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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1966

Examiner affirmed	160
Examiner affirmed in part	32
Examiner reversed	49
Total	241

Disclaimer

3,081,928.—*Francis A. Chidsey, Jr.*, Wayne, and *John V. Mahon*, Norristown, Pa. CARTON WITH RECESSED CENTER RETAINING MEMBER FOR CYLINDRICAL OBJECTS. Patent dated Mar. 19, 1963. Disclaimer filed Nov. 25, 1966, by the assignee, *Container Corporation of America*.

Hereby enters this disclaimer to claims 5, 6 and 8 of said patent.

Geographical Index of Residence of Inventors

Users of the Geographical Index of Residence of Inventors should note that the numbers assigned as codes have been changed as of January 1, 1967.

Patents Available for Licensing

ACCUMULATIVE NASA PATENT LIST No. 12

In accordance with the provisions of 14 C.F.R. § 1245.200 et seq., and 42 U.S.C. 2457(g) (1958), the National Aeronautics and Space Administration is prepared to grant royalty-free licenses, of the types specified, under the following patents.

Applications for licenses should be addressed to the Administrator, National Aeronautics and Space Administration, Washington, D.C., 20546.

Patents available for exclusive, revocable, royalty-free licensing

2,898,889. MECHANICALLY-LIMITED ELECTRICALLY OPERATED HYDRAULIC VALVE SYSTEM FOR AIRCRAFT CONTROLS.

2,903,307. TWO COMPONENT BEARING.

2,926,123. TEMPERATURE REDUCING COATING FOR METALS SUBJECT TO FLAME EXPOSURE.

2,934,331. APPARATUS FOR MAKING A METAL SLURRY PRODUCT.

2,940,259. ROCKET PROPELLANT INJECTOR.

2,944,316. PROCESS OF CASTING HEAVY SLIPS.

2,945,667. FLEXIBLE SEAL FOR VALVES.

2,956,772. LIQUID-SPRAY COOLING METHOD.

2,971,837. HIGH TEMPERATURE NICKEL-BASE ALLOY.

2,971,838. HIGH TEMPERATURE NICKEL-BASE ALLOY.

2,974,925. EXTERNAL LIQUID-SPRAY COOLING OF TURBINE BLADES.

2,984,735. RUNWAY LIGHT.

2,991,671. WIRE GRID FORMING APPARATUS.

2,991,961. JET AIRCRAFT CONFIGURATION.

2,996,212. SELF SUPPORTING SPACE VEHICLE.

2,997,274. TURBO-MACHINE BLADE VIBRATION DAMPER.

3,001,363. SPHERICAL SOLID-PROPELLANT ROCKET MOTOR.

3,001,395. AIR FRAME DRAG BALANCE.

3,001,739. AERIAL CAPSULE EMERGENCY SEPARATION DEVICE.

3,004,735. PARTICLE DETECTION APPARATUS.

3,005,081. HIGH INTENSITY HEAT AND LIGHT UNIT.

3,005,339. WIND TUNNEL AIRSTREAM OSCILLATING APPARATUS.

3,008,229. PROCESS FOR APPLYING A PROTECTIVE COATING FOR SALT BATH BRAZING.

3,010,372. FOLDING APPARATUS.

3,011,760. TRANSPIRATION COOLED TURBINE BLADE MANUFACTURED FROM WIRES.

3,012,400. NOZZLE.

3,012,407. INSULATING STRUCTURE.

3,016,693. ELECTRO-THERMAL ROCKET.

3,016,863. HYDROFOIL.

3,022,672. DIFFERENTIAL PRESSURE CELL.

3,024,659. MAGNETICALLY CENTERED LIQUID COLUMN FLOAT.

3,028,122. LANDING ARRANGEMENT FOR AERIAL VEHICLES.

3,028,126. THREE AXIS CONTROLLER.

3,028,128. REENTRY VEHICLE LEADING EDGE.

3,038,077. INFRARED SCANNER.

3,038,175. SURVIVAL COUCH.

3,041,587. ANGULAR MEASUREMENT SYSTEM.

3,041,924. MOTION PICTURE CAMERA FOR OPTICAL PYROMETRY.

3,045,424. METHOD FOR CONTINUOUS VARIATION OF PROPELLANT FLOW AND THRUST IN PROPULSIVE DEVICES.

3,049,876. ANNULAR ROCKET MOTOR AND NOZZLE CONFIGURATION.

New Applications Received During November 1966

Patents	7043
Designs	372
Plant Patents	9
Reissues	21
Total	7445

Issue—January 3, 1967

Patents	1483	No. 3,295,143 to No. 3,296,625, incl.
Designs	81	No. 206,567 to No. 206,647, incl.
Reissues	4	No. 26,132 to No. 26,135, incl.
Total	1568	

3,053,484. VARIABLE SWEEP WING CONFIGURATION.
3,057,597. MODIFICATION AND IMPROVEMENTS TO COOLED BLADES.
3,059,220. APPARATUS FOR COUPLING A PLURALITY OF UNGROUNDED CIRCUITS TO A GROUNDED CIRCUIT.
3,063,291. HIGH VACUUM CONDENSER TANK FOR ION ROCKET ENGINES.
3,064,928. VARIABLE SWEEP WING AIRCRAFT.
3,067,573. TELESCOPING-SPIKE SUPERSONIC INLET FOR AIRCRAFT ENGINES.
3,068,658. VENTING VAPOR APPARATUS.
3,069,123. INSTRUMENT SUPPORT WITH PRECISE LATERAL ADJUSTMENT.
3,070,330. ATTITUDE AND PROPELLANT FLOW CONTROL SYSTEM AND METHOD.
3,070,349. MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,070,407. AIR BEARING.
3,072,574. GAS LUBRICANT COMPOSITIONS.
3,076,065. HIGH-SPEED LOW-LEVEL ELECTRICAL STEPPING SWITCH.
3,077,599. COLLAPSIBLE LOOP ANTENNA FOR SPACE VEHICLE.
3,079,113. VEHICLE PARACHUTE AND EQUIPMENT JETTISON SYSTEM.
3,080,711. PENSHAPE EXHAUST NOZZLE FOR SUPERSONIC ENGINE.
3,083,011. MULTI-LOBAR SCAN HORIZON SENSOR.
3,084,421. REINFORCED METALLIC COMPOSITES.
3,085,165. ULTRA-LONG MONOSTABLE MULTIVIBRATOR EMPLOYING BISTABLE SEMICONDUCTOR SWITCH TO ALLOW CHARGING OR TIMING CIRCUIT.
3,087,692. VARIABLE-SPAN AIRCRAFT.
3,088,441. VALVE ACTUATOR.
3,090,212. SANDWICH PANEL CONSTRUCTION.
3,090,580. SPACE AND ATMOSPHERIC REENTRY VEHICLE.
3,093,000. CHECK VALVE ASSEMBLY FOR A PROBE.
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3,100,990. TWO-PLANE BALANCE.
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3,104,082. VARIABLE SWEEP AIRCRAFT WING.
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3,118,100. ELECTRIC BATTERY AND METHOD OF OPERATING THE SAME.
3,119,232. ROCKET ENGINE.
3,120,101. CHANNEL TYPE SHELL CONSTRUCTION FOR ROCKET ENGINE AND THE LIKE.
3,120,361. LANDING ARRANGEMENT FOR AEROSPACE VEHICLE.
3,120,738. IGNITION SYSTEM FOR MONOPROPELLANT COMBUSTION DEVICES.
3,121,309. SPHERICALLY SHAPED ROCKET MOTOR.
3,122,000. APPARATUS FOR TRANSFERRING CRYOGENIC LIQUIDS.
3,122,098. APPARATUS AND METHOD FOR CONTROL OF A SOLID FUELED ROCKET VEHICLE.
3,122,885. INJECTOR FOR BIPROPELLANT ROCKET ENGINES.
3,123,248. EXPULSION BLADDER EQUIPPED STORAGE TANK STRUCTURE.
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3,132,476. THRUST VECTOR CONTROL APPARATUS.
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3,141,769. METHOD OF PRODUCING POROUS TUNGSTEN IONIZERS FOR ION ROCKET ENGINES.
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3,150,329. VARIABLE FREQUENCY MAGNETIC COUPLED MULTIVIBRATOR.
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3,155,992. LIFE RAFT.
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D187,351. AIRCRAFT.
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D198,249. SWEPT WING ASSEMBLY.
D199,104. SUPERSONIC AIRCRAFT.
D199,105. AIRCRAFT.

Patents available for nonexclusive, revocable, royalty-free licensing

3,157,529. BONDED SOLID LUBRICANT COATING.
3,158,172. HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE.
3,158,336. ASSEMBLY FOR RECOVERING A CAPSULE.
3,158,764. TWO-FLUID MAGNETHYDRODYNAMIC SYSTEM AND METHOD FOR THERMAL-ELECTRONIC POWER CONVERSION.
3,159,967. VARIABLE THRUST ION ENGINE UTILIZING THERMALLY DECOMPOSABLE SOLID FUEL.
3,160,825. TEMPERATURE COMPENSATING MEANS FOR CAVITY RESONATOR OF AMPLIFIER.
3,160,950. METHOD AND APPARATUS FOR SHOCK PROTECTION.
3,162,012. FORMED METAL RIBBON WRAP.
3,163,935. MECHANICAL COORDINATE CONVERTER.
3,164,222. NON-REUSABLE KINETIC ENERGY ABSORBER.
3,164,369. MULTISTAGE, MULTIPLE-REENTRY TURBINE.
3,165,356. SHOCK ABSORBING SUPPORT AND RESTRAINT MEANS.
3,166,834. CATALYST BED REMOVING TOOL.
3,167,426. NICKEL-BASE ALLOY.
3,168,827. AIRPLANE TAKE-OFF PERFORMANCE INDICATOR.
3,169,001. AIRCRAFT WHEEL SPRAY DRAG ALLEVIATOR.
3,169,613. ELASTIC UNIVERSAL JOINT.
3,169,725. ERECTABLE MODULAR SPACE STATION.
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3,170,290. LIQUID ROCKET SYSTEM.

3,170,295. PROPELLANT TANK PRESSURIZATION SYSTEM.
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3,170,657. LANDING ARRANGEMENT FOR AERIAL VEHICLE.
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3,194,060. SEISMIC DISPLACEMENT TRANSDUCER.
3,194,525. SUPPORTING AND PROTECTING DEVICE.
3,194,951. LOGARITHMIC CONVERTER.
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3,276,602. CABLE ARRANGEMENT FOR RIGID TETHERING.
3,276,679. SEPARATOR.
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3,276,946. LOW FRICTION MAGNETIC RECORDING TAPE.
3,277,314. HIGH-EFFICIENCY MULTIVIBRATOR.
3,277,366. INSERTION LOSS MEASURING APPARATUS HAVING TRANSFORMER MEANS CONNECTED ACROSS A PAIR OF BOLOMETERS.
3,277,373. SERRODYNE FREQUENCY CONVERTER REENTRANT AMPLIFIER SYSTEM.

3,277,375. REENTRY COMMUNICATION BY MATERIAL ADDITION.
3,277,458. CONDITION AND CONDITION DURATION INDICATOR.
3,277,486. METHOD AND MEANS FOR DAMPING NUTATION IN A SATELLITE.
3,279,193. METHOD AND CONSTRUCTION FOR PROTECTING HEAT SENSITIVE BODIES FROM THERMAL RADIATION AND CONVECTIVE HEAT.
3,281,963. TRAINING VEHICLE FOR CONTROLLING ATTITUDE.
3,281,964. ROTATING SPACE STATION SIMULATOR.
3,281,965. CONTROLLED VISIBILITY DEVICE FOR AN AIRCRAFT.
3,282,035. MOLECULAR BEAM VELOCITY SELECTOR.
3,282,091. INSTRUMENT FOR MEASURING TORSIONAL CREEP AND RECOVERY.
3,282,532. STABILIZATION OF GRAVITY ORIENTED SATELLITES.
3,282,541. ATTITUDE CONTROL SYSTEM FOR SOUNDING ROCKETS.
3,282,739. NON-MAGNETIC BATTERY CASE.
3,282,740. SEALED BATTERY GAS MANIFOLD CONSTRUCTION
3,283,088. MULTIPLE CIRCUIT SWITCH APPARATUS WITH IMPROVED PIVOT ACTUATOR STRUCTURE.
3,283,175. AC LOGIC FLIP-FLOP CIRCUITS.
3,283,241. APPARATUS FOR FIELD STRENGTH MEASUREMENT OF A SPACE VEHICLE.
D201,773. RECOVERABLE SINGLE STAGE SPACECRAFT BOOSTER.
D202,456. TRAINER AIRCRAFT FOR SIMULATING VARIOUS GRAVITY CONDITIONS.
D202,539. HELMET.
D202,839. AIRCRAFT.
D204,331. AIRCRAFT.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 21, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-23-63	10-18-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g. Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-20-63	9-22-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	7-11-63	2-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-15-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-5-63	4-25-62
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	3-4-63	6-27-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-15-63	8-23-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-31-63	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	8-3-65	3-12-65

Total number of pending applications (excluding Designs)	194, 565
Total number of Design applications pending	4,290
Total number of applications awaiting action (excluding Designs)	142, 127
Total number of Design applications awaiting action	2, 504
Date of oldest new application awaiting action	March 4, 1963
Date of oldest amended application awaiting action	June 27, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during January 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents	Numbers 2,492,944 to 2,496,255, inclusive
Plant Patents	Numbers 911 to 918, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	8-6-64	5-22-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	9-2-64	9-24-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-22-64	6-18-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3-5-65	11-14-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	11-16-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-8-64	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ROBERT COWAN SHUMAN AND FRANCIS JOHN MEINHARDT

No. 7616. Decided June 16, 1966

[53 CCPA —; 361 F.2d 1008; 150 USPQ 254]

1. PATENTABILITY—REFERENCE—CONSIDERATION OF SPECIFIC AND GENERAL TEACHINGS.

"Considering Bolvin, the specific teachings relied on are set forth only in a conclusionary paragraph alleging that it is possible to make certain 'modifications' without departing from 'the framework of the invention.' In lieu of balls made of steel or gems, discussed in detail, it is alleged that the balls may be made from 'some surface-hardened material' or 'very fine powders' which would result in a 'spherical surface of a very fine mosaic which is extremely hard, but porous.' We think that such general allegations, appearing as a departure from the more specific teachings concerning the ball composition and devoid of detail as to the surface texture other than it being 'mosaic, * * * but porous,' is not a disclosure or a suggestion of the spherical texture of appellants' ball."

2. SAME—COMBINING REFERENCES—OBVIOUSNESS—35 U.S.C. 103.

"We are required to evaluate the claimed subject matter as a whole against the teachings of the prior art references of record. 35 U.S.C. 103. References are evaluated by ascertaining the *facts fairly disclosed therein as a whole.* It is impermissible to first ascertain factually what appellants *did* and then view the prior art in such a manner as to select from the random facts of that art only those which may be modified and then utilized to reconstruct appellants' invention from such prior art."

3. SAME—EVIDENCE—"SECONDARY CONSIDERATIONS" IN AN INQUIRY UNDER 35 U.S.C. 103.

"It is not necessary to ascertain whether each piece of evidence is defective in the manner alleged by the Solicitor ['unverified, lacks original dating in many instances, and is advertising hearsay'] as the evidence was offered to show commercial success and immediate adoption by others and not as sworn statements of individuals. There is no doubt that such evidence is relevant as bearing on 'secondary considerations' in an inquiry under section 103. *Graham* v. *John Deere Co.*, — U.S. —, 148 USPQ 459, 467."

4. SAME—SAME—SAME.

"We think the Solicitor advocates too stringent a standard as to admissibility of evidence to prove the secondary considerations stated above. Appellants could hardly expect competitors to give sworn statements of 'adoption,' or 'long felt but unsolved need.' Nor are advertising statements of competitors entitled to no weight concerning commercial success or adoption because of statements lauding the product or unknown authorship. Rather, they appeared to be a reasonable method by which evidence on such secondary considerations may be brought to the attention of the Patent Office."

5. SAME—SAME—SAME.

"Appellants have submitted evidence demonstrating secondary considerations concerning the non-obviousness of their invention. While we believe the prior art of record does not render the claimed invention obvious within the meaning of section 103, any doubt as to the correctness of this conclusion appears to have been resolved in appellants' favor by this evidence."

6. SAME—PARTICULAR SUBJECT MATTER—"BALL POINT WRITING INSTRUMENTS."

The refusal of certain claims in an application entitled "Ball Point Writing Instruments," as unpatentable over the prior art, is reversed since "* * * the claimed subject matter meets the condition of patentability specified in section 103."

APPEAL from the Patent Office. Serial No. 140,973.

REVERSED.

George H. Montemayor, Howard M. Herriott for appellants.

Joseph Schimmel (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

The issue here is whether the invention defined by the appealed claims,[1] relating to a writing tip for a ball point pen and a method of making same, is obvious within the meaning of 35 U.S.C. 103. The appealed claims were considered together by the parties and we shall do likewise.

The references relied on by the Examiner are as follows:

Bolvin (French), 1,009,193, March 5, 1952.

Schwartz et al. (Schwartz), 2,630,383, March 3, 1953.

The Examiner concluded that the claimed subject matter was obvious based on Bolvin in view of Schwartz.

The disagreement of the parties concerns the teachings of the prior art relating to the composition of the writing tip. We will first examine the teachings of the prior art. Bolvin also discloses a ball point writing instrument. The teachings of Bolvin relied on by the Examiner and the Board relate to the construction of the writing tip which is spherical in shape and "slightly corrugated." The "corrugations" in the ball resemble grooves in the polished surface of the ball, and result from "rolling the balls in all directions between two plates * * * covered with powdered diamond or other abrasives." The grooves serve to transfer the ink from the ink reservoir to the writing paper as the ball rotates during writing.

The writing tip is a "spherical, surface-hardened *steel ball*, not too highly polished." Also, good results are obtained with "balls made of *gems*, especially of agates."

The specific teaching of Bolvin, concerning alternate ball compositions relied on by the Patent Office, appears at (2) below in Bolvin:

> Needless to say, it is possible to make certain modifications of the devices described without departing from the framework of the invention.
>
> Instead of a ball of homogeneous material, it would be possible to use a ball made of (1) some surface-hardened material, or *of* (2) *a compressed agglomerate* made by subjecting to extremely high pressure *certain very fine powders* containing materials capable of constituting on the spherical surface *a very fine mosaic which is exertmely hard, but also porous.* It would also be possible to (3) inlay the surface of a ball in an appropriate fashion with very hard powdered materials capable of resisting wear. There is also the possibility of using balls of (4) an alloy of aluminum hardened by the electrolytic process. [Emphasis added.][2]

The Schwartz reference relates to "a tool made from cemented carbide which has been previously sintered and crushed into granules, which * * * is useful for such purposes as drilling dental enamel, glass, masonry, ceramics and metal, and for grinding similar materials." Schwartz discloses several tools including a "dental burr" wherein the finished burr is in the form of a sphere mounted on a shank. The spherical burr is composed of "sharp, irregular [cemented carbide] granules" which have been "screened to a size ranging be-

[1] In application Ser. No. 140,973, filed Sept. 21, 1961, entitled "Ball Point Writing Instruments."

[2] Numerical designations are by the court. Appellants disagree with the above translation of Bolvin which was relied on by the Board. We do not find it necessary to consider the alternate translation advanced by appellants.

tween about 20 mesh to about 325 mesh." The granules are "then placed in a mold and compacted by vibration or by the application of pressure." Schwartz states:

* * * The compact density that is obtained by either of these methods of compacting is limited to a minimum of approximately 40% voids due to the fact that the hard irregular granules tend to lock together in such a manner as to substantially preclude further compaction. The compacted granules are subsequently resintered by heating * * * [and] during the resintering no pressure is applied to the compact.[3]

Schwartz describes the resulting product as follows:

* * * It will be appreciated that when the sintered carbide is ground to a fine powder that the particles lose the characteristics of a sintered cemented carbide material. This is not true however of the granules which are selected to form the tool which is the subject matter of our invention. The selected granules * * * bond together at their points of contact only and retain their identity as discrete hard imporous granules of cemented carbide and have substantially the same size that they had prior to resintering. The resulting product is a porous tool comprised of irregularly shaped imporous hard selected carbide granules which are bonded together at their points of contact only and which has a minimum porosity of approximately 25% and a maximum porosity of approximately 60%.[4]

The Examiner's reasoning, adopted by the Board and cited approvingly by the Solicitor, was as follows:

The Bolvin ball * * * in one of its modes of manufacture, may be formed by an agglomerate of very fine powder compressed under very high pressure so as to provide, on the spherical surface of the ball, a very fine mosaic, very hard but porous * * *. It would be obvious to apply to the sintering art for the choice of such very hard material and to select the material disclosed in Schwartz et al.; namely, a plurality of obviously randomly distributed carbide particles sintered together to form a cemented carbide compact * * *.

The Solicitor in his brief adds:

* * * Schwartz et al. show[s] a very rough surface indeed * * *. Obviously, some surface grinding is called for here. One skilled in the art must be presumed to know how the required grinding could be performed, inasmuch as appellants disclose no specific grinding step for their own sintered carbide ball. Thus, it is evident that appellants' invention was essentially obvious.

Appellants state in their specification that their writing ball is:

* * * an integral structure composed of tungsten or titanium carbide, the binder metal itself, and intermediates of the carbide and the binder metal. * * *

The surface of the ball consists of "lands" and "pits" as:

* * * it has been determined to be extremely important that the percentage of the cumulative land area of the apparent total surface area of the ball be maintained within predetermined limits in order to provide a ball having acceptable writing characteristics which does not unduly wear away the seat.

* * * * * * *

land area percentages exceeding 85 percent are no more satisfactory than steel or other smooth balls of the prior art. * * *

* * * * * * *

if the percentage land area of the ball is maintained within the range of 30 percent to 85 percent there will be produced balls which will write over greasy surfaces and which will not unduly wear the ball seat.

In order to minimize seat wear and to provide satisfactory writeability of the ball over slick or greasy surfaces, the specification states:

* * * the entire surface of the ball should preferably be textured to the same

[3] Schwartz also states:
* * * by selecting varying proportions of large and fine granules, we can increase or decrease the degree of fluid permeability of the resulting tool between about 25% voids as a minimum and 50 to 60% as a maximum.

[4] Schwartz also discloses that the granules consist of fine particles of carbide, one-half to 10 microns in size, surrounded by a binder.

degree, that is, the surface texture should be homogenous throughout and to this end the sizes of the individual lands areas should be controlled.
* * * it has been found advantageous to sinter the ball from carbide particles having a diameter of 5 microns or less on the average.

* * * * * * *

If tungsten carbide particles of sufficiently large size are used, the result is a porous mass of particles of tungsten carbide joined together by cobalt and compositions of tungsten carbide and cobalt. However, if tungsten carbide particles having an average size of the order of 5 microns or less in diameter are used, then the resulting ball is substantially solid throughout. * * *

Schwartz teaches the construction of spherical burrs having exposed cutting edges consisting of sintered granules bonded together at points of contact only to permit coolant to flow through the burr during the cutting operation which washes away excess abraded material, reduces operating temperatures and allows higher cutting speeds. Appellants utilize similar starting materials but by selection of particle sizes achieve a substantially solid sphere having a substantially homogenous surface texture as ink transfer means which cooperates with the ball housing without causing the excessive wear therein as would be caused by use of a rough textured ball such as Schwartz produces.

Appellants' brief sets forth appealed claim 1 and includes a contrast to the teachings of the prior art.

Referring now particularly to appealed claim 1, which appellants submit as being representative, appellants advance the following as demonstrating patentabe distinctions over the references relied on by the Examiner and the Board of Appeals:

> 1. *In a ball point writing instrument, a writing ball* (the Schwartz reference is clearly inapplicable to such a structure) comprising *a plurality of carbide particles sintered together to form a cemented carbide compact* (the French Bolvin patent fails to disclose or suggest any such structure), said ball having a substantially true spherical surface except for pits which interrupt land areas on the ball surface, said surface having a substantially homogeneous texture formed by randomly distributed lands and pits, *said lands being formed by carbide particles* (Schwartz shows only sharp-pointed carbide particles, and fails to show or suggest spherical land surfaces formed of carbide particles, while the French Bolvin patent makes absolutely no showing or suggestion of the use of carbide particles to form the land surfaces) and said pits being the spaces between said lands.

As we view the teachings of the references, Schwartz shows a spherical dental burr composed of cemented carbide granules having 40% voids and exposed cutting edges. Schwartz states:

* * * The fast cutting action of our dental burr is due to the multiplicity of the cutting points present on the irregular shaped cemented carbide granules exposed on the burr's surface * * *. Our burr has a much longer life than a steel burr and is produced at a relatively low cost. The application of the coolant which passes out through the porous burr and over its entire area continuously washes away the excess abraded material and keeps the drill clean. * * *

It thus seems that modifying the Schwartz spherical burr as suggested by the Solicitor by grinding or polishing would not yield a spherical "surface having a substantially homogeneous texture formed by randomly distributed lands and pits," as called for in claim 1. Schwartz thus falls far short of teaching a spherical ball, modified by grinding, which, as urged by the Solicitor, may serve as a ball in the Bolvin writing instrument.

[1] Considering Bolvin, the specific teachings relied on are set forth only in a conclusionary paragraph alleging that it is possible to make certain "modifications" without departing from "the framework of the invention." In lieu of balls made of steel or gems, dis-

cussed in detail, it is alleged that the balls may be made from "some surface-hardened material" or "very fine powders" which would result in a "spherical surface of a very fine mosaic which is extremely hard, but porous." We think that such general allegations, appearing as a departure from the more specific teachings concerning the ball composition and devoid of detail as to the surface texture other than it being "mosaic, * * * but porous," is not a disclosure or a suggestion of the spherical texture of appellants' ball.

[2] We are required to evaluate the claimed subject matter as a whole against the teachings of the prior art references of record. 35 U.S.C. 103. References are evaluated by ascertaining the *facts fairly disclosed therein as a whole*. It is impermissible to first ascertain factually what appellants *did* and then view the prior art in such a manner as to select from the random facts of that art only those which may be modified and then utilized to reconstruct appellants' invention from such prior art.

Here we do not find the claimed subject matter obvious from the prior art teachings of a ball consisting of fine powders having a hard mosaic porous surface modified by the prior art porous spherical cutting tool whose cutting surfaces comprise cemented carbide granules.

Appellants have submitted substantial evidence to demonstrate the commercial success of their invention and the adoption of their invention by the writing industry. Appellants submit that "the invention was not obvious to the general industry prior to the public disclosure of appellants' invention," and that substantial segments of the industry have copied appellants' ball construction. The Solicitor attacks this evidence, stating it is "unverified, lacks original dating in many instances, and is advertising hearsay."

[3] It is not necessary to ascertain whether each piece of evidence is defective in the manner alleged by the Solicitor as the evidence was offered to show commercial success and immediate adoption by others and not as sworn statements of individuals. There is no doubt that such evidence is relevant as bearing on "secondary considerations" in an inquiry under section 103. *Graham* v. *John Deere Co.*, — U.S. —, 148 USPQ 459, 467.

[4] We think the Solicitor advocates too stringent a standard as to admissibility of evidence to prove the secondary considerations stated above. Appellants could hardly expect competitors to give sworn statements of "adoption," or "long felt but unsolved need." Nor are advertising statements of competitors entitled to no weight concerning commercial success or adoption because of statements lauding the product or unknown authorship. Rather, they appeared to be a reasonable method by which evidence on such secondary considerations may be brought to the attention of the Patent Office.

[5] Appellants have submitted evidence demonstrating secondary considerations concerning the non-obviousness of their invention. While we believe the prior art of record does not render the claimed invention obvious within the meaning of section 103, any doubt as to the correctness of this conclusion appears to have been resolved in appellants' favor by this evidence.

[6] We conclude that the claimed subject matter meets the condition of patentability specified in section 103.

REVERSED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,899,954, L. H. Conover, TETRACYCLINE, filed Oct. 17, 1966, D.C.N.J. (Newark), Doc. 1043–66, *Chas. Pfizer & Co., Inc.* v. *Narco Drugs Co., Inc.* Consent judgment holding patent valid, injunction issued Dec. 1, 1966. Same, filed Sept. 20, 1963, D.C.N.J. (Newark), Doc. 766–63, *Chas. Pfizer & Co., Inc.* v. *Premo Pharmaceutical Laboratories, Inc.* Consent judgment for injunction Dec. 2, 1966.

2,784,132, E. N. Maisel, AIR PERMEABLE FIBROUS BATT, filed Sept. 27, 1965, D.C., W.D.N.C. (Charlotte), Doc. 2042, *Union Carbide Corporation* v. *Microtron Corporation*. Order denying defendant's motion for summary judgment May 24, 1966. Order filed amending order of May 24, 1966, to show that such order involves controlling question of law; that proceedings in District Court stayed until Court of Appeals has considered application for appeal; in event appeal permitted, proceedings further stayed until judgment or mandate returned to District Court May 31, 1966. Appealed, Aug. 11, 1966, C.C.A., 4th Cir., Doc. 10,830, *Microtron Corporation* v. *Union Carbide Corporation*.

2,980,337, J. Kozinski (assigned to H. G. Fischer & Co.), PAINT SPRAYING SYSTEM; **3,043,496**, Juvinall and Marsh (assigned to Ransburg Electro-Coating Corp.), ELECTROSTATIC SPRAY COATING SYSTEM; **3,169,882**, J. W. Juvinall et al. (assigned to Ransburg Electro-Coating Corp.), ELECTROSTATIC COATING METHODS AND APPARATUS; **3,169,883**, J. W. Juvinall (assigned to Ransburg Electro-Coating Corp.), same, filed Feb. 12, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c264, *Ransburg Electro-Coating Corp.* v. *H. G. Fischer & Co.* (Patent No. 2,980,337, owned by defendant, included on notice of dismissal.) Pursuant to stipulation, cause dismissed and counterclaim dismissed without prejudice Nov. 14, 1966.

2,985,936, B. Hillberg, HANGER ASSEMBLY FOR SUSPENDED CONCRETE FORMS; **2,985,937**, same, OUTSIDE HANGER ASSEMBLY FOR SUSPENDED CONCRETE FORMS, filed Jan. 28, 1966, C.C.A., 8th Cir., Doc. 18281, *Superior Concrete Accessories, Inc.* v. *Richmond Screw Anchor Co., Inc.* Judgment of District Court, holding Patent No. 2,985,937 invalid, affirmed Nov. 29, 1966.

2,985,937. (See 2,985,936.)

3,000,822, Higgins and Le Suer, PHOSPHORODITHIOATE INHIBITORS; **3,087,936**, W. M. Le Suer, REACTION PRODUCT OF AN ALIPHATIC OLEFIN-POLYMER-SUCCINIC ACID PRODUCING COMPOUND WITH AN AMINE AND REACTING THE RESULTING PRODUCT WITH A BORON COMPOUND; **3,172,892**, Le Suer and Norman, REACTION PRODUCT OF HIGH MOLECULAR WEIGHT SUCCINIC ACIDS AND SUCCINIC ANHYDRIDES WITH AN ETHYLENE POLYAMINE; **3,190,833**, A. Rhodes, OXIDATION-RESISTANT LUBRICATING COMPOSITION; **3,219,666**, Norman and Le Suer, DERIVATIVES OF SUCCINIC ACIDS AND NITROGEN COMPOUNDS; **3,272,743**, same, LUBRICANTS CONTAINING METAL-FREE DISPERSANTS AND METALLIC DISPERSANTS; **3,272,746**, same, LUBRICATING COMPOSITION CONTAINING AN ACYLATED NITROGEN COMPOUND, filed Nov. 21, 1966, D.C., E.D. Mich. (Detroit), Doc. 29247, *Amoco Chemicals Corporation et al.* v. *The Lubrizol Corporation*.

3,002,636, J. P. Felburn, METHOD OF "PIGGY-BACK" TRANSPORTATION, filed Dec. 23, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c2192, *John Phil Felburn* v. *Chicago, Milwaukee, St. Paul, and Pacific Railroad Co.* Cause dismissed; plaintiff enjoined Sept. 23, 1966.

3,011,804, R. S. Burns, DUAL WELL COMPLETION APPARATUS; **3,097,695**, R. K. Le Rouax, MULTIPLE STRING TUBING HANGER, filed Apr. 26, 1966, D.C., S.D. Tex. (Houston), Doc. 66–H–249, *Armco Steel Corporation* v. *FMC Corporation*. Consent judgment—claims 1, 3 and 5 of Patent No. 3,011,804 and claims 1, 9, 29, and 31 of Patent No. 3,097,695 held valid and infringed; defendant enjoined; injunction from infringement shall be stayed and shall not be effective so long as defendant holds a license from plaintiff Nov. 4, 1966. Same, filed Apr. 25, 1966, D.C., S.D. Tex. (Houston), Doc. 66–H–242, *Armco Steel Corporation* v. *Rector Well Equipment Company, Inc.* Consent judgment—claims 1, 9, 29 and 31 of Patent No. 3,097,695 held valid and infringed; injunction issued; case dismissed as to Patent No. 3,011,804, Nov. 18, 1966.

3,015,909, O. J. Bratz, PUSH-PULL CABLE, filed Nov. 18, 1966, D.C., S.D.N.Y., Doc. 66/3918, *American Chain & Cable Company* v. *Phillips Hardware, Inc.*

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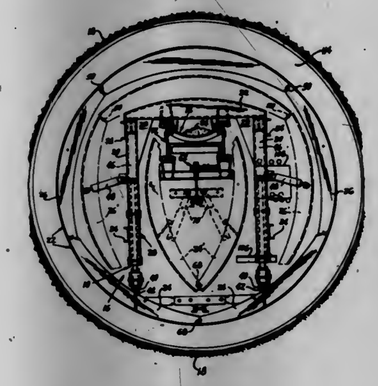
REISSUES

JANUARY 3, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,132
APPARATUS FOR FORMING A TUNNEL

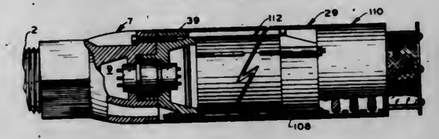
Henry P. Cerutti, San Antonio, Tex., by October Corporation of Grand Prairie, Tex., assignee
Original No. 3,206,824, dated Sept. 21, 1965, Ser. No. 258,730, Feb. 15, 1963. Application for reissue Nov. 26, 1965, Ser. No. 514,757
10 Claims. (Cl. 61—84)



1. An apparatus for *forming a tunnel including means for* progressively placing and removing concrete forms in a tunnel opening comprising a plurality of floor sections, said sections being identical and each including a pair of invert arch form members arranged in side by side relation with respect to each other and connected together along their adjacent sides for hinged movement toward and away from each other, a rail extending along each said member from one end to the other end and disposed in parallel spaced relation with respect to said adjacent sides, said sections being adapted to be laid in the form of a tunnel with the members of each section in the away position and with siad sections in end to end abutting relation so that said rails form a continuous trackway along said tunnel form, a tunnel-shaped carriage having a forward end and a rearward end, said carriage having spaced side walls and a roof extending over the upper ends of said side walls, a wheel on the lower end of each of said side walls adjacent each end of the latter, said wheels rollably supporting said carriage on said trackway when said sections are in the laid position, an overhead track positioned between said side walls adjacent the upper ends thereof and extending longitudinally of said carriage, said tracks being dependingly carried by said roof and having a portion adjacent one end exteriorly of said forward end of said carriage and having a portion adjacent the other end exteriorly of said rearward end of said carriage, [and] hoist means carried by said track for rolling movement between said one and other track ends, said means being operable to lift each of said sections in turn when on the floor of said tunnel, fold the members of said section to the toward position, transport said folded section through said carriage from the rearward end to the forward end, and lower and support said section in a position adjacent to and above the tunnel floor with said members in the away position so as to provide a form for casting concrete between said section and the tunnel floor [.], *and conveyor means carried by said overhead track for transporting muck from the forward end of said carriage to the rear end thereof.*

26,133
SEPARABLE MOTOR-PUMP CONNECTOR

George W. Wright, Yoder, Ind., assignor to Tokheim Corporation, Fort Wayne, Ind., a corporation of Indiana
Original No. 2,897,763, dated Aug. 4, 1959, Ser. No. 666,048, June 17, 1957. Application for reissue May 15, 1961, Ser. No. 120,103
37 Claims. (Cl. 103—87)



1. A liquid passage and electrical conductor connector structure comprising first means, including a submersible motor-pump unit, having a central axis and defining a first, substantially axially directed, open ended discharge passage for liquid under pump pressure and defining a junction cavity having an end opening adjacent that of said passage, a first electric connector element mounted on said first means, in said opening, and projecting substantially axially therefrom, a connector body, having a central axis, defining a liquid discharge cavity at one end and defining a junction chamber having an axial opening at the end opposite from said cavity, said body having means at one end for sealingly connecting said liquid cavity in communication with a delivery pipe and having means for sealingly connecting said chamber in communication with an electric conduit, a second electric connector element mounted on said body, in said chamber opening, and projecting substantially axially from said chamber, said body defining a substantially axially directed second liquid passage extending from said discharge cavity, past said chamber and having an axially directed opening adjacent said second element, axially extending means on said body and said first means for aligning said connector elements for endwise engagement and said first and second passages for endwise communication, means for axially drawing together and fastening said connector body and said first means to hold said connector elements engaged and said passages in communication and means disposed to seal off said connector elements from the liquid in said passages when said connector body and said first means are fastened together.

26,134
MINERAL OIL COMPOSITION

Joseph E. Fields, Ballwin, and John H. Johnson, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Original No. 3,201,351, dated Aug. 17, 1965, Ser. No. 116,247, June 12, 1961. Application for reissue Mar. 18, 1966, Ser. No. 538,144
8 Claims. (Cl. 252—56)

1. A mineral oil composition of improved viscosity index and hydrolysis stability comprising a major amount of mineral oil, a minor amount sufficient to improve the

viscosity index of said mineral oil of oil-soluble isobutylene/dialkyl fumarate polymer, said dialkyl fumarate having an average number of not more than 10 carbon atoms in said alkyl groups but at least a sufficient average number of carbon atoms to give an oil-soluble polymer and said *dialkyl fumarate* [polymer] and isobutylene existing in a 1 to 1 molar ratio in said mineral oil composition, and a minor amount of barium-containing detergent additive.

26,135

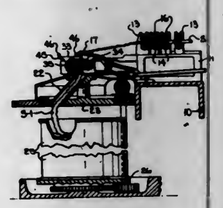
MEANS FOR FEEDING SLIVERS TO COILERS

Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina

Original No. 2,878,527, dated Mar. 24, 1959, Ser. No. 533,735, Sept. 12, 1955. Reissue No. 25,520, dated Feb. 11, 1964, Ser. No. 97,710, Mar. 22, 1961. This application for reissue Apr. 8, 1965, Ser. No. 457,888

12 Claims. (Cl. 19—159)

9. In a machine for processing textile fibers in sliver form, said machine having processing instrumentalities and a coiler including a rotating inclined tube mounted for rotation about a vertical axis; the combination of an improved calender roll unit comprising a driven shaft, a first fluted calender roll fixed on the driven shaft, a second fluted calender roll supported for free rotational movement on an axis parallel to the axis of, and meshing with, the first roll, [and] the nip of the fluted rolls



being disposed closely above the open upper end of the inclined tube *and means to adjustably vary the meshing relationship between the fluted calender rolls and to maintain them in their adjusted relationship* **during normal machine operation** *whereby the sliver is crimped and the amount of sliver drawn therebetween may be varied.*

PATENTS

GRANTED JANUARY 3, 1967

GENERAL AND MECHANICAL

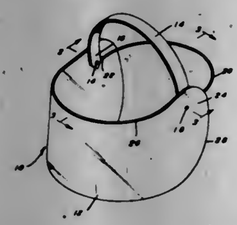
3,295,143

GLARE SHIELD

Goldie Hoffman, 250 S. 17th St., Philadelphia, Pa. 19103

Filed Nov. 1, 1965, Ser. No. 505,811

5 Claims. (Cl. 2—12)



1. A shield having a headband, said headband rotatably connected to said shield, an elastic cord member, said elastic cord member having washer members at its ends, said elastic cord member connected to said shield, rivets connecting the ends of said headband and said cord to said shield, said washer members on said cord being between said headband and said shield to provide a surface upon which the shield can rotate with respect to said headband.

3,295,144

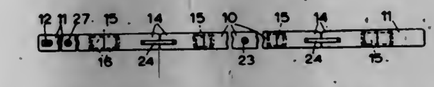
WAIST BANDS OF TROUSERS

John Peter Nicolas Mengers, London, England, assignor to S. Simpson Limited, London, England, a British company

Filed Oct. 27, 1964, Ser. No. 406,859

Claims priority, application Great Britain, May 25, 1964, 21,527/64

2 Claims. (Cl. 2—237)



1. In self-supporting trousers in combination with a waist band presenting four tunnels and a loop, said tunnels being spaced to provide one at each side of the back and one at each side of the front of the waist band and said loop being disposed substantially centrally of the back of the waist band, a waist belt adapted to fit around the waist band and pass through said tunnels and said loop, said waist belt formed in three major sections comprising a rear section extending across the back of the waist band and two front sections, cooperating means on one end of each of said front sections for attachment with one another at the front of the waist band tabs connected to each end of the rear section and tabs connected to the other end of each front section, wide strips of elastic sewn into each tab and its adjacent section constituting the connecting means therebetween, means for connecting each of the pairs of tabs to each other to form a unitary waist belt and means for adjusting the length of the waist belt comprising spaced buttons on one tab and a buttonhole provided in the tab to be joined therewith.

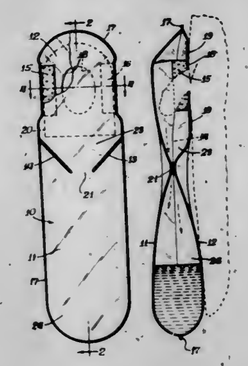
3,295,145

URINE COLLECTOR FOR INFANTS

Richard E. Ericson, Barrington, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed July 30, 1964, Ser. No. 386,301

9 Claims. (Cl. 4—110)



1. A urine collector for infants comprising a front panel and a back panel of water impervious material, said panels being joined into a flat tubular structure, seals joining the ends of said panels providing end-closures for said tubular structure, two sealed areas intermediate said end-closures sealing said panels together and converging downwardly from the sides of said flat tubular structure, said sealed areas terminating short of juncture and substantially dividing said tubular structure into an upper and a lower compartment, a slit-like unsealed throat between said panels and joining said compartments, said throat being defined by closely adjacent portions of said two sealed areas, longitudinally aligned oval aperture in said back panel centrally disposed with regard to said upper compartment and forming an opening thereinto, a layer of pressure sensitive adhesive attached to said back panel presenting an outwardly disposed adhesive surface surrounding said aperture, and two longitudinally disposed elongated pads flanking said aperture one on each side, attached within said upper compartment, said pads separating said front and back panels whereby said upper compartment is maintained in three-dimensional conformation.

3,295,146

BATHTUB SUPPORT DEVICE

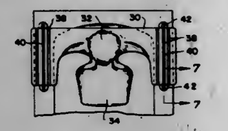
Alfred Martin and Mildred J. Martin, both of 3694 Normandy Ave., Vancouver, British Columbia, Canada

Filed Mar. 24, 1964, Ser. No. 354,280

6 Claims. (Cl. 4—185)

1. A support device for mounting on a bathtub comprising a panel adapted to extend transversely over the tub with its ends extending over the rim of the tub, said panel having a central dished portion extending inwardly from a longitudinal edge thereof for supporting the back of the head of a person reclining in said tub and a downwardly inclined extension fixedly secured to and projecting forwardly from said longitudinal edge of said central

dished section, said extension concaved upwardly for supporting the upper portions of the body of said person,

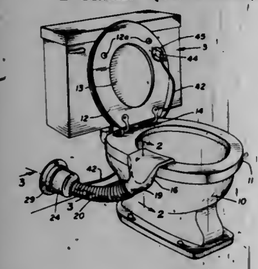


and means secured to the panel adjacent each end thereof for detachably mounting said panel on the rim of said tub.

3,295,147
TOILET STOOL VENTILATING DEVICE

Gustave Meyer, Fort Morgan, Colo., assignor to Meyer Products, Inc., Fort Morgan, Colo., a corporation of Colorado

Filed Apr. 24, 1964, Ser. No. 362,293
1 Claim. (Cl. 4—213)



In the combination with a wall section having a ventilating stack therein and a toilet stool having a seat hingedly mounted above the rim of the stool with a short space between the rim and seat when the seat is upon the rim, an automatic ventilating apparatus operable responsive to the weight of an individual seated upon the stool, and comprising:

(a) a suction nozzle having a flattened intake with a downturned bottom edge and being adapted to be secured upon the toilet rim with the intake lying betwen the rim and seat and the downturned edge gripping the stool wall below the rim;
(b) a wall flange mounted to the wall and having a passageway therein to the ventilating stack;
(c) a conduit from the suction nozzle to the wall flange;
(d) a blower means within the conduit including a normally open switch adapted to create a suction air flow from the nozzle to the stack whenever the switch is closed;
(e) a pressure bulb adjacent to the switch adapted to expand to close the same;
(f) a pressure ball at the underside of the seat lid adapted to be compressed between the lid and the seat rim by the weight of a person thereon; and
(g) a hose connecting the ball and bulb to convey the pressure effect of the ball, when compressed, to the bulb.

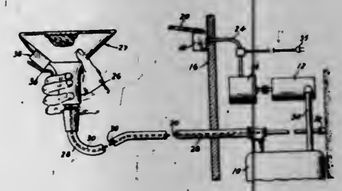
3,295,148
DENTAL CUSPIDOR SYSTEM

Haskin U. Deeley, Jr., Baltimore, Md., and Henry M. Thornton, Jr., York, Pa., assignors to The Dentists' Supply Company of New York, York, Pa., a corporation of New York

Filed Dec. 17, 1963, Ser. No. 331,229
16 Claims. (Cl. 4—263)

1. A portable dental cuspidor fluid and debris receiving and discharging system comprising:

(a) a power operated patient-controllable suction unit,
(b) a portable hand-held dental cuspidor receptacle having a discharge spout for receiving and discharging fluid and debris and arranged to be engaged by the hand of a patient adjacent said discharge spout,
(c) a flexible suction hose connecting the discharge spout of said receptacle to said suction unit,
(d) a flexible water delivery hose connecting said receptacle to a source of water under pressure,
(e) valve means on said receptacle for controlling the delivery of water from said water delivery hose to said receptacle for flushing the same and having



an operating member adjacent said discharge spout for engagement by the finger of a patient while the receptacle is being held in the hand of a patient,
(f) support means for said receptacle when not in use positioned remotely from said suction unit, and
(g) control means forming part of said support means connected to said power operated suction unit, operative both on supporting or removal of said receptacle from said support means respectively to stop and initiate operation of said power operated suction unit.

3,295,149
FOLDING BED

William Joseph Hall, London, England, assignor to W. Steel & Company Limited

Filed Dec. 28, 1964, Ser. No. 421,252
Claims priority, application Great Britain, Jan. 2, 1964, 270/64; Jan. 28, 1964, 3,527/64
8 Claims. (Cl. 5—174)



1. A folding bed comprising a central frame section; a pair of outer frame sections; means pivoting the outer frame sections one on each of opposed sides of the central section; a pair of inner leg means; means pivoting each of the inner leg means to the central section; a pair of outer leg means; means pivoting each of the outer leg means to a respective outer frame section; and linkage means extending between the leg means and the frame sections, the linkage means being adapted to maintain the inner leg means with the free ends thereof closer together than their pivoted ends, and the outer leg means with the pivoted ends thereof closer together than their free ends in the unfolded position of the bed.

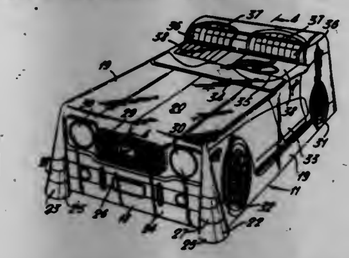
3,295,150
DECORATIVE BED COVER

Sidney Shapiro and Philip Shapiro, New York, and Jerry Shapiro, Mamaroneck, N.Y., assignors to Inventions of North America Limited, Ottawa, Canada, a corporation of Canada

Filed May 9, 1966, Ser. No. 548,477
3 Claims. (Cl. 5—334)

1. In combination, a bed, a pillow upon said bed, a bed cover disposed over said pillow and said bed, said bed cover comprising a fabric body made of a substantially planar material, said body having a front portion,

a top portion, and a plurality of side portions, said top portion having the representation of a seat portion of a vehicle planarly and positionally inscribed thereupon, said

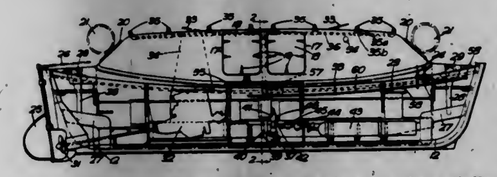


seat portion having a front portion and a back portion, said back portion of said seat disposed directly above said pillow so as to produce an actual three dimensional seat.

3,295,151
HEAT RESISTANT BOATS

Alfred George William Hall, East Molesey, Surrey, England, assignor to Watercraft Limited, East Molesey, England, a company of Great Britain

Filed May 24, 1965, Ser. No. 458,348
7 Claims. (Cl. 9—4)

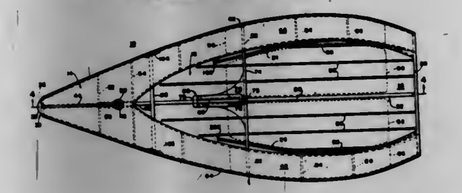


1. In a heat resisting lifeboat having a substantially enclosed passenger compartment therein and a canopy over said passenger compartment, the improvement comprising a spray system for creating a continuous flowing stream of heat insulating fluid over substantially the whole surface of the boat above water level, said spray system including spray nozzles positioned outside the boat above said canopy, a pump for delivering fluid to said nozzles, a compressed air motor for driving said pump, a source of compressed air for driving said motor, means for passing the exhaust air from the compressed air motor into said compartment within the boat, and adjustable ventilator means in said canopy to circulate air in said compartment when said spray system is not in use, said ventilator means being capable of being sealed to prevent the influx of said fluid when said spray system is in use.

3,295,152
SAILBOAT

John H. Shelley, Chez Nous, Msida, Malta

Filed Aug. 20, 1965, Ser. No. 481,258
9 Claims. (Cl. 9—6)

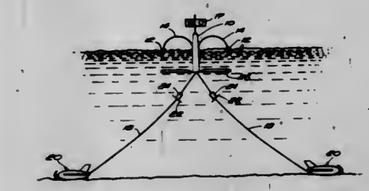


1. In a boat hull, the invention comprising a shell constructed of two like adjacent pieces of flexible sheet material convergently formed at one end to form a bow portion and divergently formed at the other end to form a stern portion, first means effecting a maximum beam width of said shell aft of amidships and forward of said stern portion, said shell having a bottom portion, and second means effecting a continuous transition of said bottom portion from a relatively short radius convex curvature at said bow to a relatively large radius convex curvature at said stern.

3,295,153
PASSIVE STABLE BUOY

Harold R. Deesau, Arlington, Mass., assignor to Dynamics Research Corporation, Stoneham, Mass., a corporation of Massachusetts

Filed Mar. 24, 1965, Ser. No. 442,284
9 Claims. (Cl. 9—8)

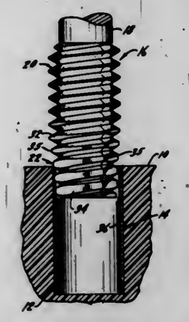


1. A marine buoy adapted to remain on the surface of a body of water in a fixed stable position with reference to the bottom of said body of water not withstanding winds and adverse sea conditions comprising a central float and plurality of self-propelled, self-anchoring cable carriers releasably secured thereto, each of said carriers containing a cable, each of said cables being affixed to said float and maintained on a reel within said carrier, each of said carriers further including means for releasing the cable maintained therein and for applying a compensating tension to said cable to maintain said float in a fixed stable position relative to the bottom of the body of water after the carriers sink to said bottom and anchor themselves thereto.

3,295,154
METAL SWAGING TOOL AND METHOD OF SEATING AND THREADING A THIN WALLED CYLINDER IN A HOLE

Willis H. Watson, Beloit, Wis., and Donald P. Welles, Jr., Rockford, Ill., assignors to Besly-Welles Corporation, South Beloit, Ill., a corporation of Illinois

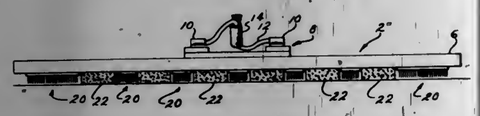
Filed Feb. 18, 1965, Ser. No. 433,741
14 Claims. (Cl. 10—1)



6. A method of seating and threading a thin-walled cylinder in a hole, including the steps of positioning the cylinder in the hole, applying intermittent gradually increasing radially directed pressure to the walls of the

cylinder along an area substantially parallel to the axis of the cylinder with such area diminishing in size, from one end toward the other, to expand the cylinder and to seat it within the hole, then applying intermittent radially directed pressure to the walls in a generally helically directed path to internally thread the cylinder and hole.

3,295,155
HOLDER FOR MOP PADS
Theodore B. Belsky, South Hadley, and Gloria B. Klarfeld, Holyoke, Mass., assignors to Ready, Inc., Holyoke, Mass., a corporation of Massachusetts
Filed June 19, 1964, Ser. No. 376,504
2 Claims. (Cl. 15—147)



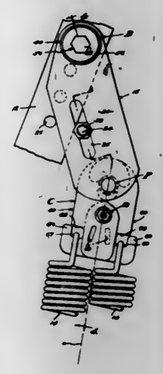
1. A holder for mop pads and the like comprising a stiff base member, a heavy backing of resilient material carried by said base member against the underside thereof and a plurality of spaced needle-like depending wire prongs carried by said backing material, said backing material being divided into at least three spaced sections at said underside of the base, the portions between said backing material carrying sections of readily compressible cellular sponge material adhesively secured thereto, the prongs at one side of said base being angularly bent with the tip ends facing in one direction and the prongs at the other side of the base being similarly bent and facing in the opposite direction, said sections of sponge material extending below the tips of said prongs.

3,295,156
TOOTHBRUSH
Joseph H. Brant, Summit, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Apr. 14, 1965, Ser. No. 448,048
4 Claims. (Cl. 15—167)



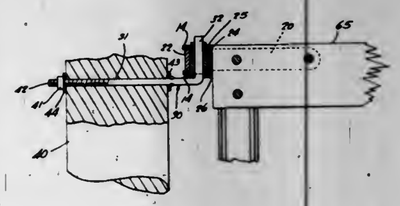
1. A toothbrush comprising a base member having a handle portion at one end thereof and a head portion at the opposite end, and a plurality of synthetic fiber bristles connected at one end to said head portion, their free ends being upstanding, from 20% to about 80% of said free ends being longitudinally split or flagged into from about two to about twenty parts for up to one half of the bristle length, the remainder of said free ends being intact, said bristles with intact free ends being from about 70 to 95% as tall as said longitudinally split bristles and cooperating with the flagged bristles to control the degree of bending thereof, whereby the cleaning of the teeth is facilitated by a wiping action exerted on the teeth by the sides of the longitudinally split bristles as well as by contact with the tips of the longitudinally split and intact bristles.

3,295,157
BEARING AND SPRING LINK FOR DOOR ACTUATORS
Vernon R. Gluth, Los Alamitos, Calif. (8378 Katella Ave., Stanton, Calif. 90680)
Filed Aug. 4, 1964, Ser. No. 387,324
3 Claims. (Cl. 16—1)



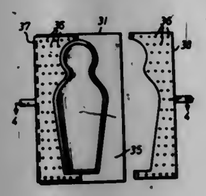
1. A bearing and spring link for a door actuator wherein the door is carried between opened and closed positions by an arm biased by a spring, and including:
(a) a link comprised of a pair of spaced plates, to be pivoted to the arm and with its free end coupled to the spring;
(b) a bearing revolubly attaching the link plates pivotally to the arm and comprising;
(1) a bearing stud fixed on and projecting from one side of the arm;
(2) and a bearing part pressed through openings in the spaced plates, there being a spacer sleeve surrounding the bearing part and engaging the plates to space the same, and having a bore rotatably receiving this first mentioned bearing stud;
(c) whereby relative rotational engagement is confined to said first mentioned bearing in said bore.

3,295,158
FARM GATE BEARING HINGE
Robert J. Hotchkiss, Jr., Bradford, and Chalmer Moore, Jr., Peoria Heights, Ill., assignors to Hotchkiss Steel Products Co., Bradford, Ill., a corporation of Illinois
Filed Sept. 21, 1964, Ser. No. 397,769
5 Claims. (Cl. 16—154)



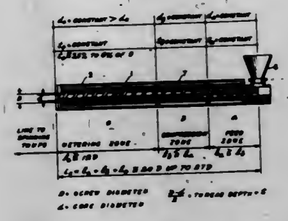
1. A farm gate bearing hinge comprising a bracket having an upstanding web and a pair of flanges projecting in superimposed spaced relation from one side of said web, there being a pair of spaced vertical slots in said web for receiving the legs of a hinge strap and retaining said legs against spreading when received therein, a hinge strap embodying a pair of parallel legs and a bight extending between and attached to one of the complemental ends of said legs, said hinge strap being disposed so that the bight is between and extends from the upper one to the lower one of said flanges with the legs extending through and out of the slots in said web and projecting beyond said web, the projecting portions of said legs being adapted to receive an end portion of a farm gate therebetween, an upstanding bearing sleeve disposed between said flanges so as to be partially embraced by the bight of said hinge strap and having the upper end bearing against the upper one of said flanges, a hinge bolt having an elongated shank and an extension projecting perpendicularly from one end thereof, said hinge bolt being positioned so that the extension thereof extends through said sleeve with the lower end of the sleeve engaging the shank thereof and the upper end of the extension projecting through the sleeve, the shank of said hing bolt being adapted to be projected through and be fixedly secured to a supporting post, and means provided in the projecting portions of said hinge strap for passage of securing elements therethrough when an end portion of a farm gate has been received therebetween, said bearing sleeve being operable to carry the load transmitted through the upper one of the flanges of the bracket from a farm gate, when said gate has been received between and secured to the projecting portions of the legs of said hinge strap, and the shank of said hinge bolt has been projected through and fixedly secured to a supporting post.

3,295,159
APPARATUS FOR THE MANUFACTURE OF HOLLOW OBJECTS
Stefan Fischer, Lohmar, near Cologne, Germany
Filed July 24, 1963, Ser. No. 297,438
Claims priority, application Germany, July 25, 1962, F 37,415; Nov. 26, 1962, F 38,393; Feb. 2, 1963, F 38,911
4 Claims. (Cl. 18—5)



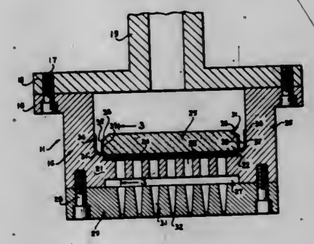
1. A device for the blow-molding of hollow objects comprising, a pair of facing mold parts having complementary cavities on their facing sides and mounted for movement into and out of facing spaced relation with each other for receiving a parison between said mold parts to be expanded into said cavities, cutting edges projecting from the facing sides of said mold parts conformably bounding said cavities and movable with said mold parts into cutting engagement with each other for severing the surplus parison material externally of said cavities from the blown material in said cavities, said mold parts meeting at their respective cutting edges thus leaving a space between said mold parts external of the cavities, and a plurality of apertured plates on opposite facing sides of said mold parts encircling said cavities and mounted for movement transversely to the direction of the movement of said mold parts into and out of the said space between said mold parts externally of said cutting edges, for removing the surplus parison material from between said mold parts.

3,295,160
APPARATUS FOR SPINNING FILAMENTS OF SYNTHETIC THERMOPLASTIC FIBER - FORMING POLYMERS
Heinz Schippers, Remscheid-Lennep, Germany, assignor to Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal-Oberbarmen, Germany
Filed July 21, 1964, Ser. No. 384,071
Claims priority, application Germany, Aug. 3, 1963, B 72,987
6 Claims. (Cl. 18—8)



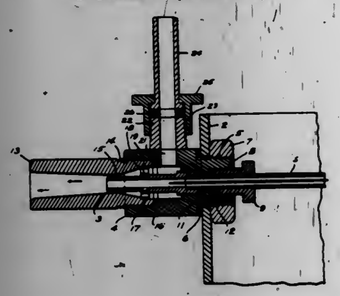
1. In an apparatus for spinning filaments of synthetic thermoplastic fiber-forming polymers including (A) an extrusion screw devided along its total length into a feed section, a compression section and a metering section, (B) a spinning pump adapted to receive molten polymer from said extrusion screw and (C) a spinneret adapted to receive the molten polymer from the spinning pump and containing openings for extrusion of the polymer into filaments, the improvement of a metering section of said extrusion screw which is at least 12 times the diameter of said screw, a thread depth in said metering section which is at least 3.5% of the screw diameter and a total length of the extrusion screw which is equal to about 20 to 27 times the screw diameter.

3,295,161
EQUIPMENT FOR PRODUCING SYNTHETIC POLYMER FIBERS
Lambert H. Mott, 3d, Hartford, Conn., assignor to Mott Metallurgical Corp., Hartford, Conn., a corporation of Connecticut
Filed Mar. 12, 1965, Ser. No. 439,248
4 Claims. (Cl. 18—8)



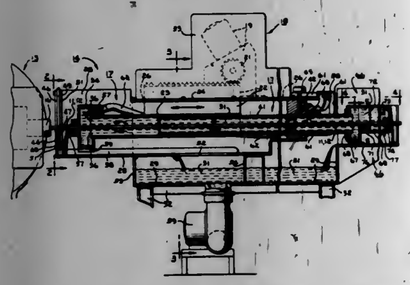
1. An extrusion head for producing synthetic fibers comprising a cup-shaped holder having a mouth defining an inlet and having a side wall and a floor, said floor having a plurality of passageways therethrough, a rigid disc of porous material positioned in said holder in juxtaposition to said floor, said disc having a beveled outer edge, and an annular sealing member substantially U-shaped in cross section positioned in said holder between the wall thereof and the side wall of said disc, the concavity of said sealing member being directed toward said inlet, the inner wall of said U-shaped sealing member having an inwardly extending annular lip adapted to seat on said beveled edge.

3,295,162
PROCESS AND APPARATUS FOR THE PRODUCTION OF NOVELTY YARNS
Georges Forceville, Vaulx-en-Velin, Rhone, France, assignor to Textile & Chemical Research Company (Vaduz) Limited, Vaduz, Liechtenstein, a corporation of Liechtenstein
Original application May 16, 1963, Ser. No. 280,838. Divided and this application June 9, 1965, Ser. No. 476,772
3 Claims. (Cl. 18—8)



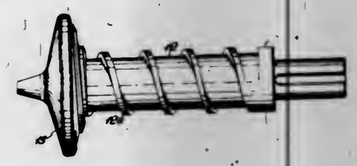
1. Apparatus for producing a novelty yarn comprising a spinning bath, a spinning tube immersed in said bath and adapted to receive the spinning bath and coagulated filaments from a spinneret, said spinning tube terminating in an ejection zone, a Venturi tube immersed in said bath and disposed in registration with said tube in said ejection zone and adapted to receive the spinning bath together with the coagulated filaments, said Venturi tube having an expanding opening adapted to reduce the rate of flow of said bath and to thereby form a mass of tangled filaments having knops spaced along the length thereof.

3,295,163
STRAND COOLING APPARATUS
Benson F. Bachus, Omaha, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 28, 1964, Ser. No. 363,136
5 Claims. (Cl. 18—12)



1. Apparatus for applying a coating to a longitudinally advancing strand, which comprises:
means for applying coating material to the longitudinally advancing strand in a relatively hot condition;
a substantially enclosed, elongated container through which the longitudinally moving coated strand is advanced along the longitudinal axis of said container from said coating material applying means, said container having a strand exit aperture therein, and having a strand entrance aperture therein which is spaced from said coating material applying means and which is substantially larger in cross section than the coated strand;
means for continuously introducing a cooling liquid, for cooling the coating material, into said container at a constant hydraulic pressure of a higher magnitude than the air pressure adjacent the strand entrance aperture in said container, such that said container constantly is filled with the cooling liquid and free of air, and such that the cooling liquid continuously flows out of the strand entrance aperture in said container to prevent air from being sucked into said container by the longitudinally advancing coated strand, with the initial contact of the coated strand with the cooling liquid being along a line which extends substantially peripherally of the coated strand;
a nozzle through which the cooling liquid is introduced into said container adjacent the strand exit aperture therein in a direction counter to the longitudinal movement of the coated strand; and
means for preventing any substantial flow of the cooling liquid out of said container through the strand exit aperture in said container.

3,295,164
EXTRUDERS
Bernard Keith Bigland, Bolton, England, assignor to The General Engineering Co. (Radcliffe) Limited, Radcliffe, Lancashire, England, a corporation of Great Britain
Filed Apr. 29, 1964, Ser. No. 363,377
Claims priority, application Great Britain, May 1, 1963, 17,082/63
6 Claims. (Cl. 18—12)

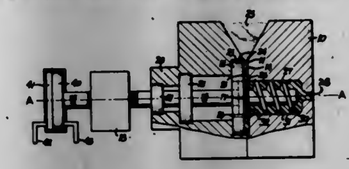


1. An extruder comprising a barrel, a feed screw mounted within said barrel, a hopper for feeding material to said screw, means for rotating said screw at one end thereof, a working zone for said material fixed on the other end of said screw, said working zone having a biconical head, the inner face of said head having a spiral working screw, the depth thereof decreasing outwardly and the pitch thereof being such that the volume in said zone is substantially constant, the outer face of said head being substantially plain.

3,295,165
ELASTIC MELT EXTRUDER
Robert T. Wallace, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 6, 1965, Ser. No. 511,777
4 Claims. (Cl. 18—12)

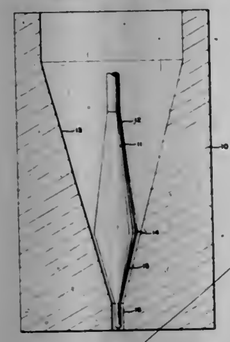
1. An elastic melt extruder comprising a housing, a fixed plate mounted in said housing and having an orifice therethrough which communicates with an extrusion bore, a rotary plate spaced from said fixed plate to define a melt gap therebetween, means for feeding plastic material to said gap, means for rotating said rotary plate to advance said plastic material centripetally through said melt

gap toward said orifice, said rotating means including a shaft corotatable with said rotary plate and axially movable relative to said rotary plate, said shaft having a free end projecting beyond said rotary shaft through said orifice and into said bore, a helical peripheral screw on



said shaft free end, a shoulder on said shaft having an end surface normally aligned with said rotary plate and of a size to seal said orifice when said shaft is moved axially to an extent to move said surface across said gap, and means for axially moving said shaft.

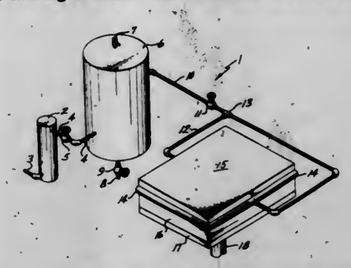
3,295,166
APPARATUS FOR EXTRUDING POLYTETRAFLUOROETHYLENE TUBING AND WIRE COATING
Donald Boyd Owings, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 24, 1963, Ser. No. 297,442
6 Claims. (Cl. 18—13)



1. Extrusion apparatus particularly adapted for the production of thin-walled tubing of tetrafluoroethylene resin comprising, in combination, a die having an area of convergence, a bulbous guide tip fixedly secured therein, said bulbous guide tip having an initial area of divergence, an area of convergence at the lower end thereof, said areas being joined by a smoothly blending, intermediate area, said die having an angle of convergence substantially the same as the angle of convergence of said guide tip, said diverging and converging areas of said guide tip being contained within said converging area of said die, said guide tip being spaced from said die a distance of 5 to 15 times the desired wall thickness of the resultant tube.

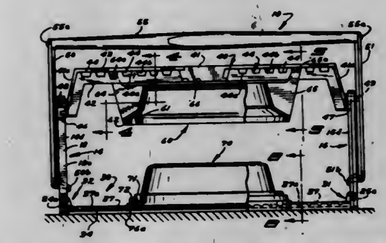
3,295,167
APPARATUS FOR PRESSING COMPOSITE CONSOLIDATED ARTICLES
Robert L. Corbin, Longview, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Original application Apr. 22, 1963, Ser. No. 274,594. Divided and this application Dec. 13, 1965, Ser. No. 528,670
2 Claims. (Cl. 18—17)

1. A steaming apparatus for consolidating composite hardboards or panels formed of lignocellulosic material bound together with a thermosetting resin binder, comprising the combination of: means providing a source of superheated steam; upper and lower heated press platens adapted to receive said material to be consolidated; one of said press platens being movable toward the other to press said material between said upper and lower press platens; said press platens when in a closed position being spaced so as to provide an opening between the lateral edges thereof; a steam platen mounted on one of said platens having a steam chamber; said steam platen being



provided with a plurality of spaced openings communicating said chamber with said material between said upper and lower platens; header means extending around the entire periphery of said steam platen and in fluid communication with said steam chamber; and conduit means having a valve therein communicating said header means with said superheated steam source whereby superheated steam can flow through said conduit means, header means, steam platen and into said material between said upper and lower platens, and from said material through the lateral edges thereof.

3,295,168
SHEET PRESS DEVICE
John A. Gale, 978 E. Shady Lane, Wayzata, Minn. 55391, and Winthrop A. Eastman, 3136 W. Calhoun Blvd., Minneapolis, Minn. 55416
Filed June 16, 1965, Ser. No. 464,326
8 Claims. (Cl. 18—19)



1. A press for forming articles from substantially thin sheet material including:
(a) a pair of spaced side supporting elements having a predetermined longitudinal dimension and having a vertical extending slot intermediate the ends thereof;
(b) a base member arranged to be positioned between said side elements for removable connection and support thereof and having a width substantially less than the length of said side members being arranged in substantially vertical alignment with the slots of said side elements and having bottom die positioning means on at least one surface thereof;
(c) an upper die supporting member arranged to extend transversely between said side support elements and having slot engaging extensions on the ends thereof to be received in the guide slots of said side elements and having upper die positioning means arranged transversely thereacross; and

(d) an actuating lever member comprising:

(1) a pair of lever arms having one end thereof respectively pivotally mounted on said side elements and arranged to engage said upper die positioning member whereby said die positioning member will be shifted vertically along said guide slots; and

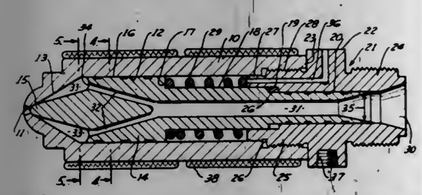
(2) handle means engaging the other end of said lever arms.

3,295,169

SPRING-PRESSED SHUTOFF FOR INJECTION NOZZLE

Ernest P. Moslo, 3443 Prospect Ave., Cleveland, Ohio 44115

Filed Dec. 23, 1963, Ser. No. 332,654
6 Claims. (Cl. 18—30)



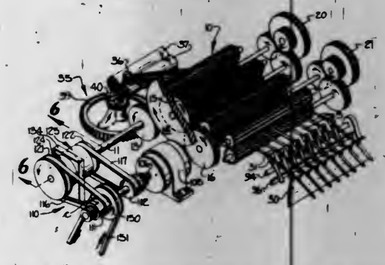
1. An injection nozzle comprising a hollow elongated nozzle body having an open rear inlet end and a forward discharge end closed except for a small discharge opening, a shutoff pin slidably mounted in said body for axial movement and having a large section substantially sealingly engaging the walls of said body at a zone spaced rearwardly from said discharge opening, said pin extending away from said discharge end and beyond said open end of said body and there being cylindrical and spaced radially inwardly and concentric with a cylindrical inner wall surface portion of said body leaving an annular space there, an end member secured to said body at said inlet end and entering said annular space and sealingly engaging said cylindrical pin portion and said cylindrical wall surface portion of said body, said pin being axially movable relative to said end member, means normally urging said pin in position closing said discharge opening, there being a stop portion on said end member disposed rearwardly of said urging means, a stop on said pin disposed rearwardly of said urging means and spaced forwardly from said stop portion when said pin is in said closing position, said end member having an axially extending ring-like portion disposed forwardly of said stop portion and extending forwardly of said stop on said pin in generally encompassing engaged relation with said pin for supporting and guiding said pin for axial movement thereof with respect to said body and said end member, there being a central material passageway through said end member and through said pin from end to end, said passageway terminating in a discharge pocket at said discharge end, said pocket being disposed forwardly of said zone and having a defining surface which tapers smoothly toward said discharge opening and merges with the latter, the front end of said pin comprising a smoothly forwardly tapering nose portion adapted for closing said discharge opening when said pin is in said closing position, said nose portion being disposed in radially inwardly spaced relation to said defining surface of said pocket except at the distal end of said nose portion when said pin is in said closing position, said pocket communicating with said discharge opening when said pin is in open position, and the cross sectional area of said pocket being greater than the cross sectional area of said pin exposed to pressure from said inlet end during injection creating a differential pressure adapted to overcome said urging means and tending toward pin-opening movement, whereby said pin normally closes said discharge opening but, under injection pressure, said differential pressure overcomes said urging means and moves said pin in opening direction until said stop on said pin engages said stop portion on said end member.

3,295,170

DRIVE FOR TEXTILE MACHINES HAVING COILERS

Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina

Filed Dec. 6, 1963, Ser. No. 328,548
2 Claims. (Cl. 19—236)



1. In a textile machine having drafting instrumentalities, means for coiling sliver drafted by the instrumentalities into a can, a suction clearer system for withdrawing residual fibers from said instrumentalities and including a suction blower, and a main shaft operatively connected to said drafting instrumentalities and said coiling means for driving the same; the combination therewith of

(a) a substantially constant speed driving shaft,

(b) means for rotating said constant speed driving shaft,

(c) means for driving said suction blower,

(d) transmission means including normally inactive clutch means operatively interconnecting said shafts,

(e) said clutch means being operable to transmit relatively slow speed and high speed rotation from said driving shaft to said main shaft,

(f) means for starting the machine and including means for initially activating said clutch means to transmit slow speed rotation from said driving shaft to said main shaft,

(g) time delay means responsive to initial activation of said clutch means and being operable at a predetermined time thereafter for further activating said clutch means to drive the machine at the high speed, and

(h) means operatively interconnecting said rotating means (b) and said suction blower driving means (c) for rendering inoperable said rotating means at any time other than during operation of said suction blower driving means.

3,295,171

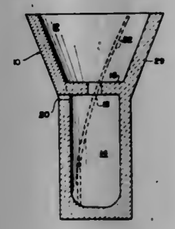
FRANGIBLE CERAMIC TEST MOLD

Robert R. Strange, Northfield, and Sherwood G. Haw, North Canton, Ohio, assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 16, 1964, Ser. No. 375,450
1 Claim. (Cl. 22—1)

A ceramic frangible mold for use in obtaining a sample of molten metal, comprising a refractory body having an integral funnel-shaped cavity in its upper end, the largest diameter end of the funnel-shaped cavity being open to receive a stream of molten metal, a single mold cavity in the lower portion of said refractory body adapted to receive molten metal to be solidified, a wall separating

the lower smallest diameter end of the funnel-shaped cavity from the mold cavity, an opening in said wall, said opening being of cross-sectional area less than the cross-sectional area of said mold cavity to provide an orifice through which a substantially even and controlled stream of molten metal may flow from the funnel-shaped cavity into the mold cavity, the outer surface of said lower mold cavity being generally cylindrical and of constant diameter throughout its length, the outer surface of said funnel-shaped cavity being flared outwardly from the outer surface of said lower mold cavity whereby the generally



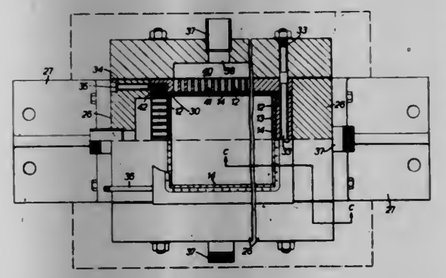
cylindrical lower mold cavity may be slipped into a ring at the end of an elongated handle and supported by contact of said ring with the outwardly flared surface of the funnel-shaped cavity to permit the mold to be held in said ring at the end of said handle while the mold is positioned in a stream of molten metal being teemed from a ladle, and an opening in the upper end of the side wall of said lower mold cavity immediately beneath said separating wall for permitting air to escape from the mold cavity while turbulent and splashing molten metal in the funnel-shaped cavity flows through said opening in an even and controlled stream.

3,295,172

CONTINUOUS CASTING MOLD

Richard James Dain, London, England, assignor to Davy and United Engineering Company Limited, Yorkshire, England

Filed Feb. 6, 1964, Ser. No. 342,961
Claims priority, application Great Britain, Feb. 14, 1963, 6,000/63
13 Claims. (Cl. 22—57.2)



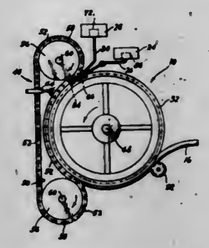
1. A mould for the continuous casting of molten metal, said mould comprising a plurality of backing members assembled to define a cavity which is rectangular in section, and for each backing member a plurality of contiguous metal tubes having outer walls brazed to the inner surface of said backing member and inner walls which constitute at least part of the interior wall of the mould.

3,295,173

CASTING MACHINE FOR CLAD METAL BARS

Clarence Eugene Webber and George William Drescher, both of York, Pa., assignors to New York Wire Company, York, Pa., a corporation of Delaware

Filed Mar. 23, 1964, Ser. No. 353,694
7 Claims. (Cl. 22—57.4)



1. A machine for casting continuous lengths of metallic composite rods and the like of uniform cross-section and comprising a core member completely encased in a sheath united integrally therewith, said machine comprising in combination, molding means comprising a plurality of molding members movable at similar speeds and having complementary surfaces movable into engagement with each other to define a longitudinal molding cavity of uniform cross-section from the point of contact and of sufficient length to form and stabilize the exterior surface of said composite rods, tubular shaping means supported stationarily substantially coaxial to and extending longitudinally into said molding cavity and having an exterior surface positioned adjacent the point of contact of said molding members to guide the flow of sheath-forming molten metal into said longitudinal molding cavity for initial contact with said mold means substantially adjacent the point of engagement of said cooperating surfaces of said molding members to form a hollow sheath and shape the exterior surface thereof and cause initial chilling thereof to stabilize the same for reception of molten core-forming metal, whereby molten sheath-forming metal does not contact said molding cavity prior to the point of engagement of said cooperating surfaces of said molding members, flow directing means extending through said shaping means substantially coaxially thereof and operable to direct the flow of molten core-forming metal into said hollow sheath immediately as it is formed and partially stabilized while retaining partial latent heat of fusion, means to deliver molten metal of one composition to said shaping means for passage therearound and into said longitudinal molding cavity to form a hollow sheath member of continuous length and substantially uniform cross-sectional shape, and additional means to deliver molten core-forming metal of a different composition continuously through said flow-directing means and into the hollow interior of said sheath to fill the same and bond therewith while said composite rod progressively moves with said mold member for a predetermined distance sufficient to chill and stabilize the same.

3,295,174

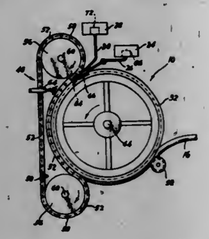
CASTING MACHINE FOR CLAD METAL BARS

Clarence Eugene Webber and George William Drescher, both of York, Pa., assignors to New York Wire Company, York, Pa., a corporation of Delaware

Filed Mar. 9, 1965, Ser. No. 438,261
9 Claims. (Cl. 22—57.4)

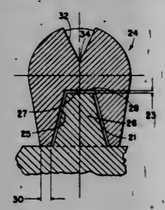
1. A machine for casting continuous lengths of metallic composite rods and the like of uniform cross-section and comprising a core member completely encased in a sheath united integrally therewith, said machine comprising in combination, molding means comprising a plurality of

members movable at similar speeds and having mating surfaces movable into engagement with each other to define a longitudinal cavity of uniform cross-section from the point of engagement of said members and of sufficient length to form and stabilize the exterior surface of said composite rods, shaping means having a passage therethrough of smaller cross-sectional area than said longitudinal cavity and terminating substantially adjacent the point of engagement of said mating surfaces of said molding members and substantially coaxial with said cavity of uniform cross-section formed thereby, means to deliver molten metal of one composition to said shaping means



for passage therethrough to form a core member of continuous length and uniform cross-sectional shape, and additional means to deliver molten cladding metal of a different composition continuously into said mold cavity of uniform cross-section to completely encase said core and initially contacting said mold cavity surfaces adjacent the terminal end of said shaping means, whereby said cladding metal contacts said mold members to commence chilling the same to stabilize it and encase said metallic core member in a sheath thereof only after said composite sheath and core have been delivered to and are moving with the uniform cross-sectional part of said mold cavity.

3,295,175
GASIFIABLE FEEDER PATTERN WITH RECESS TO COMPENSATE FOR COMPRESSIVE FORCE OF FORM MATERIAL
Erich M. Krzyzanowski, Ludwigshafen (Rhine), Germany, assignor to Full Mold Process, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Sept. 14, 1964, Ser. No. 398,472
9 Claims. (Cl. 22—158)



1. In a casting arrangement, in combination, a pattern having substantially the configuration of an article to be cast, said pattern having at least one protruding member of the same material as the pattern, and having a predetermined outer configuration, a feeder head pattern of substantially spherical configuration and consisting of a cellular material which is compressible and is gasifiable at the temperature of the molten casting charge, and

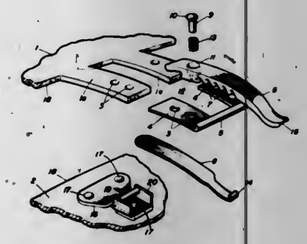
said feeder head pattern being formed with a recess of substantially the same configuration as the protruding member but of slightly greater dimensions with the outer edge of said recess defining a thin wall ring-type contacting surface for engagement with said pattern, whereby on subjecting said feeder head and pattern to compressive forces the material forming the ring type contacting surface will be permanently deformed.

3,295,176
HOSE CLAMPS
Robert Granville Bright, Leamington Spa, England, assignor to Bright Manufacturing Company Limited, Coventry, Warwickshire, England
Filed Nov. 5, 1964, Ser. No. 409,061
4 Claims. (Cl. 24—20)



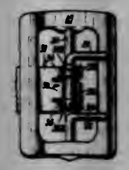
1. A hose clamp of the kind set forth constructed from a blank of rigid flexible material, the ends of the blank being shaped to provide inner and outer interengageable interfitting means of dovetail configuration which can jointly be subsequently bent by a tool into acute dovetail section to contract the clamp into gripping engagement with the hose.

3,295,177
BOOT FLAP TIGHTENER COMPRISING A TIGHTENING LEVER, HAVING NOTCHES AND A GUARD THEREFOR
Franz Brückl, Hasentalstrasse 22, Garmisch-Partenkirchen, Germany
Filed Mar. 18, 1965, Ser. No. 440,872
Claims priority, application Germany, Mar. 21, 1964, B 76,040
9 Claims. (Cl. 24—70)



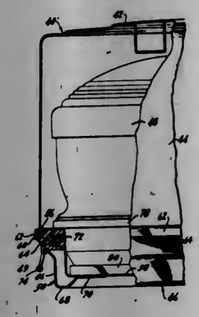
1. Fastening means for a ski boot having overlapping closing lugs along the instep thereof, a tension member securely anchored to one of said closing lugs, a double armed lever free at both ends and curved to substantially conform to the curvature of the upper of said boot, said lever being formed with successive notches for engaging said tension member, means connected to said lever for maintaining said tension member in engagement with a selected notch in said lever, a holding member having an open claw forming a recess for receiving a free end of said lever securely anchored to the other closing lug, said lever being adapted to draw upon said tension member by swinging about a fulcrum formed by the point of contact between the end of said lever and the recess in said open claw and close in said drawn up position, said holding member providing means for supporting said lever while in its swinging and closed position.

3,295,178
BREAK AWAY BELT FASTENER
Lynwood V. Smith, Farmington, Conn., assignor to North and Judd Manufacturing Company, New Britain, Conn., a corporation of Connecticut
Filed Oct. 22, 1964, Ser. No. 405,790
4 Claims. (Cl. 24—178)



4. In a belt assembly having an elongated strap, a clip for coacting with a strap connector having a transverse bar and comprising a generally flat, rectangular body including a plurality of longitudinally extending fingers having free ends thereon positioned adjacent one another at one end of said clip, each of said fingers including a laterally extending knuckle formed in alignment with the knuckles of the other fingers, each said knuckle offset from the plane of said clip in a direction opposite to that of the adjacent knuckle, and said free end of each said finger inclined generally in the direction of its offset knuckle to form diverging free ends on said clip for guiding a bar of a strap connector into tight fitting gripping engagement with said knuckles.

3,295,179
COMBINATION CASKET AND VAULT
Paul Behrendt, 9429 N. Avers Ave., Evanston, Ill. 60203
Filed May 10, 1965, Ser. No. 454,576
4 Claims. (Cl. 27—35)



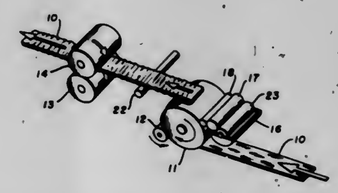
1. In a combination casket and vault, a casket body and a base, said casket body being seated on said base,

said base including an inner base member having an outwardly extending peripheral ledge, said base having a generally flat section, below said ledge, forming a bottom surface,

a vault cover overlying the upper portion of the casket body and engaging the outer portion of the ledge, a sealable joint between the lower edge of the vault cover and the outer portion of the ledge,

an outer base member extending peripherally around the base and being spaced from said inner base member, said outer base member having a defined lower peripheral foot adapted to seat upon a floor or the like, said outer base member having an interior portion, within said peripheral foot, said inner base member being peripherally joined to said interior portion of said outer base member, within said peripheral foot, said outer base member having an inwardly and downwardly directed portion adjacent the top thereof which extends peripherally around said base, reinforcing means below said ledge and positioned between said inner and outer base members, and handle means pivotally mounted to said outer base member inwardly and downwardly directed portion and said reinforcing means.

3,295,180
APPARATUS FOR CRIMPING TOW
John Mylo, Athens, Ala., assignor to Monsanto Company, a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,412
1 Claim. (Cl. 28—1)



Apparatus for crimping a tow of filamentary material comprising:

(a) a cylindrical roll mounted for rotational movement about an axis;

(b) an adhesive supply;

(c) means for transferring said adhesive in a thin layer to the lateral surface of said cylindrical roll;

(d) a press roll mounted in juxtaposition to said cylindrical roll on an axis parallel to said axis of said cylindrical roll whereby a filamentary tow fed between said cylindrical and press rolls will contact and adhere to the adhesive on the lateral surface of said cylindrical roll;

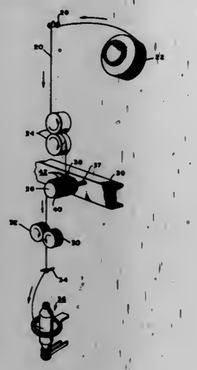
(e) a pair of take-up rolls mounted adjacent said cylindrical roll with their axes parallel to said axis of said cylindrical roll and with the nip between said take-up rolls disposed such that a line therethrough will be parallel to a tangent to said lateral surface; and

(f) said cylindrical roll, press roll, and take-up rolls being related in such a manner that a flow of tow therebetween will be along the lateral surface of said cylindrical roll to a point at which, under the influence of said take-up rolls, it is pulled back on itself at a sharp angle to thereby stretch the filaments on one side of the tow beyond their yield point so that said filamentary tow becomes crimped.

3,295,181
YARN TEXTURING APPARATUS
Euell K. McIntosh, Pensacola, Fla., assignor to Monsanto Company, a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,294
7 Claims. (Cl. 28—71.3)

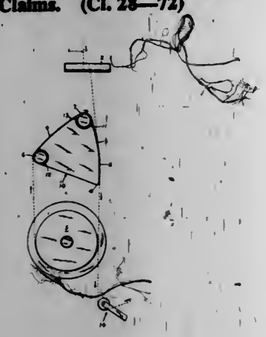
1. In apparatus for drawing a yarn, said apparatus including yarn supply means feeding said yarn at a given rate to a drawing region, and means withdrawing said yarn from said drawing region at a higher rate than said given rate whereby said yarn is drawn, the combination therewith of:

(a) a draw pin rigidly mounted in said drawing region for localizing the point at which said yarn necks down to a smaller diameter, said draw pin having an axis and a yarn-engaging surface about which said yarn is wrapped,



(b) and guide means for separating adjacent wraps of said yarn on said draw pin and for limiting movement of said along the axis of said draw pin.

3,295,182
YARN TREATMENT
John D. Robbins, Chester, and James E. Opfell, Colonial Heights, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1964, Ser. No. 420,637
3 Claims. (Cl. 28—72)



1. Process for heat treating at controlled length a molecularly oriented multifilament heat shrinkable yarn and winding up said yarn at high speed wherein said yarn is maintained at controlled length by being passed in a series of wraps between a draw roll and a separator roll and is contacted with curved heated surfaces between said rolls along both segments of the yarn wraps as they pass between said rolls, at least one full wrap of said yarn around the draw roll contacting the same upon a polished surface and at least the last full wrap of said yarn around the draw roll contacting the same upon a matte surface; which process comprises:

(1) maintaining a coefficient of friction of said yarn with each of said curved surfaces of not above about 0.1;

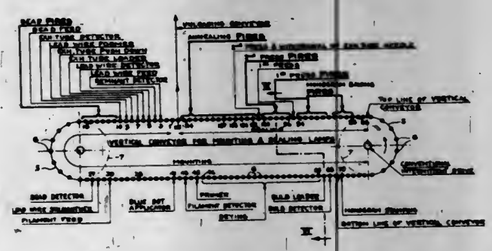
(2) contacting each full wrap of yarn with said heated surfaces on each side of the draw roll over an arc of about 5° to about 25° and passing said wraps in an angle of no more than about 10° going over each edge of the heated surface;

(3) contacting each full yarn wrap with no more than 2 idler rolls including the separator roll and contacting each full wrap with each idler roll in an arc of at least 10°, said idler rolls having surfaces which develop coefficient of friction not above about 0.1 with said yarn;

(4) minimizing frictional drag between the yarn and the heated surfaces and idler rolls to not above about 0.1 gram per denier as the yarn passes in the above specified wraps around the heater and idler rolls;

(5) withdrawing the yarn from the rolls and heater under tension between about 0.05 and about 0.25 gram per denier and winding the yarn at a speed of at least about 1500 feet per minute.

3,295,183
HIGH SPEED AUTOMATIC MOUNTING AND SEALING MACHINE
Oleg J. Orebic, Montclair, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1964, Ser. No. 391,582
7 Claims. (Cl. 29—25.19)



1. A high speed automatic mounting and sealing machine for the manufacture of electric lamps comprising the combination of:

(a) a conveyor movable in a vertical plane and along an upper and lower horizontal path,

(b) a plurality of spaced work-holding heads carried by said conveyor for supporting various lamp-making parts while the electric lamp is being progressively fabricated,

(c) a plurality of work stations adjacent the upper and lower horizontal path of movement of said work-holding heads on said conveyor and provided with various tooling at certain of such stations operable to supply lamp-making parts to said heads to form a mount and operable at certain of those stations disposed adjacent the upper horizontal path of movement of said heads to heat seal such parts and form an assembled electric lamp preparatory to evacuation thereof.

3,295,184
APPARATUS FOR MAKING SUCCESSIVE SLITS IN SHEET MATERIAL
Robert R. Durfield, Jr., Birmingham, Ala., assignor to Alabama Metal Industries Corporation, a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,082
3 Claims. (Cl. 29—6.2)

1. Apparatus for making successive slits in sheet material comprising:

(a) a movable ram,

(b) a shuttle bar mounted for lateral movement relative to said ram,

(c) a first cutting tool carried by said shuttle bar,

(d) a second cutting tool in position to coact with said first cutting tool upon relative movement of the cutting tools,

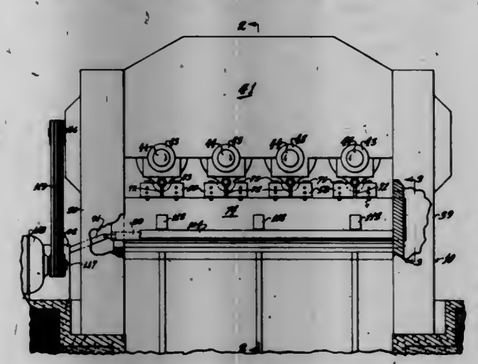
(e) means to feed a sheet of material between said cutting tools by successive movements,

(f) a rotatable shaft,

(g) a plurality of rotatable members eccentrically mounted on said shaft,

(h) an annular yoke surrounding each of said eccentrically mounted rotatable members and adapted for rotation relative thereto,

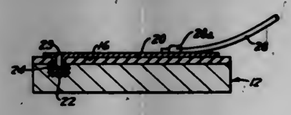
(i) means pivotally and positively connecting one side of each yoke to said ram to move said ram toward



and away from said second cutting tool in response to rotation of said rotatable members and sequentially with said successive movements of said sheet to sever spaced apart, transverse slits in said sheet and then force the portions thus severed outwardly of the plane of said sheet, and

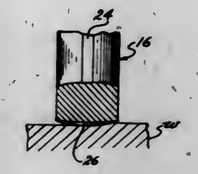
(j) means to reciprocate said shuttle bar laterally relative to the direction of movement of said sheet of material sequentially with severing said spaced apart, transverse slits to make successive slits opposite unsevered portions of said sheet.

3,295,185
CONTACTING OF P-N JUNCTIONS
Colin Pritchard, Birmingham, England, and Gian C. Della Pergola, Naples, Italy, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1963, Ser. No. 318,144
3 Claims. (Cl. 29—25.3)



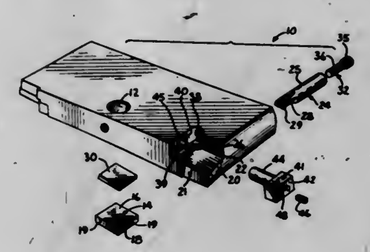
1. A process for forming a p-n junction in a body of semiconductor material and making electrical contact therewith consisting of (1) applying an unbroken layer of an insulating material to a surface of a body of semiconductor material having a first semiconductivity, (2) applying an unbroken layer of an electrically conductive material to the surface of the insulating material that upon alloying with the semiconductor material will produce a p-n junction therein, (3) thereafter locally alloying only a selected area of said material with the body of semiconductive material by localized fusion directly through the underlying portion of said insulation to form a p-n junction in the body of semiconductor material, and (4) then attaching an electrical lead to the remainder of the layer of said material whereby electrical contact is provided with the alloyed p-n junction.

3,295,186
CUTTING TOOLS
Joseph Aime Lavallee, Springfield, Mass., assignor to Lavallee & Ide, Inc., Chicopee, Mass., a corporation of New York
Filed Aug. 19, 1964, Ser. No. 390,615
5 Claims. (Cl. 29—95)



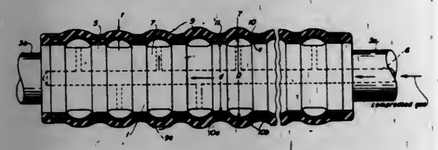
1. An elongated metal cutting tool comprising a body with a cylindrical end portion having a nose for first engaging a workpiece, a continuously convexly curved cutting edge extending laterally from each side of said nose and inwardly from the point of first contact and also inwardly of the length of said tool, said cylindrical end portion having a spherically formed end face of convex curvature and relieved from said cutting edge.

3,295,187
ADJUSTABLE BLOCK TYPE CUTTING TOOL WITH CLAMPED-ON INSERT BLADES
Harvey R. Plummer, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Mar. 1, 1965, Ser. No. 436,114
5 Claims. (Cl. 29—97)



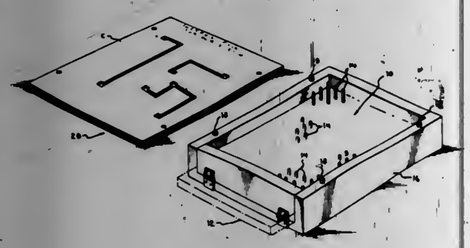
1. A block type cutting tool with insert type cutter blades comprising, in combination, a block having a pair of diametrically opposed pockets in opposite sides thereof, each said pocket having an inclined supporting surface and an upstanding locating surface, each said pocket also having a recess at its inner end, a pair of throw-away cutter blades each respectively mounted in a corresponding one of said pockets, each said cutter blade having a face in abutment with said supporting surface and an upstanding peripheral area in abutment with said upstanding locating surface, clamp means in said block adapted to hold each said cutter blade in its pocket in said block, a pair of independent adjusting wedges disposed respectively in the recesses adjacent said pockets and each adapted to abuttingly engage the peripheral area of a corresponding one of said cutter blades, a guide plunger fixed to each said adjusting wedge, and adjusting means in each said wedge adapted to bear against the wall of its associated recess to effect an adjustment of one said cutter blade radially of said block.

3,295,188
SELF-CENTERING PRESSURE ROLLER
Hans Saueressig, Wullen, Kreis Ahaus, Westphalia, Germany, assignor to Gebr. Saueressig K.G. Maschinenfabrik, Wullen, Kreis Ahaus, Westphalia, Germany, a corporation of Germany
Filed Mar. 11, 1966, Ser. No. 533,694
Claims priority, application Germany, June 30, 1965, S 97,907
6 Claims. (Cl. 29—113)



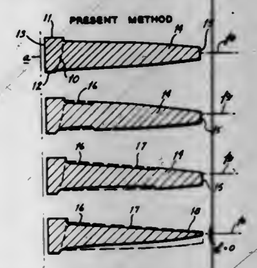
1. A pressure roller comprising a shaft connectable to a source of motive power, a cylindrical sleeve removably surrounding said shaft with annular clearance, a continuous body including a plurality of inflatable cushion sections disposed in said clearance at axially spaced locations for frictionally connecting said shaft with said sleeve, said body further including noninflatable sections between said cushion sections and being positively secured to said shaft by said noninflatable sections for enabling removal of said sleeve from said shaft in a deflated condition of said cushion sections, and conduit means for concurrently inflating said cushion sections by admitting a fluid under pressure into same, said body having imbedded therein a tubular insert of flexible but substantially inextensible material and of longitudinally undulating outline, said shaft being formed with axially spaced ribs engaging said noninflatable sections, said conduit means opening into the spaces between said ribs, said ribs registering with small-diameter portions of said insert imbedded in said noninflatable sections, said spaces registering with large-diameter portions of said insert which are imbedded in said cushion sections and limit the outward bulging of the latter while enabling said cushion sections to drop into said spaces with inversion of curvature of said large-diameter portions upon a release of the pressure of said fluid.

3,295,189
TERMINAL BOARD WIRING
Kemper M. Hammell, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 15, 1963, Ser. No. 302,398
2 Claims. (Cl. 29—155.5)



1. A method for hand-wiring terminal boards having a multiplicity of posts to be interconnected, said method comprising the steps of cutting in a template a narrow slot to determine a given wiring path, the ends of the slot ending in enlarged holes which permit the insertion of a connecting tool against the ends of selected posts, placing said templet in predetermined position over a board to be wired, connecting one end of a wire to a post and the other end to another post, laying said wire through said slot in the spaces between rows and columns of said posts, removing said templet, and then repeating the above steps with another templet having a different pattern, and so on until said board is fully wired.

3,295,190
METHOD OF MACHINING METAL CASTINGS FOR SCREW PROPELLERS AND THE LIKE
John T. Parsons, Traverse City, Mich., assignor to Parsons Corporation, Traverse City, Mich., a corporation of Michigan
Filed Jan. 16, 1964, Ser. No. 338,194
4 Claims. (Cl. 29—156.8)



1. The method of machining metal castings for screw propellers and the like, and simultaneously adjusting the positions of the machining cut for the unbalance of residual stresses accompanying such machining, characterized in the steps of

machining the hub portion of the casting to establish its axis of rotation and a tip tracking plane,

supporting the casting by its hub portion along said axis and while avoiding support of any blade portions outboard of the station being machined,

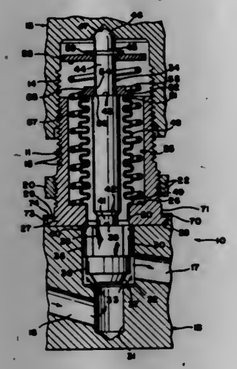
commencing machining of a relatively small blade portion near the root end adjacent to the hub portion of said blade, and

completing the machining cut so initiated to obtain substantially the final contour for each blade portion from that portion of the casting which is then presented in desired alignment with the hub axis, progressing to the next relatively small blade portion outboard of the first such portion, and repeating the process until the desired contour is achieved over the whole length of the blade,

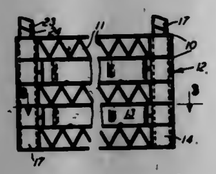
whereby the blade tip is cut from that portion of the casting tip material which is finally presented in alignment with the tip tracking plane.

3,295,191
METHOD OF CONSTRUCTING A BELLOWS VALVE
Bernard J. Gallagher, Cleveland Heights, and Francis J. Callahan, Jr., Chagrin Falls, Ohio, assignors to Nupro Company, a corporation of Ohio
Original application Mar. 25, 1963, Ser. No. 267,699. Divided and this application Apr. 13, 1964, Ser. No. 363,322
4 Claims. (Cl. 29—157.1)

1. A method of constructing a bellows valve including the steps of providing a base portion having a counterbored portion, providing a bonnet portion having a central bore therethrough and a shoulder in said bore, telescopingly inserting an open ended bellows having an axially extending end portion thereon in said bore, orienting said bellows so that said end portion is positioned within said shoulder, fusion bonding said bellows to said shoulder, partially inserting a stem axially through said bellows and thereafter placing a ring on the exposed end of said stem, maintaining said ring in place and fusion bonding said ring to said stem and said bellows, seating said bonnet in said counterbored base portion, swaging said base portion into mechanical engagement with said bonnet to rigidly join said bonnet thereto, and thereafter fluid tightly sealing said bonnet to said base by fusion bonding at a low temperature relative to the temperatures of the prior fusion bonding steps



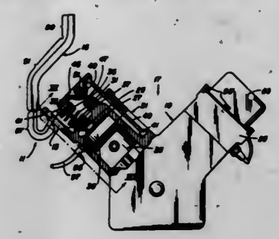
3,295,192
HEAT EXCHANGER AND METHOD OF MAKING SAME
Clyde S. Simpelaar, Racine, Wis., assignor to Modine Manufacturing Company, Racine, Wis., a corporation of Wisconsin
Filed Sept. 8, 1964, Ser. No. 394,877
4 Claims. (Cl. 29—157.3)



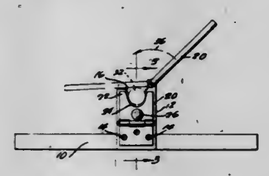
1. A method of making a heat exchanger of the type including spaced-apart sheets and intervening side closure bars, the steps comprising forming openings in said sheets and said intervening bars and assembling them one on top of the other in alternate relation on compressible pins extending through said openings, compressing the assembly including said pins to where said sheets and said bars are in abutting contact, and fluid-tightly bonding the assembly at the places of contact.

3,295,193
AUTOMOTIVE VALVE SPRING COMPRESSING APPARATUS
John F. Maness, Memphis, Tenn., assignor of fifty percent to Otis D. Gatewood, Memphis, Tenn.
Filed Aug. 24, 1964, Ser. No. 391,474
6 Claims. (Cl. 29—220)

1. Apparatus for compressing a valve spring means in an engine, said apparatus comprising a base part and a lever part, said base part including a rod member and support means for rigidly supporting said rod member in spaced relationship with said engine and adjacent said valve spring; said lever part including a forked foot portion at one end engagable on top of said valve spring means, a fulcrum portion having a substantially cylindrical upwardly facing recess surface, said fulcrum portion being fixedly attached to said forked foot portion with said recess surface being disposed transversely of said lever part and fixed relative to said lever part and turnably engaging the underside of said rod member, and an arm portion fixedly attached to said fulcrum portion and extending over said rod member for turning said lever part about said rod member to compress said valve spring means.



3,295,194
SHADE ROLLER FIXTURE REMOVING TOOL
Walter Badowski, Worthington St., Roxbury, Mass. 02119
Filed Nov. 12, 1964, Ser. No. 410,417
3 Claims. (Cl. 29—239)



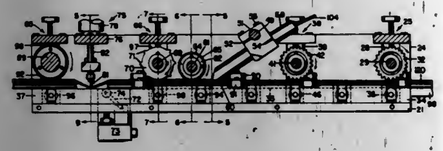
2. A shade roller fixture removing tool comprising a plate adapted to be secured to a base member and having an open circular recess at the upper edge portion thereof for receiving the diameter of a shade roller, a yoke hingedly mounted on said plate and having a lever arm perpendicularly projecting therefrom, said yoke forming a generally circular recess disposed coaxially with the circular recess of said plate, a rod pivotally mounted on said plate to hold a shade roller in place while said lever arm is actuable to remove fixtures from the end of said roller.

3,295,195
METHOD AND MACHINE FOR INSERTING AND SECURING PILE SEAL MATERIAL IN A CHANNEL IN A BAR
Charles J. Burgio, Jr., Rochester, N.Y., assignor to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York
Filed Oct. 16, 1963, Ser. No. 316,650
28 Claims. (Cl. 29—411)

26. A method for applying pile seal strip to a bar by inserting a length of the strip in an undercut channel in the bar, comprising:

disposing a length of the strip in the channel of the bar with one edge of the strip engaged in the channel and the other projecting therefrom,

pressing the other edge of the strip into the channel, to insert the strip in the channel with the pile projecting from the channel,



securing the inserted strip in place in the channel, and severing the strip adjacent but remote from an end of the bar.

3,295,196
METHOD FOR ATTACHING INDIUM ARSENIDE SEMICONDUCTOR TO ELECTRICAL LEADS
Guenther Zaeschmar, Idyllwild, Calif., assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Jan. 30, 1964, Ser. No. 341,461
3 Claims. (Cl. 29—495)

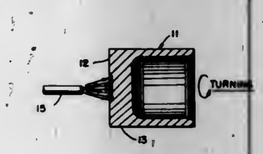
1. The method for attaching indium arsenide semiconductor to electrical leads comprising:
(a) placing a thin indium arsenide semiconductor on a hot plate for heating the semiconductor to a temperature below its recrystallization point,
(b) placing an electrical lead in contact with the semiconductor,
(c) placing a few grains of arsenic trioxide in proximity with the spot where said electrical lead is to be bonded to said semiconductor,
(d) placing a small chip of indium over said arsenic trioxide.
(e) applying heat directly to said indium and arsenic trioxide until said arsenic trioxide sublimes and said indium flows onto and amalgamates with said indium arsenide completing a strong mechanical and electrical bond upon cooling between said electrical lead and said semiconductor.

3,295,197
STAINLESS STEEL CLAD WITH ALUMINUM
Edward S. Bunn, Rome, Charles R. Mackey, Westernville, and Julius L. Giovannucci, Rome, N.Y., assignors to Revere Copper and Brass Incorporated, Rome, N.Y., a Maryland corporation
No Drawing. Filed May 14, 1964, Ser. No. 367,588
7 Claims. (Cl. 29—497.5)

1. Process for bonding aluminum to stainless steel which comprises: bringing a sheet of aluminum having the normal protective coating of aluminum oxide thereon into surface contact with a sheet of stainless steel; mechanically working the sheets while at a temperature of between about 700 to 1050° F. to compress the aluminum against the stainless steel and cause the layer of aluminum adjacent the steel surface to flow plastically with respect to the steel surface whereby the layer of aluminum is adhesively bonded to the layer of stainless steel; cold working the adhesively bonded layers of stainless steel and aluminum to elongate the metal at least 5% while compressing the two layers together to partially break down the mechanical adhesive bond between the surface of the two layers of metal and thus expose areas of nascent metallic aluminum free of oxide film in compressive contact with the adjoining surface of the stainless steel; and heating the cold worked layers of aluminum and stainless steel to a temperature of at least 500° F. to obtain a metallurgical bond between the adjoining surfaces of stainless steel and metallic aluminum.

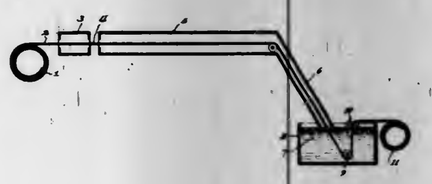
3,295,198
PROCESS OF ADHERING STAINLESS STEEL TO ALUMINUM AND PRODUCTS PRODUCED THEREBY
Robert L. Coan, 301 S. Second St., Pekin, Ill. 61554
Filed Mar. 13, 1964, Ser. No. 351,739
7 Claims. (Cl. 29—527)

1. In a process for bonding stainless steel to aluminum, the steps of forming a depression in an aluminum body, heating said depression to a temperature of between 600 and 900 degrees F. spraying stainless steel in liquid form containing molybdenum in the amount of between 1.5 and 4.0 percent into said depression, and then quickly quenching the aluminum body with the stainless steel deposit in water.



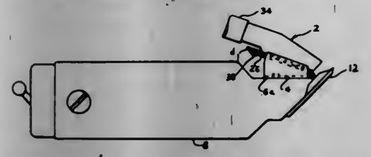
4. In a process for bonding stainless steel to aluminum, the steps of heating the aluminum body to a temperature of between 300 and 400 degrees F. to remove moisture and other contaminants from the surface thereof, forming a depression in the aluminum body, heating said depression to a temperature of between 600 and 900 degrees F., flame-spraying the depression with stainless steel having a molybdenum content of between 1.5 and 4.0 percent, and quickly quenching the aluminum body and stainless steel deposit in water.

3,295,199
PROCESS OF MAKING SOFT, DUCTILE, GALVANIZED MATERIAL
Carlton F. Schrader, Chesterton, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Original application Oct. 19, 1961, Ser. No. 146,199, now Patent No. 3,149,928, dated Sept. 22, 1964. Divided and this application Apr. 7, 1964, Ser. No. 364,052
4 Claims. (Cl. 29—527)



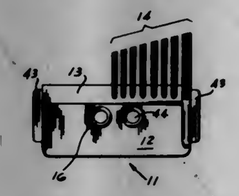
1. A process for producing a soft, ductile, galvanized flat material, said process comprising:
rolling a base from mild steel containing titanium in an amount between four and nine times the carbon content of the steel;
exposing said base to an oxidizing atmosphere to produce a thin film of oxide on the surface of the base;
then exposing said base to a reducing atmosphere at a temperature in excess of about 1650° F., whereby said oxide film is reduced to provide a clean surface layer of metal suitable for coating;
and then coating said base with zinc containing a trace of aluminum to retard formation of iron-zinc intermetallic compounds at the interface between the base and the zinc coating.

3,295,200
VACUUM ATTACHMENTS FOR BARBER'S SHEARS
Raymond Padgett and Compton H. Clark, both of 311 W. Broad St., Cookeville, Tenn. 38501
Filed June 10, 1965, Ser. No. 462,915
6 Claims. (Cl. 30—133)



1. For attachment to conventional hair clippers which embody customary cutting heads at one end of an elongated hand-held body, a device for removing hair cut by the clippers by vacuum action comprising a nozzle adapted to connect to a flexible hose leading to a source of partial vacuum, and a plate secured to the underside of the nozzle, extending beyond the sides thereof, in combination with a clip for attachment to the clipper body provided with means for slidable insertion of said nozzle plate.

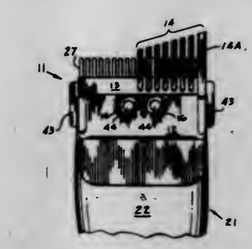
3,295,201
HAIR CLIPPER
Vito W. Pucino, 57 Vail Ave., Beacon, N.Y. 12508
Filed Nov. 17, 1964, Ser. No. 411,904
3 Claims. (Cl. 30—200)



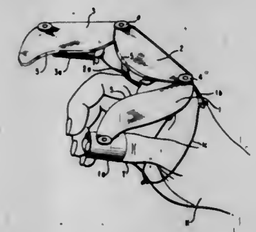
1. In an improved hair clipper adapted for tapering the hair in a single step operation, the improvement comprising
a spacing attachment positioned, when held against the head during the clipping operation, to form the support for said hair clipper,
said spacing attachment being formed with a base having a leading edge and a trailing edge and a plurality of comb-like teeth extending forwardly along said leading edge from one lateral end of said base to a point intermediate its two ends to underlie the cutting element of said hair clipper from one lateral end thereof to a point intermediate its two ends,
said teeth gradually decreasing in depth from said lateral end to said intermediate point forming a laterally beveled supporting surface for laterally tilting said cutting element with respect to the scalp while permitting one lateral end of said cutting element to contact the scalp.

3,295,202
HAIR CLIPPER
Vito W. Pucino, 57 Vail Ave., Beacon, N.Y. 12508
Filed May 28, 1965, Ser. No. 459,543
4 Claims. (Cl. 30—200)

1. In an improved hair clipper including an upper cutting blade defining a cutting edge, the improvement comprising a hair tapering bottom blade operatively secured to and underlying said cutting blade in supporting engagement when said clipper is held against the head during operation, said bottom blade including a base having a leading edge and two lateral ends and a plurality of spaced teeth forwardly depending from said leading edge between said lateral ends and extending in advance of said cutting edge, said teeth gradually decreasing in depth from one of said lateral ends to the other of said lateral ends to form a laterally beveled surface laterally tilting said cutting blade and edge with respect to the scalp thereby producing a tapered cut, said teeth also gradually decreasing in length starting from the lateral end corresponding to the deeper of said teeth and proceding to a point intermediate said two ends, and being of uniform length between said intermediate point and the remaining of said lateral ends and extending only slightly in advance of said cutting edge.



3,295,203
GRAPE AND FLOWER HARVESTING TOOLS
Raymond S. Thompson, 2044 E. Marsh St., Stockton, Calif. 95205
Filed May 25, 1964, Ser. No. 369,823
4 Claims. (Cl. 30—232)



1. In a harvesting tool for cutting plants, a combination of a first, second and third peat knife blades of about equal length, said first blade having means on its underside at one end for mounting on the thumb of a user and having means on its other end for a first freely pivotable connection to said second blade, said second blade having means at its end, remote from the said first pivotal connection, for a second freely pivotable connection to said third blade, said third blade having means on its underside for mounting toward the end of the index finger of the user, the cutting edges of the said blades being adapted to face each other when mounted on the hand of the user in a plane above the plane defined by the thumb and index finger,

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3,295,204
CLEANING APPARATUS FOR ELECTRIC SHAVERS
Robert Brian Brophy, 2501 Sycamore Canyon Road, Montecito, Calif. 93103
Filed Feb. 21, 1964, Ser. No. 346,564
5 Claims. (Cl. 30—41.5)

1. A cleaning apparatus for an electric shaver having a cutting head assembly driven by a motor comprising:
a casing for said shaver comprising a squeeze chamber, a space for said motor, and a collection chamber;

a cap member connected to said casing covering the sides of said cutting head assembly and having a wall adjacent one end of said assembly;

a cover for closing the top surface of said cutting head assembly and forming with said cap member a passageway through said cutting head assembly;

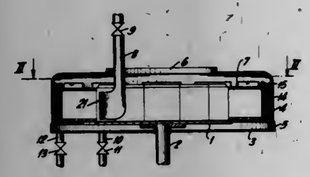
jet opening means in said wall;



said squeeze chamber adapted for introducing air to said passageway through said jet opening means to blow out the hair cuttings from said cutting head assembly; and

said collection chamber adapted for collecting hair cuttings removed by the air flowing through said passageway.

3,295,205
METHOD AND APPARATUS FOR PRODUCING CHEESE
Claes Bertil Sjöholm, Malmo, Sweden, assignor to Alfa-Laval AB, Stockholm, Sweden, a corporation of Sweden
Filed Nov. 16, 1964, Ser. No. 411,505
Claims priority, application Sweden, Nov. 22, 1963, 12,910/63
12 Claims. (Cl. 31—89)



1. In the production of cheese cakes from a mixture of curds and whey, the method comprising the steps of feeding said mixture into cheese molds carried by a centrifugal rotor and therein forming and pressing the curds into cheese cakes under the action of centrifugal force, and removing said cakes radially through outer parts of said molds.

3,295,206
DENTAL EQUIPMENT
Tilmon L. Sharp and Kenneth C. Sharp, both of 609 S. Broadway, Knoxville, Tenn. 37902
Filed June 4, 1965, Ser. No. 467,808
6 Claims. (Cl. 32—22)

1. An equipment desk for a dentist's office, said desk comprising at least two sections fixed in L-shaped configuration, a flat top of L-shaped configuration for the desk generally at arm level with respect to a person seated at the desk, sides for the desk enclosing the space beneath the top, one end of one of the sections adapted to be located adjacent a patient's chair, a cuspidor bowl in the top of the desk at said one end adjacent the inside of the L-shaped portion, an instrument holder with extendable dental instruments mounted on the desk at said one end away from the inside of the L-shaped portion, extendable water and air lines for the dental instruments, means beneath said top and enclosed within the sides for retracting



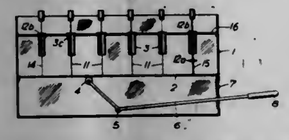
and holding said lines in a normally retracted position, a saliva ejector on the desk between the vertex of the L-shaped portion and the cuspidor bowl, and apparatus beneath the top and enclosed within the sides for servicing the bowl, the instruments and the saliva ejector.

3,295,207
DENTAL HEAD ASSEMBLY
Henri Leonard, Besancon, France, assignor to Société Anonyme Micro-Mega, Besancon (Doubs), France, a French company
Filed June 26, 1963, Ser. No. 290,671
Claims priority, application France, Oct. 12, 1962, 912,025
3 Claims. (Cl. 32—26)



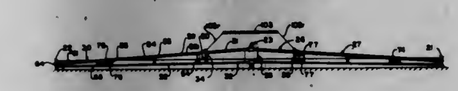
1. A dental head assembly comprising a tubular body having a coupling extension at its rear end engageable with coupling means on a dental engine, a spindle extending coaxially in said body, gripper means at the front end of the spindle for releasably gripping a dental tool, driver means at the rear end of the spindle engageable with driving means on the dental engine when said body is coupled to the latter, a front bearing in said body for rotatably supporting the spindle in the body adjacent the front end thereof, a rear bearing for rotatably supporting the spindle in the body adjacent the rear end of the spindle, a retainer sleeve in which said rear bearing is set and which is fitted in said body, internal shoulder means in the body engaged by the front end of said sleeve, the rear end of the sleeve being engageable with the coupling means of the dental engine when said body is coupled to the dental engine so that the coupling means retains the sleeve in position against said shoulder means, and bayonet joint means for fixing said sleeve in said body.

3,295,208
APPARATUS FOR DETERMINING THE WORKING LENGTH OF ROOT CANAL INSTRUMENTS
Kurt Redtenbacher, 1 Nisselgasse, Vienna, Austria
Filed Nov. 9, 1962, Ser. No. 236,581
Claims priority, application Austria, Nov. 13, 1961, A 8,565/61
19 Claims. (Cl. 32—40)



1. Apparatus for determining the working length of the root canal instruments having a longitudinal axis, said apparatus comprising a container containing a retaining support, at least two root canal instruments retained on said support in mutually parallel positions, marking elements axially adjustably mounted on said instruments, a transferring means for transversely transferring a working length set on one of said instruments mounted in said support to at least one other of said instruments mounted in said support, said support being rigidly attached to said container and said transfer means being slidably mounted in said container, said transferring means comprising a plate extending parallel to and adjustably spaced from said retaining support, displacing means for displacing said plate in the container, said support having mounting and adjusting openings therein adapted to receive said instruments in mutually parallel positions, said mounting and adjusting openings being adapted to receive one of said root canal instruments each and being smaller in at least one dimension of their cross-section than the corresponding dimension of said marking elements.

3,295,209
ROAD GAUGES
Edwin Young, 44 Marian Drive, Lakeside Park, South Fort Mitchell, Ky. 41017
Filed Feb. 8, 1963, Ser. No. 257,276
11 Claims. (Cl. 33—86)



1. A pavement surface contour gauging device comprising in combination a frame having two spaced indexing fingers, a stringline supported by and in fixed relation to said frame and extending on a substantially straight line between and predetermined by said spaced fingers cooperating therewith and means cooperating with said stringline and severally with selected points on the pavement surface therebeneath to determine the location of each of said points with reference to said stringline whereby the profile of said surface beneath said stringline may be determined.

3,295,210
DRAUGHTING DATA PROCESSING MACHINE
Christopher G. Kelsey, Glenalta, South Australia, Australia, assignor to Data Resolved Tools Pty. Ltd., Adelaide, South Australia, Australia
Filed Mar. 4, 1965, Ser. No. 437,064
Claims priority, application Australia, Mar. 24, 1964, 42,462, 42,463; Sept. 30, 1964, 49,967
15 Claims. (Cl. 33—18)

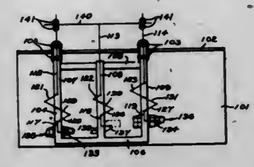
2. A drafting data processing machine comprising:

a drafting table having a flat surface, track means on the table,

a carriage movable along and guided by the track means,

a pair of tracer means on the carriage each movable relative to the carriage in a direction at right angles to the direction of travel of the carriage,

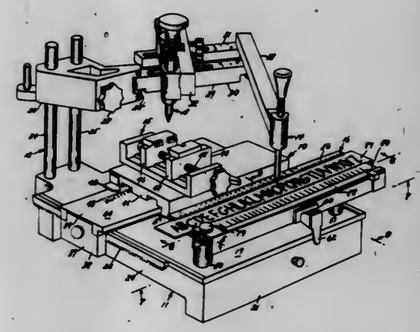
a resolver operatively coupled to each of the tracer means and arranged to transmit a proportion of tracer movement relative to the carriage,



transmission means coupled to the carriage and arranged to transmit carriage movement, means coupling the transmitted output of the resolvers and carriage movement in an algebraic sum or difference, and

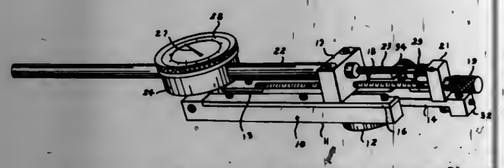
a print-out means operable in response to the sum or difference.

3,295,211
ENGRAVING MACHINE HAVING ADJUSTABLE TEMPLATE FIXTURE
Jules Nisenson, Croton on Hudson, N.Y., assignor to Granlip Corp., New York, N.Y.
Filed Oct. 28, 1964, Ser. No. 407,158
1 Claim. (Cl. 33—23)



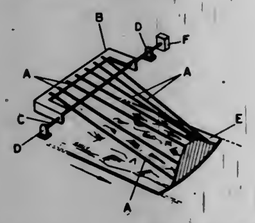
In an engraving machine having a stylus element and a stylus guiding element, improved matrix guide means comprising: a frame having first and second parallel guideways,, clamping means for mounting a matrix in a predetermined position within said first guideway, said second guideway having first, second and third channel means therein, the middle one of said channel means having a centrally located rotatably mounted pinion therein, and first and second rack members disposed in the other two channel means on either side of and meshing with said pinion for mutual relative movement in opposite directions, a plurality of index lines on the upper surface of said first rack member, an index pointer connected to said second rack member at one end thereof and arranged for cooperation with said index lines, a plurality of recesses in said middle channel means, lock pin means threadedly mounted on one end of said first rack member for selective engagement with one of said recesses for fixing the relative positions of said first and second rack members in one of a plurality of predetermined positions.

3,295,212
CAM LAYOUT DEVICE
Paul A. Greider, Dayton, Ohio, assignor to Dayton Perforators, Inc., Dayton, Ohio, a corporation of Ohio
Filed July 2, 1964, Ser. No. 379,798
5 Claims. (Cl. 33—27)



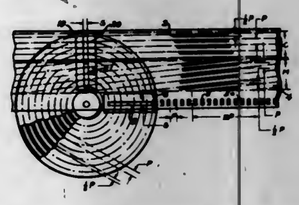
1. A unitary scribe device to lay out a cam profile on a cam blank, including a body having a flat underside to lie flush on a cam blank surface, said body having a longitudinal groove therein, a slide member in said groove extensible and retractable relatively to said body, an outer projecting end of said slide member having scribe means dependent to said underside of said body, abutment means on the opposite or upper side of said body, a tube installed in said abutment means and disposed longitudinally of said body, said tube projecting relatively beyond said body to one end, a screw post having a threaded engagement in said abutment means and extending longitudinally of said body in a direction opposed to said one end of said tube to have one end thereof project relatively to said body in a direction remote from said one end of said tube, manipulative head means fixed to said one end of said screw post, a reactant member fixed to said slide member and projecting therefrom oppositely to said scribe means, said screw post passing through said reactant member, a spring biased stem slidably received in the other end of said tube projecting therefrom to engage said reactant member in an opposing relation to said manipulative head means to compel a following movement of said slide member with respect to said manipulative head member, an indicator gauge mounted on said tube in a connected relation to said stem, and a tenon on the said underside of said body to be received in the center opening of a cam blank, said device being rotatable about said tenon as a pivot, the said one end of said tube being accessible at one end of the device as a handle for rotary movement of the device as a unit, said manipulative head means being accessible at the other end of the device for individual longitudinal adjustment of said slide member by pressure thereon through said reactant member.

3,295,213
APPARATUS FOR MEASURING THE FLOW OF MATERIAL
Geoffrey Hillyar-Russ, Woodville, near Borton-on-Trent, and Michael Newman, Mickleover, Derbyshire, England, assignors to Coal Industry (Patents) Limited, London, England, a company of Great Britain
Filed Aug. 11, 1964, Ser. No. 388,876
1 Claim. (Cl. 33—121)



Apparatus responsive to variations in volume of material transported in a predetermined direction past the apparatus, comprising a plurality of individual strip-like elements, a support means to which said elements are attached so that they extend in the same direction in side-by-side relationship, and are separately flexible relative to the support means, a free end of each said element adapted for contacting said material, means for mounting the support frame for pivotal movement about an axis transverse to said direction so that said elements extend in said direction with the free ends positioned to be contactable and deflectable by the material whereby each element on deflection can exert a torque on the support means thereby to cause the latter to pivot, and means for providing an indication of the extent of pivotting of the support means.

3,295,214
ELEMENT FOR MEASURING DISPLACEMENTS
Leif Eric De Neergaard, deceased, late of Madison, Wis., by The Northern Trust Co., executor, Chicago, Ill., assignor to Frederic W. Olmstead, Washington, D.C., Hans W. Trechsel, % The Gisholt Machine Company, Madison, Wis., Deryck A. Gerard, Minneapolis, Minn., and Norman S. Parker, Evanston, Ill., as trustees
Application May 9, 1962, Ser. No. 201,226, now Patent No. 3,230,827, dated Jan. 25, 1966, which is a division of application Ser. No. 726,998, Apr. 7, 1958, now Patent No. 3,076,374, dated Feb. 5, 1963. Divided and this application Feb. 5, 1965, Ser. No. 441,396
2 Claims. (Cl. 33—125)

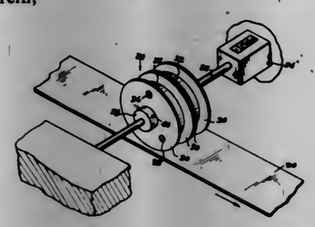


1. A signal generating element for use with electrical measuring systems, including an elongated member having a first series of spaced and parallel areas thereon transmissive to light flux and said areas being inclined to the longitudinal axis of the member, a second series of spaced and generally parallel areas thereon also transmissive to light flux and inclined to the longitudinal axis of the member, the areas of said first series having a slope, with respect to the longitudinal axis of the member, equal to a unit of linear measurement taken transversely of the member for a predetermined quantity of linear measurement taken longitudinally of the member, the areas of said second series having a slope of a submultiple of the unit of linear measurement taken transversely of the member for each said predetermined quantity of linear measurement taken along the longitudinal axis of said member, and a third series of spaced and generally parallel areas thereon also transmissive to light flux.

3,295,215
STRIP STEEL MEASURING WHEEL
Hector E. Simons, Farmington, Mich., assignor to American Steel Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 14, 1964, Ser. No. 389,655
4 Claims. (Cl. 33—134)

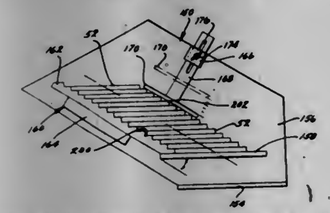
3. In a means for linearly measuring a rapidly moving and vibrating ribbon of steel comprising a shaft, a counter actuated thereby, and a wheel on and fixed to said shaft, with the edge of said wheel being engaged by said ribbon whereby the wheel and shaft are rotated by the moving ribbon;

said wheel comprising two magnetic material discs and a third magnetic material disc between them and in face-to-face contact with them, said disc being of smaller diameter than said first two discs, so that its edge is out of contact with said ribbon while the edges of the larger discs are engaged by said ribbon; the larger discs being of magnetic steel and the smaller disc being of rubber with magnetized particles therein;



and a non-magnetic material hub mounting the wheel on the shaft, with the rubber disc being secured directly to the hub, and with the steel discs being free of the hub but secured to the rubber disc.

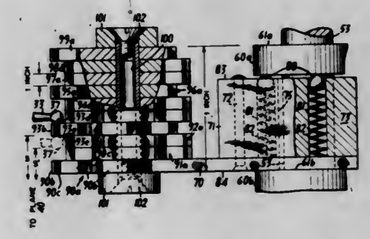
3,295,216
HEEL BREASTING EQUIPMENT
John A. Harrington, Grand Rapids, Robert J. Broersma, Spring Lake, David L. Runnells, Jr., Grand Rapids, and Clarence L. Johnson, Grand Haven, Mich., assignors to Wolverine Shoe and Tanning Corporation, Rockford, Mich., a corporation of Michigan
Original application Sept. 25, 1962, Ser. No. 226,020. Divided and this application Oct. 23, 1963, Ser. No. 321,723
1 Claim. (Cl. 33—143)



A fixture for arranging a stack of heel doubles of like thickness to be breasted collectively at the same specific acute angle, comprising: a mount having a planar surface; means forming a sole-supporting flat support surface normal to said planar surface; a diagonal guide member normal to said planar surface and at an obtuse angle to said support surface, said obtuse angle being the complement of said specific acute angle for a total of 180°; and said member having a series of like offset steps, each with a first face parallel to said flat surface and a second face generally normal to said flat surface; and said second face having a dimension along said planar surface equal to the heel double thickness, whereby a stack of like heel doubles can be arranged with the bottom one on said flat support surface, with their side edges abutting said planar surface and their ends on said first faces and abutting said second faces.

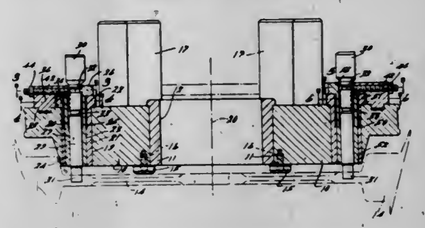
3,295,217
GAUGING FIXTURE FOR STEPPED MICROMETER GAUGE
James E. Barry, Sr., 170 Winnekee Ave., Poughkeepsie, N.Y. 12601
Filed Sept. 20, 1963, Ser. No. 310,260
13 Claims. (Cl. 33—170)

1. A gauging fixture for a gauge having an axial micrometer screw and a plurality of lands radially salient from said screw and axially spaced therealong by equal intervals measured between gauging faces respective to said lands and on sides thereof which are all towards the same end of said screw, said fixture comprising, support means having holding head means insertable between any pair of adjacent ones of said lands and axially expandable in the space between adjacent lands to maintain a bearing surface of said support means in flat contact with the gauging surface of one of said lands, said support means having a rear portion adapted to be held by said insertion radially outwards of said lands at a fixed angle in planes through said axis, and gauging means at the rear of said



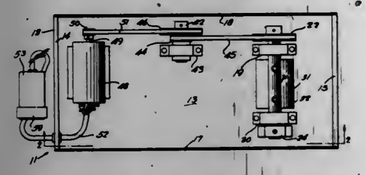
support means and comprised of a plurality of gauging elements disposed one after the other in the axial direction, said elements having gauging surfaces which are disposed on axially opposite sides of said elements to be facing in axially opposite directions, and which, when said rear portion is so held, are normal to said axis and are axially spaced by equal increments of a value smaller than said interval and integrally subdivisible into said interval, said oppositely facing surfaces being accessible from said opposite axial directions to a dimension-indicating tip of a measuring instrument.

3,295,218
CHECKING FIXTURE
Edward L. Chenowith, St. Clair Shores, Mich., assignor to Machine Products Corp., Detroit, Mich., a corporation of Michigan
Filed Mar. 18, 1965, Ser. No. 440,867
9 Claims. (Cl. 33—174)



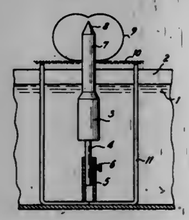
1. A checking device for checking the tolerance of a portion of a workpiece comprising a body portion having a cylindrical bore therethrough, a pair of cylindrically surfaced sleeves arranged in telescopic relationship with respect to said bore, and with respect to each other, the axis of the interior surface of each of said sleeves being parallel to and slightly offset from the axis of the exterior surface thereof and a cylindrical checking pin telescopically received within said sleeves, said checking pin having a guide portion intermediate the ends thereof in close fitting relation with at least a portion of said interior surface of said inner sleeve and a checking portion formed at one end thereof, said checking portion and having a diameter no greater than the diameter of said guide surface having a generally cylindrical exterior surface and extending axially in a direction from the interior of said inner sleeve toward the workpiece when the workpiece is placed adjacent said body portion.

3,295,219
DEGREE AND ANGLE INDICATOR
George S. Stockton, Artesia, and Kenneth M. Dunagan, Carlsbad, N. Mex., assignors to Universal Equipment Co., Inc., Artesia, N. Mex., a corporation of New Mexico
Filed Mar. 31, 1964, Ser. No. 356,304
1 Claim. (Cl. 33—215)



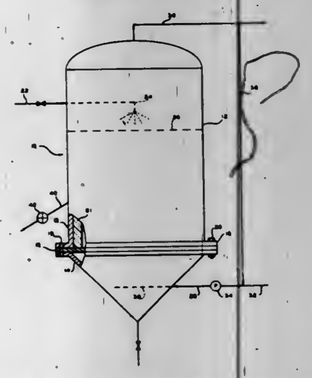
A remote level indicator comprising a support, a horizontal shaft journaled on said support, a cylindrical shell located below and parallel to said shaft, a plurality of longitudinally extending movable weight members in said shell superimposed on each other, said weight members having arcuate longitudinal edge portions conforming in curvature to the interior surface of the shell, removable spaced bolt means threadedly engaged with said shell and extending through and having tap head portions supported on said shaft, said bolt means extending through the superimposed weight members, whereby to secure the weight members in the shell and to connect the shell to the shaft, said bolt means being rotatable relative to the shell by rotating said top head portions, whereby to adjust the radial distance of the shell and the weight members therein relative to the shaft, a Selsyn transmitter adjacent said shaft, means drivingly coupling said shaft to said Selsyn transmitter, a Selsyn receiver at a location remote from said support, circuit means connecting said Selsyn transmitter to said Selsyn receiver, a level indicating dial, and a movable level indicating pointer located adjacent said dial and being driven by said Selsyn receiver.

3,295,220
METHOD FOR FREEZING FOODSTUFFS AND BIOLOGICAL PRODUCTS
Guy Savard, Westmound, Quebec, and Robert Lee, Montreal, Quebec, Canada, assignors to L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed July 12, 1965, Ser. No. 471,253
Claims priority, application France, July 21, 1964, 982,464, Patent 1,409,847
10 Claims. (Cl. 34—5)



1. A method for freezing relatively large, coherent units of foodstuffs and biological products, by indirect heat exchange with a cryogenic liquid at low temperature, said products being provided with at least an axis characterized by the steps of introducing the upper part of a metallic elongated member into each unit, and of immersing the lower part of said metallic elongated member into the liquid at low temperature and withdrawing from the inner zone of each of the units a volume approximately equal to the volume to be occupied by the upper part of the metallic elongated member before the metallic elongated member is introduced into said unit.

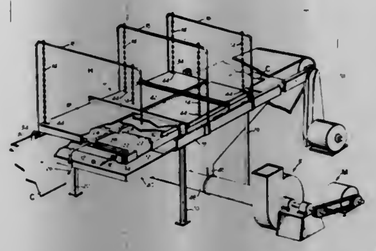
3,295,221
PROCESS AND APPARATUS FOR FLUIDIZED BED DRYING
David S. Joy, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 24, 1964, Ser. No. 377,693
9 Claims. (Cl. 34—10)



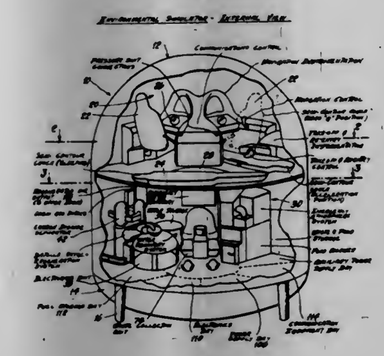
1. A process for drying particulate thermoplastic material containing liquid diluent comprising the steps of:
(1) maintaining a fluidized bed of said material in a drying zone provided with a perforate one-piece metal plate immediately below said bed;
(2) passing hot fluidizing and drying gas upwardly into said bed thru said plate to effect fluidizing and drying of said material;
(3) introducing fresh said material to and withdrawing dried material from said bed;
(4) providing the walls of the holes in said plate and the bottom surface of said plate with ceramic material to lower heat conduction thereto from said gas;
(5) circulating a fluid coolant laterally thru conduits within said plate to extract heat therefrom so as to permit higher drying gas temperature than permissible without steps (4) and (5) and avoid incipient fusion of said material and sticking thereof to the upper surface of said plate which would normally occur;
(6) withdrawing drying gas from an upper section of the drying zone of step (1) above said bed; and
(7) using higher drying gas temperature than could be used without steps (4) and (5).

3,295,222
PROCESSING TOBACCO
Robert Charles Geitz, Simsbury, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Application Apr. 8, 1963, Ser. No. 271,191, which is a continuation of application Ser. No. 144,600, Oct. 12, 1961, which in turn is a continuation of application Ser. No. 814,762, May 21, 1959. Divided and this application May 17, 1965, Ser. No. 470,657
5 Claims. (Cl. 34—201)

1. A tobacco drying apparatus comprising in combination an endless band conveyor having an underside and an upper side for supporting tobacco material to be dried, means driving said conveyor, a container, the top of which is formed by said conveyor, suspended beneath and in register with said conveyor, means for supplying steam to the interior of said container, means for impinging steam on the underside of said conveyor within said container, means for removing condensate from the underside of said conveyor, and means for moving said container so that the upper edges of the walls of said container remain in constant alignment contact with said conveyor.

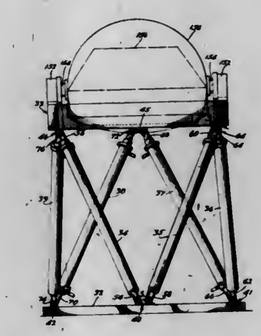


3,295,223
CLOSED ENVIRONMENTAL SIMULATOR FOR THREE MEN
Jack D. Zeff, Highland Park, Robert A. Bambenek, Glenview, and Cyril M. Tomsic, Chicago, Ill., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 23, 1964, Ser. No. 339,824
6 Claims. (Cl. 35—12)



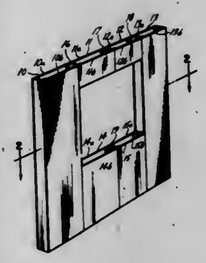
1. A self-contained environmental simulator comprising,
space navigation instrumentation and control equipment,
major subsystems and environmental systems,
a housing formed of a substantially cylindrical shell and upper and lower outwardly convexly shaped end closures,
upper and lower spaced decks dividing said housing into an upper compartment for retaining a crew to be trained and said instrumentation and control equipment,
a lower compartment for retaining and storing said major subsystems and environmental systems equipment, and a base compartment,
a passageway connecting said upper and lower compartments, and means for sealing said passageway when said simulator is to be used as either a task or reaction trainer or closed by the trainees during a simulated decompression or emergency condition.

3,295,224
MOTION SIMULATOR
Klaus L. Cappel, Marlton, N.J., assignor to The Franklin Institute, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1964, Ser. No. 416,371
5 Claims. (Cl. 35—12)



1. A motion simulator capable of motion in all six degrees of freedom, three linear and three rotational, or any combination thereof, comprising:
a platform providing three points in a plane;
a supported base defining three points in another plane; and
six powered and controlled extensible numbers each connected at one end to the support base and at the other end to the platform and connecting adjacent points of the support base and platform for providing any of said motions by said platform by selective changes in length of said extensible members, said extensible members and lines in the platform and support base, respectively, drawn between points defining edges of an octahedron having only triangular faces.

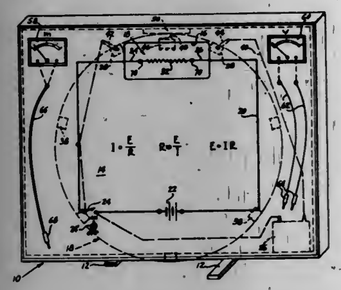
3,295,225
MODEL CONSTRUCTION PANEL ASSEMBLY
Albin R. Sodergren, 42 Waterside Lane, Clinton, Conn. 06413
Filed Sept. 23, 1964, Ser. No. 398,594
6 Claims. (Cl. 35—16)



1. A model construction panel assembly comprising a plurality of hollow, generally rectangular cross-section panels each including two pairs of opposed side walls, each pair of said opposed side walls being of identical dimensions and secured in parallel spaced relationship with the other pair of opposed side walls, one pair of said opposed side walls in each of said plurality of panels having at least one dimension common to one pair of side walls in each panel of said plurality of panels, and

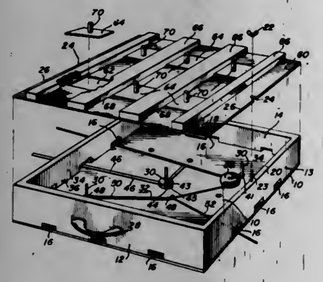
clip members of resilient material slidingly engaging contiguous side walls of adjacent panels securing said panels in frictional abutment.

3,295,226
ELECTRONIC TRAINING AIDS
Desmond P. Corcoran, 3408 Pierce, El Paso, Tex. 79903
Filed Sept. 8, 1964, Ser. No. 394,715
5 Claims. (Cl. 35—19)



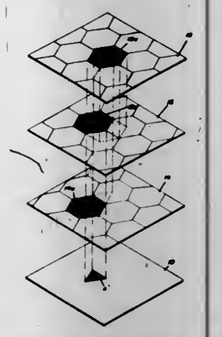
1. A teaching aid comprising a housing having a front face provided with an opening, means in said housing mounting a plurality of groups of electronic components, each group in circuit form for selectively positioning a group opposite said opening for viewing of said group, means for supplying electric current to each group successively when opposite said opening, and means carried by said first-named means adjacent each group for connecting a test instrument in circuit with the group opposite said opening and in circuit with a source of electric current.

3,295,227
EDUCATIONAL DEVICE
Joseph Richard Suchman, 2915 Kanawha St. NW., Washington, D.C. 20015
Filed Sept. 18, 1964, Ser. No. 397,411
11 Claims. (Cl. 35—22)



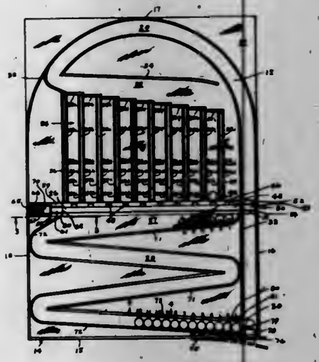
1. An educational device for use by a teacher and an operator which comprises: a base; supporting means adapted to be connected to said base; a plurality of mechanical elements, at least some of which are positionally movable with respect to each other, adapted to be interconnected with one another and to be supported by said supporting means in a plurailty of ways to form a mechanical linkage, all in a predetermined way selected from among said plurality of ways by the teacher who employs the device; and means for at least partially concealing the interconnected assemblage of elements and their linkage from the operator.

3,295,228
VISUAL DISPLAY AND METHOD OF ORGANIZING THE SAME
Robert B. Turnbull, 620 23rd St. NW., Washington, D.C. 20027
Filed July 6, 1964, Ser. No. 380,457
14 Claims. (Cl. 35—27)



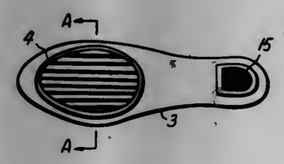
1. A visual display having different visual characteristics in different portions thereof, said display comprising a multiude of identically shaped areas,
(a) each area in said display having at least three visual characteristics,
(b) all areas in said display adjacent any given one area in said display, having at least two of said characteristics in said given one area.

3,295,229
MATHEMATICAL TEACHING DEVICE
Emery Fisher, 645 Arnow Ave., Bronx, N.Y. 10467
Filed July 24, 1964, Ser. No. 384,857
5 Claims. (Cl. 35—31)



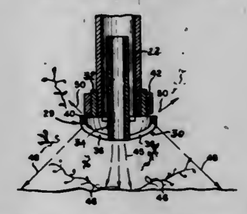
1. A device adapted to be propped up at its top end comprising a bottom plate; a transparent top plate; plurality of balls between said plates; an external wall between said top and bottom plates, and curved along its top portion; a J-shaped wall parallel with the right and top portions of said external wall; said J-shaped wall being spaced inward from said external wall, and termination at the top left portion of the device; said two walls form a first passage for a ball to roll therein; a guide wall between said top and bottom plates, extending inwardly from said external wall below the top left end of the device to guide a ball emerging from the first passage to the right; a plurality of longitudinally extending walls mounted between said top and bottom plates, one group of said walls being equally spaced from each other forming the left wall of a plurality of storage passages, a second group being equally spaced from each other and spaced to the right of said first group of walls an amount sufficient to permit a ball to pass between adjacent walls of each group, said second group of walls forming the right wall of the plurality of storage passages, each wall of said second group being also spaced apart from the rightmost adjacent wall of the first group to provide a slot there between, each of said pairs of walls having the slots there between being of ordered height with the pair on the left longer than the pair on its right; a plurality of shafts slidably mounted in said slots; flanges mounted one on the upper end of each shaft and extending across the top opening of one adjacent storage passage; plurality of knobs, one on each shaft extending through said front plate to be gripped by an operator for sliding the shafts upwards and downward; said shafts when in the up position guide a ball emerging from the first passage into an adjacent storage passage; a gate resiliently mounted extending transversely across the device below the plurality of storage passages, said gate having a slat located frontward on said device above the height of balls, and a plurality of fingers attached to and extending inward from said slat; said fingers being spaced apart at equal amounts corresponding to the location of the storage passages to block said lower ends of said passage when the gate is in a first resiliently relaxed position; said fingers being of a size that there is sufficient space between adjacent fingers to permit a ball to pass there between; said gate including a knob attached to said slat, extending through said front to be gripped by an operator and operatively slid to a second position where said fingers are below said pairs of walls and the lower ends of the storage passages are unblocked; a pair of walls equally spaced from each other extending between said top and bottom plates, said pair of walls being spaced apart along their common length by an amount sufficient to permit a ball to pass there between, said pair of walls defining a second passage which undulates between said left side external wall and the J-shaped wall from an area below the gate to the lower end of the first passage; a plurality of holes formed in said top plate above the second passage; said holes being spaced apart from each other by the diameter of a ball and each hole corresponding to an ordered ball position in the second passage; a plurality of numbers marked on said front plate in order, and in correspondence to the ball positions adjacent to the holes; a trigger mechanism located in the bottom right corner of the device having a hammer resiliently mounted and capable for projecting a ball along said first passage, and at least one peg to be inserted into one of said holes to pass there through and into said second passage for blocking the balls from passing said location.

3,295,230
ANTI-SKID SOLES
Andrew Szerenyi and Anton Liebscher, Waynesville, N.C., assignors to Ro-Search, Incorporated, Waynesville, N.C.
Filed July 22, 1963, Ser. No. 296,534
1 Claim. (Cl. 36—59)



An anti-skid sole for footwear comprising a tread surface of wear resisting material and a layer insert of moldable material having a shore hardness of between 30 and 60 and being substantially softer than the material of said tread surface, said layer insert being surrounded by said wear resisting material and having at least a portion thereof protruding beyond the outer surface of said tread surface material, the outer surface of said layer insert having narrow slots parallel to each other and spaced apart a multiple of the individual widths of said slots, said slots extending substantially throughout the extent of said insert, and the inner peripheral edges of said wear resisting material surrounding said insert being imbedded in and molded to said insert.

3,295,231
APPARATUS FOR REMOVING MATTER, PARTICULARLY WEED GROWTH FROM THE BOTTOM OF WATERWAYS
David Russell Talbott, 224 Westwood Road, Annapolis, Md. 21401
Filed July 7, 1964, Ser. No. 380,844
7 Claims. (Cl. 37—78)



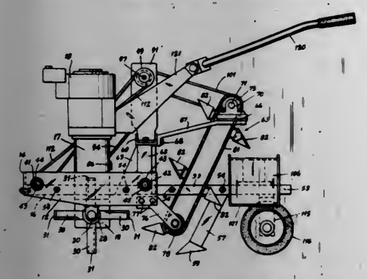
3. In combination with a substantially vertical pipe having an upper end adapted to be connected to a source of fluid pressure, a nozzle member at the lower end of said pipe, said nozzle member including a hollow body in open communication with said vertical pipe and having a substantially closed bottom wall, a relatively short pipe section of less diameter than said vertical pipe and having a lower end projecting through the bottom wall of said hollow body and extending co-axially upwardly in said vertical pipe beyond said body, and a straight slot through the bottom wall of said body and extending symmetrically on opposite sides of the lower end of said pipe section.

3,295,232
SPIRAL EARTH REMOVING BLADES AND ROTARY CUTTERS THEREFOR
Nicholas P. Oglesby, 906 Chalfonte Drive, Alexandria, Va. 22305; and Henderson Lee Turpin, Jr., and Robert E. Fowlkes, both % Wythe County Motors, Inc., Wytheville, Va. 24382
Filed Nov. 14, 1963, Ser. No. 323,662
4 Claims. (Cl. 37—81)



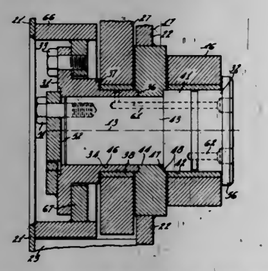
1. In an earth digging machine, a shaft adapted to be turned on its longitudinal axis and having an earth moving spiral blade extending lengthwise thereof and laterally outwardly, a plurality of cutter elements mounted on the peripheral edge of said spiral blade, said cutter elements being countersunk in the surface of said spiral blade and each being rotatably mounted on an axial pin, the full height of each cuter element being below the uppermost edge of the wall of the spiral blade whereby the entire cutter element is countersunk, said blade being provided with a depressed area beneath each cutter element and is unobstructed above each said cutter element.

3,295,233
MACHINE FOR DIGGING FOOTING TRENCHES
Bunyan I. Baker, P.O. Box 48, Dunn Road, Hazelwood, Mo. 63042
Filed Sept. 27, 1963, Ser. No. 312,263
4 Claims. (Cl. 37—96)



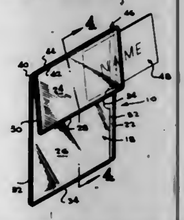
1. A machine for digging footing trenches to a predetermined depth between spaced parallel guide members, such as wood 2 x 4's, resting upon the ground and defining between them the lateral limits of the areas where the footing trench is to be dug, comprising a frame, the frame having parallel side plates spaced apart by silghtly less than the width of the prospective trench as defined by the guides, a pair of laterally outwardly extending rollers on each side plate, the rollers being adapted to rest upon the parallel guide members that line the opposite side of the prospective trench, the plates extending below the lower extremes of the rollers and therefore below the upper surfaces of the rollers when the rollers rest upon the guide members, the plates being positioned almost in contact with the inner sides of the guide members, the plates thereby guiding the machine along the path lined by the guide members, a plurality of rotary blades between the side plates for digging the trench, motor means for rotating the rotary blades, the lowest extreme of travel of the blades relative to the lower surfaces of the rollers providing the desired depth of the trench when the rollers are resting upon the guide members, a pair of wheels supported by the frame to the rear of the rotary blades, and a handle supported by the frame for pivoting the rotary blades upwardly about the wheels to provide transportation of the machine by rolling it on the wheels.

3,295,234
SCRAPER PIVOT JOINT
Dale W. Hawk, Marion, Iowa, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 13, 1964, Ser. No. 366,991
8 Claims. (Cl. 37—129)



5. Means for pivotally connecting an apron and a draft frame to a scraper bowl on a common axis comprising
a vertical side wall structure on said bowl including a pair of laterally spaced inner and outer vertical walls,
a bore formed in said outer wall,
counterbores formed in said outer wall at each end of said bore,
a pair of telescoping pivot members releasably fastened to one another, and to said walls,
one of said pivot members having a hollow cylindrical bearing portion intermediate said walls piloted in said counterbore on the inner side of said outer wall,
the other of said pivot members having a journal portion at the outer side of said outer wall and a cylindrical pilot portion of smaller diameter than said journal portion extending through said bore and into said hollow cylindrical bearing portion,
a shoulder on said other pivot member at the junction of said journal and pilot portions in radial and axial thrust transmitting relation to said outer wall,
an apron arm pivotally connected to said cylindrical bearing portion, and
a draft frame pivotally connected to said journal portion.

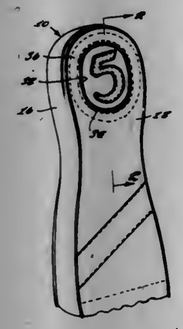
3,295,235
HOLDER
Gabriel G. Tauber, 7600 Georgia Ave. NW., Washington, D.C. 20012
Filed Dec. 23, 1965, Ser. No. 515,866
1 Claim. (Cl. 40—1.5)



A holder for a substantially rectangular indicia bearing card of given depth and for an information card of a depth greater than that of the indicia bearing card, the holder being worn with an article of apparel which includes a pocket having a top edge, the holder comprising:
elongated panel means of transparent plastic material including first and second panels, each panel having an elongated section and a relatively short section;
each of the sections having edges;
means securing the respective elongated sections to one another at three of said edges to provide a compartment for the information card, the information card being disposed therein and one of the edges of one of the elongated sections being free to provide access to the compartment for placement and removal of the information card, the information card serving to rigidify the compartment and the compartment and information card being disposed in the pocket of said apparel;
means securing the respective relatively short sections to one another at three of their adjacent edges to provide a badge holding compartment for the indicia bearing badge, the badge holding compartment being of a depth slightly greater than the depth of the card, and one of the edges of the short sections being free to provide access to the badge holding compartment;
the panel means having a common fold line pressed therein between the sections and being acutely bent and pressed about said fold line providing a creased fold portion intermediate the compartments;
the means securing the sections to one another being heat seals, whereby a combined heat seal and crease is provided; and

the fold portion resting on the top edge of the apparel pocket with the information card disposed within the apparel pocket and the badge holder displayed exteriorly thereof.

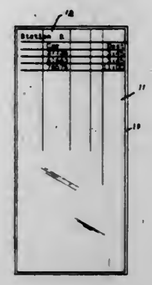
3,295,236
GOLF HEAD COVER WITH REPLACEABLE NUMBER OR INDICATING MEANS
Irving Wishnia, % Count Mfg. Co., Inc., 750 Grand St., Brooklyn, N.Y. 11211
Filed May 18, 1965, Ser. No. 456,660
1 Claim. (Cl. 40—10)



A golf club head cover comprising in combination:
(a) a pocket on one side thereof,
(b) a central opening in said pocket, and
(c) an indicia bearing panel removably positioned in said pocket,
whereby the indicia is visible through said opening including
(d) a pair of separable fastener elements, each carried respectively by said one side of said cover and said panel for securing said panel in position within said pocket, wherein
(e) said pocket is annular in form and comprises,
(f) an annular flexible marginal lip secured at its outer peripheral portion to said one side of said cover,
(g) the inner periphery of said marginal lip defining said central opening, wherein
(h) one of said separable fastener elements is secured to said one side of said cover at the center of said opening, and
(i) the other of said separable fastener elements is secured to the back of said panel at the center thereof, wherein
(j) said panel is in the form of a thin disc, and
(k) said indicia is mounted on the front of the panel, and including
(l) a finger engaging bead on the inner periphery of said marginal lip,
(m) said marginal lip overlying a substantial peripheral edge portion of said panel when the latter is positioned in said pocket.

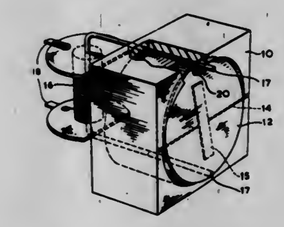
3,295,237
SIGNAL ENVELOPE AND LIST PROTECTOR
Peter E. Rooney, 8752 N. 76th St., Milwaukee, Wis. 53223
Filed Apr. 15, 1964, Ser. No. 359,988
1 Claim. (Cl. 40—16)

For use by a railroad worker, a flat elongated plastic envelope having substantially flat coextensive spaced transparent sides, a closed end and an open end, a first card inserted through said open end and disposed in the envelope and of a size and shape complemental to one of the sides, said card having an outer face containing information respecting the make-up, stops, routing and destination of a train and said outer face with such information being clearly visible through said one side and a second card inserted through said open end and disposed



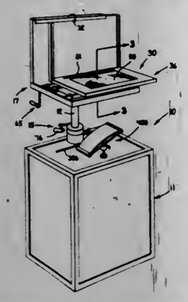
in the envelope and of a size and shape complemental to the other side and being interposed between the first card and the other side, said second card having an outer face coated with a luminous substance visible through said other side so as to serve as a signalling means when the envelope is held in the hand and waved by a railroad worker.

3,295,238
SIGN ELEMENT
Donald Winrow, Downsview, Ontario, Canada, assignor to Ferranti-Packard Electric Limited, Toronto, Ontario, Canada
Filed Oct. 28, 1964, Ser. No. 407,071
Claims priority, application Canada, Nov. 1, 1963, 888,120
3 Claims. (Cl. 40—28)



1. In an indicating unit for a sign assembly, wherein an indicia-forming element having an axis of rotation and two surfaces of contrasting appearance is rotatably supported on a frame therefor, and a magnet adapted to respond to an applied magnetic field is mounted on said element with a pole on opposed sides of said axis; the provision of stop means arranged and constructed to limit the range of rotation of said element to less than 180°, said surfaces being so arranged on said element that one surface is displayed at one end of said range of rotation and the other surface is displayed at the other end of said range of rotation; a pair of pole pieces connectible to an electric current to assume opposed and reversible polarities, and located to provide, with either polarity, that, throughout said range of rotation, the resultant force exerted by said pole pieces on said element magnet poles is in one direction; said element and said pole pieces being so designed and located that one portion of said element contacts one pole piece on rotation in one direction and the other pole piece on rotation in the other direction whereby said stop means are thereby constituted.

3,295,239
TELEVISION PRODUCTION STAND
Wilfred H. De Witt, 821 E. 36th St., Indianapolis, Ind. 46226
Filed Apr. 22, 1965, Ser. No. 450,066
11 Claims. (Cl. 40—28)



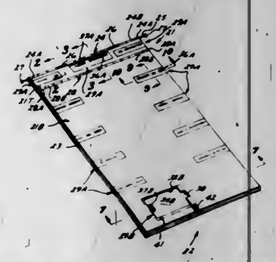
3. A television production stand comprising a base, a vertical shaft mounted on said base for rotation about the axis of said shaft, crank operated means for raising and lowering said shaft relative to said base, a table support fixed to the upper end of said shaft, said table support including a horizontal open frame portion and a vertical rectangular portion secured to one edge of said frame portion to define an L-shaped cross section, a channel secured to the upper edge of said vertical rectangular portion with the concavity of said channel opening downwardly, a table including a horizontal portion and a vertical portion secured to one edge of said horizontal portion and projecting upwardly therefrom, said table being nested in said table support with said vertical portion projecting upwardly into the concavity of said channel, rollers mounted on said open frame portion for supporting said table horizontal portion for movement of said table across said table support, said table having rollers mounted on the upper edge of said vertical portion of said table and positioned to engage said channel in the concavity thereof to maintain said table horizontal when a portion of said table overhangs said table support, and crank means for moving said table across said table support.

3,295,240
REVOLVING SIGN DISPLAY
Mathew J. Garte, 667 Madison Ave., New York, N.Y. 10021
Filed Oct. 21, 1964, Ser. No. 405,479
17 Claims. (Cl. 40—33)



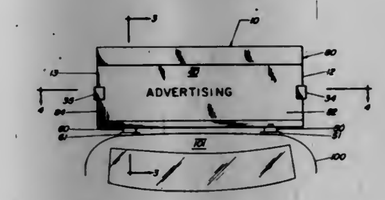
1. A sign display assembly, comprising a stationary base, a motor secured to said base, a vertical support rotatable on a vertical axis, said support being rotated by the motor at high speed, similar display members mounted on said support at opposite sides thereof, and frame means extending outwardly from the display members so that when said support is stationary the display members on each side of the support are visible only when viewed from a single viewing position in a direction substantially perpendicular to the display members and whereby the display members appear to be stationary when viewed from all viewing positions in an area entirely surrounding the support and display members when the support and display members are rotating at high speed.

3,295,241
CHANGEABLE COPY INFORMATION DISPLAY PANEL MEANS
Joseph J. Chiuminatto, 3910 Julie NE., Albuquerque, N. Mex. 87110
Filed Sept. 14, 1964, Ser. No. 396,237
4 Claims. (Cl. 40—64)



1. A changeable copy information display panel provided with a plurality of outwardly facing information display means, each comprising a recess-defining means forming a recess within a corresponding part of said display panel positioned entirely between front and rear surface planes thereof and substantially coplanar with respect thereto, each of said recess-defining means having an outwardly facing effectively transparent viewing window means immediately outwardly of the corresponding recess defined thereby, each of said information display means also comprising visibly observable information-bearing display surface means positionable within the corresponding recess behind the corresponding effectively transparent viewing window means in a frontally unobscured and visibly observable manner and including controllably manually movable means adapted to be controllably manually moved for effectively removing said information-bearing display surface means from front view through said effectively transparent viewing window means at least certain of said controllably manually movable means each comprising a thin-sheet slide member of a size and shape similar to the corresponding recess for slidable movement thereinto and thereout of and having said information-bearing display surface means on the front thereof, at least one of said controllably manually movable means comprising a thin-sheet opaque slide shutter member of a shape similar to but smaller in one direction than the corresponding recess for slidable vision-obscuring movement into a covering position in front of the corresponding information-bearing display surface means and for slidable movement out of said covering position and into an uncovering position relative to said display surface means, and including controllably manually unlockable and releasable one-direction-effective safety latch means cooperable with respect to said slide shutter member for immobilizing it when in said uncovering position by positively preventing movement of said slide shutter member toward said covering position, said safety latch means being cooperable with respect to said slide shutter member for freely allowing movement of said slide shutter member from said covering position toward and into said uncovering position and said subsequent immobilization thereof and prevention of reverse movement toward said covering position, and an outwardly projecting manually accessible operating member coupled with respect to said safety latch means for manually operating said safety latch means for effectively unlocking same with respect to said slide shutter member.

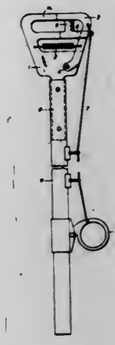
3,295,242
ADVERTISING DEVICE FOR TAXIS AND THE LIKE
Thomas A. McGregor, Omaha, Nebr., assignor to Star Station, Inc., Omaha, Nebr., a corporation of Nebraska
Filed Mar. 17, 1966, Ser. No. 535,221
1 Claim. (Cl. 40—129)



An advertising device adaptable for use with a taxi having an elongate roof extending fore and aft of said taxi, said advertising device being adapted for upright attachment to the taxi roof transversely of the longitudinal axis of said taxi elongate roof, said advertising device comprising a pair of vertically upright panels including a forward panel and a rearward panel, said upright panels being rigidly spaced apart in substantially parallel relationship, said advertising device having a pair of exterior surfaces including a forward surface of the forward panel and a rearward surface of the rearward panel; said upright panels having upper and lower flanged holding means to position a sign board therebetween at the exterior surface of the respective upright panels, said rearward panel and the flanged holding means thereof being provided of a single length of sheet metal; a roof member connected between the forward and rearward upright panels, said roof member extending rearwardly of the rearward panel to provide a shield-like protector for an illumination means, said forward panel and the roof member being provided of a single length of sheet metal; illumination means attachably positioned within the shield-like protector rearwardly of the rearward panel; L-shaped bracket means attached to the interior surface of each upright panel, each said L-shaped bracket means having a substantially horizontal lower surface; and a pair of opposed anchoring straps, each anchoring strap being attached to L-shaped bracket means on each said upright panels, each said anchoring strap abutting the lower horizontal surface of the L-shaped bracket means, the forward extremity of each anchoring strap extending forwardly of the forward upright panel and the rearward extremity of each anchoring strap extending rearwardly of the illumination means.

3,295,243
FISHING LURE RETRIEVERS
Norman Eugene Mohar, Sr., P.O. Box 865, Jennings, La. 70546
Filed Jan. 18, 1965, Ser. No. 426,451
2 Claims. (Cl. 43—17.2)

1. A fishing lure retriever, or the like including a pole, a planar head mounted as an extension of one end of said pole and a finger-piece mounted near the other end of said pole, said head including a U-shaped hook portion with its legs extending transversely of the pole, and an L-shaped jaw pivoted to said head to pivot in the plane of said head from a normally closed position with its outermost leg engaging the outermost leg of the hook portion to an open position, biasing means to bias said jaw to closed position, said hook portion and said jaw having extremities that are straight and that lie, when said jaw is in its closed position, in a straight line in the plane of said head along the side of said head remote from said pole and normal to the length of said pole, said jaw being pivoted to said one end of said head adjacent



the said pole, the innermost leg of said hook portion providing guard means lying parallel to the straight portion of said hook portion, a bifurcated portion on said guard means between the legs of which the innermost leg of said jaw moves, and an upstanding thumb extending from said guard means adjacent said bifurcated portion to a position to be engaged by said outermost leg of said jaw when in its closed position, and means operatively connecting said jaw to said finger-piece whereby said jaw may be manually opened by manipulation of said finger-piece.

3,295,244
FISHING ROD
Hellmuth Kuntze, Berlin, Germany, assignor to Deutsche Angelgeratē Manufaktur (DAM) Hellmuth Kuntze, Berlin, Germany, a firm of Germany
Filed Feb. 1, 1965, Ser. No. 429,236
Claims priority, application Germany, Jan. 31, 1964, D 43,486
2 Claims. (Cl. 43—22)



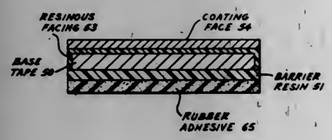
1. In a fishing rod having a stem, in combination, a tubular piece for receiving said stem, a pair of sleeves mounted on said tubular piece and movable relatively to each other, a reel-carrying foot having two oppositely directed flanges, each of said sleeves having a shoe-like extension for enclosing said flanges, said sleeves being located on opposite sides of said foot, a pair of resilient tubular members enclosing the shoe-like extensions on said sleeves and engaging the stem of said foot and each other, hollow coverings enclosing each of said sleeves, and means urging the sleeves into engagement with said flanges and urging said hollow coverings into abutting contact with said resilient members, the shoe-like extensions of the sleeves being stepped, the steps adjacent the tubular piece being adapted either to enclose longer supporting flanges or to receive an insert piece acting as support for shorter flanges which are enclosed by the other steps.

3,295,245
FISHHOOK GUARD AND LEADER ALIGNING DEVICE
Arthur J. Mullikin, 610 Cravens Bldg., Oklahoma City, Okla. 73101
Filed Feb. 19, 1965, Ser. No. 434,070
2 Claims. (Cl. 43—57.5)



1. A fishhook guard and holder for a trotline having a leader and a fishhook attached thereto, comprising: an elongated body, said body having a fishhook barb nesting bore extending therethrough adjacent one of its sides, the other side of said body having a coextensive longitudinally divided lateral projection having opposing arcuate surfaces forming a relatively narrow trotline receiving groove, said lateral projection having a coextensive trotline surrounding and gripping opening in communication with the groove, the trotline gripping opening being rectangular in cross section and having a shorter dimension less than the diameter of a trotline to be received therein, one end portion of the wall of said body having a slot therein diametrically opposite said divided lateral projection and extending longitudinally of the body a distance no greater than the diameter of its bore, said slot terminating in a circular opening diametrically greater than the width of the slot, the spacing between the walls of said body forming the slot being sufficiently narrow to frictionally and resiliently permit a sliding passage of a portion of a fishhook shank when pulled longitudinally of the slot and sufficiently wide to close by the flexing apart, in a spring like action, of said divided lateral projection when a portion of a trotline is pulled laterally through the groove into the trotline receiving opening.

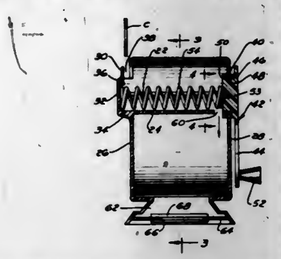
3,295,246
INSECT REPELLENT TAPES
Irving Landsman, 160 Bush St., Bronx, N.Y. 10453, and Emanuel Landsman, 2727 Palisade Ave., Bronx, N.Y. 10463
Filed Sept. 27, 1965, Ser. No. 490,348
6 Claims. (Cl. 43—131)



1. An insecticidal type coated tape comprising an absorbent strip saturated with a residual insecticide, said tape having on its bottom face a rubber base pressure sensitive adhesive coating, and a resin barrier membrane between the strip and the rubber base to prevent any interaction between the residual insecticide and the rubber base of the adhesive coating.

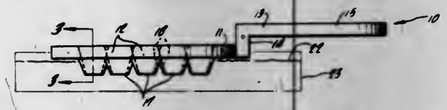
3,295,247
TOY BANK
Nathan B. Lerner, 320 N. Canal St., Chicago, Ill. 60610
Filed Mar. 4, 1964, Ser. No. 349,414
7 Claims. (Cl. 46—4)

1. A toy bank including a housing, a helical member rotatably supported in said housing for receiving and advancing a coin, means for rotating said helical member, said housing having means for receiving a coin and aligning it with said helical member, means within said housing



and adjacent said helical member to guide and support the coin as the coin is advanced in the helical member.

3,295,248
BUBBLE MAKER
Richard P. Knerr, Arcadia, and Richard L. Gillespie, San Gabriel, Calif., assignors to Wham-O Manufacturing Company, San Gabriel, Calif., a corporation of California
Filed May 2, 1966, Ser. No. 546,705
6 Claims. (Cl. 46—6)

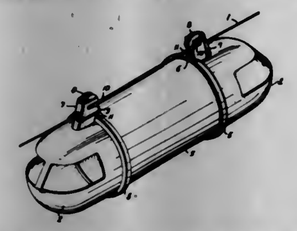


1. A device for simultaneously producing a plurality of adjacent but separate streams of bubbles as air is forced through the device comprising:
a plate having a plurality of closely arranged holes therethrough,
a like plurality of nozzles extending at least one-eighth inch outwardly from the plate and each nozzle having a central bore aligned and communicating with a separate one of said plurality of holes,
the holes and associated nozzles being spaced from each other such that the outer open ends of the nozzle bores are on centers at least equal to about twice the diameter of the openings;
the several nozzles and holes in the plates being unobstructed so as to permit passage of air simultaneously therethrough; and
a handle extending from the plate generally in a direction normal to the axis of the nozzles.

3,295,249
LINE SUSPENDED VEHICLE
Robert G. Johnson, 22109 110th Ave. W., Edmonds, Wash. 98020, and Truxton B. Troxell, 108 N. 155th St., Seattle, Wash. 98102
Filed May 31, 1962, Ser. No. 198,903
3 Claims. (Cl. 46—11)

3. In a line-supported vehicle having a central section formed by a can, an end section shell of stiff material having a closed end, an open end adapted to receive therein an end of such can and having a stop shoulder engageable by such can end to limit its movement into the shell's open end and deep notch means opening at said shell's open end, extending from said shell's open end toward said shell's closed end to a location beyond said stop shoulder and the open end portion of said deep notch means being expandable to increase the effective circumferential girth of the shell's open end, a pillar of channel-shaped cross section projecting outward from said shell and including two substantially parallel flanges having edges adjacent to said shell joined, respectively, to the opposite edge portions of said notch means and a web outward of said

shell joining corresponding edges of said flanges at the side of said pillar toward the closed end of said shell and



joined to said shell at a location spaced from the shell's open end beyond said notch, and pulley means mounted in said pillar between said flanges.

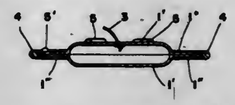
3,295,250
HAND WHIRLING TOY
Albert J. Poje, 3205 Park Ave., Bronx, N.Y. 10451
Filed Mar. 24, 1964, Ser. No. 354,377
4 Claims. (Cl. 46—51)



1. A skill and coordination device, comprising a frame including an elongated straight cylindrical shaft, four L-shaped wire arms disposed in planes radially arranged around said shaft and spaced 90° apart, each of said arms having an arm portion extending radially outward from said shaft and having a free end portion axially parallel to said shaft; and four generally cylindrical shell-like members open at opposite ends revolvable respectively around the free end portions of said arms above the radial portions of the arms while said shaft is held axially vertical and revolved in a substantially horizontal plane, the radial arm portions being secured to the shaft at positions spaced from one end of the shaft so that said one end of the shaft serves as a weight of an inverted axially vertical pendulum while the other end of the shaft serves as a handle for revolving the same.

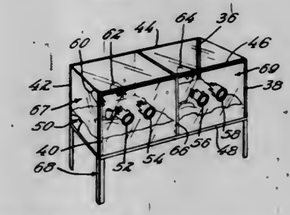
3,295,251
STRING-SUPPORTED SPINNER TOY
James Tomasello, 4801 Ridgeburg Road, Lyndhurst, Ohio 44124
Filed June 12, 1964, Ser. No. 374,638
5 Claims. (Cl. 46—61)

1. A new spin toy comprising a disc having an opening at its center and rotatable about an axis perpendicular thereto and passing through its center, said disc having a weighted portion at its outer periphery adapted to give momentum when said disc is rotated on its said axis, and a string passing through said opening in said disc and affixed to said disc in such a manner that the disc is rotatable on said string passing through said opening, said disc being adapted to offer frictional resistance when a portion of said string is touched against said disc at a frictional surface spaced from said center opening, said frictional surface comprising a means selected from the class consisting of protrusions extending from said



disc and a roughened material on said disc, and means on said disc spaced from said center opening and offering a frictional surface whereby the operator can impart additional impetus to the spinning of said disc by first maneuvering the string to engage said surface and then jerking the string.

3,295,252
SAND AND WATER TOY
Ernest M. Willette, 794 Ashland Ave., Maiden Rock, Wis. 54750
Filed Nov. 30, 1962, Ser. No. 241,255
3 Claims. (Cl. 46—91)

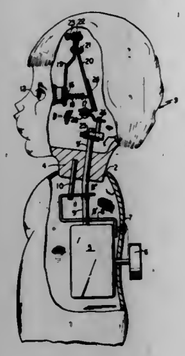


1. A toy comprising:
(a) a substantially fluid-tight hollow housing at least a portion of which is transparent,
(b) said housing including a partition dividing said housing into a pair of independent enclosed play areas,
(c) movable toy elements in said play areas,
(d) access apertures in said housing opening into the interior of said play areas,
(e) flexibly manipulative closures extending into the interior of said play areas and closing said apertures, said closures each being adapted to receive the hand and a portion of the forearm of the user,
(f) said housing having bore means establishing communication between said play areas and therebetween and the exterior of the housing through which air may be withdrawn from said housing to establish a partial vacuum therein,
(g) and plug means in said bore means for maintaining said partial vacuum in the housing,
(h) and support means underlying said housing and supporting said housing at a height above floor level wherein said closures are convenient to the user's hands and arms.

3,295,253
DOLL WITH HEAD AND EYE ANIMATING MECHANISM
Robert Gardel, 11 Riverside Drive, New York, N.Y. 10023, and Egon Gorsky, 365 E. 46th St., Brooklyn, N.Y. 11220
Original application June 17, 1964, Ser. No. 375,803, now Patent No. 3,230,666, dated Jan. 25, 1966. Divided and this application Oct. 20, 1965, Ser. No. 508,887
3 Claims. (Cl. 46—135)

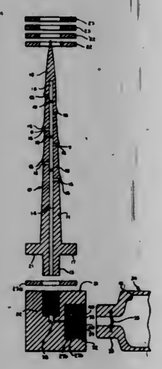
2. In combination with a doll having a body and a head which is movable with respect to said body and is provided with a gravity actuated eye element, a mo-

tor fixed within said body, a drive shaft extending from the motor into the head and adapted to be driven by the motor, part of said drive shaft being angularly offset from the axis of rotation of the shaft and said offset part of the shaft being journaled in a part of the head thereby to effect relative movement between the head and body upon rotation of the shaft, means operatively connected to the offset part of the shaft for intermittently causing movement of the eye element,



said means comprising a reciprocable part which is operable to actuate said eye element, a member mounted in the head for movement toward and away from the eye element and arranged to effect actuation of the reciprocable part, and driving connection means between the offset shaft and said member for causing the aforesaid movement of said member thereby to move said eye element with a force sufficient to overcome the effect of gravity on said eye element.

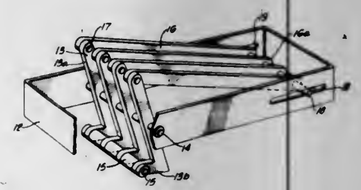
3,295,254
APPARATUS FOR INJECTING LIQUIDS INTO TREES
Marten L. Schoonman, Norwich Road, Quaker Hill, Conn. 06375
Filed May 3, 1965, Ser. No. 452,764
7 Claims. (Cl. 47—57.5)



7. Apparatus for introducing fluid to the capillary system of a tree comprising:

(a) an elongated shank pointed at one end to be driven in a tree;
  (i) said shank having an axial bore spaced from the pointed end of the shank and communicating with the other end of the shank,
  (ii) an annular projection extending radially and helically from the surface of the shank and defining a shoulder facing away from the said pointed end of the shank and extending radially between the tip of the projection and the surface of the shank,
  (iii) said shank having a plurality of variously directed radial bores each communicating with the axial bore and the surface of the shank at its juncture with the shoulder,
  (iv) an annular collar fixed to the shank in spaced relation from said other end of the shank,
  (v) said helically extending annular projection being spaced inwardly from the pointed end of the shank and from the annular collar; and
(b) a driving block having a cavity to loosely receive said other end of the shank and engageable with the collar to drive the shank into a tree.

3,295,255
UNIDIRECTIONAL TRAFFIC CONTROL
Angelo Russo, 1377 Laveta Terrace, Los Angeles, Calif. 90026
Filed Feb. 24, 1964, Ser. No. 346,940
3 Claims. (Cl. 49—49)

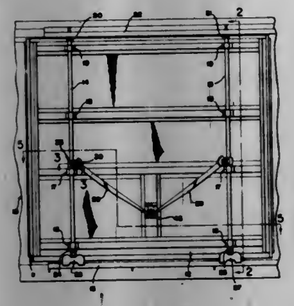


3. A unidirectional vehicular traffic control comprising:
a frame, said frame provided with a longitudinal slot;
a first arm pivotally secured to said frame at a point located between the end extremity of said first element and outwardly projecting therefrom, said arm adapted to engage a body moving theretowards from one direction so as to limit said movement and adapted to be pivotally depressed into an inoperative position by a body moving theretowards from the opposite direction;
a second arm pivotally secured to said first arm at one side of said pivot juncture, said second arm being in slidable engagement with said slot of said frame;
counterbalance means for returning said first arm to its outwardly projecting position secured to said first arm at one end thereof opposite said pivot securement juncture of said second arm with said first arm.

3,295,256
SLIP CLUTCH FOR OPERATING CRANKS UNDER LOAD
Thorvald Madland, Arlington Heights, Ill., assignor to Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed June 26, 1963, Ser. No. 290,687
7 Claims. (Cl. 49—219)

7. In a railway car having side and end walls defining an interior and a door opening in at least one side wall thereof:
a door adapted to close the door opening;

means mounting said door on said side wall of the car for transverse movement into and out of the door opening and for sliding movement longitudinally of the car;
said mounting means including a pair of vertically extending rotatable pipes secured to said door;
each of said pipes having a crank at either end thereof with said cranks cooperating with means on the side wall of said car to displace said door into and out of the door opening in the car upon rotation of said pipes;



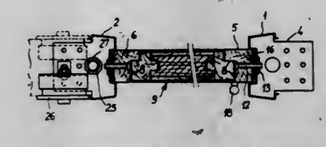
actuating means on said pipes for effecting rotation thereof;
said actuating means including abutment surfaces secured to said pipes;
lug means adapted to engage said abutment surfaces;
means supporting said lug means on said pipes for rotation relative thereto;
said supporting means further including means permitting pivotal movement of said lug means relative to said supporting means; and
manual actuating means connected to said lug means adapted to pivot said lug means into engagement with said abutment surfaces.

3,295,257
WALL PANEL ASSEMBLY
Jackson E. Douglass, San Lorenzo, Calif., assignor, by mesne assignments, to Hough Manufacturing Corporation, a corporation of Connecticut
Filed Mar. 12, 1965, Ser. No. 439,272
4 Claims. (Cl. 49—317)



1. In a wall panel assembly having a panel adapted to be releasably positioned to extend between spaced parallel room surfaces, locking apparatus comprising a grip member adapted to be disposed at an end of the panel and movable between retracted and projected positions, a rotatable member adapted to be disposed between the ends of the panel, means supporting said rotatable member for movement between first and second positions to move the grip member respectively from retracted to advanced positions, elongated resilient force translating means, one end of the elongated resilient force translating means being connected to said rotatable member at a point spaced from the axis of rotation thereof, the other end of said force translating means being connected to said grip member, means to move said rotatable member to said second position thereof and means to lock the rotatable member thereat so as to project and retain said grip member at its advanced position, the last named means including limit means forming a positive stop to define said second position, said stop being disposed to permit said one end of the force translating means to pass through advanced dead center in moving said rotatable member between said first and second positions, said limit means including stop means mounted to rotate with said rotatable member, and a stationary abutment lying substantially normal to the plane of rotation of the stop means in the path thereof to be engaged thereby and limit rotation of the stop means, said stop means including a member having a wedge surface at one end thereof, and a substantially rigid channel member of U-shaped transverse cross-section adapted to be recessed in an edge of the panel with one of the opposed sides of said channel member being disposed and adapted to be engaged by the wedge surface of said stop member thereby forming said abutment.

3,295,258
UNIVERSAL DOOR FRAME
Maurice Gridaine, 40 Rue Marbeuf, Paris, France
Filed Feb. 10, 1965, Ser. No. 431,671
Claims priority, application France, Feb. 12, 1964, 963,540, Patent 1,422,042
5 Claims. (Cl. 49—382)

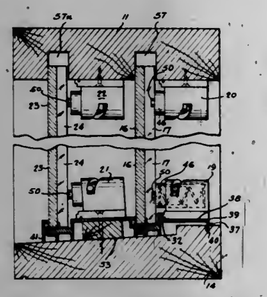


1. A door assembly comprising a symmetrical frame having two upright pieces and a cross piece connecting said upright pieces, each of said pieces having a central groove formed in the inner face thereof; a casing having two upright pieces and a cross piece removably mounted in a groove of the corresponding piece of said frame; fillisters formed in at least the upright pieces of said casing; a door panel adapted to register with said fillisters; and a reversible hinge member pivotally mounting said door panel to one of the upright pieces of said casing; said fillisters being symmetrical with respect to a plane perpendicular to the plane defined by said panel and extending through the central vertical axis thereof.

3,295,259
SASHLESS SLIDING WINDOW SYSTEM
Raymond Dallaire, 637 Commercial St., St. David, Quebec, Canada
Filed Dec. 4, 1964, Ser. No. 415,950
Claims priority, application Canada, Mar. 19, 1964, 898,225
7 Claims. (Cl. 49—413)

1. A sashless sliding window system comprising the combination of a window frame and an extruded sill track, at least two pane supporting grooves in said sill

track, two recessed T-grooves running the length of said pane-supporting grooves, said pane supporting grooves being adapted to receive and support a stationary and a sliding pane, an extruded member, L-shaped in cross-section, having a T-lug projecting therefrom and running the length thereof, said T-lug being slidably interlockable in either of said recessed T-grooves in said track, said track having an interior sill, a recessed L-groove on said interior sill running the length thereof adjacent said pane-



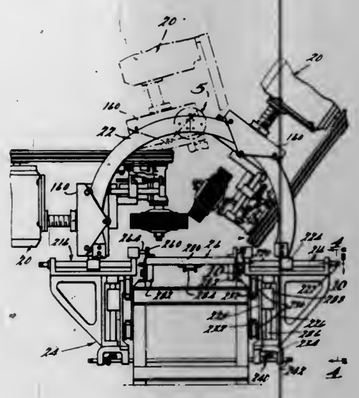
supporting groove, and a lock having an L-lug projecting therefrom said L-lug being slidably engageable in said L-groove.

3,295,260
SEALING ELEMENT
Johann A. Bus, Holzli-Weiden, Switzerland, and Herbert Hirche, Stuttgart, Germany, assignors to Christian Holzapfel KG., Ebhausen, Wurttemberg, Germany
Filed Oct. 23, 1965, Ser. No. 503,246
Claims priority, application Germany, Feb. 26, 1962, H 40,652, June 9, 1962, H 41,718
10 Claims. (Cl. 49—489)



1. In a structure of the character described, in combination, a fixed structural member having an elongated end portion; a sealing element including an elongated web fixed to said structural member and having an elongated carrier portion extending beyond and spaced from the said end portion, and a pair of elongated lips each consisting of elastic material which is softer than the material of said web and each of said lips having an elongated edge portion connected with the carrier portion of said web so that said web forms a rigid support for said lips, each of said lips forming with said web a substantially V-shaped body and said lips diverging from said web in a direction toward said end portion; and a pair of additional structural members each having an elongated end portion and each being movable with respect to said fixed member between a first position in which its end portion is spaced from one of said lips and a second position in which its end portion engages and deforms the respective lip so that said element forms a seal between the end portion of said fixed member and the end portions of said additional members.

3,295,261
WORK WHEEL MECHANISM AND ASSOCIATED APPARATUS
Ernest E. Murray, 6765 Meadowlake, Birmingham, Mich. 48010
Filed June 3, 1964, Ser. No. 372,228
32 Claims. (Cl. 51—108)

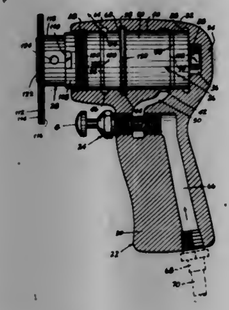


1. A portable work wheel mechanism comprising: a work wheel assembly and mounting means for mounting said work wheel assembly, said work wheel assembly comprising a work wheel, first means for supporting said work wheel for rotation about a first axis, motor means for providing rotational energy about a second axis, second means for supporting said motor means with said second axis located in spaced parallelism with said first axis, pulley means connecting said motor means and said first means for transmitting the rotational energy from said motor means to said work wheel, third means connecting said first and second means for selectively adjusting the distance between said first and second axes, means securing said work wheel assembly to said mounting means for rotation of said work wheel assembly to selected positions about a third axis which extends generally, mutually perpendicularly relative to said first and second axes, said last named means including means for locating said work wheel assembly relatively to said mounting means at selected positions along said third axis said pulley means comprising a plurality of pulleys, an endless belt connecting said pulleys and transmitting the rotational energy from said motor means to said work wheel, and means supporting said pulleys for permitting changes in the distance between said first and second axes without appreciable change in the tension on said belt.

3,295,262
PNEUMATIC MOTOR MECHANISM FOR HAND TOOLS
William J. Brown, St. Ann, Mo., assignor to General Pneumatic Products Corporation, St. Louis, Mo., a corporation of Missouri
Filed June 17, 1964, Ser. No. 375,739
6 Claims. (Cl. 51—170)

6. In pneumatic motor mechanism for hand tools of the type described, in combination:
a motor housing having a horizontal bore open at one end and closed at its opposite end;
a rotary motor structure mounted in the housing including an externally threaded drive shaft that projects through the open end of the housing;

a sanding disc assembly rigidly secured to said drive shaft for rotation therewith, said assembly including a sanding disc proper and a pair of smaller diametered back-up discs, all of said discs being mounted on an internally threaded hub member in engagement with the threaded drive shaft aforesaid;
spaced annular air intake and exhaust grooves formed in the bore of the housing;
an annular seal groove formed in the bore of the housing intermediate said intake and exhaust grooves, said seal groove comprising a semicircular formation that merges at one side into a forwardly slop-



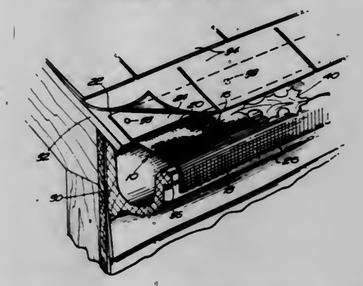
ing wall formation and the other side into a rearwardly sloping wall formation;
a pair of diametrically opposite passageway arrangements formed in the bore of the housing between said intake groove and the sealing groove, each arrangement including a horizontal passageway leading from said intake groove and merging into two divergent sections leading to the seal groove for establishing fluid communication between said grooves;
and an annulus of relatively soft resilient material seated in said seal groove, said annulus being round in cross section, and having an outer peripheral diameter that corresponds with the diameter of the seal groove, and an inner peripheral diameter that corresponds with the diameter of the housing bore.

3,295,263
MASK FOR SANDBLASTING INDICIA IN STONE AND METHOD FOR MAKING SAME
Salvatore Savoca, College Point, and Carl Kuljanich, St. Albans, N.Y., assignors to Monument Processing Co., Long Island City, N.Y.
Filed Mar. 18, 1963, Ser. No. 265,661
13 Claims. (Cl. 51—262)



1. A sandblasting mask comprising:
(a) a first sheet of resilient material having a front surface, a rear surface and a plurality of slits extending between the front and rear surfaces to define a sandblasting pattern;
(b) a second sheet of flexible material adhesively secured to one surface of said resilient sheet to define a mask assembly adapted to be removably secured to the article to be sandblasted; and
(c) a third sheet of material adhesively secured to said mask assembly and arranged to support isolated portions of said first sheet.

3,295,264
GUTTER SYSTEM AND FLEXIBLE GUARD MEANS THEREFOR
Harold G. Olson, Burrits Landing, Westport, Conn. 06880
Filed May 15, 1964, Ser. No. 367,795
5 Claims. (Cl. 52—12)



1. A gutter guard for serving from a roll supply and protectively covering a roof gutter having a rear longitudinal edge proximate to a shingled roof and a front longitudinal edge distal from said roof, said guard comprising an elongated strip of lightweight, flexible material, said strip having a multiplicity of perforations along its length and extending from a first longitudinal edge thereof partway across the width of said strip, said strip also having an unperforated zone adjacent its other longitudinal edge, said unperforated strip zone being slid under roof shingles adjacent the gutter and secured to said roof, weight means secured along said first strip edge, the width of said perforated portion of said strip being related to the width of the gutter such that said first strip edge lays out over and hangs down under gravity from said front edge of the gutter and holds said strip taut across the top of the gutter all along its length.

3,295,265
CIRCULAR MULTI-PURPOSE BUILDING AND ITS ASSEMBLING METHOD
Naoto Hida, Tokyo, Japan, assignor to Takenaka Komuten Company, Ltd., Osaka-fu, Japan, a corporation of Japan
Filed May 7, 1964, Ser. No. 365,723
Claims priority, application Japan, Dec. 5, 1963, 38/65,460
8 Claims. (Cl. 52—82)



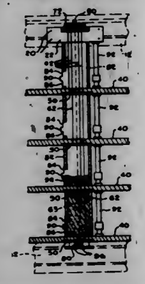
1. A multi-purpose building comprising, in combination, an annular foundation base, an even number of floor beams secured to said annular base in a radial form, one end of said floor beam being secured to said annular base while the other end of said floor beam being supported by a freely elevating jack, a central circular floor panel, a plurality of floor panels surrounding said central circular floor panel, a plurality of wall panels of a number equal to the number of said floor panels, said wall panels being erected along the periphery of said floor panels, a plu-

rality of upright posts as a central core, an annular top provided at the top of said upright posts, an even number of roof beams in a radial form being secured around said annular top, one end of said roof beam being secured to said annular top while the other end of said roof beam being inserted into a recess provided at a different position from the joint of said two adjacent wall panels, a plurality of roof panels provided on said roof beams, all the joints of said building parts being secured together by means of a clamp.

3,295,266
SUSPENDED FLOOR SYSTEM FOR A MULTI-LEVEL BUILDING

Rudi Van Bijlevelt, 1120 Amoroso Place, Venice, Calif. 90291

Original application June 22, 1959, Ser. No. 821,989, now Patent No. 3,156,071. Divided and this application Sept. 2, 1964, Ser. No. 393,907
4 Claims. (Cl. 52—83)



1. A building structure comprising at least one vertically disposed, self-supporting pillar having a hollow interior portion extending throughout substantially the entire height thereof to permit persons to enter and exit from said pillar at various levels;

horizontally disposed support means connected to and extending from said pillar;

a plurality of floors located beneath said support means and vertically spaced along said pillar at various levels;

and a plurality of sets of vertically oriented tension members connected to said floors, each of said tension members being connected at its upper extremity to said support means and terminating at said support means, and each of said sets of tension members being connected to a separate one of said floors whereby said floors are suspended in position beneath said support means and substantially all of the dead weight of each of said floors is transmitted to said support means through its associated set of said tension members, and is transmitted from said support means directly to said pillar.

3,295,267
BUILDING HAVING TENSIONED COVERING BETWEEN FRAMES

Vernon J. Lundell, Cherokee, Iowa 51012

Filed June 13, 1963, Ser. No. 287,612
15 Claims. (Cl. 52—90)

1. A building structure, comprising in combination, a foundation, a plurality of beams mounted in laterally spaced relation on said foundation, each beam including a pair of angularly related sections respectively defining a generally upright wall section and an inclined roof section terminating in a peak end, each beam presenting upwardly outwardly facing continuous abutments at opposite sides along its inner marginal edge, a series of elongated sheet-like panels extending between pairs of said beams and resting on said abutments to completely close the intervening space between said pairs of said beams, each panel having its upper and lower edges respectively formed to define outwardly and inwardly facing flanges engaging the cooperating flanges of adjacent panels to form a weathertight closure, an upper end panel extending between one pair of said beams and resting on said abutments adjacent said peak ends, said upper end panel having a lower edge formed to define an inwardly directed flange engaging the outwardly directed flange formed on the upper edge of the uppermost one of said

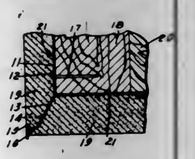


series of panels, and a lower end panel extending between said one pair of beams, said lower end panel having an upper edge formed to define an outwardly directed flange engaging the inwardly directed flange formed on the lower edge of the lowermost one of said series of panels, and adjustable means interposed between said foundation and said lower panel for applying tension thereto to maintain said series of panels in rigid assembled relation between said one pair of beams.

3,295,268
DRIP MOLDING TRIM

Alva Gaither, Los Angeles, Calif., assignor to H. K. Porter Company, Inc., Los Angeles, Calif., a corporation of Delaware

Filed June 22, 1964, Ser. No. 376,868
2 Claims. (Cl. 52—97)

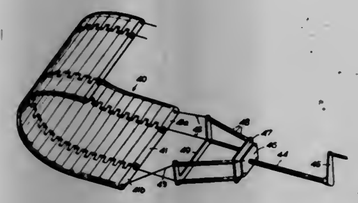


1. A drip molding trim comprising an elongated body member, said body member being bent to form a plurality of integral portions, the upper most portion of said body member comprising a straight section extending vertically and secured to a building member, said straight section having a plurality of spaced small openings therein receiving fastening members thereby securing said trim to a building member, said body member having an angular section disposed directly beneath said straight section, said angular section extending downwardly and outwardly from the lower edge of said straight section, said angular section having a plurality of substantially larger circular openings extending therethrough, said body member having a short horizontal section extending horizontally outwardly from the lower edge of said angular section, said body member having a short lip extending vertically downwardly from the outer edge of said horizontal section, said body member being completely enclosed in stucco or the like, except for the entire outer surface of said lip and the bottom edge portion of said lip, which bottom edge portion extends vertically downwardly beneath said stucco, said stucco forming a corner having a pair of right angular sections, the exposed edges of which extend vertically and horizontally, said stucco sections being joined and bonded to each other through said larger circular openings in the angular section of said body member.

3,295,269
COLLAPSIBLE STRUCTURE WITH INTERLEAVED SECTIONS

Wilhelm Schuster, Dauphinestrasse 194, Linz (Danube), Austria

Filed May 8, 1964, Ser. No. 366,099
Claims priority, application Austria, Dec. 4, 1959, A 8,802/59
14 Claims. (Cl. 52—108)

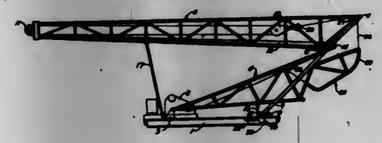


1. In a structure adapted to be selectively stiffened and slackened for bending about an axis, in combination, a plurality of body sections arrayed in parallel rows alongside one another, the body sections of adjacent rows being provided with interleaved formations and with longitudinal passages in said formations aligned in the stiffened position of said structure; an elongated, flexible and substantially inextensible tension element anchored to said structure and inserted in said passages at the junction of any two adjoining rows, thereby pivotally uniting the body sections of said adjoining rows; and releasable tightening means for said element, the body sections engaged by said tension element bearing endwise upon one another in pressure-transmitting relationship in the operated state of said tightening means.

3,295,270
FOLDED OIL WELL MAST STRUCTURE

Homer J. Woolslayer and Cecil Jenkins, Tulsa, Okla., assignors to Lee C. Moore Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 5, 1964, Ser. No. 409,089
11 Claims. (Cl. 52—117)

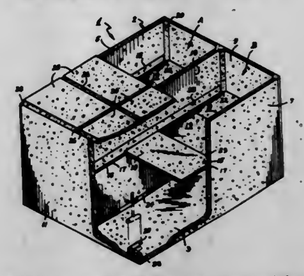


1. A folded mast structure comprising a base having front and rear ends, a reclining lower mast section having a foot pivotally connected to said base, said section extending forward over the base from said foot, an upper mast section reclining above the lower section and having a head at the back of the base, means hinging the front end of the lower side of the upper section to the front end of the upper side of the lower section, the upper side of the upper section extending forward beyond said hinging means to overhang the underlying lower section, rigid, unitary legs inclined lengthwise of the base and having upper ends pivoted to said overhang, shoes pivotally connecting the lower ends of the legs to said base between the locations of the ends of the reclining lower section, and means for swinging one of the mast sections upwardly, the lower ends of the legs being held down by said shoes in a position to cause the legs to swing the other mast section upwardly relative to said one section until both sections are erect with the upper section resting on top of the lower section.

3,295,271
BURIAL CRYPT AND METHOD OF INSTALLATION

John P. Dorris, 5301 River Ave., Newport Beach, Calif. 92660

Filed Jan. 2, 1963, Ser. No. 249,078
10 Claims. (Cl. 52—124)



9. A precast concrete burial crypt, comprising:

(a) a body defined by opposed side walls, opposed end walls, and a bottom wall;

(b) a vertical partition disposed midway between said side walls extending upwardly from said bottom wall to the top of said end walls and merging at its opposite ends with said end walls and dividing said body into two parallel compartments,

(c) said bottom wall having a pair of elongated handling openings extending therethrough in each of said compartments,

(d) said bottom wall also having depressions in the undersurface thereof extending thereinto and respectively intersecting with a different one of said openings,

(e) each of said side walls having a horizontally extending recess in the inner side thereof extending from one end wall to the other end wall,

(f) said partition having a horizontal recess in each side thereof, extending from one end wall to the other end wall,

(g) each of said recesses having a bottom ledge,

(h) all of said bottom ledges being disposed in a common plane parallel with said bottom wall and being located substantially midway between the bottom wall and the top edge of said side walls and said partition;

(i) a series of flat concrete panels disposed in side-by-side relationship with their ends resting upon the ledges of confronting recesses and extending from one wall to the other end wall in each compartment, thereby dividing each of said compartments into upper and lower sections; and

(j) two series of concrete slabs, each having its slabs disposed in side-by-side relationship and resting upon the top of one said side wall, said partition, and said end walls, and forming independently removable closures for each of said compartments.

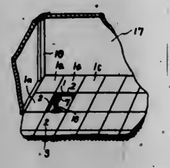
3,295,272
RAISED FLOOR CONSTRUCTION

Tomonobu Kanno, Ota-ku, Tokyo, Japan, assignor to Furukawa Casting Company Limited, Kawasaki, Japan

Filed June 1, 1964, Ser. No. 371,395
Claims priority, application Japan, Aug. 7, 1963, 38/59,046; Dec. 17, 1963, 38/94,028
3 Claims. (Cl. 52—126)

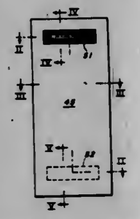
1. A raised floor construction comprising a plurality of floor panels each of which is provided with at least three sides, an upper surface and a lower surface, a plurality of reinforcing ribs depending from said lower surface and a sector-shaped projection depending from said lower surface of said panel at each corner thereof with the apex of each sector located at the point of intersec-

tion of two adjacent sides of said panel and the lower surface of each projection disposed in the same plane as the lower surfaces of said ribs; and a support pedestal having a base, a flat support plate having an upstanding circular flange secured thereto and projecting upwardly therefrom and means adjustably supporting said plate at a desired distance above said base; arcuate groove means



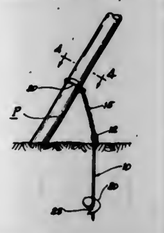
formed in said ribs about the arcuate surface of said sector-shaped projections, the radius of said circular flange and the radius of said groove means being substantially equal whereby upon placing a plurality of panels in contiguous planar relation about a central point, said arcuate groove means defines a circular groove adapted to receive said circular flange to support and lock said panels in the proper relative relationship.

3,295,273
DOOR AND PANEL CONSTRUCTION
Herbert W. Wehe, Jr., Ligonier, Pa., assignor to Overly Manufacturing Company, Greenburg, Pa., a corporation of Pennsylvania
Original application June 7, 1963, Ser. No. 286,289, now Patent No. 3,273,297, dated Sept. 20, 1966. Divided and this application Sept. 27, 1965, Ser. No. 495,754
2 Claims. (Cl. 52—145)



2. In a metal sound attenuating door panel construction in combination,
(a) vertically extending spaced front and rear skin plates having their adjacent vertical edges connected to provide an open ended hollow metal structure,
(b) vertically disposed stiffening members spaced transversely between the vertical marginal edges of said skin plates with each said stiffening member secured to the inner faces of each of said skin plates to define between them a vertically disposed ventilating louvre throat,
(c) a member extending transversely of said skin plates adjacent each horizontal edge of said panel and between said vertically disposed stiffening members defining the vertical margins of said ventilating louvre throat,
(d) an opening through each said skin plate adjacent said transversely extending members connecting said louvre throat with the opposite faces of said door panel,
(e) perforated plate members in spaced relation to said skin plates defining opposite walls of said louvre throat between said skin plate openings and having their vertical marginal edges attached to said vertical stiffening members,
(f) louvre members closing said skin plate louvre openings,
(g) a porous non-continuous sound attenuating material filling the spaces between said skin plates and stiffening members and between said skin plates and perforated louvre lining plates and,
(h) closure members disposed between and secured to said skin plates for enclosing said porous material and defining the top and bottom horizontal edges of said door panel.

3,295,274
COMBINATION OF POLE ANCHOR WITH A GYM SET OR THE LIKE
Robert R. Fulton, Sycamore, Ill., assignor to De Kalb Toys, Inc., De Kalb, Ill., a corporation of Illinois
Filed Dec. 10, 1964, Ser. No. 417,337
1 Claim. (Cl. 52—148)



In combination with an inclined pole constituting an element of a frame normally subject to severe vibration,
(a) a pole anchor comprising a cylindrical rod provided with an eye at the upper end thereof and a threaded screw portion at the lower end thereof, ending in a ground-penetrating point,
(b) a spiral blade of a diameter several times that of the cylindrical rod affixed to the latter adjacent to the upper terminal of said threaded screw portion and provided with a sharpened radial edge for progressive spiral advance into the ground,
(c) an adjustable collar formed of a pair of flexible sheet-metal straps, one of said straps having a plurality of slots displaced longitudinally from one end thereof and the other one of said straps having a male member at one end thereof for selective interlocking engagement with one of said slots, the opposite end of each of said straps having an opening therein,
(d) a bolt passing through said openings in the straps and clamping the collar onto the pole with a fastening nut, a substantial distance above the foot of the pole engaging the ground, and
(e) a metallic link chain extending between the intermediate portion of said bolt on said collar and the eye at the upper end of said pole anchor.



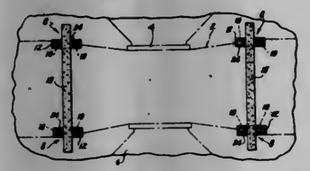
3,295,275
UTILITY POLE AND BASE CONSTRUCTION
Christian S. Carlsen, 1038 Kamus Drive, Fox Island, Wash. 98333
Filed June 30, 1964, Ser. No. 379,312
11 Claims. (Cl. 52—168)

1. An article of manufacture comprising a prefabricated base for a utility post or pole, said base being preferably formed of a molded concrete material and comprising a substantially cylindrical main body portion having a reduced one end, a plurality of connector elements embedded within said main body portion in circumferentially-spaced relation relative to one another and being disposed adjacent said reduced one end, said elements being elongated in the direction of the longitudinal axis of said main body portion and each having a passage extending longitudinally therethrough, an elongated rod for each of said connectors, each of said rods having a portion thereof extending through the passage of its associated connector and extending from end-to-end of said base, said rods being parallel to one another with their respective axes parallel to the longitudinal axis of said base, an L-shaped element for each of said connectors, said elements being embedded within said main body portion, each of said elements having a leg and a flange portion, said leg portion of each element being juxtaposed



against its respective connector element with the flange portion thereof extending radially inwardly toward the axis of said main body portion, said rods extending through, respectively, the immediately-adjacent flange of its associated element, and means connecting one end of said pole or post to said reduced end of said base, said means extending through said leg for connection with said connectors.

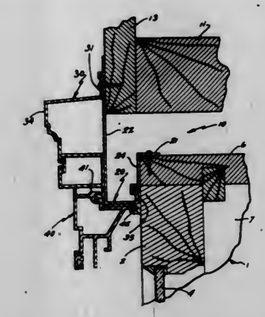
3,295,276
BRIDGE
J Stanley René, Lafayette, Ind., assignor to J Stanley René, Incorporated, Lafayette, Ind., a corporation of Indiana
Filed Feb. 10, 1964, Ser. No. 343,734
4 Claims. (Cl. 52—174)



1. A replacement bridge structure for replacing an existing bridge spanning a water course or the like with a minimum obstruction to traffic thereover, comprising: a pair of laterally spaced supports on each side of said water course, outwardly of the sides of the existing roadway, bearing means capping each of said supports below the level of the roadbed; a preformed and prestressed concrete beam spanning the space between and resting on the bearing means of each pair of supports and projecting therepast at roadbed level; and a bridge floor structure, of a width substantially equal to the length of said beams, spanning said water course and being supported at its opposite ends on said transverse beams.

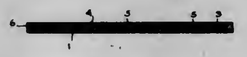
3,295,277
STRUCTURE FOR MOUNTING WINDOWS
William W. Potter, 1718 College SE., Grand Rapids, Mich. 49507, and Peter C. Cook, 2152 Osceola Drive SE., Grand Rapids, Mich. 49506
Filed May 11, 1964, Ser. No. 366,435
4 Claims. (Cl. 52—211)

1. A window structure adapted for mounting within a rough opening, comprising: a window including a head, jambs and a sill; one-piece extruded blind stops associated with said head, jambs and sill, said blind stops including first flanges secured to said head, jambs and sill; said blind stops including second flanges extending beyond the periphery of said window and lying in planes generally perpendicular to the planes of said first flanges and generally parallel to the plane of said window; said first and second flanges spaced from one another and joined through an angle along respective edges thereof; and extruded trim elements secured to said blind stops, said elements



secured to said second flanges and said angles, each of said trim elements including a flange lying aganist and secured to said second flanges of a respective one of said blind stops, a portion extending from the planes of said second flanges and away from said window, and a mating angle secured to said angle of a respective one of said blind stops.

3,295,278
LAMINATED, LOAD-BEARING, HEAT-INSULATING STRUCTURAL ELEMENT
Wilhelm Muhm, Wiesbaden, Germany, assignor to Etablissement Plastitect, Vaduz, Liechtenstein, a corporation of Liechtenstein
Filed Apr. 3, 1963, Ser. No. 270,424
2 Claims. (Cl 52—223)

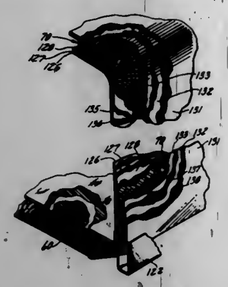


1. A load-bearing, heat-insulating structural element consisting of a heat-insulating intermediate layer of plastic foam, two covering layers of prestressed concrete facing opposite surfaces of the intermediate layer and imparting a compression and tensile strength to the element required for a structure wherein it is used, and a pluraltiy of concrete connecting dowels passing through bores in the intermediate layer and integral with the covering layers to interlock the three layers into a unitary element.

3,295,279
LAMINATED WALL UNIT FOR CARGO CONTAINERS AND OTHER ENCLOSURES
William B. Wilkins, Roxboro, N.C., assignor, by mesne assignments, to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 30, 1964, Ser. No. 355,789
20 Claims. (Cl. 52—268)

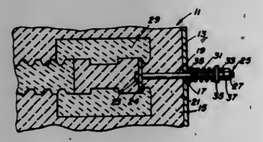
1. A wall unit of endless transverse cross section for use in a cargo container having a lower floor section and an upper lateral and top section comprising:
(A) a continuous sheet material extending in a circuit repetitively through said cross section and said section to form outer and inner laminae;
(B) substantially rigid panel means in said upper sec-

tion disposed between, and thereby spacing, said outer and inner laminae;



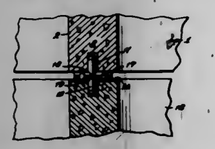
(C) said outer and inner laminae being juxtaposed and bonded together along portions thereof in said lower section.

3,295,280
FURNACE WALL ANCHORING STRUCTURES
Kay J. Kettner, Western Springs, Ill., assignor to The S. Obermayer Co., Chicago, Ill., a corporation of Ohio
Filed Apr. 9, 1964, Ser. No. 358,511
9 Claims. (Cl. 52—378)



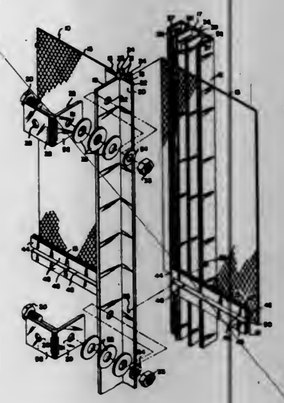
1. In a furnace of the soaking pit type, and including a monolithic plastic refractory wall and a metallic shell retaining said wall, the improvement comprising resilient anchor means connecting said wall with said shell for maintaining said wall and said shell coupled in stressed and yieldable relation, said resilient anchor means including an anchor member and a cooperating spring means resiliently urging said wall and said shell toward each other.

3,295,281
BUILDING BLOCK CONSTRUCTION WITH SPACER AND METHOD OF FABRICATING THE BLOCK
Daniel R. Dixon, Suite 808, Capitol Club Bldg., Raleigh, N.C. 27601
Filed Apr. 4, 1962, Ser. No. 185,004
8 Claims. (Cl. 52—442)



6. In a building construction, a pair of superposed blocks each having generally parallel upper and lower faces and first and second pairs of longitudinally-spaced dowel holes opening through said faces, respectively, each hole of one said pair being in vertical alignment with a corresponding hole of the other said pair, a dowel pin comprising a shank sized to have a smooth fit within said holes and a plurality of coplanar arms integral with and extending radially from the midportion of said shank, each said arm having a diamond-shaped transverse section in planes parallel to said shank defining uppermost and lowermost edges each in line contact with the corresponding face of a respective one of said blocks, the vertical distance between said edges being fixed and predetermined, and accurately determining the spacing between said blocks, all said arms of each said dowel pin lying in a common plane normal to the axis of the shank thereof, and mortar between and uniting said blocks.

3,295,282
GRID STRUCTURE AND PARTS THEREFOR OR THE LIKE
James E. Belcher, Jr., Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Nov. 7, 1962, Ser. No. 235,962
11 Claims. (Cl. 52—460)

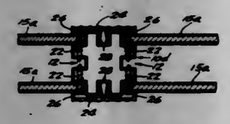


1. A grid structure comprising a pair of spaced furring and mullion means defining opposed inwardly facing channels, each furring and mullion means including a furring member and a mullion member detachably interconnected together and defining said channel thereof therebetween, a pair of spaced muntins disposed between said furring and mullion means and having ends respectively disposed in said channels, fastening means fastening said muntins only to said furring members, said muntins having opposed inwardly facing channels, and a panel means disposed in the space bounded by said muntins and said furring and mullion means and having edges thereof received in said channels, other fastening means fastening said panel means only to said furring members whereby said mullion members can be attached to and detached from said furring members without affecting the securement of said muntins and panel means to said furring members and whereby said panel means or muntins can be attached to and detached from said furring members without affecting the securement of the other to said furring members.

3,295,283
PANEL STRUCTURE AND FRAME MEMBER THEREFOR
John B. Griffith, 213 La Cadena Drive, and Clement C. Griffith, 1279 La Cadena Drive, both of Riverside, Calif. 92501
Filed Dec. 24, 1963, Ser. No. 333,099
7 Claims. (Cl. 52—475)

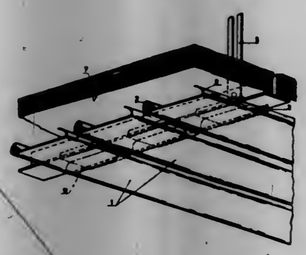
1. A panel structure comprising, in combination:
a plurality of elongated post members joined together to form a rectangular framework;
each of said post members consisting of a generally square, hollow tube having a pair of laterally spaced,

parallel ridges protruding from each of the four sides thereof;
said ridges on each side of said post member cooperating with the adjacent ridges on the adjoining side to define a rabbet groove at each corner of the post member;
each of said ridges cooperating with an adjacent ridge to define a plurality of panel seats on each of the four sides of said post member;
each of said ridges and each of said panel seats on one of said post members registering with the corresponding ridge and panel seat on the adjoining post



members, to form continuous ridges and panel seats around the inside of said rectangular framework;
a pair of rectangular panels mounted on said rectangular framework parallel to one another and spaced apart by a distance equal to the combined width of said pair of ridges and the channel defined therebetween;
and each of said panels having the edges thereof seated in one of said rabbet grooves on the adjacent side of said rectangular framework, said edges being secured to said post members by means of screws that are screwed into the sides of the ridges against which said panel bears.

3,295,284
BUILDING STRUCTURE, SUCH AS A WALL, A CEILING OR A LINING FOR A WALL OR CEILING
Werner Tschiesche, Essen-Stadtwald, Germany, assignor, by mesne assignments, to Hunter Douglas International Ltd., Montreal, Quebec, Canada, a corporation of Quebec
Filed July 3, 1962, Ser. No. 207,360
Claims priority, application Germany, July 3, 1961, T 13,494
6 Claims. (Cl. 52—483)



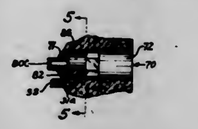
1. A building structure, such as a wall, a ceiling or a lining for a wall or ceiling, comprising at least two carrier members, holding members for carrying lamella elements side-by-side cross-wise to said carrier members, said holding members being provided with means for adjustably supporting them on a carrier member in lengthwise direction of said carrier member, the lamella elements having upturned edges and each holding member being formed by sheet metal and having at least two protruding portions clampingly engaging with the inside of the upturned edges of a lamella element, each lamella element being carried independently from one another by at least two adjustably arranged holding members for adjusting the distance between said lamella elements.

3,295,285
WALL REPAIR DEVICE
Henry L. Metz, 21401 Edgecliff Drive, Euclid, Ohio 44117
Filed June 26, 1964, Ser. No. 378,161
5 Claims. (Cl. 52—514)



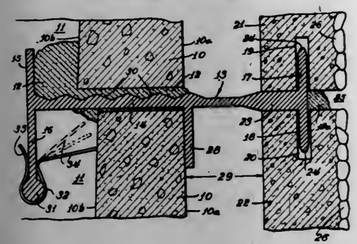
1. Apparatus for repairing a break in wall and to support patching plaster therein, said apparatus comprising an open-ended generally box-like member having one side thereof longer than another side; an expanded metal base on said box-like member to hold the patching plaster and permitting patching plaster to key in said expanded metal base; side walls serrated to points, said side walls permitting patching plaster to extrude between said points and thereby forming plaster keys against the rear surface of said wall; and expansible holding means for said box-like member having a first leg insertable through said expanded metal base and extending at an angle, said first leg engaging said expanded metal base across the rear surface thereof and having a second leg extending outwardly from said base beyond the points of said sidewalls and laterally thereof thereby adapted to extend through said break and across the edge of the break and across the front surface of said wall, said legs of said holding means being capable of being expanded from their free state when disposed, as aforesaid, to bias the serrated edges into engagement with the rear surface of said wall.

3,295,286
CEMENTITIOUS SLAB WITH BOLT MEANS
Wilbur A. Schaich, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Original application May 31, 1961, Ser. No. 113,942, now Patent No. 3,201,846. Divided and this application Dec. 30, 1964, Ser. No. 422,212
1 Claim. (Cl. 52—584)



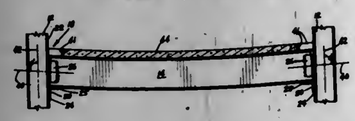
A reinforced cementitous slab for construction purposes comprising a rectangular mass of cementitious material having reinforcing mesh disposed intermediate and parallel to its major faces, said mesh comprising longitudinal and transverse wires, a bolt-receiving aperture traversing said mass and disposed adjacent to the wires of said mesh, said aperture having an enlarged countersunk portion at one end and receiving a bolt having a bolthead having a flattened peripheral chord portion, and a portion of one of the wires of said mesh traversing a peripheral chord area of said countersunk portion and being in engagement with the peripheral chord portion of the bolthead, thereby permitting the head of an inserted bolt to seat upon said wire portion.

3,295,287
CURTAIN WALL SUPPORT
Anthony V. Pasquale, 4021 Prairie Ave., Schiller Park, Ill. 60176
Filed July 30, 1964, Ser. No. 386,211
7 Claims. (Cl. 52—714)



1. A wall tie for use in erecting a curtain wall of panels having edge openings therein in front of a backup wall of blocks having a central opening therein, said tie including: a pair of coplanar forward projections adapted to be positioned vertically and received in said edge openings; a rigid intermediate member extending rearwardly of said projections and including means immediately to the rear of said projections to contact said edges to space the adjacent panels a given distance apart; a downwardly extending intermediate projection a spaced distance rearwardly of the forward projections, parallel thereto and adapted to abut the front face of a block at a mortar joint, said intermediate portion extending rearwardly from said intermediate projection to project through said mortar joint and having a wavy face thereon; and adjustable means secured to said intermediate portion rearwardly of the front inner face of the block at the central opening and extending downwardly and forwardly to contact said front inner face to lock the tie on the block.

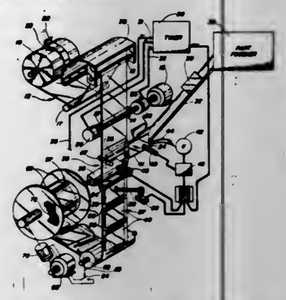
3,295,288
FRAME CONSTRUCTION METHOD
Harold P. Bakke, 815 N. Kingsview Lane, Minneapolis, Minn. 55427, and Elmer J. Kopp, 4130 Ottawa Ave. S., Minneapolis, Minn. 55416
Filed July 5, 1963, Ser. No. 293,089
7 Claims. (Cl. 52—741)



1. A method of constructing a supporting framework including a plurality of vertically disposed columns and a plurality of horizontally disposed beams extending therebetween, the steps of first, fastening the ends of each of the beams to each of the columns to provide a hinged connection therebetween; second, placing a load at the center of said beam to deflect the center thereof downwardly; third, rigidly connecting each end of the beam to the column to thereby prevent further pivotal movement between the beam and the column about a horizontal axis.

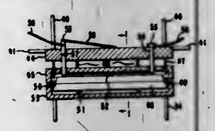
3,295,289
POUCH FORMING AND FILLING METHOD AND APPARATUS
Dean J. Critchell, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 11, 1964, Ser. No. 344,073
11 Claims. (Cl. 53—28)

8. A pouch forming and filling method comprising the steps of:
intermittently driving a continuous, heat-sealable, folded web member;
spreading the folded web member as it passes a filling station;
inserting an item in the spread portion of the web member at the filling station;



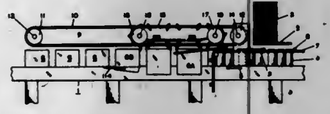
advancing the web member to a pouch forming station;
laterally sealing the web member in back of the item just inserted therein; and
storing the pouched web member in a container having closely fitting side members to contain the items in the pouches.

3,295,290
APPARATUS AND PROCESS FOR PACKAGING ARTICLES IN SHRINKABLE FILMS
John George Selby Billingsley and Harold Eugene Ramsey, Newark, Del., and Paul Glenn Stephan, Landenburg, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 9, 1963, Ser. No. 271,732
6 Claims. (Cl. 53—28)



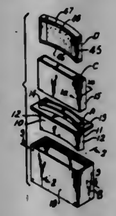
5. An apparatus for heat-sealing heat shrinkable film comprising, in combination: an upper assembly having a stationary bar, a movable clamping bar resiliently suspended from said stationary bar, a heated wire suspended from said stationary bar through said movable clamping bar and pins attached to said stationary bar and extending through said movable clamping bar and a lower assembly having a grooved clamping bar in alignment with said upper movable clamping bar, a tucker bar resiliently mounted in the groove of said grooved clamping bar and adapted to be depressed by said pins attached to said upper assembly, said upper and lower assemblies mounted to be guided into clamping and sealing actuating positions.

3,295,291
PACKAGING MACHINE AND METHOD
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed June 17, 1963, Ser. No. 288,083
13 Claims. (Cl. 53—32)



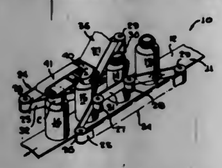
12. A method of packaging a plurality of articles in a wrapper blank having a top panel, side panels foldably joined to the side edges of the top panel, and panels foldably joined respectively to the end edges of the top panel, anchor panels foldably joined respectively to the end edges of the side panels, and collapsible web structure respectively interconnecting the end edges of the end panels with the end edges of the adjacent anchor panels, the method comprising arranging the articles in a group of two rows of a plurality of articles in each row, moving the group along a predetermined path, placing the blank in transverse relation to the path of movement of the articles with the end and anchor panels in leading and trailing relation, moving the blank in synchronism with the group of articles, applying a tucking force to each web structure on both the leading and trailing edges of the blank to fold the web structure and the end and anchor panels relative to the top and side panels respectively and causing the folded end panels to be secured against the articles by moving the point of application of the tucking forces transversely inwardly of the top panel while the tucking force is being applied.

3,295,292
FURNITURE FORMING SYSTEMS
Martin A. Marshak, Searingtown, N.Y. (101–12 84th St., Ozone Park, Long Island, N.Y. 11101)
Filed May 13, 1963, Ser. No. 279,783
9 Claims. (Cl. 53—37)



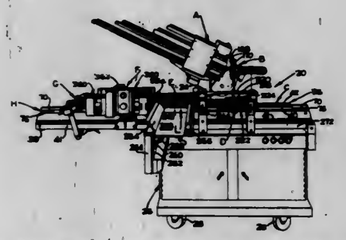
1. A method of forming furniture seats and backs provided with plastic covers, which includes providing a form corresponding in shape but larger than the article to be formed, placing an inverted plastic bag having an open mouth and closed bottom and side edges into the mouth of said form, said bag corresponding to said cover in said form, applying a vacuum to the exterior of said form to cause inversion of the plastic cover to proper shape thereinto, stretching and drawing the inverted bag into said form so that the sides and bottom of the bag are inverted, due to the force of said vacuum and said vacuum drawing the sides and bottom of said bag after inversion against the sides and bottom of said form filling the inverted bag, releasing the vacuum and then closing the open mouth thereof.

3,295,293
METHOD OF APPLYING SNAP-CAPS TO RESILIENT CONTAINERS
William F. Lodding, Orland Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 13, 1963, Ser. No. 308,819
11 Claims. (Cl. 53—40)



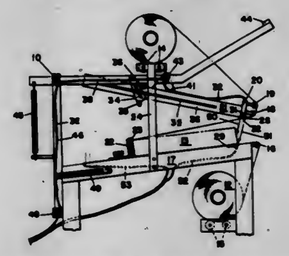
1. A method of securing a closure to a neck of a resilient container comprising the steps of applying forces against portions of a resilient container to temporarily deform a neck of the container, positioning a closure upon the neck while the neck is temporarily deformed, relieving the applied forces to reshape the neck and therewith securing the closure to the neck of the resilient container.

3,295,294
CARTON HANDLING MACHINE
Robert K. Galloway, Hoopeston, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 29, 1963, Ser. No. 305,354
19 Claims. (Cl. 53—252)



14. Carton handling apparatus comprising means for intermittently conveying a procession of spaced cartons along a predetermined path, means for singularly feeding cartons from a stack to said conveying means, and means for feeding articles into said cartons on said conveying means at a position spaced downstream from said feeding means, said conveying means comprising a support, ratcheting conveyor means mounted in said support and extending lengthwise of said path, said conveyor means including a carrier portion movable lengthwise of said path and a holding portion, and powered means for reciprocating said carrier portion forwardly and rearwardly of said path, said carrier portion including means for advancing the cartons during forward movement of the carrier portion, said holding portion including means for restricting rearward movement of said cartons during rearward movement of said carrier portion, said feeding means being operative to feed articles into said cartons during the rearward movement of said carrier portion.

3,295,295
THERMOPLASTIC FILM PACKAGING APPARATUS
Walter William Stewart, Thornton, Pa., and Frank Edward Timmons, Deerfield Beach, Fla. (both of 19 Stone Ridge Road, Thornton, Pa. 19373)
Filed Oct. 1, 1963, Ser. No. 312,992
6 Claims. (Cl. 53—390)



1. A thermoplastic film packaging apparatus comprising a work table having a plurality of adjustable heating elements located thereon and a movable heat sealing and pressure means, means mounting said movable heat sealing and pressure means above said work table, said mounting means comprising a fixed pivot and two movable

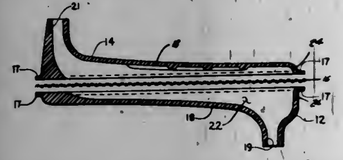
pivots whereby said movable heat sealing and pressure means travels through a dual arcing path when being lowered into contact with said heating elements.

3,295,296
SEPARATING COLUMNS FOR GAS CHROMATOGRAPHY
Istvan Halasz and Csaba Horvath, Frankfurt am Main, Germany, assignors to The Perkin Elmer Corporation, Norwalk, Conn.
Filed Oct. 21, 1963, Ser. No. 317,714
Claims priority, application Germany, Oct. 23, 1962, H 47,198
17 Claims. (Cl. 55—67)



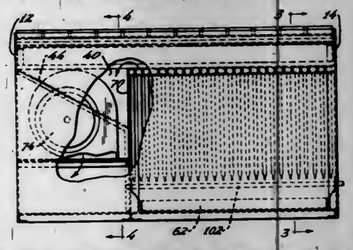
1. A process for fabricating an elution chromatography separating column from an elongated capillary tube, said tube having a layer of solid material disposed on an inner surface thereof, comprising the steps of:
filling an elongated capillary tube with a stable suspension, including a dispersive liquid and particles of the solid material,
closing the tube at an end thereof, and
evaporating the dispersive liquid from the tube by progressively heating the tube beginning at an open end thereof, thereby forming a solid porous layer on the inner surface of the tube.

3,295,297
FILTER AND BUBBLE TRAP
Robert M. Collins, La Canada, Calif., assignor to Cobe Laboratories Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 19, 1965, Ser. No. 497,965
2 Claims. (Cl. 55—178)



1. A device for separating solid and gas embolisms entrained in a liquid comprising:
(a) a pair of circular dish-like shell members of the same diameter each including rim and concave portions;
(b) a screen member;
(c) the rim portions of said shell members being secured together in liquid tight relation defining a chamber and having said screen member secured therebetween;
(d) first and second passage means of circular cross-section provided in each of said pair of shell members adjacent their respective rim portions;
(e) in the assembled relation of said pair of shell-like members said first and second passage means having a diametrical opposite relation and normally providing ingress and egress, respectively, for liquid flowing through said chamber;
(f) the area of said screen member secured between said rim portions being at least fifteen times the area of one of said first and second passage means;
(g) first and second apertures provided in each of said pair of shell-like members adjacent the rim portions thereof and said first passage means in the assembled relation of said pair of shell-like members and through which gas embolisms separated from liquid flowing through said chamber may escape;
(h) and a plurality of crescent shaped embossments on the inside surface of the one of said pair of shell-like members having said second passage means therein with the crest of each embossment coinciding with the plane containing the axes of said first and second passage means and the concave portion of the other of said pair of shell members sloping generally upwardly toward, and the concave surfaces of said embossments facing, said second passage means, said embossments being spaced from said screen member.

3,295,298
DUST COLLECTING DOWN DRAFT BENCH
Kenneth J. Mackey, St. Paul, Minn., assignor to Torit Manufacturing Company, St. Paul, Minn., a corporation of Minnesota
Filed May 18, 1964, Ser. No. 368,025
10 Claims. (Cl. 55—305)



7. A dust collecting down draft bench comprising:
(a) a hollow body having a bottom integrally secured to upstanding continuous walls and a grid top through which dust laden air may pass,
(b) said body having an air discharge opening,
(c) blower means in said body adapted to discharge air through said opening,
(d) an elongated downwardly sloping roof member overlying said blower means extending between opposed walls,
(e) said roof member having an edge spaced from a wall connecting said opposed walls,
(f) shelf means intermediate said bottom and said roof member secured to said roof member along marginal edges to form an air duct means,
(g) said shelf means having a plurality of elongated apertures in spaced side by side relation,
(h) a plurality of elongated filter bags having an open end and a closed end and spacer means in said bags to hold said bags in extended non-collapsing relation,
(i) each said filter bag having its open end coterminously secured in a said aperture,
(j) said duct means having an air opening relative to said blower through which filtered air is adapted to be drawn by said blower,
(k) partition means extending between said shelf means and said bottom intermediate said blower and filter bags partitioning said blower from dust laden air in said body.

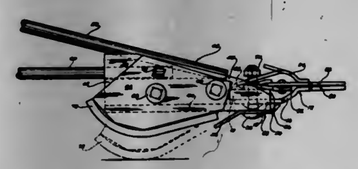
3,295,299
AGRICULTURAL MACHINE
Dale W. Brady, Altoona, and Erwin J. Erp, Des Moines, Iowa, assignors to Brady Manufacturing Corporation, Des Moines, Iowa, a corporation of Ohio
Filed Sept. 11, 1964, Ser. No. 395,815
7 Claims. (Cl. 56—24)

1. An agricultural machine for chopping corn stalks or other harvestable semi-dried crops and for the direct feeding thereof into a baler and for the operation of such baler to receive chopped crop material comprising a frame, means mounting said frame for ground traversing movement, a generally semi-cylindrical hood received on said frame and extending transversely to the line of travel thereof, said hood having a closed front portion and top and being open at the bottom thereof and at the rear thereof, a knife shaft, means mounting said shaft for rotation in said hood transverse to said line of travel adjacent the front of said hood and extending across the width thereof, a plurality of crop engaging knives pivotally mounted on said shaft for engagement with crop for chopping said crop and for directing said chopped material upwardly and rearwardly within said hood, power take off means on said frame adapted for connection to the PTO drive of a tractor and having means connected to drive said shaft, a duct extending transversely across said hood at said top to receive said chopped material therefrom through said rear opening, means in said duct at the top thereof forming a transverse deflector



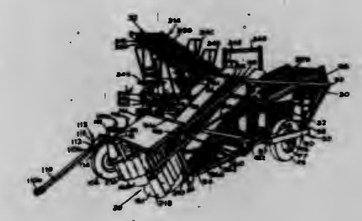
tab extending inwardly into said duct and an opening formed rearwardly of said deflector tab for interrupting the tendency of chopped material to flow along the top of said duct providing utilization of the full cross-section thereof, said duct being extended rearwardly generally along the line of travel of said machine and terminating in a spout adapted to discharge said chopped material therethrough, means on said frame for attaching a baler thereto for ground traversing movement with said frame, power take off means on said frame in driven relation to said PTO drive shaft and having means thereon engageable with the drive shaft of such baler for applying power from such tractor to such baler, said duct at said discharger spout having a rearwardly extending length in relation to such baler for discharging said chopped material rearwardly through an open air space directly into the baler pickup reel providing for the gravitational separation of deleterious heavy objects while permitting such baler pickup reel to be operated above ground level.

3,295,300
AGRICULTURAL IMPLEMENT
Laurel R. Yeske, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Mar. 31, 1964, Ser. No. 356,216
6 Claims. (Cl. 56—296)



1. A cutting mechanism of the type to be carried by a mobile support for harvesting crop material in a path parallel to the path of movement of said support, said mechanism comprising a bar carried on said support in a position generally parallel to the ground and transverse to the path of movement of said support, a knife including a plurality of sickle sections reciprocable along the bar, a cutting plate fixed along the length of said bar in a position cooperating with said sickle sections to cut crop material presented to said cutting mechanism by movement of said bar with said mobile support, said cutting plate being sufficiently thin to be resiliently flexible and made of
spring material and providing a plurality of
ledger portions projecting forwardly from said bar and shaped to be substantially congruent with said sickle sections in one position of said knife, said cutting plate having a portion fastened beneath said bar, projecting forwardly and
bending upwardly and again forwardly at a point spaced forwardly of said bar to provide a channel forwardly of said bar for reciprocation of a portion of said knife in said channel, said ledger portions being located in supporting relation to said sickle sections and slightly
upwardly inclined toward said sickle sections to be depressed by said sickle sections into correct face to face seating relation with said sickle sections, and into correct shearing contact between said sickle sections and said ledger portions.

3,295,301
APPARATUS FOR HARVESTING CROPS
Olin L. Looker, Hoopeston, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 505,115
8 Claims. (Cl. 56—327)

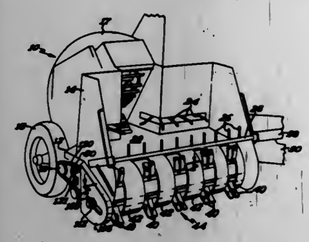


1. In a machine for gathering crops located in a row and for separating fruit from the plants on which they grew, a frame having forward and rearward portions and being mounted for forward earth traversing movement in a predetermined path of travel aligned with a row of crops to be gathered; and an elongated conveyor mounted in said frame in substantial alignment with said path of travel, having a forward end for gathering crops in said row, said conveyor including an intermediate section for conveying gathered crops rearwardly in said frame and being supported for reciprocating movement longitudinally of said conveyor so as to shake fruit loose from their plants during said rearward conveyance, said intermediate section being perforate to permit fruit to drop therethrough, and a rear end for discharging plants from which fruit has been separated from the conveyor, said forward end, said intermediate section, and said rearward end being integral parts of said elongated conveyor.

3,295,302
GRAIN PICKUP WITH RUBBER TEETH
Robert E. Lee, Larimore, N. Dak. 58251
Filed May 24, 1965, Ser. No. 458,091
9 Claims. (Cl. 56—364)

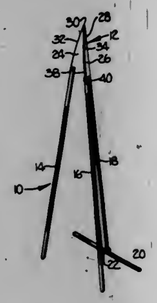
1. In a device of the class described, in combination: a support structure including a plurality of elongated members; a plurality of generally rectangular platelike flexible tooth members secured at one edge in spaced relationship along the extent of the elongated members;

means connected to the support structure to move the elongated members in an orbital path about an axis generally parallel to the extent of the elongated members such that the tooth members thereon are adapted to pick up grain; stationary guide means positioned adjacent the support structure and including a plurality of guide plates intersecting part of the path of orbital movement



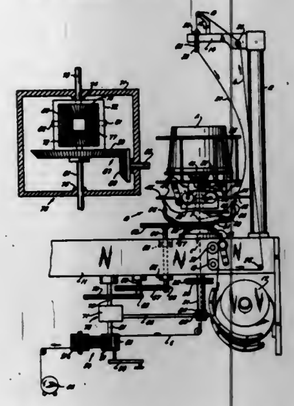
of the elongated members and substantially filling the spacing between the spaced flexible tooth members on the elongated members such that the tooth members project beyond the guide plates in a portion of their path of relative movement and provide a wiping action with the guide plates to provide positive grain pickup and unloading of the grain picked up by the tooth members.

3,295,303
ROPE-SPLICING DEVICE
Levi Clark Beveridge, 123 Ann St., Beaufort, N.C. 28516
Filed Sept. 28, 1964, Ser. No. 399,491
10 Claims. (Cl. 57—23)



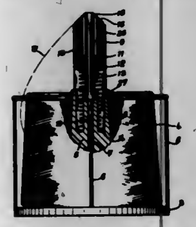
1. A rope-splicing device comprising:
(a) a base member adapted to stand upon a supporting surface;
(b) a spike member mounted in a substantially upright position upon said base member and having a pointed upper end upon which the rope is adapted to be impaled;
(c) said spike member being tapered and having three peripheral edges extending downwardly from said pointed upper end thereof in diverging relationship to each other for spreading open the impaled rope as the same is moved downwardly of said spike member;
(d) said spike member having a longitudinally-extending passageway of increasing cross-sectional area from said upper end to the lower end thereof, and the space between two of said edges of said spike member being open and communicating with said passageway.

3,295,304
APPARATUS FOR TWISTING AND PLYING STRANDS
Alfred W. Vibber, 630 5th Ave., New York, N.Y. 10020
Filed Sept. 9, 1964, Ser. No. 395,195
36 Claims. (Cl. 57—58.3)



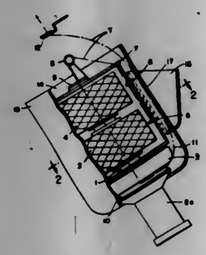
1. In apparatus for twisting together two strands to form a two-ply cord having a source of supply of a first strand, means to rotate a second strand in a loop about the source of supply of the first strand, a first means to feed the first strand at substantially constant speed toward a plying point, a second means to feed the second strand into the loop, and a third, variable speed means for feeding the plied cord to withdraw it under tension from the plying point, the improvement which comprises a first, driving shaft and a second and third differentially connected shafts driven by the first shaft, means for driving the first shaft at constant speed, means drivingly connecting the second shaft to the third feeding means, and means responsive to variations in the tension in the second strand in a zone thereof between the second feeding means and the plying point for varying the speed of rotation of the third shaft, whereby to increase the tension imposed upon the cord by the third feeding means when the tension in the second strand at such zone thereof increases, and to decrease the tension imposed upon the cord by the third feeding means when the tension in the second strand at such zone thereof decreases.

3,295,305
DOUBLE TWISTING SPINDLE
Klaus Nimtz, Krefeld, Germany, assignor to Palitex Project-Company G.m.b.H., Krefeld, Germany
Filed Dec. 15, 1964, Ser. No. 418,444
Claims priority, application Germany, Dec. 21, 1963, N 24,198
15 Claims. (Cl. 57—58.49)



1. A two-for-one spindle, which includes: substantially vertical spindle means adapted to receive and support a bobbin and provided with an axial thread passage therethrough, and a body of solid thread treating means surrounding said passage and having a surface portion exposed toward the outside for contact with a thread prior to such thread entering said passage.

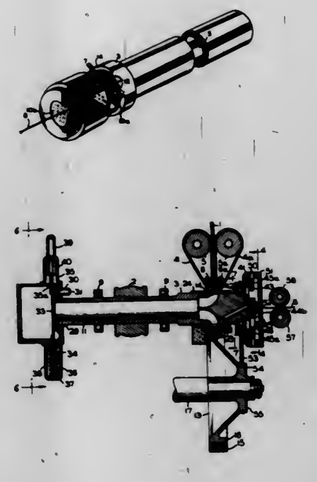
3,295,306
DOUBLE TWIST TWISTING PROCESS AND APPARATUS
Karl-Heinz Rehn, Remscheid-Lennep, Germany, assignor to Barmer Maschinenfabrik Aktienges, Wuppertal-Oberbarmen, Germany
Filed Nov. 20, 1964, Ser. No. 412,632
Claims priority, application Germany, Nov. 30, 1963, B 74,466
14 Claims. (Cl. 57—58.83)



6. In combination with a double twist thread twisting apparatus having a hollow bobbin spindle and a thread contacting surface for upwardly guiding the twisted thread into and through an outer balloon pattern, continuous supply means for coating a small amount of lubricating agent onto the external surface of said twisted thread from said thread contacting surface, said supply means being located adjacent to and in liquid connection with said thread contacting surface.

3,295,307
METHOD AND MACHINE FOR MAKING YARN FROM STAPLE FIBER
George J. Kyame and Herbert R. Copeland, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Oct. 5, 1964, Ser. No. 401,743
18 Claims. (Cl. 57—58.89)

1. A yarn spinning machine comprising in combination a housing, a spindle mounted for rotation in the housing, the housing including internal surfaces parallel to the external surface of the spindle, and spaced from the external surface of the spindle to define a yarn transfer chamber extending about the spindle, means forming a fiber spinning zone on the spindle contiguous with the external surface of the spindle, the fiber spinning zone including means for holding unspun fibers on the fiber spinning zone, the spinning zone extending circumferentially of the spindle in generally perpendicular relation with the axis of rotation of the spindle and having a circumferential dimension substantially greater than its axial dimension, a roller mounted for contact with the spindle to rotate with the spindle as the spindle rotates and positioned laterally to overlap the fiber spinning zone; a recess in the spindle surface adjacent the spinning zone and aligned therewith and extending circumferentially of the spindle to include that circumferential portion of the spindle surface not occupied by the spinning zone, a yarn passageway including an inlet opening on the external surface of the spindle in circumferential alignment with the spinning zone, the yarn passageway extending from the inlet opening toward the axis of the spindle and axially of the spindle terminating in a yarn outlet in the end of the spindle and in substantial alignment with the central axis of the spindle, means for withdrawing spun yarn from the passageway, and means for introducing unspun yarn into the yarn transfer chamber, the last-named means including means forming a fiber entry port in the housing communicating with the yarn transfer chamber in substantial alignment with the fiber spinning zone.



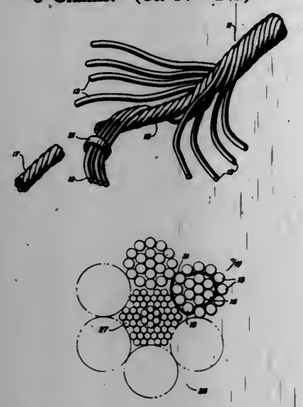
3,295,308
MULTIFILAMENT POLYOLEFIN CARPETS OF NON-REGULAR CROSS-SECTION AND METHOD OF MANUFACTURE
David W. Raynolds, Hopewell, Va., Arthur S. Smith, Kingsport, Tenn., and Frank W. Abernathy, Framingham, Mass., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,799
5 Claims. (Cl. 57—140)

1. As a new article of manufacture a blend of fibers in strand form useful for the manufacture of fabric floor covering and other fabric type products where it is desirable to improve the resistance to indentation of the fabric product from the weight of an object resting on the fabric, said blend of fibers containing substantial amounts of at least two different man-made fibers from the group consisting of polyolefins, polyesters, polyamides, polyacrylonitriles, modacrylics, cellulose esters and viscose, the blend being particularly characterized in that one of the man-made fibers therein is present from a substantial and easily observable amount up to 50% of the blend by weight and that said one fiber in said strand is comprised of at least 7 relatively small non-circular cross-section filaments of a denier per filament less than 30 and a total denier of less than 6250, said filaments having an essentially uniform cross-section along the fiber length and said cross-section consisting of three integrally joined, substantially symmetrical lobes, said cross-section having a tip radius ratio and an arm angle such that said tips of the individual filaments contact other filaments in the blend to reinforce each other and thereby impart improved resistance as aforesaid, said filaments having in general a Y-shaped cross-section in which the ratio of the length of the legs of said Y to the width of said legs is within the range of 3:1 to 5:1.

3,295,309
METHOD AND MEANS FOR PREVENTING CENTER WIRES FROM WORKING OUT OF A STRAND OF A WIRE ROPE SPLICE

David W. Gathman, Williamsport, and Charles A. Foster, Linden, Pa., assignors to Bethlehem Steel Company, a corporation of Pennsylvania

Filed Sept. 28, 1964, Ser. No. 399,714
6 Claims. (Cl. 57—142)

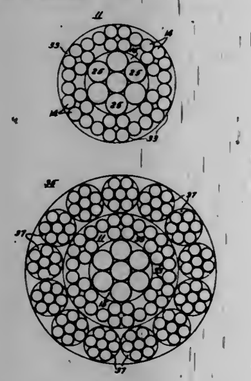


5. In a tuck in a wire rope splice a structure comprising:
(a) a two-operation strand,
(b) the inner operation ending just prior to the tuck,
(c) a compressed metal sleeve surrounding and securing together the inner operation and several adjacent wires of the outer operation close to the end of the inner operation and adjacent the core of the rope,
(d) the outer operation wires being normally disposed about the inner operation and compressed metal sleeve.

3,295,310
WIRE ROPE PARTICULARLY USEFUL FOR INDEPENDENT WIRE ROPE CORE

Arthur F. Beighley, Williamsport, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware

Filed Mar. 27, 1964, Ser. No. 355,323
4 Claims. (Cl. 57—145)



1. An IWRC comprising:
(a) a helically laid seven-wire core strand,
(b) six six-wire centerless outer strands helically laid around said core strand and flattened thereagainst,
(c) the diameters of the wires of said outer strands being smaller than the diameters of the wires of the core strand,
(d) the outer strands having substantially the same lay as the core strand, and
(e) the outer strands being of lang lay construction.

3,295,311
DEAD END AND METHOD OF MAKING THE SAME

Tom E. Butz, Chagrin Falls, and Seymour N. Schlein, University Heights, Ohio, assignors to The Fanner Manufacturing Company, a Division of Textron Inc., Cleveland, Ohio, a corporation of Rhode Island

Filed Dec. 6, 1965, Ser. No. 511,604
16 Claims. (Cl. 57—145)



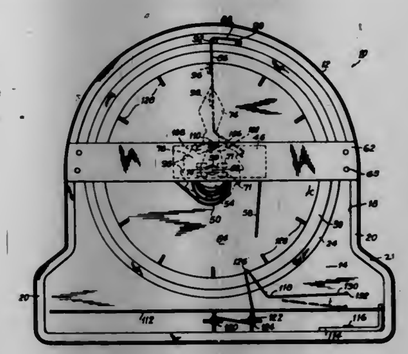
1. Means for holding a line to a support, said means being characterized in that it has resistance to peeling and slippage when applied to said line, said means comprising:
a plurality of resilient elements;
said elements each having helically preformed end portions and an intermediate substantially straight portion joining said helically preformed end portions;
each of said elements of said helically preformed end portions substantially conforming as to pitch length and internal diameter;
said elements positioned in side-by-side relationship with one another to form a group;
said group of elements being bent within said intermediate straight portion to form a substantially straight bight section being free of a complete helical revolution;
legs extending from the respective ends of said straight bight section;
each of said legs comprising said helically preformed portions of said elements; and
said elements in said group being limited in number to provide upon the intertwisting of both of said legs about said line more than half lay but less than full lay coverage of said line.

3,295,312
TOY CHIMING CLOCK

William Nutting, New York, and John Joslyn, Suffolk, N.Y., assignors to Kohner Bros., Inc., New York, N.Y., a corporation of New York

Filed Mar. 2, 1965, Ser. No. 436,582
8 Claims. (Cl. 58—106)

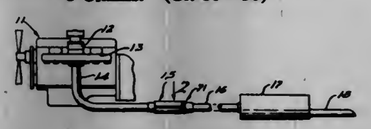
1. A toy chiming clock comprising a clock face, a set of clock indicia circumferentially spaced at horal locations on the clock face, a clock hand, a first rotatable element carrying the clock hand, a second rotatable element rotatably mounted coaxially of said first element, means drivingly engaging the second element to the first element for common rotation only in the clockwise direction, manually operable means for turning the second element and thus the first element so that the hand rotates in a clockwise direction from an initial 12 o'clock location through not more than about 360° to any desired one of the horal locations, spring means biasing the first element and thus the hand for counterclockwise rotation from said desired horal location to said initial location, means releasably retaining the first element and thus the hand at said horal location, a windup spring motor having an input/output shaft, said motor being wound by clockwise rotation of said shaft and when unwinding driving said shaft in the counterclockwise direction, means securing the second element to the shaft for common rotation whereby rotation of the manually operable means winds said motor and unwinding of the motor rotates the second element in a counterclockwise direction, a sounding element, a hammer mounted to strike so as to sound said element, means carried by the second element for repetitively driving the hammer only upon counterclockwise rotation of the element to its initial 12 o'clock position so as to sound said element a number of times indicative of the horal location at which the clock hand is retained, and means carried by the second element for releasing the retaining means only after the second element rotates to its initial 12 o'clock location and the emission of sounds from the sounding element has terminated.



3,295,313
EXHAUST SYSTEM

Ervin C. Lentz, Jackson, Robert C. Bonner, Napoleon, and Robert N. Balluff, Rives Junction, Mich., assignors to Walker Manufacturing Company, a corporation of Delaware

Filed Aug. 12, 1965, Ser. No. 479,172
6 Claims. (Cl. 60—30)

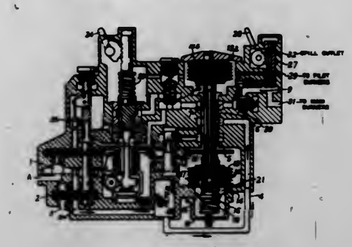


1. A device for introductory secondary aid into the exhaust system of an internal combustion engine for assisting in consuming unburned smog producing exhaust gas constitutents comprising means defining an exhaust gas flow passage from the engine, means defining a venturi section in said exhaust gas flow passage, a two-part housing, baffle means dividing said housing into two halves, means including said baffle means defining a first passage in one of said halves running substantially the length of said housing, said first passage having an inlet opening through said housing at one end thereof and being closed at its other end by said housing, means including said baffle means defining a second passage in other of said halves, an opening in said baffle means contiguous to said other end of said first passage and contiguous to one end of said second passage defining a flow path between said passages, and means providing a flow path between the other end of said second passage and the throat of said venturi section for introducing secondary air into said exhaust gas passage through said venturi section via said housing.

3,295,314
LIQUID FUEL SUPPLY SYSTEMS FOR GAS TURBINES

Robert Barry Matthews, Chandler's Ford, Eastleigh, and John Parkin Whitehead, Fareham, England, assignors to Plessey-UK Limited, Ilford, England, a British company

Filed May 15, 1964, Ser. No. 367,928
Claims priority, application Great Britain, May 31, 1963, 21,869
2 Claims. (Cl. 60—39.28)



1. A fuel-supply system for a gas-turbine engine including a combustion chamber equipped with burner means, a turbine rotor and an aerodynamic combustion-air compressor rotating with said rotor, said compressor having an air inlet and a delivery outlet, wherein the fuel-supply system comprises: a fixed-displacement fuel pump having a fuel-delivery outlet; means for drivingly connecting said pump to such engine; a distributor slide valve having an inlet connected to said fuel-delivery outlet, a first port for connection to the burner means of said engine, a second port for returning excess fuel to said pump, and a slide valve element movable between two terminal positions to vary the exposed areas of said ports, said valve element having an abutment, and said ports and valve element being so constructed that for any position to which the slide valve element is thus movable, the exposed area of each said port is a linear function of the distance of the valve element from one of said terminal positions and the sum of the exposed areas of said two ports is independent of the position of said slide valve element; a throttle valve in said return line; and means differentially responsive to the pressures at said two ports to so vary the position of said throttle valve as to equalise the pressures in said ports; means actuating the said slide valve element, said means including a first spring-loaded bellows acted-upon, against its spring loading, by the absolute pressure at the air intake of said compressor; and a second spring-loaded bellows acted-upon, against its spring loading, by the difference between the respective pressures at the delivery and intake of said compressor, said second bellows being arranged, when the ratio of absolute delivery pressure to absolute intake pressure exceeds a predetermined value, to strike, and move jointly with, the abutment of the slide valve element.

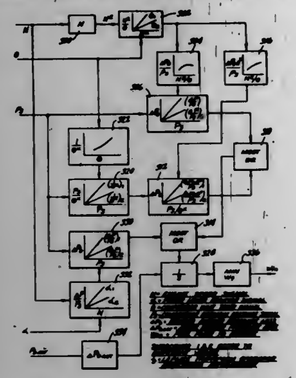
3,295,315
FUEL CONTROL

Louis A. Urban, Granby, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed May 22, 1964, Ser. No. 369,418
12 Claims. (Cl. 60—39.28)

1. For a turbojet engine having a compressor, a heat source and a turbine receiving the discharging products from said heat source for driving the compressor, a source of fuel under pressure, connecting means interconnecting said source and said heat source, fuel regulating means in said connecting means for regulating the flow of fuel therein, means responsive to compressor discharge pres-

sure, pressure drop across the heat source, compressor inlet temperature and a parameter of engine operation for



controlling said regulating means, said means including computing means for establishing a scheduled value for satisfying the expression

$$\frac{\Delta P_b \theta^x}{P_3}$$

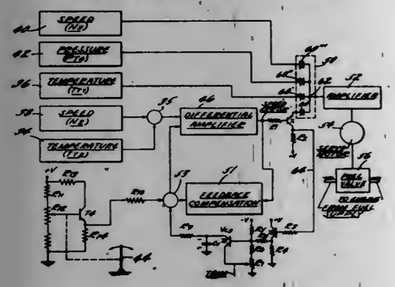
where

ΔP_b=desired pressure drop across the heat source
θ=compressor inlet temperature
x=a thermodynamic value of the engine working medium
P_3=compressor discharge pressure.

3,295,316
SPEED OVERSHOOT LIMITER FOR FUEL CONTROLS

Finton J. Beatrice, Broad Brook, and Richard A. Allen, Vernon, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 10, 1964, Ser. No. 373,942
8 Claims. (Cl. 60—39.28)

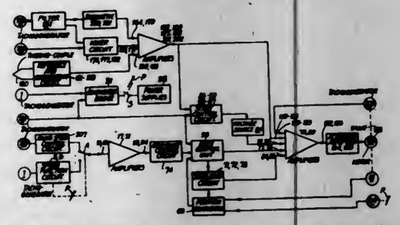


1. In a control for a device having first and second variable parameters of operation, means for sensing the value of a first variable, means for establishing a reference value of said first variable, means for comparing the sensed value and the reference value of said first variable and producing a first control signal, means for producing a second control signal responsive to a second variable, means for conducting said first control signal to the device to change the value of said first variable, means responsive to an increase in said reference value for said first variable for disconnecting said first control signal from said device and for conducting said second control signal to said device, and means operative during the period when said second control signal is connected to said device for temporarily reducing the established reference value of said first variable.

3,295,317
FUEL CONTROL SYSTEM FOR GAS TURBINE ENGINES

Benjamin Edward Blackaby, Tewin Wood, England, assignor to Hawker Siddeley Dynamics Limited, Hatfield, England, a company of Great Britain

Filed Aug. 9, 1965, Ser. No. 478,101
Claims priority, application Great Britain, July 17, 1959, 24,718, 24,719, 24,720, 24,721
13 Claims. (Cl. 60—39.28)



1. A control system for a gas-turbine engine which includes a compressor turbine, the system comprising means for generating a first electric signal which represents a datum temperature which the actual engine temperature should not generally exceed, means for generating a second electric signal which represents the actual engine temperature, means responsive to compressor-turbine speed and to ambient temperature to generate a third electric signal which represents, at any given compressor-turbine speed and at any given ambient temperature, the amount by which the said datum temperature must be decreased in order to prevent the engine entering a surge region, means for subtracting the second and third electric signals from the first electric signal to derive a fourth electric signal which represents the difference between the actual engine temperature and the datum temperature when decreased by the said amount, a unidirectionally electrically conductive device supplied with the fourth electric signal and arranged to pass that signal only when it is of a polarity indicating that the actual engine temperature has exceeded the datum temperature when decreased by the said amount, control means responsive to the output of the unidirectionally conductive device to control the supply of fuel to the engine in the sense to tend to decrease that fuel supply, means responsive to the actual engine temperature to generate a fifth electric signal as a function of the rate of change of the actual engine temperature, and means for modifying the fourth electric signal as a function of the fifth electric signal such that, when the actual engine temperature does not exceed the datum temperature when modified by the said amount and when the rate of change of the function of the rate of change of the actual engine temperature exceeds a predetermined value, the polarity of the fourth electric signal will be changed such that the modified fourth electric signal will be passed by the unidirectionally conductive device.

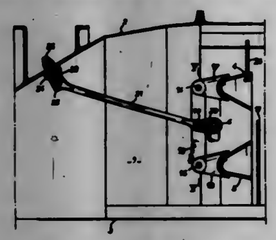
3,295,318
BURNER DEVICES AND COMBUSTION CHAMBERS THEREFOR

Louis Jules Bauger, Vanves, Bernard Paul Emile Gambet, Dammarie-les-Lys, Armand Jean Baptiste Lacroix, Itteville, and Pierre Jean Victor Negre, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris France, a company of France

Filed June 7, 1965, Ser. No. 462,015
Claims priority, application France, June 9, 1964, 977,635
4 Claims. (Cl. 60—39.72)

1. An improvement in combustion equipments for combustion chambers designed to be traversed by a high-velocity air flow and of the kind comprising at least two

annular flame-holder rings of V-shaped radial cross-section defining an inner space closed upstream at the apex of said V cross-section and open downstream, said rings being of different radii and arranged concentrically of each other, and a plurality of generally radial hollow struts extending between said concentric rings and communicating with said inner space thereof, said concentric rings and said radial struts forming a rigid unitary assembly, wherein said improvement comprises an annular fuel manifold having a radius intermediate the radii of said

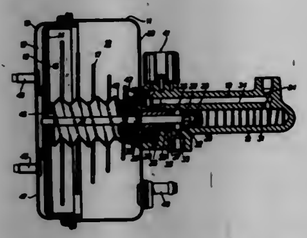


rings and arranged coaxially with respect thereto and upstream of said assembly, an inlet passage formed in the leading edge of said hollow struts at substantially the same radial distance as the radius of said fuel manifold, said inlet passage facing upstream toward said fuel manifold, and a fuel jet nozzle projecting from said manifold and through said inlet passage into the respective hollow radial strut, a substantial clearance being left between the periphery of said inlet passage and said fuel jet nozzle to allow inflow of air into said strut around said nozzle.

3,295,319
COMBINED BOOSTER AND AUXILIARY MASTER CYLINDER UNITS

Harold Fineman, Edgbaston, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company

Filed Feb. 8, 1965, Ser. No. 430,891
Claims priority, application Great Britain, Feb. 8, 1964, 5,378/64
11 Claims. (Cl. 60—54.5)

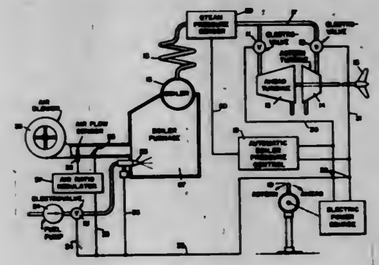


1. In a combined booster and auxiliary master cylinder unit for use in a vehicle hydraulic braking system incorporating in combination: a booster including a housing, a wall movable in said housing in response to a pressure difference, a rod connected to and adapted to be actuated by said movable wall, and valve means for controlling the flow of a pressure medium with respect to an end of said housing to cause said pressure difference adapted to be actuated by manually operable means; and an auxiliary master cylinder including a housing, a piston working in a bore of said housing and actuated by said rod of said booster, and outlet means from the cylinder through which fluid under pressure is adapted to be supplied to vehicle brakes, the invention comprising means for controlling operation of said control valve means of said booster, said means including a sleeve of stepped diameter fitting over the rod of said booster, said sleeve having opposite ends of different diameters of which one of said ends and a portion of the sleeve at the step in diameter define surfaces of different areas, one of said surfaces being exposed to pressure generated by said manually operable means, and the other of said surfaces being exposed to outlet fluid pressure produced in the bore of the housing of said auxiliary master cylinder.

3,295,320
CONTROL SYSTEM OF MARINE STEAM POWER PLANT

Yasuo Takeda, Hiroyuki, Suzuki, and Masao Shimizu, Kobe-shi, Japan, assignors to Kawasaki Jukogko Kabushiki Kaisha, Kobe-shi, Japan, a corporation of Japan

Filed Aug. 14, 1964, Ser. No. 389,593
Claims priority, application Japan, Aug. 15, 1963, 38/43,211
3 Claims. (Cl. 60—105)

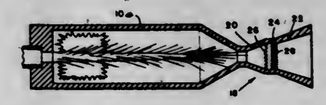


1. A device for controlling a marine steam power plant comprising a turbine, direction controlling turbine maneuvering valves, a fuel valve and air dampening valve for a boiler means, means for primarily controlling the degree of opening of said valves comprising a single maneuvering handle operatively connected to each said valve, said fuel valve being opened a minimum amount and said maneuvering valves being fully closed when said handle is in a neutral position, and secondary controlling means for controlling the degree of opening of said valves, comprising means responsive to an automatic boiler pressure control means which is actuated by a signal from a boiler pressure responsive means to eliminate an unbalance between the amount of fuel and air supplied to the boiler and the amount of steam supplied to the turbine.

3,295,321
METHOD AND APPARATUS FOR INJECTING A SECONDARY PROPELLANT IN MULTI-HEAT RELEASE COMBUSTORS

Leroy J. Krzycki, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 25, 1964, Ser. No. 379,068
3 Claims. (Cl. 60—207)



3. Apparatus for combusting bi-propellants, one of which is a liquid, in a rocket motor having a primary non-stoichiometric reaction zone and a spaced secondary stoichiometric reation zone downstream thereof, comprising:

(a) a single circular orifice disposed at the forward end of said motor adapted to inject said liquid in a direction axially thereof and parallel to the flow of combuston gases in the motor in the presence of the other propellant and in a coherent stream and at a velocity such that a portion of the stream is removed thereupon for reaction in the primary zone,

(b) a portion of said stream adapted to pass through said primary zone without reacting and to subsequently mix with the products of combustion from the primary zone to form a stoichiometric mixture adapted to react in said secondary zone,

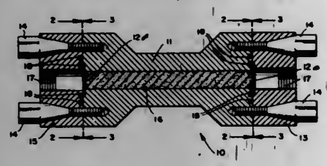
(c) said motor being provided with a convergent-divergent exhaust nozzle, the divergent portion having two divergent portions joined by a transition portion adapted to produce a shock wave, said secondary zone being disposed within said nozzle rearwardly of said shock wave.

3,295,322

HYPERGOLIC SLUG IGNITER

Joseph J. Atkins and Robert J. Geres, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 12, 1963, Ser. No. 330,206
2 Claims. (Cl. 60—251)



1. In a hybrid rocket motor including a liquid oxidizer, an oxidizer line, a pressurization package, and a solid propellant grain within said motor,

the improvement which comprises an igniter slug mounted in the oxidizer line adjoining the propellant grain, said slug comprising a casing provided with a bore therethrough, a coined burst diaphragm closure at one end and grooves with "O"-ring fittings at the open end;

chlorine trifluoride within said casing;

a coupling cap with a burst diaphragm at one end and internal threads at the other end; said cap adjoining the open end of said casing thereby creating a hermetic seal; and

a coupling means with grooves and O-ring fittings at one end and internal threads at the other end, said grooved end positioned in contiguous mating relation with the closed end of said casing,

whereby release of pressure from the pressurization package against the oxidizer line causes rupture of the disks forcing the chlorine trifluoride onto the propellant grain in advance of the oxidizer.

3,295,323

MEANS FOR VAPORIZING LIQUID PROPELLANTS

Allen L. Holzman, Palo Alto, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

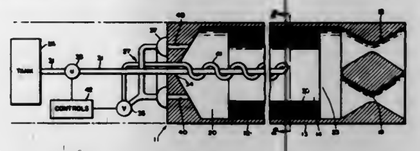
Filed Feb. 24, 1965, Ser. No. 435,098
10 Claims. (Cl. 60—251)

1. In a hybrid rocket engine having an annularly disposed solid propellant, a source of liquid propellant, a combustion chamber and an exhaust nozzle the combination comprising:

said combustion chamber containing said solid propellant and having injectors for entry of said liquid propellant;

conduit means disposed within the annulus of the solid propellant for conducting said liquid propellant from the source of supply thereof to the forward end of the solid propellant;

said solid propellant selectively spaced from said conduit means; and



injector means disposed at the forward end of the combustion chamber and connected to said conduit means for injecting vaporized liquid propellant into said combustion chamber,

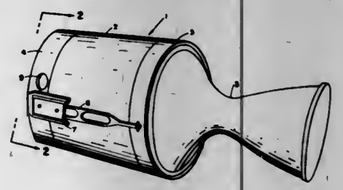
whereby said liquid propellant is vaporized in said conduit means and a more uniform regression of the burning surface of said solid propellant is obtained.

3,295,324

ROCKET MOTOR CASE VENT SYSTEM

Robert G. Conard, Raymond A. Deep, Thomas N. L. Pughe, Howard H. Henriksen, and William E. Thomas, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army

Filed June 10, 1964, Ser. No. 374,213
5 Claims. (Cl. 60—254)



1. A rocket motor case vent system comprising: a rocket motor having a combustion chamber defined by a laterai wall and a closed end portion; a nozzle portion opposite said closed end portion and attached to said wall; a generally rectangular explosive charge attached to and contacting the exterior of said wall and extending lengthwise thereof, said charge comprises a center portion and a pair of relatively slender portions attached to either end of said center portion, said center portion having a plurality of apertures therein being so located and shaped as to concentrate the contacting explosive material of the center portion along its lateral edges, said center portion being relatively wide as compared to said end portions; and means for igniting said explosive charge thereby effecting penetration and removal of a portion of said chamber wall so as to vent said combustion chamber to the ambient atmosphere.

3,295,325

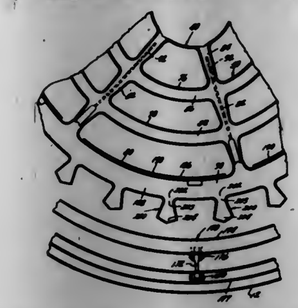
JET ENGINE AFTERBURNER FLAMEHOLDER

Arthur W. Nelson, Jr., Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Apr. 29, 1965, Ser. No. 451,861
6 Claims. (Cl. 60—251)

1. Combustion apparatus including an afterburner case concentric about an axis and having an upstream and a downstream end, a first trough-shaped flameholder ring located in said case and concentric about said axis, a second trough-shaped flameholder ring located in said case and being of different diameter than said first ring, and

at least one trough-shaped flame-spreader joined to said first ring and extending toward said second ring and shaped to define a throat between said first and second rings by being of intermediate cross-sectional area ad-



jacent said first ring, of maximum cross-sectional area adjacent said second ring and of minimum cross-sectional area therebetween to form a venturi between said first and second rings.

3,295,326

BREAKING OF SHEET ICE

John White, Birmingham, England, assignor to Horlicks Limited, Buckinghamshire, England, a British company

Filed Apr. 20, 1964, Ser. No. 361,113
Claims priority, application Great Britain, Apr. 26, 1963, 16,425/63
6 Claims. (Cl. 61—1)



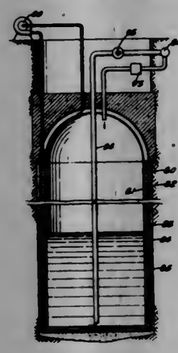
1. A method of breaking ice formed on the surface of a body of water in which water is drawn from the body of water at one locality beneath the ice and is discharged into the body of water at a second locality beneath the ice horizontally spaced from the first locality and air is mixed with the water drawn at said one locality before it is discharged at said second locality.

3,295,327

UNDERGROUND STRUCTURE

Willis D. Waterman, Salina, Kans., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed Oct. 21, 1964, Ser. No. 405,432
1 Claim. (Cl. 61—.5)



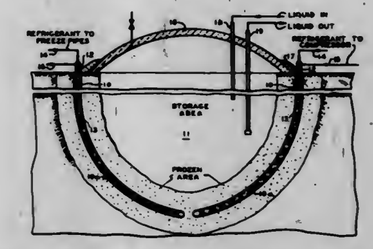
In an underground structure, the combination of: a double-wall member having a cylindrical metal liner encircled by a cylindrical metal shell, said liner and shell defining an annular space between them, metal reinforcing elements positioned in said annular space and joined with said liner and said shell to form a continuous trussed beam, cementitious material surrounding said shell, means defining a passage into said annular space for directing a refrigerating medium into the space between the liner and the shell, and a subsurface reinforced concrete cap overlying said shell and said liner.

3,295,328

RESERVOIR FOR STORAGE OF VOLATILE LIQUIDS AND METHOD OF FORMING THE SAME

George F. L. Bishop, Woods Cross, Utah, assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 5, 1963, Ser. No. 328,215
7 Claims. (Cl. 61—.5)



1. The method of forming a reservoir in the earth's surface which comprises drilling a plurality of boreholes spaced within earth freezing distance of each other about the periphery of the reservoir site downwardly into the earth and directionally toward the center of the reservoir site so that the boreholes terminate within earth freezing distance of the center of the bottom of the proposed reservoir;

circulating refrigerant in said boreholes to freeze the earth surrounding said boreholes, thereby to form a shell of frozen earth around and under the site of the proposed reservoir; and

excavating the unfrozen earth within the shell of frozen earth.

3,295,329

PORTABLE IRRIGATION DITCH GATE

Maurice U. Deverill, P.O. Box 422, Billings, Mont. 59103

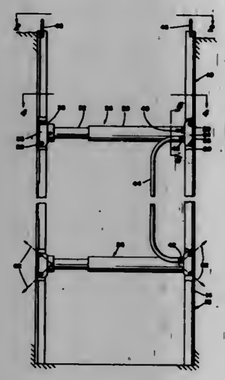
Filed Jan. 21, 1964, Ser. No. 339,285
3 Claims. (Cl. 61—29)



1. A portable irrigation ditch gate for defining a temporary dam in an irrigation ditch including downwardly included side walls, said gate comprising an imperforate panel-like member generally isosceles trapezoidal in plan shape and having an elongated reinforcing member welded rigidly to and extending along the longer of the parallel edges of said panel-like member and projecting outwardly

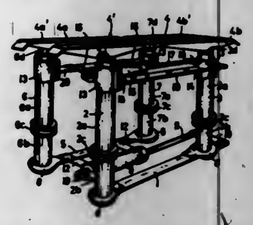
beyond the equal length edges of said panel-like member, the spacing between the parallel edges of said panel-like member being a distance adapted to be greater than the depth of said ditch whereby when said panel-like member is lowered edgewise into said ditch the shorter of the parallel edges will engage and penetrate the bottom of said ditch as said equal length edges penetrate the side walls of said ditch before said reinforcing member engages the upper surface of the ground on opposite sides of the ditch as said panel-like member is forced downwardly into the ground defining said ditch, said reinforcing member including an upstanding upwardly opening tubular socket disposed intermediate its opposite ends and which projects away from said panel-like member along a line inclined slightly away from the plane in which said panel-like member is disposed, and a removable elongated handling having one end snugly telescoped in said socket.

3,295,330
SHORING EQUIPMENT
Marc Mesborer, Cleveland, Ohio, assignor to Allied Steel & Tractor Products, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 20, 1964, Ser. No. 338,971
7 Claims. (Cl. 61—41)



1. In shoring equipment,
a pair of normally parallel beams each having a longitudinally extending web portion and,
a pair of longitudinally extending spaced ribs integral with the web of each beam and defining a channel section opening toward the channel section of the other beam,
a pair of pins traversing said channel of each beam and supported by the ribs thereof, one pin of each pair constituting a pivot pin and the other a bearing pin,
lineraly extensible forcing means extending between said beams and a head block and a foot block carried at opposite ends of said forcing means,
said head block being pivotally mounted on the pivot pin for movement into and out of bearing engagement with the bearing pin of a pin pair carried by one beam,
and said foot block pivoting on the pivot pin for movement in and out of bearing engagement with the bearing pin of a pin pair carried by the other beam,
each of said blocks being maintained in a spaced position from the web of the beam with which it is associated by its pivot pin when said block does not engage its bearing pin and by its pivot pin and bearing pin when said block bears on its bearing pin and the surface of the block bearing on its bearing pin being oriented and arranged with respect to said forcing means to direct the line of extension substantially perpendicularly to the beam on which said block is pivoted,
the pivot pins being diagonally arranged with respect to each other in the corners of the quadrilateral located by the said pin pairs, whereby said beams may be moved toward each other upon pivoting said blocks on said pivot pins and out of engagement with said bearing pins for insertion and removal from between opposed surfaces and, when said blocks engage said bearing pins, extension of said forcing means permits said beams to shore opposed surfaces.

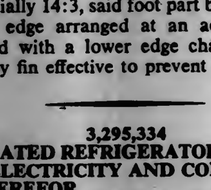
3,295,331
MOVABLE MINING SUPPORT
Karl Ernst Bläser, Lunen, and Günther Dommann, Wethmar, near Lunen, Germany, assignors to Gewerkschaft Eisenhutte Westphalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany
Filed Apr. 3, 1964, Ser. No. 357,113
Claims priority, application Germany, Apr. 5, 1963, C 37,467
12 Claims. (Cl. 61—45)



1. Mining support comprising lower drive means having a first lower part and a second lower part operatively interconnected and movable back and forth with respect to each other in a horizontal direction, a first pair of spaced apart vertical mining prop means positioned on one side of said lower drive means and connected at a lower level to said first lower part, a second pair of spaced apart vertical mining prop means positioned on the other side of said lower drive means and connected at said lower level to said second lower part, upper drive means having a first upper part and a second upper part operatively interconnected and movable back and forth with respect to each other in a horizontal direction, said upper drive means being vertically spaced above said lower drive means with said first upper part being connected at an upper level to said first pair of space apart prop means and said second upper part being connected at said upper level to said second pair of spaced apart prop means, said lower and upper drive means being separately connected to said prop means at said levels for maintaining said first and second pairs of prop means substantially parallel with respect to the direction of movement of said parts, the prop means of each pair being spaced apart from one another in the direction of movement of said parts and being spaced apart from the adjacent prop means of the other pair of prop means in the direction transverse to the movement of said parts.

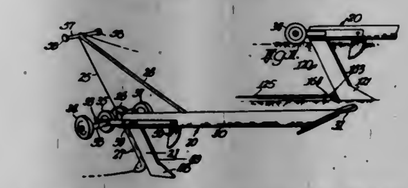
3,295,332
PROTECTIVE COVER FOR BUTT ENDS OF TIMBER PILES
John J. Dougherty, Cedar Grove, N.J. (262 Rutherford Blvd., Clifton, N.J. 07014)
Filed Apr. 28, 1964, Ser. No. 363,240
2 Claims. (Cl. 61—53)

1. A protective cover for the end of a timber pile projecting out of the water or ground, comprising a substantially inverted U-shaped in cross-section concrete body opening upwardly from the bottom thereof, encompassing the area of the projecting end of the timber pile, inverted U-shaped rods extending about the periphery of the concrete pile for reinforcing the concrete body, laterally extending feet on the bottom ends of the rods, an annular plastic trough device having inner and outer peripheries opening upwardly supported on the feet below



the bottom end of the concrete body, said trough device serving to seat the bottom end of the body, the bottom ends of the rods engaging the inner periphery of the trough device, and upstanding extensions on the free ends of the feet engaging the outer periphery for holding the trough device in place.

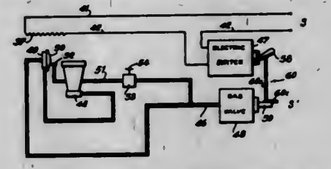
3,295,333
CABLE-LAYING PLOW
Donald J. Killoren, Appleton, Wis., assignor to Killoren Company, Appleton, Wis., a corporation of Wisconsin
Filed Sept. 20, 1963, Ser. No. 310,234
3 Claims. (Cl. 61—72.6)



1. A cable laying plow, comprising an elongated tubular frame substantially free of loading superstructure and equipped with a hitch at its front end, a transversely extending axle on the rear end of said frame, a wheel on each side of said frame mounted on said axle and projecting above and below said frame, an elongated plate-like plow element rigidly connected to said frame adjacent to and just forward of said axle and extending downwardly and forwardly relative to said frame when the frame length is disposed generally horizontally, and means on the rear edge of said plow element for training a cable rearwardly of said plow element in a furrow cut by said plow element, said plow element having an integral forwardly extending foot part, said foot part having a thickness about the same as the remainder of said plow element, the ratio of the length of said frame to the depth of said foot part from the path of travel of said wheel being substantially 14:3, said foot part being characterized by an upper edge arranged at an acute angle to the horizontal and with a lower edge characterized by the absence of any fin effective to prevent emergence of said foot part.

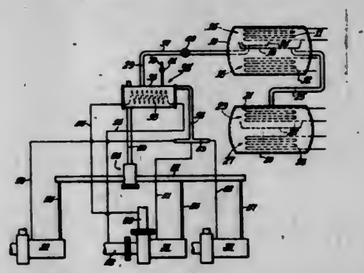
3,295,334
HEAT OPERATED REFRIGERATOR OPERABLE ON GAS OR ELECTRICITY AND CONTROL MECHANISM THEREFOR
Nils Lennart Hultgren, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 8, 1965, Ser. No. 424,278
9 Claims. (Cl. 62—148)

1. In combination with a refrigerating system of the type alternatively employing gas and electricity as power sources and in which cooling is effected by a refrigeration unit having a heat receiving part, of a gas burner heating means adapted to heat the heat receiving part, means for supplying gas energy to said burner heating means, electrical heating means adapted to heat the heat receiving part, means for conducting electrical energy to said electrical heating means, and control mechanism connected to said gas energy supply means and to said electrical energy conducting means and adapted to connect said gas energy supply means to its associated heating means and to disconnect said electrical energy conducting means from its associated heating means or to connect said electrical energy conducting means to its associated heating means and disconnect said gas energy supply means from its associated heating means, said control mechanism comprising an electric switch which is coupled to said electrical energy conducting means and to said electrical heating means and includes a first independently movable



part manually movable between switch closed and open positions for respectively completing and interrupting electrical continuity therethrough and a valve in said gas supply means having a rotatable plug with a passage therethrough and including a second independently movable part manually movable between valve open and closed positions for turning said plug for respectively flowing and obstructing flow of gas energy through said supply means, said first part being independently movable to a position in the path of movement of said second part and said second part being independently movable to a position in the path of movement of said first part, and said first part being independently movable to a switch closed position only when said second part is in a valve closed position and said second part being independently movable to a valve open position only when said first part is in a switch open position.

3,295,335
HERMETICALLY SEALED PUMP-MOTOR ASSEMBLY COOLING SYSTEM FOR ABSORPTION-REFRIGERATION APPARATUS
Per Edberg, Spring Garden Township, York County, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 21, 1963, Ser. No. 317,661
7 Claims. (Cl. 62—476)



1. In an absorption refrigeration system of the type including an absorber, a generator, a condenser, an evaporator, and a plurality of hermetically sealed pump-motor assemblies for circulating solution and refrigerant through the system, the combination of:
a heat exchanger;
means for withdrawing a continuous stream of cold re-

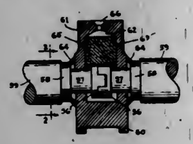
frigerant flowing in the evaporator circuit of said absorption system;

means for circulating a coolant for said pump-motor assemblies through said heat exchanger in heat exchange relation with said cold refrigerant;

means for circulating said coolant through each of said pump motor assemblies internally thereof in a closed circuit and back to said heat exchanger; and

means for collecting condensed refrigerant in said condenser to provide make-up cooling fluid.

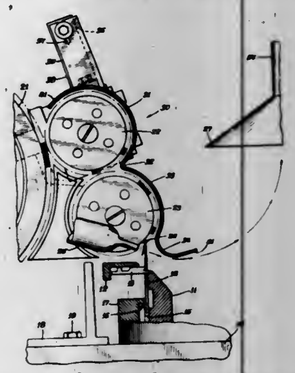
3,295,336
BEARING AND COUPLING FOR DRAFTING ROLLERS OF SPINNING MACHINES
Shigematsu Takita, 182 2-chome, Takarazuka, Hyogo, Japan
Original application Jan. 2, 1963, Ser. No. 249,017, now Patent No. 3,240,031, dated Mar. 15, 1966. Divided and this application Feb. 18, 1965, Ser. No. 462,157
2 Claims. (Cl. 64—9)



1. In a textile drawing mechanism, a plurality of roller sections each having first and second flanges at its respective ends, said first flange having a tooth extending axially and diametrically from its end face, said second flange having a channel therein extending axially and diametrically, the diametral transverse dimension of said tooth being less than the corresponding dimension of said channel, and a plurality of spaced bearings having an enlarged central chamber, and journaling the contiguous ends of a successive pair of rollers with the flanges thereof in said chamber and the tooth of one flange loosely fitting the channel of the contiguous flange to effect rotation of all sections as a unit while permitting limited relative axial rotation between successive sections, each said bearing having parallel, axially-spaced planar surfaces normal to the axis defined thereby, each flange of each said roller section being defined by a first portion of diameter less than that of the central body portion of the section, there being a second portion between said first portion and said body portion, and having a diameter greater than said first portion and less than said body portion, and a pair of seals of flexible material, each tightly fitting a respective one of the second portions of said roller sections, and having an outwardly-flared frusto-conical skirt with its free edge in sliding contact with a planar surface of the contiguous bearing.

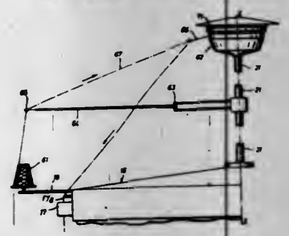
3,295,337
GUARD FOR CARDING MECHANISMS OF KNITTING MACHINES
Abraham J. Beucus, Delavan, Wis., and Patrick J. Forde, Kitchener, Ontario, Canada, assignors to Amphenol Corporation, Broadview, Ill., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,804
3 Claims. (Cl. 66—9)

1. In a pile fabric knitting machine of the type having a rotatable needle cylinder; a plurality of knitting needles carried by said cylinder; loose fiber exhaust means provided with an inlet above said cylinder; at least one carding head including a main carding roll, an intermediate carding roll above the level of said needle cylinder adjacent the side of said main carding roll facing toward said needle cylinder for receiving fiber from said main carding roll, and a feeder card roll below said intermediate carding roll and adjacent the needle cylinder for receiving fiber from said intermediate carding roll and delivering it to said needles as said needles move past said carding head during rotation of said cylinder; and means for directing a jet of air at said needles from the outside of the needle cylinder toward the inside of the needle cylinder at a location just beyond the carding head in the direction of rotation of the needle cylinder; the improvement which comprises cover means partially surrounding said intermediate carding roll and said feeder card roll for restricting fee flow of air adjacent such rolls to control discharge of fiber therefrom; said cover means having an upper curved portion closely spaced with respect to the intermediate carding roll surface extending from the main



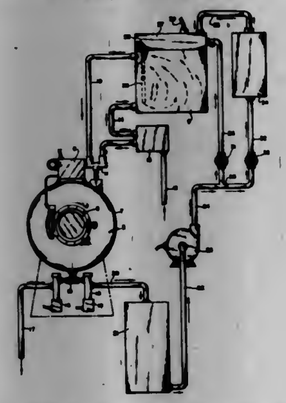
carding roll to the feeder card roll and being located between the intermediate carding roll and said loose fiber exhaust means, and a lower curved portion closely spaced with respect to the feeder card roll surface extending from the zone of cooperation thereof with said needles to the intermediate carding roll and being located between such feeder card roll surface and said loose fiber exhaust means, with said upper and lower portions being joined together by a sharp reverse bend projecting into the space between said intermediate carding roll and said feeder roll in close proximity to the zone of fiber transfer from said intermediate carding roll to said feeder card roll so as to shield the loose fibers in such zone from air currents.

3,295,338
DUST REMOVING ARRANGEMENT FOR CIRCULAR KNITTING MACHINES
Richard Schmidt, Stuttgart-Vaihingen, Germany, assignor to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany
Filed Sept. 15, 1964, Ser. No. 396,584
Claims priority, application Germany, Sept. 18, 1963, M 58,231
10 Claims. (Cl. 66—168)



1. In a circular knitting machine including a support upwardly projecting at the top of the machine, in combination, housing means mounted on the top of said support and including an inner annular wall forming an inner chamber open on top and having circumferentially spaced first openings and an outer annular wall forming an annular chamber surrounding said inner chamber and having circumferentially spaced second openings; a plurality of circumferentially spaced thread guides mounted on said outer annular wall outwardly projecting from the same; and blower means located within said inner chamber and adapted to suck air from the openings on top of said inner chamber and to discharge the air along the entire circumference thereof through said first openings into said annular chamber and through said second openings at said outwardly projecting thread guides and beyond the same so that dust produced by threads passing through said thread guides is blown away from the machine in outward directions.

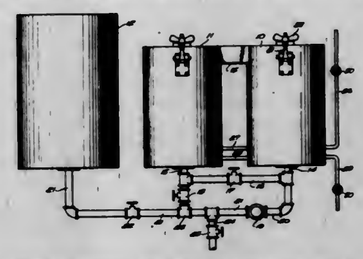
3,295,339
WATER CONSERVATION SYSTEM FOR COMMERCIAL LAUNDRIES
Robert H. Cheyne, 1325 NW. 10th St., Dania, Fla. 33004
Filed Sept. 30, 1964, Ser. No. 400,509
1 Claim. (Cl. 68—18)



A water conservation means for clothes washers comprising, a motor driven washer, a fluid supply tank having means for conducting fluid into said washer, two drainage pipes leading away from said washer, one of said drainage pipes leading to waste, an intermediate tank connected to said washer by the other drainage pipe, said intermediate tank having a first filter means therein to remove lint and sediment trapped in said fluid channeled into said intermediate tank from said washer, sterilization means including an ultraviolet lamp, a second filter means, said second filter means further removing any undesirable elements from said fluid, conduit means leading from said intermediate tank, pump means in said conduit means to deliver said fluid from said intermediate tank to either said second filter or directly to said sterilization means, said sterilization means returning the water to the desired level of purity, and conduit means directly interconnecting said sterilization means and said fluid supply tank thereby recycling the fluid so that it may be reused in the washer.

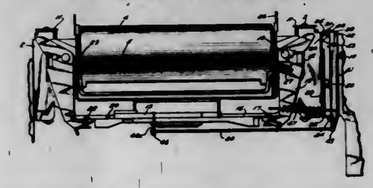
3,295,340
DYEING APPARATUS
Martin Karl, 333 Greenwich Ave., Warwick, R.I. 02886
Filed July 17, 1964, Ser. No. 383,348
4 Claims. (Cl. 68—27)

1. An apparatus for dyeing textile materials comprising a pair of dyeing tanks, a reserve tank, an overflow circulating channel connecting said dyeing tanks adjacent the upper ends thereof, a conduit connecting the bottoms of said dyeing tanks, a second conduit connecting the bottoms of said dyeing and reserve tanks, a reversible high volume low pressure circulating pump in said second conduit, a steam line extending through the lower ends of said dyeing tanks, and manually operable valves in said conduits for controlling the flow of dye liquid between said tanks and said pump, each of said dyeing tanks



having a baffle mounted on the bottom over said conduit inlet, a post extending vertically from said baffle, and a plurality of stacked work holding baskets mounted around said post.

3,295,341
INSTINCTIVE WRINGER RELEASE
Victor W. Cuthbert, Sodus, and Robert A. Brenner, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Mar. 12, 1965, Ser. No. 446,458
11 Claims. (Cl. 68—256)



11. In a wringer with instinctive pressure release means,
a frame,
a pair of rolls in said frame,
over-center toggle means to apply and maintain pressure on said rolls,
a wringer head,
a bracket rigidly secured to one end of said frame and having horizontal flanges extending over and under said head,
a pin depending from said head and having a loose fit with the lower of said flanges to permit movement of the frame relatively to said head in both vertical and horizontal planes,
a member movable by a pivotal movement of said frame,
a tension element connecting said member with said toggle means to move the same to released position, and
spring means of predetermined strength positioned to hold said member against movement.

3,295,342
LOCKING DEVICE
Berwyn E. Etter, 3120 46th Ave. N., St. Petersburg, Fla. 33710
Filed Aug. 21, 1964, Ser. No. 391,336
10 Claims. (Cl. 70—153)

1. In a locking device,
spaced apart first and second plate members having inner and outer surfaces,
a housing between said first and second plate members and operatively secured to one of said first and second plate members,
a control bar slidably mounted in said housing and having one end thereof slidably extending from one end of said housing,

locking means movably mounted in said housing and adapted to engage said control bar at times to limit the slidable movement thereof at times,

a dial mechanism movably mounted on the outer surface of said first plate member,

yieldable means yieldably connecting said first plate member and said dial mechanism to resist the movement of said dial mechanism in one direction,

said yieldable means normally yieldably holding said dial mechanism in a predetermined position and normally returning said dial mechanism to said predetermined position whenever a displacing force on said dial mechanism has been removed,

a means operatively connecting said dial mechanism and said locking means whereby the predetermined movement of said dial mechanism in said one direction will disengage said locking means from said control bar,

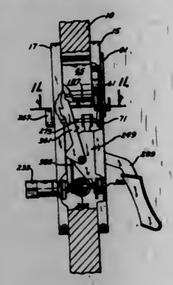
a rotatable member rotatably mounted on said one end of said housing having a notch thereof adapted to receive said one end of said control bar at times and being longitudinally movable,

a vertically slidable cam means mounted on said one end of said housing adapted to move said rotatable member longitudinally towards said housing at times,

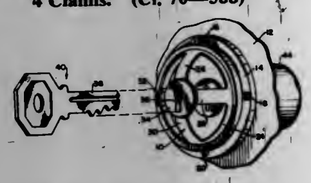
means connected to said vertically slidable cam means for vertically moving said vertically slidable cam,

a first handle means extending inwardly through said first plate member and being operatively connected to said rotatable member,

a latch bolt assembly operatively connected to said rotatable member and said first handle means whereby said first handle member will activate said latch bolt means only when said rotatable member rotates.

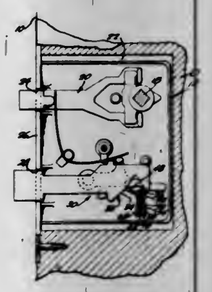


3,295,343
KEY EJECTOR
Roderick W. Beebe, Huntington, and Thomas J. Hughes, Hicksville, N.Y., assignor of one-third to Albert C. Nolte, Jr., New York, N.Y.
Filed Dec. 3, 1964, Ser. No. 415,685
4 Claims. (Cl. 70—388)



1. A key-extracting device in combination with a lock assembly, comprising a one piece resilient hemispherical member having a circular base, a central portion spaced perpendicular from a plane through said circular base and parallel to said plane, said central portion having a non-circular aperture for insertion of a key therethrough and for engaging said key so as to be rotatable therewith, said circular base having a flange, mounting means cooperating with said flange to secure said member to said lock assembly, and a plurality of spokes joining said circular base to said central portion, and wherein said key cooperating with the lock assembly is released from said lock assembly by the spring action of said hemispherical member.

3,295,344
BIT KEY LOCK GUARD
Leon W. Hankins, P.O. Box 224, 2646 W. Walnut St., Springfield, Mo. 65801
Filed Dec. 8, 1964, Ser. No. 416,706
3 Claims. (Cl. 70—430)

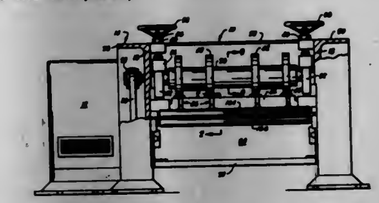


1. In combination, a lock case containing an extensible and retractable locking bolt, said locking bolt being formed with a notch having outer and inner cam edges, the case being formed with a keyhole located in the region of said notch, a key having a shaft formed with an eye on its outer end and with a lateral bit at its inner end, the key being engaged through the keyhole with its bit positioned in said notch, the key being adapted to be rotated in opposite directions for operatively engaging the bit with the cam edges for extending and retracting the locking bolt, and a guard fixed to the key, said guard having an arm engaged non-rotatably through the keyhole, said keyhole has a vertical slot through which the guard arm is non-rotatably engaged, said guard comprising a relatively wide flat head on the outer end of said arm, said head being angled relative to the guard arm, the bit of the key being in upwardly and outwardly angled position relative to the keyhole slot in engagement with the outer cam edge of the bolt notch in the extended position of the bolt and the guard head being in an inwardly and downwardly angled position relative to the keyhole slot, the bit and the eye of the key being located in the same plane, the head of the guard and the key eye being angled out of the horizontal, a side of the head being engaged with a side of the key eye, and means fixing the key eye to one side of the guard head.

3,295,345
FORMING MACHINE
Eric O. Acker, 4436 NW. 59th St., Oklahoma City, Okla. 73118; Eric O. Acker, Jr., 7804 NW. 28th Terrace, Bethany, Okla. 73008; and Pleasant P. Kimball, 5912 NW. 50th, Oklahoma City, Okla. 73135
Filed Feb. 18, 1964, Ser. No. 347,992
8 Claims. (Cl. 72—24)

1. In a material forming machine having a vertically movable ram, a fixed die, a horizontally movable die located on the ram and adapted to mate with the fixed die to form a sheet therebetween, the improvement comprising:

sheet advancing means adapted to feed the sheet through the machine in timed relationship with movement of the ram; and,



control means adapted to start and stop said sheet advancing means, whereby formed sheets having a predetermined length are automatically produced.

3,295,346
METHODS FOR THE ELEVATED TEMPERATURE PROTECTION OF METALLIC SURFACE, AND COATINGS THEREFOR
Howard B. Bomberger, Jr., East Liverpool, Ohio, assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
Filed Feb. 11, 1964, Ser. No. 346,057
9 Claims. (Cl. 72—41)



1. The method of lubricating and protecting refractory and other metals from surface contamination and scaling during heating and working operations comprising: applying to the surface of such a metal a suspension of a powder mix consisting essentially of about 50 to 80% boron oxide and about 20 to 50% feldspar in a vehicle of highly volatile liquid, volatilizing said vehicle whereby a substantially continuous coating is deposited on the surface of said metal, heating the thus-coated metal to a temperature up to 1800° F. for a period up to 30 minutes for coatings containing more than 70% boron oxide and to a temperature up to 2000° F. for a period up to 8 hours for coatings containing less than 70% boron oxide, whereby said coating fuses to form a glass coating which is suitably viscous and self-repairing.

3,295,347
APPARATUS FOR SHEARING A TUBULAR MEMBER IN ACCORDANCE WITH A PRESCRIBED PATTERN
Robert A. Fuessle, Northbrook, and Raymond G. Napolski, Downers Grove, Ill., assignors to Western Electric Company, Incorporated, a corporation of New York
Filed May 12, 1965, Ser. No. 455,266
4 Claims. (Cl. 72—55)

1. Apparatus for trmming a thin-walled can, open at one end, in accordance with a prescribed pattern, which comprises:

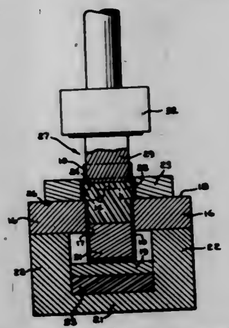
a base for supporting the closed end of the can, at least a portion of said base being yieldable upon the application of substantial pressure thereagainst by the can;

a die mounted on said base, and defining a chamber aligned with said yieldable portion of said base and conforming closely to the outer surface configuration of the can, the interior walls of the chamber terminating at one end of said die, remote from said base, in a sharp continuous cutting edge defined in accordance with the prescribed trimming pattern;

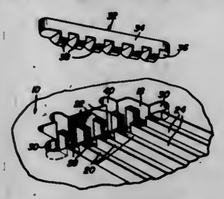
a retainer plate having one end conforming to the configuration of and arranged in engagement with said one end of said die, said retainer plate defining an aperture communicating with and larger in cross-section than the chamber in said die so that a continuous shoulder is formed along the plane of said cutting edge at the interface of said die and said retainer plate; and

a ram conforming closely to the inner cross-section of the can for slidable reception therewithin, at least a portion of said ram being composed of a substantially deformable material which is free to expand laterally outward of said ram upon being subjected to a transverse compressive force, said deformable portion being arranged adjacent said cutting edge when said ram engages the closed end of a can supported by said base;

said yieldable portion of said base being substantially more rigid than said deformable portion of said ram so that said yieldable portion yields only to forces applied to said ram which are substantially greater than those sufficient to expand said deformable portion and deform the walls of the can over said cutting edge, and then said yieldable portion yields only to permit said ram to displace the closed portion of the can relative to the deformed portion by a distance sufficient to part the walls of the can cleanly along said cutting edge of said die in accordance with the prescribed pattern.



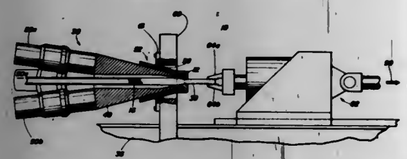
3,295,348
EXTRUSION DIE WITH REINFORCED TONGUES
Carl De Buigne, 9511 Grinnell, Detroit, Mich. 48213
Filed May 12, 1964, Ser. No. 366,711
10 Claims. (Cl. 72—261)



1. A multiple tongue extrusion die comprising a body having a die passage therethrough including a throat and a feed pocket at the inlet end of the latter together with a plurality of extrusion tongues projecting into said feed pocket and each having one end secured to said body and having its other end free, said tongues providing narrow extrusion passages therebetween for forming relatively thin and long extrusions, a reinforcing bar in said feed

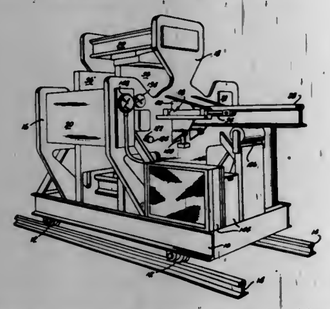
pocket having its end fixedly secured to said die body and extending transversely across said tongues adjacent the free ends thereof and fixedly secured to each tongue.

3,295,349
METHOD AND APPARATUS APPLYING VIBRATORY ENERGY
Nicholas Maropis, West Chester, Pa., assignor to Aero-projects Incorporated, Chester, Pa., a corporation of Pennsylvania
Filed Oct. 4, 1965, Ser. No. 492,669
4 Claims. (Cl. 72—283)



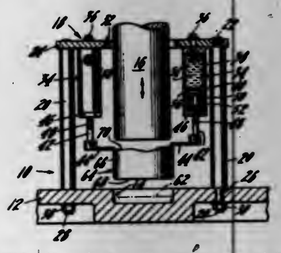
1. Vibratory tube drawing apparatus comprising a die having an orifice therein, a vibratory generator coupled to said die, means on one side of said die for pulling tubing in an axial direction through said orifice, a free-floating plug partially disposed in said orifice, said plug having a physical length corresponding to an acoustical length of an odd integral number of one-quarter wavelengths of sound in the material of which it is made at the frequency of said vibratory generator, said plug having one end thereof in said orifice and a second end thereof on the side of said die opposite from said pulling means, said plug being acoustically non-compliant at said one end.

3,295,350
CONTINUOUS RAIL STRAIGHTENING PRESS
Norman F. Clayborne, Monticello, Ind., Max E. Kerns, Greenwich, Conn., and William E. Hamlin, Jackson, Mich., assignors to Railway Automation Maintenance Specialties Company, Jackson, Mich.
Filed Mar. 11, 1964, Ser. No. 351,029
13 Claims. (Cl. 72—309)



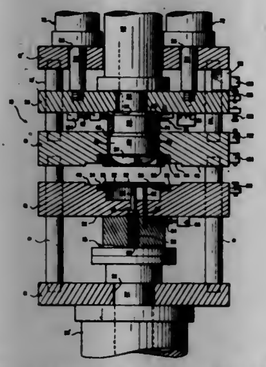
1. A bending press for elongated members comprising, in combination,
(a) a frame including a pair of spaced support members,
(b) supporting means for the elongated member to be bent defined on said support members,
(c) intermediate supporting means interposed between said support members adapted to engage the elongated member to be bent intermediate said supporting means,
(d) means supporting said intermediate supporting means for movement transverse to the length of a member to be bent supported upon said supporting means,
(e) power actuated means disposed adjacent said intermediate supporting means adapted to transversely displace said intermediate supporting means, and
(f) means mounting said power actuated means for movement about said intermediate supporting means whereby the direction of transverse displacement of said intermediate supporting means by said power actuated means may be varied.

3,295,351
SELF-ADJUSTING STRIPPING FINGERS
Edward Charles Jacobs, Wauconda, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 23, 1964, Ser. No. 361,941
6 Claims. (Cl. 72—344)



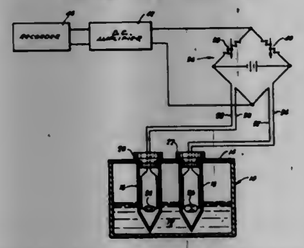
6. An article forming apparatus comprising:
a die member having a cavity therein;
a punch member movable relative to said die member and dimensioned to fit within said cavity;
said cavity being adapted to receive a slug of material which, when struck by said punch member, forms and article which adheres thereto; and
means for stripping said article from said punch member;
said means including a plurality of stripping fingers spaced equally about the periphery of the punch member, extending radially toward said punch member, and adapted to engage the upper edge of an article adhered to said punch member;
said means also including piston and cylinder means mounting each of said stripping fingers;
said piston and cylinder means including an elongated tubular cylinder having an aperture in one end thereof and a piston slidable within said cylinder and having a depending piston rod which projects through said aperture and beyond said cylinder;
said stripping fingers being mounted upon the projecting ends of said piston rods;
spring-biasing means beneath said pistons extending between the apertured end of each cylinder and the face of each piston from which said piston rod depends;
conduit means interconnecting said cylinders adjacent their non-apertured ends;
said spring-biasing means normally biasing all of said pistons and thus all of said stripping fingers to the same level;
hydraulic fluid contained within said conduit means and within each of said cylinders;
said hydraulic fluid normally completely filling said conduit means and each of said cylinders above said pistons;
said stripping fingers being movable axially of said punch member when engaged by said article;
said axial movement of any one of said stripping fingers causing a responsive oppositely directed axial movement of at least one other of said stripping fingers until all of said stripping fingers engage said article whereby they move said article axially of said punch member to strip it therefrom.

3,295,352
METHOD OF FORMING ARTICLES AND ARTICLE FORMING APPARATUS
William F. Middlestadt, Arnold, Md.
(200 E. Joppa Road, Baltimore, Md. 21204)
Filed Sept. 11, 1963, Ser. No. 308,276
4 Claims. (Cl. 72—356)



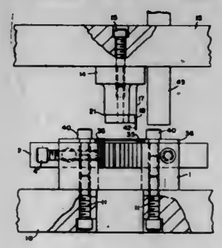
1. A sheet forming press comprising a pair of continuous opposed sheet clamping surfaces, means for directing a clamping force between said surfaces and normal to the plane of the sheet to be formed, a forming die member having a side wall normal to the clamping surface and substantially coextensive therewith, a pre-forming punch, said pre-forming punch having a cross dimension substantially less than the cross dimension of the forming die, a generally flat base and a convex side wall, means for urging said pre-forming punch into said forming die a distance greater than the finished depth of the depression to be formed in the sheet, a final forming punch, said final forming punch forming a sleeve about the pre-forming punch, the cross dimension of the outer surface of said final punch providing only a working tolerance in said forming die, and means for urging said final forming punch into said die following pre-forming by said pre-forming die.

3,295,353
DIFFERENTIAL THERMAL DETECTOR SYSTEM
Donald F. Hagen, St. Paul, Minn., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,924
1 Claim. (Cl. 73—362)



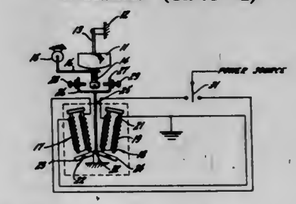
In a system for detecting thermal changes in a chemical reaction:
a container for enclosing chemical reactants;
first and second thermistors carried within said container;
a heat insulating medium comprising a high melting point wax coated on said second thermistor to delay the effect of said thermal change thereon;
a tubular glass member enclosing said first and second thermistors for protecting said thermistors from said chemical reactants while permitting said thermistors to respond to thermal changes occurring in said reactants and outside said thermally conductive means;
a Wheatstone bridge circuit having first and second legs connected with said first and second thermistors, respectively, and having a variable resistor in each remaining leg thereof;
an amplifier connected to said Wheatstone bridge circuit for receiving the output therefrom; and
a recorder connected with said amplifier.

3,295,354
BLANKING METHOD AND APPARATUS
Joseph G. F. Hotte, Lasalle, and Joseph L. R. A. Thomas, Montreal, Quebec, Canada, assignors to Northern Electric Company, Limited, Montreal, Quebec, Canada
Filed Apr. 16, 1964, Ser. No. 360,298
7 Claims. (Cl. 72—468)



1. Apparatus for blanking stampings from sheet material which comprises,
a punch having a shaving portion contoured to an outline of a stamping to be blanked,
a blanking portion on said punch being of smaller size with respect to said shaving portion, and defining a clearance between the blanking and shaving portion,
means for moving said punch in an operative path,
adjustable cutter means surrounding the path of travel of said punch and conforming to the contour of said shaving portion, and
a die plate between said punch and said cutter means, said punch being brought down to punch out and shave an aperture in said die plate to the contour of said shaving portion by cooperation with said cutter means, said die plate subsequently forming a female portion of a punching apparatus for said sheet material comprising said die plate and said punch blanking portion.

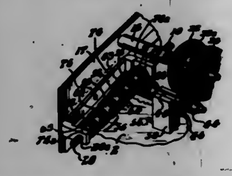
3,295,355
ACCELEROMETER HAVING SELF-TESTING MEANS
Ralph W. Fisher, St. Charles, Harold W. Hossfeld, O'Fallon, and Martin D. Settles, Florissant, Mo., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
FHed Nov. 9, 1964, Ser. No. 410,040
2 Claims. (Cl. 73—1)



1. An accelerometer comprising:
a housing,

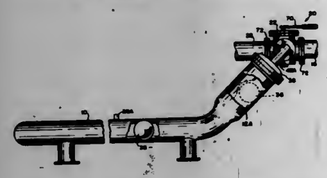
a mass pivotally mounted to said housing,
a balancing screw threadedly attached to said mass,
an output device,
means connecting said output device to said mass,
first and second electromagnetic coils,
an armature pivotally connected to said housing, said armature having a first leg extending outwardly and adjacent one end of said first electromagnetic coil and a second leg extending outwardly and adjacent one end of said second electromagnetic coil, said armature having a reverse-bent arm providing first and second parallel sides,
means for selectively energizing said first and second electromagnetic coils, and
first and second adjusting screws threadedly attached one each to said first and second parallel sides, said adjusting screws being engagable with said balancing screw.

3,295,356
SPEEDOMETER CORRECTION APPARATUS
Peter A. La Fata, 401 Lancaster Ave., Reading, Pa. 19602
Filed Mar. 6, 1964, Ser. No. 349,919
5 Claims. (Cl. 73—2)



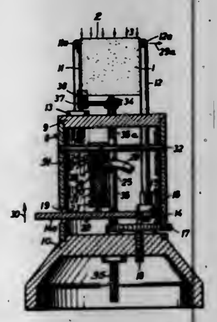
5. A speedometer correction apparatus having direct gear means for varying the ratio of input-output shaft revolutions, said apparatus comprising,
a series of gears mounted on a first shaft for being shifted as a unit axially thereof and for rotating therewith, said gears being the same in diameter and, from gear to gear, progressively different in number of teeth, said teeth being circumferentially equally spaced,
an independent gear mounted on a second shaft positioned to engage one of the gears mounted on the first shaft, and
means for shifting the series of gears relative to the independent gear including a control member adjustably fixed in position and operatively engaged with the series of gears, the member being operable for shifting the series of gears axially of the first shaft whereby any selected gear of the series thereof may be placed in engagement with the independent gear.

3,295,357
CALIBRATING METERS
Joseph C. Halpine and Bernard M. Moroney, Tulsa, Okla., assignors to Halmor Industries, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Apr. 14, 1965, Ser. No. 448,170
9 Claims. (Cl. 73—3)



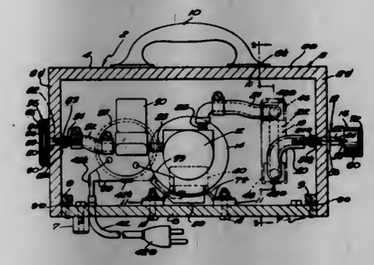
1. An apparatus for use in calibrating meters comprising:
(a) a U-shaped horizontally extending barrel of even internal diameter;
(b) a ball receiving portion at each end of said barrel, the ball receiving portion being of enlarged internal diameter and inclined upwardly at an angle relative to the horizontal;
(c) a ball of external diameter substantially equal the internal diameter of the barrel, the ball forming a sealed piston in said barrel, the internal diameter of each ball receiving portion being sufficiently large that the force exerted by fluid passing between the ball and the internal diameter at normal velocities is insufficient to overcome the force of gravity tending to roll the ball down the inclined receiving portion;
(d) a fluid conducting flow means communicating with each ball receiving portion;
(e) first and second piston detecting means in longitudinally spaced relationship at points in said barrel actuated by passage of said ball; and
(f) fluid direction switching means communicating with said fluid conducting flow means whereby fluid may be caused selectably to flow in both directions through said barrel, said ball being moved as a piston by such fluid flow and whereby said ball enters the said inclined enlarged ball receiving portion at the end of each movement by fluid flow and wherein said ball automatically re-enters said piston when the fluid flow is reversed.

3,295,358
METHOD AND APPARATUS FOR DETERMINING THE THERMAL EXPANSION OF MATERIALS
Dietmar Boenisch, Haselsteig 11, Aachen, Germany
Filed June 15, 1964, Ser. No. 375,392
Claims priority, application Germany, June 21, 1963, B 72,363
17 Claims. (Cl. 73—16)



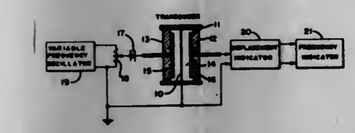
1. An apparatus for determining the thermal expansion of industrial materials such as molding and core sands and other refractory materials, comprising:
a housing having a cover, means for supporting a test specimen above the cover,
a quartz glass rod extending vertically from and firmly secured in said cover and bent at a right angle at its upper end to form a backing element for the test specimen,
a probe element comprised of a similarly bent quartz glass rod with an elongated shaft freely movably vertically extending through an opening in the cover,
a fulcrumed measuring beam in the housing, the lower end of the probe shaft being connected to one end of said measuring beam, the opposite end of the measuring beam projecting out of the housing, and
beam displacement sensing means connected with said beam.

3,295,359
AIR SAMPLER
Robert D. Peck, Needham, Mass., assignor to Controlled Environment Equipment Corporation, Whitman, Mass., a corporation of New York
Filed Nov. 20, 1963, Ser. No. 324,936
8 Claims. (Cl. 73—28)



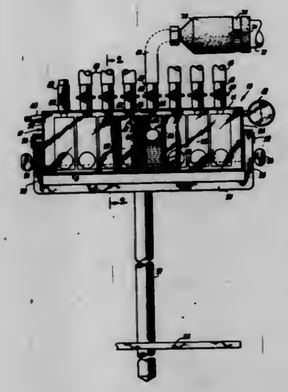
1. A portable air sampler for sampling the amount of contaminants in the atmosphere in an enclosure comprising a sealed casing, a pump, a motor for said pump, and a timer switch in the circuit of said motor, said pump and motor being enclosed within said sealed casing, a flow control valve operable from outside said casing to control rate of flow, said timer switch being operable from outside the casing, an air conduit comprising an air inlet and an air outlet extending through said casing and conduit means providing communication between said air inlet, said control valve, said vacuum pump and said air outlet, the inlet of said air conduit located outside of said casing having a replaceable filter therein to collect contaminants in the sample of atmosphere drawn through said sampler by said pump, the outlet of said air conduit located outside of said casing having a replaceable filter therein to remove any additional contaminants picked up by said atmosphere during passage thereof through the sampler and thereby prevent contamination of said atmosphere in said enclosure by said last mentioned contaminants, said sealed casing preventing the escape of contaminants from said motor and pump to said atmosphere in said enclosure.

3,295,360
DYNAMIC SENSOR
John Dimeff, San Jose, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 21, 1965, Ser. No. 449,902
18 Claims. (Cl. 73—30)



1. A device for measuring gaseous environments comprising:
(a) a structure defining a hollow cavity, and having passage means through which a gaseous environment may enter all parts of the cavity,
(b) a flexible, vibratory member contained within the cavity, with the gaseous environment being present on all sides of said vibratory member,
(c) means for driving said vibratory member at resonance and at a constant amplitude, whereby said vibratory member cyclically compresses the gaseous environment present on both sides of said vibratory member,
(d) driving force detecting means for measuring the force required to vibrate said vibratory member, and
(e) means for detecting the displacement of said vibratory member.

3,295,361
LEAK DETECTOR
Michael Lombardo, 3101 Edwards Circle, Independence, Mo. 63125
Filed May 25, 1964, Ser. No. 369,950
6 Claims. (Cl. 73—40.5)



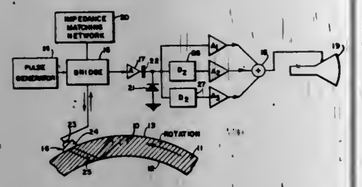
1. Apparatus for detecting a fluid leak in a fluid conduit comprising:
an enclosure having a pair of spaced openings therethrough and being adapted for containing a first fluid therein to a predetermined level below said openings, one of said openings adapted to be coupled to a source of a second fluid under pressure and the other of said openings adapted to be coupled to a conduit to be tested;
a tube within said enclosure in communication with said other opening and extending toward said first fluid, said tube having an opening therein normally disposed below said level of said first fluid, whereby said first fluid may pass into said tube and said second fluid will force said first fluid upwardly of said tube when said conduit has a leak therein and after the enclosure and the conduit have been subjected to the pressure of said second fluid; and a pressure-responsive valve coupled with said tube adjacent to the upper end thereof and disposed for exhausting the fluid therewithin to said enclosure when the fluid pressure in the tube reaches a predetermined value.

3,295,362
METHOD OF AND APPARATUS FOR ULTRASONIC INSPECTION UTILIZING CORRELATION TECHNIQUES
Fenton M. Wood, Sugarland, and Noel B. Proctor, Houston, Tex., assignors, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed July 15, 1963, Ser. No. 294,969
13 Claims. (Cl. 73—67.9)

1. A method of detecting discontinuities in a region by ultrasonic vibrational energy, comprising the steps of
transmitting from a source a periodic series of pulses of ultrasonic vibrational energy into the region;
moving the region with respect to said source;
receiving and converting into an output representation a series of vibrational energy output pulses following the traversing of at least a portion of said re-

gion, there being an output pulse for each encountered region boundary for each transmitted pulse,

said output pulses being modified by discontinuities encountered such that modifications of corresponding output pulses for different transmitted pulses occupy different positions in said output pulses,

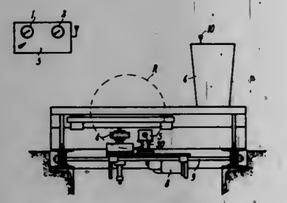


said output representation also unavoidably including random noise;

delaying a portion of said output representation the length of time equal to the time between two output pulses; and

combining said output representation and said delayed portion thereof to increase the strength of discontinuity-modified pulses with respect to unmodified output pulses and random noise.

3,295,363
HARDNESS-TESTING SYSTEM
Claude Delporte, Malo-les-Bains, Nord, France, assignor to Compagnie des Ateliers et Forges de la Loire (St. Chamond-Firminy-St. Etienne-Jacob-Holtzer), Paris, France
Filed Oct. 31, 1963, Ser. No. 320,424
Claims priority, application France, Nov. 16, 1962, 915,634, Patent 1,348,463
10 Claims. (Cl. 73—81)



1. A system for serially hardness-testing a metal part, comprising a frame, blocking means displaceable on said frame engageable with said part to block said part relative to said frame, a carriage reciprocable on said frame in a longitudinal direction generally parallel to a surface of said part, a first actuator means for reciprocating said carriage, grinder means supported on said carriage for longitudinal reciprocation therewith and for transverse movement into and out of engagement with said surface, a second actuator means for moving said grinder means relative to said carriage; an indenter device supported on said carriage for longitudinal reciprocation therewith and for transverse movement into and out of engagement with said surface, a third actuator means for moving said indenter device relative to said carriage, a power source, control means connected with said power source and a fourth actuator means sequentially operable for operating said first actuator means and said second actuator means to grind a test area on said surface and then operating said third actuator means for actuating said indenter device to indent said ground test area for making a hardness test.

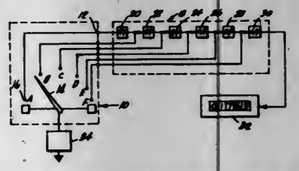
3,295,364
COMPUTING ACCELEROMETER
William D. Van Dyke, Palos Verdes Estates, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Jan. 30, 1964, Ser. No. 341,234
4 Claims. (Cl. 73—88.5)

1. A fatigue monitor comprising:

a measuring means for providing an indication of stress levels to which a structure is subjected, said measuring means including a plurality of outputs wherein each output is adapted to deliver a distinct output signal when a predetermined stress level associated with that output is reached;

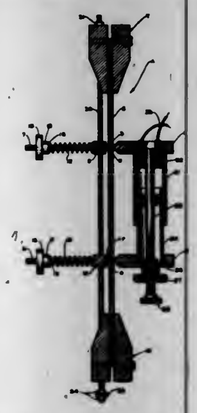
counting means for providing an indication representative of the fatigue history of the structure monitored; and

metering means for changing the indication of said counting means, said metering means including a plurality of subcircuits each having an input and an output wherein said subcircuits are connected



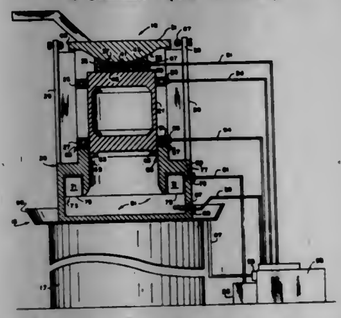
in series in a series combination and adapted to produce upon receipt of at least two input signals one output signal which can change the state of the following subcircuit, said measuring means outputs being connected to said subcircuit inputs, respectively, and said counting means being responsively connected to the output of said series combination whereby said distinct output signals are applied to said subcircuit inputs when the predetermined stress levels are reached to change the indication of said counting means.

3,295,365
EXTENSOMETER
Harry J. Larrigan, St. Louis, Michael J. Browne, Rolla, and Charles H. Adams, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 422,970
13 Claims. (Cl. 73—95)



1. A deformation measuring apparatus for indicating the magnitude of deformation in a sample comprising in combination first and second spaced opposed clamping means for releasably retaining the sample to be measured, means attached to said sample to cause deformation thereof, fluid bearing means operatively connecting said first and second clamping means and being adapted to provide substantially friction-free shiftable movement between said first and second clamping means, and means operatively associated with said clamping means for indicating the degree of deformation of said sample.

3,295,366
SUPPORT APPARATUS FOR DYNAMIC TESTING
George Landwehr von Pragenau and Wilhelm Angele, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 25, 1964, Ser. No. 370,135
4 Claims. (Cl. 73—116)



1. A hydraulic support for use in the dynamic testing of space vehicles comprising:

(a) a housing having a cylinder ring and a bottom portion forming an oil compression chamber;

(b) a piston telescoped within said cylinder ring;

(c) said piston and cylinder ring forming a capillary leak area between their two contiguous surfaces;

(d) said bottom portion having an inlet adapted to admit oil within its oil compression chamber so that the oil flow will build up pressure beneath the piston and leak through the capillary seal area between the piston and cylinder ring;

(e) a flexible container within said oil compression chamber;

(f) said bottom portion having an inlet communicating with said flexible container and adapter to admit gas within said flexible container; and

(g) self-adjusting bearings supported upon the top surface of said piston;

(h) said self-adjusting bearings comprising:

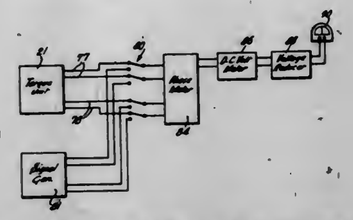
(1) an upper and lower bearing having spherical convex and concave surfaces;

(2) said lower bearing being provided with internal bores which exit into hydrostatic lift pockets within its top surface and its bottom surface;

(3) means for supplying oil within said internal bores so that oil enters the pockets within the top and bottom surface of the lower bearing and fills them so that hydrostatic pressure will separate the opposed surfaces of the upper and lower bearings as well as the opposed surfaces of the lower bearing and piston.

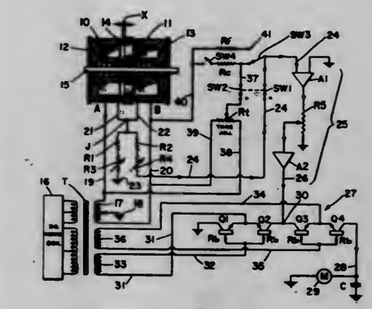
3,295,367
SENSITIVE TORQUE METER
Herbert A. Rundell, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,849
7 Claims. (Cl. 73—136)

1. In rotary type deep well drilling, in combination, a power plant for producing high torque rotary shaft power, a rotary table driven by said power plant, a removable connecting link having a shaft and being adapted for location between said rotary table and said power plant, said connecting link comprising a high torque torque meter including a pair of axially spaced apart A.C. generators both having the rotors thereof intergrally mounted on said connecting links shaft, said generators each having



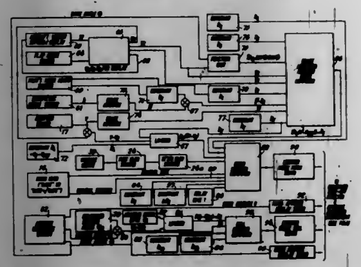
a plurality of pairs of salient poles extending substantially entirely around the periphery of each said rotor, said pairs of salient poles comprising a plurality of horseshoe type permanent magnets, and means for measuring solely the phase angle between the A.C. signals of said two generators, said phase angle being proportional to the torque applied to said shaft.

3,295,368
ELECTRICAL LOAD CELL
Searle G. Nevius, Playa Del Rey, Calif., assignor to W. C. Dillon & Company, Inc., a corporation of Illinois
Filed July 13, 1964, Ser. No. 382,037
11 Claims. (Cl. 73—141)



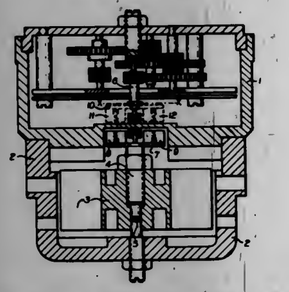
1. An electrical load cell including, in combination; first and second inductance windings; armature means movable between said inductance windings in response to a force on said cell; wave generating means including means for providing a first alternating wave form of given frequency and amplitude connected to said first inductance winding, and means for providing a second alternating wave form of identical frequency and amplitude to said first alternating wave form but 180° out of phase therewith connected to said second inductance winding to excite said first and second inductance windings with out of phase waves so that an electrically neutral point in said windings exists when said armature is in a given position between said windings, and a voltage appears at said point when said armature is moved from said given position to change the inductance of said first inductance winding relative to said second inductance winding; and a resistance network connected between said neutral point and ground to electrically load said inductance windings so that the variation of current in said resistance network is more linear with respect to movement of said armature than in the absence of said resistance network.

3,295,369
AIRCRAFT TAKE-OFF SYSTEMS
Eric Priestley, % Elliott Brothers (London) Limited, St. Leonards, Hastings, Sussex, England
Filed Apr. 17, 1964, Ser. No. 360,536
Claims priority, application Great Britain, Apr. 19, 1963, 15,636/63
16 Claims. (Cl. 73—178)



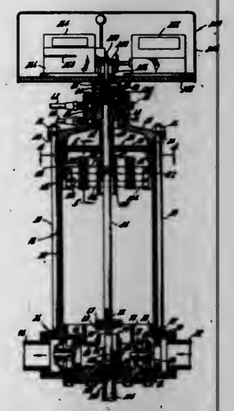
1. A take-off director system for aircraft comprising means for continuously measuring selected components of the movement and position of the aricraft, such means comprising a pitch rate gyroscope having a rate output and an integrated rate output, and an airspeed sensor, means to generate signals representing constants dependent upon the characteristics of the aircraft, means to combine the measurements signals with the constants signals to provide a composite demand signal representative of the action required to perform the take-off and initial climb cycle in accordance with a predetermined program, and a director indicating instrument to display the composite signal so that the pilot, by setting the controls to carry out the demands displayed by the system, can perform the required sequence of take-off control operations in a substantially optimal manner.

3,295,370
FLUID METERING DEVICE
Josef Marx, Mainz-Kastel, Germany, assignor to Elster & Co. Aktiengesellschaft, Mainz-Kastel, Germany, a corporation of Germany
Filed Aug. 8, 1962, Ser. No. 218,199
2 Claims. (Cl. 73—231)



1. A fluid metering device comprising a fluid metering chamber having a fluid flow measuring mechanism disposed therein, said mechanism being rotatably mounted on a shaft and having a driver magnet secured thereto, and a counting mechanism rotatably mounted on a shaft externally of said chamber and having a follower magnet associated therewith, in which said magnets are arranged to move in axially aligned annular paths of substantially equal radial dimensions around the common longitudinal axis of said shafts, and in which said magnets have adjacent poles of the same polarity with the individual polar axes of the magnets extending parallel to the common longitudinal axis of said shafts and with said follower magnet being positioned with respect to said driver magnet so as to produce repulsion forces therebetween, such that for zero fluid flow said magnets are disposed in an equilibrium position with a maximum angular distance between their poles and with the repulsion force at a minimum, whereas when a finite fluid flow causes rotation of said measuring mechanism shaft and driver magnet this rotation is transmitted to said follower magnet and the relative angular distance between the magnet poles decreases with increasing torque.

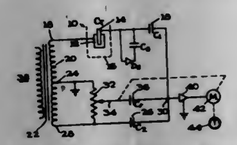
3,295,371
LEASE AUTOMATIC CUSTODY TRANSFER UNIT
Sydney S. Smith, Scarsdale, N.Y., assignor to Smith Development Co., Pablo Beach, Calif., a corporation of California
Filed Feb. 21, 1964, Ser. No. 346,513
12 Claims. (Cl. 73—250)



12. In a lease automatic custody transfer unit, a housing, a single piston adapted to move back and forth freely in the housing to defined intake and pumping strokes, means to move said piston through pumping strokes, a fluid inlet in the housing to one side of the piston adapted to be connected to the lease tank, a fluid outlet in the housing to the same side of the piston adapted to be connected to the pipeline gathering system, means in the piston responsive to changes in fluid temperature for varying the effective pumping strokes of the piston, a valve controlling the fluid outlet, an abutment on the piston for contacting the fluid outlet valve to close it at the end of the piston's pumping stroke, and said means responsive to changes in the temperature of the fluid in the housing being formed and adapted to variably position the abutment so that the time of closing of the outlet valve and therefore the effective pumping stroke of the piston, will depend on fluid temperature.

3,295,372
CAPACITANCE TYPE FLUID MEASURING APPARATUS
Alfred D. Gronner, White Plains, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed July 1, 1964, Ser. No. 379,465
8 Claims. (Cl. 73—304)

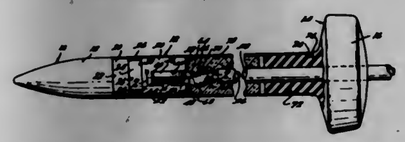
7. A capacitance fluid measuring apparatus for indicating the mass of fluid in a container comprising a first circuit including a measuring condenser having spaced electrodes immersed in said fluid, a linearizing capacitor connected in series with said measuring condenser and an A.C. voltage source for energizing said measuring condenser, a second circuit including a fixed source of A.C. voltage and a variable source of A.C. voltage, a fixed reference capacitor, an amplifier having an input circuit common to said two circuits, varying means controlled by said amplifier for varying said second circuit voltage so as to reduce the current output of said amplifier to substantially zero, indicating means under control of said varying means, said means being controlled by said amplifier, said first and second voltage sources having a predetermined phase relationship whereby the current from said first circuit is essentially opposite in phase to the current from said second circuit.



ERRATUM

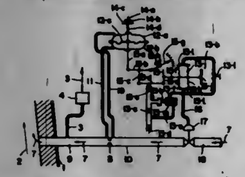
For Class 73—362 see:
Patent No. 3,295,353

3,295,373
TEMPERATURE RESPONSIVE MECHANISM
Leonard Boddy, Ann Arbor, Mich., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Original application Jan. 8, 1963, Ser. No. 250,468, now Patent No. 3,175,178, dated Mar. 23, 1965. Divided and this application July 17, 1964, Ser. No. 383,386
14 Claims. (Cl. 73—362)



1. A current modulating temperature sensing device comprising a metallic tip having a cavity therein defined by walls, and two substantially coaxial sensing elements in said cavity each having a first face disposed in intimate heat transfer relation with a wall of said cavity and disposed relatively remotely from said first face of the other one of said sensing elements, each of said sensing elements having a second face disposed proximate the second face of the other one of said sensing elements.

3,295,374
METHOD AND DEVICE FOR MEASURING PRESSURE OF FLUID IN VESSEL
Yasuhiro Sawada and Zensaku Ayuha, Kawasaki, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 23, 1964, Ser. No. 354,029
Claims priority, application Japan, Mar. 25, 1963, 38/13,597; Sept. 23, 1963, 38/51,071; Jan. 29, 1964, 39/4,185
3 Claims. (Cl. 73—395)



2. A device for continuously measuring a pressure of fluid containing dust in a vessel, comprising a first pipe connected at one end to a vessel containing fluid to be measured, a throttle mechanism at the other end of said first pipe, a second pipe connected at one end to said throttle mechanism and a feed-gas flow regulating valve at the other end of said second pipe, a third pipe connected at one end to said feed-gas flow regulating valve and adapted to be connected at the other end to a feed-gas supply source, a vessel pressure detecting pipe connecting with said first pipe at one end, a converter connected to the other end of said pressure detecting pipe for converting a detected pressure to an electric signal, an indicating and recording meter to which said converter is coupled, a first detecting pipe for detecting feed-gas pressure connected to said first pipe on the lower pressure side of said throttle mechanism, a second detecting pipe for detecting feed-gas pressure connected to said second pipe on the higher pressure side of said throttle mechanism, a differential pressure setting device to which said detecting pipes are connected, a feed gas supply regulator, a transmission mechanism for transmitting the deviation of the detected differential pressure from the set differential pressure connected between said pressure setting device and the feed-gas supply regulator, and a feed-gas flow regulating valve to which said feed gas supply regulator is connected.

3,295,375
PROCESS AND APPARATUS FOR MEASURING MASS DISTRIBUTION IN A ROTATING BODY
Thomas D. Sharples, Lansdale, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 28, 1964, Ser. No. 392,896
5 Claims. (Cl. 73—466)

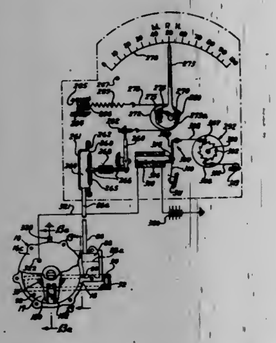


1. A process for determining the condition of balance of an object with respect to a mechanical axis of rotation, the object rigidly mounting an element having an inwardly facing annular pocket disposed substantially about the mechanical axis of the object and containing a small amount of liquid, the process comprising the steps of rotating the system comprising the object and element substantially about the mechanical axis on a non-rigid suspension to above the critical speed of the system until the object assume its own free axis of rotation, the liquid mass being insignificant with respect to the mass of the object so that the liquid has insignificant effect on the condition of balance, and measuring the depth and disposition of liquid in the pocket to indicate the position of and the extent of unbalance of the object with respect to said mechanical axis.

3,295,376
ODOMETER AND SPEED INDICATING MECHANISM
Robert H. Thorner, 19754 Monte Vista, Detroit, Mich. 48221
Filed Apr. 8, 1963, Ser. No. 271,296
7 Claims. (Cl. 73—490)

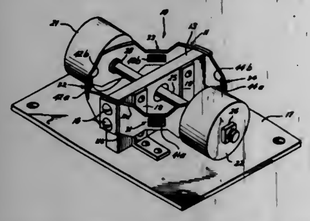
5. In a speed-indicating instrument for a mobile vehicle having an electric circuit therein, the combination of;

a centrifugal liquid device including rotary means for revolving a mass of liquid to produce a liquid pressure as a result of the centrifugal force thereof that varies as a function of the speed of rotation of said rotary means, pressure-transmitter means communicating with said rotary means and including a trapped mass of gas to convert said liquid pressure to gas pressure also varying as a function of the speed of rotation of said rotary means, pressure responsive means communicating with said pressure transmitter means and responsive to changes in pressure of said mass of gas, said pressure responsive means including indicating means movable therewith, scale means cooperable with said indicating means and gradu-



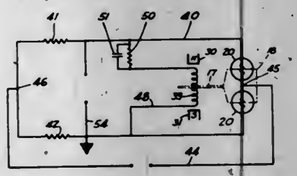
ated in units functional with the speed of rotation of said rotary means to indicate the speed thereof, said rotary means including cam means rotating therewith, first ratchet means operated by said cam means upon each revolution of said rotary means and including switch means in said circuit adapted to be operated once after a predetermined number of said ratchet operations, distance-indicating mechanism including counting means, second ratchet means operatively connected to said indicating mechanism for actuation thereof, electro-magnetic means in said circuit to operate said second ratchet means upon operation of said switch means to effect one actuation of said indicating mechanism.

3,295,377
ANGULAR ACCELEROMETER
Richard R. Richard, Houston, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed June 13, 1966, Ser. No. 557,868
8 Claims. (Cl. 73—517)



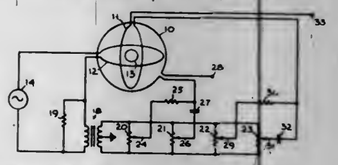
1. An apparatus for measuring angular acceleration, said apparatus comprising:
a ring member;
support means for supporting said ring member at diametrically opposed points on said ring member, said support means being rigidly connectable to a body adapted to be subject to angular acceleration;
a pair of masses supported on said ring member and mounted thereon at diametrically opposed locations which are equiangularly disposed relative to said support points;
a rigid memer interconnecting said masses;
a plurality of stress sensing means mounted on said ring member for sensing strains induced in said ring member by inertia of said masses when said apparatus is subjected to angular acceleration, at least one of said stress sensing means being located between each said mass and support point; and
indicating means responsive to said plurality of stress sensing means for indicating magnitude and direction of angular acceleration of said apparatus.

3,295,378
ACCELEROMETER
Walter J. Hirtreiter, 239 Norwalk Ave., Buffalo, N.Y. 14216
Filed July 30, 1962, Ser. No. 213,308
4 Claims. (Cl. 73—517)



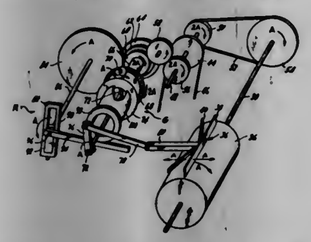
1. In an accelerometer, a pair of spaced photoconductive elements, means normally illuminating said photoconductive element substantially equally, a mass disposed between said illuminating means and said elements and normally disposed medially with respect to said elements, said mass being movable in opposite directions from such medial position in response to positive and negative acceleration forces to vary the proportionate distribution of light as between said photoconductive elements, a D.C. power supply and parallel conductors in circuit therewith, one of said photoconductive elements and a resistance being connected directly in series with each of said conductors, means connected across said conductors between the photoconductive element and said resistance of each conductor for indicating deflections of said mass as evidenced by variations in proportionate illumination of said photoconductive elements, a second connection across said conductors between the photoconductive element and the resistance of each and electromagnetic means therein acting against said mass, whereby movements of said mass produce electromagnetic restoring forces thereagainst opposite in direction to the deflection of said mass and proportionate to the degree of deflection.

3,295,379
SPHERICALLY SYMMETRIC GYRO
Louis K. Jensen, Palos Verdes Estates, and George H. Towner, Palos Verdes, Calif., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed May 20, 1963, Ser. No. 281,720
12 Claims. (Cl. 74—5.6)



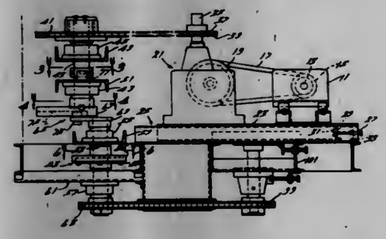
1. In combination,
at least three electrically energized readout coils having mutually perpendicular axes, and
a rotating spherical mass having no preferred moment of inertia spinning about the center of said coils, the voltage output of said readout coils being indicative of the position of said rotating mass,
said mass having electrically conducting portions, said coils completely encircling said sphere.

3,295,380
VARIABLE DRIVE STRUCTURE FOR DRIVING A WORK HEAD WITH RECIPROCATING CYCLICAL MOVEMENT
Paul V. Osborn, Jr., Webster, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Original application Sept. 20, 1961, Ser. No. 139,529, now Patent No. 3,205,117, dated Sept. 7, 1965. Divided and this application May 28, 1965, Ser. No. 459,710
1 Claim. (Cl. 74—44)



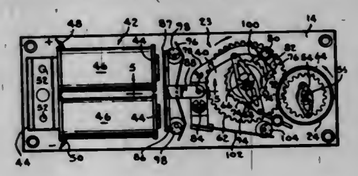
A variable drive for a work head mounted for reciprocating cyclical movement comprising a drive crank, a connecting rod pivotally secured to said drive crank and to said work head, means to rotate said drive crank including a differential gear unit having first and second differential side gears, a spider connected to said drive crank, differential pinion gears mounted on said spider and meshing with said first and second differential side gears, and power input means to drive said differential gear unit connected to said first differential side gear to rotate same at a prescribed rotational velocity, control means connected to said second differential side gear of said differential gear unit for rotating said second differential side gear at prescribed velocities during the cyclical movement of said work head, said control means including an adjustable crank having a variable crank arm length, a rack connected at one end to said adjustable crank and meshing with said second differential side gear, and control drive means from said power input means for rotating said adjustable crank and thereby said second differential side gear to control the cyclical movement of said work head.

3,295,381
MECHANICAL INDEX DRIVE
Adolph Czarnecki, Birmingham, Mich., assignor to Anchor Steel and Conveyor Company, Dearborn, Mich., a corporation of Michigan
Filed May 4, 1964, Ser. No. 364,576
1 Claim. (Cl. 74—84)



A rotary drive for cyclically indexing a work holding conveyor of the type having work supporting means suspended pendulously therefrom to move work on said support means to a predetermined position at the end of each operating cycle, and wherein the conveyor is accelerated at a constant rate during the first part of each cycle and decelerated to a final stop or dwell period also at a constant rate during the last part of each cycle, whereby to deliver the work to said position without swinging or agitation and whereby the work is essentially stationary at the time of delivery, said rotary drive comprising a drive shaft rotatable about a first axis, means rotating said drive shaft at a constant speed, a driven shaft rotatable about a second axis in spaced parallel relation to said first axis, cam means interconnecting said drive and driven shafts, said cam means including a first arm fixed to one of said shafts and having a radial cam way therein extending at least substantially to the rotational axis of said one shaft, a second arm fixed to the other of said shafts and having a cam follower fixed thereto and spaced radially of the rotational axis of said other shaft a distance only slightly greater than the space between said shafts whereby rotation of said drive shaft causes said follower to move along said radial way from a first position on one side of the rotational axis of said one shaft and spaced therefrom a distance substantially equal to the sum of the space between said shaft rotational axes and the space between the rotational axis of said other shaft and said follower, to a second position on the other side of the rotational axis of said one shaft and closely adjacent thereto, said driven shaft reaching a maximum angular velocity when said follower is in said first position and a minimum angular velocity and nearly stopping when said follower is in said second position, brake means for stopping said input shaft, switch means connected to said brake means for energizing the same, switch actuating means fixed to said input shaft and positioned to actuate said switch means and energize said brake means when said follower is substantially in said second position and said driven shaft is traveling substantially at said minimum velocity, said output shaft including a first and second portion operatively connected to said cam means and said conveyor, respectively, means interconnecting said first and second portions including a pair of confronting discs connected to said first and second portion, respectively, a plurality of angularly spaced holes formed in each said disc with the holes in one disc offset angularly in varying amounts from the holes in the other and said disc, bolt means adapted to extend through selected aligned ones of said holes in said discs permitting accurate angular adjustment of said discs relative to each other whereby to accurately angularly position said second portion to position said conveyor and said work when said brake means is energized.

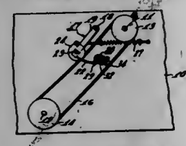
3,295,382
STEPPING MECHANISM FOR ELECTRO-MECHANICAL COUNTERS
Robert E. Einem, Emmet Township, Dodge County, and Enno A. Knief, Watertown, Wis., assignors to Durant Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Original application May 16, 1963, Ser. No. 280,786, now Patent No. 3,238,359, dated Mar. 1, 1966. Divided and this application Oct. 22, 1965, Ser. No. 501,893
6 Claims. (Cl. 74—142)



1. A stepping mechanism comprising,
electro-magnetic means adapted to be connected to a

source of input pulses and to be energized during reception of the input pulses,
an armature in operative relation to said means and provided with a bracket,
a pivoted drive arm having a pivotal connection with said bracket,
a pawl carried by said drive arm,
a ratchet wheel advanced by said pawl,
a yoke spring for biasing siad armature and bracket away from said means and having end sections inclined in a direction towards said pivotal connection and being engaged by said bracket betwen said end sections, and
support means for said end sections, said armature and bracket being pulled in opposition to the bias of said yoke spring towards said electro-magnetic means during energization of said means, and being moved in a direction away from said electro-magnetic means by said yoke spring when said electro-magnetic means is de-energized, said end sections stabilizing the motion of said armature.

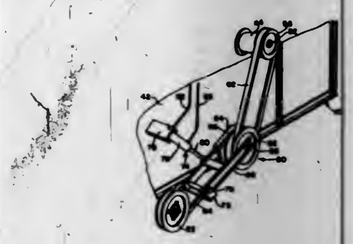
3,295,383
DRIVE BELT TIGHTENING IDLER MOUNTING
Lawrence E. Allen, Independence, Mo., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Jan. 15, 1965, Ser. No. 425,781
14 Claims. (Cl. 74—227)



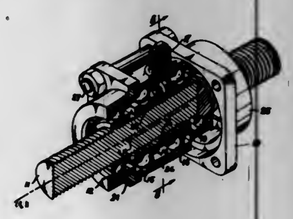
1. In combination with a flexible driving means operatively connecting one or more rotary driven members with a rotary driving member and with said rotary members being carried by a framework, a drive tightening assembly including an arm mounted at one end on said framework for swinging movement about an axis parallel to the axes of said rotary members, a tightening member mounted on the other end of said arm for engagement with said flexible driving means, the improvement comprising, an arcuate element attached at one end to said other end of said arm, said arcuate element being so configured as to lie in a circle produced by said other end of said arm when said arm is rotated about said one end, latch means coacting with said arcuate member for permitting swinging movement of said arcuate member and said arm in one direction but limiting retrograde movement thereof, and resilient means operatively connected to said arm for biasing said tightening member in said one direction into engagement with said driving means for tensioning same.

3,295,384
VARIABLE SPEED BELT DRIVE FOR A VEHICLE
Mahlon L. Love, Osco, and La Verne Anderson, Jr., New Windsor, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,595
12 Claims. (Cl. 74—230.17)

1. A variable speed V-belt drive comprising a first sheave having a fixed pitch diameter, a second sheave having a variable pitch diameter and disposed at a fixed distance from the first sheave, a support movable between the sheaves, a double sheave including a pair of coaxial sheaves having inversely variable pitch diameters journaled on the support for rotation in unison, control means operably connected to and for selectively moving the support for establishing the position of the double sheave relative to the first and second sheaves, a first endless drive means drivingly connecting the first sheave to one of the inversely variable coaxial sheaves and operative to change the double sheave diameters in response to movement of the support, and a second endless drive means drivingly connecting the second sheave to the other inversely variable sheave and operative to change the second sheave diameter in response to a change in the double sheave diameters.



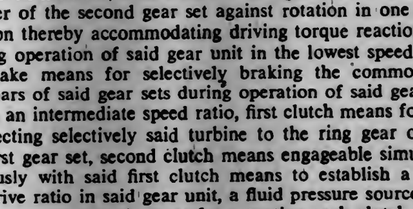
3,295,385
AUTOMATIC ANTI-FRICTION DUAL RATIO MOTION CONVERTER
Robert W. Jenny, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Dec. 16, 1964, Ser. No. 418,771
6 Claims. (Cl. 74—424.8)



1. A dual ratio motion converter for converting rotary motion into rectilinear motion, comprising in combination:
(a) a first threaded member,
(b) a second threaded member having a different pitch diameter from said first member,
(c) said first member disposed in thread engaging relationship with said second member, and
(d) restraining means yieldingly engaging said second member for applying a restraining force to said second member for restraining the rotation thereof so as to provide a first given ratio of linear displacement to revolutions of said first member, and permitting said second member to rotate when a predetermined increase of torque is applied to said first member so that rotation of said second member simultaneously with rotation of said first member provides a second ratio of linear displacement to revolutions of said first member.

3,295,386
THREE-AXIS CONTROLLER
Earl O. Menefee, Mountain View, and Albert A. Puccinelli, San Jose, Calif., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 27, 1964, Ser. No. 363,348
35 Claims. (Cl. 74—471)

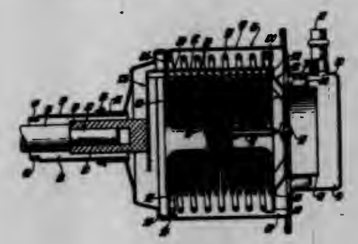
1. A controller comprising a support frame, a first pivot member connected to said frame for pivotal movement as a unit about a first axis, a second pivot member connected to said first pivot member for pivotal movement relative to the first pivot member about a second axis, a handle connected to said second pivot member for pivotal movement relative to said second pivot member about a third axis, said first axis intersecting said second axis, and said third axis intersecting said second axis at a location spaced from said first axis.



3,295,387
MULTIPLE SPEED TRANSMISSION
Richard L. Leonard, Farmington, and Robert P. Zundel, Wayne, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 3, 1963, Ser. No. 277,855
17 Claims. (Cl. 74—472)

1. In a power transmission mechanism a hydrokinetic unit comprising a bladed turbine and a bladed impeller disposed in toroidal fluid flow relationship, a power input member connected to said impeller, a planetary gear unit comprising two simple planetary gear sets, each set comprising a sun gear, a ring gear, planet gears engageable with said sun and ring gears and a carrier rotatably supporting said planet gears, the sun gears of each set being connected together, a driven member, the carrier of the first gear set being connected to said driven member, the ring gear of the second gear set being connected to said driven member, means for inhibiting rotation of the carrier of the second gear set against rotation in one direction thereby accommodating driving torque reaction during operation of said gear unit in the lowest speed ratio, brake means for selectively braking the common sun gears of said gear sets during operation of said gear unit in an intermediate speed ratio, first clutch means for connecting selectively said turbine to the ring gear of said first gear set, second clutch means engageable simultaneously with said first clutch means to establish a direct drive ratio in said gear unit, a fluid pressure source, fluid pressure operated servos for actuating each clutch means and said brake means, conduit structure including fluid pressure distributor valve means for selectively distributing pressure from said source to said servos, a source of a first fluid pressure signal that is proportional approximately in magnitude to driving torque, a second pressure signal that is proportional substantially in magnitude to the driven speed of said driven member, said distributor valve means being sensitive to each signal to control distribution of pressure selectively to said servos, and valve means disposed in and partly defining said conduit structure for modifying the effective pressure made available by said source to said second clutch means and said brake means in response to variations in said first signal during a speed ratio change from an intermediate speed ratio to a direct drive ratio, said last-named valve means being in fluid communication with said first fluid pressure signal source and with the servo for said second clutch means and being responsive to a pressure build-up in said last-named servo to effect such modification when said first pressure signal is reduced.

3,295,388
TRANSMISSION CONTROL
Ronald C. Groves, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 5, 1963, Ser. No. 306,886
20 Claims. (Cl. 74—472)

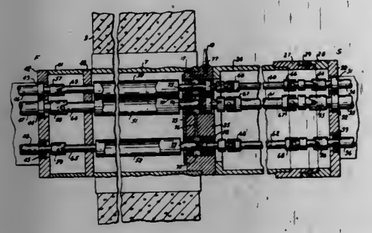


1. In a transmission control system for an engine driven vehicle transmission the combination of
(a) means providing a regulated fluid pressure source,
(b) pressure control means connected to said regulated fluid pressure source and adapted to supply a variable control pressure,
(c) and modulator means controlling said pressure control means including first motor means having a constant reference pressure and responsive to the differences in pressure between ambient atmospheric pressure and said constant reference pressure to provide a large variable force to control said pressure control means, and second motor means connected to an engine vacuum source reflective of engine torque and responsive to the differences in pressure between ambient atmospheric pressure and engine vacuum to provide a small variable force to control said pressure control means to provide a control pressure reflective of engine torque as a function of engine vacuum and correct for changes in engine vacuum resulting from changes in ambient atmospheric pressure.

3,295,389
APPARATUS FOR TRANSMITTING MOTION FROM A SAFE AREA TO A DANGEROUS AREA
Hans Wällischmiller, Meersburg (Bodensee), Germany
Filed Apr. 29, 1963, Ser. No. 276,401
Claims priority, application Germany, Apr. 30, 1962, W 32,171; May 25, 1962, W 32,318
9 Claims. (Cl. 74—491)

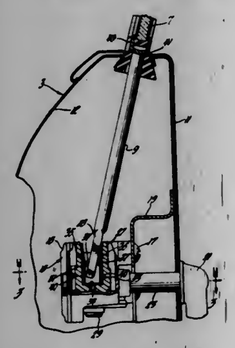
1. In an apparatus for transmitting motion from one area to another area, in combination, a wall situated between and separating said one area from said other area, said wall having a pair of opposed faces respectively directed toward and exposed to said areas and said wall being formed with an opening passing therethrough; a tube

located in said opening; a plate carried by and extending across said tube; a plurality of rotary, motion-transmitting first shafts extending turnably through said plate; sealing means carried by said plate and surrounding said shafts to prevent a fluid from flowing from said other area to said one area, said sealing means being located exclusively at the region of that face of said wall which is directed toward said one area; a rotary plate spaced from and aligned with said first-mentioned plate and located in said one area; means carried by said tube and supporting said



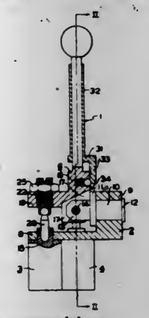
rotary plate for rotary movement relative to said first-mentioned plate; a plurality of rotary, motion-transmitting second shafts extending through said rotary plate; a plurality of transmissions respectively connecting said second shafts to said first shafts for transmitting rotation of said second shafts respectively to said first shafts, each of said transmissions including at least one universal joint so that the angular orientation of said first and second shafts relative to each other may be adjusted while maintaining transmission of motion therebetween.

3,295,390
DRIVE MECHANISM
Bert R. Wanlass, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 10, 1964, Ser. No. 373,972
11 Claims. (Cl. 74—507)



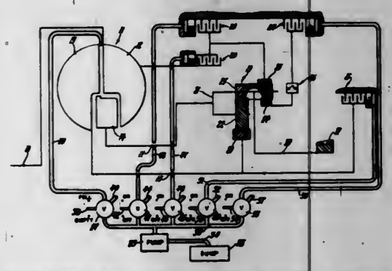
1. A drive mechanism for a movable member including a drive shaft comprising, a reduction gear unit including an output gear having an axis of rotation and means turning said gear on its axis of rotation, said gear being formed with a recess therein receiving an end portion of said drive shaft, said drive shaft having an axis of rotation which intersects the axis of rotation of said gear, connecting means mounted in said opening slidably and pivotally connecting one end of said drive shaft to said gear, said gear and said connecting means providing a universal joint connecting said first mentioned means and said shaft thereby permitting said first mentioned means to turn said shaft on its axis of rotation.

3,295,391
LOCKING MEANS FOR A LEVER-OPERATED MULTI-POSITION VALVE DEVICE
Wolfgang Ernst, Neustadt am Rubenberge, Wilhelm Bachmann, Godshorn, Hannover, and Rudi Conradt, Hannover, Germany, assignors to Westinghouse Bremsen-Gesellschaft m.b.H., Hannover, Germany
Filed Sept. 21, 1964, Ser. No. 397,872
Claims priority, application Germany, Oct. 19, 1963, W 31,405
9 Claims. (Cl. 74—536)



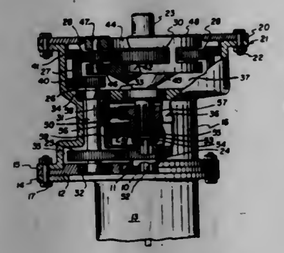
1. A control device comprising:
(a) a lever,
(b) a support,
(c) means pivotally attaching said lever to said support for selective movement to and from a plurality of positions relative to said support to effect a plurality of control operations,
(d) a bushing disposed on said lever for coaxial reciprocable movement therewith,
(e) shim means attached to said bushing and moveable therewith to and from a first position disposing the shim means in the space provided between the lever means and the support when the lever is placed in a preselected one of said positions to hold the lever means in said one position, and moveable to and from a second position disposing the shim means in a withdrawn position relative to said space for permitting uninhibited movement of the lever,
(f) means releasably holding said shim means in each of said first and second positions and including means effecting a predetermined maximum force on said shim means to be overridden by an opposing manual force to effect release of said shim means from each of said first and second positions.

3,295,392
TRANSMISSION
Milton H. Schelter, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,350
6 Claims. (Cl. 74—677)



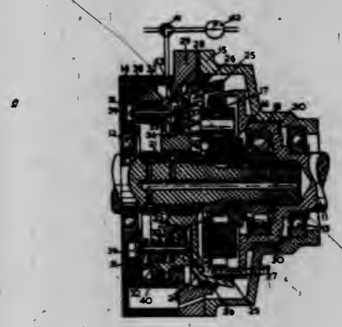
1. A transmission adapted to provide a plurality of forward drive ratios, neutral and reverse, comprising an engine driven power input shaft, a final power delivery shaft, a hydrodynamic torque converter unit of the type adapted to be selectively filled with and emptied of working fluid and having an impeller driven by said input shaft, a turbine and a reaction member, a planetary gearing unit comprising a planet carrier supporting a short planet pinion gear and a long planet pinion gear in mesh with said short planet pinion gear, a first sun gear driven by said turbine and in mesh with said short pinion gear, a reaction sun gear in mesh with said long planet pinion gear, a ring gear in mesh with said long planet pinion gear, means connecting said reaction member of said hydrodynamic unit to said final power delivery shaft for rotation therewith as a unit including said planet carrier, a first brake effective when engaged to prevent rotation of said reaction sun gear in at least one direction, a clutch effective when engaged to connect said ring gear to said input shaft for rotation therewith, and a second brake effective when engaged to prevent rotation of said ring gear, said hydrodynamic torque converter unit being filled with fluid during neutral, forward first gear, forward direct drive and reverse conditions of operation and emptied of fluid in second gear forward drive, said first brake being engaged to complete the establishment of first gear forward drive, said first brake and said clutch being engaged to establish second gear forward drive, said clutch being engaged to establish direct driven when said converter is filled with fluid, said second brake being engaged to establish reverse drive when said turbine is filled with fluid and all of said brakes and clutches being released to establish neutral condition of operation, a fluid pressure source adapted to be connected to said converter, means including a valve operable to admit fluid from said source to said converter or to connect said converter to exhaust, and means for controlling the engagement and release of said clutch and said brakes for controlling the transmission drive ratio.

3,295,393
TRANSMISSION
Phillip H. Roberts, New Orleans, La., and William R. Snook, Jr., Wichita, Kans., assignors to The Boeing Company, Seattle Wash., a corporation of Delaware
Filed May 6, 1964, Ser. No. 365,285
1 Claim. (Cl. 74—705)



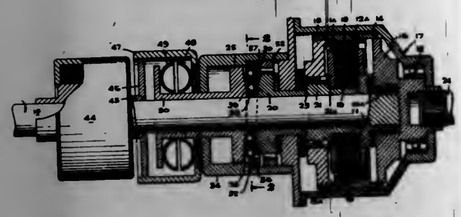
In a reversible multi-speed transmission, a housing having a partition, a bearing plate fixed to one end of said housing, an input shaft journaled in said bearing plate, an output shaft coaxially mounted with said input shaft in said housing, a ring gear journaled internally of said housing, a sun gear, planet gears operatively engaging said ring gear and said sun gear, a carrier member journaled in said partition and journaled on said output shaft and carrying said planet gears, said sun gear being fixed to and driving said output shaft, brake and clutch means disposed between said input shaft and said planet carrier member for normally braking said planet carrier member, means for disengaging said brake means and engaging said clutch means for forming a driving connection between said input shaft and said planet carrier member, drive gear means fixed to and carried by said input shaft, a countershaft disposed within said housing parallel to said input shaft and said output shaft, said countershaft being journaled in said bearing plate and said partition, first gear means fixed to and carried by said countershaft and driven by said drive gear means, second gear means fixed to and carried by said countershaft and means drivingly engaging second gear means and said ring gear in such a manner that said planet gears are driven in the same direction by said ring gear as by said planet carrier member when the latter is directly driven by said input shaft, said housing partition dividing said housing into first and second compartments, said first compartment housing said drive gear means, said first gear means, and said brake and clutch means, and said second compartment housing said second gear means, said ring gear, said planet gears, said sun gear, and said planet carrier member.

3,295,394
PLANETARY TORQUE-TRANSMITTING GEARING
Eric A. Whateley, Coventry, England, assignor to Axel Wickman Transmissions Limited, Coventry, England
Filed Oct. 21, 1963, Ser. No. 317,652
Claims priority, application Great Britain, Oct. 29, 1962, 40,712/62
7 Claims. (Cl. 74—781)



1. A planetary torque-transmitting gearing including a friction engaging member, means supporting said friction engaging member for axial movement, a member defining a first friction surface, said friction engaging member movable axially to engage said first friction surface, said planetary gearing arranged to transmit torque at one ratio when said friction engaging member is engaged with said first friction surface, a member defining a second friction surface, said friction engaging member movable axially away from said first friction surface to engage said second friction surface, said planetary gearing arranged to transmit torque at another ratio when said friction engaging member is engaged with said second friction surface, a first resiliently-distortable means arranged to urge said friction engaging member axially into engagement with said first friction surface, a force-producing means, a second resiliently-distortable means arranged operatively between said force-producing means and said friction engaging member, and said force-producing means operable to load said second resiliently-distortable means to urge said friction engaging member axially away from said first friction surface and into engagement with said second friction surface whereby said second resiliently-distortable means will prevent the generation of a shock in said gearing when said force-producing means is operated to engage said another ratio.

3,295,395
TRANSMISSION
George W. Willard, P.O. Box 902, Springfield, Mo. 65801
Filed Mar. 30, 1964, Ser. No. 355,656
15 Claims. (Cl. 74—793)



1. In an epicyclic gear train power transmission having a power imput to said gear train, a work drive output from said gear train, and a remaining member, the speed of operation of the remaining member being the determinator of the speed and power ratio between the power imput and work drive output, the provision of an improved regulating and constraining means to provide control of said remaining member, said regulating and constraining means comprising:

a shelf-locking driven device connected to said remaining member, said driven device having the characteristic of holding the remaining member from rotation under drive of the transmission forces unless said driven device is operated from a second drive source;

said driven device having means including two matched cams formed and adapted to rotate with respect to one another in a speed ratio to produce a constant spacing therebetween, said constant spacing oscillating within fixed limits between the cams, one said cam driven by said remaining member and the other by a second drive source, and at least one follower roller gear means interposed therebetween for allowing one said cam to rotate under drive influence of said remaining member at a speed determined by the rotation speed of the other.

3,295,396
METHOD OF AND APPARATUS FOR MAKING CARBIDE TIPPED SAW BLADE AND OTHER TOOLS
Gerhard G. Kolb, Chicago, Ill., assignor to Contour Saws, Inc., Des Plaines, Ill., a corporation of Illinois
Filed Jan. 18, 1965, Ser. No. 426,025
8 Claims. (Cl. 76—25)

7. Apparatus for providing a tool formed of metal having good shock resistant properties with a hard cutting edge, comprising:

A. first fixture means for gripping and holding the tool, and having means to so position the tool that the portion thereof at which the hard cutting edge is to be located is exposed and at a fixed location;

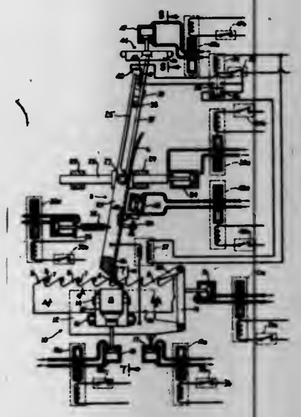
B. second fixture means for gripping and holding a rod of hard metal with one side of one end portion of the rod exposed;

C. a pressure applying member on said second fixture means to bear against the opposite side of said end portion of the rod;

D. means mounting said two fixture means and so positioning them that said pressure applying member is in juxtaposition to said fixed location and is operable to press the exposed side of the end portion of the rod against the tool;

E. motion producing means operatively associated with one of said fixture means for effecting relative movement between said two fixture means in the direction to bring the exposed side of the end portion of the rod into contact with the exposed portion of the tool and to cause said pressure applying member to press the end portion of the rod against the tool;

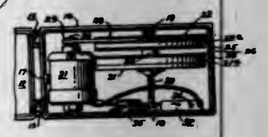
F. means for passing an electric welding current across the junction between the tool and the rod to cause softening of the contiguous portion of the tool and fusion of the end portion of the rod to the tool,



the softening of the contiguous portion of the tool enabling further relative movement between the two fixture means to force the end portion of the rod into the tool; and

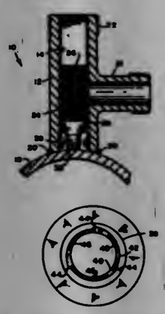
G. means responsive to such further relative movement between the two fixture means to stop the flow of electric welding current across the junction between the tool and the rod.

3,295,397
RAZOR SHARPENER
Gerald E. Stewart, 262 Texas St. San Francisco, Calif. 94107
Filed Oct. 23, 1964, Ser. No. 405,962
1 Claim. (Cl. 76—81.7)



In a razor sharpener, a casing, a cover connected by hinge means to an end of the casing, bearing members supported on opposed sides of the casing, a shaft supported in the bearings, a pair of laterally spaced discs on the shaft, said discs having opposed honing surfaces thereon adapted to be engaged alternately by the sides of a razor, an electric motor in the casing, a pulley secured to the drive shaft of the motor, an endless drive belt connecting the pulley and one of the discs, a spring latch normally engaging with a keeper on the casing to hold the cover in a closed position, a push button member carried on the cover to release the latch from the keeper, spring means to swing the cover to an open position when the latch is actuated to a released position, an electric switch connected in an electrical circuit supplying electricity to the motor, and means to close the switch automatically when the cover swings to an open position, such means automatically opening the switch when the cover is closed.

3,295,398
SELF-PUNCHING T FITTING
Eldon W. Morain, 9710 E. 4th Place, Tulsa, Okla. 74128
Filed May 11, 1964, Ser. No. 366,330
4 Claims. (Cl. 77—42)



1. A punch for forcing a hole in the wall of a pipe comprising:

a substantially cylindrical threaded shank terminating in a reduced diameter tapered concentric tubular punch end portion, said tubular punch end portion terminating in a punching face, the tapered external surface of said punch end portion defined in part by at least one longitudinal cutting edge extending inwardly from said punching face.

3,295,399
AXLE NUT WRENCH
Lewis K. Juneau, Moreauville, La. 71355
Filed June 11, 1965, Ser. No. 463,205
4 Claims. (Cl. 81—74)



1. A wrench for removing a polygonal axle nut from an axle located within a rotatable wheel hub comprising:

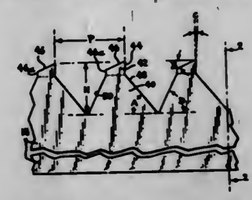
(a) a connector block,

(b) a pair of mutually perpendicular elongated members slidably and non-rotatably mounted in said connector block,

(c) nut-engaging portions at both ends of each of said elongated members, each of said nut-engaging portions having a flat lateral face parallel to the longitudinal axis of its respective one of said elongated members, and an outwardly curved surface opposite to said flat lateral face, said curved surface having for its axis of curvature a line substantially parallel to the longitudinal axis of its respective longitudinal member; whereby one of said nut-engaging portions may be inserted within a wheel hub wherein said outwardly curved surface contacts the inner surface of said hub and said flat lateral face lies adjacent to a side of a polygonal axle nut.

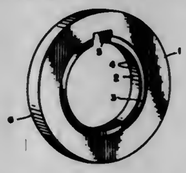
3,295,400
BAND SAW FOR BUTCHERING MEAT
Charles Anderson, 1373 Meriden Road, Wolcott, Conn. 06716
Filed May 5, 1964, Ser. No. 365,120
6 Claims. (Cl. 83—661)

1. A band saw blade for cutting meat comprising a continuous flat steel band having a toothed front edge, each tooth in said front edge having a major, generally trapezoidal root portion whose longer base is integral with said band, and a minor outer tip portion joined integrally along its base to the shorter base of said root portion; said outer tip portion having a cutting edge in the leading face of the tooth which face is disposed substantially perpendicular to the longitudinal axis of the blade, and a trailing edge which angles back from the extremity of said cutting edge to join the trailing edge of said root portion



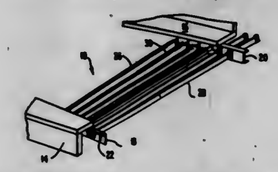
and provide a clearance rake; said root portion having a leading edge inclined rearwardly at an angle of from 45° to 55° to the longitudinal axis of the blade, and a trailing edge inclined forwardly to the blade axis to produce a tooth height of from about one-eighth to one-quarter inch, the teeth in said blade having a pitch of from three-sixteenths to five-sixteenths inch, and a set laterally of the blade of from 0.003 to 0.008 inch.

3,295,401
ALLOY STEEL SHEARING KNIVES
Selwyn R. Rackoff, Pittsburgh, Pa., assignor to American Shear Knife Company, Homestead, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1963, Ser. No. 331,849
4 Claims. (Cl. 83—676)



2. A rotary shearing blade for a rotary shear device comprising a disc-shaped, alloy steel, rotary blade body having an axial, centrally disposed aperture therein adapted to receive a shaft of a rotary shear device and having a circular shearing edge, said alloy steel consisting essentially of the following components in stated percents by weight: carbon, 1.6–1.8%; silicon, up to 1%; manganese, up to 1%; chromium, 11–14%; vanadium, 1.5–2.8%; molybdenum, up to 1.5%; tungsten, up to 1.5%; phosphorus, up to 0.7%; sulfur, up to 0.7%, and the balance being essentially all iron.

3,295,402
PEDAL BOARD FOR ORGANS
Paul A. Klann, P.O. Box 2398, Waynesboro, Va. 22980
Filed May 7, 1965, Ser. No. 454,003
7 Claims. (Cl. 84—366)



1. In a pedal board for organs of the type including a front and a rear rail, a plurality of pedal keys pivotally supported adjacent one end thereof from the rear rail

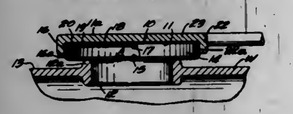
and guided for vertical movement by the front rail, with actuating means attached to the pedals adjacent the front end thereof, the improvements comprising; slot liners shaped to line slots in the rear rail, each slot liner including an elongated passage therethrough for accommodating pivotal movement of a metal pedal base and a pivot pin hole transverse to the passage, a pivot pin positioned in the hole and extending through the pedal base, and means to lock the slot liner in the rear rail slot, the locking means allowing removal of the slot liner so that the slot liner and corresponding pedal can be quickly and easily removed.

3,295,403

CUSHIONING PAD FOR WIND INSTRUMENT AND METHOD OF MAKING SAME

Jacob H. Kindlesparker, Stow, Ohio, assignor to Market Electronics Co., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 7, 1965, Ser. No. 446,329
9 Claims. (Cl. 84—385)



5. A method of making a wind instrument valve pad or like cushioning object, comprising: the steps of providing a vacuum-forming mold plate having an upstanding peripheral wall defining a cup-shaped cavity, and having inner air vents through the portions of the plate defining the bottom of the cavity and a series of peripherally spaced outer air vents through the plate outwardly of said peripheral wall and closely adjacent the base of the same; vacuum-forming a sheet of hot, pliable, air-impervious plastic material flatwise against said mold plate, and through said inner and outer air vents to vacuum form a cup-shaped member within the mold cavity, including a web portion covering said inner air vents, and an out-turned peripheral flange having an integral, reversely formed, inturned peripheral flange extension connected to a marginal portion of the sheet; severing said marginal portion from said inturned peripheral flange to expose said outer vents; and vacuum forming a second sheet of hot, pliable air-impervious plastic material to form a diaphragm flatwise across the outer rim of said peripheral wall to define a chamber between the diaphragm and said web; said outer air vents being effective to draw an integral extension of the second sheet inwardly as an inturned peripheral flange complementally engaging said inturned peripheral flange extension of said first sheet, the steps of the method including bonding said inturned peripheral flange extension of the second formed sheet to the inturned peripheral flange extension of the first formed sheet; and removing the formed object from the mold plate.

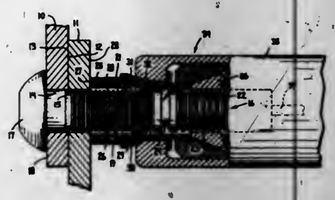
3,295,404

COLLAR FOR HUCK FASTENER

Dykes M. Baker, Marion County, Ind.
(254 S. Walcott St., Indianapolis, Ind. 46201)

Filed June 24, 1965, Ser. No. 466,529
1 Claim. (Cl. 85—7)

Fastener means for two members having face-abutting surfaces formed with registering openings therethrough, comprising a bolt including a shank penetrating said openings and an enlarged head, said shank having a portion provided with substantially annular ribs extending beyond the remote surface of one of said members when said head is in abutment with the remote surface of the other of said members, and a collar formed of a ductile metallic material proportioned and designed for swaging into locked association with said annularly ribbed shank portion, said collar having an axial bore to define a tubular body disposed on said shank portion and having an inner end engageable with said remote surface of said one member and having an outer end portion, the minimum diameter of said collar bore being greater than the maximum diameter of said shank portion, and a



stiffly flexible ring mounted within recess means in said bore and restrained against relative axial movement toward said inner end of today tubular body, said ring projecting radially into said bore with the internal dimensions of said ring being slightly less than the corresponding external dimensions of said extending shank portion, whereby the radially inner periphery of said ring engages said annularly ribbed shank portion.

3,295,405

GRIP PLATE FOR WOODEN TRUSS MEMBERS

James Stanley Burke, 7100 Coral Way, Miami, Fla. 33155

Filed Sept. 3, 1964, Ser. No. 394,285
1 Claim. (Cl. 85—13)



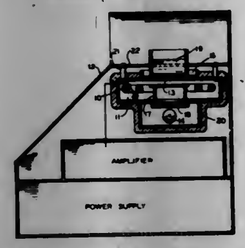
A gusset plate for use in securing wooden members together comprising a flat metal plate having spaced circular openings therein and a plurality of wood penetrating members extending upwardly from adjacent the perimeter of said openings comprising a first prong having an arcuate base portion, said prong tapering inwardly as it extends away from said base portion and terminating in a blunt flat end portion, said prong in vertical cross section having a lazy S shape configuration with said lazy S facing away from said opening, two other prongs disposed on opposite sides of said lazy S prong and having an edge joined to the adjacent edge of said lazy S prong to provide arcuate portions extending above the plate opening, said two prongs each having a first edge defined by a relieved base portion tapering toward the base of said first prong and the other edge thereof sloping upwardly from adjacent the base of the first prong thereby defining a dog ear configuration in vertical cross section, and having pointed end tips, said dog ear prongs being shorter than said lazy S prong, and a straight prong disposed between the sides of said dog ear prongs opposite said lazy S prong, said straight prong terminating in a generally arcuate configuration, said straight prong forming substantially a right angle with said plate and having its opposite lower edges cut away to form a space between it and said dog ear prongs, said straight prong being shorter than said dog ear prongs.

3,295,406

COLOR GRADING APPARATUS

Traver J. Smith, San Jose, Calif., assignor of one-half to Genevieve I. Magnuson and one-half to Genevieve I. Magnuson, Robert Magnuson and Lois J. Fox, trustees of the estate of Roy M. Magnuson, deceased

Filed Feb. 21, 1963, Ser. No. 260,276
7 Claims. (Cl. 88—14)



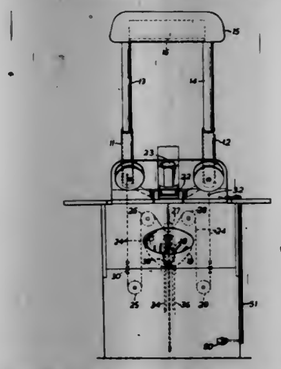
1. In color grading apparatus the combination of an electric discharge device comprising an elongated vitreous tube having an atmosphere of rarified gas, said tube being of substantially circular shape, a housing having a cavity for said tube, heat insulating material positioned on the outside of said housing and coving the sides and bottom of said housing, a substantially circular wall structure in said cavity surrounded by said electric discharge device, light filter means positioned in said wall structure for selecting substantially monochromatic lines from the light produced by said electric discharge device, wall structure in the top of said housing defining a well into which the sample to be color graded is inserted, the bottom of said well being open so that light produced by said electric discharge device impinges said sample and is reflected from said sample into said filter means, a light sensitive cell positioned under said filter means to receive light reflected from said sample and passing through said filter means, and an indicating device connected to said light sensitive cell for indicating the magnitude of light energization of said cell.

3,295,407

MICROFILM ENLARGER

John Henry Jeffree, London, England, assignor to Caps Research Limited, London, England, a British company

Filed Aug. 13, 1963, Ser. No. 301,849
Claims priority, application Great Britain, Oct. 8, 1959, 34,209/59
12 Claims. (Cl. 88—24)



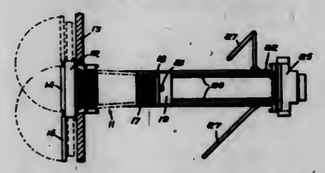
1. A microfilm enlarger comprising a light projecting unit, formed by a semiellipsoidal reflector and a lamp, a microfilm locating means and a magnifying len system; said light projecting unit, said microfilm locating means and said magnifying lens system being arranged in that order along the same optical axis and said reflector being disposed in a position to focus an image of the center of said lamp at a point beyond a microfilm frame located in said microfilm locating means; said lamp being surrounded by said reflector and coaxial therewith; and said reflector having, in the area of its reflecting surface surrounding its vertex and solely within the inner half of said reflector adjacent its vertex, shallow deformations adapted to even out the illumination over the center part of said microfilm frame.

3,295,408

OPTICAL APPARATUS FOR ADJUSTING COPY-TO-IMAGE RATIOS IN GRAPHIC ARTS PHOTOGRAPHY

William K. Rab, Newton Highlands, Mass., assignor to Multiprint, Inc., Boston, Mass., a corporation of Massachusetts

Filed June 16, 1964, Ser. No. 375,453
6 Claims. (Cl. 88—24)



1. In a graphic arts camera having a ground glass, a longitudinally movable lensboard and a longitudinally movable copyholder, a scale applied to the inner surface of the ground glass at one side of a major axis thereof, a corresponding scale applied to the copyholder at a complemental side of a major axis thereof, whereby the image of the copyholder scale may be viewed in superposed relation to the ground glass scale, and means for adjusting the relative extensions of the lensboard and the copyholder, so that said extensions may be adjusted according to the copy-to-image ratio visually observable by the relative registration of indices of the superposed scales on the ground glass.

3,295,409

MULTIPLE OPTICAL PRINTING MACHINE

André Victor Leon Clement Debrie, Paris, France, assignor to Etablissements Andre Debrie, Paris, France, a company of France

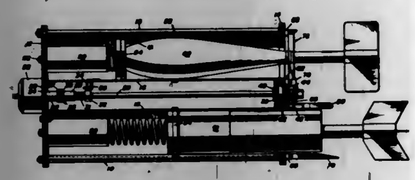
Filed Oct. 2, 1964, Ser. No. 401,083
Claims priority, application France, Jan. 23, 1964, 961,348
3 Claims. (Cl. 88—24)



1. In a multiple optical printing machine, for simultaneously producing a plurality of positive copies from a single negative film, said machine having a light source, means for producing a plurality of light beams from said light source and a reproduction optical system with a plurality of reproduction objectives, each of said light beam passing through one of said reproduction objectives, the improvement comprising means for individually controlling the light flux passing through each of said reproduction objectives, said means for controlling comprising a device comprising a casing, an opening thereon centered on the optical axis of said printing machine and displaceable elements in number equal to the number of said reproduction objectives, said device being placed outside the light path separating said negative film from said

positive copies, whereby the displacement of said elements permits individual control of the light flux passing through each of said reproduction objectives.

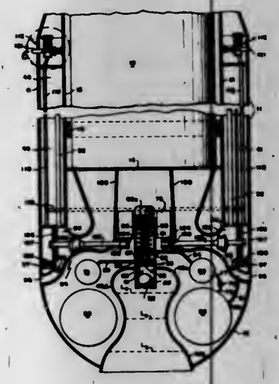
3,295,410
RETRO EJECT BOMB RACK
William R. Edwards, California, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 29, 1964, Ser. No. 407,593
4 Claims. (Cl. 89—1.5)



1. A retro eject bomb rack comprising:
a frame having forward and rearward end portions and being adapted to be secured to an aircraft, said frame defining a plurality of bomb receiving compartments;
a spring and follower ejector mechanism disposed in the forward end portion of each of said compartments;
a rotary solenoid indexing mechanism secured to the forward end portion of said frame;
rotary keeper means journaled to the rearward end portion of said frame being rotated by said indexing mechanism through a one-way clutch, said keeper means comprising a detent plate and a single lobed cam;
a plurality of hinge blocks secured to the rearward end portion of said frame, at least one of said hinge blocks containing spring loaded detent balls for cooperative engagement with said detent plate;
latch means pivotally mounted to said hinge blocks comprising latch sear means and cam follower means, said cam follower means normally engaging said single lobed cam; and
spring biased trigger means comprising first and second overlapping interlocked sequentially releasable triggers which normally surround the bomb to be ejected, the first of which is released by said latch sear means and the second of which is released by said first trigger;
whereby, upon rotation of said rotary indexing mechanism, said cam follower rides down said single lobed cam thereby pivoting said sear away from said first trigger to release same, which thereafter releases said second trigger to permit ejection of the bomb by said spring.

3,295,411
DEEP SUBMERGENCE MISSILE LAUNCHING VEHICLE WITH HOVERING AND MISSILE EJECTING SYSTEMS
Guenther W. Lehmann, Sunnyvale, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 25, 1965, Ser. No. 427,992
13 Claims. (Cl. 89—1.810)

1. In a submersible vehicle, a hovering system comprising:
ballast trimming tank means, the bottom of which is open for communication with ambient water, said tank means being adapted to provide zero buoyancy in said vehicle when water is at a predetermined level in said tank means;
valve means responsive to pressures at depths deeper than a predetermined hovering depth to connect said tank means to a source of air at a pressure substantially above the water pressure at said predetermined hovering depth so as to displace water from said tank means for increasing buoyancy of said vehicle;
means providing a zone of low pressure connected to said valve means;
said valve means being responsive to pressures at lesser depths than said predetermined hovering depth to connect said tank means to said zone of low pressure substantially less than said water pressure at said predetermined hovering depth so as to admit water to said tank means for decreasing buoyancy of said vehicle; and

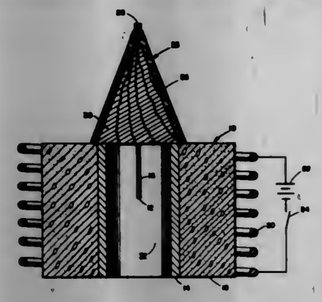


said valve means being operative in response to said water pressure at predetermined hovering depth to interrupt connection of said tank means to both said source of air and said zone of low pressure with water in said tank means at said predetermined level said air being in direct contact with said water in said ballast trimming tank means, said trimming tank means comprises an upper tank portion and a lower tank portion, said tank portions being connected by a relatively narrow throat portion, whereby changes in water level in said upper and lower tank portions effect greater changes in ballast than do changes of water level in said throat portion.

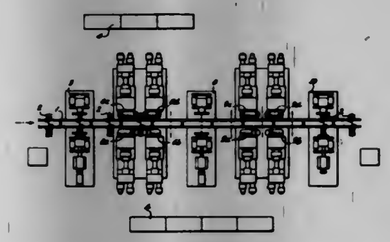
3,295,412
MAGNETIC GRADIENT PARTICLE ACCELERATOR
Morgan J. Morley, Berkeley, and David I. Gilbert, Walnut Creek, Calif., assignors, by mesne assignments, to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Original application Dec. 4, 1963, Ser. No. 328,025, now Patent No. 3,254,564, dated June 7, 1966. Divided and this application Sept. 21, 1965, Ser. No. 505,300
5 Claims. (Cl. 89—8)

1. An improved particle accelerator comprising: a metallic particle, a hollow cylindrical conductor adapted to contain said particle on its longitudinal axis, a concentric cylinder of high energy explosive arranged about said conductor, and an induction coil concentrically arranged about said explosive, said induction coil adapted

to establish a magnetic field around said metallic particle and said explosive adapted to implode said conductor around said particle so as to converge the magnetic field and thereby accelerate said particle.



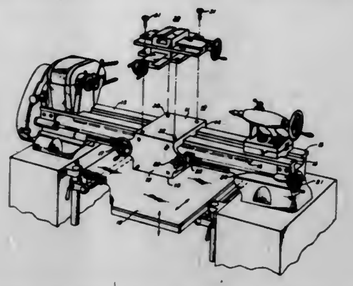
3,295,413
INSTALLATION FOR BALANCING ENGINE CRANKSHAFTS
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Mar. 29, 1965, Ser. No. 443,507
Claims priority, application France, Apr. 2, 1964, 969,519, Patent 1,398,894
2 Claims. (Cl. 90—11)



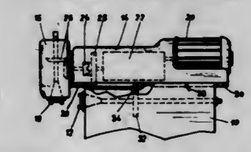
1. An improved engine crankshaft balancing installation, comprising, positioned along a crankshaft transfer path, a want-of-balance measuring machine and cutting machines effecting the necessary correction by milling the counterweights responsively to data received from computers operating on the basis of information furnished by said measuring machine, characterized in that the crankshafts are translated along the transfer path in a direction perpendicular to their longitudinal axis and in that the correction is effected by milling or cutting only the terminal counterweights in a direction parallel to the crankshaft axis, two cutting units being provided for each counterweight and being arranged in such manner that the cutting be effected in two mutually perpendicular axial planes whereby to remove material from the periphery of the counterweight.

3,295,414
MACHINE TOOL FIXTURES
Frank A. Szwadowski, 462 Morris Ave., Summit, N.J. 07087
Filed Oct. 12, 1965, Ser. No. 495,198
7 Claims. (Cl. 90—11)

1. An arrangement for selectively adding various machine tools to a basic machine having supports and ways between them, the arrangement comprising a multifaced, rectangular sleeve embracing the ways and moveable therealong, each sleeve face having securing means mateable with other securing means associated with a selected tool, an adjustable work supporting table under the ways and between the supports of the basic machine, and required driving means.



3,295,415
MACHINE TOOL WITH TWO ALTERNATELY USABLE SPINDLES
Johann Muller, Munich, Germany, assignor to Hans Deckel, Munich, Germany, and Friedrich W. Deckel, Zug, Switzerland
Filed Oct. 18, 1965, Ser. No. 497,358
Claims priority, application Germany, Oct. 28, 1964, D 45,734
7 Claims. (Cl. 90—11)

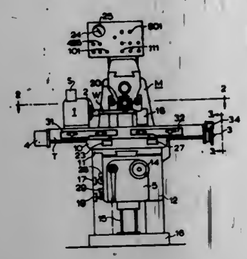


1. In a machine tool with two alternately usable spindles, a support member, a spindle housing displaceably mounted on said support member, a first spindle means mounted for rotation on said spindle housing, a driving motor supported by said spindle housing and connected to rotate said first spindle means, transmission members connected in said spindle housing and connected to said driving motor to be driven thereby, a second spindle means mounted for rotation on said support member, transmission parts connected to said second spindle means, said spindle housing being displaceable on said support member from a working position of said first spindle means to a rest position of said first spindle means in which it remains during use of said second spindle means, and said transmission members connected to move into driving connection with said transmission parts to rotate said second spindle means with said driving motor when said support member is displaced to the rest position.

3,295,416
MACHINE TOOL CONTROL SYSTEM
Carl R. Apthorp, Jr., Shaker Heights, Francis A. Foster, Parma Heights, Robert L. Nekola, Chesterland, and Thomas Samar, University Heights, Ohio, assignors to The Cleveland Twist Drill Company, Cleveland, Ohio, a corporation of Ohio
Filed July 26, 1965, Ser. No. 474,549
10 Claims. (Cl. 90—11.42)

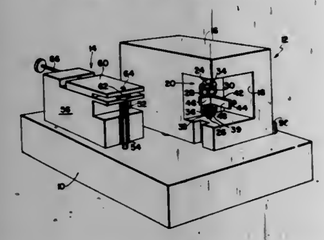
1. The method of machining a helical groove in a work piece in a machine having a tool and a work-holding spindle, which comprises mounting the workpiece on the spindle to turn and to travel in unison therewith,
generating pulses in an independent master pulse source,
moving the spindle along a predetermined path relative to the tool at a selected rate in response to a frac-

tion of the number of pulses from said source, to achieve an operative relation between the mounted workpiece and the tool,



and, while the spindle is so moving, rotating the spindle through a predetermined angle in response to each of another selected fractions of the generated pulses.

3,295,417
APPARATUS FOR CUTTING OPTICAL ELEMENTS
Albert J. Hanlon, Somerville, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,739
9 Claims. (Cl. 90—13.9)



1. Apparatus for cutting from blanks of synthetic optical material optical elements having a predetermined profile, comprising:

a head assembly including:

a housing,

a spindle assembly assuming an index position at rest, said spindle assembly including means for securely holding a blank,

spindle drive means for rotating said spindle assembly, and

spindle coupling means for effecting a driving connection between said spindle assembly and said spindle drive means;

a cutter assembly including:

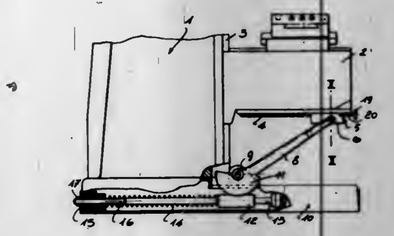
a rotatably mounted cutter, and

cutter drive means;

motive means for bringing said cutter and said spindle assembly together before a cutting operation and for separating said cutter and said spindle assembly after the cutting operation, said motive means biasing said cutter and said spindle assembly together during the cutting operation, said spindle coupling means initiating a driving connection between said spindle assembly and said spindle drive means upon engagement of a blank by said cutter; and

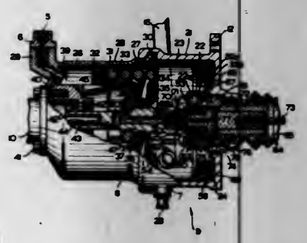
means for effecting during the cutting operation a varying displacement between said cutter and the axis of said spindle assembly corresponding to said predetermined profile, whereby from the blank said cutter cuts an optical element having said predetermined profile.

3,295,418
BALANCED SUPPORT FOR OVERHUNG TABLE OF MACHINE TOOLS, PARTICULARLY FOR MILLING MACHINES
Paolo Chiaia, Via Ghiberti 11, Milan, Italy
Filed Dec. 29, 1964, Ser. No. 421,906
9 Claims. (Cl. 90—58)



1. In a machine tool of the type having a vertically movable carriage, in combination, support means; a cantilevered carriage having a first portion supported by said support means for substantially vertical movement therealong and having a second portion spaced from said support means; and biasing means operatively connected to said second portion of said carriage for exerting thereon an upwardly directed force in opposition to the force of gravity, said upwardly directed force remaining substantially constant during vertical displacement of said carriage so that such vertical displacement may be accomplished with relatively little effort.

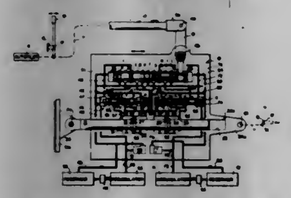
3,295,419
VEHICLE BRAKING INSTALLATION
Oskar Vielmo, Stuttgart-Sonnenberg, and Reinhold Scholl, Ditzingen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Sept. 21, 1964, Ser. No. 397,758
25 Claims. (Cl. 91—170)



1. In a system for actuating the brake means of a vehicle, in combination, a pair of housings connected to each other to form a unitary assembly; spring-pressure means and fluid-pressure means respectively situated in said housings and adapted to actuate said brake means to brake the vehicle; a source of pressure fluid; conduit means placing said source of pressure fluid in communication with both of said housings; non-return valve means controlling the flow of fluid to the housing which contains said spring-pressure means to prevent fluid in the latter housing from flowing back toward said source when the pressure of the fluid in said housing is greater then the pressure of the fluid before the latter passes through said non-return valve means to said latter housing; operator-actuated valve means controlling the flow of pressure fluid into the housing which contains said fluid-pressure means; and means in said housing which contains said spring-pressure means for maintaining the latter inoperative when the pressure of the fluid in said latter housing is above a predetermined value

and for responding automatically to a drop in the pressure of the fluid in said latter housing below said predetermined value to render said spring-pressure means operative to actuate said brake means.

3,295,420
HYDRAULIC ACTUATOR
Thomas M. Gleason and Lloyd G. Peck, Wichita, Kans., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,137
7 Claims. (Cl. 91—216)



1. An hydraulic control system for an aircraft having a control surface comprising, traveling hydraulic actuator means having first, second and third cylinder means formed therein, a piston slideably disposed in said first cylinder means, a piston rod affixed to said piston and pivotally connected to the aircraft, a member pivotally connected to the control surface, spool servo valve means slideably disposed in said second cylinder means, pilot-actuatable means connected to said servo valve means for displacing the same in said second cylinder means, cylinder bypass valve means slideably disposed in said third cylinder means for bypassing fluid from said first cylinder means when said bypass valve means is in a power off bypass position and preventing said piston from being hydraulically locked in place in said first cylinder means, spring means biasing said bypass valve means in one direction into the power off position in said third cylinder means, first conduit means conducting fluid under pressure to one end of said bypass valve means and compressing said spring means and urging said bypass valve means into a piston actuating power on position, second conduit relieving fluid under pressure from another end of said bypass valve means and from said first cylinder means on one side of said piston means as controlled by the axial position of said bypass valve means, and third conduit means supplying fluid under pressure from a pressure fluid supply to one end of said servo valve means and to said first cylinder means on an opposite side of said piston means as controlled by the axial positioning of said servo valve means and said bypass valve means, said bypass valve means being automatically axially shifted into the power off bypass position to trap hydraulic fluid in said first cylinder means on both sides of said piston when said servo valve means is returned to center by said pilot-actuatable means for holding said control surface in the position selected, and said bypass valve means permitting full hydraulic power to continue to bear against said other side of said piston when said piston has reached the end of travel thereof in said first cylinder means so long as said servo valve means is held off-center by said pilot-actuatable means.

3,295,421
POSITION CONTROL CIRCUIT
Loran F. McCormick, Canoga Park, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 16, 1964, Ser. No. 352,401
6 Claims. (Cl. 91—363)

1. A hydraulic control system comprising:

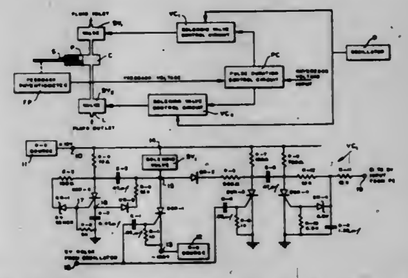
a fluid displaceable member;

a member connected fluid flow circuit, including a pair of on-off solenoid valves, each being selectively operable for selectively controlling fluid flow as it passes through said fluid flow circuit;

a first electrical pulsing circuit connected with a first one of said pair of solenoid valves for applying a first bilevel voltage control pulse thereacross;

a second electrical pulsing circuit connected with a second one of said pair of solenoid valves for applying a second bilevel voltage control pulse across said second one of said valves simultaneously with the application of said first pulse across said first one of said pair of solenoid valves;

means interconnected within each of said electrical pulsing circuits for imparting a first voltage level to the

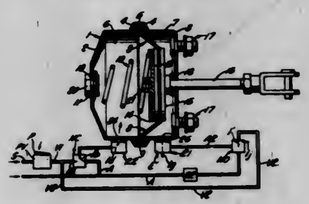


leading portion of each of the applied pulses in a simultaneous manner;

further circuit means connected within said pulsing circuits for selectively and independently maintaining a trailing portion of each applied pulse at a second voltage level substantially below the first voltage level; and

means including a pulse duration electrical circuit connected with said further circuit means for controlling duration of the trailing portion of each applied pulse, whereby the trailing portion of the first applied bilevel voltage pulse may be maintained at said second voltage level subsequent to a termination of the trailing portion of said second applied bilevel voltage control pulse, and whereby the trailing portion of the second applied pulse may be maintained at a second voltage level subsequent to a termination of the trailing portion of said first applied pulse.

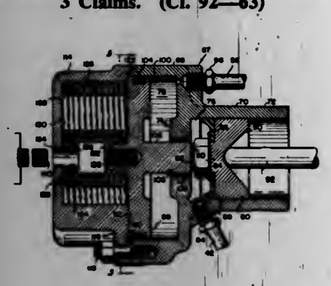
3,295,422
SAFETY BRAKE ACTUATOR
James L. Bostwick, 1501 Bluff Drive, Santa Barbara, Calif. 93105
Filed Nov. 16, 1964, Ser. No. 411,267
2 Claims. (Cl. 91—446)



1. A safety brake actuator comprising: a housing; a movable member dividing said housing into a brake applying chamber and a brake releasing chamber and movable therebetween into brake applying and brake releasing positions; a brake actuating rod extending into said brake releasing chamber and operatively connected with said movable member for movement therewith into

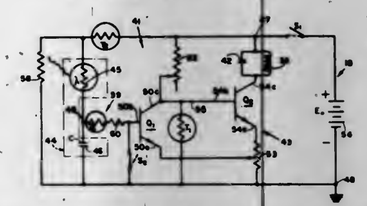
said brake applying and brake releasing positions; spring means operable in said brake applying chamber for moving said movable member and said rod into said brake applying position in the absence of fluid pressure in said brake releasing chamber; fluid pressure responsive means operable to vent said brake applying chamber and to introduce fluid under pressure into said brake releasing chamber to move said movable member and said rod into said brake releasing position and compress said spring means, as well as operable to vent said brake releasing chamber and to introduce fluid under pressure into said brake applying chamber to move with the aid of said spring means said movable member and said rod into said brake applying position; said fluid pressure responsive means including a quick relief valve for each of said chambers; a normally open fluid pressure responsive relay valve for directing fluid for operating one of said relief valves; a normally closed fluid pressure responsive relay valve for directing fluid for operating the other of said relay valves; a manually operable valve; and circuit means interconnecting said manually operable valve with said relay valves and said relief valves so that in response to operation of said manually operable valve said relay and relief valves will be operated in the aforementioned manner.

3,295,423
EMERGENCY BRAKE ACTUATOR
Frank T. Cox, Jr., Ashtabula, Ohio, Howard A. Sherretts, Linesville, Pa., and George P. Mathews, Ashtabula, Ohio, assignors to Rockwell-Standard Corporation, Coraopolis, Pa., a corporation of Pennsylvania
Original application Apr. 24, 1963, Ser. No. 275,375, now Patent No. 3,232,175, dated Feb. 1, 1966. Divided and this application Sept. 29, 1965, Ser. No. 491,455
3 Claims. (Cl. 92—63)



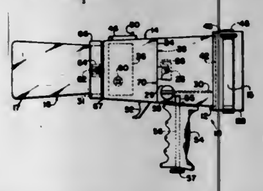
1. In a brake actuator, a casing assembly having aligned service and emergency chambers extending oppositely from a common wall, a first fluid pressure responsive member in said service chamber, said member having a connection for a brake mechanism, a second fluid pressure responsive member in said emergency chamber, one of said members extending through said wall for operative engagement with the other member, means connecting the respective spaces between said members and said wall to fluid under pressure to urge said members away from said wall, a cover detachably secured to the outer end of said emergency chamber, said cover having a surface for limiting the movement of said second member away from said wall, means in said cover providing a plurality of separate pockets circumferentially spaced around the axis of said actuator, a plurality of substantially identical springs, each spring being received in one of said pockets with a portion thereof peripherally enclosed by its respective pocket and each spring being compressed between said cover and said second fluid pressure responsive member and cooperating aligned central formations on said second fluid pressure responsive member and said cover to support and guide said springs at their non-enclosed portions.

3,295,424
SHUTTER TIMING APPARATUS
Conrad H. Biber, Needham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 17, 1963, Ser. No. 288,418
6 Claims. (Cl. 95—10)



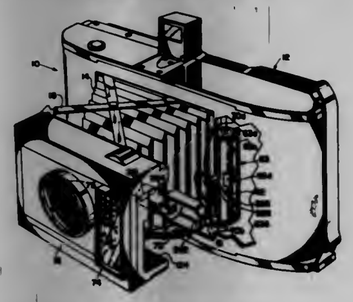
1. A shutter mechanism for a photographic camera having an exposure aperture for exposing to scene light a photosensitive material, the sensitivity of which may vary with changes in ambient temperature, comprising:
shutter means movable into light unblocking and blocking positions relative to said exposure aperture to effect exposure;
a photoconductive element exposed to scene light and having an electrical parameter which varies in response to the intensity of light incident thereon;
an electrical control circuit responsive to said parameter of said photoconductive element automatically controlling the amount of light admitted through said aperture by said shutter means, said control circuit including first transistor means responsive to said photoconductive element and normally nonconducting during exposure, second transistor means having a negative temperature coefficient of resistance and normally conducting during exposure, and regenerative feedback means from said second transistor means to said first transistor means; and
temperature compensating means responsive to variations in ambient temperature including resistance means with a negative temperature coefficient of resistance connected in said control circuit to decrease the conduction of said second transistor means and hence the amount of feedback generated by said feedback means with increasing ambient temperatures, whereby the effects of ambient temperature variations on said control circuit are compensated thereby.

3,295,425
CAMERA APPARATUS
Herbert A. Bing, Wellesley, and Philip Boone, Winchester, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,254
5 Claims. (Cl. 95—11)



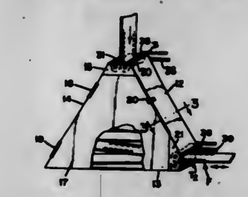
1. A camera embodying a plurality of interchangeable components for photographing, with extreme accuracy of focus and exposure, a wide variety of objects at short range in a minute detail at a predetermined magnification or other given dimensional ratio of like image and object portions, comprising a rear housing section adapted to carry a photosensitive film material and position it for exposure at a focal plane, at least one housing section releasably attachable to and adapted to be positioned forwardly of said rear section, a lens, exposure mechanism and actuating means therefor incorporated with at least one of said sections, means releasably attachable to a given section providing a given spacing between said lens and object to be photographed, and manually-operable, coacting, movable latching and film-protective means incorporated with and predeterminedly distributed between said sections for assembly and disassembly thereof and for providing protection of a film material located at said image plane from inadvertent exposure during said disassembly, said latching and film-protective means comprising a plurality of engageable fixed clevis-type latch members including a cross-bar mounted on one of said sections, and a plurality of engaging, movable latch members cooperating with a movable baffle through manually-actuable means interlocking said movable latch members and baffle mounted on another of said sections, so that, when said latch members of one section are disengaged from those of another, said baffle is positioned across a path of light rays leading to said film material and, when said latch members are mutually engaged, said baffle is removed from said path, permitting the exposure of said material, each said movable latch member being slidably mounted for vertical movement and spring-biased upwardly and including an elongated portion terminating in a tip having two oppositely-angled planar surfaces, namely, a front and a rear surface leading downwardly therefrom, said latch member including an undercut slot extending downwardly from said rear planar surface which is adapted to receive and firmly hold said cross-bar of said clevis-type latch member, whereby during assembly of said sections, when said clevis-type cross-bar contacts said front planar surface of said elongated latch portion during joining of said sections and passes across said tip thereof, said latch member is forced downwardly against said spring bias, and when said clevis cross-bar has passed across said tip to said rear planar surface said latch member moves upwardly under said spring bias and said fixed and movable latch members are preliminarily engaged so as to hold the camera sections with which they are incorporated against an inadvertent separation.

3,295,426
RADIO TRANSMITTER-CAMERA COMBINATION
Edwin H. Land, Cambridge, Richard J. Chen, Brockton, John W. Lothrop, Westwood, and Richard R. Wareham, Marblehead, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Original application Apr. 10, 1961, Ser. No. 102,047, now Patent No. 3,194,137. Divided and this application July 13, 1964, Ser. No. 382,280
4 Claims. (Cl. 95—11.5)



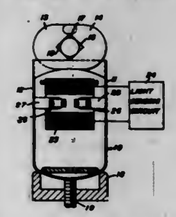
1. Photographic apparatus comprising:
(a) a camera having a shutter mechanism by which a scene can be photographed;
(b) flash contacts associated with said camera and closeable in synchronism with movement of said shutter mechanism;
(c) a flash bulb socket having a pair of socket contacts adapted to engage the electrodes of a flash bulb when the latter is operatively inserted in said socket; and
(d) a miniature radio transmitter constructed and arranged to be mounted on said flash bulb socket so as to be triggered into operation when said flash contacts close.

3,295,427
FILM MAGAZINE
Robert A. Oswald, 5701 W. Adam Blvd., Los Angeles, Calif. 90016
Filed Nov. 13, 1963, Ser. No. 323,302
11 Claims. (Cl. 95—12)



1. A film storage magazine for use in a viewing system having a projector, the storage magazine comprising: a housing having a triangular inner chamber formed therein, first and second passageways formed at individual triangular corners of the inner chamber, each being adapted to pass the strip of film between the magazine exterior and the inner chamber, at least one constant torque drive means connected to feed the strip of film into the inner chamber through the first of said passageways, whereby force exerted on the strip of film from the projector is operable to pull the film from the chamber for viewing, a second constant torque drive means connected to feed strip film into the chamber at the second of said passageways whereby the strip of film is fed back into said storage magazine when any outward pulling force exerted on the film by the projector is eliminated.

3,295,428
PHOTOGRAPHIC APERTURE REGULATING DEVICE
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 10, 1964, Ser. No. 337,032
8 Claims. (Cl. 95—64)



1. A device for regulating the effective size of a photographic aperture as a function of the illumination of a photoresponsive element, comprising: movable adjusting means the position of which determines the effective size of said aperture; and a solenoid actuator comprising hollow coil means and permanent magnet core means movable relative to one another and one of which is movable with said adjusting means, said coil means being in circuit with said photoresponsive element and variably energized as a function of said illumination, and said coil

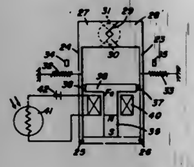
means and said permanent magnet means being relatively arranged so that whenever said coil means is unenergized, said permanent magnet means extends into the hollow of said coil means, and whenever said coil means is energized, said coil means and said permanent magnet means are urged apart so as to position said adjusting means as a function of the strength of the magnets field of said coil means, said permanent magnet core means being adapted to be at least partially withdrawn from said hollow coil means when said aperture is at its smallest size.

3,295,429

ELECTROMAGNETIC RELAY EXPOSURE CONTROLS

Allen G. Stimson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 12, 1964, Ser. No. 366,739
11 Claims. (Cl. 95—64)



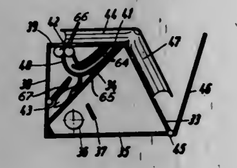
1. In a device for regulating a photographic aperture as a function of the illumination of a photoresponsive element, said device including an electromagnetic having a coil in circuit with said element and variably energized as a function of said illumination and an armature formed of magnetic material and positionable relative to said coil as a function of the energization of said coil, the improvement comprising permanent magnet bias means fixed with respect to said coil for inducing a predetermined magnetism in said armature so that coil energization operates on the armature in its range of greatest permeability.

3,295,430

DEVICE FOR EXPOSING COPY MATERIAL

Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany

Filed Apr. 21, 1964, Ser. No. 361,427
Claims priority, application Germany, Apr. 27, 1963, L 44,767
5 Claims. (Cl. 95—73)



1. A copying apparatus for a photosensitive layer to a master, comprising

(a) a housing adapted to rest upon a generally horizontal surface and including a flat translucent exposure plate inclined upwardly and inwardly with respect to the housing while forming a wall thereof, and a pair of generally planar further walls diverging from one another in the direction of said exposure plate and including acute angles therewith whereby said walls form an enclosure of generally triangular section in said housing with said plate constituting the base of the triangular section;

(b) a light source in said enclosure longitudinally extending parallel to said plate between said further walls at a region remote from said plate;

(c) wall means constituting part of said housing and forming with one of said further walls a developing compartment and including a generally horizontal flat supporting surface angularly adjoining said plate at its upper end at an obtuse angle; and

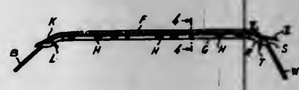
(d) developing means in said compartment for receiving said photosensitive layer, said wall means being provided with an inlet and an outlet for said layer communicating with said compartment to enable insertion of said layer into and removal of said layer from said developing means.

3,295,431

AIR DISTRIBUTION SYSTEM FOR A SELF-PROPELLED LAND VEHICLE SUCH AS AN AUTOMOBILE

Samuel R. Warner, 75—16 Vleigh Place, Flushing, Long Island, N.Y. 11367

Filed Dec. 31, 1964, Ser. No. 422,579
1 Claim. (Cl. 98—2)



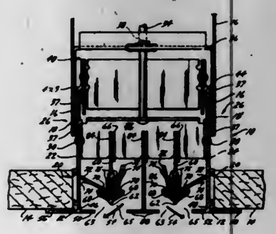
An automobile ventilating system for an automobile vehicle having a body enclosure with front and rear obliquely disposed windshield windows and said body having a top which extends toward the front and rear windows, said body top carrying the system, said system having a ventilating air conduit extending longitudinally thereunder from the front windshield to the rear windshield and having an inlet at the front windshield and an outlet at the rear windshield, said conduit having a plurality of outlets along the length between the front and rear windows and control means to control the flow inwardly through the front of the windshield and outwardly from the conduit inside of and at the rear window, said conduit having transverse interior supply conduits within the automotive vehicle each having adjustable outlet closure doors, said means to control having manual elements at the rear and front of the automotive interior to control the amount of closure.

3,295,432

STRAIGHT LINE ADJUSTABLE DIFFUSER

Carl W. Palmquist, Clarks Summit, Pa., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York

Filed May 28, 1964, Ser. No. 370,918
5 Claims. (Cl. 98—40)



1. An air diffuser for controlling the flow of ventilating air being discharged into a room, said diffuser comprising

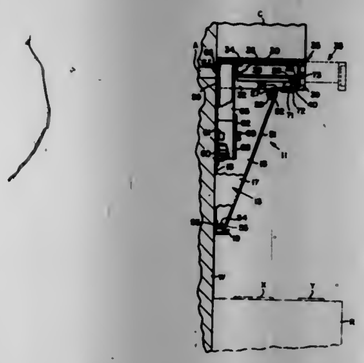
longitudinally extending side walls defining at least one elongated air flow channel therebetween, a substantially horizontal air deflecting flange extending along and projecting laterally inwardly from the lower downstream edge portion of each of said channel defining side walls, an elongated vane supporting member disposed between said channel side walls and dividing said channel into first and second air passageways, a lower portion of said member defining outwardly extending first and second leg portions, said first and second leg portions being located in closely spaced vertical relation to said first and second flanges respectively to define first and second air discharge slots therebetween, and first and second elongated vanes pivotally supported in sockets provided therefor in the upper surfaces of said first and second leg portions respectively for independent movement between vane open positions wherein each vane extends vertically upwardly alongside said member and vane closed positions wherein each vane extends across its associated passageway and said lower portion of said vane supporting member having a width which is at least approximately equal to the horizontal spacing between said side wall flanges to screen said passageway from the view of one looking upwardly into the diffuser.

3,295,433

KITCHEN RANGE HOOD

Norman P. Fox, Springwater, N.Y., and Warren H. Fischer and Clarence Ray Thorne, Fayetteville, N.C., assignors to Fasco Industries, Inc., Rochester, N.Y., a corporation of New York

Filed Sept. 11, 1964, Ser. No. 395,688
6 Claims. (Cl. 98—115)



1. A hood for exhausting fumes arising from a kitchen range, comprising:

(a) a housing adapted to be mounted above a kitchen range,

(b) a plate mounted in registery with an opening in the front of said housing to be inclined rearwardly downwardly,

(c) said plate being spaced around its perimeter slightly from the sidewalls of said housing,

(d) a duct mounted on said housing above said plate and having a fixed section communicating with the interior of said housing, and a movable section telescoping into said fixed section and reciprocable between an inoperative position in which said movable section is enclosed in said fixed section, and an operative position in which said movable section projects outwardly from said housing beyond said plate,

(e) said movable section having therein an opening which is disposed outside of said housing, when said movable section is in its operative position,

(f) an exhaust fan mounted in said housing and operable to create a vacuum in said housing to draw cooking fumes into the housing through the space surrounding said plate, and through said opening in said movable section, when the latter is in its operative position, and

(g) an exhaust duct communicating with said fan to convey away the fumes which are drawn into said housing.

ERRATA

For Class 99—234 see:
Patent No. 3,295,996

For Class 99—275 see:
Patent No. 3,295,997

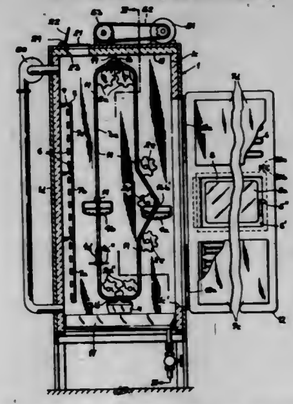
For Class 99—282 see:
Patent No. 3,295,998

3,295,434

ROASTING DEVICE

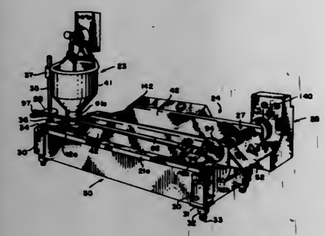
Alfred Wilhelm, Essen-Bredeney, and Alfred Löhr, Bochum, Germany, assignors to Firma F. Kupperbusch & Söhne Aktiengesellschaft, Gelsenkirchen, Germany, a corporation of Germany

Filed Dec. 30, 1964, Ser. No. 422,189
Claims priority, application Germany, Jan. 4, 1964, K 51,770; Oct. 9, 1964, K 54,209
12 Claims. (Cl. 99—346)



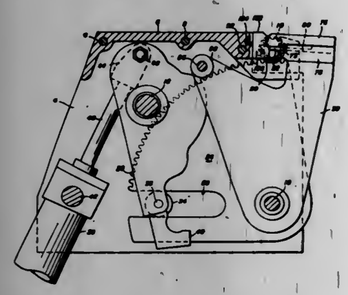
1. An automatic roasting oven comprising a generally elongated housing; a pair of spaced apart endless conveyor elements displaceable in said housing; a plurality of carrying members entrainable by said conveyor elements and removably spanning them for transporting foodstuffs to be roasted over a substantially closed transport pattern; drive means for said conveyor elements; means in said housing above said path for spraying liquids onto the foodstuffs carried by said members; heating means positioned along said path for roasting said foodstuffs as they are transported therealong, said members being formed as strainers supporting said foodstuffs while permitting the passage of liquid therethrough; and roller means in said housing defining generally rectangular paths for each of said conveyor elements, said housing having walls extending parallel to the reaches of said conveyor elements, said heating means having generally planar configurations and being disposed along at least some of said walls parallel to said carrying members and including a layer of heat-retaining ceramic capable of maintaining the interior of said housing at an elevated temperature for prolonged periods, at least one substantially planar array of generally elongated electrical heating elements, and a heat-reflective plate disposed between said array and the foodstuffs carried by said members.

3,295,435
DOUGHNUT FRYING MACHINE
Thomas E. Belshaw, Wilbur D. Wilke, and Glendon H. Scott, Seattle, Wash., assignors to Belshaw Brothers, Incorporated, Seattle, Wash., a corporation of Washington
Original application Aug. 19, 1963, Ser. No. 302,894. Divided and this application Oct. 15, 1965, Ser. No. 496,557
3 Claims. (Cl. 99—405)



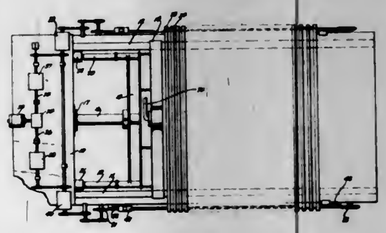
1. In combination, a fryer tank; a conveyor means mounted in said tank and having a drive shaft on said tank comprising a gear casing, a first gear in said gear casing drivingly connected to said drive shaft, a swing plate pivotally connected to said gear casing, a second gear rotatably mounted on said swing plate to swing into and out of mesh with said first gear, spring means for releasably holding said swing plate in position for meshing of the first and second gears, and a motor mounted on said swing plate in driving connection with said second gear.

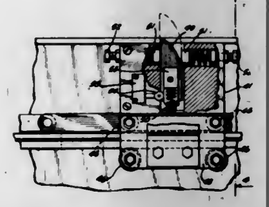
3,295,436
KNOTTER MECHANISM FOR WIRE-TYING APPARATUS
Shirley B. Brouse, Oak Lawn, and Jack J. Dalton and Marchand B. Hall, Olympia Fields, Ill., assignors to United States Steel Corporation, a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 431,618
6 Claims. (Cl. 100—31)



6. Knotter mechanism for a wire-tying machine including an article-supporting table, a spacer plate disposed below and substantially parallel with said table, a slotter twister pinion journaled below the surface of said plate, a wire-end gripper adjacent one end of said pinion, and a cutter lever adjacent the other end, said mechanism comprising a pair of spaced side plates depending from said spacer plate, one adjacent each end of said pinion, a sector plate journaled between said side plates on a shaft extending through the latter, a cam plate journaled between said side plates on a shaft offset laterally from said first-mentioned shaft and extending through both of said side plates, a sector gear journaled on said first-mentioned shaft adjacent said sector plate, said gear extending adjacent said cam plate and meshing directly with said twister pinion, a cam follower carried by said sector plate, means urging said sector plate in a direction to effect engagement of said follower with said cam plate, said gear having a radial slot therein, a roller carried by said cam plate fitting in said slot to effect angular movement of said gear on angular movement of said cam plate, and power means effecting angular movement of said cam plate less than 180 degrees first in one direction and then the other whereby said sector gear is turned by said roller to effect knot-forming rotation of said pinion and then return to starting position.

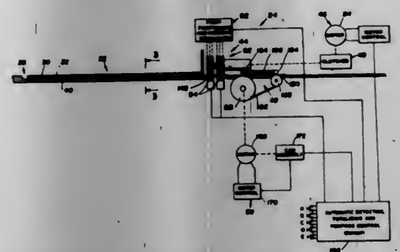
3,295,437
FILTER PLATE SEPARATOR
Henry L. Fowler, 11912 Bayla Ave., Norwalk, Calif. 90651
Filed Feb. 24, 1964, Ser. No. 346,693
5 Claims. (Cl. 100—198)





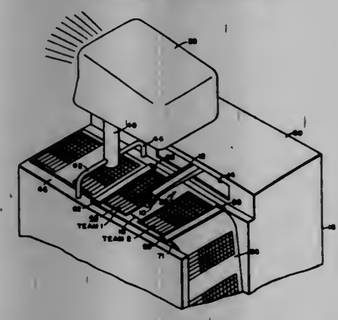
5. In a device of the class described having a plurality of filter plates arranged in a horizontal row and adapted to be moved on a horizontal track one against another, electromechanical means adapted to move and separate adjacent filter plates consecutively along said horizontal track including a plurality of drivers actuated by electrical means operating in prearranged timed sequence and adapted to engage filter plates and move the same from one position in contact with each other to another position in contact with each other along said horizontal track, each of said drivers comprising a housing, a dog mounted vertically in said housing and riding on a compression spring, a contact plate affixed to the outside of the dog, a limit switch having an operating lever mounted on said housing in proximity to said contact plate in such a manner as to provide contact between said contact plate and said operating lever when the dog is in an intermediate depressed condition, a pin affixed to the dog on the lower portion thereof and extending outwardly therefrom, a latch affixed to the housing in proximity of the dog so as to engage and latch about said pin when the dog is in a totally depressed position, and means positioned above said driver in spaced relation thereto so as to engage and depress the dog when the driver is moved under said means; and electrical control means to disengage said drivers from said filter plates at the conclusion of each movement and to discontinue the movement of said drivers upon the conclusion of the separating operation.

3,295,438
PRINTING APPARATUS
Ernest C. Webb, Bay Village, and Everett K. Mentzer, Struthers, Ohio, assignors to Cleveland Trust Company, Cleveland, Ohio
Filed Apr. 19, 1963, Ser. No. 274,167
3 Claims. (Cl. 101—93)



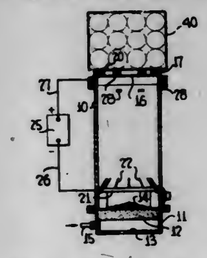
1. Apparatus for printing on one side of an individual sheet, comprising in combination: support means for supporting said sheet in a viewing position a transparent plate above said support means and through which said one side is visible; means for supporting said individual sheet at a printing position; printing apparatus at said printing position and adapted to produce printed characters on said one side of said individual sheet which can be viewed through said transparent plate; said individual sheet terminating at one end in a first transverse edge remote from said printing apparatus and at its opposite in a second transverse edge; and means engaged with said second edge of said individual sheet for moving said individual sheet from said viewing position to said printing position and vice versa.

3,295,439
PRINTING APPARATUS
Robert L. Miller, Olmsted Falls, Ernest C. Webb, Bay Village, Stephen C. Peplin, North Olmsted, and Vernon C. Becks, Westlake, Ohio, assignors to Cleveland Trust Company, Cleveland, Ohio, trustee
Filed Mar. 10, 1964, Ser. No. 350,738
19 Claims. (Cl. 101—93)



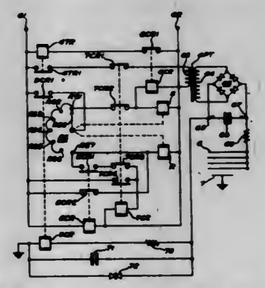
1. In apparatus for printing the score on a bowling game score sheet so as to maintain a substantially continuous image of the score sheet during the progress of a bowling game, the combination of carriage means positioned beyond the edge of the score sheet and movable in a plane extending parallel to the score sheet, a cantilever arm mounted on said carriage means and projecting outwardly therefrom over the score sheet, printing means carried on said cantilever arm, said printing means having a single band of type characters thereon which are rotatable about an axis extending perpendicular to the cantilever arm and which are successively movable into position to be momentarily pressed against the score sheet, means for selectively moving said cantilever arm toward the score sheet to thereby press a type character against the score sheet, and means responsive to electrical intelligence representing a score having a plurality of digits therein for actuating said printing means and cantilever arm to print successive digits of the score by successive momentary depressions of a type character with the cantilever arm moving laterally to the position of a next digit after each digit is printed.

3,295,440
ELECTROSTATIC PRINTING METHOD AND APPARATUS EMPLOYING CORONA DISCHARGE MEANS
Kenneth W. Rarey, South Holland, and John B. Kennedy, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 27, 1964, Ser. No. 370,610
6 Claims. (Cl. 101—114)



1. An electrostatic printing apparatus comprising a duct having an electrical nonconductive portion, a corona element at one end of the said nonconductive portion, a pattern stencil having open and closed portions and conductive elements, said stencil being located at the other end of the said non-conductive portion, a high voltage direct current source connected to the corona element and the conductive elements for creating electric charges on toner particles adjacent the corona elements and for effecting acceleration of charged toner particles from the corona element toward the stencil, means for introducing an air-borne cloud of toner particles to the region of the corona element, and means for supporting a printable substrate at the side of the stencil remote from the corona element.

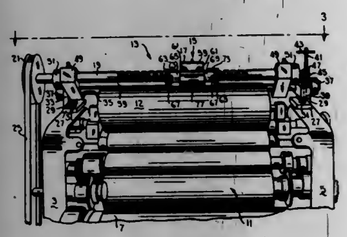
3,295,441
ARC SUPPRESSOR SYSTEM FOR INK MIST CONTROL
John J. Garnier, Hales Corners, Wis., assignor to Cutler, Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 30, 1964, Ser. No. 355,735
8 Claims. (Cl. 101—335)



1. In a printing press, in combination; a roller couple for transferring printing ink from one roler of the couple to the other, said couple when in operation causing an ink mist to be produced in the atmosphere adjacent the exit

side of the nip of said couple; means for suppressing said mist comprising an electrical conductor disposed adjacent said rollers and in relatively short spaced relation to the exit side of said nip, power supply means for applying a high electrical potential between said conductor and at least one roller of said couple to establish a corona discharge about said conductor and to establish an electrical field between said conductor and said roller of said couple, said corona discharge effecting electrical charging of the particles of said mist and said electrical field acting upon said charged particles to repel the latter back onto said rollers; and means for suppressing electrical arcing between said conductor and said roller comprising means for detecting the surge of current flowing to said conductor resulting from the occurrence of each arc between said conductor and said roller, means responsive to said detecting means for deenergizing said power supply means to interrupt each arc, means for automatically reenergizing said power supply means following each of a fixed number of arcs after an interval of time sufficient to allow each arc to be extinguished, and means for preventing automatic reenergization of said power supply means following the occurrence of one more than said fixed number of arcs.

3,295,442
INK ROLL CLEANING ATTACHMENT
James O. Allen, 1600 7th Ave., Peoria, Ill. 61605
Filed Aug. 17, 1964, Ser. No. 389,937
16 Claims. (Cl. 101—349)



15. In a printing press having an ink roller, an ink distribution member mounted for reciprocation longitudinally of the ink roller while in contact with the ink roller, means for reciprocating the ink distribution member back and forth along the ink roller, said ink distribution member comprising a pair of scrapers spaced apart longitudinally of the ink roller, and a roller extending between the scrapers contacting the ink roller.

3,295,443
PRINTING PLATE FOR ROTARY PRINTING DRUMS AND ATTACHMENT MEANS THEREFOR
Harry J. Devon, Pittsburgh, Pa., assignor to Jas. H. Matthews & Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 23, 1964, Ser. No. 377,324
1 Claim. (Cl. 101—376)

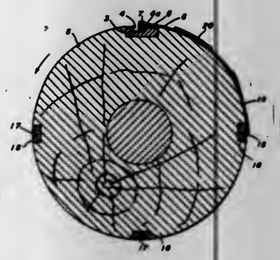
A printing plate for application to a printing roll comprising a flat sheet of fiberboard which may be bent to the curvature of the roll on which it is to be used and on which a rubber printing element is secured,

means at the leading edge of said sheet comprising a strip providing two channels with a common separating web therebetween forming an apron of greater length than the outer side walls of the channels,

said sheet having its leading edge confined in and protected by one channel with the end portion of the sheet resting on and being secured to said apron,

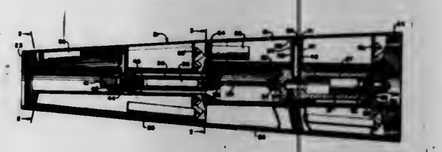
the other channel providing a hook to engage in a slit in the printing roll,

and a resilient rubber strip attached to the opposite end of said sheet having means at its free end for



engagement in a slit in a printing roll to which the plate is applied and exerting tension on the plate when said leading edge is engaged in the slot in the printing roll.

3,295,444
DISPERSAL TYPE CLUSTER WARHEAD
Vincent J. Cushing, Winnetka, and Walter A. Beaudry, Chicago, Ill., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 2, 1956, Ser. No. 601,845
3 Claims. (Cl. 102—7.2)

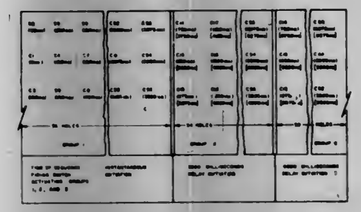


1. In a warhead of the type including circumferentially arranged submissiles which are adapted to be radially outwardly dispersed, a means for dispersing the submissiles comprising a gas chamber, a plurality of piston assemblies operatively associated with said gas chamber, each of the piston assemblies including a radially disposed cylinder formed with an internal shoulder and communicating with the interior of the gas chamber, an elongated piston in said cylinder, said piston being connected to a submissile, a shear ring carried by the piston and normally engaging said shoulder, said gas chamber containing means for generating high pressure, hot gases therein, said gases exerting pressure on said piston sufficient to rupture said shear ring and move the piston the length of its stroke, movement of the piston serving to impart a velocity to the submissile, said piston having an enlarged portion adapted to engage said shoulder at the end of the piston stroke, engagement of the shoulder by the piston suddenly stopping movement of the piston and serving to break the connection of the submissile to the piston; whereby the submissile is released for dispersal with a velocity imparted thereto.

3,295,445
METHOD OF BLASTING
Thomas Z. Ball, New Ringgold, and Edwin G. Brown, Thornton, Pa., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,597
3 Claims. (Cl. 102—23)

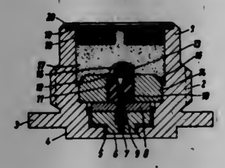
1. In a method of blasting wherein a multiplicity of charges is detonated at varying times by delay detona-

tors, the improvement which comprises initiating the detonators in separate groups of charges so that the detonators in a first group are initiated at one time while detonators in an adjacent group are initiated at a later time but prior to detonation of any charge in such first



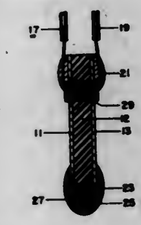
group which has a field of execution inclusive of any charge of such adjacent group, the delay between initiation and firing of a detonator of any charge of such adjacent group within such field of execution being such that said charge of such adjacent group detonates after detonation of the charge having such field of execution.

3,295,446
ELECTRIC PRIMER
Hans-Dieter Harnau, Gevelsberg, Westphalia, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Mar. 5, 1965, Ser. No. 437,520
Claims priority, application Germany, Mar. 12, 1964, R 37,434
6 Claims. (Cl. 102—28)



1. A primer comprising in combination an electric priming element including a center electrode, a cylindrical outer electrode around said center electrode, a rim on said outer electrode bent towards said center electrode and terminating in at least one contact point, an insulator located between said center and outer electrodes and having a surface between said electrodes, a metallic coating on said surface in connection with said electrodes, means for holding said primer element including a sleeve-like body, said body having an open-ended axial bore therethrough and having a first end directed towards a mass to be primed by the primer and a second end opposite to said first end directed outwardly for electrical contacting purposes, an internal shoulder at said second end, a metallic retaining ring in said bore, said primer element being mounted in its entirety in said retaining ring by forcing in said outer electrode, an anvil located in said bore and residing on said shoulder, a thin insulating layer disposed between said shoulder and said anvil, an insulating washer disposed between said metallic retaining ring and said anvil, said retaining ring being pressed in a direction to said second end against said shoulder by means of said insulating washer, said anvil and said thin insulating layer, and said center electrode of said primer element projecting through said insulating washer and being connected electrically with said anvil.

3,295,447
ELECTRIC MATCH ASSEMBLY AND ELECTRIC EXPLOSION INITIATORS MADE THEREWITH
William D. Trevorrow, Tamaqua, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Apr. 6, 1965, Ser. No. 446,797
21 Claims. (Cl. 102—28)



1. A match assembly comprising

a pair of conductive tabs having a bottom portion,

said tabs separated by a layer of non-conductive material,

a bridge wire connecting said tabs along said bottom portion,

an ignition composition in ignitable position with said bridge wire,

said tabs having a portion broader than said bottom portion,

said tabs and said non-conducting material having a perforation therethrough, and

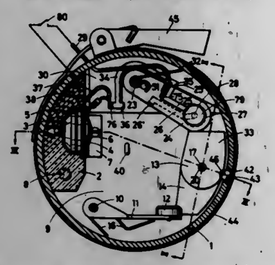
a plug of semi-conductive material positioned in said perforation in contact with each member of said pair of tabs.

3,295,448
BLANK SHELL FOR GUNS
Walter Gähle, Unterluss-Hohenrieth, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Oct. 23, 1964, Ser. No. 405,974
Claims priority, application Germany, Oct. 31, 1963, R 36,459
1 Claim. (Cl. 102—39)



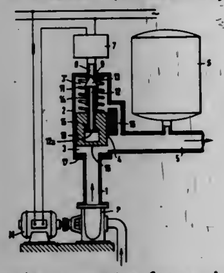
A blank shell comprising in combination a shell case having an inwardly tapered upper end, a propellent charge located at one end of said case, a first tamping element located within said case adjacent said charge but spaced therefrom by a cavity, said first tamping element comprising a mixture of a filler and a hardenable binder, said mixture hardening after location within said case, a second tamping element located within the shell case in spaced relationship with said first tamping element, and a cover member on each side of the mixture to contain the latter introduced into the case as a paste-like mass.

3,295,449
ELECTRICAL FUSES FOR PROJECTILE OR THE LIKE
Adalbert Löhnert, Furth, Bavaria, Germany, assignor to Firma Diehl, Nurnberg, Germany, a German Kommanditgesellschaft
Filed Oct. 9, 1964, Ser. No. 402,824
Claims priority, application Germany, Oct. 15, 1963, D 42,710
8 Claims. (Cl. 102—70.2)



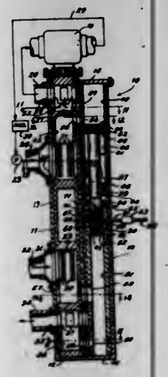
2. An electrical fuse for a projectile comprising; a piezo-electrical cell operable upon the application of pressure thereto to develop an ignition voltage for igniting the charge in a projectile in which the fuse is mounted, a hammer element in the fuse moveable to develop pressure on said cell by impact thereon, a first spring biasing said hammer element toward said cell, a trigger arm having one end engaging said hammer element and normally holding the hammer element in ineffective position, an inertia body connected to the other end of said trigger arm, said inertia body being moveable in one direction to move said trigger arm into ineffective position out of engagement with said hammer element thereby to release said hammer element to cause pressure to be developed on said cell thereby, a second spring urging said inertia body in the other direction, and inertia forces acting on said inertia body when the projectile is accelerated during the firing phase thereof urging the said inertia body in the said one direction.

3,295,450
CONTROL DEVICE FOR INDIVIDUAL WATER-PUMP INSTALLATIONS
Siegfried Schönwald and Gert Hecht, Bad Neustadt (Saale), Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed June 26, 1964, Ser. No. 378,242
Claims priority, application Germany, June 28, 1963, S 85,885
5 Claims. (Cl. 103—25)



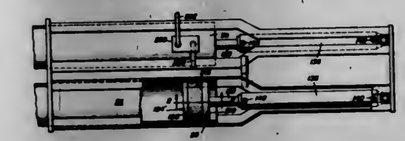
1. A pump-motor apparatus for an individual water-supply system, comprising water inlet conduit means for connection to a pump to receive water therefrom, water-supply means connected with said inlet conduit means for supplying water therefrom to outlets of the system, and a control device for starting and stopping a motor for the pump, said control device being interposed between said inlet conduit means and said supply conduit means and including a pressure-responsive switch communicating with said supply conduit means for starting the pump motor in response to a pressure drop in said supply conduit means, said control device having a control member cooperating with said switch for maintaining operation of said pump motor in response to a pressure increase in said inlet conduit means, and for stopping said motor in response to a given subnormal flow rate of water in said supply conduit means, said control member comprising a piston being urged into a blocking position interrupting communication between said inlet conduit means and said supply conduit means in dependence on the flow rate of water in said supply means.

3,295,451
HYDRAULIC POWER CONVERTER
James E. Smith, 302 Plantation Drive, Lake Jackson, Tex. 77566
Filed Nov. 10, 1965, Ser. No. 507,167
10 Claims. (Cl. 103—49)



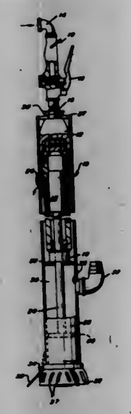
1. A hydraulic power converter comprising:
(a) a source of pressurized hydraulic actuating fluid,
(b) main distributor inlet and exhaust ports communicating with the pressurized actuating fluid source,
(c) at least three power transfer cylinders, each of the cylinders having:
(1) a dam positioned therein,
(2) a piston mounted for reciprocal movement in the cylinder, said piston including:
(a) a stem slidable through the dam,
(b) heads on opposite ends of the pistons,
(c) the piston heads, dam and cylinder defining expansible chambers between the heads and the ends of the cylinder and a trapped fluid chamber between the dam and the inner face of the head exposed to the actuating fluid,
(3) actuating fluid inlet and exhaust ports aligned with the distributor actuating fluid inlet and exhaust ports,
(d) means connecting at all times the trapped fluid expansible chambers in the cylinders,
(e) means for alternately and in turn moving the distributor actuating fluid inlet and exhaust ports into and out of communication with the inlet and exhaust ports of each of the cylinders, and
(f) pumped fluid inlet and exhaust means communicating with the expansible pumped fluid chambers in the power transfer cylinders and timed with the operation of the pistons to deliver a continuous, uninterrupted non-pulsating output of pumped fluid from the converter.

3,295,452
OIL LUBRICATED HYDRAULIC POWERED CONCRETE PUMP
Max L. Smith, West Palm Beach, Fla., assignor to Burnup and Sims, Inc., West Palm Beach, Fla., a corporation of Florida
Filed Aug. 15, 1966, Ser. No. 572,413
18 Claims. (Cl. 103—49)



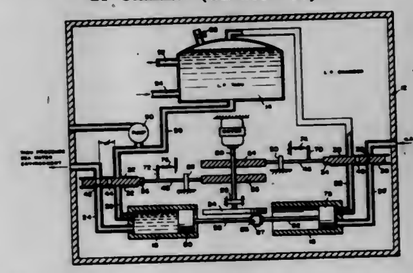
1. In a hydraulic powered electrically controlled concrete pump assembly having a hydraulic fluid reservoir, a hydraulic pressure means connected thereto, a concrete pump cylinder, a concrete sucking and pumping piston, a first hydraulic cylinder and piston actuating said concrete sucking and pumping piston, a first two-way solenoid actuated valve controlling pressure from said hydraulic pressure means to said first hydraulic cylinder, a concrete pump control valve directing concrete flow to and from said concrete pump cylinder, a second hydraulic cylinder and piston actuating said concrete pump control valve, a second two-way solenoid valve controlling pressure from said pressure means to both sides of said piston of said second hydraulic cylinder and piston for cycling said concrete pump control valve in relation to said concrete sucking and pumping piston; the improvement comprising a lubricant absorbing and dispensing piston ring on said concrete sucking and pumping piston, a lubricant conduit extending from a lubricant source of supply into said concrete pump cylinder, a lubricant pressure feed pump connected in said lubricant conduit, and a cycling pressure conduit connecting said lubricant pressure feed pump to said second two-way solenoid actuated valve to actuate said lubricant pressure feed pump.

3,295,453
FLUID PUMP DEVICE
Joseph J. Scott, Philadelphia, Pa., assignor to American Air & Power Company, Philadelphia, Pa., a partnership composed of Joseph J. Scott and Edward A. Wallace
Filed Oct. 21, 1965, Ser. No. 499,259
11 Claims. (Cl. 103—50)



1. A portable fluid pump device, comprising in combination: a pneumatic activator including a reciprocating rod; a sleeve casing connected to said activator and providing a pump chamber around said rod, said chamber having an inlet and an outlet; a piston attached to said rod for reciprocation therewith in said chamber; and a check-valve in said piston for a one-way fluid flow through said piston from said inlet to said outlet during the motion of said piston toward said inlet, said inlet remaining open at all times to fluid flow therethrough in either direction.

3,295,454
PRESSURE REDUCING PUMPING SYSTEM
William B. Plum, Ventura, and Harold P. Vlad, Oxnard, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 27, 1965, Ser. No. 428,592
10 Claims. (Cl. 103—57)

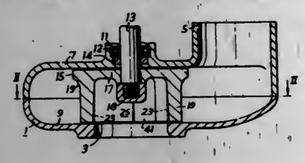


1. A pressure reducing pumping system for circulating a fluid from a high pressure fluid source to a low pressure fluid source and then returning the fluid to the high pressure fluid source comprising;
piston cylinder means;
a pair of conduits connected to the piston cylinder means and communicating said piston cylinder means with the high pressure fluid source;
another pair of conduits connected to the piston cylinder means, this pair of conduits being in communication with one another and communicating the piston cylinder means with the low pressure fluid source;
valve means for opening the high pressure conduits substantially simultaneously and closing the low pressure conduits during one cycle of operation, and closing the high pressure conduits and opening the low pressure conduits during another cycle of operation; and
means synchronized with the valve means and including piston means disposed within said piston cylinder means for simultaneously taking fluid in and discharging fluid from the piston cylinder means through the high pressure conduits during said one cycle of operation and circulating fluid through the pair of low pressure conduits during the other cycle of operation.

3,295,455
CENTRIFUGAL PUMPS
Miklos Patay, Lajos Patay, and Paul Patay, all of Broadway, Lavington Road, Devizes, England
Filed July 26, 1965, Ser. No. 474,872
Claims priority, application Great Britain, Aug. 31, 1964, 35,602/64
9 Claims. (Cl. 103—103)

1. A high specific speed, radial flow centrigugal pump, comprising: a casing and an impeller arranged for rotation within said casing, said impeller having a plurality of similar impelling bodies circumferentially spaced from one another about said impeller to form an axially disposed impeller eye, the rear end of each of said impelling bodies being spaced outwardly with respect to the forward end of the next succeeding impelling body, each of said impelling bodies also having four faces extending axially

of said impeller, including, a short, front, leading face and a long, outer, leading face opposite a short, rear, trailing face and a long, inner, trailing face, respectively, said short leading face of each impelling body forming



with said long trailing face of the impelling body in advance of it an outlet path between said impelling bodies which is convergent when viewed from said eye of said impeller and short as measured in a radial direction.

3,295,456
PUMP
Clinton C. Warren, Milwaukie, Oreg., assignor to Cornell Manufacturing Co., Milwaukie, Oreg., a corporation of Oregon
Filed Apr. 12, 1965, Ser. No. 447,141
4 Claims. (Cl. 103—115)

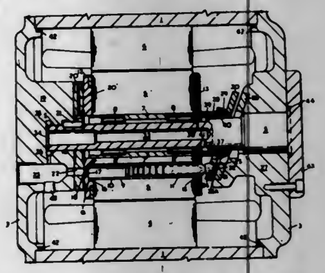


1. An impeller for a centrifugal pump comprising a substantially circular shroud adapted to be rotated about its axis and a continuous vane extending across one side of the shroud forming one end of the impeller which vane, when viewing said one end of the impeller, includes one section that starts at a marginal portion of the shroud and thence in outline arcuately curves in one direction progressing toward the axis of the impeller, and another section joined to said one section at the axis of the impeller which in outline arcuately curves in the opposite direction progressing from the axis of the impeller toward another marginal portion of the shroud which is spaced circumferentially on the throud from said first-mentioned marginal portion,

that side of each vane section which is the convex side, on viewing said one end of the impeller, forming the lead side of the vane section on operation of the impeller which moves into fluid to work thereon, and such convex side being defined by a wall that curves when viewing the impeller from its said one end to produce the arcuate outline for the vane section, but which is substantially straight and lies at a steep angle relative to the shroud viewing cross sections of the impeller taken through the axis of the impeller,

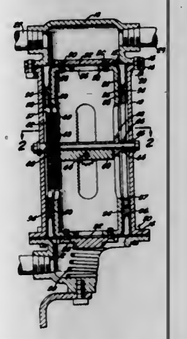
that side of each vane section which is the concave side, on viewing said one end of the impeller, forming the trailing side of the vane section on operation of the impeller, and such concave side being defined by a wall that curves when viewing the impeller from its said one end to produce the arcuate outline for the vane section, said wall also curving concavely in cross-sectional views of the impeller taken through the axis of the impeller, and further curving in a concave continuous sweep progressing rearwardly of the vane section from adjacent the lead side of the impeller in a cross-sectional view of the impeller taken along a line that curves around the axis of the impeller.

3,295,457
FLUID PRESSURE DEVELOPING UNITS
Harold George Oram, 285 Hangleton Road, Hove, Sussex, England
Filed Mar. 6, 1964, Ser. No. 349,849
9 Claims. (Cl. 103—118)



1. A pressure developing unit comprising an electric motor, said electric motor including a stator and a rotor, a plurality of bores in the rotor equally spaced from the axis of rotation of the rotor and extending parallel thereto, a tubular sleeve in each of said bores, a piston in each sleeve, each piston having one end projecting from one end of its associated sleeve, a thrust plate, means maintaining said projecting end of each piston in sliding relationship with said thrust plate, means for supporting said thrust plate in inclined relationship relative to the axis of rotation of the rotor whereby as the rotor rotates the pistons are caused to reciprocate in their sleeves, at least one end of each sleeve extending out of said rotor and into a fluid flow opening extending through a port plate, said port plate being rotatable with said rotor, means for effecting limited axial and inclined motion of said port plate relative to said rotor and said sleeves, said last-mentioned means including sealing means between said sleeves and the fluid flow openings in the port plate thereby forming a liquid tight seal in addition to effecting the latter-noted relatve axial and inclined motion.

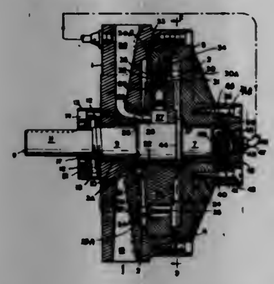
3,295,458
PUMP
Adam P. G. Steffes, 707 S. Hill St., Los Angeles, Calif. 90012
Filed Aug. 13, 1964, Ser. No. 389,395
2 Claims. (Cl. 103—150)



1. In a pump having a casing, a flexible diaphragm mounted within said casing, a piston within said casing engaging said diaphragm, a ring surrounding said piston

and filling the space between said piston and said casing and engaging said diaphragm, the combination of: means forming a rack on said piston, a spider abutting said ring and positioned between said casing and piston, means forming a second rack on said spider, pinions meshing with said racks and mounted for rotation upon said casing, said casing having an inlet and an outlet on the opposite side of said diaphragm from said piston, and a shaft journalled in said casing and projecting through said piston and spider supporting said pinions.

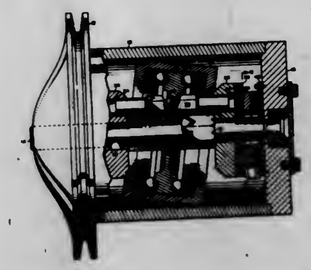
3,295,459
HYDRAULIC PUMPS
Raymond C. Griffith, 12683 Arnold St., Detroit, Mich. 48223
Original application Apr. 4, 1963, Ser. No. 271,050. Divided and this application Aug. 23, 1965, Ser. No. 493,299
6 Claims. (Cl. 103—161)



1. A fluid pump comprising a stator casing structure, a power shaft supported by said stator casing structure, a rotor secured on said shaft, said stator casing structure provided with a chamber having an annular peripheral cam surface eccentric to the shaft axis, said rotor having a plurality of angularly spaced radially extending fluid pumping instrumentalities, each comprising a pump chamber and a pump plunger reciprocatingly supported by said rotor in said pump chamber, and a shoe movably carried on the outer end of the pump plunger and constructed to slidably contact the eccentric cam surface of said stator casing structure, fluid intake and exhaust means for said pumping instrumentalities, and a free floating annular shoe retaining ring assembly disposed concentric with respect to the annular peripheral cam surface of the stator casing chamber and engaged with said shoes to retain same in position for operable contact with said cam surface and to restrain said shoes from rotary displacement about the pump plunger axis, said ring assembly being rotatable with respect to said rotor and to said stator casing structure, said free floating annular shoe retaining ring assembly comprising a pair of axially spaced annular rings engaging the radially inner sides of said shoes, and means fixing said rings in said spaced relation with respect to each other, said means fixing said rings in spaced relation comprising cross members secured to both rings and which extend intermediate adjacent shoes, one or more of said cross members being engaged by a shoe to effect rotation of said retaining ring asembly with said rotor.

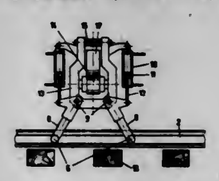
3,295,460
VALVE PLATE MOUNTING FOR A CYLINDER AND MULTI-PISTON TYPE PUMP
Tom H. Thompson, Carrier 6, Ponce Park, Daytona Beach, Fla. 32019
Filed Dec. 21, 1964, Ser. No. 419,670
14 Claims. (Cl. 103—162)

1. In a fluid pressure energy translating device of the type having a rotatable cylinder barrel, a plurality of reciprocable pistons received in the cylinders of the barrel, and means providing a plurality of fluid passages respectively associated with the cylinders of the barrel and opening outwardly at one end of the barrel; a valve plate having fluid passages which communicate with the pas-



sages in said one end of the barrel, said valve plate being arranged coaxially of the barrel and being engaged with said one end of the barrel, and means mounting said valve plate for resiliently restrained limited movement about the rotational axis of the barrel and for urging the valve plate toward the barrel.

3,295,461
MEANS FOR LATERALLY ALIGNING TRACKS
Joseph Anton Bick, Zurich, Switzerland, assignor, by mesne assignments, to Messrs. Franz Plasser Bahnbaumaschinen, Vienna, Austria
Filed Dec. 2, 1964, Ser. No. 415,332
5 Claims. (Cl. 104—8)

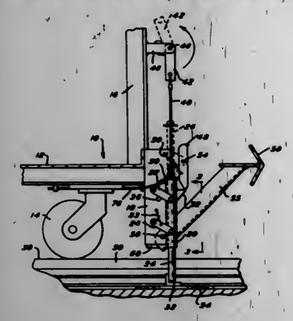


1. Apparatus for laterally aligning rails which comprises at least one aligning tool which, in use, is forced laterally against only one of the rails of a track, said aligning tool being provided with at least two longitudinally spaced pressure exerting members, and wherein said pressure exerting members (3) are attached to a common driver holder (1, 13) which is freely swivelable in a substantially horizontal plane about a hinge (4) arranged substantially in the center of said holder for carrying out simultaneously a lateral movement of the said spaced pressure exerting members (3) up to the said one rail (2) under the action of a common power source and for distributing between the said spaced members the pressure exerted on the said rail.

3,295,462
TOW TRUCK
Lynn Bradt, Easton, Pa., assignor to SI Handling Systems, Inc., Easton, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1964, Ser. No. 407,198
11 Claims. (Cl. 104—172)

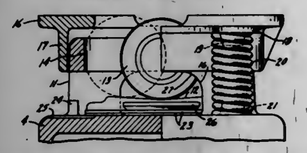
1. A tow truck comprising a body adapted to be mounted for movement along a guide path, an upright tow pin having one end adapted to enter a slot for engagement with a conveyor means, guide structure for the tow pin, means including two link members mounting said guide structure and the tow pin at one end of said body, each link member having a first end portion pivotably connected to said guide structure, and each link

member having a second end portion pivotably coupled to said body, whereby said tow pin and guide structure



may move forwardly and upwardly with respect to said body while remaining in an upright position.

3,295,463
RAILROAD CAR STABILIZING LIMIT AND SIDE BEARING MEANS
Franklin D. Barber, Chicago, Ill., assignor to Standard Car Truck Company, Chicago, Ill., a corporation of New Jersey
Substituted for abandoned application Ser. No. 291,479, June 28, 1963. This application Nov. 22, 1965, Ser. No. 508,921
4 Claims. (Cl. 105—199)



1. A railroad car side bearing assembly, including opposed friction plates on the car body and the car truck, load supporting spring means between the car body and the truck, biasing the plates into constant frictional contact with each other as the car body rocks with respect to the truck, anti-friction means, normally out of contact with both plates, between the car body and the truck, so positioned that as the car rocks with respect to the truck, moving the plates toward the base which supports the spring means and increasing the pressure on the spring means, a point is reached at which the anti-friction means are contacted by one of the plates to positively inhibit further movement of such plate toward the base and prevent any increase in the spring carried load and in the pressure between the friction plates, the load resulting from the rocking of the car body with respect to the truck being thereafter divided between the spring means and the anti-friction plates.

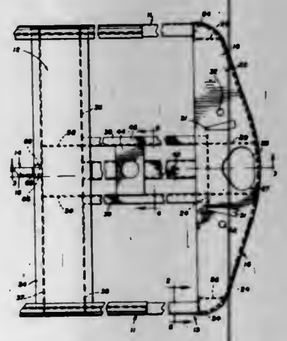
3,295,464
TIE DOWN SYSTEM FOR HEAVY VEHICLES
Keith W. Broling, Homewood, Ill., assignor to Brandon Equipment Company Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 16, 1965, Ser. No. 440,202
11 Claims. (Cl. 105—369)

1. In a tie down apparatus for freight cars and the like and in combination with a flat car having a deck and spaced stake pockets at opposite sides of said deck and a pair of parallel spaced channel-like retainers extending along opposite sides of said deck above said stake pockets, each channel-like retainer having at least one outboard tie down winch mounted therein for adjustable movement therealong and having inwardly extending retainer flanges recessed beneath the floor of the deck and adapted to have interengagement with the tie down winch for retaining the winch in an operative tie down position,
said channel-like retainers having openings therein reg-



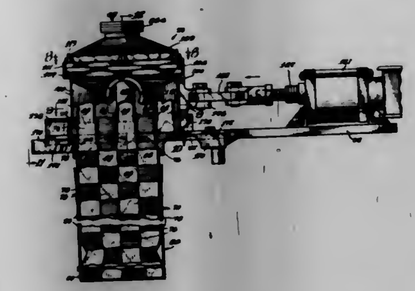
istering with said stake pockets and having trap doors pivoted to the bottoms thereof closing the space between said stake pockets and accommodating movement of a tie down winch therealong over said openings and the placing of stakes in said stake pockets upon the opening of said trap doors.

3,295,465
RAILWAY VEHICLE UNDERFRAME CONSTRUCTION
Jack W. Borger, Chicago, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,725
2 Claims. (Cl. 105—414)



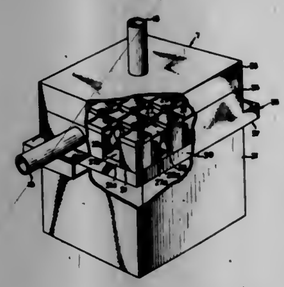
1. A railway car underframe structure comprising a pair of laterally spaced and lengthwise extending side sills, a pair of lengthwise spaced bolsters extending transversely between said side sills and fixed thereto inwardly of the ends of said underframe, a center sill at each end of the underframe and fixed to the outer faces of the respective ones of said bolsters and extending outwardly toward the respective ends of said underframe, an end sill connected to the respective ends of said side sills and center sills so that the impact load adapted to be applied on the end sill is proportionally distributed between said end sill and said bolsters, means mounted on at least one of said center sills between said end sill and said bolster for connecting a draw bar thereto, said end sill having a cut-out intermediate the ends thereof in alignment with said center sill to provide a sector subject to localized bending in the form of elastic deformation and said end sill having an over-all bending capacity higher than said bolsters to provide a high energy absorbing member which upon an impact tending to distribute a failure causing load to said bolster is subject to bending beyond the elastic limit so that said failure causing load is isolated at said end sill.

3,295,466
METHOD AND APPARATUS FOR FORMING ICE CREAM AND LIKE MATERIALS
Kenneth Bell, Marengo, and Joseph J. Porada, Norridge, Ill., assignors to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 337,991
10 Claims. (Cl. 107—1)



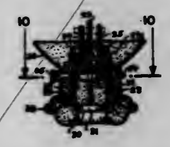
6. In apparatus for forming a block of different edible materials, the combination of a housing having first and second chambers and a generally flat bottom wall, said wall having a plurality of ports therein arranged in a row, alternate ones of said ports communicating with said first chamber and the intervening ports communicating with said second chamber, a generally flat plate slidably supporting said housing and having a series of openings arranged in a row beneath said ports, said openings being fewer in number than said ports, and means guiding said housing for reciprocation longitudinally of said rows to bring each opening into registry first with a port of one of said chambers and then alternately with a port of the other chamber.

3,295,467
METHOD AND APPARATUS FOR FORMING ICE CREAM AND LIKE MATERIALS
Edward M. Gropen, East Northport, N.Y., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 337,994
17 Claims. (Cl. 107—1)



5. In apparatus for forming an edible product of different materials, the combination of at least two manifolds each adapted to contain a different one of said materials, said manifolds having discharge nozzles with openings arranged in a pattern with adjacent openings communicating with different manifolds, a grid having openings arranged in a pattern similar to said pattern of said manifold openings, and product receiving means communicating with said grid openings for the advance of said materials to the product receiving means through said nozzle openings and the grid openings, said manifolds and said grid being supported for movement relative to each other and transversely of the direction of advance of said materials to form layers of sections of said materials in patterns corresponding to the patterns of said openings with adjacent sections in each layer and adjacent sections of adjacent layers being formed of different materials.

3,295,468
DOUGH FORMING MACHINE
Thomas E. Belshaw, 1772 22nd Ave. S., Seattle, Wash. 99204
Filed Oct. 16, 1962, Ser. No. 230,920
1 Claim. (Cl. 107—14)

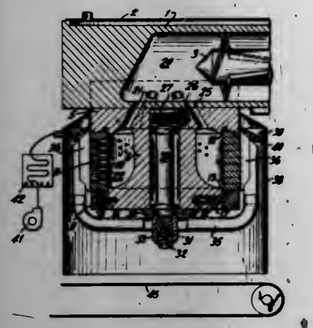


In a dough forming machine, a hopper assembly with a discharge extension having a radial opening therethrough, a removable sleeve mounted in said extension and having an external circumferential groove therein at the same level as said opening and extending less than the circumference of the sleeve, an enlarged guard fixed on the sleeve and extending radially beyond the lower end of the extension, a removable pin slidably extending through said opening into said groove, the inner end of said pin being tapered and said pin having a stop shoulder opposing the outer face of said extension and arranged to prevent inward travel of the tapered inner end portion of the pin beyond the inside radius of said sleeve and means engaging said extension and yieldingly resisting withdrawal of said pin from said groove, the end portion of the floor of said groove and the inner end portion of said pin being so shaped that turning of said guard relative to said extension causes said pin to back out of said groove onto the non-grooved portion of the sleeve in opposition to said means thereby freeing the sleeve for axial removal from the extension, and the upper end of said sleeve being externally tapered inwardly toward the top above said groove for engaging the inner end of said pin when the sleeve is being inserted into said hopper extension to thereby retract the pin from the inside of the extension until said groove reaches the level of the pin.

3,295,469
ALIMENTARY PASTE EXTRUSION PRESS
Renzo Vassalli, Uzwil, St. Gall, Switzerland, assignor to Gebruder Buhler, Uzwil, Switzerland, a company of Switzerland
Filed May 26, 1964, Ser. No. 370,293
Claims priority, application Switzerland, May 31, 1963, 6,829/63
13 Claims. (Cl. 107—14)

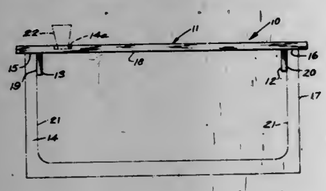
1. An alimentary extrusion press comprising a material feeding housing, said housing having an opening in the wall thereof, means to force material in the housing out through said opening, an adapter having a plate portion attached to said housing and having an opening therein which communicates with said housing opening, an elongated extension extending downwardly from the center of said plate portion, an extrusion die having a plurality of openings therein and adapted to be fastened between a

lower end of said plate portion extension and a surface of said plate portion so as to provide a material receiving space between said extension and said die, said space com-



municating with said housing and plate openings, and means carried by said extension to fasten said die to said adapter plate portion.

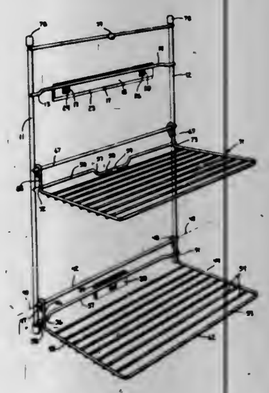
3,295,470
BATHTUB TRAY
Luverne E. Johnson, 4455½ 48th St., San Diego, Calif. 92113
Filed Dec. 10, 1965, Ser. No. 512,998
2 Claims. (Cl. 108—47)



1. A bathtub tray comprising an elongated horizontal panel adapted to be positioned over an intermediate portion of a bathtub rim, a pair of supports secured to said panel near the ends thereof and extending in perpendicular relationship therefrom for removably securing said tray to the upper portion of said tub; and recess means on said panel for providing holding means for articles adapted to be positioned and secured therein, said pair of supports comprising vertical panels secured on the underside of said horizontal panel, said vertical panel extending downwardly and parallel to each other when said bathtub tray is placed over an intermediate portion of said tub, and said vertical panels being shorter in length than the width of said horizontal panel and centrally mounted between opposite side edges of said horizontal panel.

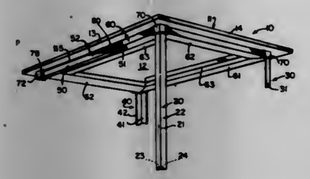
3,295,471
FOLDING-SHELF
Robert W. Cook, 1331 SW. 21st Terrace, Miami, Fla. 33145
Continuation of application Ser. No. 332,389, Dec. 23, 1963. This application June 14, 1965, Ser. No. 470,267
2 Claims. (Cl. 108—111)

1. A folding shelf device comprising an elongated double-faced pressure sensitive adhesive strip, the rear face of said strip being adhesively attached to an upstanding mounting wall; a first plate adhesively attached to the front face of said strip, said plate having a plurality of horizontal loops projecting forwardly therefrom, said loops accommodating entry of a prong moving vertically downward; a second plate covering said first plate and having apertures therein receiving said loops when said plates are disposed in face-to-face relationship, said apertures having prongs therein projecting down from upper margins thereof, and received by said loops and retaining said plates together as said loops support said second plate; a vertical frame secured to said second plate, said vertical frame including side members, a first fixed cross member and a second fixed cross member spaced below said first fixed cross member; a first shelf frame having first and second generally L-shaped shelf side members in spaced relation with a first shelf cross member affixed to said shelf side members and extending therebetween, the short leg of each of said shelf side members having an end portion looped around said first fixed cross member whereby said shelf frame is povitally mounted to said first fixed cross member, the short leg of each of said shelf side members abuttingly engaging said second fixed cross member to thereby support said shelf frame in a horizontal plane; said vertical frame also including third and fourth fixed cross members spaced substantially above said first fixed cross member, said third fixed cross member having a central portion projecting downwardly toward said first fixed cross member; a latching ball mounted to the front surface of said central portion and providing a downwardly opening notch between said central portion and



said ball, said notch being spaced from said first fixed cross member a distance substantially equal to the distance of said first shelf cross member from said first fixed cross member, and portions of said ball and said central portion adjacent said notch being closer to said first fixed cross member than said first shelf cross member, and one of said cross members being resiliently deflectable, whereby said first shelf cross member is movable into said notch and securely retainable therein to retain said shelf frame in a folded vertical condition; said fourth fixed cross member spaced above said third cross member; a second shelf frame having third and fourth generally L-shaped side members in spaced relation, with a second shelf cross member affixed to said third and fourth shelf side members and extending across said second shelf frame, the short leg of each of said third and fourth shelf side members having an end portion looped around said fourth fixed cross member, and the short leg of each of said third and fourth shelf side members abuttingly engaging said third fixed cross member to support said second shelf frame in a second horizontal plane, said second plane being disposed farther from said first fixed cross member than said first shelf cross member, to accommodate folding of said first shelf frame to said folded condition while said second shelf frame remains supported in said second plane.

3,295,472
TABLE LEG ASSEMBLY
Charles O. Larson, Sterling, Ill., assignor to Chas. O. Larson Co., Sterling, Ill., a corporation of Illinois
Filed June 19, 1964, Ser. No. 376,361
4 Claims. (Cl. 108—144)



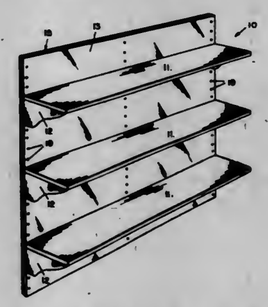
1. In a combined mounting and storage structure for legs of tables and the like; a support member having an upper support surface and a pair of planar attachment surfaces, said attachment surfaces both being disposed substantially normal to said support surface and being disposed at a predetermined angle of not less than 90 degrees with respect to each other, a leg including a pair of angularly disposed planar flanges on the upper end thereof, said leg flanges being disposed with respect to each other at the same angle as said predetermined angle of said attachment surfaces and being adapted to be positioned thereagainst in close fitting relationship thereto, a leg mounting and storage bracket formed of a resiliently bendable material and having a pair of substantially planar attachment arms disposed at the same angle as said leg flanges and adapted to engage against the outer surface of said leg flanges adjacent to the upper ends thereof in close fitting relationship thereto, each of said attachment arms having a length substantially longer than the associated leg flange and having a fastener receiving opening therein disposed outwardly beyond the associated leg flange, at least one of said attachment arms extending a substantial distance outwardly beyond said opening to provide a leg storing portion on the arm, fasteners disposed in said openings and engaging said support member for resiliently clamping said bracket against the outer surfaces of said leg flanges and in turn clamping said leg flanges against the associated attachment surfaces firmly to clamp said leg upon said support member with the leg extending substantially perpendicular to said support surface in a vertically adjustable position, and a lug on each of said leg flanges extending outwardly therefrom and adapted to engage the lower edge of the associated attachment arm to limit the upper position of said leg with respect to said support member, said leg being demountable upon loosening of said fasteners for storage with one of said leg flanges clamped beneath said leg storing portion of said attachment arm and the leg extending substantially parallel with said support member.

3,295,473
PORTABLE BUMPER MOUNTED PICNIC TABLE WITH UMBRELLA SUPPORT
Jesse R. Wentworth, 6161 Nathaniel St., Dayton, Ohio 45427
Filed June 10, 1965, Ser. No. 462,836
4 Claims. (Cl. 108—152)

1. A portable picnic table readily assembled and disassembled, including an arm unit for generally horizontal disposition cooperatively to engage at its one end a relatively stationary support, a post connected to said arm unit to assume a generally vertical position, the upper projecting end of said post including socket means, and a plurality of table segments which when brought to an assembled relation define a table, each segment having dependent finger means to engage in said socket means and be supported thereby in laterally projecting relation to said post, said segments having their inner ends meeting at said post and commonly in an overlying relation to the upper end of said post, said dependent finger means being located adjacent to the inner end of each segment.



3,295,474
WALL MOUNTED SHELF ASSEMBLIES
Reuben Ornstein, New York, N.Y. (30 Manjer St., Brooklyn, N.Y. 11206)
Filed Sept. 13, 1965, Ser. No. 486,764
1 Claim. (Cl. 108—152)



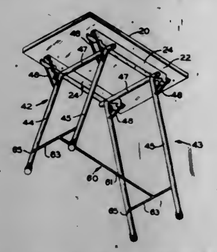
A shelf structure adapted to be selectively pre-assembled and mounted on a supporting wall, said shelf structure comprising a vertical wooden panel having front and rear surfaces and provided with at least two transversely spaced vertical rows of apertures countersunk at the rear surface of the panel, an adhesively coated backing sheet coextensive in area with said panel, said backing sheet having an adhesive front surface secured to the rear surface of the panel and an adhesive rear surface adapted to adhere to a supporting wall, said sheet being provided with at least two transversely spaced vertical rows of openings in register with the countersinks of the respective apertures in said panel, at least two transversely spaced and horizontally aligned cantilever type brackets selectively positioned against the front surface of said panel, a horizontal shelf member supported by said brackets, and a plurality of screws selectively insertable from the rear of said backing sheet forwardly through selected of said openings and selected of said apertures into engagement with said brackets to fasten the brackets to the panel at a selected shelf height before the shelf structure is mounted on a wall, said screws having enlarged heads seated in the countersinks of the selected apertures flush with the rear surface of the panel.

3,295,475
KNOCK-DOWN TABLE OR THE LIKE
Ralph E. McClellan, Toledo, Ohio, assignor to Mellink Steel Safe Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 3, 1965, Ser. No. 484,832
20 Claims. (Cl. 108—153)

1. A knock-down support comprising:
(a) a pair of parallel horizontally disposed top members provided with longitudinally disposed and laterally spaced notched and hook means,

(b) a pair of generally U-shaped tubular leg elements having the base portion of each U-shaped element engageable in said notch means,

(c) bail means pivotally secured to said leg portions of said U-shaped elements and engageable in said hook means to fix said leg elements to said members, and



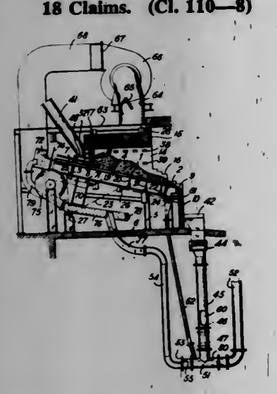
(d) tension means disposed between said leg elements and between the leg portions of each of said leg elements to stabilize all of said leg elements and to tension said bail means.

3,295,476

COMBUSTION APPARATUS FOR AGGLUTINANT AND SWELLING COALS HAVING A HIGH CONTENT OF VOLATILE MATERIALS

Georges Victor Jacques Quentin, Saint-Avold, Moselle, France, assignor to Houilleres du Bassin de Lorraine, Faulquemont, Moselle, France

Filed June 18, 1963, Ser. No. 288,732
Claims priority, application France, June 18, 1962, 901,007, Patent 84,606
18 Claims. (Cl. 110—8)



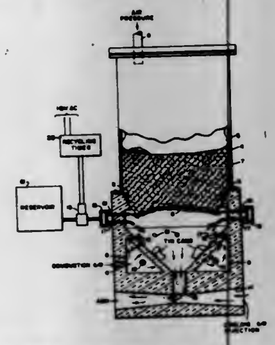
1. In combustion apparatus for agglutinant and swelling coals having a high content of volatile materials, in combination, a fire chamber having two extremities, a stationary grate, means for simultaneously and in synchronism introducing coals on said grate at a first extremity of said fire chamber, obturating said first extremity, forming on said grate and in said fire chamber a thick layer of said coals, and propelling said layer on said grate in the direction of the second extremity of said fire chamber which is open, said fire chamber including a refractory wall located at a relatively small distance from said thick layer in the vicinity of said first extremity, to thereby intensively radiate heat on said thick layer in a corresponding zone, means for introducing primary air under said grate, means for introducing secondary air in said fire chamber over said thick layer, and means for expelling cinders resulting from the combustion of said coals situated in the vicinity of said second extremity, said fire chamber comprising a crown, pillars supporting said crown, chimneys in said pillars, with at least one secondary air outlet orifice in each pillar, said chimneys communicating at the upper part of each pillar with a distributing chamber and therethrough with internal conduits inside each arch of said crown, each arch having nozzles converging beneath said crown.

3,295,477

INCINERATOR

Gerald E. McGinnis, Plum Borough, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 27, 1964, Ser. No. 362,735
7 Claims. (Cl. 110—8)



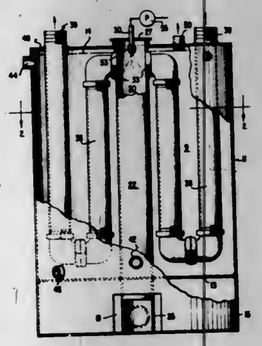
1. An incinerator comprising an open top combustion chamber having a funnel-shaped entry, an open bottom trash bin surmounted on said combustion chamber, means in said trash bin for forcing trash stuffed therein to an imporous plug of oxidizable material pressed downwardly by said compacting means and halted in its downward movement by said funnel-shaped entry to said combustion chamber, where the bottom face of said plug constitutes the top wall of said combustion chamber, means to induce and to maintain combustion of said bottom face of said plug, and air jet means for blasting said bottom face of said plug to dislodge ash formed thereon.

3,295,478

INCINERATION OF LIQUID WASTES

John C. Lowe, Broadway, N.J., assignor to Broadway Research and Development Corp., a corporation of Pennsylvania

Filed Dec. 2, 1963, Ser. No. 327,308
2 Claims. (Cl. 110—10)



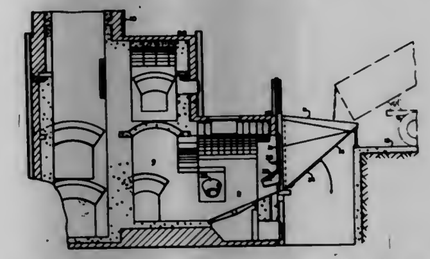
1. A method for the incineration of liquid wastes and the exploitation of heat values which comprises dispensing a finely divided stream of the wastes into the upper part of a vertical combustion zone held in indirect heat exchange relation with a liquid to be heated, passing simultaneously and upwardly from the lower end of said combustion zone a stream of hot gas sufficient to vaporize non-combustible portions of the wastes and containing free oxygen sufficient to burn the combustile portions of the waste.

3,295,479

INCINERATORS OR THE LIKE

Felix Scholer, Castle Cove, New South Wales, Australia, assignor to Goodrid Incinerator Co. Pty. Limited, Sydney, New South Wales, Australia, a corporation of Australia

Filed July 31, 1964, Ser. No. 386,541
12 Claims. (Cl. 110—18)



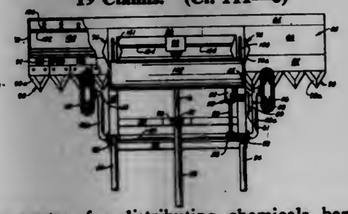
6. An incinerator having at least one firing cell, a loading chute adapted to receive material and feed it into the firing cell, said loading chute having an opening therein communicating with the firing cell, a door operatively associated with said cell for closing said opening, a damper-controlled tapered air inlet member supported from the door and extending into the firing cell for directing high speed streams of air into the charge to be burned in said cell, and means supporting the air inlet member from the door for angular rotation with respect to the door to vary the position at which the inlet air is directed against the charge and enable the inlet air to contact substantially all portions of the charge.

3,295,480

APPARATUS FOR DISTRIBUTING CHEMICALS BENEATH THE SURFACE OF THE EARTH

Freddie J. Haynes, 917 W. Silver Meadow, Midwest City, Okla. 73110

Filed May 12, 1965, Ser. No. 455,193
19 Claims. (Cl. 111—6)



1. Apparatus for distributing chemicals beneath the surface of the earth comprising:

a main transverse horizontal support plate having a forward edge, a trailing edge and two opposed ends extending perpendicular to said forward and trailing edges;

a generally horizontally extending dirt supporting plate mounted on said main transverse support plate and extending in part to the rear thereof;

a pair of spaced side plates secured to the opposite ends of said main transverse support plate and defining with said dirt supporting plate, a downwardly opening chemical distribution chamber positioned to the rear of said main transverse support plate;

means for evenly distributing a chemical into all parts of said downwardly opening chemical distribution chamber;

earth cutting means movably mounted on the forward edge of said main transverse horizontal support plate for cutting movement in a horizontal plane; and

power means for moving said apparatus along the ground and for moving said earth cutting means on said main transverse horizontal support plate.

3,295,481

LIQUID FERTILIZER SHOE FOR PLANTERS

Robert Dethmers, Boyden, Iowa 51234

Filed May 27, 1965, Ser. No. 459,261
3 Claims. (Cl. 111—7)



3. A liquid fertilizer shoe for planters comprising a vertically positioned blade, a vertically positioned tube attached to the trailing edge of said blade, a vertically positioned flange attached to said tube, means for bolting said flange to a planter framework portion, a further forwardly positioned flange attached to said blade including a substantially horizontal further flange, means for bolting said substantially horizontal further flange to a further planter framework portion, said blade having a lower arcuate sharpened edge, said vertically positioned tube being attached to a liquid fertilizer supply, means for controlling the rate of flow of liquid fertilizer through said tube, the lower end of said tube being slightly flattened, a clip attached to said blade adapted to receive a planter framework portion to prevent lateral displacement of said shoe.

3,295,482

ASSEMBLY FOR SUBSURFACE APPLICATION OF NUTRIENT

Peter J. Dountas, 608 N. 15th St., Ashland, Nebr. 68003, and Richard Holm, 3750 4th Ave., Council Bluffs, Iowa 15501

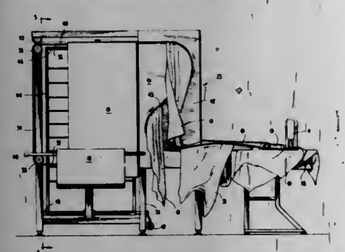
Filed Feb. 9, 1966, Ser. No. 526,087
8 Claims. (Cl. 111—7)



1. A nutrient applicator assembly comprising a main frame adapted to support a nutrient tank and to be attached to a tractor having a rearwardly disposed adjustable tow bar supporting a plurality of spaced nutrient applicating means operably connected to said tank and mounted to said tow bar between said tractor and said main frame for subsurface application of the nutrient, said main frame including a cross member transverse to the longitudinal axis and a single forward axle unit for supporting a front wheel having a turning radius of 120° and a pair of rear axle units for supporting a pair of rear wheels adapted to propel the main frame over the ground, said forward and rear axle units providing a tri-cycle support for said main frame, said forward axle unit in-

cluding an axle frame for rotatably supporting said front wheel to said main frame, each of said rear axle units including a rear axle frame slidingly supported to said main frame, means for adjustably sliding said rear axle frames transversely of the longitudinal axis thereof, said means including a threaded member threadingly engaging each rear axle frame and rotatably supported to said cross member on opposed sides to effect adjustment of the wheel centers of the rear wheels upon rotation of the threaded members and means for rigidly securing the rear axle frames to said main frame in a selected position for pre-plant and side dress application of the nutrient.

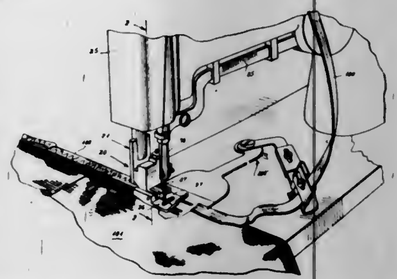
3,295,483
CLOTH ARTICLE HEMMING AND STACKING METHOD AND APPARATUS
William J. Rothfuss, David E. Robinson, and Ronald W. Emus, Greenville, S.C., assignors to Southern Machinery Company, Greer, S.C., a corporation of South Carolina
Filed Oct. 12, 1964, Ser. No. 403,255
6 Claims. (Cl. 112—2)



1. Apparatus for hemming and stacking towels and the like comprising a hemming sewing machine through which corresponding ends of a plurality of towels are fed for hemming one end only in succession, means to engage and advance each towel away from the sewing machine after said hemming, said towels then being connected in chain-like fashion by the hemming threads, cutter means near said engaging and advancing means to separate the towels by automatically severing said threads between the towels, additional means to engage and advance the towels generally horizontally in one direction from said cutter means, gripping means adapted to successively grip, advance and also elevate the towels, said gripping means being adapted to grip an end portion of each towel and suspend it by the end portion when it is advanced and elevated, and a transfer rack, means pivotally mounting said transfer rack for swinging movement under a portion of said gripping means, said transfer rack thereby being adapted to engage each hanging towel in succession and withdraw it from engagement with said last-named gripping means and depositing the towels in succession one upon the other in a neat stack with the hemmed ends thereof facing in one direction, whereby the identical apparatus may again act upon the same towels to hem their opposite ends, separate, advance and stack the same in completed form.

3,295,484
SEWING MACHINE TRIPLE FEEDER ATTACHMENT FOR STITCHING ELASTIC TO CLOTH PIECES
Ronald J. Boser, 261-79 Langston Ave., Glen Oakes, N.Y. 11004, and Eugene Weschler, 288 Bel-Air Drive, Massapequa, N.Y. 11762
Filed May 19, 1964, Ser. No. 368,473
3 Claims. (Cl. 112—158)

1. In a sewing machine, a base, an upright standard on the base, a bracket arm extending from said standard, a head on the other end of the bracket arm, a needle bar carrying a needle supported on said arm, a feed dog within said base, a pressure foot bar supported on said arm, said pressure foot bar carrying a shoe assembly at its lower end, said shoe assembly being in contact alignment on its lower side with the upper side of said feed dog, a drive mechanism carried within said head for providing vertical reciprocal movement of said needle bar, mechanical means within said arm for providing lateral movement of the lower end of said needle bar, mechanism within said head for imparting a generally circular movement about a lateral axis to said feed dog, means for applying a plurality of different pressures by said shoe assembly against said feed dog, said shoe assembly being comprised of a pair of laterally adjacent shoe elements each of which has means to exert a different downward pressure against said feed dog than the other, said pressure foot being vertically adjustable relative to said arm and being selectively urged by a compression coil between said arm and said pressure foot bar to bear downward with a full pressure through one of said shoe elements and a resilient pressure



through the other of said shoe elements, one of said shoe elements being a left shoe element and the other being a right shoe element, both said shoe elements being supported on a block laterally adjustably secured to a shank attached to said pressure foot bar, said left shoe element being affixed pivotally free to said block by a transverse pin, said left shoe element thus transmitting the said full pressure of said pressure foot bar downward against said feed dog, said right shoe element being secured pivotally free by a transverse second pin to a plate, said plate having an upstanding post, said block having vertical opening to slidably receive said post, said post having an undercut portion on its aids and said block having a mounted pin adjacent thereto to prevent disengagement of said post from said block, a compression coil spring within said opening between the upper end of said post and a screw threadedly attached in the upper end of said opening, said screw being vertically adjustable for selective pressure against said post, and a lock nut threadedly engaged on said screw.

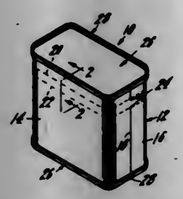
3,295,485
END CLOSURE
Erik Gedde, Park Ridge, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 30, 1963, Ser. No. 334,113
1 Claim. (Cl. 113—121)

A method of securing a metal end closure to a rectangular can body having a laterally outwardly extending flange at one end thereof, the end closure comprising a countersink wall and a flange extending generally laterally outwardly therefrom comprising the steps of:

forming a continuous raised bead in said end closure flange adjacent said countersink wall,

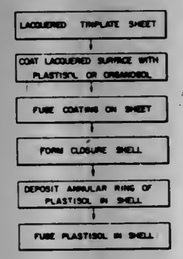
positioning said end closure on said one end of the can body with said countersink wall disposed within and in contact with the can body and said end closure flange disposed over and closely adjacent to the can body flange, and

forming said said end closure flange downwardly and inwardly against said can body flange along a hinge line disposed at the junction of said end closure flange and said bead to form said end closure flange,



said bead and said can body flange into a double seam between the end closure and the can body whereby the body flange is bent into a hook which has its bent portion nested within said raised bead in said end closure in close conforming relationship with the inner surface of said bead.

3,295,486
GASKET COMPOSED OF A PANEL LINER AND AN ANNULAR SEALING RING FOR CLOSURES
Charles W. Simons, Bedford, and Robert S. Holdsworth, Arlington, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Original application Mar. 16, 1964, Ser. No. 352,192. Divided and this application Sept. 1, 1964, Ser. No. 393,789
3 Claims. (Cl. 113—121)



1. A method of forming a closure element which consists of providing a lacquered sheet of metal plate, coating the lacquered surface with a liquid vinyl resin composition having between about 15% to 50% of a plasticizer based on the weight of the resin, fusing the coating on said lacquered sheet, forming closure shells of the coated sheets, depositing an annular ring of a plasticized vinyl resin composition having between about 65% to 150% of a plasticizer based on the weight of the resin on the inner surface of said shell, and fusing the annular deposit in said shell.

3,295,487
HYDROFOIL SAILBOAT
Bernard Smith, 526 Caffee Circle, Dahlgren, Va. 22448
Filed Sept. 23, 1965, Ser. No. 489,770
9 Claims. (Cl. 114—66.5)

1. A sailing craft comprising:

first, second and third hydrofoil means each having a positive static buoyancy characteristic, and collectively having sufficient displacement to provide flotation for said sailing craft under static conditions;

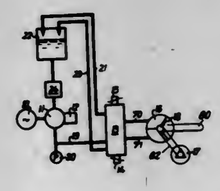
fuselage means supported at a first end by said first hydrofoil means and at the other end by said second hydrofoil means;

rigid airfoil means supported on, and extending upwardly from, said third hydrofoil means;



outrigger means connected to said fuselage means and to said rigid airfoil means, said outrigger means being so configured and disposed as to maintain said rigid airfoil means at an acute angle with respect to the plane of flotation of said craft defined by said first, second, and third hydrofoil means.

3,295,488
HYDRAULIC RUDDER CONTROL SYSTEM
Karl Hinsch, Hamburg, Heinz Augustin, Hamburg-Harburg, and Jörg Heinemann, Bad Oldesloe, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed June 22, 1964, Ser. No. 377,015
Claims priority, application Germany, June 21, 1963, L 45,168
6 Claims. (Cl. 114—150)



1. A hydraulic rudder control system which comprises:

(a) a rudder actuator;

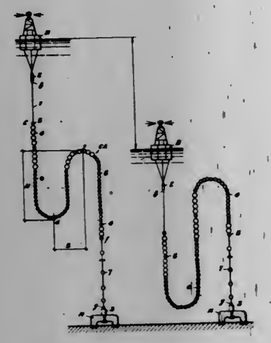
(b) a pump regulated to put out a constant pressure and being connected hydraulically directly to said rudder actuator, said pump including means for adjusting the constant pressure which is put out by said pump;

(c) hydraulic-mechanical means mechanically connected to said rudder actuator and to said pressure adjusting means of said pump;

(d) a continually operating electro-hydraulic control valve hydraulically connected to said hydraulic-mechanical means for controlling the setting of said pressure adjusting means of said pump and hence for controlling the flow of pressure fluid medium from said pump to said rudder actuator; and

(e) a movement-dependent quiescent-current remote control arrangement electrically connected to said control valve, said arrangement including means for applying a vibratory frequency to said control valve, said vibratory frequency also serving to actuate said valve.

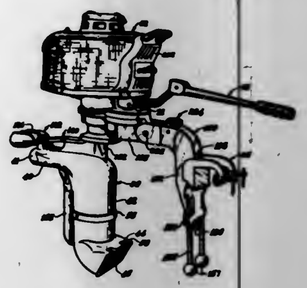
3,295,489
PLASTIC COMPOUND CATENARY FOR ANCHORAGE AND PIPELINE AND/OR CABLE SUPPORT IN ANY SEA ZONE AND DEPTH
Eduardo Bossa, Via Roccaraso 31, Rome, Italy
Filed June 16, 1965, Ser. No. 464,505
Claims priority, application Italy, June 20, 1964, 13,431/64
10 Claims. (Cl. 114—206)



1. A compound marine catenary assembly for anchoring an object in a body of liquid, comprising an elongated flexible support having an upper end adapted to be connected to the object which is to be anchored and having a lower end distant from the object, an anchor connected to said lower end of said flexible support, and means carried by and distributed along said flexible support for providing the latter between said upper and lower ends thereof with a predetermined sinusoidal configuration having at least one lower catenary curve followed by at least one upper catenary curve opposed to said lower catenary curve, said means distributed along and carried by said flexible support including a plurality of ballast elements situated at said lower catenary curve and a plurality of float elements situated along said upper catenary curve, said float elements tending to rise in the body of liquid and said ballast elements tending to sink in the body of liquid, and said ballast and float elements which are distributed along said lower and upper curves, respectively, having with respect to each other a state of equilibrium providing the sinusoidal configuration for said flexible support.

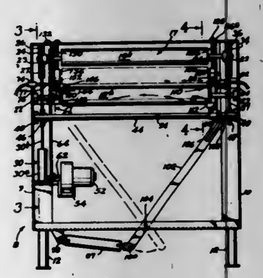
3,295,490
PROPULSION MEANS
Wilbur L. Hiatt, 561 E. 37th St., Indianapolis, Ind. 46202
Filed May 6, 1963, Ser. No. 278,318
4 Claims. (Cl. 115—12)

1. A propulsion means for boats, comprising:
a frame-member;
water-flow means including a discharge outlet for discharging through said outlet water under pressure to achieve propulsion by reaction effect;
the said water-flow means being movable to vary the direction which said outlet faces to thereby guide the boat;
the outlet facing in a generally horizontal direction to project the stream of water discharged therethrough in a generally horizontal direction;
and deflector means to deflect the stream of water discharged through said outlet downwardly as the water-flow means is in a direction in which the said outlet is facing the said boat;
the said water-flow means being movable relative to said frame member to vary the direction which said outlet faces;
cam means co-operating between said frame member and said deflector means to automatically cam said



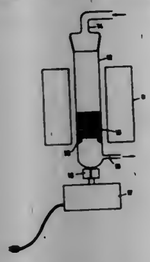
deflector means to a deflecting position with respect to said outlet when said water-flow outlet is in a boat-facing direction.

3,295,491
GLUE-APPLYING APPARATUS
George J. Cassarno, P.O. Box 496, Lake Oswego, Oreg. 97034
Filed Jan. 21, 1964, Ser. No. 339,130
10 Claims. (Cl. 118—2)



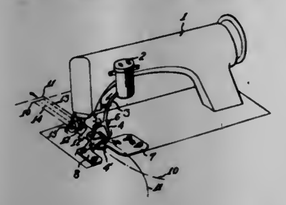
1. In glue-applying apparatus for applying glue to a workpiece bounded on opposite sides by opposed edges,
means defining a path for a workpiece through the apparatus with such workpiece moving from infeed to offbearing ends of the apparatus,
a pair of glue applicators mounted with one on one side and one on the other side of said path,
guide means positioned toward the infeed end of the apparatus from one applicator and adjacent said one side of said path operable to guide one edge of a workpiece past said one applicator along a predefined course with the latter in proper glue-applying position for said one edge,
detector means toward the infeed end of the apparatus from the other of said pair of applicators and adjacent said other side of said path for detecting the position of the edge of a workpiece opposite its said one edge,
means movably mounting the other of said pair of glue applicators accommodating shifting of said other applicator transversely of said path and into a proper glue applying position for said opposite edge of a workpiece, and
means interconnecting the detector means and said other glue applicator for producing shifting of said other applicator in response to the detector means detecting the position of said opposite edge.

3,295,492
JOGGING DEVICE IN APPARATUS FOR TREATING SEMICONDUCTOR WAFERS IN GAS
Norbert Schink, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany
Filed May 25, 1964, Ser. No. 369,857
Claims priority, application Germany, June 1, 1963, S 85,490
6 Claims. (Cl. 118—48)



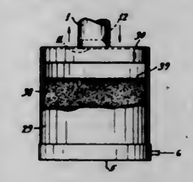
1. In an apparatus for heat treating semiconductor wafers in gas, the combination comprising furnace means, holder means for vertically supporting a stack of semiconductor wafers superimposed on one another within said furnace means for heat treating the wafers therein, and oscillating means for imparting a series of shocks to the semiconductor wafers of said stack having at least a component in the axial direction thereof as the wafers are being heat treated whereby each of said heated semiconductor wafers is displaced and at least partly spaced temporarily from the adjacent semiconductor wafer of the stack.

3,295,493
AUTOMATIC APPARATUS COMBINED WITH INDUSTRIAL SEWING MACHINE FOR FILLING SEAM OF A SYNTHETIC RESIN FILM
Shokichi Yamamoto, 11 Nishi 22-chome, Sapporo-shi, Japan
Filed Feb. 12, 1964, Ser. No. 344,291
Claims priority, application Japan, Feb. 26, 1963, 38/8,500; Feb. 27, 1963, 38/8,607
2 Claims. (Cl. 118—316)



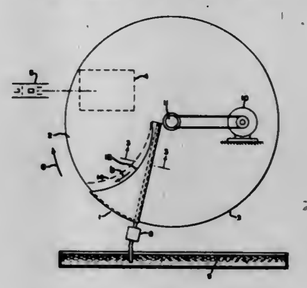
1. An automatic apparatus for filling with an adhesive, the seams and stitching perforations, produced by the operation of sewing up two pieces of a synthetic resin film together by an industrial sewing machine, comprising a guiding means and a liquid adhesive applying means, said guiding means comprising two folded back metal guide plates arranged on the face plate of said sewing machine in such a manner that said folds are arranged in parallel with the direction of feeding said pieces and the folded parts of said two guide plates overlap each other and are arranged oppositely to each other, and said liquid adhesive applying means comprising a reservoir for storing said liquid adhesive, a forked pipe for taking it out of said reservoir, each branch of said forked pipe being terminated inside a respective folded plate so as to jet said liquid adhesive on such a part of each piece as to be seamed when each piece is fed along its respective fold, and manual adjusting means for said liquid adhesive provided on an intermediate portion of said pipe to control the feed thereof.

3,295,494
FLUIDIZED BED APPARATUS FOR COATING THE INTERIOR OF HOLLOW BODY
Donald Herbert Brooks, Johannesburg, Republic of South Africa, assignor, by mesne assignments, to International Protected Metals, Inc., a corporation of New Jersey
Filed Apr. 16, 1959, Ser. No. 806,931
Claims priority, application Republic of South Africa, Sept. 25, 1958, 3,382/58
2 Claims. (Cl. 118—408)



1. Apparatus for coating the interior of a hollow elongate body having opposite end openings, comprising a receptacle, a gas pervious partition dividing the receptacle into upper and lower chambers, said partition being adapted to support a body of pulverulent fluidizable material in the upper chamber, means for admitting a gas into the lower chamber for passage through the partition into and through the material in the upper chamber to fluidize the material, said receptacle in the portion thereof forming the upper chamber comprising an upper part and a lower part telescopically joined together whereby the upper part may have up-and-down movement relative to the lower part, means for effecting said up-and-down movement, the said upper part having a top outlet, and means for securing one open end of a hollow body to said upper part in communication with said outlet.

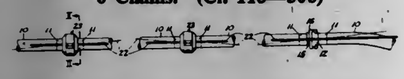
3,295,495
THIN FILM FLUID APPLICATOR
George W. Ellis, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 30, 1963, Ser. No. 276,855
6 Claims. (Cl. 118—409)



1. A fluid applicator for depositing a thin layer of fluid of uniform thickness onto a planar surface of a rotating substrate lying in a plane having an appreciable vertical component, comprising:
(a) a body member having an elongated passageway adapted to transport fluid introduced therein;
(b) an elongated output opening coupled to said passageway for emitting said fluid under substantially equal pressure along its length;

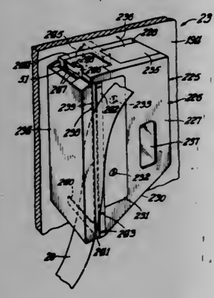
(c) said output opening being located in a planar surface of said body member; and positioned in the proximity of, substantially parallel to, and in facing relationship with, said substrate surface and generally along a radius of said rotating substrate;
(d) said planar surface further including a portion extending forwardly along the entire extent of, and from, said slot and in the direction of movement of said substrate;
(e) a surface of said body member extending normal from the leading edge of said forwardly extending portion and being concave in character; such that said leading edge is dimensionally furthest from the elongated opening at about the vicinity of the periphery of said substrate and dimensionally nearest to said opening at about the vicinity of the center of rotation of said substrate.

3,295,496
HOSE AND CABLE COUPLING
John T. Barton, Montour Falls, N.Y., assignor to Perkins Pipe Linings, Inc., Grand Island, N.Y.
Filed Nov. 6, 1963, Ser. No. 321,745
6 Claims. (Cl. 118—506)



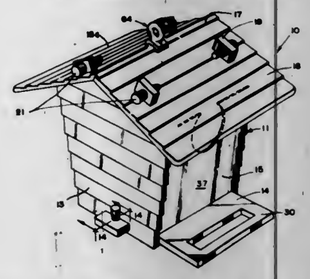
1. A combination conduit and cable assembly comprising a conduit having a plurality of spaced coupling members disposed therealong, a cable extending generally alongside said conduit, means associated with each of said plurality of couplings for attaching the cable thereto, each cable engaging means including cable locking means adapted to grip said cable upon attempted relative movement between the cable and conduit in either direction, and means for selectively rendering said cable locking means inoperative to permit free longitudinal movement of said cable relative to said conduit.

3,295,497
ELECTROSTATIC RECORDERS
Otto J. Albrecht, Trenton, N.J., and Percy J. Barnes, Wilmington, Del., assignors, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 7, 1962, Ser. No. 243,078
10 Claims. (Cl. 118—637)



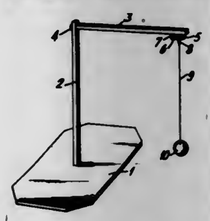
2. In a system for representing information by the application of powder particles to charged areas of a flexible dielectric medium, said system having an inking station including a housing for retaining the powder particles therein, the improvement which comprises means in said housing defining an extended slit along one side thereof for admitting the dielectric medium laterally without opening said housing to define the extended slit, and flexible sealing means supported by said housing adjacent said slit, said flexible seal normally retaining the powder particles within the housing and yielding to facilitate the lateral insertion of the dielectric medium.

3,295,498
CONVERTIBLE BIRD HOUSE AND BIRD FEEDER
Thomas E. Brown, Slatersville, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed July 22, 1965, Ser. No. 474,054
8 Claims. (Cl. 119—23)



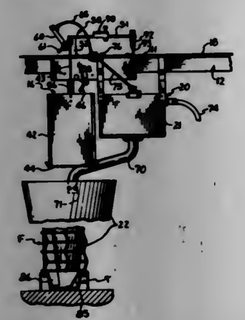
8. Connection means for a bird station including bottom, side and end walls wherein the outer surface of a first of said walls is step wise sloped downwardly away from a second of said walls at their point of interconnection, said first side wall having an ear opening therethrough, said second wall having an ear connection member projecting above the outer surface of said first wall through said ear opening and provided with a connecting pin opening therethrough, said first wall having an upstanding ledge proximate the opening therethrough and on the lower sloped portion thereof, and a tapered connecting pin spanning one of said steps of said first wall, downwardly directed through said pin opening and contacting said step above said ear opening and said ledge below said ear opening.

3,295,499
ANIMAL AMUSEMENT AND EXERCISING DEVICE
James T. Manchester, Forrest Drive, Lloyd Neck, Huntington, Long Island, N.Y. 14062
Filed Apr. 12, 1965, Ser. No. 447,497
6 Claims. (Cl. 119—29)



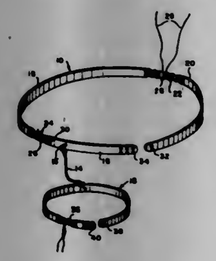
1. In an animal exercising and amusement device the combination of a base member; a support structure secured to said base member extending upwardly and outwardly therefrom; an object attractive to animals; a cord secured to said object for suspending the same within easy reach of animals using the device; a U-shaped permanent magnet secured to the free end of said support structure; a magnetic armature associated with said magnet; said cord having a loop at one end, said loop being adapted to normally surround said armature at a point between the legs of said permanent magnet whereby said cord may be released by sliding off one end of said armature when excessive pressure is applied.

3,295,500
AUTOMATIC FEED WEIGHING AND LIQUID DISTRIBUTING APPARATUS FOR LIVESTOCK
Ronald S. Blough, Fairfield, Iowa, assignor to Fairfield Engineering and Manufacturing Company, Fairfield, Iowa, a corporation of Iowa
Filed Mar. 25, 1964, Ser. No. 354,736
14 Claims. (Cl. 119—51.5)



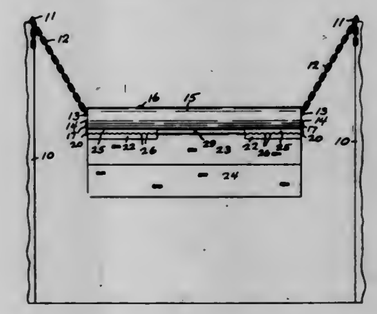
8. A livestock feed weighing and distributing mechanism comprising, in combination, a feed weighing tube, a conveyor having an opening therein for distributing feed into said tube, balancing means mounted on a frame member supported on said conveyor for sensing a preselected weight of feed deposited into said tube, said balancing means including a balance arm pivotally mounted in a bracket secured to said frame, a weight selectively positionable on said balance arm, a depending link pivotally mounted on said balance arm at a point spaced horizontally from said pivotal mounting of said balance arm in a direction away from said weight, said weighing tube being supported by said depending link whereby said balance arm and weight are raised upon said weighing tube receiving said preselected weight of feed from said conveyor, means coupled to said balancing means for closing said opening when said preselected weight of feed is sensed, each of said pivotal mountings of said link on said balance arm and said balance arm on said bracket including a pivot pin, and at least one of said pivot pins disposed for limited rolling movement with respect to a horizontal surface portion of said respective pivotal mounting whereby starting friction is minimized when said balance arm begins to rise.

3,295,501
SAFETY BELTS FOR INFANTS
Marcia Marbury Riley, 3464 Wells St., Orlando, Fla. 32805
Filed Oct. 22, 1965, Ser. No. 501,128
4 Claims. (Cl. 119—96)



1. A safety device for use in the care of children comprising a first belt adapted to encircle the waist of an adult, a second smaller belt adapted to encircle the waist of a child and a flexible tether interconnecting said belts, at least said first belt comprising a plurality of interconnected inextensible flexible strap parts and at least one flexible, expansible part, said expansible part comprising a section of pleatable material connected to and between the adjacent ends of two of said strap parts, and flexible elements cooperating with said strap parts for adjusting the spacing between the ends thereof.

3,295,502
CATTLE OILING DEVICE
Richard H. Mabe, Walthill, Nebr. 68067
Filed Aug. 9, 1965, Ser. No. 478,169
2 Claims. (Cl. 119—157)

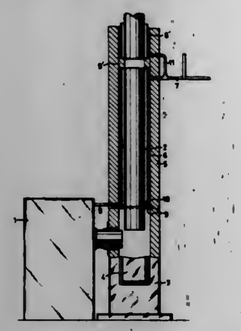


1. A cattle oiling device comprising a horizontally positioned substantially lengthened tube adapted to contain oil therein, means for supporting said tube at each end thereof, a pair of spaced angularly positioned strap members positioned beneath said tube, means movably securing the strap members with the tube, porous fabric members attached between said strap members, said fabric members including an upper outer folded member, and an inner folded member projecting downwardly beyond said upper member, said strap member including a serrated member attached thereto, a transverse rod attached to said strap members at the mid-points thereof, a valve rod having a lower eye portion receiving said transverse rod, a tapered valve member attached to the upper end of said valve rod, a coupling member secured within the tube having a tapered surface in abutment with said tapered valve member, movement of said strap members being adapted to move said valve rod whereby said tapered member will rise above said tapered surface to allow oil to escape from said tube.

3,295,503
DEVICES FOR EXPLOITING THE FLUE GAS HEAT IN THE FLUE OF A HOT WATER BOILER
Per Herman Ranebo, Roinge, Hasslelholm, Sweden
Filed Jan. 8, 1965, Ser. No. 424,249
Claims priority, application Sweden, Mar. 7, 1964, 2,884/64
3 Claims. (Cl. 122—20)

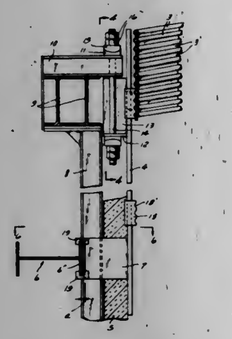
1. In combination with a hot water distribution system, means for exploiting the flue gas heat comprising
a hot water boiler,
a flue passing through a chimney structure and connected to said hot water boiler to receive heat therefrom,
a jacket surrounding at least a part of said flue and defining together with said flue a water conduit to permit the return to the boiler of water in the hot water system,
a hot water return conduit connected from the hot water distribution system to the upper part of said water conduit,

and a water return pipe connected from said hot water boiler to the lower end of said water conduit



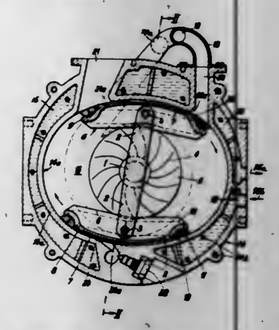
whereby the return water from the hot water system is preheated by the flue gas heat before arrival in the boiler.

3,295,504
TUBE SUPPORT FOR STEAM BOILERS HAVING AN UPRIGHT WALL FORMED BY HELICALLY ARRANGED TUBES
Otto Engler, Dusseldorf, Germany, assignor to Vereinigte Kesselwerke AG., Dusseldorf, Germany
Filed June 8, 1965, Ser. No. 462,242
Claims priority, application Germany, June 13, 1964, V 26,156
8 Claims. (Cl. 122—510)



1. In a steam boiler having an upright substantially cylindrical wall formed by a plurality of tubes extending in contact with each other in substantially helical form substantially parallel to each other from the lower to the upper end of said cylindrical wall and being welded to each other, in combination, support means; and a plurality of substantially vertical elongated tie means fixed at the upper ends thereof to said support means and extending spaced from each other along the outer surface of said wall substantially from the upper to the lower end thereof at spaced portions thereof, said tie means having portions facing the outer surface of said wall and having at said portions a contour matching that of the tube portions forming the outer wall surface and being welded at said portions to the tubes forming the wall so that the weight of the tubes and any weight carried thereby is suspended by said tie means on said support means, whereby bending stresses in said tubes are reduced.

3,295,505
ROTARY PISTON APPARATUS
Alfred Jordan, Drususstrasse 25, Bonn, Germany
Filed June 1, 1964, Ser. No. 371,271
Claims priority, application Germany, May 31, 1963, J 23,801
19 Claims. (Cl. 123—17)



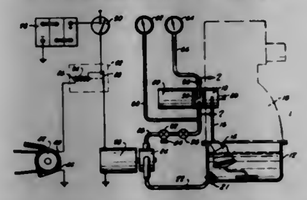
1. A rotary internal combustion engine comprising a fixed housing having an annular central section having an internal surface of oval outline and a pair of side walls respectively connected to opposite ends of said central section and extending radially inwardly beyond said internal surface, each of said side walls being formed with an opening therethrough; a shaft coaxially journalled in and extending into the interior of said housing; an arm secured to said shaft into the interior of said housing so that said arm may transmit rotary motion to said shaft; a piston articulately connected with said arm, said piston having a leading and a trailing end in permanent sealing and sliding engagement with said internal surface, said piston being constructed and arranged to leave said openings substantially uncovered during circumferential movement of said piston so that air passing through said openings will pass axially through said housing so as to directly cool said arm, said piston and said internal surface of said housing.

3,295,506
METHOD AND APPARATUS FOR THE PREVENTION OF SOUPING IN DIESEL ENGINES
Henry U. Wisniowski, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed July 22, 1964, Ser. No. 384,407
1 Claim. (Cl. 123—32)



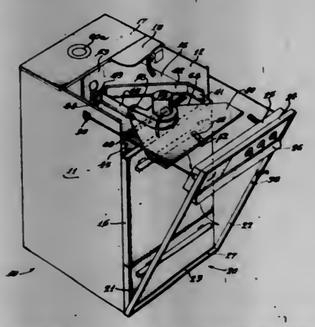
In a diesel engine of the type having a cylinder, a piston in the cylinder, a cylinder head forming a combustion chamber above said piston, and a fuel nozzle located in said head, constructed to discharge separate conical spray patterns at widely divergent angles generally radially from the nozzle and through said combustion chamber formed between the crown of said piston and said cylinder head; the improvement comprising a generally flat disk located in said combustion chamber arranged in a plane transverse to an axis bisecting the divergent angle of the spray pattern, means for supporting said disk spaced from the piston and cylinder head with the central portion of said disk exposed only to the gases in said chamber and with only the peripbery of said disk disposed to intercept a portion of the conical sprays from said nozzle which approach the adjacent head of the piston, said means providing sufficient spacing to form a barrier to heat transfer from the disk to maintain disk temperature above ignition temperature at engine idle speeds.

3,295,507
LUBRICATION SYSTEM FOR INTERNAL COMBUSTION ENGINES
Aaron D. Carter, 1608 NW. 45th, Oklahoma City, Okla. 73111, and Lawrence G. Johnston, P.O. Box 68, Nicoma Park, Okla. 73066
Filed July 6, 1964, Ser. No. 380,262
12 Claims. (Cl. 123—196)



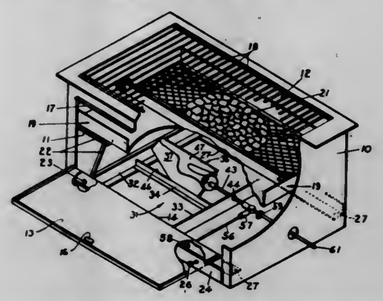
1. In combination with an internal combustion engine of a type having a lubricant sump and a pump driven by the engine for supplying lubricant to certain moving parts of the engine, the improvement which comprises:
an auxiliary pump connected to said sump for drawing lubricant therefrom;
an electric motor drivingly connected to said auxiliary pump;
a source of electrical current electrically connected to said motor;
a filter positioned externally of the lubricant sump connected to said engine driven pump and to said auxiliary motor driven pump for receiving lubricant from either of said pumps;
means for conveying lubricant from said filter to said moving parts.

3,295,508
BUILT-IN OVEN
Averd G. Nelson, Wisconsin Rapids, Wis., assignor to Preway Inc., a corporation of Wisconsin
Filed Dec. 27, 1961, Ser. No. 162,530
10 Claims. (Cl. 126—21)



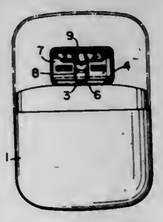
1. In a built-in oven usable beneath an overlying structure, a casing having an interior oven chamber and an oven door, a casing top panel spaced from said oven chamber, a front trim frame surrounding and extending around the front perimeter of the door, a control panel mounted on said frame, and positioned between said oven chamber and said casing top panel and means mounting said frame for movement relative to the casing and casing top panel to carry the control panel away from the casing for access to the space between the oven chamber and the casing top panel and the back side of the control panel.

3,295,509
BARBECUE STARTER AND BURNER APPARATUS
Robert E. Harvey, Hillsborough, Calif., assignor to Goodwin of California Incorporated, Berkeley, Calif., a corporation of California
Filed Oct. 22, 1964, Ser. No. 405,663
6 Claims. (Cl. 126—25)



1. Gas burner apparatus for use in a firebox, said apparatus comprising a pair of spaced parallel support bars, a spreader bar extending between the support bars to maintain the spacing therebetween, the ends of the support bars lying in a plane and formed to be supported to dispose the plane in parallel closely spaced relation above the bottom of the firebox, a burner assembly supported to extend between the support bars, said burner comprising an elongated vane lying generally in a plane tipped at a modest angle to the horizontal and disposing one side edge above the other, said side edges extending transversely of said support bars, a series of burn holes in a line along the upper edge of the vane and beneath the plane of the vane for discharging gas to be burned thereat, an elongated gas manifold extending along the upper side edge of the vane and in gas communication with said burn holes to supply same with a mixture of air and fuel gas, means for mixing air and fuel gas and for feeding the mixture to said manifold, and valve means disposed to control the flow of fuel gas to said mixing means, the angle of the plane of said vane and the adjacency of the lower side edge thereof with respect to the bottom of the firebox serving to cause air to be drawn upwardly beneath the vane toward the burn holes when said burner is ignited.

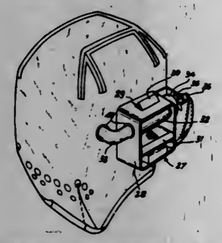
3,295,510
IGNITER OF A BENZINE POCKET WARMER
Kyozo Matoba, Koshien, Nishinomiya-shi, Hiyogo Prefecture, Japan, assignor to Hakutinkairo, Ltd., Osaka, Japan, a corporation of Japan
Filed June 11, 1964, Ser. No. 374,392
Claims priority, application Japan, Mar. 30, 1964, 39/24,692, 39/24,693
6 Claims. (Cl. 126—208)



1. A pocket warmer comprising a hollow tank containing absorbent material adapted for absorbing fuel, said tank including an upper frame having an open mouth, said warmer further comprising a wick having one end embedded in said absorbent material and an opposite free

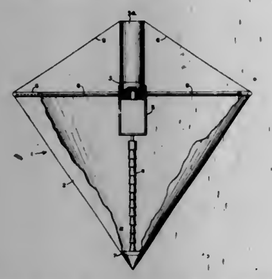
end, said frame having a port in which is engaged the free end of the wick, such that said free end is slightly exposed through said port and a burner body containing a catalytic substance slidably and detachably engageable with said frame to enclose the same, said burner body having a U-shaped notch therein positioned in alignment with said port to provide external communication with said free end of the wick with said burner body engaged on the frame, said wick being supported in said port and being positioned within the confines of the burner body with the latter mounted on the frame.

3,295,511
HEADGEARS FOR PROTECTION AGAINST COLD AND UNCLEMENT WEATHER
Jean Philippe Crouzet, 128 Blvd. Malesherbes, Paris, France
Filed Feb. 10, 1965, Ser. No. 431,613
Claims priority, application France, Mar. 4, 1964, 966,084
6 Claims. (Cl. 126—208)



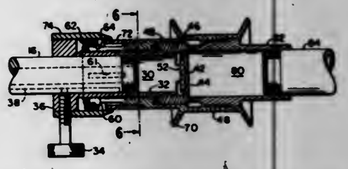
1. A helmet adapted to protect the wearer's head against cold and unclement weather constituted by a bent sheet of plastic material, the lateral edges of which face each other to close the rear of the helmet, said sheet being provided with ports in its section which forms the lower front part of the helmet and with a number of cuts along the upper and lower peripheries of the helmet formed by it, adhesive strips fitted across the edges of the cuts of the bent sheet to hold said edges in abutting relationship, and a flap slidingly carried by the front of the helmet-forming sheet and provided with ports adapted to register to an adjustable extent with the ports in the helmet-forming sheet upon shifting of the flap.

3,295,512
FOLDABLE SOLAR CONCENTRATOR
Thomas J. McCusker, Akron, Ohio; granted to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457(d)
Filed May 3, 1963, Ser. No. 277,833
10 Claims. (Cl. 126—270)



1. In an apparatus for concentrating solar rays at a focal point for energy conversion the combination of
a heat receiver adapted to receive a focused concentration of solar rays thereon,
an open cone reflector mounted on the heat receiver so that the receiver is on the axis of the cone reflector and substantially in the plane of the base of the cone reflector,
a shaped column reflector mounted to the receiver and extending inside the cone reflector on the axis of the cone reflector, said shaped column reflector having a reflective surface achieved by the revolution of a plurality of elements of parabolas having their axes of revolution coincident to the axis of the column, said column reflector surfaces arranged in relation to the cone reflector so that solar rays entering the cone reflector parallel to the axis thereof will reflect from the cone reflector to the column reflector back to the cone reflector and thence to a focus point on the heat receiver.

3,295,513
ACOUSTIC BRIDGE FOR IMPEDANCE MEASUREMENTS OF THE EAR
Paul W. Dippolito, Weston, Mass., assignor to Grason-Stadler Company, Inc., West Concord, Mass., a corporation of Massachusetts
Filed June 16, 1964, Ser. No. 375,532
12 Claims. (Cl. 128—2)



1. In an acoustic bridge for measuring acoustic impedance, a variable acoustic impedance comprising a housing, a conical valve seat within the housing, a sleeve slidably adjustable within said housing, a disc mounted on the sleeve in axially-spaced relation to an end thereof, the tube end being open rearwardly of the disc, said disc having a conical surface complementary to the conical seat, struts intermediate the sleeve and the disc and supporting said disc on the sleeve, said struts extending axially and inwardly from the sleeve to the disc rearwardly of the conical surface thereon, and screw-threaded means for adjusting the sleeve axially of the housing to vary the slit opening between disc and seat and thereby adjust the acoustic resistance of said opening.

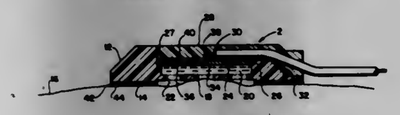
3,295,514
ELECTRICAL DENTAL INSTRUMENT ASSEMBLY
Dale E. Hein and William R. Heathe, both of York, Pa., assignors to The Dentists Supply Company of New York, York, Pa., a corporation of New York
Filed June 8, 1964, Ser. No. 373,452
12 Claims. (Cl. 128—2.1)



1. An interchangeable plural electrical dental instrument assembly wherein each instrument is used individually and requires current of a different type from the others, comprising in combination:
(a) a common body member,
(b) a plurality of electrical instruments having electrical means respectively for performing different dental operations and each having similar base members all complementary to said body member and selectively and commonly engageable therewith,

(c) a plurality of sets of separable co-engageable contacts arranged with one contact of each set carried by said body member in a patterned arrangement and duplicates of the other contact of each set being carried respectively by said base members in similar patterns comprising indexing means to insure similar positioning of all said base members of said different dental instruments with said body member,
(d) a multi-conductor flexible electric cable connected at one end to said body member with the corresponding ends of said conductors connected to the contacts on said body member and the opposite ends of said conductors respectively being connectable to suitable sources of different types of current respectively of the type required by said different dental instruments, and
(e) a different one of the contacts of the patterned arrangement of contacts carried by each of said base members of said instruments being connected to the electrical means in said instruments and the other contacts thereon being unconnected with said electrical means, whereby connection of each dental instrument to its intended type of current carried by said electric cable is insured.

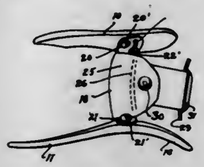
3,295,515
ELECTRODE ASSEMBLY
Alan R. Kahn, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Nov. 5, 1963, Ser. No. 321,460
8 Claims. (Cl. 128—2.06)



1. An electrode assembly for detecting low level electrical signals from the skin of a living creature comprising:
a relatively thin disc of nonconducting material having a face for contacting a skin surface;
said disc having a rigid wall recessed behind said face;
said disc having an electrolyte reservoir behind said wall;
an electrode component fixedly mounted in said reservoir and spaced behind said wall;
said rigid wall of said disc having a plurality of openings therethrough of sufficiently small size so that when said wall contacts a skin surface the movement of the skin or compression thereof into the openings are insufficient to mechanically disturb electrolyte closely adjacent to said electrode component; and
a conductor connected to said electrode component and extending to the exterior of said disc.

3,295,516
CERVICAL COLLAR
Simon Grassl, 1561 3rd Ave., New York, N.Y. 10003
Filed Jan. 27, 1964, Ser. No. 340,154
6 Claims. (Cl. 128—75)

1. A cervical collar for wearing around the neck comprising a U-shaped upper frame member shaped to engage the jaw area of a patient, a U-shaped lower frame member shaped to engage the shoulder and sternum area of a patient in spaced relationship with said U-shaped upper frame member, a plurality of metal pieces secured adjacent the rear ends of said members and connecting said U-shaped upper and lower frame members while maintaining the U-shaped upper and lower frame members in spaced relationship, adjustment means disposed on said plurality of metal pieces for adjusting the position of the front end of said U-shaped upper frame member with respect to said lower frame member, each of said



plurality of metal pieces being provided with a cover, and strap means connected to said covers for securing the cervical collar around the neck of the wearer.

3,295,517
LEG BOOSTERS TO RELIEVE BODY FATIGUE
Couvaris J. Stevens, 645 Redondo Ave., Long Beach, Calif. 90814
Filed July 22, 1963, Ser. No. 296,794
3 Claims. (Cl. 128—78)



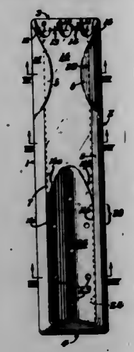
1. A device to facilitate walking and standing and to improve the posture of a human wearer of the device, comprising a vest having a pair of generally oval sections formed with openings defining armholes, spaced pairs of straps secured to outer panels of said sections, means for adjustably attaching the straps of one section to the straps of the other section so that the vest fits snugly at the chest and back of the wearer, a pair of short straps depending from opposite sides of the vest at opposite sides of the wearer, a pair of long, elastic main straps attached at one end thereof to the said short straps, opposite ends of the main straps being formed into elastic loops for engaging around the feet of the wearer, means for adjusting said main straps in tension to provide upward pressure at the soles of the wearer's feet, a first elastic cross strap on each main strap located to engage around the thighs of the wearer, a second elastic cross strap on each main strap located to engage around the legs of the wearer below the knees, whereby the main straps are retained at the wearer's sides, and means at ends of the first and second cross straps for adjustably and detachably securing the ends of each cross strap together to apply radially inward pressure on the wearer's thighs and legs respectively, each of said means including mating snap fastener elements.

3,295,518
CONTOURED ARM BOARD FOR INTRAVENOUS INJECTIONS
Lewis F. Hazlewood, Willingboro, N.J., and Ronald J. Shea, Norristown, Pa., assignors to Meda-Plast Products Company, Riverside, N.J., a corporation of New Jersey
Filed Apr. 15, 1964, Ser. No. 359,924
7 Claims. (Cl. 128—133)

1. A contoured arm board for use as a support of an arm, hand and fingers for intravenous feeding and the

like, having a front and rear end, and a top and bottom surface, comprising:

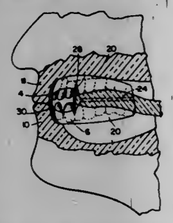
(a) a substantially flat portion extending from the approximate midpoint of said top surface to a position adjacent the front end of the board;



(b) a plurality of upstanding spaced-apart ridges extending rearwardly from the front end of the board and merging with said flat portion; said spaced-apart ridges thereby forming a plurality of substantially concave depressions therebetween for the reception and support of fingers; and

(c) a substantially concave depression extending from the rear edge of said flat portion towards the rear of said board to support the forearm.

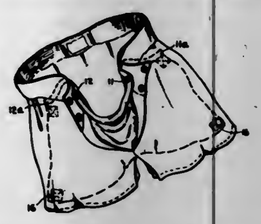
3,295,519
MOUTH EXERCISER
Warren E. Gerber, 64 Old Orchard Road, Skokie, Ill. 60609
Filed Oct. 13, 1964, Ser. No. 403,466
7 Claims. (Cl. 128—136)



1. An orthodontic mouth exerciser for juveniles comprising a shield having a rear surface for engaging the outer surfaces of the upper and lower front teeth and gums of a patient when placed into the mouth vestibule and a front surface shaped to fit the lips when the lips are closed over the shield, said shield also including side portions integral with said front portion and extending rearwardly therefrom to overlie the outer surfaces of the posterior upper and lower teeth, and bite means integral with and extending inwardly from each of the side portions for gripping between the posterior upper and lower teeth.

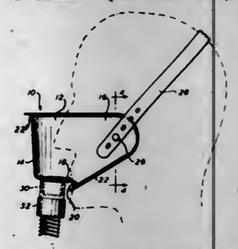
3,295,520
SUPPORT DEVICE
Joseph D. Keller, 1820 Winchester Drive, Winter Park, Fla. 32789
Filed July 6, 1964, Ser. No. 380,298
13 Claims. (Cl. 128—159)

1. An article for positioning the scrotum of a male user, said article of clothing having waist and leg portions and principally comprising a support member for maintaining the scrotum adjacent with the upper portion of the thighs irrespective of whether the user is in the standing or sitting position, said support member being defined by a clothlike component held in a sidewardly extending



manner in the inner front part of the article by upper and lower support means, said upper support means being generally adjacent said waist portion, and said lower support means being adjacent said leg portions.

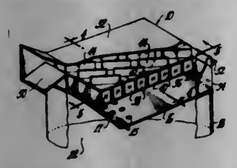
3,295,521
FACE TENT FOR INHALATION THERAPY
James L. Balch, Madison, Wis., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 28, 1963, Ser. No. 319,202
1 Claim. (Cl. 128—205)



A face tent device made of flexible plastic material for administering a therapeutic inhalant fluid to a patient and having a semiconfined breathing chamber contiguous with the nose and mouth of the wearer, directly exposed at its upper extremity to the surrounding atmosphere and closed at its bottom, comprising an arcuate vertical shield member forming a forward vertical wall portion adapted to be spaced from the face of the wearer and rearwardly extending vertical side wall portions extending along the sides of the wearer's face and tapering upwardly toward the rear, a bottom wall extending substantially horizontally rearwardly from said forward wall portion to a substantially lesser extent than said side wall portions having an outwardly curved face-engaging seating edge, said seating edge merging with lower edges of said rearwardly extending side wall portions which are similarly outwardly curved to provide lower seating edges and form a continuous saddle adapted to be seated against the face of a wearer along a line extending laterally across the forward portion of the chin of a wearer and rearwardly therefrom to the area of the cheek bones, the upper edges of the side walls and said forward wall being substantially free of seating contact with the face of the wearer and said outwardly curved edges of said saddle extending continuously around the entire periphery of said arcuate shield member to effectively provide structural rigidity for said face tent, gas inlet means mounted in said bottom wall for delivering therapeutic fluid upwardly and generally parallel to said forward and side wall portions of said shield, lug members formed integrally with said rearwardly extending side wall portions approximate the terminal ends thereof and strap means secured at its ends respectively to said lug members and adapted to extend

behind the head of the wearer to urge the seating edge of said bottom wall rearwardly against the forward chin portion of the wearer and said lower seating edges of said rearwardly extending wall portions laterally against the sides of the wearer's face along the line of engagement provided for by said saddle formed by said bottom wall and said side wall portions of said shield.

3,295,522
WEARABLE COOLING RESPIRATORY DEVICE
Howard L. Johnson, Los Angeles, Calif. (P.O. Box 1401, Gardena, Calif. 90249)
Filed Sept. 4, 1962, Ser. No. 221,094
7 Claims. (Cl. 128—212)



4. A cooling respiratory device of the character described, comprising in combination: a shoulder length helmet comprising a crown adapted to be supported atop a wearer's head and having encircling flexible side walls descending loosely from said crown to the wearer's shoulders to form a closed air space surrounding the head and neck of a wearer, said walls being light transmitting at least in an optic area to an extent permitting the wearer to look out, said walls also being formed with a normally closed mouth-slit having adhesive surfaces adjacent upper and lower areas of its inner surface adapted for selective pressure attachment around the mouth of a wearer so that the latter may speak and exhale directly to the exterior thru the slit without thereby admitting air inside the helmet; a flexible loop forming the lower margin of the side walls and adapted to conformingly overlie the tops of the wearer's shoulders and clingingly extend across his back and chest so as, in conjunction with the flexible side walls, to seal said air space and permit free movement of the wearer's head (without directly admitting external air) within the sealed enclosure thus formed by the mounted helmet; receptacle means retaining a heat-transferring material; and walls defining an air inlet passage located immediately adjacent said heat-transferring material so as to be warmed or cooled thereby, said passage being disposed to admit external air into the enclosure formed by the mounted helmet from which enclosure it may be inhaled thru the nostrils of the wearer and thence expelled thru his mouth to the exterior, the lung action of the wearer thus effecting unidirectional intermittent circulation of air thru the enclosure which is formed about the wearer's head and neck by the mounted helmet.

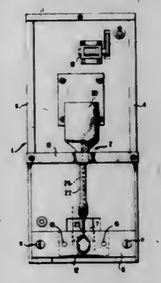
3,295,523
DISPOSABLE SYRINGE WITH NOVEL REBOUNDING SQUEEZE BULB
Theodore E. Welchselbaum, Normandy, Mo., assignor, by mesne assignments, to Biological Research, Inc., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,885
1 Claim. (Cl. 128—232)

A one-piece plastic syringe comprising a hollow tubular body tapering into an extended nozzle at one end and tapering into a neck portion at the other end and a hollow resiliently compressible bulb including a semispherical portion, an externally longitudinally concave portion adjoining said semispherical portion, a conical tapering portion adjoining said concave portion and said neck portion, and a flat disc portion adjoining said semispherical portion opposite to said concave portion, said conical tapering portion and said flat disc portion having a wall thickness substantially greater than said semispherical portion, and



said externally longitudinally concave portion gradually varying in thickness from the thicker conical tapering portion to the thinner semispherical portion.

3,295,524
METHOD AND APPARATUS FOR VACCINATING AND DEBEAKING FOWL
Coy Edwin Parker, 1425 N. College St., Gonzales, Tex. 78629
Filed Aug. 8, 1963, Ser. No. 300,775
6 Claims. (Cl. 128—253)



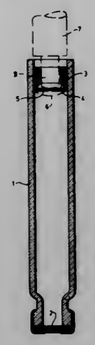
1. The method of vaccinating fowl comprising the steps of severing the tip portion of the beak from the rest of the beak, and simultaneously applying vaccine to the freshly exposed surface on the beak stump.

3. Apparatus for vaccinating fowl comprising debeaking means including a reciprocating cutting blade and a stationary cutting member adjacent to and cooperable with the cutting blade and having a beak-receiving opening extending therethrough, said stationary cutting member being positioned so that the cutting blade passes over the opening during debeaking of a fowl, said stationary cutting member having means for delivering vaccine to the cutting blade for vaccinating the beak of a fowl during a debeaking operation.

3,295,525
SELF-ASPIRATING CARTRIDGE AMPOULE
Hans Christer Arvid Evers and Sven Paul Littorin, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden, a company of Sweden
Filed Apr. 7, 1964, Ser. No. 358,034
Claims priority, application Sweden, Apr. 9, 1963, 3,975/63
1 Claim. (Cl. 128—272)

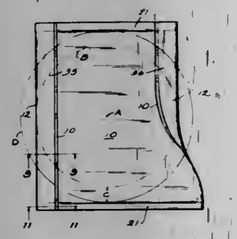
A self-aspirating cartridge ampoule, comprising a substantially rigid, cylindrical ampoule wall, a puncturable

closure closing one end of the ampoule, and a plunger closing the other end of the ampoule and being slidable in the ampoule to press out the injection liquid, the plunger having in its rear end a recess for receiving the front end of a push rod, said recess having a rear cylindrical portion and a front conically widening portion, the



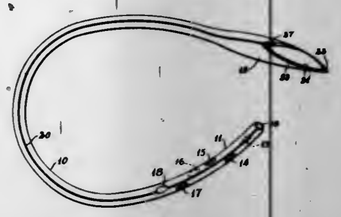
front end of said conically widening portion being limited by a comparatively thin web which with connections to the side walls of the plunger is the outer, substantially plane front end of the plunger, said front end of the plunger being flexible downwardly over its entire length under the downward action of the push rod.

3,295,526
DISPOSABLE DIAPERS AND THE LIKE
Lois E. Sabee, 728 S. Summit St., Appleton, Wis. 54911
Filed Oct. 21, 1964, Ser. No. 405,548
5 Claims. (Cl. 128—287)



1. A substantially rectangular disposable diaper comprising a liquid permeable facing sheet, a liquid impervious cover sheet, and a liquid absorbent filler between the facing and cover, the facing sheet side margins extending over and bearing against the filler side edges and having means connecting them about the filler side edges with the cover, the ends of the facing and cover extending beyond the ends of the filler for providing joined end portions including only the facing and cover, the filler being of substantially uniform density and thickness for its entire width and length for providing substantially uniform liquid absorption throughout the entire filler, strips of the cover and filler longitudinal of and along the sides of the diaper being folded inwardly to increase the filler width available for liquid absorption in a given size diaper, end portions of the strips at the said end portions of the diaper being attached to adjacent end portions of the unfolded portions of the diaper.

3,295,527
INTERCOSTAL CATHETER
Ralph D. Alley, Loudonville, and David S. Sheridan, Argyle, N.Y., assignors to Sheridan Corporation, a corporation of New York
Filed Jan. 27, 1966, Ser. No. 523,446
18 Claims. (Cl. 128—348)



1. A catheter having a distal end and a proximal end comprising: a tube of flexible plastic material having at least one opening in the distal end portion thereof, a fusiform section formed in the tube adjacent the proximal end which has a distal slope and a proximal slope, and a proximal end opening lying within said proximal slope.

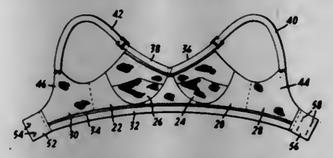
3,295,528
ELECTRICAL THERAPEUTIC EQUIPMENT
Kazumi Masaki, Toyonaka, Osaka Prefecture, Japan, assignor to Sutetaro Yamashiki, Fukiaiku, Kobe, Japan
Filed Sept. 11, 1962, Ser. No. 222,792
4 Claims. (Cl. 128—422)

1. An electrical therapeutic generator for treatment of the human body comprising:
(a) blocking oscillator means producing an electrical signal of substantially the same frequency as a neural voltage waveform produced by body nerve cells and generally in the order of 300 to 1000 cyles per second;
(b) signal generating means associated with said blocking oscillator means for generating a signal having a frequency of at least 60 to 100 times that generated by said blocking oscillator;
(c) circuit mixing means electrically connecting said signal generating means to said blocking oscillator means and superimposing said electrical signal generated by said signal generating means upon said electrical signal from said blocking oscillator;
(d) and electrode means connected to said circuit means, said electrode means being adapted for connecting a portion of the human body therebetween.

3,295,529
STRAP MATERIAL FOR GARMENTS
James Stephen Corrigall, Greenwich, Raymond R. Waterman, Easton, and Kenneth M. Deal, Norwalk, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York
Filed July 10, 1964, Ser. No. 381,630
12 Claims. (Cl. 128—510)

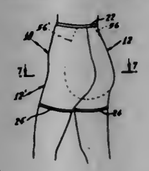
3. A support garment comprising a body supporting element and a strap material connected to said element, said strap material including a thin strip of soft resilient

foam and a strip of breathable, extensible fabric connected to each opposite surface of said foam strip, the fabric strips being joined together along their longitudinal edges



solely by said foam strip, said foam strip being compressed in said joined together portions of said fabric strip and the fabric strip being joined thereto by heat sealing.

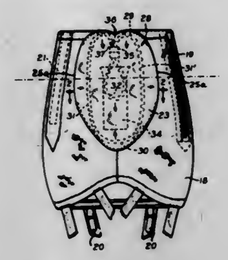
3,295,530
PANTY GIRDLE
Herbert Mayer, Teaneck, N.J., and Reinhold F. Pfeiffer, Farmingdale, N.Y., assignors to Kops Bros., Inc., New York, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,632
5 Claims. (Cl. 128—522)



1. A girdle adapted to encircle the body of the wearer from the waist downwardly below the hips comprising:
an outer layer having a body encircling portion and a pair of leg encircling portions;
an inner layer having a body encircling portion and a pair of leg encircling portions;
said outer and inner layers being stitched together in juxtaposed relation along their upper and lower contour edges;
and a pair of flexible members disposed between said layers at the rear of the garment for imparting to the wearer a youthful appearance by defining a pair of curved portions in the buttocks region of the wearer;
said flexible members comprising a pair of pads disposed symmetrically on opposite sides of the rear medial line of the girdle;
each of said pads having a half moon shaped contour defined by a curved edge and a substantially straight edge;
said pads being spaced from each other with their straight edges in confronting relation and extending vertically of the girdle from just below the waist region of the girdle to just above the crotch region thereof.

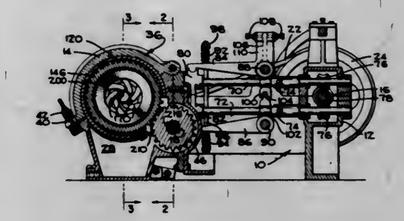
3,295,531
GIRDLE WITH WIRE CONTROL MEMBER
Henry M. Herbener, 406 Remington Ave., Thomasville, Ga. 31792
Original application Dec. 29, 1959, Ser. No. 862,650, now Patent No. 3,148,681, dated Sept. 15, 1964. Divided and this application Sept. 11, 1964, Ser. No. 395,726
7 Claims. (Cl. 128—533)

6. A lady's girdle comprising a flexible body-encircling portion including a front having a top which is depressed by movement of the body and has a tendency to roll, a generally heart-shaped pocket extending downwardly from the top of said girdle at its front, and a flat control member adapted to urge said top upwardly and counteract its tendency to roll and to shield the abdomen, comprising a frame with a notched upper end engaging the top of said heart-shaped pocket, a rounded lower end engaging the bottom of said heart-shaped pocket and outwardly bowed legs resiliently connecting said frame ends, the dimensions of said pocket being such that said frame is under vertical compression and said legs are permitted to bow outwardly



away from each other when the frame ends are moved toward each other, a stay extending downwardly from said notched end between said legs, and an auxiliary pocket located inside said first-named pocket and adapted to receive said stay for sliding movement therein.

3,295,532
PRODUCE CUTTING MACHINE
Ross E. Childers, Hoopeston, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Continuation of application Ser. No. 294,537, July 12, 1963. This application May 17, 1965, Ser. No. 458,831
13 Claims. (Cl. 130—9)

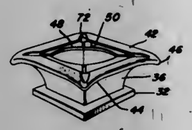


1. A produce cutting apparatus having the cutting portions of a plurality of knives positioned to define a generally circular passageway through which produce is fed to effect cutting of outer peripheral portions therefrom, said apparatus comprising a rotatable support means mounting the knives for rotation about the axis of the circular passageway and having each of the knives pivotally mounted thereon, means for simultaneously pivoting the knives toward and away from such axis to effect reduction or enlargement of the circular passageway respectively, means for urging the knives toward such axis, and a cam and follower operably connected to said urging means and operable during rotation of said support means for increasing or decreasing the force with which the knives are urged toward such axis.

3,295,533
ASH TRAY ASSEMBLY
William O. Collins, Falls Church, Va. (6528 N. Kensington St., McLean, Va. 22101)
Filed Aug. 8, 1963, Ser. No. 300,746
1 Claim. (Cl. 131—241)

A cigarette ash tray comprising a plate-like base of polygonal configuration, an upstanding and outwardly flared wall member adjacent each side edge portion of

said base, the wall members having vertical side edges which are joined to form corners defining a hollow interior receptacle portion for receiving cigarette ashes, a generally horizontally disposed ledge on the upper edge of each wall member, said ledges projecting outwardly beyond the wall members with the adjacent ends of the ledges being joined and forming ledge corners, said ledge corners curving downwardly and outwardly and having a radial extent which is greater than that of the intermediate portions of the ledges, the innermost portion of each ledge having a downwardly offset recess in the top surface thereof extending to the inner edge of the ledge defining a peripheral shoulder adapted to receive the base of an overlying ash tray when a plurality of ash trays



are stacked for positioning and retaining the base of the overlying ash tray in aligned position thereon, each ledge corner having a radial groove formed therein with the surface of the groove being horizontal whereby the downward curvature of the ledge corner forms an outward taper in the groove with the outer edge of the groove terminating inwardly of the outer edge of the ledge corner whereby the outer end of a cigarette placed in the groove will be spaced from the ledge corner, portions of the downwardly offset recess in the inner periphery of the ledge having a groove therein forming a continuation of the cigarette groove in the ledge corner for receiving and positioning the inner end of a cigarette placed in the groove in the ledge corner.

3,295,534
HAIR THICKENING METHOD
Jess Dorkin, 824 46th St., Brooklyn, N.Y. 11220
Filed Dec. 17, 1963, Ser. No. 331,145
2 Claims (Cl. 132—5)

1. The method of permanently securing supplemental hairs to the existing hairs on top of the head, comprising the steps of applying adhesive to one end of a first group of parallel, coextensive hairs having opposed free ends, securing the group of hairs to a second group of adjacent, natural hairs on the top of a person's head by attaching the adhesive ends of the first group to the ends of hair in the second group that are in contact with the scalp in a manner so that both groups lie generally parallel with each other, and repeating the above steps in sequence, as desired, for thickening the amount of hair on a person's head.

3,295,535
APPARATUS FOR TIPPING HAIR INCLUDING A TUBE FOR RECEIVING A TUFT OF HAIR AND HAVING AN EXPANSION CHAMBER
Peter Amato, 499 Hillside Blvd., New Hyde Park, Long Island, N.Y. 10804
Filed Mar. 25, 1964, Ser. No. 355,153
7 Claims. (Cl. 132—9)

1. A hair treating device comprising a vial member adapted to receive an individual strand of hair and a treating agent, a first valve means positioned at one end of said vial member through which an individual strand of hair may be pulled and which is adapted to sealingly engage the interior of said vial member about the strand of hair, a second valve means adapted to sealingly close the end of said vial member opposite said first valve means, and through which a treating agent



may be injected into the vial member, and an expansion chamber in pressure communication with the interior of said vial member to accommodate increase in pressure resulting from gases evolved from the treating agent.

3,295,536
HEAD COVERING WITH DETACHABLE WIG FOR INTERCHANGING HAIRPIECES
Richard B. Shaw, 23220 Wendover Drive, Beachwood, Ohio 43214, and Gerald Stockton, 4437 Sillsbury Road, University Heights, Ohio 44106
Filed Aug. 6, 1964, Ser. No. 387,854
6 Claims. (Cl. 132—53)



1. In a head covering of the character described, a fabric turban portion of generally tubular construction adapted to encircle the head of the wearer along the areas in the front, back and sides of the head, thereby concealing a wearer's natural hair in said areas, said turban portion having an upper circular edge and a lower circular edge, and a wig portion of generally hemispherical shape removably secured about said upper edge so as to completely overly the top of a wearer's head and conceal the natural hair from view.

3,295,537
COMBINATION APPLICATOR COMB AND DISPENSING CARTRIDGE WITH POSITIONAL FLOW CONTROL MEANS
Garth L. Young, Jr., 1395 Carnelina Ave., Los Angeles, Calif. 90049
Filed May 24, 1963, Ser. No. 283,007
3 Claims. (Cl. 132—113)

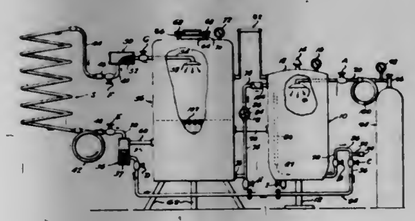
1. An applicator comb assembly which comprises a comb formed of a flexible resilient material, and including a frame having deflectable sides and a plurality of laterally extending teeth integrally connected to said frame, at least a portion of said teeth each having a passage extending axially therein, and at least one discharge opening communicating with said passage, said discharge opening being

located adjacent the outer end of each of said teeth containing said passage, said discharge openings being normally in substantially closed position, and being expandible to an open position by pressure generated in said passages, and retractable to said substantially closed position on removal of said pressure, said frame having a cylindrical longitudinal bore therein having an open outer end and communicating laterally with the inner ends of said passages in said teeth, a deformable cylindrical cartridge containing a material to be dispensed from said comb, said cartridge being received with a snug but rotatable fit within said cylindrical bore, a cylindrical cap fixed to the outer end of said cartridge and disposed within the outer



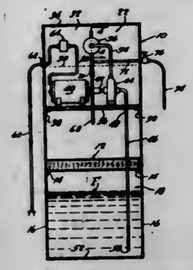
end of said last named bore, means on said cap for manually rotating said cartridge in said bore, means permitting limited rotation of said cartridge in said bore but restraining said cartridge against axial displacement in said bore, a seal between the outer wall of said cartridge and said bore, said cartridge having a plurality of holes positioned in longitudinal alignment in a wall of said cartridge, such that in a first angular position of said cartridge, said holes therein are aligned with the inner ends of said teeth passages, and in a second angularly displaced position of said cartridge said holes are misaligned with the inner ends of said teeth passages, and indicator means indicating said first and second positions of said cartridge.

3,295,538
REFRIGERATION SYSTEM CLEANER
Clarence B. Williams, Jr., 2009 Broad St., Tallahassee, Fla. 32301
Filed Oct. 18, 1963, Ser. No. 317,369
8 Claims. (Cl. 134—111)



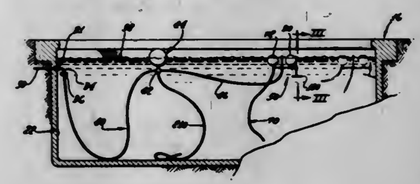
1. A device of the character described, comprising a pressure and solution reclaiming tank, a cleaning solution tank adapted to contain cleaning solution, a pressure line extending from the reclamation tank, a drier in communication with the pressure line and having an outlet pipe adapted to be connected to one end of a system to be cleaned, a filter having an inlet pipe adapted to be connected to the other end of the system to be cleaned, said filter having an outlet pipe entering the upper part of the solution tank on a level above the solution therein and terminating in a downwardly facing spray head, a vertical pipe connected at its lower end to the lower part of the solution tank below the solution level therein, said vertical pipe being connected at its upper end to a horizontal pipe portion entering the upper part of the reclamation tank and terminating in a down pipe having an open lower end near the bottom of the reclamation tank, and a source of pressure operatively connected to the pressure line.

3,295,539
FILTER CLEANER
Bernard F. Schlagock, 603 S. Broder, Anaheim, Calif. 92804
Filed Jan. 8, 1965, Ser. No. 424,397
1 Claim. (Cl. 134—111)



A filter cleaner comprising a housing formed with a cleaning fluid chamber, a pump having an intake pipe leading from said cleaning fluid chamber, said pump having a discharge pipe, a filter mounting head being formed with an axial bore with which the discharge pipe is in communication, said head being formed with an offset bore, a fluid return pipe connected to said offset bore and leading to said cleaning fluid chamber, a bypass pipe connected at one end to said return pipe and leading outside of the housing, a first valve in said return pipe beyond the bypass pipe connection therewith and remote from the head, a second valve in the portion of the bypass pipe outside of the housing, said housing containing a filter assembly above and extending across the cleaning fluid chamber into which the return pipe discharges, and a tubular adapter threaded into said axial bore and extending forwardly from said head, the forward end of said head being formed with an annular groove concentric with the adapter and communicating with said offset bore, whereby a fluid filter may be secured to the head with its tube in communication with said axial bore only and its filter element in communication only with said offset bore.

3,295,540
POOL CLEANING APPARATUS
Robert Ortega, Los Angeles, Calif., assignor to Anthony Pools, Inc., South Gate, Calif., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,677
6 Claims. (Cl. 134—167)



5. A swimming pool cleaner comprising:
a floating leader unit adapted to move about the periphery of a pool in a forward direction, including a hollow body;

a flexible conduit connected at one end to said hollow body and at its other end to a source of water under pressure;

said body being provided with a propulsion orifice for discharge of water generally rearwardly, a turning orifice for discharge of water generally laterally of the forward direction, and a third orifice directed in the opposite lateral direction;

valve means in the body normally closing the path of water flow to the turning orifice and actuatable to open said path and simultaneously to close the path of water flow to the propulsion orifice;

means for actuating said valve upon striking an obstruction to forward movement of the unit including an elongated member extending generally downwardly from said body and a horizontally disposed disk carried by the lower end of the member, the forward edge of the disk extending forwardly of said body;

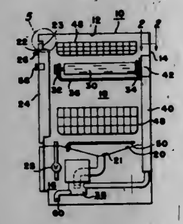
and a flexible hose connected at its upper end to said unit and receiving water therefrom for jetting discharge of water from its lower end in random movement in the pool water.

3,295,541

SOUND INHIBITOR AND SEALING ARRANGEMENT FOR WATER DISTRIBUTION CHAMBER

Richard L. Ummel, Park Forest, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 8, 1966, Ser. No. 534,599
9 Claims. (Cl. 134—182)



6. In combination, wall means defining a liquid distribution chamber for washing dishes or the like, means for supplying liquid to said chamber including spray means for said chamber operable for distributing said liquid throughout said chamber and toward impinging contact with said wall means, and coating means on one side of said wall means toward the liquid being distributed to intercept said liquid before impinging contact is made with said wall means, said coating means comprising a soft layer of cured yieldable plastisol having a hardness rating in the range of 35 to 50 durometers (shore A) and a thickness in the range of 1/16 inch to 1/8 inch to absorb the energy of a flying droplet of said liquid before impinging contact is made with said wall means, and said coating means extending substantially over all the exposed inner surfaces of said wall means and being thicker than said wall means.

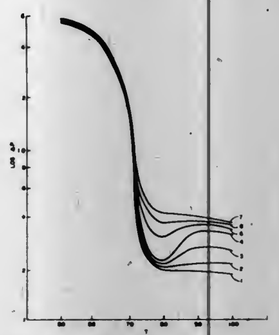
3,295,542

METHOD OF TRANSPORTING MINERAL OILS

Joseph G. Savins, Dallas, Tex., and David B. Cox, Sewell, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Filed June 29, 1964, Ser. No. 378,580
9 Claims. (Cl. 137—13)

1. In a method of transporting a mineral oil, the steps of flowing said mineral oil through a pipeline extending from a shipping point to a terminal point at a temperature within 5° F. of its pour point in at least a portion of said pipeline, and maintaining the flow rate of said oil such that the ratio of said flow rate in thousands of barrels per day to the square of the inner diameter in inches of said pipeline is not less than .32 nor more than .42 for said portion of said pipeline.



3,295,543

METHOD OF AUTOMATICALLY CONTROLLING PNEUMATIC OR HYDRAULIC ELEMENTS OF INSTRUMENTS AND OTHER DEVICES

Lev Abramovic Zalmanzon, Moscow, U.S.S.R., assignor to Pneumo-Hydraulic Automatic Control Laboratory of Automatic Control and Telemechanics Institute of the Academy of Sciences of the U.S.S.R., Moscow, U.S.S.R.

Filed Feb. 12, 1960, Ser. No. 10,834
Claims priority, application Great Britain, Dec. 15, 1959, 42,551/59
1 Claim. (Cl. 137—81.5)



A method of controlling the fluid flow from a source to a point of utilization wherein the flow is used to perform work, the improvement comprising interposing an airfoil body between the source and the point of utilization, directing the fluid flow from the source over the airfoil body to effect a border layer at least in the upper surface of the body, and thereafter directing a further fluid flow from an auxiliary source located in proximity to the trailing edge of the body against the border layer to break away the border layer from the airfoil body and divert such flow to the point of utilization.

3,295,544

PNEUMATIC CONTROL DEVICE

Klaus P. Mueller, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Oct. 3, 1963, Ser. No. 313,673
6 Claims. (Cl. 137—85)

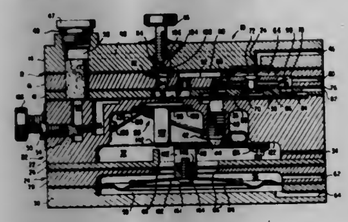
1. In a pneumatic control device having a flapper-nozzle assembly associated with a branch chamber in such a manner that the branch chamber is connected and disconnected with a source of compressed air at a constant pressure in response to variation in the nozzle pressure, a range spring assembly including:

a body member mounted at one end on a fixed support,

an adjusting flange formed on the free end of the body member,

a pair of resilient arm members projecting from said body member,

a connecting strip joining the free ends of the arm members resiliently movable in the path of the flapper to adjust the position of the flapper relative to the nozzle.



condition responsive means engaged with said connecting strip for exerting a force on the flapper proportional to variations in a controlled condition,

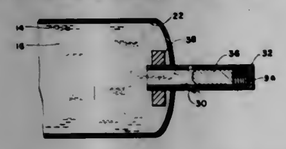
and feedback means engaged with the connecting strip responsive to increases in branch chamber pressure for exerting a force on the flapper proportional to the branch chamber pressure in a direction opposite the direction of the force exerted by the condition responsive means.

3,295,545

LIQUID STORAGE TANK VENTING DEVICE FOR ZERO GRAVITY ENVIRONMENT

Solomon Stephen Papell, Berea, and Robert W. Graham, Parkview, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Dec. 13, 1963, Ser. No. 330,209
1 Claim. (Cl. 137—197)



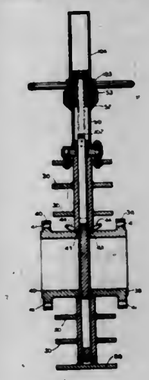
A venting device for use with a storage tank adapted to contain a magnetic fluid having a liquid phase and a gas phase and subject to zero gravity conditions, said venting device comprising a vent pipe connected to said tank in sealing communication therewith, said vent pipe having an inner portion extending into said tank and outer portion disposed outwardly of said tank, said inner portion having an open end and said outer portion having a closed end; port means in said outer portion of said vent pipe; magnetic means disposed around said inner portion of said vent pipe to prevent passage of the liquid phase of said magnetic fluid from said tank to said port means; a plunger-like valve element slidably disposed in said vent pipe and having sufficient travel so that the end of said valve means facing the interior of said tank can move between a point inward of said magnetic means and a point outward of said port means; a preloaded spring means disposed between said valve element and said closed end of said outer portion of said vent pipe, said valve means compressing said spring means to unblock said port means thereby venting a portion of the gas phase of said magnetic fluid when pressure in said tank exceeds a predetermined magnitude, said spring means biasing said valve means to a position at which the end of said valve means facing said interior of said tank is normally positioned inwardly of said magnetic means whereby after each venting action, said valve means forces magnetic liquid from said vent pipe into said tank thereby preventing a build-up of magnetic liquid in said vent pipe.

3,295,546

GATE VALVE FOR SCALE CONCENTRATED FLUID

Sydney E. Carlton, 240 W. Hereford, Gladstone, Oreg. 97027

Filed June 19, 1963, Ser. No. 289,051
4 Claims. (Cl. 137—242)



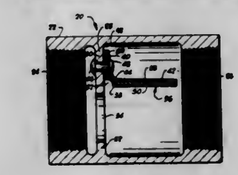
1. A knife gate for a gate valve comprising a gate member having a through port adjacent the bottom thereof adapted to register with a pipe opening of a valve in the open position, and a solid portion above the port adapted to close off the pipe opening in the closed position, a groove semi-circular at both top and bottom with parallel sides adjacent the marginal edge of said gate member encircling both the through port and the closing area, a ring retained within said groove, said ring being angularly disposed with respect to the plane of the gate member outwardly and inwardly and adapted for resilient sliding engagement with the face of the valve chamber and means at the top thereof for receiving and loosely retaining the shaped end of a valve stem.

3,295,547

FOLDABLE CHECK VALVE

Domer Scaramucci, 3245 S. Hattie St., Oklahoma City, Okla. 73129

Filed Feb. 10, 1964, Ser. No. 343,530
6 Claims. (Cl. 137—315)



1. A check valve including:

a generally tubular valve body having upstream and downstream ends of smaller inner diameter than the inner diameter of the valve body between said ends;

a generally planar seat extending transversely across the valve body between the upstream and downstream ends having an aperture therethrough surrounded by a seating surface on the downstream side of the seat, the distance across the aperture in one direction being substantially equal to the inner diameter of the downstream end of the body, and the distance across the aperture in another direction being less than the

inner diameter of the downstream end of the valve body, said seat also having a mounting portion on the downstream side thereof adjoining the seating surface;

a valve member of larger transverse dimensions than the inner diameter of the downstream end of the valve body having a mounting portion and a flapper portion joined by a resilient hinge portion, whereby the mounting portion and flapper portion may be folded toward one another for insertion of the valve member through the downstream end of the body;

said mounting portion including a rigid material, plate-like reinforcing portion and resilient sealing material adapted to seal against the mounting portion of said valve seat;

said flapper portion including a rigid material, plate-like reinforcing portion having transverse dimensions greater than the respective dimensions of said aperture to span across said aperture when the valve is closed; and

means for securing said mounting portion of the valve member in sealed relation against the mounting portion on the downstream side of said planar seat.

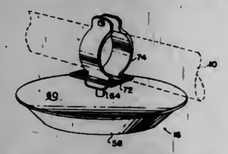
ERRATUM

For Class 137—329.05 see:
Patent No. 3,296,026

3,295,548
IRRIGATION SYSTEM

Sylvester P. Woods, 2109 62nd St., Lubbock, Tex. 79412

Filed Apr. 21, 1964, Ser. No. 361,497
9 Claims. (Cl. 137—344)



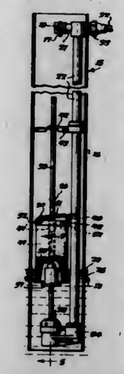
1. In an agricultural irrigation pipe line system having
(a) a series of pipe elements
(b) axially connected by flexible joints,
(c) each pipe element adapted to carry means for sprinkling water therefrom, and
(d) a hitch means attached to one end of the series for towing the series axially;
each pipe element having attached thereto at least one improved skid assembly comprising:
(e) a pan with
(f) a circular cross-section and a flat bottom, and
(g) means for attaching the pan to the pipe element for rotation of the pan about its axis which is upright.

3,295,549
WATER SOFTENING APPARATUS

Louis J. Buchmann, Buffalo, N.Y., assignor to Aquionics Corporation, Buffalo, N.Y., a corporation of New York

Filed Dec. 14, 1964, Ser. No. 418,178
10 Claims. (Cl. 137—391)

1. A brine valve assembly for water softening apparatus comprising a conduit having an opening, a first valve seat in said opening, a vertically extending rod, first valve means on said rod for seating on said first valve seat when said rod moves upwardly and for unseating when said rod moves downwardly, float means mounted for sliding movement on said rod, float supported second valve means slidably mounted on said rod, a second valve seat on said opening of said conduit for receiving said second valve means when the liquid surrounding said lower portion of said conduit drops to a first predetermined lower level, lock means mounted relative to said rod for providing locking engagement between said rod and said float means when said float means rises to a second predetermined upper level which is higher than said first predetermined level to thereby cause said float means and said rod to rise in unison to cause said first valve means to seat on said first valve seat, said lock means including means for permitting said rod to move axially relative

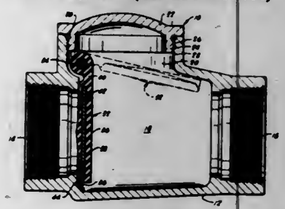


thereto during vertical movement of said rod when said float means is below said second predetermined upper level, and means for raising or lowering said first and second valve seats in unison by raising and lowering said conduit without varying the position at which said lock means provides said locking engagement in view of the action of said means for permitting said rod to move axially, to thereby vary the level at which seating occurs between said second valve means and said second seat means without varying the upper level at which seating occurs between said first valve means and said first seat means.

3,295,550
SWING-TYPE CHECK VALVE

Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129

Filed Mar. 2, 1964, Ser. No. 348,619
11 Claims. (Cl. 137—527.4)

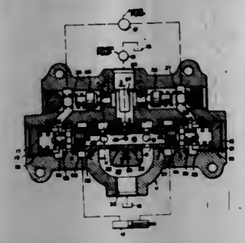


7. In a check valve including a valve body having a pivot pin mounted therein and a valve seat surrounding a flow passageway, the improvement comprising:
a valve member adapted to be pivotally supported in the valve body, said valve member having
a seal portion adapted to sealingly engage the valve seat,
a resilient connecting portion integral with the seal portion and extending from said seal portion, said connecting portion having a bore therein for receiving the pivot pin to journal said valve member on the pivot pin and permit the seal portion to align itself with the valve seat, and
a reinforcing member in said seal portion sized to engage said valve seat.

3,295,551
VALVE

Thomas J. Malott, Kalamazoo, Mich., assignor to The New York Air Brake Company, a corporation of New Jersey

Filed July 17, 1964, Ser. No. 383,383
7 Claims. (Cl. 137—596)



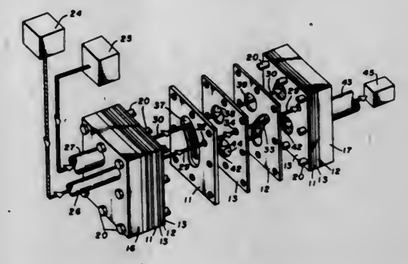
1. A valve comprising
a. a housing containing an inlet passage, an exhaust passage, first and second motor passages, and first and second control passages;
b. first and second check valves arranged to permit flow from the inlet passage to the first and second control passages, respectively, and to block flow from the control passages to the inlet passage;
c. a valve member movable in first and second opposite directions from a neutral position;
d. centering spring means biasing the valve member to the neutral position;
e. means carried by the valve member and the housing defining a flow connection between the inlet and exhaust passages containing a first variable area orifice, the area of the orifice being a maximum when the valve member is in neutral position and being reduced progressively as the valve member moves away from neutral position in either of said opposite directions;
f. means carried by the valve member and the housing defining a flow connection between the first control passage and the first motor passage containing a second variable area orifice and defining a flow connection between the second control passage and the second motor passage containing a third variable area orifice, the flow areas of the second and third orifices increasing as the valve member moves in said first and second directions, respectively;
g. means carried by the valve member and the housing defining a flow connection between the first and second motor passages and the exhaust passage containing fourth and fifth variable area orifices, respectively, the flow areas of the fourth and fifth orifices increasing as the valve member moves in said second and first directions, respectively; and
h. means responsive to the pressure differential between the first and second control passages for shifting the valve member in the first direction when the first control passage is at the higher pressure and for shifting the valve member in the second direction when the second control passage is at the higher pressure.

3,295,552
APPARATUS FOR COMBINING SPINNING COMPOSITIONS

Fred B. Powell, Decatur, Ala., and Brian K. Polk, Tuscola, Ill., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Jan. 14, 1965, Ser. No. 425,513
4 Claims. (Cl. 137—604)

1. An apparatus for combining a plurality of spinning compositions, comprising a first lamination, a second lamination, a spacing lamination positioned between the first and second laminations, and means for holding the laminations together in face-to-face relationship to form a unitary body, said laminations having therein a plurality of apertures defining a pair of inlet passageways and an outlet passageway, said passageways being perpendicular to said laminations, said passageways being parallel to and spaced from each other, said first lamination having

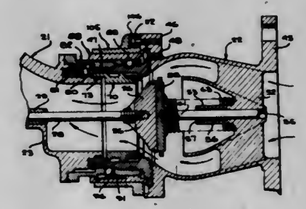


therein a slot extending laterally thereacross from one of the inlet passageways to the outlet passageway, said second lamination having therein a slot extending laterally thereacross from the other inlet passageway to the outlet passageway, said slots being curved in such a manner that they are parallel to each other at the point of entry into the outlet passageway.

3,295,553
FUEL NOZZLE AND ADAPTER ASSEMBLY

Douglas R. Garrett and James S. Millar, Los Angeles, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 70,815, Nov. 21, 1960. This application Mar. 5, 1965, Ser. No. 444,887
16 Claims. (Cl. 137—614.06)

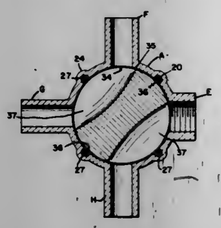


1. In a nozzle and adapter assembly, a nozzle body, an adapter body having a seat thereon, a tubular nose slidable on said nozzle body and forming an extension thereof, said nose having sealing means for engagement with said seat for forming a seal between said nozzle body and said adapter body, resilient means urging said nose to a projected position, a valve member engaged with said nose and closing said nozzle body adjacent said adapter body, cooperating means on said nozzle body and said adapter body interlocking said nozzle body and said adapter body with said sealing means being spaced from said seat and permitting rotation of said nozzle body relative to said adapter body, means carried by said nozzle body connected to said valve member for moving said valve member to an unseated position wherein said nose is released and said sealing means are engaged with said seat, said resilient means including spaced bores in said nozzle body, spring members in said bores, and balls acted upon by said spring members engaging said nose.

3,295,554
VALVE CONSTRUCTION

Stanley Huppert, Hartsdale, N.Y., assignor to American Machine Products, Inc., Flushing, N.Y., a corporation of New York

Filed July 29, 1964, Ser. No. 385,844
1 Claim. (Cl. 137—625.43)



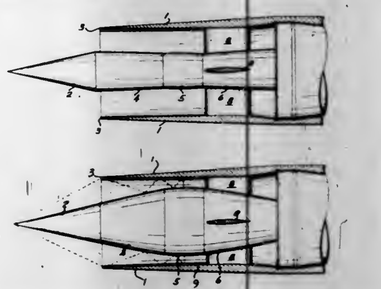
A valve construction having a valve body with a vertical axis taking the form of a cylindrical central housing with a closed bottom, an open top and tubular outlet ports extending radially outwardly from the middle of the sides of the body at 90° intervals, said ports having central horizontal passageways therethrough, a cylindrical rotary valve body member therein having opposite inwardly extending port connection horizontal slots taking up a major portion of the transverse horizontal area thereof and having a vertical width substantially as high as the diameter of the horizontal passageways, said body having an interior cylindrical chamber closely fitting said body member and having vertical cylindrical grooves spaced midway between said ports and extending below the bottom face of the chamber and to the open top and cylindrical plastic sealing means filling said grooves and a detachable cover for said body, said horizontal slots extending over a major portion of the horizontal area of the body member and having a base cut out line which curves inwardly from port to port so that the full flow area of the passageway in the port will open into the slot and said plastic sealing means extending down to the bottom of said cylindrical grooves and to below a bottom circular sealing means and contacting the outer periphery of the bottom sealing means and having a substantially greater diameter than the circular sealing means which are positioned above and below the valve member, and a double coil spring positioned on top of said body member and below said cover and having recesses in the central portion of said cover and the top of the valve body to receive the respective coils thereof and a recess in the center of the interior of the closed bottom and a nipple projecting downwardly along the central vertical axis of the body member and closely fitting in said recess.

3,295,555
VARIABLE THROAT JET ENGINE AIR INTAKE

Varnell L. James, Kent, James R. Moorehead, Bellevue, and Elling Tjonneland, Seattle, Wash., assignors to The Boeing Company, a corporation of Delaware

Filed Jan. 15, 1965, Ser. No. 425,837
7 Claims. (Cl. 138—45)

1. In a jet engine, an arcuate cowl providing within it an inlet duct for flow of air therethrough to the jet engine, and a core within said cowl including elongated edge-overlapping strips having their lengths extending axially of said core and forming a shell for said core with an external cross-sectional shape similar to the internal cross-sectional shape of said cowl, and defining with said cowl an air inlet passage of arcuate cross section and means effecting substantially radial movement of said strips for expanding said core laterally to vary the width of such arcuate passage, at least some of said strips having stiffening stringers projecting inward from their inner sides and extending lengthwise of said strips over substantially their entire lengths for rigidifying said strips to



maintain a substantially constant axial profile in all radially adjusted positions thereof.

3,295,556
FOLDABLE CONDUIT

Laurence W. Gertsma, Berea, and James H. Dunn, Lakewood, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration.

Filed Aug. 26, 1963, Ser. No. 304,698
1 Claim. (Cl. 138—119)



In a bendable tubular support of the type having two flexible parts with mating marginal surface portions of each joined to the other along the length thereof and central sections traversely bowed outwardly from the plane of the marginal surface portions, the improvement comprising,

an inwardly curved portion between each of the central sections and the marginal surface portions,

one edge of said inwardly curved portion being tangent to the central section to provide a smooth, gradual, reversal of curvature whereby high stress concentrations are prevented when said central sections are forced towards one another,

the opposite edge of said inwardly curved portion being tangent to the marginal surface portion whereby said inwardly curved portion merges smoothly with said marginal surface portion thereby preventing high stress areas between said inwardly curved portion and said marginal portion when said support is bent,

the radius of each inwardly curved portion being substantially equal to the radius of the traverse bow in the central section so that stresses in the flexible parts are equalized to prevent kinking or rupture of the support when it is bent sharply.

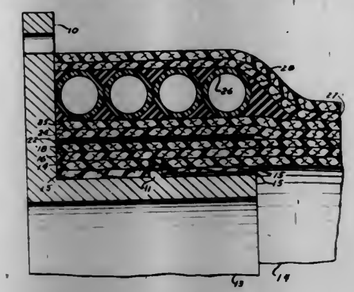
3,295,557
HOSE

Robert L. Christiansen, Clarence, N.Y., assignor, by mesne assignments, to Hewitt Robins, Stamford, Conn., a corporation of Delaware

Filed July 15, 1963, Ser. No. 295,611
4 Claims. (Cl. 138—125)

1. A method of conveying fluids over a body of water employing a hose which has a total weight in excess of the water it displaces when in a collapsed state and which displaces a volume of water at least equal to the total weight of said hose when inflated and conveying a fluid;

comprising the steps of collapsing said hose by creating a differential pressure between the interior and exterior thereof whereby said hose will be unable to displace its

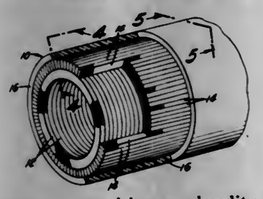


weight and will sink, and inflating said hose while conveying a fluid therein whereby said hose will displace its weight and the weight of said fluid and will float.

3,295,558
FILAMENT WOUND STRUCTURE

Boris Levenetz, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California

Filed June 1, 1964, Ser. No. 371,539
5 Claims. (Cl. 138—140)

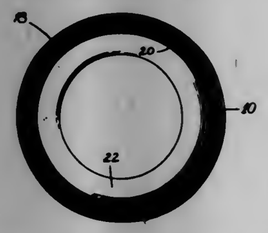


1. A structure comprising a plurality of rings, each of said rings formed of a plurality of circumferentially oriented relatively large diameter fibers bonded together and overwound with a relatively small diameter filament oriented transversely to said fibers, said rings being positioned about a common axis and bonded together, a plurality of longitudinal members bonded to said rings and a filament wound outer wrapping overlying said longitudinal members.

3,295,559
INDUCTION HEATING SUSCEPTOR AND METHOD FOR PRODUCING SAME

William C. Beasley and John H. Brannan, Lawrenceburg, Tenn., assignors to Union Carbide Corporation, a corporation of New York

Filed Sept. 17, 1962, Ser. No. 223,921
4 Claims. (Cl. 138—141)



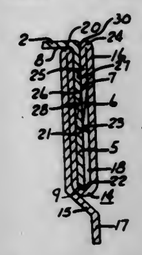
1. A thin walled cylindrical susceptor of uniform thickness which comprises a continuous lamination of graphite cloth.

2. The article of claim 1 wherein said carbonized binder is graphite.

3,295,560
SNAP LOCK SHEET-METAL SEAM

Louis F. Demmler, 431 Maple Ave., Edgewood, Pa. 15218

Continuation of application Ser. No. 374,872, June 1, 1964. This application Mar. 18, 1965, Ser. No. 444,503
9 Claims. (Cl. 138—166)



1. A lock seam for connecting adjacent edge portions of sheet metal elements that follow around an arcuate margin consisting of a continuous pocket having three folds enclosing a chamber and following along one edge portion of one of said sheet metal elements, said one edge portion with said pocket following around an arc, an interengaging sheet metal flange along one edge portion of another sheet metal element carrying a lock means and following around said arc of said pocket and locked in said pocket to complete the lock seam, a continuous offset formed by an offset bend in said one edge portion of said sheet metal element inwardly under and immediately adjacent of said pocket to offset said pocket relative to the outer surface of said sheet metal element carrying said pocket to prevent the distortion and collapsing of said pocket due to the rigidity of said sheet metal element when said sheet metal element with said pocket is rolled into an arcuate shape, said pocket having a back fold outward of said offset and extending toward said offset bend and forming one side of said chamber, and a refold outward of said offset and extending away from said offset bend and forming the bottom and the other side of said chamber, and an inturned back fold extending into said chamber and producing a hem with its marginal edge spaced uniformly from the bottom of said chamber, a mouth at the end of said chamber between the normally engaged surfaces of said inturned hem back fold and said first outward back fold, and said lock means of said flange having abutment edges engaging said marginal hem edge in said chamber of said pocket to lock said flange in said chamber.

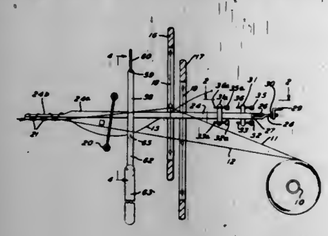
3,295,561
APPARATUS FOR WEAVING PILE FABRICS

Joseph P. Erkes, Rock Hill, S.C. (% Steel Heddle Mfg. Co., 2100 W. Allegheny Ave., Philadelphia, Pa. 19132)

Filed Apr. 27, 1965, Ser. No. 451,167
10 Claims. (Cl. 139—46)

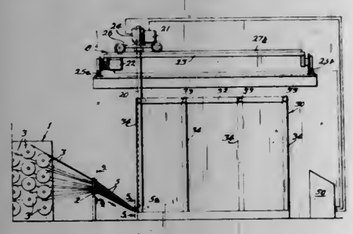
1. Apparatus for weaving pile fabrics having ground warp threads and a plurality of pile warp threads comprising members for positioning the ground warp threads to provide successive sheds for the successive insertion of filling threads, a filling thread beat-up member, a plurality of longitudinal pile wires each having a mounting end and an opposite pile gage end extending beyond said beat-up member, a mounting member for said mounting end of said pile wires, a member for tilting one of said pile wires intermediate its ends in a predetermined direction in timed relation, a member for simultaneously tilting another of said pile wires intermediate

its ends in an opposite predetermined direction from said other pile wire in timed relation, and a pile control member for controlling each of said pile warp threads in relation to the successive sheds, said control member including a pile heddle for each of the pile warp threads, said heddles having opposite separable side strips between



which a respective one of said pile wires is disposed, a pile warp thread engaging portion having a needle for positioning the associated pile warp on one side or the other of said respective pile wire as determined by the tilting thereof and the positioning of said needle, and a member for controlling the raising and lowering of said control member.

3,295,562
METHOD AND APPARATUS FOR ROUTING AND LAYING WIRES
William F. Concannon, 30 Dewey Road, Cheltenham, Pa. 19012
Filed Jan. 5, 1965, Ser. No. 423,445
16 Claims. (Cl. 140—93)



1. A method of routing a plurality of wires simultaneously in large structures, comprising the steps of: providing a clamp having three degrees of movement, clamping a plurality of wires in said clamp, moving the clamp consecutively in at least two of said degrees of movement, providing at at least each point of change of movement of the clamp a wire cradle, and during movement of the clamp, engaging said wires in said cradles and terminating the movement of the clamp and moving the cradles into a position to unload the wires from the cradles into predetermined positions.

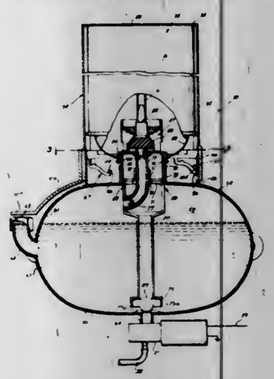
3,295,563
METHOD AND APPARATUS FOR HANDLING CRYOGENIC LIQUIDS
Lawrence Laya, Chicago, Ill., and John Cupp, Lexington, Mass., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,859
6 Claims. (Cl. 141—1)

5. A method of filling a container with cryogenic liquid, which method comprises establishing a flow of cryogenic liquid from a source thereof under superatmospheric pressure, conducting said flow of cryogenic liquid to a filling means, throttling said cryogenic liquid at said filling means and splitting said flow into a multitude of small streams, and directing the flow of said multitude of small liquid streams into a container at atmospheric



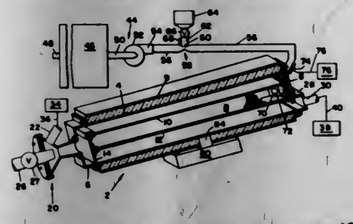
pressure to fill the container with minimal splashing of said liquid.

3,295,564
WINDSHIELD WASHER
Willis L. Kibler and Robert H. Opdyke, Detroit, Mich., assignors to The Delman Company, Cookeville, Tenn., a corporation of Tennessee
Filed Feb. 24, 1964, Ser. No. 346,900
2 Claims. (Cl. 141—18)



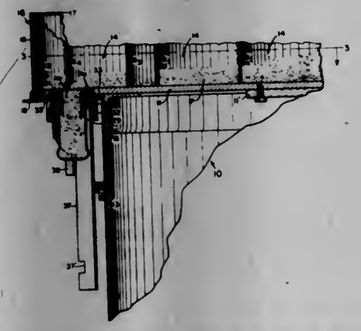
1. In combination,
(a) container means for storing a liquid solvent under gaseous pressure,
(b) valve means on said container for controlling the flow of solvent therefrom,
(c) reservoir means for storing a cleaning liquid, said reservoir means having an inlet opening closed with a removable cap,
(d) means on said reservoir means engageable with said container means and said valve means to fluid seal said container means with said reservoir means and to open said valve means,
(e) housing means engageable with said container means and reservoir means for holding the container means in an assembled relation with the reservoir means,
(f) coacting means on said housing means and reservoir means operable to releasably attach the housing means to the reservoir means and to selectively position the container means in a fluid sealed or a non-fluid sealed relation with the means on the reservoir means, and
(g) arms means secured to said housing means and positionable adjacent said cap on the reservoir means when the container means is in a fluid sealed relation with the reservoir means for preventing the removal of the cap from the reservoir means.

3,295,565
APPARATUS FOR FILLING AN EXHAUST PURIFIER WITH CATALYST PELLETS
Charles G. Grandy, Jr., Radnor, Pa., assignor to Oxy-Catalyst, Inc., Berwyn, Pa., a corporation of Pennsylvania
Filed Sept. 9, 1963, Ser. No. 307,560
1 Claim. (Cl. 141—67)



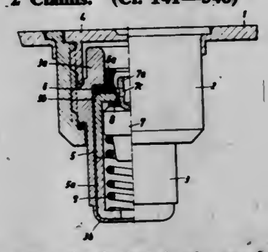
In combination with a catalytic exhaust purifier having a housing containing a pair of grids defining a catalyst bed area; a blower, a conduit connecting the discharge end of said blower with said catalyst bed area, said conduit having a venturi portion, a catalyst reservoir, a pipe connecting said reservoir to the venturi portion of said conduit for the entrainment of catalyst pellets in a stream of air in said conduit, said pipe having a screened opening for the passage of air between the conduit and the reservoir.

3,295,566
FILLING MACHINE FOR COMMINUTED MATERIALS
George S. Maniatty, Cincinnati, Ohio, and Robert H. Chaffee, Westfield, N.J., assignors to Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 14, 1964, Ser. No. 418,187
8 Claims. (Cl. 141—71)



1. High speed rotary filling apparatus for placement of a predetermined weight of a comminuted free-flowing material within open mouthed containers, said apparatus comprising in combination:
(A) an enclosed rotating chamber adapted to contain a substantially constant quantity of the said comminuted material, said chamber having a bottom plate on which said material is supported and which is provided with a plurality of apertures spaced uniformly about its peripheral area;
(B) a filling means associated with each of said apertures, said filling means including an annular sealing surface, a depending outage regulatory element the body of which is encircled by said sealing surface and adapted to project into a container presented to said station, said element containing a passageway in open communication with the product in said chamber during only a fixed portion of each revolution of said chamber, which portion constitutes the container filling period of the machine cycle, said body of said element being of a length substantially shorter than the internal height of said container and adapted to leave a predetermined volume of said container unfilled by said material during the said container filling period, and a pusher-guide member to maintain said container in axial alignment with the filling means, said aperture, sealing surface, outage regulatory element and pusher-guide member being coaxial;
(C) means to raise said container to place and maintain the open mouth thereof in sealing contact with said sealing surface during said container filling period whereby to telescope the body of said outage regulatory element within said container; and
(D) means to lower and remove each of said containers from said apparatus following said container filling period.

3,295,567
FILLING VALVE FOR A GAS-FUELED LIGHTER
Heinz Pichl, Offenbach am Main, Germany, assignor to Rowenta Metallwarenfabrik G.m.b.H., Offenbach am Main, Germany, a firm of Germany
Filed Nov. 13, 1964, Ser. No. 410,883
Claims priority, application Germany, Dec. 9, 1963, R 27,521
2 Claims. (Cl. 141—348)

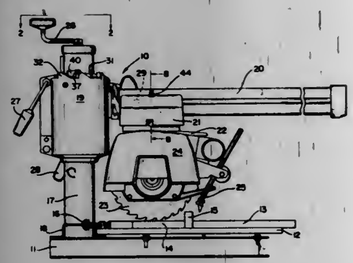


1. A filling valve of a fuel tank of a gas-fueled lighter, said valve comprising a valve housing arranged to be mounted on the fuel tank and having an opening defined by an inner wall portion of the housing, a valve body movable in said housing opening between a valve closing position and a valve opening position, yieldable means biasing the valve body into its valve closing position, an elastic annular sealing member disposed within said housing opening between said inner wall portion of the housing and said valve body to define therebetween an entrance throat for the insertion of the neck of a fuel containing container, said sealing member including an annular disk having along its inner peripheral rim an upwardly extending flange protruding above the upper end of said valve body, said flange being deformable to partly overlay said valve body upon insertion of said fuel container neck into said throat and to thereby form an annular seal between said neck and said valve body, whereby pressure applied to said container will be transmitted via said seal to move said valve body to the open position.

3,295,568
UNI-DIRECTIONAL INDEXING MEANS FOR POWER-OPERATED MACHINE
Harold C. Cassey, Manheim, Pa., assignor to De Walt, Inc., Lancaster, Pa., a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 397,239
5 Claims. (Cl. 143—6)

1. In a machine having a pair of members which are rotatable relative to one another about an axis of rotation, an indexing means between the members, comprising:
(a) an annular series of notches formed on one of the members, each of said notches including a ramp portion and a projecting shoulder;

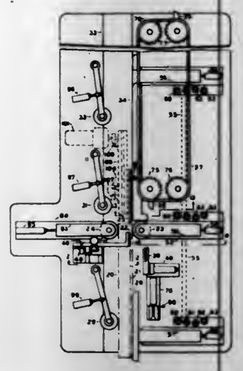
(b) a headed adjusting screw carried by the other member and disposed on an axis transverse to the axis of rotation between the members;
(c) a ledge formed on the other member, radially of the screw, and between the screw and the annular series of notches formed on the one member;
(d) an index latch pivotably mounted on the screw about the axis thereof and extending radially therefrom into the annular series of notches;
(e) said index latch normally abutting against a respective shoulder of the annular series of notches, thereby positively indexing the members relative to one another, and thereby normally precluding relative rotation of the members in one direction without first lifting the index latch out of abutment with the respective shoulder, said index latch riding up a respective ramp and engaging with an adjacent notch to abut against the next respective shoulder upon relative rotation of the members in the opposite direction, whereby the indexing means is unidirectional; and



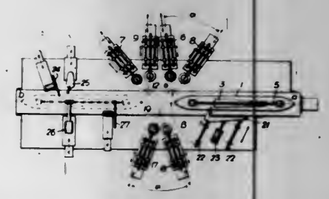
(f) Said index latch having a pair of side surfaces;
(g) whereby, in its indexed position, one of the side surfaces of the index latch abuts against the underside of the headed adjusting screw and a respective shoulder on the annular series of notches, spaced radially from the screw; and whereby the other side surface of the index latch abuts against the ledge, radially between the screw and the respective shoulder, thereby placing the index latch in shear between the members; and
(h) whereby the headed adjusting screw provides a micrometer adjustment for the indexed position of the index latch, thereby compensating for tolerance accumulations, wear, and misalinements of the indexing means between the members.

3,295,569
MACHINE FOR CUTTING WOOD WITH A FIXED BLADE
Corlise M. Sweet, 1000 E. Montana St., Milwaukee, Wis. 53207
Filed May 31, 1962, Ser. No. 199,011
9 Claims. (Cl. 144—175)

1. A machine for cutting a board from a timber having a specific gravity of over .25, comprising a fixed thin blade that is held in position for cutting, means for fastening the opposite ends of said blade to the machine whereby the timber passes between the fastened ends of said blade and the blade can be thinner than if only one end of the blade was fastened to the machine, means to hold a timber in the correct position for cutting a board from one side of the timber, means to compress the section of wood being cut thereby preventing the wood from splitting, and means to exert a pushing force on the trailing end of said timber to push the timber past said blade whereby using the above machine space is provided for the thin blade to pass through the timber by compressing the wood on the sides of the board instead of providing space by wasting wood in sawing a kerf or providing space by bending and fracturing the wood.

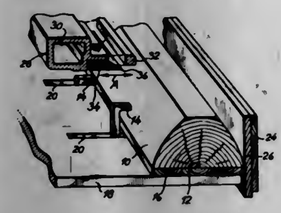


3,295,570
PROCESS AND MACHINE-TOOL FOR LONGITUDINAL AND TRANSVERSE MACHINING
Kurt Olbrich, Vienna, Austria, assignor to Fa. Maschinenfabrik Zuckermann Komm. Ges. Wien, Vienna, Austria
Filed Oct. 23, 1963, Ser. No. 318,205
Claims priority, application Austria, Oct. 26, 1962, A 8,478/62
7 Claims. (Cl. 144—326)



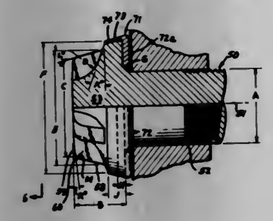
1. A method of operating a double-side copying miller having a multiplicity of machining stations spaced along and on opposite sides of a longitudinal transport path for an elongated workpiece, comprising the steps of clamping said workpiece on a carriage provided with a machining template having contoured longitudinal sides extending along said path for determining the machined configuration of said workpiece; feeding a pair of milling cutters toward said workpiece and guiding said cutters by engagement with said template while displacing said carriage along said transport path for milling a contour corresponding to that of said template in said workpiece; thereafter without releasing said workpiece from said carriage displacing a pair of grinding elements from opposite sides of said path into engagement with said workpiece and guiding said grinding elements by engagement with said template while continuing the displacement of said carriage along said path to finish-machine the contours of the workpiece in accordance with the configuration of said template; immobilizing said carriage at at least one location along said transport path and displacing a tool transversely to said path into engagement with the workpiece while said carriage is immobilized to transversely machine said workpiece; and displacing a saw blade transversely of said workpiece across said path and through said workpiece, for trimming said workpiece to a predetermined length.

3,295,571
VENEER PRODUCTION
Per Bork, 7 Langebrogade, Copenhagen, Denmark
Filed Feb. 26, 1964, Ser. No. 347,494
Claims priority, application Denmark, Oct. 28, 1963, 5,074/63; Great Britain, Feb. 17, 1964, 6,457/64
22 Claims. (Cl. 144—327)



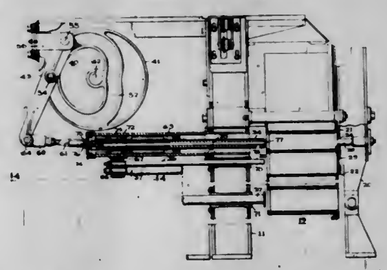
6. A method of producing veneer leaves by slicing a wooden workpiece substantially parallel with a surface thereof during firm clamping of said workpiece, comprising the steps of surface drying said surface of said workpiece by means of volatile chemical substances,
providing a composite structure comprising said workpiece and a layer of a material that will not damage the knife of the veneer slicing machine, having a thickness enabling the clamping to be effected on the sides of said layer only, by bonding said layer on said workpiece surface by means of a bonding agent capable of setting to effectively provide a bonding strength at least substantially corresponding to the interior strength of said workpiece,
clamping said composite structure and slicing veneer leaves of the workpiece of said composite structure until the bonding zone between said workpiece and said layer is reached during clamping only on the sides of said layer during the last part of the slicing operation.

3,295,572
SCREW AND SCREW DRIVER COUPLING
George S. Wing, Palos Verdes Estates, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Original application May 18, 1959, Ser. No. 814,008, now Patent No. 3,187,790, dated June 8, 1965. Divided and this application June 24, 1964, Ser. No. 377,757
3 Claims. (Cl. 145—50)



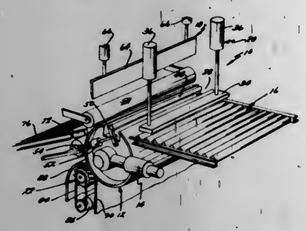
1. A coupling for joining two elements with their central axes aligned so that turning one element around its central axis will turn the other element, said coupling comprising a recess on an end of one element and mating convex surfaces on the other of said elements adapted to enter into and engage with said recess, said recess comprising a plurality of projections, each projection being bounded by a pair of projection sidewalls which lie in planes that are substantially parallel to said central axis, each pair of adjacent projections being separated by an intervening flute, the sidewall of each adjacent projection forming a sidewall of each flute, the sidewalls of each flute thereby being substantially parallel, each flute having an outer wall inclined at an acute angle with the central axis and each flute having a bottom surface which intersects the sidewalls and outer wall, said outer walls and bottom surfaces being non-convex relative to the opening of the recess, the intersection of the bottom surface with the outer wall lying farther from the central axis than the portion of the adjacent projections nearest the central axis, said outer wall diverging outwardly from the said intersection and the longitudinal axis, said convex surfaces comprising a plurality of radially extending blades, each of said blades having a pair of sidewalls which are substantially parallel to each other and to the central axis, and which are spaced apart by substantially the same distance that the sidewalls of the flutes are spaced apart, each blade also having an outer wall and an end wall which bear the same angular relation to the central axis as the respective outer wall and bottom surface of the flutes, the outer walls and end walls of the convex surfaces being respectively congruent to and adapted to make full surface contact with portions of the outer walls and bottom surfaces of the recess, whereby the blades are adapted to enter into the flutes with the respective sidewalls in engagement for effecting a torque driving connection between the two elements and with the elements held in alignment by the engagement of the outer walls and bottom surfaces of the recess with the outer walls and end walls of the convex surfaces, the blades being spaced apart by grooves, the bottoms of said grooves being circular arcs, the innermost portions of the projections being toroidal convexly toward the central axis.

3,295,573
PINEAPPLE CORING MACHINE
Robert F. Healy, Honolulu, Hawaii, assignor, by mesne assignments, to Castle & Cooke, Inc., Honolulu, Hawaii, a corporation of Hawaii
Filed Mar. 12, 1964, Ser. No. 351,296
8 Claims. (Cl. 146—6)



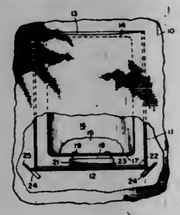
1. In a Ginaca-type pineapple processing machine having a plurality of open ended chambers for the pineapples arranged in a turret rotated to individual operating stations including a coring station after the butt and crown ends of the pineapple are severed, the improvement comprising a coring mechanism having a hollow cylindrically shaped core cutting tube mounted for reciprocation through the chamber at the coring station for cutting of the core of the pineapple within said chamber upon insertion of said core cutting tube, a stationary stripping rod mounted coaxially within said coring tube and arranged to bear against the cut core to retain said cut core within the pineapple when said cutting tube is withdrawn and core ejecting means mounted for reciprocation together with said core cutting tube, said core ejecting means being displaced from said core cutting tube so as to pass through the chamber at the operating station adjacent the coring station for ejecting the cut core from the pineapple.

3,295,574
METHOD AND APPARATUS FOR SKINNING
Robert J. Broersma, Spring Lake, and Ernest M. Reimer, New Era, Mich., assignors to Wolverine Shoe & Tanning Corporation, Rockford, Mich., a corporation of Michigan
Filed Aug. 7, 1964, Ser. No. 388,211
6 Claims. (Cl. 146—241)



6. A method of skinning hogsides on a notched rotational skinning drum, comprising the steps of: placing a hogside, skin down, tangentially of the drum, with its edge overlapping the drum notch; lowering a shearing blade against an edge portion of the hogside at an angle of at least about 90° with respect to the edge portion for simultaneously severing the meat from the edge of the skin and bending the skin edge into the notch; clamping the skin edge in the notch, and rotating the drum past a skinning blade.

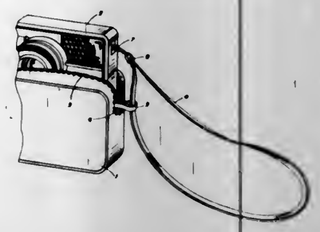
3,295,575
WALLET RETAINING DEVICE
Harold S. Young, 315 Kimball Terrace, Chula Vista, Calif. 92010
Filed Sept. 23, 1964, Ser. No. 398,660
7 Claims. (Cl. 150—47)



1. Means for holding a generally rectangular wallet in a person's pocket comprising, in combination: a first metallic member attached to the bottom of the wallet; a second metallic member disposed under and close to said first member upon lowering the wallet into said pocket, one of said members being magnetized to a high flux density and the other member being paramagnetic; a thin nonmetallic elastic band capable of being elongated at least 100 percent; means connecting the ends of said band to the bottom of said pocket; and means for retaining said second member on the middle portion of said band.

3,295,576
CARRYING CASE, PARTICULARLY FOR PHOTOGRAPHIC CAMERAS
Eugen Schmitt, Stuttgart, and Ernst Lieser, Stuttgart-Feuerbach, Germany, assignors to Eastman Kodak Company, Rochester, N.Y.
Filed Oct. 7, 1964, Ser. No. 402,082
Claims priority, application Germany, Oct. 23, 1963, K 46,079
4 Claims. (Cl. 150—52)

1. In combination
(1) a case for an article of manufacture provided with an elongated closable opening through which said article can be inserted into and removed from said case and which can be closed by drawing the edges thereof together;
(2) manually operable closure means for selectively closing said opening except for one extreme end of said opening which remains open when said elongated opening is closed by said closure means;



(3) a carrying strap adapted to be attached to said article of manufacture and including a closed loop portion; and
(4) a strip of material fastened to opposite sides of and bridging said extreme end of said elongated opening and extending through the closed loop portion of said carrying strap.

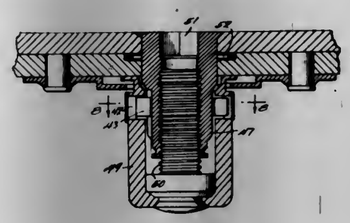
3,295,577
COVER APPARATUS OR THE LIKE
Lorraine T. Danielson, 3816 Beau d' Rue, St. Paul, Minn. 55111
Filed Feb. 5, 1965, Ser. No. 430,597
6 Claims. (Cl. 150—52)



1. An adjustable peripheral cover comprising:
a section of yieldable material;
a pocket formed by said material extending substantially around the perimeter of said material;
an elastic band placed within said pocket;
first and second portions of mating hook and eye pressure fastening means;
said first and second portions connected, respectively, to first and second ends of said elastic band, and extending through first and second apertures formed in said pocket; and
said first and second portions capable of forming a substantially non-bulging, firm fastening when pressed together, and being of sufficient length to vary the expansion of said elastic band when pressed together at any point.

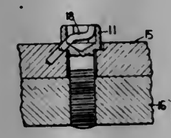
3,295,578
FASTENING DEVICE
Emile A. Maloof, 4925 Deal Drive, SE., Washington, D.C. 20021
Filed June 29, 1964, Ser. No. 378,815
5 Claims. (Cl. 151—11)

1. A fastener for securing together two members having aligned apertures comprising: an exteriorly threaded bolt; a cylindrical sleeve member surrounding said bolt in spaced relationship thereto and being attachable to one of the members so as to be axially aligned with the apertures in the members; means connecting one end of the bolt to said sleeve for preventing relative movement between said bolt and sleeve; said sleeve having a peripheral groove in its exterior adjacent the end thereof nearest said one plate and at least one radial passage extending between said groove and the interior of said sleeve; an arcuate spring carried in said groove, said spring having a yieldable locking finger extending loosely through said radial passage and biased by said spring inwardly beyond the interior of said sleeve, said locking finger terminating in two angularly intersecting walls; an interiorly threaded tubular nut insertable through the apertures in the members for cooperatively engaging said bolt, said



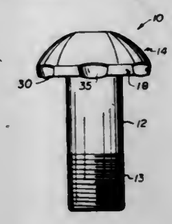
nut having a longitudinal portion with a maximum transverse diameter less than the internal diameter of said sleeve, said longitudinal portion having at least one longitudinal groove therein defined by intersecting walls which receive the walls of said locking finger in camming engagement in one rotative position of said nut in a manner to permit rotation of said nut in a tightening direction while resisting but not completely preventing rotation of said nut in a loosening direction.

3,295,579
LOCK BOLT
Einar Medal, Washington, D.C., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 8, 1965, Ser. No. 437,743
2 Claims. (Cl. 151—33)



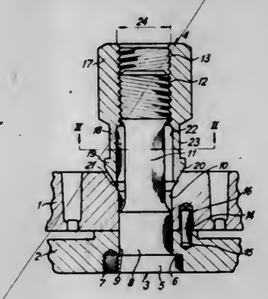
1. A screw threaded fastener locking device comprising in combination, a bolt having a cylindrical threaded shank and a head, said head provided with a hexagonal countersunk socket defined by a circumferential outer wall and a small cylindrical opening extending diagonally upward from the undersurface of said head into the socket, said bolt securing a plate member to a base member in such a manner that the bolt head undersurface is in close engagement with the outer surface of the plate member, said plate member having a cylindrical hole in the upper surface thereof in contact with said bolt head undersurface and in alignment with the cylindrical opening in the bolt head, and a pin fitted through the said cylindrical opening in the bolt head and into said aligned hole in the plate member, said pin being received in said cylindrical hole to the fullest extent having the upper portion thereof extending axially above and radially beyond said socket prior to deformation said pin being adapted to have the upper portion thereof deformed by a double bend so as to be fully received into the socket in the bolt head and said pin engaging the wall portion of said socket so as to maintain assembly of the pin within said hole and said socket.

3,295,580
FASTENER HAVING CONCAVE LOCKING FINS
William G. Waltermire, Seven Hills, Cleveland, Ohio, assignor to The Lamson & Sessions Co., Cleveland, Ohio, a corporation of Ohio
Filed July 6, 1964, Ser. No. 380,409
5 Claims. (Cl. 151—37)



1. A one-piece bolt for connecting a pair of host members having holes for receiving the bolt, said bolt having a shank which is to be received in the holes, a threaded portion disposed at the forward end of said shank to extend outwardly of the holes in said host members, to receive a nut to apply clamping pressure to said host members, an enlarged head at the end of said shank remote from said threaded portion having a bearing surface for engaging the adjacent host member, said bearing surface tapering inwardly toward said shank at an acute angle therewith to define a concave surface, said head being comprised of alternate convex and flat surfaces when viewed from above said head, said head having a peripheral configuration of alternately spaced convex and concave arcs when viewed from the bearing surface and a radially inwardly concave fin extending along each of the concave arcs and projecting axially beneath the bearing surface thereof and being directed slightly inwardly toward said shank, said fins embedding in the adjacent host member to provide a locking engagement therewith when said head and nut are in clamping engagement with said host members.

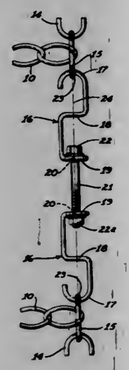
3,295,581
NUT LOCKING DEVICE
Knut Bertil Norlin and Erik Roland Lundberg, Nacka, Sweden, assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Dec. 2, 1964, Ser. No. 418,580
6 Claims. (Cl. 151—38)



1. In the combination of a reusable nut locking device of the character described and a threaded member which is to be secured to a body from which it projects, said body having a tapered friction surface around said projecting member, a nut having an internally screw-threaded portion at one end thereof for engagement with said threaded

member, a tubular cylindrical throat portion axially spaced from said threaded portion and having an external diameter less than the external diameter of said threaded portion and an internal bore with an internal diameter greater than the major diameter of the screw thread of said threaded portion and substantially constant throughout the axial extent of said throat portion for providing clearance between said throat portion and said threaded member upon assembly and for resiliently yielding axially upon tightening of said nut on said threaded member, a continuous annular flange on said throat portion around the end thereof opposite said threaded portion and axially spaced therefrom, said flange having a substantial axial extent which is substantially thicker than said throat portion forming a radially extending shoulder therearound for yielding less resiliently than said throat portion, and said thicker axially extending portion of said flange terminating in an axially tapered end surface opposite said shoulder and spaced from said throat portion for frictional engagement against said tapered friction surface on said body with the extreme point of said tapered end surface being spaced radially from said shoulder.

3,295,582
TIRE CHAIN TIGHTENER
Frank Hernikl, 301 E. El Comino Drive, Phoenix, Ariz. 85020
Filed Apr. 9, 1965, Ser. No. 446,910
1 Claim. (Cl. 152—241)



A chain tightener for a tire chain comprising in combination:

(A) a pair of oppositely disposed longitudinally spaced tension hooks having points of engagement with the ends of the tire chain defining an axis of pull each having

(B) hook portions adapted to grip the opposite ends of the chain,

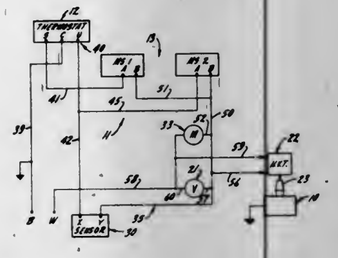
(C) intermediate transversely diametrically radially disposed extending portions relative to said axis,

(D) and bent-over radially disposed eyelet portions lying in a plane parallel to said intermediate portions on the opposite ends of each tension hook relative to said axis from said hook portions,

(E) and a tightening bolt extending through said eyelet portions having a nut so as to interconnect said bolt between said eyelet portions with the axis of said bolt on said axis of pull,

(F) said points of engagement of said hook portions with said side chain ends being located on the axis of said bolt, nut and eyelet portion openings of said tension hook for any degree of clamping of said bolt and nut.

3,295,583
RESTARTER FOR THERMOSTATICALLY CONTROLLED OIL AND GAS BURNERS
Ambrose Dean Olds, 35 Evergreen Drive, Centralia, Ill. 62801
Filed Oct. 22, 1965, Ser. No. 500,661
10 Claims. (Cl. 158—28)

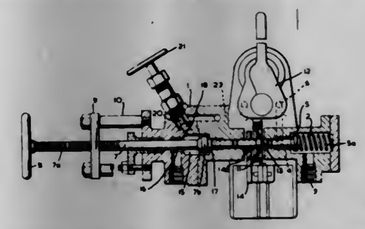


1. A system for controlling the ignition and re-ignition of a burner comprising: circuit means including a source of current, electrical fuel control means, electrical fuel firing means, sensor means for sensing flame at the burner, timer means, operator switch means, and timer switch means, movement of said operator switch means into a first alternative condition when said system is in its normal start or zero position completing circuits to said timer means and to said fuel control means and said fuel firing means to attempt ignition of said burner, said timer means timing a predetermined ignition period, normal firing of the burner during said ignition period being sensed by said sensor means which then closes holding circuits to said timer means, and said fuel control means, said timer means continuing to operate as long as said burner is fired while cyclically operating said timer switch means, movement of said operator switch means into a second alternative condition while said burner is normally fired being effective to open the circuit to said fuel control means and complete another circuit to said timer means to operate said timer means until said normal start or zero position is reached once more, whereupon said timer switch means is effective to open the closed circuit to said timer means and prepare said system for another ignition attempt when said operator switch means again moves into said first alternative condition, said timer means manipulating said timer switch means if ignition is not successfully obtained during said predetermined ignition period to break the circuit to and lock out said electrical fuel control means, said timer means also manipulating said timer switch to break its own closed circuit and lock itself out after said unsuccessful ignition period, manipulation of said operator switch means into said second alternative condition after said lock out being effective to complete a circuit to said timer means to cause said timer means to time a prescribed reset period and then manipulate said timer switch means to open the circuit to said timer means once more at said normal start or zero position.

3,295,584
VALVE AND BURNER MANIFOLD ARRANGEMENT
Albert Edward Proctor, Wembley, England, assignor to Airoil Burner Company (G.B.) Limited, West Drayton, England, a British company
Filed June 12, 1964, Ser. No. 374,794
Claims priority, application Great Britain, June 14, 1963, 23,844/63
6 Claims. (Cl. 158—75)

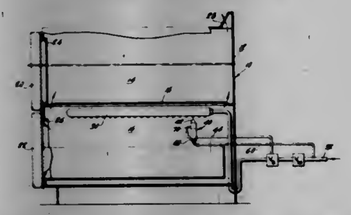
1. A valve arrangement by which fuel can be supplied to a burner manifold comprising: a valve body incorporating a first chamber with a first inlet and a first valve in the chamber to control the fuel flow to the burner through a

first outlet, a burner manifold detachably secured to the valve body; an elongate first movable member mounted in the valve body by which the first valve can be opened; a second movable member mounted on the burner manifold between the first movable member and first valve and



being aligned with said first member to transmit axial movement of the first movable member to said first valve only when the manifold and valve body are secured together in their operative positions whereby the first valve can be opened only when the manifold and valve body are secured together in their operative positions.

3,295,585
APPARATUS FOR SENSING THE COMPOSITION OF GASES, AND GAS BURNER SYSTEM EMPLOYING SAME
John T. Kovach, Jr., Cleveland, and Charles W. Thompson, Lyndhurst, Ohio, assignors to American Gas Association, Inc., New York, N.Y., a corporation of New York
Filed July 12, 1965, Ser. No. 471,112
11 Claims. (Cl. 158—130)



1. Apparatus for sensing the proportion of a predetermined component in a gaseous mixture which contains oxygen, a fuel and inerts, comprising:

a gas conduit having gas inlet means and gas outlet means;

first gas-transmissive flame-stabilizing screen means disposed inside and across the interior of said conduit intermediate said inlet means and said outlet means;

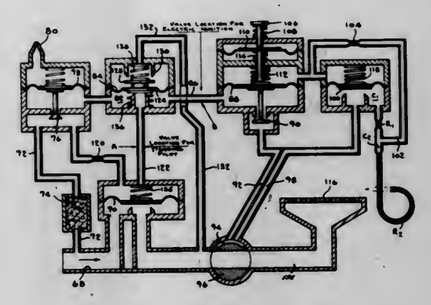
second gas-transmissive flame-stabilizing screen means disposed across said outlet means;

means for permitting ignition of said gaseous mixture at said first screen means when the gaseous mixture supplied thereto is combustible; and

means for detecting the occurrence of gaseous combustion at said first screen means.

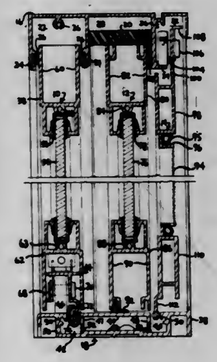
3,295,586
CONTROL BY TEMPERATURE SENSITIVE GAS BLEED
Lourdes V. McCarty, Milwaukee, and Robert J. Duncan, Delafield, Wis., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,233
12 Claims. (Cl. 158—136)

1. A control for gas burners comprising, a pilot burner, fuel supply means for the burner including first and second restrictions having a conduit therebetween, a safety valve controlling the supply to the first restriction, the pilot burner being positioned to heat the second restriction, means controlling the valve in response to the change in pressure of the gas flowing through the conduit in response to heating of said second restriction, means for



establishing fuel flow to the first restriction and burner for burner ignition purposes, a pressure regulator in the fuel supply means ahead of the safety valve, a second safety valve in the fuel supply means and responsive to an abnormally high pressure in the conduit to stop flow to the first restriction.

3,295,587
SLIDING GLASS DOOR
William J. Horgan, Jr., Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1963, Ser. No. 332,555
7 Claims. (Cl. 160—91)

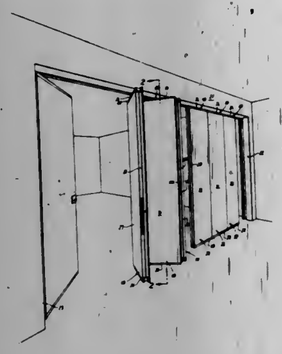


1. A reversible sliding panel and sliding screen door assembly for selectively positioning the screen door on either the inside or the outside of an opening comprising a door frame having a header, a pair of jambs and a threshold, said threshold comprising a threshold frame member having a longitudinal opening in its upper surface, a threshold insert member mounted within said longitudinal opening and providing with said threshold frame member in a first position one arrangement of laterally spaced guide channels of different widths and in a second position the reverse arrangement of said guide channels, and at least one sliding panel and one sliding screen door guided by said guide channels and said header.

3,295,588
OPERABLE PANEL TYPE PARTITION ARRANGEMENT

Herman M. Gilson, San Francisco, Calif., assignor, by mesne assignments, to Hough Manufacturing Corporation, a corporation of Connecticut

Filed June 25, 1965, Ser. No. 466,975
10 Claims. (Cl. 160—199)



1. In an operable panel type partition arrangement, a plurality of at least two panels each adapted to be releasably positioned to extend between spaced parallel room surfaces, each panel having means forming a frame, and sheets of material carried by said frame to form front and back panel faces, each panel including spaced parallel ends and sides, hinge means disposed to support adjacent panels for hinged movement between wall forming and wall folded positions, a grip member at one end of each panel and movable with respect thereto between retracted and projected positions, lifting means between the faces of each panel for moving said grip member from retracted to projected positions thereof, said grip member of each panel when in its said projected position being adapted to engage surfaces within a room so as to secure the panel therein when said grip member is urged thereagainst, control rod means in each panel extending along an axis between the sides of each panel, said control rod means being operatively coupled to drive an associated one of said lifting means between retracted and projected positions to move said grip member, coupling means carried on adjacent ends of the control rod means of adjacent panels to couple the control rod means of said adjacent panels when said adjacent panels are swung together to said wall forming position and to decouple the control rod means of said adjacent panels when moving said adjacent panels to said wall folded position, and crank means carried at the edge of one of said panels, said crank means being operatively coupled to rotate said control rod means of both said adjacent panels via said coupling means when said panels are in said wall forming position, whereby the panels of a multi-panel wall so formed shall be conjointly secured within the room by movement of said crank means.

3,295,589
TRAFFIC DOOR

Robert H. Pfleger, Milwaukee, George E. McGuire, Thiensville, and Robert C. Beckwith, Glendale, Wis., assignors to Kelley Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed May 20, 1964, Ser. No. 368,793
3 Claims. (Cl. 160—327)

1. A closure for doorways wherein a pair of complementary similar doors are hingedly mounted at their remote edges to swing in either direction to and from closed positions at which their free edges are contiguous, and wherein the doors are biased to their closed positions, the improvement which resides in the fact that each door comprises:

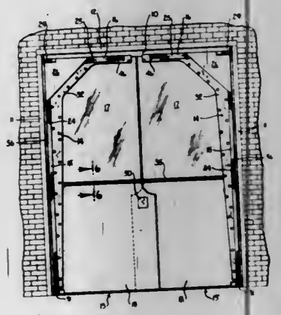
(A) a rigid inverted L-shaped frame having an upright rail extending from top to bottom of the door along its hinged edge, and a transverse arm extending laterally from the upper end of the rail;

(B) an upper panel section formed essentially of substantially transparent material which possesses only limited flexibility;

(C) a lower panel section formed of rubber-like material having substantial flexibility;

(D) means securing the upper panel section to the upright rail and the transverse arm of said frame;

(E) means securing the lower panel section to the upright rail,



the width of the upper panel sections being such that the free edges thereof are spaced from one another when the doors are in their closed positions, so as not to collide when the doors swing to and from closed position, and the width of the lower sections being substantially greater than that of the upper sections so that said lower sections overlap when the doors are in closed positions,

the lower panel sections having substantially greater wall thickness than the upper panel sections, and each lower panel section having a groove in its upper edge in which the lower edge portion of its companion upper panel section is nested;

(F) a rubber strip at each side of each door covering the junction of its upper and lower panel sections; and

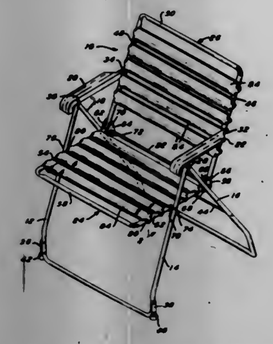
(G) fastening means passing through the nested edge portions of the panel sections and through portions of said strips.

3,295,590
FURNITURE

Morton Pearistine, Bala-Cynwyd, Pa., assignor to Bunting Company, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 14, 1964, Ser. No. 344,925
6 Claims. (Cl. 160—327)

1. An article of manufucture comprising spaced frame members, flexible slat means, said slat means extending partially around said frame members, said slat means including flexible material curved about its longitudinal axis and tab means depending from the ends thereof, the edges of said curved material resting on said frame members to cause said slat means to substantially stand away from said frame members when under no load and to make arcuate contact with said frame members when a load is applied thereto, and connecting means including

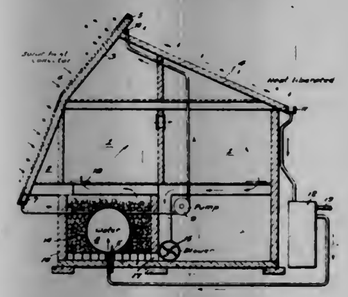


said tab means for securing said slat means to said frame members.

3,295,591
APPARATUS FOR COOLING AND SOLAR HEATING A HOUSE

Harry E. Thomason, District Heights, Md. (7354 Walker Mill Road SE., Washington, D.C. 20027)

Filed Sept. 9, 1965, Ser. No. 486,019
5 Claims. (Cl. 165—1)



3. The method of cooling a building which comprises the steps of: circulating a liquid to apparatus outside of the space enclosed by the building to lower the temperature of the liquid, collecting the liquid after its temperature has been lowered, storing the cooled liquid in a container in heat-exchange relationship with non-liquid material substantially surrounding said container to thereby cool the non-liquid material, circulating air from the building in heat-exchange relationship through and around the non-liquid material which has been cooled to thereby cool the air from the building.

3,295,592
TEMPERATURE CYCLING DEVICE FOR PRECISION FREQUENCY CRYSTALS

Niels A. Nissen, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Dec. 4, 1964, Ser. No. 416,028
7 Claims. (Cl. 165—12)

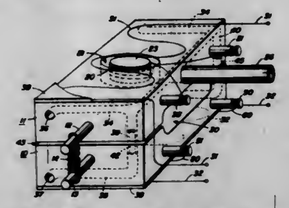
1. Temperature controlled oven means for controlling temperature over a range of temperatures as a function of time and comprising:

first and second heat conducting elements constructed to fit together to form a partial enclosure with a cavity therein;

temperature sensing means for detecting temperature changes in said first and second heat conducting elements;

cooling means for cooling said first and second heat conducting elements to a predetermined low temperature level;

heating means for heating said first and second heat conducting elements;

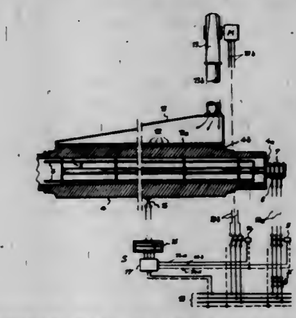


and control means responsive to said temperature sensing means to control said heating means to cause the temperature of said first and second heat conducting elements to increase from said predetermined low temperature level over said range of temperatures to a predetermined higher temperature level in acordance with a predetermined function of time.

3,295,593
DEVICE FOR CONTROLLING THE TEMPERATURE OF HEATED BODIES

Hans Wentzel, Knickelsdorf-im Fliess, Germany, assignor to Joh. Kleinewefers Söhne, Krefeld, Germany

Filed Mar. 9, 1964, Ser. No. 350,942
Claims priority, application Germany, Mar. 12, 1963
K 49,174
1 Claim. (Cl. 165—26)

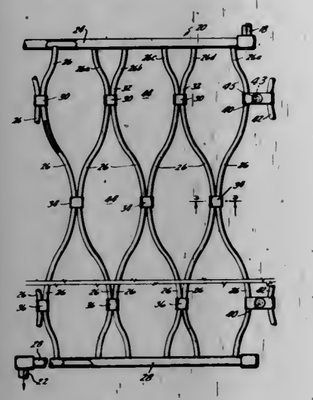


In combination with a hollow calender roller: heating means arranged within said calender roller for heating the same, cooling means arranged outside of and near the outer peripheral surface of said calender roller for applying a cooling medium directly onto said outer peripheral surface to cool the same, temperature sensing means arranged adjacent said outer peripheral surface of said calender roller for sensing the temperature on said outer peripheral surface, said cooling means including a container adapted to receive cool air and having a bottom extending in the longitudinal direction of said roller and being closely spaced to the outer peripheral surface thereof, said bottom being provided with rows of apertures for conveying cooling air therethrough, and electric control means operatively connected to said sensing means on one hand and to said heating means and said cooling means on the other hand and operable automatically to control said heating means and said cooling means in conformity with said temperature variations occurring relative to a certain temperature and sensed by said sensing means.

3,295,594
THERMAL GARMENT

James H. Hopper, Windsor Locks, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Sept. 3, 1964, Ser. No. 394,280
10 Claims. (Cl. 165—46)

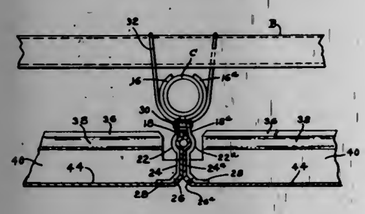


10. An anthropomorphic thermal garment made entirely of tubes and adapted to cover a portion or the entire body of the occupant and comprising a plurality of flexible, hollow tubes, means joining adjacent tubes in side-by-side, free-running relation so that said adjacent tubes so joined are restrained from lateral movement with respect to each other but are free to move longitudinally with respect to each other at selected stations to form a flexible, expandable layer of fabric adapted to lie flat against the occupant's body, and means to supply fluid to said hollow tubes.

3,295,595
HEAT TRANSFER APPARATUS

William H. Armstrong, 197 Sandwich St., Plymouth, Mass. 02360

Filed July 29, 1964, Ser. No. 385,978
7 Claims. (Cl. 165—56)



6. A heat transfer member for use with two panels each having a face portion and a side extending angularly thereform, said sides adjoining each other and each embodying an inwardly extending bead portion spaced respectively from said face portions, said heat transfer member comprising two holder portions to extend beyond said panel sides, two laterally extending bead receiving portions to extend inwardly of said panel sides to receive said panel bead portions, two connector portions extending downwardly from said latter portions and two contact portions extending angularly relative to said connector portions to thereby make contact with said panel face portions.

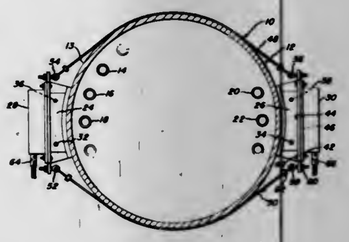
ERRATUM

For Class 165—66 see:
Patent No. 3,295,605

3,295,596
HEAT EXCHANGER AND CLEANING MEANS THEREFOR

Bernard Ostrofsky, Gary, and Cayce B. Parrish, Jr., Munster, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Dec. 17, 1963, Ser. No. 331,313
5 Claims. (Cl. 165—84)

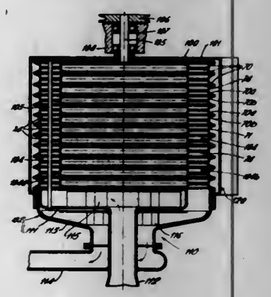


1. In combination, with an apparatus for cleaning the unexposed tubes of a heat exchanger which is on stream, said heat exchanger having a shell enclosing a liquid which surrounds said tubes, a plurality of transducers for generating sonic sound waves, a plurality of liquid coupling means, each coupling means being positioned adjacent to and in coupling relationship with each of said transducers and fitted on the outer surface of said heat exchanger shell, and fastening means connected to each of said liquid coupling means for connecting said liquid coupling means at a pre-determined position on said outer surface of said shell.

3,295,597
HEAT EXCHANGERS

Ingeborg Laing, Rosenbergstrasse 24a, Stuttgart, Germany, and Nikolaus Laing, Stuttgart, Germany, said Nikolaus Laing assignor to said Ingeborg Laing

Filed Jan. 12, 1962, Ser. No. 165,795
Claims priority, application Germany, Apr. 1, 1961, L 38,632
3 Claims. (Cl. 165—86)

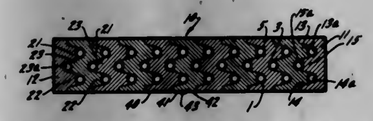


1. A rotor adapted for use in a rotary type heat exchanger to effect heat exchange between a first and second fluid medium, said rotor comprising a plurality of hollow annular shaped coaxially spaced ribs, a plurality of parallel circumferentially spaced hollow blade elements extending axially between and connecting the interior of adjacent hollow ribs to form axially extending circumferentially alternatively spaced inflow and outflow fluid conduits extending over the axial length of the plurality of rib members, an inlet fluid manifold means at one axial end of the plurality of hollow ribs connecting with said inflow fluid conduits, and an outlet fluid manifold means at the same axial end of said hollow ribs as said inlet manifold connecting with said outflow conduits; a first fluid medium upon being forced into said inlet manifold flowing through said inflow conduits and being progressively bled off therefrom by said hollow ribs and thence flowing through said outflow conduits to said outlet manifold whereby heat may be exchanged between said first fluid medium and a second fluid medium passing over the exterior of said hollow ribs and blade elements.

3,295,598
HEAT EXCHANGER ASSEMBLY AND METHOD OF FORMING SAME

John A. Metzger, Glenview, Ill., assignor to Stanley Knight Corporation, Des Plaines, Ill., a corporation of Illinois

Filed Jan. 14, 1965, Ser. No. 425,405
13 Claims. (Cl. 165—172)

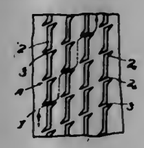


1. A heat exchanger comprising a plurality of offset tube coils, a plurality of block elements, each of said block elements being positioned adjacent and in direct heat-transfer contact with opposed portions of each of said tube coils, each of said tube coils having the entire outer surface of its major portion in direct heat-transfer contact with opposed block element portions, each of said block elements being in heat-transfer contact with at least one adjacent block element and means retaining all of said block elements in said direct heat-transfer contact relationship, whereby heat may be transferred from one to another of said tube coils through said block elements.

3,295,599
HEAT TRANSFER FIN HEAT EXCHANGING TUBE

Yoshizo Okamoto, Tokai-mura, Naka-gun, Ibaragi-ken, Shinichi Negoya, Hitachi-shi, Ibaragi-ken, and Ken Namatame and Miyoshi Obuchi, Tokai-mura, Naka-gun, Ibaragi-ken, Japan, assignors to Nihon Genshiryoku Kenkyujo, Tokyo, Japan, a corporation of Japan

Filed Apr. 5, 1963, Ser. No. 270,860
Claims priority, application Japan, Apr. 23, 1962, 37/15,650
1 Claim. (Cl. 165—184)

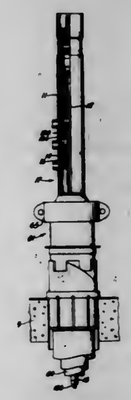


A heat exchanger comprising: an elongated tube; a series of spaced fin elements formed on the external surface of said tube, each of said fin elements extending radially outwardly from said external surface and being elongated axially of said tube, said fin elements being aligned in regularly circumferentially spaced axially extending rows, the ends of adjacent fin elements in each row being spaced to define a groove therebetween the bottom of which extends along said external surface diagonally with reference to the axis of said tube, said grooves in each row being staggered with respect to the grooves in both adjacent rows to define regularly axially spaced series of interrupted helical slots extending circumferentially completely around said tube, each of said fin elements having a convergent laterally projecting edge portion formed at each end thereof, said edge portions projecting in one direction at one end of every fin element and on the opposite direction at the opposite end of every fin element, said edge portions extending in opposite directions at opposite sides of each helical slot, whereby cooling fluid flowing longitudinally of said tube in either direction is deflected laterally through said helical slots.

3,295,600
UNDERWATER PRODUCTION METHOD

Cicero C. Brown, Houston, Tex., and Charles E. Wakefield, Jr., Long Beach, Calif., assignors to Richfield Oil Corporation, Los Angeles, Calif., a corporation of Delaware

Original application Sept. 20, 1963, Ser. No. 310,203. Divided and this application Oct. 22, 1965, Ser. No. 501,057
2 Claims. (Cl. 166—.5)



1. A method for completing a well in a formation underlying a body of water from a structure over said well, the steps comprising:
installing a tubing head in said well adjacent said formation,
installing production tubing on a tubing hanger mandrel at said structure,
lowering said tubing and tubing hanger mandrel from said structure into said well,
landing said tubing hanger mandrel on a shoulder in said tubing head,
mechanically locking said tubing hanger mandrel in a recess in said tubing head, and
extruding packing in the annulus between said tubing hanger mandrel and said tubing head by hydraulically moving piston means associated with said tubing hanger mandrel between said recess and said shoulder.

3,295,601
TRANSITION ZONE FORMATION IN OIL PRODUCTION

Melcon Santourian, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 20, 1964, Ser. No. 353,471
9 Claims. (Cl. 166—9)

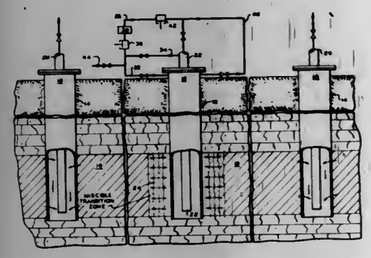
1. A method of establishing a transition zone downhole around an injection well for use in a miscible fluid drive process in recovering oil from an oil-bearing stratum prior to injection of a driving fluid and forcing same thru

said stratum from said injection well to at least one offset production well, which method comprises the steps of:

(1) injecting into said stratum thru said injection well, a fluid miscible with the oil in said stratum and containing a substantial concentration of CO_2;

(2) continuing the injection of said fluid into said stratum until the well pressure reaches at least 500 p.s.i.g.;

(3) thereafter, releasing the fluid pressure in said well so that fluid pressure built up in said stratum and solution gas drive causes fluid flow into said injection well thereby producing fluid containing a substantial concentration of stratum oil;



(4) forcing the produced fluid of the preceding step into said stratum to again build up a pressure therein of at least 500 p.s.i.g.;

(5) repeating step (3); and

(6) repeating step (4), thereby establishing a substantial transition zone around said injection well wherein the oil in the resulting solution is of decreasing concentration from the innermost boundary thereof to the well and the injected fluid is of increasing concentration in the same direction.

3,295,602

WITHDRAWN

3,295,603

METHOD AND APPARATUS FOR PRODUCTION WELL COMPLETION

Calvin C. Bagwell, Abilene, Tex., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Apr. 30, 1964, Ser. No. 363,729
17 Claims. (Cl. 166—12)

1. A well cementing tool comprising:

a perforated pipe;

a cement float shoe secured to one end of said perforated pipe; and

means for temporarily blocking said perforations removably positioned in said pipe, said means including:

a flexible, fluid-retaining member positioned in said pipe for distention by fluid pressure into a blocking position over said perforations;

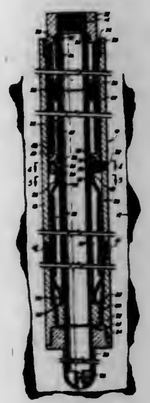
threaded tubular means for detachably connecting said perforated pipe to a tubing string, said threaded tubular means having bidirectional threads thereon in two locations for unscrewing said threaded tubular means from said perforated pipe without unscrewing said threaded tubular means from a tubing string to which it is connected;

means for exerting a distending fluid pressure on said flexible, fluid-retaining member; and

means associated with said threaded tubular means for releasing said distending fluid pressure when said threaded tubular means is rotated about its axis.

11. A method for positioning perforated liner in a well bore opposite a formation bearing a fluid which it is desired to produce, said method comprising:

blocking the perforations in said liner by covering said perforations with a flexible member;



lowering said liner at the end of a tubing string with the perforations thus blocked into the well bore to a position opposite said producing formation while maintaining said member in blocking position by fluid pressure;

injecting a settable permeable filter media via the lower end of the liner into the annulus between the perforated liner and said formation; and then, after the filter media has set up to a hardened state,

rotating said tubing string to release said liner and simultaneously release the fluid pressure on said member to permit said perforations to pass the fluid which it is desired to produce.

3,295,604

APPARATUS FOR CUTTING MULTIPLE TUBULAR CONDUITS

Bruce J. Cordary, Los Alamitos, and Robert W. Weber, Long Beach, Calif., assignors to The Servco Company, Long Beach, Calif., a corporation of Nevada

Filed July 10, 1964, Ser. No. 381,722
4 Claims. (Cl. 166—55.8)

1. An apparatus for sequentially cutting an inner tubular conduit and at least one larger outer tubular conduit disposed in a well bore comprising:

(a) a tool body adapted to be secured to a drill string and having an axial bore;

(b) one piston reciprocably and slidably movable within the bore in the tool body and having a surface exposed to fluid pressure in the bore;

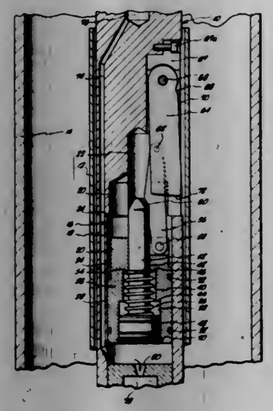
(c) a second piston having a surface exposed to the same fluid pressure;

(i) the cross-sectional area of said surface of the first piston being smaller than the cross-sectional area of said surface of the second piston;

(d) at least one cutter pivotally joined at one of the ends to the tubular body;

(e) innterconnecting means hingeably secured at its opposite ends to the other end of the cutter and to one of the two pistons;

(f) means on the other of the two pistons for engaging the interconnecting means upon movement of said other piston and thereby to move the cutter outwardly toward the inner tubular conduit;



(g) stop means to stop movement of said other piston after outward movement of the cutter is initiated; and

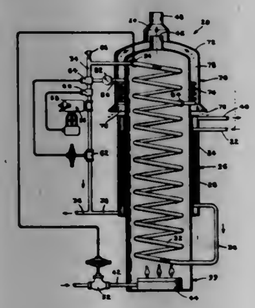
(h) a passageway providing fluid communication between a source of pressure and the bore whereby application of fluid pressure moves said other piston to the stop means and thereupon moves the first and second pistons as a unit.

3,295,605

SERVICE WATER PURIFICATION SYSTEM

Joseph F. Sebald, Bloomfield, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Nov. 6, 1964, Ser. No. 409,470
15 Claims. (Cl. 165—66)



4. A service water purification system for purifying water comprising:

(a) a heater having a coil therein;

(b) the coil having an inlet and an outlet for the passage of water therethrough;

(c) means to heat the coil to purify the water passing therethrough;

(d) a thermo-siphonic circulation means connected in flow relationship with the heater coil at a point intermediate the inlet and the outlet thereof to recirculate a portion of the heated water back to the heater coil by means of thermal circulation whereby a quantity of the hot purified water is maintained at a preset temperature; and

(e) a service outlet line connected to the outlet of the heater coil to deliver hot purified water for service use.

3,295,606

COMBINATION SQUEEZE AND FULL BORE PRODUCTION PACKER WITH CONNECTED UPPER DOWNWARDLY, AND LOWER UPWARDLY, BITING SLIP JAW SEGMENTS

George A. Bumpers, 8406 W. Little York Road, Houston, Tex. 77040

Filed Feb. 17, 1964, Ser. No. 345,513
18 Claims. (Cl. 166—131)



3. A slip and drag assembly comprising a mounting sleeve comprised of complemental abutting mounting rings, friction drag elements to grasp the well bore and yieldably urged outwardly by resilient means against stop means included by said mounting rings, said assembly also including integrally formed slip segments alternately angularly disposed between said friction drag elements and including slip jaws integrally connected and having teeth formed in the opposed outer surface end portions thereof to present downwardly biting upper teeth and upwardly biting lower teeth, and connection means also integrally formed with each segment and included a pivot complementally enclosed by said mounting rings to pviotally mount said segment to pivot about an axis transverse to the vertical axis of the well.

3,295,607

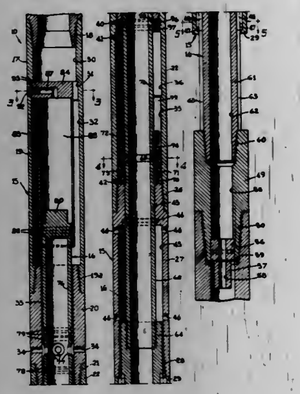
TESTING TOOL

Wayne N. Sutliff, Bakersfield, Calif., assignor of one-half to Sutliff-Downen, Inc., a corporation of California, and one-half to Cook Testing Co., a corporation of Nevada

Filed June 12, 1964, Ser. No. 374,685
9 Claims. (Cl. 166—226)

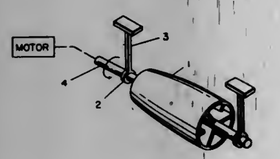
7. In an oil well tool the combination of a tubular outer mandrel having sleeve means therein fixed against endwise movement relative thereto, said sleeve means

being open at one end and closed at the other end and having restricted passage means communicating between the closed end portion of said sleeve means and the exterior of said mandrel, ample by-passage means being provided in said mandrel axially by-passing said sleeve means, said mandrel also having an axial bore aligned with said sleeve means and juxtaposed in spaced relation with the open end of said sleeve means and in communication with said by-passage means; and a tubular inner



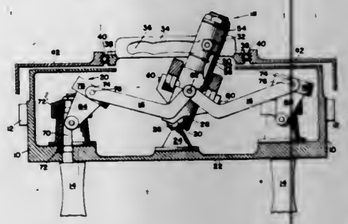
mandrel telescopically slidable within said bore and sleeve means with a fluid tight fit with each, the inner end of said inner mandrel being closed, lateral port means being provided in said inner mandrel which means is normally located within said bore and is adapted to be brought into communication with said by-passage means by relative axial movement between said mandrels which shifts said port means so as to expose the same between said bore and said sleeve means.

3,295,608
VORTEX GENERATOR
George Arshal, 714 Ardmore Ave., Redlands, Calif. 92373
Filed Jan. 5, 1966, Ser. No. 518,860
14 Claims. (Cl. 170—135)



1. In combination, a vessel having a central axis and including internal means of checking coaxial fluid circulation relative to itself, said vessel being open at each end, means of supporting said vessel for rotation about its axis, said means of support being attached to a mechanical structure, the said vessel being immersed in fluid, driving means to rotate the said vessel, whereby the fluid in said vessel is rotated to generate a vortex and induce circulation in the fluid around said vortex, and a boundary surface structure serving to confine the said fluid circulation, said surface structure forming a barrier proximate to the said vessel and being attached to the said mechanical structure.

3,295,609
UNIVERSAL PITCH PROPELLER LINKAGE
Laurence I. Jayne, Renton, Wash., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 30, 1965, Ser. No. 517,860
10 Claims. (Cl. 170—149)

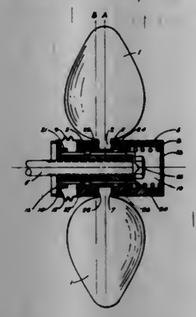


1. A cycloidal propeller formed of a cylindrical housing having a top wall with a central opening and mounted in ship structure for revolvement in a horizontal plane and comprising,
(a) a group of blades depending from the bottom wall of the housing adjacent its periphery and movable in a circle orbit during revolvement of the housing,
(b) each of said blades having upper shanks within the housing mounted in bearing structure for movement about a vertical axis,
(c) a fixed central standard extending upwardly from said bottom wall and having an upper spherical end disposed within the housing,
(d) a control shaft having a socket at its lower end receiving said upper spherical end of the standard to permit reciprocation and a rotatable upper end,
(e) an actuator assembly for each blade disposed within the housing and secured to each blade shank,
(f) each actuator assembly being operable to selectively adjust the blade for oscillatory or rotary movement,
(g) a group of link arms each having its inner end pivotally connected to said control shaft and its outer end pivotally connected to one of the actuator assemblies,
(h) a rotatable ring mounted by the ship structure and having cammed traverse means extending above the central opening in the housing top wall,
(i) cam roller means extending from the rotatable upper end portion of the control shaft and received by said cammed traverse whereby
(j) said upper end of the control shaft may be reciprocated in the cammed traverse to effect pitch adjustment of the blades or rotated to effect steering adjustment of the propeller.

3,295,610
AUTOMATIC PROPELLER PITCH CONTROL AND ADAPTOR
Robert Frias, 2512 Redbud, Odessa, Tex. 79762
Filed Oct. 24, 1965, Ser. No. 504,649
5 Claims. (Cl. 170—160.49)

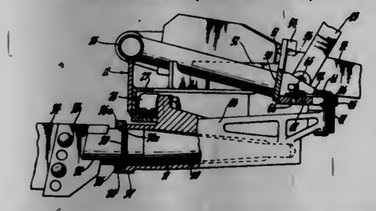
1. In an automatic propeller pitch control mechanism, a shaft having a threaded end and an adaptor removably affixed thereto, a propeller hub slidably carried on said adaptor, a fastener means and a washer on the threaded end of said shaft with said washer being held tightly against said adaptor by said fastening means, said washer having a detent therein to provide a locking means for

said fastening means, a resilient spring, a cover plate located on one end of said hub in spaced apart aligned relationship to shaft, said washer further forming a toroidal cup-like receptacle for receiving one end of said



resilient spring in compressed relationship between said cup-like receptacle and said cover plate, and said washer further providing a stop means to limit the travel of said hub in one direction.

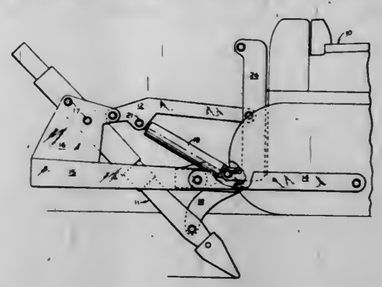
3,295,611
DRAWBAR HITCH ATTACHMENT
Ernest V. Bunting and Habibur Rahman, Detroit, and Donald J. Kiesgen, Dearborn, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Apr. 13, 1964, Ser. No. 359,076
17 Claims. (Cl. 172—447)



17. An implement-tractor combination comprising a hitch mechanism including a drawbar pivoted on the tractor for laterally swinging movement and having a rearwardly facing conical socket, a power lift mechanism on the tractor for raising and lowering the drawbar, a tongue on said implement having a conically formed end seated snugly within said socket so as to hold the tongue in rigid longitudinal alinement with the drawbar and to define a cantilever lifting connection between the tongue and drawbar, and means defining a pulling connection releasably locking said end against withdrawal from said socket while permitting relative rotation between the tongue and the drawbar.

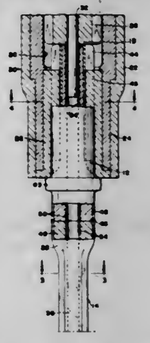
3,295,612
CONTROL LINKAGE FOR EARTH-WORKING TOOLS
Roy E. Mayo, Walnut Creek, Calif., and Wayne E. Roberts, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of Illinois
Filed Nov. 12, 1964, Ser. No. 410,518
3 Claims. (Cl. 172—464)

1. Draft and control linkage between a tractor and a frame supporting a ripper shank comprising upper and lower pairs of links pivotally connected between the tractor and the frame for swinging movement in a vertical plane, said ripper shank having a normal earth engaging angular position and said links being normally substantially parallel and horizontal, with said frame pivotal connections being normally in a diagonal plane, said pivot points of said links approaching a parallelogram sufficiently close to hold the ripper shank at substantially the same angle as it is swung upwardly through the ground from said normal position, but said lower links being longer than the upper links and arranged to cause faster swinging of the upper links when the ripper shank has



cleared the ground, and means for swinging the shank clear of the ground and inwardly toward the tractor at its upper end wherein said upper links are swung to a substantially vertical position while said lower links are swung to a substantially diagonal position and wherein said frame pivotal connections are in a substantially vertical plane.

3,295,613
COMPOSITE DRILL ROD AND METHOD FOR MAKING THE SAME
Floyd R. Anderson, Quincy, Ill., assignor to Gardner-Denver Company, a corporation of Delaware
Filed Aug. 12, 1964, Ser. No. 389,052
5 Claims. (Cl. 173—131)

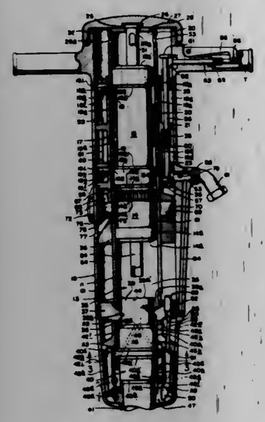


1. A percussive drill rod comprising:
an elongated body;
a shank having a blow-receiving surface on one end; and
a friction welded interface joining said body and shank in end-to-end relation.

3,295,614
VIBRATIONLESS PERCUSSIVE TOOLS
Charles Leavell, 206 S. Fairfield Ave., Lombard, Ill. 60148
Filed Sept. 16, 1965, Ser. No. 490,162
27 Claims. (Cl. 173—139)

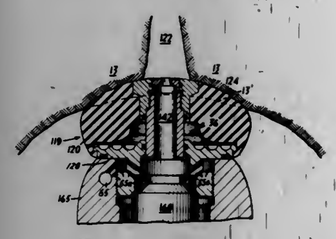
20. In a percussive tool having a casing element in which the occurrence of vibration is undesirable and which casing is provided with a main cylinder having a hammer-piston reciprocable therein to effect the intermittent delivery of impact force to a work member, a vibratory element axially reciprocable within said main

cylinder, means defining a pair of conjointly-acting connecting linkages for effectuating a necessary transmission between said casing and vibratory elements of a force comprising co-linearly and oppositely active components, means for automatically adjusting the value of at least one such force component to maintain a predetermined operational relation between said elements, and means for maintaining any such adjusted value relatively constant



throughout any cycle of the vibratory motion of said vibratory element, said means for automatically adjusting the value of each such force component including a pair of control means in respective association with said linkages for simultaneously adjusting the values of the aforesaid components of such force to increase the value of one while decreasing the value of the other, and vice versa.

3,295,615
FORMATION-TESTING APPARATUS
Emmet F. Brieger, Needville, and Ulrich E. Voetter, Houston, Tex., assignors to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 320,410, Oct. 31, 1963. This application Oct. 22, 1965, Ser. No. 506,444
27 Claims. (Cl. 175—4.52)



25. In combination with a fluid testing tool including a body adapted to be lowered through a well bore extending through earth formations, spaced sample admitting means on said body adapted to be urged into engagement with a well bore, said sample admitting means each including resilient annular sealing means for establishing a pressure seal on the wall of the well bore and each of said sample admitting means including insert means and compression means for circumferentially acting on said sealing means, said insert means being attached centrally of said sealing means and there being a portion of said insert means adjacent said compression means, and fluid communication means between said compression means and sealing means for placing the portion of said insert means adjacent said compression means in fluid communication with the well bore, means permitting hydraulic actuation of said compression means for movement relative to said body.

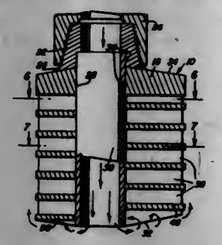
3,295,616
FREE CORING DEVICE
John D. Charlton, Washington, D.C. (829 W. Ave., J–12, Lancaster, Calif. 93534), and Edward A. Abbott, 8321 Still Spring Court, Bethesda, Md. 20034
Filed Dec. 2, 1964, Ser. No. 415,551
3 Claims. (Cl. 175—5)



1. An underwater earth sampling corer which comprises:
A core cutting means,
Weight means secured to said core cutting means,
A float means secured to said weighted core cutting means,
Means for timely releasing said float means to free said float relative to said weighted core cutting means,
Float stop means secured at the upper end of said core cutting means,
Means for timely releasing said weight means subsequent to timely releasing said float means,
Said weight means being released prior to said float means impacting with said float stop means,
Whereby said weight means forces said core cutting means into said earth subsequent to said release of said float means and prior to release of said weight means and said weight means is released prior to said float means impacting with said float stop means to withdraw said core cutting means from said earth and float the latter to the surface of said water.

3,295,617
DRILL BIT WITH SELF-RENEWING TEETH
Donald M. Willis, Monroe, La., assignor to Imagineering, Inc., a corporation of Louisiana
Filed June 10, 1964, Ser. No. 373,911
9 Claims. (Cl. 175—379)

1. A self-renewing drill bit comprising a vertically elongated body having a bottom surface constituting a cutting face and an axial bore through said body for the passage of drilling fluid to said cutting face, said body being vesicular and having a plurality of vertically spaced layers of horizontally extending voids therein, each void being defined by side walls and a bottom wall whereby when said bottom walls are worn away, the lower edges of



said side walls will constitute new cutting elements for said body bottom surface.

3,295,618
DOWEL BIT AND METHOD OF MANUFACTURING THE SAME
Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany
Original application May 9, 1960, Ser. No. 27,738, now Patent No. 3,208,542, dated Sept. 28, 1965. Divided and this application May 14, 1965, Ser. No. 455,924
Claims priority, application Germany, May 8, 1959, F 28,402; May 26, 1959, F 28,520
6 Claims. (Cl. 175—403)



1. A dowel bit for drilling bores in plaster, brick, concrete and like materials, said bit comprising a tubular body having a wall of constant thickness and consisting of a first portion having a cutting end, and a second portion which is gripped while the dowel bit is in use, said second portion being integral with and constituting an extension of said first portion, said second portion having a cutting end distant from said first mentioned cutting end and said body having a slot extending over the entire length of said tubular body all the way between said cutting ends; and a core member slidably received in said tubular body and having a projection extending through said slot, said core member being readily removable from said tubular body by sliding of said projection toward and outwardly beyond one end of said slot.

3,295,619
SELF-POWERED SLED
Leland H. Plank, 815 First Ave. E., Mobridge, S. Dak. 57601
Filed Feb. 19, 1964, Ser. No. 345,919
13 Claims. (Cl. 180—6)



1. A self-powered sled comprising:
a vehicle body,

surface supporting means disposed beneath said body for supporting and sliding said body with respect to said surface,
said supporting means being separable transversely intermediate their respective ends,
a bridging structure secured to said supporting means and having a plurality of quickly detachable toggle joints interlocking said structure with said vehicle body,
propelling means pivotally secured to said vehicle body, and
means for rotating said propelling means.

3,295,620
VEHICLE STEERING SYSTEMS
Charles B. Messenger, 2440 Benton St., Denver, Colo. 80214
Filed Mar. 2, 1964, Ser. No. 348,370
16 Claims. (Cl. 180—6.7)

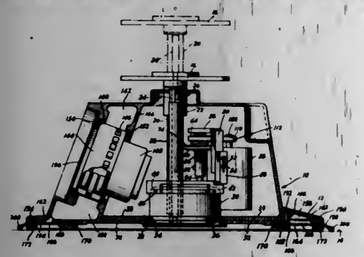


7. A vehicle for on-the-road type usage as a wheeled carrier and/or for off-the-road or other usage as a track laying vehicle comprising a power unit, an automotive type differential assembly, drive components interconnecting said power unit and differential, drive members on said differential assembly for application of the main drive force for said vehicle ih both the wheeled vehicle and track vehicle configurations, a track steering control unit disposed on said vehicle in position away from said differential and drive members, steering control members on said control unit, separate tracks for selective use on said vehicle and disposed for driven engagement with the separate drive members of said differential assembly and the steering control members of said control unit when the vehicle is to be used for track laying purposes, said steering control unit being inclusive of power means for exerting torque forces on said steering control members and the individual tracks associated therewith, and means for the selective distribution of said torque force whereby unbalanced torque forces are exerted by said control unit and control members on the individual tracks for transmission thereby to the differential assembly.

3,295,621
SUPPORTING BASE FOR CHAIR AND THE LIKE FOR GLIDING ON A FILM OF AIR
Haskin U. Deeley, Jr., Baltimore, Md., and George H. Stram, Hellam, Pa., assignors to The Dentists' Supply Company of New York, York, Pa., a corporation of New York
Filed Apr. 25, 1963, Ser. No. 275,594
14 Claims. (Cl. 180—7)

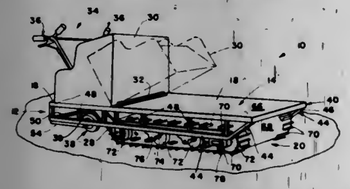
1. Mobile supporting means for a chair seat comprising in combination, a base arranged to be moved along and supported upon a floor surface, supporting means on the upper portion of said base arranged to have a chair seat connected thereto, air distributing means in the lower portion of said base, means to supply said distributing means with air under pressure, a substantially circular and ring-like rigid plate member having air discharge port means therethrough, means detachably connecting said plate member to the lower portion of said base, porous flexible sheet-like air discharge means complementary in shape to said plate member and extending over the lower surface of said plate member adjacent the periphery thereof, means to control the supply of air to said porous means, and means connecting the periphery of said porous

flexible air discharge means to the periphery of said plate member, said porous flexible air discharge means being inflated a limited amount away from said plate member when air under pressure is discharged from said air distributing means through said discharge ports and against



said porous flexible discharge means to cause air to be discharged therethrough and form a film of air between the same and a floor surface over which the mobile supporting means may glide upon said film, said detachable connecting means permitting said plate member and porous air discharge means carried thereby to be disconnected from said base as a unit.

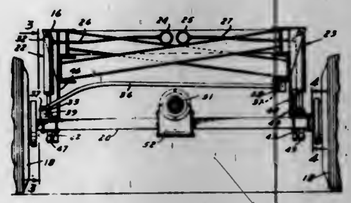
3,295,622
STEERABLE LOAD-CARRYING VEHICLE
Arthur H. Pitchford, 5881 Lorene Drive, Bethel Park, Pa. 15102
Filed Jan. 13, 1965, Ser. No. 425,305
5 Claims. (Cl. 180—9.22)



1. In a vehicle, a frame having platform means thereon providing a forward load-carrying portion and a rear drive support portion, drive means mounted on said rear support portion, flexible, endless ground engaging traction means operably mounted on said frame beneath said platform means, means connecting said drive means to said traction means for driving the same, ground engaging guide wheels mounted to said rear support portion for pivotal guiding movement transversely of said vehicle, steering means mounted on said rear support portion of said platform means and being adapted to receive an operator-imposed thrust for turning said steering means, and reverse acting linkage means operatively connecting said steering means to said guide wheels for pivoting said guide wheels in a direction which is counter to the direction of pivoting of said steering means, whereby said vehicle turns in a direction which is opposite to said operator-imposed thrust.

3,295,623
SUSPENSION FOR DRIVEN MULTIPLE AXLE OVERLAND TRANSPORT VEHICLE
David D. Kyzer, Spenard, Alaska (1601 E. 1st Ave., Anchorage, Alaska 99501)
Filed Apr. 23, 1963, Ser. No. 275,034
2 Claims. (Cl. 180—23)

1. An overland transport vehicle comprising a truck frame, a plurality of wheels spatially distributed substantially equally along the length of the truck, a fluid suspension system suspending said wheels from said frame, said system comprising individual expandible wheel cylinders each including an actuator shaft, a header tube connecting the wheel cylinders along one side of the truck, and flexible coupling means individually extending between each of the wheel cylinders along one side and the associated header tube; means for applying driving torque to each of said wheels individually, a plurality of axles connected between corresponding pairs of said wheels, a single sway bar for each axle extending from one side of said truck frame to the corresponding axle at the opposite side thereof, and means for controlling the longitudinal movement of an axle relative

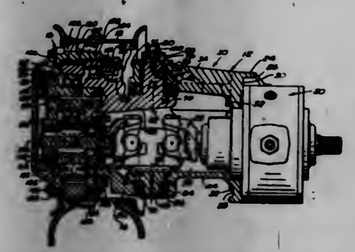


to the truck frame comprising a first sway brace mounted longitudinally between the frame and the axle on one side of the truck frame and a pair of second sway braces mounted longitudinally between the frame and the axle on the opposite side thereof, said second sway braces being arranged in a pantograph configuration to prevent rotation of the axle housing, a plurality of support elements individually secured to corresponding axles to connect corresponding wheel cylinder actuator shafts to said axles, and means connecting the sway braces to said support elements.

3,295,624
POWER DRIVEN STEERABLE WHEEL ASSEMBLY
Arthur L. Lee and Arthur B. Coval, both of Columbus, Ohio, assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 7, 1966, Ser. No. 532,454
5 Claims. (Cl. 180—43)

1. In a power driven steerable wheel assembly the combination comprising,
a spindle bracket having a body portion with an upper arm member and a lower arm member extending laterally from one side of said body portion, said arm members arranged in spaced relation to each other,
said spindle bracket body portion having a recessed portion opposite said laterally extending arms and a horizontal passageway therethrough,
a differential member positioned in said recessed portion and secured to said spindle bracket body portion,
said differential member having an output shaft extending laterally therefrom through said horizontal passageway,
said spindle bracket laterally extending upper arm member having an end portion with a vertical passageway therethrough,
said spindle bracket lower arm having an end portion with a downwardly projecting pin portion, said pin portion aligned with said passageway in said upper arm member,
a spindle member having a body portion with a cylindrical side wall, a front wall and a rear wall, said spindle member body portion having a horizontally extending main shaft passageway extending therethrough parallel to and spaced below the longitudinal axis of said spindle member body portion,
said spindle member body portion having an upper arm member and a lower arm member extending laterally from said body portion rear wall, said arm members arranged in spaced relation to each other with said main shaft passageway therebetween,

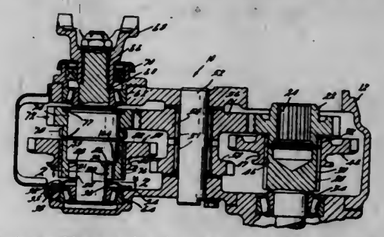
said spindle member upper arm member having an end portion with an upwardly projecting pin portion,
said spindle member lower arm member having an end portion with a vertical passageway therethrough aligned with said upper arm member upwardly projecting pin portion,
said spindle member having said upper arm upwardly projecting pin portion positioned in said spindle bracket upper arm vertical passageway and said spindle bracket lower arm downwardly projecting pin portion positioned in said spindle member lower arm vertical passageway to thereby pivotally connect said spindle member to said spindle bracket member for pivotal movement of said spindle member about the aligned vertical axes of said upwardly extending pin portion on said spindle member upper arm and said downwardly extending pin portion on said spindle bracket lower arm member,
said spindle member body portion having a vertical chamber opening into said main shaft passageway, said spindle body portion having an opening into said chamber adjacent the upper portion thereof,
said spindle member body portion having an idler shaft passageway positioned above said main shaft passageway in spaced parallel relation thereto,



a main drive shaft rotatably positioned in said main drive shaft passageway and having an externally toothed gear portion in said chamber,
an idler shaft nonrotatably positioned in said idler shaft passageway,
an idler gear rotatably positioned on said idler shaft in said chamber in meshing relation with said externally toothed gear portion of said main drive shaft, a portion of said idler gear extending through said top opening in said chamber,
an annular driven member rotatably positioned on said spindle member body portion cylindrical side wall, said annular driven member having an internally toothed gear portion in meshing relation with said idler gear extending through said opening in said chamber so that rotation of said main drive shaft rotates said annular driven member relative to said spindle body portion,
universal means connecting said differential member output shaft with said main drive shaft, and
said universal means having a vertical pivot axis aligned with the longitudinal axis of said vertical projecting pin portions on said spindle member arm members.

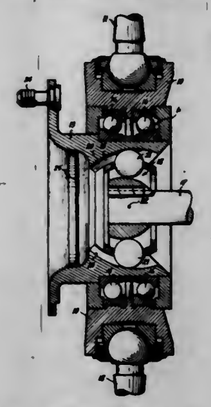
3,295,625
AUTOMATIC FOUR-WHEEL DRIVE TRANSFER CASE
Miguel A. Ordorica, Lambertville, Mich., and Rene E. Sauzedde, deceased, late of Terryville, Conn., by Marjorie P. Sauzedde, administratrix, Terryville, Conn., assignors to Kaiser Jeep Corporation, Toledo, Ohio, a corporation of Nevada, and General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 16, 1964, Ser. No. 376,305
10 Claims. (Cl. 180—44)

1. In an automotive vehicle having a set of front and a set of rear wheels drivable from a source of power, the combination comprising: transmission means selectively operable for coupling the sets of front and rear wheels to the source of power for both forward and reverse driving conditions, said transmission means including first drive means operative for transmitting power substantially continuously to one of the sets of front and rear wheels, said first drive means including a first drive spindle, second drive means actuable for transmitting power to the other of the sets of front and rear wheels, said second drive means including a second drive spindle, an annular member rotatably mounted on said second drive spindle, means connecting said annular member for rotation with said first drive spindle, clutch means operatively associated with said first and second driving means



and being self-actuating into an operational condition for both forward and reverse driving conditions for connecting said annular member to said second drive spindle automatically when the one set of wheels has a peripheral linear velocity greater than the other set of wheels and for disconnecting said annular member and said second drive spindle when the one set of wheels has substantially the same peripheral linear velocity as the other set of wheels, said clutch means including a roller bearing and cage subassembly rotatably mounted on said second drive spindle, a portion of said annular member defining an outer race for said subassembly, and means fixed to said subassembly for exerting a drag resisting rotation of said subassembly.

3,295,626
WHEEL MOUNTING
Jean Georges Cadiou, Paris, France, assignor to S. A. Andre Citroen
Filed Oct. 5, 1964, Ser. No. 401,601
Claims priority, application France, Oct. 3, 1963, 949,443, Patent 1,380,561
3 Claims. (Cl. 180—48)



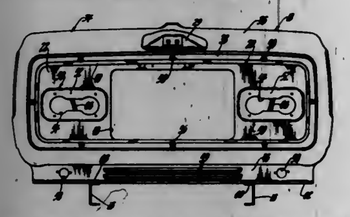
1. A king-pin arrangement for a front wheel of a front wheel drive vehicle, said arrangement comprising a ring member, diametrically opposed ball-joints between which said ring member is pivotally mounted, and a

homokinetic joint having an inner drive member for connection to a drive shaft and one-piece outer driven member which constitutes the hub of said wheel and on which said ring member is journalled, said driven member being mounted to pivot on said drive member about an axis transverse to said drive shaft and rotatably mounted within said ring member to turn in the plane of said ring member.

3,295,627
VEHICLE BODY FRONT END STRUCTURE

Francis C. Fleck, Pontiac, Dewan D. Forester, Birmingham, and Charles W. Morris, Pontiac, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 20, 1964, Ser. No. 390,876
3 Claims. (Cl. 180—68)



1. In combination with a vehicle body, a front end structure comprising, an inner member generally coextensive in area and shape to the desired area and shape of the front end of the vehicle and including a body portion provided with an outer peripheral flange portion, an outer member generally coextensive in shape to the desired shape of the front end of the vehicle and being provided with inner and outer peripheral flange portions secured respectively to the peripheral flange portion of the inner member and to the body thereof to provide a hollow torus type structural unit therewith continuously bounding the front end of said vehicle, the body portion of said inner member being accessible through said outer member, said inner member being provided with a central opening adapted to house a radiator core and a housing to each side of the opening adapted to receive and support a vehicle headlamp assembly.

3,295,628
ACOUSTIC WELL LOGGING METHOD AND APPARATUS

Gerald C. Summers, Dallas, Tex., assignor, by mesne assignments, to PGAC Development Company, Houston, Tex., a corporation of Texas

Filed Mar. 23, 1962, Ser. No. 181,859
9 Claims. (Cl. 181—.5)

1. In a system for logging a cased borehole extending into the earth's formations and having a cement layer between the exterior of the casing and the walls of the borehole the combination of a downhole tool within the borehole;

a cable extending from the downhole tool through the borehole to the earth's surface;

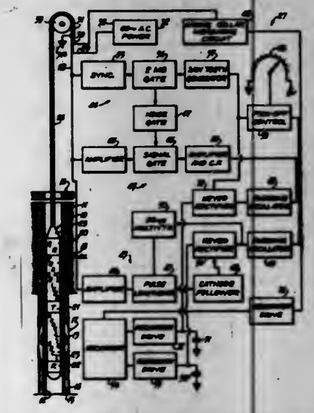
means at the surface cooperating with the cable to raise and lower the downhole tool within the borehole; and

equipment at the surface connected to said cable;

said downhole tool comprising a casing collar locator for providing collar locating signals having at least one characteristic affected by the casing thickness, a transmitter for repeatedly emitting spaced apart acoustic pulses for transmission through the borehole casing and through the earth formations coupled to the casing through the cement layer and for producing a synchronizing pulse coincident with each acoustic pulse, and a receiver spaced from the transmitter in a direction extending longitudinally of the borehole for receiving said acoustic pulses and for developing corresponding electrical signals;

means for transmitting to said surface equipment over said cable said collar locating signals, said synchronizing pulses and said electrical signals;

said surface equipment including recording means connected to said cable for developing longitudinally along a recording medium and in response to said synchronizing pulses and said electrical signals a first curve proportional to the travel time of the acoustic pulses from the transmitter to the receiver at the different borehole depths, means responsive to said electrical signals for developing longitudinally along said recording medium a second curve proportional to the amplitude of the electrical signals at the different borehole depths and spaced from said first curve in a direction extending transversely of said medium, and means connected to said cable and responsive to variations in said characteristic of said collar locating signals for providing an indication on



said recording medium from which the depths of the casing collars may be determined, said first and second curves having a common time base so that transversely aligned points represent a common borehole depth, whereby the acoustic pulses arriving at said receiver after passing through the casing and having an amplitude represented by said second curve can be readily distinguished on said second curve from the acoustic pulses arriving at said receiver after passing through the cement layer and the earth formations adjacent the casing by reference to the differences in travel time as indicated on said first curve, the differences in amplitude between the different recordings making up the second curve being influenced by the amount of energy coupled through the cement layer to the earth formations so that high amplitude indications on said second curve represent borehole depths where most of the energy of said pulses passes through the casing to the receiver while low amplitude indications represent borehole depths where a portion of the energy of said pulses is coupled through the cement layer to the earth formations.

3,295,629
ACOUSTICAL WAVE TRANSLATION DEVICE

Emmanuel P. Papadakis, Allentown, Pa., assignor to Manlabs, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed May 28, 1963, Ser. No. 283,946
4 Claims. (Cl. 181—.5)

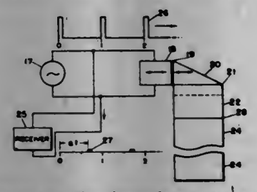
4. An acoustic wave translation system, comprising:

an electromechanical transducer adapted to generate

longitudinal mode, plane-polarized, acoustic energy in response to a source of high frequency electrical energy;

a polarization mode converter means coupled to said transducer means for converting said polarization from longitudinal to shear mode, said converter means including a ceramic prism having a reflection angle such that said shear mode is maximized and said longitudinal mode is minimized in a preferred direction;

transmission means coupled to said converter means for transmitting said energy at a selected velocity along said preferred direction, said transmission means including an aluminum tapered transformer for substantially matching the impedance at said con-



verter means to the impedance at a substantially linear output surface;

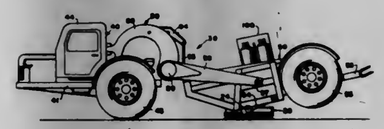
focusing means coupled to said transmission means in the path of said energy for converting said plane wave into a cylindrical wave, said focusing means having a tin focusing member in the form of a segment having a convex cylindrical surface mating with a concave cylindrical surface in the base of said transformer member, the velocity of said energy in said tin focusing member being less than the velocity of said energy in said tapered member; and

an elongated, ribbon-like, delay line member coupled to said transmission means for transmitting said energy at said selected velocity for a predetermined time interval.

3,295,630
CARRIER VEHICLE FOR SEISMIC WAVE GENERATOR

Lauren G. Kilmer, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 6, 1963, Ser. No. 321,743
10 Claims. (Cl. 181—.5)

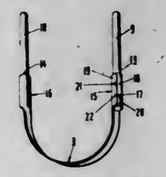


1. In the combination of an earth-impactor type seismic wave generator and a vehicular mass for superposition thereon, the improvement in which said vehicular mass is a wheeled vehicle including a forward portion having first supporting wheel means thereon, a rear portion having second supporting wheel means thereon, hitch means connecting said forward and rear portions for providing controlled movement therebetween about a horizontal axis extending transversely of said vehicle and including operator means for moving said portions relative to each other about said axis whereby the forward end of said rear portion is selectively raised and lowered with respect to said forward portion, generator support means engaging said generator and pivotally mounted on said vehicle for movement between positions in which said generator is relatively lower and relatively higher on said vehicle, the center of gravity of the mass of said vehicle not including that of said generator being located and said generator support means being located between said first and said second wheel means, operator means attached to said generator support means for moving said generator to said positions, whereby when said generator is thereby moved to said lower position said rear portion is adapted to pivot and said vehicle is elevated in part and the mass of said vehicle is supported on said first wheel means and on said generator.

3,295,631
STETHOSCOPE

Gustav F. Machlup, Belmont, Mass., assignor to Cardiosonics Medical Instruments Corporation, Cambridge, Mass.

Filed Feb. 10, 1966, Ser. No. 526,451
7 Claims. (Cl. 181—24)



1. An adjustable binaural stethoscope construction comprising,

a pair of elongated, hollow, rigid ear tubes each having an upper end and a lower end,

a curved spring defining a first end connected to one of said ear tube ends and a second end connected to the other said ear tube end by first and second connections,

said connections each comprising means for preventing longitudinal movement of said ear tubes and allowing rotational movement thereof and means for rotational indexing thereof about axes of said ear tubes,

said means for rotational indexing comprising a spring biased projection on one of said ear tubes or spring and a plurality of indexing indentations on the other of said ear tubes or spring.

3,295,632
SCAFFOLDING FOR A MINE ARRANGEMENT

Willy Heyer, Bochum-Gerthe, Germany, assignor to Gewerkschaft Eisenhutte Westphalia, Lunen, Westphalia, Germany, a corporation of Germany

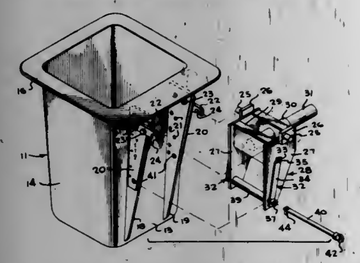
Filed May 13, 1964, Ser. No. 367,073
Claims priority, application Germany, Jan. 29, 1964, G 39,729
19 Claims. (Cl. 182—93)



1. In a mining arrangement including a longitudinally extending mining conveyor adapted to rest normally upon a mine floor longitudinally along a mine face and having a conveyor path bounded by longitudinally extending side

walls, said arrangement being slidably displaceable on such mine floor transversely toward and away from such mine face, the improvement for increasing the range of height which may be served by the mining arrangement which comprises an elongated scaffold mounted on one longitudinal side of such mining conveyor at an elevated level spaced from the mining conveyor and mine floor, and a plurality of separate transverse foot supports spaced apart along the scaffold whereby to provide a walkway for workmen at an elevated level spaced from the mine floor.

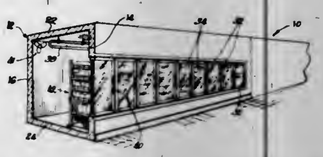
3,295,633
QUICK DETACHABLE BASKET FOR AERIAL TOWERS
Edwin Earl Milner, Jr., Williamsburg, Va., assignor to Baker Equipment Engineering Co., Incorporated, Richmond, Va., a corporation of Virginia
Filed Nov. 9, 1965, Ser. No. 506,973
10 Claims. (Cl. 182—222)



1. In a mobile aerial tower device having an elongated boom which is movable for elevational adjustment of one end thereof and a personnel basket carried on said boom end for supporting a workman, said basket having upwardly extending wall means disposed adjacent said boom end; quickly detachable and attachable mounting means for supporting said basket on said boom end comprising a mounting bracket to be carried by said boom end having trunnion pin means alined along a horizontal axis extending transversely of the axis of said boom and structural members defining abutment surfaces at a selected position below said pin means, said basket having rigid coupling means projecting from said basket wall means having downwardly opening socket formations to removably receive and seat on said trunnion pin means upon disposition of said socket formations above the trunnion pin means and relative downward movement of the basket for supporting said basket from said trunnion pin means, surface means on said basket disposed to abut said abutment surfaces when said socket formations are seated on said pin means coacting with the latter to dispose the basket in a selected upright position on the bracket, and means for releasably interlocking said basket and bracket together at a point spaced radially from the axis of said trunnion pin means to restrain the basket and bracket against relative decoupling movement.

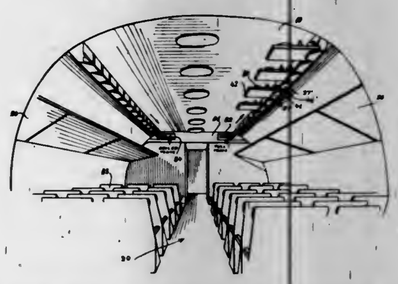
3,295,634
REFRIGERATED DISPLAY APPARATUS
Henry M. Buchbinder, 14 Graymoor Lane, Flossmoor, Ill. 60422
Filed Jan. 7, 1964, Ser. No. 336,248
4 Claims. (Cl. 186—1)

1. In a refrigerator,
the combination comprising a walk-in cooler room entirely enclosed by a plurality of walls,
said cooler room having a side wall provided with a display opening,
a plurality of vertical display doors mounted in said opening and arranged side by side,
each of said doors having a transparent panel therein,
each door being swingable between closed and open positions to give access to the interior of said cooler room,
a plurality of carts mounted on wheels,
each of said carts having a plurality of shelves extending forwardly thereon,
said carts being disposed in said cooler room with said shelves positioned behind said doors,
each of said carts corresponding in width to one of said doors and being located behind one of said doors,
said cooler room having a floor surface for supporting said carts,



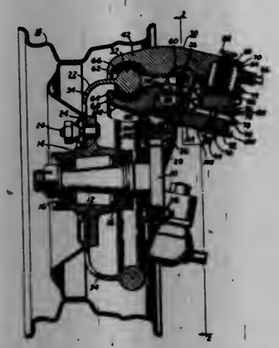
each of said carts being movable on said wheels out of its normal position behind the corresponding door,
said cooler room having space behind said carts for receiving said carts when moved away from said doors,
and an additional door in one wall of said cooler room and providing an opening through which each of said carts may be wheeled out of said cooler room,
each of said carts having a rear generally vertical closure panel behind said shelves and restricting access and visibility of the interior of said cooler room from said first mentioned doors in front of said carts.

3,295,635
AIR PASSENGER MEALS CONVEYOR
Robert L. Cahn, 1 Mannetto Court, Huntington, N.Y. 11743
Filed Dec. 14, 1965, Ser. No. 513,801
10 Claims. (Cl. 186—1)



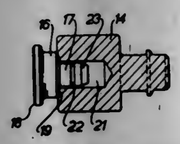
1. A tray delivery and return conveyor apparatus, comprising an endless horizontal rail, said rail being I-shaped in cross section with upper and lower spaced plates having laterally extending first flanges; a continuous chain of tray supports and tray guides each of said tray supports and tray guides having a vertical body provided with second flanges at its upper end slidably interfitting between the first flanges of the spaced plates of the rail, so that the rail slidably supports the chain of tray supports and guides, each of the tray supports and guides having a laterally extending flange plate for removably supporting a tray; hinge means pivotally connecting adjacent ends of the tray supports and tray guides, said ends of the tray supports and tray guides being tapered in form; and drive means for moving said chain slidably around underneath the rail, said drive means comprising a pair of polygonal drive sprockets located respectively at opposite looped ends of the chain, each sprocket having straight edges contacting edges of flange plates of the tray supports and tray guides at a looped end of the chain, each sprocket having corner tapered cogs engageable between adjacent tray supports and tray guides at a looped end of the chain, and motor means operatively connected to one of the sprockets and rotatably driving the same so that the chain of tray supports and tray guides moves continuously around underneath the rail.

3,295,636
BRAKE MECHANISM
Fred Adams, Clawson, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 412,999
10 Claims. (Cl. 188—18)



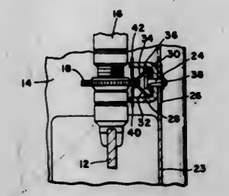
1. A vehicle disc brake assembly comprising a brake caliper having curved friction surface friction means and an annular member having a toroidal friction braking surface selectively engaged by said friction means, said friction means having a plurality of toroidally segmental friction surfaces and including opposed friction surfaces selectively and concurrently engaging said annular member on radially opposite sides of the toroidal friction braking surface along opposed cross sectioned arcs.

3,295,637
INTERNAL SHOE DRUM BRAKES
Kenneth John Wells, Sutton Coldfield, England, assignor to Girling Limited, Birmingham, England, a British company
Filed Apr. 16, 1965, Ser. No. 448,625
4 Claims. (Cl. 188—78)



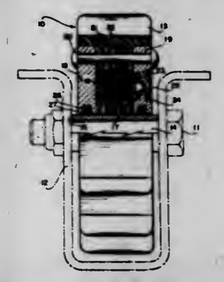
1. A shoe drum brake comprising a stationary backplate, a shoe mounted on the back-plate for engagement with a rotatable drum, an hydraulic cylinder mounted on the back-plate, a piston movable in the cylinder for applying the shoe to the drum, an intermediate member located between the piston and the shoe and in rocking engagement with the shoe, a stem on said intermediate member adapted to enter an axial recess in the piston of greater diameter than the stem to provide a loose fit therebetween, a forward face on said intermediate member for engagement with the shoe, and an annular part spherical rear face on said intermediate member co-operating with a complementary part-spherical surface on the piston being located immediately forward of said axial recess.

3,295,638
BRAKE SHOE CENTERING MECHANISM
Robert H. Bauman, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 7, 1964, Ser. No. 402,088
5 Claims. (Cl. 188—79.5)



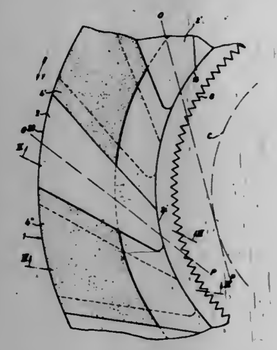
1. Brake centering mechanism comprising: a brake drum arranged to rotate with a vehicle wheel; a stationary member; brake shoes biasedly carried by said stationary member in juxtaposition to said brake drum; automatic adjusting means including a star wheel actuator disposed between said brake shoes and arranged to maintain a predetermined clearance between said brake drum and said brake shoes; and centering means for said brake shoes having portions disposed on either side of said adjusting means and including a bracket adjustably carried by said stationary member and resilient means carried by said bracket and engaging said adjusting means, said resilient means adapting said adjusting means to be yieldable relative to said stationary member during wheel rotation in either direction, said resilient means having portions spaced from said bracket a distance proportional to the predetermined clearance between said brake drum and said brake shoes.

3,295,639
ROTARY RETARDING UNIT
Donald G. Smith, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Jan. 5, 1965, Ser. No. 423,437
7 Claims. (Cl. 188—90)



1. A rotary retarding unit comprising a hollow wheel rotatably mounted on fixed structure and having a periphery adapted to receive a tangentially applied force causing its rotation, complemental and coacting spaced surfaces carried by said wheel and said structure, each disposed within said wheel normal to the axis of rotation thereof, and a fluid of preselected viscosity confined between said surfaces and filling the spaces therebetween whereby the velocity of said wheel is constant regardless of the magnitude of the force applied as aforesaid.

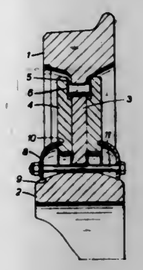
3,295,640
DISK-TYPE FRICTION BRAKE
Friedrich Beuchle, Frankfurt am Main, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik K.G., Frankfurt am Main, Germany, a corporation of Germany
Filed June 15, 1965, Ser. No. 463,998
Claims priority, application Germany, Nov. 17, 1964, T 27,435
4 Claims. (Cl. 188—218)



1. A brake disk for a disk-type brake having a pair of brake members disposed on opposite sides of said disk and engageable therewith for braking rotation of said disk relative to said members, said disk comprising a rotatable central support and an annular engagement portion surrounding said support and having opposite faces juxtaposed with said members, said faces each being formed with a multiplicity of angularly spaced outwardly divergent cooling channels open in the direction of the respective member and inducing a flow of cooling fluid therethrough upon rotation of said disk, said channels lying along respective tangents to an imaginary circle centered on the axis of rotation of said disk and of a diameter less than that of said engagement portion of said disk, the cooling channels of one of said faces being angularly offset from the cooling channels of the other of said faces, the channels in each of said faces defining between them angularly spaced lands frictionally engageable by said members and cooled by said fluid upon the passage thereof through the adjoining channels and a respective channel of the opposite face disposed between the adjoining channels, said disk being further provided with a pair of annular grooves disposed along the respective sides thereof at the inner periphery of said engagement portion of said disk, said channels being of progressively axially decreasing depth outwardly along the disk, said channels communicating with the respective grooves for drawing said fluid therefrom and ejecting said fluid generally outwardly.

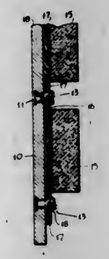
3,295,641
WHEELS
Maurice B. Eaton and Clifford J. Parton, Tyseley, Birmingham, England, assignors to Girling Limited
Filed Mar. 1, 1966, Ser. No. 530,975
Claims priority, application Great Britain, Mar. 1, 1965, 8,698/65
5 Claims. (Cl. 188—218)

1. A vehicle wheel for engaging a railway line comprising a flanged rim, a hub and means interconnecting the hub and rim, at least one disc having one face supported against movement axially of the wheel by the interconnecting means and the axially oppositely directed face carrying a braking surface, resilient retaining means extending radially from a margin of the disc, abutting a stop on the wheel and permitting some relative radial movement between the disc and wheel and clamping means engaging the resilient retaining means and a surface supported by the wheel to urge the resilient retaining means toward the wheel and thereby the disc against



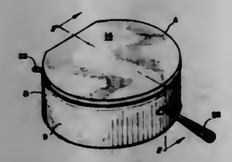
the interconnecting means, locking means being provided forming a mechanical connection between the wheel and disc permitting relative radial movement while preventing relative angular movement between the wheel and disc.

3,295,642
FRICTION SURFACE AND LINING FASTENER
Albert G. Dean, Narberth, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 30, 1965, Ser. No. 452,195
1 Claim. (Cl. 188—234)



A rotary disk brake assembly, comprising in combination a brake shoe plate having a lining supporting surface, means projecting from said supporting surface of said brake shoe plate, supporting sheet means having one of its surfaces in engagement with said supporting surface of said brake shoe plate, said sheet means including a plurality of apertures to receive said projecting means and having a plurality of local depressions in the other surface aligned with and extending to said apertures, a plurality of segmental brake lining blocks bonded to said other surface of said supporting sheet means and capable of transmitting braking reaction forces thereto when in operative engagement with a rotary disc, said supporting sheet means being of woven material and resilient and compressible in a direction normal to its plane to permit each lining block to tilt in any direction, said supporting sheet means being rigid and having a great strength in a direction parallel to its plane to transmit said braking reaction forces from said lining blocks to said projecting means without movement and deflection relative to said projecting means, and retaining means cooperating with said projecting means and received in said local depressions to thereby hold said supporting sheet means in engagement with said brake shoe plate.

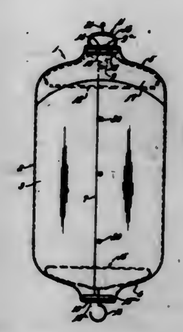
3,295,643
LUGGAGE
Everett A. Peterson, 113 St. Marks Place, Roslyn Heights, N.Y. 11577, and Harold W. Peterson, 193 E. Broadway, Roslyn, N.Y. 11577
Filed Feb. 18, 1964, Ser. No. 345,739
5 Claims. (Cl. 190—41)



1. A blank for luggage comprising end and intermediate spaced stay members and covering sheets for said members extending over the entire surfaces thereof, one of said covering sheets extending over a first surface thereof and having an area of greater length and width than said spaced stay members to provide a marginal portion extending beyond the external peripheral free edges of said stay members, said marginal portion being turned over the adjacent free edges of said stay members and folded over a marginal portion of the inner face thereof, the other of said covering sheets extending over a second surface of said stay members and being connected to said folded over marginal portion by a lap joint, said sheets also contacting each other in the space between said stay members, said sheets being permanently united to each other at their points of contact, said stay members being free of attachment to said sheets, said stay members and their covering sheets forming wall members for luggage, the contacting portions of said sheets between said stay members forming a hinge joint for said wall members, whereby said wall members may be folded over to form top and bottom members for luggage, said intermediate stay member and covering sheets forming a connecting back wall member therefor, and a side wall member secured to one end edge of said back member and having side edges for connection with said top and bottom members, respectively, and a free end edge for connection with the other end edge of said back member, said side member having a separable fastener thereon intermediate its said side edges and extending substantially the full length thereof.

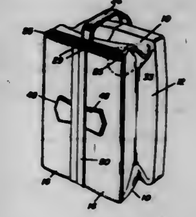
3,295,644
CLOTHES PACKING BAG AND CARRIER
Iwao Furuya, 1641 Kamitoda Toda-cho, Kitaadachi-gun, Saitama-ken, Japan
Filed Feb. 11, 1964, Ser. No. 344,088
5 Claims. (Cl. 190—43)

1. A clothes packing bag and carrier comprising
an elongate generally rectangular flat plastic bag having a front, a back and closed top and bottom edges, said plastic bag being primarily made from a single sheet of plastic material having edges overlapping each other on the front of said bag, the top and bottom edges of said plastic bag being contoured to engage coat hanger means and each top and bottom edge having a center opening therein,
a coat hanger means received within said plastic bag at both the top and bottom edges thereof, a support portion of each of said hanger means extending through said opening formed in each of said top and bottom edges, and
a cover sheet secured only at its top and side edges to the upper and lateral margins of said plastic bag and having a slot provided therein corresponding to the



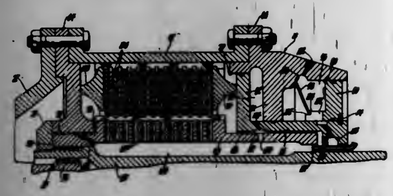
top edge opening in said bag whereby said plastic bag can be folded and have the lower of said hanger means positioned under said cover sheet with the support portion of each of said hanger means also extending through said slot in said cover sheet.

3,295,645
CARRIER
William H. St. Thomas, Gloversville, N.Y., assignor to St. Thomas Inc., Gloversville, N.Y.
Filed Mar. 18, 1964, Ser. No. 352,902
2 Claims. (Cl. 190—45)



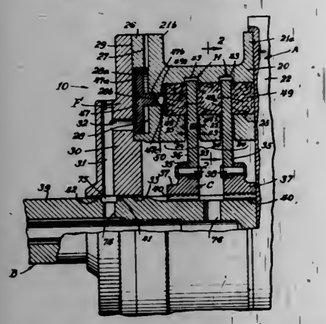
1. A carrier having a body of flexible material and a rigid top frame,
(a) the body having a bottom, opposed end walls, opposed side walls and a top opening,
(b) a flap coextensive with each side wall, each flap being a partial closure for the top opening and having end edges and a lengthwise edge,
(c) said rigid top frame having opposed cross arms of like width to the body end walls and opposed U shaped hinged members pivotally connected to the ends of the cross arms,
(d) each hinged member having end legs and a lengthwise arm,
(e) said arm having means for securing at least the lengthwise edge of a flap to said lengthwise arm in spaced relation from said pivoted connection,
said arm having means comprising a V shaped channel adapted to compressively engage an edge of a flap,
(f) means interconnecting the top edge of each opposed end wall to opposed frame cross arms.

3,295,646
CENTRIFUGALLY OPERATED FLUID CLUTCH
Victor W. Peterson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,357
12 Claims. (Cl. 192—85)



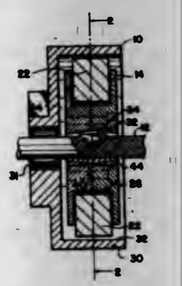
1. In combination
(a) a driven load having a normal operating rated power load, a prime mover having a normal operating speed range for driving said driven load and a starter for starting said prime mover,
(b) drive means operable to connect said starter to said prime mover to start said prime mover and to disconnect said starter from said prime mover after said prime mover is started and accelerating toward said normal operating speed range,
(c) and drive transmitting means operable to connect and disconnect said prime mover and said driven load including clutch means and only fluid motor means for operating said clutch means responsive to the speed of said prime mover to provide a fluid pressure clutch engaging force to initially engage said clutch means at a speed below said normal operating speed range and provide said clutch means with a power capacity sufficient to initially accelerate said driven load, said motor means being further responsive to the speed of said driven load to increase said fluid pressure clutch engaging force proportional to the square of the speed of said driven load to provide said clutch means with an increasing power capacity to accelerate said driven load with said prime mover and complete full clutch engagement to provide clutch lockup and a direct drive through said clutch means at a speed approaching said normal operating speed range.

3,295,647
MULTIPLE DISC SPOT CLUTCH WITH BOOSTER
Eugene S. Murphy, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 23, 1964, Ser. No. 413,182
6 Claims. (Cl. 192—85)



1. A high energy friction device comprising: rotative input means and rotative output means, one of said means carrying an annular housing having at least one series of three or more coaxial and spaced cylindrical chambers, the other of said means carrying a plurality of friction discs having sides with one disc each interposed between adjacent chambers; a plurality of friction buttons, with one each slideably disposed in one of said chambers effective to be urged against a side of said discs for promoting rotative drive therebetween; hydraulic actuating means comprising a stepped piston and cylinder assembly effective to exert a multiplied force against one of the outermost buttons of said series; and a cooling system effective to circulate a cooling medium about the sides of said discs.

3,295,648
HUB AND SHAFT CONNECTION FOR CENTRIFUGAL CLUTCHES
Roy C. Foutch, 3300 W. 8th, Coffeyville, Kans. 67337, and Sanford L. Hargrove, 922 N. Santa Fe, Wichita, Kans. 67214
Filed Feb. 1, 1965, Ser. No. 429,424
2 Claims. (Cl. 192—105)



1. In a centrifugal clutch having a clutch hub assembly mounted on a shaft, including a transversely split hub having a square central portion and spaced disc-like flanges, two semi-circular friction elements positioned on opposite sides of said central portion, and two tension-type coil springs attached to the ends of said friction elements securing same against said central portion, and a drum member having an interior cylindrically shaped surface positioned about said hub assembly, the improvement comprising, a connection means for rigidly securing said hub assembly on said shaft, said shaft having a longitudinally extending semi-circular shaped key seat, a half-moon key seated in said key seat, an annular shaped split bushing disposed about said shaft positioned with said half-moon key positioned between the ends thereof, said bushing having opposite outwardly tapered exterior surfaces, and an elongated longitudinally extending radially protruding key portion, said split hub comprised of two hub elements each having an outwardly tapered bore, and a key seat, said bores being complementary in shape to said tapered surfaces of said bushing and receiving said bushing therein, four bolts securing said hub elements in assembled relation, said centrifugal clutch adapted in use to provide a driving connection between said shaft and said drum with said connection means maintaining a rigid relationship between said shaft and said hub assembly preventing wear and vibration.

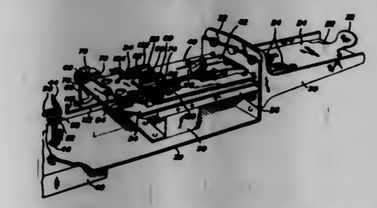
3,295,649
APPLIANCE WITH MULTIPLE LID CONTROL SWITCHES
Tanzi Giuseppe, 21 Via Orocco, Comerio, Italy
Filed Nov. 10, 1964, Ser. No. 410,083
7 Claims. (Cl. 192—136)

1. An appliance with means for variable speed control comprising, in combination, a housing for said appliance; operating means within said housing and operable at variable speeds; variable speed motor means connected to said operating means for actuating same; a power source connectable to said motor means for driving same; a first door associated with said housing and providing access to the interior thereof; means associated with said first



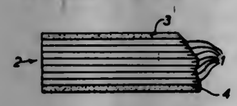
door and reducing the speed of said motor means in response to the opening of said first door; a second door accessible from said first door and having means associated therewith for further reducing the speed of said motor means in response to the opening of said second door.

3,295,650
COIN-CONTROLLED ACTUATOR
Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky. 41075
Original application Apr. 27, 1964, Ser. No. 363,014, now Patent No. 3,231,059, dated Jan. 25, 1966. Divided and this application Mar. 4, 1965, Ser. No. 442,846
15 Claims. (Cl. 194—1)



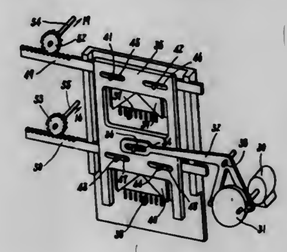
1. A coin-controlled actuator for a service machine starter, which starter is movable from a normally inoperative position to an operative position, said actuator comprising in combination: an elongate coin-receptive coin slide, a support therefor along which the coin slide is manually shiftable longitudinally between a normal position of retraction and an extended position of advancement, a starter interceptor, means on the coin slide supporting the interceptor for disposition to one of two positions upon each full advancement of the coin slide, and, at one of which positions the interceptor strikes and moves the starter to operative position, and at the second of which positions the interceptor avoids moving the starter to operative position, and means indexing the interceptor to operative position only upon execution of a plural number of coin slide reciprocations.

3,295,651
MONETARY TOKENS
Stefan Klackowski, Ruislip Manor, Barry Birch Goalby, Twyford, Dennis Charles Lowe, Whitley Bay, and Roy Salter, Newcastle-on-Tyne, England, assignors to Thomas de la Rue and Company Limited, London, England, a British company
Filed Mar. 25, 1963, Ser. No. 267,548
Claims priority, application Great Britain, Mar. 26, 1962, 11,441/62
8 Claims. (Cl. 194—4)



1. A monetary token made from a material which includes radioactive urea containing carbon^{14}, and having a first surface having a substantially uniform distribution of carbon^{14} thereon, the emission of radioactivity from said surface being within predetermined ranges of penetration and intensity.

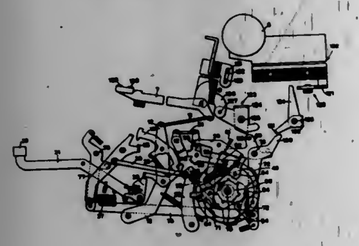
3,295,652
TYPE DRUM SELECTOR USING SLIDING PLATES
Rentaro Sasaki, Takasaki, Japan, assignor to Oki Electric Industry Company Limited, Tokyo, Japan
Filed Mar. 23, 1965, Ser. No. 442,061
Claims priority, application Japan, Mar. 25, 1964, 39/16,146; Dec. 26, 1964, 39/73,584
3 Claims. (Cl. 197—53)



1. In printing apparatus including a type drum carrying type members mounted for displacement radially of the drum and arranged in angularly and axially spaced relation each at the intersection of a respective angular coordinate with a respective axial coordinate, a hammer operable to radially project a type member then aligned therewith to print on a printing medium, adjusting means for displacing the drum angularly, adjusting means for displacing the drum axially, and selector means operable through the adjusting means to displace the drum angularly and axially to align a selected type member with the hammer: the improvement in which said selector means comprises a support panel; a pair of relatively elongated operators mounted on one surface of said panel for lengthwise displacement in one longitudinal direction in substantially parallel relation, each operator being in driving connection with a respective adjusting means; a pair of selector plates each mounted on a respective operator for displacement in a transverse direction substantially normal to said one longitudinal direction, and constrained against displacement in said longitudinal direction relative to its associated operator; each selector plate having an outwardly opening, substantially isoceles triangular notch in its edge facing in said transverse direction, and the two notches facing in the same direction with each notch having an apex; a plurality of selector fingers arranged in two transversely spaced parallel rows extending in said longitudinal direction, each row extending across the path of movement of the notch in a respective selector plate; each selector finger being mounted through a respective aperture in said panel; respective means constantly mechanically biasing each selector finger to project from said one surface of said panel into the path of movement of the associated selector plate; respective latch means mechanically latching each selector finger against such projection; printing pulse responsive electromagnetic release means operable, when energized, to release the associated latch means from one selector finger in each row, in accordance with the drum coordinates of the character to be printed, for projection of the released fingers by the respective mechanical biasing means; and printing pulse responsive driving means operable, when energized, to reciprocate said selector plates initially in a direction to engage a sloping side of the associated notch with a projected selector finger to move the respective selector plate and its operator in said longitudinal direction an amount equal

to the spacing of the respective projected selector finger, longitudinally of its row, from the apex of the respective notch.

3,295,653
INTERLOCKING DEVICE FOR ELECTRIC TYPEWRITERS
Rinaldo Salto, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Continuation of abandoned application Ser. No. 346,010, Feb. 19, 1964. This application Jan. 13, 1966, Ser. No. 532,026
12 Claims. (Cl. 197—74)



1. In an electric typewriter having a set of type levers pivotally mounted on a basket, a set of type actions individually conditionable for operating the corresponding one of said type levers, a paper carriage, a depressible case shift key, and a mechanism operable for case shifting said basket with respect to said carriage between a upper case and a lower case thereof, and interlocking device for said type actions and said mechanism, comprising in combination:

(a) a universal member normally yieldably movable from a first to a second position at the depression of each printing key of conditioning the corresponding one of said type actions for operation,

(b) means for returning said unversal member to said first position at the end of said operation,

(c) a clutch having a pair of rest locations associated with said upper and lower case, said clutch being engageable for power operating said mechanism,

(d) a control member normally located in a first position to hold said clutch disengaged in either of said locations,

(e) yieldable means for moving said control member from said first position to a second position to cause said clutch to be engaged,

(f) a pair of levers fulcrumed on a common pivot and adapted to alternately lock said control member in said first position, said pair of levers being operated by said case shift key for releasing said control member,

(g) means comprised in said mechanism for returning said control member to said first position at the end of its shifting operation,

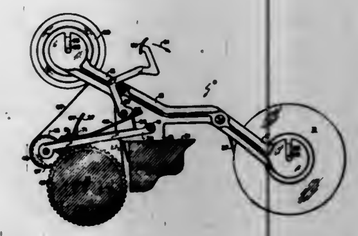
(h) means shiftable simultaneously with said basket for alternating said pair of levers in locking said control member,

(i) a first element integral with said universal member, and having an intercepting portion and an abutting portion movable along a first path,

(j) and a second element integral with said control member and having an intercepting portion and an abutting portion movable along a second part intersecting said first path,

(k) each one of said two elements when located in the corresponding second position placing the intercepting portion into the path of the abutting portion of the other element to lock said other element.

3,295,654
APPARATUS FOR PRODUCING LABELS
William D. Clinton, Guilford, Conn., and Donald R. Forry, James J. Grimm, and Rexford W. Jones, Columbus, Ohio, assignors, by mesne assignments, to American Library Association, Chicago, Ill., a corporation of Massachusetts
Filed Aug. 20, 1963, Ser. No. 303,318
4 Claims. (Cl. 197—133)



1. Apparatus, in combination with a typewriter, for producing laminated labels, comprising:

(a) a typewriter having a platen and a carriage;

(b) a frame adapted for mounting on the carriage of said typewriter;

(c) a first gear around the surface of said platen;

(d) a roller rotatably mounted on said frame and having resilient means urging said roller against said platen;

(e) a second gear on said roller meshing with said first gear, said first and second gears having a ratio such that the surface speed of said roller is greater than the surface speed of said platen as said platen is rotated;

(f) a first spool rotatably mounted on said frame, said first spool supporting and paying out a supply of base-tape material, said base-tape material passing around the platen in position to receive printed indicia from said typewriter and thereafter threaded between the platen and said roller;

(g) a second spool rotatably mounted on said frame, said second spool supporting and paying out a supply of transparent adhesive-tape material said transparent adhesive-tape material passing around said roller onto the printed surface of said base-tape material, said roller pressing the adhesive surface of said transparent adhesive-tape material into intimate contact with the printed surface of said base-tape material; and

(h) means for positioning each of said first and second spools whereby said transparent adhesive-tape material and said base-tape material are maintained in alignment for pressing together.

3,295,655
DOUBLE UTILITY TYPEWRITER SPOOL
Walter David Landgraf, 4808 W. 96th Place, Oak Lawn, Ill. 60453
Filed July 26, 1963, Ser. No. 297,890
18 Claims. (Cl. 197—175)

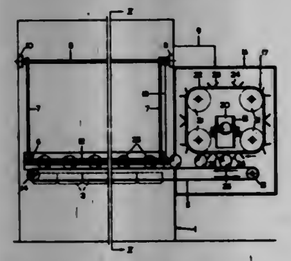
1. A spool for a typewriter ribbon including a first spool component, a second spool component, each of said components including an approximately circular flange, the flanges being of substantially equal diameter, means for securing said spool components in irrotational relation to form a doubly flanged spool, wherein the two flanges are spaced in parallel planes by said means for securing, said components being separable and when separated one of said components forming a singly flanged spool, said singly flanged spool having means integral

therewith for securing said typewriter ribbon thereto, said singly flanged spool and said doubly flanged spool



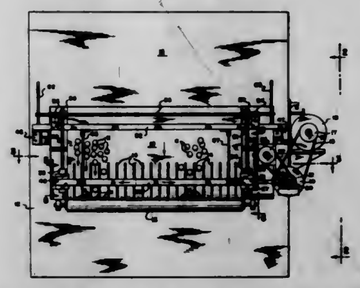
being individually usable in alternative typewriter ribbon feed mechanisms.

3,295,656
METHOD AND APPARATUS FOR HANDLING DOUGH BALLS
Pieter Johannes Benier, Voorburg, South Holland, Netherlands, assignor to N.V. Nederlandsche Fabriek van Bakkerijwerktuigen v/h G.J. Benier, The Hague, Netherlands
Filed June 15, 1965, Ser. No. 464,123
Claims priority, application Netherlands, June 16, 1964, 6,406,813
1 Claim. (Cl. 198—24)



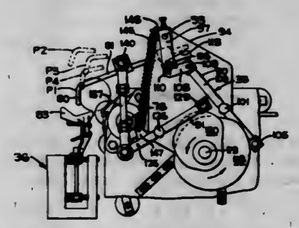
An apparatus for processing dough balls comprising a rising box, a plurality of dough ball holders in said rising box arranged in a plurality of parallel horizontal rows connected alongside of each other in a chain of spaced rows, means mounting said chain of rows movably through a vertical path, a conveyor for feeding dough balls to said rising box through a horizontal feeding path in front of said chain of rows in its vertical path, pusher means extending in front of said chain of rows above and parallel to said conveyor, means for periodically moving said pusher means over said conveyor transversely thereof, supplying means having its discharge means arranged above said conveyor for dropping dough balls thereon one after another, guiding means for guiding said dough balls when dropped from said discharge means, said guiding means comprising pairs of guiding faces arranged in a row, said pairs of guiding faces being spaced equally to the spacing of said dough ball holders in their rows, means mounting said row of pairs of guiding faces movably through a path parallel to said conveyor between said discharge means and said conveyor, the guiding faces of said pairs of guiding faces when moving through their path between said discharge means and said conveyor converging towards said conveyor to define a transmitting channel having a restricted outlet relative to its inlet as seen in the direction of said conveyor, and driving means for driving said conveyor and said row of guiding faces with equal speed and synchronously with said supplying means.

3,295,657
COOKIE ALIGNING APPARATUS
Orval Snyder, Richmond, Ind., assignor to Richmond Baking Company, Richmond, Ind., a corporation of Indiana
Filed Aug. 10, 1964, Ser. No. 388,514
8 Claims. (Cl. 198—30)



1. A cookie aligning apparatus comprising spaced disc partition means between which cookies may pass, means for imparting oscillating and rotary motion to said disc partition means, and conveyor means for conducting cookies toward and away from said disc partition means.

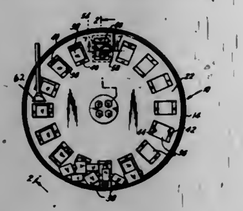
3,295,658
TRANSFER CONTROL MECHANISM FOR EGG PROCESSING MACHINES
Boyd W. Rose and Harold J. Mumma, Riverside, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Sept. 28, 1962, Ser. No. 226,994, now Patent No. 3,252,607, dated May 24, 1966. Divided and this application Oct. 13, 1965, Ser. No. 495,429
2 Claims. (Cl. 198—30)



1. In an egg processing machine, a conveyor comprising an endless roller conveying chain, means defining a plurality of pockets between said rollers, guide means for changing the direction of movement of said roller chain to define the discharge end of the conveyor, drive means for driving said endless roller chain to move eggs in said pockets to the discharge end of the conveyor and discharge the eggs over the end, a mechanism for retarding the fall of eggs from said roller chain including an egg-arresting bar adapted to be disposed in an egg-intercepting position adjacent the discharge end of said conveyor and slightly below the level of the upper run of said endless chain to intercept eggs dropping over said discharge end, a first linkage connected to said bar for swinging said bar in a generally horizontal direction about a horizontal axis, a second linkage connected to said bar for swinging said bar in a generally vertical direction about a horizontal axis, a shaft driven in timed relation with said drive means, and cams keyed to said shaft and operatively connected to said two linkages to control the movement thereof and effect movement of said egg-arresting bar from said egg-intercepting position in an orbital path away from said position to release eggs and then back to said position.

3,295,659
HOPPER-TYPE FEEDING AND ORIENTING DEVICE FOR BOTTLES OR THE LIKE

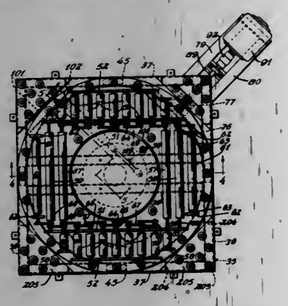
Samuel S. Aidlin, New York, N.Y.
(214 Beaumont St., Brooklyn, N.Y. 11235)
Filed Mar. 2, 1965, Ser. No. 436,527
5 Claims. (Cl. 198—33)



1. Apparatus for orienting and feeding bottles or like articles having a portion of reduced cross-section at one end, comprising a hopper including a bottom wall secured in fixed position at an angle to the horizontal, a member rotatable over said bottom wall in parallel relation and in proximity thereto, said member including a ring section having radially-disposed spaced slots formed therein, each said slot of a length, in a radial direction, greater than the height of the thick portion of a bottle but less than the thickness of the thick portion of said bottle, each said slot having the upper marginal edge portion at each radial end thereof cut away to form a recess for the end of the neck portion of said bottle, an opening formed in said bottom wall at the top thereof arranged to have each said opening in said ring section register therewith in succession as said rotary member is rotated, said opening in said bottom wall being of a width not less than the width of an opening in said ring section, and means on said hopper within said opening in said bottom wall engaging the thick portion of a bottle in an opening of said ring section moving over said bottom wall opening and applying a downward force on said bottle to eject said bottle through said opening.

3,295,660
PALLET HANDLING APPARATUS

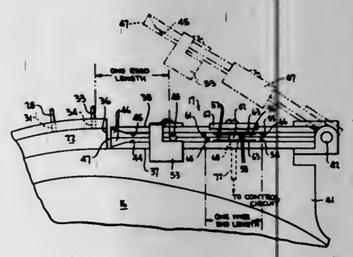
Iver L. Nelson, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Mar. 12, 1965, Ser. No. 439,243
10 Claims. (Cl. 198—33)



1. A turntable device for unitized loads including:
a ring rotatably supported for pivotal movement about a vertical axis,
roller means supported in parallel relation on substantially horizontal axes on said ring and adapted to support a load,
a table pivotally supported on a vertical axis within said ring and concentric therewith,
said table being arranged on a plane at least no higher than the upper surface of said rollers, and
means for vertically reciprocating said table to a plane above the plane of the upper surfaces of said rollers, said roller means including two sets of parallel rollers on diametrically opposite sides of said table adapted to support a load before and after it has passed over said table, and parallel aligned pairs of rollers between said sets of rollers adapted to support a load while passing over said table, all of said rollers being outwardly of the periphery of said table.

3,295,661
APPARATUS FOR CONVEYING ELONGATED ARTICLES

Henry D. Mitchell, Jr., Robert M. Tribble, and Hugh A. Wells, Winston-Salem, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 24, 1965, Ser. No. 458,203
10 Claims. (Cl. 198—33)

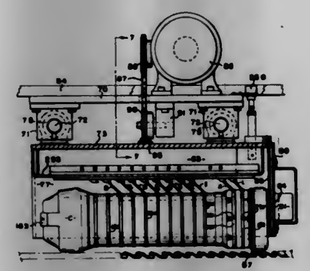


1. An apparatus for conveying elongated articles, which comprises:
means for orienting the elongated articles in a predetermined endwise position, said orienting means including a pair of normally adjacent plates, said plates defining an inlet for receiving said articles, a chamber, and an outlet for dispensing said oriented articles;
means for successively feeding said articles to said inlet of said orienting means in a column of random endwise positions;
means responsive to the presence of said articles of said column of articles for a first predetermined time for ejecting every other article of said column of articles to space apart said articles at intervals at least equal to the length of said articles; and
means responsive to the presence of said articles for a second time greater than said first predetermined time for moving at least one of said plates away from said other plate to open said chamber to permit the movement therefrom of any articles therein.

3,295,662
CENTRAL EXCHANGE DISPATCHER FOR PNEUMATIC TUBE SYSTEMS

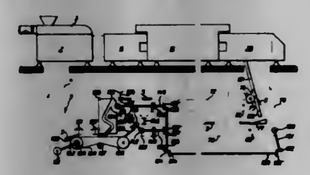
Peter F. Crosby, Cazenovia, Charles W. Wallis, East Syracuse, and William D. Budynas, Liverpool, N.Y., assignors to Lamson Corporation, Syracuse, N.Y., a corporation of New York
Filed Aug. 24, 1964, Ser. No. 391,698
11 Claims. (Cl. 198—38)

1. A central exchange dispatcher for pneumatic tube systems for the transmission of carriers therethrough comprising a code sensing station, carriers for transmission through said system means operable to present said carriers successively to said station, each of said carriers being provided with a destination code, a plurality of carrier ejection stations, an outgoing tube at each of said ejection stations, means at said sensing station operable to sense the destination code on a carrier when present at said sensing station, a trackway extending from said sensing station to said ejection stations, means for conveying said carriers from said sensing station along said trackway to an ejection station preselected by the code of said carrier, and carrier ejector mechanism carried by said conveying means operable to eject said carrier into the outgoing tube at said selected ejection station.



3,295,663
SUSPENSION ROD MAGAZINE

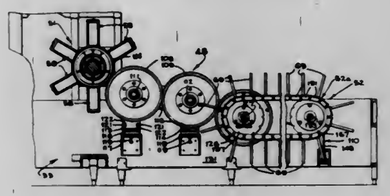
Renzo Vassalli, Uzwil, Switzerland, assignor to Gebruder Buhler, Uzwil, Switzerland, a company of Switzerland
Filed Aug. 4, 1964, Ser. No. 387,402
Claims priority, application Switzerland, Aug. 5, 1963, 9,668/63
16 Claims. (Cl. 198—85)



1. An apparatus for the automatic storage and transfer of articles, for example suspension rods, for supporting strands of long alimentary paste goods such as macaroni, between at least two production stages having different production rates, comprising means for loading the articles into a first production stage adapted to be located adjacent the first production stage, means for delivering the articles after use from a second production stage adapted to be located adjacent the second production stage, first and second conveyers disposed between said loading means and said delivering means, first means associated with said first and second conveyers for connecting at least one of said conveyers to said delivering means for receiving the articles on the connected conveyer from said delivering means, second means for selectively connecting each of said conveyers to said loading means for delivering articles on the conveyer to said loading means, and timing means associated with each of said first and second conveyers and said first and second means for operating said first and second conveyers and said first and second means to store articles received from said delivering means in excess of those which are delivered to said loading means and for providing sufficient rods for delivery to said loading means during its operation.

3,295,664
CONVEYOR DRIVE MECHANISM

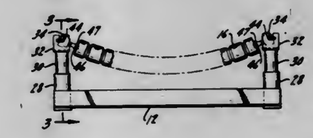
Robert D. Heffelfinger, Saratoga, Calif., John G. Hagerborg, St. Niklaas-Waas, Belgium, and Wendell S. Thompson and Henry A. Oldenkamp, Saratoga, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Aug. 10, 1962, Ser. No. 216,248, now Patent No. 3,248,841, dated May 3, 1966. Divided and this application Feb. 11, 1966, Ser. No. 526,728
5 Claims. (Cl. 198—135)



1. A conveyor drive mechanism for driving a conveyor having a drive shaft with a drive sprocket thereon, a driven shaft with a driven sprocket thereon, and an endless article supporting conveyor chain trained around said sprockets and having an upper run, the combination of intermittent drive means connected to said drive shaft for intermittently driving the same, means for alternately actuating and terminating actuation of said intermittent drive means, an overrunning clutch operatively connected to said driven shaft, power means connected to said overrunning clutch for activating the same, said clutch being movable into driving engagement with said driven shaft upon activating said power means, and control means operated in timed relation with said intermittent drive means for activating said power means for engaging said clutch and rotating said driven shaft immediately prior to the actuation of said intermittent drive means and for disengaging said clutch subsequent to the termination of the driving movement of the conveyor by such intermittent drive means whereby the upper run of said conveyor chain is maintained tensioned during operation of said intermittent drive means.

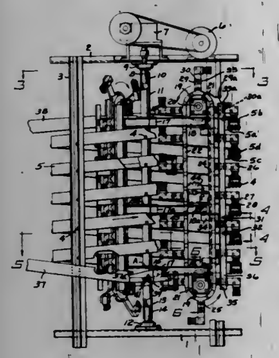
3,295,665
CHAIN CATENARY BELT IDLER

Edmund C. Bitzer, Golden, Colo., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 24, 1964, Ser. No. 413,424
7 Claims. (Cl. 198—192)



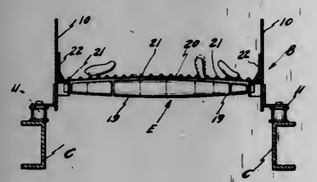
1. A catenary belt idler for supporting conveyor belts and the like, which includes an outer sleeve of a flexible material having the general characteristics of rubber and having a generally axial aperture therethrough, and a flexible internal support for said outer sleeve, together with means for securing the ends of the outer sleeve to the flexible internal support while maintaining the outer sleeve under endwise compression.

3,295,666
HELICAL STORAGE UNIT
John G. Kay, Detroit, and Alfred L. Osinski, Warren, Mich., assignors to F. Jos. Lamb Company, Inc., Detroit, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,174
17 Claims. (Cl. 198—212)



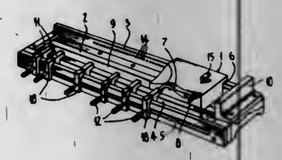
1. A storage unit including a frame, means forming a vertically extending helical runway mounted on the frame, a vertical spindle mounted for rotation on the frame coaxially with the central vertical axis of the runway, means including a pair of vertically spaced rotatable members mounted on the spindle for rotation about spaced horizontal axes, an endless element extending around said pair of rotatable members, said endless element having a plurality of laterally extending arms thereon projecting into the space between successive convolutions of the runway, said arms being spaced apart along said endless element a distance corresponding to the pitch of the helical runway, each arm having a vertically projecting pusher element thereon which extends into the runway in a vertical direction, a helical guide member positioned adjacent and in parallel relation with the convolutions of the runway, means on said endless element engaging said guide member for moving the endless element around said pair of rotatable elements a distance corresponding to the pitch of the helix during each revolution of said spindle, and means for rotating said spindle whereby said vertically extending pusher elements are adapted to engage articles in the runway and convey the articles along the runway in response to rotation of said spindle.

3,295,667
ANTI-BLINDING MECHANISM FOR SCREEN PANELS
Walter R. Kittle, Durand, Mich., assignor to Simplicity Engineering Company, Durand, Mich., a corporation of Michigan
Filed May 20, 1965, Ser. No. 457,372
6 Claims. (Cl. 198—220)



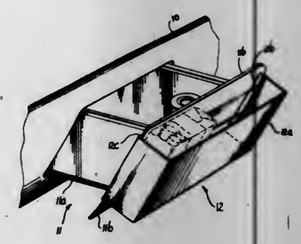
1. An anti-blinding mechanism for screening pickles, the combination with a driven gyrating means including a frame, of a pitched screen panel mounted in said frame and gyrated by said gyrating means; screen support bars mounted in said frame; a transversely disposed shaft; a plurality of impact sleeves mounted on said shaft; said sleeves being actuated by gyration of said gyrating means and striking the lower face of the screen panel to release pickles wedged in the screen as the machine is driven.

3,295,668
MATRIX TABULATING AND ALIGNMENT TOOL
Walter Albert Thompson, Traralgon, Victoria, Australia, assignor to Alfred Robert Schlipalius, Traralgon, Victoria, Australia
Filed Sept. 27, 1965, Ser. No. 490,517
Claims priority, application Australia, Oct. 2, 1964, 50,022/64
5 Claims. (Cl. 199—47)



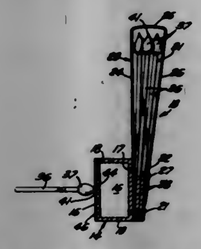
1. A matrix tabulating tool comprising a calibrated channel shaped member for holding assembled matrix pieces, index means axially slidable within said channel member relative to one end of said member to define a matrix assembly space between said member and the end, an index key pivotally connected to said index means, a guideway located along one side of said channel-shaped member and extending substantially the entire length of the tool and a plurality of vertically disposed adjustable spacing stops located along one side of said channel shaped member in said guideway for individual engagement by the index key to facilitate selective spacing of said matrix pieces within said matrix assembly space.

3,295,669
CIGARETTE-HOLDING DEVICE
Hertha Schneider, 10562 Kinnard Ave., Los Angeles, Calif. 90024
Filed June 14, 1965, Ser. No. 463,692
3 Claims. (Cl. 206—19.5)



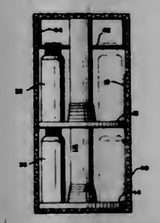
1. In a motor vehicle, the combination comprising: an ash tray slideably mounted on the dashboard of the vehicle, said ash tray having a frontface panel whose edges extend beyond its body; and a device for holding cigarettes mounted on the frontface panel of said ash tray, said device being rectangularly shaped and including means for slideably mounting it on said ash tray panel, said means being a pair of spring-loaded U-shaped elements that respectively slip over the edges of said panel to slideably hold said device in place.

3,295,670
TALKING MATCH BOOK
Richard H. Bush, 3249 O'Farrell Drive, Sacramento, Calif. 95815; and Homer C. Jones, 3722 Laura Court, Sacramento, Calif. 95821
Filed Oct. 1, 1965, Ser. No. 492,036
6 Claims. (Cl. 206—29)



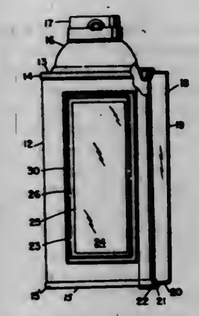
1. A talking match device comprising:
(a) an elongated panel having formed on one side thereof at least one substantially linear elongated sound track;
(b) an ignition layer on said panel adjacent one end thereof; and,
(c) a plurality of matches mounted on said panel, each of said matches including a combustible head portion and a tip portion projecting from said head portion for sound producing engagement with said track as said match is swept along said track from the other end of said panel toward said one end thereof, with said combustible head portion igniting as said match traverses said ignition layer.

3,295,671
PRE-PACKAGED DISPLAY
John H. Wuensch, Lecuia, N.J., and John A. Ferrara, New York, N.Y., assignors to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 18, 1964, Ser. No. 345,613
14 Claims. (Cl. 206—44)



1. A pre-packaged display comprising a supporting pillar, a planar base mounted on said supporting pillar and having a configured article bearing upper surface, a planar element on said supporting pillar disposed above said planar base and having a configured article bearing upper surface, said planar element having article retaining means in its bottom surface, said supporting pillar passing through approximately the centers of said planar base and said planar element, cylindrical containers disposed upon said configured article bearing surfaces so that said display contains a plurality of tiers of said cylindrical containers, the lowest of said tiers being immobilized between said configured upper surface of said planar base and said article retaining means of the bottom surface of said planar elements, a shipping carton surrounding and contacting said planar base and said planar element, and an article stabilizing insert disposed above said planar element and having article retaining means in its bottom surface, said stabilizing insert being surrounded and contacted by said shipping carton, the highest of said tiers of said cylindrical containers being immobilized between said configured upper surface of a said planar element and said stabilizing insert.

3,295,672
PACKAGING ASSEMBLIES
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Filed Oct. 14, 1964, Ser. No. 403,777
15 Claims. (Cl. 206—47)



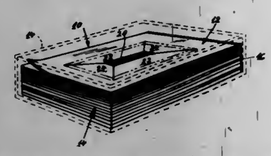
1. A packaging assembly comprising
(a) a main product container,
(b) a container sub-housing made of thin, flexible sheet material,
(c) said sub-housing having an end wall and a circumscribing side wall,
(d) a circumscribing flange formed as an outward extension of said side wall and extending lateral to the side wall of said sub-housing,
(e) a first coating bonded on a selected area of the outer surface of said main product container,
(f) means sealing said outwardly extending flange of said sub-housing to said first coating for retaining the sub-housing and product container together with a storage volume defined between the two by the walls of both and
(g) a premium disposed in said storage volume and retained by said sub-housing against said main product container.

3,295,673
SPOOL DEVICES
William E. Bowe, 33 Torre St., Reading, Mass. 01867
Filed Apr. 6, 1965, Ser. No. 446,044
8 Claims. (Cl. 206—52)



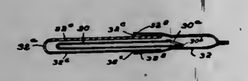
6. A device for storing a continuous tape comprising a base, a plurality of posts mounted on said base and extending therefrom in the same direction, the spacing between said posts being such that one end of said tape can be looped over less than all of said posts and wound around all of said posts, a cover for enclosing said wound tape and means mounted to said cover for engaging the other end of said tape and holding the tape in the wound position.

3,295,674
PRESENTATION MOUNTS PERTAINING TO MATS
Frank Shore, 26 Lantern Road, Hicksville, Long Island, N.Y. 12108
Filed June 26, 1964, Ser. No. 378,466
2 Claims. (Cl. 206—56)



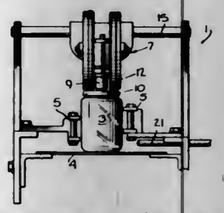
1. As an article of manufacture, a pad constituted by a plurality of superimposed similarly sized rectangular-shaped picture frame mats and rectangular-shaped picture frame backing boards removably secured to each other by a layer of adhesive over one short end of the pad, the mats each having a body portion with an elongated rectangular central opening, a plurality of flaps around the opening, said flaps, after the removal of said mats from said pad, being foldable rearwardly through the opening to form a window in the mat for framing and exposing a picture superimposed on the backing board, said flaps having slanted end edges forming mitre joints therebetween, said flaps having adhesive applied to one surface thereof for fastening the flaps to the body of the mat to hold the flaps in folded condition.

3,295,675
PACKAGE OF OUTER UNSTERILE AND INNER STERILE COVERS FOR ENCLOSING A SUBSTANTIAL PORTION OF AN OBJECT HAVING AN UNSTERILE SURFACE
Walter W. Burns, Greenport, N.Y., and Jacob L. Brause, Washington, D.C., assignors, by direct and mesne assignments, to Steri-Therm, Inc., Arlington, Va., a corporation of Virginia
Original application May 22, 1961, Ser. No. 119,889, now Patent No. 3,092,252, dated June 4, 1963. Divided and this application June 3, 1963, Ser. No. 284,893
The portion of the term of the patent subsequent to June 4, 1980, has been disclaimed
5 Claims. (Cl. 206—63.2)



1. A package which is designed to protect the mouth of a patient from contamination by bacteria or virus which may be on an operative object such as a clinical thermometer or the like, said package comprising in combination:
(a) an inner cover member having a chamber of a size and shape to enclose a substantial portion of an operative object such as a clinical thermometer, or the like, and protect the mouth of the patient from contact with the operative object,
(b) said inner cover having an angular opening and a tubular seamless side wall and a seamless closed end for insertion into the mouth of the patient and for holding the lower end of the operative object, which may be contaminated, out of contact with the patient's mouth and extending outwardly beyond the mouth opening,
(c) said cover being of an impervious material, and of a thickness to permit ready transfer of the body heat from the patient's mouth to the thermometer bulb,
(d) said material being flexible to permit it to be readily conformed to and in contact with the outer surface of the thermometer over a large area,
(e) an outer enveloping member having an opening indicating means and for enclosing the inner cover member to enclose the same and to provide protection therefore, the
(f) inner cover member having an outer sterile aseptic surface for separating the operative object from contacting the mouth of the patient, thereby giving protection to the patient against bacterial and virus contamination in the patient's mouth, from the operative object, and
(g) said inner cover member when open lying in the outer enveloping member in a position to permit the ready insertion of the thermometer or other operative object without removing said cover member from the outer enveloping member, and without touching the part of the inner cover member which comes into contact with the patient's mouth to any contaminating surface.

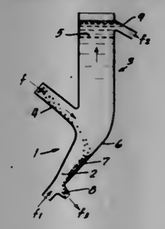
3,295,676
DETECTING MECHANISM
Charles S. Ochs, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Sept. 2, 1964, Ser. No. 393,952
6 Claims. (Cl. 209—111.8)



1. A sensing device for a dud detector for use with closure caps having a flexible vacuum indicating flip panel surrounded by a panel supporting surface and having a raised rim outwardly of the supporting surface comprising the combination of a conveyor for capped containers, a panel position sensor element, means for ejecting containers from said conveyor coupled to said sensor element, and a sensor support wheel having annular flanges for engaging said panel supporting surface and for positioning the sensor element a pre-determined distance from said supporting surface when said sensor is centered above said flip panel and for spacing said sensor from said closure cap rim.

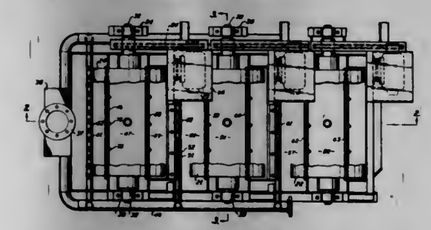
3,295,677
PROCESS AND APPARATUS FOR THE SORTING OF TWO OR MORE MATERIALS
Elie Condolios, Grenoble, Isere, France, assignor to Societe Grenobloise d'Etudes et d'Applications Hydrauliques, Grenoble, France, a corporation of France
Filed Dec. 3, 1963, Ser. No. 327,715
Claims priority, application France, Dec. 7, 1962, 4,514; Oct. 28, 1963, 4,619
20 Claims. (Cl. 209—136)

8. Apparatus for achieving very accurate sorting of particulate materials in a fluid flow, comprising a lower inclined duct portion, a vertical duct portion of given height connected at its lower end to the upper end of said lower duct portion to form a continuous duct, means for feeding sorting fluid into the lower end of said lower inclined duct portion and up through said inclined and vertical portions, and for feeding the particulate material to be sorted into the sorting fluid at an intermediate zone thereof located at the juncture of said inclined and vertical duct portions, means at the upper end of said vertical duct portion for discharging the sorting fluid flowing up through said inclined and vertical duct portions, said vertical duct portion having a given uniform cross-sectional area such that for a given rate of flow of the sorting fluid fed into said inclined duct portion, the velocity of flow of the fluid through said vertical duct section is greater than the sinking velocity of the fine or low density particles in the material, but less than the sinking velocity of the coarse or dense particles thereof so that the fine or low density particles are carried by such fluid from said intermediate zone to said discharge means and the coarse or dense particles are unable to reach said discharge means and tend to sink into the lower inclined duct portion, the floor of said inclined duct portion having a slope steeper than the natural equilibrium slope the coarse or dense particles would assume in static fluid, but not of such steepness that the fluid cannot penetrate



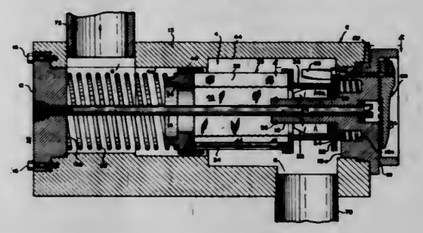
into a downwardly sliding layer of such particles, and said lower inclined duct portion having a restriction at the lower end part thereof and downstream of the entrance of the fluid flow into such inclined duct portion, said restriction being such that the flow velocity of the sorting fluid is so increased at a localized section in the region of such restriction that the velocity of the fluid therethrough is equal to the entrainment velocity for the coarsest or densest particles in the material, and such as to prevent the passage of the fine or low density particles past such localized section, and a discharge outlet for the coarse or dense particles located below said restriction so that such particles move downwardly in said inclined duct portion past said restriction in their travel toward said discharge outlet.

3,295,678
MAGNETIC SEPARATOR FLOW CONTROL
Henry L. Genier, Silver Bay, Minn., assignor to Reserve Mining Company, Silver Bay, Minn., a corporation of Minnesota
Filed July 19, 1962, Ser. No. 210,976
1 Claim. (Cl. 209—223)



Apparatus for the removal of a magnetically separatable fraction from a slurry of commingled ferrous metal ore and non-magnetic tailings, said apparatus comprising an enclosure, a compartment in said enclosure, means for directing a stream of said slurry through said compartment, means for maintaining a liquid level in said compartment, means providing a surface movable through said stream with one side thereof in contact with said stream, means for establishing a magnetic field closely adjacent to said surface on the opposite side of said surface from said stream whereby magnetic material entrained in said stream is attracted towards said surface, unidirectional flow through said compartment being maintained with respect to said magnetically separatable fraction and said non-magnetic tailings and said liquid, means for confining said stream to a zone adjacent said opposite side of said surface, said last named means including a weir for controlling the fluid and solids passage capacity of said zone, and means carried by said weir to automatically permit passage of oversized solids between said weir and said surface whereby to prevent scoring of said surface.

3,295,679
BAYONET FLUID FILTERING ASSEMBLY
Nils O. Rossen, Bloomfield Hills, Mich., assignor to The Rossen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Apr. 14, 1964, Ser. No. 359,749
7 Claims. (Cl. 210—90)

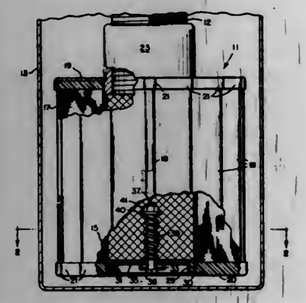


1. Fluid filtering apparatus, comprising
a housing containing a cavity and inlet and outlet openings communicating with said cavity;
filter means mounted for reciprocatory movement in said cavity and defining therein inlet and outlet chambers in direct communication with said inlet and outlet openings, respectively;
spring means biasing said filter means axially in one direction toward a first position in said cavity in which said chambers are in communication solely via said filter means;
means responsive to the pressure differential between said inlet and outlet chambers for displacing said filter means in the opposite direction from said first position toward a second position in said cavity; and
follower means movable in said housing cavity simultaneously with said filter means solely during movement of said filter means between said first position and a third position intermediate said first and second positions, one of said filter and said follower means including a by-pass passage for affording direct communication between said chambers, the other of said filter and said follower means being operable to close said by-pass passage when said filter means is displaced between said first and third positions and to open said by-pass passage when said filter means is displaced between said third and second positions.

3,295,680
FILTER ASSEMBLY HAVING A BY-PASS VALVE
Paul F. Wilber, Richland, N.Y., assignor to Dollinger Corporation, Rochester, N.Y., a corporation of New York
Filed July 1, 1964, Ser. No. 379,448
2 Claims. (Cl. 210—130)

1. A filter comprising
(a) a porous filter element having an axial bore, and formed with axially-extending pleats which project radially outwardly from said bore,

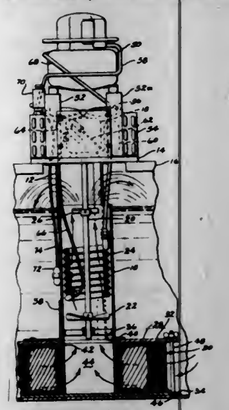
(b) a pair of end caps secured over opposite ends, respectively, of said element and having central openings aligned axially with said bore,
(c) a coupling secured centrally to one of said caps for connecting its opening and said bore with the suction side of a pump, operable to pump fluid through said element,
(d) a ring sealingly secured in the central opening of the other of said caps in axial alignment with said coupling and having on its inner end an integral, radially inwardly projecting ring flange,
(e) a rigid rib extending diametrally across said ring to seat at opposite ends against the outer face of said flange,
(f) a disc-shaped valve in said bore to be seated around its marginal edge against the inside face of said flange to close the ring and the central opening in said other cap, whereby when said valve is closed, fluid may pass only radially through the pores in said element to be filtered thereby,



(g) a bolt having a shank which extends through registering central apertures in said rib and said disc into said bore coaxially thereof, and having a head portion, which seats against the outer face of said rib,
(h) a nut adjustably secured to one end of said bolt, and
(i) a compression spring surrounding said shank and seating at one end against said valve resiliently to hold said valve and said rib against said inner and said outer faces, respectively, of said flange,
(j) said nut and bolt being adjustable relative to one another to adjust the tension in said spring, whereby when the pressure differential created by said pump between said bore and the outside of said element exceeds a predetermined value, atmospheric pressure is operative to force said valve axially away from said flange against the resistance of said spring, whereby fluid may flow directly axially through said bore.

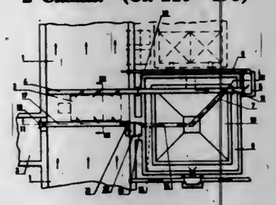
3,295,681
WATER COOLING AND AERATING DEVICE FOR FISH TANKS AND THE LIKE
George E. Rubert, George W. Buchanan, and Paul D. Findlay, Toledo, Ohio, assignors to Frigid Units Inc., Toledo, Ohio, a corporation of Ohio
Filed Oct. 4, 1963, Ser. No. 313,811
8 Claims. (Cl. 210—169)

1. In a cooling and aerating device for fish tanks and the like having a generally predetermined water line; a support plate adapted to be supported adjacent the top of the tank above the water line in the tank, a vertical tube having an upper open end, said vertical tube being spaced from said support plate with the upper open end of said tube terminating generally in the region of the water line of the tank, a motor having a vertical shaft supported generally coaxially of said vertical tube, a propeller supported by said shaft inside said vertical tube for moving water vertically through said tube, a cooling coil positioned inside said tube above said propeller in such position that water propelled by said propeller flows over said cooling coil, means at the upper end of said vertical tube for introducing air into water flowing out of the top of said tube, a top filter plate member having an opening therethrough through which water to said vertical tube passes, a bottom filter plate member spaced beneath said top filter plate member, a porous retainer extending vertically between said filter plates and surrounding said opening in said top plate, a vertically extending filter positioned



between said filter plates and spaced radially outwardly from said porous retainer, surface active material positioned in the space between said porous retainer and said filter, said filter comprising a plurality of layers which extend between said filter plates, which overlie each other, and which are separable from each other, a sealed motor-compressor unit mounted on said support plate above said motor, a condenser mounted on said support plate, said condenser receiving refrigerant from said compressor and discharging it to said cooling coil, and a fan mounted on the shaft of said motor for causing air to flow through said condenser and over said sealed motor-compressor unit.

3,295,682
SEWAGE TREATMENT APPARATUS
Paul Schramm, Nassau, Germany, assignor to Nederlandse Organisatie voor Toegepast-Natuur-Wetenschappelijk Onderzoek ten Behoeve van de Volksgezondheid, The Hague, Netherlands, a corporation of the Netherlands
Filed Sept. 10, 1964, Ser. No. 396,481
Claims priority, application Germany, Sept. 10, 1963, P 32,561
2 Claims. (Cl. 210—195)



1. A sewage treatment apparatus comprising an aeration tank provided with a sewage inlet, and a sewage outlet maintaining a predetermined liquid level therein, and with at least one aeration rotor of the rotating brush type provided with aeration elements, which rotor is rotatably mounted on a horizontal axis situated over the liquid

level in the aeration tank with said aeration elements dipping below said liquid level during rotation of said rotor and means for rotating the said rotor; a sedimentation tank for the aftertreatment of the sewage treated in the aeration tank, said sedimentation tank including means maintaining a predetermined liquid level therein and being situated in such a manner that during the operation of the apparatus the liquid level in the sedimentation tank is higher than that in the aeration tank; means for conveying treated sewage from the aeration tank into the sedimentation tank, which means comprise at least one trough which is mounted alongside of said rotor so as to collect sewage liquid splashed up by said aeration elements of said rotor; and means for returning activated sludge from the sedimentation tank to the aeration tank.

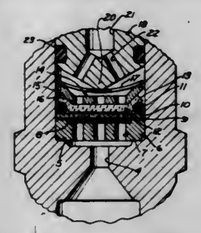
3,295,683
CIRCULAR THIN-LAYER CHROMATOGRAPHIC APPARATUS
Gerald Joseph Litt, Colonia, and Rosemary Gerheiser Johl, Matawan, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
Filed May 28, 1965, Ser. No. 459,800
5 Claims. (Cl. 210—198)



1. An apparatus for circular thin-layer chromatography comprising:
(a) a dish having a relatively flat bottom surface, an upwardly extending side wall around the periphery of the dish, and a laterally projecting lip at the top of the side wall, the upper surface of the lip having at least a portion thereof extending radially outward from the center of the dish in the same horizontal plane throughout the periphery of the lip;
(b) a flat plate engaging said upper surface of the lip around the periphery of the dish and thereby forming a vapor-restricted seal between the plate and the dish, the underside of the plate having chromatographic material adhering thereto;
(c) a chromatographing solvent contained in the dish;
(d) an unglazed ceramic body having a height less than the distance between the bottom inside surface of the dish and the bottom of the layer of chromatographic material on the plate, but of sufficient height to have its lower portion wetted by the solvent when its upper surface is in contact with the chromatographic material on the plate; and
(e) a plastic body, made of a plastic which is inert with respect to the solvent and which is elastic when in relatively thin strips of relatively narrow width, positioned between the ceramic body and the bottom inside surface of the dish and supporting the ceramic body on the dish, said plastic body having sufficient inherent elasticity, due to its thinness and shape, for maintaining the top surface of the ceramic body in engagement with the chromatographic material on the plate without causing the disengagement of the periphery of the plate with the lip of the dish.

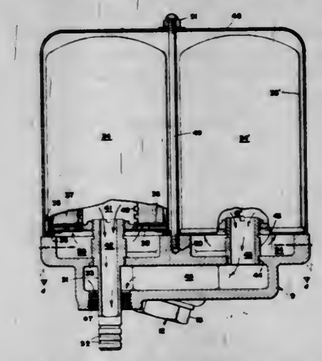
3,295,684
HIGH PRESSURE FILTER
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of William F. MacGlashan, Jr.
Filed Feb. 28, 1963, Ser. No. 261,918
2 Claims. (Cl. 210—314)

2. A high pressure filter, comprising:
(a) a housing including a central bore having a constricted outlet port forming a supporting shoulder;
(b) an inlet fitting screw-threaded in said bore and having a conical tip and downwardly diverging inlet ports surrounding said tip;
(c) an axially perforated support member bearing against said shoulder;
(d) a load-distributing screen overlying said perforations;
(e) a perforated plate overlying said screen;
(f) a perforated plate overlying said screen;
(g) a preliminary filter element overlying said final filter sheet;



(h) a seal ring interposed between said filter sheet and filter element and sealingly engaging the walls of said bore;
(i) a retainer disk having an upwardly diverging un perforated marginal rim, disposed in the path of discharge from said diverging ports, and a central perforated portion overlying said preliminary filter element;
(j) and a cross-shaped spring having radial arms bearing against the rim of said retainer and a central portion engaged by the conical end of said inlet fitting.

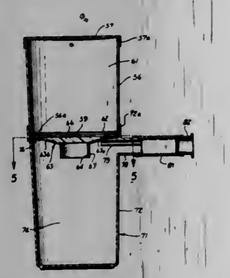
3,295,685
FILTERING ARRANGEMENT FOR MOTOR FUELS
Elnar T. Young, Newtown Square, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Feb. 17, 1965, Ser. No. 433,284
4 Claims. (Cl. 210—323)



1. A dual fluid filter adapted for connection to a fluid supply fitting which separately delivers two different fluids; said filter comprising a chambered mounting body including thereon an upper filter-mounting face, an elongate manifold plug sealed into said body and cooperating with the fluid supply fitting to provide two separate longitudinally-extending fluid passageways one of which surrounds the other, said body having therein a first transversely extending fluid passage one end of which communicates with said one surrounding passageway and the other end of which opens into the upper face of said body and also having therein a second transversely-extending fluid passage isolated from said first passage, one end of

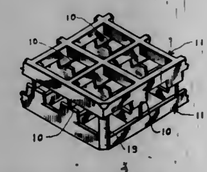
said second passage communicating with said other passageway and the other end of said second passage opening into the upper face of said body; and two filter cartridges mounted on the upper face of said body in side-by-side but spaced relationship and covering the open ends of said first and second passages, respectively, said body also having therein two separate fluid outlets one of which surrounds the other, the outlet sides of said two filter cartridges being coupled to respective ones of said fluid outlets.

3,295,686
FILTER UNIT
Albert P. Krueger, Berkeley, Calif., assignor to Rockridge Laboratories, Oakland, Calif., a corporation of California
Filed May 20, 1965, Ser. No. 457,455
12 Claims. (Cl. 210—455)



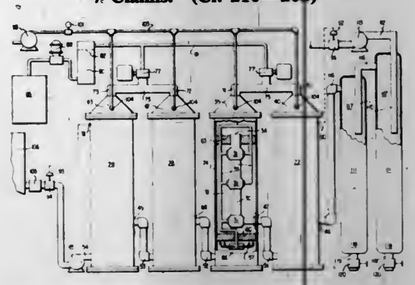
6. In a disposable filter unit, a hollow body for the reception of a liquid to be filtered and having open top and bottom ends, a sheet-like filter medium disposed adjacent the bottom end of the body, a funnel-like member underlying the filter medium and supporting said filter medium, means forming a permanent liquid-tight seal between the outer margin of the filter medium, the funnel-like member and the bottom end of the body, said funnel-like member having an opening below the filter medium, a receptacle for receiving a filtered liquid mounted on the body below the funnel-like member, and means permanently connecting said body to said receptacle, said receptacle being provided with a shoulder and said funnel-like member resting upon said shoulder.

3,295,687
FILTER-GRID SUPPORT
Joseph Schmerler, New York, N.Y., assignor to Major Pool Equipment Corp., South Kearny, N.J.
Filed July 23, 1964, Ser. No. 384,630
4 Claims. (Cl. 210—486)



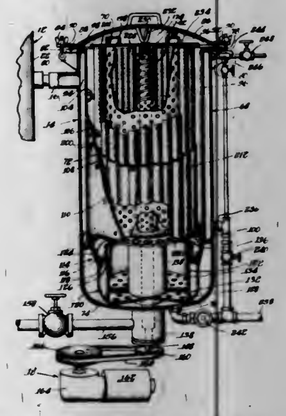
1. A filter-grid spacer comprising:
(a) a pair of filter-grids,
(b) opposing pins and sockets on the filter-grids frictionally engaged with each other,
(c) opposing enlargements on the filter-grids slidably engaged with each other,
(d) the enlargements being elongated and disposed transversely with respect to each other.

3,295,688
SEPARATION OF FOAMABLE IMPURITIES FROM WATER
John C. Lowe, Broadway, N.J., assignor to Broadway Research and Development Corp., a corporation of Pennsylvania
Filed Dec. 2, 1963, Ser. No. 327,302
7 Claims. (Cl. 210—202)



4. An apparatus for treating water containing a foamable impurity which comprises a liquid-solid separator comprising a vertically elongated vessel having an upper outlet and an inlet conduit opening into the vessel and descending from the top of the vessel to define a downflow portion through the inlet conduit, the cross-sectional area of said downflow portion being less than the cross-sectional area of said vessel, a conduit connecting said outlet to the internal mixing tube of an upright foaming vessel, said foaming vessel having a vacuum chamber for collecting foam, a quiescent settling chamber outside of said internal mixing tube, and a liquid outlet from the foaming vessel, said mixing tube being supplied with a plurality of orifices for inert gas to contact liquid within the mixing tube and means for passing inert gas through said orifices, the top of the vacuum chamber being provided with a duct for foam removal, a gas pump connected to said duct, and a second means for introducing foaming gas into said quiescent settling chamber.

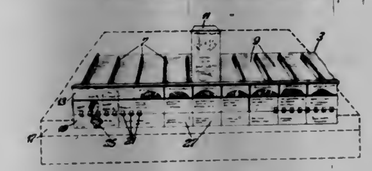
3,295,689
APPARATUS FOR PURIFYING LIQUIDS
Kostas Savas Arvanitakis, 10025 W. Grand Ave., Franklin Park, Ill. 60131
Filed Dec. 20, 1963, Ser. No. 332,139
4 Claims. (Cl. 210—259)



1. An apparatus of the character described comprising, in combination, a tank, a lint trap positioned in said tank for collecting and holding lint particles, a second tank connected to the first mentioned tank, said second tank

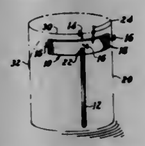
having a plurality of nozzles mounted therein, said nozzles being ararnged in a substantially helical path, a cartridge rotatably mounted in said second tank and having its outer periphery adjacent to said nozzles, said cartridge including means for filtering out dirt particles and for adsorbing impurities from a liquid passing through the cartridge, and a drive connected to said cartridge rotating the cartridge in the tank past the nozzles, whereby the rotation o fthe cartridge past the nozzles causes a spray of a liquid from said nozzles to disengage dirt particles adhering to the outer periphery of the cartridge.

3,295,690
COMBINED SHELF AND COLOR SELECTOR
John B. Ottman, Greenwich, Conn., assignor to Clairol Incorporated, New York, N.Y., a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 434,807
9 Claims. (Cl. 211—49)



1. A combined shelf and color selector for hair coloring comprising a base; a front panel extending upwardly from said base; a plurality of hair color designating means disposed on said front panel; a plurality of hingedly mounted card means disposed adjacent said front panel and adapted to be flipped upwardly without totally obscuring said hair color designating means, said card means being provided with means for locating a subject's natural hair color and for locating the formula necessary to change said subject's natural hair color to a desired color selected from said hair color designating means.

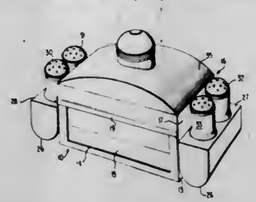
3,295,691
SUPPORT DEVICE FOR RECEPTACLES
Jerry D. Bowman, 1310 N. Dukane St., Indianapolis, Ind. 46224
Filed Apr. 1, 1966, Ser. No. 539,564
10 Claims. (Cl. 211—71)



1. A support device for a receptacle, comprising, in combination:
a ground-engaging support;
a first abutment means for engaging an associated receptacle to support the device by the receptacle; and
a second abutment means for engaging the associated receptacle to retain the receptacle by the said support device.

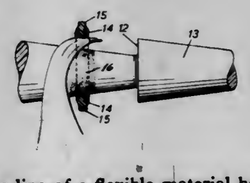
3,295,692
TABLE SERVICE SET
Morgan E. Ellcey and James E. Rhodes, Shoshoni, Wyo., assignors to Bruce and Thelma Menzies, Douglas, Wyo.
Filed Oct. 26, 1964, Ser. No. 406,366
9 Claims. (Cl. 211—74)

1. A condiment table service unit for mounting on a napkin dispensing receptacle, comprising: saddle means for releasable mounting on the dispensing receptacle; said saddle means including a bridging portion adapted to overlie one surface of the receptacle and including a pair of depending stirrup portions disposable in the assembled position adjacent opposed side surfaces of the receptacle; said bridging portion having opposed side walls; said stirrup portions having a generally horizontally extend-



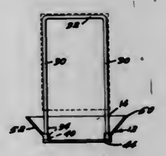
ing portion attached to the lower end of each of said side walls; said saddle means including at least one seat area in each of said bridging and horizontally extending portions; a plurality of condiment receptacles removably supported on the seat areas of said saddle.

3,295,693
CLOTHES LINES
Alan R. Lowe, 30 Station Road, Colwyn Bay, North Wales
Filed Mar. 30, 1966, Ser. No. 538,668
6 Claims. (Cl. 211—119.13)



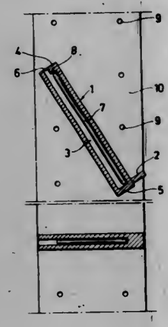
1. A clothes line of a flexible material having a cross-section which periodically increases and reduces in dimension, each region of increasing dimension carrying a ring captive thereon and adapted to become tightened thereon when moved axially.

3,295,694
DRYING RACK FOR PLASTIC BAGS
Albert J. Nejezchleb and Mary A. Nejezchleb, both of Fairfield, Nebr. 68938
Filed Dec. 17, 1964, Ser. No. 419,167
3 Claims. (Cl. 211—126)



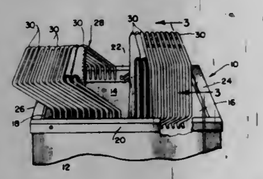
1. A drying rack for plastic bags comprising: a tray, a plurality of bag-supporting members mounted above said tray, said bag-supporting members each having an upper portion lying in substantially a single plane and being of a dimension in a direction transversely of the respective said plane sufficiently large so that the open end of the bag can be placed on said bag-supporting member in an inverted position so that when the open end of the bag is downward, the said open end will be held open by the respective bag-supporting member and the sides of the bag will be held in spaced relation for the admission of air between said sides for the drying of said bag.

3,295,695
ARRANGEMENT ON SHELVES, PREFERABLY FOR BOOK-CASES
Helge Carmstrom, 79 Fack, Virserum, Sweden
Filed Mar. 24, 1966, Ser. No. 537,130
5 Claims. (Cl. 211—148)



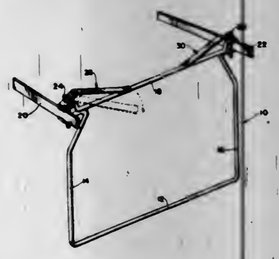
1. An arrangement on shelves, preferably for book-cases, whereat the shelf at its two transverse ends is provided with a groove parallel to the support surface of the shelf, said groove extending from the rear edge of the shelf along the transversal end and forward to a short distance from the forward edge of the shelf, whereat a double-shanked shelf support means is introduced into the groove for the support of the shelf, said support means with its shanks being secured in holes contained in the end walls of the book-case, said holes being arranged in pairs in the horizontal plane so that the shelves are adjustable by the removal of the shelf support means to another pair of holes, in which arrangement that part of the groove which is situated nearest the support surface of the shelf is provided with a shoulder for the shelf support means at the rear edge of the shelf.

3,295,696
GARMENT DISPLAY RACK HAVING HANGERS PIVOTALLY MOUNTED ON HORIZONTAL AXES
Maurice Cohen, 3580 NW. 52nd St., Miami, Fla. 33126
Filed Jan. 25, 1965, Ser. No. 427,603
8 Claims. (Cl. 211—171)



1. In a rack for displaying garments thereon, a frame including at least two spaced horizontal rails, in the inside opposing surfaces of which a plurality of holes are located in spaced apart relation, the holes in one rail being aligned with the holes in the other rail, a plurality of garment receiving hangers mounted on said rails for pivotal movement with respect thereto, each of said hangers including a horizontal garment supporting portion that extends substantially the distance between said rails and is elevated with respect thereto, side portions joined to the garment supporting portion of each hanger, a lower extension joined to each side portion and being offset with respect thereto, each of said lower extensions terminating in an outwardly extending projection that is received in one of said holes, wherein said hangers are pivotally mounted between said rails, said hangers being pivotally movable from a first position wherein the side portions are inclined with respect to the vertical to a second position wherein said side portions are disposed in vertical relation, wherein either of said adjacent hangers may be pivotally moved into said space to provide for unencumbered removal of the garment therefrom, and aligned stops fixed to the inside opposing surfaces of said rails and adjacent the ends thereof, the offset lower extension of the hangers that are located adjacent to said stops being adapted to engage said stops for locating the side portions of said hangers either in the inclined or vertical position as required.

3,295,697
LOCK LEVER SUSPENSION FILE SUPPORT
Edward D. Patterson, Sea Cliff, N.Y., assignor to Oxford Filing Supply Co. Inc., Garden City, N.Y., a corporation of New York
Filed Dec. 22, 1964, Ser. No. 420,275
4 Claims. (Cl. 211—184)



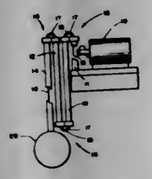
1. A file support comprising a pair of end frames each including a U-shaped component having a seat forming portion extending outwardly and parallel to the base of the U at the free end of each leg, a superposed component extending across the open end of said U-shaped component having seat forming terminal ends, a headed component secured in said portions and passing freely through said seat forming terminal ends, spring levers permanently pivotally mounted near their ends on said headed components respectively, and a pair of rods clamped between the associated pairs of seat forming portions and seat forming terminal ends when the free ends of said spring levers rest on the associated superposed components.

3,295,698
MOBILE BATCHING PLANT
Arnold R. Ross, Lakeland, Fla., and Charles Schroedl, Milwaukee, and Robert W. Strehlow, New Berlin, Wis., assignors to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 12, 1965, Ser. No. 432,205
7 Claims. (Cl. 214—2)



7. In a mobile cement batching plant, an open box-type vehicle frame including spaced parallel upper and lower longitudinal frame side members, running gear supporting said box frame in manner to constitute therewith a vehicle adapted for travel on highways, a cement bin shaped to fit longitudinally between said parallel frame members and substantially wholly within the box frame when disposed horizontally in travelling position in said frame, longitudinally extending abutment members along the upper portion of said cement bin and extending longitudinally of and engaging the upper edge of said box frame to support said bin along the upper edge of said frame with its upper surface substantially flush with said upper longitudinal frame members, pivot bearing members pivotally connecting one end of said cement bin to said upper longitudinal frame members in such manner that said cement bin may be pivoted thereon upwardly from its horizontal travelling position to a vertical operating position, means to lock said bin to said upper longitudinal frame members when in the vertical operating position, and a cement batcher mounted in said frame in position to receive and batch cement flowing by gravity from said bin when said bin is in vertical operating position.

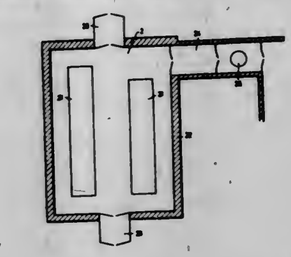
3,295,699
FOLDING BOOM ASSEMBLY
John P. Bauernschub, Jr., Hyattsville, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 28, 1964, Ser. No. 392,970
12 Claims. (Cl. 214—1)



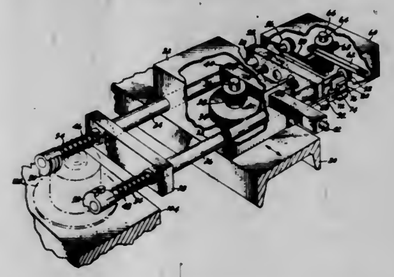
1. A folding boom including in combination, a base, a plurality of boom sections, a plurality of knuckle joints joining one boom section to said base and joining successive boom sections end-to-end, such that said boom sections are foldable in a substantially parallel relationship, each said knuckle joint comprising first and second knuckles rotatable about a common pivot, with triggered locking means mounted on said knuckles to provide a positive locking engagement therebetween upon closing of said knuckle joints, pulley means mounted coaxially of the common pivot of each said knuckle joint, a single cable having one end thereof secured to the remote one of said boom sections, said cable being looped around and coacting with said pulley means at each knuckle joint, and a reeling mechanism positioned on said base and coacting with the other end of said cable to apply a closing torque to said knuckle joints to thereby unfold said boom sections.

3,295,700
METHOD AND APPARATUS FOR HANDLING RADIOACTIVE MATERIALS
Albert Ziegler, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Mar. 6, 1964, Ser. No. 350,130
Claims priority, application Germany, Mar. 8, 1963, S 84,065
20 Claims. (Cl. 214—1)

1. Method of performing handling operations in a closed radioactive environment, which comprises shielding an operator individually in a radiation-proof enclosure freely movable within the closed radioactive environment, controlling the operations by the operator from within said enclosure, decontaminating the outer surface of the enclosure, and guiding the enclosure into a chamber shielded from the radioactive environment for permitting entry and exit of the operator.



3,295,701
ARTICLE TRANSFER MECHANISM
Michael P. Alexander, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 13, 1965, Ser. No. 425,149
8 Claims. (Cl. 214—1)



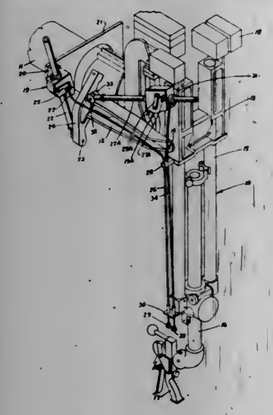
1. Mechanism for transferring a cylindrical article between successive work stations including, a pair of reciprocable tubes disposed on opposite sides of a cylindrical article, at least one of said tubes having a rack portion formed in a segmented area thereof, a pair of rods rotatably supported in said tubes, finger means attached to the end of each rod, gear means operably engaging said rack portion to lineally extend said tubes and said rods to position said finger means diametrically relative to said cylindrical article, means operable to rotate said rods to cause said finger means to clamp said cylindrical article therebetween, means operable to move said tubes, rods and said article transversely from a first work station to a second work station, and means operable to rotate said rods in the opposite direction so that said finger means release said cylindrical article.

3,295,702
MANIPULATOR MOTION LOCK
Lester W. Haaker, Red Wing, Minn., assignor to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota
Original application Aug. 12, 1963, Ser. No. 301,571. Divided and this application July 13, 1965, Ser. No. 483,386
7 Claims. (Cl. 214—1)

1. A remote control master-slave manipulator comprising a horizontal rotatable tubular support and a master arm and slave arm pivotally supported thereby,

(a) said tubular support being adapted to extend through a barrier wall and said arms adapted to be supported on opposite sides of that wall,

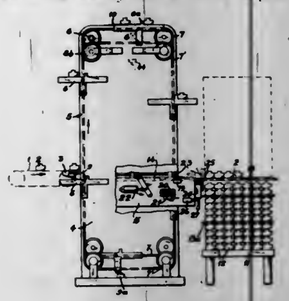
(b) said arms being attached to said tubular support to pivot therewith in one direction and relative thereto in another direction;
(c) motion lock means to lock said arms against pivotal movement in at least one of said directions;
(d) said motion lock means including a lock box and and an elongated locking arm extending through said lock box and being reciprocably movable with respect thereto;
(e) one of said lock box and said locking arm of each of said motion lock means being mounted for movement with said master arm and the other being mounted independent of movement with said master



arm, whereby when said master arm is pivoted said locking arm is reciprocated relative to said lock box;
(f) said lock box including a plate having an aperture through which said locking arm extends with a slide fit when the axis of said aperture is aligned with the longitudinal axis of said locking arm,
(g) rotatable cam means in said lock box normally bearing against one face of said plate to maintain the axes of said locking arm and aperture in alignment, and
(h) means to cant said plate relative to said locking arm when said cam is rotated to cause the apertured plate to grip the locking arm and lock it against further movement.

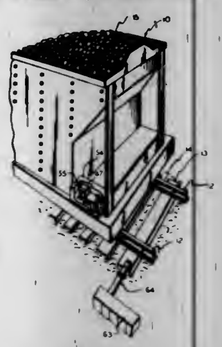
3,295,703
STACKING APPARATUS FOR ELONGATED ELEMENTS SUCH AS MOLDING STRIPS
Heinz Willy Ernst Schiepe, Berlin-Dahlem, Germany, assignor to Firma Maschinenfabrik Stahlkontor Weser Lenze KG, Gross Berkel b. Hameln, Germany
Filed Apr. 21, 1964, Ser. No. 361,489
Claims priority, application Germany, Apr. 27, 1963, Sch 33,191
14 Claims. (Cl. 214—6)

4. Apparatus for stacking elongated workpieces comprising, in combination, a stacking station; conveyor means for transporting workpieces to said stacking station; stack support means at said stacking station arranged to support a stack comprising superposed layers of workpieces; a carriage at said stacking station mounted for adjustment vertically of said stack; stack guide means mounted on said carriage for substantially horizontal reciprocation between an extended position, in which said guide means extends across said stack, and a retracted position, in which said guide means is clear of said stack; said stack guide means, in the extended position, supporting workpieces during formation of a stack layer; means operable, responsive to arrival of a workpiece at said stacking station, to move the workpiece from said conveyor means onto said stack guide means; counting means pulsed responsive to each arrival of a workpiece at said stacking station; triggering means operable by said counting means, responsive to arrival of a preset number of workpieces at said stacking station; cycling means activated by operation of said triggering means to initiate a cycle involving movement of said guide means to the retracted position, upward movement of said carriage to position said guide



means at a level spaced from the upper surface of the uppermost layer of said stack, and movement of said stack guide means to the extended position; workpiece retainer means mounted on said carriage and movable to an operative position responsive to operation of said triggering means; feeler means movably mounted on said carriage; and biasing means operable to move said feeler means into operative engagement with said stack responsive to operation of said triggering means.

3,295,704
AUTOMATIC UNLOADER FOR HOPPER CARS
Laurance H. Gillick, Wilmette, Ill., Jose Menendez, Yonkers, N.Y., and Kristupas Daugirdas, Wilmette, and William Chan, Brookfield, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 30, 1964, Ser. No. 341,319
1 Claim. (Cl. 214—58)



In a hopper car having a body with side and end walls and a bottom, at least one opening in the bottom to permit discharge of the contents from within the car, and a door over the opening adapted to be selectively opened and closed, said hopper car being mounted on tracks and movable therealong, means for opening and closing said door comprising, a pneumatic door operator mounted on said hopper car and drivingly connected to said door for opening and closing same, control means mounted along the side of the car in a tamper-proof box for operating said door operator, said control means including a pilot valve and a lever pivoted adjacent said valve for operating

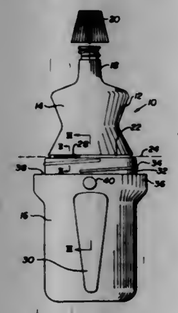
same having on one end thereof detent means for engaging said valve and at the other end a paddle-shaped portion of magnetic material, electromagnet means mounted along said tracks and selectively movable to a position in close alignment and spaced relation with the path of said paddle-shaped portion of said valve lever to move the lever and actuate the pilot valve thereby energizing said door operator to open said door, and spring means associated with said lever to return same to a normal position to effect closing of said door when said paddle-shaped portion of said lever is out of the influence of said electromagnet.

3,295,705
FOLDING AND SWINGING HYDRAULIC BOOM
Harold B. Peterson, Larchwood, Iowa 51241
Filed July 13, 1964, Ser. No. 382,273
3 Claims. (Cl. 214—132)



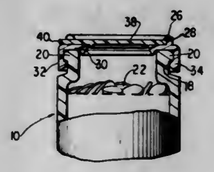
1. A folding and swinging boom comprising a boom structure including a boom member, a framework for supporting said boom member, said boom member being adapted to be pivotally moved upwardly, a further boom member pivoted to said boom member, means for extending said further boom member with respect to said boom member, means for rotatably securing said framework whereby said boom members can be rotated in a horizontal plane, said means for extending said further boom member with respect to said boom member including a lever pivoted to said boom member, means for hydraulically moving said lever, bars pivotally attached to said lever, links pivotally attached to said bars and to said boom member and said further boom member.

3,295,706
MULTIPURPOSE PLASTIC CONTAINER
John O. McMeekin, Valencia, Pa., assignor to Hipwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 10, 1964, Ser. No. 374,031
2 Claims. (Cl. 215—1)



1. A plastic container for granular solids or liquids which when empty is adapted for conversion to a flashlight, comprising: a hollow thin-walled body formed with a generally rectangular lower body portion which is convertible to the shell of a flashlight and an upper body portion adapted to receive a cap for sealing said container; a groove formed in said body which extends transversely around the periphery of said body to define the juncture of said upper body portion with said lower body portion, said groove comprising a guideway for guiding a cutting implement during severance of said upper and lower body portions; said lower body portion having an inset cylindrical shoulder terminating at said groove; threads formed on said inset cylindrical shoulder, said shoulder being adapted to threadedly receive the lens and lamp assembly of a flashlight; a handle integral with said lower body portion; and a button-like projection formed in said lower body portion between said handle and said shoulder, said projection being hollow whereby upon severance thereof from said lower body portion an aperture is formed for receiving the switch of the later-formed flashlight.

3,295,707
CONTAINER CLOSURE
Robert H. Knies, Fairfield, Conn., assignor to Richardson Merrell Inc., New York, N.Y., a corporation of Delaware
Filed July 23, 1965, Ser. No. 474,438
5 Claims. (Cl. 215—41)



1. In combination, a bottle having an inward circular shoulder on its outer surface and a mouth defining neck of smaller radial extent rising above said shoulder, an outwardly projecting annular bead about the top of said neck, a circular hollow closure surrounding said neck and mouth, said closure having an opening at the top and bottom ends thereof, said closure having an inwardly projecting bead at its lower end cooperating with the neck bead for securing to said bottle adjacent to the bottom shoulder, the diameter of said closure being no greater than the outer diameter of the bottle shoulder, said closure having a radially inwardly directed flange overlying the mouth of said bottle, a groove above said flange circumscribing a major inner circumference of said closure, a rigid disk snapped within said groove, the top of said disk being below the closure top and providing a partition thereacross, said disk being in contact with the flange and entirely within the area of the closure outer circumference therebelow a minor circumferential edge of said disk being exposed, but the underside of said exposed edge being in contact with the closure or flange therebelow, said cooperating closure and neck beads having sufficient resistance to displacement so as to normally retain the closure on said container neck in assembled relationship, thus necessitating prying of said disk within the closure circumference to obtain access into said container.

3,295,708
THREADED CLOSURE
John Moss Wathen, Jr., Shelbyville, Tenn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 26, 1965, Ser. No. 450,728
6 Claims. (Cl. 215—43)

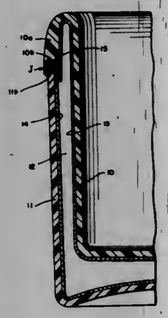
1. A closure for a container comprising an upstanding hollow neck, a cap rotatably engaged on said neck, coacting threads on said neck and cap securing them in rotational engagement and for enabling their disengagement

upon relative rotation thereof, and a projection formed integrally on one of said threads adjacent the upper end of



said neck providing interfering frictional engagement with the other said thread when said cap and said neck are fully engaged.

3,295,709
MANUFACTURED PRODUCT HAVING VACUUM RETAINING PLASTIC WALLS
Wallace D. Herrick, Wichita, Kans., and Howard W. Christie, Kansas City, Mo., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Oct. 19, 1965, Ser. No. 497,988
5 Claims. (Cl. 220—9)



5. In a manufactured product having an enclosed space with a vacuum therein higher than 10^{-3} mm. Hg, a boundary wall for said space composed of a synthetic plastic which is incapable per se of maintaining said vacuum, and an electroplated lead coating on the surface of said wall facing said space, said coating being in the form of a continuous layer having a thickness of about .5 to 2.0 mils, and said coating sealing said wall and making it capable of retaining said vacuum.

3,295,710
MULTIPLE CONTAINER PACKAGE
Paul A. Marchant, Kansas City, Mo., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed June 25, 1963, Ser. No. 290,394
1 Claim. (Cl. 220—23.8)

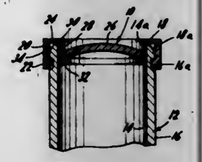


A one-piece multiple-container package having a plurality of individual containers joined by flexible connectors and positioned in a circular configuration, each container having walls defining a chamber to hold a commodity, an opening into said chamber to permit dispensing said commodity from the chamber, a flexible connector integrally molded at its ends to join the sides of adjacent containers to permit swinging movement of one container relative to the other, each of said containers having an integral side wall portion which includes a vertically disposed abutment area engageable with a corresponding abutment area on an adjacent container when said containers are positioned in said circular configuration, and said abutment areas on adjacent containers being disposed at an angle A relative to each other, wherein

$$A = 180° - 180° \frac{n-2}{n}$$

when n is the number of identical containers in said package and is greater in number than two containers.

3,295,711
COMBINED CLOSURE AND SEALING MEMBER
Gilbert L. Abrams, Valley Cottage, N.Y., assignor to Guild Molders, Inc., Elmsford, N.Y., a corporation of New York
Filed Mar. 12, 1964, Ser. No. 351,481
7 Claims. (Cl. 220—24.5)

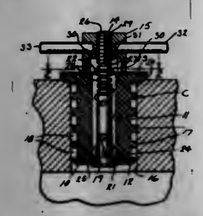


1. A combined closure and sealing member for a receptacle including a top neck wall bounding a neck opening and inner and outer neck walls extending therefrom comprising a substantially cylindrical depending neck-engaging wall dimensioned to fit about said outer neck wall, means on said neck-engaging wall and adapted to engage said outer neck wall for releasably securing said member to said neck of said receptacle, an inwardly directed suspension flange formed integrally with said neck-engaging wall and adapted to overlie said top neck wall, a centrally disposed closure top arranged below said suspension flange and within said neck, and an inwardly directed sealing element of substantially J-shaped cross section integral with said suspension flange and said closure top and extending within said neck in confronting relation to said inner neck wall, said sealing element being biased radially outwardly by said closure top, said sealing element and said neck-engaging wall defining therebetween an annular space, at least a portion of said annular space being of lesser radial extent than the corresponding spacing between said inner and outer neck walls such that the engagement of said closure and sealing member with said receptacle will establish a sealing contact between said sealing element and said inner neck wall.

3,295,712
ADJUSTABLE TAMPERPROOF CLOSURE
Richard L. Peterson, Greenville, Miss., assignor to Moeller Mfg. Co., Inc., Greenville, Miss., a corporation of Mississippi
Filed Oct. 15, 1965, Ser. No. 496,437
4 Claims. (Cl. 220—24.5)

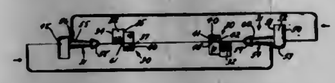
1. A safety and locking means for expansible stoppers of the type having an elongated compressible body, a stem slidably received through the axial center of said body and means for actuating said stem to compress said body longitudinally, said safety and locking means including

spaced ribs on said stem intermediate its ends defining spaced grooves certain of said grooves adapted to be aligned with the upper surface of said body upon longitu-



dinal movement of said stem, and a U-shaped flat locking plate of a size and configuration to be received in a respective aligned groove and under a respective rib.

3,295,713
HINGED BOX CONSTRUCTION
Philip S. Optner, Roslyn Heights, N.Y., assignor to Lerner Packaging Corporation, Garwood, N.J.
Filed Feb. 15, 1965, Ser. No. 432,643
3 Claims. (Cl. 220—31)



1. In a synthetic resinous molded hinged box construction, including first and second mating elements, the improvement comprising: socket-forming hinge means on one of said mating elements including a first member having a generally semi-circular recessed surface forming a portion of a circular socket, and a second member adjacent the first member and in juxtaposed relation thereto having a second generally semi-circular surface forming the remaining part of said circular socket; said first and second members being capable of limited flexibility to allow enlargement of said socket; the other of said mating elements having a mounting flange extending from an outer surface thereof, and an elongated shaft extending laterally from said mounting flange and generally parallel to said last-mentioned outer surface, said shaft having a free end thereof selectively projectable into said circular sockets to be freely rotatable therein.

3,295,714
SNAP-ON HINGE
Alexander N. Di Addario, Clarence, N.Y., assignor to Buffalo Molded Plastics, Inc., Buffalo, N.Y.
Filed May 28, 1965, Ser. No. 459,648
3 Claims. (Cl. 220—31)



2. A molded plastic receptacle comprising, in combination,

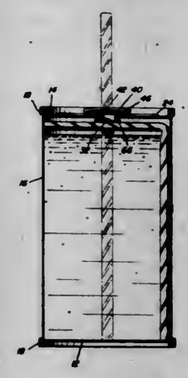
a container including a rear wall having an upper edge provided with a substantially centrally disposed upstanding tab, an upwardly facing stirrup on the outer face of said rear wall below said tab, a pair of ears outstanding from said tab on either side of said stirrup and being complementary therewith to form an interrupted but substantially circular bearing surface,

a pair of saddles on the outer face of said rear wall disposed in spaced relation and on opposite sides of said stirrup,

a pair of ears outstanding from said rear wall on either side of each saddle below a respective saddle and being complementary therewith to form an interrupted but substantially circular bearing surface,

a cover having a rear edge provided with three notches in registry respectively with said stirrup and said saddles, a pintle pin bridging each of said notches and received in respective ones of said substantially circular bearing surfaces.

3,295,715
METAL CONTAINER WITH CENTRAL PLASTIC STRAW
William A. Pugh, 5200 S. Harper Ave., Chicago, Ill. 60615
Filed Nov. 17, 1964, Ser. No. 411,783
3 Claims. (Cl. 220—54)



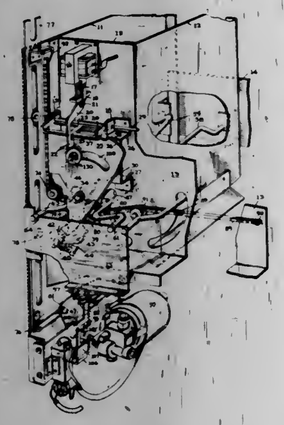
1. A container comprising a lid, a centrally disposed tear-out portion on the lid for forming a centrally disposed opening in the lid when the tear-out portion is removed, a handle connected with the tear-out portion for removing the tear-out portion, said tear-out portion being connected to the remainder of the lid by a score line, said handle extending radially toward the periphery of the lid for enabling it to be engaged by the fingers, said tear-out portion of the lid including supporting means depending therefrom, and a flexible, resilient plastic straw disposed in the container with the upper end portion thereof being angulated and disposed in underlying relation to the lid and being engaged by the supporting means on the tear-out portion for retaining the straw in place and pulling a portion of the straw up through the opening in the lid when the tear-out portion is removed, said lid being imperforate with the tear-out portion including a depending cylindrical drawn down portion having an upwardly extending convex portion in the center of the bottom thereof, said handle having a plurality of depending tongues at the distal end thereof with the tongues generally defining a cylindrical configuration for positioning in the depressed area of the tear-out portion with the depressed area being riveted outwardly thereby riveting the tongues thereto for securing the handle to the tear-out portion without penetration of the lid, said tear-out portion being connected to the remainder of the lid by aligned score lines communicating with the upper surface and lower surface of the lid, said handle including a distal end portion having an edge engaging the tear-out portion immediately radially inwardly of the score line for exerting a downward break through pressure thereon, said handle also including a generally C-shaped rib projecting upwardly therefrom for a portion of the periphery thereof, said lid

having an annular rib reinforcing the lid outwardly of the score line with the C-shaped rib receiving the annular rib, said riveted portion of the depressed area terminating immediately inwardly of the score line in the undersurface of the lid thereby exerting upward break through pressure immediately inwardly of the score lines in diametrically opposed relation to the downward break through pressure exerted by the distal end of the handle, said supporting means including a ring encircling and being retained by the riveted depressed area, at last one arm projecting radially from the ring and being curved to form a spring clip underlying the tear-out portion of the lid and frictionally clamping the upper portion of the flexible plastic straw.

3,295,716
REVERSIBLE MOTOR DRIVEN REGULATOR FOR DISPENSING MECHANISM FOR ARTICLES IN STAGGERED STACKS

Vernon D. Camp and Harry R. Payne, Chattanooga, Tenn., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware

Filed Apr. 8, 1965, Ser. No. 446,667
5 Claims. (Cl. 221—9)



1. A mechanism for dispensing a single bottle at a time from a stack of bottles in a bin, supports for said bottles adjacent the lower end of the bin mounted for downward rotary movement for releasing the bottle to be dispensed, a regulator for control of releasing of the bottle to be dispensed disposed beneath said supports in stand-by position for engagement by said supports, reversible electric motor means for driving said regulator during movement of one of said supports maintaining engagement between said one of said supports and said regulator during normal run condition, reversible electric switch means for reversing said motor means, cam means rotated by said motor means for reversing said switch means from normal position upon engagement of said regulator with one of said supports jammed in a downward position, centrifugal switch means opened by rotation of said motor means and closed when said motor means stalls upon engagement of said regulator with said jammed one of said supports for completing the reversing of said motor means whereby said regulator is moved from engagement with said jammed one of said supports, said cam means thereafter freeing said reversible switch means for return to normal position and stop means engaged thereafter by said cam means for stalling said motor means for closing said centrifugal switch means for returning said motor means to normal run condition.

3,295,717
DISPENSER CONTAINER

Robert J. Gantner, 2 Henneberry, Golf, Ill. 60029

Filed Dec. 9, 1965, Ser. No. 512,711
5 Claims. (Cl. 221—46)

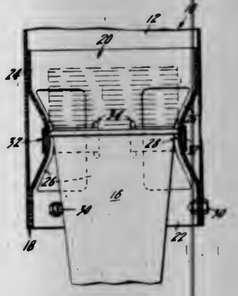


1. A container for a box of tissues comprising, in combination, a substantially rectangular box-like structure open at one end and including spaced top and bottom walls and a wall closing its other end, said top and bottom walls converging toward each other in the direction of the closed end, at least one rib on the inside surface of at least one of said converging walls, a cover for the open end, a mounting bracket secured to the top wall, and a tissue dispensing opening in the bottom wall.

3,295,718
ADJUSTABLE CUP DISPENSER

Andrew Stuard Graham, Jr., Laburnum Lane, Wyncote, Pa. 19095

Filed Aug. 25, 1965, Ser. No. 482,482
6 Claims. (Cl. 221—63)



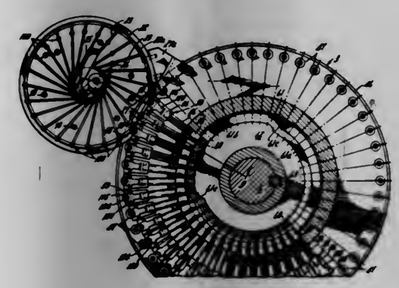
1. A cup dispenser, comprising:
- a casing adapted to contain a stack of nested cups, said casing having a cup delivery opening at one end thereof;
- an adjustable throat member adjacent said delivery opening for releasably retaining the cups in said casing;
- said throat member having a support portion and resilient cup-engaging portions extending from the support portion and inwardly toward the path of movement of the cups so as to define a restricted opening, said support portion being secured to said casing; and
- an adjustable band encircling said cup-engaging portions, whereby the size of the restricted opening defined by said cup-engaging portions may be adjusted to accommodate cups of various sizes.

3,295,719
NAIL-FEEDING MECHANISM

Gordon A. Cooley, Chicago, and Philip Kaye, Wilmette, Ill., assignors to The Deniston Company, Chicago, Ill., a corporation of Illinois

Original application Dec. 6, 1963, Ser. No. 328,549, now Patent No. 3,255,474, dated June 14, 1966. Divided and this application Dec. 23, 1965, Ser. No. 515,975
4 Claims. (Cl. 221—277)

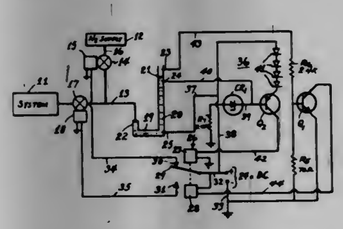
1. A nail-feeding carousel having a generally frusto-conical upper surface, a central bore in said carousel, an outer circumferential surface bounding said frusto-conical surface, a frame wall surrounding said circumferential surface in spaced relationship therewith, a plurality of nail passages communicating with said bore and extending in paths offset from the radial therefrom, each of said passages penetrating said circumferential surface, and means for delivering nails sequentially to said passages for delivery therethrough in response to gravity and rotation of said carousel, said delivery means including a roller engaging the inner circumferential surface of said bore, and a nail track adapted to deliver nails sequentially to a point adjacent the point of contact between said roller and said bore.



3,295,720
CONTROL CIRCUIT FOR AN ADSORPTION OR DESORPTION SYSTEM

Thomas J. Slone, Silver Spring, Md., assignor to American Instrument Co., Inc., Silver Spring, Md.

Filed Oct. 20, 1965, Ser. No. 498,943
8 Claims. (Cl. 222—3)

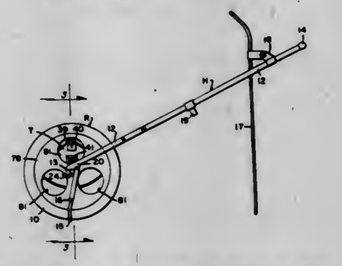


4. In a fluid distribution assembly, a system which adsorbs or desorbs gas, a main conduit connected to the system, a branch conduit connected to said main conduit for supplying gas to or releasing gas from said main conduit, said main conduit being provided with an electrically operated normally closed system valve located between said system and the branch conduit, said branch conduit being provided with an electrically operated normally closed branch valve, a two-coil relay, means to energize the system valve responsive to the energization of one of the relay coils, means to energize the branch valve responsive to the energization of the other relay coil, means to energize only one of the relay coils when the gas pressure in the main conduit drops below a predetermined lower limit value, whereby to open one of said valves while the other valve remains closed, and means to energize only the other relay coil when the gas pressure in the main conduit reaches a predetermined upper limit value, whereby to open said other valve and to close said one of the valves, said relay including means to maintain each valve energized until the relay coil associated with the other valve becomes energized.

3,295,721
WEEDICIDE SOLUTION APPLICATOR

Rowland G. Hibbard, 320 Broadwater Ave., and Earl Cathcart, 30 Broadwater Ave., both of Billings, Mont. 59102

Filed May 14, 1964, Ser. No. 367,530
15 Claims. (Cl. 222—51)

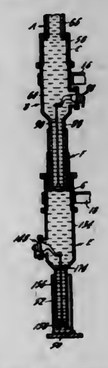


1. An applicator for a weedicide solution and the like, comprising a hollow roller having an absorbent periphery for applying said solution to a lawn and the like;
- a supply tank within said roller for containing said solution to be supplied to the inside of said roller;
- a distributing pipe extending longitudinally beneath said tank and having a plurality of discharge openings therein;
- at least two supply means for supplying solution from said tank to the inside of said distributing pipe and providing means for controlling the flow of solution to said pipe at spaced points along said pipe; and
- a handle operatively connected to said roller for moving said roller across said lawn and the like.

3,295,722
LIQUID DISPENSING APPARATUS

James Henry Gordon, Morris Plains, N.J., and Elmer Leroy Ruth, Green Bay, Wis., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

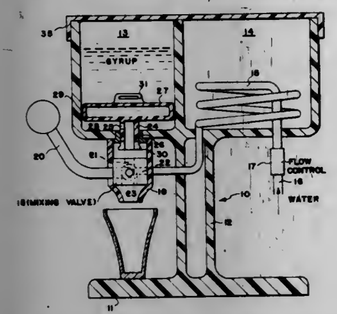
Filed Feb. 2, 1965, Ser. No. 429,741
6 Claims. (Cl. 222—52)



1. A liquid metering and dispensing apparatus comprising a liquid reservoir having a tubular outlet end, dispensing means having a tubular inlet end disposed in telescoping relation with said reservoir outlet end, resilient sealing means connecting said outlet and inlet ends to permit telescoping movement between said reservoir and said dispensing means while maintaining a fluid-tight connection therebetween, first valve means between said reservoir and said dispensing means and operatively associated with said reservoir to control communication of said reservoir with said dispensing means, and second valve means in said dispensing means responsive to both

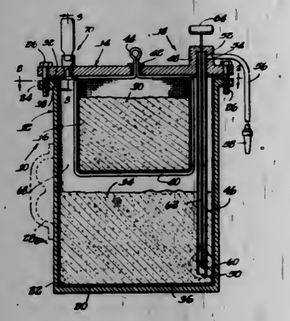
said telescoping movement and to pressure changes within said dispensing means to control the dispensing of a predetermined volume of said liquid.

3,295,723
GRAVITY FLOW CONTROL FOR MIXED BEVERAGE DISPENSER
Frank Welty, 4962 Lockwood Blvd., Youngstown, Ohio 44511
Filed June 24, 1965, Ser. No. 466,758
8 Claims. (Cl. 222—54)



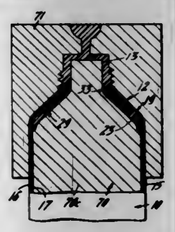
8. Apparatus for regulating the rate of gravity outflow of liquid from a container for the liquid comprising a port in the bottom wall of the container, a tubular member vertically slideable in said port and having an aperture in the upper portion of its side wall through which liquid may flow from said container downwardly through said member and thence outwardly through the open bottom end of said member, piston means loosely received within the side walls of said container and connected to said tubular member, means to yieldably bias said piston means and member upwardly whereby said aperture is opened above said port, the arrangement being such that upon the release of pressure in said tubular member and below said piston means the pressure drop vertically downward across said piston means will move said piston means and tubular member downwardly to throttle off said aperture.

3,295,724
PORTABLE, RECHARGEABLE DISPENSING UNIT FOR REACTABLE RESINS
William R. Brooks, 365 Alexander, Elmhurst, Ill. 60126, and Irving C. Heinzel, 1111 Webster Lane, Des Plaines, Ill. 60016
Filed Dec. 2, 1964, Ser. No. 415,346
5 Claims. (Cl. 222—80)



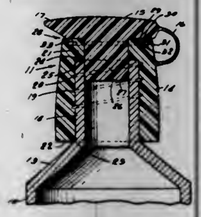
2. In apparatus for use in dispensing a reacting mixture, the combination comprising: vessel means sized both to receive a quantity of a first and a second reactant and to define a gas space; membrane means inside said vessel means shaped to segregate said first and second reactants; membrane rupturing means including active means inside said vessel means and engageable with said membrane means and control means connected to said active means and extending exteriorly of said vessel means for operating said active means into rupturing engagement with said membrane to release said reactants into contact with each other; and fitting means on said vessel means including a connection portion adapted to receive an auxiliary vessel in communication with the primary vessel for introducing supplemental, compressed gas therein, said fitting means including a puncturing member for piercing a wall of said auxiliary vessel.

3,295,725
COLLAPSIBLE DISPENSING CONTAINER WITH AN IMPERMEABLE BARRIER BOTH IN ITS LAMINATED WALL AND IN ITS HEADPIECE
Roger Brandt, Wayland, Mass., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Original application Dec. 7, 1962, Ser. No. 242,991, now Patent No. 3,260,777, dated July 12, 1966. Divided and this application Mar. 14, 1966, Ser. No. 550,074
8 Claims. (Cl. 222—107)



1. A collapsible dispensing container, comprising a deformable body portion having a plurality of laminations therein, one of said laminations being a thermoplastic material and another of said laminations providing a barrier against fluid permeation therethrough, and a thermoplastic headpiece including integral skirt and breast portions, said skirt portion being fused to said one lamination along a band area at one end thereof and said breast portion having barrier means embedded therein.

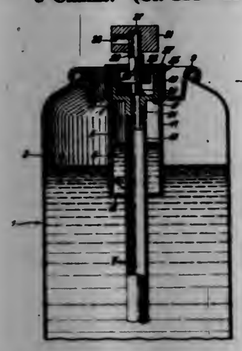
3,295,726
CONTAINER NECK CAP AND SEAL ARRANGEMENT
Arnold E. Hanson, 2940 Lorain Road, San Marino, Calif. 91108
Filed Apr. 9, 1965, Ser. No. 446,876
5 Claims. (Cl. 222—109)



1. A container neck cap and seal arrangement comprising:
a resilient cap in firm fitting engagement with said neck, said cap defining an aperture therethrough,
said aperture being of substantially the same diameter as and in register with the interior of said neck,

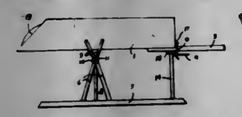
a resilient lid hinged to said cap and having a plug portion protruding within and sealed against the interior of said container neck to form a first container seal, and said lid and cap forming a snap-in second container seal.

3,295,727
AEROSOL CONTAINER
Irving Kates, Clark, and Ara Nersesian, Newark, N.J., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
Filed Mar. 17, 1964, Ser. No. 352,537
8 Claims. (Cl. 222—136)



1. An aerosol dispenser capable of simultaneously dispensing at least two materials maintained substantially separate from each other until just before the time for dispensing which comprises an outer compartment containing a first material, a dip tube extending into a second material and then into said first material, an inner compartment containing said second material and arranged concentrically around said dip tube, a propellant vapor in said dispenser continuously exerting pressure simultaneously on the contents of each of said compartments whereby on dispensing from said aerosol dispenser, each of said materials is simultaneously dispensed.

3,295,728
GRAVEL HOPPER MANUAL DUMP
Joseph W. Hochmuth, Musselshell County, Mont. (Roundup, Mont. 59072)
Filed June 10, 1964, Ser. No. 374,087
1 Claim. (Cl. 222—166)



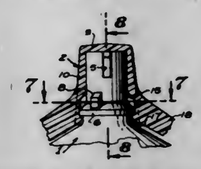
A manual dump gravel hopper with a support means therefor comprising: said hopper formed with an elongate rounded bottom, upwardly and outwardly sloping sides, a first closed end and a second open end said open end provided with inwardly turned side wall portions forming a spouted restricted dispensing passage at said second and edge of said rounded bottom; said support means comprising two angle iron support runners rigidly connected together in a space parallel position in a plane by braces; said braces extending to a region substantially above said plane; pivot means at said region pivotably connecting said braces to approximately the longitudinal center of said hopper for rotation of said hopper above the axis of said pivot, said axis extending in a direction perpendicular to the direction of the runners and at a right angle to the longitudinal axis of said rounded bottom; said braces including a hopper support and stop means engaging the bottom of the hopper at the first closed end; a releasable safety catch latch latching the bottom of the hopper and said stop means together; handle means extending from said hopper closed end adjacent said releasable latch permitting release of the latch and pivoting of the hopper with both hands grasping the handle.

3,295,729
SPRING-LOADED CLOSURE UNIT FOR COLLAPSIBLE CONTAINERS SUCH AS TUBES AND BOTTLES
Alois Egli, Sonnenbuehl, Ruti, Switzerland
Filed July 23, 1965, Ser. No. 474,250
3 Claims. (Cl. 222—497)



1. In a spring-loaded closure unit for callapsible containers such as tubes and bottles, having a valve body and a cap with a discharge opening adapted to receive a part of said valve body for automatically sealing upon the cessation of the extruding pressure, the improvement comprising in combination: a spring ring provided with a resilient leg extending radially inwardly and a vertically directed end-leg at the inner end of the resilient leg and positioned in the center of said spring ring and carrying said valve body, and a recess within the cap which together with the end-face of the container neck constitutes an annular groove adapted to clamp said spring ring upon tightening said cap.

3,295,730
ROTARY FLOW CONTROL CLOSURE FOR A CONTAINER
James G. Moran, 112 N. Rose St., Burbank, Calif. 91504
Filed May 27, 1965, Ser. No. 459,312
2 Claims. (Cl. 222—553)



1. The combination with a container having a neck member, and a closure having a sleeve member surrounding said neck member, of a means for limiting relative movement of said members, comprising:
(a) an annular external rib on said neck member forming a latching shoulder defining a plane essentially perpendicular to the axis of said neck member and an axially sloping cam surface;
(b) an annular internal rib on said sleeve member forming a latching shoulder defining a plane essentially perpendicular to the axis of said sleeve member and an axially sloping cam surface;
(c) at least one of said members being yieldable whereby said sleeve member may be forced axially over said neck member for mutual engagement of said cam surfaces until said shoulders are moved axially apart from each other thereby to lock said sleeve member against removal from said neck member;
(d) a stop lug formed on one of said axially sloping cam surfaces and extending axially therefrom,

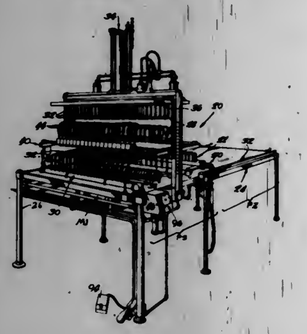
said stop lug having essentially radially extending stop surfaces on opposite sides thereof;

(e) and a clearance channel for said stop lug, formed in the other of said members, said clearance channel being interrupted by two stop abutments, said abutments having circumferentially spaced confronting stop shoulders defining essentially radially extending surfaces engageable with the corresponding surfaces of said stop lug to confine said members to relative movement corresponding to the movement of said stop lug between said stop shoulders;

(f) said stop abutments having circumferentially elongated cam surfaces at their circumferentially remote sides; whereby, on assembly of said sleeve member and said neck member, should said stop lug be located other than in the space between the stop shoulders of said abutments, said members may be forceably rotated to place said stop lug between said stop shoulders for retention therebetween, and;

(g) a rudimentary boss disposed adjacent at least one of said stop shoulders for yieldably retaining said stop lug against movement toward the other stop shoulder.

3,295,731
PULLING HEAD FOR DRAPERY PRESSING MACHINE
Joseph E. Klint, Jr., Joliet, Ill., assignor of one-half to Alex Dreier, Chicago, Ill.
Filed Oct. 16, 1964, Ser. No. 404,443
17 Claims. (Cl. 223—32)



1. In a fabric pleating and pressing machine, a multiple clamping and pulling head for effecting clamping engagement of adjacent longitudinally extending transversely spaced folds of a pleated fabric article at one end thereof, said clamping head comprising an elongated base support, a series of cooperating clamping jaw members slidable axially upon said base support and including a fixed reaction end jaw member adjacent one end of the support, a movable end jaw member adjacent the other end of the support, and a plurality of intermediate jaw members disposed between the two end jaw members, the jaws of alternate pairs of adjacent jaw members being relatively movable toward and away from each other between proximate closed fold-clamping and remote open fold-releasing positions, a movable pressure-applying element engageable with said movable end jaw member, power-actuated means for effecting movement of said pressure-applying element to move said movable end jaw member toward the fixed reaction jaw member, said movable end jaw member, when thus moved, being effective to cause relative movement between adjacent jaw members of said alternate pairs tending to move them toward the proximate closed positions thereof, carriage means for said base support mounted for movement along a predetermined path relative to said pleating and pressing machine, and means for driving said carriage means along said path.

3,295,732
QUICK-ACTING CLAMP FOR VEHICLES
Harlan J. Haven, 1 N. Main St., Bellingham, Mass. 02019
Filed Oct. 21, 1965, Ser. No. 499,139
2 Claims. (Cl. 224—42.1)



1. A carrier for an elongated article for application to a vehicle roof in which the vehicle has a door, means to secure the carrier to the roof adjacent the door,

the carrier including an elongated frame part located on the roof just over the door, said frame part extending along the roof, a clamp member on the frame part,

an elongated clamp opening member generally parallel to the frame part, a clamp member thereon, the clamp members being interconnected to clamp the elongated article therebetween parallel to the frame part,

means normally holding the clamp members adjacent each other in clamping condition, the elongated member separating the clamping members upon motion thereof relative to the frame part, and being accessible from the interior of the vehicle through the door,

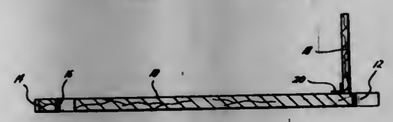
the clamp members supporting the elongated clamp opening member, the article clamped being a bow, and an arrow carrier on the elongated clamp opening member.

3,295,733
BOOK CARRIERS
Francis J. Heal, Toronto, Ontario, Canada, assignor, by direct and mesne assignments, of thirty-three and one-third percent to Michael Horodelski, Toronto, Ontario, Canada, and thirty-three and one-third percent to Reginald C. Longman, Don Mills, Ontario, Canada
Filed July 12, 1965, Ser. No. 471,322
4 Claims. (Cl. 224—45)



1. A book carrier comprising a plate designed to serve as a backing for a set of books and having an opening near the upper end, a shelf extended forwardly from the bottom of the plate for support of the books, means for retaining the books in the carrier comprising an elastic cord loop with frontal companion sections spanning the lower edge of the opening and the outer edge of the shelf and terminal sections anchored on the reverse side of the plate.

3,295,734
CARRYING BOARD
Robert M. Bish, 4420 Rusk, Houston, Tex. 77023, and Jewell W. Davis, Houston, Tex.; said Davis assignor to said Bish
Filed June 22, 1964, Ser. No. 376,723
1 Claim. (Cl. 224—48)



A carrying board comprising:

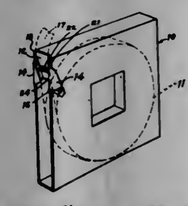
a rigid board having

a recess in one end in which the arm of a person carrying the board may be engaged with the board to hold the board against lateral movement relative to the arm,

finger grasping means on the other end of the board comprising a plurality of finger grooves in the other end of the board and a thumb hole through the board adjacent said finger grooves and

an upstanding wall traversing said board adjacent said one end.

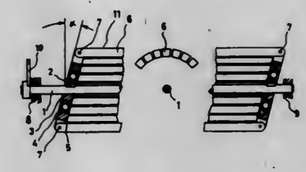
3,295,735
TAPE DISPENSERS
Fay S. Lincoln, 114 E. 32nd St., New York, N.Y. 10016
Filed Feb. 19, 1965, Ser. No. 434,020
4 Claims. (Cl. 225—52)



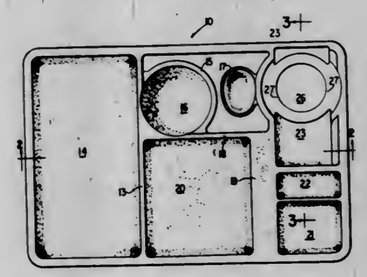
1. In a box, a tape dispenser comprising a blank bent upon itself into several sections, a path-way made by the latter, a cutter forming part of said path-way, the latter sloping downwardly and terminating in a slightly rounded end portion, whereby to facilitate a pull on said tape, teeth at the top of said cutter, the latter being made with a slit at the opposite end thereof, and a rough edge formed by said slit and adapted to grip and prevent the remaining tape from sliding back into the box after cutting; flap sections on each side of the path-way being bent over the wall of said box and secured to the latter, whereby to strengthen the construction thereof.

3,295,736
APPARATUS FOR THE GUIDING AND/OR LATERAL DISPLACEMENT OF MOVING WEBS OF MATERIALS FOR EXAMPLE WEBS OF TEXTILES
Albert Leimer, Reimlerstrasse 15, Augsburg, Germany, and Siegfried Brunner, Stadtberger Strasse 1, Leitershofen, Germany
Filed Feb. 3, 1965, Ser. No. 430,110
Claims priority, application Germany, Feb. 6, 1964, E 26,353
18 Claims. (Cl. 226—190)

1. Apparatus for guiding and laterally adjusting a moving web, comprising, in combination, annular web guiding means having a peripheral web guiding surface of cylindrical configuration having a first axis; bearing means having a second axis intersecting said first axis at an angle, and supporting said annular web guiding means so that said peripheral web guiding surface reciprocates in the direction of said first axis during rotation of said annular web guiding means; and control means for turning said bearing means about said first axis between adjusted angular positions in which different portions of said peripheral web guiding surface are adapted to guide a web so that the guided web is displaced different distances in the direction of said first axis during rotation of said annular web guiding means.



3,295,737
TRAY
Phyllis D. Page and William C. Page, both of 19850 W. Dixie Highway, North Miami Beach, Fla. 33160
Filed Sept. 15, 1965, Ser. No. 487,494
11 Claims. (Cl. 229—2.5)

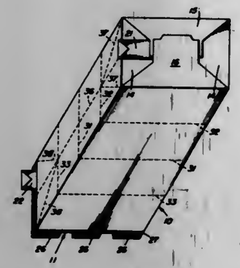


1. A compartmented food tray comprising a bottom portion integral with upstanding side walls forming compartments within said tray for containing food; other side walls of said tray forming a semicylindrical compartment adapted to receive a beverage container in horizontal position such that it lies below the top of the tray; and walls within the confines of said semicylindrical compartment, defining a circular recess for receiving said beverage container in upright position.

3,295,738
SEMI-BULK SHIPPING BAG
Theodoor P. E. Keuchenius, Ridgewood, and John C. Floyd, Scarsdale, N.J., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Mar. 23, 1965, Ser. No. 442,118
3 Claims. (Cl. 229—6)

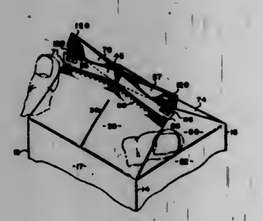
1. A semi-bulk gusseted shipping container comprising a bag made of flexible sheet material having a flat top and a flat bottom, a pallet-type platform adhered to the flat bottom exteriorly thereof, and a relatively non-flex-

ible platform attached to the flat top exteriorly thereof, said bag having a valve and a transverse V-fold whereby



the bag is collapsible, when empty, into a flat package in proximity with the platforms.

3,295,739
CONTAINER
Isaac L. Wilcox, Fulton, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 482,993
3 Claims. (Cl. 229—17)



1. A gable top container formed of paperboard or the like, comprising a tubular body rectangular in cross section and having a bottom closure affixed thereto, a pair of opposed front and rear roof closure panels inclined toward each other and overlying said body, a pair of opposed end closure panels infolded between said roof panels from the opposite gable ends formed by the latter, each of said end closure panels including an end closure portion and a pair of triangular fold-back portions integral therewith and with the respective adjacent roof closure panel, said fold-back panel portions being folded against the under sides of said roof closure panels, a rib panel surmounting each of said roof closure panels and fold-back panel portions, said rib panels being disposed vertically and being joined together with a permanent adhesive bond to define a central laminar top rib, said front roof closure panel being formed with a weakened line of severance lying solely within said front roof closure panel and extending transversely at the upper end thereof below and adjacent to the respective surmounting rib panel, said weakened line of severance terminating at its ends in spaced relation to the side edges of said front roof closure panel and being formed by a series of zig-zag incisions, the outer surface of said front roof closure panel having a coating of thermoplastic material permanently bonded thereto, a tape positioned on said outer surface and overlying said weakened line of severance and extending beyond the ends thereof, at least the inner surface of said tape confronting said front roof closure panel being formed of thermoplastic material heat sealed and permanently bonded to said thermoplastic coating on said front roof closure panel, said fold-back portions lying contiguous to said rear roof closure panel being formed in their outer surfaces adjacent their outer ends with outwardly extending triangular projections with the apexes pointing downwardly, said triangular projections being formed by incisions extending only part way through said fold-back panel portions which lie contiguous to said rear roof closure panel, said triangular projections serving to engage the upper edge of the rib panel surmounting said front roof closure panel when such rib panel is moved downwardly from its sealed position.

3,295,740
TRIANGULAR CARTON
Harrison R. Hall, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 10, 1965, Ser. No. 438,685
2 Claims. (Cl. 229—22)



1. A triangular carton having improved closure means which comprises, a back wall panel and a pair of side wall panels connected together along score lines; a bottom closure flap foldably secured to the lower edge of each wall panel, one of said bottom closure flaps being an interior flap having a recessed portion formed therein, another of said bottom closure flaps being an intermediate flap lying adjacent said interior flap, and the other bottom closure flap being an exterior locking flap having a male tongue portion cooperatively positioned within the recessed portion of said interior flap; a top closure flap foldably secured to the upper edge of each side wall panel, one of said top closure flaps having a slit line formed along a portion of its foldable connection forming an open portion therealong, a locking tab formed partly out of said one top closure flap and its associated side wall panel, the other of said top closure flaps having a tongue flap foldably projecting from one edge thereof with a locking slit formed along a portion of such fold, and said tongue flap projecting through the open portion formed by said slit line with said locking tab projecting within said locking slit to provide a triangular carton having improved easily lockable closure means.

3,295,741
SHIPPING FOLDER
Harold S. Meyers, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed June 1, 1965, Ser. No. 460,351
2 Claims. (Cl. 229—40)

1. A shipping folder for use in shipping and storage including:

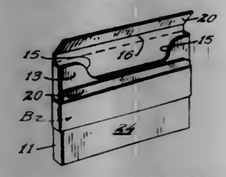
a back wall panel having opposed parallel side edges and opposed parallel top and bottom edges,

side wall panels having opposed parallel first and second side edges and opposed parallel top and bottom edges hingedly connected along the first side edge thereof to the side edges of said back wall panel, each of said side wall panels folded upwardly from said back wall panel,

front wall flaps hingedly connected to each second side edge of said side wall panels and folded inwardly into edge abutting relation and into spaced parallel relation with said back wall panel, said front wall flaps when in edge abutting relation including a generally rectangularly shaped cutaway portion bounded on the sides by side cut lines communicating with the upper edges of said front wall flaps and spaced a substantial distance from the side edges of said front wall flaps parallel thereto, and on the bottom by a bottom cut line parallel to the top edge of said front wall flaps and intersecting the side cut lines,

top and bottom wall panels having opposed parallel first and second side edges and opposed parallel end edges hingedly connected along the first side edges thereof to the top and bottom edges of said back wall panel and folded upwardly;

a top closure flap having opposed parallel first and second side edges and opposed parallel end edges hingedly connected along the first side edge thereof



to the second side edge of said top wall panel and folded inwardly into face contact with said front wall flaps including means for severing said top closure flap along a line parallel to a side edge thereof, said last named line being a substantial distance from the second side edge and substantially superimposed on the bottom cut line of said front wall flaps when overlying said front wall flaps, and

a bottom closure flap having opposed parallel first and second side edges and opposed parallel end edges hingedly connected along the first side edge thereof to the second side edge of said bottom wall panel and folded inwardly into face contact with said front wall flaps and into edge abutting relation with said top closure flap,

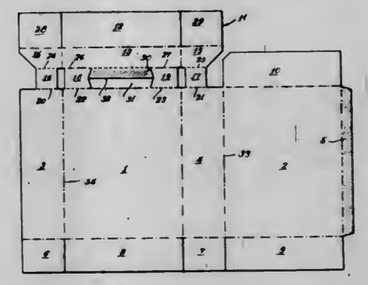
means for securing said top and bottom closure flaps in face contact with said front wall flaps,

the portion of said top closure flap between said severing means and the second side edge of said top wall panel adapted to be in unsecured relation to said front wall flaps when said top closure flap is severed, and

the portion of said top closure flap between said severing means and the second side edge of said top closure flap adapted to remain in secured relation to said front wall flaps when said top closure flap is severed.

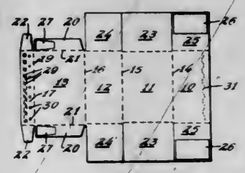
3,295,742
SNAP RECLOSEABLE HOODED CARTON WITH LOCK
Merrill J. Coe, Kalamazoo, Mich., assignor to Brown Company, a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 487,223
8 Claims. (Cl. 229—45)

1. A carton formed of an integral blank comprising a container assembly including a front wall panel, a rear wall panel and side wall panels, and a cover assembly hingedly connected to said rear wall panel including a cover top panel having a cover front wall panel and cover end wall panels connected thereto, means detachably connecting said cover front wall panel and said cover end wall panels to said container assembly comprising a pair of struts one adhesively affixed to the outer surface of each of said side wall panels and detachably connected to the lower edge of each of said cover end wall panels, and a pair of struts one adhesively affixed at each side of said front wall panel to the outer surface thereof and detachably connected to the lower edge of said cover front wall



panel, and a pair of lock flaps positioned between said cover front wall panel and said front wall panel, one of said lock flaps being adhesively affixed to a surface of one member of said cover front wall panel and said front wall panel, and the other of said lock flaps being hingedly connected to the edge of and folded over in engagement with a surface of the other member of said cover front wall panel and said front wall panel, said lock flaps having free edges in substantially abutting mutual engagement but being free of attachment to each other, whereby said lock flaps cooperate to retain said cover in closed position.

3,295,743
ICE CREAM CARTON
John R. Redpath, Western Springs, and Lawrence S. Wysocki, Chicago, Ill., assignors to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Mar. 11, 1965, Ser. No. 444,893
3 Claims. (Cl. 229—51)



1. A generally rectangular carton for ice cream and the like including:

(a) a front wall, bottom wall, rear wall and top wall hingedly connected in series,

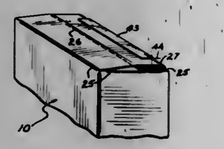
(b) end flaps hingedly connected to the bottom wall and extending upwardly therefrom substantially the full height of the front and rear walls,

(c) end flaps secured to the ends of the front and rear walls and secured in overlapping relation outwardly of said bottom wall end flaps,

(d) a substantially flat, generally rectangular, cover front flap overlying the upper portion of the front wall and having points of attachment substantially throughout its length adhesively connected to the forward edge of the top wall,

(e) cover side flaps secured to the ends of said top wall and overlying said overlapped end flaps,
(f) corner flaps having adhesive areas securing the ends of said cover flap and the forward ends of said cover side flaps,
(g) said corner flaps hinged to the ends of said cover front flap and underlying said cover side flaps,
(h) said cover front flap having inwardly embossed areas beneath the said points of attachment extending toward said front wall and spacing the lower edge of said cover front wall flap from said front wall,
(i) said embossed areas corresponding generally in length to the length of said cover front flap.

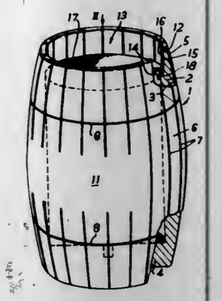
3,295,744
TOP CLOSURE FOR BAG
Charles H. Turpin, Louisville, Ky., and Loren J. Klitzke, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 445,849
15 Claims. (Cl. 229—62)



1. A flexible sheet bag containing a finely divided substance having excess sidewall material extending above the plane defined by the top level of said substance, said bag comprising:
(a) a gussetted and flattened cover flap formed from excess upper sidewall material,
(b) said cover flap having an endmost panel folded against itself on an upper fold line parallel to the plane of the bag top,
(c) dust tight sealing means disposed at the marginal edge of said endmost panel and over the adjacent surface of the cover flap,
(d) said coverflap further having an innermost panel toward which said folded endmost panel is again folded on an outer fold line parallel to the plane of the bag top,
(e) and an outer tape adhesively affixed over said outer fold line and against the exterior surface of the bag sidewall material, whereby said dust tight sealing means and said upper fold line will be immobilized in its folded condition.

3,295,745
CONTAINER
Willibald Winter, Bubenreuth, near Erlangen, Germany
Filed Aug. 9, 1965, Ser. No. 478,160
Claims priority, application Germany, Aug. 14, 1964, W 33,240
2 Claims. (Cl. 229—67)

1. A cask-like container, comprising a body structure having a hollow interior and an exterior side surface curved like a timber cask, and a prefabricated covering, the outer face of which is formed with longitudinal impressions simulating cask staves and with transverse impressions simulating cask hoops,
said prefabricated covering being made of resilient material, and retained by its resiliency on the exterior surface of the body, the areas of the prefabricated covering between the longitudinal impressions and particularly adjacent the center of the container, being stretched transversely to simulate staves having a greater width at the center than at both ends,
said prefabricated covering including a free upper portion, in the form of a hollow tube covering the exterior side surface and bottom of said body, the said



free upper portion extending beyond the peripheral upper edge defining the open upper end of said body, and being overturned into contact with the interior wall of said body.

3,295,746
ENVELOPE
Robert W. Duncan, 8600 Penn Ave. S., Minneapolis, Minn. 55431
Filed Sept. 17, 1965, Ser. No. 488,060
6 Claims. (Cl. 229—85)

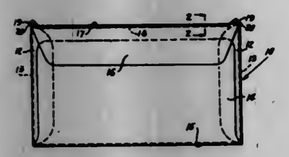


1. A shipping envelope for holding a merchandise indentification document comprising: a rectangular shaped top panel integral with and positioned over a bottom panel, said bottom panel having a first end flap projected from one end thereof and folded over said top panel and secured thereto closing said one end of the envelope, and a second flap integral with the opposite end of the bottom panel and projected outwardly therefrom, said second flap adapted to be folded into said envelope to close the open end of the envelope, a tab member formed by a semicircular cut in said top panel adjacent the open end of the envelope, said tab member directed toward the closed end of the envelope, said second flap when folded into the envelope having a length sufficient to extend beyond the cut, means extended longitudinally of the top panel from the cut to the first flap usable to provide an elongated longitudinal opening in the top panel permitting the removal of the merchandise identification document from the envelope whereby the envelope can be opened by pressing on the tab member and gripping a portion of said means and then pulling said means to longitudinally sever the top panel to provide the longitudinal opening therein.

3,295,747
ENVELOPE CONSTRUCTION
Eugene W. Bergkamp, 8032 Buttonwood Way, Citrus Heights, Calif. 95610
Filed Feb. 17, 1965, Ser. No. 433,270
1 Claim. (Cl. 229—86)

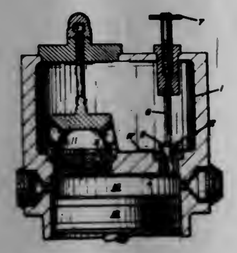
An envelope construction comprising an envelope including a front portion, rear and end flaps integral with

the front portion and foldable along bottom and end fold lines, secured together to define an open topped pocket, and a top flap integral with the front portion and foldable along a top fold line over the secured rear and end flaps to form a closure for the pocket, adhesive sealing means on the inner side of said top flap, a string of a length less than the length of said top fold line adhesively secured beneath said top fold line along the juncture of the top of said front portion and said top flap along substantially



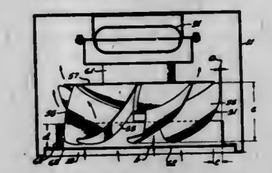
the entire length thereof, and access means to the ends of said string adjacent the ends of said top fold line to permit grasping of said string to tear said envelope open along said top fold line, said access means comprising means defining open-ended slits along said top fold line extending inwardly towards each other from the end of the fold line to a distance to overlie the ends of said string, each end of said string extending outwardly of said envelope through one of said slits at a point spaced inwardly from the end of the envelope.

3,295,748
ARRANGEMENT FOR THE CONTINUOUS ADJUSTMENT OF THE OUTPUT OF A PISTON COMPRESSOR
Anton Leitgeb, Basel-Campagne, Switzerland, assignor to Maschinenfabrik Burckhardt AG., Basel, Switzerland, a corporation of Switzerland
Filed July 16, 1965, Ser. No. 472,455
Claims priority, application Switzerland, July 17, 1964, 9,406/64
6 Claims. (Cl. 230—21)



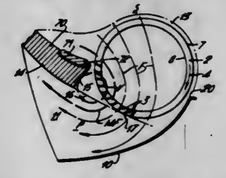
1. In combination with a fluid compressor including at least one cylinder, a piston reciprocable therein, and at least one auxiliary pressure-adjusting chamber, the combination of two passages connecting said cylinder with the associated auxiliary chamber, an adjustable throttling member in one of said passages through which a fraction of the fluid compressed by the piston in the compressor cylinder is diverted into the auxiliary chamber, means adjusting the area of the passageway provided by the throttling member and a suction valve in the other passage allowing the passage of fluid from the auxiliary chamber into the compressor cylinder during the suction stroke of the piston in the compressor cylinder.

3,295,749
FAN ENCLOSURE
Karl L. Bedell, Pasadena, and Charles R. Fields, Arcadia, Calif., assignors to Williams Furnace Co., Buena Park, Calif., a corporation of Delaware
Filed June 23, 1964, Ser. No. 377,225
4 Claims. (Cl. 230—119)



1. In combination with a multibladed fan having an axial input to the blades and a peripheral output from the blades, a low noise enclosure comprising:
(a) a wall heater enclosure having a circular inlet port formed in its front surface;
(b) means rotatably mounting said fan interior of said enclosure facing said inlet port with the frontmost edges of the fan blades lying in a plane parallel to said front surface and a preselected linear distance therebehind;
(c) the tips of said blades radially spaced apart from the edges of the circular inlet port a preselected distance approximately equal to said preselected linear distance; and,
(d) a circular cowl disposed around the outside of said fan and affixed to the interior of said enclosure at a radially spaced apart distance from the tips of said fan blades approximately equal to one-half of either of said preselected distances;
(e) said cowl extending rearwardly alongside the tips of said fan blades for approximately 40–50% of the depth of said fan to optimize the inlet and outlet areas for said fan.

3,295,750
CROSS FLOW MACHINE
Nikolaus Laing, Stuttgart, Germany, assignor, by mesne assignments, to Laing Vortex, Inc., New York, N.Y.
Original application June 5, 1962, Ser. No. 221,621, now Patent No. 3,232,522. Divided and this application Jan. 28, 1966, Ser. No. 523,728
7 Claims. (Cl. 230—125)



1. A fluid flow machine comprising a cylindrical bladed rotor defining an interior space clear of obstructions and mounted for rotation in a predetermined direction about its axis, the blades being curved and having their outer edges leading their inner edges in said predetermined direction, means substantially closing the ends of the rotor, and guide means defining with the rotor, entry and discharge regions and comprising end walls in substantial alignment with the ends of the rotor; first and second guide walls extending between the end walls and defining an outlet duct for fluid leaving the rotor, said first guide wall presenting to the rotor an end surface which subtends at the rotor axis an angle of less than 30° and as seen in cross-section forming a profile which, if continued beyond said surface would be substantially tangential to the rotor at a point intermediate in the arc thereof within

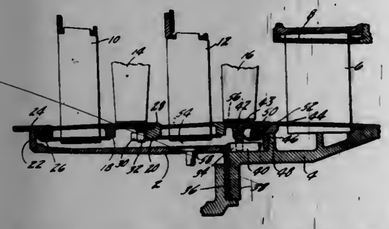
said discharge region, the second guide wall as seen in cross section forming a general spiral line starting from a point of nearest approach to the rotor opposite said first guide wall where said entry and discharge regions merge, the end surface of said first guide wall and rotor on rotation thereof in said predetermined direction cooperating to set up and stabilize a vortex of Rankine type which has a core region that is eccentric of the rotor axis and interpenetrates the path of the rotating blades of the rotor adjacent said surface of the first guide wall and induces a flow of fluid from the entry region through the path of the rotating blades to the interior of the rotor and thence again through the path of the rotating blades to the discharge region and through the outlet duct with the major part of the fluid throughput being turned through an angle approaching 180° in passing from the entry region to said outlet duct.

3,295,751

COMPRESSOR STATOR SHROUD ARRANGEMENT

Elton J. Sceggel, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Apr. 21, 1965, Ser. No. 449,752
3 Claims. (Cl. 230—133)



1. A stator construction for a multistage axial flow compressor including a plurality of rows of stator vanes, a plurality of shroud rings at the outer ends of the vanes, one for each row of vanes and in which the vanes are positioned to define stator ring assemblies, for supporting the rows of vanes in spaced axial relation, said rings being arranged in end-to-end relation and in engagement one with another, and a two-part casing surrounding the rings, one part being substantially cylindrical with an end shoulder at one end for engagement with the outer end of one end ring, and the other casing part having a flange adjacent to the outer end of the other end shroud ring, said other end shroud ring having a cooperating radial surface adjacent to and in axial alignment with said flange, an axially-acting spring between said flange and said radial surface to urge said rings into endwise contact and means for holding said casing parts together axially, said spring being located substantially in axial alignment with the shroud rings.

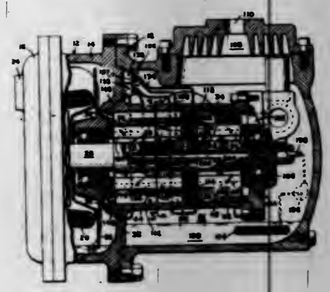
3,295,752

ROTARY VANE COMPRESSOR

Friedrich O. Bellmer, East Orange, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Apr. 4, 1966, Ser. No. 540,036
16 Claims. (Cl. 230—138)

1. A sliding vane rotary compressor comprising:
(a) a casing having an elongated cavity formed therein,
(b) said casing including end walls on opposite ends thereof,
(c) a rotor positioned within the cavity and rotatably mounted in the end walls, said rotor having axially extending vanes slidably carried in the outer surface thereof to engage the walls of said cavity,
(d) said end walls, said rotor, and walls of said cavity forming at least one compression chamber in said cavity, said sliding vane extending radially outwardly from the axis of said rotor to form compression pockets between adjacent rotor vanes,
(e) an inlet passage in said casing having an opening in said compression chamber at the portion of maximum volume of said compression chamber, an outlet passage through said casing having an opening to said compression chamber at the portion of minimum volume of said compression chamber, said compression chamber decreasing in volume from the inlet passage opening to the outlet passage opening,
(f) at least one bypass passageway having its inlet opening between said inlet and outlet passage open-



ings in said compression chamber, said bypass passageway having its outlet opening connected to said inlet passage,
(g) said bypass passageway inlet opening being spaced from said compression chamber inlet opening a distance less than the distance between the tips of adjacent vanes forming a compression pocket,
(h) and valve means in said bypass passageway, said valve means being responsive to the pressure within an individual compression pocket adjacent to said bypass passageway inlet opening and, additionally, responsive to a separate control signal, said valve means being operative to be opened when the pressure in the individual compression pocket exceeds a predetermined value.

3,295,753

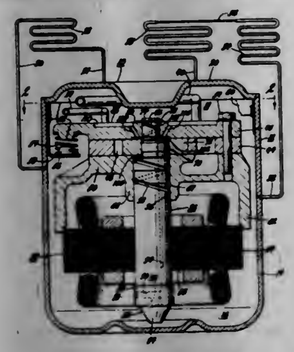
REFRIGERATING APPARATUS

Mervin R. Butts, West Milton, and Marion K. Tucker, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 423,215
12 Claims. (Cl. 230—139)

1. In a refrigeration compressor, the combination of, a hermetically sealed shell including a lower liquid sump region and an upper gas space, a compressor including an outer housing wholly located within said gas space in spaced relationship to said shell whereby said gas space serves to muffle noises from said compressor, motor means for driving said compressor including a stator and a rotor located above said liquid sump region at a point spaced inwardly of said shell and between said sump region and said compressor, a shaft having a portion thereof rotatably supported by said compressor housing and a portion thereof secured to said rotor for driving said compressor upon energization of said motor means, said shaft having an extension thereon located on the upper side of said compressor housing, a thrust element secured to said shaft extension, said thrust element having a portion thereon engaging said compressor housing for

suspending said shaft therefrom, means for resiliently supporting said compressor housing on said shell, and lubricant supply means for directing liquid from said sump region upwardly through said shaft against said thrust ele-



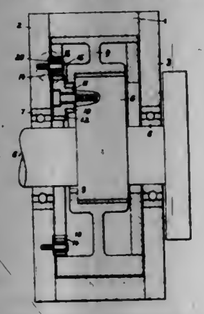
ment whereby said thrust element upon rotation of said shaft serves to sling lubricant radially outwardly against the inside surface of said shell thereby to flow downwardly across substantially the full extent of the inside surface of said shell in cooling relationship therewith.

3,295,754

ROTARY PISTON MACHINE, PARTICULARLY ROTARY PISTON INTERNAL COMBUSTION ENGINE

Hubert Abermeth, Cologne, and Peter Combuchen, Bergisch-Gladbach, Germany, assignors to Klöckner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany

Filed Jan. 17, 1966, Ser. No. 520,965
Claims priority, application Germany, Apr. 2, 1962, K 46,349
4 Claims. (Cl. 230—145)



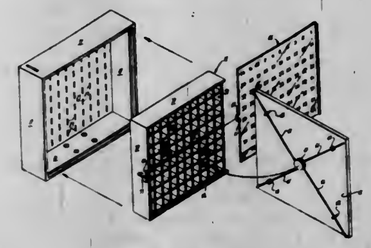
1. A rotary piston machine, especially rotary piston internal combustion engine, which includes: an outer body with lateral confining wall means, a rotary piston eccentrically and rotatably arranged within said outer body, a gear ring having one of its end faces arranged adjacent one of said wall means, friction disc means interposed between said one wall means and said one end face of said gear ring, said gear ring being provided with circumferentially spaced bores having their axes substantially perpendicular to said one end face of said gear ring, elastic sleeve means respectively arranged in said bores and in firm connection with said gear ring, bolt means respectively extending through said sleeve means into and being connected to said one wall means so as to place said sleeve means under preload in axial direction thereof to firmly press said gear ring against said friction disc means, and gear means drivingly interconnecting said piston and said gear ring.

3,295,755

COIN COLLECTION BOX

David Gold, Burlingame, Calif., assignor to Parking Management, Inc., San Francisco, Calif., a corporation of California

Filed May 24, 1965, Ser. No. 458,026
2 Claims. (Cl. 232—1)



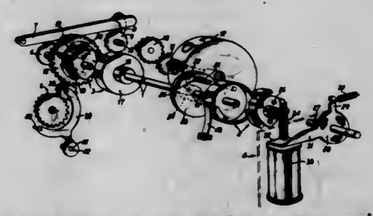
1. A collection box for receiving coins comprising an outer box having front, top, bottom and side walls, the front wall being divided into an array of vertically and horizontally extending alphamerically identified spaces by a grid network running vertically and horizontally on the front face of the wall, said front wall having a plurality of slots therethrough, one slot for each alphamerically identified space, a second inner box adapted to be removably disposed within the interior of said outer box, said second box having front, top, bottom and side walls and a plurality of interior walls therein ranged to provide coin receiving cells in registry with the spaces on the front wall of the outer box, the front wall of said inner box having a plurality of slots therethrough, one slot provided for each cell and so arranged that when the inner box is disposed within the outer box, the cells in the front walls of each respective box are in alignment so that a coin may be passed therethrough and into the cell within said inner box, the back wall of said inner box being adapted for movement between open and closed positions for permitting access to the interior of said inner box, and including means for locking said back wall to said inner box, and a back wall or cover adapted to close the back of the outer box and including means for lockably securing the cover to the outer box.

3,295,756

TAXIMETER

Heinz Kelch and Eduard Schuh, Villingen, Germany, assignors to Kienzle Apparate G.m.b.H., Villingen, Germany

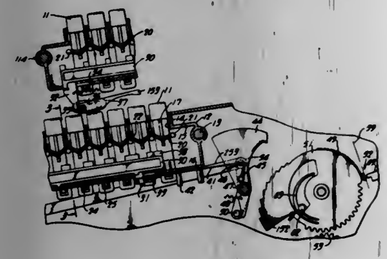
Filed Dec. 2, 1964, Ser. No. 415,394
Claims priority, application Germany, Dec. 3, 1963, K 51,519
15 Claims. (Cl. 235—30)



6. In a taximeter, in combination, a rotary main shaft for representing a fare by the number of revolutions thereof; one-way distance clutch means adapted to be driven by distance drive means and operatively connected with said main shaft for turning the same according to the distance travelled; electromagnetic time drive means having an armature reciprocating at a constant frequency;

one-way time clutch means operatively connected with said electromagnetic time drive means and actuated by the same; and lost motion means connecting said time clutch means with said main shaft so that the same is driven from said electromagnetic time drive means at a predetermined constant average number of revolutions per minute when said distance clutch means drives said main shaft at a speed below a predetermined minimum speed, while said lost motion means prevents driving of said main shaft by said time clutch means while said distance clutch means rotates said main shaft at a speed above said predetermined minimum speed.

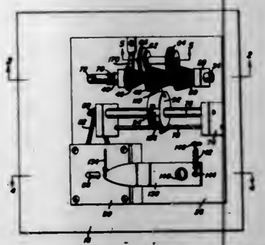
3,295,757
SELECTION MECHANISM FOR CALCULATING MACHINE
Richard E. Busch, La Puente, and John G. Clary, Pasadena, Calif., assignors to Addmaster Corporation, San Gabriel, Calif., a corporation of California
Filed Feb. 14, 1966, Ser. No. 527,168
9 Claims. (Cl. 235—60)



1. In a calculating machine having value selecting means and a differential control member movable from an initial position toward a second position,
said value selective means being effective to differentially limit the extent of movement of said control member toward said second position,
a first yieldable means for moving said control member toward said second position thereof, and
a differentially movable member,
the combination comprising a second yieldable means for moving said differentially movable member from an initial position to a second position thereof,
a flexible cable connecting said control member to said differentially movable member,
means for controlling said differentially movable member to move toward said second position thereof at a predetermined rate of speed, and
means for controlling said control member to move toward said second position thereof ahead of said differentially movable member whereby said cable is maintained slack until said control member is arrested by said value selecting means.

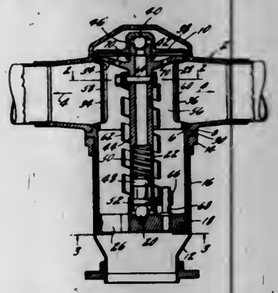
3,295,758
GRADE AVERAGING DEVICE
Cyrus G. Sewell, P.O. Box 738, Sweetwater, Tex. 79556
Filed Sept. 7, 1965, Ser. No. 485,247
5 Claims. (Cl. 235—61)

3. A mechanical averaging device including a movable value input member, a movable average indicating member, a variable ratio drive connection drivingly connecting said input member to said average indicating member for progressive proportional advancing movement of the latter in response to successive advancing movement of said input member, said drive connection including means operative to selectively vary the drive ratio thereof according to the number of input values to be averaged at one time whereby a direct reading of the total movement of



said indicating member will be indicative of the average movement of the input member.

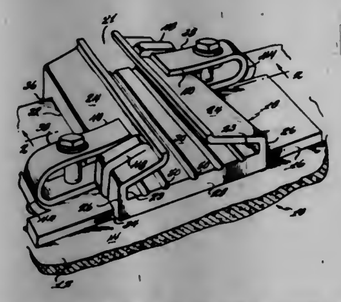
3,295,759
PRESSURE BALANCED THERMOSTATIC VALVE
Philip M. Wing, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 7, 1965, Ser. No. 446,205
3 Claims. (Cl. 236—93)



1. A thermostatic valve including a main base forming an outlet duct and having a central lateral opening therein with a mounting flange surrounding said opening, a secondary base forming an inlet duct and attached at one end to said mounting flange, a first sleeve having opposed ports therein positioned within the main base with the ports aligned with the outlet duct, said sleeve having an integral end cap and a first bearing supported by said end cap, said sleeve having a flange coextensive with the mounting flange and attached thereto, a valve rotor positioned within the bases and comprising a stem coaxial with said inlet duct and a rotor sleeve supported by said stem within, concentric to and spaced from said first sleeve, said rotor sleeve having ports therein for alignment with the ports in the first sleeve, one end of the stem engaging said first bearing, a cap positioned within said secondary base and attached to said mounting flange, said cap having a bearing therein for engagement by the other end of the rotor stem, and a temperature sensitive element attached respectively to the cap and the stem for turning the stem in response to temperature changes in the fluid in said inlet.

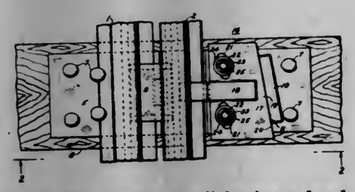
3,295,760
RUBBER RAIL SEAT FOR TRACK STRUCTURE AND THE LIKE
Nelson K. Moses, Ashtabula, Ohio, assignor to Railroad Rubber Products, Inc., Ashtabula, Ohio, a corporation of Florida
Filed Feb. 25, 1964, Ser. No. 347,203
6 Claims. (Cl. 238—283)

1. In combination: a traction rail having a base flange; a supporting structure for said traction rail; a preformed resilient pad between said traction rail and said supporting structure, said resilient pad being of unitary construction and having a rail base flange-receiving cavity in its upper surface for receiving the base flange of said rail, the flange-receiving cavity being defined by a pair of lips on said pad overlying the marginal portions of the base flange of said rail, a vertical wall extending upwardly along each of the marginal edges of the marginal portions of the base flange, and a unitary base portion underlying the base flange, the flange-receiving cavity being defined by a pair of lips on said pad which extend upwardly to said longitudinally extending groove, a vertical wall extending downwardly from the lower portion of each of said lips, and a unitary base portion, said base portion having upper and lower planar surfaces and said vertical walls being connected at their lower end to the base portion and at their upper ends



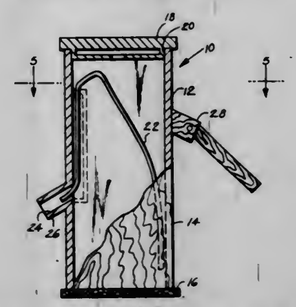
to the respective lips, said vertical walls being connected at their lower ends to the base portion and at their upper ends to the respective lips; an anchoring clip for each lip, each clip having a portion overlying and bearing against the upper surface of the lip; means to anchor each clip to said supporting structure; and means integral with said pad and extending outwardly therefrom on either side thereof for engaging said clips and preventing longitudinal movement of said pad in either direction, said means for engaging said clips including at least one rib extending up one vertical wall and continuing on the upper surface of one lip, and at least one first second rib extending up the other vertical wall and continuing along the upper surface of the other lip, said first rib engaging one clip and preventing longitudinal movement of said pad in one direction and said second rib engaging the other clip and preventing longitudinal movement in the opposite direction.

3,295,761
ADJUSTABLE RAIL BRACE
Stephen T. Marcin, Bethlehem, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 417,910
6 Claims. (Cl. 238—292)



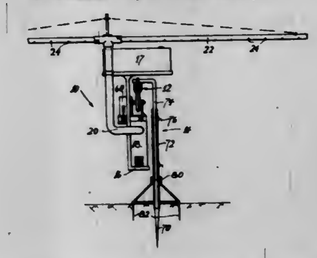
1. Apparatus for bracing a rail having a head, a web and a foot, said apparatus comprising:
(a) a tie plate adapted to support the foot of the rail,
(b) a brace element adapted to be removably secured to said tie plate and placed in bracing relationship to said rail free of the web of said rail, said bracing element comprising:
a vertical face adapted to engage the rail only at the side of the head of the rail,
a face adjacent the lower portion of said brace element adapted to extend over the foot of said rail closely adjacent to but free thereof.

3,295,762
PLANT PUMP
Richard L. Gray, 623 N. Walnut St., Orrville, Ohio 44667
Filed Dec. 23, 1964, Ser. No. 420,640
1 Claim. (Cl. 239—51)



A plant pump for automatic watering of plants comprising, a hollow rectangular casing of vitreous china providing reservoir means for water and plant food, a base closing the bottom of said hollow rectangular casing, a selectively removable cover providing access for the intermittent insertion of water and plant food and limiting the escape of water via evaporation, a spout intermediate the length of said hollow rectangular casing, an angular handle on said hollow rectangular casing providing gripping means for carrying said pump, a continuous hollow arcuate straw within said hollow rectangular casing extending from a position proximate said base to said spout, and a fibrous material in said straw providing capillary action to discharge a metered flow of water from said spout.

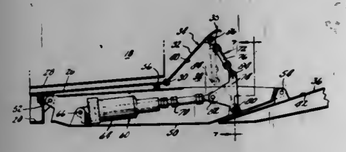
3,295,763
SELF-CONTAINED TRACK GUIDED AGRICULTURAL SPRAYER
Shlomo Brauner, 46 Yahalom St., Ramat-Gan, Israel
Filed Feb. 17, 1964, Ser. No. 345,526
Claims priority, application Israel, Nov. 15, 1963, 20,248
5 Claims. (Cl. 239—173)



1. Spraying apparatus comprising a sprayer unit, said sprayer unit including a container for containing the material to be sprayed, a track, means for supporting the track above the ground in the area to be sprayed,

a traction wheel carried by said sprayer unit and engageable with one side of the track for propelling the sprayer unit including its spraying material container, a driven wheel carried by said sprayer unit and engageable with the other side of said track, and a prime mover carried by said sprayer unit for driving said traction wheel.

3,295,764
VARIABLE AREA EXHAUST NOZZLE
Frederick L. Geary, Springfield, Mass., Lawrence J. Lauck, Wapping, Conn., and Everett A. Johnston, Springfield, Mass., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 27, 1965, Ser. No. 451,135
12 Claims. (Cl. 239—265.41)



1. A jet exhaust nozzle having an axis, a plurality of movable circumferentially positioned exhaust nozzle flaps mounted to form an exhaust outlet, means to actuate said flaps to vary the area of said outlet, said actuating means being attached to adjacent edges of alternate flap pairs, and synchronizer means attached to adjacent edges of the remaining flap pairs.

3,295,765
DISCHARGE SPOUT FOR COFFEE MAKING MACHINES
Vittorio Cimbali, Milan, Italy, assignor to Officine Cimbali Giuseppe S.p.A., Binasco (Milan), Italy, Societa per Azioni, a corporation of Italy
Filed Jan. 15, 1965, Ser. No. 425,696
Claims priority, application Italy, Jan. 20, 1964, A 43,070
3 Claims. (Cl. 239—565)



1. In a coffee making machine with one or more infusion heads, whose lower end is closed by a filter full of powdered coffee, the whole constituting the infusion chamber, this filter being supported by a removable filter-holder applied to said head, a double discharge spout comprising a first member having a flange and a threaded cylindrical hollow projection and thus adapted to be secured to the filter-holder, which is provided with a corresponding threaded bore, engaging its said flange against the bottom surface of the said filter holder, the said first member having two parallel side surfaces and a vertical passageway formed therein aligned with that of the projection, a stream splitting member of generally channeled configuration with a U-shaped cross-section in which the base of the U lies in an arcuate plane of curvature to the walls of tht U and perpendicular thereto, the walls of the U each having a planar extension extending in a plane substantially normal to said plane of curvature of the base of the U, the upper ends of the extensions being secured to the side surfaces of the first member and the stream-splitting member arranged with the channel generally normal to the flow of liquid and having a rise in the channel floor at the point of impact of said liquid whereby to divide the stream smoothly and without turbulence to direct the parts of the stream toward the opposite sides of the rise.

3,295,766
GRINDING OF SOLIDS
Elmer C. Tveter, Concord, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 8, 1964, Ser. No. 395,034
5 Claims. (Cl. 241—15)

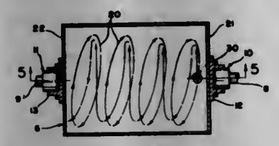
1. A method of grinding mineral ores to liberate mineral values therefrom which comprises grinding a mineral ore with at least one organic liquid compound having a specific gravity at operational temperatures greater than 1.0 thereby to liberate the mineral values from said ore.

3,295,767
NON-METALLIC FLOTATION PROCESS
Charles W. Becker, Angleton, Tex., and Roland S. Foster, Arvada, Colo., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 12, 1963, Ser. No. 308,355
6 Claims. (Cl. 241—19)

1. The method of recovering beryllium values substantially free from fluorspar and calcite found in bertrandite ore consisting of (1) grinding the ore in about a 60 to about 70 percent total solid aqueous slurry containing, per ton of ore, between about 1 and about 10 pounds of soda ash, between about 1 and about 2 pounds of a silicate selected from sodium and potassium metasilicates and orthosilicates, sodium and potassium fluosilicate, and mixtures thereof, to a particle size such that at least about 95 percent will pass through a 200 mesh sieve and about 75 percent will pass through a 325 mesh sieve, to make a pulp, and subsequently adding water to dilute the solids to about 25 to about 30 percent and conditioning the pulp at a temperature of from about 30° C. to about 100° C. for a period of from about 2 to about 20 minutes and (2) passing a gas which is chemically inert to the pulp upwardly through the pulp in the presence of between about 0.5 and about 5.0 pounds, per ton of ore present, of a C_8 to C_{24} carboxylic acid at a controlled rate, at a pulp temperature of between about 30° C. and about 100° C., whereby both calcite and fluorspar are caused to rise as a froth and to overflow as a concentrate, thus effecting a separation thereof from the beryllium values.

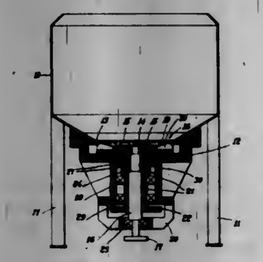
3,295,768
METHOD OF VIBRATORY-MILLING
Frank D. Moore, Akron, Ohio, assignor, by mesne assignments, to U.S. Stoneware, Inc., Tallmadge, Ohio, a corporation of Ohio
Filed Feb. 7, 1964, Ser. No. 343,330
3 Claims. (Cl. 241—30)

1. The process of vibratory grinding in a substantially horizontal vessel containing tumbling grinding media, with material to be ground contained in the vessel, which process comprises circulating the respective ends of the vessel in looped eccentric paths, each in a substantially vertical plane, without rotating the vessel, the eccentricity of one end of the vessel leading the eccentricity of the other end, and thereby causing the grinding media to move in loop orbits within the vessel about a horizontal axis, making repeated contacts with one another and with the wall of the vessel, and by such motion of the vessel causing the grinding media to maintain a relatively constant position longitudinally with respect to the ends of the vessel, while causing the material to be ground to



travel toward one end of the vessel while being subjected to repeated grinding contacts with the grinding media.

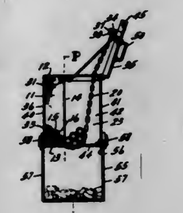
3,295,769
APPARATUS FOR BEATING AND DISINTEGRATING FIBROUS MATERIALS IN LIQUID SUSPENSION
Nils Gunnar Holger Nilsson, Segerminnevagen 7, Huddinge, Sweden
Filed Dec. 2, 1964, Ser. No. 415,542
Claims priority, application Sweden, Dec. 17, 1963, 14,041/63
9 Claims. (Cl. 241—46)



1. An apparatus for beating and disintegrating fibrous materials in liquid suspension and comprising a container for receiving the material to be treated as well as the suspending liquid for the same, said container having an opening in its wall, a rotary impeller mounted at the end of a driving shaft in said opening of the container, said impeller having substantially radially extending fins projecting into said container to cause, when said impeller rotates at a high speed, an intense circulation of the liquid in said container and also a mechanical beating and, hence, disintegration of the liquid suspended material coming into contact with said impeller fins, and an annular screening device surrounding said rotary impeller in said opening of the container, said screening device forming part of an outlet duct for said container, characterized in that said screening device is separate from said rotary impeller as well as from said container and mounted on a tubular shaft surrounding said impeller driving shaft in a manner to be independently rotated relatively to said impeller.

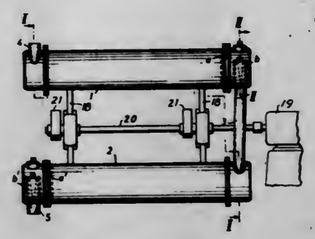
3,295,770
DEVICE FOR BREAKING FRANGIBLE MATERIAL
Elmer W. Fletcher, Ross, Ohio
(4100 Layhigh Road, Hamilton, Ohio 45014)
Filed May 28, 1964, Ser. No. 371,043
7 Claims. (Cl. 241—99)

1. A fragmentizing device for frangible material comprising in combination, a set of rigidly spaced ribs each having an actional edge thereon, flexible means disposed entirely between immediately adjacent ribs on said set, said flexible means including slack therein disposable in a spacial region opposing the actional edges of said ribs, a pair of fixed spaced means, one elevated with respect to the other and to which the respective ends of said flexible means is securely attached, one of said means intersecting said immediately adjacent ribs, the one end



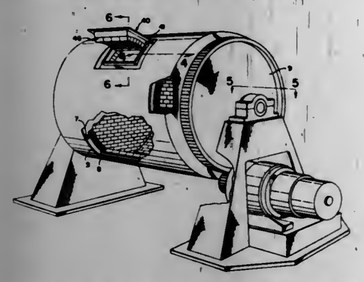
of said flexible means adapted to be wound about a point on said one of said means whereby said slack is withdrawn from said spacial region, whereby frangible material supported by said slack of said flexible means is drawn against the actional edges, the cooperative action of said edges and withdrawing slack of said flexible means breaking such material into fragments.

3,295,771
VIBRATORY GRINDING MILL OF THE DRUM TYPE
Heinz Jochem Maeder, Cologne-Dellbrueck, Germany, assignor to Klöckner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany, a corporation of Germany
Filed Nov. 9, 1964, Ser. No. 409,673
Claims priority, application Germany, Nov. 19, 1963, K 51,411
9 Claims. (Cl. 241—153)



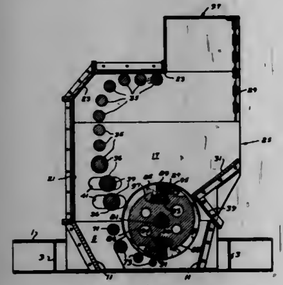
8. A continuously operable vibratory grinding mill comprising an upper and a lower vibratory grinding drum each having an axis extending substantially in a horizontal direction, said drums having respectively an upper inlet opening at one end thereof and a lower outlet opening at the other end thereof, means for connecting the lower outlet opening of said upper drum with the upper inlet opening of said lower drum, a screen partition extending across the axis of each drum and secured in the respective drum at a location spaced axially from the other end thereof, said partition forming at said other end an outlet chamber above the respective outlet opening, and a discharge device mounted in each of said outlet chambers and comprising a member having a hollow interior communicating with the respective outlet opening, said member of each of said discharge devices being formed with at least one opening exposing the hollow interior of said member to the respective outlet chamber.

3,295,772
BALL MILL OR THE LIKE
Thomas W. Cunningham, Uniontown, Ohio, assignor, by mesne assignments, to U.S. Stoneware, Inc., a corporation of Massachusetts
Filed Dec. 22, 1964, Ser. No. 420,337
10 Claims. (Cl. 241—182)



1. A mill with a grinding chamber therein, an area of the inner surface of which chamber is provided with a rod which is supported parallel to said surface and covered by resilient blocks snapped over the rod.

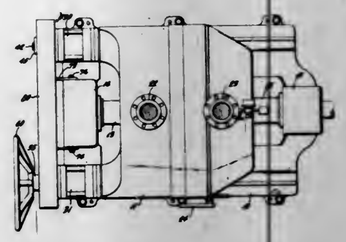
3,295,773
CRUSHER
Virgil H. Nixon, Joplin, Mo., assignor to Missouri-Rogers Corporation, Joplin, Mo., a corporation of Missouri
Application Aug. 26, 1963, Ser. No. 305,025, now Patent No. 3,202,368, dated Aug. 24, 1965, which is a continuation of application Ser. No. 837,053, Aug. 31, 1959. Divided and this application June 30, 1965, Ser. No. 468,261
12 Claims. (Cl. 241—191)



1. In a rock crusher having a rotatably mounted rotor, unitary impact hammers disposed in slots extending lengthwise across the periphery of the rotor, and wedging means leading said hammers and adapted to lock them in place, the improvement residing in said slot having a substantially dove-tail cross section, the portion of said hammer within said slot conforming to the rear tapered wall of said dove-tail, the wedging means conforming to the front tapered wall of said slot and disposed completely within said slot, and means for drawing said wedging means axially inwardly from the end of the rotor toward one another to urge the hammer tightly against the rear tapered wall and to lock the hammer within the slot.

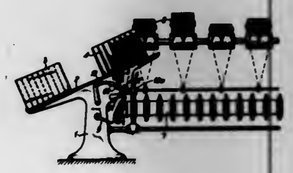
3,295,774
ATTRITION MILL APPARATUS
Chester Donald Fisher, Muncy, Pa., assignor to Sprout, Waldron & Company, Inc., Muncy, Pa., a corporation of Pennsylvania
Filed May 7, 1964, Ser. No. 365,688
8 Claims. (Cl. 241—256)

1. In attrition mill apparatus characterized by a casing defining a chamber therein, a rotatable attrition disc in said chamber secured to a shaft rotatably mounted within said casing, a non-rotatable attrition disc mounted in said chamber for axial movement relative to said casing, and means on said casing for axially positioning said non-rotatable disc including a hydraulic cylinder-and-piston assembly, the improvement comprising selectively adjustable stop means for setting said non-rotatable attrition



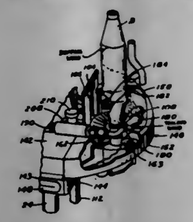
disc at a predetermined axial position, said means comprising a threaded piston rod extension extending outwardly from said cylinder-and-piston assembly, a stop member on said piston rod extension threadedly engaged therewith for selective positioning thereon, and means associated with said cylinder-and-piston assembly for engagement with said stop member to limit inward travel of said piston rod.

3,295,775
METHOD AND APPARATUS FOR READYING THE WINDING OPERATION OF YARN SUPPLY COILS ON COIL WINDING MACHINES
Hans Raasch, Rheydt-Odenkirchen, and Wilhelm Küpper, Rickelrath, Germany, assignors to Walter Reiners, Monchengladbach, Germany
Filed Apr. 6, 1964, Ser. No. 357,610
Claims priority, application Germany, Apr. 5, 1963, R 34,884
9 Claims. (Cl. 242—35.5)



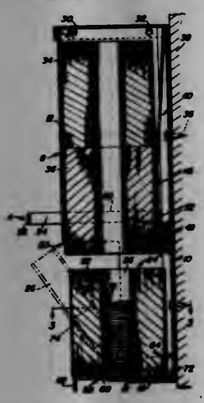
1. In the art of readying hollow-core spinning cops having a final length of yarn forming steeply wound final turns extending from tip to foot on the peripheral surface thereof, for an unwinding operation in a multi-station yarn winding machine having means at each station for knotting a yarn end of a spinning cop with a yarn end of a take-up package being wound at the station, the method which comprises removing a yarn end portion of the final length from the cops, inserting at least part of said end portion into the hollow core of the respective cop, conveying the cops to the respective winding stations, removing the yarn end portion from the hollow core of each cop at the respective station, and readying the yarn end for knotting with the yarn end of the take-up package by the knotting means at the station.

3,295,776
METHOD AND MEANS FOR READYING SUPPLY BOBBINS
David G. Cruickshank, North Kingstown, Robert E. Males, Cranston, and John Nelson, North Kingstown, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Oct. 7, 1964, Ser. No. 402,096
17 Claims. (Cl. 242—35.6)



1. A method of preparing a bobbin wound with yarn for unwinding comprising the steps of, applying a force to the yarn on said bobbin to extend the outer yarn end from said bobbin in a plane substantially normal to the axis of the bobbin, providing severing means for cutting said outer yarn end, directing a fluid stream in a path to move the extended outer yarn end to said severing means, and severing said outer yarn end to produce a free yarn end connected to said bobbin.

3,295,777
HOLDER AND DISPENSER FOR TOILET PAPER
Clifford L. Carroll, 26 N. Main, Springville, Utah 84663
Filed Oct. 19, 1965, Ser. No. 497,751
5 Claims. (Cl. 242—55.3)



1. A holding, storing and dispensing device for rolls of toilet paper wherein each roll embodies a tubular cardboard core with toilet tissue wound thereon comprising: a vertically elongated container providing an enclosed space for a plurality of rolls of toilet paper stacked one above the other, the front bottom portion of said container being provided with a toilet paper clearing and dispensing opening of requisite width and extending upwardly from the plane of the bottom of said container to a height sufficient to permit dispensing of toilet paper from the roll in alignment with said opening, and also permitting one to pass a full roll through said opening for reloading, if desired, that portion of the container above the opening providing a storage space and serving to enclose extra rolls of toilet paper capable of gravitating into the lower portion of the container when the paper or the roll therein has been used up, manually releasable spring-biased means operatively mounted within the confines of the upper portion of said container and releasably supporting said extra rolls of paper until needed for use in said bottom portion, and a manually yieldable spindle mounted axially and vertically in said lower portion and adapted to suport and accessibly retain the lowermost in-use roll of toilet paper, said spindle being of a vertical height less than the height of said dispensing opening, said manually releasable spring-biased means comprising a plate connected with and movably suspended from a coacting component part of said container and which is interposed between said part and the rolls of paper proximal thereto, said plate provided with a spring which yieldably urges the plate to assume and normally retain its roll holding position and to serve its purpose, and a manually trippable arm secured at a rearward end to said plate and projecting forwardly to an accessible operating position in front of said container, whereby when the arm is pressed toward the container, the spring is depressed and permits the plate to move to its roll-releasing position, said plate being vertically elongated and provided at an upper end with hooks removably hung over the upper edge of a rear wall of said container, said spring comprising a coil spring affixed to one side of a lower end portion of said plate.

3,295,778
TAPE TAKE-UP DEVICE
Guido Fiorentino, Ivrea, and Domenico Bertina, Parella, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Apr. 30, 1964, Ser. No. 363,946
Claims priority, application Italy, May 30, 1963, 11,552/63
4 Claims. (Cl. 242—55.12)

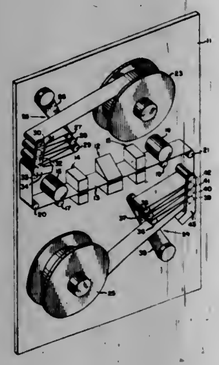


3. A tape takeup device having means for feeding the tape at a predetermined speed, a core for taking up said tape and comprising in combination:
(a) a pair of flanges yieldably urged one toward the other to assume a mutual distance less than the width of said tape for slightly pinching the edges of an end of said tape therebetween,
(b) means for rotatably mounting said flanges on said device,
(c) means for rotating a first flange of said pair at a peripheric speed greater than said predetermined speed,
(d) means removably mounting said core on said first flange so as to be frictionally rotated thereby,
(e) clutch means for causing the other flange of said pair to be rotated by said first flange,
(f) and means for enabling said clutch to be disengaged and said second flange to be removed to permit removal of said core and the taken-up tape from said device.

3,295,779
RECORD MEDIA HANDLING DEVICE
Frederick J. Cooper, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Jan. 18, 1965, Ser. No. 426,159
7 Claims. (Cl. 242—55.12)

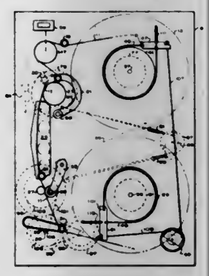
1. In a record media handling device, the combination comprising

driving means capable of driving record media in either one of two opposite directions;
braking means for halting movement of the record media;
sensing means for sensing information from the record media;
first driven reel means for taking up the record media when it is being driven by the driving means past the sensing means in a first of said directions, and for supplying the record media when said record media is being driven in a second of said directions by the driving means;
first tension control means positioned in the path of movement of the record media between the first reel means and the driving means for controlling tension of the record media;
second driven reel means for taking up the record media when it is being driven by the driving means past the sensing means in the second of said directions, and for supplying the record media when said record media is being driven in the first of said directions by the driving means;
second tension control means positioned in the path of movement of the record media between the second reel means and the driving means for controlling tension of the record media;



first unidirectional means positioned in the path of movement of the record media between the first reel means and the driving means, engaging said record media, adapted to rotate freely when the record media is being driven from the first reel means to the second reel means in the second of said directions by the driving means, and adapted to remain stationary when the record media is being driven from the second reel means to the first reel means in the first of said directions by the driving means, thereby imposing a frictional force on the record media to slow its movement when driven in said first direction; and
second unidirectional means positioned in the path of movement of the record media between the driving means and the second reel means, engaging said record media, adapted to rotate freely when the record media is being driven from the second reel means to the first reel means in the first of said directions by the driving means, and adapted to remain stationary when the record media is being driven from the first reel means to the second reel means in the second of said directions by the driving means, thereby imposing a frictional force on the record media to slow its movement when driven in said second direction.

3,295,780
TAPE RECORDING AND REPRODUCING APPARATUS
Walter T. Selsted, Woodside, and William I. Girdner, Portola Valley, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Original application Nov. 29, 1963, Ser. No. 326,811. Divided and this application Sept. 10, 1965, Ser. No. 486,338
3 Claims. (Cl. 242—55.12)

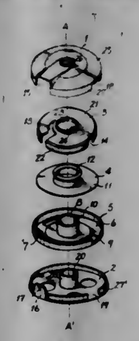


1. In tape recording and reproducing apparatus having a reel of tape, braking means for said reel comprising:
a brake drum disposed to rotate with said reel;
a brake band disposed about a portion of the periphery of said drum;
a pivoted arm;
means attaching the ends of said band to said arm at dissimilar distances from said axis at locations and at locations thereon which move both ends of said band in band-tightening directions about said drum in response to rotation of said arm in a selected direction about said pivot axis; and
means to rotate said arm in said selected direction about the pivot thereof for actuating said braking means.

3,295,781
REEL FOR ENDLESS MAGNETIC TAPES
Mamoru Namikawa and Masaoki Sekine, Tokyo, Japan, assignors to TDK Electronics Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 9, 1965, Ser. No. 447,016
Claims priority, application Japan, July 31, 1964, 39/61,099
1 Claim. (Cl. 242—55.19)

A reel for an endless magnetic tape comprising a lower lid having
a first disk forming a first bottom part;
a first cylinder provided upright in the center of said first disk;
a first projection provided inside said first cylinder;
a cylindrical magazine wall provided on the periphery of said first disk; and
a first aperture for winding in tapes provided in said cylindrical magazine wall;
an upper lid having
a first upper surface part in the form of a disk;
a second aperture provided in the center of said first upper surface part;
a second projection provided inside said second aperture;
a first cylindrical side wall provided on the periphery of said disk-like first upper surface part;
a third aperture for winding in tapes provided in said first cylindrical side wall; and
a fourth aperture for pulling out tapes provided in said first cylindrical side wall and upper surface part continuously;

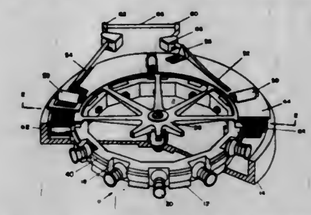
an upper cover having
a second upper surface part in the form of a disk;
a fifth aperture provided in the center of said second upper surface part;
a second cylindrical side wall provided on the periphery of said second upper surface part;
a sixth aperture provided in said second cylindrical side wall; and
a projection-receiving aperture formed in said second cylindrical side wall and disk-like second upper surface part;
a lower cover having
a bottom part in the form of a disk;
a third cylindrical side wall provided on the periphery of said bottom part;
a seventh aperture for winding in tapes provided in said third cylindrical side wall;
a third, generally upright, projection having a head part, said third projection provided partly on said bottom part of said lower cover adjacent to said third cylin-



drical side wall and adapted to fit into said projection-receiving aperture of said upper cover;
a pull-out aperture provided in said head part of said third projection;
a generally upright cylinder provided in the center of said disk-like part of said lower cover; and
an eighth aperture provided in said generally upright cylinder and
a spool having
a bottom part in the form of a disk; and
a cylinder fixed in the center of said bottom part;
said spool being rotatably contained in the lower lid and said upper and lower lids being fitted together and contained in said upper and lower covers when fitted together, whereby said first and second projections on the lower and upper lids fit into said eighth aperture of the lower cover and said generally upright third projection of the lower cover fits into said projection-receiving aperture of said upper cover.

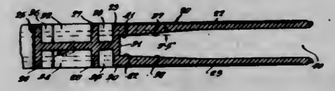
3,295,782
ENDLESS TAPE CARTRIDGE
Kenneth W. Stark and William A. Burton, Hyattsville, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 29, 1963, Ser. No. 319,893
8 Claims. (Cl. 242—55.19)

5. In a tape cartridge for a spirally coiled, endless-loop tape, a tape support mechanism comprising: a circular member; an array of tape support rollers circumferentially spaced about said member; said rollers being rotatably mounted in said member and extending radially therefrom; each of said rollers having an inclined surface on its radially inner end to facilitate unwinding of the tape from the tape cartridge; each of said array of rollers having a peripheral surface progressively increasing in diameter in the radially outward direction, where-



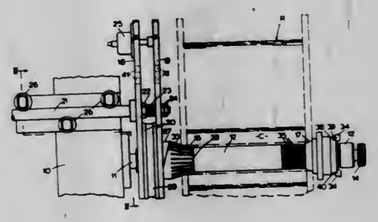
by a spirally coiled tape pack may be supported with the edges of the tape convolutions resting on the peripheral surfaces of said array of rollers.

3,295,783
TAPE GRIPPING REEL
Ernest O. P. Tatter, Addison, and Philip Vazzano, Des Plaines, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,897
11 Claims. (Cl. 242—74)



1. A tape gripping reel comprising: a generally cylindrical hub; first and second spaced reel sides extending outwardly from said hub, said reel sides having spaced surfaces facing one another; and each of said facing surfaces having an inclined portion adjacent the hub to define a gradually narrowing tape gripping channel, the inclination of each of said surface portions being substantially in the range of 3°–5° with respect to a plane perpendicular to the axis of said hub.

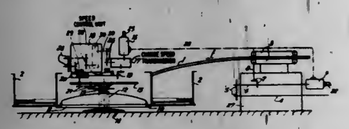
3,295,784
MOUNTINGS FOR REELED STRIP MATERIAL
Adolf Wahl, 4 Eanerdale Ave., Dunstable, Bedfordshire, England
Filed Jan. 29, 1964, Ser. No. 340,973
Claims priority, application Great Britain, July 10, 1963, 27,352/63
4 Claims. (Cl. 242—68.3)



1. A mounting for a cored reel of continuous strip material, comprising support means, a first reel-supporting rotary collar mounted on said support means, a second reel-supporting rotary collar removably mounted on said support means and spaced apart from said first collar,

means for preventing axial movement of said first collar, ratchet teeth on said support means, opposed pawls mounted on said second collar to engage with said ratchet teeth and so position said second collar to secure the core of the reel, pivotal mountings for the pawls located axially outwardly of the points of engagement between the pawls and said ratchet teeth to facilitate disengagement of the pawls and at a minimum radial distance from said support means and a shaped locking ring mounted on said second collar to move into and out of engagement with said pawls to effect locking and unlocking, respectively, of said pawls.

3,295,785
APPARATUS FOR COILING CABLE IN A TANK
Eugene Felicite, St.-Germain-en-Laye, France, assignor to Forges et Ateliers de Constructions Electriques de Jeumont, Seine et Oise, France
Filed Nov. 18, 1964, Ser. No. 412,075
Claims priority, application France, Nov. 22, 1963, 954,629
8 Claims. (Cl. 242—83)



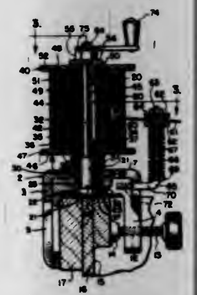
1. Apparatus for coiling a cable spirally in an annular tank having an inner wall and an outer wall, comprising means for feeding cable, a stationary vertical column, means supporting said column, a hollow shaft rotatable about said column, a rotatable platform carried by said hollow shaft and having peripheral portions adapted to support said annular tank, said column extending above said hollow shaft, a stationary platform mounted on said column above said platform, and means on said stationary platform for driving said hollow shaft, rotatable platform and tank at selected speed.

3,295,786
REEL STRUCTURE MOUNTING MEANS
Roy E. Smith, Atlanta, Ga., assignor to The Auto-Soler Company, a corporation of Georgia
Filed Feb. 24, 1965, Ser. No. 434,928
3 Claims. (Cl. 242—129.5)



1. Means for mounting a reel structure comprising a tubular spindle, a latch member having an elongated body portion of substantially reduced diameter in relation to the inner diameter of said spindle with an enlarged base portion at one end thereof proportioned in diameter for loosely fitting said inner diameter and an enlarged head portion at the other end thereof approximating but not exceeding in diameter the exterior size of said spindle, said latch member having the body portion thereof arranged lengthwise within said spindle with the base portion thereof fitted with means projecting radially therefrom and loosely engaging an aperture in the tubular wall of said spindle for locating said head portion adjacently beyond an end of said spindle, and a coil spring contained within said spindle for exerting a compression bias against said base portion axially of said spindle and thereby reacting in relation to said radially projecting means to maintain said latch member yieldably cocked, so that said head portion is normally displaced sidewise at the adjacent spindle end to present a retaining abutment endwise thereof while always remaining shiftable to axial alignment with said spindle.

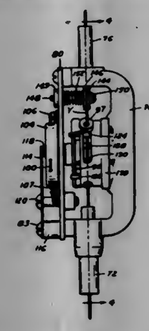
3,295,787
AUXILIARY FISH LINE SPOOL HOLDER
Fred Golonka, 17 W. 645 Foster, Wooddale, Ill. 60191
Filed Sept. 13, 1965, Ser. No. 486,989
10 Claims. (Cl. 242—129.5)



1. An auxiliary spool holder having a support including a base clamp adapted for attachment to an associated support structure, a spindle rotatably mounted in said support and having a shank portion projecting therefrom, adjustable means interposed between the shank and support for frictionally resisting rotation of the spindle, a spool mounted on said spindle for rotation therewith, and a line grasp means mounted on said clamp adjacent to the spool and comprising a holder disposed generally parallel with the spindle and having a pair of jaws with conical opposing faces diverging toward the spindle and separable axially of the spool for releasably holding a line wound upon the spool.

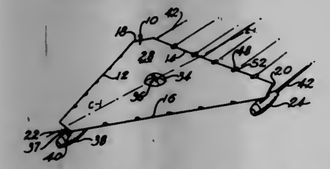
3,295,788
TENSIONING APPARATUS
Hans H. Richter, Cranston, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Dec. 22, 1964, Ser. No. 420,281
5 Claims. (Cl. 242—154)

1. Apparatus for tensioning an advancing strand of yarn comprising, a frame, a pair of fixed yarn guides supported on said frame and adapted to direct said strand in a straight path, a rotatable member disposed intermediate said guides and adapted to engage said strand, an arbor rotatably journalled in said frame and arranged to support said member, said arbor having a flange portion thereon, resilient means connected with said arbor for rotating said arbor and member, a damping element for engaging an end of said arbor and exerting an axial force to thrust said flange portion against said frame to thereby control the rotational movement of said arbor and member, and fixed means mounted on said frame and



spaced apart from said straight path, said strand being engageable with said fixed means in response to rotation of said member to impart tension to said strand.

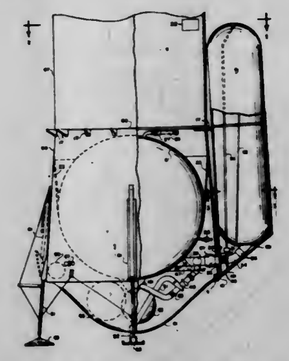
3,295,789
AIRSPACE CRAFT
Charlie R. Hill, Cobb County, Ga. (Dobbins Air Force Base, Ga. 30060)
Filed Nov. 4, 1963, Ser. No. 321,220
8 Claims. (Cl. 224—1)



8. In an air-space craft of the character described:
(a) a space craft body having a top surface and a bottom surface,
(b) said craft being triangular in formation,
(c) a main propulsion means on said air-space craft,
(d) said means being adjustable to change the direction of propulsion,
(e) said means in (c) being capable of movement to different positions to enable the propulsion to be directed in different directions according to the flight desired,
(f) secondary engine propulsion means on said craft,
(g) said secondary engine propulsion means being attached to the respective edges and including respective propulsion outlets movably mounted thereon whereby said respective propulsion outlets may circumscribe a pattern as directed,
(h) means on said craft for combining with craft of identical construction into a space station.

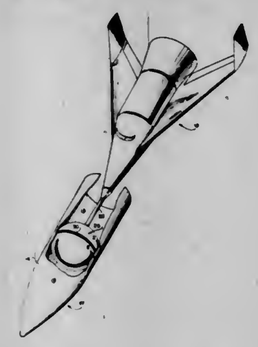
3,295,790
RECOVERABLE SINGLE STAGE SPACECRAFT BOOSTER
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Philip Bono
Filed June 16, 1964, Ser. No. 375,682
10 Claims. (Cl. 244—1)

1. A single stage spacecraft booster capable of boosting a payload into earth orbit comprising:
(a) a booster main body having a longitudinal axis with a payload section and a propulsion section at opposite ends, respectively, of said longitudinal axis;
(b) an annular combustion chamber rocket engine attached to said main body at its propulsion section end and oriented to have its resultant thrust vector substantially along said longitudinal axis toward said payload section end;
(c) an oxidizer tank positioned within said booster main body between said payload section end and said propulsion section end;



(d) a plurality of fuel tanks detachably and symmetrically mounted to the exterior surface of said booster main body about said longitudinal axis between said payload end and said propulsion end;
(e) means for feeding fuel from said fuel tanks and oxidizer from said oxidizer tank to the annular combustion chamber of said engine; and
(f) means for separating said fuel tanks from said booster main body.

3,295,791
STORAGE CONTAINER MOUNTING FOR SPACE VEHICLES
Dolphus H. Black, Arab, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 11, 1964, Ser. No. 417,846
9 Claims. (Cl. 244—1)

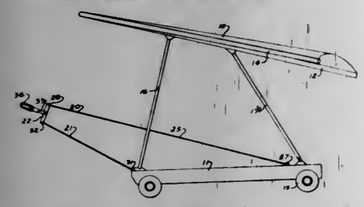


1. A space vehicle adapted to be placed in an orbit above the earth's atmosphere comprising, in combination:
(a) a body having inner and outer surfaces;
(b) a liquid storage container adapted to be supported on said body;
(c) a first supporting means on said inner surface of said body;
(d) a second supporting means on said liquid storage container;

(e) said first and second supporting means being in engagement with each other due to the action of gravity; and

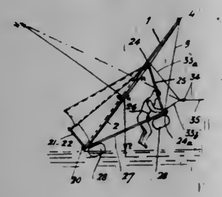
(f) a force applying means for automatically disengaging said first and second supporting means when said space vehicle reaches an orbital position above the earth's atmosphere where there are substantially no gravitational forces, thereby minimizing the amount of heat transferred from said outer surface of said body to the liquid stored in said liquid storage container.

3,295,792
TOWED GLIDER
Harry E. Rollins, Garden Grove, and Cecil E. Craigo, Whittier, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed July 19, 1965, Ser. No. 473,252
3 Claims. (Cl. 244—2)



1. In combination with a glider including a rectangular load support and a wing disposed above and operatively connected to said load support, towing apparatus comprising a vertically arranged equalizing bar, a main tow cable connected to said bar intermediate the ends thereof, a first towing bridle connected to said load support adjacent the rear corners of the support and to the upper end of said equalizing bar, and a second tow bridle connected to said load support adjacent the front corners of said support and to the lower end of said equalizing bar.

3,295,793
KITE-TYPE AIRCRAFT
Louis E. A. Renart, 9 Ave. Armand Rousseau, Paris, France
Filed Feb. 3, 1965, Ser. No. 430,009
Claims priority, application France, Feb. 11, 1964, 963,371
7 Claims. (Cl. 244—3)



1. A kite device comprising

a frame, said frame comprising

a longitudinal main frame member,

a forward cross member secured at right angles to the longitudinal member intermediate its ends, and a rear frame member secured at right angles to the longitudinal member near the rear end thereof;

sail means secured across the frame and comprising

a generally diamond-shaped flat central sail portion having its four apices attached to the respective ends of said longitudinal member and said forward cross member;

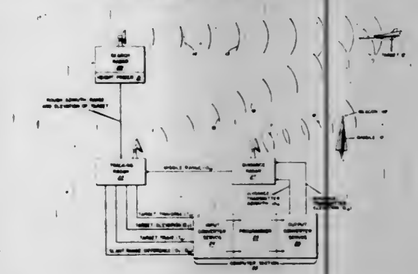
a first, inner pair of part-conical, side sail portions adapted and arranged to be downwardly concave in operation having their cone apices substantially coincident with the ends of the forward cross member and having inboard edges coextensive with the rear sides of said central sail portion and having their arcuate rear edges attached to said rear cross member; and

a second, outer pair of part-conical, downwardly-concave side sail portions adapted and arranged to be downwardly concave in operation having their cone apices substantially coincident with the ends of the forward cross member and having inboard edges coextensive with the outboard edges of said inner side sail portions and having their arcuate rear edges attached to said rear cross member, in a plane upwardly offset from the plane of said flat central sail portion and edges of the inner side sail portions,

an undercarriage secured to said frame members below said sail means and accommodating a flyer, and

means for attaching a tow line to said undercarriage.

3,295,794
LAUNCHER AND CAPTURE COMPUTER
Irvin H. Schroader, Simpsonville, Melvin E. Hosea, Silver Spring, and Isaac R. Hunter, Jr., Edgewater, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 24, 1963, Ser. No. 297,469
9 Claims. (Cl. 244—14)



1. Apparatus for effecting initial beam capture of a beam-riding guided missile comprising in combination,

tracking radar means for tracking a target and obtaining target position information,

guidance transmitter means for providing a beam to direct the missile towards said target after capture in accordance with a prescribed trajectory,

a missile launcher located remotely from said guidance transmitter at a known location relative to said guidance transmitter for effecting initial directing of said missile in addition to launching,

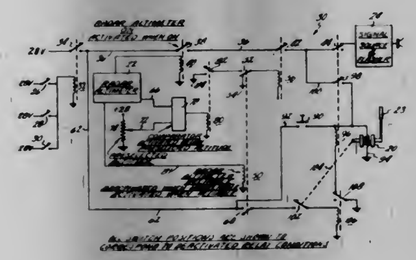
means for initially positioning said launcher and said guidance beam transmitter prior to launching the missile in accordance with derived control signals,

capture point computer means, and

means for applying input signals to said capture point computer means representative respectively of said target position information, the actual position of said launcher in elevation and azimuth, the location of said launcher relative to said guidance beam transmitter and various predicted external forces to which said missile will be subjected after launch,

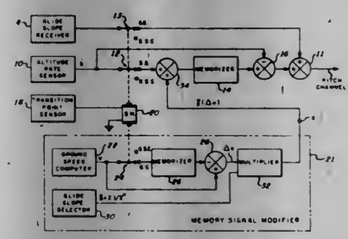
said capture point computer means being programmed to manipulate said input signals in accordance with prescribed control and ballistic equations to derive control signals defining the pre-launch positioning of each of said guidance beam transmitter and launcher necessary to direct said guidance beam and said missile respectively towards a desired capture point on said prescribed trajectory, said capture point computer means being operably connected to apply said derived control signals to said initial positioning means to thereby insure capture of the missile after launch within the guidance beam.

3,295,795
HELICOPTER LANDING GEAR UNSAFE WARNING SYSTEM
Thomas B. Meek, Jr., Oxford, Conn., and Stephen W. Salai, Penfield, N.Y., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,315
13 Claims. (Cl. 244—17.17)



12. In a helicopter landing gear unsafe warning system comprising warning signal means operative to establish a first warning signal responsive to a preselected altitude signal and to a landing gear unsafe signal, and means to override said first warning signal and establish a second warning signal responsive to helicopter collective pitch stick position.

3,295,796
FLIGHT CONTROL SYSTEM
Randall Gaylor, Phoenix, Ariz., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Apr. 3, 1964, Ser. No. 357,071
6 Claims. (Cl. 244—77)



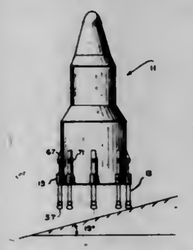
2. Glide slope extension control apparatus for aircraft comprising means for producing a signal representing craft rate of descent, means for storing said signal while said craft is controlled to a radio defined course, means for producing a signal representing ground speed changes with respect to quiescent ground speed condition, means for modifying the signal in said storing means as a function of said ground speed signal, and means for comparing said descent rate signal with the output of said storing means to produce an error signal for controlling the flight of said craft.

3,295,797
AIRCRAFT CONTROL SYSTEMS
Phillip H. Roberts, New Orleans, La., and William R. Snook, Jr., Wichita, Kans., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Original application Dec. 14, 1964, Ser. No. 418,119, now Patent No. 3,261,573, dated July 19, 1966. Divided and this application Oct. 24, 1965, Ser. No. 510,735
10 Claims. (Cl. 244—82)



1. In an aircraft pitch control system, an airframe, a horizontal stabilizer pivotally connected to said airframe, at least one elevator pivotally connected to the trailing edge of said stabilizer, at least one elevator boost tab pivotally connected to the trailing edge of said elevator, double-acting fluid motor means connected to said stabilizer and said elevator and extensible and retractable in such a manner as to pivot said elevator and cause the deflection thereof relative to said stabilizer, a rocker arm pivotally connected to said elevator and having a pivot axis coincidental with the pivot axis of said elevator, linkage means including first push-pull rod means connecting said boost tab to said rocker arm in such a manner as to apply push-pull force thereto via said first push-pull rod means caused by aerodynamic forces acting against said boost tab and deflecting the same, said linkage means having second push-pull rod means with pre-loaded double-acting spring cylinder means therein connected to said stabilizer and to said rocker arm for resisting change in length of said second push-pull rod means, stop means for limiting the angular deflection of said rocker arm to a predetermined angular deflection from a faired position of said boost tab with said elevator, and said stop means and said linkage means cooperating in such a manner that said spring cylinder means is deflected and the length of said second push-pull rod means is changed to cause said boost tab to be moved toward a faired position with said elevator when said elevator has been deflected beyond said predetermined angular deflection, and to cause said boost tab to fair with said elevator at a maximum allowable deflection angle of said elevator.

3,295,798
LANDING GEAR
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Russell L. Hopping, William R. Forlifer, and Robert P. Gaston, Jr.
Filed Nov. 10, 1964, Ser. No. 410,331
5 Claims. (Cl. 244—100)

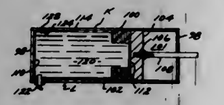


1. An energy-absorbing device comprising:

(a) a support housing adapted for mounting on a vehicle;

(b) a tubular cylinder slidably disposed in said support housing for extending and retracting motion;
(c) a piston telescopically received in said cylinder with one end of said piston being within said cylinder and the other end of said piston projecting from one end of said cylinder;
(d) a yieldable foot portion carried by said other end of said piston;
(e) a crushable energy-absorbing material disposed within said foot portion and within said cylinder;
(f) said crushable material within said cylinder being contiguous with said one end of said piston whereby retractive sliding of said piston within said cylinder will result in a crushing of some of said material;
(g) a switch associated with said foot portion responsive to pressure contact of said foot portion with a surface;
(h) means responsive to said switch for locking said cylinder against retractive sliding within said support housing.

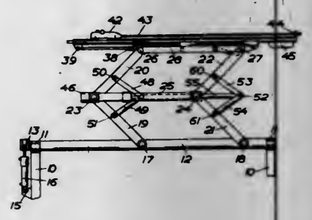
3,295,799
FUEL TANK
Willy G. Stoppe, 936 Cedar Ave., Apt. 5, Long Beach, Calif. 90813
Filed Sept. 7, 1965, Ser. No. 485,398
1 Claim. (Cl. 244—135)



The combination with an engine-powered aircraft, provided with an elongate fuselage which supports a transverse wing that can be tilted to a desired degree to control the flight characteristics of said aircraft, of,
(a) at least one elongate, longitudinally extending tank located within said wing;
(b) a resilient bag situated within said wing in which said fuel is contained, with said bag having a plurality of pleats formed therein that are parallel to the longitudinal axis thereof;
(c) first means for introducing liquid fuel into said bag;
(d) second means for discharging said liquid fuel from said bag to said engine;
(e) a piston slidably mounted in said tank for exerting a force on said bag in a direction wherein said pleats tend to move into abutting contact with one another, with said liquid fuel in said bag being maintained under pressure to prevent movement of said liquid relative to said wing as said wing is tilted; and
(f) a plurality of rigid elongate members affixed to said pleats to maintain the shape thereof, which members are in abutting contact with the interior surface of said tank when said bag is fully expanded.

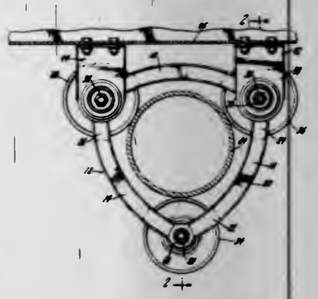
3,295,800
POSITIONING DEVICE FOR ROCK DRILLS
Karl-Erik Qvarnström, Vendelso, and Carl Valfrid Rune Skattman, Ektorp, Sweden, assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Oct. 28, 1964, Ser. No. 407,053
Claims priority, application Sweden, Oct. 31, 1963, 12,023/63
14 Claims. (Cl. 248—13)

1. A positioning device for rock drills for positioning a rock drill into a plurality of alternative drilling positions according to a polar coordinate system, said positioning device comprising a substructure having coaxial spaced apart journals thereon, an elongated frame rotatably mounted in said journals the axis thereof being along the polar axis of said coordinate system, an elongated feed shell for longitudinally movably carrying a rock drill thereon and having feeding means thereon for feeding and retracting a rock drill thereon along said feed shell, a parallel motion link system linked between said feed shell and said frame for providing translatory motion of said feed shell relative to said frame into a plurality of selected parallel positions without change in the relative longitudinal position between said feed shell and said frame, the said link system with the said feed shell disposed thereon extending radially from said frame along a plane including the axis of said frame with the



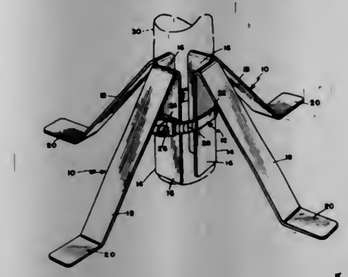
extent of movement of said feed shell away from said frame being along the radius of said polar coordinate system, power means disposed upon said substructure and connected to said frame for the rotating thereof and said link system and said feed shell disposed thereon for defining the angular position of said feed shell and said link system about the axis of said frame, and a single pressure fluid operated ram connected to said link system for the operation thereof for translating said feed shell relative to said frame into one of the said plurality of parallel positions.

3,295,801
SHAFT HANGER
Charles J. McDowall and Victor W. Peterson, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 4, 1965, Ser. No. 452,993
6 Claims. (Cl. 248—18)



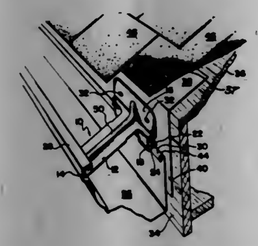
1. A shaft hanger comprising:
a generally polygonal frame adapted to encircle a rotating shaft,
wheels journaled to said frame at its apexes, said wheels being disposed so as to frictionally engage said shaft, and
bracket means to support said frame, said bracket means including vibration damping means whereby said hanger is adapted to antifrictionally support said shaft and to damp vibrations therefrom.

3,295,802
CHRISTMAS TREE STAND
Francis R. Leatherman, 1203 Coral St., El Cajon, Calif. 92021
Filed Mar. 16, 1965, Ser. No. 440,137
1 Claim. (Cl. 248—44)



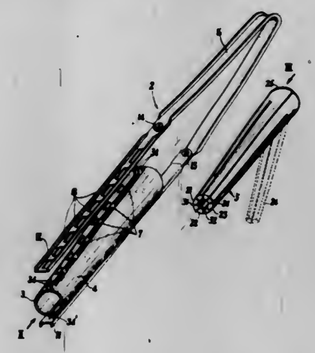
A tree stand, comprising:
a pair of stand units for disposal at diametrically opposite sides of a tree trunk and each having an elongated upright post portion of V-shaped cross-section with adjacent sides substantially at right angles to each other, and each unit also having two legs extending divergently at right angles to each other outwardly and downwardly from the upper ends of said sides and having supporting feet at the lower ends thereof;
and a constricting clamp including a flexible strap encircling the post portions of said pair of stand units to clamp the same onto a tree trunk held therebetween;
said legs being rigid flat straps formed from standard angle-section stock, and each leg and the corresponding post portion being in the same respective vertical plane.

3,295,803
RIGID ONE-PIECE GUTTER HANGER
James H. Blayden, Pittsburgh, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 6, 1964, Ser. No. 380,311
12 Claims. (Cl. 248—48.2)



9. The combination of a gutter having rear and front wall upper marginal edge downwardly open bead configurations and a rigid hanger therefor, said hanger being terminated rearwardly in attachment thereof proximate a roof surface and incorporating a forwardly extending strap portion terminating outwardly remote to said roof surface in an angularly disposed hook-shaped configuration in engagement within the front wall marginal downwardly open bead configuration of the gutter, an upwardly open hook-shaped rear configuration carried by said strap portion of the hanger in engagement within the rear wall marginal downwardly open bead configuration of the gutter, and a deflectable gutter securing tab carried by the hanger strap portion adjacent and above its rear hook-shaped configuration, said tab being deflected into interfering relationship to an upwardly facing outer surface of the downwardly open rear wall marginal bead configuration of the gutter.

3,295,804
CABLE HANGER
André Noirclerc, Versailles, France, assignor to Societe Industrielle de Liaisons Electriques, Paris, France
Filed Nov. 10, 1965, Ser. No. 507,107
8 Claims. (Cl. 248—60)



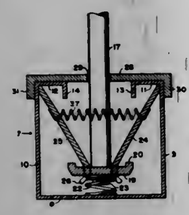
1. A hanger for a cable and the like, comprising, in combination:
(a) a strap member having two elongated end portions;
(b) a tubular shell having an axis and conically tapering in the direction of said axis,
(1) said shell being formed with an axial slot therethrough and having two axially elongated edge portions on either side of said slot;
(c) a radially expandable hollow core member having an axis, an outer frusto-conical wall about said axis thereof adapted to be conformingly received in said shell and an inner approximately cylindrical wall defining an axial passage through said core member;
(d) a plurality of axially spaced fastening means for fastening respective longitudinal parts of one of said end portions to corresponding parts of each of said edge portions in response to axial movement of said shell relative to said one end portion in the direction of taper of said shell; and
(e) securing means for securing said shell to the other end portion of said strap member.

3,295,805
SUPPORT STRUCTURE AND CONNECTION BETWEEN A STRUCTURE AND A FIXTURE
Donald A. Girard, P.O. Box 172, Rancho Cordova, Calif. 95670
Filed Mar. 16, 1966, Ser. No. 543,463
24 Claims. (Cl. 248—68)

1. A support structure suitable for connecting a fixture to a "Unistrut" channel member that includes a bottom wall, side walls, and flanges extending inwardly from the tops of said side walls, leaving a longitudinal opening between said flanges, which structure comprises:
(a) an elongated base shaped to be situated within a channel member in spaced and parallel relation thereto, said base having fixed thereto at longitudinal intervals a plurality of studs which have lengths to extend outwardly beyond the channel member between its flanges,
(b) a pair of thrust plates adapted to be situated one on each side of said studs with at least parts of the

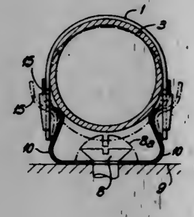
parts thereof in abutment with the said base and the upper edges shaped for abutment with the undersides of such channel flanges,

(c) at least one cap plate adapted to be positioned on the top of such channel member in abutting relation thereto and having a plurality of openings formed therein through which said studs can extend, and



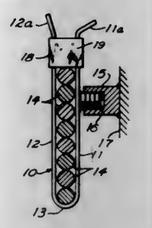
(d) means acting on said studs and adapted to act on said fixture for applying tension to the studs while applying downward force against said cap plate through the said fixture, whereby said thrust plates can be placed in compression between said base and channel flanges.

3,295,806
TWO PART CLIP FOR ATTACHING A CYLINDRICAL MEMBER TO A SUPPORT
Robert Modémé, 25 Rue Hermel, Paris, France
Filed Sept. 9, 1965, Ser. No. 486,104
Claims priority, application France, Oct. 3, 1964, 990,271; Dec. 22, 1964, Ser. No. 999,591
4 Claims. (Cl. 248—74)



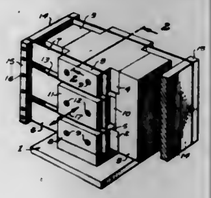
1. A two part clip for a cylindrical member, said clip comprising a base portion for supporting the cylindrical member, and an attaching portion engageable on the base portion, said base portion comprising a web, and a pair of spaced upstanding resilient arms which are obliquely directed towards each other from the web, bowed outwardly intermediate their length to form a pair of spaced shoulders adapted to support the cylindrical member and which terminate in a pair of free ends projecting beyond said shoulder and inclined towards one another when unstressed; said attaching portion being substantially U shaped and having two substantially parallel limbs adapted to embrace the cylindrical member when the latter is supported on the said shoulders of the base portion, said limbs further adapted to be introduced between the free ends of the base portion and to releasably engage said free ends to resiliently clamp the cylindrical member between said shoulders and said attaching portion, said free ends extending approximately parallel in said clamping position; whereby pressure exerted on the cylindrical member supported on said shoulders towards said web will move said free ends apart to release said limbs from engagement therewith.

3,295,807
ELECTRICAL CABLE AND SMALL PIPE OR TUBING HANGER
Arthur W. Von Volkli, Rte. 4, Box 584C, Port Orchard, Wash. 98366
Filed Apr. 26, 1966, Ser. No. 546,152
7 Claims. (Cl. 248—74)



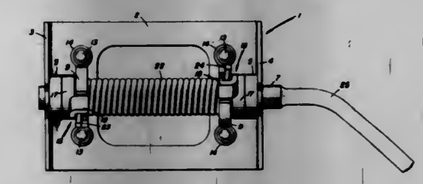
1. A hanger for supporting a plurality of tubular members in a stacked relationship comprising;
a U-shaped member having two substantially parallel legs and a connecting web, said legs being spaced to provide lateral support for the stacked tubular members,
a clamp sized to substantially encompass said legs and adapted to be disposed in an abutting relationship with the outer one of said stacked tubular members for securely holding said stacked tubular members between said clamp and said web, at least one of said legs extending through said clamp and being deformable to secure said clamp in said abutting relationship, and
means for supporting said U-shaped member being connected to only one of said parallel legs.

3,295,808
PARALLEL MOTION SUSPENSION DEVICE
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Raymond A. McCreary
Filed Apr. 16, 1965, Ser. No. 448,898
6 Claims. (Cl. 248—178)



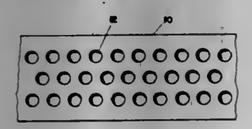
1. A parallel motion suspension means, comprising:
(a) a fixed frame having axially spaced ends and an opening extending therebetween;
(b) a first and a second pair of leaf springs secured intermediate their extremities to the ends of said frame at opposite sides of said opening;
(c) a movable element positioned in said opening;
(d) a third pair of leaf springs secured intermediate their extremities to the ends of said movable element, the members of said third pair of leaf springs being disposed between the members of said first and second pair of leaf springs, and the leaf springs at one end of said fixed frame and movable element normally occupying common planes;
(e) and a pair of connecting plates secured to the extremities of said leaf springs to support said movable element free of the walls of said opening and limit said movable member to axial travel.

3,295,809
TORSION SPRING HINGE MECHANISM
James F. Smola and David I. Moss, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 11, 1963, Ser. No. 287,159
5 Claims. (Cl. 248—204)



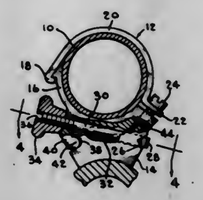
1. A hinge for supporting a satellite solar cell panel, including, in combination with a satellite
a base plate having a pair of aligned, spaced flanges projecting therefrom, said flanges having aligned, centrally located openings therein,
a pair of journal bearing partially received within said centrally located openings,
a cylindrical shaft having its opposite end portions received within said journal bearings,
a pair of spaced stationary structurally independent spring retainers affixed to said base plate between said flanges,
a preloaded torsion spring disposed about said cylindrical shaft between said retainers, the ends of said spring projecting tangentially to define oppositely directed legs,
a pair of arms secured to said cylindrical shaft and in engagement with the legs of said spring,
an elbow-shaped solar cell panel support shaft rigidly secured to one end of said cylindrical shaft, and
a solar cell panel connected to said support shaft, said elbow-shaped shaft having an included angle at the elbow of such value, that when said support shaft is erected to be in a plane substantially normal to said base plate said panel is properly positioned in angular relationship to the satellite axes.

3,295,810
ARTICLE ATTACHING MEANS
Irving L. Kintish, Rockaway, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 3, 1965, Ser. No. 436,970
2 Claims. (Cl. 248—206)



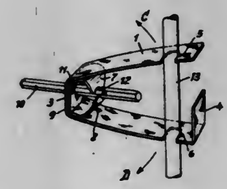
1. In an underwater demolition arrangement having an explosive charge secured to a support member submerged in water,
a waterproof, resilient tape having a central portion secured to said charge and its end portions secured to said member, said tape having one side substantially covered with an adhering surface, said surface having substantially throughout its length a plurality of spaced cup-like recesses defining vacuum containing indentations in said surface secured against said charge and said member.

3,295,811
MOUNT FOR RIFLESCOPE
Harry L. Giwosky, Milwaukee, Wis., assignor to Realist, Inc., Menomonee Falls, Wis., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,027
9 Claims. (Cl. 248—229)



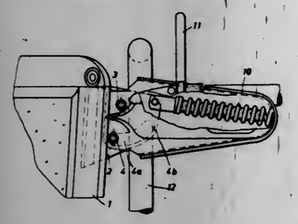
1. A mounting assembly for a telescopic sight, comprising, a base adapted to be secured to a rifle, a telescope clamp including a block, interfitting non-planar surfaces on the block and base serving to locate the block vertically and horizontally with respect to the base, abutting surfaces on the block and base allowing relative sliding motion between the block and base as the interfitting surfaces are brought into engagement, and means connecting the block to the base and exerting a force on the block holding the interfitting surfaces in engagement and the abutting surfaces in engagement.

3,295,812
FASTENING CLAMP
Walter Schneider, Alte Dorfstrasse 4, Langnau, Zurich, Switzerland, and Ernst Fischer, Krauchtalstrasse 14, Bolligen, Bern, Switzerland
Filed Dec. 21, 1964, Ser. No. 419,848
Claims priority, application Switzerland, Dec. 2, 1964, 15,574/64
7 Claims. (Cl. 248—229)



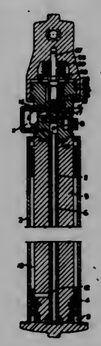
1. A fastening device comprising a body having a pair of interconnected legs with free extremities remote from their junction, said legs being resiliently biased into a first position of relative inclination of said extremities and being manually movable against their biasing force into a second position in which said extremities are substantially parallel to each other, said extremities being formed with registering cutouts which are engageable in said second position by a transverse rod of smaller cross-section and whose edges firmly clamp said rod onto said body upon return of said legs toward said first position by said biasing force, said body being apertured at said junction for penetration by a pan perpendicular to said rod; and a pair of retaining members respectively secured to said legs in the vicinity of said junction for co-operation with each other in engaging said pin, said members being held by said legs under pin-engaging stress in at least an intermediate position in which said rod is held clamped by said edges.

3,295,813
ADJUSTABLE BRACKET FOR SUPPORTING A WINDSHIELD
Arnold Tschursch, Helmatweg, Germany, assignor to Georg Fritzmeier, Kommanditgesellschaft, Groszhelfendorf above Munich, Germany, a firm of Germany
Filed Nov. 30, 1964, Ser. No. 414,698
7 Claims. (Cl. 248—291)



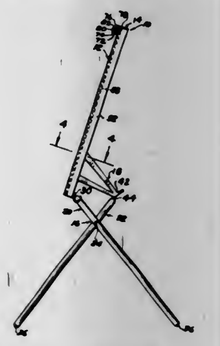
1. In an assembly of a weather protection member and a windscreen member for an agricultural vehicle or the like
a windscreen support adapted for attachment to a portion of the weather protection member, said windscreen support comprising mating halves which when joined form a spring housing with a rearwardly closed end and a forward open end,
said halves each terminating at the open end with a flattened lip,
between said lips a bearing plate fitted to said windscreen and pivotally mounted upon a pin extending between the lips,
travel-limiting stop means associated with the bearing plate and the lips to limit pivotal motion of the bearing plate,
and a compression spring member extending between the bearing plate and the rearwardly closed end of the housing acting to retain the bearing plate in desired position.

3,295,814
CONTROL MEANS OF MINE ROOF SUPPORTS
Frank Town, Burton Joyce, England, assignor to W. E. & F. Dobson Limited
Filed Jan. 13, 1965, Ser. No. 425,123
Claims priority, application Great Britain, Jan. 18, 1964, 2,314/64
11 Claims. (Cl. 248—354)



1. A cylinder and ram assembly comprising a ram, a ram piston thereon, a ram cylinder in which the ram piston is slidable, an inlet for leading pressure fluid into said ram cylinder, a control device mounted on said ram and operable for instigating a separate operation other than that of the cylinder and ram assembly, operating means including an end member axially slidable on said ram so as to operate said control device upon relative contraction between said end member and said ram, and pressure applying means providing a predetermined pressure less than the loading pressure of the ram piston and ram cylinder and disposed in separating association with said end member and said ram, whereby said ram piston and ram cylinder must be pressure loaded in excess of said predetermined pressure before said control device is operated.

3,295,815
FOLDING EASEL
David S. Howell, Royal Oak, Mich., assignor to Arlington Aluminum Company, Detroit, Mich., a corporation of Michigan
Filed Jan. 28, 1965, Ser. No. 428,661
6 Claims. (Cl. 248—464)



1. A folding easel, comprising
a generally upright easel panel structure having a lower portion with a pivotal connection thereon,
an outer leg unit having an outer cross member pivotally mounted in said pivotal connection and swingable upwardly and rearwardly therearound from a ground-engaging panel-supporting position of said outer leg unit below said lower portion of said easel panel structure to a storage position thereabove behind said panel structure, said outer leg unit having outer legs secured to and projecting transversely from said outer cross member,
an inner leg unit having an inner cross member of shorter length than said outer cross member disposed in spaced parallel relationship therewith and having inner legs secured to and projecting transversely from said inner cross member,
pivot means pivotally connecting said inner leg unit to said outer leg unit upon a pivot axis spaced away from said cross members,
and means extending from said easel panel structure to said inner leg unit for releasably holding said inner leg unit in angular inclined relationship to said outer leg unit.

3,295,816
INDICATOR TAPE HOLDER
Carmelo Salvador, 2926 Royal Palm Ave., Miami Beach, Fla.
Filed Sept. 16, 1965, Ser. No. 487,839
3 Claims. (Cl. 248—473)

1. An indicator tape holder comprising, a first and second elongate member of equal length, pivot means to connect the members together intermediate the length thereof, spring means on the holder between the members to normally urge one end of each of the members together, and an enlarged footed portion on the other end of each of the members to rest the holder in an upright position with a strip of tape grasped between the said one ends of the members, the confronting surfaces of the members being provided with a longitudinal drip recess to guide any droplet of water from a piece of tape held in the tape to the footed portion of the members.

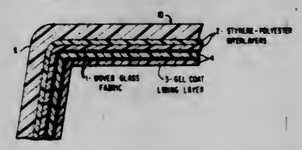


3,295,817
APPARATUS FOR FORMING A CEMENTITIOUS BASE FOR FENCE POSTS OR UTILITY POLES
Christian S. Carlsen, Fox Island, Wash. 98333
Filed June 30, 1964, Ser. No. 379,305
3 Claims. (Cl. 249—83)



1. A strip mold for molding a concrete base for a utility post or pole, said mold comprising a normally horizontal mold base having a substantially cylindrical neck projecting upwardly from a side thereof, a normally upright substantially hollow cylindrical form having a pair of opposed upper and lower open ends, said form being split on a line parallel to the longitudinal axis thereof to provide a pair of separable confronting edges, means releasably-securing together said confronting edges, said releasable-securing means comprising a flange radiating from each of said edges, respectively, said flanges being disposed in confronting relationship relative to one another and means clamping said flanges together, said form having the lower one of its ends telescoped over said neck and supported on said base, a split annular element fixedly-secured within said form adjacent the upper other end thereof, said annular element opening on the line of separation of said flanges, said upper other one of said ends of said form receiving concerete therethrough, a plurality of connector members detachably-secured within said form, said connector members each being substantially rectangular in configuration and being provided with a passage extending substantially parallel to the longitudinal axis of said form, said connector members being circumferentially spaced about said form adjacent said upper other end thereof, a plurality of elongated rods, each of said rods being slidably-received, respectively, in one of said passages and extending parallel to the longitudinal axis of said form, each of said connectors being provided with a tapped opening extending perpendicular to its respective associated passage and to the longitudinal axis of said form, a bolt extending through said passage to releasably-secure said connectors and said rod within said form, an upright L-shaped element for each of said connectors, said elements each including a vertically elongated leg having an opening formed therein adjacent the upper end thereof to receive one of said bolts therethrough, said leg being interposed between its associated connector and said form, and a flange projecting radially and inwardly from the lower end of each of said legs, said last-named flange having an opening extending transversely therethrough to slidably-receive one of said rods therein, said last-named openings being offset with respect to the passage formed in the connector with which the element is immediately associated, said rods, connectors and L-shaped elements remaining embedded within said concrete base as said form is removed from its said mold base and said confronting edges of said mold are separated.

3,295,818
LINING FOR LIGHTWEIGHT FIBERGLAS REINFORCED POLYESTER RESIN MOLD
George J. Kreier, Jr., 1524 Cambridge St., Philadelphia, Pa. 19130
Filed May 14, 1965, Ser. No. 455,794
4 Claims. (Cl. 249—134)



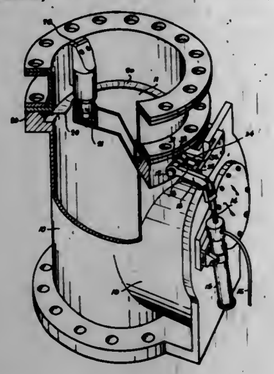
1. A form member of extended surface area for poured concrete structures comprising: (a) a backing formed of a rigid, glass fiber reinforced, cured styrene-polyester laminate; and, (b) a chemically inert finely divided hydrophilic fibrous filler containing cured styrene-polyester gel facing layer bonded to said backing, said facing layer varying in thickness from about 1/64" to about 1/4", said facing layer imparting a smooth surface to the poured concrete molded thereby and being adapted to withdraw from the freshly poured concrete a quantity of water up to about 1.5% by weight of the cured gel facing layer to condition the mold and to thereby facilitate separation of the mold form from the concrete after the concrete has hardened, there being present in said gel facing at least from about 15 to about 35% of said fibrous talc filler of particle size of 1–10 microns by weight of said facing layer, said filled styrene-polyester gel facing layer being coated with a film of organic hydrophobic mold-release material, said hydrophobic film forming a barrier which blocks the transport of free lime from the concrete while floating against a film of water at the water-containing surface of the concrete during casting, the concrete being thereby effectively separated from the mold by a film of water.

3,295,819
VALVE CONSTRUCTION
Harvey John Underhill, Pembroke, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ontario, Canada, a corporation
Filed May 11, 1964, Ser. No. 366,539
8 Claims. (Cl. 251—69)

1. A valve construction comprising
(a) a casing defining a passageway,
(b) a valve gate and means mounting said valve gate in said passageway with said valve gate movable unimpededly from a position closing said passageway to a position opening said passageway,
(c) a pair of cooperating magnet elements comprising an electromagnet and an armature,
(d) means mounting one of said elements on said valve gate and the other of said elements on said casing with said elements in cooperating relationship

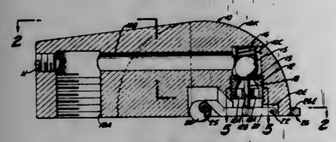
in the closed position of the valve gate to hold the same in closed position,

(e) means for moving said valve gate from open to closed position,



(f) and means sensitive to location of said valve gate in said closed position for deactuating said moving means to leave said valve gate held in said closed position solely by said magnet elements.

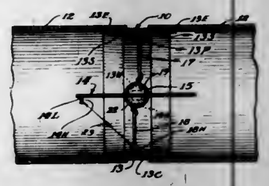
3,295,820
VALVE MEANS
Walter J. Zipper, Santa Monica, Calif., assignor to Nuid Engineering Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 27, 1964, Ser. No. 362,798
7 Claims. (Cl. 251—229)



5. A faucet construction including a housing, an O-ring seat, first means retaining said seat in said housing, a ball, a coil compression spring acting between said housing and said ball normally urging said ball against said seat, lever means, second means pivotally mounting said lever means on said housing, and third means connected between said lever means and said ball for moving said ball from said seat against the action of said spring upon movment of said lever, said spring being effective to move said ball against said seat and to move said lever means to an Off position, said lever means being generally U-shaped having parallel legs thereof movable in slotted portions of said housing, a shaft having opposite ends rotatably mounted in said housing, means connecting said shaft to said legs, a cam on said shaft, a lever pivoted on said housing and engaging said cam, and means connected between said lever and said ball for moving the same from its seat upon movement of said lever means.

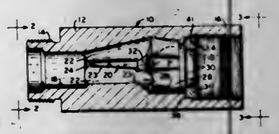
3,295,821
VOLUME CONTROL DAMPER UNIT
Francis G. McQuown, Bloomington, Ill., assignor, by mesne assignments, to Modine Manufacturing Company, a corporation of Wisconsin
Filed July 2, 1964, Ser. No. 379,913
5 Claims. (Cl. 251—305)

1. A volume control damper unit comprising a round frame in the form of a one-piece die cast tubular casing having internal semi-circular bearing flanges at laterally opposite regions of the casing to define peripheral journal pockets aligned laterally of the casing and having open faces directed axially thereof, said casing having complementary internal semi-circular peripheral stop flange segments offset axially of the casing and each joining corresponding regions of said bearing flanges to define a generally rounded outline configuration, a damper blade in the form of a one-piece die cast plate having a



generally rounded outline configuration matched to the outline configuration of said segments and having integral peripheral journals projecting oppositely to engage in said pockets for mounting said blade in the casing, and retainer means engaging said segments and spanning said pockets to retain said journals.

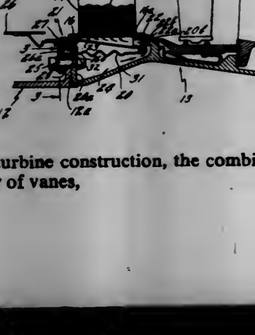
3,295,822
BLIND VALVE CAGE AND METHOD OF MAKING SAME
Walter A. O'Bannon, Jr., and William R. Bradley, Jr., Tulsa, Okla., assignors to Walter O'Bannon Company, Tulsa, Okla., a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,742
17 Claims. (Cl. 251—366)



1. A unibody closed valve cage comprising
a lower valve ball receiving portion having a bore extending axially therethrough;
an upper portion having at least one flow passage extending therethrough, said flow passage being smaller in diameter than and communicating at its lower end with the upper end of said bore through said lower portion;
at least one longitudinally extending groove open to said bore and provided in the interiorly exposed surface of said lower portion, terminating upwardly at the point of juncture of said bore through said lower portion and said bore through said upper portion, and terminating downwardly in an internal annular shoulder for receiving thereagainst a ball valve seat, the axis of said groove in said lower portion inclining upwardly and outwardly with respect to the axis of said bore through said lower portion;
at least one longitudinally extending valve ball guide surface provided interiorly of said lower portion;
a downwardly presented valve ball stop means provided at the juncture of said flow passage and said bore through said lower portion.

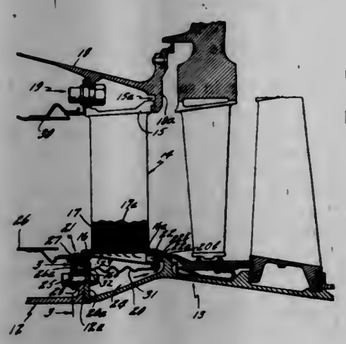
3,295,823
GAS TURBINE COOLING DISTRIBUTION SYSTEM USING THE BLADE RING PRINCIPLE
Raymond G. H. Waugh, Media, and Alvin L. Stock, Wallingford, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 13, 1965, Ser. No. 495,739
7 Claims. (Cl. 253—39.1)

1. In axial flow gas turbine apparatus including a casing having spaced concentric cylindrical inner and outer liners defining an annular path for motive fluid and having rotary blading disposed in the path, the improvement in mounting the stationary blading which comprises,
(a) a ring assembly of spaced inner and outer rings forming an annular compartment therebetween,
(b) a first connecting means between the assembly and the outer liner positioning the assembly concentrically about the turbine blading zone,
(c) a second connecting means between the assembly and the casing,
(d) tongue and groove connecters formed in the outer periphery of the inner ring,



(e) a plurality of stationary blade units formed of structure providing outer and inner manifolds interconnected by a group of hollow vanes,
(f) each outer manifold having tongue and groove connectors mating the tongue and groove connecters of the inner ring and permitting the blade units to be assembled circumferentialy thereof,
(g) an aperture in each outer manifold and a plurality of circumferentially spaced apertures in the inner ring aligned therewith and,
(h) apertures in each inner manifold whereby heat exchange fluid from said annular compartment may be distributed to the rotary blading.

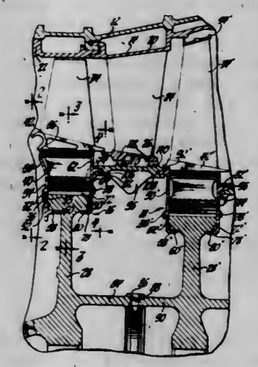
3,295,824
TURBINE VANE SEAL
Thornton G. Woodwell, West Hartford, and Marcus C. Benedict, Glastonbury, Conn., and Angelo A. Glotto, Rochester, N.Y., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 6, 1966, Ser. No. 548,112
7 Claims. (Cl. 253—39.1)



1. In a turbine construction, the combination of an annular array of vanes,

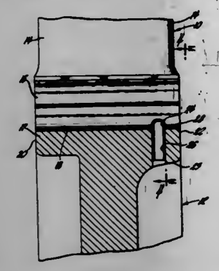
inner and outer shroud elements attached to the inner and outer ends of the vanes, each of said vanes having cooling air passages therein,
inner and outer turbine casings respectively surrounding said inner and outer shroud elements,
means forming a connection between said outer shroud elements and the related outer casing to permit relative movement in radial and axial directions therebetween, said outer shroud elements and said outer casing defining a chamber,
means to introduce cooling air into said chamber,
and partition means in said chamber for directing air to the downstream end of said outer shroud elements, said outer shroud elements having passages formed therein communicating with said vane passages.

3,295,825
MULTI-STAGE TURBINE ROTOR
Beuford C. Hall, Jr., Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 10, 1965, Ser. No. 438,476
7 Claims. (Cl. 253—77)



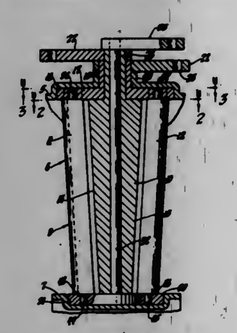
1. In a multi-stage bladed rotor, the combination comprising:
a first rotor wheel having a plurality of circumferentially spaced axial slots,
a plurality of radially extending blades having roots mounted in said slots,
first and second tangs on said roots,
means engaging said first tangs to prevent said blades from being withdrawn axially in one direction from said first wheel,
an annular side plate having a plurality of bayonet slots abutting the edge wall of said first wheel and said roots with said second tangs extending through said slots, said side plate being indexable to an interlocking poistion to engage said second tangs and prevent said blades from being withdrawn axially in the opposite direction from said first wheel,
a plurality of spacer segments mounted at one end to said side wall, said segments abutting adjacent segments to form an annular spacer,
pilot means on said segments engaging said side plate and said first wheel to locate said segments and to retain said side plate in said interlocking position, and
a second bladed rotor wheel spaced axially from and connected to said first wheel, said second wheel including means to mount the opposite end of said spacer segments thereon.

3,295,826
BLADE LOCK
Lawrence H. Nickles, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,178
5 Claims. (Cl. 253—77)



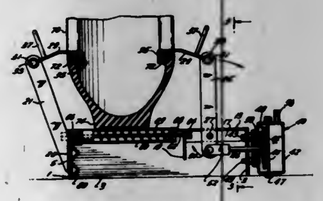
1. A bladed rotor comprising: a rotor having a widened rim with a plurality of circumferentially spaced generally axial fir tree mounting grooves and a plurality of bores extending generally radially across said rim and in radial alignment with said mounting grooves, a plurality of blades having mating fir tree roots mounted in said grooves, each of said blade roots having a generally transverse slot bounded by a surface having a cam portion, said slots being in communication with said bores and having a width coextensive with said bore in a first plane, and a width greater than said bore in a second plane transverse to said first plane,
a dowel disposed in said bore and having a head deformable by said cam portion to a width greater than the width of said bore disposed in said slot whereby said dowel is retained in said bore and slot upon deformation of said head, said dowel fixing said blade axially with respect to said rotor.

3,295,827
VARIABLE CONFIGURATION BLADE
Dennis C. Chapman, Greenfield, and Kenneth O. Johnson and Salvatore A. Sgroi, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 6, 1966, Ser. No. 540,647
6 Claims. (Cl. 253—78)



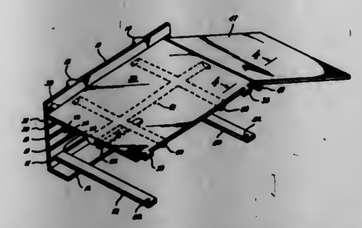
1. A variable configuration vane or blade for a turbomachine comprising, in combination,
a body generally of airfoil configuration,
means mounting the body for rotation about an axis extending spanwise of the body,
means for rotating the body about the said axis,
an adjustable leading edge strip,
means mounting the leading edge strip on the body guiding the strip for movement chordwise of the body,
an adjustable trailing edge strip,
means mounting the trailing edge strip on the body guiding the strip for movement chordwise of the body,
and means rotatable about the said axis coupled to the ends of the strips to move the strips chordwise of the body in response to relative rotation of the said means and the body.

3,295,828
TIRE SPREADER
Richard L. Stout, Box 186, Provo, Utah; Jerald L. Johnson, 389 East 720 South, and La Nar J. Spendlove, 708 East 400 North, both of Orem, Utah
Filed Oct. 11, 1965, Ser. No. 494,817
9 Claims. (Cl. 254—50.3)



1. A tire spreader comprising:
(a) a base having:
(1) a first end plate having top, bottom and side edges,
(2) a second end plate having top, bottom and side edges,
(3) a first side plate having top, bottom and side edges secured at its side edges to a side edge of each end plate,
(4) a second side plate having top, bottom and side edges secured at its side edges to the other side edge of each of said end plates opposite said first side plate to form an open bottom frame adapted to rest on a support,
(5) means providing spaced supports for the tread of a tire adjacent to the top edges of said side plates and to said second end plate,
(6) a top plate secured to the top edge of the first end plate and along the top edges of the side plates having a slot parallel to said side plates adjacent to said first end plate,
(b) a first bar secured to the exposed surface of said second end plate and extending a substantial distance above it,
(c) a second bar in said slot pivoted intermediate its ends to said top plate and extending a substantial distance above it, said bar being movable in said slot toward and away from said first bar,
(d) a fluid motor having a casing and a reciprocable connecting rod, said casing being mounted on said first end plate and said connecting rod being connected to said second bar below the pivot whereby the power thrust of said connecting rod moves the upper end of said second bar away from said first bar, and
(e) a gripper pivoted to the upper end of each bar having a hook adapted to engage the bead of a tire placed on said base with the tread engaging said supports and to spread the beads when the fluid motor is actuated.

3,295,829
APPARATUS FOR LEVELING TRAILERS AND THE LIKE
Charles H. Tarr, 8554 Forum St., Houston, Tex. 77055
Filed Mar. 19, 1965, Ser. No. 441,227
8 Claims. (Cl. 254—88)



1. Wheel elevating and support apparatus, comprising inclined ramp means having oppositely projecting bar portions at its upper inner end, platform means having laterally projecting locking key portions at opposite sides, a pair of facing support elements each having a plurality of vertically spaced socket openings adjacent one end each adapted for receiving a said projecting bar portion of said ramp means to support the upper inner end of said ramp means at a particular selected level, said support elements each having in its face the same plurality of vertically spaced horizontal slot means as said plurality of socket openings and each said slot means being disposed and adapted to receive and support a side of said platform means at a vertical level corresponding to one said selected level of the upper inner end of said ramp means, said support elements each having perforation means associated with each said slot means to releasably receive and engage said locking key portions of said platform means when a side of said platform means is received and supported in any of its said slot means, whereby a wheel may be elevated by rolling up said ramp means and supported in elevated condition upon said platform means.

3,295,830
MULTI-CABLE SPREADER TOOL
Stephen B. Bogese, Roanoke, Va., assignor to Virginia Plastics Company, Roanoke, Va., a corporation of Virginia
Filed June 4, 1965, Ser. No. 461,444
6 Claims. (Cl. 254—131)



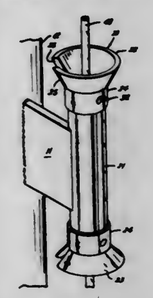
1. A multi-conductor cable-spreading tool comprising a plate-like main body having a central portion of maximum width, said body being formed with notches at opposite edges thereof, at least one of said notches being located at said maximum-width portion, said notches being adapted to receive electrical conductors to be spread apart, and an elongated insertion finger extending from one end of the main body, said finger having a tapered free end portion adapted to be inserted between the conductors of a multi-conductor cable, whereby the finger may be engaged between said conductors and the main body lodged therebetween, after which the main body may be rotated with the conductors engaged in the notches, causing the conductors to be spread apart.

3,295,831
BARREL LIFTER
Roy S. Trimble, 1021 Capitol, Beacon Hill Station, San Antonio, Tex. 78201
Filed Oct. 14, 1965, Ser. No. 495,916
8 Claims. (Cl. 254—131)



1. In a barrel lifter, a body portion comprising a pair of aligned legs and a bight connecting said legs at one end, said legs being obtusely angled at an intermediate point in a direction transverse to the extension of said bight, a bar secured to each leg on one side of the angle therein and extending across said angle in substantially parallelism to the portion of the leg on the other side of the angle, a support extending from each leg on said other side of the angle rigidly connected to the adjacent bar, a portion of each bar extending beyond its support and adapted to engage beneath the flange of flanged barrel to be lifted, and an arcuate end member secured across the ends of said legs opposite said bight adapted to bear against the arcuate side of the barrel to be lifted, whereby lifting pressure exerted on said bight is adapted to raise the barrel from a horizontal position to a vertical position.

3,295,832
CABLE GUIDE MEANS
John H. Fowler, Houston, Tex., assignor to Rockwell Manufacturing Company, Houston, Tex., a corporation of Pennsylvania
Filed Oct. 18, 1965, Ser. No. 497,429
9 Claims. (Cl. 254—190)
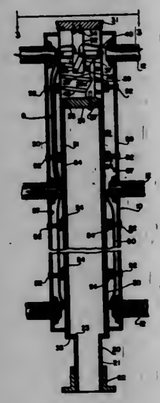


1. In a device for sliding down a cable, the combination of:
an apertured cable guide portion, said portion's aperture substantially exceeding said cable's diameter to permit free sliding movement between the cable and the guide portion;
means for blocking lateral escape of a cable through said apertured portion; and
means for positioning said guide portion radially outward of a descending tool means.

3,295,833
PROTECTIVE ENCLOSURE
Charles J. Everett, Central Islip, N.Y., assignor to Holmes Electric Protective Company, New York, N.Y., a corporation of New York
Filed Jan. 18, 1965, Ser. No. 426,221
3 Claims. (Cl. 256—21)

3. An electric protective enclosure comprising a plurality of vertical posts and a plurality of lateral rails connected to said posts,

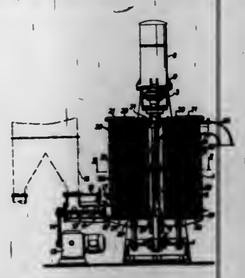
(A) each of said posts comprising
(1) two upright elongate members extending one within the other in telescoping relation
(a) the outer of said members being positioned uppermost
(2) resilient means interposed between said two members for urging the outer member upwardly from the inner member,
(3) means on both said members for engaging each other and preventing upward movement of the outer member beyond a preselected point,
(4) housing means extending along at least one side of the outer member for providing a covered passageway from the lower to the upper portions of said outer member,
(B) a plurality of laterally oriented rails connected to said housing means and extending part-way into said



housing means, each rail comprising:
(1) an elongate hollow tube
(2) means for rotatably joining said tube to said housing means and for permitting axial motion of said tube into and out of said housing means
(C) electric switch means within each of said posts for initiating a signal when predetermined movement downwardly of said outer member occurs with respect to said inner member,
(D) electric conducting means extending through said rails and at least a portion of said housing means for joining a switch in one post with another switch in another post,
whereby, a load, exceeding a preselected value, imposed on at least one of said laterally oriented rails will cause said outer member to move downwardly and actuate said electric switch means and thus initiate an alarm signal.

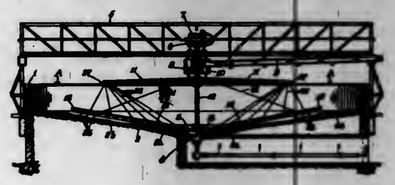
3,295,834
APPARATUS FOR WHIPPING AND FOAMING MATERIALS
John Huxtable Bendle, West Hartlepool, England, assignor to Cerebos Foods Limited, London, England, a British company
Filed Nov. 27, 1964, Ser. No. 414,288
Claims priority, application Great Britain, Nov. 28, 1963, 47,076/63
7 Claims. (Cl. 259—7)

1. Apparatus for whipping a material into a foam, comprising: an upright substantially cylindrical container having a side wall and top and bottom walls and having an inlet adjacent its bottom wall for the introduction of materials to be whipped, an outlet adjacent its top wall for the egress of foamed material; and rotary whipping means mounted within the container for rotation about the axis thereof, said whipping means being arranged to cut through the material without imparting any substantial rotary motion thereto and comprising elements defining a generally radial surface, a portion of which extends generally downwardly and forwardly of the direction of rotation to urge said material upwardly in said



container, said whipping means extending from said axis substantially to the side wall of said container and substantially from said top wall to said bottom wall thereof whereby to sweep substantially the whole interior of said container.

3,295,835
SETTLING APPARATUS
Daniel R. Klopper, Brendam, Transvaal, Republic of South Africa, assignor to Union Corporation Limited, Transvaal, Republic of South Africa
Filed May 11, 1965, Ser. No. 454,946
Claims priority, application Republic of South Africa, May 22, 1964, 64/2,420
12 Claims. (Cl. 259—104)



2. Settling apparatus comprising a settling tank; rotary raking means comprising at least a pair of raking blade carrier arms located within the settling tank in required angular relationship to the horizontal and extending radially in circumferential spaced relationship from a common, substantially vertical axis of rotation, the carrier arms being mounted towards their inner ends for rotation together about the common vertical axis and each carrier arm further being mounted towards its inner end for individual pivotal movement independently of the other carrier arm about both a substantially horizontal axis and a substantially vertical axis; and at least one elongated draught element secured to each carrier arm, whereby draught force acting along a closed path about the vertical axis of rotation of the carrier arms is applicable to each draught element in a position above and in advance of its carrier arm.

3,295,836
PORTABLE AGITATOR
Frank A. Langella, Raymond Blvd. and Rte. U.S. 1, Newark, N.J. 07103
Filed Oct. 16, 1964, Ser. No. 404,297
7 Claims. (Cl. 259—122)

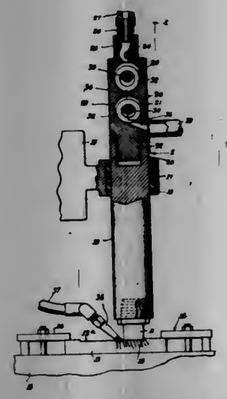
1. A portable agitator adapted to be removably inserted into a container through an opening thereof, comprising a shaft having an axis, means for supporting said shaft within said opening for rotation about said axis,

and stirring means, said stirring means being constituted by a bar of angular cross-section to provide two elongated angularly disposed legs over the whole length of said bar, said bar being secured to said shaft in end to end relation,



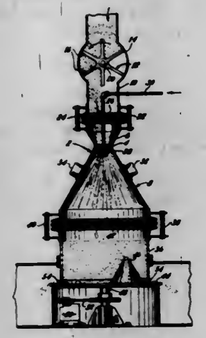
each leg being defined by a pair of opposite faces, the two pairs of opposite faces intersecting each other, one of the faces of each of said pairs pointing, on rotation of said shaft and bar, in the general direction of rotation.

3,295,837
METHOD FOR GENERATING AND TRANSMITTING SONIC VIBRATIONS
Albert G. Bodine, Jr., Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif. 91406)
Application Sept. 12, 1960, Ser. No. 55,537, now Patent No. 3,153,530, dated Oct. 20, 1964, which is a division of application Ser. No. 825,117, July 6, 1959, now Patent No. 2,960,314. Divided and this application Oct. 8, 1964, Ser. No. 402,529
4 Claims. (Cl. 259—1)



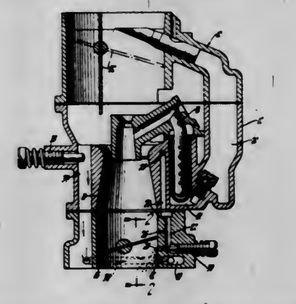
1. In a sonic vibration process, the steps of: driving a plurality of inertia rotors repeatedly in orbital paths around the surface of a corresponding plurality of cylindrical bearings, holding said bearings in coupled relation to a vibratory part of an elastically vibratory apparatus, and driving said inertia rotors with sufficient effort to cause them to revolve in said orbital paths in the resonant frequency range of said elastically vibratory apparatus but with insufficient effort to obtain peak resonant amplitude of said vibratory part thereof, so that said inertia rotors all assume and hold a synchronous relation to the vibration of said vibratory part below the frequency for said peak amplitude.

3,295,838
CONDITIONER FOR PREMOISTENING DRY POWDERS
Thomas E. Ban, Cleveland, Ohio, assignor to McDowell-Wellman Engineering Company, a corporation of Ohio
Filed Aug. 24, 1964, Ser. No. 393,009
9 Claims. (Cl. 259—2)



1. A conditioner for premoistening dry powder comprising:
(a) a vertically disposed venturi section having open extremities, in which dry powder is conditioned;
(b) means for feeding dry powder through the upper open extremity of the section;
(c) means for moistening the dry powder at the throat section of the venturi section;
(d) means for vibrating the venturi section; and
(e) means for aggregating the moistened dry powder adjacent the lower extremity of the venturi section, said aggregating means including a circular bin resiliently supported by the venturi section whereby the circular bin is movable relative to the venturi section.

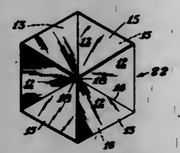
3,295,839
CARBURETOR IDLE AIR BYPASS ARRANGEMENT
Harry R. Mitchell, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 29, 1964, Ser. No. 363,357
1 Claim. (Cl. 261—41)



A carburetor comprising a downdraft induction passage, a throttle valve disposed in said passage, a main fuel supply passage discharging to said induction passage upstream of said throttle valve, an idle fuel supply passage having a fuel discharge port opening to said induction passage downstream of said throttle valve, and an idle air supply passage having an air discharge port opening to the induction passage immediately subjacent

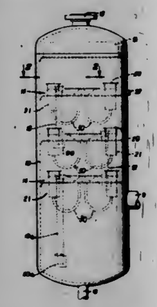
said fuel discharge port, said idle air supply passage having an inlet opening from said induction passage upstream of said throttle valve, said air discharge port being horizontally greater in width than said fuel discharge port, said air discharge port having a substantially horizontally disposed elongated configuration to thereby provide a fan-shaped jet of air flowing into said induction passage which will tend to atomize any liquid fuel discharged from said fuel discharge port and provide an evenly dispersed air-fuel mixture in said induction passage.

3,295,840
TOWER PACKING
Harold J. Donald, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 27, 1962, Ser. No. 205,754
1 Claim. (Cl. 261—95)



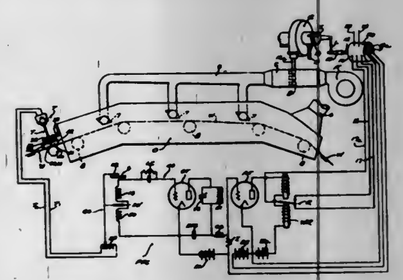
A tower packing comprising opposite end walls and a peripheral side wall, each said end wall comprising a section pyramidally recessed toward a common center, said side wall comprising a plurality of pyramidally recessed sections about its periphery, the surfaces of each section extending toward said common center and approaching a pyramidal apex at an angle generally equal to $360°/n-2$, where n is the total number of sections in said packing, said apexes being spaced from one another and at least partially cut-out.

3,295,841
LIQUID-VAPOR CONTACT METHOD AND APPARATUS
Arthur J. L. Hutchinson, Palm Springs, Calif., assignor of one-half to William L. Rifenberick, Glendale, Calif.
Filed Feb. 19, 1963, Ser. No. 259,654
3 Claims. (Cl. 261—114)



1. Liquid gas contacting apparatus comprising,
(A) a shell containing a horizontal circular tray,
(B) means for maintaining a substantially constant level of liquid on the tray and for passing a portion thereof downwardly through the tray,
(C) means forming a plurality of circularly arranged open vapor riser passages spaced radially from the center of the tray,
(D) means at a central area of the plate for continuously metering a second portion of said liquid body into separate streams corresponding in number to said vapor riser passages, said metering means comprising circularly arranged weirs in the central area of the tray for individually metering separate streams of the liquid from the central tray area, and
(E) means for conducting said separate streams downwardly through the tray into the centers of said passages for entrainment of the liquid in vapors flowing upwardly through the passages and return of the liquid to said liquid body, said conducting means including pipes extending downwardly from the downstream sides of said weirs and then upwardly into said passages.

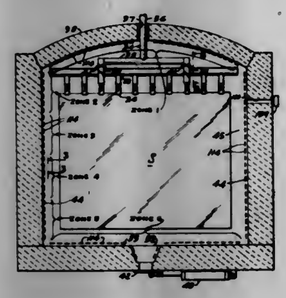
3,295,842
WEB TEMPERATURE CONTROL APPARATUS
Walter R. Stelling, Jr., Wauwatosa, Wis., and Frederick H. Wittel, Cincinnati, Ohio, assignors to Faustel, Inc., Milwaukee, Wis., a corporation of Wisconsin
Original application Mar. 15, 1961, Ser. No. 96,026, now Patent No. 3,163,406, dated Dec. 29, 1964. Divided and this application Aug. 8, 1963, Ser. No. 300,878
1 Claim. (Cl. 263—3)



In a web dryer oven having a discharge end from which the rapidly moving and dried web emerges, a thermocouple holder secured on the outside of said oven and adjacent said end, said holder comprising, a base member adapted to be rigidly positioned adjacent a surface of said web, at least two opposite side walls extending generally in the direction of web movement and also a rear wall, all walls extending downwardly from said base member and towards said web and having free edges positioned closely adjacent said web, said base member and said walls together with said web defining a substantially enclosed chamber having a front side, unobstructed opening for an air curtain moving along with said web, said front side opening facing in the direction from which the web approaches said holder, a thermocouple secured on said holder and having a free end comprised of a flat loop and located in said chamber and closely adjacent to and parallel with said web, means for adjusting said holder relative to said web, and means for adjusting said thermocouple relative to said holder and web.

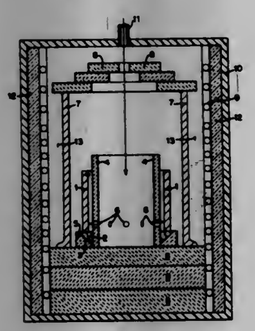
3,295,843
METHOD AND APPARATUS FOR UNIFORMLY HEATING SHEET MATERIAL
Harold A. McMaster, Woodville, and Norman C. Nitschke, Perrysburg, Ohio, assignors to Permaglass, Inc., Woodville, Ohio, a corporation of Ohio
Filed Feb. 17, 1964, Ser. No. 345,297
9 Claims. (Cl. 263—7)

1. A method of heating a flat sheet of material and raising its temperature substantially uniformly, comprising the steps of positioning the sheet so that it is substantially completely surrounded by a heat radiating surface initially at a uniform elevated temperature, thereby causing the net rate of heat radiation per unit area of the surface to become non-uniform over the surface and the temperature of the surface to fall at a non-uniform rate



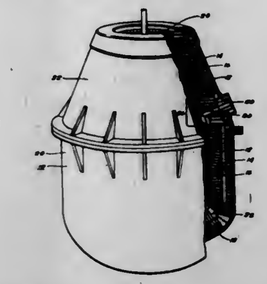
over the surface, and supplying energy to different parts of the surface at different rates in such manner as to cause all parts of the surface first to approach a uniform lower instantaneous temperature and thereafter to rise together from the lower temperature towards the said elevated temperature.

3,295,844
SINTERING FURNACE
Arthur C. Neeley and William J. Yaggi, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 1, 1964, Ser. No. 364,343
4 Claims. (Cl. 266—5)



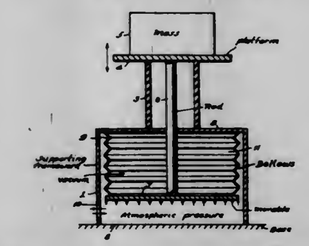
1. An improved sintering furnace for sintering of symmetrical, hollow powder compacts incapable of complete self-support while sintering, comprising in combination: a furace enclosure, an annular hearth disposed within said furnace enclosure, a hollow cylindrical mandrel having a lower end abutting against the inner surface of said annular hearth, said annular hearth having an inclined upper surface adjacent to said mandrel, said inclined upper surface and said mandrel defining an annular trough, and powder filling said trough for vertically supporting said compacts, said powder having substantially the same sintering characteristics as the powder in said powder compacts, said powder forming a support for said compacts during a sintering operation.

3,295,845
BASIC OXYGEN STEELMAKING VESSELS
Alfred E. Finn, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 20, 1965, Ser. No. 488,386
5 Claims. (Cl. 266—36)



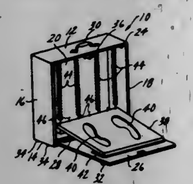
1. In metallurgical vessels of the type having an outer metal shell, a refractory lining in contact with the interior of the shell and an inclined taphole opening passing through the metal shell, the improvement comprising a prefabricated taphole assembly opening into said taphole opening composed of a plurality of mated pairs of refractory brick having generally face, side and end surfaces, each brick in each of said pairs containing a groove in a face surface thereof, said groove extending entirely across the face surface in which it is formed and intersecting an adjacent side and end surface which side and end surface intersect to form a common edge, both brick in each pair being arranged so that the respective groove containing face surfaces are in contiguous contact with each other with said respective groove containing faces cooperating to define an open ended passage which forms a portion of an inclined taphole, a said pair of brick being arranged with its side surfaces in contiguous contact with an adjacent pair along a vertical axis of the vessel with respective open ended passages aligned to provide an open ended continuous inclined taphole, with respect to said vertical axis, extending through the brick assembly.

3,295,846
CONSTANT FORCE SHOCK ABSORBER
Kenneth D. Robertson, 20 Summer St., Canton, Mass. 02021
Filed Apr. 23, 1965, Ser. No. 450,556
3 Claims. (Cl. 267—1)



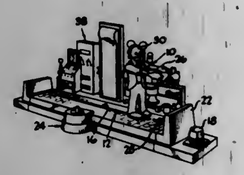
1. Constant force-exerting apparatus comprising a sealed chamber, one side of said chamber comprising a movable wall, force-transmitting means connected to said movable wall to transmit force exerted by said movable wall, a high vacuum in said chamber creating a negative pressure on one side of said movable wall and atmospheric pressure applied freely to the opposite side of said movable wall to thereby exert a substantially constant force against said movable wall.

3,295,847
EXERCISING DEVICE
Albert R. Matt, Sr., 1509 Moss Ave., Leesburg, Fla. 32748
Filed July 7, 1964, Ser. No. 380,820
10 Claims. (Cl. 272—83)



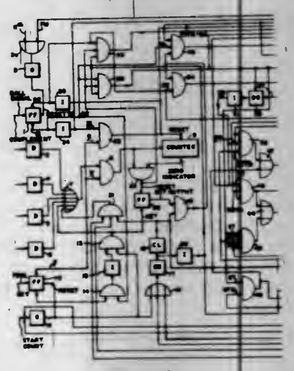
1. A portable exercising device comprising a carrying case adapted to rest on a floor surface or the like and having a door opening in one side thereof, a door operatively associated with said opening, means pivotally connecting said door to a lower portion of said carrying case to provide for a downward and outward swinging movement of the door to a substantially prone open position, inclined pedal means with one end portion adjacent an inner surface of said open door and with a body portion extending angularly upwardly therefrom toward said carrying case, means pivotally connecting said one end portion of said pedal means with the door, and spring means connected to an opposite end portion of said pedal means and to said carrying case whereby said pedal means can be selectively depressed under foot pressure and permitted to rise under spring pressure in an exercising activity.

3,295,848
MECHANICALLY ACTUATED GAME FOR OPPOSING PLAYERS
Marvin I. Glass and Gordon A. Barlow, Chicago, Leonid Kripak, Villa Park, and Henry Stan, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 28, 1964, Ser. No. 348,151
3 Claims. (Cl. 273—1)



1. A game for opposing players comprising, a platform having opposite goals, an articulated figure of a man having a head and movable arms, means mounting said figure on said platform for rotation and for movement between said goals, a mask mounted on said head for movement from a normal position concealing said head to a position exposing said head, drive means connected with said mounting means, control means connected with said drive means and operable by the opposing players to move said figure in either of opposite directions between said goals and to turn said figure to face in its direction of movement, said control means being arranged so that a player cannot determine in advance the effect of any particular setting of the control on the drive means, and means responsive to said figure arriving at a position adjacent either of said goals for effecting a raising movement of said arms and a removal of said mask from said normal position so as to expose the face of the figure, whereby each player can operate the control means in an attempt to move the figure to the goal associated with the other player and the player associated with the goal opposite the goal at which the figure raises its arms and exposes its face is the winner.

3,295,849
AUTOMATIC BOWLING SCOREKEEPING APPARATUS
Daniel D. Miller, Sunnyvale, and Jack Y. Robertson, Concord, Calif., assignors, by mesne assignments, to Doban Labs, Inc., a corporation of California
Filed Sept. 6, 1963, Ser. No. 307,145
4 Claims. (Cl. 273—54)



1. Apparatus for automatically computing bowling results and for providing a cumulative running record of each game as it is played, said results being computed from the output of a standing pin sensing device which provides a plurality of electric pulses on several lines, the sum of which pulses represents the standing pin count, which comprises:

(a) a means for combining said plurality of electric pulses on said several lines into a single rapid series of electric pulses representing the standing pin count, said combining means operating in a continuous electronic process, directly in response to the receipt of said plurality of electric pulses, upon said electric pulses without mechanically making or breaking any electrical circuit connections;

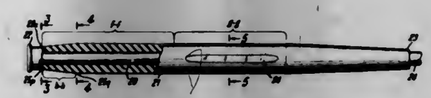
(b) a first input means for receiving a signal indicating that a ball has been rolled;

(c) a second input means for receiving a signal indicating that a player has committed a foul;

(d) an electronic switching means including a counting means for accumulating the pulses in said single rapid series of pulses, said switching means further including means responsive to the signals at said first and second input means upon the rolling of a ball and to the nonoccurrence of a foul, respectively, and responsive to said counting means for deriving from said accumulated pulses a number of pulses representing the fallen pin count and means for computing from said derived pulses a correct running cumulative score for the player rolling said ball for each frame including the recognition of spares and strikes and the inclusion of the bonus points resulting therefrom; and

(e) means for recording the results of each frame, said results including the cumulative score at each frame, and an indication of spares and strikes at the frame where same occurred, said recording means operating in response to signals from said electronic switching means.

3,295,850
GOLF CLUB INCLUDING HANDLE MEANS WITH TAPERED UPPER END OF REDUCED DIAMETER
John K. Garrity, 41 Carlynn Drive, Fairfield, Conn. 06430
Filed Sept. 14, 1964, Ser. No. 396,129
3 Claims. (Cl. 273—81.4)

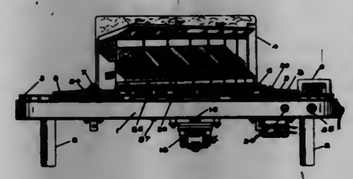


1. A golf club comprising in combination a club head, a shaft and a grip mounted on said shaft; wherein:

said grip comprises a first gripping portion farthest from the club head, adapted to be grasped by one of a golfer's hands, a second gripping portion adapted to be grasped by the golfer's other hand, and a longitudinal interior channel receiving said shaft; wherein

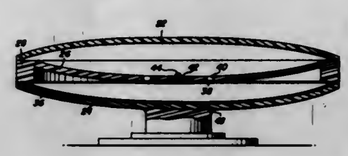
said first gripping portion comprises a tapered sub-portion having a relatively abrupt increase in exterior perimeter from a minimum, at the end of said sub-portion coincident with the end of the first gripping portion remote from said club head, to a maximum, intermediate the ends of said first gripping portion, the longitudinal length of said tapered sub-portion being substantially equal to the width of the little finger and a portion of the width of the ring finger of the hand grasping said sub-portion, and the maximum perimeter of said first gripping portion being no greater than the maximum perimeter of said sub-portion.

3,295,851
ROTATABLY ACTUATED RACING GAME
Joseph H. Miller, 2824 Overland Ave., Baltimore, Md. 21214
Filed Mar. 3, 1964, Ser. No. 349,045
13 Claims. (Cl. 273—86)



1. A racetrack comprising a horizontal generally rectangular base, upstanding spindles at each end thereof, a plurality of freely rotatable similarly horizontally spaced pulleys on each spindle, belts connecting each pair of correspondingly horizontally spaced pulleys, an upstanding spindle having horizontal drive wheels fixed thereon, the peripheries of which engage the pulleys on one spindle to drive them, means to drive said wheel spindle at a substantially uniform rate, the driven pulleys having therein spindle openings substantially larger than the maximum cross sectional dimension of the portion of the mounting spindle passing through said pulleys said drive wheels having portions of varying radii to engage and disengage the driven pulleys, the driven pulleys moving bodily to vary their engagement with the drive wheels, racing members on said belts projecting thereabove and being moved irregularly around the track by said drive means.

3,295,852
MOVABLE POCKETED SURFACE PROJECTILE TOY
Stephen T. Dunn, 3034 Balboa St., San Francisco, Calif. 94121
Filed May 26, 1964, Ser. No. 370,301
1 Claim. (Cl. 273—115)

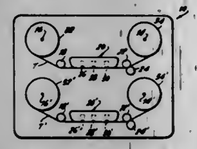


A ball and pocket toy comprising a top member of generally circular configuration, a bottom member of generally circular configuration, an intermediate partition generally circular in configuration disposed between the top member and bottom member, said partition having a thickened peripheral edge disposed between the peripheral edges of the top member and bottom member, means securing the top member, partition and bottom member together at the peripheral edges thereof, said top member having a concave inner surface generally spherical in nature and having a radius of curvature considerably greater than the radius of the top member, said bottom member and partition having an upwardly facing concave inner surface which are spherically curved about a radius of curvature considerably greater than the radius of the bottom member and partition thereby forming a shallow hollow interior with the partition being spaced from the bottom member and from the top member, a metal ball rollingly engaging the upwardly facing surface of the partition, said partition having a continuously smooth upwardly facing surface provided with a plurality of apertures extending therethrough forming pockets, a paper member attached to the bottom of the partition forming a closure for the pockets for retaining the ball in one of the pockets, a radially extending indicating means in the form of an irregularity on the upwardly facing surface of the partition for audibly and visually indicating the rolling movement of the ball thereover, said bottom member being provided with a paper member attached to the upper surface thereof having indicia thereon, said top member and partition being transparent to enable observation of the ball and indicia, said bottom member having a pedestal support attached thereto with the pedestal support including a standard and base having a diameter substantially less than the diameter of the partition, top member and bottom member to enable the peripheral edge of the toy to be grasped at opposite sides thereof for manual manipulation, the continuously smooth upwardly facing surface of the partition enabling the ball to roll freely in any direction thereon until coming to rest in one of the pockets.

3,295,853
MULTIPURPOSE TAPE RECORDER AND PLAYBACK SYSTEM
Teh Yuan Cheng, 148—37 90th Ave., Jamaica, N.Y. 11435
Filed Feb. 17, 1964, Ser. No. 345,430
5 Claims. (Cl. 274—11)

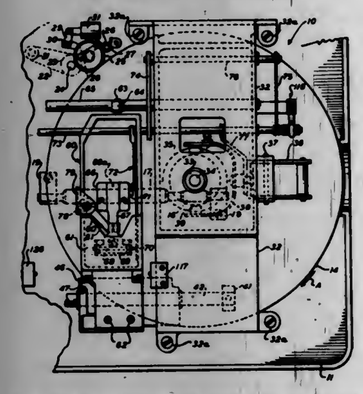
1. A tape recording, playback and editing machine comprising a pair of sound reproducing and recording assemblies, independent drive means connected to said assemblies for operating said assemblies, each of said assemblies including a supply reel, a take-up reel and magnetic heads, an audio amplification circuit means, switching means selectively operatively connecting the magnetic of said assemblies to said audio amplification circuit means so that said assemblies can be selectively

operated simultaneously and independently of each other, said supply reels being coaxial, said take-up reels being coaxial, said supply reels and said take-up reels being



controlled by said independent drive means one of said magnetic heads being superposed on the other magnetic heads.
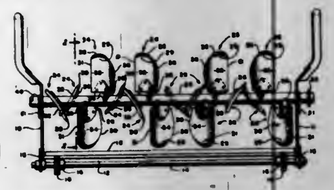
3,295,854
DICTATION TRANSCRIBING MACHINE
Donald B. Gibson, Passaic, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed July 30, 1964, Ser. No. 386,229
8 Claims. (Cl. 274—21)



1. In a dictation transcribing machine including a support for a record medium, a reproduce head, a drive motor and means operable by said drive motor for rotating said record support and advancing said head: a mechanism for selectively backspacing said head by discrete steps including a scan motor, a power circuit for said scan motor and a switching system in said power circuit comprising two parallel lines and two single-pole double-throw alternating switches for completing said power circuit alternately via said two parallel lines, a manual backspace control successively operable for shifting one of said alternating switches back and forth between its two positions, and cam means operable by said scan motor for shifting the other of said alternating switches back and forth between its two positions respectively as said head is moved by said successive steps whereby upon each operation of said manual backspace control said head is backspaced by one of said steps.

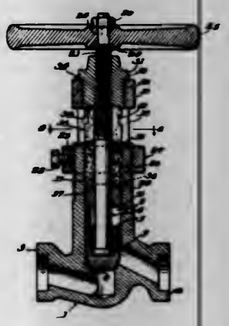
3,295,855
MANURE SPREADER PADDLE
Loren G. Sadler, Stevens, and Charles A. Smith and John K. Hale, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 428,915
8 Claims. (Cl. 275—15)

1. A paddle mountable on the rotatable wide spread shaft of a manure spreader or the like comprising, a blade having a radially inner end attachable to the shaft and a radially outer end remote from said shaft, said blade having a leading edge relative to the direction of shaft rotation extending between said ends and a trailing edge opposite said leading edge extending between said ends, said blade having a concave material engaging



working face on one side thereof extending between said ends and edges, and a flange portion along said radially outer end projecting on said concave working face side of the blade.

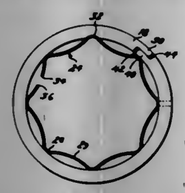
3,295,856
STUFFING BOX ARRANGEMENT FOR VALVES
Kurt B. Bredtschneider, Chicago, and John P. Magos, Wilmette, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 13, 1963, Ser. No. 330,404
5 Claims. (Cl. 277—111)



1. In a valve actuating means or the like, the combination of a valve yoke having a hub portion, a stuffing box positioned in said yoke, a yoke bushing threadedly journalled within said hub portion, a stem threadedly engaging said yoke bushing wherein the lead of the threads of said stem and yoke are the same to thereby permit independent positioning of said stem or bushing, the said stem extending through said box, a bifurcated gland means for said box, means for interlocking said bushing with said gland means whereby said bushing cooperates with said gland means to hold the latter within said box, and, locking means adapted to prevent relative rotation between said bushing and yoke.

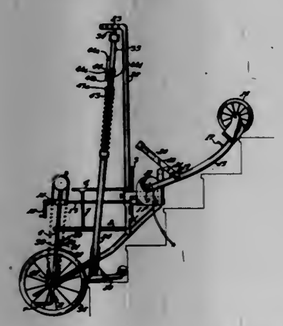
3,295,857
PISTON RING ASSEMBLY
John O. Latz, St. Paul, Minn., assignor to Wilkening Manufacturing Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed July 29, 1963, Ser. No. 298,207
7 Claims. (Cl. 277—141)

1. A piston ring assembly comprising first and second split ring members in overlying disposition, each ring member having a recess on its inner periphery, said recesses extending through said rings, said rings being positioned so that said recesses are aligned, the distance from the recess on the first ring member to the split on the first ring member being greater than the corresponding distance on the second ring member, an expander within said ring members biasing said ring members radially outwardly, said expander having an undulating periphery of projections and valleys, said expander having a portion disposed within said recesses thereby retaining a predetermined relative rotative disposition between the splits on



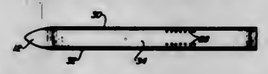
said ring members, said portion of said expander being a projection, the other of said projections of said expander being in contact with the inner periphery of said ring members wherein the height of said entire expander is greater than the combined thickness of the first and second piston rings.

3,295,858
STAIR TRAVERSING WHEEL CHAIR MECHANISM
Harry W. Addison, Jr., 200 W. Main St., Marshall, Minn. 56258
Substituted for abandoned application Ser. No. 247,589, Dec. 27, 1962. This application Oct. 20, 1965, Ser. No. 540,108
6 Claims. (Cl. 280—5.3)



1. A wheel chair for ascending and descending stair flights including:
(a) a chair support frame;
(b) a first pair of wheel members mounted for rotation on one end of said frame;
(c) a pair of rotatably mounted support stems on the other end of said frame;
(d) a second pair of wheel members rotatably mounted on said support stems;
(e) means for rotating said wheel support stems to adjust the wheel base length of a chair such that a sitting portion of a chair may be maintained in proper sitting position when the chair is placed on a stair flight;
(f) a pair of piston units pivotally mounted on a portion of the farme for oscillatory movement in a vertical plane adjacent the sides of said frame having a stair contacting portion on the bottom end thereof for contacting a stair;
(g) means for applying pressure to said piston for lifting at least a portion of the chair whereby at least said portion of the chair may be lifted upwardly and will pivot about said piston means to elevate the same to the next succeeding step.

3,295,859
METAL SKI HAVING A PAIR OF GROOVES AT THE OPPOSITE EDGES THEREOF
Elijah R. Perry, 7055 SW. Raleighwood Lane, Portland, Oreg. 97225
Filed June 4, 1964, Ser. No. 372,533
11 Claims. (Cl. 280—11.13)



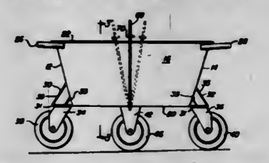
1. A snow ski, comprising:
an elongated ski member of one piece metal construction having a pair of spaced longitudinal grooves provided in the bottom surface of said ski member extending substantially parallel to one another adjacent the outer edges of said bottom surface at the opposite sides thereof; and
said bottom surface providing a substantially flat, continuous ground engaging surface between said grooves.

3,295,860
SKI AND SKI TIP ATTACHMENT
George R. Von Hoven, 1121 Spruce St., Philadelphia, Pa. 19107
Filed Sept. 28, 1964, Ser. No. 399,470
10 Claims. (Cl. 280—11.13)



1. In combination with a pair of conventional skis having upturned forward ends, a pair of ski bar attachments adapted to be affixed one on the upper surface of each ski at the forward tip end adjacent the inside edge only of each ski, and each attachment comprising an elongated rigid body having an upstanding flat faced rail portion and disposed substantially flush with said inside edge of each ski, said bar projecting longitudinally back from the tip end a relatively short distance compared to the overall length of the ski, to prevent the skis from assuming a crossed tip condition.

3,295,861
HOD BUGGY
Le Grand H. Lall, 5501 Woodlawn Blvd., Minneapolis, Minn. 55417
Filed Nov. 17, 1964, Ser. No. 411,835
8 Claims. (Cl. 280—47.16)



1. In a hod buggy, the combination comprising:
a load receiving receptacle having end walls, side walls and a bottom, said receptacle being provided with a lip along at least one of its upper side edges,
a pair of laterally spaced center wheels rotatably supporting said receptacle between its ends,
a swivelling wheel rotatably supporting said receptacle at each end thereof,
the ground engaging peripheries of said center wheels extending from said receptacle a slightly greater distance than the ground engaging peripheries of said end wheels whereby to rockably support said receptacle on said center wheels and on alternate ones of said end wheels,

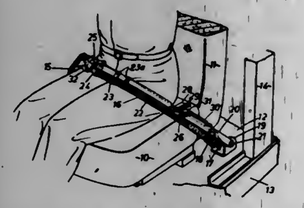
a brake rod extending in spaced relation to a side and the bottom of said receptacle,

means rotatably mounting said brake rod for limited pivotal movement,

a friction member carried by said brake rod operable to move into and out of engagement with at least one of said center wheels upon the pivotal rotation of said brake rod, and

ratchet means on a side of said receptacle including a series of inwardly extending notches in said rim adapted to receive and hold the handle portion of said brake rod whereby to lock said friction member in a selected position.

3,295,862
CAR SAFETY BELT
Kenneth C. Ebert, 27 Armstrong St., New Liskeard, Ontario, Canada
Filed June 23, 1964, Ser. No. 377,209
4 Claims. (Cl. 280—150)



1. In a motor vehicle having a frame, a driver's seat and a door hinged on the driver's side of the vehicle, a safety belt for the driver of the vehicle comprising in combination

(a) two flexible straps having means at one end thereof for anchoring the straps to the frame in spaced apart relationship to accommodate the driver therebetween, one strap being located adjacent said door the other ends of the two straps being designated as the free ends;

(b) a substantially rigid articulated arcuate strap support member having one end pivotally mountable to the frame adjacent to the door and to the anchored end of the adjacent flexible strap, said support member being adapted to be manually swung from a substantially vertical position to a normal position to span the waist of an occupant of the seat;

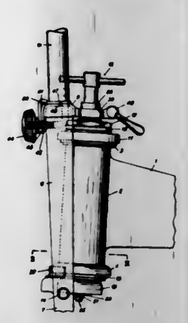
(c) spring biased latch means retaining said member in the position to which it is manually moved;

(d) a latch plate slidably carried on the free end of the support member, and having its extension beyond a set point restrained by one of said flexible straps;

(e) and a complemental manually operable catch carried by the free end of the other strap whereby said catch can be manually manipulated by one hand to engage said latch plate whereby said two straps are joined together to span the waist of the driver or to be disconnected therefrom.

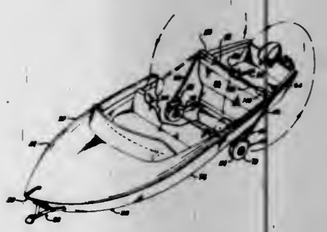
3,295,863
DEMOUNTABLE CYCLE
Eric Jaulmes, Paris, France, assignor to Ateliers de la Motobecane, a corporation of France
Filed Oct. 19, 1964, Ser. No. 404,646
Claims priority, application France, Oct. 17, 1963, 950,848
10 Claims. (Cl. 280—278)

1. In a demountable cycle having separable front and rear parts; the front part of the cycle comprising a fork constituted by two lower arms adapted to support a front wheel and two uprights upwardly extending from said arms, two vertically spaced cross members interconnecting said uprights, and handlebars mounted upon said fork; and the rear part of said cycle comprising a frame adapted to support a rear wheel and including a tubular steering head adapted to be inserted between said members; the improvement consisting in the provision of a tubular pivoting sleeve inserted in and coaxial with said sleeve, a



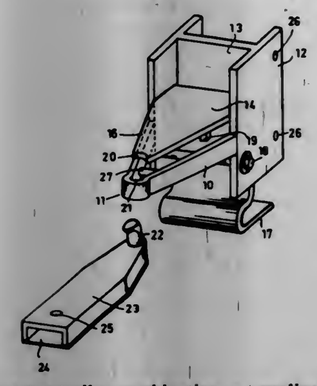
pair of bearings rotatively supporting the opposite ends of said sleeve upon said head, said head, said sleeve and said bearings forming a pre-set sub-assembly upon said frame, a connecting rod axially insertable through said sleeve via bores in said members, and releasable locking means for connecting said sleeve to and disconnecting it from said members.

3,295,864
SELF-CONTAINED BOAT TRAILER
Harold W. Norrby, 5018 186th Place SW., Lynnwood, Wash. 98188
Filed Nov. 9, 1964, Ser. No. 409,811
7 Claims. (Cl. 280—414)



1. A self-contained boat trailer, comprising: a boat hull serving as a principal body structure of a trailer; a detachable, connecting, multiple plane support to removably attach the boat hull at its bow to a pulling vehicle; and a pivoting, retractable, over-roadway running gear assembly having shock-bearing supports secured to the hull at substantially deck level, a cross axle rotatably held in these supports with its respective side struts arranged to clear a hull side upon pivoting and to turn under a hull chine, chine supports each secured to an axle side strut and arranged thereon to support the hull substantially at its chine, wheels rotatably mounted on the axle side struts which are arranged to place the wheels in a vertical plane of rotation passing through the hull just inboard of the gunnel structures, so upon forward retractive rotation the wheels enter the hull space and upon rearward rotation into roadway engagement support the hull near the chine, thus taking advantage of the hull shape, and a lever assembly to turn the cross axle during such forward and rearward rotations.

3,295,865
AUTOMATIC SAFETY DRAWBAR HITCH
Norman Hedley Pengilly, The Meadows, River Road, Canowindra, New South Wales, Australia
Filed July 9, 1965, Ser. No. 470,690
Claims priority, application Australia, July 10, 1964, 46,815/64
9 Claims. (Cl. 280—475)



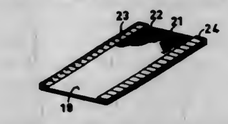
1. In a tractor trailer combination, a coupling member secured to the tractor drawbar and a connecting member secured to the trailer, a guideway on the connecting member, a latch member slidably mounted in the guideway, a ground engaging portion on the latch member, a loop member secured to the connecting member, said latch member having a portion for engagement with the loop member to retain the coupling member in engagement therewith when the tractor drawbar is initially positioned with the coupling member underlying the loop member and is subsequently raised to allow the latch member to move under its own weight into engagement with the coupling member and the loop member.

3,295,866
ARTICULATED RESILIENT HITCH CONSTRUCTION
Ernest R. Standfuss, Bucyrus, Ohio, assignor to The Burch Corporation, Crestline, Ohio, a corporation of Ohio
Filed May 21, 1964, Ser. No. 369,273
5 Claims. (Cl. 280—479)



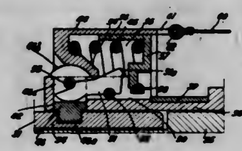
1. In vehicular hitch construction of the class described, in combination, a hitch unit, means for attaching said unit to one vehicle, upwardly open means for releasably connecting the unit to another vehicle to be towed thereby, operating means to move the connecting means upwardly into connected position, means to yieldably maintain said connecting means in said connected position, the attaching means comprising a depending attaching frame generally U-shaped in plan, the means for connecting the unit to said another vehicle comprising spaced independently, pivotally mounted connecting members, having upwardly open hooked elements at their extremities for engagement with an axle of a towing vehicle and the yieldable means facilitates independent upward and downward movement of the elements when an axle of the towing vehicle changes transverse attitude at different times from the transverse attitude of a vehicle being towed.

3,295,867
APPLIANCE FOR COLLATED COPYMAKING OF NOTE-TAKING IN BOOKS OR LOOSE-LEAF RECORDS
Alexander Stein, 725 Royal Ave., Suite 101, New Westminster, British Columbia, Canada
Filed Oct. 22, 1964, Ser. No. 405,874
6 Claims. (Cl. 282—27)



1. A note taking appliance to make collated copies on loose-leaf records from original recordings in books, and the process of use comprising; a book made of leaves of chemically treated paper on the underside with the transfer medium and the top for original recordings; and collated copy sheets of chemically treated paper with a coating on top, onto which coating face to face with the transfer medium of a leaf of said book copies of the original recordings are transferred; said copy sheets being folded over the top on both sides to form guide portions according to right or left handed use one of said guide portions to indicate the place used and to slidingly engage the edge of leaves of said book.

3,295,868
QUICK RELEASE ELECTRICAL CONNECTOR
Fernand Georges Bac, 18 Rue du Mont-Cenis, Paris, France
Filed June 3, 1965, Ser. No. 460,979
Claims priority, application France, Feb. 1, 1962, 886,659
4 Claims. (Cl. 285—27)

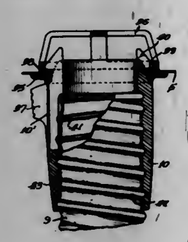


1. In a quick release connection device comprising a first and second separable, cooperating, connecting units, a first and second cylindrical outer tubular member rigidly secured on said first and second units, respectively, and each having a longitudinal axis, said first tubular member having an outer surface and a projecting free end, at least one helical groove provided in the said outer surface, and opening at said free end of said first tubular member, reciprocally engageable means provided on said first and second tubular members, respectively, for preventing relative rotation about said longitudinal axis of said first and second tubular members when in engaged relationship, a sleeve rotatably mounted and held against axial movement on said second tubular member, said sleeve having a projecting free end having a substantially smooth outer surface, and an inner surface adapted to overlie the projecting free end of the said first tubular member, as many circumferentially arranged radial openings in said projecting free end of said sleeve as there are helical grooves in said first tubular member, a locking member in each of said openings, movable substantially perpendicular to the axis of said second tubular member and adapted to project through said opening in one direction above the inner surface of said sleeve into engagement with the corresponding helical groove, a lever member arranged in said sleeve for each locking member, said lever being rockingly mounted on said sleeve about an axis substantially perpendicular to the longitudinal axis

of said second tubular member, for movement in a plane substantially containing said longitudinal axis, and further having one front end portion engaging with an abutting member on said locking member, and a rear end protruding above the outer surface of said sleeve, a locking ring axially slidably mounted on said outer face of said sleeve, resilient means urging said locking ring toward the free end of said sleeve, said locking ring comprising a first rear section fitting on said outer surface of said sleeve and adapted to cooperate with the rear end of each said lever for rocking said lever about the axis thereof when said locking ring is urged against the action of said resilient means, a second section of such diameter that it may engage over each locking member when moved toward the free end of said sleeve, in a locking position in which said ring causes said locking member to protrude above the inner surface of said sleeve into engagement with the corresponding helical groove, and a third section flaring out from said second section to leave said locking member free to retract through the corresponding opening and disengage from the corresponding helical groove in the said first tubular member, and said first rear section of said locking ring is in cooperative engagement with said rear end of said lever, said sleeve, locking member, and helical groove being so interrelated that upon initial axial engagement of said connecting units said locking member is received within the open end of said helical groove and upon rotation of said sleeve in one direction the locking member moves axially inwardly along said groove drawing said connecting units axially together into the final assembled relationship.

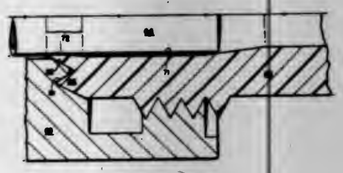
3,295,869
HAIR DRIER
Worthy L. Chambers, Wilmette, and Gilbert R. Wolter, Elmhurst, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Application Mar. 20, 1964, Ser. No. 353,479, which is a division of application Ser. No. 101,241, Apr. 6, 1961, now Patent No. 3,168,382, dated Feb. 2, 1965. Divided and this application May 27, 1965, Ser. No. 459,227

4 Claims. (Cl. 285—200)



1. A hose connector for an air manifold of a hair dryer cap, said manifold comprising two superposed sheets of flexible plastic material, said sheets being free to move away from each other when said manifold is inflated and free to contact each other when said manifold is deflated, one of said sheets having an aperture formed therein, a first annular member connected to the edges of said one sheet bounding said aperture, a hose, a second annular member connected to one end of said hose, said second annular member being insertable into said first annular member to connect said hose to said manifold, cooperative latch means on said annular members to retain said hose connected to said manifold, portions of said second annular member protruding for a short distance beyond said first annular member into said manifold and towards the other sheet, and means formed on said first annular member for spacing said other sheet from said portions, said means comprising integral formations on said first annular member, said integral formations extending across said aperture and being positioned inside said manifold between said portions and said other sheet.

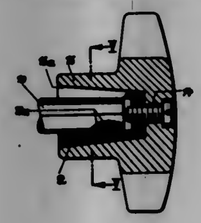
3,295,870
PIPE FITTING
Wendell Seablom, 3712 Texas Drive, Santa Rosa, Calif.
Filed Sept. 20, 1965, Ser. No. 488,460
2 Claims. (Cl. 285—331)



1. A pipe joint construction comprising a length of cylindrical tubing having a smooth outer peripheral surface at one end thereof, a fitting to be coupled to said end, the fitting including an elongated annular tube-engaging body portion, an elongated bore formed within said body portion and dimensioned to receive the end of said tubing introduced coaxially therein, the inside surface of said bore including a surface region circumferentially uninterrupted and extending axially along the bore to define a sealing zone adjacent the smooth outer peripheral surface of the tubing, a first frusto-conical wedging surface defined around the outside of said body portion and axially disposed laterally of said sealing zone, a second frusto-conical wedging surface defined around the outside of said body portion and axially disposed laterally of said sealing zone in concentricity with and spaced substantially parallel to said first wedging surface to respectively form radially inner and outer tapered wedging surfaces encircling the end of the body portion, an annular arresting surface integral with the body portion and spaced in overlying relation to the inner wedging surface to form therewith the sides of an annular groove having a V-shaped transverse cross-section, said groove thereby encircling the outer end of the bore, a hollow nut member adapted to pass said tubing therethrough coaxially of said bore, an annular boss coaxially formed within said member and adapted to oppose said groove, said boss having a truncated frusto-conical cross-section to define a third wedging surface disposed to slidably cooperate with said first wedging surface to circumferentially compress the sealing zone of the bore against the smooth outer peripheral surface of the tubing to form an uninterrupted circumferential seal therebetween and to define an arresting surface radially outwardly of said third wedging surface, to slidably engage said first named arresting surface and limit axial movement of said member towards the body portion, a fourth wedging surface formed within said nut member in concentricity with said bore and radially spaced substantially parallel to said third wedging surface to slidably cooperate with said second wedging surface to radially inwardly compress same and force a portion of said body portion radially inwardly to provide sealing engagement between said first and second named arresting surfaces, means for drawing said nut member axially along said body portion to first engage said first and third wedging surfaces and thereafter to engage said second and fourth wedging surfaces, said nut member being formed and disposed to be

free to move axially until limited by ultimate penetration of said groove by said boss, the material of said body portion and axial and radial dimensioning of said boss with respect to said first named groove being such that said ultimate penetration develops at a point within the elastic limit of the material.

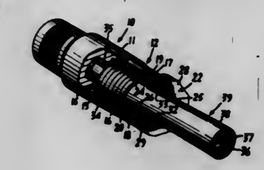
3,295,871
JOINT FOR ENSURING THE RELATIVE IMMOVABILITY OF PARTS PRESSED TOGETHER
Hubert L. Naimer, Schumanngasse 35, Vienna, Austria
Filed July 16, 1963, Ser. No. 295,449
Claims priority, application Austria, July 23, 1962, A 5,951/62
1 Claim. (Cl. 287—53)



An assembly comprising an elongated metallic shaft formed with a plurality of axially extending grooves on its end portion so as to provide an extremity of non-circular cross-section, a rigid element to be mounted on said shaft, said element having an axially tapering bore in one end thereof slidably receiving said extremity with all-around clearance therebetween, a split tubular coupling member of deformable plastic material capable of cold flow disposed in said clearance and having an end portion spaced from the inner end of said bore and an axially tapered outer periphery in contact with the peripheral wall of said bore, said tubular coupling member having an inner periphery with at least one axially extending spline thereon interengaging with at least one of said grooves for preventing relative rotation between said coupling member and said shaft, said extremity being provided with at least one transverse rib at the bottom of another of said grooves, and screw means between the end of said coupling member and the end of said bore connecting said rigid element and said tubular coupling member for relative axial movement so as to draw said coupling member more deeply into said bore with exertion of a sustained radial pressure from the tapering peripheral wall thereof urging said rib into contact with an inner wall surface of said coupling member whereby said inner wall surface is creepingly deformed by said rib with consequent positive interlocking of said extremity and said coupling member.

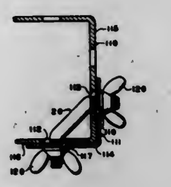
3,295,872
CLAMP FOR ROD LIKE ELEMENTS SUCH AS A CABLE
Ralph J. Kragle, Cheshire, Conn., assignor to The International Silver Company, Meriden, Conn., a corporation of Connecticut
Filed Sept. 29, 1964, Ser. No. 399,928
5 Claims. (Cl. 287—115)

1. A clamp for a rod like element comprising:
(a) clamping sleeve means having an internal thread of certain hand over at least a portion of its length, and transverse abutment means;
(b) hollow cylindrical torsion collar means threadably mounted within the internal thread of said sleeve means making a sub-assembly, said collar means having an internal thread over at least a portion of its length of a hand opposite that of the internal thread of said sleeve means;
(c) a rod like element gripping coil spring mounted within said clamping sleeve means and torsion collar means sub-assembly, having one end secured to the collar means against relative motion thereto and the other end secured to the sleeve means against relative motion thereto;



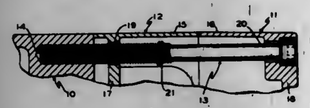
(d) a back nut threadably mounted into the collar means internal thread having an abutment face rotatable against said collar abutment means and adapted rotatably to back the collar out of the clamping sleeve means when the back nut is screwed into the latter with the abutment face riding against said abutment means; the degree of pitch of the threads on the collar being such that when the collar is backed, the coil spring will be moved into gripping engagement with a rod like element to be inserted therein and
(e) means for rotating the back nut relative to the clamping sleeve means.

3,295,873
FASTENER ELEMENTS
Warren R. Attwood, 4077 Second St., Wayne, Mich. 48184
Filed May 20, 1963, Ser. No. 281,618
15 Claims. (Cl. 287—189.36)



1. A fastener member for use in clamping a structural member to a tubular member provided with perforations said perforations each having their axes in substantially a common plane and substantially normal to each other, said fastener element comprising:
(a) a first and a second end portion extending through aligned perforations in said structural member and in said tubular member,
(b) an intermediate portion connecting said end portions, said end portions being straight and extending at right angles to each other,
(c) clamping means carried on said end portions,
(d) said intermediate portion of said fastener member being straight and being adapted to be contained within a transverse cross-sectional area of the interior of said tubular member lying on one side only of a diagonal plane longitudinally bisecting same.

3,295,874
BOLT JOINT WITH SCREW TETHERING MEANS
Clifford W. Allen, Monroeville, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed May 24, 1963, Ser. No. 282,933
5 Claims. (Cl. 287—189.36)



1. In combination:
(a) a first member having a smooth bore therein,
(b) a second member having a threaded bore therein aligned with said smooth bore,
(c) a third member disposed between and in alignment with said first and said second members and providing an axial space between said smooth bore and said threaded bore,
(d) a screw having a head at one end thereof larger than said smooth bore and having threads thereon having an outside diameter smaller than that of said smooth bore, which threads are axially passed through said smooth bore and received into said threaded bore up to a predetermined maximum length when said screw is tightened for holding said first, second and third members in assembled abutting and aligned relationship,
(e) tethering means fixedly installed on said screw and preventing complete withdrawal of said screw through said smooth bore, and
(f) said first member and said third member cooperating to define traveling space accommodating said tethering means for travel thereof between and including a first position in which said screw threads are received in said threaded bore when said screw is tightened and including a second position in which said screw threads are fully withdrawn from said threaded bore, the length of said traveling space axially of said bore and said threaded bore being greater than the said predetermined maximum length said screw threads are received in said threaded bore while in said first position.

3,295,875
CLAMPING BAR FOR A GUY WIRE PROTECTOR
David H. W. Fisher, Battle Creek Township, Calhoun County, Mich., assignor to Oliver Electrical Manufacturing Co., a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,589
5 Claims. (Cl. 287—189.36)



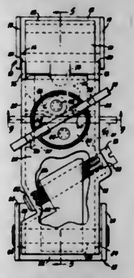
1. A clamping bar for securing a guy wire and anchor rod assembly to a guy wire protector comprising a plate, one end of said plate having an aperture for receiving a fastener for attaching said plate to said guy wire protector, said plate having notches at the sides of its central portion to provide a weakened section, and a pair of prongs at said notches for holding said assembly away from said notched central portion and against said protector whereby any bending in said plate is concentrated at said central portion when excessive pressure is applied thereto to prevent bending through said aperture and binding to said fastener.

3,295,876
JUNCTION DEVICE FOR REMOVABLE PANELS
Charles Molin, Chatenay-Malabry, and Marius Pinchemel, Paris, France, assignors to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France
Filed Mar. 12, 1965, Ser. No. 439,389
Claims priority, application France, Mar. 16, 1964, 967,613
6 Claims. (Cl. 287—189.36)



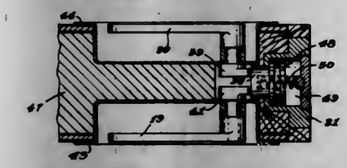
1. A junction device permitting two panels, and especially two panels with composite cores, to be mechanically coupled together at will in a rigid manner, said device comprising:
an end-to-end assembly in two parts, each of said parts being fixed to one of said panels;
two parallel junction shoulders in said assembly,
and means permitting said two assembly portions to be coupled together at the level of said shoulders,
whereby the mechanical forces applied to one of the panels are transmitted to the other panel, while the assembly itself contributes to the strength of the whole structure.

3,295,877
CATCH FOR PACKING CASE OR THE LIKE
Gunnar E. Swanson, 469 Ridge Road, Middletown, Conn. 06457
Filed Jan. 31, 1962, Ser. No. 170,137
40 Claims. (Cl. 292—111)



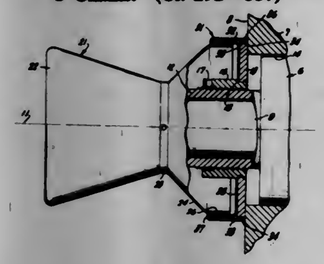
1. A catch for releasably securing together two separable parts of a structure, said catch comprising a strike adapted for attachment to one of said separable parts, a base adapted for attachment to the other of said separable parts, a body member connected with said base, a catch member carried by said body member and supported thereby for movement relative to said body member between first and second limited positions, said catch member including a portion engageable with said strike and arranged to exert closing pressure on said strike when said catch member is moved toward the first limit of its movement relative to said body member and to release said closing pressure from said strike when said catch member is moved toward the second limit of its movement relative to said body member, means including a manually rotatable element for effecting said relative movement between said catch member and said body member, and means for adjusting said body member relative to said base and in a direction toward or away from said strike whereby said catch portion may be made to properly engage said strike so as to exert a desired amount of closing pressure thereon when said catch member is moved to the first limit of its movement relative to said body member.

3,295,878
FASTENING APPARATUS
Irving S. Houvener, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,367
7 Claims. (Cl. 292—144)



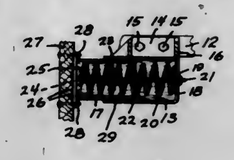
1. A latching mechanism comprising an actuating means and a plurality of bolt members selectively positioned by the actuating means, the latching mechanism comprising in cooperative combination an hydraulic actuating means comprising a master hydraulic cylinder having one piston adapted to displace the fluid from the cylinder, a first operating handle in operative engagement with the piston adapted to force the piston into the cylinder and displace fluid therefrom, a second operating handle in operative engagement with the piston and adapted to force the piston into the cylinder and displace fluid therefrom, the first and second operating handles having means connecting the handles to the piston and the handles so constructed and arranged so that each of the operating handles operate independently of each other, a plurality of hydraulic bolt actuating cylinders remotely disposed from the master hydraulic cylinder and in communication therewith by means of a conduit, each of the bolt actuating cylinders in cooperative combination with a bolt so constructed and arranged so as to engage a strike.

3,295,879
DOOR KNOB TRIM
Ernest L. Schlage, Burlingame, and Horst K. Graumann, San Francisco, Calif., assignors to Schlage Lock Company, a corporation
Filed Sept. 3, 1964, Ser. No. 394,178
5 Claims. (Cl. 292—357)



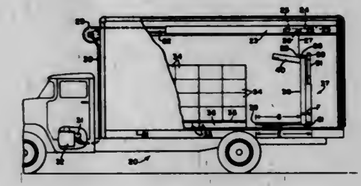
1. A door knob trim in combination with a lock unit adapted to be mounted on a door having a face, said lock unit including a bearing plate, means for holding said bearing plate in stationary abutment with said door face and normal to a central axis perpendicular to said door face, said lock unit also including a knob independent of and movable axially with respect to said bearing plate and having a hand grip portion of a predetermined diameter and having a circular cylindrical free standing rim of substantially said diameter connected to said hand grip portion and adapted to rotate about said axis with said rim close to but spaced from said bearing plate, said door knob trim comprising a trim ring having a circular cylindrical portion of approximately said predetermined diameter, and means interengaged between said trim ring and said bearing plate for supporting said trim ring on said bearing plate with said circular cylindrical portion of said trim ring in substantial abutment with said door face and lapping said circular cylindrical rim in any axial position of said rim.

3,295,880
SPRING BIASED BUMPER
Myles F. Klosterman, Elkton, S. Dak. 57026
Filed Oct. 19, 1965, Ser. No. 497,658
1 Claim. (Cl. 293—85)



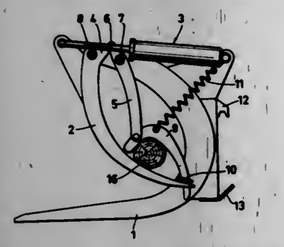
A spring loaded bumper comprising a pair of transversely spaced cylinders, means for attaching said cylinders to a vehicle, a pair of further transversely spaced cylinders received in said cylinders, said cylinders having abutment ends, plates attached to said further cylinders, helical springs received in said cylinders adapted to bear against said abutment ends and said plates, a transversely positioned bumper member attached to said plates, chains attached to said plates, rods attached to said chains and attached to said abutment ends, flanges attached to said cylinders, bolts for attaching said flanges to said vehicle.

3,295,881
CARGO CARRIER FOR LOAD-HANDLING SYSTEMS
Stanley W. Worthington, 720 Prospect Blvd., Waterloo, Iowa 50701
Filed July 31, 1964, Ser. No. 386,722
8 Claims. (Cl. 294—67)



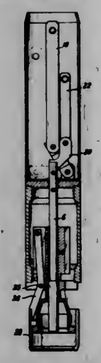
8. For use with a load-handling system having an overhead traversing support and suspension means depending therefrom, a cargo carrier comprising a lower fore-and-aft ground-proximate element adapted to receive and carry a load thereon and having a free front end and a rear end, an upright element rigidly secured to and rising from said rear end to an upper end portion, an elongated rigid arm rigidly secured to and extending forwardly from said upper end portion to a free front end overhanging said lower element, said arm having track means running lengthwise thereof, a trolley carried by and movable along the track means and having means for suspended attachment to the suspension means, front and rear stop means respectively at the front and rear ends of said arm for normally confining the trolley against escape from the track means, releasable means to enable removal of the trolley from the track means while retaining its connection to the suspension means, and wheel means carried by the lower element to support the carrier for rolling over the ground when the trolley is removed from the track means.

3,295,882
GRAB DEVICE FOR TIMBER
Karl Erik Wallberg, Bergnaset, Sweden, assignor to Kewacos Forsaljningsaktiebolag, Lulea, Sweden
Filed Mar. 1, 1965, Ser. No. 436,726
Claims priority, application Sweden, Mar. 3, 1964, 2,562/64
6 Claims. (Cl. 294—88)



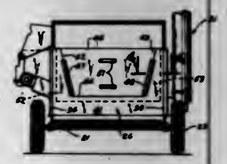
1. A grab device for timber comprising a substantially U-shaped fork which in its normal position has an upper and a lower arm and an open and a closed side, a first pivot adjacent to the free end of said upper arm, a grab clamp connected adjacent its upper end to said first pivot, a piston engine connected between said fork and said grab clamp and adapted to swing said grab clamp through said open side, a second pivot on the upper arm of said fork adjacent to said first pivot, a clamping link connected adjacent to its upper end to said second pivot and means connecting said grab clamp and said clamping link whereby the free end of the latter is moved forwardly toward said open side when the free end of the former moves rearwardly through said open side into the space between said upper and lower arms.

3,295,883
HANDLING GRAB
Gérard Dupuy, Paris, and André Tarabella, Palaiseau, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Jan. 11, 1965, Ser. No. 424,692
Claims priority, application France, Jan. 13, 1964, 960,138
6 Claims. (Cl. 294—90)



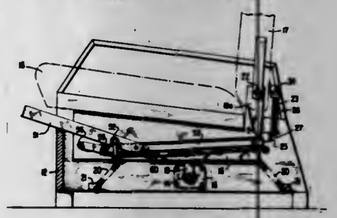
1. Handling grab comprising a hollow body, gripping members mounted on said hollow body, a slide-block which is axially movable within said hollow body and which is arranged to control the movement of said gripping members, said hollow body having an abutment member at each end thereof for arresting the movement of said slide-block relative to said hollow body in each of the two end positions of said slide-block, an articulated system mounted on one of said abutment members for controlling the displacement of the hollow body, a rod arranged to control the movement of the slide-block within the interior of the hollow body and the displacement of the grab when the slide-block is drawn to the top position thereof, said rod being adapted to pass freely through the articulated system but is arrested in the bottom position by said articulated system at the time of upward movement of said system from the rest position to the load lifting position of the grab.

3,295,884
END DOOR STRUCTURE FOR A WAGON BOX
Elmer K. Hansen, 801 S. Martha, Sioux City, Iowa 51106
Original application Aug. 5, 1964, Ser. No. 387,664. Divided and this application Apr. 26, 1965, Ser. No. 459,973
2 Claims. (Cl. 296—52)



1. A door structure for closing an opening in the rear wall of a wagon box:
(a) said opening defined by upwardly diverging side edges and a transverse bottom edge,
(b) a flat door member of a larger size than the opening in the rear wall, said door being of substantially rectangular shape, its sides extending laterally beyond said upwardly diverging side edges and its lower end below said traverse bottom edge of said opening when positioned against the inside of the rear wall for closing the opening therein, and
(c) upwardly diverging members secured inwardly from the sides of the door member and above the lower end of the door member in a complementary relation relative to the diverging side edges of said opening, said diverging members having guide portions engaged with said diverging edges to attach the door member to the inside of the rear end wall.

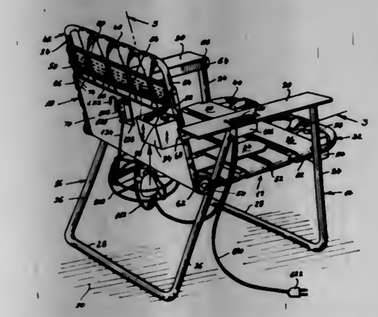
3,295,885
ROCKABLE RECLINING CHAIR CONSTRUCTION
Bruner T. Barksdale, 901 Lake Drive, Bainbridge, Ga. 31717
Filed Apr. 20, 1965, Ser. No. 449,396
13 Claims. (Cl. 297—84)



7. A rockable reclining chair having a seat, seat support means for movable mounting said seat to a stationary frame member, a back portion pivotally mounted on said seat, spring means interconnecting said back portion and said seat for resiliently biasing said back portion into a neutral generally upright position, foot rest means operatively connected to said seat, and actuating means for automatically shifting said foot rest means from a retracted position closely adjacent said seat to an extended position spaced from said seat,

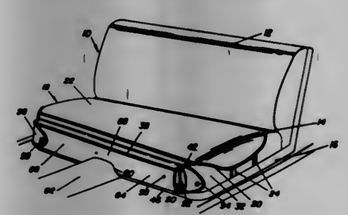
channel means mounted to the underside of said seat for guiding said foot rest means during movement between said retracted and said extended positions, said channel means being pivotal at one end thereof about a transverse pivot axis adjacent the rear of said seat and height adjusting means including means connected to the other end of said channel means for selectively raising and lowering said other end with respect to said transverse pivot axis thereby adjusting the elevation of said foot rest means.

3,295,886
COOLING MEANS FOR CHAIRS
Isaac Goldmerstein, 210 Riverside Drive, New York, N.Y. 10032
Filed Nov. 19, 1964, Ser. No. 412,553
12 Claims. (Cl. 297—180)



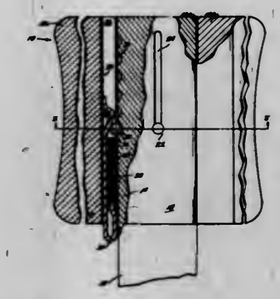
1. A chair comprising supporting legs, a seat supported on said legs, a back rest pivotally connected at its bottom end to the rear end of the seat, including a plate, a supply of water supported on the plate, and an electric fan swivelly mounted at the junction of the seat and back rest, for cooling said plate by evaporation of moisture, from said supply.

3,295,887
CARRIER FOR USE WITH VEHICLE SEATS
Eldrid H. Bacon, Box 177, Three Forks, Mont. 59752
Filed June 29, 1965, Ser. No. 467,905
6 Claims. (Cl. 297—188)



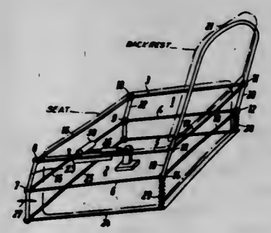
1. A carrier for elongated articles adapted for use on a vehicle seat which comprises a flexible cover means adapted to extend over at least the seat portion of said vehicle seat, fastening means for securing said cover means to said vehicle seat, and at least one envelope-like compartment attached along the length of said cover means below the level of the covered seat portion, said compartment having an indentation in its central lower portion which is shaped to fit over a hump in the floor boards of a vehicle, and said compartment also having at least one open end whereby elongated articles may be inserted into and removed from said compartment from the sides of said vehicle seat.

3,295,888
BACKREST HEIGHT ADJUSTING APPARATUS FOR CHAIRS AND THE LIKE
Larry L. Poland, Middleville, Mich., assignor to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,728
9 Claims. (Cl. 297—298)



1. A backrest height adjustment apparatus for chairs and the like, comprising in combination: an upright post structure securable to a chair assembly; a backrest member engageable with said post structure to be vertically movable relative thereto; a plurality of recesses in a generally aligned vertical sequence formed in the surface of said post structure; a dog element loosely carried by said backrest member at a predetermined and generally constant vertical position relative thereto; said dog element being of a shape at least partially insertable within each of said recesses when aligned therewith through vertical movement of said backrest member relative to said post structure; and a releasable positioning member operatively associated with said backrest member for maintaining said dog in inserted engagement with an aligned recess and thereby maintaining a desired height adjustment of said backrest member relative to said post means; said positioning member when released allowing said dog to be moved out of engagement with the aligned recess to vary the height of the backrest member by manually moving same vertically to a new position of dog element and recess alignment.

3,295,889
MOTOR VEHICLE SEAT
Rudolf A. Lorenz, 66 Bismarckstrasse, Berlin-Charlottenburg, Germany
Filed May 26, 1964, Ser. No. 370,295
Claims priority, application Germany, May 29, 1963, L 44,984
1 Claim. (Cl. 297—299)



A motor-vehicle seat assembly for a motor-vehicle body, comprising a seat portion and a back rest disposed proximal to a rear part of the seat portion; a pair of parallelo-

grammatic linkages flanking said seat portion and having respective relatively long rods extending in longitudinal direction along said seat portion, and mutually parallel relatively short rod portions at front and rear extremities of each linkage, the relatively short rod portions at the rear of said linkages being connected with said back rest, the relatively short rod portions at the front of said linkages being pivoted to the floor of said body whereby the back rest is oscillatable with a vertical component generally parallel to itself with respect to said seat portion; resilient means bearing upwardly upon at least one of said parallelogrammatic linkages for movably supporting said back rest, said parallelogrammatic linkages having corresponding pivots interconnecting said short rod portions and said rods, further comprising transverse rods interconnecting the corresponding pivots of said parallelogrammatic linkages and extending along front and rear portions of said seat portion and defining with said parallelogrammatic linkages a frame for said seat portion, said resilient means including at least one spring bearing upon said frame for resiliently supporting said back rest, said short rod portions at the rear of said parallelogrammatic linkages extending upwardly and being interconnected at an upper portion for forming a further frame for said back rest; and adjusting means mounted upon the floor of said body and engageable with one of said transverse rods for varying the inclination of said short rod portion to vary the inclination of said back rest.

3,295,890
SEATS AND THEIR CONSTRUCTION
Peter Nigel Gore Murdoch, New York, N.Y., assignor to Peter Murdoch, Inc., New York, N.Y., a corporation of New York
Filed Mar. 24, 1965, Ser. No. 442,466
Claims priority, application Great Britain, Mar. 26, 1964, 12,878/64
6 Claims. (Cl. 297—445)



1. A seat including a surface to support a user constituted by a first portion of sheet material, said sheet material being flexible but nevertheless fairly stiff and being a development of a substantially inextensible flat blank portion, a second portion of sheet material integral with the first portion, the two portions being inclined to one another and meeting at a line of fold which is curved, so that the two portions are respectively convex and concave adjacent to the fold when considered from the same side of the sheet, and means which resists reversion of the two portions to the flat condition of said blank.

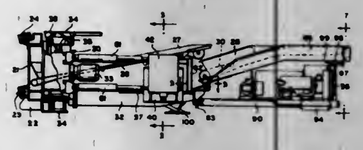
3,295,891
FURNITURE CONSTRUCTION
Jerry A. Brown, Columbus, Ind., assignor to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Nov. 10, 1965, Ser. No. 507,215
8 Claims. (Cl. 297—452)

1. In a furniture construction for a back rest, seat, or the like, first and second opposed shells each having a central portion terminating at its edges in a peripheral flange generally normal thereto, a plurality of pockets in the central portion of said first shell having their open ends disposed toward the periphery of said first shell, and a plurality of tongues projecting outwardly from the flange on said second shell received in said pockets for locking said shells together in interfitting relationship,



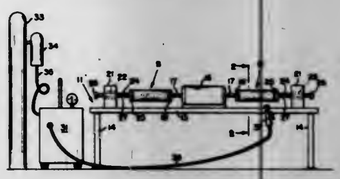
said first shell having a greater cross-sectional extent than said second shell whereby the flange on said second shell is received within the flange on said first shell.

3,295,892
STEERABLE TUNNEL-DRILLING MACHINE
Douglas F. Winberg, Bellevue, and John Galgoczy, Seattle, Wash., assignors to James S. Robbins and Associates, Inc., a corporation of Washington
Filed Mar. 30, 1964, Ser. No. 355,775
21 Claims. (Cl. 299—31)



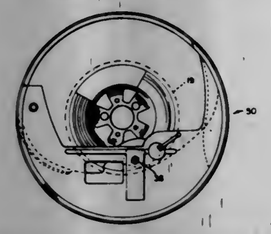
1. In a tunnel-boring machine, a power-driven rotary cutting head, a main body having said head journal-mounted thereon, a trunk extending rearwardly from said body, a box proxiding a slide-way for the rear end of said trunk, anchor means movable into and out of gripping engagement with the wall of a tunnel being bored, means supporting said box from the anchor means for adjustment of the box both vertically and transversely relative to the anchor means, and a trailing afterbody hinged to the rear end of the trunk.

3,295,893
METHOD AND APPARATUS FOR PREPARING BRUSHES FOR TRIMMING
Floyd Silas Adams, Rochester, N.Y., assignor to Smada Corporation, Rochester, N.Y., a corporation of New York
Filed June 28, 1965, Ser. No. 467,565
5 Claims. (Cl. 300—21)



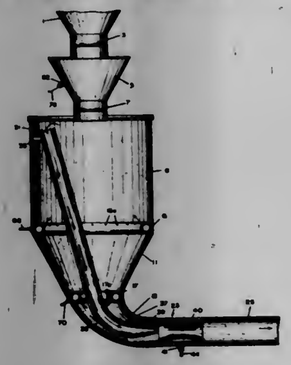
1. A method of treating a rotary fur covered brush prior to trimming its hairs to a desired length, which comprises
(a) rotating the brush about its axis at a relatively high speed, and
(b) while the brush is rotating, subjecting its hairs to an atmosphere of high temperature and high humidity sufficient to cause the hairs to become moist and soft, and to separate and project radially outwardly relative to the brush axis in response to the centrifugal force created by the rotation of the brush.

3,295,894
AUXILIARY AUTOMOBILE WHEEL SUPPORT
Joseph F. Perry, Stoughton, Mass., assignor of forty-five percent to Walter L. Reardon, Dorchester, Mass.
Filed Apr. 23, 1965, Ser. No. 450,352
19 Claims. (Cl. 301—38)



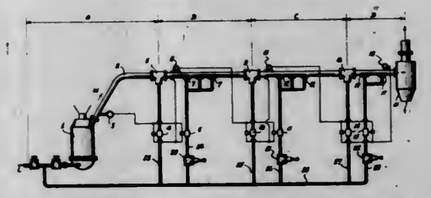
16. An automobile wheel support comprising first and second coacting rim support frames.
said frames each carrying a mating portion of an encircling peripheral rim,
means for inwardly collapsing said frames in a substantially planar pivoting action and alternately locking said frames in operative position whereby said rim forms a circle of 360 degrees,
means for limiting collapsing movement of said frames and associated rim portions,
and hub means joined to said first rim support frame for mounting said frames on an automobile wheel over a flat tire.

3,295,895
METHOD AND APPARATUS FOR PNEUMATICALLY CONVEYING FINELY DIVIDED SOLIDS
Burton F. Latham, Jr., Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware
Filed June 8, 1965, Ser. No. 462,328
7 Claims. (Cl. 302—17)



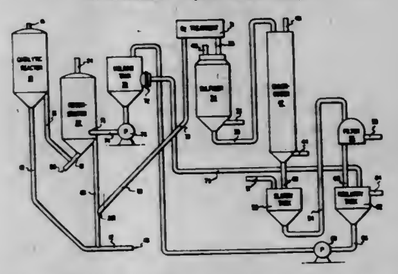
1. In a pneumatic conveying system
a vessel for the material to be conveyed;
said vessel having an outlet opening;
a gas pipe disposed in said vessel and extending toward said outlet opening;
means for supplying gas to said gas pipe;
a nozzle connected to said gas pipe and disposed in substantially axial alignment with the outlet opening in said vessel hopper;
a Venturi-shaped valve body communicating with said outlet opening and with the conduit of said pneumatic conveyor;
a flexible lining disposed in said Venturi-shaped valve body and adapted for movement inwardly with respect thereto; and
means for supplying gas under pressure to the interior of said valve body to move said flexible lining therefrom and constrict the throat of the Venturi-shaped opening provided thereby.

3,295,896
METHOD AND MEANS FOR THE PNEUMATIC TRANSPORT OF BULKY MATERIAL IN DUCTS
Knut Ingvar Hurtig, Terrangvagen 99, Stockholm-Hagersten, Sweden, and Karl Gustav Evert Krantz, Karlavagen 47B, Stockholm, Sweden
Filed July 12, 1965, Ser. No. 470,976
Claims priority, application Sweden, July 14, 1964, 8,565/64
8 Claims. (Cl. 302—26)



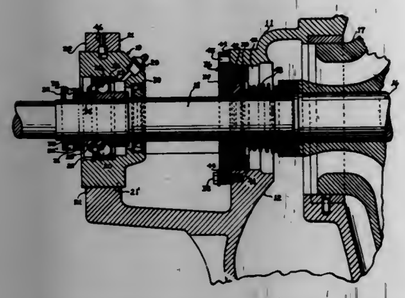
1. A method for the pneumatic transport of bulky material in ducts comprising transporting at an adjustable speed said material through a duct from an intake station to a delivery station, the material being divided during its transport into separate lots or batches by means of shut-off valves in said duct, a lot or batch of material being automatically supplied with fresh or compressed air for conveying purposes in response to pressure acting on the preceding lot or batch of material.

3,295,897
METHOD FOR TRANSFERRING A SLURRY OF CATALYSTS TO A REGENERATION ZONE
Henry Erickson, Park Forest, Ill., and Howard G. Russell, Munster, Ind., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,760
3 Claims. (Cl. 302—66)



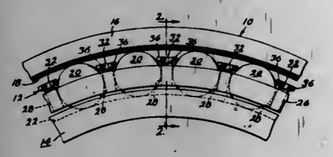
1. An improved method for transferring a water-solid catalyst slurry from a lower pressure catalyst washing operation to a regeneration zone of elevated pressure and at an elevated position which comprises the steps of forming an aqueous slurry of the catalyst containing about 2.5 to 9 parts of water per part of catalyst, pumping the slurry from an elevation below said regeneration zone to an intermediate zone at an elevation higher than the point of entry of the catalyst into the regeneration zone, removing at said higher intermediate zone an amount of water from the slurry to provide a mixture of catalyst and water containing about 1.2 to 1.9 parts of water per part of catalyst and at least about 50% less water than is in said formed slurry, and passing said catalyst- water mixture to said regeneration zone by way of said lower point of entry.

3,295,898
BEARING CARTRIDGE AND SEALING UNIT FOR A PUMP SHAFT
Herman Finzel, Chicago, Ill., assignor to Well Pump Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 1, 1964, Ser. No. 400,839
4 Claims. (Cl. 308—189)



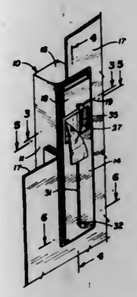
1. In combination with a pump housing and a shaft extending longitudinally therethrough,
(a) sealing means provided by said housing for opposite end portions of the shaft,
(b) each of said sealing means including a removable face plate connected to the housing,
(c) said pump housing having oppositely disposed supporting arms spaced from said sealing means,
(d) said arms each providing an opening,
(e) identical bearing cartridges mounted in the openings of said arms,
(f) each of said bearing cartridges including an inner race slip-fitted to said shaft for hand removal therefrom and a locking ring eccentrically engaging said race for removably securing the cartridge upon said shaft,
(g) the diameter of said face plate of said sealing means being less than the diameter of the opening of said arm to permit said sealing means, when said face plate is detached from said pump housing, to pass freely through said opening of said arm upon removal of said cartridge from said shaft.

3,295,899
CAGE FOR ROLLING BEARINGS
Elmer E. Knowles, Williamstown, N.J., and Edgar L. Garvin, Center Square Garden, Pa., assignors to SKF Industries, Inc., King of Prussia, Pa., a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,391
4 Claims. (Cl. 308—217)



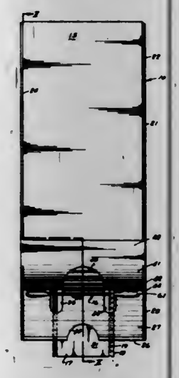
1. A cage for a rolling bearing assembly having inner and outer spaced apart rings and a plurality of rolling elements in the annular space between the rings comprising a pair of annular members, a plurality of cross pieces between the annular members circumferentially spaced apart to define pockets for the rolling elements, an anvil shaped member projecting radially from each of the cross pieces having a pair of tabs projecting axially from each end thereof, said tabs disposed radially to one side of the pitch circle of the set of rolling elements and adapted to be spread apart to overlie the pockets thereby limiting radial movement of the rolling elements in at least one radial direction.

3,295,900
TOILET PAPER HOLDERS
Walter V. Kendall, 4175 S. Lincoln St., Englewood, Colo. 80110
Filed May 12, 1965, Ser. No. 455,059
6 Claims. (Cl. 312—39)



1. A toilet paper holder comprising an elongated cabinet for holding a plurality of rolls of paper in end-to-end position having a waste compartment at one end having an access opening to the exterior of the cabinet provided with a closure member, a dispensing opening in said cabinet adjacent said waste compartment, a separator in said cabinet between the waste compartment and the dispensing opening, said separator having an opening substantially the size of a paper spool, a longitudinally extending shaft in said cabinet for supporting a plurality of rolls of paper in end-to-end position, said shaft being secured at one end to said cabinet and having the other end positioned adjacent the opening in the separator, and a pusher mounted on said shaft for longitudinal movement thereon.

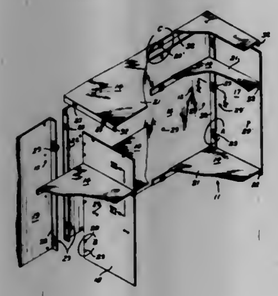
3,295,901
DISPENSER
Harold J. Fischer, North Freedom, Wis., assignor to Hankscraft Company, Reedsburg, Wis., a corporation of Wisconsin
Filed June 21, 1965, Ser. No. 465,548
12 Claims. (Cl. 312—91)



7. A dispenser for the dispensing of stick-like articles releasably carded on a flexible, easily tearable strip, said dispenser comprising

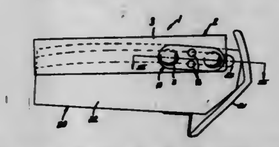
an open-article-receiving receptacle having means partially closing one end of said receptacle to provide an article slot for the dispensing therethrough of said articles and a strip slot for the passage therethrough of said strip, and
dividing means integral with said receptacle between said slots to separate said articles from said strip as said strip is drawn through its slot.

3,295,902
SHELVING
Oliver Sam Doutt, Rte. 5, Box 1039, Bremerton, Wash. 98310
Filed Feb. 17, 1964, Ser. No. 345,540
1 Claim. (Cl. 312—108)



A coupling construction for securing together sheet metal panels for forming a multi-unit cabinet structure, comprising;
a row of spaced pockets formed on one of said panels,
end flanges formed on opposite edge portions of another panel, said flanges extending in the same direction and substantially at right angles to the plane of said other panel,
a plurality of spaced selectively-formed areas formed on both of said end flanges,
said row of pockets including pairs of adjacently-spaced pockets, one of each pair being indented in one direction relative to the plane of the panel and the other being indented in the oposite direction whereby both sides of said pocketed panel can be secured to other panels,
said selectively-formed areas on both said end flanges being substantially equidistantly-spaced and the disposition of the areas on one of the flanges being staggered relative to the disposition of the areas on the flange of the adjacent panel for permitting each of said spaced staggered areas on either adjacent flange to be brought into coupling alignment with one or the other row of pockets of a complementary pair of oppositely-indented pockets,
said pocket disposition and spacing being arranged to accommodate said coupling alignment,
each of said selectively-formed areas having;
a tongue member insertably receivable in one of said pockets, and
a detent flange member disposed in an intial position facilitating said insertable reception and being manually shiftable from said initial position to a final position, in said final position, said detent flange member being so disposed as to be in abutting endwise engagement with the exterior surface of the pocket into which its adjacent tongue member has been inserted, whereby said tongue member is mechanically locked in said pocket.

3,295,903
ASH TRAY
Forest L. Middleton, Middleville, Mich., assignor to Lescoa, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed June 1, 1965, Ser. No. 460,395
14 Claims. (Cl. 312—246)



1. An ash tray adapted to be mounted in the interior of an automobile and the like, comprising: a member including a pair of flanges; said flanges defining openings therethrough; a ball retainer secured to each of said flanges; ball bearings positioned in said retainers, said ball bearings extending through said openings; said retainers fabricated of a material exhibiting spring characteristics; an ash box including a pair of tracks at its sides; and said ball bearings engaging said tracks under tension through said retainers whereby said box is movable with respect to said member as said ball bearings rotate in said tracks and said retainers.

3,295,904
CONTAINER ASSEMBLY
William R. Cobb, Columbus, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 18, 1964, Ser. No. 419,448
2 Claims. (Cl. 312—270)



1. In combination;
a pair of parallel glideways disposed in space relation,
a hollow container having a top opening and an outwardly projecting lip slidably engaged in said pair of glideways,
a one piece closure member for covering said top opening, said closure member having a first portion disposed adjacent the lip of said container, and
a second portion disposed adjacent the lip of said container in the closed position and movable to an open position for providing access to the interior of said container, and
a flexible hinge portion integrally molded between said first portion and said second portion of said closure member
said second portion being movable to an open position only when said lip adjacent said second portion is disengaged from said glideways.

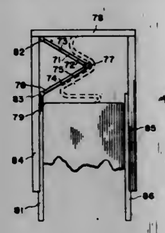
3,295,905
ELECTRONIC EQUIPMENT MOUNTING ARRANGEMENTS
Richard M. Sisk, Wilton, Jonas M. Shapiro, Stamford, Robert Vesciglio, Westport, and Theodore Watkin, Stamford, Conn., assignors to Manson Laboratories, Inc., Stamford, Conn., a corporation of Connecticut
Original application May 27, 1963, Ser. No. 283,226, now Patent No. 3,228,532, dated Jan. 11, 1966. Divided and this application Apr. 2, 1965, Ser. No. 445,193
3 Claims. (Cl. 312—273)

1. A mounting arrangement for an electronic equipment unit having a cable connected thereto comprising, in combination,

a casing having spaced opposite substantially parallel sides and a back substantially perpendicular to said sides and joined at one end to one side and joined at the other end to the other side;

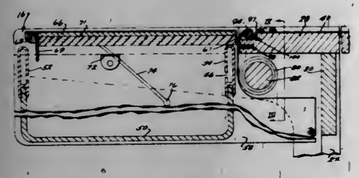
a pair of support arms adapted to support an electronic equipment unit between them;

mounting means slidably mounting one of said support arms on one of said sides and the other of said support arms on the other of said sides with each support arm in substantially adjacent and parallel relation to the corresponding side and slidable in directions toward and away from the back of said casing; and



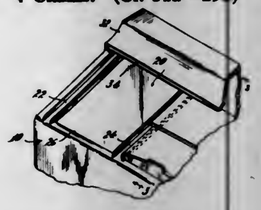
a cable retractor comprising hinged supporting means for supporting the cable connected to the electronic equipment unit, said hinged supporting means having two ends, means for pivotally supporting said supporting means at one end on the back of said casing, and means for pivotally supporting said supporting means at the other end on one of said support arms in a manner whereby a force applied to said cable by said one of said support arms in a direction away from said back pivotally moves said supporting means arcuately relative to one of the sides of said casing and away from the said back and a force applied to said supporting means by the said one of said support arms in a direction toward said back pivotally moves said supporting means arcuately relative to the said one of said sides and toward the said back.

3,295,906
DESK AND COVER
Ronald H. Beckman, New York, N.Y., assignor to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Nov. 27, 1964, Ser. No. 414,290
2 Claims. (Cl. 312—297)



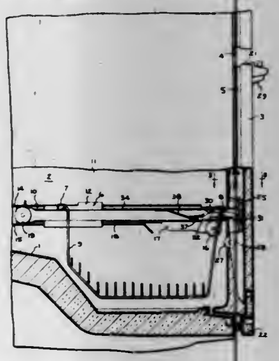
1. An office desk comprising: a support base and a top mounted thereon; said top including a work surface at the front of said desk, with front and back edges; a storage pod suspended on said desk along the back edge of said work surface; an openable cover for said pod; a flexible, wind-up work surface cover, including cover wind-up retraction means beneath said top, adjacent the front of said pod, concealed from above said work surface; an elongated slot opening between said pod and said work surface back edge, said pod cover and said back edge being generally within arm's length of said front edge; said cover having a portion projecting through said slot, and an enlarged edge preventing complete retraction through said slot and providing a grasping pull means readily accessible from said front edge; and said cover being extensible from said retraction means, through said slot, and over the extent of said work surface to cover the work surface and materials thereon.

3,295,907
FOOD CABINET CLOSURE
Thomas M. Galvin, Quincy, Mass., assignor to Interstate Fabrications, Inc., Boston, Mass., a corporation of Massachusetts
Filed Feb. 9, 1965, Ser. No. 431,266
4 Claims. (Cl. 312—298)



4. A food container comprising a cabinet having a rearwardly inclined top opening defined by front, rear and two side edges, the front edge merging smoothly with the front of the cabinet, the side edges having channels disposed adjacent thereto, and the rear edge being covered by an overhanging cabinet member terminating in a depending lip, and a cover therefor comprising front and rear telescoping sections, both sections having depending side edges adapted to fit slidably with said cabinet channels and upstanding rear edges, the front section having an upstanding front edge, the rear section having a depending front edge adapted to fit over and engage the upstanding rear edge of the front section, the rear section also having depending stops at its rear edge adapted to engage the upstanding rear edge of the front section when the cover is opened, the upstanding rear edge of the rear section being adapted to fit behind and abutt said overhanging lip when the cover is closed, both sections intermediate their front and rear edges being substantially smooth.

3,295,908
STORAGE CABINET DRAWER ASSEMBLY
Daniel B. Dawley, Anchorage, and Howard D. F. True, Jr., Fern Creek, Ky., assignors to General Electric Company, a corporation of New York
Filed July 21, 1965, Ser. No. 473,578
4 Claims. (Cl. 312—303)



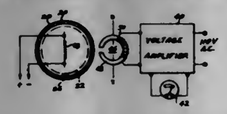
1. A cabinet including a storage compartment having an access opening,

a drawer assembly supported in said compartment for movement between a recessed and an access position,

said assembly comprising a frame including a slide having a slot therein and a closure member for closing said access opening pivotally mounted on said frame for movement about a transverse axis between a vertical and a tilted position,

means for releasably latching said closure member in the tilted position comprising a latch element mounted on said closure member at a point offset from said axis and including a latch portion positioned to enter said slot when said closure member is in the tilted position and means comprising a roller supporting said slide and operable during movement of said drawer assembly towards its recessed position for releasing said latch portion.

3,295,909
METHOD OF ORIENTING FILAMENTS IN INCANDESCENT LAMPS
Arthur J. Hollenbeck, West Orange, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1965, Ser. No. 516,651
8 Claims. (Cl. 316—23)



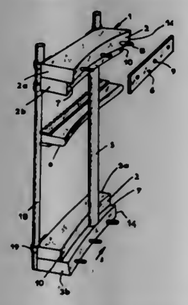
1. The method of orienting an elongated filament which is positioned within a sealed lamp bulb in a predetermined position with respect to a reference point on the base of said bulb comprising the steps of:

(a) passing a predetermined current through said filament to generate an electric field therearound,

(b) measuring the relative intensity of the generated electric field at a predetermined location exterior to said bulb which location has a predetermined orientation with respect to said reference point on said lamp base,

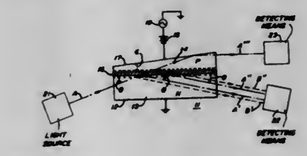
(c) and rotating said bulb with respect to said reference point on said lamp base until the resulting relative magnitude of the measured electric field indicates that the filament is properly oriented with respect to said reference point on said base.

3,295,910
CURVED PROJECTION SCREENS
Jules Hourdiaux, 96 Ave. de Versailles, Paris, France
Filed Apr. 3, 1964, Ser. No. 360,163
Claims priority, application France, Apr. 6, 1963, 930,681
7 Claims. (Cl. 350—125)



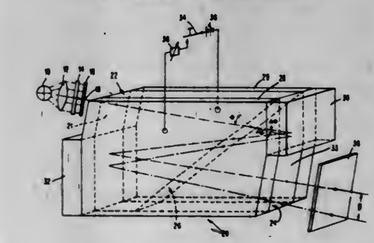
1. A projection screen comprising a series of individual panels which are secured together in side-by-side relation, each panel comprising at least one upper and one lower shoe each provided with a curved shoulder, securing plates mounted on said shoes, a plurality of elongated juxtaposed screen elements comprising rigid members extending between said shoes, each rigid member having a slightly bulged portion provided with a light-diffusing front face, said front faces together constituting a single curved projection surface and being substantially parallel to a direction perpendicular to the projection axis throughout the screen surface, said rigid members being clamped between the shoulders of said shoes whereby they are maintained in proper spacial relationship and angular setting.

3,295,911
SEMICONDUCTOR LIGHT MODULATORS
Arthur Ashkin, Bernardsville, and Murray Gershenzon, Morris Plains, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 15, 1963, Ser. No. 265,511
4 Claims. (Cl. 350—150)



1. A light modulator comprising a semiconductor member having substantially transparent regions of p type conductivity and n type conductivity, said regions forming a longitudinally extending junction, means for directing a beam of light to be incident on said junction at an acute angle to the longitudinal axis thereof, one of said conductivity regions having a surface oriented at an angle to said junction upon which a portion of said light beam is incident, means for biasing said junction to create a depletion layer in the junction region, said depletion layer having an index of refraction differing from those of said p type and n type conductivity regions creating an impedance discontinuity, means for intercepting light reflected from said angularly oriented surface, and means for modulating said light beam comprising means for shifting the location of said impedance discontinuity relative to said light beam.

3,295,912
LIGHT DEFLECTION DEVICE
Harold Fleisher, Eugene Shapiro, and Thomas J. Harris, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 20, 1963, Ser. No. 281,622
6 Claims. (Cl. 350—150)

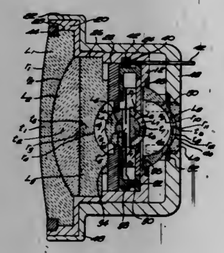


1. An electro-optical light deflector for deflecting a monochromatic light beam comprising:

a light transparent body composed of two distinct electro-optic mediums closely adjacent to each other

along a boundary, each having an electric field dependent index of refraction;
means for passing said light beam back and forth through said body across said boundary a plurality of times;
and means for applying an electric field in said body to change the index of refraction of at least one of said mediums, thereby to deflect said light beam by an amount proportional to the field applied as the said light beam passes through the boundary between said electro-optic mediums.

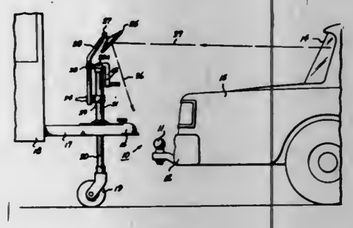
3,295,913
HIGHLY CORRECTED WIDE ANGLE LENS SYSTEM CHARACTERIZED BY PARTIAL CONCENTRICITY
Adriaan Walther, Waltham, Mass., assignor, by mesne assignments, to Bank of America National Trust and Savings Association
Filed Dec. 6, 1962, Ser. No. 242,798
6 Claims. (Cl. 350—177)



1. A wide angle optical construction comprising sequentially a negative system, a substantially concentric system and a toric system, said negative system consisting of a triplet including lens L_1 having radii r_1, r_2 and thickness t_1; lens L_2 having radii r_3, r_3 and thickness t_2 and lens L_3 having radii r_3, r_4 and thickness t_3, said negative system being generally meniscus in form and being outwardly convex relative to said substantially concentric system, said lens L_1 being generally negative, said lens L_2 being generally positive and said lens L_3 being generally negative, said substantially concentric system including a doublet of lenses L_4, L_5 and a doublet of lenses L_6, L_7, lens L_4 having radii r_5, r_6 and thickness t_4, lens L_5 having radius r_6, a flat rearward face and thickness t_5, lens L_6 having a flat forward face, a radius r_7, and thickness t_6, lens L_7 having radii r_7, r_8 and thickness t_7, said toric system including lens L_8 having radii r_9, r_{10} and thickness t_8, and lens L_9 having radii r_{11}, r_{12} in the vertical direction, radii r_{13}, r_{14} in the horizontal direction and thickness t_9, lenses L_3 and L_4 defining a gap therebetween of length d_1, lenses L_5 and L_6 defining a gap therebetween of length d_2, lenses L_7 and L_8 defining a gap therebetween of length d_3 and lenses L_8 and L_9 defining a gap therebetween of length d_4, said forward surface of said lens L_9 being substantially toroidal and said rearward surface of said lens L_9 being substantially cylindrical.

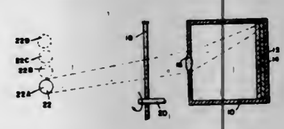
3,295,914
HITCH GUIDE MIRROR FOR MOUNTING ON A TRAILER JACK HOUSING
William Dietrich, 3611 E. 112th St., Takoma, Wash. 98446
Filed Jan. 3, 1964, Ser. No. 335,487
2 Claims. (Cl. 350—307)

2. In combination with a trailer hitch assembly including tow vehicle coupling means and trailer vehicle coupling means having a vertically extending trailer support jack housing, a hitch assembly viewing apparatus detachably mounted on said trailer support jack housing and comprising
a mirror,
first support means attached to said mirror,
resilient clamp means attached to said first support means for coupling said first support means to said trailer support jack housing, and



adjustable positioning means attached to said first support means and engageable with the top of said trailer support jack housing,
whereby said adjustable positioning means may be mounted at a selected location on said first support means to serve as a limit stop to assure the correct height positioning of said mirror in the line of sight of a tow vehicle driver presenting an unobstructed view of the trailer hitch assembly during the operation of coupling the tow vehicle to the trailer vehicle.

3,295,915
PHOTOGRAPHIC METHOD
Robert B. Eaves, Wayne, Pa., assignor to Photo Motion Corporation, Norristown, Pa., a corporation of Pennsylvania
Filed Jan. 15, 1963, Ser. No. 251,602
2 Claims. (Cl. 352—38)

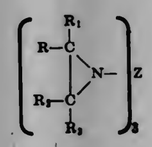


1. A photographic method comprising illuminating a still object occupying a first position, directing light from said object through a plane polarizing first screen and thereafter through a group of similarly polarized zones exclusively of a second screen having diversely polarized zones and forming a real image of said object on a photographic emulsion adjacent to said second screen to expose said emulsion, then shifting said first screen to cause its plane of polarization to correspond to the direction of a second group of similarly polarized zones of said second screen, placing a similar still object in a second position spaced from said first position, and forming a real image of said similar still object on said emulsion through said screens to again expose said emulsion, then developing said emulsion to produce a photographic image, disposing said developed photographic image adjacent to said second screen and in the same position relative to said polarized zones as before development on said emulsion, illuminating said image and directing light therefrom through said second screen to an observation plane, disposing a plane polarizing screen intermediate said source and observation plane, and shifting the last said screen to transmit light from said polarized zones successively.

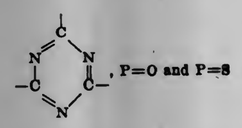
CHEMICAL

3,295,916
PRODUCTION OF WASH FAST COLORATIONS WITH WATER-SOLUBLE METALLIZED AZO DYES
Leon S. Zielinski, Springville, and Frederic L. Sievenpiper, Alden, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 27, 1965, Ser. No. 490,679
21 Claims. (Cl. 8—17)

1. The process of coloring textile and related materials selected from the group consisting of cellulose, silk and polyacrylonitrile with water-soluble dyestuffs non-reactive with the material which comprises the steps of:
(A) impregnating the material with an aqueous liquor which contains a mixture of an organic isocyanate, a water-soluble 1:1 metallized azodyestuff which contains a metal of atomic number from 23 to 30 in complex combination with a chelatable group and being otherwise devoid of reactive-hydrogen and at least one mole per mole of said dysteff of a cross-linking agent selected from the group consisting of:
(1) an aziridinyl compound of the structure:



wherein R, R_1, R_2 and R_3 are the same or different and are selected from the group consisting of hydrogen or lower alkyl groups and Z represents a radical selected from the group consisting of:



, P=O and P=S

and
(2) a sulfoxo compound of the structure:

A—X—A

wherein A represents a radical selected from the group consisting of a 2-hydroxyalkyl radical of 2 to 6 carbon atoms which contains at least one hydrogen atom attached to the 1-carbon atom and a 1,2 ethylenically unsaturated aliphatic hydrocarbon radical of 2 to 6 carbon atoms and X represents a member of the group consisting of —SO_2—, —SO—, —SORSO—, and —SO_2—R—SO_2— wherein R represents a member of the group consisting of an alkylene radical and an alkyl arylene radical of the formula —$CH_2C_6H_4$—CH_2—, with the proviso that the material is cellulose when the cross-linking agent is a sulfoxo compound as defined above;
(B) heating the impregnated material to firmly fix the dyestuff to the textile material by a cross-linking reaction.

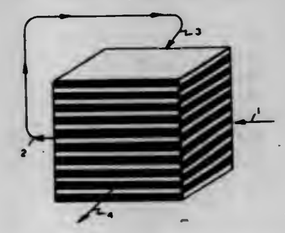
3,295,917
INHIBITING CORROSION OF COPPER AND COPPER-BASE ALLOYS
Joseph Bernard Cotton, Little Aston, Sutton Coldfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 12, 1965, Ser. No. 471,423
Claims priority, application Great Britain, Dec. 4, 1959, 41,245/59; Apr. 27, 1961, 15,270/61
2 Claims. (Cl. 21—2.5)

1. A method of inhibiting the corrosion of copper by forming thereon a self-sustaining protective film, which comprises providing an atmosphere of benzotriazole vapor at a temperature of at least 75° C., placing the copper in said atmosphere at a temperature below the condensation point of said benzotriazole vapor, maintaining the copper in said atmosphere until a self-sustaining protective film is formed thereon and then removing the copper from said atmosphere.

3,295,918
METHOD OF TREATING EXHAUST GASES
Warren S. Briggs, Silver Spring, William A. Stover, Ellicott City, and John L. Warthen, Baltimore, Md., assignors to W. R. Grace & Co., Clarksville, Md., a corporation of Connecticut
No Drawing. Filed Sept. 6, 1962, Ser. No. 221,895
3 Claims. (Cl. 23—2)

1. A method for treating exhaust gases of internal combustion engines to oxidize the pollutants therein which comprises mixing an oxygen containing gas with said exhaust gases and passing said mixture through a bed of a catalyst comprising 2 to 12 weight percent copper oxide, 2 to 18 weight percent manganese dioxide, 1 to 20 weight percent chromic oxide and about 0.0025 to 0.4 weight percent palladium, impregnated on a porous, high surface area base, and passing the thus treated gases to the atmosphere.

3,295,919
METHOD OF TREATING EXHAUST GASES OF INTERNAL COMBUSTION ENGINES
Donald S. Henderson, Baltimore, Warren S. Briggs, Silver Spring, and William A. Stover and Alan H. Thomas, Ellicott City, Md., assignors to W. R. Grace & Co., Clarksville, Md., a corporation of Connecticut
Filed Sept. 6, 1962, Ser. No. 221,797
4 Claims. (Cl. 23—2)



1. A process for controlling the temperatures in a catalytic system for converting the carbon monoxide and hydrocarbons in the exhaust gases of an internal combustion engine to innocuous entities which comprises passing said exhaust gases, mixed with air, through a bed of a lead adsorbent material contained in a series of metallic corrugated plates in heat exchange relationship with a bed containing a catalyst active for conversion of hydrocarbons and carbon monoxide to innocuous entities further substantially cooling the gases externally to the catalyst bed, passing the cooled gases through said preheated

catalyst bed also disposed on corrugated metallic plates and exhausting the purified gases to the atmosphere.

3,295,920
RECOVERY OF LITHIUM FROM LITHIUM-BEARING ORES

Robert D. Goodenough, Giffin D. Jones, and Robert E. Anderson, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,703
16 Claims. (Cl. 23—50)

1. In a method of recovering lithium values from a lithium-bearing ore containing lithium in an acid-leachable form which includes contacting the solid ore, in the presence of water while maintaining a temperature of from about 90 to about 150 degrees centigrade with a strongly acidic cationic exchange resin, subsequently separating the resin from the ore and recovering lithium values from the resin, the improvement which comprises contacting said ore with said strongly acidic cation exchange resin in the presence of an aqueous solution containing from about 10 to about 80 percent by weight of an acid selected from the group consisting of acetic and propionic acids.

3,295,921
PRODUCTION OF HALIDES

Alan Edward Callow and Bernard Harris, Middlesbrough, England, assignors to British Titan Products Company Limited, Billingham, Durham County, England, a company of England

No Drawing. Filed Jan. 18, 1963, Ser. No. 252,287
Claims priority, application Great Britain, Jan. 24, 1962, 2,715/62
8 Claims. (Cl. 23—87)

1. A process for the production of zirconium and silicon tetrachlorides which comprises

(a) forming in a reaction zone a bed of finely divided zircon and solid reducing agent comprising carbon, the amount of reducing agent being at least that required to reduce the zircon;

(b) introducing into said bed an alkali metal material selected from the group consisting of alkali metal bromides, alkali metal chlorides, alkali metal iodides and substances adapted to form the alkali metal halide in situ and selected from the group consisting of alkali metal carbonates and alkali metals, the amount of the alkali metal halide in the bed being in the range of 0.1% to 5% by weight of the aggregative amount of zircon and reducing agent;

(c) passing a fluidizing gas comprising chlorine into the aforesaid bed to fluidize the same;

(d) heating the fluidized bed to a temperature in the range of 900° C. to 1400° C. for effecting chlorination of the zircon to form zirconium tetrachloride and silicon tetrachloride vapors; and

(e) removing said vapors from the reaction zone and selectively condensing the zirconium tetrachloride and silicon tetrachloride.

3,295,922
PROCESS FOR RECOVERING ALUMINUM HALIDES AND HYDROGEN HALIDES FROM TERNARY ADDITION PRODUCTS HAVING THE FORMULA: AROMATIC:HX:AlX$_3$ OR 2AlX$_3$ WHERE X IS CHLORINE OR BROMINE

David G. Walker, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,326
14 Claims. (Cl. 23—96)

1. A method for treating a protonated compound selected from the group consisting of aromatic:HX:AlX$_3$ and aromatic:HX:2AlX$_3$ where X is selected from the group consisting of Cl and Br which comprises mixing said compound with a metal halide wherein the metal of said metal halide is selected from the group consisting of Na^{+1}, K^{+1}, Ca^{+2} and Mg^{+2} and the halide is selected from the group consisting of Cl and Br at a temperature within the range of about 0° to about 50° C. in an aromatic solvent whereby said aromatic and hydrogen halide of said compound are recoverable in substantially quantitative yields and a binary compound of said admixed metal halide and said aluminum halide of said compound is formed.

7. A method in accordance with claim 1 wherein the binary metal halide:aluminum halide compound formed is heated to recover the aluminum halide in anhydrous form.

8. A method for treating a protonated compound selected from the group consisting of aromatic:HX:AlX$_3$ and aromatic:HX:2AlX$_3$ where X is selected from the group consisting of Cl and Br which comprises mixing said compound with a metal halide wherein the metal of said metal halide is selected from the group consisting of Ag^{+1}, Cu^{+1}, Sn^{+2} and Pb^{+2} and the halide is selected from the group consisting of Cl and Br at a temperature within the range of about 0° to about 50° C. in an aromatic solvent whereby a hydrogen halide and a ternary addition compound of said aromatic, metal halide and aluminum halide are formed.

12. A method in accordance with claim 8 wherein said ternary addition compound is continually heated until the anhydrous aluminum halide is recovered.

3,295,923
PRODUCTION OF ALUMINUM HEXAHYDROSULFATE HEPTAHYDRATE

Charles R. Dickey, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 15, 1963, Ser. No. 258,885
5 Claims. (Cl. 23—123)

1. A process for producing hydrated aluminum hexahydrosulfate which comprises contacting from about 1.15 to about 3 moles of concentrated sulfuric acid with 1 mole of aluminum hydroxide in a reaction zone at a temperature below about 120° C., and recovering said hydrated aluminum hexahydrosulfate as product.

3,295,924
PROCESS FOR RECOVERING IRON, TITANIUM AND ALUMINUM FROM THE RED SLURRIES OBTAINED IN PROCESSING BAUXITE BY THE BAYER PROCESS

Umberto P. Colombo, Novara, Italy, assignor to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

Filed Oct. 22, 1962, Ser. No. 232,218
Claims priority, application Italy, Oct. 24, 1961, 19,253/61
14 Claims. (Cl. 23—143)

1. A process for the treatment of red slurry obtained as residue in the processing of bauxite by the Bayer process, to obtain iron oxide and to recover titanium oxide, and aluminum oxide present in the slurry, comprising the following operations:

(a) preliminary separation of water to provide a water content below 30% by weight;

(b) calcination in a fluidized bed furnace at a temperature between 300° and 750° C.;

(c) reduction of the still hot calcined material with a reducing gas containing at least 20% carbon monoxide and hydrogen and obtained by partial combustion of a fuel, the reduction being carried out in a fluidized-bed furnace, to transform ferric oxide Fe_2O_3 into magnetite Fe_3O_4;

(d) cooling the calcined and reduced red slurry;

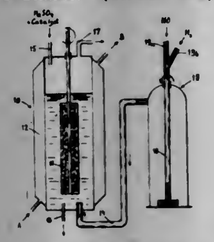
(e) magnetic separation of the material to obtain a magnetic fraction consisting of concentrated Fe_3O_4;

(f) recovery of aluminum and titanium oxides from the non-magnetic fraction thus obtained by roasting with Na_2CO_3 and $CaCO_3$, leaching to solubilize the aluminate thus formed, separating the aluminate solution from the residue, hydrolysis of the aluminate solution according to the Bayer process to recover aluminum oxide and acid attack of the residue, thus solubilizing titanium dioxide and separating the solubilized titanium dioxide.

3,295,925
PROCESS FOR THE PRODUCTION OF HYDROXYLAMINE

Heinz Füeg and Koichi Matsuya, Chur, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland

Filed July 9, 1963, Ser. No. 293,609
Claims priority, application Switzerland, July 13, 1962, 8,451/62
5 Claims. (Cl. 23—190)



1. In a continuous process for the production of hydroxylamine by catalytic reduction of nitric oxide by means of hydrogen in acid solution, the improvement which comprises effecting the reduction in the presence of 0.4–1.0 mol of a hydroxylamine salt per liter of reaction solution.

3,295,926
STABILIZATION OF CYANAMIDE

Raymond Henry Janes, Niagara Falls, Ontario, George Jan Novak, Thorold South, Ontario, and Robert Campbell Rawlings, Niagara Falls, Ontario, Canada, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,103
6 Claims. (Cl. 23—190)

1. A stable cyanamide composition comprising cyanamide and a stabilizing amount of solvent selected from the group consisting of ethylene glycol monomethyl ether acetate, ethylene glycol monoethyl ether acetate and ethylene glycol diacetate.

5. A stable cyanamide composition comprising cyanamide and a solvent selected from the group consisting of ethylene glycol monomethyl ether acetate, ethylene glycol monoethyl ether acetate and ethylene glycol diacetate, and water, said cyanamide and said solvent being present in said composition in relative weight ratios of about 99:1 to about 1:99, cyanamide to solvent, respectively, said water being present in an amount up to 50% by weight of the total composition.

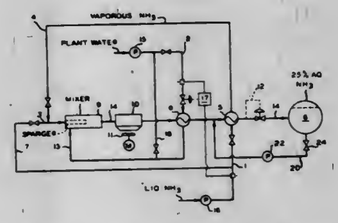
3,295,927
AQUA AMMONIA PRODUCTION

George C. Earley, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 500,055
8 Claims. (Cl. 23—193)

1. A process for producing a concentrated aqueous ammonia stream from a stream of liquid ammonia at about atmospheric temperature and a stream of water at a temperature of not more than 65° F., which comprises the steps of:

(1) mixing all of said stream of ammonia and all of the heated stream of water from step (3) in a single mixing zone under substantial pressure to form a hot stream of aqueous ammonia at a substantially higher temperature than resulting from mixing with said stream of water at said temperature of not more than 65° F.



(2) passing all of the hot stream of aqueous ammonia of step (1) thru an air-fin cooler to substantially reduce the temperature thereof;

(3) passing all of said stream of water at said temperature of not more than 65° F. in indirect heat exchange with all of said stream of aqueous ammonia downstream of step (2) to cool said aqueous ammonia to a temperature of not more than atmospheric; and

(4) passing the cooled stream of aqueous ammonia of step (3) to a closed storage zone.

3,295,928
PRODUCTION OF HYDROGEN PEROXIDE

Brian K. Howe, 62 Halfway Ave., St. Albans, England; Stanley Andrus, 29 King St., Luton, England; and Geoffrey Noel Davies, 5 Baronet Road, Warrington, England

No Drawing. Filed Sept. 19, 1962, Ser. No. 224,823
18 Claims. (Cl. 23—207)

1. In the autoxidation process for the production of hydrogen peroxide wherein an anthraquinone solution is consecutively reduced and oxidized to produce hydrogen peroxide, which is extracted, the improvement wherein the anthraquinone solution is treated, while in the oxidized state after the extraction of substantial amounts of hydrogen peroxide, by contacting said solution with a water-soluble base and an oxidizing agent capable of supplying oxygen thereto.

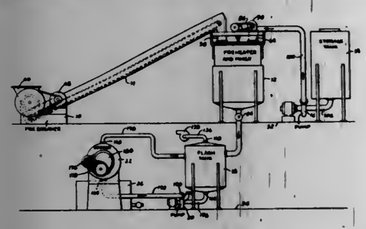
3,295,929
SEMI-CONTINUOUS CLOSED CIRCUIT APPARATUS FOR RENDERING ANIMAL MATTER

Norman J. Allbright, Hinsdale, Ill., and Alvyn C. Boldon, % Faber Industries, Inc., 109 S. Monroe St., Peoria, Ill.; said Allbright assignor to said Boldon

Continuation of application Ser. No. 723,472, Mar. 24, 1958. This application Jan. 18, 1962, Ser. No. 167,125
4 Claims. (Cl. 23—280)

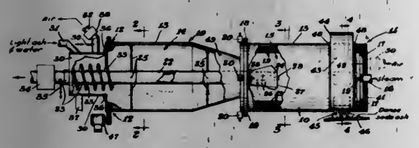
1. An apparatus designed for use in rendering a predetermined quantity of animal matter and comprising a preheating and mixing tank adapted to receive said quantity of animal matter and a quantity of prerendered grease, means for applying heat to said tank to raise the temperature of the contents thereof, means for agitating the heated contents of the tank to produce a heated flowable mixture therein, a cooker comprising a normally closed horizontally elongated receptacle with a fluid inlet in the bottom region thereof and a fluid overflow outlet adjacent to the top region thereof, and also comprising a power-driven paddle-equipped shaft extending longitudinally through the central portion of the receptacle

and means for supplying heat to the cooker in the form of a substantial continuous steam jacket around the receptacle, a flash tank having a fluid inlet at the upper region therein and a fluid outlet at its bottom region, a conduit establishing fluid communication between the fluid outlet of the cooker and the fluid inlet of the flash tank, a conduit establishing fluid communication between the fluid outlet of the flash tank and the fluid inlet of the cooker, said flash tank being provided at the top thereof with a vapor outlet for the escape of moisture, said cooker, flash tank and conduits comprising a normally closed fluid circuit through which said flowable mixture may be repeatedly circulated, a conduit establishing fluid



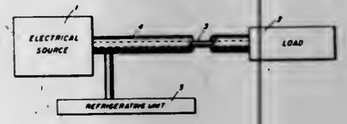
communication between the preheating and mixing tank and the closed fluid circuit and serving to transfer said heated flowable mixture from the preheating and mixing tank to said closed fluid circuit for treatment therein, a shut-off valve connected in and forming a part of said last mentioned conduit, and power-driven impeller means connected to and forming a part of said closed fluid circuit and operative when driven while such shut-off valve is in its closed position repeatedly and continuously to cause the transferred mixture to circulate through said closed fluid circuit in such manner that during each cycle it flows from the lower portion of the flash tank to the cooker, then in a generally upward direction through the cooker and finally downwardly through the flash tank.

3,295,930
APPARATUS AND METHOD FOR TREATING PARTICULATE MATERIAL
Norman Swanson, Freeport, and Joe B. Lovett, Sweeny, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 5, 1963, Ser. No. 292,930
1 Claim. (Cl. 23—286)



An apparatus for treating a particulated solid with an air stream and moisture comprising: an assembly of a first and second elongated hollow chamber in end to end communication with their longitudinal axes in alignment, motor means for revolving the assembly about the longitudinal axis thereof, feeder means for the first chamber for the admission of particulate solid thereto, an exhaust means connected to the first chamber for the exhaustion of air therefrom, variable heater means for the second chamber disposed adjacent to the side wall thereof, an exhaust pipe having an inlet extending through the first chamber and into the second chamber for exhausting air from said second chamber, the inlet end of said exhaust pipe being adapted with a shroud to prevent clogging quantities of particulate material from entering said exhaust pipe while exhausting air therefrom, an air inlet for the second chamber near the end wall remote from the first chamber, the side wall of the second chamber adjacent to the end remote from the first chamber having therein product discharge openings around the chamber.

3,295,931
SUPERCONDUCTING COMPOSITIONS
Fritz Hulliger, Uerikon, Zurich, Switzerland, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Feb. 19, 1963, Ser. No. 259,649
7 Claims. (Cl. 23—315)

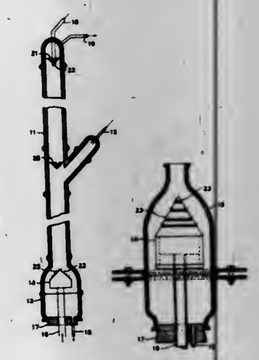


1. A homogeneous superconductor composition having the formula

XYZ

where X is a member selected from the group consisting of Pd and Pt, Y is a member selected from the group consisting of Sb and Bi, and Z is a member selected from the group consisting of Se and Te said composition having been prepared by intimately mixing powdered component elements, molding said mixtures under pressure and heating them, said pressure of molding and time and temperature of heating being such as to form said homogeneous superconducting composition.

3,295,932
METHOD FOR THE EXTRACTION OF MINERALS
Pierre Boutin, Ottawa, Ontario, and Frank W. Melvanin, Port Hope, Ontario, Canada, assignors to Eldorado Mining and Refining Limited, Ottawa, Ontario, Canada, a company of Canada
Filed Apr. 26, 1963, Ser. No. 275,964
13 Claims. (Cl. 23—340)



1. The method of separating a dissolved mineral from a comminuted mineral solids-and-water mixture wherein the said mineral is extracted into a fluid organic extractant, comprising flowing the said mixture vertically downwardly, introducing the said extractant in the form of globules having a minimum diameter of 0.1 millimetres and substantially free of globules of less than said minimum diameter into the bottom of the said downwardly flowing mixture, causing substantially all of the said globules to rise vertically countercurrent through the said downwardly flowing mixture to extract the said mineral, and collecting and recovering the extractant and the mineral.

3,295,933
PERCHLORAMIDE COMPOUNDS AND PROCESS
Harry Creston Mandell, Jr., Abington, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 6, 1961, Ser. No. 93,799
17 Claims. (Cl. 23—356)

1. A dialkali metal perchloramide compound selected from the group consisting of K_2NClO_3, Cs_2NClO_3, Rb_2NClO_3, Li_2NClO_3, and Na_2NClO_3.

13. A method for the preparation of a perchloramide compound wherein the cation is represented by M^1 and is selected from the group consisting of $(Li^+)_2$, $(Na^+)_2$, $[(CH_3)_4N]^+]_2$, Ba^{++}, Ca^{++}, Mg^{++}, Sr^{++}, $(AgH)^{++}$, $(NH_4H)^{++}$, $[(CH_3)_4NH]^{++}$, $(BaH_2)^{++++}$, $(CaH_2)^{++++}$, $(MgH_2)^{++++}$, and $(SrH_2)^{++++}$ which comprises contacting for a period of time at least sufficient for metathesis to occur an aqueous solution of $MYNClO_3$ wherein M is an alkali metal selected from the group potassium, rubidium and cesium and Y is a cation selected from the group consisting of hydrogen, potassium, rubidium and cesium at a temperature in the range from about the freezing point of the solution to about 50° C. with about a stoichiometric amount of an ionizable compound M^2A wherein M^2 represents Ag^+, Li^+, $[CH_3)_4N]^+$, $(NH_4)^+$, Ba^{++}, Ca^{++}, Mg^{++} and Sr^{++} and A is an anion which upon metathesis of said M^2A with said $MYNClO_3$ forms a compound different in degree of water solubility from that of the newly formed perchloramide compound, maintaining the pH of the reaction mass at a pH of at least 8, and recovering said newly formed perchloramide compound from the reaction mass by physical separation means.

3,295,934
MANUFACTURE OF COMPLEX ALUMINOUS METAL-GLASS PRODUCTS OF HIGH STRENGTH
Michel Bré, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
No Drawing. Filed Jan. 8, 1963, Ser. No. 249,993
Claims priority, application France, Jan. 12, 1962, 884,684
20 Claims. (Cl. 29—182.5)

1. A compact composition of matter which is largely free of voids and has a matrix which is rich in aluminum and contains in solution elements resulting from the reaction of glass and aluminum, and in said matrix a dispersed phase which consists essentially of granular glass particles not more than 100 microns in size, the surfaces of which present a layer consisting essentially of alumina resulting from the reaction of the glass and the aluminum.

3. A method of making objects of composite structure having a matrix which is rich in aluminum and contains in solution elements resulting from the reaction of glass and aluminum, and a dispersed phase which consists essentially of granular glass particles the surfaces of which present a layer containing alumina resulting from the reaction of glass and aluminum, which comprises mixing metallic particles of the group consisting of aluminum and its alloys with granular particles of glass not more than 100 microns in size, and containing by weight at least 80% of the essential components:

	Percent
SiO_2	45–57
MgO	15–28
Al_2O_3	20–30

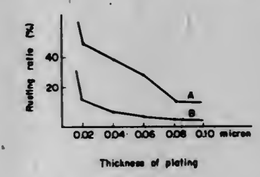
and as optional components 0 to 6% alkali metal oxide, and 0 to 20% of the class of divalent metal oxides other than MgO and iron oxide of which CaO is not to exceed 2%, compressing the mixture at room temperature under pressure at least equal to 200 kg./cm.^{2} thereby producing a preform, heating the preform at a temperature at least equal to about 600° C. in order to initiate the reaction of aluminum and glass and thereafter cooling.

3,295,935
COMPOSITE STOCK COMPRISING A PLURALITY OF LAYERS OF ALLOYING CONSTITUENTS, EACH LAYER BEING LESS THAN 0.001 INCH IN THICKNESS
Heinz R. Pfaumm, Plainville, and George Durst and Brian C. Coad, Attleboro, Mass., assignors to Texas Instruments Incorporated, a corporation of Delaware
Original application July 22, 1958, Ser. No. 750,138, now Patent No. 3,113,376, dated Dec. 10, 1963. Divided and this application Aug. 22, 1963, Ser. No. 338,543
5 Claims. (Cl. 29—183.5)



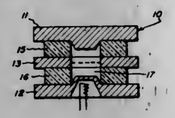
4. Composite stock formed of a plurality of alloying constituents capable of forming an alloy by solid state interdiffusion, alloys of which are brittle, said composite stock comprising an assembly of a plurality of layers, each of said layers being formed of one of said alloying constituents, the layers of each of said constituents being interspersed with the layers of the other constituents, the mutually adjacent surfaces of said layers being bonded to each other, and each of said layers being less than 0.001 of an inch in thickness.

3,295,936
THINLY NICKEL-PLATED STEEL PLATE
Hidejiro Asano and Kiyoshi Segawa, Kiyakyushu, Fukuoka Prefecture, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan
Filed Nov. 29, 1965, Ser. No. 510,229
3 Claims. (Cl. 29—183.5)



1. A thinly nickel-plated steel sheet comprising a steel sheet plated with a 0.02 to 0.3 micron thick plating of a material selected from the group consisting of nickel, nickel-tin alloy and a nickel-iron alloy, said plating being covered with a passive film produced by cathode electrolysis of the surface of said plating in an aqueous solution of a chromic acid selected from the group consisting of dichromic acid, the sodium salt of dichromic acid, the potassium salt of dichromic acid, chromic acid, the sodium salt of chromic acid, the potassium salt of chromic acid, and mixtures thereof, at a current density of 1.5 to 4.0 a./dm.^{2} for from 1 to 10 seconds.

3,295,937
TITANIUM CERAMIC COMPOSITE BODIES
John G. Leschen, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 31, 1962, Ser. No. 198,942
3 Claims. (Cl. 29—195)



1. A composite body comprising at least one body of substantially pure titanium permanently joined to at least one vacuum-tight crystalline ceramic body by means of a solder joint to form a vacuum-tight bond, the ceramic body consisting essentially of a fired mixture of magnesia and magnesia-alumina spinel and titania having compositional limits between 40 and 60 parts of magnesia and between 60 and 40 parts of magnesia-alumina spinel, respectively, and containing between 0.05 part and 1.0 part of titania, the ceramic body being substantially silica-free and having a coefficient of thermal expansion between 25° C. and 1000° C. of about 9.0×10^{-6} centimeter per centimeter per degree C. to about 11.0×10^{-6} centimeter per centimeter per degree C.

3,295,938
METHOD OF POLISHING HYGROSCOPIC MATERIALS
Joseph C. Jerome, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed May 24, 1963, Ser. No. 283,115
2 Claims. (Cl. 51—293)

1. A method for polishing hygroscopic ferrous metals and forming a protective surface coating thereon consisting:

(a) applying to a wax lapping to a water-free composition compatible with said lapping tool and consisting of a mixture of an anhydrous hydraulic vehicle and a dehydrated abrasive powder in proportions depending on the type and nature of the hygroscopic surface to be polished, said hydraulic vehicle also being unharmful to said wax lapping tool,

(b) said hydraulic vehicle consisting entirely of ethylene glycol which will not soften and deform hygroscopic materials,

(c) said abrasive powder mixed with said ethylene glycol being any of a variety of polishing, buffing and lapping abrasives suitable for grinding and polishing hygroscopic materials and entirely free of water,

(d) contacting the lapping tool with polishing composition thereon to the surface of a hygroscopic ferrous metal until polished to a mirror-like surface,

(e) washing said surface with ethylene glycol to remove excess abrasive,

(f) forming an anti-moisture film over the polished surface of the hygroscopic ferrous metal with said ethylene glycol during and by the polishing and washing of said surface for preventing contamination of said surface by oxidation thereof.

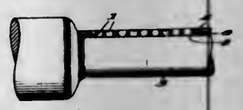
3,295,939
TROPOLONE CONTAINING POLYMERS
Lorraine Guy Donaruma, Media, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 10, 1962, Ser. No. 208,900
27 Claims. (Cl. 51—298)

27. A sheet of abrasive paper comprising a sheet of paper coated on at least one side with a powdered abrasive embedded in a matrix consisting essentially of a tropolone-aldehyde cross-linked polymer.

3,295,940
ABRASIVE RESINOUS POLYMER COMPOSITIONS AND THEIR PREPARATION
Clare W. Gerow, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 19, 1962, Ser. No. 245,665
14 Claims. (Cl. 51—298)

12. An abrasive film consisting essentially of a polyimide film having from 5% to 90% by weight of crystalline particles selected from the group consisting of green rouge, silica, alumina, boron carbide, silicon carbide, steel and diamond distributed through the film.

3,295,941
DIAMOND REINFORCED COATINGS AND METHOD OF PREPARING SAME
James Earl Spellman, Unionville, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,800
6 Claims. (Cl. 51—308)



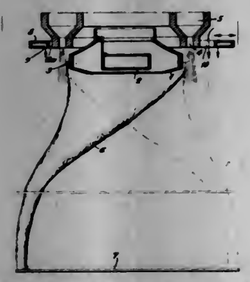
3. An article of manufacture which comprises a member and a wear-resistant coating positioned on the surface of said member; said coating comprising a metal matrix, a ceramic matrix selected from the group consisting of aluminum oxide, chromium sesquioxide, beryllium oxide, silicon dioxide, zirconium oxide, stannic oxide, titanium oxide, and mixtures thereof as the outermost layer, and diamond particles embedded in the said metal and ceramic matrices, said outermost layer being of substantially uniform thickness in the regions between said diamond particles, and the outer surface of said coating being substantially smooth and having portions of at least a substantial proportion of said diamond particles exposed.

3,295,942
PROCESS FOR PRODUCING INTEGRATED BODY OF MULTI-FILAMENT STRANDS
George E. Smock and Walter F. Fulk, both of Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation of abandoned application Ser. No. 231,362, Oct. 18, 1962. This application Sept. 7, 1965, Ser. No. 505,081
7 Claims. (Cl. 65—2)



2. A method of building a fibrous body which comprises projecting a multiplicity of adjacently arrayed fibrous strands, said strands being forcefully and kinetically projected in closely spaced and parallel relation along straight paths, providing a receiving surface moving in intercepting relation to said paths, and each of said strands upon approaching and reaching the receiving surface assuming a lazy whirl form laterally interengaging and interleaving with the other strands and forming therewith a flat narrow strip on said surface.

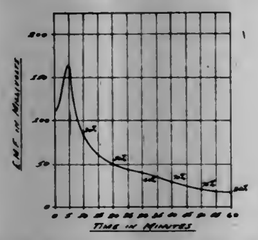
3,295,943
PROCESS AND APPARATUS FOR THE MANUFACTURE OF FIBER MATS
Marcel Mabru, Paris, France, assignor to Compagnie De Saint-Gobain, Neuilly-sur-Seine, France, a corporation of France
Filed Feb. 28, 1963, Ser. No. 261,899
Claims priority, application France, Mar. 5, 1962, 889,975
14 Claims. (Cl. 65—6)



1. The method of producing continuous lengths of mats of thermoplastic fibers which comprises the steps of centrifugally extruding the fibers in the form of a continuous annular curtain from a rotary centrifuge, and gently depositing said annular curtain of fibers onto a traveling conveyor below the centrifuge by inducing air from above the centrifuge at one side of the conveyor into a zone between the centrifuge and conveyor, and cyclically gradually alternating the induction of said air from the opposite sides of the centrifuge overlying the sides of the conveyor to flatten the annular curtain from opposite directions as the same is brought to rest on the conveyor.

2. Apparatus for producing a continuous mat of thermoplastic fibers comprising a vertically disposed rotary centrifuge having a peripheral wall provided with orifices for the centrifugal extrusion of fine fibers therefrom, a traveling conveyor below said centrifuge for receiving the annular curtain of fibers which are projected from said centrifuge, and means for flattening said annular curtain in its travel from said centrifuge to said conveyor comprising means at least at the level of said peripheral wall for inducing air from a zone above said peripheral wall to a zone therebelow cyclically and alternately from the opposite sides of the centrifuge overlying the sides of said conveyor to flatten the annular curtain as it drops from said centrifuge onto said traveling conveyor.

3,295,944
METHOD FOR CONTROLLING THE RATE OF DEVITRIFICATION
Nils Tryggve E. A. Baak, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Jan. 2, 1963, Ser. No. 248,915
6 Claims. (Cl. 65—29)



1. A method for measuring the degree of devitrification of thermally crystallizable vitreous shaped articles while said articles are being subjected to a heat treatment in the devitrification temperature range of said vitreous material to produce thermally crystallized articles which comprises subjecting a voltage cell to the same heat treatment as the vitreous articles undergoing devitrification, said voltage cell comprising a pair of plates wherein one of said plates is formed from a crystalline material, the other of said plates being formed from a thermally crystallizable vitreous material having the same chemical composition as said vitreous articles undergoing devitrification, measuring the electromotive force produced by said voltage cell during said heat treatment until the desired degree of devitrification is reached which corresponds to a recorded value of electromotive force and then removing said vitreous articles from said heat treatment, said articles having reached the desired degree of devitrification.

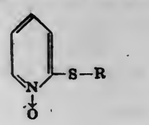
3,295,945
PROTECTIVE SALT BATH FOR A GLASS RIBBON
Emile Plumat, Gilly, Belgium, assignor to Glaverbel, Brussels, Belgium
Filed June 29, 1966, Ser. No. 561,530
10 Claims. (Cl. 65—30)

1. A salt bath for supporting a glass ribbon in the plastic state, said bath comprising chlorides of metals which diffuse into the glass and chlorides of metals which do not substantially diffuse into the glass, the chlorides of metals which diffuse into the glass including both on the one hand chlorides of metals which increase the coefficient of expansion of the glass when they diffuse into the glass with substitution, and on the other hand chlorides of metals which reduce the coefficient of expansion of the glass when they diffuse into the glass with substitution, said chlorides of metals which diffuse into the glass being respectively present in said bath, in a proportion such that diffusion into the glass of the cations of such diffusing metals and the substitution of such cations for constituent metal cations of the glass are accompanied by little change in the glass volume and in the coefficient of expansion of the glass.

5. In a method in which a glass ribbon is floated on a bath, an improvement comprising forming the bath of chlorides of metals which diffuse into the glass and of chlorides of metals which do not diffuse into a glass, said glass ribbon normally undergoing ionic exchange of a metal thereof with metals of the bath which diffuse into the glass whereby residual stress effects in the glass are produced, the bath including chlorides of these last metals having opposed effects on the volume and on the coefficient of expansion of the glass, the latter chlorides being present in specific quantities to counterbalance the residual stress effects caused by the ionic exchange of the metals of said chlorides with the metal of the glass.

3,295,946
CONTROLLING VEGETATION WITH BENZYL THIOPYRIDINE OXIDES
John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Original application Mar. 19, 1962, Ser. No. 180,853, now Patent No. 3,155,671, dated Nov. 3, 1964. Divided and this application Jan. 20, 1964, Ser. No. 343,437
5 Claims. (Cl. 71—2.5)

1. The method of controlling vegetation which comprises applying thereto a phytotoxic concentration of a benzylthiopyridine oxide having the general formula



where R is selected from the group consisting of monohalobenzyl, 2,3-, 2,4-, 2,6- and 3,6-dihalobenzyl, 2,3,4-, 2,3,6-, 2,4,5- and 2,4,6-trihalobenzyl, 2,3,4,5- and 2,3,5,6-tetrahalobenzyl alpha-methyl 2,6-dihalobenzyl and alpha-methyl 2,3,6-trihalobenzyl.

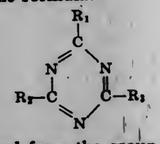
3,295,947

HERBICIDAL MIXTURE COMPRISING AN S-TRIAZINE DERIVATIVE AND N-(B-O,O-DI-ISOPROPYLIDITHIOPHOSPHORYLETHYL) BENZENESULFONAMIDE

Jitsuichi Kishikawa and Shoichi Yokoyama, Osaka, Japan, assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,574
Claims priority, application Japan, Nov. 26, 1963, 38/63,006, 38/20,784
14 Claims. (Cl. 71—2.5)

1. Herbicidal compositions comprising a herbicidally effective amount of a mixture of (a) one part by weight of a compound of the formula:



wherein R_1 is selected from the group consisting of halogen, methoxy and methylthio radicals, and R_2 and R_3 are selected from the group consisting of ethylamino, isopropylamino, diethylamino or allylamino radicals, and (b) 1 to 20 parts by weight of N-(β-O,O-di-iso-propyldithiophosphorylethyl)benzenesulfonamide.

3,295,948

DESICCATION OF PLANTS WITH ACETYLENEDICARBOXYLIC ACID COMPOUNDS

Herbert Q. Smith, Trenton, N.J., and Gopal H. Singhal, King of Prussia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 30, 1964, Ser. No. 364,005
12 Claims. (Cl. 71—2.7)

1. A method for desiccating plants which comprises applying to the foliage of said plants a desiccating amount of a compound selected from the group of acetylenedicarboxylic acid and its water soluble salts.

3,295,949

METHOD FOR THE CONTROL OF UNDESIRABLE PLANT GROWTH

Bryant Leonidas Walworth, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Sept. 27, 1963, Ser. No. 311,947. Divided and this application Sept. 2, 1965, Ser. No. 484,742
8 Claims. (Cl. 71—2.7)

1. A method for controlling the growth of undesirable plants which comprises applying to the foliage thereof a herbicidally effective amount of 3-amino-3-carboxypropyl methyl sulfoximine and its herbicidally effective salts.

3,295,950

METHOD OF MAKING SULFUR-COATED FERTILIZER PELLET HAVING A CONTROLLED DISSOLUTION RATE

Glenn M. Blouin, Florence, and Donald W. Rindt, Sheffield, Ala., assignors to Tennessee Valley Authority, a corporation of the United States

Filed May 3, 1965, Ser. No. 452,947
7 Claims. (Cl. 71—64)

1. A process of manufacturing fertilizer adapted for use in promoting survival and health in crop plants and containing specifically proportioned amounts of plant nutrients encased in a nearly impervious shell whereby the dissolution rate of said plant nutrients in soil solution is controlled, thereby ensuring the availability of plant nutrients to the crop plants during a substantial proportion of the growing season, which process comprises applying to fertilizer pellets, a subcoating of a material characterized by its oily nature, said material selected from the group consisting of petrolatums, petroleum soft-waxes, petroleum oils, wood rosins, paraffins, and mixtures thereof, in quantities relative to the weight of said fertilizer particles in the range from about 1 percent to about 8 percent by weight, said quantities sufficient to fill the surface voids, cracks, and capillaries of said fertilizer particles; and subsequently applying to the resulting oil-coated, sized fertilizer particles a coating of elemental sulfur, the quantity of said elemental sulfur being in the range from about 5 percent to about 50 percent by weight of the finally coated fertilizer particle.

3,295,951

PRODUCTION OF METALS

Christopher J. B. Fincham, Boston, and Gerard J. Villani, Newton, Mass., assignors to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Feb. 2, 1965, Ser. No. 429,852
1 Claim. (Cl. 75—.5)

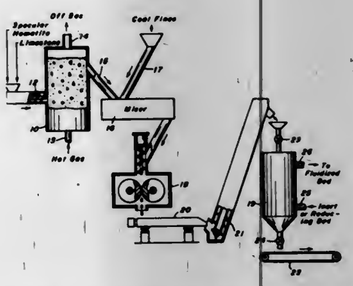
As an article of manufacture, a tantalum powder useful in the production of tantalum capacitors, said tantalum powder consisting of tantalum particles having a solid chunky appearance as determined by photomicrograph and a 15–20 micron fraction of said tantalum powder having a particle shape number of less than 1.5 as determined by the ratio of "Roller" to "Fisher" particle diameters, said tantalum particles having at least 10 p.p.m. of at least three of the following impurities: iron, nickel, silicon, tungsten, nitrogen and carbon, all of said impurity content being in solid solution, whereby a sintered anode made from said powder particles and sintered at a temperature of about 1930° C. for about 1.5 hours can be anodized to form a uniform continuous dielectric oxide film which will have a breakdown voltage in excess of 260 volts when measured under "standard conditions."

3,295,952

METHOD OF MAKING ORE BRIQUETTES

Roger T. Johnson, Monroeville, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Sept. 22, 1964, Ser. No. 398,346
5 Claims. (Cl. 75—3)



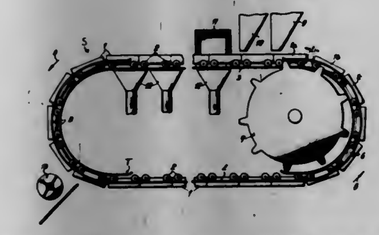
1. A method of briquetting specular hematite fines comprising heating the fines under reducing conditions to raise their temperature to the range of about 850 to 1050 F. and effect about 15 to 30 percent partial reduction of the hematite, mixing low-temperature bituminous coal fines with the heated and partially reduced hematite fines to produce a uniformly dispersed mixture containing about 5 to 15 percent coal and having an apparent temperature in the range of about 600 to 800 F., compacting the mixture into briquettes directly following the mixing step and while it remains at a temperature in the latter range, the coal itself serving as a binder, and cooling the briquettes but preventing reoxidation of the hematite.

3,295,953

PROCESSES OF AND MACHINES FOR SINTERING ORES

Hans Farber, Oberhausen-Sterkrade, Rhineland, Germany, assignor to Gutehoffnungshütte Sterkrade Aktiengesellschaft, Oberhausen, Rhineland, Germany

Filed Jan. 17, 1964, Ser. No. 338,462
Claims priority, application Germany, Jan. 19, 1963, G 36,860
10 Claims. (Cl. 75—5)



1. The process of moving a continuous series of end to end abutting pallets of a sintering machine along an endless track having an upper course, a lower course and arcuate track portions interconnecting said upper and lower courses at the opposite ends thereof, the total length of said continuous series of pallets in the cold condition of the machine being less than that of said track by a heat expansion gap corresponding in size to the longitudinal thermal expansion of said continuous series of pallets to be expected during the operation of the machine; comprising the steps of maintaining said heat expansion gap between the leading and trailing ends of said continuous series of pallets in the region of one of said arcuate track portions, providing drive means adjacent said one arcuate track portion for engagement at any given time only with the then leading and trailing ones of said continuous series of pallets of which said leading pallet is at that time to be transferred through said heat expansion gap into engagement with said trailing pallet, and actuating said drive means to advance said trailing pallet and therethrough all the remaining interengaged pallets of said series and simultaneously to displace said leading pallet through said heat expansion gap at a speed initially in excess of but decreasing to the speed of movement of said trailing pallet, whereby said leading pallet is brought in a substantially shock-free manner into contact with said trailing pallet of said series.

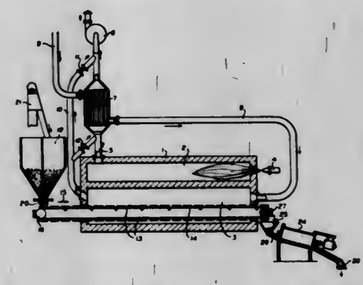
3. A sintering machine, comprising an endless track having an upper course, a lower course, a lifting arcuate track portion at one end of said courses, and a lowering arcuate track portion at the other end of said courses, a continuous series of end to end engaging pallets in said track which are adapted to receive the material being sintered and to be moved along said track, the total length of said continuous series of pallets in the cold condition of the machine being less than the length of said endless track by a heat expansion gap corresponding in size to the longitudinal thermal expansion of said continuous series of pallets to be expected during the operation of the machine, said gap being disposed in the region of said lifting arcuate track portion, and drive means operable to engage at any given time only the then leading and trailing pallets of said continuous series for advancing said trailing pallet and therethrough all the remaining interengaged pallets of said series and for simultaneously lifting said leading pallet through said heat expansion gap away from the remainder of said continuous series and toward said trailing pallet at a speed initially in excess of but decreasing to the speed of movement of said trailing pallet, whereby said leading pallet is brought into shock-free contact with said trailing pallet of said series.

3,295,954

PROCESS FOR ROASTING MATERIALS CONTAINING CHROMIUM OXIDE

Friedrich Schatzler, Aerzen, and Klaus Falk, Hameln, Germany, assignors to Zahn & Co. G.m.b.H., Hameln (Weser), Germany

Filed Jan. 21, 1964, Ser. No. 339,258
Claims priority, application Germany, Jan. 26, 1963, Z 9,875
8 Claims. (Cl. 75—7)



1. A process for the alkaline roasting of materials containing chromium oxide by means of roasting gases essentially consisting of forming a mixture of said materials with a compound selected from the group consisting of sodium carbonate and caustic alkali, molding the resulting mixture into cakes and conveying the cakes, free from mechanical stresses, on a support, in counter-current to the flow of said roasting gases, through a heated long reaction space of small height, in which is maintained a temperature gradient increasing in the direction of advance of the material to be roasted, up to a maximum temperature which is less than the melting and sintering temperature of the cakes.

3,295,955

SMELTING METHOD AND DEVICE

Jean Cordier, Tunis, Tunisia, assignor to Institut de Recherches de la Siderurgie Francaise, Saint Germain-en-Laye, France

Filed May 12, 1964, Ser. No. 366,834
Claims priority, application France, Feb. 14, 1959, 786,759, Patent 1,226,532; Aug. 1, 1959, 801,789, Patent 1,242,894; Aug. 3, 1959, 801,848, Patent 1,241,196; Nov. 17, 1959, 810,351, Patent 1,249,437
11 Claims. (Cl. 75—11)

1. In a process of obtaining molten ferrous metal by treatment of ferrous ore in an electric arc furnace having an upper frusto-conical shaft portion and a lower hearth portion in which the electric arc is formed between electrodes the forward ends of which extend into said lower hearth portion and at least one of which is a hollow electrode opening into said lower hearth portion, the steps of forming a particulate mixture of ferrous ore and slag-forming material; heating the thus formed particulate mixture to sintering temperature under oxidizing conditions to obtain a hot sintered oxidized charge having a temperature within the range of between about 800° C. and 1150°

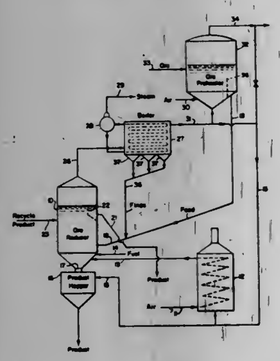
C.; introducing said hot charge without appreciable loss of heat into said upper frusto-conical shaft portion; allowing said charge to pass downwardly through said shaft portion and into said hearth portion of said furnace in countercurrent flow to hot reducing gases passing upwardly from said lower hearth portion so as to provide intimate contact between said hot reducing gases and said charge thereby partially reducing said charge in said upper shaft portion before the same reaches said hearth portion; injecting through said hollow electrode into said lower hearth portion a reducing agent selected from the group consisting of hydrocarbons and decomposition products thereof obtained by cracking said hydrocarbans, so as to complete reduction of said charge to molten metal in said hearth portion in contact with said reducing agent and while subjecting said charge to an electric arc thereby separating said charge into slag and molten ferrous metal and carburizing the latter in said hearth; and separating the thus obtained molten ferrous metal from said slag.

3,295,956

ORE REDUCTION

Thomas H. Whaley, Mount Vernon, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 30, 1965, Ser. No. 483,719
5 Claims. (Cl. 75—26)



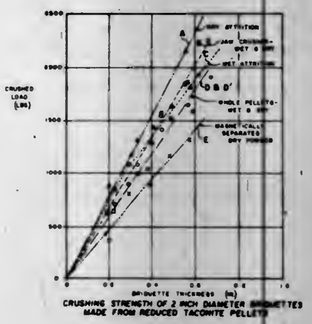
1. A process for reducing iron oxide to metal which comprises establishing a fluidized mass of relatively coarse solid particles comprising reduction products of said iron oxide in a reaction zone, introducing oxygen-containing gas into said bed and injecting hydrocarbon fuel into admixture with said oxygen-containing gas for reaction therewith directly into contact with said solid particles in the lower part of said fluidized mass in relative proportions and amounts effective for the production of a reducing gas mixture of carbon monoxide and hydrogen at a temperature within the range of 1650 to 2000° F. and in a volume sufficient to maintain said mass substantially in the form of a dense phase fluidized bed at a temperature in the range of 1650 to 2000° F. and above the softening temperature of a portion of partially reduced solid particles contained therein, supplying iron oxide ore in fine particle form to said mass at a rate such that said portion comprises only a minor amount of the total solid present within said mass at any given time and as said partially reduced particles are softened and become attached to other solid particles in said bed composite particles of larger particle size than said iron ore are formed, and withdrawing said composite particles from said reaction zone as a product containing at least 80 percent of the original iron oxide in metallic state, said composite particles larger in size than said iron ore particles and more buoyant than average particles in said mass being removed from the upper portion of said fluidized bed.

3,295,957

PRODUCTION OF HIGH STRENGTH BRIQUETTES FROM SOLID-STATE-REDUCED IRON ORES

Peter Robertson, Lakewood, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed Apr. 5, 1965, Ser. No. 445,502
4 Claims. (Cl. 75—33)



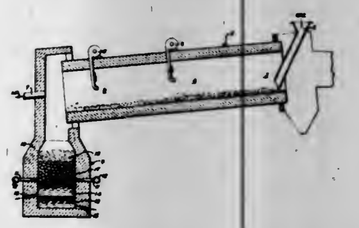
1. The method of processing oxidic iron ores and other iron oxide-containing materials of substantial gangue and other impurity content, into high strength briquettes containing said impurities, which comprises: forming said material into pellets, subjecting said pellets to elevated temperature induration and reduction without fusion in the presence of a reducing agent until at least 80% by weight of the iron values thereof have been metallized, and without separation of the impurities including unreduced iron oxide from the metallic iron values of the indurated and reduced pellets, compacting them into briquettes of substantially larger dimensions.

3,295,958

METHOD OF MANUFACTURING PIG IRON AND STEEL FROM IRON ORE AND IRON-OXIDE-CONTAINING WASTE MATERIALS

Hermann Ritter, Ludwigshafen (Rhine), Egon Cherdron, Limburgerhof, Pfalz, and Gerhard Bayer, Ludwigshafen-Rheingonheim, Pfalz, Germany, assignors to Gebruder Giulini G.m.b.H., Ludwigshafen (Rhine), Germany

Filed Jan. 21, 1964, Ser. No. 339,079
13 Claims. (Cl. 75—38)



1. The method of preparing pig iron and steel from a member selected from the group consisting of fine grain iron-oxide containing ores and waste materials which compromises the steps of—treating a mixture of such a fine grain iron-oxide containing material and finely ground carbon in a reducing zone whereby a particle form sinter product is obtained in which at least 90% of the Fe_2O_3 originally present in said fine grain iron oxide containing material is reduced to free metal (Fe) thereafter melting the reduced sinter product by imparting thereto a turbulent fluidized motion by blowing a stream of air upwardly and through an underlying bed of heated coke while preventing fluidization of said coke, conducting the molten metal droplets thereby formed from said fluidized sinter product downwardly and in intimate contact with said bed of heated coke, coalescing the discrete droplets of molten metal into a body of molten metal and separately collecting the molten slag from the body of molten metal thereby formed.

3,295,959

METHOD OF PRODUCING CAST IRON IN A CUPOLA FURNACE UTILIZING AN OXYGEN ENRICHED AIR BLAST

Eugene E. Langner, Jr., and Wilburn S. Clay, Birmingham, Ala., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,949
9 Claims. (Cl. 75—43)

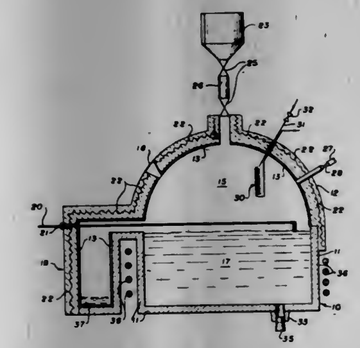
1. In the method of producing cast iron in a cupola furnace wherein iron materials, coke and fluxing materials are charged and an air blast is introduced into the shaft for combustion of coke, the improvement comprising enriching the air blast with oxygen to increase the temperature of reaction with the coke and thereby increase the iron temperature whereby a higher rate of carbon pickup by said iron occurs, and substantially maintaining a normal bed height of coke in said shaft by increasing the rate of coke charged into said shaft to compensate for the increased rate of combustion of coke with the oxygen enriched blast.

3,295,960

METHOD OF TREATING METAL

Norman A. D. Parlee, Los Altos Hills, and William E. Mahin, Oakland, Calif., assignors to Kaiser Industries Corporation, a corporation of Nevada

Filed June 8, 1964, Ser. No. 373,243
12 Claims. (Cl. 75—93)



1. A method of treating molten metal with volatile treating material which comprises,

A. maintaining a pool of said metal in a closed vessel having a liquid holding portion and a vapor space,

B. maintaining a passive gas atmosphere in the vapor space,

C. maintaining volatile treating material in said vessel in quantity sufficient to effect said treatment,

D. maintaining the walls of said vapor space above the melting point of said treating material,

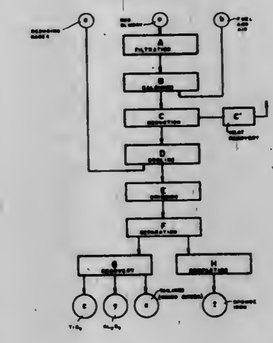
E. maintaining condensing means in said vapor space between the melting temperature and the boiling temperature of said volatile treating material.

3,295,961

PROCESS FOR THE PRODUCTION OF IRON SPONGE AND THE RECOVERY OF TITANIUM AND ALUMINUM FROM RED SLURRIES OF BAUXITE

Umberto Colombo and Giuseppe Sironi, Novara, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy

Filed Oct. 15, 1963, Ser. No. 316,378
Claims priority, application Italy, Oct. 16, 1962, 20,373/62
7 Claims. (Cl. 75—101)



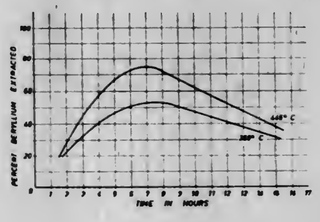
1. The process for the treatment of the red slurries obtained from processing bauxite according to the Bayer process, which comprises the steps of calcining such slurries in a fluidized bed at a temperature below 700° C., reducing to metallic iron the oxides of iron in the calcined material in a fluidized bed at temperatures in the range of 500 to 900° C. in a reducing atmosphere, subdividing the product of said reduction, and magnetically separating the iron in said product from the non-magnetic components.

3,295,962

METHOD FOR THE CHEMICAL BENEFICIATION OF BERYLITE

Wendell J. Biermann, Winnipeg, Manitoba, Canada, assignor to Beryloy Limited (no personal liability), Winnipeg, Manitoba, Canada

Filed June 11, 1962, Ser. No. 201,710
1 Claim. (Cl. 75—115)



A method of concentrating beryllium in berylite ore comprising treating said ore with concentrated sulphuric

acid at a temperature of approximately 350° C. to 500° C. for substantially 7 hours.

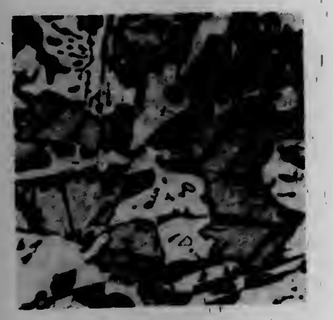
3,295,963
ALLOYS CONTAINING RARE EARTH METALS
Paul Désiré Galvin, Chedde, Haute-Savoie, France, assignor to Pechiney Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
No Drawing. Filed July 25, 1963, Ser. No. 297,695
Claims priority, application France, July 27, 1962, 905,267; Jan. 15, 1963, 921,435
4 Claims. (Cl. 75—122)

2. A rare earth metal alloy having the composition consisting essentially of 15–35% by weight of earth metals, 12–35% by weight of silicon, up to 0.5% by weight of calcium and 30–65% by weight of iron and in which the silicon and calcium are present in the ratio of one part by weight of silicon to 0.8–4 parts by weight of the rare earth metal component and one part by weight of calcium to 50–150 parts by weight of the rare earth metal component said alloy having a specific gravity of at least 4.

3,295,964
TITANIUM-TANTALUM HIGH-SPEED STEEL
Masao Kondo, Masumi Ohsawa, and Toru Arai, Toyama-shi, Japan, assignors to Kabushiki Kaisha Fujikoshi, Toyama-shi, Japan, a joint-stock company of Japan
No Drawing. Filed Mar. 16, 1966, Ser. No. 534,656
Claims priority, application Japan, Dec. 28, 1961, 36/47,586
4 Claims. (Cl. 75—123)

1. A titanium-tantulum high speed steel consisting essentially of up to 25% tungsten, up to 20% molybdenum, up to 10% chromium, up to 10% vanadium, 0.2 to 6% titanium, 0.3 to 6% tantulum, 0.6 to 5% carbon and the balance essentially iron, the total percentage of the titanium and tantulum contents being about 0.5 to 10% and the ratio of the titanium content to the tantulum content being 1:0.5 to 1:2, all said percenages being by weight.

3,295,965
WEAR RESISTANT CAST IRON
Gordon E. Willey and Franklin W. Kellam, Thornhill, Ontario, Canada, assignors to Union Carbide Canada Limited, Toronto, Ontario, Canada, a corporation
Filed Sept. 30, 1963, Ser. No. 312,772
5 Claims. (Cl. 75—125)



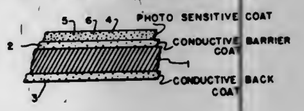
1. A cast iron alloy consisting essentially of 3.5% to 12% manganese; 1% to 2.5% chromium; 0.4% to 0.7% silicon; 2.9% to 3.6% carbon; up to 1.5% in the aggregate of copper and nickel; not more than 0.15% phosphorus; not more than 0.1% sulfur; the balance iron and incidental impurities.

3,295,966
VERSATILE LOW-ALLOY TOOL STEEL
Gary Steven, Mount Lebanon Township, Allegheny County, Pa., assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
No Drawing. Filed Apr. 30, 1964, Ser. No. 363,980
2 Claims. (Cl. 75—126)

1. Semi-high-speed steel capable of being austenitized at about 2050° F. without the development of a grain-size coarser than Snyder-Graff No. 12, said steel being characterized by improved attainable hardness and consisting essentially of about:

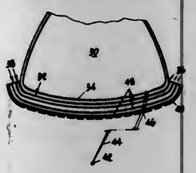
Tungsten	More than 0.15% and up to 0.50%.
Carbon	0.85 to 1.3%.
Silicon	About 1.5 to 2.5%.
Chromium	2.5 to 5.0%.
Vanadium	0.75 to 1.5%.
Molybdenum	2.0 to 5.0%.
Sulfur	Up to 0.35%.
Titanium	Up to 0.4%.
Iron	Balance.

3,295,967
ELECTROPHOTOGRAPHIC RECORDING MEMBER
Samuel J. Schoenfeld, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 305,979
12 Claims. (Cl. 96—1.5)



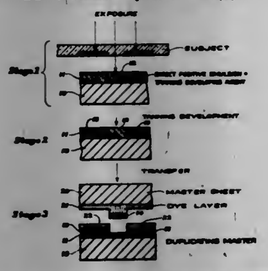
1. An electrophotographic member comprising a composite having a non-metallic base of high electrical resistance, a coating on said base for increasing the electrical conductivity of the composite, said coating comprising gelatinous hydrated silicic acid and a hygroscopic hydrated inorganic salt, said coating covered by a photosensitive stratum comprising a photoconductive component and an insulating binder, said component being dispersed in said binder and said binder having an electrical resistance greater than that of the base.

3,295,968
LIGHT TRAPPING FILTER AND METHOD OF MAKING
Vern E. Hamilton, Palos Verdes Estates, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed June 11, 1962, Ser. No. 201,693
13 Claims. (Cl. 96—27)



1. A method of producing an ambient light trapping filter having a plurality of substantially parallel depthwise spaced filter elements of grid form in predetermined registry, comprising the steps of: applying to a transparent base layer a laminate consisting of a plurality of layers of photo-sensitive material separated by layers of non-photo-sensitive material; all of said layers being bonded together and being permeable in-situ by a photo-developing fluid; placing over and in contact with said laminate a mask having transparent portions corresponding to a predetermined grid pattern with opaque portions therebetween; exposing said laminate to a source of light passing through the transparent portions of said mask to produce latent images of corresponding grid patterns in each of said photo-sensitive layers in predetermined registry with each other; and developing said latent images into permanent visible form, retaining all of the material of said layers in place to produce a final laminate of substantially uniform thickness constituting a transparent panel bearing between its faces a plurality of depthwise spaced patterns of grid markings in precise registry.

3,295,969
PHOTOGRAPHIC SPIRIT DUPLICATING PROCESS
Thomas I. Abbott, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 12, 1961, Ser. No. 102,449
11 Claims. (Cl. 96—28)



1. A method of forming a printing master, adapted to produce direct reading positive copies of a direct reading positive original to be copied in a spirit duplicating process, by the steps comprising:

(1) Photographically exposing to the original to be copied a silver halide emulsion layer to form in said layer a latent photographic image of said original;

(2) Developing said exposed emulsion layer in the presence of a tanning developing agent to form in said layer a developed photographic image of said original, the areas of said layer wherein the silver halide has been developed to a silver image exhibiting greater gelatin hardness than the remainder thereof;

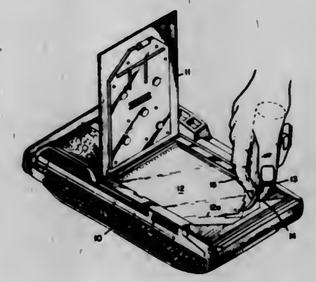
(3) Pressing said exposed and developed emulsion layer while moist from said developing step 2, and with the developed and undeveloped areas thereof intact and in at least substantially coplanar relationship directly against a hectographic dye-containing layer of a hectographic dye sheet, said dye layer being free of protective coating, and

(4) Separating said emulsion layer and dye sheets with simultaneous transfer of a portion of said emulsion layer in the unhardened areas thereof onto said dye sheet and of a portion of the dye-containing layer onto the hardened areas of said emulsion layer.

3,295,970
PHOTOGRAPHIC PRODUCTS AND PROCESSES
Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed Dec. 4, 1962, Ser. No. 242,066
10 Claims. (Cl. 96—29)

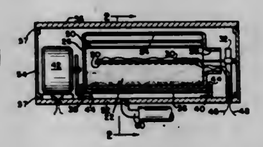
6. In a process of forming a photographic image in color, wherein an exposed silver halide emulsion is developed in the presence of a dye developer to provide an imagewise distribution of unoxidized dye developer and at least a portion of said imagewise distribution of said unoxidized developer is transferred, by imbibition, from said emulsion to an image-receiving element in superposed relationship with said emulsion to impart thereto in said image-receiving element a positive dye image, the improvement characterized by the feature that said image-receiving element comprises a support bearing an inner layer comprising an image-receiving material selected from the group consisting of poly-4-vinylpyridine and mixtures of polyvinyl alcohol and poly-4-vinylpyridine and a thin outer layer of about 50 to 200 mg. per square foot of polyvinyl alcohol, said transferred dye developer being transferred through said outer layer of polyvinyl alcohol to said inner layer.

3,295,971
PHOTOGRAPHIC PROCESS
Richard W. Young, Wellesley Hills, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 4, 1962, Ser. No. 242,217
6 Claims. (Cl. 96—29)



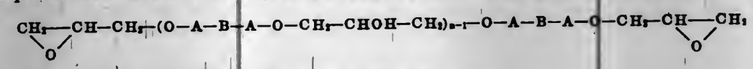
1. In a process of forming an image in color by diffusion transfer including the steps of spreading an aqueous alkaline processing composition between an exposed light-sensitive stratum and a superposed image-receiving layer, forming an imagewise distribution of color image-providing constituents and transferring said constituents, by imbibition, to said image-receiving layer to form a color image thereon, the improvement which comprises introducing an acidifying gas between said image-receiving layer containing said color image and said stratum prior to separating said layer from said stratum and exposing said image to air.

3,295,972
VAPOR DEPOSITED SILVER PRECIPITATING AGENT IN POLYMERIC RECEIVING LAYER AND PHOTOGRAPHIC USE THEREOF
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,922
14 Claims. (Cl. 96—29)



1. The process of forming images by diffusion-transfer which comprises developing a latent image in an exposed silver halide layer, forming a transferable silver complex

part at least of the unreduced silver halide of said layer, transferring at least part of said complex to a print-receiving layer comprising a stratum from 1 to 8 microns thick of a silver precipitating agent dispersed in an organic plastic material, and forming an image comprising silver on said stratum by means of the silver transferred to said stratum, said stratum of silver precipitating agent being formed by vacuum depositing a normally solid silver preciptating agent upon said organic plastic material in a form presenting a large surface area, said silver precipitating agent containing at least a metallic component, mixing the resultant product with a liquid which is a solvent for said organic plastic material and a non-



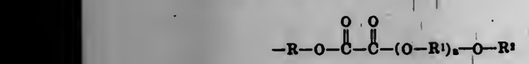
solvent for said vacuum deposited silver precipitating agent, thereby dissolving said organic plastic material and forming a fine dispersion comprising said vacuum deposited silver precipitating agent as the discontinuous phase and said organic plastic material as at least part of the continuous phase of said dispersion.

3,295,973
NOVEL PHOTOGRAPHIC PRODUCTS AND PROCESSES

Elkan R. Blout, Belmont, Saul G. Cohen, Lexington, and Milton Green and Myron S. Simon, Newton, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 813,702, May 18, 1959. This application Nov. 3, 1965, Ser. No. 506,280
6 Claims. (Cl. 96—29)

1. A process of forming transfer images in color which comprises the steps of exposing a photosensitive element containing a silver halide emulsion and a dye selected from the group consisting of monoazo dyes and anthraquinone dyes containing a single anthraquinonyl nucleus, said dyes possessing not less than one and not more than two groups within the formula:



wherein R is an alkylene group comprising from 1 to 5 carbon atoms; R^1 is an alkylene group consisting of not less than two and not more than four carbon atoms; n is selected from the group consisting of 0 and the integers from 1 to 3, inclusive; and R^2 is selected from the group consisting of phenyl groups and alkyl groups, said alkyl groups comprising from 1 to 12 carbon atoms where n is 0, and from 1 to 4 carbon atoms where n is an integer from 1 to 3; said dye further possessing not less than one and not more than two groups selected from the group consisting of ortho- and para-dihydroxyphenyl groups; effecting removal of the



ester groups by hydrolysis subsequent to photoexposure, developing the latent image contained in the exposed silver halide emulsion, immobilizing the dye in exposed areas of the photosensitive element as a function of the point-to-point degree of exposure of said emulsion, thereby providing an imagewise distribution of dye in unexposed areas of said photosensitive element, and transferring a portion of said imagewise distribution to a superposed image-receiving layer to impart thereto a positive dye image.

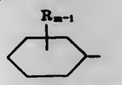
3,295,974
LIGHT SENSITIVE EPOXY MATERIAL FOR THE PHOTOMECHANICAL PRODUCTION OF PRINTING PLATES

Fritz Erdmann, Wiesbaden-Schierstein, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, New Jersey

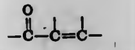
No Drawing. Filed Oct. 23, 1964, Ser. No. 406,151
Claims priority, application Germany, Oct. 25, 1963, K 51,181
12 Claims. (Cl. 96—35)

1. Light-sensitive material comprising a base material having a light-sensitive coating thereon, the latter comprising at least one epoxy resin having the formula

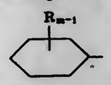
in which A is the group



B is an aliphatic group having at least 3 carbon atoms, which group may be substituted by alkyl groups, in which the group



occurs at least once and in which one carbon-to-carbon single bond may be interrupted by the group



R is selected from the group consisting of alkyl, cycloalkyl, alkenyl, alkoxy, carbalkoxy and nitro groups and carboxyl, sulfonic acid and phosphonic acid groups in the form of a salt, and halogen, m is an integer from 1 to 5, and n is an integer.

3,295,975
BLACK-AND-WHITE DEVELOPER FOR PHOTOGRAPHIC REVERSAL PROCESSES

Heinz Meckl, Cologne-Flittard, and Helmut Hüseler and Bernhard Morcher, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,660
Claims priority, application Germany, Sept. 15, 1962, A 41,160
6 Claims. (Cl. 96—55)

1. A photographic reversal black-and-white silver halide developer formulation having sodium sulfite in a proportion low enough to avoid dissolving silver halide from a silver halide emulsion, o-phenylene diamine, a 3-pyrazolidone in which the 1, 4 and 5 positions can be substituted by phenyl or alkyl of up to 4 carbons, and sufficient alkalizing agent to give the developer a pH between 8.5 and 11.5, the o-phenylene diamine and the 3-pyrazolidone being in the ratio of from 60:40 to 40:60.

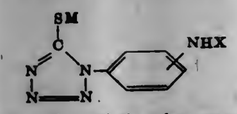
3,295,976
NOVEL INHIBITORS FOR USE IN THE BLACK AND WHITE DEVELOPMENT OF COLOR REVERSAL FILM

John R. Abbott and Ilmari F. Salminen, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Sept. 1, 1964, Ser. No. 393,639
4 Claims. (Cl. 96—55)

2. The method of selectively controlling the overdevelopment of a multi-layer photographic color element by a negative developer in a high temperature color process which comprises negative development of said

element in the presence of a compound having the formula:



where M is a member of the class consisting of alkali metals and hydrogen, and X is a radical having a formula selected from the class consisting of $—SO_2R$ and —COR wherein R is a hydrocarbyl radical of 1 to 22 carbon atoms.

3,295,977
PHOTOLITHOGRAPHIC PLATE HAVING A COMPOSITE BACKING

Edward W. Deziel, Bloomington, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Mar. 17, 1966, Ser. No. 535,196
4 Claims. (Cl. 96—75)



1. A sensitized, dimensionally stable plate suitable for photolithographic printing wherein a masking media is employed to determine the exposure areas, comprising in combination (a) a composite backing sheet, said backing sheet including a thin pliable annealed temper metal foil firmly bonded to one face of a yieldable conformable base layer and a water resistant surfacing bonded to the opposite face of said base layer, said composite backing being of a thickness ranging from about 5 to 12 mils, and said base layer having a thickness substantially greater than the thickness of the metal foil, (b) the exposed surface of said metal foil having an isolating and bonding surface treatment, and (c) over and in contact with said surface treatment on said metal foil a thin coating of a light-sensitive material, said composite backing sheet during exposure of the plate within a vacuum frame, conforming to the windows of the masking media to facilitate intimate contact between the stencil or image-carrying transparency and the metal foil throughout the open areas of said windows to thereby effectively reduce halation.

3,295,978
LIGHT-SENSITIVE PHOTOGRAPHIC ELEMENTS CONTAINING DEVELOPING AGENT PRECURSORS

Charles R. Barr, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,936
7 Claims. (Cl. 96—76)

1. A light-sensitive photographic element comprising a support coated with at least one hydrophilic colloid-silver halide layer and at least one hydrophilic colloid layer containing a photographically compatible inactive developing agent precursor having the formula:

$$MD_n$$

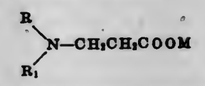
wherein M represents a metal atom selected from the class consisting of the lead atom, the calcium atom, the cadmium atom, the barium atom, the nickel atom, the zinc atom, the cobalt atom, the antimony atom, the titanium atom, and the chromium atom; D represents a silver halide developing agent that is a water-soluble hydraquinone having a chelating group substituted on the carbon atom of the ring adjacent to a hydroxyl group, such that said silver halide is contiguous to said developing agent precursor; and n represents an integer of from 1 to 3.

3,295,979
FRICTION REDUCING COATINGS FOR PHOTOGRAPHIC ELEMENTS

George R. Secrist and Harold C. Lohrberg, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 17, 1963, Ser. No. 273,545
12 Claims. (Cl. 96—76)

1. A photographic support having on one side thereof an exterior friction reducing layer comprising casein and 1–10%, based on the dry weight of the casein, of a compound having the following formula:



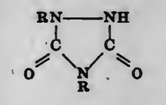
wherein R is an aliphatic hydrocarbon group of from 10 to 18 carbon atoms, R_1 is selected from the group consisting of hydrogen, an aliphatic hydrocarbon group of from 10 to 18 carbon atoms and CH_2CH_2COOM, and M is selected from the group consisting of hydrogen and a cation.

3,295,980
INCREASED EFFICIENCY WITH MUCOCHLORIC ACID HARDENING BY USE OF 4-SUBSTITUTED URAZOLES

William W. Rees and William H. Russell, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,196
6 Claims. (Cl. 96—109)

1. A light sensitive gelatin-silver halide emulsion containing as a hardener therein a halogen substituted aldehyde acid compound selected from the group consisting of mucochloric acid and mucobromic acid and as an antifoggant therein a compound selected from the group consisting of the compounds having the following structural formula



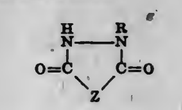
R being selected from the group consisting of H, alkyl, aryl, and aralkyl only one R being hydrogen, the monoacetyl and diacetyl derivatives of these compounds, maleic acid hydrazide, and phthalic acid hydrazide.

3,295,981
STABILIZING A SILVER HALIDE EMULSION HARDENED WITH FORMALDEHYDE AND MUCOCHLORIC ACID

Kirby M. Milton, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 12, 1965, Ser. No. 425,064
9 Claims. (Cl. 96—109)

1. A light sensitive gelatin-silver halide emulson containing as a hardener therein a mixture of mucochloric acid and formaldehyde, the latter constituting 5–40% of the mixture and as an antifoggant therein a compound selected from the group consisting of compounds having the following general formula:

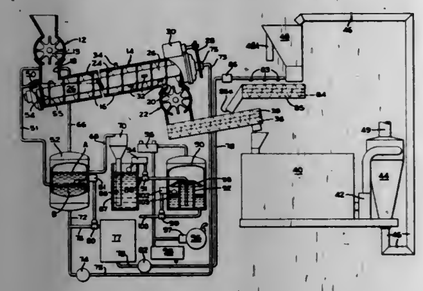


wherein Z represents the atoms required to complete a heterocyclic ring and R is selected from the group consisting of H, alkyl and aryl; and the monoacyl and diacyl derivatives of compounds having the above formula.

3,295,982
CONTINUOUS RENDERING METHOD AND APPARATUS

Frank D. Hickey, Harold W. Adams, and Katsuji Hirahara, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed July 23, 1962, Ser. No. 211,761
22 Claims. (Cl. 99—2)



2. In a process of rendering animal fats or other fat-containing solids, the steps of cooking animal material in a confined steam atmosphere under pressure to cause the separation of the material into meal, fat, and proteinaceous extract; separating the meal, fat and extract from each other; directing a portion of the extract into and through the separated meal to strip fat from the meal and provide relatively low fat meal; adding protein-enriched meal to said low fat meal to form a mixture of the meals having a relatively high protein content; and drying said mixture to reduce its liquid content.

13. In a system for rendering inedible animal fats the combination of a processing vessel having a cooking zone and a drain zone, means for maintaining a pressurized steam atmosphere in said vessel whereby animal fats confined in the cooking zone of said vessel separate into solid material, fat and stickwater, means for conveying a body of solid material out of said cooking zone and along said drain zone, means for removing fat and stickwater from said cooking zone and separating the fat from the stickwater, and means for directing a portion of the stickwater into and through the solid material in the drain zone of said vessel to strip fat therefrom and produce low-fat solid material.

22. In a process for separating fats from proteinous matter wherein the solid proteinous matter is moved through a pool of fatty material incident to treatment thereof in a processing vessel, the improvement which comprises the steps of directing heated stickwater into said proteinous matter after it leaves the pool to strip fatty material from the proteinous matter, and returning the fatty material back to the pool.

3,295,983
FEEDING SILKWORM LARVAE FEED CONTAINING PROPIONIC ACID

Keizo Kato, Kanagawa-ken, and Satoshi Ide and Kazuto Okada, Tokyo, Japan, assignors to Ajinomoto Co., Inc., and Katakura Industry Co., Ltd., both of Tokyo, Japan

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,741
Claims priority, application Japan, Sept. 26, 1964, 39/55,148
3 Claims. (Cl. 99—2)

1. A method of rearing silkworm larvae which comprises feeding to said larvae a feed containing nutrient ingredients and 0.001% to 5% by weight, on a dry basis, of a growth promoting additive selected from the group consisting of propionic acid and its physiologically tolerated salts.

3,295,984
METHOD OF FEEDING ANIMALS A NON-PROTEIN NITROGEN SOURCE COATED WITH COPOLYMER OF DICYCLOPENTADIENE AND ESTER OF UNSATURATED ACID

Louis I. Hansen, Minneapolis, Minn., assignor to Archer-Daniel-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,513
6 Claims. (Cl. 99—2)

1. In the method of supplementing the diet of animals wherein non-protein nitrogen sources are fed to the animals as feed supplements, the improvement which comprises feeding the animals a coated non-protein nitrogen source, said coated non-protein nitrogen source comprising a core of a granular non-protein nitrogen source surrounded by at least one cured coating of a curable copolymer of dicyclopentadiene and ester of unsaturated acid.

3,295,985
PROCESS FOR THE PRODUCTION OF SUBSTANTIALLY FAT FREE AND FLAVOR FREE PROTEINACEOUS FOODSTUFFS

John Charles Cavanagh, 168 Adelaide Terrace, Perth, Western Australia, Australia

No Drawing. Filed Dec. 6, 1965, Ser. No. 512,004
Claims priority, application Australia, Nov. 21, 1960, 66,735/60
6 Claims. (Cl. 99—17)

1. In a process for the removal of fats and other components from relatively dry proteinaceous materials having a moisture content not exceeding about 20% by weight and which is in comminuted form, the steps of introducing said material into an initial compartment where the temperature of the material is maintained at a point capable of substantially rendering its entrained fat, adding sufficient water to the material by the time it is in said initial compartment to cause the resultant liquor in said compartment to exist in two phases, one of said phases consisting of solvent and water while the other consists substantially of fat, the quantity of water added being also sufficient so that the flavor components of the starting material are substantially dissolved in the solvent and water phase, withdrawing this two-phase liquor from the initial compartment, conducting said material through at least one intermediate stage where it is subject alternately to agitation with solvent and forceful separation of material from solvent and to a final stage where it is subjected to solvent extraction, and introducing a counterflowing solvent into the material in said final stage, said solvent having a boiling point above the melting point of the fat and below the boiling point of water, in maintaining the temperature of said material during said intermediate stages also at or above the melting point of fat said solvent with its contained fat being then conducted in counterflow successively into contact with the oncoming material in the intermediate stages and thence into said initial compartment and conducting the material from said last stage to a final compartment for the further removal of solvent therefrom.

3,295,986
POWDERED FAT COMPOSITIONS AND PROCESS FOR MANUFACTURE

Irving M. Saslaw, Glen Rock, N.J., and John J. Brady, East Weymouth, Mass., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 17, 1964, Ser. No. 419,219
14 Claims. (Cl. 99—123)

1. A dried emulsion comprising a fat phase of discrete fat particles containing an emulsifying agent and a non-fat phase comprising edible encapsulating solids selected from the group consisting of carbohydrate materials, proteinaceous materials, and mixtures thereof, said fat phase at temperatures below about 86° F. having a solids content of not less than 19.6 percent and a liquid content of not more than 80.4 percent, and at temperatures above about 104° F. having a solids content of not more than 12 percent and a liquid content of not less than 88 percent, said fat phase having a crystalline structure both above and below body temperature, and a solids content index of at least 3 at a temperature of 110° F. to stabilize said fat phase in dispersed particle form.

3,295,987
METHOD OF PRODUCING ALCOHOLIC MALT BEVERAGE

Kazuo Hoshino, Tokyo, and Toshitada Fukaya and Mikio Kato, Ibaragi-ken, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

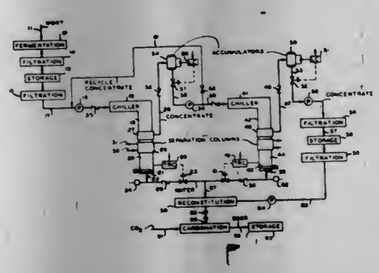
No Drawing. Filed May 20, 1963, Ser. No. 281,758
Claims priority, application Japan, Aug. 21, 1962, 37/34,463
8 Claims. (Cl. 99—31)

1. A method for producing alcoholic malt beverage which comprises mixing starch and plant protein with water, boiling the resulting mash, adding malt and proteolytic enzyme to the mash, subjecting the mash first to a temperature of 40° to 60° C. until hydrolysis of the protein has been effected, then raising the temperature to 55–85° C. until saccharification of the starch has been effected, boiling the hydrolysis mixture-containing mash with hops, and fermenting the resultant wort and with bottom-fermenting yeast.

3,295,988
PREPARATION OF RECONSTITUTED BEER

Emil A. Malick and Dwight L. McKay, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 21, 1963, Ser. No. 325,377
6 Claims. (Cl. 99—31)



1. A process for accelerating the lagering of ruh beer, said process comprising the steps of cooling the beer in a chiller to form a slurry of ice crystals in mother liquor; passing said slurry into an elongated confined separation zone wherein said ice crystals are moved in a compact mass into a body of water formed by melting said ice crystals in a downstream portion of said zone while simultaneously displacing water from said body back into the advancing crystal mass; withdrawing water from said downstream portion of said zone; withdrawing mother liquor from a midportion of said zone thereby forming a beer concentrate; and reconstituting said beer concentrate with said withdrawn water.

3,295,989
PRESERVATION OF UNBAKED BAKERY PRODUCTS WITH AN ANTIBIOTIC PEPTIDE AND THE RESULTING PRODUCT

Samuel A. Matz, Liverpool, Ernest George Linke, North Syracuse, and Donald E. Mook, De Witt, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,532
9 Claims. (Cl. 99—90)

5. The method of preserving a packaged unheated and unbaked bakery product selected from the group consisting of doughs, batters and puff pastes comprising dispersed substantially uniformly therethrough the product an effective amount of an antibiotic peptide selected from the group consisting of nisin, subtilin, and mixtures thereof to inhibit microbial growth and spoilage.

3,295,990
INACTIVE DRY YEAST AND PROCESS OF MAKING SAME

Peter J. Ferrara, 50 E. 78th St., New York, N.Y. 10021, and Gaston Dalby, 51 5th Ave., New York, N.Y. 10003

No Drawing. Filed June 17, 1963, Ser. No. 288,451
9 Claims. (Cl. 99—96)

1. A process for inactivating the glutathione in inactive yeast which comprises reducing the —S—S— groups of the glutathione to —SH groups and combining the glutathione through said —SH group with a member of the class consisting of low molecular weight unsaturated organic acids, the salts of said low molecular weight unsaturated organic acids having a reactive double bond and a carboxy group in proximity thereto and of low molecular weight unsaturated aldehydes having a reactive double bond and an aldo group in proximity thereto.

8. An inactive plasmolyzed dry yeast containing glutathione in which substantially all of the glutathione is linked through a thio ether linkage to an organic radical of a member of the class consisting of low molecular weight unsaturated organic acids, the salts of said low molecular weight unsaturated acids having respectively a reactive double bond and a carboxy group in proximity thereto and of low molecular weight unsaturated aldehydes having a reactive double bond and an aldo group in proximity thereto.

3,295,991
ENZYMATIC PROCESS OF MAKING CHEESE AND CHEESE PRODUCTS

Winifred M. Cort, Lloyds Neck, and Lloyd K. Riggs, Oakdale, N.Y. (both % Evans Research & Development Corp., 250 E. 43rd St., New York, N.Y. 10017)

No Drawing. Continuation of application Ser. No. 58,643, Sept. 27, 1960. This application Feb. 18, 1963, Ser. No. 259,361
5 Claims. (Cl. 99—116)

1. A novel method for the production of cured cheese comprising contacting milk curd with enzymes extracted from the group consisting of *P. roqueforte* and *P. camemberti* and permitting the enzyme treated milk curd to stand for a sufficient period of time to form the cured cheese.

3,295,992
REDUCING THE STICKINESS OF HOT CANDY

Robert F. Frey, Greensboro, N.C., assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 28, 1963, Ser. No. 305,189
3 Claims. (Cl. 99—134)

1. A method of reducing the stickiness of hot candy which comprises incorporating therein 0.05 to 10 percent by weight of a non-hygroscopic polyethylene glycol while the candy is hot.

3,295,993
METHOD OF IMPROVING THE TASTE OF ARTIFICIAL SWEETENING AGENTS
Masaaki Yoshida, 562 5-chome, Saginomiya, Nakano-ku, Tokyo, Japan, and Masahide Yoshikawa, % Asagiku-so, 303 Yyunkso, Shinjyuku-ku, Tokyo, Japan
No Drawing. Filed Sept. 5, 1963, Ser. No. 306,698
Claims priority, application Japan, July 13, 1962, 37/29,027
9 Claims. (Cl. 99—141)

1. A method of improving the taste of a sweetening agent selected from the group consisting of saccharin, soluble saccharin, and the physiologically tolerated water soluble salts of hexanesulfamic acid, which comprises:
(a) treating said sweetening agent in aqueous solution at a temperature not substantially below the boiling point of said solution with sodium chloride and an alkaline material selected from the group consisting of sodium bicarbonate and sodium salts of amino acids, whereby a precipitate is formed in said solution; and
(b) separating said precipitate from the remainder of said solution.

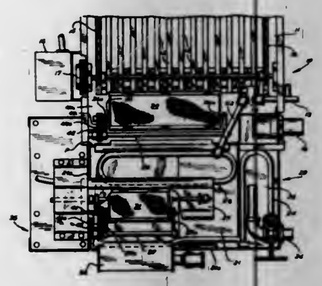
3,295,994
KIM CHEE PICKLE CANNING
Joseph K. Lee, 10616 Bramble Bush Ave., Whittier, Calif. 90604
Filed Aug. 3, 1962, Ser. No. 214,638
6 Claims. (Cl. 99—154)

6. The method of making Kim Chee pickle comprising the steps of partially fermenting nappa in a saline solution to a pH of about 3.8, straining the partially fermented nappa from the solution, collecting the solution strained from the partially fermented nappa, washing the strained nappa to arrest fermentation therein, placing the washed partially fermented nappa in a container, boiling the collected solution for about five minutes to arrest fermentation therein, pouring the hot solution into the container containing the partially fermented nappa, sealing the container containing the nappa and the solution to provide an intermediate pickle preparation, refrigerating the sealed container containing the intermediate preparation substantially until it is opened to prevent resumption of fermentation in the container, opening the container under conditions free of substantial refrigeration to reinstitute fermentation of the intermediate preparation, and fermenting the intermediate preparation for a selected period to produce the desired pickle.

3,295,995
PROCESS OF DEHYDRATING VEGETABLES
Willard M. Bright, Ridgewood, Morton Pader, Teaneck, and Wilfried Wiesner, Rutherford, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,906
7 Claims. (Cl. 99—204)

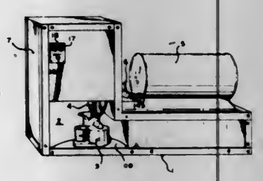
1. A process for forming a dehydrated root vegetable piece which comprises preparing and cutting as required a root vegetable for dehydration; heating said prepared vegetable to case-harden its surface, to remove at least about 5% of the original moisture but to provide an average moisture content of at least 40% and to form a differential moisture level in its exterior surface and in its interior portion; pressing said casehardened, partially dehydrated vegetable with a minimum amount of delay to break down severely the cellular structure of its interior portion without damaging substantially the exterior surface except for a minimum amount of, but at least one, perforations therein; and drying the treated piece therefrom to provide a dehydrated product.

3,295,996
HONEYCOMB MELTER CLEANER
Melford E. Olson, 4749 Florida Ave., N., Minneapolis, Minn. 55427
Filed Oct. 22, 1965, Ser. No. 500,692
7 Claims. (Cl. 99—234)



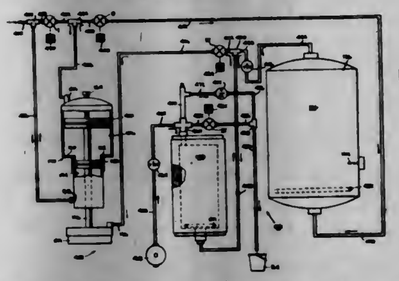
1. A honeycomb capping separator for recovering honey, beeswax and other products comprising:
(a) a separating tank to receive honeycomb cappings therein with means for supplying heat to the cappings to produce an initial separation of the products contained in the cappings;
(b) a heating tank arranged to receive at least partially separated products therein from said separating tank;
(c) heat supplying means in said heating tank to separate and purify the products delivered thereto to permit the recovery of beeswax in a purified condition; and
(d) means for selectively transferring products from said first separating tank into said heating tank.

3,295,997
MILK SHAKE MACHINE
Barnard E. Tomlinson, Walla Walla, Wash., and Orville E. Jay, Milton-Freewater, Oreg., assignors to Northwest Historical Metals Inc., Walla Walla, Wash., a corporation of Washington
Filed Dec. 19, 1963, Ser. No. 331,787
23 Claims. (Cl. 99—275)



1. In a milk shake processing machine having a rotatable vertically reciprocable shaft including mixing and cutter blade members for cutting and mixing a frozen mixture in the bottom of a container; movable support means for positioning said container beneath said shaft, liquid dispensing means, and control means for sequentially positioning said container beneath said shaft, lowering said shaft and blade members into said container a predetermined distance, rotating said shaft within said container, dispensing a predetermined quantity of liquid into said container during the rotation of said shaft, and subsequently raising said shaft.

3,295,998
APPARATUS FOR PREPARING AND DISPENSING HOT POTABLES
Nathan Goros, Manhattan, N.Y. (% Vendcor, Inc., 2641 Decatur Ave., Bronx, N.Y. 10458)
Filed May 28, 1962, Ser. No. 197,988
31 Claims. (Cl. 99—282)



1. In a machine for dispensing an individual portion of a potable upon each actuation of the machine, the combination of: a tank the fluid capacity of which is substantially equal to an individual portion of the potable, a dispensing station, a brewing station connected directly to the dispensing station, a source of water, a first conduit means connecting said source of water to said tank, a second conduit means connecting said tank directly to said brewing station, means in the first conduit means for selectively isolating the source of water from the tank, means in the second conduit means for selectively isolating the brewing station from the tank, and fluid means for applying pressure to the water in the tank when the tank is isolated from the source of water and is connected to the brewing station so as to empty the tank through the brewing and dispensing stations, said fluid means being inoperative to apply such pressure when the tank is connected to the source of water and is isolated from the brewing station.

7. In a machine for dispensing a potable, a pair of jaws, means mounting said jaws for relative movement toward and away from one another, said jaws forming a compartment when they are closed together, means for moving said jaws toward and away from one another, said means comprising a pair of functionally integral pistons of different diameters in cooperating cylinders, means for supplying water under pressure continuously to the outer face of the smaller piston, means selectively supplying water under pressure to the outer face of the larger piston, said jaws being moved toward one another when the water under pressure is supplied to the larger piston and being moved apart when no water under pressure is supplied to the larger piston, a tank, means connecting the cylinder in which the larger piston operates to the tank when the larger piston is disconnected from water under pressure whereby when the jaws are moved apart the water from the larger piston is forced into the tank, means connecting the tank to one of the jaws, and a valve in said last-named connecting means which is opened when the jaws are brought together.

29. In a machine for dispensing potables, a magazine containing plural packages, means for abstracting one package at a time from the magazine and delivering said package to an intermediate station, a brewing station in the same horizontal plane as the intermediate station, the brewing station including a lower stationary jaw and an upper movable jaw, means energized upon delivery of a package to the intermediate station to transport the package to the lower jaw, a cup dispensing unit, a dispensing platform, and means energized upon abstraction of a package from the magazine and transport thereof to the lower jaw to energize the cup dispensing unit and conduct a cup therefrom to the dispensing platform.

3,295,999
PROCESS OF CHEMICAL METAL PLATING AND BATHS THEREFOR
Heinz Günter Klein, Cologne-Deutz, and Eberhard Zirngiebl, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Dec. 12, 1961, Ser. No. 158,873
Claims priority, application Germany, Dec. 31, 1960, F 32,879
5 Claims. (Cl. 106—1)

2. An aqeous metal and plastic plating bath for plating by chemical reduction, consisting of 30 g./l. $NiCl_2.6H_2O$, 50 g./l. $C_2H_4(NH_2)_2$, 20–250 mg./l. of a mixture of $TINO_2$ and $SnCl_2.2H_2O$ in a proportion by weight of 1:1, and 0.6 g./l. $NaBH_4$.

3,296,000
SHAPED REGENERATED CELLULOSE PRODUCTS HAVING BACTERIOSTATIC PROPERTIES
Gregory C. Bockno, Media, and Joseph W. Schappel, Morton, Pa., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 261,195, Feb. 26, 1963. This application Apr. 6, 1966, Ser. No. 540,514
8 Claims. (Cl. 106—15)

1. A process for producing shaped bodies of regenerated cellulose which have bacteriostatic properties which includes the steps of extruding through a shaping orifice and into an aqueous acidic coagulating solution a viscose solution containing from about 4% to 10%, by weight, of cellulose having incorporated therein not less than 0.25%, by weight based on said cellulose, of 3,4,4'-trichlorocarbanilide in particulate form to impart bacteriostatic properties to a dry-shaped product of regenerated cellulose prepared from said solution, subjecting the thus extruded solution to the action of the aqueous acid solution until the extruded solution is coagulated, converting the coagulated solution to regenerated cellulose and subsequently drying the shaped products of regenerated cellulose.

3,296,001
PIGMENT COMPOSITION, PROCESS FOR MANUFACTURE, AND ORGANIC MATERIALS CONTAINING THE SAME
Arnold Edwin Ambler and Richard William Tomlinson, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 2, 1963, Ser. No. 277,475
Claims priority, application Great Britain, May 15, 1962, 18,678/62
17 Claims. (Cl. 106—30)

1. A solid pigment composition for the pigmentation of an organic material, said composition consisting essentially of a finely divided phthalocyanine pigment and a resinous substance which is soluble to the extent of at least 5% in the organic material, and the composition being characterised in that it contains from 60 to 85% by weight of pigment and that the volume concentration of pigment in the composition when under a uniform compressive pressure of 20 pounds per square inch is less than 18%.

5. Process for manufacture of a pigment composition for the pigmentation of an organic material which comprises producing an intimate mixture of
(a) a pigment in paste form obtained by electrolyte flocculation of an aqueous dispersion of a pigment selected from the class consisting of organic pigments and carbon black, and
(b) an aqueous paste of a resinous substance which is soluble to the extent of at least 5% by weight in the aforesaid organic material said paste being obtained by electrolyte flocculation of an aqueous dispersion,

both (a) and (b) being free from any dispersing agent in the chemical form originally present in the aqueous dispersion, said pigment being present in an amount from 60% to 95% by weight of said mixture, softening the resinous substance in said mixture and then re-hardening the same.

13. Process for the manufacture of a viscous printing ink which comprises working, in a heavy duty dough mixer, a viscous printing ink medium with a pigment composition consisting essentially of

(1) a solid resinous substance which is soluble to the extent of at least 5% in the organic material; and

(2) from 60% to 95% by weight of a pigment selected from the group consisting of

(a) organic pigment in a volume concentration in said composition of less than 18% when said composition is under a uniform compressive pressure of 20 lb./sq. in.; and

(b) carbon black in a volume concentration in said composition of less than 13% when said composition is under said compressive pressure.

15. Process for the manufacture of pigmented plastic objects which comprises roll milling a plastic material with a pigment composition consisting essentially of

(1) a solid resinous substance which is soluble to the extent of at least 5% in the organic material; and

(2) from 60% to 95% by weight of a pigment selected from the group consisting of

(a) organic pigment in a volume concentration in said composition of less than 18% when said composition is under a uniform compressive pressure of 20 lb./sq. in.; and

(b) carbon black in a volume concentration in said composition of less than 13% when said composition is under said compressive pressure, and forming the pigmented plastic material into solid objects.

3,296,002
REFRACTORY SHAPES

Weston Andrew Hare, Northfield, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 11, 1963, Ser. No. 294,266
5 Claims. (Cl. 106—40)

1. A method for making an improved refractory product comprising mixing from about 10–50% by weight of particles of the group consisting of aluminum and alloys thereof containing a major amount of aluminum, said particles passing through an 80-mesh screen, with from about 50–90% by weight of refractory particles at least half of which pass through a 140-mesh screen, said particles being selected from the group consisting of the carbides of aluminum, boron, silicon, titanium, and tungsten, the nitrides of aluminum, boron, titanium, uranium and silicon, and the borides of chromium, molybdenum, titanium, tungsten and silicon, forming the particles into a body having a porosity of at least 20% after removal of volatile material, and firing the body in an oxidizing atmosphere at a temperature between 600° C. and the melting point of the refractory for a period of time sufficient to oxidize at least 90% of the aluminum, the rate of heating being controlled so that the temperature of the shaped mixture does not exceed the ambient temperature by more than 100° C.

3,296,003
GLASS MANUFACTURE

Howard R. Swift and Lawrence B. Ginther, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 20, 1963, Ser. No. 310,452
14 Claims. (Cl. 106—47)

1. In a method of changing from the production of a glass of one kind to a glass of a similar composition but different kind in a continuously operating tank furnace during the continuous operation thereof, the steps of adding to said first mentioned glass in said continuously operating furnace glass batch materials calculated to change the contents of said furnace from said first mentioned glass to said second mentioned glass during a transition period, and additionally adding a material that will increase the density of the resulting glass to said added glass batch materials.

3,296,004
NEUTRAL BROWN HEAT ABSORBING GLASS COMPOSITION

James E. Duncan, Natrona Heights, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,669
10 Claims. (Cl. 106—52)

1. A neutral brown colored, heat absorbing glass having substantially uniform transmittance of light in the portion of the spectrum lying between 400 and 750 millimicrons and an excitation purity between 6 and 12 percent, consisting essentially of the following ingredients in percent by weight: 60 to 75 percent SiO_2, 11 to 20 percent Na_2O, 0 to 10 percent Ka_2O, the sum of Na_2O and K_2O being 11 to 21 percent, 6 to 16 percent CaO, 0 to 10 percent MgO, the sum of CaO and MgO being 6 to 20 percent, 0.2 to 1 percent Fe_2O_3, 0.001 to 0.02 percent CoO and 0.0005 to 0.02 percent Se, the amounts of Se, CoO and Fe_2O_3 being coordinated to produce a neutral brown glass having said transmittance properties.

3,296,005
BRONZE-SMOKE OPHTHALMIC GLASS COMPOSITION

James E. Duncan, Natrona Heights, and Joseph E. Cooper, Brackenridge, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

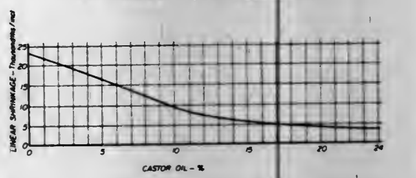
No Drawing. Filed Dec. 23, 1964, Ser. No. 420,793
6 Claims. (Cl. 106—52)

1. A bronze-smoke glass consisting in its essential ingredients of the following components in percent by weight: 65 to 73 percent SiO_2; 0 to 7.0 percent Na_2O; 9.0 to 19.0 percent K_2O, the total weight of Na_2O and K_2O being 14 to 19 percent and the weight ratio of K_2O to Na_2O being 1.4 to infinity; 4 to 10 percent ZnO; 0.5 to 5 percent BaO; 0.1 to 4 percent Al_2O_3; 1.5 to 5.5 percent Fe_2O_3; 0.003 to 0.012 percent CoO; 0.0001 to 0.2 percent Se; 0 to 2.0 percent Sb_2O_5; and which has a coefficient of thermal expansion between 4.9 and 5.3×10^{-6} per ° F. between 70° F. and 575° F., an index of refraction from 1.521 to 1.525 and a softening point above 1315° F.

3,296,006
PATTERN MATERIAL COMPOSITION

Robert A. Horton, Chesterland, Ohio, assignor to Precision Metalsmiths, Inc.

Filed Jan. 28, 1963, Ser. No. 254,329
21 Claims. (Cl. 106—38.7)

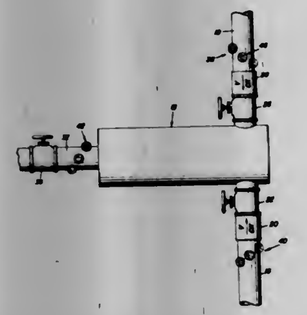


1. A heat disposable pattern composition comprising from about 20% to about 70% ethyl cellulose and from about 30% to about 80% of a fatty acid ketone, said composition being characterized by a softening point in the range from about 210° F. to about 265° F. and by substantially immediate surface melting to a low viscosity liquid when subjected to a temperature in the range from about 1600° F. to about 2300° F.

3,296,007
THERMAL BLENDER AND METHOD FOR PREPARING VISCOUS FLUENT MATERIALS

Howard L. Thom, Rte. 1, Laurel, Mont. 59044

Filed July 26, 1962, Ser. No. 212,533
9 Claims. (Cl. 106—278)



1. A method of preparing a fluent product of at least two materials consisting of a hydrocarbon solvent and a liquid asphalt having a Furol viscosity which is below 600 at 180° F. to obtain a product having a specified viscosity and curing rate, comprising the steps of: preheating at least one of said materials to reduce the viscosity thereof for inlet flow; regulating the inlet flow of one of said fluent materials at a different inlet temperature relative to the other of said fluent materials; mixing said materials for discharge flow at a resultant temperature; measuring the inlet temperatures of the fluent materials and the resultant temperature of the product and varying the regulated inlet flow of said one of the materials to obtain a calibrated relationship between the measured inlet temperatures of said fluent materials and said resultant temperature of the product under discharge flow.

3,296,008
PHTHALOCYANINE PIGMENTS

André Pugin, Riehen, near Basel, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed Feb. 26, 1963, Ser. No. 261,214
Claims priority, application Switzerland, Mar. 2, 1962, 2,556/62
7 Claims. (Cl. 106—288)

1. A microcrystalline composition stable to aromatic solvents which consists essentially of

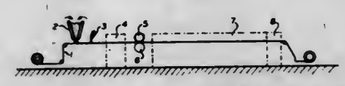
(a) microcrystalline metal-free phthalocyanine in the β-form, and

(b) as stabilizing agent, 10 to 45% of a partially halogenated metal-phthalocyanine of the α-form, the halogen of which has an atomic number ranging from 9 to 35 and the metal of which has an atomic number ranging from 27 to 29 inclusive, said stabilizing agent being present in such amounts that at least 0.08% by weight of the total composition consists of halogen; and at least about 2% by weight of said stabilizing agent consists of halogen.

3,296,009
PROCESS FOR PROVIDING TEXTILE FLOOR COVERING WITH LATEX RESIN FOAM COATING

Theodor Schütte and Günter Jacobs, Bremen, Germany, assignors to Hansawerke Lurman, Schutte & Co., Bremen-Hemelingen, Germany

Filed Jan. 5, 1965, Ser. No. 423,431
3 Claims. (Cl. 117—10)

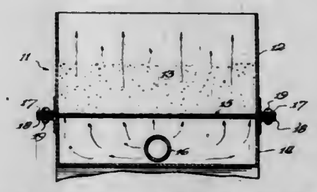


1. Process for providing textile floor-coverings with a stiff resilient coating, essentially consisting of applying to one surface of the textile floor-covering a composition consisting essentially of a foamed substantially uniform mixture prepared by mixing (a) a rubber latex dispersion (b) with an aqueous dispersion of polyvinyl acetate and (c) with a filling material substantially finely and uniformly distributed in said mixture and compatible with said mixture, and by foaming the resulting mixture said aqueous dispersion of the polyvinyl acetate and said filling material being compatible with said mixture; 100 parts by weight of said composition containing 2.5 to 60 parts by weight of dry rubber and 1 to 60 parts by weight of dry polyvinyl acetate in a weight ratio of 1 to 3 up to 8 to 1 of rubber to polyvinyl acetate, 0 to 200 parts by weight of dry filler, all of said parts being based on the total weight of dry rubber and dry polyvinyl acetate present in the composition; heating the resulting coated textile floor covering formed on one surface of the floor-covering, to gelling temperature in order to cause gelling of the coating; pressing together part of the gelled coating and the corresponding registering textile floor-covering adhered thereto on at least ¼ to ⅗ of the entire coated surface of the floor-covering in order to attain strong adherence between said part of the coating and the corresponding part of the floor-covering, and applying substantially lower pressure than that applied in said pressing together of said part of the gelled coating and the textile floor-covering, to the remaining part of the coated textile floor covering in order to form raised portions of high elasticity in the gelled coating; drying and vulcanizing by heating the coated textile floor-covering.

3,296,010
METHOD OF APPLYING REFLECTORIZING COATINGS

George H. Craig, Hammond, and Charles A. Racz, Griffith, Ind., and Vernon E. Coleman, Thornton, Ill., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed July 24, 1963, Ser. No. 297,250
7 Claims. (Cl. 117—33)



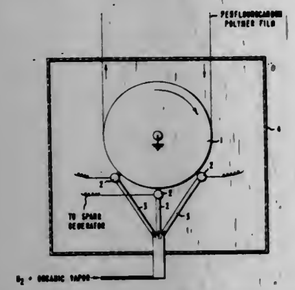
1. A method for applying an even light-reflective coating to an elongated article having an irregular lateral cross-section which varies in thickness, said method comprising:

providing said article to be coated;

providing an expanded bed of light-reflecting beads in a condition of incipient fluidization, wherein said bed has a top which is substantially motionless;

covering a predetermined area of the surface of said article with a binder for said beads, said binder being in a tacky condition;
immersing at least a portion of said binder-covered area of the article in said expanded bed while the bed is maintained in said condition of incipient fluidization during the entire time of immersion, to coat said portion with an even coating of said beads;
and then withdrawing said coated article from said bed.

3,296,011
SURFACE TREATMENT OF PERFLUOROCARBON POLYMER STRUCTURES
Richard Thomas McBride and Leon Edward Wolinski, Buffalo, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 24, 1963, Ser. No. 282,947
14 Claims. (Cl. 117—47)



1. A process which comprises continuously passing a continuous film of a copolymer of tetrafluoroethylene and hexafluoropropene containing from 95% to 50% by weight of tetrafluoroethylene and from 5% to 50% of hexafluoropropene, between positive and negative electrodes spaced a distance from about 0.015 to about 0.25 of an inch apart, continuously applying to said positive electrode an alternating current at a voltage within the range of from 10,000 to 30,000 volts, and at a frequency in the range of from 300,000 to 500,000 cycles per second, and maintaining between said electrodes a substantially oxygen gas-free atmosphere containing less than about 5% by volume of the vapors of a non-oxidizing organic compound having a vapor pressure of at least 0.25 millimeter of mercury at 60° C. in a gaseous carrier medium which will sustain said electrical discharge, whereby to render a surface of said film adherable to other materials, and thereafter coating said surface with a polymeric coating.

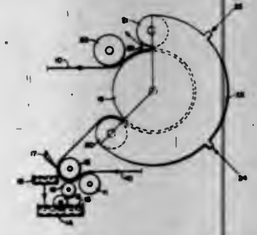
3,296,012
ELECTROLESS COPPER PLATING ON CERAMIC MATERIAL
Stewart G. Stalnecker, Jr., Raleigh, N.C., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Continuation of application Ser. No. 170,832, Feb. 2, 1962. This application Apr. 30, 1965, Ser. No. 452,333
6 Claims. (Cl. 117—47)

1. In a method of chemically depositing copper on a surface of an alumina substrate comprising the steps of cleaning said substrate, sensitizing it, rinsing it with water and immersing it in a plating bath, the improvement comprising the steps of
making the surface of said alumina substrate submicroscopically porous by leaching after said cleaning step in a bath comprising about 85% aqueous solution of ortho-phosphoric acid,
sensitizing the leached surface by successively immersing said substrate in an aqueous solution of stannous chloride and an aqueous solution of palladium chloride for about 3 minutes each, and then
immersing said substrate in a plating bath containing a salt of copper to which bath tetrasodium salt of ethylenediaminetetraacetic acid has been added in the amount of at least 0.5% by volume.

3,296,013
PROCESS FOR METAL COATING CELLULOSE TRIACETATE
Joseph L. Feeley, Rahway, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Oct. 30, 1963, Ser. No. 319,976
6 Claims. (Cl. 117—60)

1. A process for metal coating cellulose triacetate plastic film which comprises the steps of
(*a*) contacting cellulose triacetate plastic film with aqua regia for about 10 to 20 minutes, and
(*b*) soaking the film prepared in step (*a*) in a solution of a noble metal salt and a reducing agent to deposit a continuous metal coating on said film.

3,296,014
METHOD AND APPARATUS FOR PRESSURE CAST COATING
Robert C. Williams, 9902 River Road, Richmond, Va. 23229
Filed Mar. 4, 1964, Ser. No. 349,219
12 Claims. (Cl. 117—64)

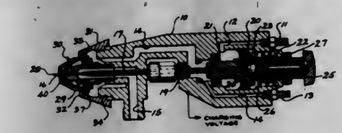


1. A high temperature pressure cast coating method utilizing a hardenable coating formulation comprising a volatile liquid component, said method comprising:
(1) contacting a wet coating of said coating formulation, applied upon a paper web, with a casting surface,
(2) heating said coating to a temperature above the vaporization temperature of said volatile liquid component so as to generate vapors thereof, while simultaneously
(3) compressing said coating on said web against said heated casting surface by pressurized air until said coating is cast, and thereafter
(4) releasing said cast coated web from said heated casting surface by releasing said air pressure and allowing moisture in said web to flash therefrom.

3,296,015
METHOD AND APPARATUS FOR ELECTROSTATIC DEPOSITION OF COATING MATERIALS
James W. Juvinall and Erhard Kock, Toledo, and John F. McCaslin, Perrysburg, Ohio, assignors to The DeVilbiss Company, Toledo, Ohio, a corporation of Ohio
Filed Jan. 6, 1964, Ser. No. 335,941
7 Claims. (Cl. 117—93.44)

1. In a method of coating an article with liquid coating material from an electrostatically charged air atomizing spray gun in which liquid coating material is dischar

charged around a highly charged needle electrode and atomized by a surrounding airstream, the improvement which comprises directing the airstream to impinge against the stream of liquid coating material with a substantially



unopposed tangential component of force to cause the liquid coating material to atomize in the volume immediately around the axis defined by the needle electrode and adjacent the tip thereof.

3,296,016
PRODUCTION OF MICROPOROUS COATING ON SUBSTRATE
Walter T. Murphy, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 31, 1963, Ser. No. 320,554
8 Claims. (Cl. 117—105.5)

1. A process for forming a microporous film which comprises forming a 3% to 15% by weight polymeric solution of a polymer selected from the group consisting of substantially linear polyurethane polymer, polyvinyl chloride, and mixtures thereof in a hygroscopic solvent and spraying said polymeric solution onto a base stratum coincidentally with a spray of nonsolvent for said polymer, said nonsolvent being completely miscible with said hygroscopic polymer solvent, said sprays being mixed after they have traveled far enough from their sources to form discrete droplets.

3,296,017
METHOD OF CHEMICALLY BONDING A METAL TO A CERAMIC
Jack A. Rubin, Encino, Calif., assignor to North American Aviation, Inc.
No Drawing. Filed July 17, 1963, Ser. No. 295,845
15 Claims. (Cl. 117—119.8)

1. A method of chemically bonding a metal to a ceramic body which comprises forming a mixture consisting essentially of powders of a transition metal oxide and a refractory metal, forming a fluid suspension of the powder mixture, applying the resulting suspension on the ceramic body, and firing the coated body at an elevated temperature in a flowing, anhydrous hydrogen atmosphere to provide a uniform metal coating on said ceramic body.

3,296,018
PROCESS FOR PREPARING MOISTENABLE HOT MELT ADHESIVE SHEET
Daniel M. Sullivan, Granby, and Leo J. Monaghan, Springfield, Mass., and Leo M. Germain, Shawinigan, Quebec, Canada, assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware
No Drawing. Filed June 23, 1961, Ser. No. 119,030
4 Claims. (Cl. 117—122)

1. A process for preparing a moistenable adhesive film comprising (a) melting at a temperature range of from 70–400° C. a composition comprising a polyvinyl alcohol resin having a residual polyvinyl acetate content of from 10 to 80% by weight and having a viscosity (measured at 20° C. in a 4% aqueous solution) between 1.3 and 75.0 centipoises and containing from zero to 50% by weight, based on the total weight, of plasticizer, (b) applying the molten resin composition to a surface to be ultimately adhesively secured and (c) cooling to obtain the solid, non-tacky, water moistenable adhesive film.

3,296,019
POLY(ETHYLENE OXIDE) ADDUCTS OF FATTY OILS AND FATTY AMINES AS ANTISTATIC COATING FOR POLYOLEFIN FIBERS
Ann S. Keller, Norristown, and Harry H. Hall, Springfield, Pa., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
No Drawing. Filed Apr. 19, 1962, Ser. No. 188,838
4 Claims. (Cl. 117—138.8)

1. Polyolefin fibers having incorporated thereon a finish consisting essentially of 1 to 5 parts by weight of a polyethylene oxide modified fatty oil having an average of at least 15 ethylene oxide units per glyceride molecule and 1 part by weight of a polyethylene oxide modified primary amine having an average of at least 10 ethylene oxide units per amine molecule said primary amine obtained from a C_{12}–C_{18} fatty acid.

3,296,020
PROCESS FOR PRODUCING ANTISTATIC CHARACTERISTIC IN NYLON FIBERS
Robert E. Sheehan, % Bibb Mfg. Co., Macon, Ga. 31202
No Drawing. Filed Aug. 27, 1964, Ser. No. 393,011
12 Claims. (Cl. 117—138.8)

1. A process for producing anti-static characteristics in nylon fibers which comprises: applying thereto a composition consisting essentially of fatty acid ester formed by the esterification of fatty acids having at least 6 carbon atoms in the hydrocarbon chain and lower polyols selected from the group consisting of lower glycols and lower glycerols, diethylene glycol and a rust inhibitor.

3,296,021
HEAT-RESISTANT AND OXIDATIONPROOF MATERIALS
Nils Gustav Schrewelius, Hallstahammar, Sweden, assignor to Aktiebolaget Kanthal, Hallstahammar, Sweden
No Drawing. Filed Nov. 24, 1964, Ser. No. 413,653
Claims priority, application Great Britain, June 25, 1962, 24,344/62
3 Claims. (Cl. 117—160)

1. A method for the production of heat-resistant and oxidation proof bodies of low porosity and consisting essentially of silicon carbide and molybdenum silicide, comprising the steps of shaping a preliminary porous body consisting essentially of at least one member of the group consisting of hexagonal SiC, cubic SiC, graphite, amorphous carbon, and carbon-containing carbonizable material, heating a molybdenum-silicon alloy in the presence of but not in direct contact with said preliminary body in a non-oxidizing atmosphere at a temperature above the melting temperature of said alloy but below the decomposition temperature of SiC thereby causing said alloy to expand so as to contact and infiltrate substantially all the pores in at least one coherent portion of said preliminary body with a part of said melted alloy.

3,296,022
POLYMER SATURATED BACKING MATERIAL
William F. Timmer, Cohoes, and Nolan A. Curry, Troy, N.Y., assignors to Norton Company, Troy, N.Y., a corporation of Massachusetts
No Drawing. Filed Aug. 13, 1962, Ser. No. 216,347
4 Claims. (Cl. 117—161)

1. A flexible backing for coated abrasives which comprises:
(a) A fibrous web; and
(b) A saturant for said web present in an amount of at least 1% by weight of said web;
(c) Said saturant comprising the reaction product of an alcohol-soluble nylon having a dilution value of at least 33 and an intrinsic viscosity of at least 0.4

with a thermosetting, alkali-catalyzed, unsubstituted phenolic resin;

(d) Said reaction product having a nylon to phenolic resin ratio of from 6.33:1 to 1:1.

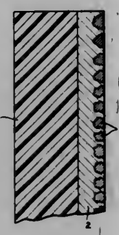
3,296,023
FABRIC COATED WITH LIGHT REFLECTING FILLER AND ACRYLIC POLYMER
Alexander John Leaderman, Pikesville, and Gordon Loeb, Baltimore, Md., assignors to Rockland Bleach and Dye Works, Inc., Baltimore, Md., a corporation of Maryland
No Drawing. Filed Mar. 11, 1964, Ser. No. 351,239
4 Claims. (Cl. 117—161)

1. A flexible, drapeable, washable and dry cleanable coated fabric consisting essentially of a fabric completely coated with a composition consisting essentially of a filler adapted to reflect a proportion of light waves while transmitting a proportion of said waves, with a minimum of heat absorption, and resinous binder consisting of an acrylic polymer polymerized in situ on the fabric by an acid catalyst, the proportions by weight of filler to binder being from 1.2 to 2.8 parts of filler per part of binder.

3,296,024
POLYESTER COATINGS FOR INSULATED ELECTRICAL CONDUCTORS
Manuel A. Jordan and John F. Meyer, Schenectady, N.Y., assignors to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York
No Drawing. Filed Dec. 6, 1962, Ser. No. 242,655
10 Claims. (Cl. 117—218)

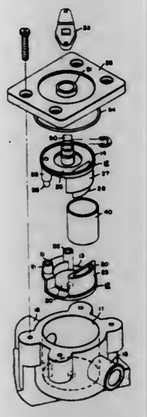
1. An electrical conductor provided with a first continuous coating of the polymeric ester of an acid selected from the group consisting of terephthalic acid and isophthalic acid with a mixture of polyhydric alcohols consisting of (a) 25 to 75% by weight of a saturated aliphatic polyhydric alcohol having at least three hydroxyl groups and (b) 75 to 25% by weight of an aliphatic hydrocarbon diol wherein from 20 to 100% of said diol is a member selected from the group consisting of neopentyl glycol and a mixture of neopentyl glycol with a straight-chain α,ω aliphatic hydrocarbon diol having four to five carbon atoms and the balance of the diol is ethylene glycol, and a second continuous coating of linear polymeric polyethylene terephthalate.

3,296,025
METHOD FOR MAKING POROUS MEMBRANE ELECTRODE
Eugene L. Holt, Forest Hills, and Morton Beltzer, New York, N.Y., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 10, 1963, Ser. No. 250,515
6 Claims. (Cl. 117—227)



1. A method of making a porous membrane electrode which comprises coating a porous membrane with a paste comprising a finely divided catalyst, and pressing said catalyst into said membrane at room temperature and a pressure of about 250 to 20,000 p.s.i.

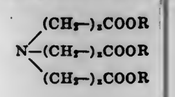
3,296,026
ROTARY VALVE HAVING RENEWABLE SEALING SURFACE
Olan L. Long, Hilliard, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 25, 1964, Ser. No. 377,855
2 Claims. (Cl. 137—329.05)



1. A rotary plug valve comprising, a valve body having a valve cavity and inlet and outlet openings extending through the side walls of said body into said cavity, a valve core adapted to be loosely fitting and rotatable within said cavity, an elongated member carried by said core to extend across said outlet opening when said core is in the valve closed position, and an endless ring sealing member of resilient sheet material positioned to loosely surround said elongated member to be carried thereby into sealing relation with said outlet by the force of fluid pressure within said valve cavity when said core is in the valve closed position, said valve core being comprised of two complementary parts, one of said parts comprising a bottom end surface and a plurality of upstanding tongue elements, the other of said parts comprising a top end surface and a plurality of downwardly extending tongue elements, the core being assembled with the respective tongue elements of said parts joined in interfitting relation and said elongated member being formed of respective ones of said interfitting tongue elements.

3,296,027
REMOVAL AND INHIBITION OF SCALE FORMATION IN STEAM GENERATION
Clarence Jacklin, Downers Grove, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Nov. 19, 1964, Ser. No. 412,336
4 Claims. (Cl. 134—3)

1. A method of removing and inhibiting scale formation in boilers in the generation of steam from water which has a tendency to form scale which comprises incorporating with said water from which said steam is generated under pressures ranging from about 250 p.s.i. to about 1100 p.s.i. a quantity of a salt of nitrilotricarboxylic acid sufficient to accomplish said removal and inhibition, said salt having the following structural formula:



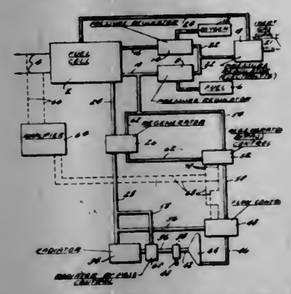
where x is an integer of from 1 to 2, and R is a radical selected from the group consisting of hydrogen and alkali metal, with at least one occurrence of R being an alkali metal radical and boiling said water under said range of pressure.

3,296,028
LEAD STORAGE BATTERY ELECTRODE ALLOY COMPOSITION
Erik G. Sundberg, Osbacken, Nol, Sweden, assignor to Aktiebolaget Tudor, Stockholm, Sweden, a corporation of Sweden
Filed July 13, 1964, Ser. No. 382,236
2 Claims. (Cl. 136—65)



1. A lead acid storage battery electrode comprising an active material and a supporting and current conducting grid composed of rods in contact with said active material, said rods being formed of a homogeneous alloy consisting essentially of about 0.07% by weight tellurium, about 0.007% by weight silver, and the balance pure lead, said alloy having no antimony therein.

3,296,029
FUEL CELL SYSTEM FOR THE AUTOMATIC CONTROL OF CELL TEMPERATURE
George H. Davis, Windsor Locks, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 30, 1961, Ser. No. 155,949
7 Claims. (Cl. 136—86)

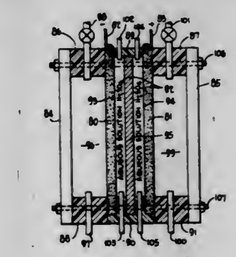


1. In a fuel cell control device, a fuel cell, means for supplying oxidant and an excess of fuel under pressure to said cell, a discharge conduit for removing the products of oxidation and the excess fuel from said cell, a regenerator connected to said conduit for receiving and for cooling said discharge products, a separator through which the cooled products are directed for removing the liquid products of oxidation from the excess fuel, a pump receiving the fuel from the separator for returning the excess fuel through the regenerator to the cell, a bypass for the excess fuel around the regenerator and valve means for controlling the amount of excess fuel bypassing the regenerator, said valve means being movable in response to the electrical output of the cell thereby to reduce the flow through the regenerator if the electrical output is too high.

3,296,030
FUEL CELL WITH STABILIZED ZIRCONIA ELECTROLYTE AND NICKEL-SILVER ALLOY ANODE
William E. Tragert, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 1, 1962, Ser. No. 234,602
2 Claims. (Cl. 136—86)

1. A fuel cell comprising a solid stabilized zirconia electrolyte, a cathode in direct contact with one surface of said electrolyte, an electrical lead containing said cathode, means to supply a gaseous oxidant to said cathode, an anode in direct contact with the opposite surface of said electrolyte; said anode comprising a porous alloy matrix of nickel and silver, the nickel being present in an amount by weight of said alloy of from 90% to 99%, and the silver being present in an amount by weight of said alloy of from 1 to 10%; an electrical lead contacting said anode, and means for supplying a fuel selected from the group consisting of hydrogen, carbon monoxide, and mixtures thereof to said anode.

3,296,031
ELECTROCHEMICAL PROCESS OF PRODUCING ELECTRICAL ENERGY USING SULFUR DIOXIDE FUEL AND HALOGEN OXIDANT
Robert A. Rightmire, Twinsburg, and Philip S. Fay, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 29, 1965, Ser. No. 505,708
9 Claims. (Cl. 136—86)



1. In a process of producing electrical energy from an electrochemical reaction system comprising a relatively oxidizable subsystem, a relatively reducible subsystem, ion-permeable means separating said subsystems, an electrode in each of said subsystems, each electrode coupled to an external electron conducting circuit, and means for supporting the respective subsystems and electrodes in coacting relationship,

the steps of

placing concentrated aqueous sulfuric acid in the relatively oxidizable subsystem as ion-transfer medium, separated by the ion-permeable means from the other subsystem, to form a reaction interface with the electrode,

placing a concentrated aqueous mineral acid in the relatively reducible subsystem as ion-transfer medium, separated by the ion-permeable means from the other subsystem to form a reaction interface with the electrode,

supplying molecular SO_2 to the ion-transfer medium of the relatively oxidizable subsystem and to the reaction interface and causing the SO_2 to react electrochemically with the oxygen ion species of the ion-transfer medium to produce SO_3,

supplying an elemental halogen to said relatively reducible subsystem and causing the halogen to react electrochemically at the reaction interface in said relatively reducible subsystem with hydrogen ion species of the ion-transfer medium to produce hydrogen halide,

removing the SO_3 from said relatively oxidizable subsystem in combination with residual ion-transfer medium,

recovering the SO_3 externally of the subsystem and reconverting to SO_2 by reduction in the vapor phase in the presence of a reducing catalyst,

resupplying reconverted SO_2 to said reltaively oxidizable subsystem for the production of further electrical energy,

removing the reaction product from said antifuel subsystem,

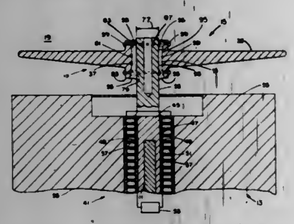
and supplying additional elemental halogen to said antifuel subsystem for the production of further energy.

3,296,032

POWER FLATTENING DEVICE FOR RADIOISOTOPE HEATED THERMOELECTRIC GENERATOR

Harold Belofsky, Verona, N.J., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 17, 1964, Ser. No. 338,539
8 Claims. (Cl. 136—202)



1. A radioisotope powdered thermoelectric generator for use in a vacuum, comprising a radioisotope heat source, a primary heat rejection path having thermocouples forming hot and cold junctions for producing electric current from the heat supplied by said heat source, external secondary radiator means for ejecting excess heat to said vacuum, and external means evaporable into said vacuum connecting said heat source and said external secondary radiator means to cause said evaporation and to eject said heat for throttling said heat ejectment from said secondary radiator means by decreasing the conductance of heat to said external secondary radiator means as said evaporable means evaporates into said vacuum, said external evaporable means being shaped with large exposed initial area and a decresing exposed evaporation area for compensating for the change in the source temperature minus the external secondary radiator means temperature and being connected to said source and radiator through low emissivity shields for high end-of-life efficiency, said evaporation being sufficient to maintain a constant electric current until the end of said generator operating life-time at which time said evaporation is complete.

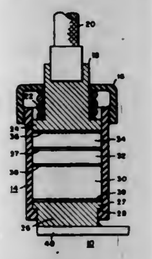
8. The method of throttling the removal of heat from a radioactive heat source, comprising removing heat from said source in a vacuum with means that said heat removal causes slowly to sublimate into said vacuum in correspondence with the reduction in the heat from said source due to radioactive decay, said means having an exposed area that decreases in size due to said sublimation in correspondence with the radioactive decay of said source.

3,296,033

SEMICONDUCTOR DEVICE

Samuel J. Scuro, Verona, Pa., and Geoffrey W. Wilson, Cleethorpes, Lincs, England, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 4, 1961, Ser. No. 142,907
2 Claims. (Cl. 136—205)



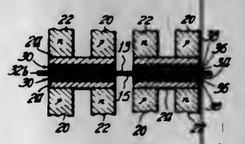
1. A thermoelectric element comprising an open ended insulated cylindrical container, electrically and thermally conductive means disposed at each end thereof, at least one body of thermoelectric material disposed in the container between the conductive means, and a layer of solder disposed between each of the bodies of thermoelectric materials and between the bodies of material and the conductive means, said solder consisting essentially of at least one element selected from the group consisting of lead, tin, indium and base alloys thereof, means forcing the conductive means together whereby to maintain good contact with the thermoelectric body, the solder at the operating temperature of the element being at least partially in the liquid state.

3,296,034

THERMOELECTRIC ASSEMBLY AND METHOD OF FABRICATION

Allen D. Reich, Des Plaines, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Jan. 4, 1962, Ser. No. 164,334
5 Claims. (Cl. 136—212)



1. In a cascaded thermoelectric assembly, the combination of:

a relatively thin thermally-conductive, electrically-nonconductive plate having first and second sides;

a layer of electrically-conductive silver preparation fired on said first side of said plate;

a layer of copper electroplated on said layer of silver preparation;

a layer of solder sweated on said layer of electroplated copper;

selected portions of said first side of said plate being free of said layers of silver preparation, cooper and solder to form a plurality of thermally-integrated, electrically-segregated, electrically-conductive portions;

a relatively thick copper bar bonded to each of said electrically-conductive portions;

a plurality of p-type thermoelectric elements each having an end bonded to one of said copper bars; and

a plurality of n-type thermoelectric elements each having an end bonded to one of said copper bars in proximate spaced relationship to one of said p-type thermoelectric elements;

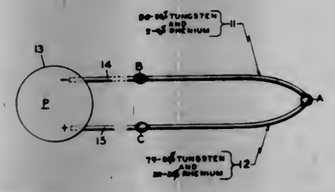
said copper bars, p-type thermoelectric elements, and n-type thermoelectric elements thereby forming a continuous electrically-conductive path.

3,296,035

THERMOCOUPLE HAVING TUNGSTEN-RHENIUM ALLOY LEG WIRES

Edward D. Zysk, Livingston, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed Apr. 1, 1963, Ser. No. 269,390
6 Claims. (Cl. 136—227)



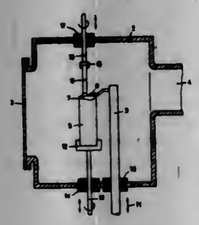
1. A thermocouple having a leg and lead wire combination comprising a first leg wire of 96–98% tungsten and 2–4% rhenium joined to a second leg wire of 74–80% tungsten and 20–26% rhenium, a lead wire connected to the first leg composed of 75–85% nickel, 15–25% chromium, 0–2% manganese and 0–0.15% carbon, and a lead wire connected to the second leg composed of 96–99% copper, 0.5–3% nickel and 0–1.5% manganese, said percentages of ingredients being by weight.

3,296,036

APPARATUS AND METHOD OF PRODUCING SEMICONDUCTOR RODS BY PULLING THE SAME FROM A MELT

Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Oct. 22, 1965, Ser. No. 502,054
Claims priority, application Germany, Mar. 19, 1965, S 96,046
19 Claims. (Cl. 148—1.6)



1. Method of producing a monocrystalline semiconductor body which comprises horizontally rotating a melt of semiconductor material simultaneously with a carrier of the same material underlying and supporting the melt; applying heat at a radially extending area overlying the rotating melt so as to heat the melt as it passes beneath the area to at least the melting temperature of the material; and pulling with the aid of a crystal seed a monocrystalline semiconductor body from a portion of the melt distantly located from the applied heating area.

3,296,037

RUST PREVENTION IN AQUEOUS AMMONIA CONTAINERS

Ernst J. Solberg, South Charleston, and Charles A. Albert, St. Albans, W. Va., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 30, 1963, Ser. No. 298,592
5 Claims. (Cl. 148—6.14)

1. The process of treating a steel surface which rusts when in contact with aqueous ammonia which comprises removing residual rust and contaminants from said steel surface, contacting said steel surface with an aqueous ammonia solution having a concentration above about 0.5 wt. percent to build up a thin, continuous, corrosion-produced film on said steel surface, removing said aqueous ammonia solution from contact with said corrosion-produced film, drying said corrosion-produced film, and maintaining said corrosion-produced film in a dry state for at least about 5 hours, said corrosion-produced film preventing corrosion of said steel surface when in contact with aqueous ammonia.

3,296,038

HIGH TEMPERATURE COLUMBIUM BASE ALLOYS

Elihu F. Bradley, West Hartford, Conn., Robert I. Jaffee and Dean N. Williams, Columbus, and Edwin S. Bartlett, Worthington, Ohio, assignors, by direct and mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Filed Dec. 21, 1962, Ser. No. 246,364
10 Claims. (Cl. 148—11.5)

1. In a process for fabricating a high-temperature strength columbium-base alloy consisting essentially of columbium as the principal component and an additive selected from the group consisting of tungsten, molybdenum and mixtures thereof in an amount of from 5 to 35% by weight of the alloy with the total molybdenum content not exceeding 25% by weight of the alloy, the improvement that comprises the step of subjecting the alloy from a strain-free state to a reduction of at least 33% at a temperature of from 1800 to 2800° F., said reduction being sufficient to impart to the alloy a 4T-bend transition temperature not in excess of about 300° F., said 4T-bend transition temperature being defined as the minimum temperature at which an alloy strip can be bent without cracking or fracture through an angle of 105° with an included radius of curvature equal to four times the strip thickness, whereby substantial work hardening is introduced into the allow, said step comprising the final reduction step on said alloy, and thereafter maintaining the alloy free from substantial recrystallization.

3,296,039

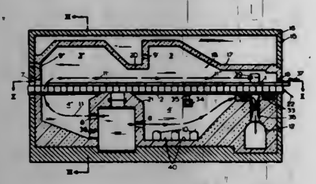
METHOD OF PREVENTING THE FORMATION OF BLACK STRIPES IN THE HEAT-TREATMENT OF METAL BODIES

Karl Loeck, Oberhausen, Josef Molz, Mulheim an der Ruhr-Menden, and Hans Weineck, Oberhausen, Germany, assignors to Huttenwerk Oberhausen A.G., Oberhausen, Rhineland, Germany, a corporation of Germany

Filed Dec. 22, 1965, Ser. No. 515,646
4 Claims. (Cl. 148—157)

1. In the heat treatment of metal bodies which are successively fed through a pusher-type heat-treating oven from an inlet of said oven to an outlet thereof by sliding said bodies along fluid-cooled rails having laterally insulated heat-conducting refractory members interposed between said bodies and said rails, the bodies being thereupon withdrawn from said oven, the improvement which

comprises the step of directing a stream of heating gas against said bodies from above and below during the



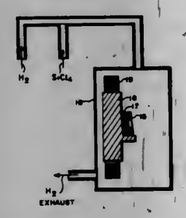
entire displacement of each of the bodies from said inlet to said outlet.

3,296,040

EPITAXIALLY GROWING LAYERS OF SEMICONDUCTOR THROUGH OPENINGS IN OXIDE MASK

Henry F. H. Wigton, Palo Alto, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, Long Island, N.Y., a corporation of Delaware

Filed Aug. 17, 1962, Ser. No. 217,687
5 Claims. (Cl. 148—175)



1. Method of depositing a layer of semiconductor material by epitaxial growth by halide decomposition over a portion of the surface of a semiconductor substrate while leaving the remainder of said surface substantially free of deposited semiconductor, which comprises:

covering said remainder of said surface with a silicon oxide layer, and

exposing said surface to a halide decomposing epitaxial growth atmosphere at a temperature in the range between about 1100° and 1428° C., the act of exposing said surface to said atmosphere being controlled by a gas flow rate and deposition time in said temperature range for leaving a substantial portion of said oxide layer intact when deposition is completed, for obtaining a layer of semiconductor deposited on said portion of said surface, and for leaving the surface of said intact oxide layer substantially free of deposited semiconductor.

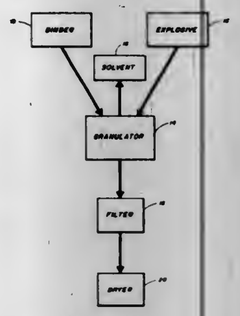
3,296,041

GRANULATED CRYSTALLINE PLASTIC BONDED EXPLOSIVES

Sam Bruce Wright, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed July 8, 1964, Ser. No. 381,169
4 Claims. (Cl. 149—2)

1. A plastic-bonded high-density explosive molding composition comprising about from 50 to 98 percent by weight of cap-sensitive, crystalline high explosive selected from the group consisting of organic nitrates and nitramines and about from 2 to 50 percent by weight polyester, polyamide or polytetrafluoroethylene binding material therefor, said binding material being dispersible in water, and chemically inert with the system, said composition being in the form of granules of a size such that substantially 100 percent pass a U.S. Sieve No. 18 and



substantially 100 percent are retained on a U.S. Sieve No. 80.

3,296,042

EXPLOSIVE CONTAINING OXIDIZING SALT, ORGANIC NITRO-COMPOUND, AND HYDROPHILIC COLLOID

Therese Quadflieg, Frankfurt am Main, Germany, and Gustav Allan Wetterholm, Gyttorp, Sweden, assignors to Nitroglycerin Aktiebolaget, a company of Sweden

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,907
10 Claims. (Cl. 149—7)

1. A novel plastic explosive having low sensitivity when being drilled-on in combination with ease and reliability of detonation by weak blasting caps mainly consisting of

(a) from about 20 to about 45% by weight of a finely divided solid explosive ingredient of high brisance selected from the group consisting of pentyl, hexogen, nitromannite, ditrinitroethylurea and having at a density above 1.45 g./cc. and detonation velocity exceeding about 7500 m./second;

(b) at least one oxygen-delivering inorganic salt selected from the group consisting of nitrates, chlorates, and perchlorates of alkali metals and alkaline earth metals in an amount of from about 10 to about 70% by weight, and

(c) a gel produced from water and a hydrophilic colloid selected from the group consisting of starch, dextrin, carboxymethyl-cellulose, agar-agar, alginates, pectin, alkyl cellulose, alkyl-hydroxyalkyl (ethyl) cellulose, guar gum and cross-linked guar gum, the composition and the amount of said gel being such that the water content of the explosive is within the range of from about 3 to about 25% by weight and the hydrophilic colloid ranges between about 0.3 and 10% by weight,

said composition being oxygen-balanced and substantially free from liquid esters of nitric acid.

9. An explosive composition according to claim 1 wherein the salt is at least partly coated with a water-repelling substance selected from the group consisting of wax, paraffin wax and silicones.

3,296,043

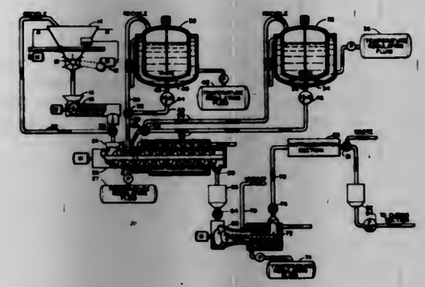
CONTINUOUS MIXING PROCESS FOR SOLID RESIN BASE PROPELLANTS

Gordon A. Fluke, Rancho Cordova, Jerome W. Keating, Sacramento, Donald C. McGehee, Carmichael, and Rudolph A. Peterson, Rancho Cordova, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Oct. 26, 1961, Ser. No. 147,988
9 Claims. (Cl. 149—19)

1. Process for continuously mixing the ingredients for a solid propellant comprising forming a moving stream

of solid oxidizer material, introducing a stream of a resin binder within said oxidizer stream, and mixing the oxi-



dizer and binder materials until a uniform composition has been obtained.

3,296,044

NITRIC ACID SENSITIZED CAP SENSITIVE EXPLOSIVES WITH GELATION CATALYST

Neil E. Gehrig, Schuylkill Haven, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 17, 1964, Ser. No. 411,698
23 Claims. (Cl. 149—47)

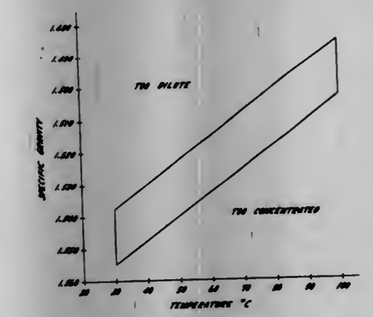
1. A gelled emulsion blasting composition comprising an aqueous solution of nitric acid, an inorganic nitrate selected from the group consisting of ammonium and alkali metal nitrates, a carbonaceous fuel immiscible with the said nitric acid solution, an acid-resistant stabilizer and a gelation catalyst.

3,296,045

PYROTECHNIC COMPOUND TRIS(GLYCINE) STRONTIUM (II) PERCHLORATE AND METHOD FOR MAKING SAME

Bernard E. Douda, Bloomfield, Ind., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 9, 1964, Ser. No. 410,037
5 Claims. (Cl. 149—75)



1. A process for preparing a pyrotechnic compound comprising:

first dissolving one mole of strontium perchlorate in water to form a solution,

next dissolving three moles of glycine in said solution, and

then removing said water.

5. Tris (glycine) strontium (II) perchlorate.

3,296,046

METHOD OF TACK SEALING BIAXIALLY ORIENTED POLYPROPYLENE FILM

Hillard W. Pouncy, Jr., Somerset, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,859
5 Claims. (Cl. 156—82)

5. The method of tack sealing biaxially oriented polypropylene film which comprises conditioning the surface of said film by exposure to flame until said surface can be wet by a liquid having a surface tension of from 43 to 70 dynes/cm., placing two such films in intimate contact such that at least one contact surface is a conditioned surface, and heating the contacted surfaces to an interface temperature of from 235° F. to 255° F. inclusive.

3,296,047

METHOD OF PRODUCING REINFORCED FLEXIBLE HOSE

Russell Dale Parr, Carlisle, Pa., assignor to Carlisle Tire and Rubber Division of Carlisle Corporation, a corporation of Delaware

Original application May 25, 1962, Ser. No. 198,692, now Patent No. 3,189,053, dated June 15, 1965. Divided and this application Sept. 10, 1964, Ser. No. 395,453
3 Claims. (Cl. 156—86)



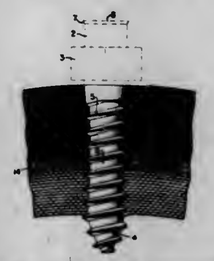
1. A method of producing a reinforced flexible hose consisting in rigidly supporting a tube of heat fusible elastomeric material with a mandrel in the bore thereof, coiling a metal reinforcing filament around the periphery of said tube along the length thereof in spaced apart convolutions leaving portions of said tube periphery exposed therebetween, wrapping a heat shrinkable tape having a heat fusible elastomeric coating over said metal reinforcing filament and tube exposed periphery along the length of said tube, applying fusing heat to said tape and tube and at the same time shrinking said tape against said tube exposed peripheral portions and said metal reinforcing filament bringing said tape into a composite fused union with said tube and said convolutions of said reinforcing filament and removing said tube from said mandrel.

3,296,048

REPAIR ELEMENT AND METHOD OF USE

Merritt W. Wolfe, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Sept. 17, 1962, Ser. No. 223,915
9 Claims. (Cl. 156—97)



1. A process for repairing a puncture in a pneumatic tire comprising the steps of (1) cleaning the puncture, (2) screwing into and through the puncture a polyurethane repair element at least larger than the puncture opening and having a helical ridge extending from at

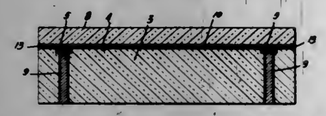
least the intermediate cylindrical section thereof to at least near the outside end of the tapered section of said element with the surface of said repair element being in contact with a rubber cement while it is being screwed into the hole and then (3) the cutting away of at least that portion of the polyurethane repair element which extends beyond the outside surface of the tire to leave the intermediate cylindrical section having the helical ridge sealing the puncture opening.

3,296,049

METHOD FOR MAKING GLASS SANDWICHES PRIMARILY FOR WINDOWS OF OPTICAL INSTRUMENTS

John R. Davy and Alexander J. N. Hope, Anniesland, Glasgow, Scotland, assignors to Barr and Stroud Limited, Glasgow, Scotland, a British company

Original application Nov. 4, 1960, Ser. No. 67,435, now Patent No. 3,223,829, dated Dec. 14, 1965. Divided and this application May 4, 1965, Ser. No. 453,148
3 Claims. (Cl. 156—99)



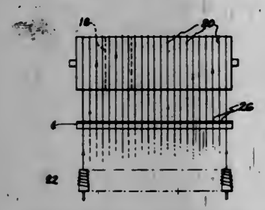
1. A method of connection between the fine electric wires and a bus-bar of an electrically heatable glass sandwich primarily for optical instruments wherein such fine electric wires are arranged in a selected pattern of plural wire lengths spaced over a surface of one of the glass layers of the sandwich to heat the glass layers, comprising embedding the wire ends in an electrically conductive material and an organic binding agent in the liquid suspension state arranged to form a bus-bar for said wires, and solidifying the material and organic binding agent in order to fix the wire ends therein.

3,296,050

METHOD OF MAKING ELASTOMERIC-GLASS FIBER PRODUCTS FOR USE IN ENDLESS BELTS

Alfred Marzocchi, Cumberland, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Dec. 26, 1962, Ser. No. 247,244
5 Claims. (Cl. 156—171)



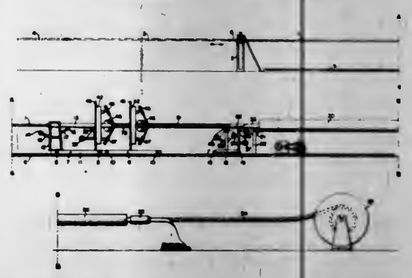
1. In the method of fabricating a belt having a matrix of elastomeric material with fibers of high strength and high dimensional stability extending crosswise of the belt comprising applying a layer of uncured elastomeric material onto the peripheral surface of a mandrel, circumferentially winding endless lengths of such fibers about the peripheral surface of such elastomeric material in a direction perpendicular to the mandrel and at the right angles to the axis of the mandrel, severing the elastomeric material and fibers along the axis of the mandrel, separating the layer of elastomeric material and the fibers from the mandrel to provide a slab, turning the slab through an angle of 90° to position the fibers for extension in the crosswise direction, and wrapping the slab about another mandrel upon which other layers of uncured elastomeric material are built up to form the cross-section of the belt.

3,296,051

METHOD AND APPARATUS FOR CONTINUOUSLY MAKING FIBER REINFORCED HOSE

Donald E. Harpfer and Elmer G. Klumpich, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed July 21, 1960, Ser. No. 44,432
14 Claims. (Cl. 156—190)



1. Apparatus for manufacturing long length unspliced hose comprising, in combination, a vulcanization chamber having a substantially smooth tubular bore therethrough adapted to receive unvulcanized hose said chamber having an entrance end and an exit end, movable hose wrap carriage means adjacent to the entrance end of said chamber to which unvulcanized hose is advanced, said wrap carriage means having mounted thereon hose wrap supply means, drive means coupled to said hose wrap carriage and adapted to move it to and from said chamber, movable building mandrel carriage means adjacent said wrap carriage means at the opposite end thereof from said chamber, said mandrel carriage means having a hollow building mandrel mounted thereon, means to couple said wrap carriage means and said mandrel carriage means, and airbag pipe stand means adjacent said mandrel carriage means at the opposite end thereof from said wrap carriage means, said airbag pipe stand means having airbag pipe releasably mounted thereon and extendable through said mandrel and said hose wrap means into said chamber, all of said carriage means being substantially longitudinally aligned with said vulcanization chamber.

3,296,052

MEANS AND METHOD FOR POSTFORMING PLASTIC LAMINATED PRODUCTS

Anthony M. Bechtold, Fort Lauderdale, Fla., assignor to Bechtold Engineering Company, Fort Lauderdale, Fla., a corporation of Florida

Filed Nov. 8, 1962, Ser. No. 240,469
22 Claims. (Cl. 156—382)

19. The method of conforming flat plastic laminates in the form of strips fixedly and permanently applied to the faces of variable-width elongated wood-like cores having parallel opposite edges which are rounded, the transverse peripheral width of each core being somewhat less than that of the applied laminate strip, the method comprising the steps of applying a bonding adhesive to the core edges and to the exposed back of the unbent free edge portions of the laminate, applying heat to the free edge portions of the laminate in an amount and for a time requisite for rendering the said laminate free edge portions amenable to bending, and, while so heated and amenable to bending, applying to the free edge portions of the laminate a bending force, starting at one end of the laminate and moving steadily to the other end thereof, to progressively deflect the free edge portions

of the laminate toward and upon the rounded edges of the core and into close conformity therewith, and, promptly after being so conformed, applying to the laminate edge portions opposing pressures exerted over a substantial distance lengthwise of the laminate, starting at one end thereof and continuing to the other through a prolonged interval, to induce bonding to the core edges of the conformed edge portions of the laminate, any excess of laminate material being then disposed beyond and past the back of the core, and trimming off all such excess material evenly with the core back, and controlling application of the heat and of the bending and bonding forces so applied to the laminate edge portions, as required by the width of the particular core to which the laminate is conformed, to assure a continuous and firm adherence of the laminate free edge portions to opposite rounded edges of the core.

3,296,053

PROCESS FOR SIMULTANEOUSLY MANUFACTURING A MULTIPLICITY OF TRUSSED RAFTERS

Ernest P. Plechel, Rte. 1, Box 179, Freeland, Wash. 98249

Filed Sept. 1, 1965, Ser. No. 487,969
14 Claims. (Cl. 156—288)



1. A method for simultaneously manufacturing a multiplicity of trussed rafters having chords and gussets with an adhesive bond between the chords and the gussets, said method comprising: positioning the chords and gussets of a first rafter in the desired position, insuring that there is an adhesive between the gussets and respective chords; positioning the chords and gussets of a second rafter in the desired position with respect to the gussets of the first rafter, insuring that there is an adhesive between the gussets and the respective chords; performing said positioning of the chords and the gussets as many times as desired to simultaneously form a multiplicity of rafters; applying pressure to the gussets to squeeze together the gussets and chords, and maintaining said pressure until the gussets and the respective chords are bonded by the adhesive.

3,296,054

METHOD OF HEAT SEALING TREATED RESIN FILM

Gordon D. McCann, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,586
14 Claims. (Cl. 156—308)

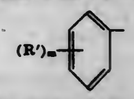
1. The method of improving the heat sealing characteristic of a film to a like body comprising:

applying to the surface of an alkenyl aromatic resin film an aqueous solution consisting essentially of from about 0.025 percent to about 10 percent by weight (based on the total weight of the solution), of a polyglycol compound of the formula:

$$R—O[(C_{n_x}H_{2n_x})—O]_x—[(C_{n_y}H_{2n_y})—O]_y—H$$

wherein n_x and n_y are integers from 2 to 3, and x and y are integers having individual values from 0 to 20 inclusive and having a sum of from 1 to 20 inclusive

R is a member selected from the group consisting of (a) alkaryl radicals of the formula:



wherein m is an integer from 1 to 4 and R′ is an alkyl group containing 2 to 20 carbon atoms, and (b) alkyl radicals containing from 8 to 13 carbon atoms;

to give a coating weight on said surface of said compound of from about 0.118 milligram per square foot to about 148 milligrams per square foot of surface

drying said coating and subsequently

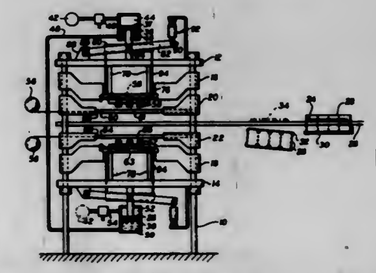
heat sealing said film at a temperature of from about 60° centigrade to about 88° centigrade.

3,296,055

APPARATUS FOR APPLICATION OF REINFORCING STRANDS TO A COMPARTMENTED NEST

William Burdette Wilkins, Roxboro, N.C., assignor to Reinforced Plastic Container Corporation, Roxboro, N.C.

Filed June 5, 1963, Ser. No. 285,762
10 Claims. (Cl. 156—433)



1. Apparatus for the application of roving to the edges of the walls of a fabricated nest having longitudinal and transversely extending partitions, comprising a first mold platen and a second mold platen, each of said mold platens having a mold mounted thereon, each of said molds having a plurality of upstanding segments to fit within the compartments of said nest and to define slots therebetween to receive the partitions of said nest, means to move said nest between said mold platens, roving platens positioned between said nest and said first and second mold platens to draw roving strands over a selected plurality of said partitions, means to close said mold by simultaneous movement of said first and second mold platens into engagement with said nest in which position said mold segments are inserted into the nest compartments and in which position the roving and partition walls are received by said slots in said mold assembly, and to hold said mold closed to bond said roving to said partitions, means for heating said mold to cure said bond, means to open said mold after said cure, and means to withdraw said nest with said roving bonded to the selected plurality of partitions.

3,296,056

MEANS FOR POSTFORMING PLASTIC LAMINATED PRODUCTS

Anthony M. Bechtold, Fort Lauderdale, Fla., assignor to Bechtold Engineering Company, Fort Lauderdale, Fla., a corporation of Florida

Filed Feb. 25, 1964, Ser. No. 347,227
22 Claims. (Cl. 156—461)

1. A postforming machine of the kind described wherein a laminate strip, conditioned for pressure-bonding and

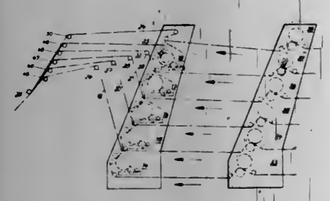
applied flatwise to the top face of an elongated core, is to be conformed and bonded thereto while the work is advanced lengthwise of itself through the machine, comprising means for propelling the work through a fixed path lengthwise of the machine, means for heating the laminate strip to a flexibilized state, means engaging the flexibilized strip for conforming and bonding the laminate to the top face of the core comprising a plurality of idling rolls of smooth resilient material adapted, when contacting the flexibilized core, to move tracelessly and freely therewith, and means positioned along opposite sides of the movement path of the work and adjustable relative thereto for continuous frictionless engagement with the work to maintain the same fixedly in the path of movement prescribed therefor.

3,296,057

TUBE FORMING MACHINE FOR MULTILAYER MATERIAL WEBS COMPRISING PAPER OR THE LIKE SUBSTANCES

Friedrich Franz Brockmüller, 50 Schulstrasse, Lengerich, Westphalia, Germany

Filed July 31, 1962, Ser. No. 213,755
Claims priority, application Germany, Aug. 8, 1961, W 30,494
4 Claims. (Cl. 156—548)



1. A tube forming machine for producing multi-layer material from a plurality of webs, comprising, in combination:

a plurality of web weakening devices, each for transversely weakening one of said webs;

a plurality of means each for applying transverse adhesive stripes to one of said webs, each said means including

(1) an adhesive applying roller for applying adhesive to its associated web,

(2) a counter roller disposed above the horizontal center line of said adhesive applying roller adjacent the circumference of the latter, and

(3) a first guide roller disposed above the level of said counter roller and spaced from the adhesive applying roller;

a collecting roller for collecting all of the webs and for bringing them into contact with one another for bonding;

a plurality of deflecting rollers, each for guiding one of the webs to the collecting roller, each web being individually guided through the counter roller and first guide roller of its associated adhesive applying device, so that the underside of the web faces the adhesive applying roller between the counter roller and first guide roller; and

a plurality of individual second guide rollers for equalizing the lengths of the webs between said adhesive applying rollers and said collecting roller, each said second guide roller being spaced transversely from a line between that said first guide roller and that said deflecting roller associated with the same web by a distance sufficient to create equal web lengths for all of said webs between said adhesive applying rollers and said collecting roller.

3,296,058

UNITARY COMPOSITE TRUNK CHRISTMAS TREE

Jack W. Fleck, 4536 Lake Heights, Bellevue, Wash. 98004

Filed Nov. 14, 1963, Ser. No. 323,714
3 Claims. (Cl. 161—22)



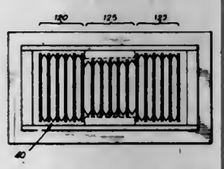
1. A unitary Christmas tree, comprising a plurality of naturally-grown trees, each with lopsided foliage growth, having their trunks disposed in such substantially parallel coextensive juxtaposed relationship as to form a tree with a composite trunk and with generally symmetrical foliage growth around the composite trunk, and means uniting said trunks fixed in such relationship and with the lower portion of one of said trunks projecting sufficiently beyond the butts of all the other trunks of said composite trunk to enable said projecting trunk portion to be mounted in a tree stand.

3,296,059

EXPANSIBLE HOLLOW CORE

Benjamin W. Schwindt, 40 Awixa Ave., Bay Shore, Long Island, N.Y. 11706

Filed Mar. 18, 1963, Ser. No. 265,935
3 Claims. (Cl. 161—69)



1. In combination, a frame having a preselected width and a hollow ladder-type core disposed in said frame, said core comprising a plurality of strips of corrugated paper board preselected ones of which have a width substantially equal to said preselected width, and hinge-like holding means at the ends of the strips for holding each strip to an adjacent strip to form a single cell which extends between the boundaries of said frame, said hinge-like holding means comprising connecting pieces connected between adjacent ones of said strips of corrugated paper board and being foldable along said connections, each of said connecting pieces having a fold line intermediate said connections whereby each connecting piece is foldable along its lines of connection to adjacent ones of said strip and along said intermediate fold line, said connecting pieces being formed of a material that is the same as the corrugated paper board.

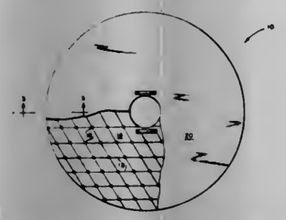
3,296,060

UNFIRED-CERAMIC FLAME-RESISTANT INSULATION AND METHOD OF MAKING THE SAME

Vaughn F. Seitzinger, Fayetteville, Tenn., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Oct. 18, 1963, Ser. No. 317,389
22 Claims. (Cl. 161—115)

14. In combination, a base plate for a rocket launch vehicle having secured to one surface thereof an expanded metal overlay, an insulative coating applied over said metal overlay for protecting said surface from an external source of radiant energy, said insulative coating consisting of 90 parts by weight of a mixture of block potassium titanate and 10 percent by weight of high-silica fibers to which has been added 10 parts by weight of a fiber



asbestos shrinkage reducing additive and 420 parts by weight of an aqueous colloidal silica sol bonding agent, and a removable protective coating applied over said insulative coating for protecting the optical properties of said insulative coating until said insulative coating is placed into use.

3,296,061

RUBBER LAMINATES

Albert S. Tavenor and James B. Borland, Indianapolis, Ind., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 27, 1962, Ser. No. 247,608
8 Claims. (Cl. 161—240)



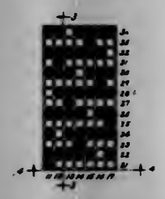
6. A laminate consisting of a first layer, a second layer, and a third layer; said first layer comprising a peroxide-cured rubber; said second layer comprising a sulfur-curable rubber, a sulfur curative, and hydrated aluminum silicate; said third layer comprising a rubber cement containing an ultra-accelerator capable of migrating into and curing said second layer.

3,296,062

BELT FABRIC

Neal A. Truslow, Wilmsboro, S.C., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Filed June 24, 1965, Ser. No. 466,644
11 Claims. (Cl. 161—91)



1. A fabric comprising high strength multifilament warp yarns having a twist multiple less than about 2.0, and weft yarns capable of being adhered strongly to a polymer coating interwoven with said warp yarns, said warp and weft yarns being woven in a weave in which both faces of the fabric are composed predominantly of weft yarns, and the warp yarns being predominantly in the fabric center and regularly passing on the fabric interior side of at least two consecutive weft yarns at each side of the fabric.

3,296,063

SYNTHETIC ELASTOMERIC LUBRICATED FILAMENT

Carroll F. Chandler, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 2, 1964, Ser. No. 394,041
5 Claims. (Cl. 161—175)

1. A filament prepared from a synthetic segmented elastomeric copolymer having a lubricating finish thereon, said finish having a viscosity of less than about 100 centistokes measured at 25° C. and having as essential ingredients a minor proportion of a polyamylsiloxane component having a viscosity of from about 8000 to about 20000 centistokes measured at 25° C. and a major proportion of a polydimethylsiloxane component having a viscosity within the range of from about 5 to about 100 centistokes measured at 25° C., said polyamylsiloxane being present in an amount equal to at least about 0.025% by weight of said filament.

3,296,064

METHOD OF TREATING CELLULOSIC PULPING WASTE LIQUORS WITH MAGNESIUM OXIDE TO FORM A COMPLEX PRIOR TO BURNING THEREOF

Everett D. Cann, Freeport, Ill., assignor of forty percent to William T. Neiman, Freeport, Ill.

Filed May 4, 1965, Ser. No. 453,043
11 Claims. (Cl. 162—36)

1. A method of treating the aqueous waste liquor from wood and similar cellulosic pulping operations wherein said waste liquor contains residues from the chemical digestion of lignin and hemicelluloses, as well as recoverable pulping chemicals, comprising: commingling with at least a portion of said waste liquor a substantial amount of an inorganic carrier in an amount sufficient to increase the inorganic content of the total solids in the waste liquor to within the range of about 5% to 70% and to raise the pH to within the range of about 8.5% to about 10.0%, thereby forming a separable solid complex of residues and carrier, said carrier being magnesium oxide, burning the combination of said waste liquor residues and inorganic carrier under oxidizing combustion conditions to substantially burn off organic material in said waste liquor residues and to reclaim said inorganic carrier as a furnace ash containing said carrier in the form of the oxide, and recycling at least a portion of said inorganic carrier to the commingling step.

3,296,065

PAPER PRODUCTS CONTAINING CARBOXYLIC ACID ESTERS AND PROCESS FOR PREPARING SUCH PRODUCTS

Joseph P. O'Brien, Kirkwood, and Eric T. Reaville and Floyd B. Erickson, Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware

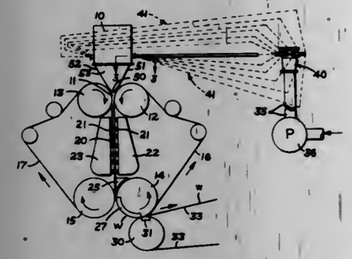
No Drawing. Filed Oct. 7, 1963, Ser. No. 314,555
16 Claims. (Cl. 162—158)

1. A cellulosic fiber paper product containing an ester of an acid selected from the group consisting of aliphatic dicarboxylic acids of from 2 to 10 carbon atoms, benzoic acid, biphenylcarboxylic acid, and benzene di-, tri- and tetracarboxylic acids, the esterifying group for each carboxyl group of the acid being an aliphatic group, said ester having at least about 8 carbon atoms and being present in an amount sufficient to soften said paper product.

3,296,066
HEADBOX FOR PAPERMAKING MACHINE AND STOCK DISTRIBUTOR THERETO

Marshall S. Green and Svend H. Hansson, Watertown, N.Y., assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed Nov. 13, 1963, Ser. No. 323,533
6 Claims. (Cl. 162—338)

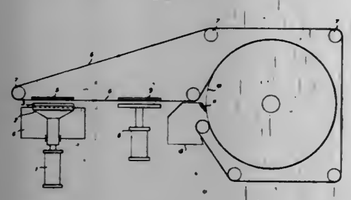


1. A flow divider for use in the stock supply system of a paper machine, comprising a header, means forming an inlet at one end of said header for connection to a supply line of stock, means closing the opposite end of said header, means forming multiple outlets in the side wall of said header arranged in uniformly spaced relation adjacent said closed end thereof, each of said outlets being of substantially smaller flow area than said inlet, said outlets extending radially of said header at substantially right angles to the direction of entering flow of stock through said inlet to effect corresponding redirection of the outgoing flows of stock therethrough with respect to such entering flow, the total flow area of said outlets being no greater than the flow area of said inlet, and said closing means being so constructed and arranged that the inner surface thereof is essentially flat and defines a plane substantially normal to the direction of such entering flow and parallel with the plane defined by the centers of said outlets to effect substantially complete extinction of the velocity of such entering flow within said header prior to redirection thereof to said outlets.

3,296,067
APPARATUS FOR MANUFACTURING FILIGREED DECKLE EDGED PAPER IN SHEET FORM

Heidy Berner-Furlenmeier, Gordola, Ticino, Switzerland, assignor to Elmo Bernardasci, Gordola, Ticino, Switzerland, a Swiss citizen

Filed Sept. 24, 1963, Ser. No. 311,254
4 Claims. (Cl. 162—394)



1. An apparatus for manufacturing filigreed paper with deckled edges, comprising a track, a ladle, a sieve frame carried by said ladle, a vat enclosing said ladle for containing paper pulp, said track extending above said ladle and said vat, said sieve frame withdrawing a wet paper sheet from said pulp, the width of said track being at least equal to that of said sieve frame, means connected with said sieve frame for moving it intermittently to and from said track, whereby said wet paper sheet is applied to said track by said sieve frame, and means connected with said track for moving the track after the application of the wet paper sheet thereto by a distance which is greater than the length of the wet paper sheet in the longitudinal direction of the track.

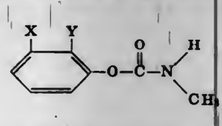
3,296,068
o- AND m-ALLYLOXYPHENYL AND m-ALKOXYPHENYL-N-METHYL CARBAMATES AND THE INSECTICIDAL USE THEREOF

Roger Williams Addor, Westport, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed July 28, 1960, Ser. No. 45,776
5 Claims. (Cl. 167—30)

1. An ester of N-methylcarbamic acid selected from the group consisting of m-allyloxyphenyl-N-methylcarbamate, o-allyloxyphenyl-N-methylcarbamate and m-isopropoxyphenyl-N-methylcarbamate.

4. The method of killing insect pests which comprise applying thereto in effective amounts a compound of the formula:



wherein X and Y are selected from the group consisting of R—O— and H, provided that when X is R—O—, Y is H and when Y is R—O—, X is H wherein R represents a member selected from the group consisting of lower alkyl and allyl and provided that when Y is R—O—, R is allyl.

3,296,069
SOLID SHAPED STERILIZING, SANITIZING, AND DISINFECTING COMPOSITIONS

Xavier Kowalski, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 20, 1965, Ser. No. 481,422
16 Claims. (Cl. 167—33)

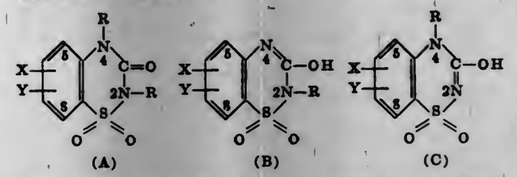
1. A sterilizing, sanitizing, and disinfecting composition, in solid shaped dosage unit form, comprising a mixture of (1) a non-deliquescent, solid, chlorine containing compound selected from the group consisting of dichloroisocyanuric acid, [(monotrichloro)tetra-(monopotassium dichloro)]pentaisocyanurate, and (trichloro)(monopotassium dichloro)diisocyanurate, (2) from about .25% to 2.0% by weight, based on the weight of the composition, of a metal salt of an aliphatic carboxylic acid having at least 10 carbon atoms in the aliphatic group, said metal being selected from the group consisting of alkali metals, alkaline-earth metals, zinc, and magnesium and (3) an anhydrous metallic salt selected from the group consisting of anhydrous copper and zinc inorganic salts, and anhydrous copper and zinc organic salts, said copper and zinc salts being characterized by having a solubility of at least 10 grams per 100 milliliters of water at water temperature of 20° C.

3,296,070
METHOD FOR THE TREATMENT OF HYPERTENSION

John G. Topliss, East Orange, and Nathan Sperber, North Caldwell, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 21, 1961, Ser. No. 90,632
7 Claims. (Cl. 167—65)

2. A method of treating hypertension in mammals which comprises administering to a mammal a pharmaceutical preparation containing a therapeutically effective antihypertensive dose of 3-oxo-3,4-dihydro-1,2,4-benzothiadiazine-1,1-dioxide selected from the group having the structural formulae:



(A) (B) (C)

and their non-toxic alkali metal salts wherein X is a member of the group consisting of trifluoromethyl, lower alkyl and halogen, said member being attached to one of the benzenoid carbon atoms of the group consisting of positions 6- and 7-; Y is a member of the group consisting of hydrogen, trifluoromethyl, lower alkyl and halogen, said member being attached to the benzenoid carbon atoms of the group consisting of positions 6-, 7-, and 8-, and R is a member of the group consisting of hydrogen and lower alkyl.

3,296,071
REDUCING BLOOD SUGAR WITH 3-ALKYL-5-ALKOXYMETHYLISOXAZOLE

John B. Wright, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 31, 1963, Ser. No. 284,307
3 Claims. (Cl. 167—65)

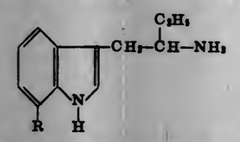
3. A method for reducing the blood sugar content of mammals comprising: administering to a mammal a compound selected from the group consisting of 3-methyl-5-methoxymethylisoxazole and 3-methyl-5-methoxymethylisoxazole zinc chloride complex.

3,296,072
METHOD OF TREATING MENTAL DEPRESSION

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application June 11, 1962, Ser. No. 201,251. Divided and this application Jan. 29, 1964, Ser. No. 341,101
2 Claims. (Cl. 167—65)

1. A method for treating mental depression in mammals which comprises: administering to said depressed mammal in unit dosage form a composition containing from about 0.5 to about 250 mg. of a compound selected from the group consisting of (1) 7-alkyl-3-(2-aminobutyl)indole free bases having the formula:



wherein R is alkyl of 1 to 4 carbon atoms, inclusive, and (2) pharmacologically acceptable acid addition salts thereof.

3,296,073
ENHANCING TETRACYCLINE ANTIBIOTIC BLOOD LEVELS WITH PYRAZOLIDINE POTENTIATING AGENTS THEREFOR

John E. Fahey, Gales Ferry, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,783
17 Claims. (Cl. 167—65)

1. An antibiotic composition comprising a tetracycline antibiotic and a compound selected from the group consisting of 1,2 - diphenyl-4-(1'-cyano)cyclopentylpyrazolidine-3,5-dione, 1,2 - diphenyl-4-(1'-cyano)cyclohexylpyrazolidine-3,5-dione, 1,2 - diphenyl-4-(1'-cyano)cycloheptylpyrazolidine-3,5-dione.

3,296,074
METHODS AND COMPOSITIONS FOR TREATING PSYCHOSES AND NEUROSES

Toboru Yui, Osaka, and Yuji Takeo, Kyoto, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Sept. 23, 1964, Ser. No. 398,757
Claims priority, application Japan, Oct. 4, 1963, 38/53,409
12 Claims. (Cl. 167—65)

1. A method for treating psychosis, which comprises administering 2-amino-4-methyl-6-methoxy-1,3,5-triazine to a patient suffering from psychosis; said compound being administered in an amount of 20 to 100 milligrams, in terms of the free base, per 50 kilograms of body weight per day.

3,296,075
17α - ACYLOXY - 16 - METHYLENE - PREGN - 4-ENE-3,20-DIONES, PHARMACEUTICAL PREPARATIONS CONTAINING SAME, AND INTERMEDIATE THERETO

David Neville Kirk, Vladimir Petrow, Martin Stansfield, and David Morton Williamson, all of London, England, assignors to The British Drug Houses Limited, London, England, a British company

No Drawing. Filed Aug. 4, 1959, Ser. No. 831,481
Claims priority, application Great Britain, Aug. 11, 1958, 25,753/58
5 Claims. (Cl. 167—74)

5. A pharmaceutical preparation comprising 17α-acetoxy - 16 - methylenepregn - 4-ene-3,20-dione admixed with a pharmaceutical carrier.

3,296,076
PILOMOTOR SHAVING COMPOSITIONS AND METHOD OF USING SAME

Otto Thomä, Ingelheim (Rhine), Germany, assignor, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany

No Drawing. Filed June 11, 1962, Ser. No. 201,276
6 Claims. (Cl. 167—85)

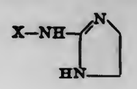
1. An alkaline shaving composition selected from the group consisting of shaving creams and shaving soaps, said composition having uniformly dispersed therethrough from 0.01 to 10% by weight, based on the total weight of said composition, of a pilomotor acting compound selected from the group consisting of 2-(3'-hydroxy-phenyl)-morpholine and its dermatologically acceptable, non-toxic acid addition salts.

3,296,077
PILOMOTOR SHAVING COMPOSITIONS AND METHOD OF USING SAME

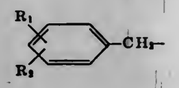
Alex Berg, Biberach an der Riss, Germany, assignor, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany

No Drawing. Filed July 31, 1962, Ser. No. 213,609
Claims priority, application Germany, Aug. 4, 1961, T 20,557
7 Claims. (Cl. 167—85)

1. An alkaline shaving composition having uniformly dispersed therethrough 0.01 to 10% by weight of the composition a pilomotor acting compound selected from the group consisting of 2-amino-imidazolines of the formula



wherein X is selected from the group consisting of naphthyl, tetrahydronaphthyl and a radical of the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen and halogen and their non-toxic, dermatologically-acceptable acid addition salts.

3,296,078

COMPRESSED FACE POWDER CAKE COMPOSITION

Anne Kaye, 115 Eastern Parkway, Brooklyn, N.Y. 11238, and Herman J. Amsterdam, 587 Montgomery St., Brooklyn, N.Y. 11225

No Drawing. Continuation of application Ser. No. 755,870, Aug. 19, 1958. This application Mar. 14, 1962, Ser. No. 179,782

16 Claims. (Cl. 167—92)

1. A compressed face powder cake composition comprising in the form of a homogeneous mixture 45–65% by weight of talcum, containing a cosmetically applicable wetting agent, titanium dioxide, an insoluble metal stearate and an iron oxide pigment having a cosmetically suitable color in uniform distribution; said talcum being combined with 15 to 20% of cosmetically applicable lubricating materials to an intimate uniform mixture; a cosmetically applicable medical agent selected from the group consisting of salicylic acid, allantoin, hexachlorophene, and alkyl dimethyl benzyl ammonium chloride; and cosmetically applicable preserving agents in the amount of 0.1 to 0.25% based on the weight of the total composition.

3,296,079

PRODUCTS SWEETENED WITHOUT SUGAR AND CHARACTERIZED BY FREEDOM FROM AFTERTASTE

Joan M. Griffin, Forest Hills, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,244

4 Claims. (Cl. 167—93)

1. In a method for sweetening comestibles with non-nutritive sweetening agents, the improvement which comprises masking the unpleasant aftertaste of said non-nutritive sweetening agents by incorporating with said sweetener maltol in an amount to provide from about 0.003 to about 160% by weight based on said sweetening agent.

3. In a method for sweetening oral cleaning agents with non-nutritive sweetening agents, the improvement which comprises masking the unpleasant aftertaste of said non-nutritive sweetening agents by incorporating with said sweetener maltol in an amount to provide from about 0.003 to about 160% by weight based on said sweetening agent.

3,296,080

LINALOOL HOMOLOGUES

Walter C. Meuly, New Brunswick, and Petko S. Gradeff, Franklin Township, Somerset County, N.J., assignors to Rhodia Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 8, 1963, Ser. No. 300,907

12 Claims. (Cl. 167—94)

9. As an odoriferous composition, the isomeric mixture consisting essentially of 3,4,4,7-tetramethyl-1,6- octadien-3-ol and 7-methyl-3-isopropyl-1,6-octadien-3-ol.

3,296,081

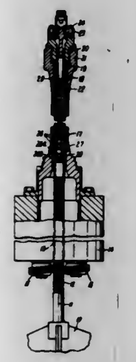
NUCLEAR REACTORS

Ronald Wildgoose, Derby, England, granted to United States Atomic Energy Commission under the provisions of 42 U.S.C. 2182

Filed Nov. 21, 1960, Ser. No. 70,543

Claims priority, application Great Britain, Nov. 21, 1959, 39,581/59

7 Claims. (Cl. 176—19)



1. A position indicating device for a nuclear reactor having at least one control rod comprising a hollow extension of magnetic material secured to said control rod and having significantly different internal dimensions over a part of its length, fixed structure relative to which said rod and extension are movable, a pair of formers secured to said fixed structure, windings on said formers to form part of a transformer having one of its windings in two parts connected in series opposition, means for supplying A.C. to said windings, means for indicating the presence of an output from said transformer, a further series of windings on formers also secured to said fixed structure and spaced longitudinally therealong, said further windings being connected in series, and means for indicating variations in the inductance of the series-connected further windings, the relative position of the various parts being such that when the rod is in one particular position the transformer is partly within that part of the hollow extension having different internal dimensions.

3,296,082

GAS COOLED NUCLEAR REACTOR POWER PLANT

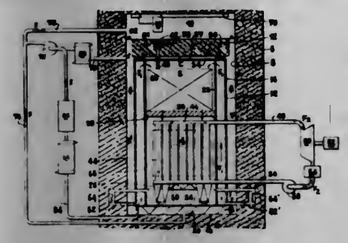
Georges Lemesle, Paris, Louis Patarin, Gif-sur-Yvette, and Pierre Rouge, Orsay, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed July 23, 1964, Ser. No. 384,614

Claims priority, application France, Aug. 1, 1963, 943,490

4 Claims. (Cl. 176—30)

1. In a nuclear power plant cooled by a gas at super atmospheric pressure, a pressure vessel and biological shield, a shell supported in and by said pressure vessel in spaced relation to said pressure vessel, an annular wall supported in and by said shell and defining therewith an annular space, a reactor core and a heat exchanger located one above the other within said annular wall, a radiation shield separating said core and said exchanger within said annular wall, means for circulating a main coolant gas in a closed circuit comprising said reactor core, said heat exchanger and said annular space and means for maintaining coolant gas at a temperature below the minimum temperature of said coolant gas in said closed circuit in the space between said shell and said pressure



vessel whereby said pressure vessel is maintained at a relatively low temperature.

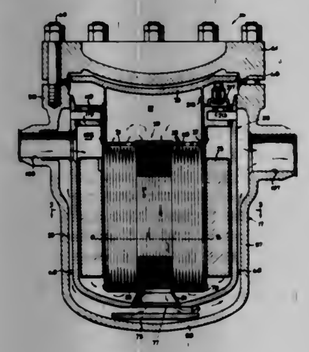
3,296,083

FORCED CIRCULATION BOILING NUCLEAR POWER REACTOR

Eugene V. Haake, San Diego, and John M. Krase, La Jolla, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 14, 1964, Ser. No. 396,230

9 Claims. (Cl. 176—54)



1. A nuclear power reactor comprising a reactor core which includes an active region containing nuclear fuel material and having passageways formed therein which extend therethrough, said reactor core having formed therein a fuel-free region, means connecting said fuel-free region in series fluid communication with said passageways, and means for circulating a fluid that is both a coolant and a moderator through said passageways and then through said fuel-free region, said nuclear fuel material having a negative temperature coefficient of reactivity, the fluid in said passageways having a predetermined positive density coefficient of reactivity, and the fluid in said fuel-free region having a predetermined negative density coefficient of reactivity, said predetermined density coefficients of the fluid being so selected that in response to a change in operating conditions the difference of their reactivity contributions is balanced by the reactivity contribution resulting from the negative temperature coefficient of the nuclear fuel material, whereby a variation in the power load upon the reactor is automatically compensated for within the reactor without requiring any external adjustment of reactor reactivity and without causing an undesirable amount of change in fuel temperature.

3,296,084

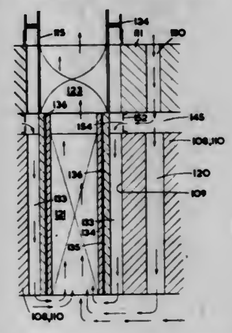
TEMPERATURE CONTROL OF GRAPHITE-MODERATED NUCLEAR REACTORS

Sydney Fawcett, Hale Barns, Richard Valentine Moore, Appleton, and Burton Cutts, Culcheth, Warrington, England, assignors to United Kingdom Atomic Energy Authority

Continuation of application Ser. No. 835,523, Aug. 24, 1959. This application Jan. 22, 1965, Ser. No. 427,303

Claims priority, application Great Britain, Sept. 4, 1958, 28,499/58

10 Claims. (Cl. 176—59)



1. A graphite moderated nuclear reactor arrangement for reducing the effect of a positive moderator temperature coefficient comprising a graphite moderator structure defining a series of parallel-disposed channels extending right through said structure and divided into first and second groups with a channel of the first group disposed between adjacent channels of the other group and spaced from the channels of the other group by moderator material, a header vessel adjacent to and spaced from said structure and traversing the extending axes of said channels, reactor fuel in the channels of said first group only and means defining coolant paths around the fuel, channel extensions connecting the header vessel with the adjacent ends of the channels of the said first group only, means for feeding reactor coolant to the ends of the channels of the said second group adjacent the header vessel to flow through the channels of the second group, means restricting coolant from flowing into the ends of the fuel coolant paths nearest the header vessel, wall means extending transversely across the axes of said channels and arranged to constrain coolant emerging in bulk from the ends of the channels of said second group remote from said header vessel to enter the ends of the channels of said first group remote from the header vessel, and flow through the fuel coolant paths in the channels of the first group in contra-direction to the flow of the coolant in the channels of the second group, means defining a flow path from the fuel coolant paths to the interior of said header vessel, and means for withdrawing coolant from the interior of said header vessel.

3,296,085

CALANDRIA CORE FOR SODIUM GRAPHITE REACTOR

William S. Peck, Pacoima, Richard S. Duncan, Canoga Park, and Ardell C. Williams, Chatsworth, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed July 24, 1964, Ser. No. 385,003

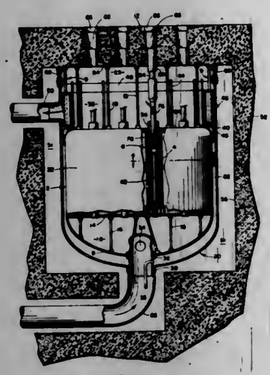
13 Claims. (Cl. 176—61)

1. A sodium graphite reactor comprising:

(a) calandria core tank disposed in a reactor cavity,

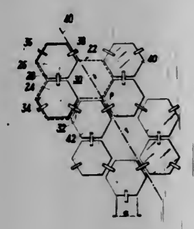
(b) a reactor vessel surrounding said core tank in said cavity and spaced therefrom to define an annular space therebetween,

(c) a beam positioned above said cavity,
(d) said calandria core tank and said reactor vessel being independently supported by and suspended from said beam,
(e) unclad graphite moderator disposed in said core tank,



(f) a plurality of parallel, longitudinal process tubes extending through said graphite and sealed to said core tank,
(g) fuel elements positioned in said process tubes,
(h) sodium coolant filling said process channels and surrounding said core tank in said reactor vessel, and
(i) means for circulating sodium through said process tubes and said reactor vessel.

3,296,086
MODERATOR CORE STRUCTURE FOR NUCLEAR REACTOR
Claude Boutin and Sebastien Foglia, Verrieres-le-Buisson, Georges Lemesle and Roger Martin, Paris, and Pierre Rouge, Gif-sur-Yvette, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Dec. 21, 1964, Ser. No. 421,751
Claims priority, application France, Mar. 22, 1962, 892,404; Feb. 22, 1963, 925,754
13 Claims. (Cl. 176—84)



1. A core structure for a nuclear reactor comprising a plurality of prismatic identical assemblies arranged parallel to a vertical direction and interfitted with adjacent assemblies in a cross-section transverse to said direction, each of said assemblies consisting of from two to six adjacent columns each column consisting of solid prismatic moderator blocks stacked in end to end relation, said columns having their axes parallel to said vertical direction, each of said assemblies including one nuclear fuel structure extending through said assembly parallel to said direction, passage means in said fuel structure for a fluid coolant parallel to said direction, keying means extending parallel to said direction connecting all of said columns, said prismatic assemblies being located in the core in the same angular position whereby each of said fuel structures is surrounded by solid moderator columns only.

13. A core structure for a nuclear reactor comprising a plurality of prismatic identical assemblies arranged parallel to a vertical direction and interfitted with adjacent assemblies in a cross-section transverse to said direction, each of said assemblies consisting of three adjacent columns of solid moderator blocks stacked in end to end relation, said columns having their axes parallel to said vertical direction, each of said assemblies including one nuclear fuel structure extending through said assembly parallel to said direction, passage means in said fuel structure for a fluid coolant parallel to said direction, keying means extending parallel to said direction connecting all of said columns, each of said columns having two opposed part-cylindrical faces whereby said columns define cylindrical channels and each fuel structure having a circular cross-section, said prismatic assemblies being located in the core in the same angular position, wherein said keying means comprise ribs and grooves formed in said blocks parallel to said direction, the distance between the longitudinal axis of the blocks and the bottom of each groove being substantially equal to the distance between said axis and the base of each rib.

3,296,087
PROCESS FOR PREPARING 5'-NUCLEOTIDES
Koji Mitsugi and Akira Kamimura, Kawasaki-shi, Shinji Okumura, Yokohama-shi, and Noboru Katsuya, Kawasaki-shi, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan
No Drawing. Filed Sept. 24, 1964, Ser. No. 399,082
Claims priority, application Japan, Sept. 27, 1963, 38/50,803
17 Claims. (Cl. 195—28)

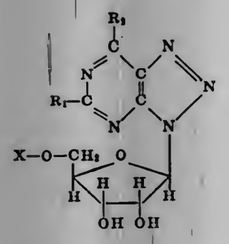
1. A process for preparing a 5'-nucleotide having a desired purine or pyrimidine base component, which comprises contacting an enzyme source with an aqueous medium containing the organic base corresponding to the desired base component and a 5'-nucleotide other than that to be prepared and having a base component selected from the group consisting of a purine and pyrimidine which is different from said desired base component until the desired 5'-nucleotide is formed; and recovering the formed 5'-nucleotide, said enzyme source being capable of producing a 5'-nucleotide selected from the group consisting of adenylic acid and inosinic acid when in contact with an aqueous solution containing 0.135 g. adenine and 1.43 g. disodium-5'-uridylate at 40° C. for a period of 3 to 20 hours at pH 8 to 9, said enzyme source being prepared from a microorganism selected from the genera Alcaligenes, Escherichia, Aerobacter, Pseudomonas, Staphylococcus, Serratia, Flavobacterium, Proteus, and Micrococcus.

3,296,088
PROCESS FOR THE PRODUCTION OF URIDYLIC ACID BY FERMENTATION
Shukuo Kinoshita, Tokyo, Kiyoshi Nakayama, Sagamihara-shi, Zenroku Sato, Machida-shi, and Haruo Tanaka, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Nov. 25, 1964, Ser. No. 413,976
Claims priority, application Japan, Nov. 27, 1963, 38/63,230
14 Claims. (Cl. 195—28)

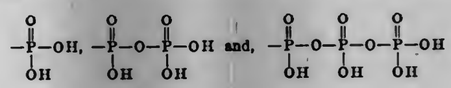
1. A process for the production of 5'-uridylic acid which comprises culturing a bacterium belonging to *Brevibacterium ammoniagenes* in a fermentation medium therefor which in addition to the normal constituents thereof contains uracil, and recovering from said medium the 5'-uridylic acid which accumulates therein.

3,296,089
PROCESS FOR THE PRODUCTION OF RIBOSYL-PHOSPHATES OF 8-AZAPURINE DERIVATIVES BY FERMENTATION
Kiyoshi Nakayama, Sagamihara-shi, Zenroku Sato, Machida-shi, and Haruo Tanaka, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Nov. 25, 1964, Ser. No. 414,018
Claims priority, application Japan, Nov. 27, 1963, 38/63,232
16 Claims. (Cl. 195—28)

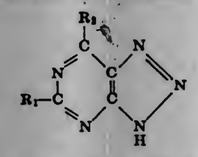
1. A process for the production of 5'-ribosyl phosphates of the formula



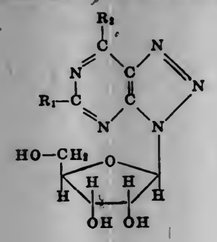
wherein R_1 is a member selected from the group consisting of H and NH_2 and R_2 is a member selected from the group consisting of OH and NH_2, R_1 being H when R_2 is NH_2 and being NH_2 when R_2 is OH, and
X represents a member selected from the group consisting of



which comprises culturing a bacterium belonging to *Brevibacterium ammoniagenes* in a fermentation medium therefor which, in addition to the normal constituents thereof, contains a member selected from the group consisting of an 8-azapurine derivative of the formula



wherein R_1 and R_2 have the significance previously assigned, and a riboside thereof of the formula



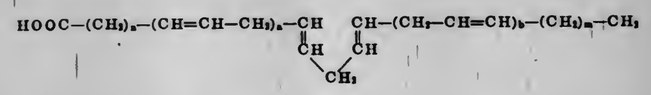
wherein R_1 and R_2 have the significance previously assigned, whereby objective 5'-ribosyl phosphate accumulates in the said medium, and recovering the said accumulated 5'-ribosyl phosphate.

3,296,090
FERMENTATION PROCESS FOR PRODUCING l-TRYPTOPHANE
Toshio Enatsu, Fushimiku, Kyoto, and Gyozo Terui, Higashisumiyoshiku, Osaka, Japan (both % Commercial Solvents Corp., Terre Haute, Ind. 47808)
No Drawing. Filed May 28, 1964, Ser. No. 371,107
5 Claims. (Cl. 195—30)

1. A process for the production of l-tryptophane which comprises cultivation of l-tryptophane producing strains of an organism selected from the group consisting of Candida, Debaryomyces, Hansenula, Pichia, Torulopsis, Rhizopus, Mucor, Circinella, Claviceps, Chaetomium, Fusarium, *Saccharomyces uvarum, Saccharomyces shaosing, Saccharomyces marxianus, Saccharomyces willianus, Endomyces decipiens, Endomycopsis fibuliger, Crytococcus laurentii, Zygosaccharomyces nukamiso* and *Pseudohansenula peipin*, said organism having a QO_2 of not more than 10 and high tryptophane-autotrophic ability in an aerated aqueous nutrient medium containing anthranilic acid and maintained at a pH of not less than 4 until a substantial amount of l-tryptophane is produced and accumulated in the medium.

3,296,091
MICROBIOLOGICAL CONVERSION OF UNSATURATED FATTY ACIDS
Philip F. Beal III, Kalamazoo, Gunther S. Fonken, Charleston Township, Kalamazoo County, and John E. Pike, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Feb. 19, 1964, Ser. No. 345,852
16 Claims. (Cl. 195—30)

1. The process which comprises aerobically incubating a fatty acid having the formula:



wherein n is an integer from 1 to 8, inclusive, and a and b are integers from 0 to 2, inclusive, and m is an integer from 1 to 12, inclusive, provided that the sum of $3a+n$ is from 1 to 8, inclusive, and the sum of $3b+m$ is from 1 to 12, inclusive, with comminuted mammalian gland tissue in a substantially aqueous medium and recovering from the incubation reaction mixture a material having prostaglandin-like activity.

3,296,092
FERMENTATION PROCESS FOR PRODUCING DEXTROSE
Julian Corman, Muscatine, Iowa, assignor to Grain Processing Corporation, Muscatine, Iowa, a corporation of Iowa
No Drawing. Filed Oct. 5, 1964, Ser. No. 401,685
7 Claims. (Cl. 195—31)

1. In a process for producing dextrose from starchy materials wherein a starch derived substrate is hydrolyzed with an unpurified glucoamylase and transglucosidase-containing fungal enzyme preparation, the improvement which consists in carrying out at least the initial stage of the hydrolysis with the said enzyme preparation at a pH below 3.

3,296,093

METHOD OF PRODUCING 10α-METHYL STEROIDS WITH SEPEDONIUM SPECIES

Jan de Flines and Willem Frederik van der Waard, Delft, Netherlands, assignors, by mesne assignments, to Koninklijke Nederlandse Gist & Spiritusfabrieken, a corporation of the Netherlands

No Drawing. Filed Oct. 15, 1963, Ser. No. 316,462
Claims priority, application Netherlands, Oct. 16, 1962, 284,410
8 Claims. (Cl. 195—51)

1. A method of producing 10α-methyl steroids oxygenated at the 16 position comprising subjecting a 10α-methyl steroid having two hydrogen atoms at the 16 carbon atom and being free of a 17α-hydroxyl, selected from the group consisting of 3-keto-Δ^4-10α-methyl steroids, 3-keto-$\Delta^{4,6}$-10α-methyl steroids, 3-hydroxy-Δ^5-10α-methyl steroids and functional derivatives thereof in the 3 position, to the action of a microorganism selected from the group consisting of the developmental stages of the Sepedonium species, the oxygenating enzyme systems thereof and the spores thereof, and recovering said 10α-methyl steroids oxygenated at the 16 position.

3,296,094

STABILIZED AQUEOUS ENZYME SOLUTIONS

Theodore Cayle, Brooklyn, N.Y., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

No Drawing. Filed May 5, 1966, Ser. No. 547,769
7 Claims. (Cl. 195—63)

1. An aqueous solution of a proteolytic enzyme stabilized against loss of proteolytic activity upon storage comprising a proteolytic enzyme, glycerol and a partially hydrolyzed and solubilized collagen.

3,296,095

METHOD FOR DETERMINING THE EXISTENCE OF EXTRATERRESTRIAL LIFE

Albin M. Nowitzky, Chatsworth, Calif., assignor to Universal Match Corporation, St. Louis, Mo.

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,767
9 Claims. (Cl. 195—103.5)

1. A method for determining the existence of extraterrestrial life comprising the steps of:
- extracting a sample of soil from an extraterrestrial body;
- generating an in situ nutrient by mixing said sample with water;
- subjecting said nutrient to sterilization;
- exposing said sterilized nutrient to extraterrestrial atmosphere;
- and sensing the occurrence of a metabolic reaction in said exposed nutrient.

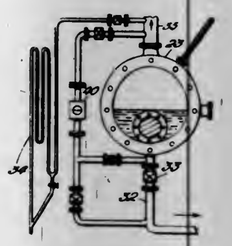
3,296,096

RECOVERY OF SULFUR TRIOXIDE BY DISTILLATION WHILE CONTROLLING A PROCESS VARIABLE IN RESPONSE TO THE DIELECTRIC CONSTANT

William Ewart Portman, Basil Tom Gillyatt, and Thomas Frederick Eden, Hollingwood, England, assignors to The Staveley Iron & Chemical Company Limited, Hollingwood, England, a British company

Filed Aug. 23, 1962, Ser. No. 219,002
Claims priority, application Great Britain, Aug. 24, 1961, 30,606/61
14 Claims. (Cl. 203—1)

1. A process for the production of liquid sulphur trioxide from oleum, which process comprises feeding oleum to a distillation zone, heating said oleum in said distillation zone, removing oleum residue from said distillation zone and collecting a distillate containing a high proportion of sulphur trioxide, measuring the dielectric constant of a material selected from the group consisting of the oleum in said distillation zone and the oleum in said distillate and adjusting at least one process variables selected from the group consisting of the oleum feed flow rate, the rate of removal of said oleum residue from



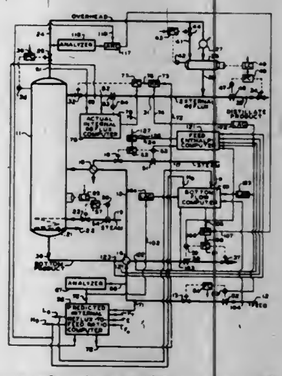
said distillation zone and the amount of heat supplied to said distillation zone in response to said measurement of said dielectric constant such that the proportion of acid in said oleum in said distillation zone is prevented from rising above a predetermined level.

3,296,097

PREDICTIVE CONTROL OF DISTILLATION COLUMN INTERNAL REFLUX

Dale E. Lupfer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 23, 1962, Ser. No. 189,375
12 Claims. (Cl. 203—2)



1. In a process wherein a multicomponent feed stream is separated in a fractional distillation column into an overhead vapor stream and a liquid bottom product stream having a specified purity, said overhead stream is condensed, some of the condensed overhead is recycled to said column as an external reflux stream, and some of said condensed overhead is yielded as a distillate product stream having a specified purity, a control method therefor comprising the steps of measuring a process variable indicative of the flow rate of said feed stream; measuring the amounts of feed components in said feed stream; producing signals proportional to said measurements; combining said signals together with signals proportional to constants in a statistically derived equation based on the expression:

$$R_{Ip}=f(F, F_c, E, F_T, F_e, H_D, L_B)$$

where:

R_{Ip}=predicted internal reflux flow rate for said column
F=flow rate of said feed stream

F_c=generic symbol for the amounts of said feed components expressed as fractions of said feed stream
E=tray efficiency of said column
F_T=feed tray of said column, numbering trays from the top of said column
F_e=enthalpy of said feed stream
H_D=specified fraction of heavy key component in said distillate product stream
L_B=specified fraction of light key component in said bottom product stream,

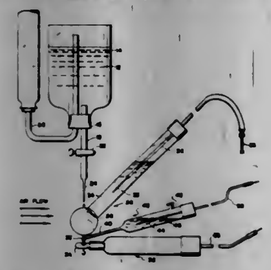
producing a signal proportional to said R_{Ip}; measuring process variables indicative of the internal reflux flow rate of said column; producing a signal R_{Im} proportional thereto; comparing said signals R_{Ip} and R_{Im}; and manipulating the flow rate of said external reflux stream in accordance with said comparison to produce at an optimum said distillate and bottom product streams with said purities H_D and L_B, respectively.

3,296,098

METHOD AND APPARATUS FOR GAS ANALYSIS

Edwin P. Arthur, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Jan. 15, 1962, Ser. No. 166,230
9 Claims. (Cl. 204—1)



1. A method for determining the presence of selected constituents in a gas comprising:
- continuously flowing electrolyte as a thin film over an uncovered ion sensitive bulb of a sensing electrode so that a continuously renewed thin film of electrolyte is provided over said bulb;
- exposing the electrolyte film on said bulb directly to the gas whereby the constituents present in the gas are absorbed by said film; and
- electrolytically sensing the potential developed at said ion sensitive bulb as an indication of the changed electrolytic characteristics of said film caused by the absorbed constituents.

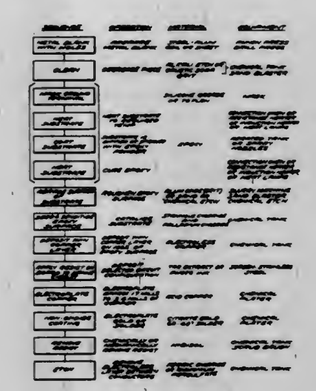
3,296,099

METHOD OF MAKING PRINTED CIRCUITS

Donald Dinella, Clark, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 220,383, Aug. 30, 1962. This application May 16, 1966, Ser. No. 550,568
10 Claims. (Cl. 204—15)

1. A method of fabricating a conductive pattern including plated-through holes on an insulated supporting base comprising the steps of:
- perforating holes in a predetermined pattern in a thin metal substrate,
- heating said substrate to within a first predetermined temperature range,
- applying a coating of an insulating material maintained in a fluidized state to and in adherence with at least one major surface area of said substrate including the holes associated therewith, said heated substrate being exposed to said material for a sufficient period of time to allow an adequate insulating build-up on the major surface of said substrate and to form substantially crescent-shaped walls within and smoothly rounded peripheral edges at the extremities of the holes associated with at least said major area when the holes are viewed in cross section,



- thermally curing said insulating coating within a second predetermined temperature range,
- masking at least a portion of said insulating coating to define a distinct pattern of desired configuration,
- exposing said pattern to a metallic electroless solution to formulate a metal coating thereon, and
- removing said mask.

3,296,100

PROCESS FOR PRODUCING ANTICORROSIVE SURFACE TREATED STEEL SHEETS AND PRODUCT THEREOF

Shigeru Yonezaki, Hajime Nitto, and Hidejiro Asano, all of Kitakyushu, Japan, assignors to Yawata Iron & Steel Company Limited, Tokyo, Japan, a Japanese corporation

Filed Apr. 29, 1963, Ser. No. 276,549
Claims priority, application Japan, May 9, 1962, 37/18,896
3 Claims. (Cl. 204—41)

2. A process for producing surface-treated anticorrosive steel sheet, comprising immersing a steel sheet in a dilute aqueous treating solution consisting essentially of 10–15 g./l. chromic anhydride and a sulphuric acid radical and trivalent chromium ions each in an amount of 0.2 to 5% by weight of the chromic anhydride in said solution, and electrolyzing said solution with said steel sheet as a cathode, whereby an intermediate layer of metallic chromium is first formed on the surface of steel sheet and a chemically treated layer of non-metallic chromate is then formed thereon.

3,296,101

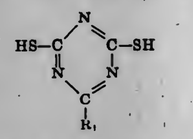
CYANIDE ELECTROPLATING BATHS AND PROCESSES

James R. Crain, Penn Hills, Pa., assignor, by mesne assignments, to Cowles Chemical Company, Shaker Heights, Ohio, a corporation of Ohio

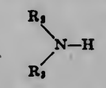
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,823
19 Claims. (Cl. 204—44)

1. An aqueous alkaline cyanide metal plating solution containing a metal cyanide from the group consisting of copper cyanide and mixtures of copper cyanide and zinc cyanide, an alkali cyanide and an effective amount suf-

ficient to impart brightness of water soluble salt formed from (A) at least one compound having the formula



wherein R_1 is a radical selected from the group consisting of hydrogen, thiol, amino and hydroxyl radicals and (B) at least one compound having the formula



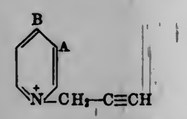
wherein R_2 and R_3 are radicals selected from the group consisting of (1) hydrogen, (2) substituted and unsubstituted aliphatic radicals containing not more than four carbon atoms in which the substituents are selected from the radicals consisting of —NH_2, —Cl, —OH and —SO_3Na, (3) substituted and unsubstituted carbocyclic radicals containing from 4 to 6 ring carbon atoms in which the substituents are selected from the radicals consisting of —NH_2, —Cl, —OH and —SO_3Na and (4) substituted and unsubstituted heterocyclic radicals containing 5 to 6 ring atoms selected from the group consisting of C, S, N and O atoms at least three of which are C atoms and in which the substituents are selected from the group consisting of —NH_2, —Cl, —OH and —SO_3Na.

3,296,102
CATALYSTS AND ELECTRODES FOR ELECTROCHEMICAL CELLS
Charles H. Worsham, Fanwood, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 1, 1961, Ser. No. 128,366
3 Claims. (Cl. 204—47)

3. In the process for preparing an electrode for use in an electrochemical cell which comprises electrodepositing platinum black catalyst upon an electron conductive structure, the improvement which comprises effecting said electrodeposition at a reduction potential in the range of about +0.05 to —0.08 volt relative to Standard Hydrogen Reference and at a current density in the range of about 2 to 10 amperes per square foot of electrode surface area.

3,296,103
BRIGHT NICKEL ELECTROPLATING
Frank Passal, Detroit, Mich., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 24, 1964, Ser. No. 347,046
10 Claims. (Cl. 204—49)

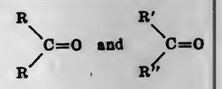
1. The process for electrodepositing nickel which comprises electrodepositing nickel from an aqueous nickel electroplating bath containing a secondary brightener and, as a primary brightener, an effective amount of a compound having a cation of the structure



wherein A and B are each selected from the group consisting of hydrogen, carboxamido —$CONH_2$, acetyl —$COCH_3$, and carbomethoxy —$COOCH_3$, and at least one of A and B is other than hydrogen.

3,296,104
ELECTRODEPOSITION OF ZINC FROM PYROPHOSPHATE SOLUTIONS
Frederick W. Eppensteiner, Woodbridge, N.J., assignor to Hanson-Van Winkle-Munning Company
No Drawing. Filed Oct. 29, 1963, Ser. No. 319,666
15 Claims. (Cl. 204—55)

1. The process for producing bright zinc deposits which comprises electroplating zinc from an aqueous alkaline pyrophosphate solution containing at least one zinc salt in which there is dissolved from about 0.5 to about 5.0 grams per liter of a carrier selected from the group consisting of (a) bis [sulfonaphthyl] methane, (b) naphthalene derivates that contain substituents selected from the group consisting of sulfonic acids and their alkali metal salts, hydroxyl, amino and imino radicals, (c) benzene derivatives containing substituents selected from the group consisting of sulfonic acids and their salts with alkali metal and ammonium, alkyl and imino radicals, and (d) allyl sulfonic acid and its salts with alkali metals, and from about 0.025 to about 0.2 gram per liter of a carbonyl compound having a structural formula selected from the group consisting of



wherein R is selected from the group consisting of hydrogen, alkyl, aryl and heterocyclic oxygen and sulfur radicals, and R′ and R″ are selected from the group consisting of alkyl and aryl radicals.

3,296,105
ZINC CYANIDE ELECTROPLATING BATH AND PROCESS
John D. Rushmere, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 3, 1964, Ser. No. 357,291
17 Claims. (Cl. 204—55)

1. An aqueous cyanide zinc electroplating bath containing as a brightening agent therefor an organic amine oxide having a $\equiv N \rightarrow O$ group, said amine oxide and the reduction product thereof obtained by removal of the oxygen from said $\equiv N \rightarrow O$ group being soluble in said bath, said amine oxide being present in a sufficient amount to yield a zinc electrodeposit of improved brightness.

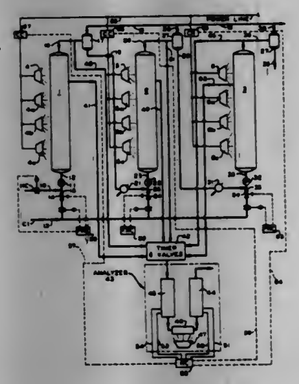
3,296,106
METHOD OF CATHODICALLY TREATING METALLIC SURFACES
John R. Smith, Steubenville, and Anthony J. Lamantia, Toronto, Ohio, assignors to National Steel Corporation, a corporation of Delaware
No Drawing. Filed Jan. 12, 1966, Ser. No. 520,048
15 Claims. (Cl. 204—56)

1. A method of treating material having a metallic surface to improve the corrosion resistance of said surface, comprising making the said material a cathode in an aqueous hexavalent chromium electrolyte consisting essentially of about 1–10 ounces per gallon of a water soluble chromate and a small but effective amount not less than about 0.1 ounce per gallon of a substance selected from the class consisting of boric acid and water soluble borates of which the cations will not deposit at the cathode under the process conditions, and adding a chromium-containing film to said surface in an amount sufficient to improve the corrosion resistance of the material by passing an electric current through the material and the electrolyte, the electrolyte having a pH of at least 5 and the said substance being effective to reduce substantially the quantity of current necessary to achieve said corrosion resistance.

3,296,107
METHOD OF ELECTROLYTIC PRODUCTION OF HIGH PURITY BERYLLIUM
Takao Nakamura, Mizuho-ku, Nagoya, Japan, assignor to NGK Insulators, Ltd., Mizuho-ku, Nagoya, Japan, a corporation of Japan
Filed Feb. 4, 1963, Ser. No. 255,909
Claims priority, application Japan, Apr. 14, 1962, 37/15,095
3 Claims. (Cl. 204—65)

1. A method of electrolytic production of high purity beryllium which comprises effecting electrolysis of a mixed fused salt of crude beryllium chloride and sodium chloride at first with a low current density through the cathode to deposit a first layer of beryllium flake containing a large amount of metallic impurities which are more electrolytically positive than beryllium on the cathode, then effecting further electrolysis by raising the current density through the cathode to deposit large substantially pure beryllium flakes on the previously deposited impure beryllium flake of the first layer, scraping off the large beryllium flake after completion of the electrolysis and leaving the first layer deposited on the cathode, recovering the large substantially pure beryllium flakes to obtain high purity beryllium from raw beryllium chloride.

3,296,108
PHOTOHALOGENATION OF HYDROCARBONS
Thomas Hutson, Jr., and René A. Loth, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,543
5 Claims. (Cl. 204—163)

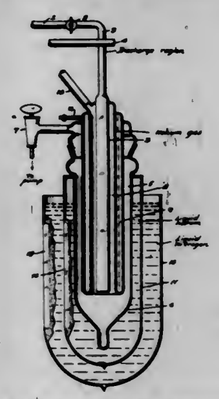


1. In the process of halogenating a liquid paraffin hydrocarbon wherein the hydrocarbon is reacted with a halogen in the presence of light, the improvement comprising reacting the hydrocarbon and halogen in a plurality of steps; substantially saturating the hydrocarbon with halogen preceding each step; contacting the hydrocarbon and halogen in each step with sufficient light in the form of a plurality of increments to react all of the halogen; detecting and measuring the residual halogen in each step prior to the last increment of light; adjusting the amount of halogen reacted in each step so that substantially no free halogen remains in the effluent of each step; removing hydrogen halide from the effluent of each step; removing the heat of reaction from the effluent of each step; and recovering from the final step halogenated hydrocarbon having a high ratio of mono- to dihalogenated hydrocarbon.

3,296,109
INSOLUBILIZATION OF CELLULOSIC SUBSTANCES
Frederick C. Leavitt, Wellesley, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 28, 1962, Ser. No. 227,072
9 Claims. (Cl. 204—160.1)

1. In a process for cross-linking water-soluble, nonionic cellulose ethers which comprises subjecting an aqueous solution of such a cellulose ether to radiation in the form of high energy electrons, the improvement which consists in providing the cellulose ethers to be irradiated in the form of an aqueous solution having a viscosity within the range from about 3 to 500 centipoises and irradiating the solution with high energy electrons at a dose rate of at least 0.4×10^6 rep./sq. cm./sec. to provide a total dose within the range from about 1×10^4 to about 0.6×10^6 Roentgen equivalent physical units.

3,296,110
PROCESS FOR MAKING POLYOXYMETHYLENE
Robert A. Ruehrwein, St. Louis, Mo., assignor to the United States of America as represented by the Secretary of the Army
Filed July 19, 1965, Ser. No. 480,543
3 Claims. (Cl. 204—169)

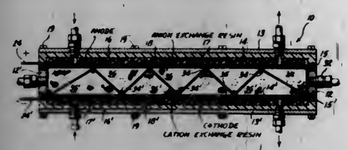


1. A process for making polyoxymethylene comprising:
- subjecting oxygen gas to a microwave electrodeless electric discharge at a pressure in the range of from 0.1 mm. to 10 mm. of Hg,
- blending the products of said discharge with ethylene gas at a temperature in the range of between 4.2° K. and 77° K. to form a solid condensate therewith,
- removing the volatile fraction from said condensate by distillation at a temperature in the range of about 250° K. to 300° K., and
- maintaining said fraction as a liquid at room temperature until precipitation of said polyoxymethylene has occurred therein.

3,296,111
METHOD FOR TREATING IONIC LIQUIDS
Omer E. Miller, South Plainfield, and Frank J. Wolf, Westfield, N.J., assignors to Delonall Corporation, Westfield, N.J., a corporation of New Jersey
Filed Oct. 7, 1965, Ser. No. 493,624
9 Claims. (Cl. 204—180)

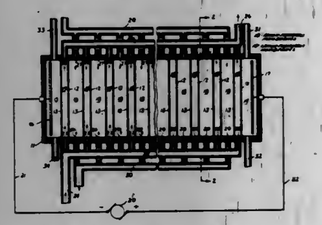
5. The method of treating an ionic liquid to alter its ion content, comprising: passing said liquid sequentially through a plurality of alternately disposed beds of anion and cation exchange resin materials contained between a pair of ion-permeable walls disposed between electrode

compartments containing an anode and a cathode respectively, said anion exchange resin beds contacting only that ion-permeable wall nearest the anode compartment and extending substantially to but terminating short of the ion-permeable wall nearest the cathode compartment, and said cation exchange resin beds contacting only that



ion-permeable wall nearest the cathode compartment and extending substantially to but terminating short of the ion-permeable wall nearest to the anode compartment, passing a stream of ionic liquid in contact with the outer surfaces of said ion-permeable walls, and simultaneously passing a direct current between said anode and cathode through said walls and the beds of ion exchange material.

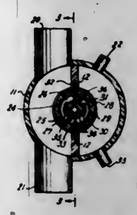
3,296,112
METHOD OF MODIFYING THE CHEMICAL COMPOSITION OF SUBSTANCES BY ION TRANSFER
Paul Kollsman, 100 E. 50th St., New York, N.Y. 10022
Filed July 16, 1957, Ser. No. 672,311
13 Claims. (Cl. 204—180)



1. The method of separating a solution containing dissolved electrolyte into concentrated and dilute fractions comprising (1) passing a first stream of solution through one set of chambers of a concentrating and diluting unit having a set of diluting chambers alternately disposed between a set of concentrating chambers, said chambers being defined between alternating anion, permeable and cation permeable membranes, (2) dividing a second stream from the first stream after passage thereof through said unit, (3) passing the second stream through the other set of chambers of said unit and (4) passing a direct electric current in series across the alternating chambers and membranes, thereby to effect concentration and dilution of the streams in said unit.

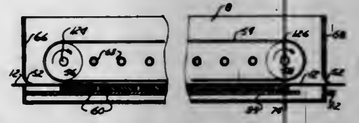
3,296,113
GAS-STREAM MONITOR
Robert E. Hansen, Cleveland, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Oct. 15, 1963, Ser. No. 316,400
8 Claims. (Cl. 204—195)

1. Gas monitor comprising, in combination, a casing provided with main gas inlet and outlet ports and a reference gas inlet port; a galvanic sensing element disposed within the casing and including two electrochemical cells electrically connected so as to oppose each other and each having a gas-depolarizable, porous carbon cathode situated within the casing in spaced relation thereto so as to form two independent gas passageways, one of which communicates between said main gas inlet and outlet ports and the other of which communicates with said reference gas inlet, said gas passageways being so arranged and disposed around the cathode of each one of the cells as to expose the cathode of one of the cells solely to the full flow of main gas through one passageway and the cathode



of the other cell solely to the full flow of reference gas through the other passageway; and a means indicating the electrical output of the opposed cells.

3,296,114
ANODIZING APPARATUS
James B. C. Lloyd, Orillia, Ontario, Canada, assignor to Lloyd Metal Manufacturing Company Limited, Orillia, Ontario, Canada
Filed July 17, 1963, Ser. No. 295,771
16 Claims. (Cl. 204—206)

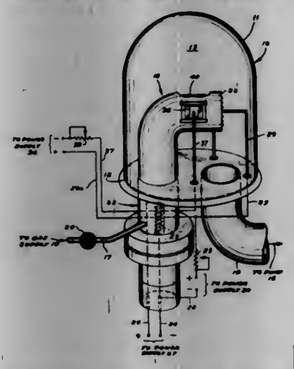


1. Anodizing apparatus comprising a tank for containing a quantity of electrolyte, said tank having side walls and end walls, said walls being provided adjacent the bottom thereof with means for sealingly engaging a metallic sheet to be anodized, whereby the bottom of said tank is closed, means for connecting an electrical potential between said electrolyte and said sheet, whereby anodizing current flows between said electrolyte and said sheet, and means for flowing said electrolyte over the surface of said sheet, said last named means comprising an endless belt mounted on a pair of rollers disposed within said tank, said belt being positioned parallel and closely adjacent to the surface of the sheet to be anodized at the bottom of said tank and having a plurality of discontinuities in the surface thereof adapted to cause said electrolyte to flow over the surface of said sheet when said rollers are rotated.

3,296,115
SPUTTERING OF METALS WHEREIN GAS FLOW IS CONFINED TO INCREASE THE PURITY OF DEPOSITION
Nils Laegreid, Minneapolis, Minn., and Roger M. Moseson, Rochester, N.Y., assignors to G. T. Schjeldahl Company, a corporation of Minnesota
Filed Mar. 2, 1964, Ser. No. 352,416
4 Claims. (Cl. 204—298)

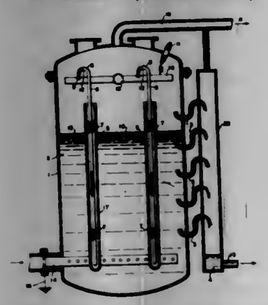
1. In a deposition apparatus for a sputtering operation adapted for the preparation of a film deposit along the surface of a substrate member, an enclosure, means for evacuating said enclosure, chamber means disposed within said enclosure and terminating in an end surface defining a partially open grid structure for confining the working stations of the sputtering operation, and a plurality of operating stations disposed along said chamber means, said operating stations including a pair of operating electrodes including a cathode for providing a supply of free electrons to said apparatus and an anode for attracting said electrons, the electrodes being disposed in spaced apart relationship, one of the electrodes being disposed adjacent said end surface, and defining a gap zone

therebetween, and a generally externally accessible target retaining means and substrate retaining means arranged in generally oppositely disposed and mutually operative relationship along the walls of said chamber



and within said gap zone, means for introducing and maintaining a flow of inert gas through said chamber including means for exhausting said gas through said grid and into said enclosure.

3,296,116
APPARATUS FOR PRODUCING OZONE
Roger Leviel, Suresnes, France, assignor to Degremont S.A., Ruell-Malmaison, France, a corporation
Filed Mar. 11, 1963, Ser. No. 264,251
Claims priority, application France, Mar. 28, 1962, 892,533, Patent 1,326,514
10 Claims. (Cl. 204—321)



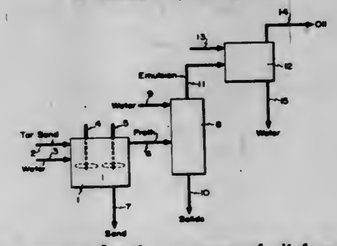
1. In an apparatus for producing ozone which includes a source of voltage, hollow metal interior electrodes suitably mounted in parallel, and a plurality of dielectric elements each surrounding each of said metal electrodes, and defining a space therebetween constituting the ozonization chamber, the improvements comprising:

an electrically conducting hollow collector for the passage of gas therethrough, said hollow collector being attached to each of said hollow electrodes for the passage of gas therethrough, said hollow electrodes being connected to said source of voltage through said collector;

means to create a gas pressure drop between said hollow collector and each of said hollow electrodes, said means including a narrow restricted portion adjacent the juncture of said hollow collector and said hollow electrodes, both said collector and said electrodes having relatively large cross-sectional areas compared with said narrow restricted portion; and

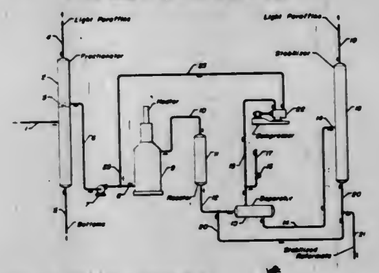
means to flexibly and resiliently separate and support each of said surrounding dielectric elements from each of said hollow electrodes so that relative movement between said hollow electrodes and said dielectric elements is permitted upon temperature variations.

3,296,117
DEWATERING/UPGRADING ATHABASKA TAR SANDS FROTH BY A TWO-STEP CHEMICAL TREATMENT
Sydney Ross, Troy, N.Y., and Gerard P. Canevari, Cranford, and Robert J. Flocco, Jersey City, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,374
6 Claims. (Cl. 208—11)



1. In a process for the recovery of oil from tar sands wherein tar sands are treated with water at an elevated temperature and wherein a froth consisting essentially of water, sand-clay and oil is secured, the improvement which comprises contacting said froth in a first stage with water containing from about 0.1 to 2% by weight of a transfer agent selected from the class consisting of tetrasodium pyrophosphate, trisodium pyrophosphate, and sodium silicate, whereby the sand and clay separate, removing a substantially sand-clay free emulsion from said first stage and contacting the same in a secondary stage with a mixture consisting of (1) about 1 part by weight of the reaction product of diethyl ethanol amine with premixed propylene oxide and ethylene oxide and (2) from about 2 to 4 parts by weight of a palmitic acid ester of the reaction product of an alkyl phenol formaldehyde resin with ethylene oxide whereby an oil phase substantially free of water and sand-clay separates, thereafter removing said oil phase.

3,296,118
HYDROFORMING WITH A PLATINUM CATALYST
George J. Czajkowski, Chicago, Ill., and Peter E. Liakakos, Santa Fe Springs, Calif., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed June 15, 1960, Ser. No. 36,344
5 Claims. (Cl. 208—100)



1. A process which comprises

(a) reforming gasoline boiling hydrocarbons in a reaction zone in the presence of hydrogen and a catalyst containing a platinum group metallic component,

(b) removing from the reaction zone, the resultant vaporous and liquid effluent comprising reformed gasoline hydrocarbons, normally gaseous hydrocarbons and hydrogen,

(c) separating said effluent into a hydrogen-rich gas and a liquid reformed gasoline fraction containing normally gaseous hydrocarbons,
(d) recycling at least a portion of said gas to the reaction zone,
(e) stabilizing said liquid reformed gasoline fraction to separate normally gaseous hydrocarbons therefrom and form a stabilized gasoline product,
(f) commingling a portion of said stabilized gasoline product with the total vaporous and liquid reaction zone effluent prior to the separation thereof as aforesaid, and
(g) recovering the remainder of said stabilized gasoline product.

3,296,119
CATALYTIC REFORMING PROCESS AND CATALYST THEREFOR

Edward J. Bicek, La Grange, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

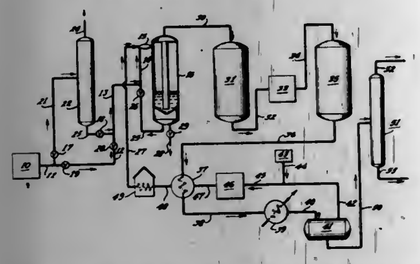
No Drawing. Filed Jan. 8, 1964, Ser. No. 336,365
13 Claims. (Cl. 208—139)

1. In a process for reforming hydrocarbons and mixtures of hydrocarbons, in which process a hydrocarbon charge stock is contacted with a catalytic composite of a noble metal from Group VIII of the Periodic Table, a refractory inorganic oxide and combined halogen, the improvement which comprises contacting said charge stock, at reforming conditions, with a catalytic composite of an alumina-containing refractory inorganic oxide, a reduced noble metal from Group VIII of the Periodic Table having sulfur adsorbed thereon and combined chlorine, said catalytic composite characterized by the method of manufacture comprising initially preparing a refractory inorganic oxide, combining chlorine therewith, impregnating said refractory inorganic oxide with a solution of a Group VIII noble metal compound, drying the resultant composite and oxidizing the dried composite at an elevated temperature above about 400° F. to oxidize said noble metal, reducing the oxidized composite with hydrogen at an elevated temperature above about 850° F., in the absence of sulfur and sulfur compounds, to reduce said noble metal, and thereafter treating said composite with hydrogen sulfide at a temperature below about 200° F., thereby only physically adsorbing sulfur onto the resulting reduced noble metal, the resulting composite being substantially free from chemically combined sulfur.

3,296,120
TWO STAGE DRIPOLENE HYDROGENATION

Louis C. Doelp, Glen Mills, Stanley Gussow, Broomall, and Thomas C. Michael, Glenolden, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

Filed Sept. 30, 1963, Ser. No. 312,456
4 Claims. (Cl. 208—143)

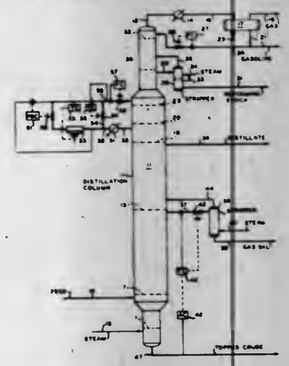


1. The process for the selective hydrogenation of olefinic hydrocarbons of a dripolene charge stock in two reaction zones which consists essentially of vaporizing the charge stock with 700 to 1100° F. hydrogen containing gas, contacting the resulting vaporized mixture of charge stock and hydrogen containing gas in the first reaction zone with sulfided cobalt molybdate catalyst at a temperature between 300 to 900° F., adjusting the temperature of the effluent from the first reaction zone before said effluent enters a second reaction zone so that the reaction temperature in the second reaction zone is maintained below a maximum of 900° F. and contacting the temperature adjusted effluent from the first reaction zone with sulfided cobalt molybdate catalyst in the second reaction zone.

3,296,121
DISTILLATION CONTROL SYSTEM

Mack F. Potts, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 15, 1964, Ser. No. 375,182
8 Claims. (Cl. 208—350)



1. A distillation process which comprises passing a feed mixture to a distillation zone, withdrawing a vaporous stream from the upper region of said distillation zone, withdrawing a liquid stream from the lower region of said distillation zone, passing a liquid side stream from an intermediate region of said distillation zone to a first cooling zone, passing at least a portion of the resultant cooled side stream from said first cooling zone to a second cooling zone, combining the remainder of the effluent stream from said first cooling zone with the effluent stream withdrawn from said second cooling zone, passing at a substantially constant flow rate the resultant combined cooled mixture of said distillation zone above the point of withdrawal of said side stream from said distillation zone, manipulating the rate of flow of effluent from said first cooling zone to said distillation zone responsive to a temperature measurement of said combined cooled mixture, and manipulating the rate of flow through said second cooling zone responsive to a differential pressure measurement, said differential pressure measurement comprising the difference in measurements representative of the pressure of the effluent withdrawn from said second cooling zone and the feed to said second cooling zone.

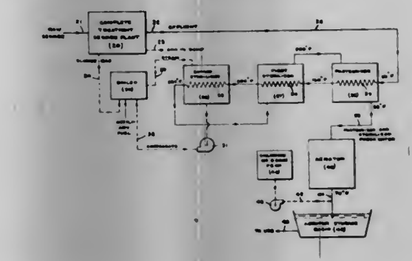
3,296,122
SUPPLY OF FRESH UNPOLLUTED WATER BY MEANS OF PASTEURIZATION AND STERILIZATION OF SEWAGE EFFLUENT

Igor J. Karassik, Maplewood, and Joseph F. Sebald, Bloomfield, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Apr. 2, 1963, Ser. No. 269,982
29 Claims. (Cl. 210—2)

1. A purification process for providing a potable water supply from a non-potable source which includes raw sewage, comprising the steps of

(a) reducing the raw sewage in a complete treatment sewage plant to provide a clear effluent and a sludge gas,
(b) converting the sludge gas from said complete treatment sewage plant to heat energy,
(c) using said heat energy for raising said effluent to pasteurizing and sterilizing temperatures and thereby destroying the micro-organism content thereof,



(d) aerating said sterilized effluent to improve the taste thereof, and
(e) delivering said sterilized and aerated fluid to a service system.

3,296,123
REMOVAL OF CESIUM FROM AQUEOUS SOLUTIONS BY ION EXCHANGE

William E. Prout, Aiken, Edwin R. Russell, Columbia, and Harold J. Groh, Jr., Aiken, S.C., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Apr. 1, 1964, Ser. No. 357,022
14 Claims. (Cl. 210—38)

1. A process for selectively removing cesium values from an aqueous solution containing said cesium values which comprises contacting said solution with preformed stable particles of potassium cobalt ferrocyanide ion exchange material to take up said cesium values on said ion exchange material, said ion exchange material being prepared by adding an aqueous solution of potassium ferrocyanide to an aqueous solution containing at least about 40 to 50% stoichiometric excess of a cobalt salt to form a potassium cobalt ferrocyanide precipitate, removing and drying said precipitate at a temperature not to exceed about 150° C. to form a crystalline potassium cobalt ferrocyanide ion exchange material; and separating the resulting cesium value-loaded ion exchange material from the cesium value-depleted aqueous solution.

3,296,124
PROCESS FOR PREPARING A USEFUL WATER FROM A NATURAL SALT WATER AND RECOVERING VALUES CONTAINED THEREIN

Sidney M. Heins, 7132 N. Ashland Ave., Chicago, Ill. 60626

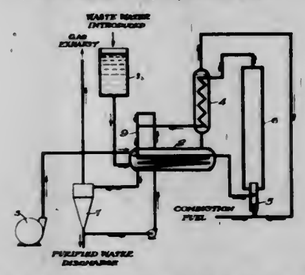
No Drawing. Filed Oct. 23, 1964, Ser. No. 406,147
9 Claims. (Cl. 210—45)

1. In a process for preparing a useful water from a natural salt water having an excessive salt content, the steps which comprise reacting such natural water with hydrosilicofluoric acid to precipitate sodium silicofluoride, separating the precipitate from the resulting liquid, removing hydrogen chloride from the resulting liquid, and recovering the resulting liquid.

3,296,125
PROCESS FOR THE PURIFICATION OF WASTE WATER

Gerhard Hegner, Dortmund, Deggingstrasse 10–12, Germany, assignor to Friedrich Uhde GumbH, Dortmund, Germany

Filed Oct. 13, 1964, Ser. No. 403,573
Claims priority, application Germany, Oct. 17, 1963, V 10,203
2 Claims. (Cl. 210—63)



1. In the process for the purification of waste water containing predominantly organic impurities including the steps of conveying the waste water in a fluid phase to a preheater and vaporizer of the purification system, mixing the waste water and combustion air to lower the vapor pressure of the water, preheating the mixture of air and water at a temperature below 100° C. whereby a portion of the waste water and of its volatile constituents are vaporized, conveying the vapor-air mixture to an overheater, overheating the vapor-air mixture, mixing the overheated vapor-air mixture with combustion fuel, conducting the vapor-air mixture and combustion fuel to a burner which operates with excess of air, oxidizing the impurities of the mixture by the burner and forming hot combustion gases, said oxidation being carried out under atmospheric pressure, passing said hot combustion gases into a reactor, conveying the remaining unvaporized water in the preheater from the preheater to the reactor where it is vaporized and overheated by said hot combustion gases, conducting the hot exhaust gases formed in the reactor to the overheater, utilizing the heat from the exhaust gases to heat vapor-air mixture in the overheater, and discharging the purified water from the system.

3,296,126
DRILLING MUD

Horst Diener, Frankfurt am Main Hochst, and Dieter Ulmschneider, Frankfurt am Main Unterliederbach, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Dec. 3, 1964, Ser. No. 415,789
Claims priority, application Germany, Dec. 7, 1963, K 51,561
10 Claims. (Cl. 252—8.5)

1. A drilling mud comprising water, a clay in a concentration of 2 to 10 percent by weight, and, as a protective colloid, a poly-N-vinyl carboxylic acid amide having a K-value of 20 to 140 and being present in an amount sufficient to reduce water loss, the carboxylic acid precursor of the amide having 2 to 7 carbon atoms.

3,296,127
CORROSION INHIBITED LUBRICATING COMPOSITIONS

Richard A. Butcosk, Westmont, and Henry Raich, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,924
9 Claims. (Cl. 252—25)

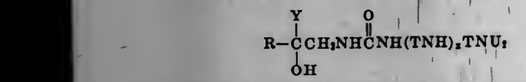
1. A composition consisting essentially of (a) a product produced by neutralizing an N-carboxymethyl-alkenyl-succinamic acid, said alkenyl group containing from about

8 to about 35 carbon atoms, with an alkali metal phosphate, said product having a pH of at least 7, and (b) an alkali metal nitrite.

6. A lubricant composition containing, as a corrosion inhibitor, a composition as defined in claim 1.

3,296,128
MONOHYDROXYHYDROCARBYL UREAS AS LUBRICATING OIL DETERGENTS
Donald J. Anderson, San Anselmo, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Dec. 23, 1964, Ser. No. 420,817
6 Claims. (Cl. 252—32.7)

1. Compound according to the formula:



wherein R is an alkyl radical of from about 28 to 198 carbon atoms, Y is selected from the group consisting of hydrogen and lower alkyl, T is an alkylene radical of from 2 to 6 carbon atoms, U is selected from the group consisting of hydrogen and lower alkyl and x is a cardinal number of from 0 to 5.

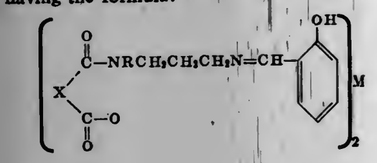
6. A lubricating oil composition having from 0.1 to 10 weight percent of compounds according to claim 1 and from 5 to 50 mM./kg. of the composition of zinc O,O-dihydrocarbyl phosphorodithioate, wherein said hydrocarbyl group is of from 4 to 36 carbon atoms.

3,296,129
METHOD OF FORMING STABLE EMULSIONS
John R. Scheidker, Grand Rapids, Mich., and Ford C. Teeter, Palos Heights, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 3, 1963, Ser. No. 306,274
5 Claims. (Cl. 252—33.4)

1. A method of forming a stable emulsion of a soluble oil consisting essentially of a major amount of mineral lubricating oil, and minor amounts of an oil-soluble emulsifying agent consisting essentially of a member selected from the group consisting of oil-soluble aromatic sulfonates and oil-soluble resinates and of a coupling agent selected from the group consisting of glycols and alkyl ether glycols of up to 12 carbon atoms, and up to about 6% water, the steps which consist essentially of mixing one part of said soluble oil and about 0.4 to 3 parts of augmentation water having up to about 600 p.p.m. hardness as $CaCO_3$ and having a temperature of at least about 60° F. to produce a water-augmented blend, and mixing on part of said blend with about 10 to 100 parts of emulsification water having a temperature up to about 50° F. and having about 100 to 600 p.p.m. hardness as $CaCO_3$, to produce said stable emulsion.

3,296,130
ORGANIC COMPOSITIONS
Paul Y. C. Gee, Woodbury, and Harry J. Andress, Jr., Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Nov. 29, 1965, Ser. No. 510,374
12 Claims. (Cl. 252—33.6)

1. Organic compositions normally susceptible to deterioration, containing a small amount, to inhibit said deterioration, of a metal salt of a salicylaldimine anside acid, having the formula:



wherein X is selected from the group consisting of CH:CH, CH_2CH_2 and $C_{12}H_{23}CHCH_2$, R is an alkyl group having from about 8 to about 18 carbon atoms and M is a divalent metal.

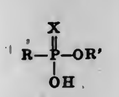
6. A composition in accordance with claim 1 wherein said composition comprises a lubricant.

3,296,131
ANTIFOAMER FOR HYDROCARBON OILS
Albert T. Knecht, Jr., Hazel Crest, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,536
10 Claims. (Cl. 252—35)

1. A composition consisting essentially of a normally liquid hydrocarbon oil having foaming tendencies and a foam suppressing amount of a metal salt of a copolymer of styrene and maleic anhydride, said metal being selected from the group consisting of Groups IB, IIB, IV and VIII of the Periodic Table and said copolymer having a molecular weight of about 600 to 50,000 and a molar ratio of styrene to maleic anhydride of about 0.5 to 3:1.

3,296,132
ALKYL ALKENETHIOPHOSPHONATE AND THEIR LUBRICANT COMPOSITION
James M. Petersen, Fishkill, and Joseph F. Lyons, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 18, 1962, Ser. No. 231,553
7 Claims. (Cl. 252—46.6)

4. A lubricant composition comprising a lubricating oil and between 0.2 and 10 weight percent of a product selected from the group consisting of an alkyl hydrocarbonthiophosphonate and a mixture of said alkyl hydrocarbonthiophosphonate and corresponding alkyl hydrocarbonphosphonate, said alkyl hydrocarbonthiophosphonate of the formula:



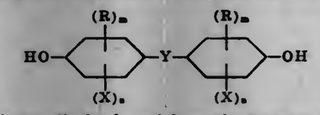
where R is hydrocarbyl derived from a polyolefin having an average molecular weight between about 250 and 50,000, R' is alkyl of from 1 to 10 carbons and said mixture consists of a major amount of said alkyl hydrocarbonthiophosphonate and a minor amount of alkyl hydrocarbonphosphonate where X is oxygen.

3,296,133
2-STROKE ENGINE LUBRICANTS
Hyman Ratner, Florissant, Mo., and Merlyn Townsend, Concord, and Romeo Gouley, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 22, 1963, Ser. No. 325,780
1 Claim. (Cl. 252—46.7)

A lubricant composition for 2-stroke engines which employs a lubricant-fuel mixture comprising a major amount of mineral lubricating oil having a viscosity index of 45–80 and a viscosity of from 400 SUS at 100° F. to 100 SUS at 210° F. and from 0.1% to 10% each of dioleylamide of $H_2NCH_2CH_2N(C_4H_9)CH_2CH_2NH_2$, 2-thiadodecyl phosphonic acid and bis(3,5-diert.butyl-4-hydroxyphenyl)methane.

3,296,134
MINERAL LUBRICATING OIL CONTAINING BISPHENOL, DETERGENT AND PHOSPHITE ADDITIVE
Duk Hi Lee, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 30, 1964, Ser. No. 363,976
4 Claims. (Cl. 252—46.7)

1. A mineral lubricating oil composition comprising a major amount of mineral lubricating oil and from about 1% to about 10% of a copolymer of 2-hydroxyethyl methacrylate and a mixture of lauryl and stearyl methacrylates and from about 0.01% to about 2% each of (A) an alkylated bisphenol having the formula



where Y is a radical selected from the group consisting of $—CH_2—$ and —S—, X is a halogen, R is a tertiary alkyl radical of 4 to 8 carbon atoms and m and n are integers such that m is at least 1 and n can be zero and (B) an organic phosphite having the formula

$$(HZ)_y—P—(ZR')_x$$

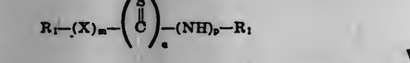
where Z is an element selected from the group consisting of oxygen and sulfur, R' is an aryl radical and $x+y$ equal 3 and y is at least 2.

3,296,135
LUBRICANT COMPOSITIONS HAVING IMPROVED CORROSION AND OXIDATION PROPERTIES
Robert A. Cupper, Ridgefield, Conn., and Carl A. Wolf, Jr., New York, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Feb. 8, 1963, Ser. No. 257,079
7 Claims. (Cl. 252—47.5)

1. A novel additive system for use in synthetic ester and glycol lubricants which comprises from about 10 to about 50 parts by weight of a compound selected from the group consisting of phenothiazine and N-phenylalphanaphthylamine, from about 10 to about 50 parts by weight of 2,6-di-t-butyl-4-methylphenol and from about 1 to about 10 parts by weight of benzoguanamine.

3,296,136
LUBRICANT COMPOSITIONS OF IMPROVED OXIDATION RESISTANCE
Daniel B. Eickemeyer, Park Forest, and Tai S. Chao, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 13, 1963, Ser. No. 323,275
6 Claims. (Cl. 252—47.5)

1. A lubricant composition consisting essentially of a major amount of an ester base fluid of lubricating viscosity and small amounts of each of an ester base fluid-soluble compound having the following structural formula:



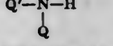
wherein

R_1 is selected from the group consisting of hydrogen, alkyl radicals of up to 18 carbon atoms, phenyl, naphthyl and pyridyl;

X is selected from the group consisting of $—NR_1—$ and $—N=N—$;

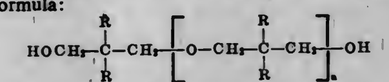
m is 0 to 1;
n is 1 to 2; and
p is 1 to 2,

with the proviso that at least one R_1 is other than hydrogen and when m is 0 the R_1 attached to the —CS— group is other than hydrogen, and an ester base fluid-soluble aromatic amine having the general formula:



wherein Q is a non-olefinic, non-acetylenic monovalent hydrocarbon radical of 1 to 20 carbon atoms and Q' is an aromatic hydrocarbon radical of 6 to 16 carbon atoms, said amounts being effective to retard oxidation of said ester base fluid at temperatures in excess of 400° F., and said ester base fluid being an ester of an alkanol of 4 to 20 carbon atoms and an alkane carboxylic acid of 4 to 18 carbon atoms.

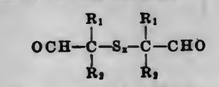
4. The lubricant composition of claim 1 wherein the ester base fluid is an ester of an alkanol having the general formula:



wherein n is 0 to 1 and R is selected from the group consisting of lower alkyl radicals and hydroxymethyl.

3,296,137
LUBRICANTS CONTAINING ALDEHYDO-HYDROCARBON SULFIDES
Herbert F. Wiese, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed May 13, 1965, Ser. No. 455,655
7 Claims. (Cl. 252—48.2)

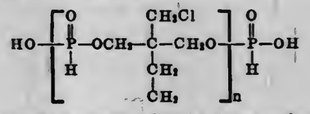
1. A lubricating composition comprising a major proportion of a lubricating oil and a minor proportion of a sulfide having the structural formula



wherein R_1 is a hydrocarbon radical and R_2 is selected from the class consisting of hydrogen and hydrocarbon radicals and x is an integer from 1 to 2.

3,296,138
EXTREME PRESSURE LUBRICANT ADDITIVES
Robert A. Cupper, Ridgefield, Conn., and Carl A. Wolf, Jr., New York, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 6, 1963, Ser. No. 300,161
The portion of the term of the patent subsequent to Apr. 19, 1982, has been disclaimed
2 Claims. (Cl. 252—49.9)

1. A functional fluid composition which comprises a major proportion of an organic functional base fluid of lubricating viscosity and a minor amount, sufficient to improve the load carrying properties of said composition, of a polymer of the formula:



wherein n represents a number having a value such that said polymer has a molecular weight of from about 400 to about 12,000.

3,296,139
ORGANIC PEROXY ESTER ANTI-SEIZURE AGENT
Arthur M. Shapiro, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Mar. 4, 1965, Ser. No. 437,323
5 Claims. (Cl. 252—57)

1. A lubricant composition having good anti-seizure, anti-wear and anti-corrosive properties suitable for use

in various machine cutting operations, said lubricant composition consisting essentially of about 0.5 to 3.0 weight percent of t-butyl perbenzoate and the balance being an oil of mineral origin.

3,296,140
LIQUID DEVELOPER FOR ELECTROGRAPHIC PRINTING
Daniel M. Zabiak, Chicago, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
No Drawing. Filed Feb. 13, 1964, Ser. No. 344,555
4 Claims. (Cl. 252—62.1)

1. A liquid developer composition for latent electrostatic images consisting essentially of a liquid solvent, a polystyrene resin present in the dissolved state in the liquid solvent in an amount within the range of 0.5 to 5.0 percent by weight of the composition, and a dye or pigment suspended in finely divided form in the polystyrene solution in an amount within the range of 0.05 to 0.6 percent by weight of the composition, and in which the liquid solvent consists essentially of substantial proportions each of an aliphatic petroleum solvent, an aromatic hydrocarbon solvent present in an amount sufficient to maintain the polystyrene in solution and a chlorinated-fluorinated hydrocarbon solvent present in an amount sufficient to raise the flash point of the liquid solvent to above 100° F. and in which the aliphatic petroleum solvent and aromatic hydrocarbon solvent have boiling points which do not exceed about 349° F. and in which the liquid solvent has a flash point above 100° F.

3,296,141
BRIGHT DIP COMPOSITIONS FOR THE TREATMENT OF STEEL
Wilbur A. Lieb, Sandusky, and Edward Billow, Northfield, Ohio, assignors, by direct and mesne assignments, to R. O. Hull & Company, Inc., Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 25, 1965, Ser. No. 442,821
8 Claims. (Cl. 252—79.3)

3. A composition for treating the surface of steel consisting essentially of a mixture of the following ingredients in the parts by weight specified:

Ammonium bifluoride	30–64
Urea	0–70
Hydrogen peroxide	35–105

dissolved in sufficient water to give a concentration of the ammonium bifluoride plus urea of between about 9 to 15 ounces per gallon of the resulting solution.

4. A composition for treating the surface of steel consisting essentially of the following ingredients in the parts by weight specified:

Ammonium bifluoride	30–64
Urea peroxide	30–100
Hydrogen peroxide	0–105

dissolved in sufficient water to give a peroxide concentration of about 7% by weight.

3,296,142
ETCHING COMPOSITION AND METHOD OF ETCHING
Abraham Isidor Sherer, Clifton, N.J., and John Ruzicka, Brooklyn, N.Y., assignors to Ball Brothers Company Inc., Muncie, Ind., a corporation of Indiana
No Drawing. Filed Apr. 6, 1964, Ser. No. 372,053
14 Claims. (Cl. 252—79.4)

1. An additive for an etching composition consisting essentially of between about 25% and 40% by weight of a sulfated castor oil, between about 0.3% and 2% by weight of an alkyl-benzene sulfonate having an alkyl group containing between about 10 and 12 carbon atoms, and between about 60% and 72% by weight of a petroleum solvent.

3,296,143
TANK CLEANING COMPOUND AND METHOD OF PRODUCING SAME
Marvin M. Bolko, Morton Grove, Ill., assignor to Tri-Bros. Chemical Corporation, Morton Grove, Ill., a corporation of Illinois
No Drawing. Filed Nov. 12, 1963, Ser. No. 323,119
5 Claims. (Cl. 252—87)

1. A substantially dry, non-toxic tank cleaning composition especially suitable for removing substantially water-insoluble salts from a water heater having an anode rod, which comprises about 75–98 parts by weight citric acid in substantially anhydrous form dispersed in about 0.25–5 parts of an inert colloidal material selected from the group consisting of charcoal, graphite and silica gel, as one constituent, and about 1–15 parts of a normally solid non-toxic sugar dispersed in an inert colloidal material as the other constituent.

3,296,144
REMOVAL OF STAINS FROM POLYMERIC MATERIALS, PARTICULARLY VINYL PLASTICS
Roy A. White, Somers, Conn., assignor to Kimball Systems, Inc., a corporation of Delaware
No Drawing. Filed Dec. 18, 1963, Ser. No. 331,376
16 Claims. (Cl. 252—91)

1. A method of removing stains from a polymeric material including a polymer component and plasticizer component which comprises applying to the stained area a primary amine borane soluble in one of said components forming said material, for a period of time to effect removal of stains, said primary amine borane selected from the group consisting of monomethyl amine borane, monoethyl amine borane, monopropyl amine borane, monoisopropyl amine borane, monobutyl amine borane, monoisobutyl amine borane, monoethanolamine borane, benzyl amine borane, ethylenediamine borane, dodecyl amine borane and cyclohexyl amine borane.

6. A method of removing stains from a polymeric material including a polymer component and a plasticizer component which comprises applying to the stained area a borohydride soluble in at least one of said components forming said material, for a period of time to effect removal of stains, said borohydride selected frm the group consisting of sodium borohydride, potassium borohydride and lithium borohydride.

12. A stain remover for polymeric materials comprising a vinyl sheet material impregnated with a heterocyclic material selected from the group consisting of pyridine borane, methyl pyridine borane, dimethyl pyridine borane, ethyl pyridine borane, diethyl pyridine borane, propyl pyridine borane, isopropyl pyridine borane and butyl pyridine borane.

3,296,145
QUATERNARY AMMONIUM-TERTIARY AMINE OXIDE COMPOSITIONS
John C. Findlan, Chappaqua, and Ralph P. Sorrentino, Elmhurst, N.Y., and Reginald L. Wakeman, Philadelphia, Pa., assignors to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,282
13 Claims. (Cl. 252—106)

1. A germicidal agent consisting essentially of (1) at least one tertiary amine oxide of the formula:

$$R{-}\underset{\downarrow}{N}{-}R'R''$$
$$O$$

wherein R is a member of the group consisting of alkyl and alkenyl having 8 to 20 carbon atoms, and wherein R' and R'' are selected from the group consisting of methyl, ethyl, propyl, isopropyl, hydroxyalkyl, hydroxyalkoxyalkyl, hydroxyalkyl polyalkoxyalkyl, and morpholine containing R', R'' and N as members, the alkyl, the hydroxyalkyl compounds being lower alkyl, and (2) at least one germicidal quaternary ammonium compound having at least one long chain alkyl group of 8 to 22 carbon atoms attached to the quaternary nitrogen and having a phenol coefficient of at least 100 with respect to *Staphylococcus aureus* and *Salmonella typhosa* at 20° C., the amine oxide and quaternary ammonium compound being respectively present in the proportion of about 50:1 to about 5:1 parts by weight.

9. A method of simultaneously cleaning and sterilizing human tissue which comprises applying to said tissue a composition consisting essentially of (1) at least one tertiary amine oxide of the formula:

$$R{-}\underset{\downarrow}{N}{-}R'R''$$
$$O$$

wherein R is a member of the group consisting of alkyl and alkenyl having 8 to 20 carbon atoms, and wherein R' and R'' are selected from the group consisting of methyl, ethyl, propyl, isopropyl, hydroxyalkyl, hydroxyalkoxyalkyl, hydroxyalkyl polyalkoxyalkyl, and morpholine containing R', and R'' and N as members, the alkyl of the hydroxyalkyl compounds being lower alkyl, and (2) at least one germicidal quaternary ammonium compound having at least one long chain alkyl group of 8 to 22 carbon atoms attached to the quaternary nitrogen and having a phenol coefficient of at least 100 with respect to *Staphylococcus aureus* and *Salmonella typhosa* at 20° C., the amine oxide and quaternary ammonium compound being present in the proportion of about 50:1 to about 5:1 parts by weight.

3,296,146
ALKYLBENZENE SULFONATE DETERGENT COMPOSITIONS CONTAINING 2-HYDROXY-1-AMINO ALKANES
Joseph A. Meyers, Springfield, Pa., Edward G. Shay, Belle Mead, N.J., and Robert C. Taylor, King of Prussia, Pa., assignors to Atlantic Richfield Company, a corporation of Pennsylvania
No Drawing. Filed Aug. 26, 1965, Ser. No. 482,920
14 Claims. (Cl. 252—137)

1. A detergent composition having improved detergency properties comprising a water soluble alkylbenzene sulfonate having 9 to 15 carbon atoms in the alkyl side chain and as a detergency improving agent, 2-hydroxy-1-amino alkane of the formula

$$R{-}\underset{\underset{OH}{|}}{CH}{-}\underset{\underset{NH_2}{|}}{CH_2}$$

wherein R is an alkyl radical having from about 4 to about 18 carbon atoms and wherein the detergency improving agent is present in an amount ranging from about 0.3 weight percent to about 3.3 weight percent based on the amount of the water soluble alkylbenzene sulfonate present.

3,296,147
CLEANER FOR FOOD RESIDUES
Eugene M. Gatza, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 24, 1964, Ser. No. 377,465
8 Claims. (Cl. 252—153)

1. A composition consisting essentially of, in intimate admixture, water, ammonia in an amount, expressed as NH_3, of from 0.05 to 10 percent by weight of water, an alkali metal alkaline compound in an amount from 0.1 to 15 percent by weight of water, and an aliphatic halohydrocarbon solvent of molecular weight up to about 150 whereof the halogen is selected from the group consisting of chlorine and bromine said solvent being present in an amount from 2 percent to 95 percent by volume of water, whereby the ammonia, alkaline compound, solvent, and water all contribute to the cleaning potentiation of the entire resulting mixture.

3,296,148
STABILIZATION OF ANHYDRIDES
Norbert E. Talbert, Morris Plains, and John J. Rizzo, Hopewell Township, Mercer County, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 15, 1965, Ser. No. 507,712
10 Claims. (Cl. 252—182)

1. A method of stabilizing the liquid state of a polycarboxylic acid anhydride selected from the group consisting of polycarboxylic acid anhydrides which form clear liquids at temperatures below 100° C. and polycarboxylic acid anhydride mixtures which form clear liquids at temperatures below 100° C. which comprises heating the anhydride with 0.1–2.0 milliequivalents per gram of anhydride of an oxirane-containing compound having a molecular weight not in excess of 200 and free of functional groups which react with the said anhydride, at a temperature of 90–140° C. until 0.1–1.0 milliequivalent of oxirane oxygen is reacted per gram of anhydride, thereby stabilizing the polycarboxylic acid anhydride in the liquid state for at least three months.

3,296,149
CORROSION-INHIBITING COMPOSITION OF MIXTURE OF MOLASSES, POTASSIUM IODIDE AND METAL SALT OF A FATTY ACID
Errol F. Cook, Marlborough, Mass., and Walter A. Szymanski, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Continuation of application Ser. No. 854,221, Nov. 20, 1959. This application Sept. 25, 1964, Ser. No. 399,393
6 Claims. (Cl. 252—389)

1. A corrosion-inhibiting composition for aqueous solutions of strong acidic inorganic compounds selected from the group consisting of phosphoric acid, monocalcium phosphate, hypophosphorus acid, hydrochloric acid, sulfuric acid and mixtures thereof, which composition consists essentially of a mixture of molasses, potassium iodide and a metal salt of a fatty acid, the weight ratio of molasses to potassium iodide in said mixture being between about 25:1 and about 100:1, and the weight ratio of potassium iodide to said metal salt being between about 5:1 and about 15:1, said metal salt of a fatty acid being a salt of a metal selected from the group consisting of calcium, sodium, and aluminum, and a fatty acid selected from the group consisting of oleic, stearic, and palmitic acid.

3,296,150
ORGANOPOLYLITHIUM POLYMERIZATION INITIATORS AND THEIR PREPARATION
Gerald R. Kahle, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Aug. 27, 1962, Ser. No. 219,787
4 Claims. (Cl. 252—431)

1. A process for forming an organopolylithium polymerization initiator composition which comprises contacting lithium with a polyaryl-substituted ethylene compound containing from 2 to 4 aryl groups selected from the group consisting of phenyl and naphthyl in an inert nonpolymerizable reaction medium comprising an acetylenic hydrocarbon material having from 4 to 20, inclusive, total carbon atoms having the structural formula:

$$R{-}C{\equiv}C{-}R$$

wherein R is a hydrocarbon radical selected from alkyl, aryl, and cycloalkyl radicals and combinations of these at a temperature in the range —20 to 100° C.

3,296,151

PRODUCTION OF SILICA BONDED ZEOLITIC MOLECULAR SIEVE GRANULES

Gerhard Heinze and Ernst Podschus, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Aug. 16, 1962, Ser. No. 217,326

Claims priority, application Germany, Aug. 19, 1961, F 34,738

5 Claims. (Cl. 252—448)

1. A process for the production of substantially spherical silica bonded molecular sieve granules comprising the steps of

(a) forming a flowable suspension of a molecular sieve zeolite-silica sol having a pH of between 8–10 by adding to an aqueous silica sol under stirring, a powdery molecular sieve zeolite in an amount to produce a product having a molecular sieve zeolite content of between 50 and 90%, said silica sol having a specific surface area of 150 to 400 $m.^2/g.$ BET on drying, said silica sol being used in a concentration of 10 to 40% by weight of SiO_2, a suspension of said zeolite in distilled water having a pH not exceeding 11,

(b) forming a suspension of finely divided magnesium oxide by adding magnesia usta to water,

(c) admixing the suspensions obtained in steps (a) and (b), utilizing the same in an amount producing a product having an MgO content of between 0.1 to 3% by weight,

(d) substantially immediately introducing the suspension formed in step (c) in dropwise form into a liquid immiscible with water whereby spherical granules are formed by sol-gel conversion, and

(e) separating the granules formed in step (c) from the liquid and drying and dehydrating said granules.

3,296,152

POLYMERIZATION OF ORGANIC EPOXIDES USING CERTAIN METALLIC OXIDES AND METALLO ORGANO COMPOUNDS

Marco A. Achon, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 18, 1961, Ser. No. 83,361

10 Claims. (Cl. 260—2)

1. The method of making a substantially linear polyether which comprises, under an inert atmosphere, mixing together at least one mono 1,2-epoxide and a catalyst composition and polymerizing said epoxide through its epoxide group in the presence of said catalyst composition at a temperature of at least about 25° C., (A) said epoxide having from 2 to 25 carbon atoms and being free of halogen atoms, and (B) said catalyst composition comprising an oxide selected from the group consisting of antimony trioxide, antimony tetraoxide, antimony pentaoxide, boron oxide, chromium trioxide, stannous oxide and stannic oxide and mixtures of said oxides, said oxide being activated for the catalytic polymerization of said epoxide by contacting said oxide with at least one organometallic compound selected from the group consisting of AlR_3, CdR_2, and ZnR_2, where R is a hydrocarbon radical of from 1 to 20 carbon atoms and is free of aliphatic unsaturation, and said catalyst composition being used in a minor molar amount as compared to said epoxide and sufficient to polymerize said epoxide to the solid state, said organometallic compound being used in an amount sufficient to activate said oxide for the polymerization of said epoxide.

3,296,153

INSULATION MATERIAL PREPARED FROM A HALOGENATED EPOXY, SILOXANE AND A POLYAMINE-AMIDE CURING AGENT

Richard C. Snogren, Downey, Calif., assignor to North American Aviation, Inc.

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,356

12 Claims. (Cl. 260—2.5)

1. A composition of matter for providing ablation protection comprising:

50 to 80 parts by weight of halogenated epoxy resin prepared from a diglycidyl ether of Bisphenol A,

20 to 50 parts by weight of siloxane selected from the group consisting of dimethyl siloxane, diethyl siloxane, diethyl siloxane and methyl phenyl siloxane, the ratio of the epoxy resin to the siloxane being in the range from 80/20 to 50/50, and the total weight of said epoxy resin and the siloxane being 100 parts by weight,

20 to 50 parts by weight of liquid polyamide-polyamine resin with an amine value of 80 to 320,

15 to 30 parts by weight of thin walled hollow microparticles,

4 to 7 parts by weight of tris (2,3-dibromopropyl) phosphate, and

10 to 20 parts by weight of triphenyl phosphite.

3,296,154

PREVENTING STATIC BUILDUP IN FOAMABLE RESIN BEADS WITH CLAY

Thomas H. Ferrigno, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed Apr. 17, 1963, Ser. No. 273,555

19 Claims. (Cl. 260—2.5)

1. A destaticized foamable composition in the form of free-flowing, nonadherent beads comprising:

(a) a normally solid nonporous styrene polymer in bead form, said polymer (b) having incorporated therein a volatile organic compound as a foaming agent and (c) having uniformly deposited on the surface of said beads an adherent coating consisting essentially of particles of crystalline kaolin clay, the particles of said kaolin clay having previously been coated with a small amount of a normally solid cationic nitrogeous surface active compound as an antistatic material for said styrene polymer, said surface active compound containing a long-chain hydrocarbon radical containing 8 to 20 carbon atoms and derived from a fatty acid, the cationic radical of said nitrogenous surface active compound being selected from the group consisting of amine, amide and quaternary ammonium, said cationic surface active compound being stable and nonvolatile at styrene polymer molding and fusion temperatures.

3,296,155

POLYMERIC HARDENERS FOR GELATIN

Louis M. Minsk and Hyman L. Cohen, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Aug. 6, 1962, Ser. No. 214,815. Divided and this application Oct. 8, 1965, Ser. No. 516,179

2 Claims. (Cl. 260—8)

1. A composition of matter comprising gelatin containing as a hardener therein an effective hardening amount of copoly(vinyl acrylate-vinyl acetate-vinyl acid succinate).

2. A composition of matter comprising gelatin containing as a hardener therein an effective hardening amount of copoly(ethylene-beta-vinylsulfonylethyl acid maleate).

3,296,156

2-AMINO-2-METHYL-PROPANOL CROSSLINKING AGENT FOR POLYURETHANE PROCESS AND PRODUCT

Russell Paul Carter, Jr., Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,574

14 Claims. (Cl. 260—9)

1. A polyurethane elastomer comprising the reaction product of 1.1 to about 4 mols of an organic diisocyanate with one mol of a reactive hydrogen containing polymeric material having a molecular weight of at least 500 and selected from the class consisting of polyester glycols, polyether glycols and the polyester amides and then crosslinking with a 2-amino-2-methyl propanol.

4. The process for making polyurethane elastomers having a Shore A hardness less than about 75 comprising (1) forming a fluid reaction mixture which comprises (a) a reactive hydrogen containing polymeric material having a molecular weight of at least 500 and a hydroxyl number greater than the acid number, (b) at least a 10% excess of organic diisocyanate over the amount equivalent to the reactive hydrogen in said polymeric materials and (c) 2-amino-2-methyl propanol, and (2) then casting said fluid reaction mixture into a shaping means for reacting said mixture to form a solid cured elastomer.

3,296,157

METHOD OF MANUFACTURING AND SEPARATING EPOXIDE RESINS

Zbigniew Brojer, 15 Ordynacka St.; Piotr Andrzej Penczek, 4 Corazziego St.; and Jerzy Henryk Sas, 24 Nowolipki St., all of Warsaw, Poland

No Drawing. Filed Apr. 5, 1962, Ser. No. 185,241

Claims priority, application Poland, Apr. 13, 1961, 96,243

14 Claims. (Cl. 260—13)

14. In a method of manufacturing and separating epoxide resins of a softening point of 50° C.–160° C. by condensation of bisphenol-A with a chlorohydrin selected from the group which consists of glycerol dichlorohydrin and epichlorohydrin, carried out in a medium of aqueous caustic alkali, the improvement which comprises carrying out said condensation by mixing and heating to a temperature of about 40° C. to 100° C. said bisphenol-A with said chlorohydrin in the presence of a water-soluble organic polymer selected from the group which consists of polyvinyl alcohol and the sodium salt of carboxymethylcellulose, in a minute amount effective to form a protective colloid for said epoxide resin but not less than 0.02% by weight based on said bisphenol-A, whereby said epoxide resin is obtained as a suspension of easily stirrable beads.

3,296,158

METHOD OF PREPARING LIGNIN REINFORCED RUBBER AND PRODUCT THEREOF

Mitchell S. Dimitri, Westwood, Charleston, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 23, 1961, Ser. No. 97,719

8 Claims. (Cl. 260—17.5)

1. A butadiene type rubber stock which has been subjected to a heat treatment at a temperature above 300° F. comprising 100 parts of rubber stock and from about 25 to 100 parts of lignin in the form of a polyvalent metal lignate.

6. The method which comprises effecting coprecipitation of lignin and butadiene type rubber from a mixture of an aqueous alkaline solution of lignin and a rubber latex by addition of the mixture to an aqueous solution of a polyvalent metallic salt, separating the supernatant liquid from the thus coprecipitated lignin-rubber, drying the coprecipitated lignin-rubber and subjecting the dried lignin-rubber to a heat treatment above 300° F.

3,296,159

WASTE SULFITE LIQUOR ALIPHATIC ALDEHYDE REACTION PRODUCTS

Glenn K. Lissner, Los Altos, Calif., assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,815

7 Claims. (Cl. 260—17.5)

1. An adduct of a waste sulfite liquor product obtained by chemically reacting an aliphatic aldehyde and a waste sulfite liquor at a temperature between room temperature and about 100° C.

3,296,160

EPOXY RESINS BASED ON DIPHENOLIC ACID DERIVATIVES

Thomas J. Miranda, Granger, and Herbert R. Herman, South Bend, Ind., assignors to The O'Brien Corporation, South Bend, Ind., a corporation of Indiana

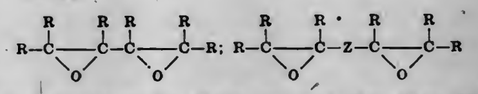
No Drawing. Filed Nov. 8, 1961, Ser. No. 150,869

17 Claims. (Cl. 260—18)

1. A coating composition having approximately 50–75 percent by weight of solvent and 50–25 percent by weight of non-volatiles therein comprising the ester reaction product of an ethylenically unsaturated fatty acid having about 10–25 carbon atoms in said acid, with the condensation product of

(1) a compound selected from the closs consisting of the alkyl esters of 4,4-bis-(p-phenylol)pentanoic acid and the chloro and bromo nuclear-substituted derivatives thereof having no more than 2 of said bromo and chloro atoms substituted per aromatic nucleus therein, said alkyl group having no more than 30 carbon atoms therein, and

(2) an oxirane compound selected from the class consisting of oxirane compounds having one of the formulas:



and polymers thereof having no more than about 20 repeating units therein, and having at least 2 of said oxirane groups intact therein, in which formulas R is a radical selected from the class consisting of hydrogen and alkyl radicals the total number of carbon atoms in said R groups in any one of said formulas is no more than 20 carbon atoms, and Z represents a divalent radical having no more than 30 carbon atoms therein selected from the class consisting of divalent hydrocarbon radicals and derivatives thereof having only derivative groups selected from the class consisting of ether and hydroxy derivative groups, said hydroxy and ether derivative groups being at least one carbon atom away from each of the valence bonds by which said Z group is attached to the oxirane radicals of said formulas, said condensation product being formed by the reaction of the hydroxy groups of said 4,4-bis-(p-phenylol)- pentanoic acid compound with said oxirane groups.

2. A composition of claim 1 in which said unsaturated acid is tall oil fatty acid, and said condensation product is the condensation product of said alkyl ester of 4,4-bis-(p-phenylol)-pentanoic acid and monomeric diglycidyl ether of bisphenol.

6. A composition of claim 1 in which said unsaturated acid is tall oil fatty acid, and said condensation product is the condensation product of said alkyl ester of 4,4-bis-(p-phenylol)-pentanoic acid having 2 chlorine atoms attached to each of the aromatic nuclei of said pentanoic acid derivative and monomeric diglycidyl ether of bisphenol. –

3,296,161
CURABLE ORGANOPOLYSILOXANE

Theodore A. Kulpa, Cohoes, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,797
7 Claims. (Cl. 260—18)

1. A composition stable under anhydrous conditions and convertible to the solid, cured elastic state upon exposure to moisture comprising by weight (A) 100 parts of a substantially liquid organopolysiloxane having a viscosity of from about 200 to 500,000 centistokes at 25° C., containing an average of from 1.85 to 2.01 organic groups per silicon atom, and containing from 0.02 to 2.0% silicon-bonded hydroxyl groups, (B) from 0.2 to 6.0 parts of a dialkoxydiacyloxysilane having the formula,

$$(RO)_2Si(OY)_2$$

and from 1.8 to 6.0 parts of an organotriacyloxysilane having the formula,

$$R'Si(OY)_3$$

where the organo groups of the organopolysiloxane and the organo groups represented by R' are members selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals, R is a lower alkyl radical and Y represents a saturated aliphatic monoacyl radical of a carboxylic acid.

7. A composition stable under anhydrous conditions and convertible to the solid, cured, elastic state upon exposure to moisture normally present in the atmosphere comprising by weight (A) 100 parts of a methylpolysiloxane which is a liquid having a viscosity of from about 200 to 500,000 centistokes at 25° C. and having an average of from about 1.85 to 2.01 methyl groups per silicon atom and from about 0.02 to 2.0 percent by weight silicon-bonded hydroxyl groups, (B) from 1.8 to 6.0 parts of an organotriacyloxysilane having the formula,

$$R'Si(OY)_3$$

(C) from 0.2 to 6.0 parts of a dialkoxydiacyloxysilane having the formula,

$$(RO)_2Si(OY)_2$$

(D) a filler, (E) and from 0.01 to 2.0 parts of a carboxylic acid salt of a metal ranging from lead to manganese, inclusive, in the electromotive series of metals, where R is a lower alkyl radical, R' is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals, Y is a saturated aliphatic monoacyl radical of a carboxylic acid, and where the dialkoxydiacyloxysilane of (C) is present in an amount equal to from 5 to 70% by weight of the total of the dialkoxydiacyloxysilane of (C) and the organotriacyloxysilane of (B).

3,296,162
STABLE LATICES COMPRISING POLYETHYLENE PARTICLES COATED WITH EMULSIFYING AGENTS

Gerald J. Mantell and Arthur F. Helin, Kansas City, Mo., and Harry K. Stryker, Prairie Village, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 21, 1961, Ser. No. 104,711
14 Claims. (Cl. 260—23)

1. A shelf-stable and mechanically stable polyethylene latex comprising a plurality of particles of solid, substantially oxygen-free, substantially sulfur-free polyethylene suspended in an aqueous medium, said particles having an average particle size of from about 0.02 micron to about 0.5 micron, the surface of said particles being substantially saturated with at least one emulsifier selected from the group consisting of non-ionic and anionic emulsifiers.

3,296,163
POLY ALPHA OLEFINS STABILIZED WITH DITHIO-OXAMIDES AND PHENOLS

Piero Manaresi, Ferrara, and Vincenzo Giannella, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,967
Claims priority, application Italy, Dec. 6, 1960, 21,038/60
13 Claims. (Cl. 260—23)

1. A stabilized polymeric composition comprising a solid polymer of an alpha-mono-olefin, a stabilizer having the general formula

$$R-HN-\underset{\underset{S}{\|}}{C}-\underset{\underset{S}{\|}}{C}-NH-R$$

wherein R is selected from the group consisting of alkyl, cycloalkyl unsubstituted aryl and alkyl-aryl radicals, said stabilizer being present in proportions of from about 0.075 to 4% by weight based on the weight of said solid polymer, and an alkylphenol antioxidant in proportions of from about 0.05 to 1% by weight of said solid polymer.

13. The composition of claim 1, said composition also containing a secondary stabilizer selected from the group consisting of calcium stearate, calcium laurate, barium stearate, barium laurate, and ethylene-diamino-sodium tetra acetate.

3,296,164
LUBRICANT ADDITIVE COMPRISING A BITUMEN-ACRYLATE POLYMERIZATION PRODUCT

Ernst Koch, Traisa, Darmstadt, Wilhelm Rooskopp, Darmstadt, and Heinz Jost, Messel, Darmstadt, Germany, assignors to Röhm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed Feb. 9, 1962, Ser. No. 172,111
Claims priority, application Germany, Feb. 15, 1961, R 29,678
12 Claims. (Cl. 260—28)

1. In the method of making lubricating and fuel oil additives by polymerizing acrylates of alcohols having from 8 to 18 carbon atoms, the improvement which comprises dissolving bitumen, as defined herein, in said acrylates prior to polymerization in amounts between 0.1 and 25 percent by weight of said additive, whereby products having improved dispersing properties are obtained.

3,296,165
BITUMINOUS EMULSION COATING

Woodrow E. Kemp, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Mar. 19, 1963, Ser. No. 266,335
3 Claims. (Cl. 260—28.5)

1. A storage stable aqueous aluminum-filled bituminous emulsion comprised of the following components within the ranges of the weight percent tabulated:

	Minimum (percent)	Maximum (percent)
(a) Coal tar	15	40
(b) Butyl rubber latex solids, said butyl rubber being the product of the copolymerization of isobutylene with a small amount of a diene selected from the class consisting of isoprene and butadiene	1	5
(c) Inhibitor selected from the class consisting of the 3- and the 5-nitro salicylic acid isomers and mixtures thereof	0.1	1
(d) Stabilizer selected from the class consisting of alkali silicates having an alkali oxide-silicon dioxide ratio of at least 1:3 and tetrapotassium pyrophosphate	0.1	1
(e) Alkali metal salt of N-cocoa-beta-amino-butyric acid	0.2	2
(f) Aluminum powder	8	25
(g) Water	40	60

3,296,166
STABILIZING VINYLIDENE POLYMERS BY HEATING

Francis John Whitby, Newport, England, assignor to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed June 14, 1961, Ser. No. 116,959
Claims priority, application Great Britain, June 29, 1960, 22,775/60
10 Claims. (Cl. 260—29.6)

1. In a process for improving the mechanical stability of a latex of a polymer of the group consisting of natural rubber and a synthetic vinylidene polymer by adding with agitation 0.1–5%, based on the weight of latex solids, of a water-soluble polyelectrolyte containing oil-soluble groups, the improvement which comprises heating the latex to a temperature of about 30–80° C. prior to adding the polyelectrolyte with agitation.

3,296,167
PROCESS FOR POLYMERIZING AN ETHYLENICALLY UNSATURATED AMINE-CONTAINING MONOMERIC MIXTURE

Robert J. Turner, Lake Geneva, Wis., and Clifford M. Lutes, Jr., Woodstock, Ill., assignors to Morton International Inc., a corporation of Delaware

No Drawing. Filed Feb. 2, 1962, Ser. No. 170,797
6 Claims. (Cl. 260—29.6)

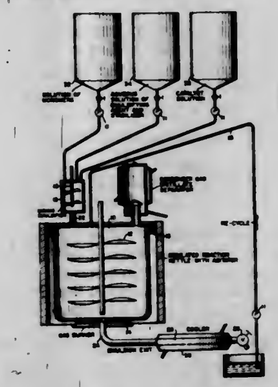
1. In a process for preparing an alkali resistant, acid sensitive interpolymer latex by interpolymerizing a total of from about 5 to 25 percent by weight of a monomeric ethylenically unsaturated amine, and from about 75 to 95 percent by weight of at least one alpha-beta unsaturated polymerizable co-monomer by an aqueous emulsion interpolymerization reaction, the improvement which comprises carrying out said interpolymerization by a multistage polymerization process, in which at least one stage comprises adding and polymerizing an ethylenically unsaturated amine-monomer enriched fraction, the ethylenically unsaturated amine-monomer proportion of said amine-monomer enriched fraction being always greater than said total percent of ethylenically unsaturated amine-containing monomer in said interpolymer and being present in an amount of from 10 to about 100 percent by weight of said fraction, and wherein said fraction constitutes from 10 to 70 percent by weight of the total monomeric constituents, and the other stage or stages of which comprises adding and polymerizing the remainder of said monomeric constituents in a fraction or fractions nonenriched in the ethylenically unsaturated amine-monomer component, to provide said interpolymer latex.

3,296,168
CONTINUOUS FLOW POLYMERIZATION OF VINYL ACETATE IN EMULSION

Frank E. Jirik, Moravia, and Fernando Castañeda, San Ramon de Tres Rios, Costa Rica, assignors to Kativo, S.A., San Jose, Costa Rica, a corporation of Costa Rica

Filed July 11, 1962, Ser. No. 208,983
6 Claims. (Cl. 260—29.6)

1. A continuous method of emulsion polymerization and co-polymerization, which comprises polymerization of monomers selected from the group consisting of butyl acrylate, ethyl acrylate, di-butyl-maleate, di-2-ethyl-hexyl maleate, vinyl stearate, vinyl chloride, methyl methacrylate, vinyl acetate, and 2-ethyl-hexyl-acrylate, at a pressure greater than atmospheric and sufficient to suppress vaporization of monomer and in a vessel kept totally full of



aqueous emulsion of polymer and monomer, the polymer to monomer ratio being from about 97:3 to about 99.5:0.5.

3,296,169
VINYL ACETATE-METHYL METHACRYLATE-ACRYLIC ACID COPOLYMER LATICES

Albert E. Corey, East Longmeadow, Mass., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,163
5 Claims. (Cl. 260—29.6)

1. A stable, aqueous emulsion of a hard polymer which is non-filming at room temperature and which is made from a monomer mixture comprising 0.5 to 2% by weight of an acrylic acid, 33 to 85% of methyl methacrylate, and at least 10% of vinyl acetate.

3,296,170
EMULSION POLYMERIZATION OF ETHYLENE

Richard D. Burkhart, South Charleston, and Nathan L. Zutty, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,174
11 Claims. (Cl. 260—29.6)

1. A process for producing a stable ethylene polymer latex characterized by relatively spherical particles having a diameter of from 0.01 to 2.0 microns which process comprises subjecting a polymerizable mass of non-aromatic, mono-olefinically unsaturated, polymerizable monomer containing from 5 to 100 percent ethylene monomer therein to a temperature of from 50° C. to 250° C., at a pressure of from about 1000 pounds per square inch to about 50,000 pounds per square inch, with the proviso that a pressure of at least 8,000 pounds per square inch is employed in preparing ethylene homopolymer, in an aqueous media containing (1) a water-soluble free-radical catalyst; (2) a surfactant selected from the group consisting of (a) amine salts of alkyl aryl sulfonates containing from 12 to 30 carbon atoms inclusive and having a micelle potential of less than 10 and (b) oil-soluble non-ionic surfactants of the formula:

$$R^2-(O-CH_2-CH_2)_y-OH$$

wherein R^2 is a monovalent aliphatic hydrocarbon radical containing from 10 to 20 carbon atoms and y is an integer having a value of from 1 to 6 inclusive; and (3) a high micelle potential anionic surfactant, having a micelle potential of from 10 to 40 inclusive, of the formula:

$$RO-\overset{\overset{O}{\|}}{C}-(CH_2)_a-\underset{\underset{SO_3M}{|}}{CH}-(CH_2)_b-\overset{\overset{O}{\|}}{C}-OR$$

wherein R is an alkyl group containing from 7 to 20 carbon atoms inclusive, *m* is a digit having a value of from 1 to 3 inclusive, *n* is a digit having a value of from 0 to 3 inclusive, and M is a monovalent cation having a molecular weight of from 2 to 40 inclusive, with the proviso that when the polymerization temperature used is in excess of 100° C. the high micelle potential anionic surfactant employed has a micelle potential of from 20 to 40.

3,296,171

HEAT STABLE ACRYLONITRILE POLYMER COMPOSITIONS AND MEANS FOR MANUFACTURE THEREOF

John H. Hennes and Charles R. Pfeifer, Newport News, Va., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,235
12 Claims. (Cl. 260—29.6)

7. Method for preparing a solution of an acrylonitrile polymer from which shaped articles can be manufactured having improved initial whiteness and heat stability comprising polymerizing an ethylenically unsaturated monomeric material containing at least about 80 weight percent acrylonitrile dissolved in an aqueous saline solution that is a solvent for said monomeric material and polymers therefrom, said solution having incorporated therein between about 0.1 and about 5 weight percent, based on the weight of said monomeric material, of a water soluble zirconium salt.

3,296,172

PREPARING AQUEOUS POLYMER DISPERSIONS IN PRESENCE OF POLAR LIQUIDS

Dennis Light Funck, Fairfax, Del., and Vernon Clare Wolff, Jr., Orange, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,532
11 Claims. (Cl. 260—29.6)

1. A process for preparing aqueous polymer dispersions which comprises the steps of intimately contacting with water a solution of a substantially hydrocarbon polymer in a substantially water-immiscible solvent, said substantially hydrocarbon polymer having carboxyl groups attached thereto by a carbon-carbon linkage, and said polymer comprising 80–99.7 mole percent bound α-olefin units having 2–18 carbon atoms and 0.3–20 mole percent bound carboxyl units, said substantially water-immiscible solvent being selected from the group consisting of hydrocarbons and halogenated hydrocarbons having a boiling point at 760 millimeters pressure of less than 150° C., in the presence of a base selected from the group consisting of ammonia and an organic amine having a dissociation constant of at least 1×10^{-8}, a polar liquid, and a dispersing agent, said polar liquid being selected from the group consisting of alcohols, ketones, and amides, said polar liquid comprising at least about 5 weight percent of the combined weights of polar liquid and substantially water-immiscible solvent, and thereafter removing said substantially water-immiscible solvent and said polar liquid and recovering an aqueous polymer dispersion having an average solids particle size of less than about 1.0 microns.

3,296,173

LUBRICOUS COATING FOR GLASS CONTAINING POLYVINYL ALCOHOL, POLYOLEFIN EMULSION AND AMMONIUM CHLORIDE

John Edward Pickard, Selma, Ind., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

No Drawing. Filed Feb. 10, 1964, Ser. No. 343,483
12 Claims. (Cl. 260—29.6)

10. A composition for forming a durable, lubricous, label accepting coating on glass comprising between about 1 to 4 parts by weight of polyvinyl alcohol, between about .8 to 3 parts by weight of an emulsified polyolefin, and ammonium chloride.

3,296,174

LUBRICOUS COATING FOR GLASS CONTAINING POLYVINYL ALCOHOL, POLYOLEFIN EMULSION AND AN ORGANIC ACID

John Edward Pickard, Selma, Ind., assignor to Ball Brothers Company Inc., Muncie, Ind., a corporation of Indiana

No Drawing. Filed Feb. 10, 1964, Ser. No. 343,507
13 Claims. (Cl. 260—29.6)

11. A composition for forming a durable, lubricous, label accepting coating on glass comprising about 1 to 4 parts by weight of polyvinyl alcohol, between about .8 to 3 parts by weight of emulsified polyolefin, and an organic acid.

3,296,175

POLYMER LATICES WHICH HAVE HIGH VISCOSITIES AND COATING COMPOSITION CONTAINING THE SAME

Joel Fantl, Frank J. Hahn, and John F. Heaps, Springfield, and Charles R. Williams, Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,061
10 Claims. (Cl. 260—29.6)

1. In a process for preparing a polymer latex from polymerizable monomers which monomers contain from about 5.5–20% by weight of an alpha,beta-ethylenically unsaturated carboxylic acid and at least one vinylidene monomer which is interpolymerizable therewith, in which the monomers are emulsified in water and polymerized, the improvement which consists essentially of delaying the addition of the acid monomer to the emulsion until at least about 70% by weight of the monomers have polymerized; said acid monomer constituting 18–75% by weight of the remaining monomers added to the emulsion.

3,296,176

INTERPOLYMER LATICES

Joel Fantl, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 3, 1965, Ser. No. 436,919
7 Claims. (Cl. 260—29.6)

1. An aqueous latex containing interpolymer particles having an overall composition of from 6 to 18% by weight of (A) an unsaturated nitrile selected from the group consisting of acrylonitrile and methacrylonitrile, from 20 to 45% by weight of (B) an unsaturated ester selected from the group consisting of straight-chain and branched-chain saturated aliphatic alcohol esters of fumaric, acrylic and methacrylic acids containing from 5 to 20 carbon atoms in the alcohol moiety of which from about 5 to 14 carbon atoms comprise the longest continuous chain thereof, from 1 to 5% by weight of (C) an unsaturated monocarboxylic acid containing from 3 to 10 carbon atoms and, correspondingly, from 32 to 73% by weight of (D) a monovinylidene aromatic hydrocarbon, wherein said interpolymer particles comprise an inner mass of a particular interpolymer composition and an outer surface-oriented interpolymer of a different composition; said inner mass having an interpolymer composition of

(1) from 20 to 40% by weight of (A) and, correspondingly,

(2) from 80 to 60% by weight of (D);

said outer surface-oriented interpolymer having a composition of

(1) from 3 to 12% by weight of (A),

(2) from 25 to 50% by weight of (B),

(3) from 1 to 5% by weight of (C) and, correspondingly,

(4) from 33 to 71% by weight of (D).

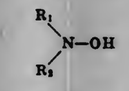
3,296,177

STOPPING AGENTS FOR SYNTHETIC RUBBER POLYMERIZATION

Paul Gordon Haines, Lafayette Hills, Alfred Case Whiton, Blue Bell, and Harry Elmer Albert, Lafayette Hills, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 13, 1964, Ser. No. 411,145
7 Claims. (Cl. 260—29.7)

1. In the process of polymerizing an ethylenically unsaturated monomer and terminating the polymerization by the addition of a stopping agent, the improvement which comprises using as said stopping agent a bis-oxalate salt of an alkyl hydroxylamine having the structure



where R_1 is selected from the group consisting of hydrogen, alkyl, and cycloalkyl, and R_2 is selected from the group consisting of alkyl and cycloalkyl, and wherein the organic R_1 and R_2 groups contain up to about 6 carbon atoms.

3,296,178

AGGLOMERATION OF SYNTHETIC RUBBER LATEX

John D. Sutherland, Jr., Baton Rouge, La., assignor to Copolymer Rubber & Chemical Corporation, a corporation of Louisiana

Filed Aug. 23, 1957, Ser. No. 679,849
4 Claims. (Cl. 260—29.7)

1. In a process for agglomerating synthetic rubber latex wherein the average particle size is enlarged in the resultant agglomerated latex by steps including freezing and thawing, the improvement comprising subcooling the frozen latex to a temperature between about −10° F. and −40° F., the synthetic rubber latex being selected from the group consisting of latices of rubbery homopolymers of conjugated diolefins and latices of rubery copolymers of conjugated diolefins and monoethylenically unsaturated monomers.

3,296,179

EPOXIDIZED POLYMER OF BUTADIENE CURED WITH OXALIC OR MALONIC ACID AT ROOM TEMPERATURE

Fred Lister, Belle Mead, N.J., Charles G. Cullen, Yardley, Pa., and Theodore R. Hopper, Cranford, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,782
4 Claims. (Cl. 260—31.2)

1. A method of curing an epoxidized polymer of butadiene at room temperature to a hard, tough, adherent and solvent and chemical resistant film which comprises: mixing

(a) an epoxidized polymer of butadiene having an oxirane oxygen content of 6–12% by weight in which 60–100% of the polymer forming units are derived from butadiene and the balance from an ethylenically unsaturated comonomer and

(b) a volatile organic solvent solution of a dicarboxylic acid selected from the group consisting of oxalic acid and malonic acid containing 0.05–0.4 mole of dicarboxylic acid per oxirane equivalent of epoxidized polymer of butadiene,

applying the mixture as a coating, and allowing the coating to cure at room temperature.

3,296,180

VINYL CHLORIDE RESINS PLASTICIZED WITH SUBSTITUTED CYCLOHEXYL ALKYL PHTHALATES

Louis O. Raether, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1963, Ser. No. 249,310
1 Claim. (Cl. 260—31.8)

A vinyl halide resin composition comprising a vinyl chloride polymer selected from the group consisting of polymerized vinyl chloride monomers and the copolymers of such monomers with an ethylenically unsaturated monomer, at least 50% of the monomer units of said copolymers being vinyl chloride units and from about 5 to about 200 parts by weight of decyl nonylcyclohexyl phthalate per 100 parts by weight of vinyl chloride polymer.

3,296,181

PHENOLIC-FORMALDEHYDE RESINS CONTAINING AN ALKYL PHENOL WHEREIN THE ALKYL GROUP CONTAINS 5–15 CARBON ATOMS AND INK COMPOSITIONS THEREFROM

Albert Wurmli and Roderich Konig, Riehen, near Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed Feb. 16, 1961, Ser. No. 89,625
Claims priority, application Switzerland Feb. 17, 1960, 1,776/60; Mar. 24, 1960, 3,322/60; Feb. 3, 1961, 1,156/61
10 Claims. (Cl. 260—33.2)

1. A resinous condensation product of

(a) one equivalent part of dimethylolatable phenol,

(b) more than one and less than two equivalent parts of formaldehyde, and

(c) 0.5 to 0.75 equivalent part of a mixture consisting essentially of

(α) 1 molar proportion of alkyl phenol, the alkyl radical of which contains from 5 to 15 carbon atoms, and

(β) from 1 to 2.5 molar proportions of hydroxybenzene carboxylic acid having at least one free position at the ortho- or para-positions relative to the hydroxy group,

from which condensation product all water of condensation has been split off, said product being suitable as base in flexo-pressic printing inks and capable of reducing the tendency of such inks to flake out and to form rubber-like gels therein.

3,296,182

ORGANOPOLYSILOXANE ELASTOMERS AND ARTICLES PRODUCED THEREFROM

Frank Fekete, Monroeville, Pa., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 5, 1964, Ser. No. 365,131
25 Claims. (Cl. 260—37)

1. A heat-curable composition of matter suitable for use in the production of diorganopolysiloxane elastomers which comprises (1) a linear diorganopolysiloxane gum, (2) at least one compound selected from the class consisting of silicon compounds containing at least one silicon-bonded alkoxy group and silicon compounds containing at least one silicon-bonded hydroxy group in a total amount of from about one part by weight to about 100 parts by weight to 100 parts by weight of said gum, said silicon compounds being selected from the class consisting of silanes, silicates, polysilicates and organopolysiloxane oils (3) a reinforcing amount of a filler selected from the class consisting of finely-divided silica fillers, reinforcing carbon black fillers, and mixtures of said silica and said carbon black fillers, (4) a titanium ortho ester having the formula $Ti(OR')_4$ wherein R' is an alkyl group containing from 1 to 18 carbon atoms, and (5) an organic peroxide curing catalyst.

3,296,183
METHOD OF HEAT TREATING ETHYLENE/ALPHA - MONOOLEFIN/NONCONJUGATED DIENE POLYMERS

Melvin Albert Schoenbeck, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 8, 1962, Ser. No. 178,258
4 Claims. (Cl. 260—41)

1. A process for heat-treating a normally solid ethylene/CH_2=CH - (C_{1-16}alkyl)/nonconjugated hydrocarbon diene copolymer before curing, which process comprises masticating at 275–500° F. a mixture comprising 100 parts of said copolymer, 20–300 parts of clay, and 1–5 parts of a promoter compound having at least 6% chemically incorporated chlorine by weight, said promoter compound being selected from the class consisting of chlorinated saturated aliphatic hydrocarbon copolymers, sulfochlorinated saturated aliphatic hydrocarbon polymers, and mixtures of said polymers.

3,296,184
VULCANIZABLE COMPOSITIONS OF OLEFIN POLYMERS OR COPOLYMERS AND VULCANIZED ARTICLES OBTAINED THEREFROM

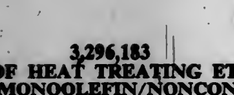
Augusto Portolani, Giuliano Ballini, and Carlo Bujtar, Ferrara, and Cesare Augusto Peri and Spartaco Fontani, Milan, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,950
Claims priority, application Italy, Feb. 14, 1963, 3,038/63; June 27, 1963, 13,442/63
33 Claims. (Cl. 260—41)

1. Vulcanizable compositions containing a polymer selected from the group consisting of olefin polymers and ethylene alpha-olefin copolymers together with a reinforcing filler and a peroxide selected from the group consisting of peroxides having the formula



in which R and R′ are alkyls, substituted alkyls, saturated cycloalkyls, unsaturated cycloalkyls, aralkyl and hydrogen atoms, and peroxides having the formula



in which R and R′ are bivalent alkylenic radicals containing from 2 to 8 carbon atoms and in which the resulting cyclic structure contains from 6 to 12 carbon atoms.

3,296,185
HIGH IMPACT HARD RUBBER COMPOUND AND METHOD OF MAKING SAME

Thaddeus Frank Cathey, Oak Ridge, George A. Campbell, Newfoundland, and Lyle C. Ryder, Butler, N.J., assignors to Amerace Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 30, 1964, Ser. No. 341,430
11 Claims. (Cl. 260—41.5)

1. An improved hard rubber composition characterized by relatively high impact strength while maintaining relatively high rigidity comprising synthetic rubber in the form of a polymer of hydrocarbon units initially having unsaturated double bonds, sulfur chemically combined at some of said initially unsaturated double bonds, and titanium dioxide, the composition having titanium dioxide in the proportion of between approximately 65 to about 150 parts by weight and between approximately 28% and 76% by weight of the saturation quantity of sulfur as herein defined per 100 parts of synthetic rubber.

3,296,186
STABILIZATION OF EPOXIDIZED POLYMERS OF BUTADIENE WITH PARA-BENZOQUINONE

Louis T. Gunkel, Pasadena, Md., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 5, 1963, Ser. No. 285,614
5 Claims. (Cl. 260—45.7)

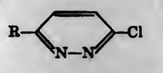
1. A method of stabilizing an epoxidized polymer of butadiene having an oxirane oxygen content of at least 6% by weight in which at least 50% by weight of the polymer forming units are derived from butadiene, which comprises mixing the epoxidized polymer with 0.01–1.0 part by weight of para-benzoquinone per 100 parts of epoxidized polymer.

3,296,187
3-SUBSTITUTED AMINO-6-CHLOROPYRIDAZINES AS ANTIOXIDANTS FOR RUBBER

Douglas I. Relyea, Pompton Plains, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed June 26, 1963, Ser. No. 290,592
10 Claims. (Cl. 260—45.8)

1. A sulfur-vulcanizable diene rubber composition comprising 0.1 to 5 parts by weight per 100 parts of rubber of a compound represented by the formula



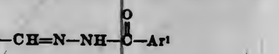
wherein R is selected from the group consisting of monoalkylamino, dialkylamino, cycloalkylamino and anilino.

3,296,188
POLYOLEFIN COMPOSITIONS STABILIZED WITH HYDRAZONES

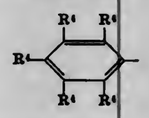
Kurt W. Leu, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 10, 1964, Ser. No. 336,864
Claims priority, application Netherlands, Jan. 31, 1963, 288,393
9 Claims. (Cl. 260—45.8)

1. A polyolefin composition stabilized against degradation when in contact with copper comprising
(1) a solid polymer of an alpha-monoolefin of from 2 to 8 carbon atoms per molecule combined with
(2) a combination of inhibitors against degradation thereof consisting of;
(a) from 0.01% to 5% by weight with reference to the polymer of a hydrazone having the formula



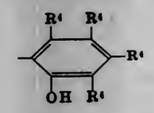
wherein, Ar is selected from the group consisting of



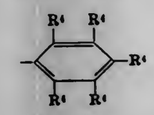
and radicals wherein from 1 to 3 of the —CR^4= groups of the



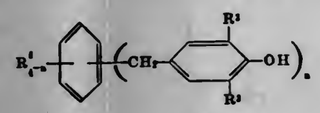
radical have been replaced by —N= groups wherein R^4 is a member selected from the group consisting of hydrocarbon radicals, hydroxy groups, halide atoms and hydrogen atoms, Ar^1 is selected from the group consisting of



and radicals in which from 1 to 3 =CR^4 groups of the



radical have been replaced by =N— groups wherein R^4 is as defined before, the hydrazone being further characterized in that at least one heterocyclic nitrogen atom is present;
(b) from 0.01% to 1% by weight with reference to the polymer of a phenol having the formula



wherein, R^4 is selected from hydrocarbon radicals, hydroxy groups, halide atoms and hydrogen atoms, is a member selected from secondary and tertiary hydrocarbon radicals and a cyclohexyl, R^3 is a member selected from R^3 and a hydrogen atom and n is selected from 1 to 3; and
(c) from 0 to 5% by weight with reference to the polymer of an organic sulfide selected from the group consisting of R^8—S_p—R^8 and

$$R^7—R^8—R^9—S—R^9—R^8—R^7$$

wherein R^8 and R^7 are monovalent hydrocarbon radicals, R^9 is carbonyloxy group, R^9 is a divalent hydrocarbon radical and p is an integer selected from 1 and 2.

3,296,189
CHEMICALLY CROSS-LINKED POLYETHYLENE STABILIZED WITH POLYMERIZED TRIMETHYL QUINOLINE

Warren O. Eastman, 3602 Fallen Timber Drive, Louisville, Ky. 40222

No Drawing. Continuation of application Ser. No. 105,868, Apr. 27, 1961. This application July 29, 1965, Ser. No. 475,841
6 Claims. (Cl. 260—45.8)

1. A curable composition of matter comprising:
(a) normally solid polyethylene,
(b) from 1% to 10% by weight of the polyethylene present of an organic peroxide having each of the peroxide oxygen atoms linked directly to a tertiary carbon atom, said peroxide substantially decomposing at temperatures in excess of 130° C. thereby cross-linking the polyethylene of said composition, and
(c) from 0.25% to 2.0% by weight of the polyethylene present of polymerized 1,2-dihydro-2,2,4-trimethylquinoline.

3,296,190
STABILIZATION OF POLYESTERS WITH A COMBINATION OF CARBODIIMIDES AND ORGANO-SILICON COMPOUNDS

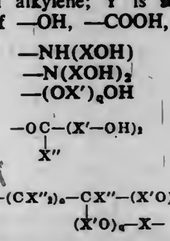
Artur Reischl, Leverkusen, Hans Holtschmidt, Cologne-Stammheim, Wolfram Neumann, Leverkusen, and Walter Simmler, Cologne-Mulheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,541
Claims priority, application Germany, Apr. 25, 1961, F 33,746
14 Claims. (Cl. 260—45.9)

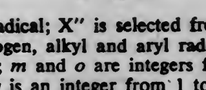
1. A polyester stabilized against hydrolysis and aging by having incorporated therein a stabilizing amount of a carbodiimide and a stabilizing amount of a silicon compound having the general formula:

$$R_nR'_mSiO_{\frac{4-n}{2}}$$

in which R represents a member selected from the group consisting of —X—Y groups and hydrocarbon radicals free of aliphatic unsaturation, said hydrocarbon radicals being selected from the group consisting of alkyl and aryl radicals; R′ represents a divalent —X— radical linking together one Si-atom and one O-atom; at least some of said R's being hydrocarbon radicals and in case of m=0 at least one of said R's being an —X—Y group; X is selected from the group consisting of alkylene and nitrogen-interrupted alkylene; Y is selected from the group consisting of —OH, —COOH, $—NH_2$



and



X′ is an alkenyl radical; X″ is selected from the group consisting of hydrogen, alkyl and aryl radicals; n has a value from 2 to 3; m and o are integers from 1–30 including zero and q is an integer from 1 to 300.

3,296,191
STABILIZED POLYPROPYLENE CONTAINING A NICKEL OR COBALT PHENOL-PHENOLATE OF A 2,2′-DIHYDROXY-4-ALKOXYBENZOPHENONE

Harold T. Smallwood, Media, Pa., and Segor Tryon, Claymont, Del., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

No Drawing. Filed Nov. 17, 1961, Ser. No. 153,190
11 Claims. (Cl. 260—45.75)

1. A composition of matter comprising solid, substantially crystalline isotactic polypropylene and a stabilizing quantity of a metal-phenol-phenolate of a 2-,2′-dihydroxy-4-alkoxybenzophenone wherein said metal is selected from the group consisting of nickel and cobalt, said alkoxy group contains between 6 and 20 carbon atoms, and the mol ratio of metal to benzophenone is about 1 to 2.

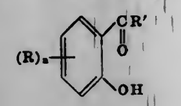
3,296,192
STABILIZATION OF POLYOLEFINS WITH NICKEL SALTS OF AROMATIC COMPOUNDS

Albert S. Matlack, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,977
8 Claims. (Cl. 260—45.75)

1. A polyolefin selected from the group consisting of polyethylene and a stereoregular homopolymer of a mono-α-olefin having at least 3 carbon atoms containing

as a light stabilizer therefor a small stabilizing amount of a nickel salt of an aromatic compound having the formula



wherein R is selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl, aralkyl, alkaryl and alkoxy radicals, R′ is selected from the group consisting of hydrogen, hydroxyl and NR″R‴ substituents wherein R″ is selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl, aralkyl, and alkaryl radicals and R‴ is selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl, aralkyl, alkaryl and $N(R'')_2$ radicals, and n is a number from 0 to 4.

3,296,193

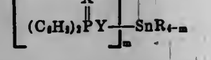
STABILIZED POLYOLEFIN COMPOSITIONS CONTAINING TIN PHOSPHINATES

Edward N. Walsh, Chicago Heights, Ill., and Adam F. Kopacki, Westwood, N.J., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Aug. 28, 1962, Ser. No. 220,036. Divided and this application Sept. 7, 1965, Ser No. 510,722

8 Claims. (Cl. 260—45.75)

1. A stabilized polyolefin composition comprising a polymer obtained by polymerizing at least one unsaturated mono-olefinic hydrocarbon monomer of 2 to 4 carbon atoms and from 0.05 to 5.0 percent by weight of the total polymer composition of a compound of the formula



wherein X and Y are selected from the group consisting of sulfur and oxygen, R is selected from the group consisting of phenyl and 1 to 12 carbon alkyl radicals, and m is a positive integer from 1 to 4.

3,296,194

STABILIZATION OF ACYLATED OR ALKYLATED POLYOXYMETHYLENES WITH TERTIARY ALKANOL AMINE ESTERS

Kuno Wagner and Hans Scheurlen, Leverkusen, and Helmuth Kritzler, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed May 24, 1960, Ser. No. 31,259

Claims priority, application Germany, June 4, 1959, F 28,611

5 Claims. (Cl. 260—45.85)

1. A composition comprising a thermally stabilized, normally solid, synthetic high molecular weight polyoxymethylene selected from the group consisting of acylated and alkylated polyoxymethylenes and a stabilizing amount of a monocarboxylic acid ester of a tertiary ethanolamine.

3,296,195

CURABLE COMPOSITION

John C. Goossens, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,265

10 Claims. (Cl. 260—46.5)

1. A composition stable under anhydrous conditions and curable to the solid, elastic state upon exposure to atmospheric moisture comprising a liquid silanol chain-stopped polydiorganosiloxane in which the organo groups are selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals and an alkoxyacyloxysilane in which the four valences of silicon are satisfied by either zero or one silicon-bonded radical selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals, at least one radical selected from the class consisting of alkoxy radicals and halogenated alkoxy radicals and at least one saturated aliphatic monoacyl radical.

9. The process for preparing a composition stable under anhydrous conditions and cuarble to the solid, elastic state upon exposure to atmospheric moisture, which comprises adding under substantially anhydrous conditions to a liquid silanol chain-stopped polydiorganosiloxane in which the organo groups are selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals, an alkoxyacyloxysilane in which the four valences of silicon are satisfied by either zero or one radical selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals, at least one radical selected from the class consisting of alkoxy radicals and halogenated alkoxy radicals and at least one saturated monovalent acyl radical.

3,296,196

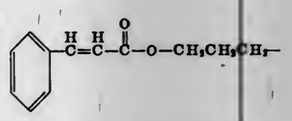
SILOXANE POLYMERS CONTAINING ALLYLCINNAMATE GROUPS

Harry F. Lamoreaux, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed June 1, 1964, Ser. No. 371,764

1 Claim. (Cl. 260—46.5)

An ultraviolet light-absorbing, film-forming composition consisting essentially of a resinous, cross-linked organopolysiloxane, comprising a plurality of cyclotetrasiloxane units joined together with silicon-ethylene-silicon linkages, with from 5 to 50% of the silicon atoms of said organopolysiloxane being linked directly to allylcinnamate radicals having the formula:



the organo groups of said organopolysiloxane being monovalent hydrocarbon radicals free of aliphatic unsaturation and being attached to silicon through silicon-carbon linkages.

3,296,197

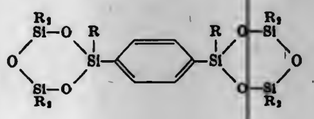
ORGANOPOLYSILOXANE COMPOSITIONS

Tse C. Wu, Waterford, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,596

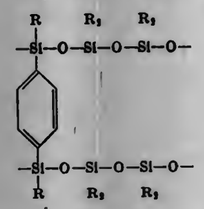
6 Claims. (Cl. 260—46.5)

1. An organopolysiloxane composition having the structure:



where R is a radical selected from the group consisting of phenyl and tolyl.

4. A cross-linked organopolysiloxane material consisting essentially of recurring units of the formula:



where R is a radical selected from the group consisting of phenyl and tolyl.

3,296,198

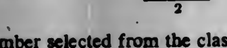
CURABLE ORGANOPOLYSILOXANE COMPOSITIONS

Robert M. Lukes, Louisville, Ky., assignor to General Electric Company, a corporation of New York

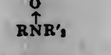
No Drawing. Filed July 19, 1965, Ser. No. 473,177

4 Claims. (Cl. 260—46.5)

1. A curable organopolysiloxane composition consisting essentially of (1) a silanol-containing organopolysiloxane having the formula:



where Q is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, and cyanoalkyl radicals, Q′ is a lower alkyl radical, a has a value of from 1.0 to 1.98, inclusive, b has a value of from 0.01 to 1, inclusive, c has a value of from 0 to 0.99, the sum of $b+c$ is from 0.01 to 1, inclusive, and the sum of $a+b+c$ is from 1.01 to 2.1, inclusive, and (2) from 0.1 to 10 percent by weight, based on the weight of said organopolysiloxane, of an amine oxide having the formula:



where R and R′ are selected from the class consisting of monovalent hydrocarbon radicals.

3,296,199

METHOD FOR MAKING ORGANOSILICON POLYMERS

Robert A. Murphy, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,311

9 Claims. (Cl. 260—46.5)

1. A method which comprises (1) mixing under substantially anhydrous conditions at a temperature between 0° C. to 200° C., (A) an aminoxy organosilicon material having two OY radicals attached to silicon by silicon-oxygen-nitrogen bonds and selected from the class consisting of a silane, a linear polysiloxane, a cyclopolysiloxane, and a bis(silyl)hydrocarbon, and (B) a hydroxy organosilicon material selected from the class consisting of (a) a silane of the formula,



and (b) a silanol-terminated polydiorganosiloxane consisting essentially of chemically combined units of the formula,



and (2) recovering from (1), an organosilicon polymer having a molecular weight greater than (A) or (B) and a ratio of from about 1.95 to 2 monovalent radicals per silicon atom selected from the class consisting of hydrocarbon radicals, halogenated hydrocarbon radicals, alkoxy radicals, triorganosiloxy radicals and cyanoalkyl radicals, where R′ is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, and cyanoalkyl radicals, G is a monovalent aryl radical, Y is a member selected from the class consisting of $-N(R'')_2$ and a monovalent heterocyclic amine, and R″ is a monovalent hydrocarbon radical.

3,296,200

EPOXIDE AZIRIDINE COMPOUNDS AND COATED ARTICLES MADE THEREFROM

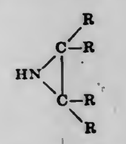
Arthur A. Sommerville, Stewart Manor, and John J. R. Luzzi, Freeport, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed May 11, 1962, Ser. No. 194,163

2 Claims. (Cl. 260—47)

1. A self-curing thermosetting compound comprising the reaction product of

(a) One molar equivalent of an imine having the structure



where R is selected from the group consisting of H, CH_3, and C_2H_5 with

(b) one molar equivalent of a diepoxide resin which is the reaction product of

(1) epichlorohydrin, and

(2) a bis(hydroxyphenyl) alkane, the thermosetting compound having approximately half as many epoxide groups as originally present in the diepoxide resin.

3,296,201

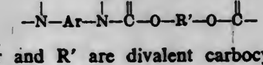
N-PHENYL AROMATIC POLYMERS

Curtis Wayne Stephens, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 8, 1962, Ser. No. 236,393

7 Claims. (Cl. 260—47)

1. A fiber-forming nitrogen-containing linear condensation polymer consisting essentially of the following recurring structural units:



wherein Ar and R′ are divalent carbocyclic aromatic radicals and R is a monovalent carbocyclic aromatic radical.

3,296,202

PROCESS FOR CURING POLYEPOXIDES

Robert Schmitz-Josten, Cologne-Stammheim, and Rolf Kubens, Gunter Frank, and Richard Wegler, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 16, 1963, Ser. No. 273,317

Claims priority, application Germany, May 11, 1962, F 36,777

8 Claims. (Cl. 260—47)

1. A process for producing a cured product which comprises heating to a temperature between 50° C. and

280° C. a mixture of a 1,2-polyepoxide having a polyepoxide equivalency between 0.1 and 2.0 and at least one curing agent selected from the group consisting of 3-methyl-hexahydrophthalic anhydride and 4-methyl-hexahydrophthalic anhydride, said mixture containing 0.6 to 1.2 mols of said curing agent per mol of epoxy group present in said polyepoxide.

3,296,203

PRODUCTION OF DEPOLYMERIZATES FROM POLYMERS CROSS-LINKED BY S(Se, Te) HALIDES

Lev Akobjanoff, 2726 Hillegass Ave., Berkeley, Calif. 94705

No Drawing. Filed May 8, 1961, Ser. No. 108,276
15 Claims. (Cl. 260—48)

1. A process for depolymerizing polymers which comprises:

(a) Reacting an organic monomer containing at least two unsaturated constituents, said monomer being selected from the group consisting of ethylenically unsaturated organic monomers, acetylenically unsaturated organic monomers, organic monomers containing unsaturated oxygen linkages and organic monomers containing unsaturated nitrogen linkages with exactly one half equivalent per equivalent of monomeric unsaturation of a member selected from the group consisting of sulfur halides, selenium halides, and tellurium halides to form an exhaustively cross-linked polymer.

(b) Depolymerizing said exhaustively cross-linked polymer by further reaction with additional quantities of said halides beyond the requirements for exhaustive cross-linking to produce by the splitting of said cross-links unilaterally bound highly reactive halide side chains.

3,296,204

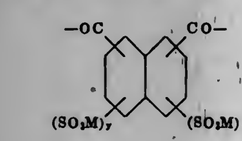
SULFONATED POLYAMIDES

John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

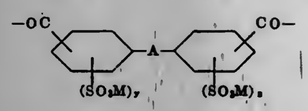
No Drawing. Filed Feb. 20, 1962, Ser. No. 174,392
6 Claims. (Cl. 260—49)

1. A polyamide comprised of

(A) recurring structural units having the structure



or



wherein M is an alkali metal; y and z are 0 or 1, the sum of y and z being at least 1; and A represents a direct bond, —O—, —CH_2—, —O—CH_2—CH_2—O— or



and

(B) recurring structural units having the structure

—HR—R_2—NH—

wherein R_2 is selected from the group consisting of divalent aliphatic radicals, divalent alicyclic radicals, and divalent aromatic radicals.

wherein R and R′ are members of the group consisting of

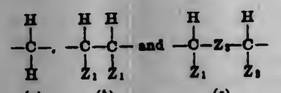
(i) lower alkyl radicals,

(ii) lower alkyl radicals bearing polar substituents which do not tend to condense with formaldehyde, and

(iii) alkylene radicals which form with the C-atom in position 5 of the hydantoin nucleus a five- to six-membered saturated ring,

while Y is a divalent organic radical of the group consisting of

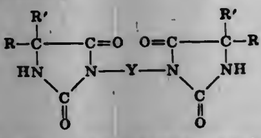
(iv) the divalent radicals embraced by the three formulas



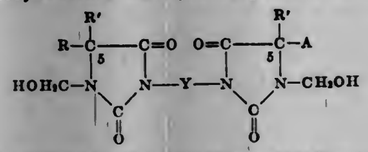
wherein Z_1 and Z_2 are members of the group consisting of hydrogen and monovalent organic radicals which are free of substituents that are reactive toward hydantoin-ring nitrogen and also of substituents and structures which tend to condense with formaldehyde, while Z_2 is a divalent organic radical which is free of the aforesaid substituents and structures, and

(v) the divalent radicals embraced by Formulas *b* and *c* above but wherein Z_1 and Z_2 are bonded together to form a divalent organic radical which is free of the aforesaid substituents and structures.

9. The process of producing a linear condensation polymer which comprises reacting formaldehyde at a temperature from about 50° C. to about 90° C. and in the presence of a basic catalyst, with a bishydantoin compound of the formula



wherein R, R′ and Y have the same meaning as in claim 1, whereby to form a dimethylol compound of the formula



(R, R′ and Y having the same meaning as above), isolating and purifying said dimethylol compound and then heating the same at a temperature above 160° C. and up to about 260° C. in the presence of an acid catalyst, whereby to eliminate water and formaldehyde, with formation of a linear polymeric chain.

3,296,205

POLYMERIZATION OF GASEOUS FORMALDEHYDE

Ernest-Ulrich Köcher, Leverkusen, and Fritz Kolb, Odenthal-Buchmuhle, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed July 2, 1963, Ser. No. 292,373
Claims priority, application Germany, July 16, 1962, F 37,322
7 Claims. (Cl. 260—67)

1. In the process of polymerizing gaseous formaldehyde by contacting a fluidized bed of polyoxymethylene at a temperature of about 0° C. to about 100° C. with a continuous current of a gaseous feed stream containing formaldehyde in the presence of a formaldehyde polymerization catalyst, the improvement which comprises interrupting the continuous flow of said feed stream at a frequency of from 0.1 to 1000 times per second while maintaining said bed as a fluidized bed.

3,296,206

COPOLYMERS OF ACETALS

Claus Schott, Hofheim am Taunus, and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,824
Claims priority, application Germany, Apr. 28, 1962, F 36,669
1 Claim. (Cl. 260—67)

A solid, thermally stable and oxidation resistant copolymer consisting of 99 to 80 percent by weight of oxymethylene units and 1 to 20 percent by weight of units derived from thiodiglycolformal.

3,296,207

PROCESS FOR THE PRODUCTION OF POLYFORMALS OF β-HYDROXYALKYL-ISOCYANURATES AND PRODUCTS THEREOF

Richard W. Cummins, Rahway, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,043
5 Claims. (Cl. 260—67.5)

1. A water-insoluble thermoplastic linear polymer composition which consists essentially of the reaction product of a compound selected from the group consisting of bis-(β-hydroxyalkyl) isocyanurates and tris-(β-hydroxyalkyl) isocyanurates in which the alkyl radical of each member of the group contains from two to three carbon atoms and formaldehyde, said reaction product being formed at from about 50–160° C., said compound selected from said group being present in the ratio of about one mole per mole of said formaldehyde.

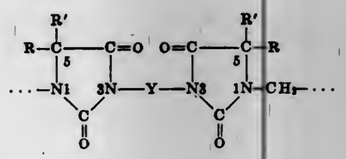
3,296,208

HYDANTOIN PRODUCTS AND PROCESSES FOR THE PREPARATION THEREOF

Arthur O. Rogers, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 8, 1963, Ser. No. 257,000
13 Claims. (Cl. 260—67.5)

1. A linear condensation polymer comprising recurring units of the structure



3,296,209

COPOLYMERIZATION PRODUCTS OF CARBONYL COMPOUNDS AND CYCLIC IMINES AND PROCESSES OF MAKING SAME

Herman F. Mark, Brooklyn, N.Y., assignor to Chemirad Corporation, Brunswick, N.J., a corporation of Delaware

Filed July 21, 1966, Ser. No. 568,702
11 Claims. (Cl. 260—67.5)

1. A high molecular weight copolymerization product of an aldheyde and a cyclic imine, having the formula:

$$[CRH(CH_2)_nCHR'NH(CHR—O)_y]_z$$

where R and R′ are selected from the class consisting of hydrogen, lower alkyl radicals, phenyl radicals, and substituted alkyl and phenyl radicals; n is a number from 0 to 4, y is a number from 1 to 199, and z is at least 32, said copolymerization product having a molecular weight of at least 10,000.

6. In the process of producing a copolymerization product of an aldehyde and a cyclic imine, the steps which comprise reacting a high purity aldehyde and a high purity cyclic imine in an organic solvent inert to the reactants under the conditions of reaction, at a temperature between about −80° C. and +80° C. in the presence of an anionic catalyst selected from the class consisting of alkyl lithium, aryl lithium, alkyl aluminum, and lithium aluminum hydride, until said copolymerization is completed, and recovering the copolymerization product.

3,296,210

COPOLYMERS OF TRIOXAN WITH ALLYL ESTERS AND PROCESS FOR THEIR PRODUCTION

Walter Wilson, Northfield, Birmingham, and Herbert May, Edgbaston, Birmingham, England, assignors to British Industrial Plastics Limited, London, England, a company incorporated of the United Kingdom

No Drawing. Filed May 18, 1962, Ser. No. 195,996
Claims priority, application Great Britain, May 26, 1961, 19,197/61
16 Claims. (Cl. 260—73)

1. A process for the preparation of a polymeric product in which the majority of the units are CH_2O units which consists essentially in reacting trioxan with an allyl ester under substantially anhydrous conditions and in the presence of an electrophilic catalyst, in the range by weight of trioxan from 99.5 to 80% and allyl ester from 0.5% to 20%.

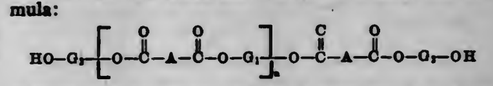
3,296,211

HYDROXY-TERMINATED POLYESTERS

Joseph Winkler, Sacramento, and Eugene A. Bratoeff, Rancho Cordova, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Nov. 1, 1961, Ser. No. 151,139
16 Claims. (Cl. 260—75)

1. A hydroxy-terminated polyester having the formula:



wherein n is an integer ranging from about 2 to about 50, A is a divalent hydrocarbon radical selected from the group consisting of aliphatic and cycloaliphatic alkylene and cycloalkylene radicals containing from 0 to about 34 carbon atoms, G_1 and G_2 are divalent radicals selected from the group consisting of aliphatic hydrocarbon radicals and oxyaliphatic radicals consisting of carbon, hydrogen and oxygen, and G_2 is bonded to the terminal hydroxy group through a bond to a secondary carbon atom.

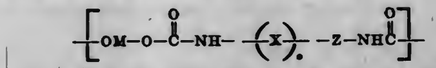
3,296,212

POLYESTERURETHANE FIBERS

J. W. Britain, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

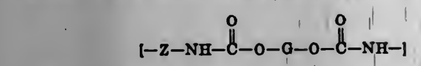
No Drawing. Filed Aug. 28, 1962, Ser. No. 220,053
13 Claims. (Cl. 260—75)

1. A thread forming polyurethane polymer which comprises structural units having the formula:



wherein O—M—O is a bivalent radical resulting from removal of the terminal hydrogen atoms from an hydroxyl polyester having a molecular weight of at least about 600 and prepared by the process which comprises reacting a mixture of at least two saturated aliphatic glycols having primary hydroxyl groups and from 2 to 6 carbon atoms

in the chain between hydroxyl groups with a difunctional aliphatic dicarboxylic acid having from 4 to 10 carbon atoms; X is a radical having the formula:



wherein Z is an aromatic radical and O—G—O is a bivalent radical resulting from the removal of the terminal hydrogen atoms from a primary straight chain aliphatic diol having from about 2 to about 10 carbon atoms between hydroxyl groups and n is at least 2, the ratio of Z to the sum of M and G being from about 1.02 to about 1.08.

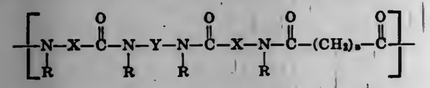
3,296,213

AROMATIC-ALIPHATIC COPOLYAMIDES

Jack Preston, Raleigh, N.C., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 19, 1963, Ser. No. 288,885
14 Claims. (Cl. 260—78)

1. An aromatic aliphatic ordered copolyamide composed of recurring structural units of the formula



wherein R is selected from the group consisting of hydrogen and lower alkyl, X and Y represent divalent aromatic hydrocarbon radicals containing up to 10 carbon atoms, wherein X may and Y must exhibit at least one plane of symmetry, and wherein n is an integer of from 0 to 10 carbon atoms.

3,296,214

PIPERIDINE-N-ACETIC ACID MODIFIED POLYAMIDES OF IMPROVED DYEABILTY

Oscar A. Pickett, Jr., Chapel Hill, N.C., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,400
5 Claims. (Cl. 260—78)

1. A fiber-forming synthetic linear polycarbonamide having recurring amide groups as an integral part of the main polymer chain, and wherein said groups are separated by at least two carbon atoms, which comprises the product obtained by reacting at a temperature between 180° C. and 300° C., a polyamide-forming composition selected from the group consisting of (a) a polymerizable monoaminomonocarboxylic acid, and (b) substantially equimolecular proportions of a dibasic carboxylic acid and a diamine in the presence of piperidine-N-acetic acid in an amount of from 0.1 to 2.5 mole percent based on said polyamide-forming composition.

3,296,215

SYNTHETIC LINEAR POLYCARBONAMIDES HAVING AN IMPROVED RECEPTIVITY FOR ACID DYES

Lawrence Worth Crovatt, Jr., Raleigh, N.C., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,589
9 Claims. (Cl. 260—78)

1. A fiber-forming synthetic linear polycarbonamide exhibiting improved dye receptivity and having recurring amide groups as an integral part of the main polymer chain, and wherein said groups are separated by at least 2 carbon atoms, which comprises the product obtained from reactants comprising (A) a polyamide-forming composition consisting of substantially equimolecular proportions of a dicarboxylic acid of the formula

HOOCRCOOH

wherein R is a divalent hydrocarbon radical having a chain length of at least 2 carbon atoms, and a diamine of the formula $NH_2(CH_2)_nNH_2$ wherein n is an integer of at least 2; (B) from 0.5 to 10 weight percent of a compound selected from the group consisting of pentaerythritol and oligomers thereof; (C) from 0.1 to 1.0 weight percent of benzene phosphinic acid; (D) from 0.1 to 2.0 weight percent of N-aminoethyl piperazine; and (E) from 0.1 to 5.0 weight percent of epsilon-caprolactam.

3,296,216

NYLON COMPOSITION HAVING ENHANCED DYEABILITY

Rupert J. Snooks, Jr., Gulf Breeze, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 16, 1964, Ser. No. 360,433
5 Claims. (Cl. 260—78)

1. A polyhexamethylene adipamide filament having incorporated therein on a weight basis:

(a) about 0.05–1.0 percent phenylphosphinic acid,

(b) about 0.05–1.0 percent N-(2-aminoethyl) piperazine, and

(c) about 0.5–12.0 percent E-caprolactam.

3,296,217

CONTINUOUS POLYMERIZATION PROCESS FOR POLYAMIDE PREPARATION

John E. Tate, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed June 1, 1964, Ser. No. 371,421
2 Claims. (Cl. 260—78)

1. A process for the preparation of polymeric hexamethylene adipamide from a precursory aqueous salt solution comprising the steps of:

(a) gravitationally flowing said aqueous salt solution as a thin annular film on the inner surface of a plurality of vertical tubes through a first zone at a pressure of from 90 to 130 pounds p.s.i.g. and at a temperature of from 195 to 240° C. for a period of from 1 to 10 minutes, thus removing substantially all of the water of solution;

(b) gravitationally flowing the substantially non-aqueous salt solution from step (a) as an annular film on the inner surface of a plurality of vertical tubes through a second pre-polymer forming zone at a pressure of from 90 to 130 p.s.i.g. and at a temperature of from 250 to 300° C. for a period of from 1 to 15 minutes to produce a pre-polymer having a viscosity of between 3 to 20 relative viscosity units;

(c) rectifying water and hexamethylenediamine evolved from said first zone and said second zone in a rectification zone communicating with said first zone and said second zone and controlling the concentration of hexamethylenediamine in both said first zone and said second zone to maintain a $COOH/NH_2$ polymer end group ratio of about 0.6 to 1.6; and

(d) finishing said pre-polymer to a polymer in a heated polymer finishing zone to produce a polymeric hexamethylenediamine adipate having fiber forming properties.

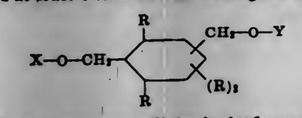
3,296,218

PREPARATION OF POLYAMIDES FROM SUBSTITUTED DIPRIMARY ALCOHOLS, ETHERS OR ESTERS AND DINITRILES

Floyd L. Ramp, West Richfield, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 13, 1965, Ser. No. 487,083
6 Claims. (Cl. 260—78)

1. A process for preparing a fiber forming linear polyamide which comprises reacting substantially equimolar amounts of at least one monomer having the structure



wherein R are saturated aliphatic hydrocarbon groups having from 1 to 12 carbon atoms, X and Y are members selected from the class consisting of hydrogen, aliphatic hydrocarbon groups having from 1 to 12 carbon atoms and



wherein R_1 are hydrocarbon groups having from 1 to 11 carbon atoms and at least one dinitrile that is free of other reactive groups in a medium of strong acid and in the presence of water until a polymer of the desired molecular weight is obtained.

3,296,219

ACID TREATMENT OF POLYESTER RESINS CONTAINING ALKYLENE OXIDE

Charles W. Jacoby, Morristown, Forrest W. Tubbs, Wharton, and Thomas C. Wilson, Morris Plains, N.J., and Orrin D. Storm, Toledo, Ohio, assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 18, 1963, Ser. No. 309,890
8 Claims. (Cl. 260—78.4)

1. In the process which comprises reacting a dicarboxylic acid or anhydride component containing at least 10 mol percent maleic acid or anhydride with ethylene oxide, propylene oxide, butylene oxides or mixtures thereof in the presence of an alkali metal hydroxide or alkaline earth metal hydroxide catalyst to obtain a polyester product and thereafter heat treating said polyester product, the improvement which comprises adding a sufficient amount of phosphoric acid to neutralize said catalyst prior to said heat treatment.

8. A process as defined in claim 1 wherein additional alkali oxide is added after said heat treatment in an amount sufficient to reduce the acid number of said polyester product to within the range of 10 to 40 and said polyester product is mixed with from 20 to 50% by weight of the total composition of a polymerizable monomer having at least one $CH_2=C<$ group.

3,296,220

PRODUCTION OF POLYMERS OF ETHYLENICALLY UNSATURATED MONOMERIC COMPOUNDS

Ernst-Guenther Kastning, Assenheim, Pfalz, Herbert Naarmann and Christoph Berding, Ludwigshafen (Rhine), and Hermann Reis, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 15, 1963, Ser. No. 302,476
Claims priority, application Germany, Aug. 25, 1962, B 68,568
6 Claims. (Cl. 260—78.5)

1. A process for the production of polymers of ethylenically unsaturated monomeric polymerizable compounds wherein the ethylenically unsaturated monomeric compound is contacted with a catalyst consisting essentially of the following components:

(a) a metal chelate compound of a metal selected from Groups IVB, VA, VB, VIB, VIIB and VIII of the Periodic System of Elements and a member selected from the group consisting of β-diketone, β-ketocarboxylic ester, ester of diacetoacetic acid, amino acid having two to six carbon atoms, salicylaldehyde, chloromalonodialdehyde, o-aminophenol, o-aminobenzoic acid and 2,2'-hydroxyazobenzene and

(b) a member selected from the group consisting of an aliphatic, aromatic and heterocyclic chlorine, bromine and iodine compound having one to twelve carbon atoms, and wherein component (a) is present in an amount of between 0.001 and 5% by weight with reference to the monomeric compounds, and wherein component (b) is present in the amount of from 0.01 to 50 parts by weight to 1 part of component (a).

3,296,221

MERCAPTO-SUBSTITUTED THIO-PHOSPHITES AND PHOSPHATES AND POLYSULFIDE POLYMERS THEREOF

James W. Stanley, Jr., Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 13, 1963, Ser. No. 280,074
11 Claims. (Cl. 260—79)

1. A method for preparing a polysulfide polymer, which comprises reacting a dimercaptan with a mercapto-substituted thio-phosphite, having the structure $(HSRS)_3P$ wherein R is an organo radical having 1 to 20 carbon atoms per molecule, said mercapto-substituted thio-phosphite having been prepared by reacting a dimercaptan with phosphorus trichloride.

8. A method for preparing a polysulfide polymer, which comprises reacting a dimercaptan with a mercapto-substituted thio-phosphate, having the structure

$$(HSRS)_3P{=}O$$

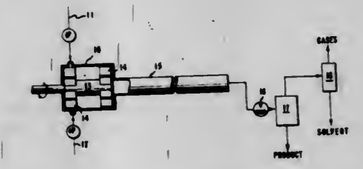
prepared by oxidizing a mercapto-substituted thio-phosphite having the structure $(HSRS)_3P$ prepared by reacting a dimercaptan with phosphorus trichloride.

3,296,222

PROCESS FOR CONTINUOUSLY CHLOROSULFONATING POLYETHYLENE AT HIGHER TEMPERATURES

Stanley Dixon, Hemel Hempstead, England, Royce Elton Ennis, Beaumont, Tex., James Kalil, Brandywine Hundred, Del., and Louis Henry Knabeschuh, Beaumont, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 27, 1963, Ser. No. 333,963
7 Claims. (Cl. 260—79.3)



1. A process for continuously chlorosulfonating polyethylene which comprises (1) rapidly mixing chlorine and sulfur dioxide in a mixer with an inert volatile solvent solution of polyethylene to a homogeneous mixture at a temperature of from about 85° to 105° C. and sufficient pressure to maintain all components in the liquid phase, (2) passing said mixture from said mixer into a reaction vessel, before more than about ⅓ of the chlorine has reacted during mixing, said vessel being maintained at a temperature of from about 90° to 250° C. and sufficient pressure to maintain all components in the liquid phase, the temperature of said mixture being above about 140° C. prior to arresting the reaction, and (3) arresting the reaction before all the chlorine has reacted by passing said mixture to a chamber of lower pressure wherein the unreacted chlorine and sulfur dioxide are evaporated.

3,296,223
VULCANIZATION OF CHLOROPRENE POLYMERS USING A MIXTURE OF A THIOACETAMIDE AND A GUANIDINE

James Richard Wolfe, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 10, 1961, Ser. No. 151,447
2 Claims. (Cl. 260—79.5)

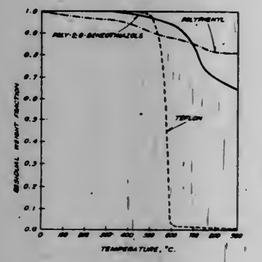
1. A vulcanization accelerator for chloroprene polymers which improves the tensile properties, in which accelerator the active component comprises (I) 1 part by weight of N-butyl-1-(1-butyl-5-thioxo-2-pyrrolidyl)thioacetamide and (II) 0.2 to 5 parts by weight of a 1,3-diarylguanidine in which the aryl radical is selected from the group consisting of phenyl and o-tolyl.

2. In a process for vulcanizing chloroprene polymers in the presence of about 0.2 to 5 parts of N-butyl-1-(1-butyl-5-thioxo-2-pyrrolidyl)thioacetamide per 100 parts of chloroprene polymer, the improvement of increasing the tensile strength by the incorporation into said polymer before vulcanization of 0.2 to 5 parts of a diarylguanidine, per part of N-butyl-1-(1-butyl-5-thioxo-2-pyrrolidyl) thioacetamide, in which diarylguanidine the aryl radical is selected from the group consisting of phenyl and tolyl.

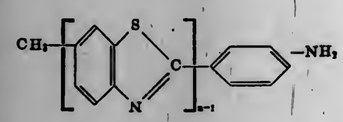
3,296,224
POLYBENZOTHIAZOLE PREPARATION

Philip E. Brumfield, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Mar. 29, 1963, Ser. No. 269,075
5 Claims. (Cl. 260—79.7)



1. A method of making a polybenzothiazole exhibiting excellent thermal stability at temperatures exceeding 600° C. comprising reacting at a temperature of 200–400° C. an amino compound of the formula:



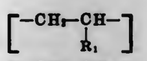
wherein *n* has a value of 1–3, with 3.5 to 6.5 moles of sulfur per mole of said amino compound in the presence of an anhydrous mixture of sodium and potassium polysulfides, said mixture comprising 0.5–2 parts by weight sodium polysulfide per part potassium polysulfide and being present in an amount of 2–20 parts by weight per part of said amino compound, and separating the polybenzothiazole thus formed from the reaction mixture.

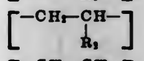
3,296,225
FUNCTIONAL POLYMERS CONTAINING PENDANT ACYLOXY GROUPS AND PROCESS FOR PREPARING SAME

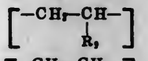
Roy Worrall, Newport, England, assignor to Monsanto Chemicals Limited, London, England, a British company

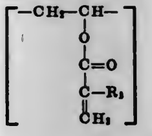
No Drawing. Filed Dec. 21, 1962, Ser. No. 246,355
Claims priority, application Great Britain, Dec. 21, 1961, 45,832/61
8 Claims. (Cl. 260—80.5)

1. An interpolymer consisting of a plurality of recurring structural groups corresponding to the following structural formulae

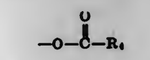
(A) 

(B) 

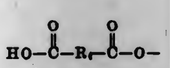
(C) 

(D) 

wherein Formula A comprises 25 to 95 molar percent, Formula B comprises zero to 70 molar percent; Formula C comprises zero to 70 molar percent and Formula D comprises 1.0 to 20 molar percent, the total of Formulae A, B, C and D being 100 molar percent; and wherein R_1 is selected from the group consisting of hydrogen, phenyl and alkyls of from 1 to 2 carbon atoms; R_2 is selected from the group consisting of hydroxyl and hydroxy methylene; R_3 is selected from the group consisting of



and



wherein R_4 is a hydrocarbon residue of from 1 to 12 carbon atoms and R_5 is selected from the group consisting of hydrogen and alkyls of from 1 to 4 carbon atoms.

3,296,226
PROCESS FOR PREPARING ACRYLONITRILE/BUTADIENE/UNSATURATED ACID TERPOLYMER WITH AN AZOBISBUTYRONITRILE/FERRIC SALT CATALYST

Robert H. McCoy, Jr., New Haven, and Richard D. Gilbert, Cheshire, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 28, 1964, Ser. No. 392,836
4 Claims. (Cl. 260—80.7)

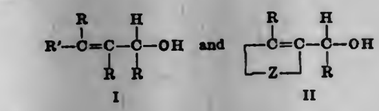
1. An improved method of interpolymerizing from about 60 to 95 parts by weight of a butadiene, from about 1 to 39 parts by weight of an ethylenically unsaturated acid, and from about 1 to 39 parts by weight of an acrylonitrile in aqueous emulsion to form a liquid rubber interpolymer, said polymerization being effected in the presence of a cationic emulsifier, azo bis(isobutyronitrile), a mercaptan modifier, and an inorganic, water soluble ferric salt in an amount of from about 0.001 to 0.1 part by weight per 100 parts of monomers, and short stopping said polymerization at a conversion of from about 40% to 80%.

3,296,227
PRODUCTION OF DIENE POLYMERS WITH A RHODIUM NITRATE CATALYST IN A 2-ETHYLENIC ALCOHOL AS DILUENT

John E. Burleigh and Samuel R. Collins, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

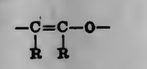
No Drawing. Filed June 3, 1963, Ser. No. 284,830
18 Claims. (Cl. 260—82.1)

1. A method for polymerizing a conjugated diene selected from the group consisting of 1,3-butadiene, isoprene, and mixtures thereof, which comprises the step of contacting said diene under polymerization conditions with a rhodium nitrate catalyst in the presence of a diluent selected from the group consisting of 2-ethylenic alcohols having a formula selected from the group consisting of



I II

wherein:
the total number of carbon atoms in the molecule is in the range of from 3 to 10 inclusive;
each R is selected from the group consisting of a hydrogen atom, and an alkyl radical;
R′ is selected from the group consisting of a hydrogen atom, alkyl, cycloalkyl, alkylcycloalkyl, aryl, aralkyl, and alkaryl radicals;
and Z is a bivalent



radical wherein R is as defined above.

3,296,228
PROCESS FOR THE PRODUCTION OF ACRYLONITRILE SYRUP

Edward Noonan Squire, Glen Mills, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 24, 1962, Ser. No. 212,116
28 Claims. (Cl. 260—82.3)

1. A process of producing a polymer-in-monomer solution of acrylonitrile having a predetermined viscosity at 24° C. of from 0.1 poise to that of a gel and a polymer concentration of 1.0 to 60% which comprises:
(a) mixing acrylonitrile monomer and at least one solubilizing monomer, the amount of solubilizing monomer in the mixture being from 1 to 25 mole percent of the mixture,
(b) adding an amount of free radical producing initiator sufficient to polymerize the mixture to a predetermined viscosity as measured at 24° C. within the range of 0.1 poise to that of a gel,
(c) polymerizing said mixture to form a polymer-in-monomer solution, and
(d) stopping the polymerization reaction when the viscosity reaches the predetermined viscosity.

3,296,229
3-NORTRICYCLYLACETIC ACID AND DERIVATIVES THEREOF

David J. Trecker and Joseph P. Henry, South Charleston, and John W. Lynn, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 24, 1964, Ser. No. 347,003
9 Claims. (Cl. 260—85.5)

2. A normally-solid polymer of vinyl 3-nortricyclylacetate.

3,296,230
PROCESS FOR MAKING HEAT-STABLE HYDROXYL-CONTAINING VINYL POLYMER

George Gateff and James W. Summers, Lakewood, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,529
15 Claims. (Cl. 260—87.1)

1. A process for producing a heat-stable hydroxyl-containing polymer comprising the steps of (A) forming a suspension of a copolymer of essentially 51 to 95% by weight of vinyl chloride and 5 to 49% by weight of vinyl acetate in particulate form in a liquid, substantially anhydrous reaction medium comprising (a) a lower aliphatic alcohol containing from 1 to 4 carbon atoms and (b) an organic solvent that swells the copolymer, said solvent present in an amount insufficient to change the particulate characteristics of the suspension, said reaction medium containing in admixture an iron salt capable of forming ferric hydroxide when contacted with a strong base, said iron salt being present in an amount sufficient to provide from about 20 to about 1000 parts of iron per million parts by weight of said copolymer; adding a strongly basic material to said suspension and maintaining said suspension in the substantial absence of oxygen at from 35° C. to 55° C. for a period of time sufficient to convert at least about 40% of the acetate groups of said copolymer to hydroxyl groups; (B) chlorinating the resulting hydroxyl-containing polymer in said suspension at a pH of about 6 to 9 in the presence of oxygen at a temperature of from about 5° C. to 45° C.; and (C) separating the polymer from the reaction medium.

3,296,231
LIQUID PHASE PROCESS FOR THE PRODUCTION OF ETHYLENE/N-VINYLLACTAM COPOLYMERS

Raoul Resz and Herbert Barti, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed May 6, 1964, Ser. No. 365,516
Claims priority, application Germany, May 9, 1963, F 39,691
5 Claims. (Cl. 260—88.1)

1. A liquid phase process which comprises polymerizing ethylene and N-vinyllactam in proportions of 10:90 to 95:5 at pressures of 20 to 2500 atmospheres and at temperatures of 30 to 250° C. in an organic solvent reaction medium in which ethylene is soluble in an amount of at least 5% by weight.

3,296,232
COPOLYMERS OF 1-BUTENE AND 1-HEXENE

James W. Cleary, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,153
5 Claims. (Cl. 260—88.2)

1. A copolymer formed by contacting under polymerization conditions a monomeric mixture of 93 to 99 parts by weight of 1-butene and 1 to 7 parts of 1-hexene with an organo aluminum-reduced titanium chloride catalyst, said copolymer having a flexural modulus of at least 15,000 p.s.i. and a tensil strength of at least 3000 p.s.i. and being at least 70 percent insoluble in normal hexane at room temperature.

3,296,233

PROCESS FOR INTRODUCING SECONDARY AMINO-ALKYL GROUPS INTO CROSS-LINKED AROMATIC VINYL POLYMERS

Herbert Corte, Opladen, and Otto Netz, Cologne-Ehrenfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,791
Claims priority, application Germany, Dec. 5, 1963, F 41,481
8 Claims. (Cl. 260—88.2)

1. A process for introducing secondary aminoalkyl groups into cross-linked aromatic vinyl polymers, which comprises reacting the polymers at a temperature of about 40°–150° C. with at least about molar quantities of an N-haloalkyl-N-alkylacylamide derived from a monobasic carboxylic acid in the presence of a swelling agent and a Friedel-Crafts catalyst to form the corresponding acylamidoalkyl derivatives, and thereafter splitting off acyl groups from the latter by hydrolysis.

3,296,234

AQUEOUS PROCESS FOR POLYMERIZING ACRYLONITRILE IN THE PRESENCE OF SILVER NITRATE AND A HYDROCARBON LIQUID

Raymond J. Ehrig, Barrington, Ill., and Samuel Liebman, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed June 23, 1964, Ser. No. 377,377
1 Claim. (Cl. 260—88.7)

The process for polymerizing acrylonitrile which comprises admixing distilled deoxygenated acrylonitrile, a catalyst consisting essentially of a deoxygenated 50–75 weight percent aqueous solution of silver nitrate, in the presence of deoxygenated hexene-1 in a mole ratio of silver nitrate:acrylonitrile:hexene-1 of 0.5:1:1, while stirring under an inert atmospere at ambient temperature, thereby to polymerize the acrylonitrile.

3,296,235

COPOLYMER OF ACRYLAMIDE AND N-ALKYL ACRYLAMIDE WITH A PROPELLANT IN AEROSOL SPRAY CANS

Hans Zoebelein, Monheim, Rhineland, and Manfred Dohr, Dusseldorf-Holthausen, Germany, assignors to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed July 8, 1964, Ser. No. 381,211
Claims priority, application Germany, Feb. 16, 1960, H 38,668; May 7, 1960, H 39,372
2 Claims. (Cl. 260—89.7)

1. A composition for use as a film-forming coating and adhesive agent in aersol spray cans, consisting essentially of a solution of copolymers consisting of acrylamide and N-alkyl acrylamides wherein the alkyl substituent contains from 2 to 6 carbon atoms in lower aliphatic alcohols, in admixture with a propellant the ratio of acrylamide to N-alkyl acrylamide is from about 5.5:4.5 to 1:8.5 by weight.

3,296,236

PRODUCTION OF GRANULAR POLYVINYL ALCOHOL

Walton B. Tanner, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 31, 1962, Ser. No. 198,721
8 Claims. (Cl. 260—91.3)

1. In a process for the production of polyvinyl alcohol by the catalyzed alcoholysis of a polyvinyl ester in which a solution of the polyvinyl ester in a hydrolytic alcohol is fed to an agitated alcoholysis mixture and a slurry of polyvinyl alcohol in a solvent mixture comprising said hydrolytic alcohol and the ester of said hydrolytic alcohol with the acid residue of the polyvinyl ester is removed from said alcoholysis mixture, said alcoholysis mixture consisting essentially of said polyvinyl ester, an alcoholysis catalyst, said hydrolytic alcohol, said ester of said hydrolytic alcohol and polyvinyl alcohol, the improvement comprising feeding at least a part of said polyvinyl ester solution in intermittent portions of such size that said alcoholysis mixture thickens as each said portion after its addition to said alcoholysis mixture passes through a gel phase, each such intermittent portion being of such size and being fed at such a rate that if such rate of feed were maintained continuously said alcoholysis mixture would set up to a non-moving gelled mass, the time interval between succeeding said portions being sufficient for said alcoholysis mixture to revert to a non-thickened condition after each said portion passes through the gel phase and before the next succeding said portion passes into the gel phase, and recovering from said slurry of polyvinyl alcohol a substantially non-dusty granular polyvinyl alcohol.

3,296,237

STEREOSPECIFIC POLYMERIZATION OF OLEFINS

Alberto Coen and Paolo Parrini, Terni, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

No Drawing. Filed Oct. 23, 1962, Ser. No. 232,611
Claims priority, application Italy, Oct. 27, 1961, 19,340/61
15 Claims. (Cl. 260—93.5)

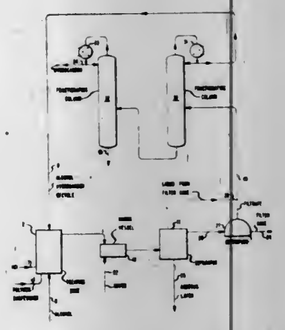
1. A process for the stereospecific polymerization of olefins to high molecular weight polymers having a stereoregular structure, which comprises polymerizing at least one monomer of an olefin having more than 2 carbon atoms in the presence of a catalytic system comprising (a) at least one metalloalkylalkenyl compound of a metal selected from the group consisting of Groups II and III of the Mendeleeff Periodic Table wherein all of the valences of the metal are satisfied by alkyl and alkenyl radicals and (b) at least one transition metal compound selected from the group consisting of $TiCl_3$, VCl_3, and mixtures thereof.

3,296,238

POLYMERIZATION PROCESS

Franciscus J. F. van der Plas, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 23, 1962, Ser. No. 232,488
Claims priority, application Netherlands, Nov. 1, 1961, 270,917
3 Claims. (Cl. 260—93.7)



1. In a process for the production of solid polyolefins by contact of a monoolefin of from 2 to 3 carbon atoms per molecule with a catalyst comprising a halide of titanium and an aluminum alkyl compound, in which polymer is recovered from the reaction zone in finely divided form suspended in alkane of from 3 to 8 carbon atoms per molecule, the improvement which comprises

(a) adding to said polymer suspension from 0.05% to 1% by weight of hydrogen chloride and from 0.5 to 4% by volume of an alkanol of from 4 to 5 carbon atoms per molecule,
(b) agitating the resulting mixture at a treating temperature of from 15° to 150° C.,
(c) providing thorough contact of the treated mixture with from 1 to 5 percent by volume of added water, at a temperature of from 15° to 150° C.,
(d) settling the mixture,
(e) separating and removing the aqueous layer,
(f) separating solid polymer from the non-aqueous layer,
(g) recovering an azeotrope of alkane and alcohol, free of contaminants, from the remaining non-aqueous liquid by distillation, and
(h) recycling said azeotrope to said polymer suspension in step (a).

3,296,239

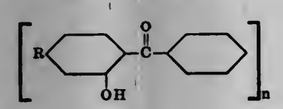
BLENDING OF POLYPROPYLENE WITH NICKEL ORGANIC COMPOUNDS TO IMPROVE DYEABILITY

Gabriel Karoly, Elizabeth, Robert I. McDougall, Newark, and Albin F. Turbak, New Providence, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 1, 1963, Ser. No. 255,668
3 Claims. (Cl. 260—93.7)

1. A composition of matter consisting of a poly alpha olefin blended with .05 to 5.0 weight percent of a nickel organic compound selected from the class consisting of:

(1) nickel derivatives of beta keto esters of the formula $R—CO—CH_2—COOR'$, where R is a C_1–C_{10} hydrocarbon and R' is a C_1–C_{20} organic radical
(2) nickel derivatives of aryl ketones of the formula



wherein *n* varies between 1 and 2, R is selected from the class consisting of C_1–C_{10} alkyl or alkoxy groups, and the remaining ring carbons may be substituted with halogen atoms.

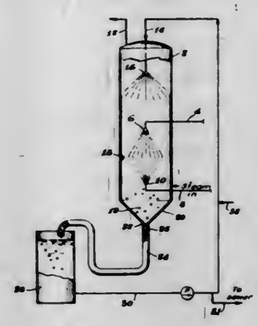
3,296,240

RECOVERY OF α-OLEFIN POLYMERS FROM SOLUTION

Stephen R. MacDonald and Robert L. Dostal, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 3, 1963, Ser. No. 277,826
5 Claims. (Cl. 260—93.7)

1. Continuous process for recovery of solvent-soluble α-olefin polymers from the solution thereof in volatile liquid solvents therefor by introducing a solution of an α-olefin polymer in a volatile liquid solvent therefor by spraying the same into a stripping zone defined by solid wall surfaces, spraying steam into the stripping zone in flow countercurrent to the flow of the polymer solution, introducing into the stripping zone and flowing over the interior surfaces of the walls defining said zone a non-solvent liquid which is immiscible with either the polymer or the solvent contained in the starting polymer solution, contacting the solution of the solvent-soluble polymer in solvent therefor with the steam to volatilize the solvent and precipitate the polymer, withdrawing a mixture of steam and vapors of the solvent from the stripping zone,



and withdrawing a mixture of the polymer and the non-solvent liquid from the stripping zone.

3,296,241

RECOVERY AND POLYMERIZATION OF HYDROCARBON MONOMER

Donald E. Berger, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 20, 1962, Ser. No. 217,792
17 Claims. (Cl. 260—94.2)

1. A process for polymerizing a conjugated diene hydrocarbon monomer containing from 4 to 10 carbon atoms per molecule comprising introducing a stream comprising said hydrocarbon monomer and other hydrocarbons into an extractive distillation zone, contacting said stream in said extractive distillation zone with a selective, hydrocarbon, polymerization solvent, withdrawing from said extractive distillation zone a solvent stream rich in said hydrocarbon monomer, contacting said solvent stream rich in said hydrocarbon monomer with a suitable polymerization catalyst under polymerization reaction conditions, and recovering the resulting polymer from the polymerization reaction effluent, said selective, hydrocarbon, polymerization solvent being substantially inert with respect to said polymerization catalyst and said hydrocarbon monomer and possessing selective absorption for said hydrocarbon monomer in comparison to said other hydrocarbons.

3,296,242

METAL-ACYLOXY COMPOUNDS AND METHOD OF PREPARING SAME

John H. W. Turner, Chapel-en-le-Frith, Eric W. Downs, Hyde, and Samuel E. Harson, Culcheth, near Warrington, England, assignors to Hardman & Holden Limited, Manchester, England, a British company

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,396
Claims priority, application Great Britain, Feb. 23, 1962, 7,091/62
9 Claims. (Cl. 260—105)

1. A metal-organic compound which contains at least one trivalent element selected from the group consisting of aluminum and boron; at least one divalent member selected from the group consisting of magnesium, calcium, strontium, barium, zinc, cadmium, iron, cobalt, nickel, lead, copper, manganese and the zirconyl radical, the divalent and trivalent atoms being linked through oxygen atoms; and there being at least one acyloxy radical attached to a divalent metal and any residual valences of the trivalent element being satisfied by radicals selected from the group consisting of acyloxy and alkoxy radicals.

3,296,243
PROCESS FOR THE PRODUCTION OF SER⁴-ILE⁸-OXYTOCIN AND INTERMEDIATES THEREIN

Albert Jöhl, Basel, Switzerland, Albert Hartmann, Grenzach, Germany, and Hans Rink, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,772
Claims priority, application Switzerland, Mar. 30, 1962, 3,863/62
21 Claims. (Cl. 260—112.5)

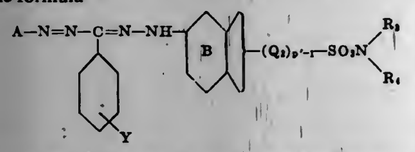
1. L-cysteinyl-L-tyrosyl-L-isoluecyl-L-seryl-L - asparaginyl-L-cysteinyl-L-prolyl-L-isoleucyl-glycinamide.

3,296,244
COBALT-CONTAINING FORMAZANE DYESTUFFS

Fabio Beffa, Basel, Paul Lienhard, Riehen, and Eginhard Steiner, Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,898
Claims priority, application Switzerland, Oct. 3, 1962, 11,615/62, 11,616/62
17 Claims. (Cl. 260—145)

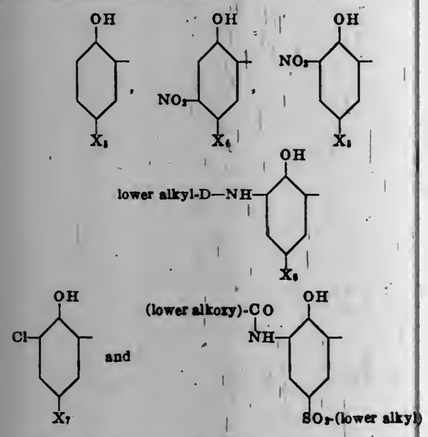
1. A 1:2 cobalt metal complex dyestuff of a formazane of the formula



wherein each of R_3 and R_4 is a member selected from the group consisting of hydrogen, lower alkyl, cyano-lower alkyl, hydroxy-lower alkyl and lower alkoxy-lower alkyl;

Q_2 is a member selected from the group consisting of phenylenesulfonyl, N-phenylene-aminosulfonyl, and N-lower alkyl-N-phenylene-sulfonyl, said member being linked via its sulfonyl moiety to the ring B;

A is a member selected from the group consisting of the radicals of the formulas



X_3 being a member selected from the group consisting of nitro, chloro, bromo, alkyl of from 1 to 5 carbon atoms, lower alkyl-sulfonyl, lower alkanoyl amino, N-lower alkyl-N-lower alkanoylamino, lower alkyl-sulfonylamino and N-lower alkyl-N-lower alkylsulfonylamino;

X_4 is a member selected from the group consisting of chlorine, bromine and lower alkylsulfonyl,

X_5 is a member selected from the group consisting of chlorine, bromine, nitro and lower alkylsulfonyl,

X_6 is a member selected from the group consisting of nitro and lower alkylsulfonyl,

X_7 is a member selected from the group consisting of chlorine, and nitro,

Y is a member selected from the group consisting of hydrogen, chlorine, bromine, lower alkyl, lower alkoxy and nitro,

D is a member selected from the group consisting of —CO— and —SO_2—, and

p' is an integer ranging from 1 to 2.

3,296,245
PROCESS FOR THE PREPARATION OF METHYL-ALPHA-D-GLUCOSIDE

Donald W. Kaiser and Stephen Fuzesi, Hamden, and Robert J. Raynor, North Branford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 11, 1965, Ser. No. 439,087
13 Claims. (Cl. 260—210)

1. The process for preparing methyl-alpha-D-glucoside which comprises reacting starch with methanol in the presence of a Lewis acid catalyst, said reaction being carried out at an elevated pressure in an inert atmosphere, and recovering the solid methyl-alpha-D-glucoside produced thereby.

3,296,246
DERIVATIVES OF ANTIBIOTICS HAVING A BASIC REACTION AND PROCESS FOR PREPARATION

Bernard Orès, Boulogne-sur-Seine, and Frédéric Zackerkandl and Jean Philippe, Paris, France, assignors to Societe Anonyme dite: Societe Industrielle pour la Fabrication des Antibiotiques, Paris, France, a French company

No Drawing. Filed July 17, 1959, Ser. No. 827,682
Claims priority, application France, July 23, 1958, 770,893; May 29, 1959, 795,984
29 Claims. (Cl. 260—210)

1. A process for the preparation of new derivatives of basic antibiotics, having a moiety selected from the group consisting of primary amine, secondary amine, and both primary and secondary amine and further having a moiety selected from the group consisting of an aminated sugar, an aminocyclitol and both aminated sugar and aminocyclitol, which comprises reacting said basic antibiotic having at least one free basic group with a salt of an acid selected from the class consisting of hydroxyalkane sulphinic acids and hydroxyalkane sulphonic acids in a liquid medium until the reaction is substantially complete and thereafter separating the resulting condensation product from the reaction medium, said basic antibiotic being one which will react with said salt to form a condensation product of reduced toxicity.

29. N-methane sulfonates of kanamycin.

3,296,247
MIXED CELLULOSE ETHERS

Eugene D. Klug, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed July 6, 1964, Ser. No. 380,609
6 Claims. (Cl. 260—231)

1. Process of preparing hydroxyethyl hydroxypropyl cellulose which comprises mixing cellulosic material, alkali, water and a water-miscible inert organic diluent, and then causing the alkali cellulose to react with a hydroxyethylating and a hydroxypropylating agent until the hydroxyethyl hydroxypropyl cellulose product has a hydroxyethyl M.S. of 0.05–1.0 and a hydroxypropyl M.S. of at least 2, and recovering the hydroxyethyl hydroxypropyl cellulose, the alkali/cellulose ratio being 0.02–0.5, the water/cellulose ratio being 0.1–4 and 0.1–2 in the alkali cellulose period and etherification period respectively.

3,296,248
PROCESS OF OXIDATIVE AGING OF HYDROXYETHYLCELLULOSE

Reid Logan Mitchell, Morristown, N.J., assignor to Rayonier Incorporated, Shelton, Wash., a corporation of Delaware

No Drawing. Filed Apr. 19, 1962, Ser. No. 188,835
4 Claims. (Cl. 260—232)

1. In the production of hydroxyethylcellulose in which cellulose is converted to alkali cellulose and reacted with ethylene oxide to form hydroxyethylcellulose having from 2% to 8% of substituted ethylene oxide, the improvement in aging the hydroxyethylcellulose to lower the D.P. which comprises subjecting the hydroxyethylcellulose to oxidative aging from about 10 minutes to 24 hours at a temperature of from 30° to 60° C. in an oxygen-containing gas and in contact with a water soluble salt of a metal of the group consisting of cobalt and manganese in an amount sufficient to provide from 0.2 to 3 p.p.m. of cobalt and 1 to 25 p.p.m. of manganese based on the bone dry weight of the hydroxyethylcellulose.

3,296,249
5-MONOCYCLIC ARYL-1,3-DIHYDRO-2H-1,4-BENZODIAZEPIN-2-ONES

Stanley C. Bell, Philadelphia, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Filed June 4, 1963, Ser. No. 285,500
34 Claims. (Cl. 260—239.3)

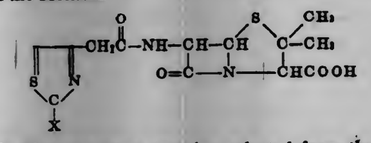
1. The composition of matter having the 5-monocyclic aryl-1,3-dihydro - 2H - 1,4 - benzodiazepin-2-one nucleus wherein said monocyclic aryl is a member of the group consisting of phenyl, pyridyl and thienyl, and having attached to said nucleus in the 3-position one of the group consisting of hydroxy and carboxylic acyloxy radicals convertible thereto by hydrolysis.

3,296,250
4-THIAZOLYLMETHYLPENICILLINS

Robert Rowntree Fraser, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 8, 1964, Ser. No. 373,560
4 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of an acid of the formula



wherein X represents a member selected from the group consisting of hydrogen and (lower)alkyl; and nontoxic, pharmaceutically acceptable salts thereof.

3,296,251
3-MERCAPTO AND 3-SUBSTITUTED MERCAPTO-1,3-DIHYDRO-2H-1,4-BENZODIAZEPIN-2-ONES

Stanley C. Bell, Philadelphia, Peter H. L. Wei, Upper Darby, and Carl Gochman, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 26, 1963, Ser. No. 261,229
4 Claims. (Cl. 260—239.3)

1. A compound selected from the class consisting of 3-mercapto - 1,3-dihydro-5-aryl-2H-1,4-benzodiazepin-2-one wherein aryl is selected from the group consisting of phenyl, pyridyl, furyl, thienyl, and phenyl substituted by chlorine, fluorine, methoxy, methyl, and trifluoromethyl and the pharmaceutically acceptable acid addition salts thereof.

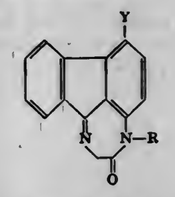
2. A compound selected from the class consisting of 3-substituted - mercapto-1,3-dihydro-5-aryl-2H-1,4-benzodiazepin-2-ones wherein aryl is selected from the group consisting of phenyl, pyridyl, furyl, thienyl, and phenyl substituted by chlorine, fluorine, methoxy, methyl, and trifluoromethyl and in which the 3-substituent is selected from the group consisting of lower-alkylmercapto, di-lower-alkylamino-lower alkylmercapto, phenylmercapto and benzylmercapto and the pharmaceutically acceptable acid addition salts thereof.

3,296,252
TETRACYCLIC DIAZEPINONE COMPOUNDS

Albert J. Frey, Essex Fells, Eugene E. Galantay, Morristown, and Hans Ott, Convent Station, N.J., assignors to Sandoz Inc., Hanover, N.J.

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,977
34 Claims. (Cl. 260—239.3)

1. A compound of the formula



wherein

R is a member selected from the group consisting of a hydrogen atom, allyl and lower alkyl; and

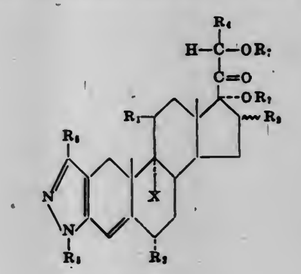
Y is a member selected from the group consisting of a hydrogen atom and a chlorine atom.

3,296,253
PYRAZOLES OF 21-ALKYL STEROIDS OF THE PREGNANE SERIES

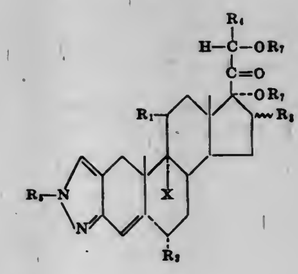
Ralph F. Hirschmann, Scotch Plains, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,289
5 Claims. (Cl. 260—239.5)

1. A compound selected from the group of compounds having the following structural formula, and the 4,6-pregnadieno- and 5α-pregnano-analogues of said compounds:



and



wherein R_1 is a member of the group consisting of hydrogen, β-halogen, β-hydroxy and keto, but halogen is present at R_1 only when X is halogen, and hydrogen is present at R_1 only when X is hydrogen; R_2 is a member of the group consisting of hydrogen, α-fluoro and α-methyl; R_3 is a member of the group consisting of hydrogen, α-methyl, β-methyl, and methylene; R_4 is lower alkyl; R_5 is a member of the group consisting of lower alkyl, lower aralkyl, aryl, pyridyl, pyridyl oxide and pyrimidyl; R_6 is a member of the group consisting of lower alkoxycarbonyl, carboxyl and hydroxymethyl; R_7 is a member of the group consisting of hydrogen and lower alkanoyl; and X is a member of the group consisting of hydrogen and halogen.

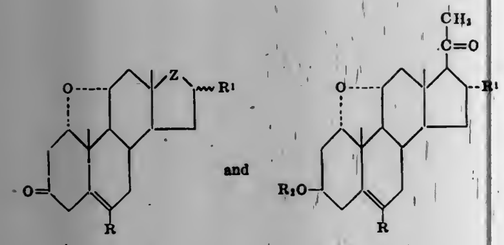
3,296,254

1α,11α-EPOXY STEROIDS AND PROCESS

George B. Spero, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

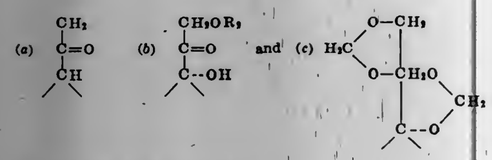
No Drawing. Filed Jan. 31, 1962, Ser. No. 170,275
20 Claims. (Cl. 260—239.55)

1. A compound selected from the formulae:



and

wherein R and R^1 are selected from the group consisting of hydrogen and methyl and in which when R is methyl R^1 is hydrogen, R_2 is selected from the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid containing from 1 to 12 carbon atoms, inclusive, and Z is selected from the group consisting of:



in which R^2 is defined as above.

3,296,255

2-CYANO STEROIDS

Raymond O. Clinton, East Greenbush, and Andrew John Manson, North Greenbush, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,070
22 Claims. (Cl. 260—239.55)

1. A 2-cyano-3-oxo-steroid, the steroid moiety having from seventeen to about twenty-three carbon atoms exclusive of ester radicals and being selected from the group consisting of the estrane, 18-norestrane, androstane, etiocholane, pregnane and allopregnane series.

10. 2α-cyano-4α,5α-epoxyandrostan-17β-ol-3-one.

3,296,256

16-METHYLENE-PROGESTERONES AND INTERMEDIATES IN THE PRODUCTION THEREOF

David Neville Kirk, Vladimir Petrow, Martin Stansfield, and David Morton Williamson, London, England, assignors to The British Drug Houses Limited, London, England, a British company

No Drawing. Filed July 24, 1959, Ser. No. 829,234
Claims priority, application Great Britain, July 25, 1958, 24,077/58
12 Claims. (Cl. 260—239.55)

9. 6α,16-dimethyl-16,17-epoxypregn-4-ene-3,20-dione.

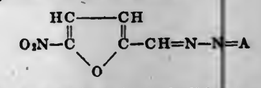
3,296,257

5-NITRO-2-FURFURAL AZINES

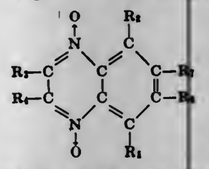
James D. Johnston, Old Saybrook, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 4, 1963, Ser. No. 285,195
5 Claims. (Cl. 260—240)

1. A compound of the formula



wherein A is a substituted methylidene moiety derived from a carbonyl compound of the formula



wherein one of said R_3 and R_4 substituents is formyl, the other of said R_3 and R_4 substituents is selected from the group consisting of hydrogen and methyl, and said R_5, R_6, R_7 and R_8 substituents are each selected from the group consisting of hydrogen and alkyl containing up to five carbon atoms.

3,296,258

7-(IMIDAZOLIDINYL-BUTYRYL)-AMINO-CEPHALOSPORANIC ACIDS

Ernst Vischer, Basel, Bruno Fechtig and Hans Bickel, Binningen, and Rolf Bosshardt and Jakob Urech, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 5, 1964, Ser. No. 387,802
Claims priority, application Switzerland, July 25, 1961, 8,762/61; Dec. 22, 1961, 14,842/61; June 22, 1962, 7,536/62; Nov. 12, 1962, 13,208/62; Aug. 20, 1963, 10,279/63
4 Claims. (Cl. 260—243)

2. A member selected from the group consisting of 7-[4-(1-lower alkenyl-2-thiono-5-oxo-imidazolidine - 4 - yl)-butyryl]-amino-cephalosporanic acid and its thereapeutically acceptable salts with organic tertiary nitrogen bases or metals.

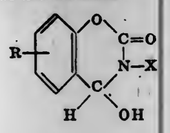
3,296,259

3,4 - DIHYDRO-4-HYDROXY-2H-1,3-BENZOXAZIN-2-ONES AND A PROCESS FOR THEIR PREPARATION

Richard E. Strube, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,466
17 Claims. (Cl. 260—244)

1. A compound of the formula:



wherein R is selected from the group consisting of benzo and from zero to not more than 4 members selected from the group consisting of alkyl of not more than 3 carbon atoms, alkoxy of not more than 3 carbon atoms, lower-alkylcarbamyloxy, phenylcarbamyloxy, halogen, and nitro, and X is selected from the group consisting of lower-alkyl and phenyl.

3,296,260

NEUTRAL AND SINGLY CHARGED DERIVATIVES OF DECABORANES AND DECABORATES

Walter H. Knoth, Jr., Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 15, 1963, Ser. No. 251,697
21 Claims. (Cl. 260—247)

1. A compound of the formula

$$M_{(2-n)}[B_{10}H_{10-n-y}X_y \cdot nZ]_b$$

wherein M is a cation having a valence from 1 to 3; X is bonded to boron and is a monovalent group which is capable of bonding to nuclear carbon of a carbocyclic aromatic compound by replacement of hydrogen, and is (1) a group derived from an electrophilic reagent by direct attack on the boron cage, or (2) is a group derived by modification of a group in (1) by reduction, esterification, hydrolysis, dehydration, amidation and combinations thereof; Z is selected from the group consisting of organic sulfides, tertiary phosphines, tertiary amines, amides of carboxylic acids, organic sulfones and nitriles; *n* is a cardinal number of from 1 to 2, inclusive; (2—*n*) represents the number of M groups which are present in the compound; *y* is a cardinal number of from 0 to (10—*n*), inclusive, and *b* is equal to the valence of M when *n* is 1 and *b* is 1 when *n* is 2.

8. A compound of the formula

$$M_{(2-n)}[B_{10-n-y}X_y \cdot nZ]_b$$

wherein M is a cation having a valence of from 1 to 3; X is a substituent selected from the class consisting of hydroxyl and halogen of atomic number of at least 17; Z is an organic sulfide; *n* is a cardinal number of from 1 to 2, inclusive; (2—*n*) represents the number of M groups present; *y* is a cardinal number of from 0 to (10—*n*), inclusive; and *b* is equal to the valence of M when *n* is 1 and *b* is 1 when *n* is 2.

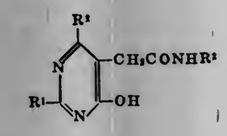
3,296,261

6-HYDROXY-PYRIMIDINE-5-ACETAMIDES

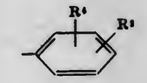
Richard A. Partyka, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 9, 1965, Ser. No. 438,404
16 Claims. (Cl. 260—247.2)

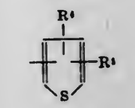
1. A member selected from the group consisting of compounds of the formula



wherein R^1 is a member selected from the group consisting of (lower)alkyl, (lower)alkylthio and —Ar in which Ar is a member selected from the group consisting of radicals of the formula



and



in which R^4 and R^5 are each members selected from the group consisting of hydrogen, chloro, bromo, (lower)alkyl, (lower)alkoxy and trifluoromethyl, R^2 is a member selected from the group consisting of hydrogen, (lower)-alkyl and —Ar, and R^3 is a member selected from the group consisting of (lower)alkyl, (lower)cycloalkyl containing from 3 to 8 carbon atoms inclusive, (lower)alkenyl, (lower)alkynyl, di(lower)alkylamino(lower)alkyl, piperidino(lower)alkyl, morpholino(lower)alkyl, N' - (lower), N' - (lower)alkylpiperazino(lower)alkyl, —Ar and $—(CH_2)_n—Ar$ wherein *n* is an integer from one to three inclusive; and the nontoxic, pharmaceutically acceptable acid addition salts thereof.

9. 2,4 - dimethyl - 6 - hydroxypyrimidine-5-N-[β-(1-morpholino)ethyl]acetamide.

3,296,262

PURIFICATION OF CYANURIC ACID

Herbert F. Scott, Jr., Prince George, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 8, 1965, Ser. No. 438,125
8 Claims. (Cl. 260—248)

1. A process for the purification of cyanuric acid which comprises digesting crude cyanuric acid in aqueous nitric acid, separating the cyanuric acid from the digestion liquor and washing the cyanuric acid with water at a temperature sufficient to maintain the cyanuric acid at about 20° to 50° C. while reducing the nitric acid concentration of the liquid in contact with the cyanuric acid to below about 1 N, but no lower than 0.3 N.

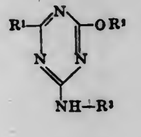
3,296,263

2-ALKYL-4-ALKYLAMINO-6-ALKOXY-s-TRIAZINES

Teruaki Tsujikawa, Otsu, Japan, assignor to Takeda Chemical Industries Ltd., Osaka, Japan

No Drawing. Filed May 4, 1964, Ser. No. 364,827
15 Claims. (Cl. 260—249.5)

1. A compound of the formula:



wherein each of R^1 and R^2 is alkyl of up to six carbon atoms, and R^2 is alkyl of up to four carbon atoms.

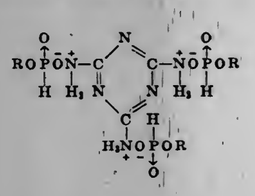
3,296,264
FIBER-REACTIVE FLUOROALKYL DERIVATIVES OF AMINO-ALDEHYDE COMPOUNDS AND TEXTILES "SOIL PROOFED" THEREWITH
Domenick Donald Gagliardi, East Greenwich, R.I., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,291
3 Claims. (Cl. 260—249.6)

2. Pentadecafluorooctoxymethylpenta (methoxymethyl) melamine.

3. C_{11} - trihydropefluoroalkyltrimethylolacetylene diureine.

3,296,265
s-TRIAZINE-1,3,5-TRIS (AMMONIUM ALKYL PHOSPHONATES)
Albert Y. Garner, Yellow Springs, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 28, 1964, Ser. No. 399,818
2 Claims. (Cl. 260—249.6)

1. The compound of the formula



in which R is an alkyl radical of from 1 to 5 carbon atoms.

3,296,266
PURIFICATION OF MELAMINE
Elmer L. Nelson, Chester, and Thomas W. Kennedy, Richmond, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 21, 1965, Ser. No. 427,093
6 Claims. (Cl. 260—249.7)

1. In the process for purifying crude melamine containing hydroxy triazine impurities by digesting a dispersion of said crude melamine in aqueous ammonia, at a temperature in the range 140° to 230° C., filtering the resulting solution of melamine in aqueous ammonia and cooling the filtrate to crystallize purified melamine therefrom, the improvement which comprises cooling the solution of melamine in aqueous ammonia first to a temperature in the range 50° to 80° C., and then, after a period of at least one minute, to a temperature in the range 0° to 40° C., and recovering the purified melamine thus precipitated.

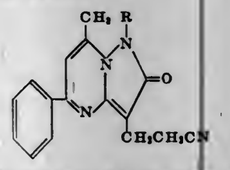
3,296,267
PREPARATION OF 2,3-DIHYDROXY-6-QUINOXALINE CARBOXYLIC ACID
John Malcolm Ross, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 15, 1963, Ser. No. 280,729
5 Claims. (Cl. 260—250)

1. The process for preparing 2,3-dihydroxy-6-quinoxalinecarboxylic acid from p-aminobenzoic acid which comprises heating p-aminobenzoic acid in contact with a compound selected from the group consisting of oxalic acid and C_1–C_4 alkyl oxalates, to produce the 4'-carboxyoxanilic acid compound, nitrating the 4'-carboxyoxanilic acid compound to produce the 4'-carboxy-2'-nitrooxanilic acid compound, hydrogenating the 4'-carboxy-2'-nitrooxanilic acid compound to produce 2,3-dihydroxy-6-quinoxalinecarboxylic acid and isolating the 2,3-dihydroxy-6-quinoxalinecarboxylic acid.

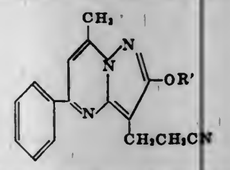
ERRATUM
For Class 260—256.4 see: Patent No. 3,296,447

3,296,268
3-CYANOETHYL-2-OXO-5-PHENYL[1,5-a] PYRIMIDINES
Viktor Papesch, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Oct. 19, 1965, Ser. No. 498,120
3 Claims. (Cl. 260—256.4)

1. A compound selected from the group consisting of compounds of the formula



wherein R is selected from the group consisting of hydrogen and cyanoethyl; and compounds of the formula



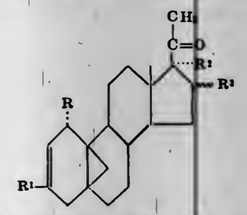
wherein R' is selected from the group consisting of lower alkyl and lower alkanoyl.

3,296,269
PROCESS FOR PROVIDING 2-FLUOROPYRIDINE
Max M. Boudakian, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia
No Drawing. Filed Sept. 21, 1964, Ser. No. 398,037
2 Claims. (Cl. 260—290)

1. A process for preparing 2-fluoropyridine which comprises reacting potassium bifluoride with 2-chloropyridine at a reaction temperature range of about 250° to about 370° C. and recovering said 2-fluoropyridine from the reaction mixture.

3,296,270
5,10-METHYLENE-19-NOR-PREGNANES AND THEIR PREPARATION
Lawrence H. Knox, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Nov. 13, 1964, Ser. No. 411,130
16 Claims. (Cl. 260—397.3)

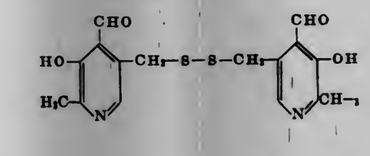
1. A compound of the following formula:



wherein R and R^1 are selected from the group consisting of lower alkyl, lower alkenyl and lower alkinyl; R^2 is selected from the group consisting of hydrogen, hydroxy and an acyloxy group of less than 12 carbon atoms and R^3 is selected from the group consisting of hydrogen, α-methyl and β-methyl.

3,296,271
BIS-[4-FORMYL-5-HYDROXY-6-METHYL-PYRIDYL (3)METHYL] DISULFIDE
Gustav Schorre, Darmstadt-Eberstadt, Germany, assignor to E. Merck Aktiengesellschaft, Darmstadt, Germany
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,725
Claims priority, application Germany, Jan. 12, 1963, M 55,402
2 Claims. (Cl. 260—294.8)

1. A compound of the formula

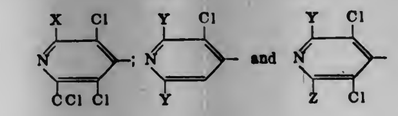


3,296,272
SULFINYL- AND SULFONYLPYRIDINES
Howard Johnston, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 1, 1965, Ser. No. 444,861
9 Claims. (Cl. 260—294.8)

1. The compound having the formula

L—M—R

wherein R represents a member of the group consisting of alkyl, monohalolower-alkyl, dihalolower-alkyl, trihalolower-alkyl, phenyl, monohalo-phenyl, benzyl and monohalo-benzyl; M represents a member of the group consisting of sulfinyl (—SO—) and sulfonyl ($—SO_2—$) and L represents a member of the group having the formulae



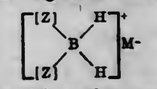
in which X represents a member of the group consisting of chlorine and hydrogen, each Y represents a member of the group consisting of chlorine, bromine and fluorine and Z represents a member of the group consisting of Y or hydrogen.

3,296,273
PROCESS FOR THE REMOVAL OF TERPYRIDYL IMPURITIES FROM BIPYRIDYLS
Frank Raymond Bradbury and James Adrian Jarvis, Widnes, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Feb. 6, 1964, Ser. No. 343,126
Claims priority, application Great Britain, Feb. 13, 1963, 5,900/63
13 Claims. (Cl. 260—296)

1. Process for the removal of terpyridyl impurity from a bipyridyl which comprises contacting the impure bipyridyl with a substantially water-immiscible organic solvent and an aqueous acid medium containing a metal derivative capable of forming a complex derivative with the terpyridyl content thereof, said metal derivative being a derivative of a metal selected from the class consisting of nickel, cobalt and iron, and said aqueous acid medium having a pH value of at most about 6, and thereafter separating the organic solvent phase which contains the bipyridyl.

3,296,274
SYNTHESIS OF BORON COMPOUNDS
Stanley Frank Stafiej, Springdale, and Dorothy Ann Carvalho, Bridgeport, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 9, 1964, Ser. No. 351,582
6 Claims. (Cl. 260—296)

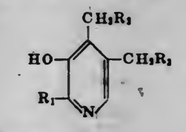
1. A compound having the formula



wherein M^- is selected from the group consisting of BF_4^- and ClO_4^- and wherein both [Z]'s are the same ligand selected from the group consisting of tertiary amines in which the nitrogen atom is bonded only to carbon atoms, nitriles, dialkyl sulfides, and tertiary phosphines in which the phosphorus atom is bonded only to carbon atoms.

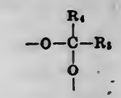
3,296,275
PROCESS FOR THE MANUFACTURE OF PYRIDINE DERIVATIVES
Sidney Frank Schaeren, Bottmingen, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed May 10, 1965, Ser. No. 454,651
Claims priority, application Switzerland, May 27, 1964, 6,921/64
12 Claims. (Cl. 260—297)

1. A process for the manufacture of compounds selected from the group consisting of pyridine derivatives of the formula



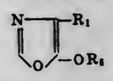
and acid addition salts thereof;

wherein R_1 is lower alkyl; R_2 and R_3, taken together, are selected from the group consisting of a grouping of the formula



wherein R_4 and R_5 are selected from the group consisting of, individually, hydrogen, lower alkyl, lower alkenyl, phenyl-lower alkyl and phenyl and, taken together, lower alkylene;

which comprises reacting at a temperature between about 130° C. and about 170° C., a compound of the formula



wherein R_1 has the same meaning as above and R_6 is lower alkyl;

with a compound of the formula

$R_2—CH_2—CH=CH—CH_2—R_3$

wherein R_2 and R_3 have the same meaning as above;

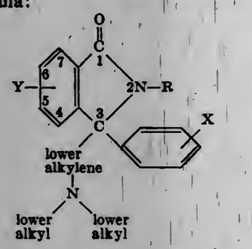
which reaction gives a Diels-Alder adduct, which is isolated and then rearranged in a weakly acidic medium at a temperature up to about 50° C.

7. A process for the preparation of 1,5-dihydro-3-lower alkyl - 8 - methyl-pyridine[3,4-e][1,3]dioxepin-9-ol which comprises reacting at a temperature between about 130° C. and about 170° C. 4-methyl-5-lower alkoxy-oxazole with 2-lower alkyl-4,7-dihydro-1,3-dioxepin; isolating the

Diels-Alder adduct so-obtained and rearranging said Diels-Alder adduct in a weakly acidic medium at a temperature no greater than about 50° C.

3,296,276
NOVEL 1-OXO-3-PHENYL ISOINDOLINES
Margaret H. Sherlock, Bloomfield, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed July 15, 1964, Ser. No. 382,943
9 Claims. (Cl. 260—325)

1. A compound of the group consisting of 1-oxo-3-di-loweralkylamino lower alkylene isoindolines having the structural formula:



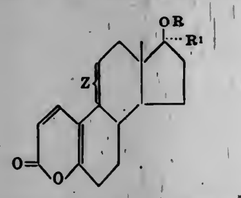
and the non-toxic acid addition salts thereof, wherein said 3-position lower alkylene moiety contains 2–9 carbon atoms, at least two of which separate the di-loweralkylamino moiety from the 3-position carbon atom of the isoindoline nucleus, R is a member of the group consisting of hydrogen, lower alkyl and hydroxy lower alkyl, and X and Y are each members of the group consisting of hydrogen, lower alkyl, halogen, trifluoromethyl, hydroxy, and lower alkoxy.

3,296,277
SUBSTITUTED 3-CYANO-1-HYDROXY-2-PHENYLINDOLES
Francis J. Petracek, Canoga Park, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Aug. 26, 1964, Ser. No. 392,278
2 Claims. (Cl. 260—326.16)

1. 3-cyano-1-hydroxy-2-(nitrophenyl)indole.

3,296,278
CYCLOPENTANOPHENANTHRENE DERIVATIVES AND PROCESS
Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Nov. 16, 1964, Ser. No. 411,620
Claims priority, application Mexico, Feb. 12, 1964, 75,789
13 Claims. (Cl. 260—343.2)

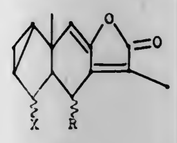
1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen, the tetrahydropyran-2-yl group and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; R^1 is a member of the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkinyl; and Z is selected from the group consisting of a saturated linkage and a double bond.

3,296,279
NOVEL LACTONE DERIVATIVES AND PRODUCTION THEREOF
Michiko Ikuta, Osaka, and Midori Miyawaki, Toyonaka-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Filed Sept. 29, 1965, Ser. No. 491,426
Claims priority, application Japan, Oct. 3, 1964, 39/56,561
6 Claims. (Cl. 260—343.3)

3. A sesquiterpenic lactone compound represented by the formula:



wherein R is hydrogen atom or hydroxyl group, X is methylene or methyl group and the ripple mark (‡) is a generic indication of both the α- and β-configurations.

3,296,280
THE OXIDATION OF TERTIARY-BUTYL GROUPS ATTACHED TO AN AROMATIC RING TO FORM THE CORRESPONDING AROMATIC CARBOXYLIC ACID
Henry J. Peterson, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed July 18, 1963, Ser. No. 296,094
11 Claims. (Cl. 260—346.4)

1. A process for the oxidation of tertiary butyl groups attached to an aromatic ring which comprises reacting said teritary butyl-substituted aromatic compounds with NO_2 gas at a temperature in excess of about 160° C. in the presence of a solvent which is substantially inert to NO_2 to obtain the corresponding aromatic carboxylic acid.

3,296,281
OXIDATION OF AROMATIC COMPOUNDS
Mack F. Hughes, Albany, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,338
11 Claims. (Cl. 260—346.4)

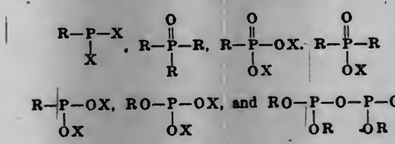
1. In a partial oxidation process in which a vaporized hydrocarbon is mixed with air, preheated to a temperature above about 400° F. and passed into contact with a fixed-bed, vapor phase, metal oxide, oxidation catalyst maintained at an oxidizing temperature in a shell-and-tube reactor having a shell diameter greater than about 5 feet, the improvement which comprises premixing said air and hydrocarbon at a weight ratio in the range from about 12–25 to 1, respectively, while maintaining the operational feed factor of said mixture prior to contact with said catalyst at a value greater than about 980, said factor being defined by the expression

$$\text{Operational Feed Factor} = 100\left[\frac{15{,}000}{T+460} - \log t\right]$$

wherein T is the temperature in degrees Fahrenheit, and t is the pre-contact interval in seconds of said mixture, said hydrocarbon being of the formula NR_x in which N is an aromatic nucleus having fewer than three aromatic carbocyclic rings, R is an alkyl group having fewer than 2 carbon atoms and x is zero or an integer less than 3.

3,296,282
OXIDATION OF HYDROCARBONS
Ralph O. Kerr, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Mar. 5, 1964, Ser. No. 349,765
7 Claims. (Cl. 260—346.8)

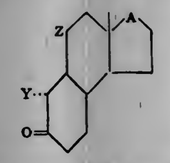
2. The process of oxidizing a hydrocarbon of 4 to 6 carbon atoms to maleic anhydride which comprises contacting a gaseous mixture of said hydrocarbon and oxygen at an elevated temperature in contact with a vanadium-phosphorus-oxygen catalyst having an atomic ratio of ½ to 3 atoms of phosphorus per atom of vanadium and whereby the yield of maleic anhydride diminishes with time, the improvement which comprises adding to the said catalyst an organo-phosphorus compound selected from the group consisting of



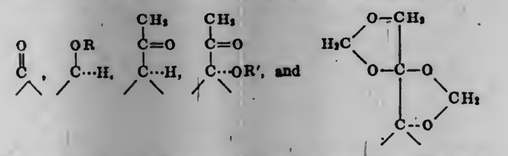
wherein R is phenyl or an alkyl radical of one to 6 carbon atoms and X is H or R while maintaining the said catalyst at a temperature of 300 to 550° C.

3,296,283
STEROID INTERMEDIATES AND PROCESS FOR PREPARING
Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed May 24, 1963, Ser. No. 282,849
21 Claims. (Cl. 260—347.3)

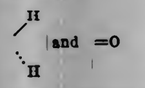
1. A compound of the following formula:



wherein A is a member of the group consisting of

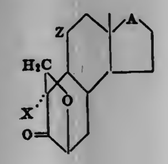


R and R^1 are each selected from the group consisting of hydrogen and a lower alkanoyl group; Z is selected from the group consisting of

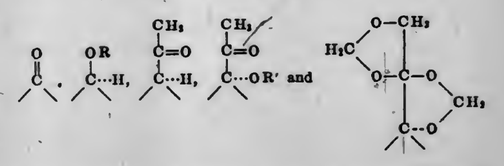


and Y is a member of the group consisting of hydroxymethyl and formyl.

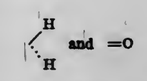
2. A compound of the following formula:



wherein A is a member of the group consisting of



R and R^1 are each selected from the group consisting of hydrogen and a lower alkanoyl group, Z is selected from the group consisting of



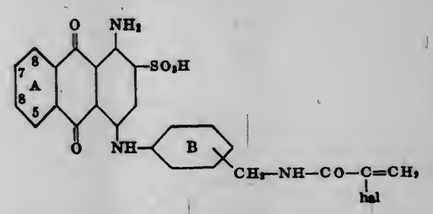
and X is selected from the group consisting of hydrogen and carboxyl.

3. A process which comprises treating a $\Delta^{1,4}$-3-keto-6β,19-oxido steroid selected from the group consisting of the androstane and pregnane series with ozone and subsequently with hydrogen peroxide to give the corresponding 6β,19-oxido des-A-steroid-5-one and the 10α-carboxy derivative thereof.

4. A process which comprises treating a $\Delta^{1,4}$-3-keto-6β,19-oxido steroid selected from the group consisting of the androstane and pregnane series with an alkali metal permanganate and an alkali metal perhalate to give the corresponding 6β,19-oxido-des-A-steroid-5-one, the 10α-carboxy derivative thereof, the corresponding 10α - hydroxymethyl-des-A-19-nor-steroid-5-one and the corresponding 10α-formyl-des-A-19-nor-steroid-5-one.

3,296,284
REACTIVE DYES OF THE 1,4-DIAMINO-ANTHRAQUINONE-2-SULFONIC ACID SERIES
Wolfgang Schoenauer, Riehen, Basel-Stadt, Switzerland, assignor to Sandoz Ltd., also known as Sandoz AG, Basel, Switzerland
No Drawing. Filed Oct. 14, 1964, Ser. No. 403,937
Claims priority, application Switzerland, Sept. 12, 1960, 10,299/60
4 Claims. (Cl. 260—372)

1. An anthraquinone dye of the formula



wherein
hal is a halogen atom selected from the group consisting of chlorine and bromine,
the ring A is selected from the group consisting of unsubstituted phenylene, sulfophenylene, fluorophenylene, bromophenylene, chlorophenylene and 6,7-dichlorophenylene, the single halogen atom being attached to one of the positions 6 and 7, and sulfo being attached to one of the positions 5, 6, 7 and 8,
and the nucleus B bears one to three substituents selected from the group consisting of lower alkyl and lower alkoxy,

and the group

$$-CH_2-NH-CO-\underset{\text{hal}}{\underset{|}{C}}=CH_2$$

being bound in ortho-position to a substituent of the nucleus B.

3,296,285

NOVEL-1(10)-13-ALKYL GONENES AND PROCESS FOR THEIR MANUFACTURE

Theodore Legatt, Bloomfield, and Elliot L. Shapiro, Cedar Grove, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 7, 1963, Ser. No. 322,050
13 Claims. (Cl. 260—397.3)

1. 3-R-13-lower alkyl-5α-1(10)-gonenes having at the 17α-position a member of the group consisting of lower alkyl, lower alkenyl, lower alkynyl, and halogeno lower alkynyl and at the 17β-position a member of the group consisting of hydroxy and an acyloxy radical of a hydrocarbon carboxylic acid having up to eight carbon atoms; wherein R is a member of the group consisting of keto, hydroxy and acyloxy, the acyl portion of which is that of a hydrocarbon carboxylic acid having up to eight carbon atoms.

8. 3,17-diketo-5α-1(10)-estrene.

3,296,286

PRODUCTION OF CARBOXYLIC ACIDS

Albert Henry Wehe, Jr., Henry George Ellert, Raymond Carroll Lohman, and Worthy Truman Boyd, all of Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Sept. 10, 1963, Ser. No. 307,856
7 Claims. (Cl. 260—413)

1. In a process for synthesizing carboxylic acids by a first-step formation of a complex of carbon monoxide, an olefinic compound selected from the group consisting of unsubstituted and carboxyl, ester and hydroxy substituted compounds and a hydrated boron fluoride catalyst and a second-step hydrolysis of said complex, the improvement which comprises continuously introducing the complex into at least one discrete hydrolysis stage, hydrolyzing said complex therein with aqueous hydrolysis medium into a crude carboxylic acid product and a reconstituted boron catalyst having a water to BF_3 mole ratio of less than 3.0 to 1, introducing the resulting acid product-catalyst mixture into another discrete stage, diluting said acid product-catalyst mixture with a BF_3-containing aqueous medium having a water to BF_3 mole ratio of greater than 15 to 1 while maintaining said stage in equilibrium and at a water to BF_3 mole ratio of about, but less than, 3.0 to 1, introducing the resulting acid product-catalyst mixture into at least one other discrete stage, and washing said acid product-catalyst mixture with aqueous medium while maintaining said stage at a water to BF_3 mole ratio of greater than 15 to 1.

3,296,287

METHOD FOR PREPARING COMPLEXES OF HEAVY METAL HALIDES AND N,N,N',N' - TETRAKIS(HYDROXYALKYL)ALKYLENE DIAMINE

William J. Meyer, Levittown, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa.

No Drawing. Filed July 2, 1963, Ser. No. 292,463
4 Claims. (Cl. 260—429)

1. A process for preparing compounds useful in vulcanizing polymers comprising reacting a heavy metal halide and an N,N,N',N'-tetrakis(hydroxyalkyl)alkylene diamine in acetone to form a solid reaction product, and recovering said solid reaction product.

3,296,288

ORGANOMERCURY GROUP VB METAL CARBONYLS

Kestutis A. Keblys, Southfield, and Michael Dubeck, Royal Oak, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,198
13 Claims. (Cl. 260—429)

1. Organometallic compounds having the formula

$$R—Hg—[M(CO)_6]$$

wherein M is a Group VB metal and R is a univalent hydrocarbon radical having from 1 to about 13 carbon atoms, said radical being selected from the class consisting of alkyl, cycloalkyl, aralkyl, alkenyl, cycloalkenyl, aryl and alkaryl radicals.

7. Process for the preparation of an organometallic compound having the formula

$$R—Hg—[M(CO)_6]$$

said process comprising reacting a mercury compound having the formula

$$R—HgX$$

wherein X is halogen and R is a univalent hydrocarbon radical having from 1 to about 13 carbon atoms, said radical being selected from the class consisting of alkyl, cycloalkyl, aralkyl, alkenyl, cycloalkenyl, aryl and alkaryl radicals; with a metal carbonyl having the formula

$$M^1(Et)_yM(CO)_8$$

wherein

M^1 is selected from the class consisting of alkali and alkaline earth metals and tetraalkyl ammonium, $NR_1R_2R_3R_4$, wherein R_1 to R_4 are independently selected from the class consisting of alkyl radicals having from 1 to about 6 carbon atoms,

Et is an ether selected from the class consisting of noncyclic bidentate and tridentate ethers;

y is an integer of value zero when M^1 is tetraalkyl ammonium, and having the value of 2 to 3 when M^1 is selected from the class consisting of alkali and alkaline earth metals, such that $y=2$ when Et is a tridentate ether, and $y=3$ when Et is a bidentate ether, and

M is a Group VB metal atom;

said process being carried out in the presence of an inert organic solvent.

3,296,289

DIALKYL TIN BIS(CYCLOHEXYL MALEATE) COMPOUNDS

Carl R. Gloskey, Stirling, N.J., assignor to M & T Chemicals, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,238
5 Claims. (Cl. 260—429.7)

1. An organotin compound

$$R_2Sn(OOCCH=CHCOOR')_2$$

wherein R is lower alkyl and R' is cyclohexyl.

4. Dibutyltin bis(2-cyclohexylcyclohexyl maleate).

3,296,290

PROCESS OF SEPARATING ARSANILIC ACID

Edward W. Berndt, Wallace F. Hladky, and Jerry D. Fockler, Charles City, Iowa, assignors to Salsbury Laboratories, a corporation of Iowa

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,636
9 Claims. (Cl. 260—442)

1. A process of separating arsanilic acid from the reaction mixture produced by the condensation of aniline with arsenic acid comprising the steps of reacting aniline with arsenic acid, subjecting the reaction mixture to vacuum distillation until the major portions of water and of unreacted aniline are removed, liquidizing the resulting viscous concentrate with water, steam-distilling said concentrate to eliminate residual unreacted aniline, diluting the concentrate with water, cooling the same and isolating separately therefrom arsanilic acid, tars and unreacted arsenic acid.

3,296,291

REACTION OF SILANES WITH UNSATURATED OLEFINIC COMPOUNDS

Alan J. Chalk, Scotia, and John F. Harrod, Ballston Lake, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed July 2, 1962, Ser. No. 207,045
14 Claims. (Cl. 260—448.2)

1. A process for the production of organosilicon compositions containing carbon-silicon bonds which comprises contacting (a) a silicon compound containing at least one hydrogen atom attached to silicon per molecule with (b) a compound containing aliphatic carbon atoms linked by multiple bonds in the presence of an organic rhodium compound soluble in at least one of the reactants of (a) and (b), and selected from the class consisting of (1) rhodium compounds obtained by the addition of the reaction product of rhodium trichloride and an aliphatic alcohol free of tertiary carbon to a silane of the formula R_3SiH, and (2) those organic rhodium compounds having the formulas

(*a*) $$H_aRh_bOlefin_cCl_d$$

and

(*b*) $$Rb(OC—R)_{3-a}(OH)_a$$

where R is a monovalent hydrocarbon radical, *a* is a whole number from 0 to 1, inclusive, *b* is a whole number from 1 to 2, inclusive, *c* is a whole number from 1 to 4, inclusive, *d* is a whole number from 2 to 4, inclusive, *n* is a value from 0 to 1, inclusive, and the word "olefin" represents an unsaturated aliphatic hydrocarbon.

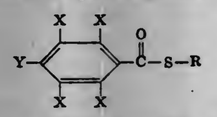
3,296,292

ESTERS AND AMIDES OF 2,3,5,6-TETRACHLORO-MONOTHIOTEREPHTHALIC ACID

Sidney B. Richter, Chicago, and Alfred A. Levin, Skokie, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed May 17, 1963, Ser. No. 281,322
7 Claims. (Cl. 260—455)

1. A compound of the general formula



wherein X is halogen; Y is selected from the group consisting of —C(O)—O—R' and —C(O)—NR^2R^3; R is selected from the group consisting of methyl and ethyl; R' is selected from the group consisting of hydrogen and methyl; R^2 is lower alkoxy; and R^3 is selected from the group consisting of hydrogen and lower alkyl.

3,296,293

PREPARATION OF CARBOCYCLIC DINITRILES

Thomas H. Strickland and Charles J. Kibler, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,071
11 Claims. (Cl. 260—464)

1. The process of preparing a cyclohexanedicarbonitrile which comprises contacting a compound selected from the group consisting of the diammonium salts, the diamides and the diesters of 1,3- and 1,4-cyclohexanedicarboxylic acid, in the presence of ammonia, with a dehydration catalyst at a temperature within the range of 300–485° C., whereby the corresponding dicarbonitrile of the acid is formed; said diamides and said diesters being volatile under about one atmosphere of pressure at said temperature.

3,296,294

PERFLUOROOCTYL TETRACHLOROPHTHALATE

William A. Zisman, 200 E. Melbourne Ave., Silver Spring, Md. 20901, and Jacques G. O'Rear, Camp Springs, Md. (5420 Henderson Road SE., Washington, D.C. 20031)

No Drawing. Filed Jan. 10, 1963, Ser. No. 250,717
1 Claim. (Cl. 260—475)

Bis (1H,1H-perfluorooctyl) tetrachlorophthalate.

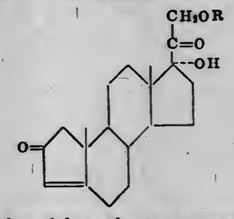
3,296,295

NORSTEROIDS

Pacifico Anthony Principe, South River, and Patrick A. Diassi, Westfield, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1964, Ser. No. 369,624
3 Claims. (Cl. 260—488)

1. A compound of the formula



wherein R is selected from the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid of less than ten carbon atoms.

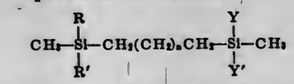
3,296,296

DISILAALKANES

James A. Webster, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 13, 1963, Ser. No. 287,472
12 Claims. (Cl. 260—448.2)

1. The compound of the formula



wherein R and Y are selected from the class consisting of methyl and alkyl of from 6 to 10 carbon atoms, R' and Y' are alkyl of from 6 to 10 carbon atoms and *n* is a number of 3 to 6.

5. A hydraulic system containing as the operative fluid the compound defined in claim 1.

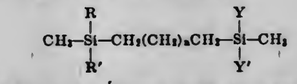
3,296,297

ORGANIC SILICON COMPOUNDS

James A. Webster, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 13, 1963, Ser. No. 287,473
14 Claims. (Cl. 260—448.2)

1. The compound for the formula



wherein R and Y are selected from the class consisting of methyl and hydrocarbon monocyclic aryl which is free of olefinic and acetylenic unsaturation, contains from 6 to 12 carbon atoms, and is linked to the silicon through

aromatic nuclear carbon, and R' and Y' are selected from the class consisting of aryl and aryloxyaryl, wherein aryl is hydrocarbon and monocyclic, is free of olefinic and acetylenic unsaturation, contains from 6 to 12 carbon atoms and is linked to the silicon through aromatic nuclear carbon, and wherein the sum of the total number of carbon atoms in R, R', Y and Y' is from 14 to 28 and *n* is a number of from 3 to 6.

6. A hydraulic system containing as the operative fluid the compound defined in claim 1.

3,296,298
TETRA (2-ETHYLHEXYL) PYROMELLITATE

Stanley P. Rowland, New Orleans, La., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Original application July 17, 1958, Ser. No. 749,060, now Patent No. 3,218,289, dated Nov. 16, 1965. Divided and this application May 3, 1965, Ser. No. 452,911
1 Claim. (Cl. 260—475)

Tetra(2-ethylhexyl) pyromellitate.

3,296,299
METHOD FOR INHIBITING THE FORMATION OF ACETALDEHYDE IN THE SOLUTION CONTAINING VINYL ACETATE AND ALCOHOL

Masao Mori, Ohgaki, Yasuo Kotani, Hirakata, and Yukio Fujita, Kumamoto, Japan, assignors to Nippon Gosei Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed May 16, 1961, Ser. No. 110,353
Claims priority, application Japan, July 22, 1960, 35/32,137
5 Claims. (Cl. 260—488)

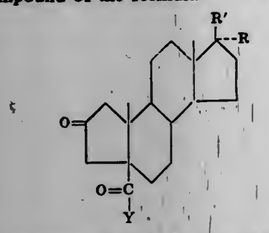
1. A method for inhibiting the formation of acetaldehyde in a solution containing vinyl acetate and a lower aliphatic alcohol, which comprises adding into said solution at least one inhibitor selected from the group consisting of aliphatic monocarboxylic acids, aliphatic polycarboxylic acids, aromatic polycarboxylic acids, mono- and polycarboxylic acids each substituted by at least one radical selected from the group consisting of hydroxy, amino and nitro and the alkali salts of the members of said first-named group, said inhibitor being added in the amount of 5 to 50 parts by weight per million parts by weight of solution when said inhibitor is in free acid form, and 5 to 10 parts by weight per million parts by weight of solution when said inhibitor is in the salt form.

3,296,300
5 BETA-ALKANOYL-A-NORANDROSTANES

Seymour D. Levine, Princeton, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,790
11 Claims. (Cl. 260—488)

1. A compound of the formula



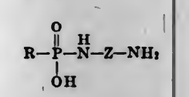
wherein Y is lower alkyl; R is selected from the group consisting of hydrogen and lower alkyl; R' is selected from the group consisting of hydroxy and the acyloxy radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms; and together R and R' is keto.

3,296,301
NITROGENOUS ORGANIC COMPOUNDS OF PHOSPHORUS

Morris L. Nielsen, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 29, 1963, Ser. No. 298,421
10 Claims. (Cl. 260—500)

1. The compound of the formula

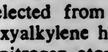


where R is an aryl radical which is free of olefinic and acetylenic unsaturation and contains from 6 to 12 carbon atoms and Z is selected from the class consisting of alkylene and hydroxyalkylene having a total of 2 to 10 carbon atoms, the nitrogen atoms being separated by a chain of 2 to 6 carbon atoms.

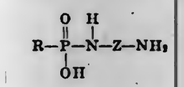
4. N-(3-aminopropyl)-P-phenylphosphonamidic acid.

5. N - (3-amino-2-hydroxypropyl) - P-phenylphosphonamidic acid.

6. The method which comprises contacting, in the presence of an aqueous basic agent, a dihalide of the formula



where R is an aryl radical which is free of olefinic and acetylenic unsaturation and contains from 6 to 12 carbon atoms and X is halogen having an atomic weight of at least 35 with a diamine of the formula $H_2N—Z—NH_2$ where Z is selected from the class consisting of alkylene and hydroxyalkylene having a total of 2 to 10 carbon atoms, the nitrogen atoms being separated by a chain of 2 to 6 carbon atoms, and recovering from the resulting product the compound of the formula



where R and Z are as above defined.

3,296,302
TRICHLOROVINYLSULFENYL CHLORIDE AND PROCESS FOR THE PRODUCTION OF TRIHALOVINYLSULFENYL CHLORIDE

Edward D. Weil, Lewiston, Keith J. Smith, Lockport, and Emil J. Geering, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 16, 1959, Ser. No. 852,931
2 Claims. (Cl. 260—543)

1. Trichlorovinylsulfenyl chloride.

2. A process for making a compound of the formula $CX_2=CX—SCl$, wherein X is independently selected from the group consisting of chlorine and bromine, which comprises reacting chlorine gas with

$$CX_2=CX—S—S—CX=CX_2$$

wherein X is independently selected from the group consisting of chlorine and bromine, until a weight increase has occurred corresponding substantially to one molar equivalent of chlorine per mole of

$$CX_2=CX—S—S—CX=CX_2$$

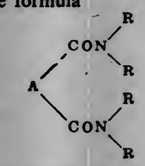
and distilling off the $CX_2=CX—SCl$ formed.

3,296,303
METHOD FOR THE PREPARATION OF AMIDES

Joseph W. Nemec, Rydal, and Harry R. Raterink, Drexel Hill, Pa., and Stanley W. Wise, Audubon, N.J., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,249
7 Claims. (Cl. 260—558)

1. In a method for the preparation of carboxylic acid diamides having the formula



(I)

by reacting a corresponding carboxylic acid diester with a compound having the formula



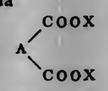
(II)

in a temperature range of about 25° to 130° C. employing a molar ratio of at least 2:1 of said (II) to said (I) in which

R is a member selected from the class consisting of hydrogen, alkyl of 1 to 4 carbon atoms and alkenyl of 3 to 4 carbon atoms,

A is a hydrocarbon group of 2 to 24 carbon atoms wherein there is always at least two carbon atoms between the two amide groups to which A is connected,

the improvement which comprises employing said ester having the formula



wherein X is selected from the class consisting of hydroxyethyl, hydroxypropyl and hydroxyethoxyethyl.

3,296,304
PROCESS FOR THE PREPARATION OF 2,2-DIARYL-N,N-DISUBSTITUTED ACETAMIDES

James N. Tilley, Cheshire, and Adnan A. R. Sayigh, North Haven, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 19, 1963, Ser. No. 331,948
26 Claims. (Cl. 260—558)

1. A process for producing a 2,2-di(Ar)-N,N-disubstituted acetamide, wherein Ar is selected from the group consisting of unsubstituted aryl and alkyl-, alkenyl-, alkoxy-, alkylthio- and halo-substituted aryl, which comprises reacting, at a temperature within the range of about 100° C. to about 250° C., a secondary amine, a polyhalo member selected from the group consisting of 1,1-di(Ar)-2,2,2-trihaloethanes and 1,1-di(Ar)-2,2-dihaloethylenes wherein Ar is as defined above, and a base selected from the group consisting of quaternary ammonium hydroxides, alkali metal hydroxides, and alcoholates of alkali metals, alkaline earth metals, and aluminum, wherein said base is employed in an amount of at least one equivalent per halo atom in said polyhalo member.

3. A process for producing a 2,2-di(Ar)-N-substituted acetamide, wherein Ar is selected from the group consisting of unsubstituted aryl and alkyl-, alkenyl-, alkoxy-, alkylthio- and halo-substituted aryl, which comprises reacting, at a temperature within the range of about 100° C. to about 250° C., a primary amine, a polyhalo member selected from the group consisting of 1,1-di(Ar)-2,2,2 - trihaloethanes and 1,1 - di(Ar) - 2,2 - dihaloethylenes wherein Ar is as defined above, and a base selected from the group consisting of quaternary ammonium hydroxides, alkali metal hydroxides, and alcoholates of alkali metals, alkaline earth metals, and aluminum wherein said base is employed in an amount of at least one equivalent per halo atom in said polyhalo member.

3,296,305
PROCESS FOR 2,2-DIARYL-N-SUBSTITUTED ACETAMIDES

William von E. Doering, Hamden, Adnan A. R. Sayigh, North Haven, and James Noel Tilley, Cheshire, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 4, 1965, Ser. No. 437,303
9 Claims. (Cl. 260—558)

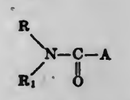
1. A process for the preparation of a 2,2-di(Ar)-N-substituted acetamide, wherein each Ar is selected from the class consisting of unsubstituted aryl and alkyl-, alkenyl-, alkoxy-, alkylthio-, and halo-substituted aryl, which comprises reacting a polyhalo member selected from the group consisting of 1,1 - di(Ar) - 2,2 - dihaloethylene and 1,1 - di(Ar) - 2,2,2 - trihaloethane, wherein Ar is as defined above, with an amine selected from the group consisting of primary and secondary amines at a temperature within the range of about 100° C. to about 250° C. and in the presence of (i) a base selected from the group consisting of alkali metal alcoholates and alkaline earth metal alcoholates, said base being employed in an amount of at least one equivalent per halo atom in said polyhalo member, and (ii) from about 0.5 mole to about 5 mole per mole of said polyhalo member of a dialkyl carbonate wherein alkyl is from 1 to 8 carbon atoms, inclusive.

3,296,306
PROCESS FOR 2,2-DIARYL-N-SUBSTITUTED ACETAMIDES

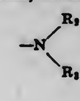
William von E. Doering, Hamden, Adnan A. R. Sayigh, North Haven, and James Noel Tilley, Cheshire, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 4, 1965, Ser. No. 437,304
9 Claims. (Cl. 260—558)

1. A process for the preparation of a 2,2-di(Ar)-N-substituted acetamide, wherein each Ar is selected from the class consisting of unsubstituted aryl and alkyl-, alkenyl-, alkoxy-, alkylthio-, and halo-substituted aryl, which comprises reacting a polyhalo member selected from the group consisting of 1,1-di(Ar)-2,2-dihaloethylene and 1,1-di(Ar)-2,2,2-trihaloethane, wherein Ar is as defined above, with an amine selected from the group consisting of primary and secondary amines at a temperature within the range of about 100° C. to about 250° C. and in the presence of (i) a base selected from the group consisting of alkali metal alcoholates and alkaline earth metal alcoholates, said base being employed in an amount of at least one equivalent per halo atom in said polyhalo member, and (ii) from about 0.5 mole to about 5 moles per mole of said polyhalo member of a compound having the formula:



wherein R represents hydrocarbyl from 1 to 12 carbon atoms, inclusive, R_1 is selected from the group consisting of hydrogen and hydrocarbyl from 1 to 12 carbon atoms, inclusive, and R and R_1 taken together with the attached N atom represent a 5 to 7 ring atom heterocyclic radical, A is selected from the group consisting of hydrocarbyl from 1 to 12 carbon atoms, inclusive, hydrocarbyloxy from 1 to 12 carbon atoms, inclusive, and



wherein R_2 and R_3 taken individually are selected from the group consisting of hydrogen and hydrocarbyl from 1 to 12 carbon atoms, inclusive, at least one of R_2 and R_3 representing hydrocarbyl, and R_2 and R_3 taken together with the attached nitrogen atom represent a 5 to 7 ring atom heterocyclic radical, and wherein said 5 to 7 ring atom heterocyclic radical in each instance is selected from the group consisting of pyrrolidino, alkylpyrrolidino, piperidino, alkylpiperidino, piperazino, alkylpiperazino, morpholino, alkylmorpholino, hexamethyleneimino, homopiperazino, and homopiperidino.

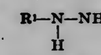
3,296,307

PRODUCTION OF MONOALKYLHYDRAZINES

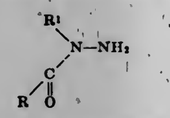
Rob R. MacGregor, Hopewell, and William P. Moore, Jr., Chester, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 27, 1962, Ser. No. 226,714
3 Claims. (Cl. 260—583)

1. A process for the production of a monoalkylhydrazine of the formula



wherein R^1 is an alkyl radical containing 1–4 carbon atoms, which comprises contacting an alkaline medium with an N-alkylacylhydrazide of the formula



wherein R has the same definition as R^1 but is independent therefrom.

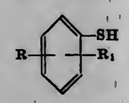
3,296,308

PREPARATION OF SUBSTITUTED THIOPHENOLS FROM AROMATIC THIOLS

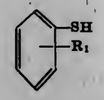
Derek Walker, Boulder, Colo., and Joseph Leib, Montreal, Quebec, Canada, assignors to Dominion Tar and Chemical Company Limited, Montreal, Quebec, Canada

No Drawing. Filed Apr. 6, 1965, Ser. No. 446,117
9 Claims. (Cl. 260—591)

1. Process for preparing substituted thiophenols having the formula:



wherein R represents a radical selected from the group consisting of chlorine, bromine, carboxyacyl radicals and the chloromethyl radical and R_1 represents a radical selected from the group consisting of hydrogen and lower alkyl which comprises: reacting an aromatic thiol of the formula:



wherein R_1 is as defined above, with a compound of the formula:

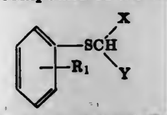


wherein

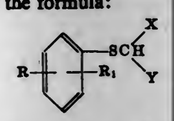
X represents a radical selected from the group consisting of hydrogen, alkyl radicals and aryl radicals, and Y is an electron-withdrawing radical selected from the group consisting of

(a) —COOR′ in which R′ is selected from the group consisting of hydrogen and lower alkyl,
(b) —COR″ in which R″ is a lower alkyl radical, and
(c) —CN

thereby to obtain a compound of the formula:



wherein X, Y and R_1 are as defined above, subjecting the compound thus obtained to a substitution reaction by reacting with a substituting agent selected from the group consisting of chlorinating agents, brominating agents, acylating agents together with a Friedel-Crafts catalyst, said acylating agents being selected from the group consisting of carboxyacyl chlorides and carboxyacyl anhydrides and chloromethylating agents to introduce the corresponding substituent onto the benzene ring, thus forming a compound of the formula:



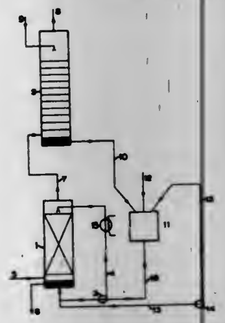
wherein R, R_1, X and Y are as defined above, and subjecting the compound thus obtained to oxidative acid-catalyzed hydrolysis by reaction with an oxidizing agent selected from the group consisting of hydrogen peroxide, potassium permanganate, potassium dichromate, nitric acid and halogens and an acid.

3,296,309

PROCESS FOR STABILIZING AN AQUEOUS FORMALDEHYDE SOLUTION

Abraham H. de Rooij, Geleen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands

Filed July 22, 1963, Ser. No. 296,745
Claims priority, application Netherlands, July 27, 1962, 281,505
3 Claims. (Cl. 260—606)



1. Process for preparing a concentrated formaldehyde solution, suited as starting material in the preparation of formaldehyde-cyanuric acid synthetic resins, by absorption of formaldehyde from formaldehyde containing gas in an absorption system comprising more than one absorption stages wherein the formaldehyde gas is passed into a first stage through which an aqueous absorption liquid is circulated comprising in addition to 15–60% by weight of water, formaldehyde and cyanuric acid in the ratio of 3–8 moles of formaldehyde per mole of cyanuric acid, a portion of this circulating solution being discharged continuously from the system to give the desired product

wherein the amount of discharged solution is such that the amount of formaldehyde entrained therein per unit time corresponds to the quantity of gaseous formaldehyde supplied to said first stage and wherein formaldehyde gas not absorbed in the first stage is subsequently absorbed in a final absorption stage by means of a continuous flow of water running in counterflow to the gas and cyanuric acid is added to the resulting solution in an amount such that per unit time the amount of added cyanuric acid corresponds with the amount of acid discharged in the desired product recovered from the first stage, the resulting mixture of formaldehyde, cyanuric acid and water being added as make-up liquid to the liquid circulating through the first stage.

3,296,310

PROCESS FOR THE PREPARATION OF THIOBISPHENOLS

Herman S. Gilbert, Angleton, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 26, 1964, Ser. No. 355,066
5 Claims. (Cl. 260—609)

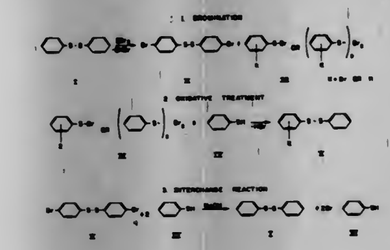
1. A process for the preparation of thiobisphenols having the sulphur atoms attached to the phenol nucleus substantially exclusively in the ortho- and para-positions comprising reacting a phenolic compound selected from the group consisting of phenol, alkyl-substituted phenols, chlorophenols and bromophenols with elemental sulfur in the presence of a catalytic amount of a halogen selected from the group consisting of iodine and bromine.

3,296,311

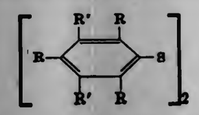
PROCESS FOR THE NUCLEAR BROMINATION OF THIOPHENOLS

Robert J. Laufer, Pittsburgh, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 10, 1964, Ser. No. 336,989
3 Claims. (Cl. 260—609)



1. In the process of preparing a bromothiophenol in which a diphenyl disulfide having the following formula:



where R and R′ are selected from the class consisting of hydrogen and lower alkyl groups and at least one R is hydrogen, is brominated to yield a crude bromination product comprising principally a bis-(bromophenyl)disulfide which is thereafter reduced to its corresponding bromothiophenol, the improvement which comprises adding a thiophenol to said crude bromination product until hydrogen bromide ceases to be evolved, and before reduction of said bis(bromophenyl)disulfide to its corresponding bromothiophenol is initiated.

3,296,312

CATALYTIC CONVERSION

Paul A. Naro, Woodbury, David D. Nelsweander, Haddonfield, and Robert D. Offenhaner, Sewell, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 13, 1963, Ser. No. 287,495
9 Claims. (Cl. 260—614)

1. A method of conducting a hydride transfer reaction between two molecules one of which serves as a hydride donor and the other of which serves as a hydride acceptor, one of said molecules being selected from the group consisting of benzaldehyde and formaldehyde, and the other of said molecules being selected from the group consisting of benzaldehyde, formaldehyde, benzyl alcohol and formic acid, comprising carrying out said reaction between said two molecules at a temperature of about 100–500° C. in the presence of a crystalline aluminosilicate catalyst.

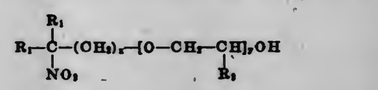
3,296,313

NITROHYDROXYETHERS

John A. Frump, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland

No Drawing. Filed Aug. 15, 1963, Ser. No. 302,470
2 Claims. (Cl. 260—615)

1. A composition of matter having the general formula:



wherein R_1 is an alkyl radical of about 1 to 20 carbon atoms; R_2 is a member selected from the group consisting of hydrogen, alkyl and hydroxy-substituted alkyl; y is an integer ranging from 1 to 20; and x is an integer ranging from 1 to 20.

3,296,314

PROCESS FOR PURIFYING METHYL ETHER

Harold W. Burns, Woodbury, N.J., and Frederick J. Sebelist, Chadds Ford, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 12, 1963, Ser. No. 322,918
5 Claims. (Cl. 260—616)

1. In a process for purifying methyl ether containing oxides of nitrogen, the step of scrubbing said methyl ether in the vapor phase with an aqueous acidic solution containing about from 0.1 to 5% by weight of an inorganic acid selected from the group consisting of sulfuric acid and phosphoric acid and about from 0.1 to 5% by weight of an $—NH_2$ containing compound selected from the group consisting of sulfamic acid and urea.

3,296,315

PREPARATION OF HYDROXY NITROPHENYL COMPOUNDS

Horst G. Adolph and Joseph C. Dacons, Silver Spring, Md., and Mortimer J. Kamlet, London, England, assignors to the United States of America as represented by the Secretary of the Navy

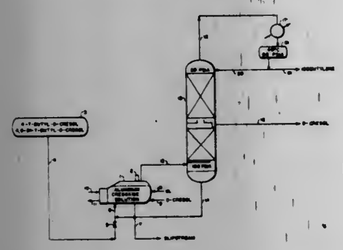
No Drawing. Filed May 2, 1963, Ser. No. 277,984
4 Claims. (Cl. 260—620)

1. Process for the conversion of methyl trinitrophenyl compounds to the corresponding hydroxy trinitrophenyl compounds wherein said methyl trinitrophenyl compound is selected from the group consisting of 3,3′-dimethyl-2,2′,4,4′,6,6′-hexanitrobiphenyl, trinitrotoluene, 3-bromo-2,4,6-trinitrotoluene, 2,4,6-trinitro-m-cresol and 3-methyl-2,2′,4,4′,6,6′-hexanitrobiphenyl comprising the oxidation of said methyl trinitrophenyl compounds in the presence of sulfuric acid, nitric acid and an alkali metal dichromate.

3,296,316
DEALKYLATION OF BRANCHED-CHAIN p-ALKYLATED PHENOLS

Martin B. Neuworth, Pittsburgh, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 27, 1961, Ser. No. 157,035
10 Claims. (Cl. 260—621)



1. A process for dealkylating a dealkylatable monobasic phenol containing a branched-chain alkyl group in the para position and otherwise unsubstituted on the nucleus by other than alkyl groups, said phenol being selected from the group consisting of p-nonylated phenol, p-t-butylated metacresol, 2,6-di-t-butyl-p-cresol, 4-t-butyl-o-cresol, 4,6-di-t-butyl-o-cresol, and a mixture of 4-t-butyl-o-cresol and 4,6-di-t-butyl-o-cresol, which comprises heating a mixture of said phenol and from 0.3 to 10 percent by weight, based on aluminum content, of an aluminum phenoxide for at least 2 hours at a temperature between 150 and 400° C. at which a gaseous olefin is formed, and recovering from the reaction mixture the phenol stripped of said branched-chain alkyl group in the para position.

3,296,317
PROCESS FOR THE POLYMERIZATION OF UNSATURATED FATTY ALCOHOLS

Werner Stein, Dusseldorf-Holthausen, and Guntram Walther, Dusseldorf-Eller, Germany, assignors to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany

No Drawing. Filed June 1, 1962, Ser. No. 199,263
Claims priority, application Germany, June 6, 1961, H 42,782
15 Claims. (Cl. 260—635)

1. A process for the polymerization of unsaturated fatty alcohols to form polymers having the same number of hydroxyl groups as present in the starting alcohol molecules forming the polymer, which comprises contacting an unsubstituted unsaturated fatty alcohol containing 12 to 26 carbon atoms and having conjugated double bonds at a temperature in the range 200–380° C. in the presence of about 0.01–10 weight percent referred to the unsaturated alcohol of at least one basically reacting alkaline earth metal compound selected from the group consisting of alkaline earth metal, bicarbonates, carbonates, oxides and hydroxides, and unsubstituted phenolates and alcoholates having 1 to 22 carbon atoms in their molecules for a period ranging from about 5 minutes to about 10 hours and recovering the polymer thus produced.

14. A polymer of unsaturated fatty alcohols having the same number of hydroxyl groups as present in the starting alcohol molecules forming the polymer prepared by contacting an unsubstituted unsaturated fatty alcohol containing 12 to 26 carbon atoms and having conjugated double bonds at a temperature in the range 200°–380° C. with about 0.01–10 weight percent referred to the unsaturated alcohol of at least one basically reacting alkaline earth metal compound selected from the group consisting of alkaline earth metal, bicarbonates, carbonates, oxides and hydroxides, and unsubstituted phenolates and alcoholates having 1 to 22 carbon atoms in their molecules for a period ranging from about 5 minutes to about 10 hours.

15. A process for the removal of unsubstituted unsaturated fatty alcohols containing 12 to 26 carbon atoms and containing multiple unsaturation in admixture with unsubstituted fatty alcohols free of multiple unsaturation and containing 12 to 26 carbon atoms which comprises contacting with 0.01 to 2 weight percent of a member selected from the group consisting of alkali metal alcoholates, metals of the platinum group and active carbon whereby the alcohols containing unconjugated unsaturation are isomerized to produce alcohols containing conjugated saturation, thereafter contacting the resultant alcohol mixture having conjugated unsaturation at a temperature in the range 200–380° C. with about 0.01–10 weight percent referred to the unsaturated alcohol of at least one basically reacting alkaline earth metal compound selected from the group consisting of alkaline earth metal, bicarbonates, carbonates, oxides and hydroxides, and unsubstituted phenolates and alcoholates having 1 to 22 carbon atoms in their molecules for a period ranging from about 5 minutes to about 10 hours and separating the alcohol fraction free of multiple unsaturation from the resulting mixture by distillation.

3,296,318
EXTRACTION OF ALCOHOL FOR ODOR BODY REMOVAL

Charles M. Starks, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,649
12 Claims. (Cl. 260—643)

1. A process for the removal of diol from admixture with monool which process comprises:

liquid-liquid extraction of a liquid mixture of an aliphatic hydrocarbon monohydric alcohol having 5 to 30 carbon atoms, as the predominant alcohol, and an aliphatic hydrocarbon dihydric alcohol having not more than about 12 carbon atoms;

with an aqueous solvent having about 60–100 volume percent of water and the remainder essentially only organic liquid selected from the class consisting of ethanol, methanol, propanol, acetone, methyl ethyl ketone, dimethylformamide and dioxane

under conditions of 10° to 200° C. and at least an equal volume of said solvent to obtain a solvent phase enriched in said dihydric alcohol and an alcohol phase of decreased content of said dihydric alcohol, and

separating said phases.

6. A process for the improvement of the quality of alcohol for use in the production of alcohol sulfates which process comprises:

liquid-liquid extraction of a liquid alcohol having 6 to 30 carbon atoms and being the even-number, straight chain primary alcohol product of the hydrolysis of the reaction product of oxygen and aluminum trialkyl

with an aqueous solvent consisting essentially only of about 70–100 volume percent water and the about 30–0 (zero) volume percent of a liquid selected from the class consisting of ethanol, methanol, propanol, acetone, methyl ethyl ketone, dimethylformamide and dioxane,

at a temperature of about 10°–200° C. and at least an equal volume of said solvent to obtain a liquid solvent extract phase and a liquid alcohol phase

separating said phases and recovering from said alcohol phase an alcohol of improved sulfation quality.

3,296,319
PARTICLE SIZE CONTROL IN FLUIDIZED OXYCHLORINATION REACTION

Lester E. Bohl and Raymond M. Vanscoy, New Martinsville, W. Va., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 22, 1965, Ser. No. 502,259
5 Claims. (Cl. 260—654)

1. In a process for the oxychlorination of aliphatic hydrocarbons containing from 1 to 4 carbon atoms and their incompletely chlorinated derivatives, comprising reacting the material to be chlorinated, oxygen and a chlorinating agent selected from the group consisting of HCl and Cl_2 and mixtures of HCl and Cl_2 in a fluidized bed of oxychlorination catalyst particles maintained at an elevated temperature the improvement comprising regulating the particle size distribution of the catalyst particles contained within the fluidized bed during the reaction to provide in the bed at least 75 percent by weight of the catalyst particles in distribution of sizes ranging between 30 to 60 mesh, said particles containing at least 10 percent by weight of the particles in the range of 50 to 60 mesh.

3,296,320
SELECTIVE HYDROGENATION OF TRANS, CIS-1,5-CYCLODECADIENE TO CIS-CYCLODECENE

Joseph T. Arrigo, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 4, 1965, Ser. No. 430,498
8 Claims. (Cl. 260—666)

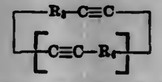
1. A process for the preparation of cis-cyclodecene which comprises reacting hydrogen and trans,cis-1,5-cyclodecadiene under hydrogen pressure and at a temperature of from about 0° C. to about 75° C. in contact with a catalyst composite consisting of reduced nickel and an adsorbent carrier material selected from the group consisting of alumina, silica and diatomaceous earth.

3,296,321
CYCLIC ACETYLENIC HYDROCARBON PREPARATION

Bobby F. Adams, Painesville, and John H. Wotiz, Mentor, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Original application Aug. 6, 1959, Ser. No. 831,930, now Patent No. 3,207,804, dated Sept. 21, 1965. Divided and this application Dec. 11, 1964, Ser. No. 432,034
15 Claims. (Cl. 260—666)

1. A cyclic polyyne having the structure:



wherein n is a number greater than 0; R_3 and R_4 are alkylene radicals having at least 5 carbon atoms.

3,296,322
PREPARATION OF ORTHO-ETHYLTOLUENE

Frederick J. Soderquist, Essexville, and James L. Amos and Robert H. Allen, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

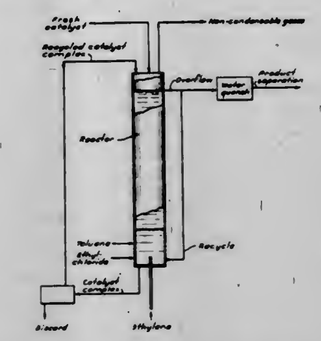
Filed Nov. 7, 1963, Ser. No. 322,089
6 Claims. (Cl. 260—671)

1. A continuous process for preparing ortho-ethyltoluene, which process comprises:

(A) feeding ethylene and toluene reactants, in a ratio of about 1.5 to 6.0 moles of toluene per mole of ethylene, into a reaction zone maintained at a temperature of from about 20° to 90° C.,

(B) providing a dispersion of from about 1 to 10 grams of an activated Friedel-Crafts catalyst per mole of toluene fed to said reaction zone,

(C) removing all of said activated catalyst settling out of said reaction zone in a non-dispersed phase immediately upon formation thereof,



(D) withdrawing a mixture of unreacted toluene, mono-ethyltoluene and polyethyltoluenes from said reaction zone at a rate which provides for an average residence time of said reactants of from about 10 minutes to 10 hours,

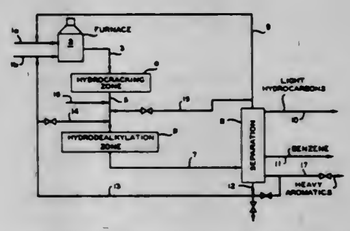
(E) neutralizing any of said catalyst present in said mixture immediately upon withdrawal thereof, and

(F) separating said mixture by fractional distillation whereby an improved yield of ortho-ethyltoluene product is obtained.

3,296,323
PRODUCTION OF BENZENE

John W. Myers and William C. Lanning, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed June 30, 1961, Ser. No. 121,016
10 Claims. (Cl. 260—672)



1. A process for hydrodealkylating a stream comprising alkyl aromatic compounds having at most about six alkyl carbon atoms per molecule which comprises passing said stream to a pre-heating zone, adding hydrogen and a minor proportion of C_6–C_8 non-aromatic compounds sufficient to heat said stream in said pre-heating zone from about 900° F. to a temperature of at most about 1200° F. by substantial hydrocracking of said non-aromatic compounds, said heating in said hydrocracking zone resulting from said hydrocracking reaction only, recovering the effluent from said pre-heating zone and passing said effluent to a reaction zone defined by refractory surfaces, heating said effluent in said reaction zone to a temperature in the range of from about 1100° F. to about 1500° F., recovering from said reaction zone a second effluent stream, separating said second effluent stream into a first benzene-containing product fraction and a second heavy fraction boiling above about 500° F., and returning said second heavy fraction as a portion of said stream to the process.

3,296,324
DEHYDROCYCLODIMERIZATION OF LOW MOLECULAR WEIGHT PARAFFINS

Sigmund M. Csicsery, Greenbrae, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,187
8 Claims. (Cl. 260—673)

1. A process for converting low molecular weight paraffins to higher molecular weight aromatic hydrocarbons and hydrogen, which comprises contacting in a reaction zone at least one paraffin hydrocarbon containing from 3 to 5 carbon atoms per molecule with a catalyst comprising at least one Group VIII metal disposed on a solid, alumina-containing support, said alumina support being of sufficient acidity that the acidity index of the catalyst is between 0 and 9, at a temperature in the range of from about 800 to 1200° F., and at a pressure in the range of from about 2 to 1500 p.s.i.a., said contacting being done such that the mole ratio of hydrogen added to said reactor (other than that produced in the reaction) to said paraffin hydrocarbon is less than 1.0.

3,296,325
CATALYST AND METHOD FOR PRODUCING THE SAME

Orville Gross, Pleasure Ridge Park, and Bruce T. Alexander, Louisville, Ky., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 11, 1963, Ser. No. 329,896
9 Claims. (Cl. 260—677)

1. A catalyst suitable for the selective hydrogenation of acetylenes in the presence of olefins, comprising about 40–60% iron oxide and about 25–35% silica of low surface area not greater than about 50 square meters per gram on which is supported about 5–20% of a metal oxide of a metal of Group VIIIB Series 4 of the Periodic Table and about 0.1–2% of a metal oxide of a metal of Group VIB of the Periodic Table.

8. Method of selectively hydrogenating acetylenic hydrocarbons to olefinic hydrocarbons in a gas stream containing olefins and an excess of hydrogen, which comprises contacting said gas stream with a catalyst as defined by claim 1 at a temperature in the range from 200° to 600° F. and a pressure in the range from 25 to 350 p.s.i.g.

3,296,326
PROCESS FOR RECOVERY OF DIETHYLENE GLYCOL MONOALKYL ETHER IN AN ACETYLIN RECOVERY PROCESS

Eugene Marvin Kling, Montague, Mich., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 8, 1964, Ser. No. 373,555
9 Claims. (Cl. 260—678)

1. In the process of manufacturing monovinylacetylene by the steps of passing acetylene through an aqueous catalyst solution of cuprous chloride and potassium chloride containing diethylene glycol monoalkyl ether, in which the alkyl group contains from one to eight carbon atoms, as a dispersed phase, condensing the water vapor present in the exit gas from said catalyst solution, and extracting the monovinylacetylene from the remaining exit gas by preferential solution in acetone, the improvement comprising recovering the diethylene glycol monoalkyl ether from the condensate formed during the condensing step by absorbing said ether into activated charcoal, extracting the absorbed ether from said charcoal with acetone, and returning the resultant extract to said catalyst solution.

3,296,327
OLEFIN CRACKING PROMOTED BY METHYLENE CHLORIDE

Kenneth J. Frech, Kent, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 7, 1962, Ser. No. 222,177
9 Claims. (Cl. 260—680)

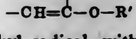
1. An isoprene producing process which comprises providing a mixture of (a) at least one olefin from the group of 2-methyl pentene-2; 3-methyl pentene-2; 2-ethyl butene-1; 2,3-dimethyl butene-1; 2-methyl hexene-2 and 3-methyl hexene-2 and (b) at least 0.5 mol percent, based on the total mols of said olefin, of methylene chloride, subjecting said mixture to temperatures ranging from about 400° C. to about 900 C. for periods of time ranging from about 0.05 to about 0.5 second at pressures not exceeding about 100 p.s.i., to cleave the carbon-to-carbon single bond which is in the position beta to the double bond of said olefin, thereby forming isoprene and recovering said isoprene.

3,296,328
PROCESS FOR PREPARING OLEFINIC COMPOUNDS

Piero Pino and Gian Paolo Lorenzi, Pisa, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,054
Claims priority, application Italy, Mar. 15, 1962, 5,138/62
8 Claims. (Cl. 260—681)

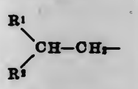
1. A process of preparing an olefin hydrocarbon, which comprises reacting an alkenyl ether having the formula:



wherein R' is an alkyl radical, with an aluminum compound of the formula:

$$R_2AlR^3$$

wherein R is an alkyl radical and R^3 is selected from the group consisting of H and



wherein R^1 and R^2 are each selected from the group consisting of H and alkyl radicals.

3,296,329
BUTADIENE EXTRACTION AND PURIFICATION

Guy Z. Moore, Jr., Odessa, Tex., assignor to El Paso Products Company, Odessa, Tex., a corporation of Texas

Filed Oct. 29, 1965, Ser. No. 505,679
5 Claims. (Cl. 260—681.5)

1. The method of purifying a hydrocarbon-containing cuprous ammonium acetate solution having therein butadiene and C_4-hydrocarbon impurities which comprises introducing an essentially single phase hydrocarbon-containing cuprous ammonium acetate solution into a quiescent settling zone controlled and maintained under non-turbulent flow conditions for a period of time sufficient to establish the condition wherein the ratio

$$\frac{X_p}{X_f}$$

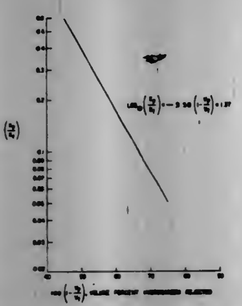
is a function of the ratio

$$1-\frac{V_p}{V_f}$$

characterized by the equation:

$$\log_{10}\left(\frac{X_p}{X_f}\right)=-3.58\left(1-\frac{V_p}{V_f}\right)+1.37$$

wherein X_p represents the C_4-hydrocarbon impurities, excluding 1,2-butadiene, expressed as volume percent of the total hydrocarbons contained in the cuprous ammonium acetate solution leaving the settling zone, X_f represents the C_4-hydrocarbon impurities, excluding 1,2-butadiene, expressed as volume percent of the total hydrocarbons contained in the cuprous ammonium acetate solution feed to the settling zone, V_p represents the volume percent of total hydrocarbons in the cuprous ammonium acetate solution leaving the settling zone, V_f represents the volume percent of total hydrocarbons in



the cuprous ammonium acetate solution fed to the settling zone, and

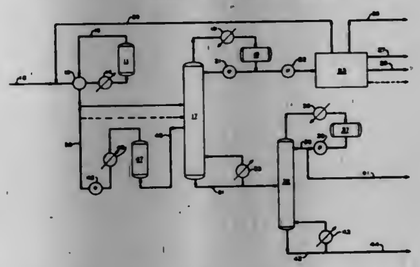
$$100\left(1\frac{V_p}{V_f}\right)$$

represents the volume percent of hydrocarbons rejected from the cuprous ammonium acetate solution in the settling zone.

3,296,330
OLEFIN DISPROPORTIONATION

Fred T. Sherk, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 16, 1962, Ser. No. 187,630
7 Claims. (Cl. 260—683)



1. A process for the disproportionation of an acyclic olefin hydrocarbon, which comprises:

contacting said hydrocarbon with a catalyst comprising oxides of molybdenum and aluminum in a first reaction zone under conditions including a temperature in the range of 250 to 450° F. to produce a first disproportionated product;

passing said first disproportionated product into a separation zone;

separating said product into a relatively low molecular weight fraction, an intermediate molecular weight fraction, and a relatively high molecular weight fraction;

recovering said relatively low molecular weight fraction as a first product;

recovering said relatively high molecular weight fraction as a second product;

contacting said intermediate molecular weight fraction with a catalyst comprising oxides of molybdenum and aluminum in a second reaction zone under conditions including a temperature in the range of 150 to 400° F. to produce a second disproportionated product comprising additional relatively low molecular weight fraction and additional relatively high molecular weight fraction; and

passing said second disproportionated product into said separation zone.

3,296,331
LIQUID PHASE POLYMERIZATION OF OLEFINS USING A ZINC FLUORIDE-ALUMINA CATALYST

Stephen M. Kovach, Highland, Ind., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 24, 1962, Ser. No. 219,107
3 Claims. (Cl. 260—683.15)

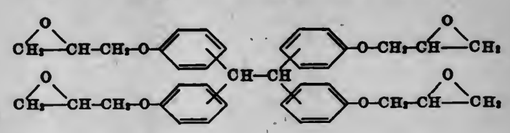
1. A process for the selective polymerization of an olefin selected from the group consisting of propylene and isobutylene to polymers whose molecular weights correspond to multiple units of said olefin which consists essentially of polymerizing said olefin in the liquid phase at a temperature of about 70 to 180° F. and a pressure of about 200 to 800 p.s.i.g. in contact with a catalyst consisting essentially of a catalytic amount of about 1 to 20% by weight zinc fluoride supported on activated alumina.

3,296,332
COMPOSITION COMPRISING THE REACTION PRODUCT OF DICYCLOPENTADIENE WITH ANOTHER EPOXY COMPOUND, A POLYCARBOXYLIC ACID ANHYDRIDE, AND A POLYOL

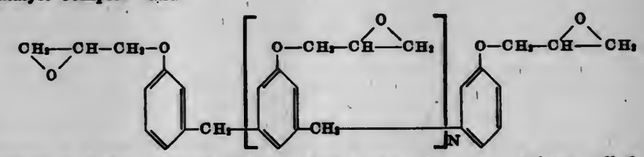
Vance A. Chase and Stewart A. Miller, Marion, Va., assignors to Brunswick Corporation, a corporation of Delaware

No Drawing. Filed Apr. 24, 1963, Ser. No. 275,209
4 Claims. (Cl. 260—835)

1. A substantially rigid heat resistant plastic product, comprising: the reaction product of dicyclopentadiene dioxide, a member of the class consisting of 1,2-epoxy compounds having the following structural formulae:



and



wherein N is a value greater than zero, a lower alkyl polyol and maleic anhydride, said reaction product having been cured at a temperature of about 300° F. for about three hours and post cured at temperatures up to about 500° F. for a time necessary to provide substantial heat resistance at intended service temperatures.

3,296,333
THERMAL INSULATING COMPOSITION COMPRISING A MIXTURE OF A PHENOL-ALDEHYDE RESIN AND POLYPROPYLENE

John W. White, Jr., Costa Mesa, Calif., assignor to Whittaker Corporation, a corporation of California

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,814
7 Claims. (Cl. 260—848)

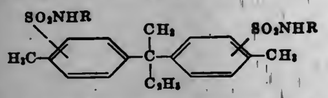
1. A thermal insulating composition capable of withstanding high heat fluxes consisting essentially of about 40 to about 60% by weight of a phenol-aldehyde resin and about 40 to about 60% by weight polypropylene, based on the total weight of said resin and said polypropylene.

3,296,334
CONDENSATION PRODUCTS OF AN ALDEHYDE WITH SULFAMOYL AND ALKYLSULFAMOYL DERIVATIVES OF 2,2-DI(P-TOLYL)BUTANE

John C. Petropoulos, Norwalk, and Anthony T. Coscia, South Norwalk, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Original application Mar. 21, 1961, Ser. No. 97,154, now Patent No. 3,150,168, dated Sept. 22, 1964. Divided and this application Feb. 4, 1964, Ser. No. 342,515
7 Claims. (Cl. 260—849)

1. A process for the preparation of a condensation product which comprises condensing (A) formaldehyde and (B) a compound having the formula



wherein R is a substituent selected from the group consisting of hydrogen and an alkyl radical having from 1 to 8 carbon atoms at a temperature ranging from about 30° C. to about 150° C., in the presence of from about 0.1% to about 5.0%, by weight, based on the combined weight of (A) and (B), of an acid catalyst, and at a molar ratio of (B) to (A) of from about 1:1 to about 1:3, respectively.

7. A cross-linked resinous reaction product produced by reacting the resinous reaction product produced by condensing (A) formaldehyde and (B) 2,2-bis(4-methyl-3-sulfamoylphenyl)butane at a temperature ranging from about 30° C. to about 150° C., in the presence of from about 0.1% to about 5.0%, by weight, based on the combined weight of (A) and (B), of an acid catalyst, and at a molar ratio of (B) to (A) of from about 1:1 to about 1:3, respectively, with a thermosetting resin selected from the group consisting of urea-formaldehyde, melamine-formaldehyde and alkyd resins at a temperature ranging from about 120° C. to about 350° C. and for from about 15 minutes to about 2 hours.

3,296,335
PROCESS FOR PROVIDING ELECTRICALLY INSULATED CONDUCTORS AND COATING COMPOSITION FOR SAME

Franz Blaschke, Witten-Ruhr, Germany, assignor to Chemische Werke Witten G.m.b.H., Witten-Ruhr, Germany

No Drawing. Filed Oct. 30, 1962, Ser. No. 234,206
Claims priority, application Germany, Nov. 10, 1961, C 25,474
17 Claims. (Cl. 260—860)

1. A method of manufacturing electrically insulated conductors by coating the same with an insulating composition, comprising passing the electric conductor through a bath of a coating composition comprising (A) approximately 5 to 60 parts by weight of a linear hydroxypolyester of an acid selected from the group consisting of terephthalic acid and mixtures thereof with isophthalic acid and ethylene glycol, said linear hydroxypolyester having a viscosity number above about 0.5, and (B) approximately 95 to 40 parts by weight of a polyester of a compound selected from the group consisting of terephthalic acid, isophthalic acid, mixtures of terephthalic and isophthalic acids, and derivatives of isophthalic and terephthalic acids having a radical disposed on at least one of the carbonyl groups which is easily replaceable by the alkoxy group of an alcohol, ethylene glycol and a saturated poly-alcohol containing at least 3 hydroxyl groups, said polyester containing terminal- and chain-positioned hydoxyl groups, and subsequently passing the coated conductor through a hardening zone of approximately 3 m. in length maintained at a temperature of at least 380° C. at a rate of approximately 4 to 10 m./minute.

3,296,336
UNSATURATED POLYESTER RESINS DERIVED FROM COMPLEX ETHER ALCOHOLS, COMPOSITIONS CONTAINING SAME, AND PROCESS FOR PRODUCING THE COMPOSITION

Friedrich Engelhardt, Homberg, Lower Rhine, Germany, assignor to Rheinpreussen Aktiengesellschaft für Bergbau und Chemie, Homberg, Lower Rhine, Germany, a corporation of Germany

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,295
Claims priority, application Germany, July 7, 1958, R 23,630
8 Claims. (Cl. 260—861)

1. A resin composition comprising a mixture of a resin consisting of condensation reaction product of a polyhydric alcohol containing about 3–10 hydroxyl groups, a saturated dicarboxylic acid and an unsaturated ether alcohol having only one hydroxyl group and at least two monoolefinic groups bonded respectively to two ether oxygen, with an unsaturated polyester of an unsaturated dicarboxylic acid and a polyhydric alcohol, and a vinylmonomer selected from the group consisting of styrene, methacrylic acid esters, vinyl-acetate, methylstyrene, vinylchloride, and vinylidenechloride, said resin composition being hardenable by simultaneous air-drying and copolymerization.

3,296,337
AIR DRYING UNSATURATED POLYESTERS FROM DIALLYLIDENE PENTAERYTHRITOL, HYDROXYL TERMINATED ESTERS, AND ALLYL AND BENZYL ETHERS

Rolf Zimmermann, Wiesbaden-Biebrich, Germany, assignor to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Jan. 4, 1963, Ser. No. 249,326
Claims priority, application Germany, Jan. 13, 1962, C 25,993
18 Claims. (Cl. 260—867)

1. A process for the production of synthetic resins, which comprises reacting (A) at least one diallylidene acetal selected from the group consisting of diallylidene pentaerythritol and a diester of a dicarboxylic acid with a monoallylidene acetal of an at least trihydric alcohol, said monoallylidene acetal still containing one reactive hydroxy group, with (B) at least one ester containing free excess alcoholic hydroxy groups which is the condensation reaction product of (1) at least one polyhydric alcohol and (2) at least one difunctional acid free from acetylenic bonds in which acid component at least 50 equivalent percent consist of the radical of at least one α,β-ethylenically unsaturated dicarboxylic acid and (C) at least one compound selected from the group consisting of allyl and benzyl ethers of a polyhydric alcohol, which ethers contain at least one free hydroxy group in their molecule, in the presence of a catalytic amount of (D) an acid reacting addition catalyst.

3,296,338
BLOCK COPOLYMERS OF ETHYLENE AND PROPYLENE

James L. Jezl, Swarthmore, and Habet M. Khelghatian, Springfield, Pa., and Louise D. Hague, Wilmington, Del., assignors to Avisun Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,613
1 Claim. (Cl. 260—878)

A process for the preparation of block copolymers of ethylene and propylene which comprises contacting a first feed selected from the group consisting of propylene and mixtures of propylene and ethylene containing from about 1.5% to 5% ethylene, in an inert solvent with a catalyst system consisting of aluminum dialkyl monochloride, titanium trichloride, and a polyethylene glycol dimethyl ether, the mol ratio of aluminum dialkyl monochloride to titanium trichloride being in the range of 0.2:1 to 10:1, and the atomic ratio of aluminum to glycol ether oxygen being from about 1:0.06 to 1:0.01, discontinuing the first feed, and contacting the catalyst system with a second feed selected from the group consisting of ethylene and mixtures of ethylene and propylene having a higher ethylene content than the first feed, and recovering a pentane-insoluble product having a lower brittle point and higher tensile impact strength than polypropylene of equivalent flow rate.

3,296,339
THERMOPLASTIC COMPOSITIONS FORMED BY POLYMERIZING METHACRYLIC ACID ESTERS AND POLYBUTADIENE LATICES

Seymour S. Feuer, Durham, N.H., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 20, 1966, Ser. No. 521,796
7 Claims. (Cl. 260—879)

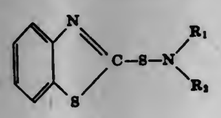
1. A rigid, tough, solid thermoplastic composition comprising 85 to 60 parts by weight of a member of the group consisting of methyl methacrylate solely and mixtures of at least 50% by weight of methyl methacrylate with another monomer having a single vinylidene group as the sole polymerizably reactive group polymerized while in intimate contact with 15 to 40 parts by weight of a butadiene homopolymer.

3,296,340
SELF-EXTINGUISHING ALKENYL AROMATIC RESINS CONTAINING SULFENAMIDES

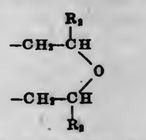
Jacob Eichhorn, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,736
6 Claims. (Cl. 260—892)

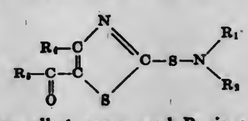
1. A self-extinguishing alkenyl aromatic resin comprising a polymer of a monomer selected from the group consisting of styrene, α-methyl styrene, ethyl styrene, isopropyl styrene, tert. butyl styrene, vinyl toluene, vinyl xylene and chlorostyrene, the polymer being: (a) a homopolymer of one of the monomers; (b) a copolymer of at least two of the monomers; (c) a copolymer of one of the monomers and acrylonitrile; or (d) a copolymer of one of the monomers and an elastomer selected from the group consisting of polybutadiene, polyisoprene, and butadiene-styrene copolymers, said resin containing as flameproofing agents a halide selected from the group consisting of ammonium bromide, organic chlorides, and organic bromides in combination with about 0.5 to 2 parts per hundred parts resin of a sulfenamide having the general formula:



where R_1 is hydrogen, an alkyl, cycloalkyl or phenyl group; R_2 is an alkyl, cycloalkyl, phenyl or the mercaptobenzothiazole group, or where R_1 and R_2 collectively are



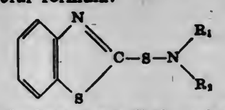
where R_3 is hydrogen or an alkyl group, and the general formula:



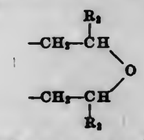
where R_4 is an alkyl group and R_5 is an alkyl or an alkoxy group.

5. A method of treating an alkenyl aromatic resin comprising a polymer of a monomer selected from the group consisting of styrene, α-methyl styrene, ethyl styrene, isopropyl styrene, tert. butyl styrene, vinyl toluene, vinyl xylene and chlorostyrene, the polymer being: (a) a homopolymer of one of the monomers; (b) a copolymer of at least two of the monomers; (c) a copolymer of one of the monomers and acrylonitrile; or (d) a copolymer of one of the monomers and an elastomer selected from the group consisting of polybutadiene, polyisoprene, and butadiene-styrene copolymers, to produce a self-extinguishing resin comprising:

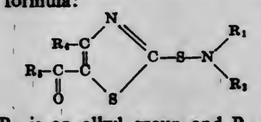
preparing an aqueous dispersion of resin granules together with flameproofing agents consisting of a self-extinguishing quantity of a halide selected from the group consisting of ammonium bromide organic chlorides, and organic bromides and about 0.5 to 2 parts per hundred parts resin of a sulfenamide having the general formula:



where R_1 is hydrogen, an alkyl, cycloalkyl or phenyl group; R_2 is an alkyl, cycloalkyl, phenyl or the mercaptobenzothiazole group, or where R_1 and R_2 collectively are



where R_3 is hydrogen or an alkyl group, and the general formula:



where R_4 is an alkyl group and R_5 is an alkyl or an alkoxy group, said quantity of halide being less than that required to render said resin self-extinguishing in the absence of said sulfenamide,

agitating said dispersion while gradually increasing the temperature thereof to a level in the range 95 to 130° C.,

maintaining said temperature level for a period up to 4 hours, thereafter

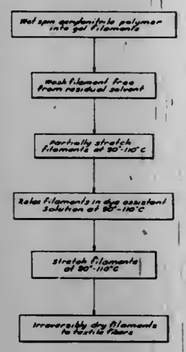
gradually decreasing the temperature of said dispersion to approximately room temperature, then

recovering said self-extinguishing resin granules therefrom.

3,296,341
METHOD FOR IMPREGNATING ACRYLONITRILE POLYMER FIBERS TO IMPROVE DYEABILITY

Herman P. Briar, Rancho Cordova, Calif., and Rupert B. Hurley, Williamsburg, Va., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed July 15, 1963, Ser. No. 295,135
9 Claims. (Cl. 264—78)



1. A method for improving through dyeability of acrylonitrile polymer fibers comprising

(a) spinning a solution of a polymer of an ethylenically unsaturated monomeric material containing at least about 80 weight percent of polymerized acrylonitrile into an aqueous coagulating bath to form filaments of said polymer;

(b) washing said filaments essentially free of any residual spinning solution solvent;

(c) partially stretching said washed filaments in an aqueous medium at about 90–110° C.;

(d) relaxing said partially stretched filaments at between about 90° and 110° C. in a liquid bath of a dye assistant agent capable of enhancing the dyeability of said filaments and impregnating said filaments therewith;

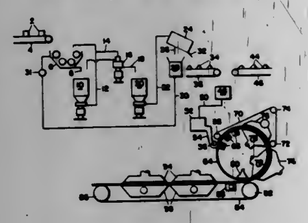
(e) stretching said impregnated filaments in an aqueous medium at about 90°–110° C.; and,

(f) subsequently, irreversibly drying said filaments to textile fibers.

3,296,342
PROCESS FOR FORMING FIBROUS MIXTURES INTO MATS

Howard Bidwell, Granby, Mass., assignor of fifty percent to Rachel Bidwell, Granby, Mass.

Filed Feb. 25, 1964, Ser. No. 347,314
9 Claims. (Cl. 264—87)

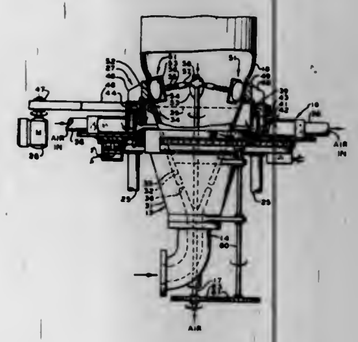


1. In the process for forming reconditioned moist-air-dry fibrous mixtures into mat forms comprising the sequential steps, forming a mat by passing a fibrous mixture through a mat-forming component including moving mat forming and carrying surfaces, extracting the free and excess moisture from the applied mat by means of a multiplicity of moisture extraction vacuum boxes disposed adjacent the mat filtrating surface for vacuum adhering the mat to the surface, partially drying the mat by filter-drying means and applying plus pressures at one side of the mat and simultaneously applying minus pressures at the opposite side of the mat while applying a resin and catalyst to one side of the mat.

3,296,343
METHOD AND APPARATUS FOR PRODUCING BLOWN THERMOPLASTIC TUBING

Doyle D. Buttolph and Louis C. Bearer, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 27, 1963, Ser. No. 268,348
5 Claims. (Cl. 264—95)



1. In the method of preparing continuous, seamless tubing of thermoplastic material, wherein such material is melted and extruded through an annular orifice in the form of tubing, cooled, inflated, and pulled in a longitudinal direction, the improvement comprising passing said tubing through an annular zone wherein rotating compressive force is applied to the peripheral portion of the tubing as it passes through said annular zone in its partially crystallized state, by applying a rotating force against the interior surface of said tubing transverse to the longitudinal direction and simultaneously applying an oppositely rotating force against the exterior surface of said tubing adjacent said rotating force so as to compress said tubing in the transverse direction, said rotating force and said oppositely rotating force having a resultant substantially zero torque on said tubing.

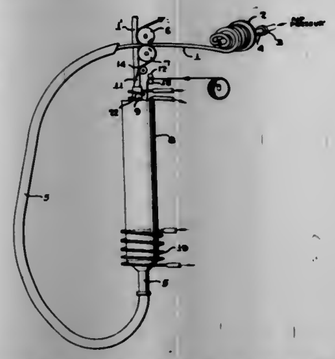
3,296,344
METHOD AND APPARATUS FOR EXPANDING PLASTIC TUBING

Robert Timmerman, North Massapequa, N.Y., assignor to Radiation Dynamics, Inc., Westbury, N.Y., a corporation of New York

Filed May 29, 1963, Ser. No. 284,081
5 Claims. (Cl. 264—95)

1. A method of expanding hollow plastic tubing comprising feeding an indefinite length of tape parallel to its longitudinal axis through a hollow open-ended mold, applying the force for feeding the tape adjacent the exit end of the mold, feeding a hollow tubing through the mold at the same rate at which the tape is fed therethrough, applying the tube feeding force to the tubing before it enters the mold, encasing the tubing in the tape by folding the tape to form a cylinder of tape having a

single longitudinally extending seam, heating the tubing above its melt point interiorly of the mold, applying a pressure to the interior of the tubing to expand the tubing at the temperature employed, cooling the tubing below

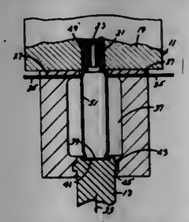


its melt point as it is withdrawn from the mold and stripping the tape from the tubing after cooling thereof.

3,296,345
METHOD OF MAKING MOLDED CONTAINERS

Thomas J. Dietz, Chester Heights, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Oct. 29, 1963, Ser. No. 319,720
7 Claims. (Cl. 264—98)



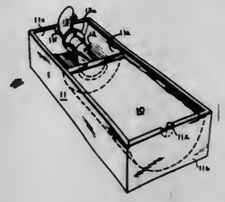
1. A method of forming hollow articles of organic film-forming material including the steps of delivering an open end of a tubular mass of flowable film-forming material against a preformed element having undercut portions so that the film-forming material along the edge of the open end of the delivered tubular mass flows into the undercut portions of the preformed element and interlocks therewith, expanding the tubular mass of film-forming material against the walls of a surrounding mold, causing the film-forming material which is within the undercut portions of the preformed element and the expanded film-forming material to set and severing the expanded film-forming material from its source of supply.

3,296,346
SLURRY POURING MEANS AND METHOD

Richard F. Shannon, Lancaster, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed June 7, 1963, Ser. No. 286,351
9 Claims. (Cl. 264—108)

1. In combination with a cavity-type mold provided with closed end walls and side walls defining a mold cavity having a substantially uniform upwardly opening and generally U-shaped transverse internal configuration, a manually manipulatable slurry pouring nozzle for filling the mold cavity with a cementitious slurry, said pouring nozzle comprising a tubular body portion defining an inlet opening for receiving a flow of slurry from a flexible slurry supply line and having a progressively flattening and widening discharge end formed with a convergent end portion defining an oblong discharge orifice substantially conforming in shape to the transverse bottom surface configuration of the mold cavity and in communicating relationship through said tubular body portion with said inlet opening, said discharge end being shaped to partially restrict the slurry during the passage thereof through said discharge end and said discharge orifice, a walled section defining an inverted L-shaped configuration

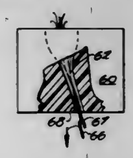


carried by said pouring means adjacent to said discharge orifice and arranged to nest within and form a partition wall extending transversely across the mold cavity, and said walled section being shiftable lengthwise of the mold cavity while retained in such nested position in response to accommodating manually imparted shifting movements of said pouring means along a linear path extending between the closed end walls of said mold.

3,296,347
PROCESS OF MAKING A PROSTHETIC POULTRY SPUR

Gabriel Fuentes, Jr., P.O. Box 867, Bayamon, Puerto Rico 00902

Original application May 4, 1964, Ser. No. 364,601, now Patent No. 3,224,412, dated Dec. 21, 1965. Divided and this application July 19, 1965, Ser. No. 484,149
5 Claims. (Cl. 264—162)



1. A method for manufacturing a prosthetic spur for poultry comprising the steps of forming a mold cavity of the spur shape desired, drawing reinforcing strand material into said mold cavity to longitudinally position said reinforcing strand material therein by means extended into and through said mold cavity from its top to its bottom, then inserting a hardenable synthetic plastic into said mold, curing said plastic to form a spur blank, removing said blank and sharpening the point of said blank.

3,296,348
METHOD FOR TREATING ACRYLONITRILE POLYMER FIBERS TO IMPROVE HEAT STABILITY

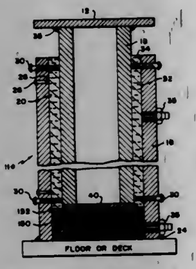
John Moore, Williamsburg, Va., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,206
10 Claims. (Cl. 264—182)

1. The method for preparing an acrylonitrile polymer fiber having improved heat stability comprising impregnating a wet spun gel filament of an ethylenically unsaturated monomeric material containing at least about 80 weight percent acrylonitrile with a water soluble zirco-

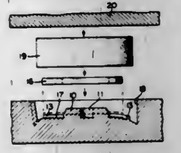
nium salt until between about 0.01 and about 2 weight percent of zirconium, based on dry fiber weight, is incorporated in said filament.

3,296,349
METHOD OF FORMING A MACHINERY SUPPORT
William J. Burch, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy
Original application Dec. 5, 1963, Ser. No. 328,437. Divided and this application Aug. 31, 1965, Ser. No. 484,127
2 Claims. (Cl. 264—262)



2. A method of forming a support member for damping and isolating the vibrations produced by machinery adapted to be supported on the deck of a ship or the like, comprising the steps of:
securing a first column member having a vertically extending and upwardly opening cavity therein to said deck;
filling the bottom portion of said cavity in said first column member with a plurality of flexible spherical elements;
placing a porous sheet material element within said cavity on top of said flexible spherical elements;
securing a machinery support member to one end of a second column member;
inserting the opposite end of said second column member a pre-selected depth into said cavity in said first column member;
temporarily securing said second column member within said cavity in said first column member at said pre-selected depth by means carried by said first column member;
said means for securing said second column member within said cavity in said first column member being operable to space the opposing peripheries of said column members a pre-selected distance apart and to thereby separate said first and second column members;
introducing a self-setting, visco-elastic material into said cavity within said first column member at selected points along the length of said first column member to set and occupy the space within said cavity between the opposing peripheries of said first and second column members; and
removing the means carried by said first column member for temporarily securing said second column member within said cavity in said first column member;
said visco-elastic material when set being bonded to said first and second column members and functioning to both separate said first and second column members and to hold said first and second column members in assembly, said visco-elastic material when set being operable to damp the vibrations produced by said machinery, to isolate said vibrations from said floor, and to isolate said machinery from shock loads emanating from said floor.

3,296,350
METHOD OF MAKING A SHOE HEEL
Thom C. Strope, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Original application May 23, 1962, Ser. No. 197,004, now Patent No. 3,154,867, dated Nov. 3, 1964. Divided and this application Feb. 24, 1964, Ser. No. 351,883
5 Claims. (Cl. 264—266)



1. In the method of molding shoe heels by
(1) charging a heel mold containing an insert flow barrier with (A) a thermoplastic nail retaining insert and (B) a curable rubber biscuit; and
(2) applying sufficient heat and pressure to said mold to cause the rubber to surround the sides, back and breast of said insert and vulcanize said rubber,
the improvement comprising restricting flow of the insert, in a direction outwardly thereof, at spaced locations along said sides of the insert and continuously along the back of said insert, while permitting a restricted flow of said insert intermediate of said spaced locations and along the breast edge of said insert whereby the insert tends to remain centered in said heel.

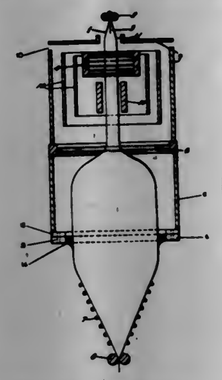
3,296,351
METHOD OF PRODUCING A LATERAL STRETCHING OF A CONTINUOUS SHEET MATERIAL
Ole-Bendt Rasmussen, Copenhagen, Denmark, assignor to Phillips Petroleum Company, a corporation of Delaware
Original application Aug. 8, 1962, Ser. No. 215,745, now Patent No. 3,235,644, dated Feb. 15, 1966. Divided and this application Nov. 29, 1965, Ser. No. 510,194
5 Claims. (Cl. 264—289)



1. A method of making fiber from orientable plastic film which comprises strongly orienting a sheet of thermoplastic material sufficiently to make the said sheet easily fissionable by stretching the sheet longitudinally in a known manner and subsequently laterally stretching the longitudinally oriented sheet by sandwiching the sheet between two elastomeric bands, and gradually distending said bands laterally while allowing said bands to contract longitudinally.

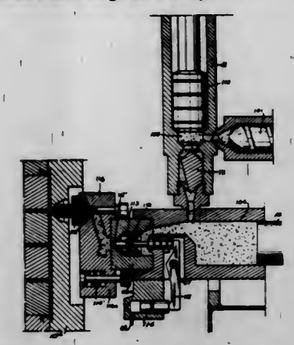
3,296,352
TUBULAR FILM MANUFACTURE
Aubrey Frank Riggs, Knebworth, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed July 20, 1962, Ser. No. 211,174
Claims priority, application Great Britain, July 28, 1961, 27,439/61
12 Claims. (Cl. 264—290)

1. In a continuous biaxial orientation process in which a tubular thermoplastic film is continuously advanced vertically downwards, heated to a temperature below its softening point which is suitable for orientation and is stretched by inflation to biaxially orient it, and withdrawing the stretched film, the improvement which comprises heating the tubular film to the said temperature by passing it through heating means comprising at least one infra-red heater enclosed in a housing and simultaneously applying a forced current of air around the circumference of the tubular film in a substantially vertically upward direction through said enclosed infra-red heater to substantially eliminate differential heating effects, thickness variations and wandering of said tubular film.



3,296,353
METHOD OF INJECTION MOLDING UTILIZING ACCUMULATING CHAMBERS
Robert Nouel, Villejuif, Seine, France, assignor to Inventions Finance Corporation, a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 273,144
11 Claims. (Cl. 264—329)

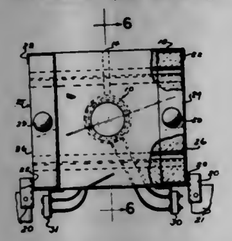
1. In a method of operating a molding machine having separable mold sections defining a mold cavity, the steps of securing said sections together solely by applying clamping forces thereto at a plurality of spaced locations thereabout, continuously feeding material to a variable volume chamber, intermittently delivering mold material from said variable volume chamber to said cavity at a plurality of spaced locations therein, and closing off the cavity from material fed thereto in response to the back pressure of material filling said cavity.



2. The method of operating a molding machine having separable mold sections defining a mold cavity, comprising the steps of continuously delivering a supply of mold material to a variable volume chamber, intermittently conducting mold material from said variable volume chamber to an injection cylinder, intermittently injecting mold material from said injection cylinder to the mold cavity, automatically controlling communication between the variable volume chamber and the injection cylinder in response to the differential pressure therebetween, increasing the volume of said variable volume chamber so that the continuously delivered mold material is temporarily stored in said variable volume chamber when said communication is cut-off, decreasing the volume of said variable volume chamber to expel said temporarily stored mold material to said injection cylinder when communication is automatically established between the variable volume chamber and the injection cylinder, and regulating, independently of the said automatic communication control, the flow of moldable material from said injection cylinder to said mold cavity.

ELECTRICAL

3,296,354
FURNACE
Ewald R. Werych, Elm Grove, Wis., assignor to Basic Products Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 5, 1964, Ser. No. 342,829
4 Claims. (Cl. 13—22)

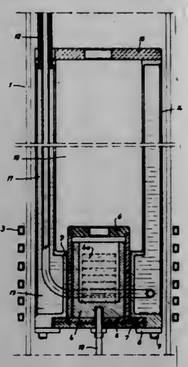


1. In a furnace, a chamber formed of ceramic members having heating means therein; an insulating mass surrounding said chamber; air passage means extending through said insulating mass on at least one side of and spaced from said chamber to increase the heat loss from said mass; means for varying the cross sectional dimension of said passage means, said means comprising slidable panel means including other air passage means that align with the air passage means in said insulating mass when said panel means is slidably moved; temperature responsive means; and means connected to said temperature responsive means for controlling the temperature within said chamber.

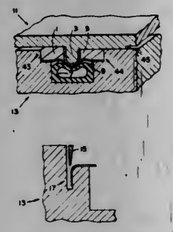
3,296,355
FURNACE FOR THE MANUFACTURE OF FISSILE AND/OR FERTILE NUCLEAR FUEL CARBIDES
Pierre Boucherie, Biandronno, Varese, and Joseph G. Warm, Varese, Italy, assignors to European Atomic Energy Community-Euratom, Brussels, Belgium
Filed July 14, 1964, Ser. No. 382,500
Claims priority, application Germany, July 5, 1963, E 25,103, E 25,104
7 Claims. (Cl. 13—26)

1. A high frequency induction furnace for the manufacture of nuclear fuel carbides or the recuperation thereof comprising: a central open top hearth into which the reaction components are to be introduced; said hearth being positioned within a supporting vessel having a cover with an aperture for gas passage; a field concentrating device including a body with hollow walls surrounding said supporting vessel and adapted to lead the field to the walls of the hearth; said body being closed at its bottom end to form a support for said supporting vessel and extending towards the top to form a con-

densation dome with hollow walls; said hollow walls of said body and dome being provided with a cooling medium; a quartz tube surrounding said field concentrating device; and induction heating means including an induction coil surrounding the quartz tube in the vicinity of the hearth.



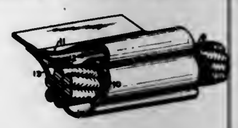
3,296,356
RADIO FREQUENCY ELECTROMAGNETIC ENERGY R.F. BARRIER
James H. McAdams, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 2, 1965, Ser. No. 436,700
3 Claims. (Cl. 174—35)



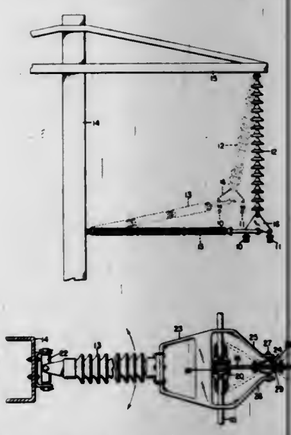
1. A shielding device comprising first and second members which are to fit together, said first member having a contacting area thereon, said second member having a trough therein, a flexible electromagnetic barrier means inserted within said trough, said contacting area making contact and compressing said flexible electromagnetic barrier means when the first and second members are fitted together, said contacting area being covered with electromagnetic barrier material, said electromagnetic barrier means being a flexible material constructed so as to be in the shape of a long flat tongue, slot means in said second member on either side of said trough, wedge means, said barrier means having edges inserted in said slot means, and said wedge means being positioned to wedge said edges in said slot means, whereby said barrier means is retained within the trough.

3,296,357
DEVICE TO PREVENT VIBRATION OF AERIAL CONDUCTORS
Henry Greber, 225 W. 80th St., Apt. 8–D, New York, N.Y. 10024
Filed Oct. 22, 1963, Ser. No. 317,975
1 Claim. (Cl. 174—42)

An overhead conductor protected against wind-induced vibration by means of a tightly fitting around it insulating layer to which a plurality of flag-like tapes is attached, which are flexible and can adjust themselves in the direction of the momentary wind, said insulating layer together with said conductor and said flag-like tapes forming a streamlined body of substantially drop-shaped cross section, with said flag-like tapes preventing any transverse motion of the air on the lee side of said conductor.



3,296,358
STRUT-SUSPENSION CONDUCTOR SUPPORT
Carl D. Fiero and Stanley C. Killian, La Roy, N.Y., assignors to Lapp Insulator Co., Inc., Rochester, N.Y., a corporation of New York
Filed July 9, 1964, Ser. No. 381,317
10 Claims. (Cl. 174—43)



1. In an electrical high voltage power transmission system including spaced apart support towers, a suspension insulator pendant from said tower, and a rigid, strut insulator disposed generally horizontally from said tower, improved means for movably supporting a plurality of spaced conductors jointly by said suspension and strut insulators, said supporting means comprising:
(a) yoke means;
(b) means movably connected to said yoke means in the top region thereof for movably coupling said yoke means to the bottom of said suspension insulator;
(c) means for movably suspending said conductors in spaced apart relation from the bottom region of said yoke means; and
(d) ball and socket joint means for connecting the outer end of said strut insulator to said yoke means in the bottom region thereof.

3,296,359
DIELECTRICS WITH CONDUCTIVE PORTIONS AND METHOD OF MAKING SAME
Thomas H. Ramsey, Jr., Dallas, and Stanly B. Rice, Jr., Garland, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,600
9 Claims. (Cl. 174—68.5)

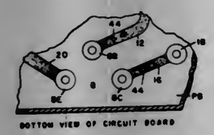
1. The method of forming a conductive portion intimately bonded to a ceramic body made of a material

selected from the group consisting of magnesium oxide and magnesium silicates comprising:
selectively treating a region of said body with a concentrated energy source to activate said region for acceptance of metal, relative to untreated portions of said body; and



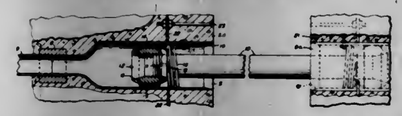
electrolessly plating metal on said region activated for acceptance of metal.
8. The product made by the method of claim 1.

3,296,360
ELECTRICAL ISOLATION MEANS FOR COMPONENTS ON A PRINTED CIRCUIT BOARD
Paul E. Faler, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Jan. 4, 1965, Ser. No. 423,166
3 Claims. (Cl. 174—68.5)



1. In a printed circuit board including a pattern of conductive material and at least one device having a plurality of electrodes connected to said conductive pattern, means for electrically isolating at least one of said electrodes from said pattern, said means comprising a body of normally solid solder located on said pattern adjacent said one electrode, said solder of said body being electrically conductive, said body having a characteristic readily identifiable shape thereby to indicate the location of said isolating means, said body comprising a pair of closely adjacent readily connectable electrically conductive segments to form a connection between said electrode and said pattern after its disconnection therefrom at said isolation means.

3,296,361
UNIVERSALLY SELF-ADJUSTING FITTING
Samuel M. Markland, 210 Chesswood Drive, San Antonio, Tex. 78228; Orval H. Lampton, 403 Flora Mae Drive, San Antonio, Tex. 78220; and Joe J. Urrabaz, 172 Dalehurst Drive, San Antonio, Tex. 78201
Filed May 5, 1964, Ser. No. 364,971
8 Claims. (Cl. 174—86)



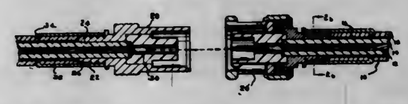
1. A fitting for connecting two longitudinally spaced metallic conduits of an electrical raceway system, comprising two universally self-adjusting joints, each including a metallic outer member having means at one end for connection to one of said conduits, its opposite end terminating in an elongated, open, radially enlarged cylindrical socket, a common tubular metallic inner member of substantially less diameter than that of said sockets, opposite ends of said inner member being telescopically inserted in respective sockets, said inserted ends being radially bounded by substantially ball-shaped fulcrum heads extending between said inner member and the inner walls of respective sockets, peripheral seals on said heads in longitudinal and rotary sliding relation to respective sockets, whereby said inner member is relatively adjustable with respect to said outer members, both longitudinally and universally, and means electrically bonding said outer members to said common inner member to provide an electrically continuous path through the raceway system.

3,296,362
DEVICE FOR INTERCONNECTING TERMINALS ON A BACK-PANEL
Forrest C. Parry, Katonah, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,671
1 Claim. (Cl. 174—88)



In combination:
a back-panel having a plurality of terminals, preselected pairs of which are to be electrically interconnected;
a plurality of wires interconnecting preselected pairs of said terminals;
means simultaneously positioning each end of said plurality of wires in connectable relationship to its respective preselected terminal,
said means comprising a flat, sheet-like, flexible member having a plurality of holes corresponding in number and position to said terminals on said back-panel, and positioned on said back-panel with the free ends of said terminals extending through said holes,
an adhesive material on the surface of said member adjacent said back-panel operable maintaining said wires in position relative to said member;
each of said wires being attached to said member by said adhesive material and pre-positioned thereon with its ends protruding through holes corresponding to the preselected pair of terminals which are interconnected by that wire.

3,296,363
CRIMPED COAXIAL CABLE CONNECTION WITH KNURLED EXTENSION
Ronald Clair Laudig, Camp Hill, and Frank Benjamin Stark, Wormleysburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed May 28, 1964, Ser. No. 370,793
2 Claims. (Cl. 174—89)



1. In a coaxial connector assembly including a connector and a coaxial cable of the type having an outer conductor comprised of spirally woven and braided metallic strands surrounding an inner conductor and spaced therefrom by a dielectric sheath, a connector body including a metallic tubular member having a dielectric insert therein carrying a center contact member, said body including a rear conductive sleeve extension and a malleable ferrule member adapted to be fitted over said sleeve extension, the said cable being attached to said connector with the inner conductor thereof fitted within and terminated to said center contact member, the said extension having an outer diameter slightly larger than the inner diameter of said outer conductor and including an

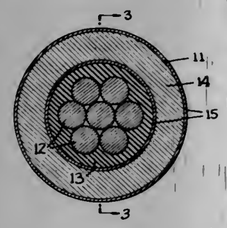
outer surface defined by a series of first and second grooves disposed thereon in a crossing relationship to define surfaces oblique to each other and a series of projecting points, said grooves being of a depth approximating the thickness of the strands of the said outer conductor, the said ferrule being of a thickness and inner diameter slightly larger than the outer diameter of said extension with the outer conductor of said cable fitted thereover and crimped inwardly along the length of said extension to a point wherein the projecting points defined by said grooves are engaged by and in contact with the inner surfaces of said ferrule with the strands of the outer conductor of said cable forced down within said grooves and deformed therein whereby said connector is locked mechanically and electrically to said cable to resist torsional and tensional forces tending to separate said cable from said connector.

3,296,364

TRANSMISSION LINES WITH A NICKEL-MOLYBDENUM-IRON ALLOY SHEATH FOR DE-ICING

John Jefferson Mason, Wednesbury, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 2, 1965, Ser. No. 460,773
Claims priority, application Great Britain, June 8, 1964, 23,731/64
10 Claims. (Cl. 174—106)



1. An alloy consisting essentially of molybdenum, nickel and iron in amounts totaling at least 99.95% of the alloy, with molybdenum in an amount of 3% to 11% of the alloy, nickel in an amount such that the percentages of nickel and molybdenum in the alloy are in accordance with the relationship

36.1 (percent Ni)—10.1 (percent Mo)—1025=20 to 40

with balance iron including not more than 0.05% impurities and characterized by high electrical resistivity of at least about 80 microhm-centimeters at about 20° C., a Curie temperature of about 20° C. to about 40° C. and by a high rate of increase of magnetic induction with decreasing temperature of at least about 160 gauss per degree centigrade throughout a temperature range extending from the Curie temperature of the alloy to about 20° C. below said Curie temperature at a field strength of about 25 oersteds.

9. An electric power transmission line especially adapted for inhibiting formation of ice thereon when carrying alternating current comprising an electric power transmission conductor, an iron-nickel-molybdenum alloy tube around at least a portion of the length of said conductor, said iron-nickel-molybdenum alloy consisting essentially of 3% to 11% molydenum, nickel in an amount such that the percentages of nickel and molybdenum in the alloy are in accordance with the relationship

36.1 (percent Ni)—10.1 (percent Mo)—1025=20 to 40

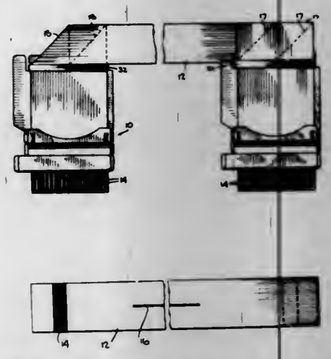
with balance essentially iron, electrical insulation between said conductor and said tube and a continuous skin of low resistivity metal on the surfaces of said tube and in electrically conducting relationship with said tube, said low resistivity metal being characterized by an electrical resistivity not greater than about 3.5 microhm-centimeters at room temperature.

3,296,365

FLAT CONDUCTOR CABLE JUMPER

Rocco F. Basile, Roselle, N.J., assignor to The Thomas & Betts Co., Inc., Elizabeth, N.J., a corporation of New Jersey

Filed Apr. 3, 1964, Ser. No. 357,042
9 Claims. (Cl. 174—117)



1. A cable comprising a plurality of conductors extending parallel to one another in a common plane and a flat sheath of insulating material encasing said conductors, said sheath having at least one slit therein extending along the length of a portion of said cable between adjacent conductors of said plurality, said slit terminating before the end portions of said cable and dividing said portion of said cable into a plurality of strips, each of said strips being folded at an angle to the longitudinal axis of said cable and extending from adjacent a common edge portion thereof substantially in said common plane, whereby said portion of said cable extends away from the longitudinal axis of said cable substantially in said common plane.

3,296,366

OUTDOOR HIGH TENSION INSULATOR HAVING LONG CREEPAGE PATH

Raymond J. Bronikowski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Dec. 23, 1965, Ser. No. 515,916
3 Claims. (Cl. 174—209)



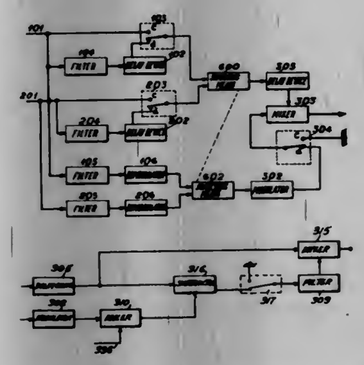
1. An electrical insulator having an exceptionally long creepage path per unit volume and being capable of absorbing mechanical forces comprising an elongated member of insulating material in the configuration of a helix having a plurality of convolutions which advance parallel to the axis of the helix and each of which is spaced from adjacent convolutions in a direction parallel to said axis, said material having a high modulus of elasticity in shear, said elongated member having at least one upwardly facing groove formed therein and extending along the length thereof.

3,296,367

SYSTEMS FOR THE GENERATION OF SPECIAL EFFECTS IN COLOUR TELEVISION

Pierre Cassagne and Gérard Melchior, Levallois, France, assignors to Compagnie Francaise de Television, a corporation of France

Filed Nov. 18, 1963, Ser. No. 324,282
13 Claims. (Cl. 178—5.4)



1. A system for generating special effects by means of signals supplied by a first and a second source in a colour television system wherein the complex video signal comprises a luminance signal and a sub-carrier modulated by a colour signal, said modulated sub-carrier occupying a frequency band which is included, at least partially, in the spectrum of said luminance signal, said system comprising: a first and a second input, hereinafter referred to as the first and second "general inputs," for applying thereto a first and a second complex video signal respectively supplied by said first and second source, and an output, hereinafter referred to as the "general output," onto which the complex video signal to be transmitted is directed; a first special effect switch having two signal inputs and an output; a first and a second channel having respective inputs respectively coupled to said first and second general inputs, and respective outputs respectively coupled to said two signal inputs of said first special effect switch; a third channel coupled to said output of said first special effect switch; two series circuits, respectively fed by said first and second-general inputs, for extracting the modulated sub-carriers from said first and second input complex video signals and demodulating said sub-carriers, each of said series circuits having an output and comprising a filter and demodulating means; a second special effect switch having two signal inputs respectively coupled to said outputs of said two series circuits and an output; means for modulating a new sub-carrier, said modulating means having a modulation input coupled to said output of said second special effect switch and an output; filtering means, hereinafter referred to as "band restricting filtering means," said band restricting filtering means being inserted in n of said channels, where n is a positive integer smaller than three, and being adapted for eliminating from the output signal of said first special effect switch those components which are due to the sub-carriers included in said input complex video signals, the band-restricted signal resulting from the operation of said band restricting filtering means being hereinafter referred to as "special effect luminance signal"; and further means, controlled by switching means, referred to as "operating condition switching means," for selectively:

(a) switching said band restricting filtering means out of said n channels and applying to said general output the output signal of said first special effect switch or

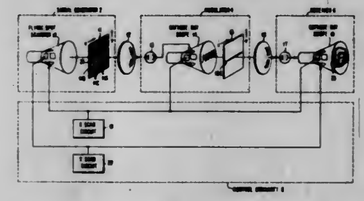
(b) leaving said band restricting filtering means inserted in said n channels and adding said special effect luminance signal to the output signal of said modulating means to build up the complex video signal which is applied to said general output.

3,296,368

NON-LINEAR OPTICAL SYSTEM

Adolf W. Lohmann, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 16, 1964, Ser. No. 352,056
4 Claims. (Cl. 178—6.8)



2. A device for generating optical signals, comprising:

means for generating first light signals wherein information is indicated by variations in intensity and time, said variations in time being indicative of variations in position;

means for changing said first light signals into an optical display wherein said variations in intensity are displayed as variations in a y coordinate and said variations in time are displayed as variations in an x coordinate;

a mask having spatially variant transmissivity, said mask being positioned in front of said display, whereby a second light signal is generated wherein information is indicated by variations in intensity and time; and

means for changing said second light signal into a second optical display wherein variations in time are indicated as variations in displacement; and variations in intensity are again indicated as variations in intensity,

whereby said second display represents a function of said first light signal, the particular function being dependent on the spatial variance of said mask.

3,296,369

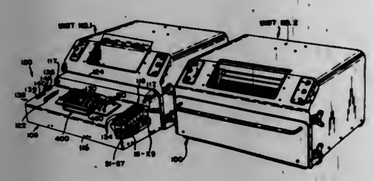
COMMUNICATIONS EQUIPMENT KEYBOARD

Clayton H. Clark, Mundelein, and Donald J. Stefanik, Berwyn, Ill., assignors to SCM Corporation, New York, N.Y., a corporation of New York

Original application Apr. 3, 1962, Ser. No. 184,820. Divided and this application Aug. 23, 1965, Ser. No. 481,797
18 Claims. (Cl. 178—17)

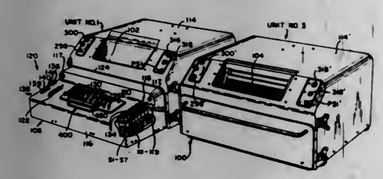
1. A keyboard transmitter comprising: manipulative mechanical keyboard structure and transmission components controlled thereby, said keyboard structure including: a plurality of shiftably depressible key levers; a plurality of longitudinally pivoted code bails with cooperating portions of said key levers and code bails including abutments and permutatively arranged notches enabling positive engagement between each depressed key lever and all code bails to provide operation of each of said code bails to and retention in either one of only

two pivotal positions, upon actuation of a key lever, representative of a mark, or a space condition, said pivotally positioned code bails thereupon providing a specific permutation code corresponding to the character on said depressed key lever; a universal bail invariably engaged by and operated upon depression of any key lever; a plurality



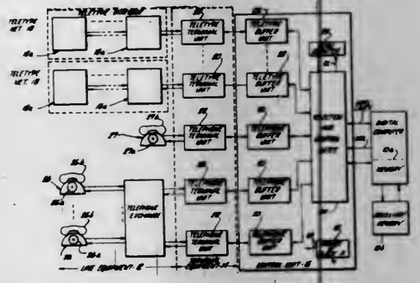
of on-off switches, each corresponding to an associated one of said code bails and set to an on or off condition upon positioning of said code bails by a depressed key lever; and a U-bar switch invariably closed subsequent to setting of said code switches by operation of said universal bail.

3,296,370
COMMUNICATIONS EQUIPMENT TRANSMITTER AND TAPE RECORDER
Clayton H. Clark, Mundelein, and Donald J. Stefanik, Berwyn, Ill., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Original application Apr. 3, 1962, Ser. No. 184,820. Divided and this application Aug. 23, 1965, Ser. No. 481,799
7 Claims. (Cl. 178—17)



1. A multiple bit code signal communication transmission apparatus comprising a magnetic tape recorder-reader set with multiple track recording and playback head means, means for stepping a magnetic tape past said head means and storing in said tape and reading from said tape information signal units consisting of multiple bit codes in serial digital form and serial digital clock pulses corresponding at least to all possible bit positions of said code; a transmitter having means enabling origination, receipt and storage of code signal information and transmission of the stored code signal information comprising an electronic parallel register to receive and store parallel bits of code signal information and a low-speed electronic transmission means to read-out and serially transmit the code signal bits from said parallel register and circuitry means connected between said magnetic tape recorder-reader set and said transmitter including high-speed electronic means to enable read-out of code signal bits from said parallel register and to store such bits in high-speed serial digital coded order along with storage of corresponding code bit clocking pulses in the magnetic tape and, in accord with the logic represented by the serially recorded clocking pulses and serially recorded code bit pulses, to accomplish high-speed serial read-out of code signals from the tape and conversion of said serial code signal, through said parallel register, for serial transmission through said low-speed electronic transmission means.

3,296,371
VOICE ENCODER
Frederick L. Fox, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 18, 1963, Ser. No. 265,776
4 Claims. (Cl. 179—1)

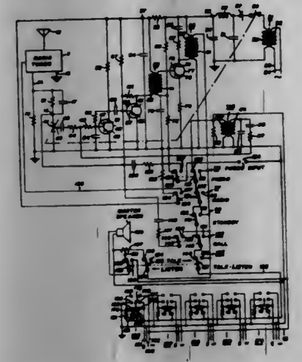


1. A voice encoding system comprising: recording means containing a plurality of prerecorded phonic message components capable of being read in various sequences and combinations and being transduced into different intelligible phonic messages, memory means for storing a message composed of a plurality of message components, each message component being represented by a group of signals which designates a phonic message component in the recording means, the signal groups being stored in a prearranged order in sequentially addressable memory locations of the memory means which correspond to a series of phonic message components in the recording means phonically descriptive of the stored message, means for counting through a sequence of states identifying memory locations containing the phonic message components of a single message in said prearranged order, means for reading the signal groups out of the memory means identified by the states of the counting means, means for reading the phonic message components out of the recording means designated by the signal groups read out of the memory means, and speaker means for transducing the phonic message components read out of the recording means into a complete audible message for a listener.

3,296,372
SIGNALLING CIRCUIT FOR INTERCOMMUNICATION SYSTEM
Harwood B. Moore, Sauquoit, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 22, 1963, Ser. No. 267,219
1 Claim. (Cl. 179—1)

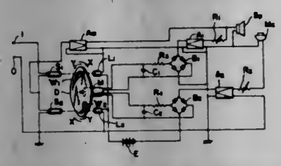
A communication system, comprising an audio amplifier having an input circuit and an output circuit, a signal output line for transmitting signals to a communication station, a first double-throw function switch having a first terminal connected to said amplifier input circuit, a second terminal connected to said amplifier output circuit, and a contact arm, a further function switch having a first terminal connected to the contact arm of the preceding function switch, a second terminal connected to said amplifier output circuit, and a contact arm, means connecting the contact arm of the last-connected function switch to said signal output line, and means adapting said further function to function as a call switch, said last-named means comprising means for causing said audio amplifier to oscillate at an audio frequency when the

contact arm of said call switch is placed in contact with the second terminal thereof thereby disconnecting the pre-



ceding function switches from said signal output line and applying the oscillation signal of said amplifier to said signal output line.

3,296,373
AUTOMATIC SOUND VOLUME CONTROLLER
Fujio Suganuma, Tokyo, Japan, assignor to TDK Electronics Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 19, 1963, Ser. No. 274,223
Claims priority, application Japan, Apr. 30, 1962, 37/17,797, 37/17,799
2 Claims. (Cl. 179—1)



1. An automatic sound volume controller comprising two photoconductors connected in series to input terminals, a disk disposed in front of said photoconductors and having windows of any desired shapes so as to vary the amounts of light incident upon the photoconductors when rotated, a dual coil meter to rotate said disk, a condenser to which is applied an output obtained by full-wave-rectifying a signal obtained from any point in the line leading from the connecting point of said two photoconductors to a loud speaker and a condenser to which is applied an output obtained by full-wave-rectifying a signal from a microphone collecting the background sound, the outputs from said two condensers being fed to the respective coils of said dual coil meter and the output of the speaker being controlled in response to the variation of the noise by varying the resistance values of the photoconductors with the variation of the amount of light by the rotation of said disk so that the noise-signal ratio may be constant.

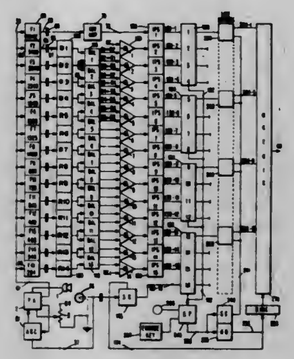
3,296,374
SPEECH ANALYZING SYSTEM
Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,344
6 Claims. (Cl. 179—1)

1. A speech analyzing system for locating formants representing energy peaks in the speech spectrum constituted of a plurality of bands of frequencies comprising:

a plurality of frequency selectors, each responsive to a particular band of said plurality of bands of frequencies;

a related plurality of frequency selector output lines, each providing a unique voltage when the particular band is present in the spectrum;

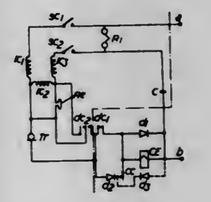
a plurality of rectifying means, connected to said output lines, for providing a plurality of D.C. voltages, each corresponding to a different unique voltage;



a plurality of balance detectors including a related plurality of pairs of balance detector output lines, each pair connected to a different balance detector; and

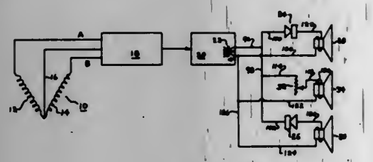
a maximizing network comprising a plurality of logic circuits, each circuit connected to a different pair of balance detector output lines, for issuing the formant representing peaks of energy in said spectrum.

3,296,375
COIN BOX TELEPHONE CIRCUIT
Edmond Marie Heirbaut, Antwerp, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 9, 1963, Ser. No. 279,166
Claims priority, application Netherlands, May 16, 1962, 278,487
3 Claims. (Cl. 179—6.5)



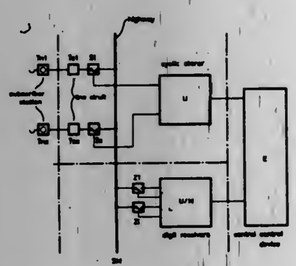
1. A coin box telephone circuit connected to a telephone exchange via a telephone line comprising a dial contact, a coin contact opened responsive to a deposited coin and connected in parallel with said dial contact, to prevent dialling before depositing a coin, a collecting electromagnet coupled in series with said parallel connection and operated responsive to a reversal of the polarity of said telephone line to close said coin-contacts and means independent of the operation of said collecting electromagnet for preventing said dial contact from being short-circuited by said coin contacts before dialling is completed.

3,296,376
MONOPHONIC TO STEREOPHONIC SYSTEM CONVERTER
Richard S. Svorec, 824 36th St., South Bend, Ind. 46635
Filed May 9, 1960, Ser. No. 27,823
5 Claims. (Cl. 179—15)



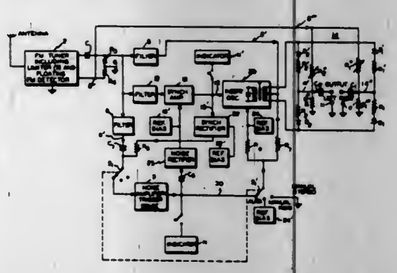
5. In a transmission and reproduction apparatus for audio signals: a pickup having a first channel and a second channel, a means having an output for creating a current alternately in response to the signal from one channel and then from the other channel so that the current flowing in one direction corresponds to the signal from one channel and the current flowing in the other direction corresponds to the signal from the other channel, three speakers, separate leads connecting two of said speakers with said output, a diode in the lead to one of said speakers passing the current corresponding to the signal of one channel in only one direction, a diode in the lead to another of said speakers passing the current corresponding to the signal of the other channel in the direction opposite to said first mentioned diode, and a lead connecting said output with said third speaker passing the current to said third speaker in both directions.

3,296,377
TIME MULTIPLEX TELEPHONE SYSTEM WITH MULTI-FREQUENCY DIALING
Dieter Von Sanden, Munich-Solln, Hubert Suckfüll, Munich-Obermenzing, and Hans Dörfler, Elbe Slade Frers, Max Schlichte, Hans Höschler, and Edmund Ptacnik, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed May 24, 1961, Ser. No. 112,307
Claims priority, application Germany, June 10, 1960, S 68,879
13 Claims. (Cl. 179—15)



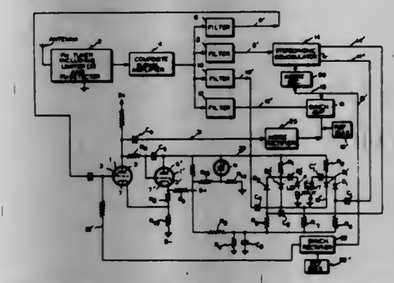
1. In a communication system operating in accordance with the time multiplex principle, the combination of individual subscriber stations, a call multiplex terminal, electronic call switches operatively connecting the respective subscriber stations with the call multiplex terminal, means operatively connected with said call switches for controlling the same by mutually phase shifted control pulses assigned to connections effected thereby, a plurality of digit receivers, electronic switches operatively connecting said digit receivers to the call multiplex terminal, means in said subscriber circuit for transmitting identifying selection information, in the form of digits, by multi-frequency code symbols, means in the subscriber loop circuit for interrupting the same to signal delivery of such a multi-frequency code symbol, and means connected to and operatively controlling said second-mentioned electronic switches, responsive to such loop circuit interruption, for effecting connection of a digit receiver to the call multiplex terminal during receipt of the digit involved, following which such digit receiver is operatively disconnected therefrom.

3,296,378
MONOPHONIC - STEREOPHONIC AUTOMATIC SWITCHING AND DEMODULATOR CIRCUIT
Lawrence William Fish, Jr., Fitchburg, and Gaylord Culver Russell, Saxonville, Mass., assignors to H. H. Scott, Inc., Maynard, Mass., a corporation of Massachusetts
Filed May 18, 1964, Ser. No. 368,033
6 Claims. (Cl. 179—15)



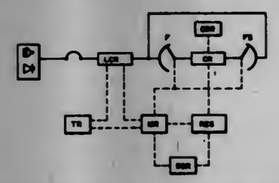
1. Apparatus for switching a common pair of output terminals to monophonic and stereophonic signal outputs, that comprises, a trigger circuit biased normally to operate in one of two states of conduction, monophonic and stereophonic signal-receiving means, a stereophonic-signal demodulator circuit comprising a plurality of detecting means biased so that one of the said detecting means is normally effective, means for connecting the monophonic and stereophonic signal-receiving means to the demodulator circuit, means operative in the presence of a monophonic signal for maintaining the trigger circuit in its said one state to apply the monophonic signal output through the said one detecting means to the said output terminals and to render the demodulator circuit ineffective to demodulate stereophonic signals, means responsive to the output of the stereophonic signal-receiving means for modifying the bias of the said trigger circuit to cause the same to assume its other state, means controlled by the assumption of the said other state by the trigger circuit for changing the detecting means bias to render the said one detecting means ineffective and other of the detecting means effective while rendering the stereophonic demodulator circuit effective and applying the stereophonic pair of received signals through the said other detecting means to the pair of said output terminals, the said responsive means including means controlled by a received pilot signal accompanying the stereophonic signals for producing a direct-current bias-modifying signal for application to the said trigger circuit, and means responsive to a noise signal indicative of inadequate stereophonic signal for eliminating the said direct-current bias-modifying signal, thereby returning the trigger circuit to its said one state of conduction.

3,296,379
MONOPHONIC-STEREOPHONIC AUTOMATIC SWITCHING CIRCUIT
Daniel R. von Recklinghausen, Arlington, Mass., assignor to H. H. Scott, Inc., Maynard, Mass., a corporation of Massachusetts
Filed June 18, 1964, Ser. No. 376,035
7 Claims. (Cl. 179—15)



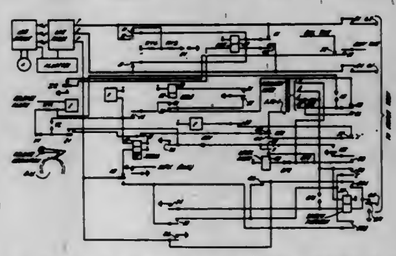
1. Apparatus for automatically switching common pairs of output terminals to monophonic and stereophonic signal outputs, that comprises, a two operational state trigger circuit biased normally to occupy one predetermined state of operation, two reversely poled switching diode means connected to the said output terminals and biased so that one diode means only is normally effective, monophonic and stereophonic signal-receiving means, means for connecting the monophonic and stereophonic signal-receiving means to the diode means, means for maintaining the trigger circuit in the said predetermined state, means responsive to the output of the monophonic signal-receiving means for applying the monophonic signal output through the said one diode means to the said pairs of output terminals, means responsive to the output of the stereophonic signal-receiving means for modifying the bias of the said trigger circuit to switch the same to the other of the said two operational states, and means controlled by the switching to the said other state for changing the diode bias to render the said one diode means ineffective and the other diode means effective, and means for thereupon applying the stereophonic pair of received signals through the other effective diode means to the said pairs of output terminals.

3,296,380
AUTOMATIC LOUD SPEAKER INTERCOMMUNICATION TELEPHONE SYSTEM
Per Gustaf Jonsson, Rosnings, Sweden, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 13, 1963, Ser. No. 264,816
Claims priority, application Sweden, Mar. 14, 1962, 2,812/62
12 Claims. (Cl. 179—18)



1. An automatic loudspeaker intercommunication telephone system serving a plurality of substations having loudspeaker key equipped telephone subsets which are connected to a telephone exchange over four wire leads, at least some of said keys at each of said subsets being specific keys individually associated with certain of said substations, said exchange comprising line circuit means individually associated to the four wire leads coming from each of said substations, means including said line circuit means for identifying calling ones of said substations responsive to a code comprising D.C. potential polarity combinations placed on the four wire leads by the operation of said keys at said calling substation, finder means operated responsive to the identification of said calling substation for completing a switching connection to said calling substation, register means for registering the directory number of called station, said register means including tens relays and units relays, relay circuit means in said register means for operating said tens relays and said units relay responsive to potential combinations placed on the four wire leads by the operation of the keys at said calling substation, selector means for selecting the line circuit means associated with the called substation responsive to directory signals received from said calling station, means at said calling substation for generating said directory signals responsive to the operation of the one of said specific keys individually associated with said called station, connector means for interconnecting said finder means and said selector means to thereby communicatively connect said calling substation to said called substation.

3,296,381
MULTIFUNCTION AUTOMATIC SWITCHES
John Edward Cox, Garfield, and Guenter Joachim Boehm, Emerson, N.J., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Original application Feb. 23, 1960, Ser. No. 10,364, now Patent No. 3,236,952, dated Feb. 22, 1966. Divided and this application Dec. 22, 1965, Ser. No. 515,586
4 Claims. (Cl. 179—18)

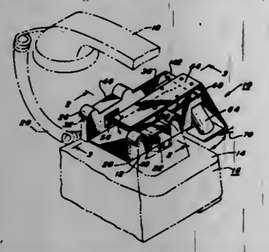


1. In an electrical system, an automatic switch having a release magnet and a plurality of contacts, means for operating said switch to an off-normal position, means responsive to a control signal of a predetermined strength for fully operating said release magnet, means responsive to a control signal of less than said predetermined strength for partially operating said release magnet, means responsive to the full operation of said release magnet for releasing said switch from said off-normal position to return said switch to a normal position and for operating said plurality of contacts, and means responsive to said release magnet being in said partially operated condition for maintaining said plurality of contacts operated.

3,296,382
TELEPHONE OPERATING ATTACHMENT
Hank Klumb, 4732 N. Broad St., Philadelphia, Pa. 19141, and Henry Elliot Rogers, Philadelphia, Pa.; said Rogers assignor to said Klumb
Filed Nov. 1, 1963, Ser. No. 320,667
6 Claims. (Cl. 179—99)

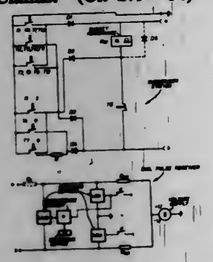
1. A telephone operating attachment adapted to be mounted on the cradle of a telephone adjacent the plunger mechanism thereof, said attachment comprising mounting means for mounting the attachment on the cradle without interfering with the operation of the plunger mechanism, a receiver responsive portion supported by said mounting

means, a plunger depressor supported by said receiver responsive portion, said plunger depressor being mounted for movement between a first and second position, said receiver responsive portion being mounted for movement between a third and fourth position, said receiver responsive portion in said third position having a telephone receiver resting thereon in the cradle, said plunger depressor in said first position being engaged with said plunger mechanism, means coupled to said plunger depressor for normally biasing said plunger depressor to said first posi-



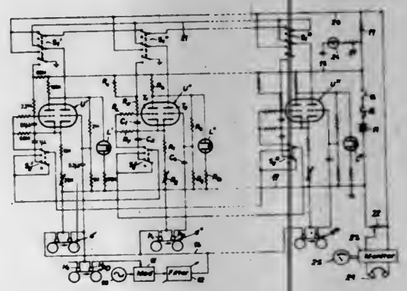
tion when said receiver responsive portion is in said third position, said plunger depressor being disengaged from said plunger mechanism when said receiver responsive portion is in said fourth position, said receiver responsive portion being disengaged from said receiver in said fourth position, and plunger depressor actuating means, said plunger depressor actuating means being operative to disengage said plunger depressor from said plunger mechanism by moving said plunger mechanism to said second position when said receiver responsive portion is in said third position.

3,296,383
UNBALANCED D.C. PUSHBUTTON-SELECTION SYSTEMS
Eberhard Herter, Stuttgart, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 5, 1963, Ser. No. 285,827
Claims priority, application Germany, June 16, 1962, St 19,370
11 Claims. (Cl. 179—84)



1. A signalling arrangement for a pushbutton-dialing system comprising central office equipment serving a plurality of two conductor lines, each of said two conductor lines having a subscriber station thereon, voltage supply means in said central office for selectively connecting a positive voltage or a negative voltage to each line of said two conductor lines, a plurality of pushbuttons in each of said subsets, single pushbutton means in said subscriber stations operated responsive to the operation of any pushbutton in said subset, said pushbuttons selectively operable to mark said two conductor lines in desired permutations and combinations, said permutations and combinations comprising individually grounding the first conductor, individually grounding the second conductor, grounding both conductors simultaneously, grounding neither conductor and connecting both conductors together, receiving means in said central office, said receiving means comprising a first metering device for detecting wire to ground voltage on a first of said two conductors, second metering device for detecting wire to ground voltage on the second of said two conductors, third metering device for detecting wire to wire voltage and evaluation means operated responsive to variations in said detected voltages for generating a code evaluation start signal.

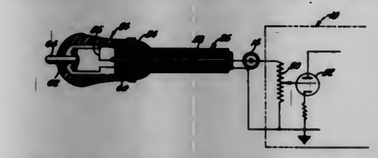
3,296,384
ELECTRONIC STEPPING SWITCH
Hans-Peter Antes, Siesmayerstrasse 58, Frankfurt am Main, Germany
Filed Nov. 27, 1964, Ser. No. 414,478
Claims priority, application Germany, Nov. 27, 1963, R 36,662; Oct. 31, 1964, R 39,152
11 Claims. (Cl. 179—100.1)



5. In a system for concurrently transcribing a message on a plurality of recording media with the aid of a plurality of recording devices each having means for reading the message stored in the respective recording medium, the combination therewith of a system for periodically monitoring the output of each recording device, said system comprising a source of energy for said recording devices; a power supply; a bank of cyclically interconnected monostable multivibrator units each including a normally conductive first amplifier stage and a normally blocked second amplifier stage connected across said power supply, said second stage having an input connected to the reading means of a respective recording device, said first stage being triggerable into a temporary state of nonconductance with concurrent unblocking of said second stage whereby the latter is operative as a reproducer of signals from the respective reading means; a time-constant network connected to the first stage of each unit for determining the duration of said temporary state; circuit means operative upon the termination of said temporary state in response to reversal of conductivity of the stages of any unit for transmitting a trigger pulse to the immediately succeeding unit, thereby initiating said temporary state in said succeeding unit; and a load circuit jointly connected to the outputs of the second stages of all said units.

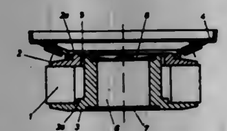
3,296,385
SYNCHRONIZING SYSTEM UTILIZING CAPACITIVE COAXIAL CABLE PICKUP FOR SUPPLYING CONTROL SIGNAL
Elton L. Shaw, North Edwards, Calif., assignor of one-half to Richard A. Roosevelt
Filed Oct. 5, 1964, Ser. No. 401,323
12 Claims. (Cl. 179—100.2)

1. A circuit for recording a control signal on a recording medium of recording and reproducing apparatus having a two terminal input one of said input terminals being connected to circuit ground, comprising a pair of electrical conductors having means at one end thereof for connecting said conductors to said terminals and a normally closed switch at the other end thereof, said switch



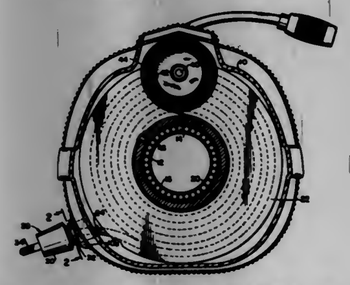
when closed causing said two conductors to be conductively coupled and when open causing said conductors to be capacitively coupled.

3,296,386
MAGNETIC SYSTEM FOR ELECTRO-DYNAMIC TRANSDUCERS
Heinrich Fanselow, Landshut, Bavaria, Germany, assignor to International Standard Electric Corporation
Filed Dec. 29, 1964, Ser. No. 421,900
Claims priority, application Germany, Jan. 8, 1964, St 21,526
3 Claims. (Cl. 179—120)



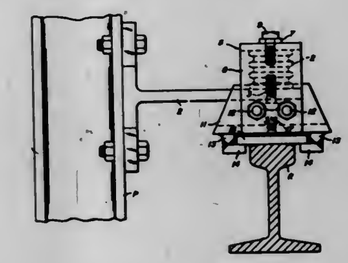
1. A magnetic system for electro-dynamic transducers comprising a core of sintered magnetic material, a bottom pole plate which decreases in thickness towards the periphery thereof and is integral to said core, a top pole plate which decreases in thickness towards the periphery thereof and is fabricated of sintered magnetic material, said top pole plate associated with said core to form an operating air gap in said magnetic system, a stud centrally arranged around the air gap, a basket-like diaphragm support accommodated by said stud, and an inset of magnetic material located between said pole plates, surrounding said core.

3,296,387
SHOCK ABSORBING ELECTRICAL CONNECTOR
Jacques L. Le Baigue, Westbury, N.Y., assignor to Electrolux Corporation, Fairfield, Conn., a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 408,041
4 Claims. (Cl. 191—12.4)



1. An electrical connector adapted for use with an electric cord which includes a plurality of conductors situated within a tubular dielectric jacket and is arranged for retraction into a cordwinder housing through an opening in the housing by being wound on a drum in the housing by a substantially constant torque spring motor which rotates said drum, said connector comprising an elastic body of dielectric material, a plurality of electrical contact elements, each contact element having a terminal portion thereof embedded in said body and connected to a different one of said conductors, a strain relief element secured to an end section of the cord's jacket and embedded together with said end section in said body, said body including an integral elastic collar portion near that end of the body which receives said cord, said collar portion extending radially outward from the surface of said body and being normally disposed in a plane which is perpendicular to the longitudinal centerline of the cord, said collar portion being larger than said opening in the housing so that at the instant said cord is fully retracted into the housing said collar portion contacts that portion of the housing adjacent said opening, arresting retraction of the cord, and flexes toward the surface of said body thereby absorbing the impact of said contact whereby a relatively small force is transmitted through said body to the strain relief element effecting the connection between the cord and the body.

3,296,388
COLLECTOR-RAIL SUPPORT
John Betlejewski, Bremen Township, Cook County, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,485
5 Claims. (Cl. 191—32)

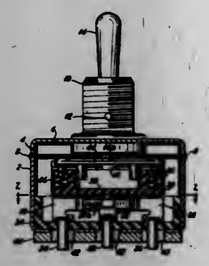


5. A suspension for a T-rail comprising a horizontally extending bracket, an insulator upstanding thereon, a yoke resting on said insulator, said yoke having a plate extending over said support and having ends depending below said bracket, a member bridging said ends, and rail-supporting means extending downwardly from said member on opposite sides of the rail.

3,296,389
POSITIVE ACTION SWITCH WITH IMPROVED RESILIENTLY BIASED STATIONARY CONTACT AND ASSOCIATED BRIDGING CONTACT STRUCTURE
Harold W. Hultz, Waukesha, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 16, 1966, Ser. No. 534,864
8 Claims. (Cl. 200—16)

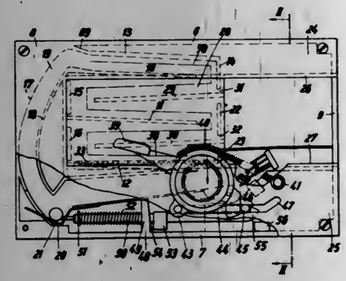
1. In an electric switch, the combination comprising:
an insulating base;
stationary contacts mounted in said base in spaced apart relation;
a movable bridging contact;
an actuator block mounted for sliding movement along said base and having said movable bridging contact rigidly secured thereto to project therefrom so that it enters into sliding engagement between a pair of said stationary contacts when said actuator block is moved;

a manually operable lever;
means providing an unyielding connection for at least a portion of the movement of said lever to transmit positive force for closing or opening the contacts in the event they stick or weld;



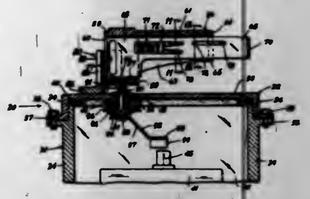
means mounting one of said stationary contacts for limited pivotal movement to allow said movable bridging contact to enter between it and another stationary contact to close the same;
and means resiliently biasing said one stationary contact toward said other stationary contact of the pair thereof to afford proper contact pressure for a good electrical connection when the contacts are closed.

3,296,390
TIME SWITCH FOR CONTROLLING AN ELECTRICAL CIRCUIT OF A PROCESS OR APPARATUS FOR A PRESET PERIOD
Werner Salger, Hamburg-Langenhorn, Germany, assignor to Lumoprint Zindler K.G., a corporation of Germany
Filed July 9, 1964, Ser. No. 381,310
Claims priority, application Germany, July 19, 1963, L 45,402
7 Claims. (Cl. 200—33)



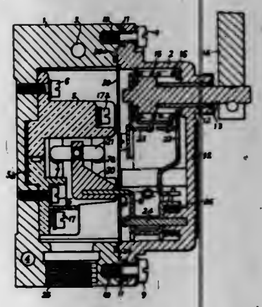
1. A time switch comprising, in combination, a housing, a vertically disposed trackway defined in said housing having a first end and a second end, said first end being disposed at a higher vertical position than said second end, a body rollable along said trackway under gravitational forces, a body holder movably mounted within said housing adjacent said trackway second end receiving said body from said second end and holding said body and movable between first and second positions, said holder normally assuming said first position and moving to said second position upon receiving said body, an electric switch connected to said holder and operated thereby upon said holder moving between said positions, and release means moving said body from said holder to said trackway first end whereby the time interval said holder is in said first position is sensed by said switch.

3,296,391
COVER INSTALLED OPERATOR FOR ENCLOSED CIRCUIT BREAKER
Marshall G. Zavertnik, Manchester, and Joseph J. Farina, Bridgeton, Mo., assignors to Killark Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 6, 1964, Ser. No. 357,689
4 Claims. (Cl. 200—42)



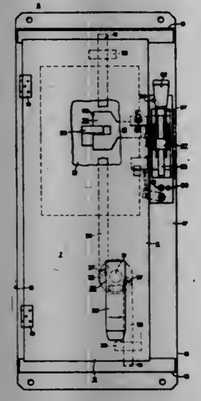
1. An enclosure for a circuit breaker comprising a housing, a cover removably attached to the housing, a bushing mounted in the cover and having a hole through it, a shaft therefore rotatable and longitudinally supported in the hole in the bushing, an operating handle attached to the end of the shaft outside the housing, a trip lever attached to the end of the shaft inside the housing, the trip lever having a lever arm with spaced side walls adapted to engage opposite sides of a circuit breaker toggle, the handle being pivotable to rotate the shaft and the trip lever through positions that move the circuit breaker toggle to open circuit, closed circuit, and reset positions, and spring means biasing the shaft in a direction to position the side walls of the lever arm for engagement with the toggle while permitting longitudinal withdrawal of the shaft by manual pull of the operating handle to draw the side walls of the lever arm free of and beyond the toggle, whereby the trip lever can be positioned to operate the toggle after the cover is attached to the housing.

3,296,392
ELECTRICAL END SWITCHES FOR USE IN MACHINE TOOLS
Harold Richard Scott, London, England, assignor to Birmingham Small Arms Limited, Birmingham, England, a British company
Filed Dec. 1, 1964, Ser. No. 415,044
Claims priority, application Great Britain, Dec. 6, 1963, 48,264/63
5 Claims. (Cl. 200—47)



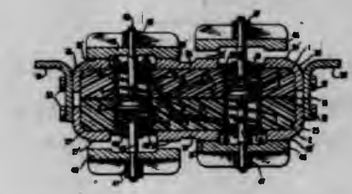
2. A limit switch for use in a machine, which comprises a first housing part having at one side an opening surrounded by a flat surface, and having mounting means for attachment to a machine with said opening freely accessible, a plurality of first contacts each having a contact surface, mounted in said housing part with said contact surface accessible through said opening along a line perpendicular to said surface, at least some of said first contacts having wire-attachment means, a second housing part detachably mounted on said flat surface of the first housing part to cover said opening thereof, a switch-arm member wholly supported in said second housing part for pivotal movement about an axis perpendicular to said flat surface, and actuating means, including an element arranged outside the housing, for the switch-arm member, said switch-arm member extending through said opening into the first housing part and including at least one contact, arranged at the outer side of said surface relative to said first housing part and radially spaced from the pivot axis of said arm, for co-operation with said first contacts to form, when the arm is in the first pivotal position, a connection between at least two of said first contacts, and to remove said connection when the arm is in a second pivotal position.

3,296,393
ENCLOSURE WITH EXTERNAL MEANS FOR OPERATING AN ENCLOSED CIRCUIT INTERRUPTER
Robert V. Rimmer, Beaver, and Louis N. Ricci, Beaver Falls, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 24, 1966, Ser. No. 522,435
15 Claims. (Cl. 200—50)



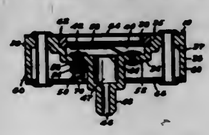
1. An enclosure structure for housing a circuit interrupter of the type having an operator movable to open and close the interrupter, said enclosure structure comprising a receptacle and an openable cover for opening and closing the receptacle, said cover having a generally planar front, operating means mounted on said receptacle, said operating means comprising an internal operating member and an external operating handle member, connecting means operatively connecting said external operating handle member with said internal operating member, said internal operating member being supported for generally rectilinear movement and having a connecting part for operative connection to said circuit interrupter operator, said external operating handle member being supported for pivotal movement about an axis that extends generally parallel to said generally planar front of said cover, said external operating handle member being pivotally movable from an "OFF" position to an "ON" position in a first direction generally toward one wall of said receptable to operate said connecting means to move said internal operating member generally rectilinearly toward said one wall of said receptacle to thereby operate said circuit interrupter operator to close said circuit interrupter, and said external operating handle member being pivotally movable from said "ON" position to said "OFF" position in a second direction opposite said first direction generally toward another wall of said receptacle opposite said one wall to operate said connecting means to move said internal operating member generally rectilinearly toward said other wall of said receptacle to thereby operate said circuit interrupter operator to open said circuit interrupter.

3,296,394
AIR POWERED CURRENT REVERSING CONTACTOR
John Patrick Corniello, New Haven, Conn., assignor of one-half to Rocco Iezzi, New Haven, Conn.
Filed Jan. 28, 1965, Ser. No. 428,671
15 Claims. (Cl. 200—82)



1. A polarity reversing switch comprising, a main body portion, a pair of input terminals connected on said body portion and adapted for connection to opposite terminals of a source of D.C. potential, first and second output terminals connected to opposite ends of said body portion and adapted for connection to a load, first and second oppositely acting fluid operated means connected in substantially side-by-side spaced relation on said body portion, said first fluid operated means connected between said pair of input terminals and said first output terminal and said second fluid operated means connected between said pair of input terminals and said second output terminal, separate contact members connected to opposite terminal ends of each of said first and second fluid operated means outwardly of said fluid operated means, and means connecting said first and second fluid operated means for opposite movement simultaneously whereby the contact members of said first fluid operated means and the contact members of said second fluid operated means are moved in opposite directions, each to two switching positions connecting the respective output terminal to one or the other of said pair of input terminals, whereby said first and second output terminals are alternately connected to opposite input terminals of said pair of input terminals upon operation of said fluid operated means.

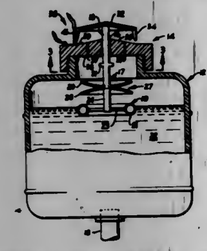
3,296,395
ADJUSTABLE VACUUM SWITCH
Robert W. Fraser, Framingham, Mass., assignor to United-Carr Incorporated, Cambridge, Mass., a corporation of Delaware
Filed June 12, 1964, Ser. No. 374,628
1 Claim. (Cl. 200—83)



A vacuum switch comprising a housing formed of insulating material, said housing including a circumferential wall defining a tubular well, having a circumferential shoulder portion formed therein and having a base portion and an opening, an aperture formed through said base

portion, a tubular nozzle extending from said base portion, having a channel extending therethrough, said channel forming a continuation of said aperture, a movable leaf spring contact and an adjustable second contact each extending into said well, said movable contact and said second contact spaced from each other and a flexible diaphragm lying completely within said well and having portions in abutting relationship with said circumferential shoulder, and a vented cover plate mounted on said housing above and abutted to said diaphragm to hold said diaphragm in position, said diaphragm having a planar, uninterrupted center portion including an under surface and being in spaced relation to said base portion and to said movable contact, and covering the major portion of the opening of said well whereby an increase in a vacuum connected to said nozzle will cause said under surface of said diaphragm to deflect said movable contact toward said second contact.

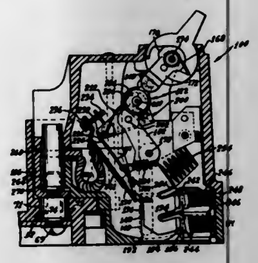
3,296,396
HYDRAULIC BRAKE SYSTEM WITH IMPROVED FILLER CAP
Rune Ingvar Stiward, 598 Maureen Lane, Pleasant Hill, Calif. 94523
Filed May 24, 1965, Ser. No. 458,003
7 Claims. (Cl. 200—84)



1. In a hydraulic brake system including a master cylinder and a reservoir for supplying brake fluid to the master cylinder, in combination, a closure device on the upper part of the reservoir comprising a cap having walls defining an opening extending through the closure device, a movable member having a stem telescoped through said opening and easily movable with respect to said opening, said opening being larger in cross-section than said stem to provide vent means through the opening while the stem is telescoped therethrough, a cover mounted on the upper end of the stem, said cover being disposed outside the cap and being in the general form of a roof over said opening to protect said opening from entry of dust and other foreign matter, said cover having means for maintaining open sides under the cover to permit breathing between said opening and the outside atmosphere, and float means carried on the lower end of said stem in operative position to be actuated by change in the level of the brake fluid carried in the reservoir during operation of the hydraulic brake.

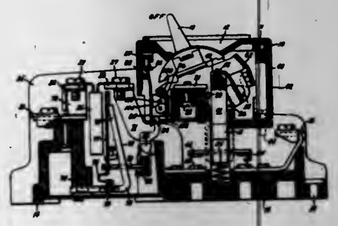
3,296,397
CIRCUIT BREAKER HAVING LINE AND LOAD TERMINALS ADJACENT ONE SIDE THEREOF
Alexander R. Norden, New York, N.Y., assignor to Federal Pacific Electric Company, a corporation of Delaware
Original application Apr. 3, 1962, Ser. No. 184,739, now Patent No. 3,213,327, dated Oct. 19, 1965. Divided and this application Jan. 28, 1965, Ser. No. 434,165
7 Claims. (Cl. 200—116)

1. A circuit interrupter comprising, a casing, a contact arm movable between an open circuit and a closed circuit position, said contact arm pivoted on a horizontal axis and carrying a pair of moving contacts equally spaced from one another about a central vertical plane, a companion contact member in said casing having a base portion with a pair of contact elements mounted thereon spaced from one another and spaced equally about said vertical plane, said companion contact member being mounted for movement by engagement with said contact arm and having a stop limiting its reverse movement, biasing means resiliently urging said companion



contact member toward said stop, said companion contact member being free to pivot about a vertical axis in said plane and about a horizontal axis transverse to said plane when engaged by said contact arm for effective contact engagement of each of said contact elements with said moving contacts, respectively, and means for moving said contact arm between said open circuit and said closed circuit position.

3,296,398
THERMAL OVERLOAD ASSEMBLY FOR CIRCUIT BREAKER
Walter F. Dowdle, Freeport, and Lyle J. Wenzel, Norman, Ill., assignors to General Electric Company, a corporation of New York
Original application Aug. 12, 1963, Ser. No. 301,361, now Patent No. 3,240,904. Divided and this application Oct. 22, 1965, Ser. No. 511,014
7 Claims. (Cl. 200—116)



1. A thermal overload assembly comprising:
a rigid bracket having a base and a cantilever support arm extended therefrom;
means on said base for affixing said bracket to a support structure;
an elongated bimetallic element fastened at one of its ends to the free end of said cantilever support arm, said bimetallic element extending alongside and spaced from said support arm toward the base portion of said bracket, the high expansion side of said element facing away from said support arm;
an overcenter spring extending between a pivot point on the other end of said bimetallic element and a pivot point at the base of said bracket, said spring normally biasing the other end of said bimetallic element away from said support arm to a first position,

heating of said bimetallic element to an elevated temperature causing the other end of said bimetallic element to snap quickly toward said support arm to a second position the opposite side of the pivot point at said base portion the other end of said bimetallic element returning to the first position when the temperature of said bimetallic element is reduced;
said support arm of said bracket having an aperture therethrough adjacent said other end of said bimetallic element; and
an actuating rod affixed to said other end of said bimetallic element and extending through the aperture in said bracket whereby movement of the other end of said bimetallic element between the first and second positions is transmitted as actuating movements by said actuating rod to a location on the other side of said bracket.

3,296,399
ELECTRIC HIGH-VOLTAGE FUSE HAVING MEANS FOR EFFECTING SEQUENTIAL VAPORIZATION OF PORTIONS OF FUSIBLE ELEMENT
Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed Oct. 19, 1965, Ser. No. 497,727
5 Claims. (Cl. 200—120)



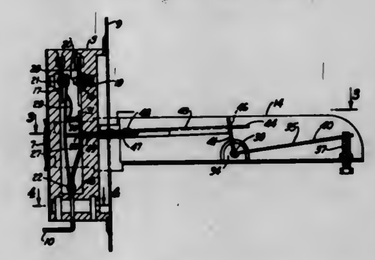
1. An electric current-limiting high-voltage fuse for circuit voltages in excess of 1000 volts comprising in combination:
(a) an elongated fuse tube of insulating material;
(b) a mass of quartz sand inside said fuse tube;
(c) a pair of terminal elements closing the ends of said fuse tube;
(d) a relatively long fusible element inside said fuse tube conductively interconnecting said pair of terminal elements, said fusible element having a plurality of serially related points of reduced and equal cross-section; and
(e) a sub-casing of a thermal insulating material inside of and spaced from said fuse tube, all outer surfaces of said sub-casing being submersed in said mass of quartz sand, said sub-casing enclosing a first portion of said plurality of points of reduced cross-section of said fusible element immersed in air and segregated from said mass of quartz sand operating at a relatively high temperature level when said fusible element is carrying current, and a second portion of said plurality of points of reduced cross-section of said fusible element being situated outside said sub-casing and directly immersed in said mass of quartz sand and operating at a relatively low temperature level when said fusible element is carrying current.

3,296,400
LIGHT BULBS, FUSES AND THE LIKE
John A. Kienzle, P.O. Box 1265, Shawnee, Okla. 74801
Filed Mar. 7, 1966, Ser. No. 532,297
13 Claims. (Cl. 200—130)



1. An improved base for light bulbs, fuses, and the like including a plurality of conducting elements arranged in parallel and having a common return lead, said base comprising:
a hollow threaded member electrically connected to the common return lead from the conducting elements, said threaded member being mounted on one end of the bulb;
an insulating member disposed in the other end of said threaded member and having an aperture extending therethrough;
a plurality of conductor members, each having one end electrically connected with a respective one of the conducting elements and the other ends extending through said insulating member; and,
a plurality of stacked, contact members insulated from each other and mounted on said insulating member and having a contact portion disposed exteriorly of said threaded member, the contact member adjacent said insulaitng member including a portion disposed in said aperture and having an opening extending therethrough for receiving at least one of said conductor members, each of said contact members being electrically connected to a respective one of said conductor members exteriorly of said tubular member and insulating member, and each being successively removable to expose the adjacent underlying contact member.

3,296,401
THERMAL SWITCH HAVING A PIVOTALLY MOUNTED TEMPERATURE RESPONSIVE MEMBER WITH A LATERAL PORTION FOR TRANSLATING A MOVABLE SWITCH ACTUATOR
Albert E. Bank, 640 Ocampo Drive, Pacific Palisades, Calif. 90272
Filed Aug. 31, 1964, Ser. No. 393,079
3 Claims. (Cl. 200—138)



1. In a temperature responsive electric switch, the combination of:
a switch housing carrying a switch unit;
a support member joined to said housing and projecting from said housing along a path;

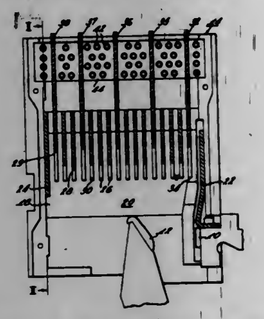
a movable member disposed along said path and extending into said housing for actuating said switch unit;

a temperature responsive member having a longitudinal portion and a lateral portion joined together adjacent the inner ends thereof;

means for pivotally mounting said temperature responsive member on said support member with the longitudinal portion extending in the direction of said path and with the lateral portion engaging said movable member in driving relation with flexing of said temperature responsive member producing translation of said movable member and operation of said switch unit; and

means for fixing the distance between the outer end of said longitudinal portion and said support member.

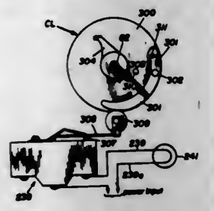
3,296,402
ARC CHUTE FOR AIR CIRCUIT BREAKER
Gerardus J. Meinders, Walpole, Mass., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 23, 1964, Ser. No. 420,745
7 Claims. (Cl. 200—144)



1. In combination, a pair of contacts between which an arc is established upon separation, a pair of spaced apart arc runners to which said arc is transferred from said contacts, a stack of spaced apart metal plates located between said pair of arc runners, the edge of each metal plate facing said contacts being provided with a slot, and a plurality of insulating plates arranged with respect to said metal plates so that there is an insulating plate between each end of said stack and the associated arc runner and between groups of metal plates, each insulating plate being in overlapping relationship with the uppermost portion of an adjacent metal plate and extending beyond the edge of each metal plate remote from said contacts, the edge of each insulating plate facing said contacts being provided with a slot which extends deeper into the insulating plate than the slot in the metal plates.

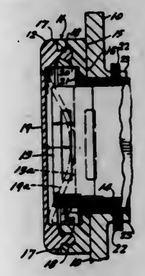
3,296,403
MEANS FOR OPERATING A ROTATION INDICATING SWITCH
Maxwell Ingram, Dumount, N.J. 07628
Original application Sept. 28, 1962, Ser. No. 226,866. Divided and this application Jan. 25, 1965, Ser. No. 427,904
5 Claims. (Cl. 200—153)

1. In combination, a rotary shaft mounted for rotation in a normal direction and for rotation in a reverse direction, means limiting the degree of rotation of said shaft in either direction, a normally open switch having a switch operating member and an actuating arm therefor; said actuating arm having an enlargement at one end thereof; a cam disc mounted on said rotary shaft and being unattached to said shaft for rotation of the latter independently relative thereto; said cam disc having a peripheral recess therein for receiving said enlargement on said switch operating arm when said switch is in normal open position; and means mounted on said shaft adjacent said cam disc for rotation of said means in either direction with said shaft; further means on said



cam disc engageable by said means when said shaft rotates in the reverse direction to thereby rotate said cam disc, move said enlargement outside the recess in the periphery of the cam disc and in engagement with the periphery of said cam disc for closing of said normally open switch.

3,296,404
PROTECTIVE INSTRUMENT COVER
Curtis Ray Stevens, La Mirada, Calif., assignor to Master Specialties Company, Gardena, Calif., a corporation of California
Filed Aug. 28, 1964, Ser. No. 392,760
1 Claim. (Cl. 200—168)



A protective cover for a panel mounted push button instrument having a portion displaceable inwardly in normal actuation comprising, in combination, a resilient base portion including a hollow frame surrounding said instrument, said frame having a rear surface with means for holding said rear surface against said panel to provide sealing engagement therewith, and a separable resilient cover member having a generally planar body extending over said base portion and said instrument, and means for effecting a seal between an exposed surface of said base portion and the inner adjacent surface of said resilient cover member, said cover member being flexible inwardly upon actuation of said instrument without impairing the seals between said cover member and said base portion or between said base portion and said panel, said cover member being removable from said base portion without impairing the seal between said base portion and said panel.

3,296,405
MICROWAVE OVEN
Bruce R. McAvoy, Pittsburgh, and Thaddeus A. Ostal, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1963, Ser. No. 332,748
6 Claims. (Cl. 219—10.55)

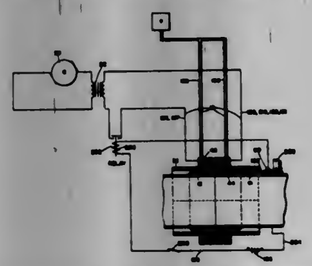
1. In a microwave oven or the like having an external source of microwave energy, a channel-like indentation

open to the exterior and having oblique opposite side walls with a separate opening in each of said opposite sidewalls thereof adapted to admit microwave energy to the oven interior, separate electronic microwave switching means at each opening adapted to vary the impedance



presented to incident microwave energy, means for conducting microwave energy from the external source to the channel-like indentation, and means for controlling said switching means to alternately substantially pass, and alternately substantially attenuate, the microwave energy at each said separate opening.

3,296,406
TEMPERATURE CONTROL MEANS FOR INDUCTION HEATING SYSTEM
John A. Stein, Torrance, and Therian E. Austin, Long Beach, Calif., assignors to North American Aviation, Inc.
Original application Oct. 27, 1961, Ser. No. 148,171, now Patent No. 3,156,807, dated Nov. 19, 1965. Divided and this application Apr. 20, 1964, Ser. No. 366,940
5 Claims. (Cl. 219—10.77)



1. A temperature control system for limiting the amount of heat induced in a normally magnetic specimen by an induction heating coil comprising an electrical contact member, means for rotatably supporting said member adjacent said specimen, permanent magnet means for urging said member into electrical contact with said specimen, biasing means connected to said member for rotatably urging said member out of electrical contact with said specimen, said biasing means being operative to break said contact only when said specimen is heated to the Curie point temperature so that said specimen is no longer sufficiently magnetic to attract said member, and circuit means including said contact member and said specimen for controlling the temperature of said heating coil.

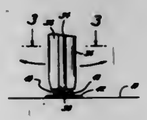
3,296,407
WELDING TORCH
Raymond Wallace, Hacienda Heights, Calif., assignor to WDL Incorporated, Los Angeles, Calif.
Continuation of abandoned application Ser. No. 465,821, June 1, 1965. This application May 2, 1966, Ser. No. 547,133
6 Claims. (Cl. 219—75)

1. A welding torch comprising a head portion and a handle portion extending therefrom, said head portion including body means having cooling means coupled thereto, electrode holder means adapted to receive an electrode and extending partially into said body means, resilient means covering the outer portion of said electrode holder means and co-acting with said body means to hold said electrode in fixed relation therewith, and nozzle means connected to said body means and coaxially disposed relative to said electrode, said handle portion including threaded connector means having male and female members, a washer disposed therebetween, and an elongated sleeve of non-conductive material adapted to urge said members in locking engagement, said female member forming the termination of a plural-



ity of tubular elements coupled to said head portion and said male member forming a matching termination for a plurality of flexible tubes for supplying an inert gas to said nozzle means and a coolant fluid to said cooling means, one of said coolant supplying tubular means further adapted to provide a conductive path for current to flow to said electrode.

3,296,408
DUAL ARC WELDING
Roman F. Arnoldy, Houston, Tex., assignor to R.I. Patents, Inc., Houston, Tex., a corporation of Texas
Filed Feb. 1, 1966, Ser. No. 524,299
8 Claims. (Cl. 219—76)



1. The method of welding a surface including:

moving a pair of electrodes over the surface,

depositing a layer of alloy granules in a puddle ahead of and between the electrodes,

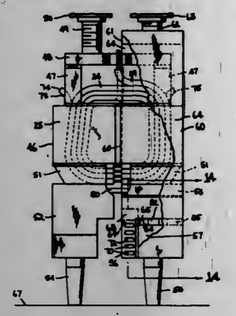
oscillating the pair of electrodes transversely of the deposited layer as they travel thereover, and

maintaining arcs from both electrodes to the deposited layer on the surface, thereby forming the puddle and welding the surface.

3,296,409
RESISTANCE WELDING APPARATUS
Charles A. Schwartz, 3637 Sutherland Road, Shaker Heights, Ohio 44120
Filed Oct. 23, 1965, Ser. No. 503,680
9 Claims. (Cl. 219—87)

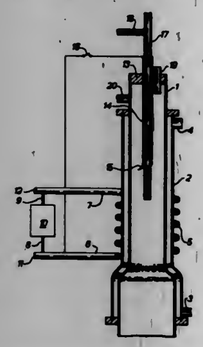
1. In an electrical welding apparatus, the combination of an electrical transformer coil structure, a first welding electrode secured to and in fixed relation with said transformer and bodily movable therewith far engaging a workpiece surface, a second welding electrode slidably mounted on said transformer in laterally spaced relationship to said first electrode for engaging the same side of the workpiece surface and movable into or out of co-

planar surface-engaging alignment with said first electrode, and means operatively associated with said elec-



trodes for impressing welding pressure forces on said electrodes.

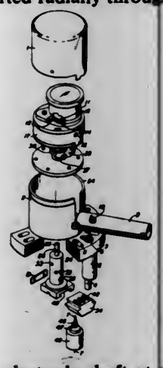
3,296,410
INDUCTION COUPLED PLASMA GENERATORS
Harry John Hedger, Chilton, Didcot, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed June 17, 1963, Ser. No. 288,411
Claims priority, application Great Britain, June 20, 1962, 23,703/62
7 Claims. (Cl. 219—121)



1. An induction coupled plasma generator comprising a tube, an induction coil arranged to be connected to the output of a radio frequency generator, said induction coil surrounding part of the said tube, means to introduce a stream of gas into said tube, means having an outlet to introduce a stream of particulate solid into the said tube in the vicinity of the induction coil, an electrically conducting body located within said tube and upstream of both the said outlet and said induction coil and means to connect said conducting body directly to the end of the induction coil which is furthest removed from said conducting body.

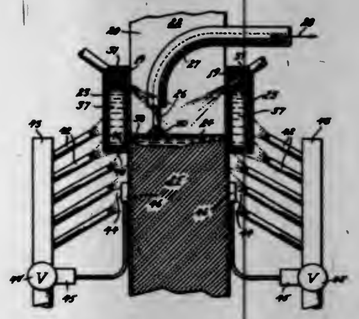
3,296,411
WELDING JIG
Joseph W. Woolsey and Howard I. Bowers, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 18, 1966, Ser. No. 551,857
3 Claims. (Cl. 219—125)

1. A rotatable arc welding tool comprising jig means and electrode mounting means, said jig means including an insulating plate and a plurality of adjustable legs for supporting an electrode in proper position for a welding operation, said plate containing a number of oval-shaped ducts, said adjustable legs being attached to said plate by bolts inserted through said ducts, said jig means supporting the electrode mounting means, said electrode mounting means comprising a motor driving a first gear, said first gear driving a second gear, said second gear being composed of insulating material, a gear mount subjacent to and rigidly attached to said second gear, said gear mount being of cylindrical configuration, an electrode shaft being inserted in said gear mount and rigidly connected thereto by screw means inserted radially through said gear mount



and contacting said electrode shaft at a flattened portion thereon, said electrode shaft being of greater diameter below said gear mount, a duct through said enlarged portion of said electrode shaft, a cylindrical housing surrounding said enlarged portion, the ducts of the enlarged portion being in alignment with grooves around the internal circumference of said housing and tubing external and attached to said housing being in flow connection with said grooves by ducts through the housing and electrode means attached subjacent to said enlarged portion, said electrode means having a duct therein in flow connection with the said grooves and ducts.

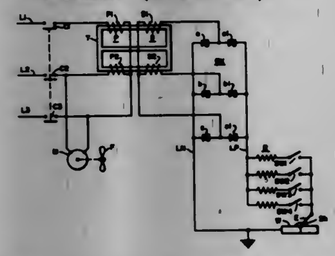
3,296,412
VERTICAL WELDING OF ALUMINUM
Matthew J. Waite, Philadelphia, Pa., and Thomas J. Moore, Cleveland, Ohio, assignors to Arcos Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 8, 1964, Ser. No. 336,506
6 Claims. (Cl. 219—126)



1. The process of vertical welding of aluminum base alloy plates, which comprises positioning aluminum base alloy plates having a thickness in excess of ½ inch in spaced relation vertically to form a vertical weld groove, discharging electric current from an aluminum electrode to the base metal in the groove to form a weld pool, defining the weld pool at the edges by shoes which engage the plates, moving the shoes upwardly with the weld so

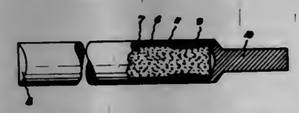
that the bottom of the shoes are always within one inch of the top of the weld pool, quenching the newly formed weld and the plates immediately below the shoes by a fluid medium and protecting the weld by a gas of a class consisting of argon, helium and mixtures thereof.

3,296,413
ARC WELDING APPARATUS
Emil F. Steinert, Clarence Township, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 12, 1963, Ser. No. 330,062
5 Claims. (Cl. 219—135)



1. Arc-welding apparatus for welding work with an electrode with power derived from a three-phase supply including a three-phase transformer connected in an open-delta connection and having a primary and a secondary, means connecting said primary in power-deriving relationship to said supply, a rectifier, means connecting said rectifier in power-rectifying relationship with said secondary, non-inductive resistance means, and means including said resistance means connecting said rectifier in a circuit with said electrode and work to energize a welding arc between said electrode and work with said resistance means absorbing substantially the whole excess of the open-circuit output voltage of said rectifier over the voltage of said arc.

3,296,414
WELDING ROD
David George Holloway, Yowie Bay, near Sydney, and Cedric Victor Whitehouse, Beverley Park, near Sydney, New South Wales, Australia, assignors to Vida-Weld Pty. Limited, Tarea Point, near Sydney, New South Wales, Australia
Filed Feb. 6, 1964, Ser. No. 342,976
Claims priority, application Australia, Feb. 22, 1963, 27,693/63
2 Claims. (Cl. 219—146)



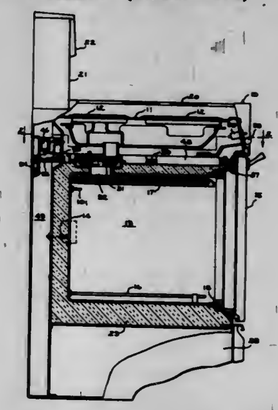
1. An electric welding rod comprising in combination, a metal tube closed at both ends and packed from end-to-end with granular core material, a separately formed closure cap at one end of said tube, said cap having a base extending over said one end of the tube and a side wall extending along and embracing peripheral portions of the tube at said one end thereof to fixedly secure the cap on the tube, an axially projecting stem on and integral with said cap, said stem having a maximum lateral dimension less than that of the tube and a length sufficient for it to be gripped in a welding electrode holder, said cap being made from metal and said side wall of the cap being deformed inwardly into tight engagement with said peripheral portions of the tube, and an external layer of flux material covering the tube and portions of the cap.

3,296,415
ELECTRICALLY HEATED DISPENSABLE CONTAINER
Paul Eisler, 57 Exeter Road, London, England
Filed Aug. 12, 1963, Ser. No. 301,488
6 Claims. (Cl. 219—385)



1. A dispensable container containing a substance to be heated while in the container in which the substance is in contact with at least part of the inside surface of the container and the wall of the container incorporates a thin low voltage heating film having a surface pattern presenting a resistive electrical path between at least two terminals to which access can be obtained for connection to a supply without removing the substance from the container, the pattern being so dimensioned that when connected to a supply at a controlled low voltage the difference between the heat conducted into the substance in the container from any area of the surface of the heating film is held to a value such that the temperature of the exterior surface of the container does not rise to a temperature substantially above the temperature to which the substance is raised during the heating period, and means which at least during the time the film is connected to the supply to hold the substance in the container in gap-free heat-conductive pressure contact with the heating film over at least the major part of the portion of its surface which is loaded at more than 4 watts per square inch.

3,296,416
SAFETY DOOR LATCH AND TEMPERATURE CONTROL CIRCUIT FOR A HEATED CAVITY
Clarence Getman, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Apr. 17, 1964, Ser. No. 360,568
7 Claims. (Cl. 219—396)



1. A heated cavity and an access door for closing and sealing said cavity, electric heating elements for raising the temperature within the cavity, a first selector means for arranging the heating elements in various circuits of different wattages for normal cooking operations, and a second selector means having a setting that is capable of shunting the first selector means for energizing the heating elements in a high temperature cleaning cycle,

and door latching means movable between open and closed positions and adapted to hold the door in a closed position during the high temperature cleaning cycle, automatic locking means for locking the door latching means in its closed position, and electro-responsive means capable of deactivating the automatic locking means thereby freeing the door latching means for manual operation, and a three-position, two circuit thermostatic switch positioned within the cavity and having one set of contacts in a series circuit with the electro-responsive means, said set of contacts being closed at oven temperatures below about 550° F., said switch having a second set of contacts closed at a maximum cleaning temperature between 750° F. and 950° F., the said switch being open-circuited at temperatures between about 550° F. and a maximum cleaning temperature, so as to disable the electro-responsive means when the said switch is operating above 550° F., and a thermal release means for the second selector means, the closing of the second set of contacts of the said switch serving to actuate the said thermal release means and cause the second selector means to de-energize the heating elements of the high temperature cleaning cycle.

3,296,417
HINGING MEANS FOR OVEN HEATING ELEMENT
Angus J. Macaulay, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed July 31, 1964, Ser. No. 386,563
4 Claims. (Cl. 219—404)



1. A sheathed electric heating element for removable connection to an apertured wall of an oven, comprising a mounting plate adapted to be secured over the aperture in the oven wall, said mounting plate containing window means therein, a hinged plate positioned over the window means, and parallel spaced tabs formed on the mounting plate and extending rearwardly thereof, each tab being formed with a slotted opening having a reduced entrance, the hinge plate having oppositely extending ear members formed on the side edges thereof for pivotal support with respect to the said tabs, whereby the hinge plate must be angled to slip the ear members through the reduced entrance of the slotted tabs of the mounting plate for confinement within the said slot, and a pair of openings formed in the hinge plate, and a sheathed electric heating element having terminal ends fixed within the said openings, and detent spring means fastened to the rear surface of the mounting plate and engageable with the top portion of the hinge plate, the electric heating element serving as a limit means for the pivotal action of the hinge plate when it engages an edge of the window means in the mounting plate, said limit means preventing the ear members of the hinge plate from being drawn from the slotted tab.

3,296,418
YARN HEATER DEVICE
Dale R. Johnson, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 6, 1964, Ser. No. 357,695
2 Claims. (Cl. 219—471)

1. A yarn heater device for imparting heat to filaments and yarns comprising;

(a) a tubular casing having an axial bore defined therethrough.

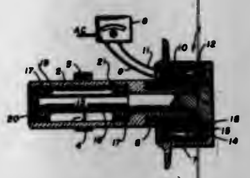
(b) a shaft having a threaded end and an opposite flanged end, said shaft mounted within said axial bore and projecting outwardly therefrom at said flanged end thereof,

(c) bearing means mounted on said shaft adjacent said threaded end thereof for rotatably journaling said shaft within said axial bore,

(d) a threaded member in engagement with said threaded end of said shaft for retaining said bearing means thereon,

(e) means at opposed sides of said bearing means for preventing axial movement of said shaft within said axial bore,

(f) mounting means on said tubular casing for mounting the latter on a frame,



(g) a porous, staninless steel insulating sleeve mounted on and surrounding the end of said tubular casing adjacent said flanged end of said shaft,

(h) an annular ring made of a spring material and having a heat absorbing property mounted on said stainless steel insulating sleeve,

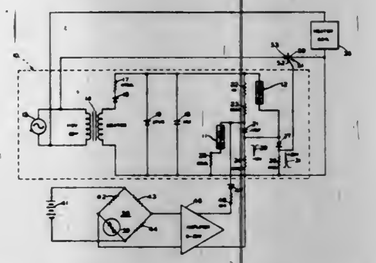
(i) an annular heater mounted on said annular ring,

(j) thermal sensing means in said annular heater,

(k) control means connected to said annular heater and thermal sensing means for supplying a current to and for controlling the temperature of said heater, and

(l) a cylindrical roll, providing a yarn engaging surface, concentrically and spacingly surrounding said annular heater and being insulatably connected to said flanged end of said shaft for rotation therewith.

3,296,419
HEAT CONTROL CIRCUIT GENERATING PULSES SYNCHRONIZED TO A.C. SOURCE EMPLOYING TWO PNPN DIODES HAVING DIFFERENT THRESHOLD VALUES
Robert L. Sels, Temple, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 6, 1964, Ser. No. 365,531
5 Claims. (Cl. 219—499)



1. A circuit for generating pulses in timed relationship with an A.C. signal having a voltage of a given magnitude, which comprises:

a first capacitor;

a first resistor;

a first PNPN diode, having a breakover voltage in excess of said given magnitude, coupled to said first capacitor and said first resistor in a closed loop;

a second capacitor;

a second resistor;

a second PNPN diode, having a breakover voltage lower than said given magnitude, coupled to said second capacitor and said second resistor in a closed loop;

a rectifier;

means for applying said A.C. signal to said rectifier;

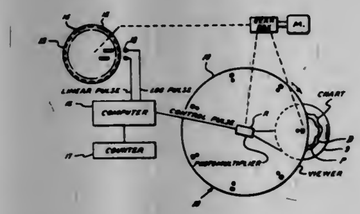
means for applying the output of said rectifier to said first capacitor to charge said first capacitor with a voltage of said given magnitude;

means, including a variable resistor and said first capacitor, for charging said second capacitor to said second PNPN diode breakover voltage, whereby said second PNPN diode assumes its low impedance state, said second capacitor discharges through said second resistor generating a first pulse in timed relationship with said A.C. signal and of a magnitude sufficient, when added to said voltage of said given magnitude, to cause said first PNPN diode to assume its low impedance state; and

means for applying said first pulse to said first PNPN diode, causing said first PNPN diode to assume its low impedance state, discharging said first capacitor through said first resistor, and generating a second pulse in timed relationship with said A.C. signal; wherein

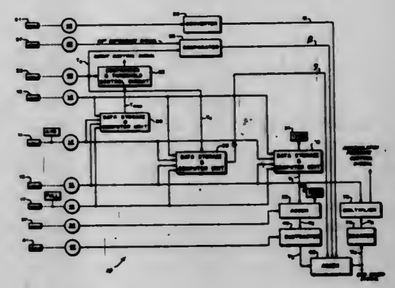
the setting of said variable resistor determines the charging rate of second capacitor and, hence, the timed relationship between said A.C. signal and said first and second pulses.

3,296,420
COMPUTER
Durward F. Searcy and Thomas W. Scott, Shreveport, La., assignors to United Gas Corporation, a corporation of Delaware
Filed Mar. 31, 1964, Ser. No. 359,541
29 Claims. (Cl. 235—61.6)



17. Apparatus for determining total gas flow through a line from a chart having a trace representing static pressure and a trace representing differential pressure across an orifice comprising, means for scanning a time increment of a chart and sensing traces on the chart and simultaneously generating a logarithmic signal during each scan, means for counting the logarithmic signal until the first trace is sensed and for then counting one-half the logarithmic signal until the second trace is sensed, means for remembering the total logarithmic signal counted, means for then generating a linear signal and simultaneously generating a second logarithmic signal by said logarithmic signal generating means, means for counting both the second logarithmic signal and the linear signal until the second logarithmic signal equals the total of the first logarithmic signal, means for storing the linear signal count at that point, means providing for repeating the operation of the scanning and counting means at succeeding time increments of the chart, and means for integrating the successively stored linear signal counts.

3,296,421
CATAPULT ACCUMULATOR PRESSURE COMPUTER
Pliny G. Holt, Bethesda, Md., and William M. Ogden, Newtown Square, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 3, 1964, Ser. No. 372,434
7 Claims. (Cl. 235—150.22)



1. A computer for determining, and indicating the pressure required in an accumulator of the type used in launching an aircraft from an aircraft carrier comprising:

first adjusting means providing a combination of separate and discrete input signals indicative of the aircraft type configuration, flap mode and weight;

first information storage and readout means connected to said first adjusting means for receiving the input signal combination therefrom and responsive thereto for providing an output signal indicative of the minimum required aircraft take-off air speed, said storage and readout means having stored therein discrete output signals of minimum take-off speed for each receivable input signal combination;

second adjusting means providing an input signal indicative of the free air temperature;

second information storage and readout means connected to said first and second adjusting means for receiving the combination of input signals therefrom and responsive thereto for providing an output signal indicative of an engine thrust correction speed, said second storage and readout means having stored therein discrete output signals of the correction speed for each receivable combination of input signals;

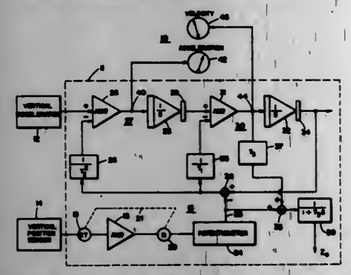
third adjusting means providing an input signal indicative of the velocity of the wind over the aircraft carrier deck;

summing means connected to said first and second storage and readout means and said third adjusting means for receiving respectively therefrom said output signals and said input signal and providing in response thereto an output signal representative of the catapult end speed;

squaring means connected to said summing means for receiving said output signal thereof for providing in response thereto an output signal indicative of the catapult end speed squared; and

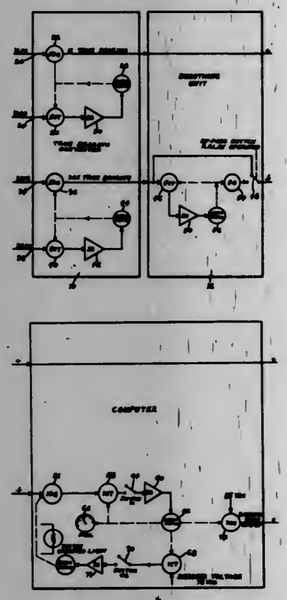
multiplier means connected to said squaring means for receiving the output signal thereof and connected to said first adjusting means for receiving said input signal representative of the aircraft weight for providing an output indicative of the proper accumulator pressure.

3,296,422
APPARATUS FOR COMPUTING TRUE VERTICAL POSITION, VELOCITY AND ACCELERATION FOR AIRCRAFT
George W. Rusler, Jr., Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,591
20 Claims. (Cl. 235—150.25)

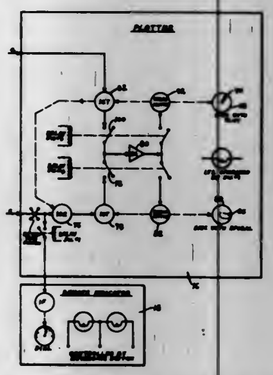


1. In control apparatus, first sensing means providing a signal in accordance with a sensed acceleration, second sensing means comprising a position sensor providing a signal in, accordance with sensed displacement from datum, computer means jointly controlled by said first two signals providing a true velocity signal, and means controlled by said sensed displacement signal and said correct velocity signal providing a corrected displacement signal.

3,296,423
AVERAGE BEARING RATE COMPUTER AND SEMI-AUTOMATIC PLOTTER
Gordon E. Ewertz, Uncasville, Conn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 30, 1961, Ser. No. 121,265
3 Claims. (Cl. 235—150.271)

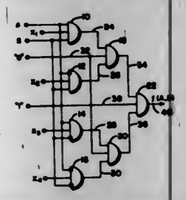


1. Position plotting apparatus of the character described for indicating average bearing rate of a target with respect to a ship comprising in combination, a bearing rate computer, said computer receiving target bearing data, said target bearing data being supplied to differential means, said differential means being operatively connected to drive a first control transformer, said control transformer providing an error, said error signal being amplified by a first amplifier means to drive motor means, said motor means being operatively connected to servo generator means for providing bearing rate output, said servo motor also being operatively connected to second control transformer means, said second control transformer means having zeroing means and being operatively



connected to a second amplifier means for amplification of said second control transformer error voltage output, said second servo amplifier output being operatively connected to drive a servo motor, the output of said second servo motor being operatively connected to said first differential means, said first servo motor means being operatively connected to said first control transformer means and to an indicator whereby said indicator provides an indication of the continuous bearing rate of the target with respect to the ship.

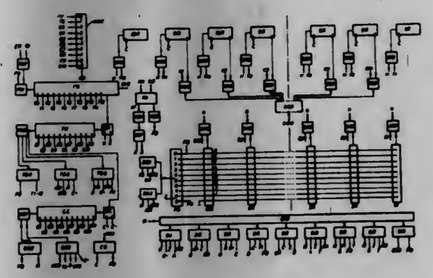
3,296,424
GENERAL PURPOSE MAJORITY-DECISION LOGIC ARRAYS
Marius Cohn, Minneapolis, Minn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 9, 1962, Ser. No. 196,028
2 Claims. (Cl. 235—152)



1. A function generator, for generating a signal representative of any one of the sixteen Boolean functions of two independent variables A and B, comprising:
a first logic level of four majority logic elements for generating four output signals comprising;
input means for receiving signal representations of independent variables A and B and function selection signals X_1, X_2, X_3 and X_4,
a first majority logic element coupled to said input means for utilizing signal representations of A, B, and X_1 to generate a first output signal,
a second majority logic element coupled to said input means for utilizing signal representations of $\overline{A}$, B, and X_2 to generate a second output signal,

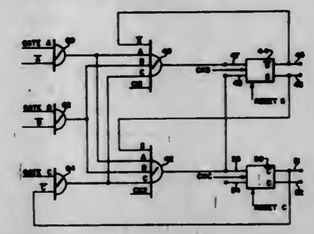
a third majority logic element coupled to said input means for utilizing signal representations of A, $\overline{B}$, and X_3 to generate a third output signal, and
a fourth majority logic element coupled to said input means for utilizing signal representations of $\overline{A}$, $\overline{B}$, and X_4 to generate a fourth output signal,
a second logic level of two majority logic elements for generating two output signals comprising;
input means for receiving the four output signals generated by said first logic level and a signal representation of a binary zero,
a first majority logic element coupled to said input means for utilizing said first and second output signals generated by said first logic level and a signal representative of a binary zero to generate a first output signal, and
a second majority logic element coupled to said input means for utilizing said third and fourth output signals generated by said first logic level and a signal representative of a binary zero to generate a second output signal,
a third logic level of one majority logic element for generating a signal representative of a Boolean function comprising;
input means for receicving the two output signals generated by said second logic level and a signal representative of a binary one, and
a majority logic element coupled to said input means for utilizing said output signals generated by said second logic level and a signal representative of a binary one to generate a signal representative of a Boolean function.

3,296,425
PORTABLE DECIMAL CALCULATING MACHINE INCLUDING PULSE OPERATED COUNTING DEVICES
Norbert Kitz, John George Lloyd, and James John Drage, London, England, assignors to Bell Punch Company Limited, London, England, a British company
Filed Sept. 25, 1962, Ser. No. 226,064
Claims priority, application Great Britain, Oct. 2, 1961, 35,559/61
34 Claims. (Cl. 235—160)



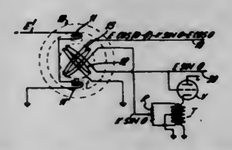
1. A calculating machine including a plurality of pulse-operated counting devices, a plurality of orders of keys, an electric pulse generator, and first and second timing devices, wherein the first timing device enables the pulse generator to be controlled by the orders of keys in sequence, wherein the second timing device enables the pulse generator to apply pulses to the counting device in sequence, and wherein means are provided for altering the relative timing of the first and second timing devices, whereby each order of keys may be used to control the application of pulses to a plurality of different counting devices.

3,296,426
COMPUTING DEVICE
John R. Ball, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 5, 1963, Ser. No. 292,840
3 Claims. (Cl. 235—175)



1. Apparatus for adding two numbers each represented by a plurality of operand bits having either a first or second signal value comprising;
a sum flip-flop having at least two input terminals and two states of operation;
a carry flip-flop having at least one input terminal and two states of operation;
first and second gating devices each having a plurality of inputs with one of said inputs operably connected to said sum flip-flop such that when it is set, said second gating device is enabled and when it is reset, said first gating device is enabled, said first gating device having output means operatively connected to one input terminal of said sum flip-flop, said second gating device having output means operatively connected to another input terminal of said sum flip-flop and said one input terminal of said carry flip-flop;
gating means responsive to the state of operation of said carry flip-flop for providing a signal to set said sum flip-flop if said carry flip-flop is set;
said first and second gating devices additionally responsive to an ith operand bit of said two numbers such that if either bit is present said first gating device will set said sum flip-flop if it is reset and will reset said sum flip-flop and set said carry flip-flop if said sum flip-flop is set.

3,296,427
RESOLVER FOR TRIGONOMETRIC FUNCTIONS
Charles R. Clemence and John Humphries, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a body corporate of Canada
Filed Apr. 1, 1963, Ser. No. 269,474
Claims priority, application Canada, Jan. 23, 1963, 867,188
1 Claim. (Cl. 235—186)



A resolver for trigonometric functions comprising
(a) a stator structure,
(b) a rotor structure including two generally mutually perpendicular coils having respective outputs of E sin θ and E cos $(\theta-\phi)$ where θ is the rotor to stator angle and ϕ is the angle of deviation of said coils from true mutual perpendicularity,
(c) means for deriving the function K sin θ from the output of the first of said coils, where K is a fraction of E,

(d) and means for generating the algebraic sum of K sin θ and E cos $(\theta-\phi)$ to generate the function E cos θ,

(e) and wherein said means for deriving said function K sin θ comprises an electron tube having its input connected to the output of said first coil and the primary of a transformer in its output circuit, the secondary of said transformer being centre tapped to ground and a resistor being connected across the ends of said secondary, a movable tap on said resistor detecting the function K sin θ whereby the value of K may be positive or negative.

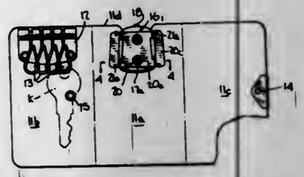
3,296,428
ELECTRONIC FUNCTION GENERATOR
Amos Nathan, Dept. Ef. Engineering, Technion, Israel Inst. Technology, Haifa, Israel
Filed Feb. 13, 1963, Ser. No. 258,335
31 Claims. (Cl. 235—197)



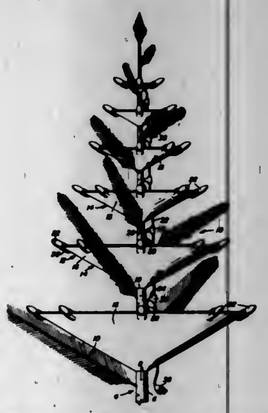
1. An electronic function generator for generating a function of at least one variable, including a plurality of input means for accepting a plurality of input signals, at least one of said signals being a function of said variable; a point of common output connection; a plurality of interpolating conductive means, each of said interpolating means being connected at one end to a corresponding one of said input means, and all of said interpolating means being connected at their other ends to said point of common output connection, at least one of said interpolating means having a nonlinear resistive characteristic; current means connected to said point of common output connection for supplying current to at least one of said interpolating means at any instant, the resistive values of said interpolating means being arranged to cause at least two of said interpolating means to conduct simultaneously for predetermined values of said input signals; and circuit means having an input terminal and an output terminal, said input terminal presenting high input impedance, said input terminal being connected to receive an electrical signal from said point of common output connection, said circuit means producing at said output terminal an output signal substantially linearly dependent upon said electrical signal, said circuit means causing the total amount of current flowing through said point of common output connection into said interpolating means to be substantially physically uninfluenced by the values of said input signals.

3,296,429
KEYCASE-FLASHLIGHT CONSTRUCTION
Sidney Schwartz, 10 W. 86th St., New York, N.Y. 10024
Filed June 29, 1964, Ser. No. 378,885
3 Claims. (Cl. 240—6.4)

1. A keycase-light of the character described comprising a sheet material casing double folded into a center panel, a side infolding panel and an opposite side exterior panel, a key ring holder carried by said side infolding panel adjacent an upper edge of said casing and having a plurality of key rings each adapted to removably carry a key for positioning within the casing and for pivoting to an external keyhole inserting position extending beyond said upper edge, said center panel having a cutout extending inwardly from said upper edge, a miniature flashlight having a light bulb at a front end and a finger pressure operated button on a top side thereof, and means for mounting said flashlight in the cutout centralized thicknesswise with respect to the plane of the center panel orienting the light bulb to substantially align with said upper edge and project a light beam along the key ring when in said external keyhole inserting position and locating the button on the exterior of the casing for access when the folded casing is grasped in the hand between thumb and forefinger.



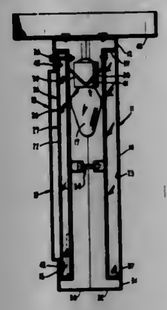
3,296,430
TREE LIGHTING SYSTEM
William Eckert, Bradenton, Fla. (234 Logan St., Apt. 204, Denver, Colo. 80203)
Filed Oct. 1, 1964, Ser. No. 400,729
10 Claims. (Cl. 240—10)



1. An artificial tree having an upstanding trunk, a plurality of generally disc-shaped brackets mounted on the trunk at points spaced vertically therealong with said trunk passing centrally therethrough, a plurality of incandescent lamps spaced circumferentially about the peripheral portions of the brackets, and means electrically connecting said lamps and adapted for electrical connection to a suitable source of electrical potential, said brackets being of substantially inverted shallow conical shape and progressively downwardly increasing in diameter.

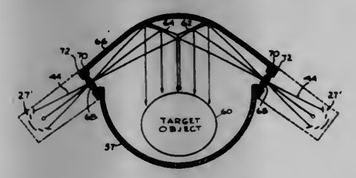
3,296,431
ILLUMINATED DISPLAY FIXTURE
Frederic Lee Green, El Cerrito, Calif., assignor to Prescolite Manufacturing Corporation, San Leandro, Calif., a corporation of California
Filed July 28, 1964, Ser. No. 385,651
7 Claims. (Cl. 240—11.2)

1. Apparatus of the type described comprising, a panel having light transmitting portions, illumination means disposed adjacent said panel and spaced at varying distances from said panel portions, said means directing progressively relatively lesser magnitudes of light intensity to panel portions spaced relatively further from said means, light equalizing means interposed between said panel and illumination means for blocking part of the light directed to said panel portions, said equalizing means blocking progressively relatively greater percentages of light directed to panel portions spaced relatively closer



to said illumination means, and said light equalizing means includes means for reflecting away from said panel the light blocked therefrom and further reflecting means for reflecting said blocked reflected light back towards said panel to increase the light intensity at relatively remote panel portions over that provided by direct lighting from said illumination means.

3,296,432
RADIATION BEAM FORMING APPARATUS
Allan D. Le Vantine, Tarzana, Calif., assignor, by mesne assignments, to TRW, Inc., a corporation of Ohio
Filed Aug. 13, 1962, Ser. No. 216,677
3 Claims. (Cl. 240—41.3)



1. In an apparatus for simulating high altitude environmental conditions:

a vacuum chamber adapted to receive an object to be tested;

a high intensity radiation source disposed externally of said chamber and adapted to approximately duplicate the spectral distribution of sunlight;

a radiation transparent window member disposed in one wall of said chamber and forming a portion of a radiation path from said source to said object;

multisurface reflective means positioned to receive radiation from said source for directing a beam along a predetermined axis to illuminate said object; and

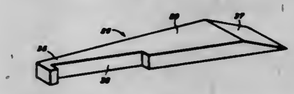
said reflective means comprising a plurality of substantially annular reflective surfaces of different mean diameters disposed concentrically about said axis with each of said surfaces lying in a different plane substantially normal to said axis and with said different planes being spaced along said axis so that different ones of said surfaces are substantially equidistant from said radiation source,

said annular reflective surfaces having a width substantially smaller than the straight line distance from the radiation source to said annular reflective surfaces,

said plurality of substantially annular reflective surfaces having a substantially common focal point,

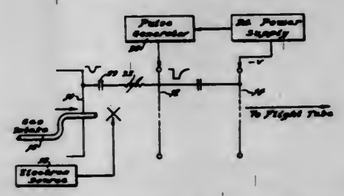
said radiation source being positioned substantially in said substantially common focal point.

3,296,433
RERAILING PLATFORM FOR RAILWAY TURNOUT SWITCHES
Teddy W. Rybar, McKeesport, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed May 8, 1964, Ser. No. 366,076
9 Claims. (Cl. 246—423)



1. An apparatus for rerailing a railcar wheel at a turnout switch of the type including a continuous stock rail in converging relation with a closure rail and a switch point comprising, a platform in the space between the said converging elements and having a flat horizontal surface for supporting engagement with the flange of a derailed wheel, said flat horizontal supporting surface extending under the head of said switch point so as to be capable of supporting said wheel flange as it bears against the head of the switch point, and said flat horizontal surface being spaced below the head of said stock rail a distance at least equal to the radial dimension of said wheel flange and being at a vertical level rendering the heads of said stock rail and switch point effective with a wedging action against opposite sides of said wheel in response to rolling movement over said surface in a direction toward the point of said switch point to cam said wheel to a rerailed position in which its tread has rolling engagement on the head of said stock rail, said platform also having at its end furthest from said switch point a ramp over which the flange of a derailed wheel can roll upwardly onto said horizontal surface.

3,296,434
METHOD OF OPERATING AN ION SOURCE FOR A TIME OF FLIGHT MASS SPECTROMETER
Martin H. Studier, Downers Grove, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 26, 1964, Ser. No. 370,387
11 Claims. (Cl. 250—41.9)



4. A method of operating a time of flight mass spectrometer ion source having a backing plate and first and second grids comprising the steps continuously generating positive ions between said backing plate and said first grid, periodically generating a negative potential pulse having a short rise time and long decay time, applying each of said negative pulses to said first grid to attract generated ions thereto, integrating each of said negative potential pulses while applying said pulses to said first grid, applying each of said integrated pulses to said backing plate to create a compensating ion attraction effect for the decay time duration of each of said applied negative poten-

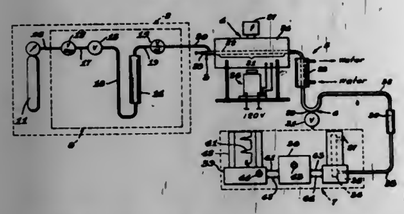
tial pulses, and applying a continuous negative potential to said second grid to accelerate ions periodically attracted to said first grid.

3,296,435

METHOD AND APPARATUS FOR DETERMINING THE TOTAL CARBON CONTENT OF AQUEOUS SYSTEMS

James L. Teal, Clayton E. Van Hall, and Vernon A. Stenger, Midland, Mich., and John W. Safranko, Rancho Cordova, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed July 6, 1964, Ser. No. 380,597
15 Claims. (Cl. 250—43.5)



1. A method for rapidly determining the total carbon content of an aqueous system containing a small amount of highly dispersed carbonaceous matter which method comprises

(1) passing a continuous stream of oxygen at a constant flow rate through a combustion conduit having a heated zone at a temperature within the range from about 700° to about 1,100° C., within which heated zone there is positioned a gas-permeable diffusing member at a distance into the heated zone from the inlet end thereof sufficient to define, in conjunction with the combustion conduit, a sample expansion zone within the heated zone of adequate volume to avoid the formation of condensate upstream from the heated zone, said diffusing member being of a material which is essentially chemically inert to oxygen and steam at the temperature of the heated zone;

(2) rapidly injecting a small predetermined amount of the aqueous system to be analyzed into the oxygen stream within the heated zone of the combustion conduit on the upstream side of the diffusing member;

(3) sweeping the gaseous product formed in the heated zone through the diffusing member and into a cooling zone by continuing the oxygen stream at the aforesaid constant flow rate whereby the gaseous product is cooled;

(4) thence sweeping the cooled gaseous product into an analyzer for quantitatively indicating the carbon dioxide in the gaseous product.

6. An apparatus for determining the total carbon content of an aqueous system containing a small amount of highly dispersed carbonaceous matter, which apparatus comprises:

(1) oxygen flow control means for maintaining a confined continuous oxygen stream from a pressurized source of supply at a constant and predetermined rate;

(2) a combustion conduit having an inlet and an outlet, said combustion conduit being coupled at the inlet to the oxygen flow control means and having a heating zone in which there is a gas-permeable diffusing member of a material which is essentially chemically inert to oxygen and steam at combustion supporting temperatures, said diffusing member being positioned within the heating zone of the combustion conduit at a distance from the inlet thereof sufficient to define in conjunction with the combustion conduit a sample expansion zone of adequate volume to avoid the formation of condensate upstream from the heating zone, and said combustion conduit being adapted at the oxygen inlet end thereof to receive sample injection means for rapidly injecting a small predetermined amount of the aqueous system to be analyzed into the heating zone;

(a) heating means in heat exchange relationship with the combustion conduit for maintaining the heating zone thereof at a controlled combustion supporting temperature;

(3) cooling means coupled to the outlet of the combustion conduit in which the temperature of the gaseous product received from the heating zone is cooled;

(a) condensate removal means integral with the cooling means wherein condensate is separated from the cooled gaseous product; and

(4) carbon dioxide detection means coupled to said cooling means for quantitatively indicating the carbon dioxide in the gaseous product from the heating zone;

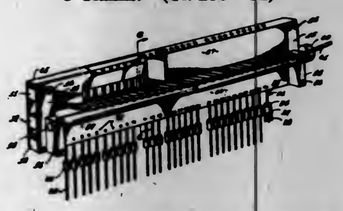
said oxygen flow control means, combustion conduit, cooling means, and carbon dioxide detection means being coupled in the order specified by suitable interconnecting conduits to provide a continuous gas train.

3,296,436

FIXTURE FOR RADIOGRAPHIC EXAMINATION OF SMALL OBJECTS HAVING MEANS FOR SIMULTANEOUSLY ROTATING SAID OBJECTS

Justin G. Schneeman, 7829 Industry Ave., Rivera, Calif. 90036

Filed Nov. 18, 1963, Ser. No. 324,344
5 Claims. (Cl. 250—51)



2. A fixture for holding leads of small objects for radiographic examination of the objects comprising:

an elongated rigid framework;

a plurality of collets mounted in said framework in substantially coplanar relationship and for limited rotation about their individual axes, each of said collets having a plurality of openable and closable jaws for removably clamping the lead of an object therein coaxially with said collet;

actuating means operatively associated with all of said collets adapted for opening and closing said jaws of said collets in response to movement of said actuating means; and

an elongated member connected to each of said collets and adapted for rotating all of said collets through equal arcs in response to movement of said elongated member whereby angularly related planes of said objects can be disposed in said common plane.

3,296,437

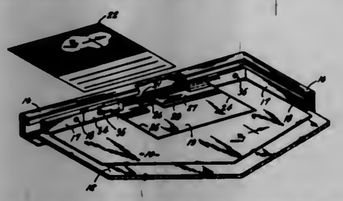
SLIT IDENTIFICATION X-RAY CASSETTE HAVING A PAIR OF REMOVABLE LIPS DISPOSED WITHIN THE CASSETTE

Isadore Meschan, Winston-Salem, N.C., assignor to Rachel M. F. Meschan, Winston-Salem, N.C.

Filed Feb. 11, 1964, Ser. No. 344,064
2 Claims. (Cl. 250—67)

1. In an X-ray film holding cassette having an outer frame, an inner frame, an X-ray permeable front plate secured in said outer frame by said inner frame, an intensifying screen, a removable back, a slit extending through said outer frame, and an internal recess disposed in the cassette between the front and back plate and adjacent the slit for receiving an X-ray identification slip externally insertable through the slit, the improvement which comprises:

(a) a pair of oppositely disposed removable, flexible lips having diverging marginal edges adjacent the slit and disposed in the recess on either side of the slit, the lips being at least coextensive with the slit and designed to receive between them an X-ray identification slip inserted through the slit in the outer frame,



said lips being disposed wholly interiorly of the outer frame and within the cassette, the innermost marginal edges of said lips being disposed wholly within the recess;

(b) means disposed on the lips adjacent the slot for preventing light entering through the slit in the outer frame from reaching the recess; and

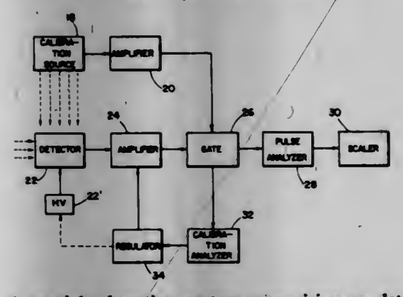
(c) means coacting between the outer frame and the lips for holding the lips in the recess adjacent the slit and including a portion of the inner frame adjacent said slit which is separately removable and which is at least coextensive with the lips and which upon removal permits removal of the lips.

3,296,438

NUCLEAR PARTICLE DETECTION SYSTEM AND CALIBRATION MEANS THEREFOR

Robert M. Main, Oakland, Calif., assignor to Laboratory For Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Aug. 12, 1963, Ser. No. 301,302
6 Claims. (Cl. 250—71.5)



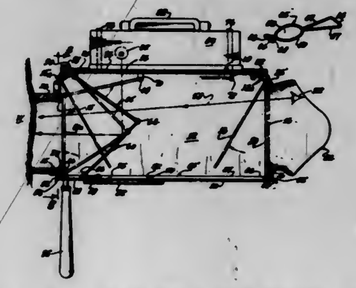
1. A particle detection system comprising: a detector element responsive to incident nuclear particles and providing output signals having a magnitude indicative of the energy of said incident particles; amplifier means coupled to said detector element for amplifying said detector element output signals; a radioactive calibration source characterized by emitting a primary particle and an accompanying gamma ray of known energy; said calibration source being positioned with respect to said detector element such that at least a portion of said accompanying gamma rays are incident upon it; a sensor element for detecting said primary particles and providing an output signal in response thereto, said sensor element being relatively insensitive to said accompanying gamma rays; analyzing means coupled to the output of said amplifying means and operative when said sensor element provides said output signal, said analyzing means providing an output indicative of the difference in magnitude between said amplified detector output signals for said accompanying gamma rays and a predetermined value for said accompanying gamma rays; and control means responsive to the output from said analyzing means for varying the gain of said amplifier means in a manner to reduce said difference to a minimum.

3,296,439

PORTABLE COLLAPSIBLE LIGHTPROOF ENCLOSURE HAVING EXTERIORLY HOUSED LIGHT SOURCE

Edgar P. Barnhart, 315 S. Washington Ave., Whittier, Calif. 90602, and Eugene Mitchell, 5222 Lakeview, Yorba Linda, Calif. 92686

Filed Oct. 7, 1963, Ser. No. 314,259
13 Claims. (Cl. 250—78)



1. In a portable light-tight viewing structure, the combination comprising:

a rigid main plate;

a light-tight, flexible and collapsible sleeve secured to opposite edges of said plate in light-tight relation, the sleeve being open at its opposite ends;

end plates pivotally mounted in the main plate at spaced positions and swingable relative to the main plate to be disposed in light-tight relation in said opposite ends of said sleeve to extend the sleeve to form a viewing space inside the sleeve, one of said end plates being provided with a view opening to be positioned at a viewer's face in light-tight relation thereto;

access means providing viewing access for an object to be viewed interiorly of the structure;

and means provided on said main plate to receive a source of light and to transmit said light to the interior of said structure.

3,296,440

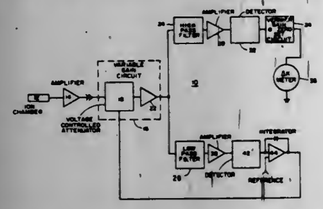
SHUTDOWN REACTIVITY METER FOR MEASURING THE SUBCRITICAL REACTIVITY IN A NUCLEAR REACTOR

Mortimer A. Schultz, Pittsburgh, Vincent G. Shaw, Latrobe, and Irwin Bluestein, Pitcairn, Pa., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed June 24, 1964, Ser. No. 377,786
5 Claims. (Cl. 250—83.1)

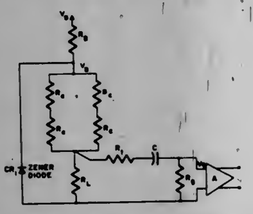
3. A shutdown reactivity meter for use with a nuclear fission reactor in a subcritical state comprising means for producing an A.C. signal modulated by variations in the neutron density adjacent the core of said reactor, adjustable first means for attenuating said signal, means for amplifying the attenuated signal, means for passing and amplifying a high frequency band component of the amplified signal, means for passing and amplifying a low frequency band component of the amplified signal, adjustable second means for attenuating the ampli-

fied low frequency band signal, means for integrating the attenuated low frequency band signal, means in response to the integrated low frequency band signal to adjust automatically the first attenuating means to increase the attenuation of the modulated A.C. signal to maintain the low frequency band signal amplitude at



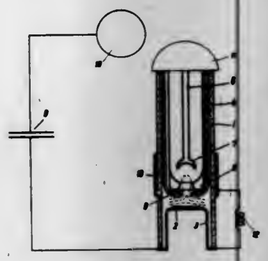
a substantially constant value and thereby to vary said high frequency band signal in accordance with the ratio of the high frequency band signal amplitude to the low frequency band signal amplitude, and means responsive to the amplified high frequency band signal to indicate directly the state of reactivity of said nuclear reactor.

3,296,441
INFRARED TEMPERATURE AND FREQUENCY COMPENSATION CIRCUIT
Richard M. Stone, Rochester, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 30, 1963, Ser. No. 305,900
7 Claims. (Cl. 250—83.3)



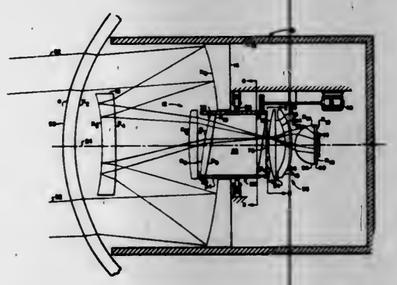
5. A circuit for temperature compensation of an infrared detecting cell network comprising:
(a) an infrared detecting cell network consisting of two series strings of two infrared detecting cells connected in parallel having a given total cell dark resistance, and a load resistor having one end connected in series therewith at a junction,
(b) a temperature compensating resistance means having one end connected at said junction and its other end connected to one side of a coupling capacitor which in turn has its other side connected with one end of a signal voltage resistance, the other end of said signal voltage resistance connected to the other end of said load resistor,
(c) said temperature compensating resisting means consisting of an infrared detecting cell having the same resistance as each of the cells in said infrared detecting cell network,
(d) a signal voltage amplifier means connected across said series combination of the signal voltage resistance,
(e) a Zener diode connected in parallel across said infrared detecting cell network and load resistance,
(f) a source of bias voltage,
(g) a decoupling resistor connected between said bias voltage source and the opposite end of said cell network from said junction,
(h) said decoupling resistor and said Zener diode being used for decoupling and holding the bias voltage constant over a required temperature range.

3,296,442
SHORT DURATION NEUTRON PULSE GENERATING SYSTEM
Ewald Fünfer and Benedikt Kronast, Munich, Germany, assignors to Institut fur Plasmaphysik Gesellschaft mit beschrankter Haftung, Munich-Garching, Germany
Filed Oct. 17, 1962, Ser. No. 231,257
Claims priority, application Germany, Oct. 25, 1961, J 20,718
17 Claims. (Cl. 250—84.5)



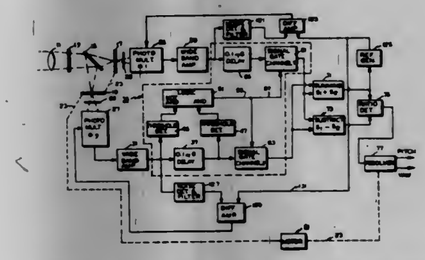
1. A device for the production of neutron pulses by bombardment of a target with ions, comprising, in combination:
(a) an envelope;
(b) a free gas in said envelope under reduced pressure and adapted for a gas discharge;
(c) a target in said envelope;
(d) a hollow anode in said envelope spaced from said target and having an aperture facing said target;
(e) a cathode spaced from said anode and on which said target is mounted;
(f) means for applying a high voltage pulse between said anode and said cathode for producing a low-pressure high-voltage disruptive discharge between said anode and said cathode; and
(g) means for focussing into the interior of the anode the electrons which are formed at the target and in the region of the discharge in front of the target.

3,296,443
COMPACT OPTICAL TRACKING SYSTEM
Sidney C. Argyle, Glendora, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Feb. 24, 1961, Ser. No. 91,544
2 Claims. (Cl. 250—203)



1. An infrared tracking head comprising in combination an optical system and an infrared detector, said optical system comprising a spherical positive mirror, a thick spherical negative mirror positioned in front of the positive mirror, a collimating lens positioned between the positive and negative mirrors to collimate the principal rays passing through the center of said optical system so that the principal rays are made parallel to the axis of said optical system, a transparent plate mounted on the axis of said optical system, said plate having front and rear planar major surfaces each of which is inclined at an angle relative to said optical axis, a spherical correcting lens cemented on the front planar major surface of the transparent plate for correcting aberrations introduced by said plate, a reticle positioned on said optical axis adjacent the rear planar major surface of said plate and positioned so the image of an object in the field of view of the optical system is sharply focused thereon, means for rotating said transparent plate and said spherical correcting lens to cause the image on said reticle to move in a generally circular path, said reticle having at least one opening in part of the generally circular path of the image moving thereon, and a field lens mounted on the optical axis to the rear of said reticle to focus the image of the entrance aperture on the infrared detector so that any infrared light pulse passing through the reticle illuminates the image of the entrance aperture on the infrared detector and produces a corresponding output signal in the detector.

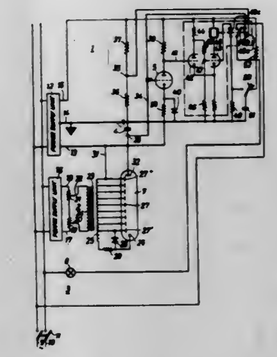
3,296,444
OPTICAL TARGET SENSING DEVICE USING VARIABLE DENSITY FILTERS
Marlin Van Wilson, Orange County, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed Aug. 2, 1963, Ser. No. 299,627
19 Claims. (Cl. 250—203)



1. Apparatus for deriving target positional information in response to light reflected from a target area, comprising in combination a plurality of light conveying paths, filter means in each path having different light transmissive characteristics to light directed thereon, means in each path for converting light energy to electrical energy, discriminating means for selecting out of the electrical energy of each path a portion thereof developed as a result of reflected light from the target area, and means for combining the so-selected portions of electrical energy to provide target positional information.

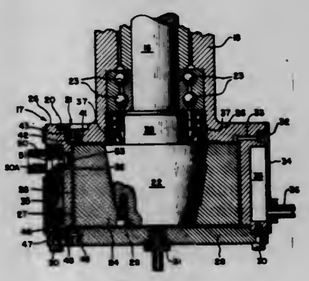
3,296,445
MEASURING ARRANGEMENT USING PHOTOMULTIPLIER TUBE WITH DARK CURRENT CORRECTION
Gunther Roos, Munich, and Richard Wick, Grunwald, bei Munich, Germany, assignors to AGFA Aktiengesellschaft, Leverkusen, Germany
Filed Dec. 5, 1963, Ser. No. 328,299
Claims priority, application Germany, Dec. 12, 1962, A 41,851
6 Claims. (Cl. 250—207)

1. In a photoelectric measuring arrangement, particularly suitable for controlling photographic printing devices, in combination, a source of alternating current; photomultiplier tube means having an anode, a cathode and dynodes, said cathode and dynodes being connected to said source for being energized thereby and said cathode being arranged for being exposed to illumination, for furnishing an output current substantially proportional to the intensity of illumination applied to said cathode; electric circuit means connected to said photomultiplier



tube means at said anode and responsive to said output current; and connection means including rectifier means arranged between said cathode and at least one of said dynodes with a polarity for blocking current flow through said connection means in the direction from said dynode to said cathode.

3,296,446
APPARATUS FOR DETERMINING THE SHAPE OF COLLOIDAL PARTICLES USING LIGHT SCATTERING
Wilfried Heller, Huntington Woods, Mich., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 31, 1963, Ser. No. 334,957
10 Claims. (Cl. 250—218)



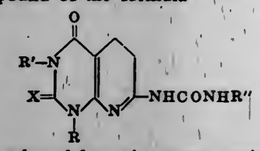
2. An apparatus for determining particle shapes in a solution comprising:
(a) means providing a single thin layer of the solution;
(b) means for imparting rotary streaming movement to said thin layer;
(c) means providing an intense incident radiant energy beam directed to pass through said streaming thin layer and become scattered by the particles therein; and
(d) radiant energy responsive means for measurement of the radiant energy scattering in a direction normal to the incident beam whereby the size of said particles may be determined.

3,296,447
7-UREIDO-2,4-DIOXO-1,2,3,4,5,6-HEXAHYDRO-PYRIDO[2,3-d]-PYRIMIDINES

Viktor Papesch, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,143
9 Claims. (Cl. 260—256.4)

1. A compound of the formula



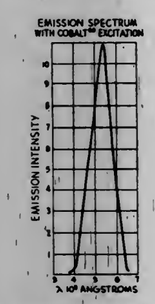
wherein X is selected from the group consisting of O and S; R is selected from the group consisting of lower alkyl, lower alkenyl, cyanoethoxyethyl, and N-ethylcarbamoyl-oxyethyl; R' is selected from the group consisting of lower alkyl and cyanoethyl; and R'' is selected from the group consisting of lower alkyl, lower alkenyl, cyclohexyl, phenyl, and p-toluenesulfonyl.

4. 3-ethyl-1-methyl-7-(3-ethyluredio)-2,4-dioxo - 1,2,3,4,5,6-hexahydropyrido[2,3-d]pyrimidine.

3,296,448
SCINTILLATION DETECTOR COMPRISING A TRANSPARENT TIN-ACTIVATED CALCIUM IODIDE SCINTILLATOR

Carl F. Swinehart, University Heights, Ohio, Robert Hofstadter, Stanford, Calif., and Earl W. O'Dell, Cleveland Heights, Ohio, assignors to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 21, 1964, Ser. No. 339,164
4 Claims. (Cl. 250—71.5)



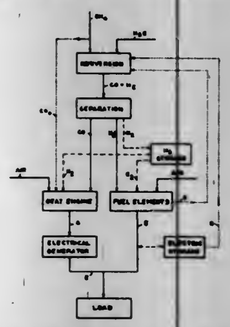
2. A scintillator comprising a transparent optically integral crystalline material consisting of tin-activated calcium iodide, said material being characterized by having an emission peak at about 5300±60 angstroms and an emission band within the range of from about 3500 to about 6000 angstroms, said tin being present in amounts ranging from about 10 parts per million to about 400 parts per million based on the weight of said material.

3,296,449
PROCESS FOR THE PRODUCTION OF ELECTRICAL ENERGY FROM THE CHEMICAL ENERGY OF FUELS

Heinz-Günther Flust, Spreitenbach, and Carl Georg Telschow, Zurich, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Feb. 10, 1964, Ser. No. 343,728
Claims priority, application Switzerland, Feb. 19, 1963, 2,031/63
9 Claims. (Cl. 290—2)

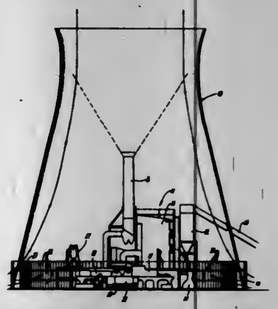
1. A process for producing electrical energy from chemical energy comprising the steps of providing a supply of gaseous fuel mixture containing a substantially constant ratio of a carbon compound and hydrogen, separating said gas mixture into a portion consisting essentially of hydrogen and a fuel gas consisting essentially of said carbon compound, supplying said fuel gas to a heat engine, supplying at least a part of said portion consisting essentially of hydrogen to said heat engine during at least a part of its operation to maintain said heat engine at substantially constant load and maximum efficiency, connecting said heat engine through an electrical generator to a load, supplying both the remainder of said portion consisting essentially of hydrogen and hydrogen from storage to a low temperature electro-chemical fuel cell during at least a part of its operation, supplying both a part of the remainder of said portion consisting essentially of hydrogen to said fuel cell and the residue of said remainder to a storage during another part of the operation of said fuel cell, supplying oxygen to said fuel cell during said parts of the operation of said fuel cell in order to generate electric energy therein and delivering the resulting energy to said load.



3,296,450
POWER GENERATING SYSTEM WITH CLOSED CIRCUIT COOLING

Victor T. Johnson, Lafayette, Calif., assignor to Utah Construction & Mining Co., San Francisco, Calif., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,746
5 Claims. (Cl. 290—2)

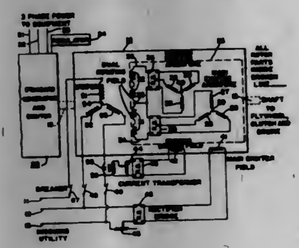


1. In a power generating system of the steam-electric type, a vertically extending draft tower, air cooled radiators located at the base of the tower, the base of the tower being formed whereby air flow into the tower occurs through the area occupied by the radiators, a steam-electric power plant located within the base portion of the tower, said plant including steam generating means together with an electrical generator and a prime mover driving the same and receiving steam from the steam generating means, said plant also including a steam condenser connected to receive exhaust steam from the prime mover and having a stack through which hot stack gases are discharged, and flow connections between the condenser and the radiators whereby condenser condensate is circulated through the radiators for cooling, said stack being disposed to discharge stack gases into the tower in an upward direction, the upper discharge end of the stack being located at a level below the throat of the tower.

3,296,451
ALTERNATOR CONTROL IN A STANDBY POWER SYSTEM

Gerald F. Van Ausdal, Lyle R. Gordon, and Elgin J. Karklins, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 15, 1963, Ser. No. 324,123
9 Claims. (Cl. 290—4)



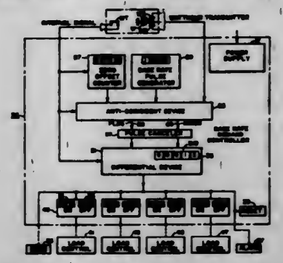
1. A dual exciter system, comprising, a source of incoming lines, an internal combustion engine and clutch means for use in place of said source, a flywheel means, an output generator means to supply uninterrupted power to load equipment, a synchronous motor means, and shaft in location substantially radially in alignment with as well as said flywheel means and clutch with engine means, said motor means having a polyphase stator winding arrangement as well as a first main exciter field portion and a secondary bucking exciter field portion, polyphase main exciter armature winding means and secondary bucking exciter armature winding means on said shaft in location substantially radially in alignment with said first exciter field portion and said secondary bucking exciter field portion respectively, a dual rotating field means and corresponding rectifier bridge means for connection thereof to said main exciter armature means and secondary bucking exciter armature means, and a current transformer means having a primary portion in one of said polyphase stator supply lines and a secondary portion with corresponding rectifier bridge for transmitting electrical energization to said secondary bucking exciter field portion.

3,296,452
LOAD REGULATION

Wallace L. Williams, Raleigh, N.C., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 16, 1963, Ser. No. 309,253
17 Claims. (Cl. 307—62)

4. In a pulse-responsive device, first input terminal means for receiving a first input signal at predetermined intervals, second input terminal means for receiving an input from a pulse quantity which pulses at a pattern variable rate, first pattern means for producing first pulses at a predetermined rate, second pattern means for producing second pattern pulses at a predetermined rate, and anti-coincident means connected to the second input terminal means, the first pattern means and the second pattern means; said anti-coincident means having first output means supplying first output pulses at a rate dependent solely on the number of pulses of said variable quantity, said anti-coincident means having second output means supplying second output pulses at a rate dependent solely

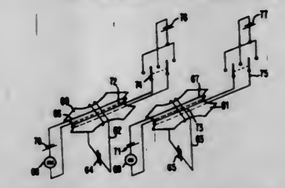


on the sum of said first and second pattern pulses, each of said first output pulses being spaced in time from the second output pulses.

3,296,453
PARAMETRIC INFORMATION TRANSFER CIRCUIT

Walter Ghisler, Southampton, England, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 26, 1961, Ser. No. 105,714
Claims priority, application Switzerland, Aug. 29, 1960, 9,723/60
22 Claims. (Cl. 307—88)

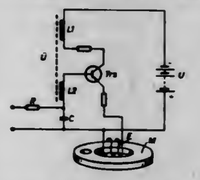


1. In an information transfer circuit, a controlling and a controlled parametric device, each said device tuned to resonate in one of a plurality of phase stable states and comprising, a magnetic element defining a portion of a flux path only, said devices arranged in field coupling relationship to one another so that stray fields from said devices couple one another, and means for momentarily detuning said controlled device such that said controlled device is established in a phase stable state dependent on the state of said controlling device.

3,296,454
CONTROL CIRCUIT FOR SETTING THE FLUX OF A MAGNETIZABLE ELEMENT

Otmar Kolb, Stuttgart-Weil im Dorf, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

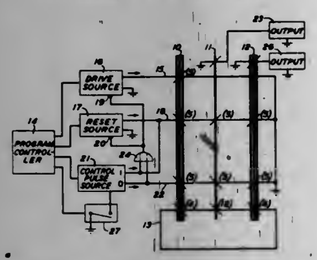
Filed June 12, 1962, Ser. No. 201,995
Claims priority, application Germany, June 13, 1961, St 17,942
4 Claims. (Cl. 307—88)



1. A control circuit for setting the flux in a magnetic counting element having at least a rectangular hysteresis loop core with a winding thereon, said control circuit com-

prising a unitary self-quenching circuit means having inherent characteristics such that said circuit turns on and current thereafter flows for an indefinite period of time and then turns off automatically a predetermined period of time after an occurrence of an electrical signal, means responsive to the receipt of an input signal for causing said self-quenching circuit to turn on and energize said winding to change the flux of said element over a reversible and an irreversible excursion, means responsive to the break at the hysteresis knee between said reversible and irreversible flux excursions for causing a self-induced voltage change in said winding, means responsive to said induced voltage change for giving said electrical signal to said self-quenching circuit, thereby starting said predetermined period of time, and means thereafter responsive only to the inherent characteristics of said self-quenching circuit for automatically terminating the energization of said winding at the end of said predetermined time period.

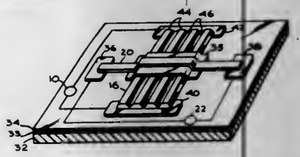
3,296,455
BISTABLE MAGNETIC CORE CIRCUIT
John A. Baldwin, Jr., Albuquerque, N. Mex., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 15, 1962, Ser. No. 217,070
12 Claims. (Cl. 307—88)



1. A bistable magnetic core circuit comprising
first, second, and third cores of magnetic material having substantially rectangular hysteresis characteristics defining two stable conditions of magnetic flux remanence, a first and a third one of said cores having a greater cross sectional area than a second one of said cores,
a coupling loop circuit linking all of said cores in the same sense so that the product of coupling loop turns times the maximum switchable flux is the same for all cores,
a drive signal circuit linking said first core in the opposite sense with respect to said coupling loop circuit for applying signals to switch said first core to a first one of its two stable conditions, and
a reset circuit linking all three of said cores for applying signals to reset said first core to the second of its two stable conditions, said reset circuit linking said core in the same direction as said coupling loop circuit and linking said second and third cores in opposite sense with respect to the windings of said coupling loop circuit thereon.

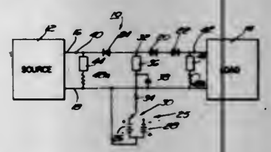
3,296,456
HIGH GAIN CRYOTRON
Arthur J. Learn, Torrance, and Rueben S. Spriggs, San Pedro, Calif., assignors to TRW Inc., a corporation of Ohio
Filed Oct. 9, 1963, Ser. No. 315,074
6 Claims. (Cl. 307—88.5)

3. A thin film cryotron comprising:
a thin film superconductive gate element provided with terminals for applying a gate current thereto, and a thin film superconductive control element adjacent to said element and operable in response to current passing therethrough to control the gate current through said gate element by controlling transitions between superconductive and resistive states of said gate element,



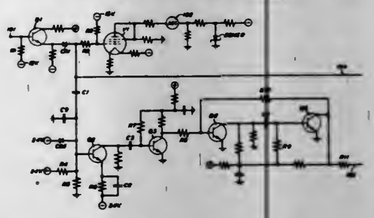
said gate element being characterized by having wide thickness variations, with the thicker portions forming continuous paths along the length of the gate element between said terminals.

3,296,457
MATCHED SINGLE POLE SINGLE THROW DIODE MICROWAVE SWITCH
Robert Robbins and Hector R. Baron, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,770
27 Claims. (Cl. 307—88.5)



1. A switch comprising:
(a) a transmission line section including first and second transmission line conductors,
(b) first and second diodes in series with each other in said first conductor,
(c) bias means connected to alternatively
(1) pass a forward current through said diodes, and
(2) apply a reverse potential to at least said second diode,
(d) said first diode being a general purpose silicon diode having low forward resistance and high reverse D.C. resistance, and
(e) said second diode being of a type having a high impedance at high frequencies when said reverse potential is applied thereto.

3,296,458
PEAK INDICATOR
Renato D. Fracassi, Middletown, and Eric V. Madsen, New Shrewsbury, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 15, 1963, Ser. No. 323,980
7 Claims. (Cl. 307—88.5)



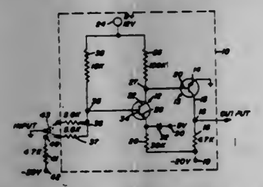
1. In a peak detecting circuit, a capacitor, an impedance connected across said capacitor for providing a current discharging path, output means connected to said impedance, means connected to said capacitor for providing a low impedance to charging current and a high impedance to discharging current, voltage pulse input means connected to said capacitor for applying a voltage pulse across said capacitor and said low impedance means, and current operated timing means including said low impedance means responsive to said charging current through said low impedance means and having a delay interval exceeding the duration of said voltage pulse for discharging said capacitor at the termination of said delay interval, said current operated means being connected in series with said capacitor.

3,296,459
SUPERCONDUCTOR CIRCUIT WITH PROTUBERANCES
Stanley Phillips Frankel, Los Angeles, Calif., assignor to General Electric Company, a corporation of New York
Filed Jan. 13, 1964, Ser. No. 337,322
3 Claims. (Cl. 307—88.5)



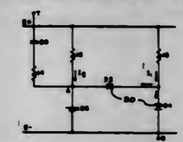
3. A superconductor circuit comprising: a first superconductor strip forming a gate, a second superconductor strip forming a control, and means for providing electric current in said second strip, said second strip being disposed in proximity to said first strip for the magnetic field produced by said current to couple to the first strip, said first strip being formed with a plurality of ridged deformations, each of said ridged deformations being relatively small compared with the width of said second strip, said deformations being oriented such that a substantial portion of said magnetic field is applied to said deformations in a direction substantially transverse to said deformations.

3,296,460
PARITY CHECK GATE CIRCUIT EMPLOYING TRANSISTOR DRIVEN BEYOND SATURATION
Raymond L. Nelson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 16, 1964, Ser. No. 338,138
7 Claims. (Cl. 307—88.5)



1. A parity check gate circuit comprising:
a first transistor having a base, an emitter electrode and a collector electrode;
a Y resistance network having two legs of equal impedance each arranged to receive an input signal and the third leg coupled to a relatively positive bias voltage source;
means coupling the base of said first transistor to the junction of said Y-network;
impedance means coupling the collector electrode to the relatively positive bias voltage source;
impedance means coupling the emitter electrode to a relatively negative voltage source, said impedance means, the bias voltage and the input signals on said network being selected so that when both input signals are most positive, said first transistor is driven beyond saturation whereby the collector electrode is positive as a function of the input signals, and when one is most positive and the other negative, said first transistor is "on," whereby the collector electrode is negative;
a negative clamping means coupled to the emitter electrode to limit the negative excursion thereof to less than the negative excursion of the junction whereby both input signals going negative will turn off said first transistor;
an output terminal coupled by impedance means to the relatively negative voltage source to provide an output signal corresponding to the negative input signal magnitude;
a second transistor coupled to ground said output terminal and thus provide a most positive output signal corresponding to a most positive input signal magnitude; and
means coupling said second transistor to be conductive only when the collector electrode of said first transistor is negative.

3,296,461
HIGH-SPEED BINARY SWITCH
John A. Macaluso, Fairbrook, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 23, 1964, Ser. No. 377,431
3 Claims. (Cl. 307—88.5)

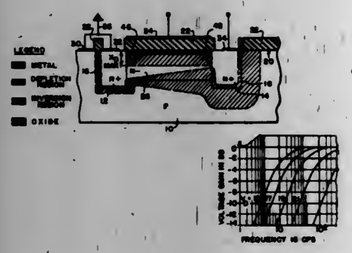


1. A switchable current source having two stable states of operation for use in a digital to analog converter comprising:
constant current means comprising a voltage source and first and second resistors each having an end connected to said voltage source;
a tunnel diode having first and second operating conditions and having a first terminal connected to the other end of said first resistor;
a source of reference potential;
a first circuit means connecting a second terminal of said tunnel diode with said source of reference potential;
an analog output terminal;
a pair of alternately conducting backward diodes opposingly connected together at a junction and having one end thereof connected to said first terminal of said tunnel diode and the other end thereof connected to said analog output terminal, one of said pair being arranged for conducting an analog current to said tunnel diode and the other of said pair being arranged for conducting said analog current to said analog output terminal;
second circuit means connecting said junction of said backward diodes to the other end of said second resistor;
a digital input terminal; and
third circuit means connecting said digital input terminal with one of said terminals of said tunnel diode for conducting a digital input potential for inducing a change of state of said tunnel diode from one operating condition to the other operating condition; said second resistor having a resistance to pass said analog current of a predetermined size and said first resistor having a resistance to pass a bias current, the sum of said analog and bias currents being less than the peak current of said tunnel diode.

3,296,462
SURFACE FIELD-EFFECT DEVICE HAVING A TUNABLE HIGH-PASS FILTER PROPERTY

Venumbaka Gopala Krishna Reddi, San Mateo, Calif., assignor to Fairchild Camera and Instrument Corporation, Long Island, N.Y., a corporation of Delaware

Filed July 15, 1965, Ser. No. 472,137
4 Claims. (Cl. 307—88.5)



3. A semiconductor device having a high-pass filter-type response with insertion gain in the pass-band comprising:

a monocrystalline semiconductor bulk region having a first conductivity type;

a monocrystalline semiconductor source region located adjacent said bulk region having a conductivity type opposite said bulk region; a monocrystalline semiconductor drain region located adjacent said bulk region and having a conductivity type opposite said bulk region;

a monocrystalline semiconductor channel region located adjacent said bulk region having a conductivity type opposite said bulk region and coupling said source region to said drain region said channel region having a depth such that any depletion region created therein will not cut off the channel under normal operating conditions;

a gate means overlying said channel and separated therefrom by a layer of insulation material;

a first bias means for applying a bias signal to said gate having a polarity which tends to repel the majority carriers in said channel region and to form a depletion region and having a value such that further increase of said bias signal does not alter the depletion region of said channel region; and,

a second bias means for adjustably applying a bias signal to said drain region, said first and second bias means enabling only signals supplied to said gate means greater than a given frequency to alter the signal passing from the source region to the drain region, said given frequency being variable by varying the bias signal of said second bias means.

3,296,463
FREQUENCY RESPONSIVE NETWORK

James W. Brault, Princeton, N.J., assignor to Princeton Applied Research Corporation, a corporation of New Jersey

Original application Oct. 21, 1963, Ser. No. 317,718, now patent No. 3,270,213, dated Aug. 30, 1966. Divided and this application Dec. 20, 1965, Ser. No. 536,247
7 Claims. (Cl. 307—88.5)

3. A tunable frequency selective network comprising in combination,

means providing a pair of signal input terminals,

input circuit means including resistive and reactive circuit elements connected in series across said input terminals,

summing circuit means including resistive and reactive circuit means connected in series, the time constant of said summing circuit means being substantially equal to the time constant of said input circuit means,

an isolation amplifier having an input circuit coupled across one of said resistive and reactive circuit elements and an output terminal,

a differencing amplifier having an input circuit coupled to receive the input signal voltage from said input terminals and the voltage applied to the input circuit of said isolation amplifier and an output terminal,



means coupling said summing network between the output terminals of said isolation amplifier and said differencing amplifier,

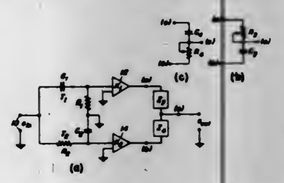
output circuit means coupled to the junction of the resistive and reactive circuit eelments of said summing circuit means, and

means for adjusting the value of one of the circuit elements of said summing circuit means to tune said frequency selective network.

3,296,464
FREQUENCY RESPONSIVE NETWORK

James W. Brault, Princeton, N.J., assignor to Princeton Applied Research Corporation, a corporation of New Jersey

Original application Oct. 21, 1963, Ser. No. 317,718, now Patent No. 3,270,213, dated Aug. 30, 1966. Divided and this application Dec. 20, 1965, Ser. No. 536,248
4 Claims. (Cl. 307—88.5)



2. A frequency selective network comprising in combination,

means providing an input terminal, and a common terminal,

input circuit means including a first resistive circuit element and a first reactive circuit element serially connected in the order named between said input and common terminals, and a second reactive circuit element, and a second resistive circuit element connected in the order named between said input and common terminals, the time constant of said first resistive element and said first reactive element being equal to the time constant of said second resistive element and said second reactive element,

first impedance isolation means including an input circuit coupled across said first reactive circuit element, and an output terminal,

second impedance isolation means including an input circuit coupled across said second resistive circuit element, and an output terminal,

summing circuit means including a third resistive circuit element and a third reactive circuit element connected in series between the output terminals of said first and second impedance isolation means, the time constant of said summing circuit means being substantially equal to the time constant of said first resistive circuit element and said first reactive circuit element,

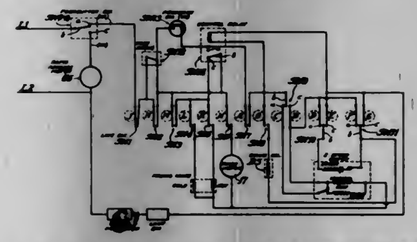
output circuit means coupled between the junction of said third resistive circuit element and said third reactive circuit element and said common terminal, and

means for adjusting one of said third resistive circuit elements and third reactive circuit elements to tune said frequency selective network.

3,296,465
CONTROL ARRANGEMENT FOR A HOUSEHOLD APPLIANCE

Carl J. Knerr, Herrin, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Jan. 29, 1963, Ser. No. 254,640
15 Claims. (Cl. 307—141)

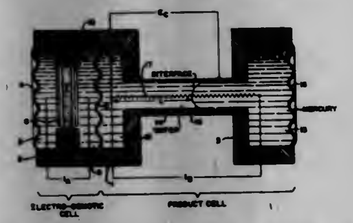


1. In a control arrangement for a household appliance, the combination of sequence control means providing selectable operations of the appliance; first control circuits operated by the sequence means; means for advancing the sequence means at timing speed during a first selected operation; a second control circuit for energizing said advancing means; means for advancing the sequence means at higher speed; and selector means manually controllable to deenergize said first and second control circuits during said first operation to discontinue said first operation and to actuate said high speed advancing means to advance said sequence means to select a second operation, and said selector means being manually controlled thereafter to deenergize said high speed advancing means and to energize said first and second control circuits to advance the sequence means for the performance of the second operation.

3,296,466
COMBINATION ELECTRO-OSMOSIS CELL AND ELECTROLYTIC DETECTING CELL

Ray M. Hurd, Austin, Tex., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 28, 1955, Ser. No. 518,693
4 Claims. (Cl. 310—2)

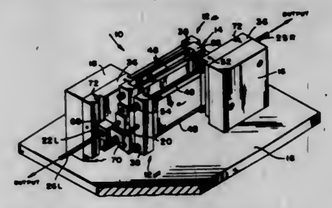


1. The combination of an electro-osmotic cell and a product cell wherein the product cell is directly coupled to said electro-osmotic cell, said product cell comprising means providing a plurality of fluid chambers, means for interconnecting said chambers including a metal tube for providing fluid communication therebetween, a diaphragm closing a first of said chambers and disposed to be common to said electro-osmotic cell in a manner adapted to be driven thereby, a quantity of water in said first chamber of said product cell, a said second chamber, said second chamber being closed by a flexible diaphragm member, said second chamber containing a quantity of mercury, an electrical resistance wire means axially disposed longitudinally of said metal passage, circuit means connecting said resistance means with a source of current, means including a source of current for energizing said electro-osmotic cell said electro-osmotic cell comprising a casing, a porous separating means centrally disposed in said casing in a manner to divide the same substantially into a pair of fluid chambers, a pair of electrodes of depolarizing materials disposed adjacent said porous separating means in a manner to provide for a capillary flow of fluid through said separator in response to application of a current thereto from said current source for the electro-osmotic cell, and means for deriving a signal output from said product cell which is proportional to the product of the current applied to the electrodes of said electro-osmotic cell and the current flowing in said resistance means, said electro-osmotic cell having the said common diaphragm closing one chamber thereof and an additional flexible diaphragm for closing a second chamber thereof.

3,296,467
MICROMETRIC LINEAR ACTUATOR

Gordon L. Locher, Los Angeles, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 20, 1964, Ser. No. 361,634
7 Claims. (Cl. 310—8.1)



1. A linear actuator, comprising;

(a) a set of three elongated electrically excitable vibrator elements disposed in laterally spaced, parallel and generally coextensive relation, said set composed of a first and second stationarily mounted vibrator elements in one and the other of the outer lateral positions and a third output movement vibrator between them, the ends of the individual vibrator elements of the set being disposed at first and second opposite reference ends of the set,

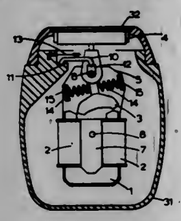
(b) rigid frame means adapted to support said first vibrator element with the end thereof at the first reference end of the set in rigid abutting contact with a first abutment portion of the frame means and with the remaining expanse of the vibrator element free to vibrate, and adapted to support said second vibrator element with the end thereof at the second reference end of the set in rigid abutting contact with a second abutment portion of the frame means, and with the remaining expanse of the vibrator element free to vibrate,

(c) said third vibrator having a standing wave nodal zone disposed midway between its ends at which minimum amplitude of vibration waves occur, said third vibrator element carrying a longitudinally extending slide surface means in rigid relationship therewith, said slide member having first and second standing wave loop zones at which appreciable amplitude of vibration wave occurs in longitudinally spaced relation about the nodal zone and disposed in directions toward the first and second reference ends of the set, respectively,

(d) a first jam and slide bearing means disposed at a slide member jamming station adjacent said first standing wave loop zone of the slide surface means and operatively connected to the vibrating end of the second vibrator element, and a second jam and slide bearing means disposed at a slide member jamming station adjacent said second standing wave loop zone of the slide surface means and operatively connected to the vibrating end of the first vibrator element, said jam and slide bearing means each having a cycle of operation in synchronous relation to the cycle of vibration of the end of the vibrator element to which it is connected, said cycle of operation including a cycle portion for jamming the slide surface means, and a cycle portion permitting the sliding of the slide surface means in its longitudinal direction,

(e) means for individually exciting the vibrator elements of the set with alternating signals at a common predetermined frequency chosen to cause vibration of the vibrator elements in predetermined synchronized phase relationships to cause the first and second jam and slide bearing means to jam the slide surface means in predetermined relation to the expansion and contraction of the second bar such that the second bar is stepped in rectilinear motion.

3,296,468
VIBRATOR MOTORS FOR ELECTRIC DRY SHAVERS
Rochard Chambrey Townshend, Sevenoaks, Kent, England, assignor to Morphy-Richards (Cray) Limited, St. Mary Cray, Kent, England, a company of Great Britain
Filed Jan. 28, 1964, Ser. No. 340,597
Claims priority, application Great Britain, Feb. 2, 1963, 4,350/63
8 Claims. (Cl. 310—29)

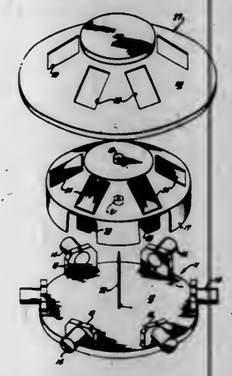


1. A vibrator motor comprising an electro-magnet assembly, an armature assembly, pivotal mountings for both said electro-magnet assembly and said armature assembly, mechanical coupling means from said electro-magnet assembly to said armature assembly to cause said electro-magnet assembly and said armature assembly to move in anti-phase about their pivotal mountings the one with respect to the other under the constraint of said mechanical means when said electro-magnet is energised in such a way that the relative angular movements of said armature assembly and said electromagnet assembly are predetermined by said mechanical means.

2. A vibrator motor according to claim 1 further comprising a containing case, a frame mounted for small angle oscillatory movement in said case and to which frame said electro-magnet is rigidly secured and said armature is pivoted, and a further yielding pivot for said armature connected to said case, the pivoting of said armature to said frame providing the mechanical coupling from said electromagnet to said armature.

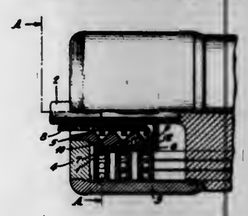
3. A vibrator motor according to claim 2, said yielding pivot comprises a bridge piece having two knife edge bearings, a V seating for one of said bearings attached to said case, a V seating for the other of said bearings attached to said armature, and spring means urging said knife edge bearings into said V seatings.

3,296,469
SOLAR MOTOR
Edward T. Hall, 2091 W. F St., Napa, Calif. 94558
Filed June 25, 1963, Ser. No. 290,390
6 Claims. (Cl. 310—46)



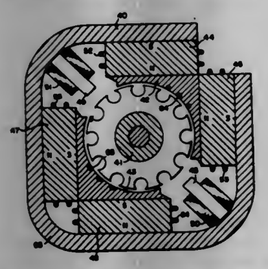
1. A solar motor comprising a stator having a plurality of circumferentially spaced field magnets, a rotor mounted for rotation concentrically of said stator, a plurality of circumferentially spaced armature coils carried by said rotor to generate upon energization magnetic fields for interaction with the fields of said magnets, a plurality of photovoltaic converters each including at least one solar cell carried by said rotor at circumferentially spaced positions corresponding to said coils and each converter being connected across a single coil in energizing relation thereto to energize the coils by solar energy incident upon said solar cells, and a mask of opaque material disposed in fixed relation to said stator adjacent said photovoltaic converters to block light from reaching same said mask having a plurality of circumferentially spaced apertures for the transmission of light therethrough onto said converters, said apertures being respectively disposed in circumferentially spaced relation to said magnets, whereby said converters moving beneath said apertures periodically generate a pulsating unidirectional current through said armature coils for maximum motor torque.

3,296,470
LIQUID COOLING OF GENERATOR ROTOR WINDINGS
Eduard Valentinovich Barbashev, Lubov Alexandrovna Juditskaja, and Valentin Fedorovich Vorobjev, Moscow, U.S.S.R., assignors to Vsesouzny Nauchno-Issledoratelsky Institute Elecktromekhaniki, Moscow, U.S.S.R.
Filed Feb. 3, 1964, Ser. No. 341,964
7 Claims. (Cl. 310—54)



1. In an electrical machine including a rotor mounted on a shaft, windings on said rotor, each winding comprising a hollow conductor having end turns adjacent one end of said rotor and spaced radially outwardly from said shaft, means for supplying a cooling liquid to each end turn, said means comprising a hollow cylinder fixed on said rotor between the end turns and said shaft and with the inner surface of said cylinder spaced radially outwardly from said shaft, insulating means disposed between the outer surface of said cyinder and the end turns, said cylinder having an annular groove in the inner surface, means providing communication between said groove at the bottom thereof and each of said end turns, and a stationary pipe disposed in the space between said shaft and said cylinder for supplying cooling liquid in a free jet to said groove, whereby upon rotation of said rotor centrifugal force causes liquid to flow from said groove through said end turns, the depth of said grooves serving to limit the maximum quantity of liquid supplied to said end turns.

3,296,471
DYNAMOELECTRIC MACHINE
Alexander Cochardt, R.D. 3, Box 233, Export, Pa. 15632
Filed Dec. 11, 1963, Ser. No. 329,703
12 Claims. (Cl. 310—154)



1. Dynamoelectric machine comprising a stator member and a rotor member concentrically arranged within the stator member so as to define a magnetic gap between said stator and rotor members, said stator member including a magnetically conducting stator frame and a plurality of plate-like permanent magnets having a pair of opposite major surfaces that are planes and represent the pole faces, said permanent magnets being disposed within said stator frame having their one plane pole faces in direct contact with said stator frame and having their other plane pole faces in direct contact with at least one magnetically conducting pole shoe bordering said magnetic gap, at least two adjacent ones of said permanent magnets being in direct contact with a single common pole shoe whereby the magnetic fluxes of the said at least two adjacent permanent magnets are combined in said common pole shoe and the combined flux is caused to pass from said common pole shoe through said magnetic gap into said rotor, the arrangement being such that the interfaces between said common pole shoe and the permanent magnets in direct contact therewith define angles less than 180°.

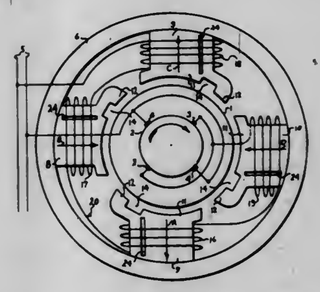
3,296,472
SERIES DIRECT CURRENT MOTOR FIELD POLES
Alec Fisher, 444 W. 9th St., Erie, Pa. 16502
Continuation of application Ser. No. 309,742, Sept. 18, 1963. This application June 21, 1966, Ser. No. 559,338
4 Claims. (Cl. 310—186)

1. An N-pole series direct current motor comprising:

(a) an armature;

(b) a field tsructure arranged for coaction with said armature and consisting of a field yoke having only N-magnetizable members projecting therefrom toward said armature and terminating near said armature in a pole face having an axially extending notch therein which divides said pole face into a main pole face portion and a commutating pole face portion with said notch providing a predetermined spacing therebetween, the center of said commutating pole face portion being located approximately on the line of the mechanical neutral of said motor;

(c) a winding connected in series with the armature circuit of said motor and arranged on said magnetizable members to provide magnetic excitation therefor; and



(d) a high reluctance region in each of said magnetizable members which extends throughout the major part of the radial length of the member and the entire axial length thereof and being effective to establish two essentially separate flux paths in each of said magnetizable members so that saturation of the path associated with the commutating pole face portion is independent of the saturation of the path associated with the main pole face portion.

3,296,473
BRUSH HOLDER MEANS OF A MINIATURE ELECTRIC MOTOR
Takaichi Mabuchi, 262 Honden-cho, Tokyo, Japan
Filed Dec. 17, 1963, Ser. No. 331,302
Claims priority, application Japan, Apr. 22, 1963, 38/29,317
1 Claim. (Cl. 310—239)

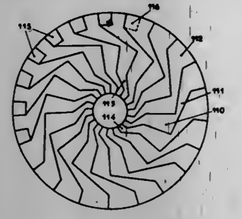


A brush holder particularly for small electric motors, comprising a resilient brush member of a predetermined configuration, and supporting means for said brush member holding at least a portion of said brush member in an outline different from its normal configuration to cause resilient engagement of said brush member against said supporting means, said brush member being held by said supporting means solely by resilient engagement, said supporting means comprising a member opened on at least one side for permitting withdrawal of said resilient brush member from said supporting means on said such side and comprising at least three spaced upright members said brush being alternately bent around adjacent ones of said members.

3,296,474
PRINTED-CIRCUIT MULTILAYER WINDING FOR ELECTRIC ROTARY MACHINES
Jacques Henry-Baudot, Antony, France, assignor to Printed Motors Inc., New York, N.Y.
Filed Aug. 6, 1963, Ser. No. 300,287
5 Claims. (Cl. 310—268)

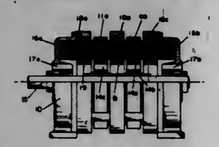
1. An electrical rotating machine printed-circuit armature winding comprising an even number greater than two separate layers of half-turn conductors, the conductors

in one half of the number of layers being reversely oriented with respect to the conductors in the other half



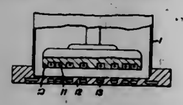
of the number of layers, said conductors being interconnected to form a single uninterrupted series-wave winding.

3,296,475
DYNAMO-ELECTRIC MACHINES, AND ROTORS THEREFOR
Louis W. Parker, 200 Harvard Ave., Stamford, Conn. 06902
Filed Sept. 15, 1965, Ser. No. 487,548
8 Claims. (Cl. 310—268)



2. In a dynamo-electric machine, a plurality of rotor sections each of which comprises a plurality of wedge-shaped lamination stacks positioned in a circular array and supported in said array by a cast aluminum matrix disposed around and between said arrayed stacks, each of said rotor sections having a central support comprising a steel hub, said central support further including means defining air passages adjacent said hub, means mounting said hubs for rotation in said machine, stator means disposed adjacent said rotor sections, and air entry passage means communicating the exterior of said machine with said air passages, said rotor sections and stator means being mounted in axially mutually spaced relation to one another to provide a plurality of substantially radially extending gaps therebetween for the egress of air from the interior of said machine.

3,296,476
X-RAY TUBE
Ernst-Günter, Hofmann, Berlin-Wilmersdorf, Germany, assignor to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 30, 1962, Ser. No. 234,024
Claims priority, application Germany, Oct. 31, 1961, L 40,351
13 Claims. (Cl. 313—55)

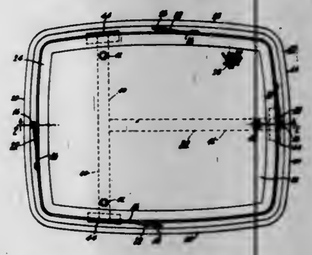


1. A high power X-ray tube including means for producing an X-ray radiation field which has lines of isodosage that are substantially parallel to each other, said means comprising, in combination: an anode having a large surface area defining a focal point; and a cathode including a plurality of electron-emitting elements which are spaced more closely together at the edges of said cathode than at the center thereof for producing an electron beam which impinges on said focal point and which has a current density which increases progressively from its central region to its periphery.

ERRATUM

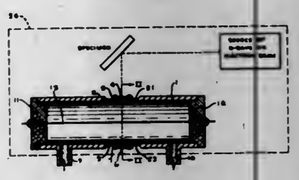
For Class 313—85 see:
Patent No. 3,296,625

3,296,477
CATHODE RAY TUBE WITH ELECTRODE SUPPORTED BY STRAP-LIKE SPRINGS
Terry M. Shrader, Leacock, and Glenn R. Fadner, Jr., Landisville, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,190
8 Claims. (Cl. 313—85)



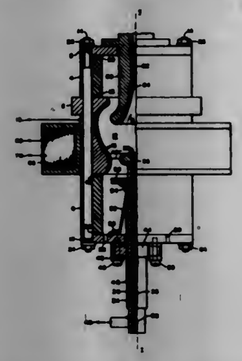
1. A cathode ray tube comprising a faceplate panel, at least three support studs extending from said panel, an electrode, and at least three mounting means attached to said electrode and having apertures receiving said studs for mounting said electrode in spaced relation to said panel; at least one of said mounting means comprising a mounting surface on said electrode, a strap-like support spring having an aperture at one end receiving one of said studs and a mounting surface at the other end engaging the outer periphery of said electrode, one of said mounting surfaces being initially curved convex to the other surface, a hook on said electrode for holding said surfaces in contact during assembly of said spring, said other end of said spring extending into said hook, and means for attaching said spring to said electrode independently of said hook with said surfaces in extended contact with each other in opposition to the resiliency of said spring.

3,296,478
PROPORTIONAL COUNTER HAVING A POLYCARBONATE WINDOW
Takeo Ichinokawa, 716 Takaishi Kawasaki-shi, Kanagawa-ken, Japan
Filed Apr. 20, 1962, Ser. No. 189,097
Claims priority, application Japan, Apr. 22, 1961, 36/13,888
4 Claims. (Cl. 313—93)



1. A proportional counter having an entrance window for X-rays which is formed of a film of polycarbonate resin of less than about 1 micron in thickness, whereby a long-wave X-ray, in particular the characteristic X-ray of carbon, can be detected effectively.

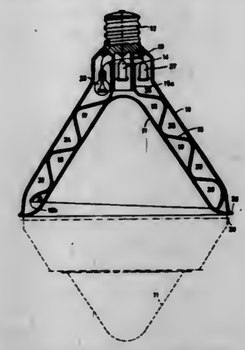
3,296,479
ARC HEATER APPARATUS
Frederick B. Johnson, Pleasant Hills, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 21, 1963, Ser. No. 282,073
5 Claims. (Cl. 313—146)



1. In arc heater apparatus for increasing the enthalpy of a gas, the combination of: a chamber including a cylindrical electrode, a first pressure plate and a second pressure plate, the second pressure plate having an opening therein; a movable electrode having a disc-shaped portion forming an arcing surface and extending into said chamber through the opening in the second pressure plate, the plane of the disc-shaped portion of the movable electrode being normally positioned substantially perpendicular to the longitudinal axis of the cylindrical electrode whereby an annular arc gap is formed between the outer periphery of the disc-shaped portion of the movable electrode and the inner wall of said cylindrical electrode; mounting means including a trunnion bearing securing the movable electrode to the second pressure plate whereby the movable electrode may be titled to bring the disc-shaped portion thereof into contact with the cylindrical electrode; supply means to apply a source of potential to said electrodes of sufficient magnitude to sustain an arc therebetween, the contact between the movable electrode and the circular inner wall of the cylindrical electrode starting the arc whereafter the movable electrode is moved back to its normal position; inlet means for admitting a flow of gas into said chamber to be heated; magnetic means to provide a magnetic field substantially transverse to the arc drawn between said electrodes; and exhaust means extending into said chamber for discharging the heated gas from said chamber.

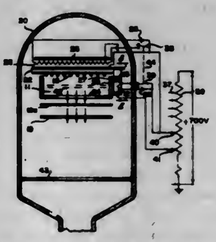
3,296,480
GAS DISCHARGE LAMPS WITH SINUOUS DISCHARGE PATH BETWEEN ELECTRODES
Alfred Walz, Am Kurzarm 7, Emmendingen, Baden, Germany
Filed Nov. 19, 1963, Ser. No. 324,674
Claims priority, application Germany, Nov. 27, 1962, W 33,421
4 Claims. (Cl. 313—204)

1. A gas discharge lamp comprising, in combination, two smooth-surfaced wall parts which are coaxial surfaces of revolution and define between them a sealed annular space whose diameter is substantially less at one axial end than at the other axial end; a middle part disposed within and along said annular space and having helical projections on both its radially inner surface and its rdially outer surface, each helical projection being in sealing contiguous relation with the smooth inner surface of the respective adjacent wall part; each projection forming, with the wall part in contact therewith, one part of a discharge path, and corresponding axial ends of the two parts of the discharge path communicating with each other at the larger



diameter end of said annular space; and a pair of electrodes each positioned at the other axial end of a respective part of the discharge path.

3,296,481
ION SOURCE HAVING BOTH DEFLECTION AND REPELLER ELECTRODES FOR DIRECTING AN ELECTRON STREAM
John L. Peters, 114 Dikeman St., Hempstead, N.Y. 11550
Filed May 13, 1964, Ser. No. 367,044
11 Claims. (Cl. 313—230)

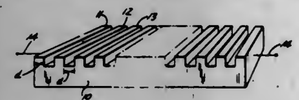


1. An ion source comprising an ion chamber, means including a filament and first focusing electrode for producing and directing a stream of electrons into said chamber, an ion outlet on one side of said chamber, a grid positioned on the opposite side of said chamber for repelling ions toward said one side, and a deflection electrode positioned on the far side of said grid from said one side of said chamber and substantially parallel to said grid for controlling the trajectories of electrons in said chamber to increase the amount of positive ions which are produced in said chamber, said deflection electrode imposing operative field forces in said chamber through the interposed grid.

3,296,482
POLARIZED RADIATION EMITTING ELEMENT FOR INCLUSION AS A LIGHT SOURCE IN AN ELECTRIC LAMP
Nils Bertil Agdur, Danderyd, Florian Sellberg, Djursholm, Kurt Goran Rafael Boling, Taby, and Karl Yngve Ohman, Stockholm, Sweden, assignors to Kooperativa Forbundet Ekonomisk Forening, Stockholm, Sweden
Filed Dec. 18, 1963, Ser. No. 331,416
Claims priority, application Sweden, Dec. 22, 1962, 13,846/62
16 Claims. (Cl. 313—341)

1. In a light-emitting device for inclusion as a light source in electric lamps and the like for the generation

and production of radiation directly polarized into a single direction, the combination which comprises an elongated light-emitting and generating element, means for supporting said elongated element with continuous portions thereof in parallel side-by-side spaced arrangement with respect to other portions thereof, and means for electrically energizing and heating said element and said support means for producing thermic emission and light radiation



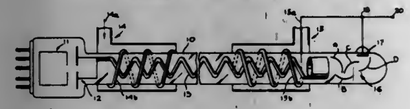
therefrom, the transverse dimension of said elongated element in a direction perpendicular to the axis thereof being generally of the same order of magnitude as the wave-length of radiation emitted thereby, and the transverse dimension of said spacing between said parallel portions of said elongated element also being generally of the same order of magnitude as the wave-length of radiation emitted by said element.

3,296,483

WIDEBAND AMPLIFIER UTILIZING COMMON ELECTRON BEAM FOR INTERACTION WITH HIGH-FREQUENCY TRAVELING-WAVE LINE AND WITH LOW-FREQUENCY ELECTRON MULTIPLIER

Abraham Jacoby, Pasadena, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif.

Filed July 1, 1963, Ser. No. 291,641
5 Claims. (Cl. 315—3.5)



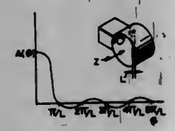
1. Amplifier apparatus comprising: a single envelope in which are mounted a traveling-wave tube structure in the forward section of said envelope; a dynode structure in the rearward section of said envelope; means for projecting an electron beam to interact with said traveling-wave structure and said dynode structure, respectively; and means, forming the output of said dynode structure, for collecting said electron beam; said traveling-wave and dynode structures being connected together at their output ends forming a single composite output, whereby a signal to be amplified is divided into two components, a high-frequency component to be amplified by said traveling-wave structure, and a low frequency component to be amplified by said dynode structure.

3,296,484

LOW MAGNETIC FIELD CYCLOTRON WAVE COUPLERS

Joseph Feinstein, Livingston, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey

Filed Aug. 2, 1961, Ser. No. 128,881
3 Claims. (Cl. 315—5.27)



1. In an electron discharge device in which an electron beam is modulated with a transverse beam wave at a signal frequency and projected along a predetermined path, means for producing a magnetic field B directed along the beam path, a beam coupler for transferring signal wave energy between the beam and a circuit over a band of frequencies centered about a given signal frequency, said beam coupler including a pair of mutually opposed conductive member portions transversely disposed of the beam path with the beam path passable therebetween, means for exciting said mutually opposed conductive member portions with an alternating voltage at the signal frequency to produce an alternating electric field transverse to the beam path for transferring signal wave energy between the beam and said mutually opposed conductive member portions, and one of said mutually opposed conductive member portions having a full extent axially coextensive with said beam path which is less than

$$\frac{8.35\sqrt{V_o}}{5B}$$

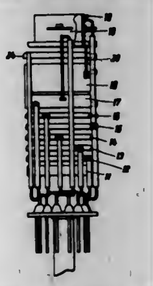
inches where V_o is D.C. voltage corresponding to the axial velocity of the electrons flowing along the beam path and B is the axial magnetic field intensity in gauss, whereby substantially linear polarization of the beam is obtained over the operating band of frequencies of said beam coupler.

3,296,485

IMAGE ORTHICON PICKUP TUBE USING METAL EVAPORATOR FILAMENT TO DEFLECT RETURN BEAM

Kurt Frank, Darmstadt, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Dec. 10, 1963, Ser. No. 329,520
Claims priority, application Germany, Dec. 20, 1962, F 38,619
2 Claims. (Cl. 315—11)



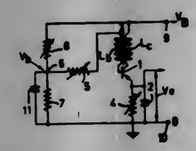
1. Image orthicon tube containing a gun system for generating a scanning beam of slow electrons with an apertured gun anode acting also as collector electrode for the return beam and as first dynode of a multiplier system, a field mesh on the side of the target facing the gun anode, a cylindrical electrode between field mesh and gun anode serving as suppressor to inhibit the secondary electrons released on the field mesh from reaching the gun anode, said cylindrical electrode being connected to an electrode of the tube of substantially negative potential relative to the field mesh, a metal evaporator encompassing a part of the circumference of the suppressor electrode and connected to an electrode of the tube having a potential different from that of said suppressor electrode, so that an auxiliary field in a direction perpendicular to the axis of the tube is superimposed upon the symmetrical field of the suppressor electrode, said metal evaporator being arranged in a spacing from said suppressor electrode, said spacing being chosen so that, due to the deflection effect of said metal evaporator on the electron beam, the minimum distance between the pattern traced upon the gun anode by the return beam and the aperture of the gun anode amounts to more than 0.2 millimeter and less than 0.5 millimeter.

3,296,486

TRANSISTOR BLOCKING OSCILLATOR INCLUDING MEANS FOR CONTROLLING THE FLYBACK WAVEFORM

Rijkent Jan Nienhuis, Mollenhutseweg, Nijmegen, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 12, 1964, Ser. No. 366,843
Claims priority, application Netherlands, May 14, 1963, 292,751
6 Claims. (Cl. 315—27)



1. A transistor blocking oscillator for producing a signal having a sawtooth-shaped waveform, comprising a transistor having input, common and output electrodes, a transformer having primary and secondary windings, a source of operating potential having first and second terminals, a first resistor, means serially connecting said resistor, the common-output electrode path of said transistor, and said primary winding between said first and second terminals, an unbypassed second resistor connecting said secondary winding between said input electrode and a point of fixed potential, whereby the instantaneous input electrode current of said transistor flows through said unbypassed resistor, capacitor means, means connecting said capacitor means between the end of said first resistor connected to said transistor and one of said terminals, whereby current of said capacitor means flows through said primary winding and transistor during the flyback time of said signal, and output means for deriving said signal from said capacitor means, the components of said oscillator being related to satisfy the expression:

$$\frac{R_b^2 C_e}{L_e} \geqq n(n+1)^2$$

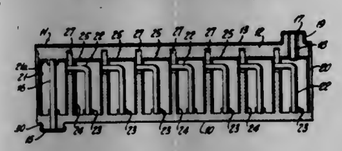
wherein R_b is the resistance of said secondary winding and unbypassed resistor, C_e is the capacitance of said capacitor means, L_e is the inductance for the magnetizing current of said transformer, and n is the transformation ratio between said secondary and primary windings.

3,296,487

PLURAL VOLTAGE REGULATOR DISCHARGE DEVICES IN A UNITARY STRUCTURE

Max Yarmovsky, Livingston, N.J., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 4, 1964, Ser. No. 342,364
8 Claims. (Cl. 315—36)



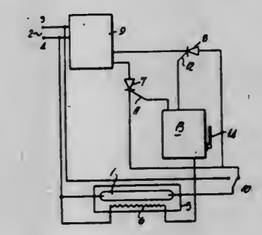
2. A gaseous voltage regulator discharge device comprising, a sealed envelope of electrical insulating material formed with spaced internal walls thereby defining a plurality of cavities, said envelope containing a gas at reduced pressure, a hollow cathode electrode positioned in each cavity, a rod anode electrode also positioned in each cavity within the hollow portion of the cathode thereby forming a plurality of diode discharge units, an anode terminal external of the envelope connected to one of said anodes, a cathode terminal also external of the envelope connected to one of said cathodes, the other anodes being connected to the outside surface of the adjoining cathodes to form intermediate discharge devices connected in series.

3,296,488

CONTROL OF HEATABLE DISCHARGE LAMPS

Raymond Taylor, Birstall, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Dec. 13, 1963, Ser. No. 330,432
1 Claim. (Cl. 315—116)



In the combination of an electric discharge lamp and means for controlling the brightness thereof, the improvement comprising parallel connected oppositely poled rectifiers, an A.C. source, switch means for selectively connecting said rectifiers in the circuit between said source and said lamp, a voltage regulator to maintain constant input voltage to said rectifiers, an electric heater for the lamp and control means for controlling the conducting periods of said rectifiers and for increasing the heater input as the conducting periods of the rectifiers are reduced.

3,296,489

CONDUCTIVE SURGICAL SHOE COVER

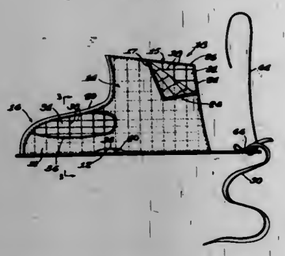
Bernard A. Ceraldi, Cleveland, Ohio, assignor to Westshore Products, Inc., Cleveland Ohio, a corporation of Ohio

Filed June 3, 1963, Ser. No. 285,023
2 Claims. (Cl. 317—2)



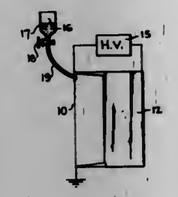
1. A conductive surgical shoe cover for rendering electrically conductive the wearer thereof comprising a textile material having a substantially closed end and an opposite, open end, said material being elastically stretchable to expand over and snugly fit the shoe of such wearer, and a relatively narrow elongated strip of electrically conductive material secured lengthwise at least from the toe to the heel areas of said cover when said cover is snugly fitted over the wearer's shoe to contact the surface upon which the wearer is standing, said strip having a portion extending freely beyond the open end of said cover adapted to be tucked within the sock of the wearer and thus in direct contact with the skin of such wearer.

3,296,490
CONDUCTIVE COVERING FOR SHOES
Russell W. Price, 11 Merton St., Newton, Mass. 02159
Filed Oct. 11, 1963, Ser. No. 315,576
2 Claims. (Cl. 317—2)



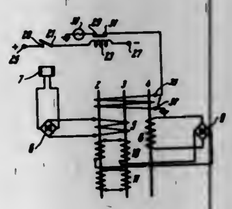
1. A conductive foot covering for shoes comprising an elongated electrically conductive flexible sole portion, an upper comprising a woven textile fabric embodying an electrically conductive material in the form of conductive yarn threads woven therein, said threads providing a conductive path from the bare skin of the wearer to the conductive sole portion, said conductive yarn threads being woven into the fabric in a pattern of intersecting horizontal and vertical spaced parallel lines, said foot covering including a toe portion and an ankle portion open at the back, said ankle portion providing opposed wings adapted to be wrapped in overlapping relation against the bare skin above the shoe of the wearer, said upper stitched in electrically conductive engagement with the marginal edges of the sole portion at the toe portion and along the sides thereof, said sole portion extending rearwardly a substantial distance beyond the upper providing a foldable portion adapted to be bent up at the heel of the shoe and against said overlapped portions to accommodate shoes of different sizes, and tie means secured to the rearwardly extended end of said sole portion for securing the ankle portion of the upper in firm electrical engagement with the bare skin of the wearer whereby to provide a conductive path from the foot through the upper and the sole to a grounded conductive floor.

3,296,491
METHOD AND APPARATUS FOR PRODUCING IONS AND ELECTRICALLY-CHARGED AEROSOLS
Thomas Townsend Brown, Meadville, Pa., assignor, by mesne assignments, to Martin M. Decker, Montgomery County, Pa.
Filed Sept. 19, 1961, Ser. No. 139,830
14 Claims. (Cl. 317—3)



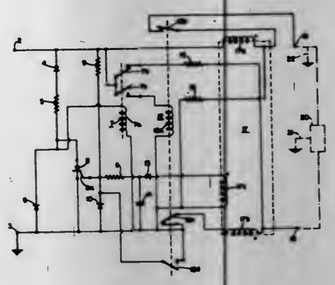
1. Apparatus for producing electrically-charged aerosols comprising a first electrode and neighboring second electrode of larger size, said electrodes being stationary relative to each other, means for applying an ionizable liquid stream to the surface of said first electrode and means for applying a direct current potential difference between said first and second electrodes whereby ions are produced from said liquid stream and are swept from said first electrode beyond said second electrode by the electrostatic force resulting from said potential difference.

3,296,492
DEVICE FOR RELAY PROTECTION OF RECTIFIER TRANSFORMERS
Alexandr Dmitrievich Drozdov and Alexandr Sergeevich Zasypkin, Novocherkassk, U.S.S.R., assignors to Novocherkassky Politekhnichesky Institut Sergo Ordzhonikidze, U.S.S.R., Novocherkassk
Filed Oct. 22, 1963, Ser. No. 317,892
3 Claims. (Cl. 317—14)



1. A transformer relay protection system comprising: a saturated transformer with three cores, a primary winding wound on said three cores, a source of operating potential connected to the primary winding, a secondary winding wound on the first two of said three cores, a relay connected across said secondary winding, means in circuit with said source and responsive to actuation of the relay by current flow in the secondary winding to disconnect the source from the primary winding, an auxiliary secondary winding wound on said third core, a braking winding wound on the first two of said cores, a short-circuited winding wound on the same said two cores, a rectifier connected between the auxiliary secondary winding to feed said braking winding, said relay being actuated when normal rated current of the primary reaches a predetermined value and on sudden primary current surges.

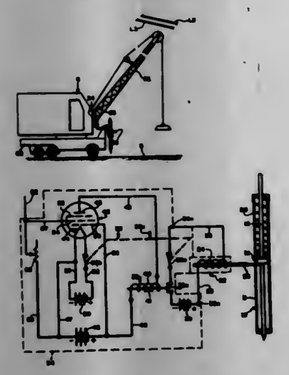
3,296,493
LEAKAGE DETECTION AND CONTROL CIRCUIT
Vernon Whittaker and Edward T. Thomson, Hatboro, Pa., assignors to Automatic Timing and Controls, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed Nov. 5, 1964, Ser. No. 409,240
5 Claims. (Cl. 317—18)



1. A protective circuit for a load circuit comprising:
(a) inductive means comprising:
(i) a first winding coupled between a first input terminal to said protective circuit and a first output terminal thereof,

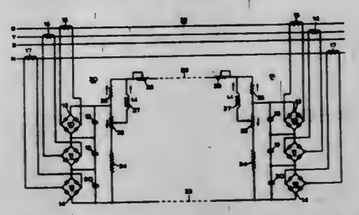
(ii) a second winding coupled between a second input terminal to said protective circuit and a second output terminal thereof, said load circuit being adapted to be connected between said output terminals and said input terminals being arranged to be connected to a voltage source, said first and second windings being arranged to produce opposite magnetic fields tending substantially to cancel one another when said load circuit is operating under normal conditions,
(iii) a third winding disposed so as to be threaded by at least part of the respective magnetic fields produced by said first and second windings,
(b) first switching means coupled between said input terminals,
(c) second switching means being coupled to said first input terminal via said first switching means and also being coupled to said second input terminal, said second switching means including means for decoupling said output terminals from said input terminals, and
(d) third switching means coupled between said input terminals and to said third winding, said third switching means being closed when said third winding has no voltage induced therein by fields produced by said first and second windings thereby bypassing said first switching means, said third switching means being constructed to open in the presence of a predetermined amount of voltage induced in said third winding thereby enabling actuation of said first switching means by said voltage source, said first switching means thereupon actuating said second switching means so as to decouple said load circuit from said input terminals.

3,296,494
VOLTAGE RESPONSIVE DEVICES AND METHODS OF VOLTAGE DETECTION
Andrew Stenger, Jr., 6443 41st Ave. N., St. Petersburg, Fla. 33708, and James S. Hall, 7923 Bogie Ave. N., St. Petersburg, Fla. 33710
Filed June 24, 1963, Ser. No. 290,124
7 Claims. (Cl. 317—17)



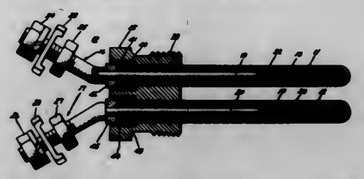
1. An automatic grounding devices comprising a metallic member, support means for retaining said member in a non-grounding position and for guiding said member for movement to a grounding position, means to attach said support means to a vehicle, means operable to propel said member from its non-grounding to grounding position, means responsive to an alternating magnetic flux field to render the last mentioned means operable, and means forming an electric connection between said grounding member and the vehicle to which said support means is attached.

3,296,495
POLYPHASE PROTECTIVE RELAY CIRCUITS
Eric Paddison, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Sept. 11, 1963, Ser. No. 308,119
Claims priority, application Great Britain, Sept. 14, 1962, 35,063/62
6 Claims. (Cl. 317—27)



1. A protective circuit arrangement responsive to faults occurring in a selected section of a polyphase supply line comprising,
two relay circuits coupled to the line conductors at opposite ends of the said selected section, each relay circuit comprising
a plurality of input circuit means separately coupled to selected conductors in the line for developing signals proportional to the current in these conductors,
a like plurality of rectifying networks each comprising a bridge rectifier having A.C. terminals connected to said input circuit means D.C. terminals and a smoothing circuit connected to said D.C. terminals,
connecting means for connecting together the D.C. outputs of all the rectifying networks, and
resistor means connected in series with said connecting means, the D.C. outputs of all the rectifying networks being connected together in like manner by said connecting means whereby the D.C. to which said resistor means responds is proportional to only the largest mean current traversing any one of said networks during each cycle,
pilot wire means connecting together the resistor means associated with the two relay circuits so that the voltages developed thereacross are in opposition to one another, and
a protective device connected to said pilot wire means and responsive to any current flow therethrough.

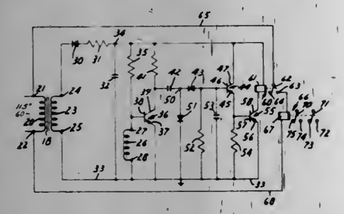
3,296,496
ELECTRIC HEATING DEVICES
Robert D. Baxter and Thorbjorn Skogland, Shelbyville, Ind., assignors to General Electric Company, a corporation of New York
Filed June 30, 1964, Ser. No. 379,266
8 Claims. (Cl. 317—98)



1. An electric heating device comprising a first and a second helical resistance heating element, a first and a second metallic sheath each having a closed end and surrounding said first and second helical resistance heating elements respectively, said first and second helical resistance elements joined electrically in circuit at one end respectively generally adjacent the closed ends of said first and second metallic sheaths, a first and second terminal connected electrically in circuit with the other ends of said

first and second helical resistance elements, powdered heat refractory material disposed between said helical resistance heating elements and said metallic sheaths to provide a heat conducting path from said helical resistance elements to said metallic sheaths, a conductive member engaging said first and second metallic sheaths and thereby to provide a series electrical connection between said resistance heating elements, and a third terminal joined with said conductive member for providing an electrical connection for selectively connecting only one of said resistance heating elements to the power source.

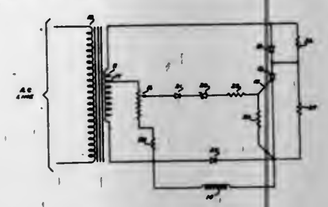
3,296,497
MOTOR STALL RESPONSIVE RELAY FOR LEVEL CONTROL DEVICES
James P. Slattery, 6524 Walker St., Minneapolis, Minn. 55426
Filed Feb. 25, 1964, Ser. No. 347,303
1 Claim. (Cl. 317—123)



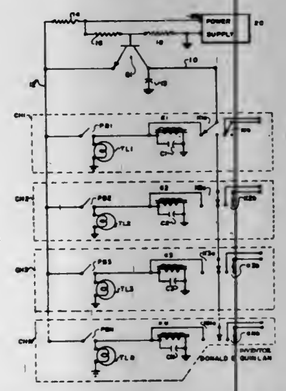
Apparatus of the class described comprising:
(a) a motor having a rotor and a shaded-pole stator;
(b) a stator winding wound in inductive relation to said stator and adapted to be connected to a first source of energizing potential, said stator winding further having a secondary winding wound in inductive relation thereto whereby energization of said stator winding produces an alternating flux in said stator and an alternating potential in said secondary winding;
(c) monitor coil means inductively coupled to the rotor of said motor to produce a control signal indicative of rotation of said rotor;
(d) current control means having an input and an output and further having a conducting state and a nonconducting state;
(e) means for rectifying the alternating signal induced in said secondary winding to produce a second energizing potential source;
(f) relay means connecting the output of said current control means to said second energizing source, said relay having relay contacts; and
(g) means connecting the input of said current control means to said monitor coil, said control signal holding said current control means in its conducting state.

3,296,498
VOLTAGE SENSING RELAY SYSTEM
Arnold L. Chassanoff, West Orange, N.J., and Bernard B. Dalen, Suffern, N.Y., assignors to Automatic Switch Co., Florham Park, N.J., a corporation of New York
Filed May 14, 1963, Ser. No. 280,384
1 Claim. (Cl. 317—148.5)

A voltage sensing system for use with a source of alternating current power, comprising a silicon controlled rectifier and a coil connected in series with said power source, said coil being connected to the cathode of said rectifier, a junction between said coil and cathode, a detector circuit connected between said power source and said junction, the gate terminal of said rectifier being connected to said detector circuit so that when said source rises above a predetermined value a firing potential will be applied to the gate terminal, and a diode connected in parallel with said coil and arranged to pass current in the direction of said junction, whereby upon deenergization of said coil after said rectifier discontinues firing the current induced in said coil and flowing through said diode produces a voltage drop which is added to the voltage drop in said detector circuit produced by said power source.

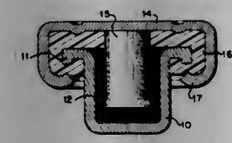


3,296,499
MULTI-CHANNEL SWITCHING SYSTEM
Donald E. Quinlan, Lincoln Park, N.J., assignor to Visual Electronics Corporation, a corporation of New York
Filed Aug. 5, 1963, Ser. No. 300,023
7 Claims. (Cl. 317—154)



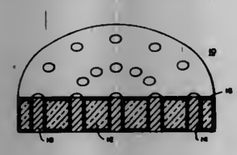
1. In a multi-channel switching system having a plurality of channel switching relays, each of said relays having at least a pair of normally open contacts, a holding circuit for said relays comprising, a source of potential having a common output terminal, a bias potential terminal, and an energizing potential terminal, said source of potential having means for developing a selected bias potential between said bias terminal and said common output terminal and a selected energizing potential between said energizing potential terminal and said common output terminal, an impedance connected to said common output terminal, individual switch means each serially connected to said impedance to form a common junction point and to an associated relay for selective actuation thereof, a switching amplifier having conducting and non-conducting states and pairs of input and output terminals, said pairs of input terminals being connected to said bias terminal and to said common junction point, said bias potential being effective to bias said switching amplifier into a conducting state, said relays having a common terminal connected to said energizing potential terminal, one of said amplifier output terminals being connected to said common junction point, and circuit means including said pairs of normally open contacts for connecting the other of said switching amplifier output terminals to the junction point of a selected switch and its associated relay whenever the associated relay is energized and said normally open contacts are closed, thereby forming a first individual holding circuit for the associated relay through the conducting switching amplifier and the associated, now closed, normally open contacts, said switching amplifier being rendered non-conductive by the increase in potential developed across said impedance to open said first holding circuit, whenever a second selected switch is closed, said amplifier remaining non-conductive until a second individual holding circuit for said second selected switch is formed by said circuit means.

3,296,500
ELECTROLYTIC CAPACITOR WITH NIOBIUM ANODE AND DEPOLARIZER IN THE ELECTROLYTE
James M. Booe, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,678
16 Claims. (Cl. 317—230)



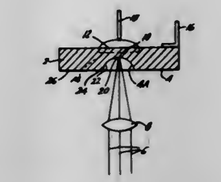
1. An electrolytic capacitor comprising, in combination, a niobium anode having a dielectric film thereon, a cathode of a metal selected from the group consisting of copper and silver, an electrolyte of sulfuric acid having a concentration between 5% and 75% and being substantially saturated with ions of the cathode metal in contact with said anode and cathode, and a compound of the cathode metal in solid form in contact with said electrolyte, said compound being soluble in the electrolyte and being adapted to maintain the concentration of ions of the cathode metal therein at saturation during the operative life of the capacitor.

3,296,501
METALLIC CERAMIC COMPOSITE CONTACTS FOR SEMICONDUCTOR DEVICES
David L. Moore, Jeannette, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 7, 1962, Ser. No. 235,973
10 Claims. (Cl. 317—234)



8. A relatively flat, ceramic member suitable for use in a semiconductor device as a contact member for a semiconductor wafer, the member having a plurality of apertures contained therein, a metalize coating disposed on all exposed surfaces of the ceramic member including the wall surfaces of the apertures, an electrically conductive metal disposed in, and completely filling the apertures, the member being capable of conducting electricity readily and dissipating heat rapidly.

3,296,502
VARIABLE PHOTOSENSITIVE SEMICONDUCTOR DEVICE HAVING A GRADUATINGLY DIFFERENT OPERABLE SURFACE AREA
Sherman B. Gross, North Woodmere, Carl L. Uretsky, Flushing, and Philip T. Altebrando, Selden, N.Y., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Nov. 28, 1962, Ser. No. 240,598
6 Claims. (Cl. 317—234)



1. In a photosensitive device comprising a semiconductor body having a surface, a first portion of said body extending away from said surface and being of a first semiconductor type, a second portion of said body being generally spaced from said surface by said first portion and being of a second semiconductor type, an area junction being defined between said first and second body portions, the spacing between a part of said surface and at least a part of said area junction being within the limits of photosensitivity, thereby to define a photosensitive section, said part of said surface defining an operative surface area on which light is adapted to impinge, thereby to vary the electrical characteristics of said device; the improvement which comprises said operative surface area being of appreciable extent such that light can be selectively directed to different sections thereof, and means for rendering the photoelectric sensitivity of said device graduatingly different at said different sections of said operative surface area, said means comprising said different sections of said operative area within said photosensitive section being spaced from sections of said area junction thereopposite by different distances within the limits of photosensitivity, said second body portion extending completely to said operative area over a fraction only of said area, thereby to render said fraction of said operative area non-photosensitive while leaving the remainder of said operative area photosensitive.

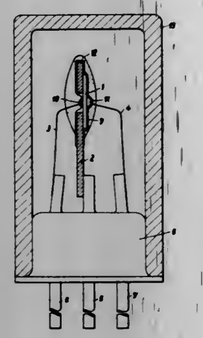
3,296,503
SEMICONDUCTOR STABILIZED MECHANICALLY AND ELECTRICALLY BY A FIRST LAYER OF LACQUER AND A SECOND LAYER OF BORIC OXIDE
Walter Klossika, Heilbronn, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Jan. 16, 1963, Ser. No. 251,943
Claims priority, application Germany, Jan. 17, 1962, T 21,431
11 Claims. (Cl. 317—234)

1. A semiconductor arrangement comprising, in combination:
(a) a semiconductor element;
(b) first means for imparting mechanical stability to said semiconductor element, said first means being a material in which said semiconductor element is at least partially embedded; and
(c) second means for imparting electrical stability to the surface of said semiconductor element, said second means being a material which at least partially surrounds said first material, said second material being constituted at least in part by boric oxide.

4. A semiconductor arrangement as defined in claim 1 wherein said lacquer is a silicon lacquer.

10. A method of making a semiconductor arrangement, comprising the steps of:

(a) applying onto a semiconductor element a first layer for imparting mechanical stability to the semiconductor element;



(b) thereafter applying onto the first layer a second layer for imparting electrical stability to the surface of the semiconductor element, said second material being constituted at least in part by boric oxide; and

(c) thereafter heat treating the semiconductor element.

11. A method as defined in claim 10 wherein said heat treatment is carried out at a temperature of approximately 80° C.

3,296,504

ELECTRODES FOR ELECTROCHEMICAL LOGARITHMIC DETECTOR UNITS

Nelson N. Estes and George T. Kemp, Austin, Tex., assignors to Union Carbide Corporation, a corporation of New York

Filed Nov. 29, 1963, Ser. No. 326,903
4 Claims. (Cl. 317—230)



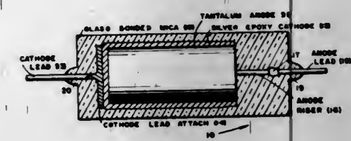
1. An electrode for a logarithmic detector having an orifice therein and having at least the side surface portions and the surface defining said orifice composed of a material selected from the group consisting of the carbides, nitrides, silicides and borides of a transition metal selected from the group consisting of hafnium, titanium, zirconium, niobium, tantalum, vanadium, chromium, molybdenum and tungsten, and an insulating coating of an oxide of a transition metal selected from the group of said metals on said side surface portions and terminating at the extremities of said orifice.

3,296,505

GLASS-BONDED MICA ENCAPSULATED TANTALUM CAPACITOR

Lawrence Robert Sparrow and Jerry Brailman, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed June 24, 1964, Ser. No. 377,639
10 Claims. (Cl. 317—230)



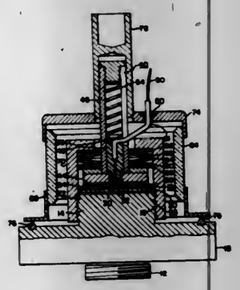
1. An electrolytic device comprising an anode of film forming metal, said anode having an extremity including an anode riser, a dielectric film formed on said anode, a solid layer of electrolyte overlying said dielectric film, a cathode layer of electrically conductive thermosetting material disposed on and substantially enclosing said electrolyte layer, a mass of glass intimately molded about said cathode layer hermetically sealing said device within a single, unitary encapsulated body thereof, with a cathode leading projecting from said cathode layer and an anode lead projecting from said anode riser.

3,296,506

HOUSED SEMICONDUCTOR DEVICE STRUCTURE WITH SPRING BIASED CONTROL LEAD

John J. Steinmetz, Jr., Monroeville, and William H. Walker, Jr., Greensburg, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 12, 1964, Ser. No. 410,660
1 Claim. (Cl. 317—234)



A semiconductor device comprising:

(1) a wafer of semiconductor material having two substantially parallel major opposed surfaces,
(2) a control electrode and a cathode electrode,
(3) said control electrode and said cathode electrode being affixed to one of said major surfaces,
(4) an anode electrode,
(5) said anode electrode being affixed to the other of said major surfaces,
(6) said anode member being in electrical and thermal contact with a metal base member,
(7) said metal base member having a pedestal portion,
(8) said pedestal portion having a plurality of screw threads disposed about the sides of the pedestal,
(9) a cathode connector connected to said cathode electrode,

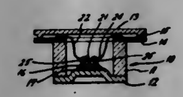
(10) said cathode connector comprising a hollow member,
(11) a control lead connected to said control electrode.
(12) said control lead being disposed within said hollow cathode connector at the point at which it is joined to said control electrode,
(13) an inverted cup-shaped member,
(14) said inverted cup-shaped member having a plurality of screw threads disposed about its inside wall,
(15) said inverted cup-shaped member being joined to said pedestal portion by said screw threads,
(16) the walls of said inverted cup-shaped member forming an aperture in its top portion,
(17) said hollow cathode connector with said control lead disposed therein being disposed through said aperture,
(18) an upper header disposed over and spaced from said inverted cup-shaped member,
(19) the walls of said upper header forming a first and a second aperture therein,
(20) said hollow cathode connector being disposed through said first aperture,
(21) the side walls of said hollow cathode connector forming an aperture in that portion of said hollow cathode connector disposed between said inverted cup-shaped member and said upper header,
(22) said control lead disposed through said aperture in said hollow cathode connector and through said second aperture in said upper header,
(23) and spring means disposed within said hollow cathode connector above the aperture in the connector through which the control lead is disposed, said spring means applying a pressure to said control lead to maintain electrical contact between said control lead and said control electrode.

3,296,507

RUGGED MICROWAVE TUNNEL DIODE HAVING A FINE MESH SCREEN AS ONE ELECTRODE SUPPORTED BY TWO CEMENTITIOUS BODIES

Mitchell Davis, Conshohocken, Richard L. Goldman, Chalfont, and Victor C. Sivydas, Hatboro, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 8, 1965, Ser. No. 446,503
9 Claims. (Cl. 317—234)



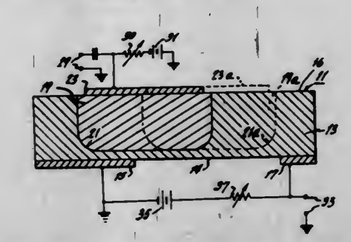
8. In a microwave tunnel diode device of the type including a semiconductive chip disposed upon an electrically conductive base, a junction contact disposed upon a surface portion of said chip and supported by a very minute necked-down portion of the latter, said necked-down portion being undercut with respect to said contact, a relatively fine mesh, elongate screen having mechanically supported end portions disposed to opposite sides of said contact and a central span portion disposed in mechanical and electrical engagement with said contact, and a pair of bodies of cementitious material each adherent to portions of said chip and disposed to opposite sides of said contact in substantially equidistant, relatively closely spaced relation thereto, said cementitious material extending through openings in said central span portion of said screen and adherent to solid portions thereof, said bodies of cementitious material serving as strain relief means for the region of engagement of said screen with said contact, with respect to forces exerted on said screen through said mechanically supported end portions.

3,296,508

FIELD-EFFECT TRANSISTOR WITH REDUCED CAPACITANCE BETWEEN GATE AND CHANNEL

Steven R. Hofstein, Neshanic, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 17, 1962, Ser. No. 245,086
3 Claims. (Cl. 317—235)



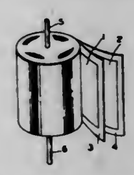
1. A field-effect transistor comprising a body of semiconductor material of one conductivity type and having a substantially planar external surface, a channel in said body extending entirely adjacent and substantially parallel to said surface, a source ohmic electrode adjacent said surface connected to one end of said channel, a drain ohmic electrode adjacent said surface connected to the other end of said channel, said source and drain electrodes defining the ends of a charge carrier path through said channel substantially parallel to said surface, and a single continuous gate electrode structure adjacent said channel and opposite a continuous portion of said current path, said gate electrode structure comprising a region of semiconductor material in said body of conductivity type opposite to that of said channel and the remainder of said body, and an ohmic gate connection to said region, one end of said region and one end of said gate connection being closer physically to said source electrode than the other ends of said region and said gate connections are to said drain electrode.

3,296,509

CAPACITOR WITH POLYPHENYLENE OXIDE DIELECTRIC

Arthur Katchman, Glens Falls, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 12, 1965, Ser. No. 507,278
10 Claims. (Cl. 317—258)



1. Electrical apparatus comprising a pair of spaced electrical conductors and insulating material arranged therebetween, said insulating material comprising brominated poly (2,6-dimethyl-1,4-phenylene ether).

3,296,510

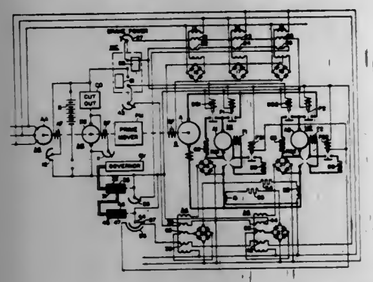
PLURAL MOTOR TRACTION CONTROL BY FIELD CONTROL

John J. Stamm, Export, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 25, 1963, Ser. No. 290,375
10 Claims. (Cl. 318—52)

1. A control system for electric traction motors, said system including a direct current generator, at least one pair of motors connected to the generator, each motor

having an armature and a series-connected field winding, a separate source of direct current excitation for each of said field windings, and means for controlling



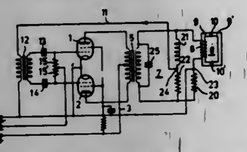
the separate excitation source of the field winding of each motor of a pair in response to the current of the other motor of the pair.

3,296,511

ARRANGEMENT FOR THE REPRODUCTION OF ULTRASONIC OSCILLATIONS

Cornelis Martinus van der Burgt and Hermanus Stephanus Josephus, Pijls, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 11, 1963, Ser. No. 308,208
Claims priority, application Netherlands, Sept. 12, 1962, 283,155
20 Claims. (Cl. 318—116)



1. Apparatus for generating electric oscillations of a given frequency comprising an amplifying device having input and output means, a load circuit including an ultrasonic transducer having a natural frequency of vibration at said given frequency, said load circuit further comprising a bridge circuit interconnecting said input means and said output means, said bridge circuit comprising first and second arms one of which includes said transducer and the other of which includes impedance means having a reactance component, said bridge circuit being arranged so that at said given frequency the bridge circuit is balanced by the clamped impedance of said transducer, and reactance means in said load circuit for tuning the load circuit to the natural frequency of said transducer, whereby oscillations are sustained in said apparatus substantially at said given frequency despite substantial variations in the load conditions of the transducer.

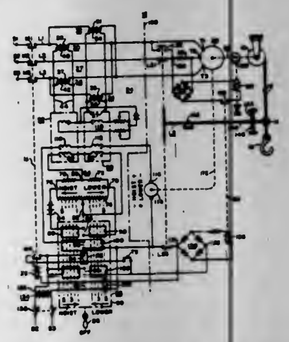
3,296,512

CONTROLLED BRAKING SYSTEM FOR LOAD LIFTING APPARATUS

Richard L. Meyer, Plum, and Albert A. Di Frango, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 23, 1963, Ser. No. 318,307
1 Claim. (Cl. 318—203)

In a reversible load lifting system including load lifting means driven by a three-phase motor having first, second and third input terminals, a supply circuit connected to the motor terminals for supplying power to the motor, said supply circuit having first switch means operable in open and closed modes for opening and closing the power circuit to the motor, said supply circuit further including first, second and third phase lines connected to said first second and third terminals respectively, a releasable brake which is normally biased set for braking said lifting means, limit means which assumes first and second modes in response to said load lifting means being respectively below and above a predetermined limit, a control circuit including master controller means and current control elements in said supply circuit responsive to the master controller means for controlling the direction and speed of the motor, said controller means having selectable hoists and low and high speed lowering positions, means including said limit means in its first mode for establishing a first switch operating circuit for operating said first switch means to its closed mode, means including said controller means in its high speed lowering position only for establishing



a second switch operating circuit for operating said first switch means to its closed mode, means including said limit means in its first mode and said controller means in any of said hoist or lowering positions for establishing a first brake release circuit for releasing said brake, means including said controller means in the high speed lowering position only for establishing a second brake release circuit for releasing said brake, means including said limit means in its second mode, said controller means in either said hoist or high speed lowering positions only, and said first switch means in its closed mode, for providing an unbalanced single phase energizing circuit to the motor wherein one of said phase lines is open-circuited relative to its associated motor input terminal, said energizing circuit including connections of unequal impedance from another of said phase lines to said associated terminal and another of the motor terminals, and a connection from the remaining phase line to the remaining motor terminal.

3,296,513

REVERSING MOTOR CONTROL INCLUDING LOAD SENSING TO DETERMINE OPTIMUM REVERSAL POINT

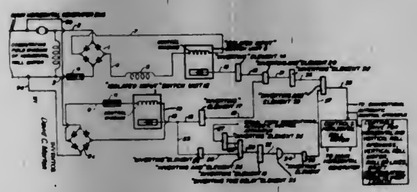
David C. Morton, Buffalo, N.Y., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware

Filed Aug. 9, 1963, Ser. No. 301,114
25 Claims. (Cl. 318—265)

1. Electrical circuitry for detecting and signalling the presence or absence of a mechanical load on an electric motor powered from an electrical source of power having output terminals with an output voltage across said output terminals adjustable between 0 volts and a rated voltage, comprising:

(a) first means electrically associated with the armature of said motor and responsive to the armature current flowing therein, said first means being adapted to emit a first output signal in response to armature currents below a predetermined value and a second output signal in response to armature current above the said predetermined value,

(b) second means electrically associated with the output terminals of said electrical source of power and responsive to the output voltage of said electrical source of power, said second means being adapted to emit a first output signal in response to electrical source output voltages below a predetermined value and a second output signal in response to electrical source output voltages above the said predetermined value,



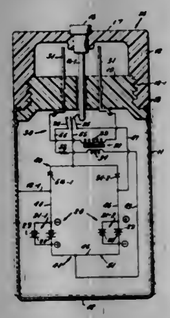
(c) third means electrically associated with said first and second means and responsive to the output signals of said first and second means, said third means being adapted to emit a first output signal indicative of a mechanical load on said motor in response only to the combination of a second output signal from said first means and a second output signal from said second means, said third means being further adapted to emit a second output signal in response to all other combinations of output signals from said first and second means.

3,296,514

RECHARGEABLE BATTERY UNIT

Harry A. Pearson, White Plains, N.Y., assignor to Sonotone Corporation, Elmsford, N.Y., a corporation of New York

Filed Aug. 16, 1963, Ser. No. 302,577
2 Claims. (Cl. 320—5)



1. A self-supporting battery unit adapted to be interchangeable with conventional dry cells for energizing a load, such as a flashlight,

said battery unit comprising a tubular housing having a pair of transverse end walls, joined by a continuous cylindrical wall,

said tubular housing containing two rechargeable cell sets each having at least one rechargeable cell and two opposite cell poles,

two output terminals at said transverse end walls for removable coupling of said two cell sets to a load and supplying cell current thereto

and two recharging terminals normally concealed by one of said transverse end walls for removable coupling of said two cell sets to alternating current power supply and recharging said two cell sets,

a transformer core in said tubular housing having primary and secondary transformer windings, said primary winding being connected between said two recharging terminals,

a full-wave recharging circuit in said tubular housing for recharging said two cell sets with alternating current from said secondary winding comprising

a cell connection from the positve pole of one cell set to the negative pole of the further cell set of said two cell sets,

two rectifier means each with opposite poles,

a rectifier connection between one pole of one and the opposite pole of the further of said two rectifier means,

a pole connection from the opposite pole of said one rectifier means to the negative pole of said one cell set

and a pole connection from the one pole of said further rectifier means to the positive pole of said further cell set,

and control means within said tubular housing actuable to an output setting for serially connecting said two cell sets through said two pole connections between said two output terminals and supplying cell current therethrough

said control means selectively actuable upon movement of said one transverse end wall to reveal said recharging terminals to a recharging setting for connecting said secondary winding between said cell connection and said rectifier connection

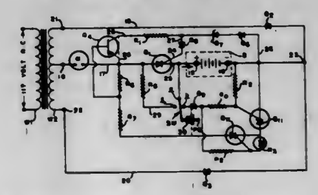
and causing alternating current from said secondary winding to pass opposite half-waves of each alternating current cycle through said two cell sets, respectively.

3,296,515

DIMINISHING RATE BATTERY CHARGER

Walter T. Knauth, 1334 W. Gray, Houston, Tex. 77019

Filed May 5, 1964, Ser. No. 365,058
6 Claims. (Cl. 320—24)



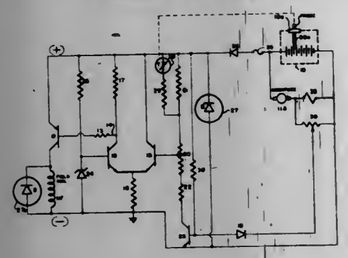
1. In a battery charger, the combination of a transformer having a primary winding connected to a source of A.C. power and a center tapped, step-down, secondary winding, a main circuit having successively therein from said center tap, a controlled rectifier including a gate, positive and negative battery posts, and a return junction, said main circuit also including an ammeter therein, parallel return circuits, each including a return rectifier to return said charge current alternately each cycle from said return junction to a respective secondary winding extremely, a current limiting resistor, a zener, and a first battery current blocking diode successively in a series circuit between the center tap and said return junction and cooperative to establish a reference voltage, and a gate firing circuit connecting said series circuit, between said zener and said current limiting resistor, to said gate, said gate firing circuit including a second battery current blocking diode therein facing oppositely of said first blocking diode, and said gate firing circuit disposing said reference

voltage for comparison with the actual battery voltage in opposing polarity whereby the difference between said voltages is employed to gate fire said controlled rectifier for charge current control whereby the diminishing of charge current to approximate a minimum is informative as to when a battery under charge approaches full charge potential.

3,296,516
VOLTAGE REGULATOR

William A. Paine II, 2401 S. Bayview, Seattle, Wash. 98144, and Lee R. Bauscher, 5123 S. Avon St., Seattle, Wash. 98178

Filed Mar. 23, 1964, Ser. No. 353,831
5 Claims. (Cl. 320—35)

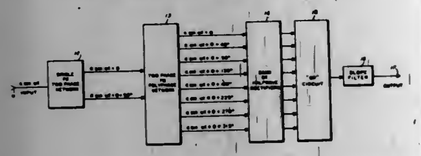


1. A voltage regulator for use with an electrical generating means having a field coil and an armature to charge a battery which comprises power transistor means adapted to be connected in series with said field coil; amplifier means, responsive to a differential voltage between said battery and a reference voltage, having an output connected to a base of the power transistor means and an input, and having a voltage divider adapted to be connected in parallel with said battery with a tap connected to said input; and a current limiting means comprising a transistor connected in series with said voltage divider and adapted to be biased by battery charging current until a predetermined battery charging current is reached.

3,296,517
PASSIVE BROADBAND FREQUENCY MULTIPLIER

Claude C. Routh, San Diego, Calif., and Milton D. Papineau, Kailua, Hawaii, assignors to the United States of America as represented by the Secretary of the Navy

Filed Mar. 15, 1963, Ser. No. 265,566
19 Claims. (Cl. 321—1)



16. A passive frequency multiplier for multiplying the frequency of an input electrical signal within a broad frequency range by a predetermined multiplication factor comprising in combination,

a pair of three hundred sixty degree phase equalizers adapted for receiving said input signal,

a pair of transformers respectively coupled to the outputs of said pair of phase equalizers,

a resistance signal-mixing network coupled to the outputs of said pair of transformers,

a plurality of half-wave rectifiers respectively connected to each of the outputs of said resistance signal-mixing network,

an "OR" circuit coupled to the outputs of said plurality of half-wave rectifiers,

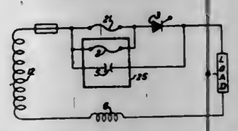
a coupling capacitor connected to the output of said "OR" circuit,

and a slope filter connected to the output of said coupling capacitor.

3,296,518
PROTECTIVE ARRANGEMENT FOR SEMICONDUCTOR RECTIFIERS

August Christian Stumpe, Frankfurt am Main, Germany, assignor to Licentia Patent-Verwaltungs-GmbH, Frankfurt am Main, Germany

Filed May 16, 1963, Ser. No. 280,818
Claims priority, application Germany, May 23, 1962, L 42,051
1 Claim. (Cl. 321—14)

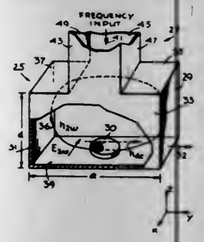


Protective arrangement for semiconductor rectifiers connected between an A.C. voltage source and a load comprising: a fuse connected in series with the semiconductor rectifier, a fusible element connected parallel to said fuse and in series to said rectifier; and a spark gap means connected across said fusible element and said rectifier and being physically located near said fusible element so that an arc produced upon melting of said fusible element fires said spark gap means.

3,296,519
ULTRA HIGH FREQUENCY GENERATING APPARATUS

Irving Kaufman, Woodland Hills, Calif., and Allan S. Risley, Boulder, Colo., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio

Filed Mar. 12, 1963, Ser. No. 264,543
4 Claims. (Cl. 321—69)



1. A frequency-multiplying microwave cavity device comprising in combination:

a cavity resonant in one mode at a fundamental frequency and resonant in a different mode at a harmonic frequency, said cavity having a generally T-shaped cross-sectional configuration with the crossbar of the T being a first cavity portion and the leg of the T being a second cavity portion having a longitudinal axis intersecting the crossbar back wall, said first cavity portion being dimensioned to be alone resonant at the harmonic frequency and said second cavity portion being dimensioned to propagate fundamental frequency energy into said first cavity portion but to substantially exclude harmonic frequency energy generated in said first cavity portion from said second cavity portion to provide maximum coupling of fundamental frequency energy to said first cavity portion,

a ferromagnetic material element disposed entirely within said first cavity portion on said longitudinal axis and crossbar back wall, said element being capable of generating magnetic flux at the harmonic frequency when subjected to a D.C. magnetic flux in the plane of said ferromagnetic material element and a fundamental frequency magnetic flux substantially in the plane of said element in a direction normal to that of the D.C. magnetic flux,

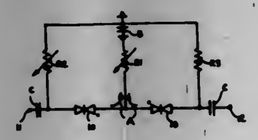
energy input means for exciting said cavity to resonate at the fundamental frequency so that said ferromagnetic material element is caused to produce magnetic flux at the harmonic frequency in the direction of the D.C. magnetic flux and in the plane of said ferromagnetic material element,

and tuning means associated with the outer end of said leg for tuning said cavity to said fundamental frequency without altering the harmonic frequency resonance of said first cavity portion.

3,296,520
ELECTRICALLY CONTROLLED VARIABLE RESISTANCE

William F. Griffith, 3609 Kimble Road, Baltimore, Md. 20918

Filed Oct. 26, 1962, Ser. No. 233,479
Claims priority, application Great Britain, Oct. 26, 1961, 38,344/61
5 Claims. (Cl. 323—74)



1. An electrically controlled variable resistance network comprising:

(a) first and second zener diode means, each means having a pair of zener diodes connected in reverse with respect to one another;

(b) each zener diode means having a nominal reverse current of at least five microamperes at one volt at 25° C.;

(c) first and second signal terminals;

(d) said first and second zener diode means being connected in series with each other between said first and second signal terminals to provide a linearly variable resistance between said first and second signal terminals over a given range of signal voltage drop between said first and second signal terminals; and

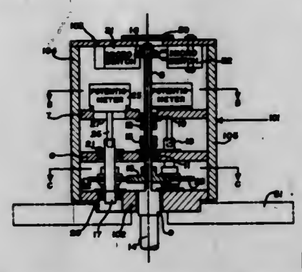
(e) a source of bias current connected to said first and second zener diode means to vary said resistance.

3,296,521
POSITION REGULATING DEVICE

John Wildberger, Peterborough, Ontario, Canada, assignor to Canadian General Electric Company, Limited, Toronto, Ontario, Canada, a company of Canada

Filed Apr. 17, 1964, Ser. No. 360,613
3 Claims. (Cl. 323—80)

1. A device of the type described comprising a frame; a shaft supported for rotation by said frame; a plurality of potentiometers supported by said frame and coupled to said shaft for rotation thereby simultaneously; a cam operated switch for each potentiometer; at least one cam supported for rotation by said frame and driven by said shaft simultaneously with said potentiometers; and said cam having at least one switch operating portion thereon adapted to operate said switches selectively depending upon the angular position of said cam portion relative to the actuators of the switches, the arrangement being such

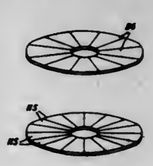


that at least one of said switches is always in an operated condition; and circuit elements connecting one of said potentiometers to a respective one of said switches.

3,296,522
ANGULAR POSITION TRANSDUCER EMPLOYING A CAPACITIVE POTENTIOMETER

Caleb Frederick Wolfendale, London, England, assignor to Sogenique (Electronics) Limited

Continuation of application Ser. No. 232,943, Oct. 25, 1962. This application Dec. 7, 1965, Ser. No. 512,829
Claims priority, application Great Britain, Oct. 27, 1961, 38,527/61
10 Claims. (Cl. 323—93)

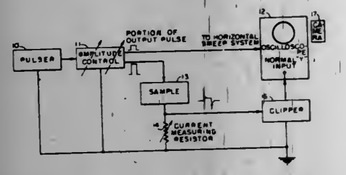


1. In a position responsive apparatus for deriving an output alternating signal the amplitude of which is a function of the relative angular positions of two relatively rotatable members: a capacitative potentiometer including a line of at least three similar separate electrically conductive aligned plates; electrically insulating mount means supporting said aligned plates spaced apart along said line in edge to edge relationship, said line forming at least an arc of a circle; a pick-off electrode system comprising at least two similar electrically conductive pick-off plates and further electrically insulating mount means supporting said pick-off plates in aligned relationship beside said line of plates and capacitatively coupled thereto, with said pick-off plates disposed symmetrically with respect to said arc of a circle; guide means cooperating with said further mount means to support said pick-off electrode system for rotation relative to said mount means about an axis passing through the center of said arc of a circle with said pick-off plates moving parallel to the line of said aligned plates; supply means for energizing said aligned plates with respective different alternating electric signals of successively greater magnitude whereby to establish a progressive change of electric potential along the line of movement of said pick-off electrode means; mechanical coupling means for coupling both said mount means to respective ones of said relatively rotatable member; and electrical connection means for establishing connections between said pick-off plates whereby to derive said output voltage and reduce the effect of movement of said pick-off electrode system transverse to the line of said aligned plates.

3,296,523
APPARATUS FOR MEASURING CHARACTERISTICS OF MATERIALS THROUGH THE APPLICATION OF PULSES OF SUCCESSIVELY INCREASING AMPLITUDE

George A. Haas, 5 Fort Hill Drive, Alexandria, Va. 22310

Continuation of application Ser. No. 52,745, Aug. 29, 1960. This application July 17, 1963, Ser. No. 296,422
2 Claims. (Cl. 324—57)



1. Apparatus for measuring the characteristics of a sample of material comprising:

means for applying a series of rectangular single polarity pulses of successively increasing amplitude to said sample of material for producing a current which passes through said sample,

means for receiving said current after passing through said sample and for deriving an output proportional to the current flow through said sample which is responsive to the successively increasing pulses.

display means having horizontal and vertical deflection means for signal presentation in two coordinates,

means in said display means for producing a time base sweep signal synchronized with the successively increasing single polarity pulses,

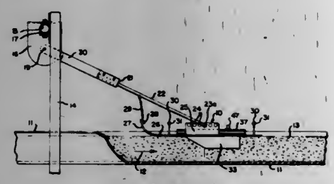
means for applying the output signal proportional to the current flow through said sample to said vertical deflection means of said display means, and

means for applying the series of successively increasing rectangular single polarity pulses and the time base sweep signal to the horizontal deflection means of said display means.

3,296,524
CAPACITANCE PROBE FOR PARTICULATE MATERIALS HAVING A PAIR OF PLATES CONNECTED IN THE MANNER OF A KEEL

Loy A. Updegraff, Worthington, Ohio, assignor to Bituminous Coal Research, Inc., Monroeville, Pa., a corporation of Delaware

Filed Dec. 9, 1963, Ser. No. 329,049
7 Claims. (Cl. 324—61)

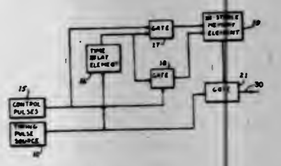


2. A capacitance probe for particulate materials comprising, in combination, a substantially flat first plate shaped for slidably riding upon a surface of a particulate material to be measured, a substantially flat second plate rigidly connected to said first plate in depending, perpendicular relation thereto in the manner of a keel for submergence below said surface of said particulate material when said first plate slidably rides thereon, said second plate being insulated from said first plate and having an inclined leading edge, pivotally mounted tow means pivotally connected to said probe for towing said probe at varing heights of said surface, and means for connecting said probe to a capacitance indicating circuit.

3,296,525
SYSTEM FOR MEASURING TIME INTERVALS BY MEANS OF TIMING PULSES

Akihiko Sakuma, Tokyo, Japan, assignor to Agency of Industrial Science Technology, Tokyo, Japan, a corporation of Japan

Filed Jan. 12, 1965, Ser. No. 425,002
Claims priority, application Japan, Aug. 7, 1959, 34/25,238
2 Claims. (Cl. 324—68)



1. A system for measuring time intervals between control pulses, comprising

pulse means for generating timing pulses, control means for generating control pulses, a pulse delay unit,

a first gate unit for opening and closing when receiving successive control pulses and for passing delayed timing pulses therethrough when open and when receiving delayed timing pulses,

a second gate unit for alternately closing and opening when receiving successive control pulses, said second gate unit opening and closing when said first gate unit closes and opens, respectively, and for passing delayed timing pulses therethrough when said second gate is open and is receiving delayed timing pulses.

an AND gate for passing timing pulses through said AND gate when receiving both timing pulses and a square wave signal,

means responsive to timing pulses passing through said AND gate for counting said timing pulses passing through said AND gate,

a first conductor means connected from said pulse means to said pulse delay unit and to said AND gate for passing said timing pulses to said pulse delay unit and to said AND gate,

a second conductor means connected from said pulse delay unit to said first gate unit and to said second gate unit for passing delayed timing pulses to said first and second gate units,

a third conductor means connected from said control means to said first gate unit and to said second gate unit for passing control pulses to said first and second gate units,

a bistable multivibrator for generating a substantially square wave signal when receiving delayed timing pulses from one of said gate units,

a fourth conductor means connected from said first gate unit to said multivibrator for passing delayed timing pulses from said first gate unit to said multivibrator,

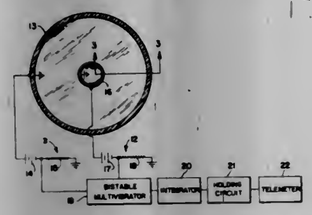
a fifth conductor means connected from said second gate unit to said multivibrator for passing delayed timing pulses from said second gate unit to said multivibrator, and

a sixth conductor means connected from said multivibrator to said AND gate for passing said square wave signal to said AND gate.

3,296,526
MICROMETEOROID VELOCITY MEASURING DEVICE

William H. Kinard, Williamsburg, and Charles C. Laney, Jr., Portsmouth, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Mar. 29, 1963, Ser. No. 269,215
4 Claims. (Cl. 324—70)

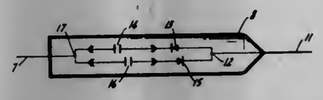


1. A micrometeoroid velocity measuring device comprising: a first micrometeoroid detector, including a first cylindrical detecting element, for producing an electrical signal each time a micrometeoroid particle penetrates said first detecting element; a second micrometeoroid detector, including a second cylindrical detecting element concentric within and spaced from said first detecting element, for producing an electrical signal each time a micrometeoroid particle penetrates said second detecting element; and means connected to said first and second micrometeoroid detectors for measuring the time differences between the signals produced by said first and second micrometeoroid detectors whereby said time differences are directly proportional to the velocities of the micrometeoroid particles that penetrate both said first and second detecting elements.

3,296,527
DIRECT MEASUREMENT PROBE FOR RADIO FREQUENCY ENERGY

Van B. Cones, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy

Filed Apr. 12, 1962, Ser. No. 187,138
2 Claims. (Cl. 324—72.5)



2. A probe for enabling direct conduction measurement of radio frequency energy comprising:

a conducting tip for contacting points where measurement of radio frequency energy is desired;

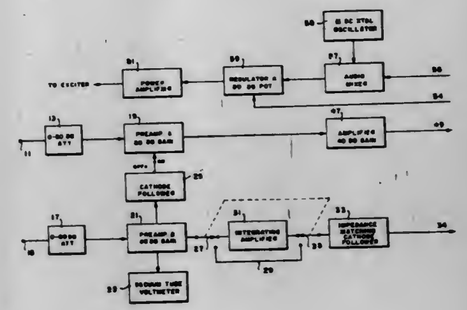
a nonconducting hollow body to which said conducting tip is attached; and

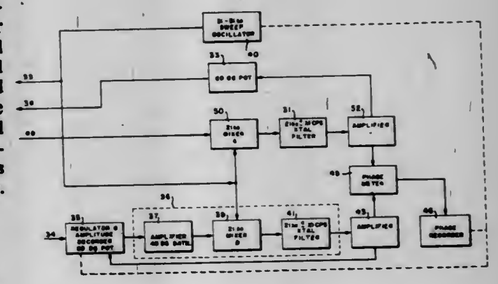
an electrical network within said hollow body having an input terminal coupled to said conducting tip and an output terminal coupled to a radio frequency energy level indicating means, said electrical network having a first combination of a rectifying means in series with a first capacitance and a second combination of a rectifying means oppositely polarized to said rectifying means of said first combination in series with a second capacitance, said first combination and said second combination being coupled, in parallel with one another, between said input and output terminals.

3,296,528
AUTOMATIC RECORDING PHASE AND RATIO METER

Fred Schloss, Arlington County, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 26, 1964, Ser. No. 347,621
16 Claims. (Cl. 324—83)





1. A system for analyzing the mechanical impedance of a structure comprising:

a force gage for producing an electrical signal;

a first amplifier having its input coupled to said force gage;

an accelerometer for producing an electrical signal;

a second amplifier having its input coupled to said accelerometer;

a first regulator means comprising a constant amplitude output voltage circuit means having an input and an output and a regulation control circuit means for controlling said constant amplitude output voltage circuit means having an input;

a first mixer means having an output and having a pair of inputs, one of said inputs coupled to said output of said constant amplitude output voltage circuit means of said first regulator means;

a first narrow band pass filter having an output and having its input coupled to the output of said first mixer means;

a third amplifier having an output and having its input connected to the output of said narrow band pass filter, the output of said third amplifier being connected to the input of said regulation control circuit means;

a second mixer means having an output and a pair of inputs, one of said inputs being coupled to the output of said first amplifier;

a second narrow band pass filter having an output and having its input connected to the output of said second mixer;

a fourth amplifier having an output and having its input connected to the output of said second narrow bandpass filter; and

a phase meter having a pair of inputs, said first input of said phase meter being connected to the output of said third amplifier and said second input of said phase meter connected to the output of said fourth amplifier;

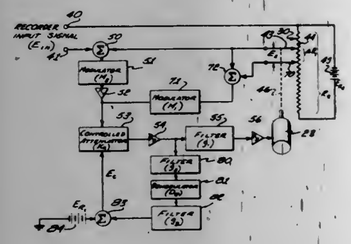
whereby the phase angle between the output of said force gage and the output of said accelerometer for each freqeuncy component of interest is determined.

3,296,529

NON-LINEAR SERVO INDICATING SYSTEM WITH PRIMARY LOOP GAIN VARIABLE AS A FUNCTION OF THE VOLTAGE GRADIENT PROXIMATE THE NULL BALANCE SLIDER POSITION

Karl Erik Sundström, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Dec. 18, 1963, Ser. No. 331,461
13 Claims. (Cl. 324—99)



12. In a servo system for producing motion of a controlled element as a non-linear function of an input signal, the combination comprising

a non-linear resistance element adapted to be connected to a known reference source and having movable null balance and supplementary slider contacts in fixed spaced contact with said non-linear resistance element and driven according to said controlled element;

a primary servo loop including

means for obtaining the difference between the output signal on said null balance contact and said input signal,

means for modulating said difference signal,

a controlled attenuator passing said modulated difference signal,

filter means for passing said modulated difference signal, and

means for actuating said controlled element responsive to said difference signal;

means for modulating the gradient voltage between said null balance and supplementary slider contacts;

means for connecting the modulated gradient voltage to the input of said controlled attenuator;

a secondary servo loop including

said controlled attenuator and filter means for passing said modulated gradient voltage and blocking said modulated difference signal,

means for demodulating said modulated gradient voltage,

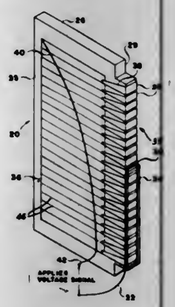
means for comparing the output of said demodulator with a reference voltage source for generating a control signal operatively connected to said controlled attenuator so that the secondary loop gain is varied in accordance with the gradient voltage, said controlled attenuator also controlling the gain of said primary servo loop so that its gain is changed such that the product thereof and the gradient voltage is maintained at a predetermined constant value.

3,296,530

VOLTAGE CONTROLLED ELECTROLUMINESCENT METER DISPLAY

William Brooks, Sunnyvale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Sept. 28, 1962, Ser. No. 227,005
5 Claims. (Cl. 324—122)



1. An electroluminescent display unit, for visually displaying the value of an input voltage comprising:

(a) a non-conductive insulative support member having a plurality of angularly disposed element support surfaces adjacent each other;

(b) a plurality of aligned, separated electroluminescent cells mounted on one of said element support surfaces;

(c) said cells each including a first electrical conductor, a layer of electroluminescent phosphor covering each first conductor and a second electrical conductor comprising a transparent conductor strip covering each of said first conductors and phosphor layers;

(d) said transparent conductor strip being connected to a first electrical input terminal;

(e) a uniform thin film of voltage dependent resistance material deposited on the second element support surface which has a high electrical resistance until a threshold voltage is reached;

(f) said film of voltage dependent resistance material being divided into segments by a series of dividing lines to form an individual resistive segment strip for each electroluminescent cell;

(g) each of said resistive segment strips being electrically connected at one end to the corresponding first conductor of said electroluminescent cell;

(h) a common conductor element connected to the other end of all of said resistive segment strip elements;

(i) said common conductor also being connected to a second electrical input terminal;

(j) a scale immediately adjacent said aligned electroluminescent cells; and

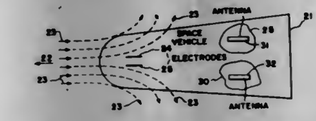
(k) the length of each of said resistive segment strips between said line of electroluminescent cells and said common conductor being of selected different lengths so that the input voltage applied between said two electrical input terminals will activate an electroluminescent cell adjacent said scale to give a calibrated scale reading for such voltage input.

3,296,531

ELECTROSTATIC PLASMA MODULATOR FOR SPACE VEHICLE RE-ENTRY COMMUNICATION

Stuart L. Seaton, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Apr. 29, 1964, Ser. No. 363,653
3 Claims. (Cl. 325—65)



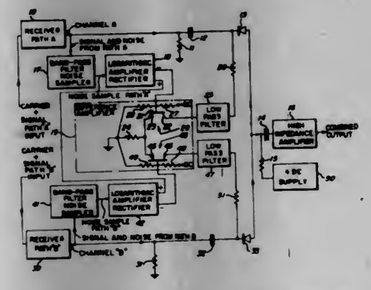
1. Means for communicating through the layer of ionized gases formed around a space vehicle as it enters or leaves a planetary atmosphere comprising: electrostatic means mounted on said space vehicle for alternately producing two regions in said layer that are devoid of free electrons; antenna means attached to said space vehicle in said regions; and a radio transmitter means connected to said antenna means for transmitting electromagnetic waves through said regions.

3,296,532

DIVERSITY COMBINERS

Peter Robinson, Waltham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Apr. 2, 1963, Ser. No. 269,936
13 Claims. (Cl. 325—305)



3. In combination, a plurality of variable impedance devices, means for permitting an input signal to be applied to each of said devices, means for combining each of said input signals coupled to said devices, and means for varying the impedance of each of these devices in accordance with the difference between a plurality of samples of noise free of input signal representing the amount of noise contained in each of said input signals to combine said input signals in optimum proportions.

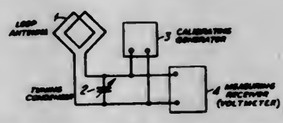
3,296,533

METHOD AND APPARATUS FOR MEASURING THE INTENSITY OF THE MAGNETIC COMPONENT OF WEAK ELECTROMAGNETIC FIELDS OF RADIO FREQUENCIES

Jurij Karpinsky, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia, a corporation of Czechoslovakia

Filed Apr. 19, 1965, Ser. No. 449,182
Claims priority, application Czechoslovakia, Jan. 12, 1960, 277/60
6 Claims. (Cl. 325—363)

4. A method for measuring the intensity of the magnetic component of weak electromagnetic fields with a loop antenna connected at least in part in parallel with the input of an A.C. voltage measuring device and with the output of a calibrating signal generator, the method comprising determining the calibrating Norton equivalent current of said signal generator, measuring with said A.C. voltage measuring device a first voltage due to the Norton equivalent current of said loop antenna acted upon by the measured field, measuring with said A.C. voltage measuring device a second voltage due to said calibrating Norton equivalent current, and determining the intensity of the measured field by utilizing said calibrating Norton equivalent current and the ratio of said first and second voltages.

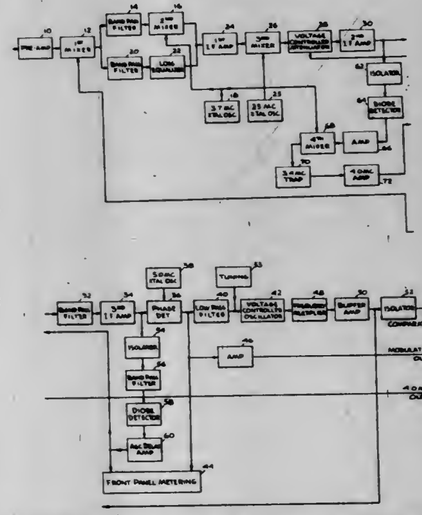


3,296,534

HIGH-PHASE STABILITY COHERENT RADIO SIGNAL RECEIVER

Ross E. Graves, Pacific Palisades, George Hetland, Jr., Palos Verdes Estates, and Henry A. Samulon and Richard G. Stephenson, Rolling Hills Estates, Calif., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio

Filed Sept. 25, 1962, Ser. No. 225,993
1 Claim. (Cl. 325—408)



A phase-locked receiver for amplifying signals with a minimum degree of phase shift comprising:

signal mixing means, first and second channels connected in parallel to the output of the mixing means,

signal shifting means in the first channel for reducing the differential phase shift by changing the frequency of the signal carried by the first channel to approach the frequency of the signal carried by the secoud channel,

tuned frequency amplifying means having substantially fixed gain connected to the output of the first and second channels, said tuned frequency amplifying means having a fixed gain and frequency characteristic,

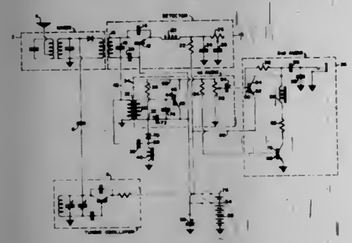
a voltage-controlled attenuator having a wide band width connected in series with the amplifying means for varying the degree of attenuation of recived signals without changing the phase relationship of signals passing therethrough,

bias voltage developing means connected to the output of the amplifying means for applying a voltage to the voltage-controlled attenuator which is proportional to the strength of received signals,

phase detecting means connected to the amplifying means, and

a voltage-controlled oscillator responsive to the output of the phase detecting means for generating an output signal coresponding in phase and frequency to the received signal.

3,296,535
SUPERREGENERATIVE RECEIVER WITH AUTOMATIC SQUELCH
Raymond P. Murray, 28 Sierra Vista Drive, Monterey, Calif. 93940
Filed July 30, 1963, Ser. No. 298,804
7 Claims. (Cl. 325—429)



1. A radio receiving system comprising

a supperregenerative detector adapted to receive an external signal and generate output audio and quench frequency signals;

an audio stage, said audio stage including an active element for first amplifying the audio signal and which element has a control electrode for controlling flow of signal through said active element;

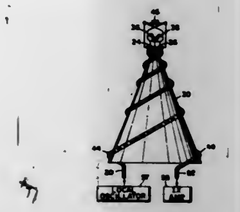
a series-connected capacitor and inductor serving as a combined frequency discriminator and quench voltage amplifier connected to receive the output quench signal of said superregenerative detector, the series-connected capacitor and inductor having a resonant frequency which is different from the frequency of the quench signal;

means for rectifying and smoothing the amplified quench signal from the series-connected capacitor and inductor; and

means for applying the rectified, smoothed quench signal from the rectifying and smoothing means to said control electrode to turn on and off the flow of audio signal through said audio stage in response to shift in quench frequency occasioned by the presence and absence of said external signal.

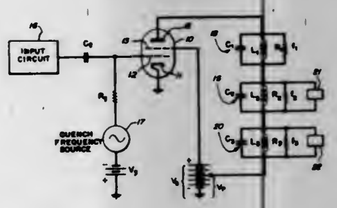
3,296,536
COMBINED ANTENNA AND TUNNEL DIODE CONVERTER CIRCUIT
John R. Copeland, William J. Robertson, and James C. Gilfert, Columbus, Ohio, assignors to Ohio State University Research Foundation
Filed June 6, 1960, Ser. No. 34,095
7 Claims. (Cl. 325—449)

1. An electronic receiver system for receiving radio frequency signals in the over 1000 megacycle frequency range comprising; a two cable antenna operative to receive radio frequency signals in the over 1000 megacycles range, each of said cables having an inner and an outer conductor and a first and second end, the first end being the point of signal origin, a mixer circuit including a tunnel diode connected between the outer conductor of one of said two cables and the outer conductor of the other of said two cables, said tunnel diode further having an input and an output, said input connected directly to the



inner conductor of said first cable and the output of said diode connected to said inner conductor of said second cable, both of said connections on said antenna at the point of signal voltage origin, means connected to the second and opposite end of said first cable for feeding a local oscillator signal to said mixer, and utilization means connected to the other end of said second cable for utilizing the difference frequency of said radio frequency signal and said local oscillator signals.

3,296,537
SUPERREGENERATIVE OSCILLATING DETECTOR CIRCUIT
Adrianus Korpel, Prospect Heights, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 24, 1963, Ser. No. 275,328
2 Claims. (Cl. 328—146)



1. A wave-signal energy responsive device comprising:

a superregenerative oscillating detector having a predetermined quench frequency;

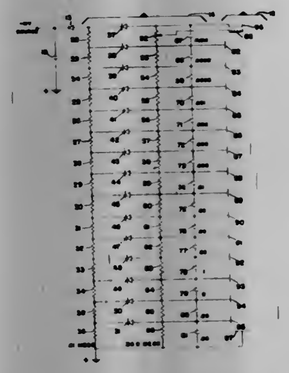
a first resonant network included in said detector responsive to thermal agitation noise to cause the build-up of oscillations in said detector toward a saturation level at a first predetermined rate;

a second resonant network included in said detector, having a resonant frequency different from that of said first network, having an oscillation build-up rate less than that of said first resonant network, and effective in the presence of an applied signal corresponding in frequency to the resonant frequency of said second network and exceeding a predetermined threshold level to cause oscillations at the frequency of said applied signal to predominate in said detector;

an input circuit for applying to said detector a received signal corresponding in frequency to the resonant frequency of said second network;

and means responsive only to the predominance of oscillations in said detector at said signal frequency to accomplish a control function.

3,296,538
PHOTOMULTIPLIER AMPLIFIER AND POWER SUPPLY
Vincent D. Stabilito, Riverside, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 4, 1963, Ser. No. 270,775
4 Claims. (Cl. 328—243)



1. In a laser power supply system, the combination with a photomultiplier device having an anode, a cathode and a series of dynodes spaced apart between said anode and cathode, of

a plurality of voltage supply capacitors connected in series between said anode and cathode,

a long-time-constant distribution network including a plurality of series-connected resistors connected between the said anode and cathode in parallel relation to said capacitor series,

means conductively interconnecting the successive dynodes with the successive capacitor junctions and resistor junctions in the parallel connected capacitor and resistor series,

a plurality of isolation diodes,

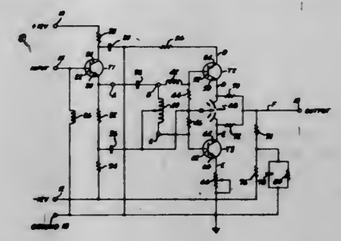
a storage capacitor having a high-voltage supply circuit coupled therewith for charging said capacitor in response to applied supply voltages above a predetermined level,

a short-time-constant distribution network including a plurality of series-connected resistors equal in number to the first named resistors and coupled therewith in parallel relation individually through said isolation diodes for charging said capacitors in response to charging of said storage capacitor to said voltage level, and

means coupling said short-time-constant network in parallel relation with said storage capacitor for applying an output voltage above a predetermined level to said distribution networks and capacitor series.

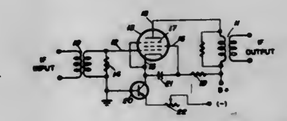
3,296,539
PULSE-COUNTER DEMODULATOR
Michael O. Felix, San Carlos, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 2, 1964, Ser. No. 348,653
9 Claims. (Cl. 329—104)

1. A pulse-counter demodulator comprising: an input terminal, a differentiating capacitor coupled to the input terminal, a push-pull transformer with its center directly coupled to ground, with one end directly coupled to the differentiating capacitor and through a first resistor to ground, and with a second end coupled through a second resistor to ground, a first active element having control electrode and output electrode, the control electrode of the first active element being coupled between the transformer and the first resistor and the output electrode of the first active element being coupled through a third resistor to an output terminal for the demodulator circuit, a second active element having input, output, and control



electrodes, the control electrode of the second active element being directly coupled between the transformer and the second resistor, and the output electrode of the second active element being coupled through a fourth resistor to the output terminal, and a differential capacitor having a variable plate and two fixed plates, the variable plate being directly coupled to ground, one fixed plate being directly coupled to the output electrode of the first active element and the other fixed plate being directly coupled to the output electrode of the second active element.

3,296,540
TRANSISTOR BACK BIAS
John C. May, Ithaca, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 7, 1963, Ser. No. 278,792
1 Claim. (Cl. 330—3)



In a device for controlling the gain of an intermediate frequency amplifier to a constant level the combination comprising:

a vacuum tube amplifier having an input circuit and an output circuit;

said input circuit including a grid resistively coupled to direct current ground;

said output circuit including a plate circuit and a cathode circuit;

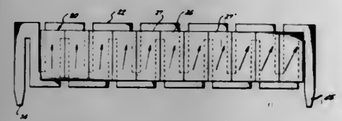
transistor means having base, emitter, and collector;

said collector being connected in series with said cathode of said vacuum tube;

said base directly coupled to ground; and

said emitter being connected to a variable source of direct current whereby large alternating current signal inputs applied to the grid of the vacuum tube cause an increase in cathode to ground voltage which is applied as a bias voltage to the tube providing a new operating point for the tube but retaining the same direct current cathode current.

3,296,541
BROADBAND TRAVELING-WAVE MASER WITH BOTH MASER AND ISOLATOR CRYSTALS CUT AT DIFFERENT ANGLES TO THE OPTIC AXIS THEREOF
Harold Lyons, Pacific Palisades, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif.
Filed May 18, 1964, Ser. No. 369,657
2 Claims. (Cl. 330—4)



1. A maser amplifier comprising: a length of microwave broadband wave slowing structure having regions of right- and left-handed circular polarization; input and output connections at the ends of said wave slowing structure; maser crystal structures in the different regions of said wave slowing structure, one crystal structure in one region having different portions cut at different angles to the optic axis thereof and adapted to be conditioned to store energy in different energy levels and which are active to release the stored energy as electromagnetic radiations when simulated by a signal of the desired frequency applied to said input connection, the frequency bands over which the energy is released together forming a broad frequency band, the other crystal structure being adapted in the other region to absorb electromagnetic radiations reflected from the output to the input ends of said waveguide, said other crystal structure have different portions cut at different angles to the optic axis thereof so that they absorb radiations over frequency bands corresponding to those over which the respective active portions release energy; means for injecting a pump signal of predetermined frequency into the input end of said waveguide; and means for directing a magnetic field through said waveguide and the crystal structures to cause the corresponding active and absorptive portions to release and absorb energy in their corresponding frequency bands when a signal in their bands is applied to said input connection.

3,296,542
CYCLOTRON AND SYNCHRONOUS PARAMETRIC AMPLIFIERS AND SYNCHRONOUS OSCILLATORS AND ISOLATORS USING BIFILAR HELIX COUPLER
Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware
Filed June 27, 1961, Ser. No. 119,931
11 Claims. (Cl. 330—4.7)



1. In an electron beam device of the transverse mode type having an electron resonance frequency different from a signal frequency at which interaction is desired, an electron coupler comprising: a bifilar helix coaxial with the electron beam path and having a pitch such that

$$n=n_c\left(1-\frac{f}{f_r}\right)$$

where n is the number of helix turns per unit length, n_c is the number of electron resonance periods per unit length, f_r is the electron resonance frequency, and f is the alternating-current signal frequency.

3,296,543
POSITIVE SYNCHRONOUS WAVE BIFILAR HELIX COUPLER AND PARAMETRIC AMPLIFIERS
Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Original application June 27, 1961, Ser. No. 119,931. Divided and this application July 13, 1966, Ser. No. 564,856
10 Claims. (Cl. 330—4.7)

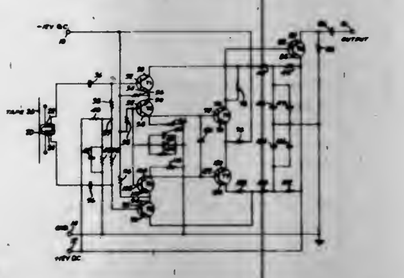


1. In an electron beam device of the synchronous wave type, an electron coupler comprising:
a lumped-electrode bifilar helix coaxial with the electron beam and having a pitch such that

$$n=n_c\frac{f}{f_c}$$

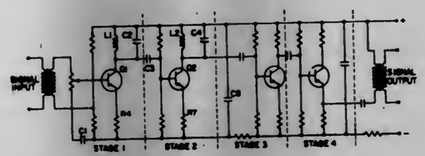
where n is the number of helix turns per unit length, n_c is the number of cyclotron orbits per unit length, f is the desired interaction frequency, and f_c is the cyclotron frequency, the average electron velocity being equal to f/n and establishing a condition of synchronous-wave operation in all active sections of said device.

3,296,544
TRANSISTORIZED LOW NOISE PREAMPLIFIER HAVING HIGH RESISTIVE INPUT IMPEDANCE AND LOW INPUT CAPACITY
Alan G. Grace, Menlo Park, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 12, 1964, Ser. No. 389,027
4 Claims. (Cl. 330—14)



4. A preamplifier circuit for amplifying signals from a transducer comprising a first transistor having emitter, base, and collector, means coupling the base of said first transistor to said transducer, a second transistor coupled in grounded base configuration and having emitter, base, and collector, the emitter of the second transistor being directly coupled to the collector of the first transistor, a third transistor having emitter, base, and collector, the base of the third transistor being directly coupled to the collector of the second transistor, a feedback loop coupling the collector of the third transistor to the emitter of the first transistor, an output terminal coupled to the collector of the third transistor, and bias means coupled to the collector and base of said first transistor, the base of said second transistor, and the emitter of said third transistor to forward bias same.

3,296,545
STAGGER-TUNED AUDIO AMPLIFIER
John R. Hicks, Oxnard, and Joe C. Wilson, Ventura, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 27, 1964, Ser. No. 370,742
1 Claim. (Cl. 330—21)



Apparatus for amplifying an input signal which extends over a range lying in the audio portion of the frequency spectrum, said apparatus comprising:
a first transistor having emitter, base and collector electrodes;
means for applying said input signal to the base electrode of said first transistor;
a source of positive potential;
a first inductor;
means connecting the collector electrode of said first transistor to said source of positive potential through said first inductor;
a first capacitor connected in parallel with said first inductor to thereby form a resonant network;
a source of negative potential;
a first resistor;
means connecting the emitter electrode of said first transistor to said source of negative potential through said first resistor;
said first transistor, first inductor, first capacitor and first resistor together constituting the first stage of said amplifying apparatus and having an amplitude vs. frequency characteristic which reaches a maximum near the lower limit of the range over which the said input signal extends;
a second transistor having collector, base and emitter electrodes;
means for applying the output of said first amplifier stage as derived from the collector electrode of said first transistor to the base electrode of said second transistor;
a second inductor connecting the collector electrode of said second transistor to the said source of positive potential;
a second capacitor connected in parallel relationship with said second inductor to thereby form a resonant network;
a second resistor; and
means connecting the emitter electrode of said second transistor to said source of negative potential through said second resistor;
said second transistor, second inductor, second capacitor and second resistor constituting the second stage of said amplifying apparatus and having an amplitude vs. frequency characteristic which reaches a maximum near the upper limit of that portion of the frequency spectrum over which the said input signal extends, both said first and second amplifier stages being connected in cascade, and with the circuit values of the components of both said first and second amplifier stages being determined in accordance with the following formulae based upon the showing of FIG. 1 of the drawings:

f_0=the center frequency of the overall amplifier.
f_1=the center frequency of the first stage including transistor Q_1.
f_{1_0}=the desired lower −3 db point.
f_2=the center frequency of the second stage including transistor Q_2.
f_{2_0}=the desired upper −3 db point.
Δf=bandwidth of overall amplifier.
$d=1/Q$=dissipation factor of each stage.
α=factor relating f_1, f_2 and f_0.
δ=total dissipation factor.

$$f_1=\frac{f_0}{\alpha} \quad (1)$$

$$f_2=\alpha f_0 \quad (2)$$

$$\Delta f=\delta f_0 \quad (3)$$

$$\Delta f_1=df_1 \quad (4)$$

$$\Delta f_2=df_2 \quad (5)$$

$$d=\sqrt{\frac{4+\delta^2-\sqrt{16+\delta^4}}{2}} \quad (6)$$

$$\alpha-\frac{1}{\alpha}=\sqrt{\delta^2-d^2} \quad (7)$$

With the −3 db points being chosen so that f_{1_0}=200 c.p.s. and f_{2_0}=4,000 c.p.s., then Δf and f_0 are found by

$$\Delta f=f_{2_0}-f_{1_0} \quad (8)$$

$$f_0=\sqrt{f_{2_0}f_{1_0}}$$

and the dissipation factor of the staggered pair are determined by Equation 3

$$\delta=\frac{\Delta f}{f_0}$$

Values of d and α being derived by Equations 6 and 7

$$d=\frac{1}{Q}=\sqrt{\frac{4+\delta^2-\sqrt{16+\delta^4}}{2}}$$

$$\alpha-\frac{1}{\alpha}=\sqrt{\delta^2-d^2}$$

Values of f_1 and f_2 being then determined by Equations 1 and 2

$$f_1=\frac{f_0}{\alpha}$$

$$f_2=\alpha f_0$$

Values of inductances L_1 and L_2 being derived from the definition of a tuned circuit:

$$L_1=\frac{1}{(2\pi f_1^2)C_1} \quad (10)$$

$$L_2=\frac{1}{(2\pi f_2^2)C_2} \quad (11)$$

with the values of C_1 and C_2 being selected arbitrarily; and the resistors to control the Q of each stage being determined by the following equations:

$$\text{first stage}=\frac{1}{2\pi f_1 C_1 d} \quad (12)$$

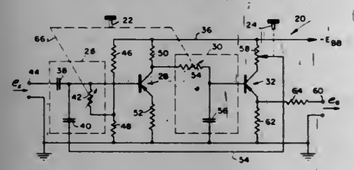
$$\text{second stage}=\frac{1}{2\pi f_2 C_2 d} \quad (13)$$

the characteristic curves for the said two individual amplifier stages being so related to one another that the numerical addition thereof results in the production of a composite characteristic curves having an essentially linear portion which extends substantially throughout the entire range of the said input signal.

3,296,546
TRANSISTOR CIRCUIT CONSTRUCTIONS FOR ACTIVE TYPE BAND PASS FILTERS

William J. Schneider, Jr., Burbank, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 31, 1964, Ser. No. 393,457
5 Claims. (Cl. 330—21)



4. An adjustable frequency selective circuit for transmission of signals of a pass band center frequency which may be selectively varied over a predetermined range of frequencies, and for attenuation of signals above and below said center frequency with an attenuation gradient between the center frequency and the attenuated frequencies, said attenuation gradient being of a selectively variable degree of steepness, said circuit comprising:

(a) first and second resistance and capacitance frequency selective amplitude transfer networks tandem connected through a buffer means, said transfer networks each comprising an impedance means serially connected in the impedance path and an impedance means shunt connected across the signal path, the serially and shunt connected means of one of said transfer networks comprising a resistor and a capacitor, respectively, and the serially and shunt connected means for the other transfer network comprising a capacitor and a resistor, respectively,

(b) means for simultaneously varying the magnitude of the serially connected impedance means of one of the transfer networks and varying the magnitude of the shunt connected impedance means of the other transfer network to selectively vary the pass band center frequency between various values in said predetermined range of frequencies and independently of variations in steepness of attenuation gradient,

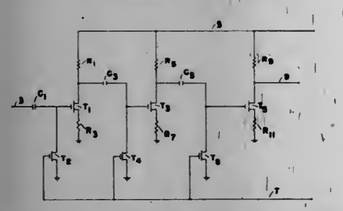
(c) positive feedback means bridged across the tandem connected transfer networks, and

(d) said positive feedback means including adjustable means for varying the feedback loop gain to selectively vary the degree of steepness of the attenuation gradient and independently of variation in center frequency.

3,296,547
INSULATED GATE FIELD EFFECT TRANSISTOR GATE RETURN

Louis Sickles II, Philadelphia, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 31, 1964, Ser. No. 356,334
1 Claim. (Cl. 330—35)



In a resistance-capacitance coupled amplifier:

(a) an A.C. input signal source;

(b) a first insulated gate field effect transistor;

(c) a high capacitance condenser connected between the A.C. signal source and the gate of the first insulated gate field effect transistor;

(d) a second insulated gate field effect transistor;

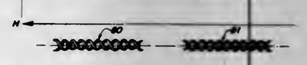
(e) means connecting the channel of the second insulated gate field effect transistor between the gate of the first insulated gate field effect transistor and ground; and

(f) means for applying a predetermined negative potential at the gate of the second insulated gate field effect transistor.

3,296,548
NEGATIVE SYNCHRONOUS WAVE AMPLIFIER AND OSCILLATOR

Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Original application Jan. 27, 1961, Ser. No. 119,931. Divided and this application July 13, 1966, Ser. No. 564,858
5 Claims. (Cl. 330—46)



1. A synchronous-wave signal energy translator and amplifier comprising:

means for projecting an electron beam along a predetermined path;

means for establishing cyclotron resonance for electrons in said beam;

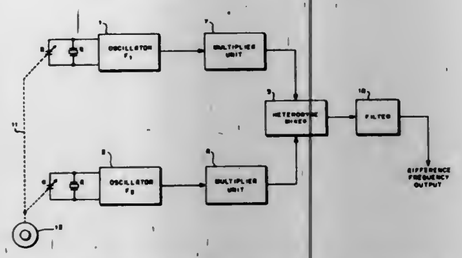
a first electron coupler responsive to input signal energy for developing a field, having components in two coordinate directions transversely across said path and propagating along said path synchronously with said electrons, which imparts to said beam an electron pattern defining a negative synchronous wave and having a twist about said path in a direction opposite that in which said electrons orbit in correspondence with said cyclotron resonance;

and a second electron coupler, spaced along said path from said first coupler and coupled to a signal-energy load, for establishing a field having components in two coordinate directions transversely across said path and propagating along said path synchronously with said electrons to interact with the negative synchronous-wave defined by said electron pattern.

3,296,549
PARALLEL CAPACITOR CONTROLLED VARIABLE FREQUENCY OSCILLATOR

Einar C. Johnson, Hatboro, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 29, 1962, Ser. No. 241,082
1 Claim. (Cl. 331—40)



A variable signal generator, comprising in combination:

first oscillator means controlled by a first crystal,

second oscillator means controlled by a second crystal,

capacitor means connected in parallel with each of said crystals for simultaneously increasing the output frequency of said first oscillator means from a first value to a second value and decreasing the output frequency of said second oscillator means from said first value to a third value,

first multiplier means connected to said first oscillator means multiplying the output frequency thereof by a predetermined factor,

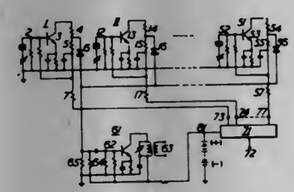
second multiplier means connected to said second oscillator means multiplying the output frequency thereof by said predetermined factor,

mixer means connected to said first and second multiplier means providing an output equal to the difference in frequencies between the outputs of said first and second multiplier means.

3,296,550
FREQUENCY SWITCHING DEVICE

Tadasu Hukami and Tadashi Tomizawa, Minato-ku, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Sept. 11, 1963, Ser. No. 308,229
Claims priority, application Japan, Sept. 11, 1962, 37/39,139
4 Claims. (Cl. 331—49)



1. A selective frequency system for mobile radio communication, comprising a plurality of separate sources of different radio frequency, means connecting the outputs of said sources in parallel, to a common output terminal, a power supply for said sources, and an electronic switching device for selectively connecting said power supply to a selected one of said sources, whereby only said one selected source is effective;

diode means being connected between the outputs of each of said sources intermediate said sources and said common output terminal; said electronic switching circuit having a plurality of outputs each being connected to one of said sources;

said switching means including means responsive to incoming pulses for unblocking said diodes in a one-at-a-time sequential manner.

3,296,551
SOLID STATE MODULATOR CIRCUIT FOR SELECTIVELY PROVIDING DIFFERENT PULSE WIDTHS

John P. Staples, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 9, 1965, Ser. No. 478,490
1 Claim. (Cl. 331—87)

A solid state modulator circuit for selectively providing different pulse widths for a radar magnetron comprising:

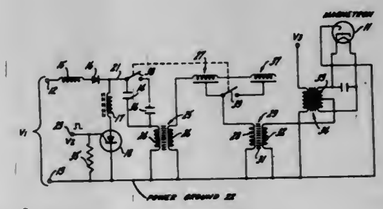
a first source of direct current voltage,

a first inductor, a first capacitor, and the primary winding of a first saturable transformer connected in series across said voltage source,

a second inductor and a silicon controlled rectifier connected in series between the junction of said first inductor and said capacitor and one side of said voltage source,

a second saturable transformer having primary and secondary windings,

a first pulse forming network having one end connected to one end of the secondary winding of said first saturable transformer and the other end to one end of the primary winding of said second saturable transformer, the other ends of said secondary winding of said first saturable transformer and the primary winding of said second saturable transformer being connected to one side of said voltage source.



a second capacitor,

a second pulse forming network,

switching means for simultaneously connecting said second capacitor in parallel with said first capacitor and connecting said second pulse forming network in series with said first pulse forming network,

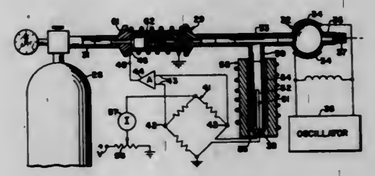
a magnetron connected to said secondary winding of said second saturable transformer, and

a source of voltage for pulsing said silicon controlled rectifier.

3,296,552
ATOMIC MASER WITH IMPROVED ATOMIC FLUX INTENSITY CONTROL
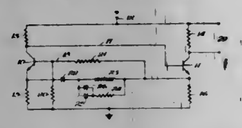
Harry E. Peters, Beverly, Mass., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Apr. 6, 1964, Ser. No. 357,731
4 Claims. (Cl. 331—94)



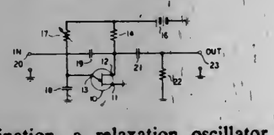
1. A hydrogen flux control apparatus for a hydrogen maser apparatus including, means for disassociating molecular hydrogen to form atomic hydrogen to produce an assemblage of hydrogen atoms in a higher energy state, a source of molecular hydrogen gas connected to said disassociater means for feeding molecular hydrogen to said disassociater, means forming a temperature responsive gas leak connected between said source of molecular hydrogen and said disassociater means for controlling the flow of molecular hydrogen from said source to said disassociater means, a pressure sensing means in gas communication with the down stream side of said leak for sensing the gas pressure on the down stream side of said leak, and means responsive to said pressure sensing means for controlling the temperature of said temperature responsive leak for controlling the atomic hydrogen flux intensity of said maser apparatus.

3,296,553
AMPLITUDE LIMITED FREQUENCY STABILIZED OSCILLATOR CIRCUIT
Richard Reid, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Apr. 23, 1965, Ser. No. 450,328
9 Claims. (Cl. 331—109)



1. An oscillator comprising an oscillator circuit having a resonant branch therein, said branch having a capacitor and inductor therein, said capacitor being temperature sensitive, said inductor being temperature sensitive, and voltage sensitive, and said branch having a temperature sensitive non-linear shunt in parallel connection to said inductor, said shunt limiting the oscillation amplitude of said circuit and varying the voltage amplitude on said inductor with temperature thereby substantially balancing the inductance of said inductor with the capacitance of said capacitor.

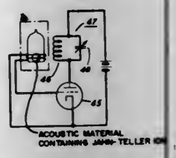
3,296,554
UNIJUNCTION TRANSISTOR RELAXATION OSCILLATOR WITH SINE WAVE SYNCHRONIZATION
David L. Favin, Whippany, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 10, 1964, Ser. No. 417,277
6 Claims. (Cl. 331—111)



1. In combination, a relaxation oscillator having a unijunction transistor with an emitter and first and second base electrodes wherein a resistor-reactor combination connected to said emitter electrode provides a changing potential between said emitter and first base electrodes which causes said transistor to periodically conduct and develop voltage pulses at said second base electrode at a repetition rate of T_u when said oscillator is unsynchronized, means for coupling a synchronizing sinusoidal voltage having a period of T_s across said first and second base electrodes, high pass filtering means connected between said second base electrode and an output terminal for coupling the voltage pulses on said second base to said output terminal while attenuating the sinusoidal voltage, the instants at which the voltage pulses appear at said output terminal with relation to said sinusoidal voltage being dependent on the ratio of T_u/T_s.

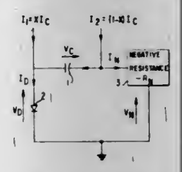
3,296,555
TEMPERATURE-STABLE SONIC TRANSMISSION ELEMENTS COMPRISING CRYSTALLINE MATERIALS CONTAINING JAHN-TELLER IONS
David B. Fraser, Berkeley Heights, Ernst M. Gyorgy, Morris Plains, Roy C. Le Craw, Madison, and Frank J. Schnettler, Morristown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 8, 1964, Ser. No. 402,453
9 Claims. (Cl. 331—157)

1. Device comprising a crystalline material containing at least one Jahn-Teller ion manifesting a large Jahn-Teller effect, such inclusion being in the amount of at least 0.02 percent by weight based on the entire composition up to 50 atom percent based on total cation content together with means for producing an elastic wave in the



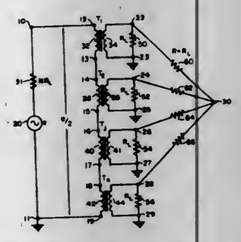
said material and together with means for maintaining the said material at a temperature approximately equal to its temperature turnover point of elastic velocity.

3,296,556
PULSE DUTY RATIO MODULATOR
Richard A. Schaefer, Timonium, Md., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed Sept. 21, 1962, Ser. No. 225,271
12 Claims. (Cl. 332—9)



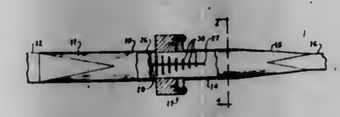
1. A relaxation oscillator circuit comprising a negative resistance device, a capacitor, a diode and a constant current source having two complementary outputs, the first of said complementary outputs being connected to one side of said capacitor and to said diode, and circuit means connecting said diode to provide a constant voltage drop for variable current flow therethrough, said second complementary output being connected to the other side of said capacitor and to said negative resistance device.

3,296,557
HYBRID NETWORK UTILIZING PLURAL TWO-WINDING TRANSFORMERS AND RESISTIVE BALANCING MEANS
George E. Petts 3rd, Annapolis, and Heber J. Morrison, Ellicott City, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 9, 1963, Ser. No. 329,052
2 Claims. (Cl. 333—11)



1. A transformer hybrid network providing N outputs comprising in combination; an N number of transformers each including a primary and a secondary winding of predetermined turns ratio disposed on its own core; an N number of loads, each load coupled across a respective secondary winding of said plurality of transformers; means for returning one terminal of said secondary winding to a point of reference potential; a balancing network comprising an N pole star network of resistors coupled together at a common terminal with the other terminal of each resistor coupled to a respective load of said N number of loads; circuit means for connecting each said primary winding of said plurality of transformers together in series circuit relationship; a source of electrical power having an internal source impedance substantially equal to the product of said load impedance times the number of said primary windings connected in series times the square of said turns ratio of said transformers; means for coupling said series circuit relationship across said source of electrical power; and circuit means for returning one side of said source of electrical power to the point of reference potential.

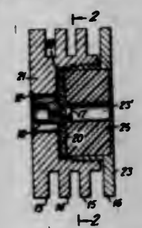
3,296,558
POLARIZATION CONVERTER COMPRISING METAL RODS MOUNTED ON A TORSION WIRE THAT TWISTS WHEN ROTATED
William J. Bleackley, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a company of Canada
Filed Sept. 22, 1965, Ser. No. 489,121
6 Claims. (Cl. 333—21)



1. Waveguide apparatus for rotating the plane of polarization of wave propagating therein in the $TE_{1,1}$ mode, comprising
a hollow circular waveguide,
a first mounting member within said waveguide fixed to the waveguide walls,
a second mounting member within said waveguide spaced along said waveguide from said first mounting member and mounted to said waveguide to permit rotatable movement about the axis of the waveguide with respect to the position of the first mounting member,
a torsion wire extending axially within said waveguide having a first end secured to said first mounting member and a second end secured to said second mounting member,
said torsion wire twisting with rotation of said second mounting member with respect to said first mounting member, and
a plurality of metal rods fastened centrally to said torsion wire at spaced intervals therealong and having ends spaced from the walls of said waveguide,
said metal rods lying in a plane in a predetermined position of said second mounting member with respect to said first mounting member and having relative angular displacement between adjacent ones of said rods as said second mounting member is rotated from said predetermined position.

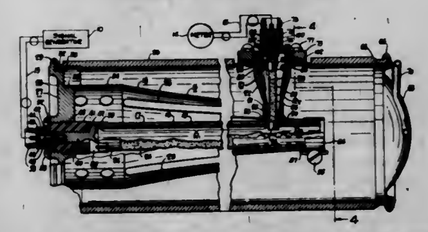
3,296,559
COAXIAL TERMINATION UTILIZING BORON NITRIDE MEMBER TO ENHANCE RADIATION
Robert Q. Maines, Wilton, Conn., assignor to Ovitron Corporation, Cheshire, Conn., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,363
7 Claims. (Cl. 333—22)

1. A termination for coaxial transmission line comprising: a resistor; means for coupling said resistor between the inner and outer coaxial conductors; a radiating member disposed adjacent said resistor; and boron nitride



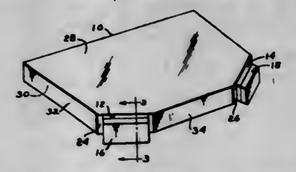
in intimate contact with said resistor and said radiating member for conducting heat therebetween.

3,296,560
COAXIAL LINE TERMINATION
Henry J. Calderhead, deceased, late of Euclid, Ohio, by Catharine E. Calderhead, administratrix, Euclid, Ohio, and Philip F. Puljer, Parma, Ohio, assignors to Bird Electronic Corporation, a corporation of Ohio
Filed Mar. 8, 1965, Ser. No. 439,522
14 Claims. (Cl. 333—22)



1. An attenuator for connecting between a pair of coaxial lines, each having an inner and an outer conductor, said attenuator comprising:
a first resistive coaxial line termination having a first resistor and a first horn-shaped member encircling said first resistor, tapering to one end of said first resistor and connecting therewith;
a second resistive coaxial line termination including a second resistor and a second horn-shaped member, said horn-shaped members being mounted to taper outwardly from each other, and said resistors being connected together, and wherein said first resistor is elongated axially of the first termination and said second resistor is connected to said first resistor intermediate the ends thereof.

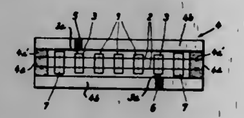
3,296,561
DIGITAL ULTRASONIC DELAY LINE
Anthony J. Polucci, Bradford, Pa., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 15, 1962, Ser. No. 217,015
4 Claims. (Cl. 333—30)



1. In combination, a flat plate-type solid delay medium having signal input, output and reflection facets arranged about the periphery thereof and so disposed that the signal strike angles are at least equal to the critical angle

of the delay medium, the flat surfaces of said plate comprising the major planes of said delay medium, the input, output and reflection facets and the major planes being polished surfaces, signal input and output transducers mounted on said input and output facets respectively for vibration in the thickness-shear mode parallel to said major planes, said transducers extending substantially from one of the major planes to the other, an acoustic absorber adhered to and substantially coincident with said input transducer and an acoustic absorber adhered to and substantially coincident with said output transducer, each of said acoustic absorbers having a mechanical impedance substantially matching the mechanical impedance of each respective transducer.

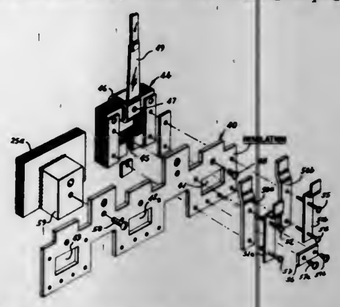
3,296,562
ELECTROMECHANICAL FILTER
Ulrich Weber, Ulm (Danube), Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Sept. 21, 1962, Ser. No. 225,208
17 Claims. (Cl. 333—71)



1. A mechanical filter arrangement comprising, in combination:
(a) a frame;
(b) a plurality of electromechanical transducer and resonator elements arranged spaced apart from each other and with their axes substantially parallel to each other, and having a length of $n\lambda/2$, where λ is the wave length and n is an integer, said elements disposed in said frame;
(c) wire means susceptible to be excited for oscillation in bending or longitudinal modes and secured to said elements for coupling the same to each other to form a filter system the ends of whose elements are free swinging, said wire means further being secured to said frame and constituting a means for holding said elements in said frame thereby to form a suspended filter system fhose transducer and resonator elements are wholly out of contact with said frame and are freely suspended in said frame; and
(d) means interposed between the first and the last of said plurality of elements and said frame for decoupling said suspended filter system from said frame, said decoupling means comprising additional resonator elements having a resonant frequency different from the pass band frequency of said filter system.

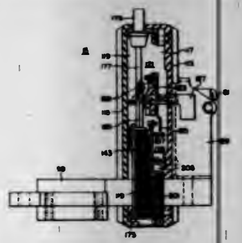
3,296,563
CIRCUIT BREAKER WITH THERMAL-MAGNETIC TRIP ASSEMBLY
George E. Gauthier, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 423,942, Jan. 7, 1965. This application May 2, 1966, Ser. No. 554,616
12 Claims. (Cl. 335—10)

1. An electric circuit breaker trip unit for a multipole electric circuit breaker comprising an insulating casing, a generally planar unitary insulating member supported in said insulating casing and having a plurality of apertures for passing primary current conductors therethrough, a generally rectangular magnetic core member mounted on said insulating member adjacent each of said apertures, each of said core members having an aperture therein in alignment with said corresponding aperture of said insulating member, latch means carried by said trip unit for restraining said circuit breaker in closed circuit condition, an armature movably supported on said trip unit casing adjacent each of said core members for movement toward and away from the corresponding one of



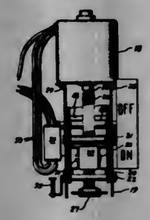
said magnetic core members, and means interconnecting each of said armature members and said latch member for causing releasing movement of said latch upon attraction of any of said armature members to its corresponding core member.

3,296,564
CIRCUIT BREAKER WITH THERMAL AND MAGNETIC TRIP MEANS
Albert R. Cellerini, Beaver, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 9, 1965, Ser. No. 438,271
4 Claims. (Cl. 335—35)



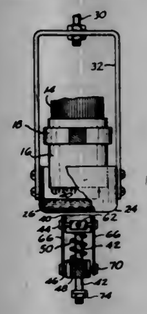
1. A circuit breaker having a length, a width and a height, said circuit breaker comprising a pair of contacts, a trip device comprising a trip structure operable to effect opening of said contacts, said trip device comprising a first magnetically permeable part, an armature, said armature in the closed position cooperating with said first magnetically premeable part to generally encompass a first opening, a second magnetically permeable part supported adjacent said first magnetically permeable part, a magnetically permeable bimetal support member cooperating with said second magnetically permeable part to generally encompass a second opening, a conductor connected in electrical series with said contacts and passing through said first and second openings, said armature comprising a main body portion, said main body portion of said armature being spaced height-wise from said bimetal support member in said circuit breaker, a bimetal member supported on said bimetal support member in a heat conducting relationship with said bimetal support member, said bimetal support member being adapted to be heated by hysteresis and eddy current losses therein when said conductor is energized, said heat in said bimetal support member being conducted to said bimetal member to heat said bimetal member, said bimetal member when heated a predetermined amount operating said trip structure to effect opening of said contacts to thereby effect a thermal tripping operation, said thermal tripping operation occurring with a time delay upon the occurrence of certain overload current conditions below a predetermined value, upon the occurrence of overload current conditions above said predetermined value said armature being attracted to said first magnetically permeable part whereupon said armature moves to operate said trip structure to effect opening of said contacts without a time delay.

3,296,565
MOTOR-DRIVEN SWITCH OPERATING MECHANISM WITH INDICATING MEANS
George W. Kiesel and Henry E. S. Owen, Unionville, Conn., assignors to General Electric Company, a corporation of New York
Filed Jan. 6, 1965, Ser. No. 423,659
5 Claims. (Cl. 335—69)



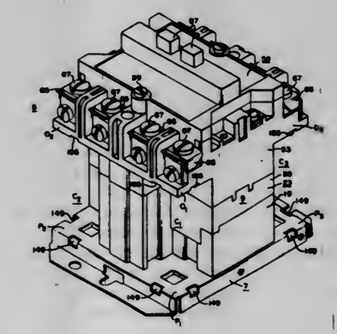
1. An electric motor operating mchanism for use with an electric switching device having an external reciprocally operable handle, comprising a frame adapted to be mounted adjacent said handle, an electric motor supported on said frame and having one end connected to said output shaft for rotation thereby and its other end rotatably supported by bearing means mounted on said frame, a travelling nut carried by said threaded shaft and having opposed trunnion pins extending therefrom, a carriage operatively engaged with said frame for guided movement therealong and having recesses therein loosely receiving said trunnion pins respectively, whereby axial displacement of said nut is permitted, and binding of said nut on said shaft is avoided, and a handle engaging assembly resiliently supported on said carriage.

3,296,566
MULTIPLE CIRCUIT ELECTRIC SWITCH FOR USE IN TELEPHONE FIRE ALARM WARNING SYSTEMS AND THE LIKE
Bert A. Smyser, 2016 S. Tacoma Way, Tacoma, Wash. 98402
Filed Aug. 27, 1964, Ser. No. 392,545
5 Claims. (Cl. 335—127)



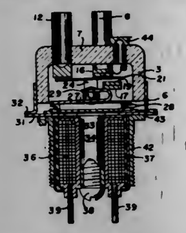
1. For use in simultaneously altering a plurality of electric circuits, an electric switch comprising:
(a) a head mounting a plurality of clustered pairs of spaced circuit terminals, each spaced pair being included in an interrupted electric circuit,
(b) a receptacle containing a quantity of electrically conducting material,
(c) mounting means mounting the receptacle adjacent the head, and
(d) shifting means for shfiting the head and the receptacle relative to each other between an advanced position, wherein the terminals are immersed in the conducting material, completing the electric circuits, and a retracted position, wherein the terminals are withdrawn from the conducting material, opening the electric circuits,
(e) the shifting means comprising a spring-biased plunger, trip means for releasably restraining the plunger in cocked condition, lever means, and link means interconnecting the lever means and the trip means.

3,296,567
ELECTRIC CONTROL DEVICE
John P. Conner and Kurt A. Grunert, Beaver, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 25, 1964, Ser. No. 369,715
12 Claims. (Cl. 335—126)



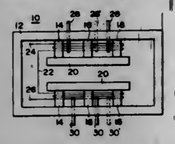
1. In combination, an electric control device comprising a first insulating housing, said first housing having a length, a width and a height, a control mechanism supported generally within said first housing, said control mechanism comprising a first pair of contacts, an electromagnet and a movable member, said first pair of contacts being operable between opened and closed operating positions, said electromagnet being operable between an energized and a de-energized condition, upon operation of said electromagnet from one to the other of said conditions said movable member moving to operate said first pair of contacts from one to the other of said operating positions, an auxiliary contact device comprising a second insulating housing, a second pair of contacts disposed generally within said second housing, an operating member extending from said second housing and being movable to operate said second pair of contacts between opened and closed operating positions, said first housing being shaped to form a cavity, said auxiliary contact device being removably mounted in a position extending into said cavity with said operating member in the path of movement of said movable member whereby said movement of said movable member will move said operating member to operate said second pair of contacts from one to the other of said operating positions, said movable member and said operating member being disposed within the confines of said length, width and height of said first housing, and said movable member and said operating member moving within the confines of said length, width and height of said first housing.

3,296,568
MINIATURE ELECTROMAGNETIC RELAY
Glenn E. Griggs, San Jose, Jean H. Hawkins, Campbell, and Clark T. Roessler, San Jose, Calif., assignors to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,417
7 Claims. (Cl. 335—154)



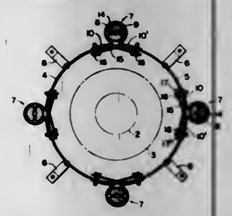
1. A relay comprising a housing including a dielectric cup portion, at least three spaced terminal leads extending into and supported on the dielectric cup portion to provide inner and outer spaced terminal ends, a pair of fixed contacts within the dielectric cup portion supported on the inner terminal ends of two of the terminal leads and comprising rigid plate-like conductive members having spaced free-end portions providing fixed contact surfaces, an elongated mobile contact supported within the housing and normally resiliently urged in a first direction to displace the mobile contact to make a circuit through one of the fixed contacts of the pair and the third terminal lead, and an actuating assembly mounted on the housing and connected to the mobile contact intermediate its ends and operable to move the mobile contact in a second direction opposite to said first direction to displace the mobile contact to break a circuit through said one of said fixed contacts and make a circuit through the other one of the fixed contacts and said third terminal lead, said terminal leads comprising tubular metallic members hermetically brazed around their outer peripheries to the dielectric cup portion and two of which have flattened and hermetically sealed end portions within the housing constituting said pair of fixed contacts.

3,296,569
MAGNET ASSEMBLY CAPABLE OF CONTROLLING DISTRIBUTION OF MAGNETIC FIELD
Hidetsugu Ikegami, Tokyo, Teruo Momota, Eiko Takekoshi, and Zyun-Itiro Matumoto, Prefecture of Ibaraki, Goro Nonaka, Tokyo, and Masayuki Goto and Sadao Shimoji, Prefecture of Hyogo, Japan, assignors, by mesne assignments, to Japan Atomic Energy Research Institute; Mitsubishi Denki Kabushiki Kaisha; Mitsubishi Seiko Kabushiki Kaisha, all of Tokyo, Japan, all corporations of Japan; and Hidetsugu Ikegami, Yokohama, Japan
Filed Aug. 27, 1962, Ser. No. 219,527
2 Claims. (Cl. 335—209)



1. A magnet assembly for controlling a distribution of magnetic field, including a pair of spaced pole pieces for producing a desired distribution of magnetic field therebetween, a plurality of magnet steel members coupled in magnetically parallel relationship to each of said pole pieces, a magnetic yoke member magnetically coupled to said plurality of magnet steel members, and a plurality of elongated magnet elements introducible axially into desired regions between said magnetic yoke member and said pole pieces and each controllable as to the extent of axial introduction into said regions, the magnet elements being arranged such that by position and extent of introduction of each magnet element into a respective region the desired distribution of magnetic field between said pair of magnetic pole pieces is locally controlled to provide the desired distribution of magnetic field between said magnetic pole pieces.

3,296,570
DEVICE FOR CORRECTING DISTORTION OF DEFLECTION IN TELEVISION RECEIVER
Katsuhito Uetake and Seishiro Iwamura, Amagasaki, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed Sept. 21, 1964, Ser. No. 397,918
Claims priority, application Japan, Sept. 23, 1963, 38/71,907
5 Claims. (Cl. 335—212)

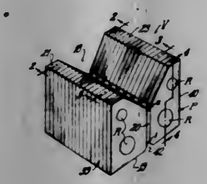


1. In a television receiver comprising a cathode ray tube including a neck portion and a deflection coil disposed around the neck portion, a device for correcting distortion of deflection of an electron beam, comprising, in combination, an annular supporting band of non-magnetic material surrounding said deflection coil and provided with a plurality of circumferentially elongated slots, a plurality of adjusting elements movably secured in spaced relationship on the outer face of said supporting band, each of said adjusting elements including a permanent magnet, a pair of pole plates of soft magnetic material having portions for rotatably holding said permanent magnet between them and portions engaging the outer face of said band, a leaf spring of non-magnetic material engaging the inner face of said band opposite said pole plates, said leaf spring being bent to form an angle projecting toward the supporting band, and a pair of fasteners extending through the associated one of said elongated slots in said supporting band to resiliently couple said leaf spring to the associated pair of pole plates whereby each of said adjusting elements is held in position on the outer face of said supporting band and is adjustable circumferentially of said band.

3,296,571
WORKHOLDING BLOCKS FOR MAGNETIC CHUCK
John T. Fisher, 6325 W. 85th Place, Los Angeles, Calif. 90045
Filed Mar. 29, 1965, Ser. No. 443,380
3 Claims. (Cl. 335—286)

1. A magnetizable work holding block adapted for use in any angular position on a magnetic chuck, said block comprising:
(a) a plurality of perforated magnetizable plates, said plates being arranged in parallel spaced, coplanar pairs, the members of each pair having confronting but spaced edges;
(b) and a homogeneous body of solidified non-magnetic material of lower melting temperature than said plates;

(c) said body of material being disposed between pairs of said plates;
(d) said body material also being disposed between the confronting edges of the members of each pair of plates;



(e) the surfaces of said non-magnetic body material being flush with all the exposed edge surfaces of said plates;
(f) said plates defining a first series of magnetic flux paths across the spaced edges of each pair and a second series of magnetic flux paths between the spaced pairs of plates.

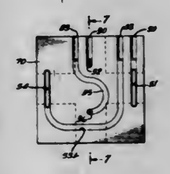
3,296,572
STANDARD THERMOMETER
Lowell A. Kleven, Minneapolis, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 18, 1962, Ser. No. 231,434
14 Claims. (Cl. 338—28)



1. A temperature sensor of the resistance wire type comprising an element support, said element support being comprised of a center cylindrical member having a plurality of outer support cylinders fixedly attached thereto and extending substantially parallel therewith, said outer support cylinders being arranged annularly around said center cylindrical member, each of said support cylinders having a plurality of holes longitudinal therethrough, a resistance wire threaded through the holes in said cylindrical support members and looped between adjacent holes in the cylindrical support members, said center cylindrical member having four holes defined therethrough, a pair of U-shaped lead wires mounted in said holes in said center cylindrical member, the bend of said U-shaped lead wires being at a second end of said element support and the legs of each wire extending through said center cylindrical member to a first end thereof, opposite ends of said resistance wire being electrically connected to a separate one of said U-shaped lead wires at the bend portion thereof, and means to prevent said lead wires from sliding movement with respect to said center cylindrical member.

3,296,573
SUBSTRATE CONFIGURATIONS FOR HALL ELEMENTS
Kermit K. W. Held, Anaheim, and Leon B. Hornberger, Huntington Beach, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed June 9, 1964, Ser. No. 373,617
5 Claims. (Cl. 338—32)

4. A Hall Effect device comprising:
a thin flat substrate formed of a dielectric material having a pair of oppositely disposed substantially flat surfaces thereon;
a Hall Effect element in the form of a semiconductor material exhibiting the Hall Effect phenomena vacuum deposited upon one of said surfaces of said substrate;
said dielectric substrate having a pair of apertures therethrough communicating with said Hall element on said one surface of said substrate;
a pair of channels formed in the opposite surface of said substrate, each of said channels extending from a common edge of said substrate and intersecting with one of said apertures formed through said substrate;
electrically conductive material lining said apertures and said channels, said electrically conductive material thereby forming output terminations for said Hall element;



said channels being so constructed and arranged on said opposite surface as to define a pair of pick-up loops, one of said loops encompassing a first area bounded substantially by said channels and the other loop encompassing a second area bounded by one of said channels and an axis passing through said apertures, said areas being disposed on respectively opposite sides of one of said channels so that a given changing magnetic flux field enclosed by said pick-up loops formed by said channels induces substantially equal magnitude and opposite polarity voltages in said conductors thereby producing a net cancellation of the inductive null voltages when a current flows through said electrically conductive material lining said channels.

3,296,574
FILM RESISTORS WITH MULTILAYER TERMINALS
Luigi Tassara, Viale Sarca 94, Milan, Italy
Filed Dec. 21, 1962, Ser. No. 246,421
2 Claims. (Cl. 338—309)

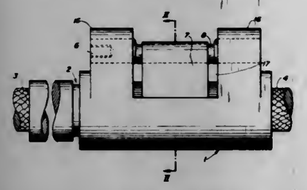


1. A resistor comprising: a rigid insulating substrate; a first layer of nickel-chromium alloy resistive material thereon; at least two conductive terminals contacting different parts of the surface of said resistive material and each comprising a second layer of metal selected from the group consisting of nickel, copper-manganese, and silver, said second layer covering and adhering to one of said parts of the surface of said resistive material, a layer of metal which is relatively highly conductive compared to said resistive material, and a bridging layer of metal between said conductive metal layer and said second layer and in surface-to-surface contact with both said conductive metal layer and said second layer and capable of alloying with said second layer; and an impervious layer of insulating material covering said resistive material between said terminals.

3,296,575
ELECTRICAL CONNECTOR OF THE PLUG-AND-JACK TYPE

Rudolf Neidecker, Basel, Switzerland, assignor to Multi-Contact A.G., Basel, Switzerland, a corporation of Switzerland

Filed Oct. 6, 1965, Ser. No. 493,470
6 Claims. (Cl. 339—75)

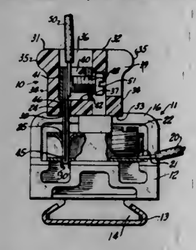


1. A connector for electrically linking two conductors, comprising a conductive generally male member connected to one of said conductors, an at least partly conductive tubular female member connected to the other of said conductors, said male member being removably received in said female member, cam means rotatably mounted on said female member, the latter having a peripheral gap in line with said cam means, and means including a radially movable pressure element penetrating said gap for exerting upon said male member a transverse force urging same into firm contact with a diametrically opposite portion of said female member upon rotation of said cam means into a clamping position, said female member being formed with an integral tongue deflectably occupying at least part of said gap, said pressure element being interposed between said tongue and said cam means, said cam means comprising a sleeve surrounding said female member, said sleeve having an eccentric inner peripheral surface.

3,296,576
ELECTRICAL CONNECTOR

Roger H. Motten, Jr., Erie, Pa., assignor to Marathon Special Products Corporation, Erie, Pa., a corporation of Pennsylvania

Filed Oct. 14, 1964, Ser. No. 403,817
10 Claims. (Cl. 339—176)



7. A combined terminal and tongue for the male contact member of a plug-in type electrical connector, comprising:

(A) a short metal tube substantially rectangular in cross section, with flat top and bottom walls connected by side walls;

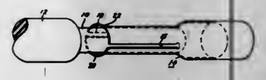
(B) a strip of metal folded transversely medially of its ends with its end portions in flatwise engagement, the overlying end portions of the strip being snugly received in the tube and being seated upon the bottom wall of the tube, the remainder of the folded strip projecting from the tube and providing the tongue, the tube having a tapped hole therethrough; and

(C) a conductor clamping screw threaded in said hole to clamp a conductor which has been inserted into the tube against the top leaf of the folded strip.

3,296,577
ELECTRICAL CONNECTOR ASSEMBLY AND METHOD

Lawrence R. Travis and Robert A. Ramey, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1964, Ser. No. 405,341
6 Claims. (Cl. 339—275)

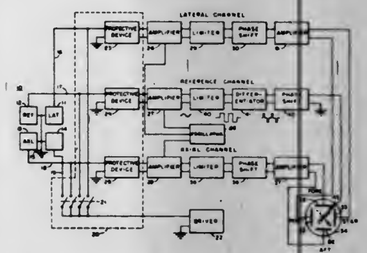


3. A method of making an electrical solder connection with soldering apparatus between a male conductor and a female connector having at least a pair of elongated slots disposed thereon and extending through an open end thereof at which the male conductor is to enter, said method comprising the steps of: providing solder at the desired connection; grasping the male conductor at the opposite sides thereof with a gripping tip portion of the soldering apparatus; inserting said male conductor into said female connector with said soldering apparatus; passing said soldering apparatus while grasping said male conductor through said slots a predetermined distance; and energizing said resistance soldering apparatus to melt the solder and secure said male conductor and said female connector.

3,296,578
UNDERWATER DIRECTION INDICATOR

Harold L. Saxton, Washington, D.C., and Melvin S. Wilson, Hillcrest Heights, Md. (both % Naval Research Laboratory, Anacostia Station, Washington, D.C. 20360)

Filed Oct. 20, 1950, Ser. No. 191,294
5 Claims. (Cl. 340—3)

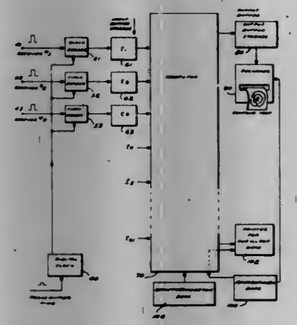


1. An underwater direction indicator comprising three spaced transducers for converting sound to electrical signals, said transducers being centered substantially on three corners of a square in the plane of said transducers; three alternating current signal paths including superheterodyne amplifiers, said paths each having an input coupled to a different one of said transducers; said amplifiers including a common source of beat frequency oscillations; an oscilloscope including a horizontal deflection input, a vertical deflection input and brightness control input; each of the outputs of said three signal paths being coupled to a different one of the inputs to said oscilloscope; the path to said brightness control including a limiting means for clipping the peaks and substantially squaring oscillatory signals propagating therein and a differentiating means for converting said squared signals to narrow brightening pulses corresponding in amplitude to the transient portions of said squared signals; and manually operated phase shifters located in at least two of said signal paths.

3,296,579
CONTOUR MAP GENERATOR

Harold K. Farr, Westwood, Paul D. Frelich, Scituate, and Richard P. Curtis, Marblehead, Mass., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey

Filed July 17, 1964, Ser. No. 383,481
14 Claims. (Cl. 340—3)



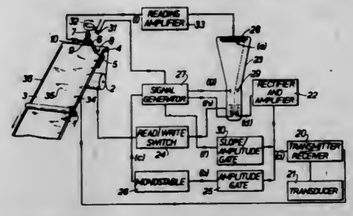
1. Apparatus for generating a contour map in a mapping vehicle moving over an area to be mapped, said apparatus comprising means to transmit pulses of energy in a beam which is narrow in an x direction which is approximately the direction of travel of the vehicle, and which is wide in a y direction transverse to the x direction, means to receive energy reflected from the intersections of the narrow area illuminated by said beam with a plurality of collateral adjacent receiving beams which are wide in the x direction and narrow in the y direction, a computer responsive to the received energy for computing y and z coordinates defining a vertical profile of the area being mapped, the z coordinates being depth coordinates from the horizontal plane of the vehicle, a recording device having means to move a recording chart in proportion to the travel of the mapping vehicle, and having means to move a recording stylus repeatedly across the chart, the stylus of said recorder being responsive to an output of said computer for printing a dot at any y coordinate the z coordinate of which corresponds to a predetermined contour line for the map, the scanning travel and dot printing operation of the stylus being related to the travel of the vehicle by movement of the chart.

3,296,580
ECHO SOUNDING APPARATUS

Peter Roy Hopkin, Hadleigh, Essex, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company

Filed Nov. 17, 1964, Ser. No. 411,804
Claims priority, application Great Britain, Nov. 19, 1963, 45,590/63
8 Claims. (Cl. 340—3)

1. Echo sounding apparatus for marine use comprising transmitting and receiving means for transmitting and receiving pulses of acoustic energy and for generating electrical signals in response to received acoustic energy, a charge storage tube for storing and reproducing electrical signals connected to the transmitting and receiving means so that it receives the said generated electrical signals, a recorder connected to the charge storage tube so that it records reproduced signals, control means connected to the charge storage tube and comprising a first control circuit for producing signals which initiate the storage and reproduction modes of operation of the charge storage tube and for deflecting the electron beam during storage and reproduction of the electric signals, and a second control circuit connected to the transmitting and receiving means for receiving the said generated electrical signals, and for terminating the storage of electrical signals by the

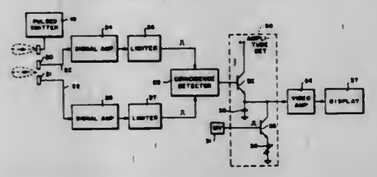


charge storage tube on receipt of the signal corresponding to the sea bed echo which has an amplitude greater than a predetermined value.

3,296,581
SIGNAL AMPLITUDE DERIVATION FROM COINCIDENCE INFORMATION

Henry L. Warner, Panama City, Fla., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 27, 1965, Ser. No. 428,596
4 Claims. (Cl. 340—3)



1. A signal receiving system comprising:

a pair of transducer means for receiving amplitude modulated signal waves accompanied by noise signal waves;

a pair of receiver means respectively connected to the outputs of said pair of transducer means for amplifying and fully limiting said amplitude modulated signal waves and said noise signal waves in such manner as to effect conversion thereof into pulses having uniform width and amplitude;

means connected to the outputs of said pair of receiving means for providing a coincidence output pulse only when the pulses from said receiving means coincide in time;

detector means connected to the output of said coincidence output pulse providing means for producing a signal having a level proportional to the density of the coincidence output pulses therefrom, said means including a capacitor effectively connected to the output of said coincidence output pulse providing means for being charge varied in one sense a fixed increment by each of said coincidence output pulses, and timing means connected to said capacitor for periodically varying in another sense the charge thereon;

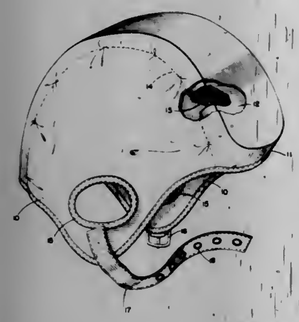
means connected to the outputs of said pair of receiving means for producing a timing pulse whenever the output pulses therefrom do not coincide in time; and

means connected between the output of said timing pulse producing means and an input of the aforesaid detector means for varying the periodicity of the timing pulses from said timing pulse producing means in response to the ones thereof having a preselected minimum amplitude.

3,296,582
UNDERWATER LISTENING AID FOR SUBMERGED PERSONNEL

John M. Ide, Alexandria, Va. (2332 Massachusetts Ave., NW., Washington, D.C. 20008)

Filed July 23, 1946, Ser. No. 685,631
5 Claims. (Cl. 340—5)

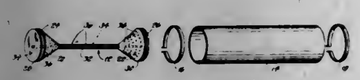


1. An underwater listening device for submerged personnel, comprising a strip of material having a substantially uniform width and an acoustic impedance lower than that of water arranged to extend fore and aft along the top of the head of a person substantially from the forehead to the base of the skull and limited in its lateral extent to omit coverage of the ears and sides of the head, and means for holding said strip in position.

3,296,583
HYDROSTATIC PRESSURE RESPONSIVE APPARATUS

Clarence K. Chatten, Jackson Heights, and Max Hanok, Elmhurst, N.Y., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 22, 1965, Ser. No. 466,132
7 Claims. (Cl. 340—8)



4. An automatic pressure compensated acoustic transducer apparatus for operation in variable depth sonar equipment comprising:

an acoustic transducer device including at least one transducer element having an outer surface exposed to ambient hydrostatic pressure and a mounting means forming a gas chamber adjacent an inner side of said element,

a spool shaped rigid body having rim sections adjacent each end and recessed from one end thereof to provide a central gas passageway,

said one end of said body and said transducer device being adapted for interconnection to provide gas intercommunication between said transducer gas chamber and said rigid body gas passageway,

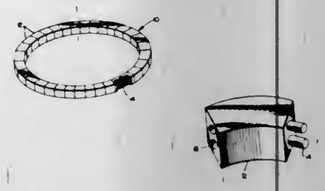
an elastomeric gas impervious envelope of substantially cylindrical shape mounted on said body and secured in gas tight relation to the rim sections of said spool shaped body to form between said body and said envelope a pressure-compensating reservoir,

said body formed with a plurality of holes along the length thereof to provide gas communication between said reservoir and said gas passageway.

3,296,584
SEGMENTED FERRITE SONAR TRANSDUCER WITH PERMANENT MAGNET BIAS

Donald Leibowitz, Bronx, N.Y., and Alfred Sommer, Bergenfield, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Sept. 3, 1963, Ser. No. 306,392
4 Claims. (Cl. 340—10)



1. A transducer ring for forming a permanently biased immersible transducer comprising:

a plurality of arcuate ferrite members having radial side faces with a pair of bores formed in each of said side faces;

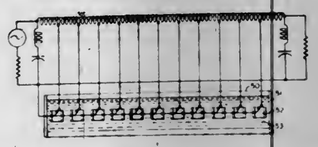
a permanent magnet substantially conforming to the cross-sectional dimension of said bores being positioned in each of the bores on one side face of each of said members and being of such length as to protrude from the side face so as to be receivable within the bores on the radial face of an adjacently positioned arcuate member; and

said plurality of members being positioned with their radial faces in abutting relation to form a rigid transducer ring.

3,296,585
DISTRIBUTED COUPLING TRANSDUCER

Winfield J. Trott, Orlando, Fla., assignor to the United States of America as represented by the Secretary of the Navy

Original application Aug. 30, 1962, Ser. No. 220,962, now Patent No. 3,243,769, dated Mar. 29, 1966. Divided and this application Sept. 30, 1965, Ser. No. 513,877
3 Claims. (Cl. 340—10)



1. A sound transducer of the type having a mechanical delay line and an electrical delay line, portions of each of said lines being formed by a common element capable of reciprocally converting energy between electrical and mechanical forms, said lines having substantially the same phase velocity whereby energy inserted in one of said lines is coupled gradually to the other of said lines, comprising:

a hollow pipe filled with liquid and closed at the ends by substantially flat, stiff end walls, said pipe having a longitudinal axis extending internally thereof between said end walls;

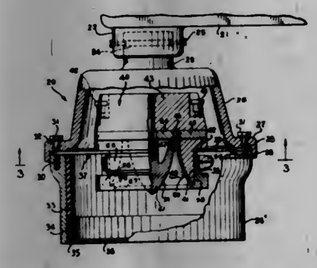
inductance means having end connection points and a plurality of spaced interior connection points;

a plurality of hollow tubes made of piezoelectric material, each tube having capacitively coupled internal and external electrodes, each tube further being closed with end caps and filled with gas, said hollow tubes being located in said hollow pipe with the axis of each of said plurailty of hollow tubes being normal to said longitudinal axis of said hollow pipe and circuit means connecting all of said internal electrodes to said end connection points and each of said external electrodes to a different one of said plurality of spaced interior connecting points.

3,296,586
TRANSDUCER AND HOUSING ASSEMBLY

Bernard J. Midlock, Norwalk, Conn., and Ralph L. Platt, Pound Ridge, N.Y., assignors to Laboratory for Electronics, Inc., Waltham, Mass., a corporation of Delaware

Filed May 18, 1965, Ser. No. 456,629
16 Claims. (Cl. 340—15)



1. In an ultrasonic detector adapted to be mounted on a support adjacent a roadway for the detection of vehicles within a defined zone,

an electro-acoustic transducer of the type which utilizes a horn loaded diaphragm for transmission or reception of a generally divergent beam of ultrasonic waves,

said transducer having a substantially cylindrical end portion and an outwardly directed flanged portion,

a housing having an opening and a portion spaced therefrom adapted to be connected to said support to locate said housing in relation to said roadway so that said beam is directed through said opening in said housing and toward said defined zone,

and mounting means for supporting said transducer within said housing, said means comprising

a relatively thin resilient but substantially rigid disc of plastic material of sound and vibration dampening characteristic, said disc having a substantially central opening and an inner flange formed integrally with said disc and disposed coaxially with respect to said opening,

means for releasably connecting the periphery of said disc to a substantially central portion of said housing,

said cylindrical portion of said transducer being telescopically received within the flanged portion of said disc so that the flanged portion of said transducer is supported on said disc,

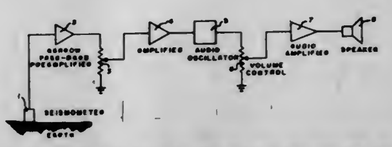
and means comprising a fastening clamp that is received in surrounding relation to the flanged portion of said disc to bind the transducer thereto for releasably mounting said transducer on said disc.

3,296,587
INTRUSION DETECTOR SYSTEM

Buford M. Baker, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Feb. 20, 1963, Ser. No. 259,958
13 Claims. (Cl. 340—15.5)

1. An apparatus for detecting the movement of an object which produces vibration in a medium, comprising means for sensing the vibration and producing a signal whose magnitude is representative of the vibration,

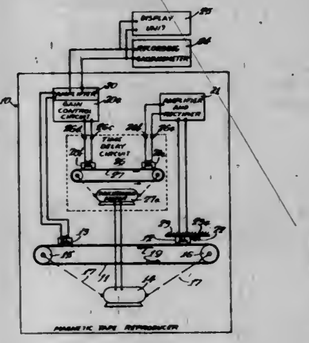


and means responsive to said signal for producing an audio-frequency output having a frequency which varies with the magnitude of said signal.

3,296,588
REPRODUCING AND TRANSLATING APPARATUS

James E. Hawkins, Broken Arrow, Okla., assignor to Seismograph Service Corporation, Tulsa, Okla., a corporation of Delaware

Original application Apr. 17, 1955, Ser. No. 500,758, now Patent No. 3,172,077, dated Mar. 2, 1965. Divided and this application Mar. 16, 1964, Ser. No. 352,193
19 Claims. (Cl. 340—15.5)



1. Apparatus for reproducing a plurality of seismic signals having different frequencies and recorded on a magnetic record, which seismic signals comprise energy from a source of seismic waves reflected to a receiving position from one or more subsurface strata together with random noises and other spurious signals, said apparatus comprising at least two spaced magnetic reproducing heads means for moving said record past said reproducing heads in sequence whereby the two reproducing heads reproduce the same signals at different times, variable frequency selective means responsive to the signals reproduced by a first of said reproducing heads, and means responsive to the signals reproduced by a second of said reproducing heads for altering the frequency selective characteristics of said frequency selective means when the same signals are reproduced by the second reproducing head.

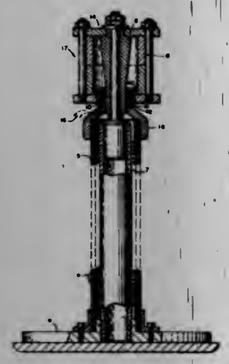
3,296,589
SEISMIC TRANSMISSION-RECEPTION SYSTEM

Kurt Ikrath, Elberon, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Apr. 1, 1964, Ser. No. 357,023
2 Claims. (Cl. 340—17)

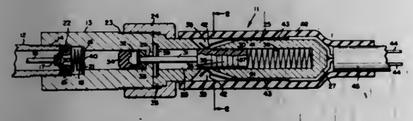
1. A seismic transmission-reception system comprising, an undamped tuned seismic transducer, said transducer comprising three drive coils attached to the top of a vertically disposed slotted cylindrical sleeve, said sleeve being attached at its lower end to a flat base which rests

on the earth and means to produce a direct magnetic field which crosses the turns of said coils at right angles; switch means for sequentially and repeatedly connecting



a different one of said three drive coils to a sinusoidal signal generator, to a short circuit and to tuned detector in the order named.

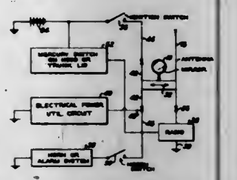
3,296,590
TIRE PRESSURE INDICATOR
Robert L. Dalton, Pittsford, N.Y., assignor to R. D. Products, Incorporated, East Rochester, N.Y., a corporation of New York
Filed Aug. 1, 1963, Ser. No. 299,229
9 Claims. (Cl. 340—58)



1. A device for indicating a low pressure condition in a pneumatic tire, comprising
(a) a stationary member and a member movable relative to said stationary member,
(b) means for connecting said movable member to a pneumatic tire for movement in one direction in response to a decrease in the air pressure in said tire,
(c) a pair of normally open switch contacts carried by one of said members,
(d) electrically-operated means connected to said normally open switch contacts and operative upon the closing of said contacts to generate a warning signal, and
(e) a contact means on the other of said members spaced from one another in said one direction and operative intermittently to close said normally open contacts successively upon movement of said movable member in said one direction.

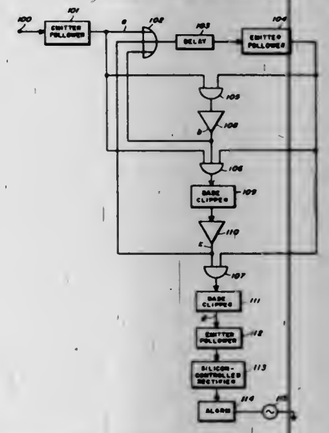
3,296,591
PROTECTION DEVICE FOR PROTECTING VEHICLES AGAINST THEFT
Edward George La Fontaine, 245 W. 25th St., New York, N.Y. 10001
Filed Dec. 10, 1963, Ser. No. 329,508
6 Claims. (Cl. 340—64)

1. In an automobile: apparatus comprising a battery, an ignition switch coupled to said battery, alarm means, electrical power utilization means, a support detachably mountable on said automobile, a first electrical conductor coupled to said ignition switch, a second electrical conductor spaced from the first conductor and coupled to said alarm and power utilization means, said support including bridging means adapted for connecting, with the support mounted on said automobile, said conductors to couple said power utilization and alarm means to said ignition switch, and a further switch concealed in said automobile and electrically coupled between said



alarm means and the associated one of said conductors to provide for selective operation of said alarm means, said support comprising a side-view mirror, the support including the bridge means and the mirror being detachable as a unit for storage and protection against damage and theft and to disconnect the alarm and power utilization means from the ignition switch.

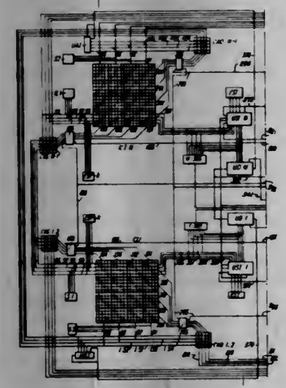
3,296,592
IFF AUTOMATIC ALARM
Bernarr H. Humpherys, Escondido, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 29, 1963, Ser. No. 284,268
2 Claims. (Cl. 340—167)



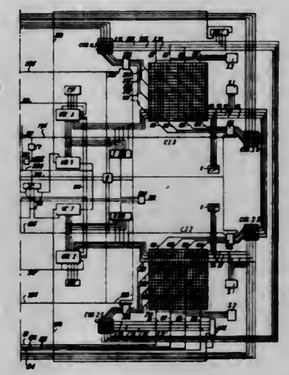
1. A system for detecting receipt of four serial pulses each spaced from each other by a predetermined time interval comprising;
a source of serial pulses to be detected,
delay means having an input and an output and adapted to produce pulses at its output indicative of pulses at its input delayed by said time interval,
means for supplying pulses from said source to said delay means input,
first coincidence detecting means having two inputs and an output and adapted to produce a signal at its output when signals are present at its two inputs,
one of said first coincidence detecting means inputs being connected to receive pulses from said source and the other of said inputs being coupled to said delay means output,
a first amplifier for receiving signals from said first coincidence detecting means output and producing an output representative of said received signals increased in amplitude,

second coincidence detecting means having three inputs and an output and adapted to produce a signal at its output when signals are present at its three inputs,
one of said second coincidence detecting means inputs being connected to receive increased amplitude signals from said first amplifier output,
the others of said second coincidence detecting means inputs being connected to receive pulses from said source and pulses from said delay means output respectively,
a second amplifier having an input and an output and adapted to produce signals at its output representative of signals at its input increased in amplitude,
a first clipper serially connected between said second coincidence detetting means output and said second amplifier input and adapted to pass signals from said second coincidence detecting means output to said second amplifier input only when such signals exceed a predetermined amplitude,
third coincidence detecting means having two inputs and an output and adapted to produce a signal at its output when signals are present at its two inputs,
one of said third coincidence detecting means inputs being connected to said second amplifier output and the other to said delay means output,
each one of said first amplifier output and said second amplifier output also being arranged to supply their respective output signals to said delay means input,
alarm means having an input and responsive to signals at its input for producing an alarm indication,
a second clipper serially connected between said third coincidence detecting means output and said alarm means input and adapted to pass signals from said third coincidence detecting means output to said alarm means input only when such signals exceed a predetermined amplitude,
whereby receipt of four serial pulses of proper time spacing will cause said alarm to produce an alarm indication.

3,296,593
INFORMATION-PROCESSING SYSTEM
Jacques Louis Sauvan, Antibes, Alpes-Maritimes, France, assignor to Société Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a joint-stock company of France
Filed Sept. 25, 1962, Ser. No. 226,110
Claims priority, application France, Sept. 30, 1961, 874,673
15 Claims. (Cl. 340—172.5)

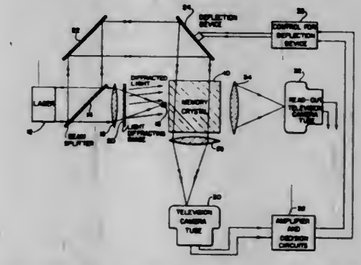


1. An information-processing system comprising at least one three-dimensional matrix array of settable storage elements each having three inputs concurrently energizable to set the element; three input assemblies for said array providing digital information signals defining an initial state, an action and a resulting state respectively; said storage elements corresponding in number to the number of possible combinations of said initial states, actions and resulting states; means for applying said



digital information signals to the respective inputs of selected storage elements whereby the setting of a storage element will indicate a particular combination between an initial state, an action, and a resulting state; and information extracting means for sensing the particular elements that are set.

3,296,594
OPTICAL ASSOCIATIVE MEMORY
Pieter J. Van Heerden, Concord, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 14, 1963, Ser. No. 288,013
22 Claims. (Cl. 340—172.5)



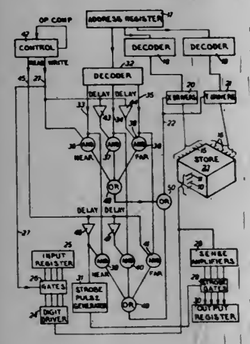
1. An optical information storage and retrieval system comprising, in combination:
a source of monochromatic, coherent light;
a storage member comprising a crystal of a material semitransparent for light from said source and bleachable by incident light;
means for directing a first beam of light from said source toward said storage member and causing said beam to converge toward a point exterior of said member;
means at said point for absorbing said light;
means including an information-containing, light-diffracting image disposed in the path of said converging first beam;
means for directing a second beam of light coherent with said first beam toward said member in a direction transverse to said first beam to intersect with light from said first beam within said member;
the last-mentioned means including deflection means in the path of said second beam for varying the direction of said second beam with respect to said storage member;

means on the side of said member opposite said deflection means in the path of said second beam for directing said second beam to a focus at a point on a surface, the position of the last-mentioned point on said surface being variable by said deflection means;

means at said surface for sensing the position of a point light image at said surface and causing said deflection means to locate the focus of said second beam at said position on said surface; and

means in the path of said first beam to the side of said member opposite said light-diffracting image for sensing a pattern of light representing information derived from said storage member.

3,296,595
DELAYED SYNCHRONOUS MEMORY SELECTION DEVICE
John Bernard James, London, England, assignor to International Computers and Tabulators Limited
Filed July 30, 1963, Ser. No. 298,604
Claims priority, application Great Britain, Aug. 1, 1962, 29,553/62
9 Claims. (Cl. 340—172.5)



1. An information storage device with a plurality of immediately accessible storage locations, including a source of signals for initiating the generation of operating signals which are applied to the storage locations to effect a read and/or write operation; a source of address signals; first means controlled by the address signals and operative to select the storage location at which the operating signals are effective; and second means controlled by said address signals and operative to select the timing of the operating signals.

3,296,596
SYSTEM AND APPARATUS FOR AUTOMATIC DATA COLLECTION
George J. Yagusic, Litchfield, and John F. Carragan, Woodbury, Conn., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 30, 1963, Ser. No. 312,699
4 Claims. (Cl. 340—172.5)

1. A data collection system comprising, in combination:

(A) a plurality of data transmitters, a central receiver, and common communications channels connecting said data transmitters to said central receiver;

(B) each of said data transmitters having first and second control terminals;

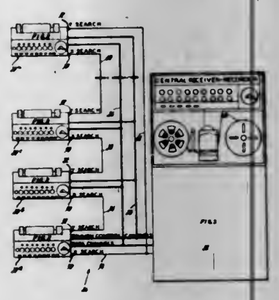
(C) a chain circuit in said common communications channel connecting said first and second control terminals of said data transmitters in a series circuit;

(D) ready-to-transmit condition responsive means at each data transmitter to disconnect the said first and second control terminals thereat;

(E) transmission conditioning means at each data transmitter conditioned for operation by said ready-to-transmit condition responsive means, and during a ready-to-transmit condition at the data transmitter responsive to a first signal at said first control terminal;

(F) transmission initiating means at each data transmitter responsive to a start signal from said central receiver-recorder to initiate transmission from the data transmitter;

(G) means at each data transmitter for supplying said first signal to the second control terminal of the data transmitter during transmission of data therefrom;



(H) transmission terminating means at each data transmitter conditioned for operation by said transmission initiating means upon receipt of said start signal from said central receiver-recorder to terminate transmission from the data transmitter;

(I) chain starting means for supplying to said first control terminal of the first said data transmitter said first signal when no data transmitter is transmitting and no transmission conditioning means has operated in response to said first signal; and

(J) means at said central receiver-recorder responsive to the termination of transmission of the occurrence of an error during transmission of data from said data transmitters to provide to all of said transmitters said transmitter start signal.

3,296,597
MARKET QUOTATION APPARATUS
John R. Scantlin, Los Angeles, Evan J. Drummond, Woodland Hills, Michael T. Gray, Los Angeles, and Reaman Paul Niquette, Palos Verdes Estates, Calif., assignors to Scantlin Electronics, Inc., Los Angeles, Calif., a Delaware corporation
Filed Oct. 28, 1963, Ser. No. 319,231
19 Claims. (Cl. 340—172.5)

1. In a market quotation apparatus, the combination of:

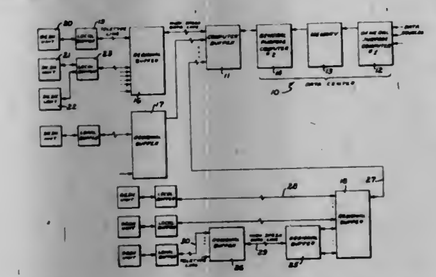
a memory unit including means for storing market information therein;

a computer including means for looking up stored information in said memory unit and composing a message in response to an inquiry, said inquiry including an identification section and a function section;

a customer unit including means for generating an inquiry and means for displaying a message;

a regional buffer having a plurality of customer inputs and outputs and a high speed line input and output;

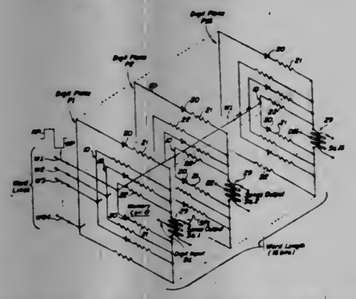
means for connecting said customer unit in parallel with additional customer units to the corresponding input and output of said regional buffer for transmitting inquiries to said regional buffer and messages to said customer unit;



a computer buffer having a plurality of high speed line inputs and outputs and a computer input and output for connection to said computer; and

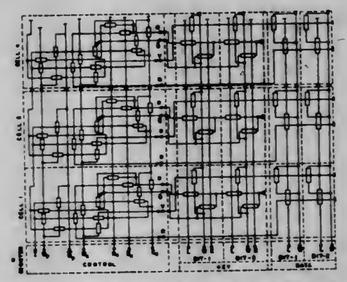
means for connecting said regional buffer to the corresponding input and output of said computer buffer for transmitting inquiries to said computer buffer and messages to said regional buffer.

3,296,598
TUNNEL DIODE MEMORY
Donal A. Meier, Inglewood, and William Y. Wong, Los Angeles, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 6, 1964, Ser. No. 357,570
7 Claims. (Cl. 340—173)



1. A tunnel diode memory system comprising: a memory matrix including a plurality of digit planes; a plurality of tunnel diode memory cells in each of said digit planes, said memory cells comprising a balanced circuit arrangement including a tunnel diode, a resistor connected in series with said tunnel diode to provide stable high and low current states representing binary signals 0 and 1 and a resistor connected in parallel with said tunnel diode and series resistor to provide parallel circuit paths; differentiating circuit means connected to said parallel paths of the memory cells in respective digit planes for detecting switching of said tunnel diodes from one stable state to the other stable state in response to read-voltage pulses by the change in current in one of the parallel circuit paths including said tunnel diode; selective circuit means for supplying read-write voltage pulses to any one word group of memory cells in separate digit planes for changing the state of said memory cells to readout and store words of digital data in said memory matrix, said selective circuit means comprising an array of linear transformers having primary windings and secondary windings and tunnel rectifiers connected in series with said primary windings, drive lines connected to said primary windings and tunnel rectifiers for supplying a forward voltage across said primary windings and tunnel rectifiers and a drive voltage pulse across any selected one of said primary windings by concurrent voltage pulses applied to a selected pair of said drive lines, each of said drive lines being connected to a plurality of said primary windings and any selected pair of drive lines being connected across a single primary winding and tunnel rectifier for producing a current in said single primary winding in response to said drive voltage pulse for inducing a read-voltage pulse across the respective secondary winding and a write-voltage pulse during the recovery of said transformer following said read-voltage pulse; and word lines individually coupling the secondary windings of said transformers to the memory cells of respective word groups for applying said read and write-voltage pulses to the memory cells of any selected one of said respective word groups for readout and storage of words of digital data in said memory system.

3,296,599
SELF-SEARCHING MEMORY
Paul M. Davies, Manhattan Beach, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio
Original application Dec. 16, 1960, Ser. No. 76,368. Divided and this application Jan. 2, 1962, Ser. No. 163,391
6 Claims. (Cl. 340—173.1)

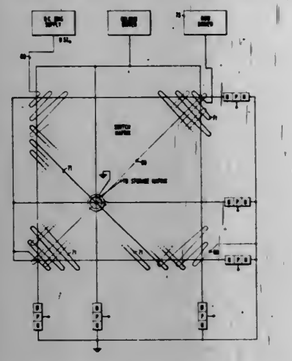


1. A memory system comprising a plurality of memory cells each arranged to store a complete record, transmitting means for transmitting bits of information simultaneously to all first portions of all the memory cells, each transmitted bit of information being directed to corresponding bit positions in each memory cell, means for inhibiting the transmission of selected bits of information to said first position of said memory cells, comparing means in said first portion of each memory cell for comparing said corresponding stored bits of information, and selecting means in each memory cell responsive to said comparing means for selecting said record in the presence of a perfect match indicated by said comparing means.

3,296,600
MAGNETIC CORE SWITCHING DEVICE
Theodor Einsele, Sindelfingen, Germany, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 17, 1961, Ser. No. 124,661
Claims priority, application Germany, Oct. 5, 1956, I 12,283
6 Claims. (Cl. 340—174)

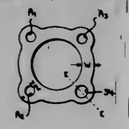
1. A magnetic core matrix comprising a plurality of bistable magnetic cores having first and second saturated flux states, said cores being arranged in rows and columns, a row driving line for each row threading each core in the associated row, a column driving line for each column threading each core in the associated column, biasing means for normally biasing each core in the matrix to said

first saturated state, driving means for concurrently energizing a selected row driving line and a selected column driving line to thereby magnetize the core at the



intersection of the selected lines to its second saturated flux state, and counter pulse means effective only during energization of said driving lines for supplementing the magnetization provided by said biasing means.

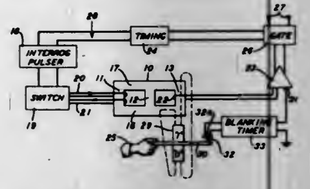
3,296,601
TRANSMITTING CHARACTERISTIC FOR MULTIAPERTURE CORES
William B. Fritz, Linglestown, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 6, 1962, Ser. No. 185,727
8 Claims. (Cl. 340—174)



2. In a method of improving the binary one and zero transmitting characteristics of magnetic cores of the type having a major aperture and a plurality of minor apertures defining inner and outer legs of magnetic material including the steps of ascertaining the manufacturing tolerance of the cross-sectional area of material of the core body, as measured from the major aperture to the periphery of the core, selecting one minor aperture as a transmitter aperture for said core, dimensioning the core so that the said cross-sectional area of material at points about said major aperture in the absence of a minor aperture and the sum of cross-sectional areas of the inner and outer legs of the minor apertures other than at the said one minor aperture are approximately equal, dimensioning the inner and outer legs of material at said one minor transmitter aperture so that the sum of cross-sectional areas of material of said legs is equal to the said cross-sectional area at other points about said major aperture less an amount equal to twice the said tolerance as ascertained.

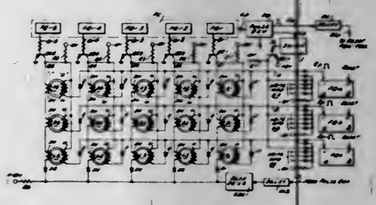
3,296,602
MAGNETIC MEMORY ELEMENT WITH NONDESTRUCTIVE READ-OUT
John A. Baldwin, Jr., Albuquerque, N. Mex., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 30, 1962, Ser. No. 220,508
7 Claims. (Cl. 340—174)

1. A magnetic storage element comprising
a two-hole magnetic device of ferrite material having a substantially rectangular hysteresis characteristic defining two stable remanent flux conditions, said device having two outer and one inner rung portions interconnecting two side rail portions to define the apertures thereof, all of said rung and rail portions having substantially the same flux path cross sectional area,



means initially magnetizing a first one of said outer rung portions to a predetermined polarity,
means switching substantially all of the magnetic flux in the second one of said outer rung portions back and forth between its two stable conditions, and
means sensing flux changes in said first outer rung portion and producing a corresponding electrical output signal.

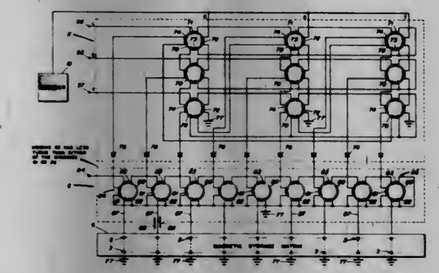
3,296,603
MAGNETIC CORE CIRCUIT
Leon S. Levy, Arthur E. Wennstrom, and William M. Cook, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 230,792
20 Claims. (Cl. 340—174)



1. A magnetic core circuit, comprising:
a plurality of magnetic cores arranged in columns and rows, each core having a drive winding and an electrically polarized read-write winding circuit;
respective enabling circuits, each including the drive windings of the respective columns of cores;
respective input-output circuits for each row of cores, each including the polarized read-write winding circuits of a row of magnetic cores, each read-write winding circuit being additionally coupled to the enabling circuit of the column of cores of which it is a part;
timing circuit means coupled to and sequentially operating said enabling circuits in predetermined time increments;
circuit means coupled to said input-output circuits and operated by output signals therefrom;
and gating means coupled to said input-output circuits for coupling magnetic core switching voltage into said input-output circuit.

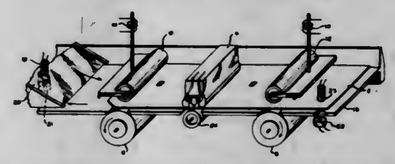
3,296,604
BI-DIRECTIONAL CURRENT STEERING SWITCH
James A. Perschy, Savage, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 30, 1963, Ser. No. 320,238
3 Claims. (Cl. 340—174)

1. In combination with a two axis magnetic storage matrix including a plurality of magnetic elements arranged in aligned groups as rows and intersecting columns, a bi-directional current steering device for alternately supplying read-restore signals to each group of elements aligned along one axis of said storage matrix comprising,
a plurality of memory element lines, each of which is electromagnetically coupled to each of the elements in a group aligned along said one axis of said storage matrix,
a first plurality of magnetic cores, each of which is equipped with an output winding, a prime winding, a reset winding and a drive winding,
said prime winding of each magnetic core being connected to the output winding of a different one of said magnetic cores, whereby one core is primed for operation each time an output pulse appears at a different core and whereby said plurality of magnetic cores operates as a ring counter so that an output pulse is produced from said magnetic cores, in succession, each time a drive pulse is applied to said ring counter,
said reset windings being interconnected to be concurrently energized upon application of a reset pulse to said ring counter and at least one of said reset windings being wound in a manner electrically opposite from the remaining reset windings, whereby a predetermined count setting is established on said ring counter upon application of said reset pulse to said ring counter,



a second plurality of magnetic driver cores, each having two magnetic remanent states and each being equipped with a drive winding, an output winding and a reset winding,
a plurality of unidirectional current devices for applying each successive output pulse produced by said ring counter to the drive winding of a different one of said driver cores, whereby each driver core is changed, in succession, from a first to a second remanent state to produce a storage read output pulse at its output winding having a predetermined polarity to read the elements of said magnetic storage matrix,
the output winding of each of said driver cores being connected to a different one of said memory element lines,
the reset windings of said driver cores being interconnected so as to be concurrently energized upon application of a reset pulse to said driver cores,
a third plurality of magnetic cores, each of which is equipped with a read winding, a reset winding, a prime winding and an output winding,
the read winding of each core in said third plurality being interconnected to be concurrently energized upon application of a read pulse to said third plurality of cores,
the output winding of each core in said third plurality being connected to the prime winding of another core in said third plurality, whereby said third plurality of cores operates cyclically and one output pulse is produced from said third plurality of cores, in succession, for each read pulse applied to said third plurality of cores,
circuit means for applying each output pulse produced by said third plurality of cores to the drive windings of said ring counter cores,
the reset windings of the cores in said third plurality being interconnected to be concurrently energized by a reset pulse applied to said third plurality of cores and one of said reset windings being wound electrically opposite from the reset windings of the remaining cores of said third plurality, whereby application of said reset pulse causes said third plurality of cores to begin cycling from a predetermined starting condition,
a reset driver core equipped with a write winding, an output winding and a plurality of prime windings,
each of said plurality of prime windings for said reset driver core being connected to be energized by the output pulse produced by a different one of said third plurality of cores, whereby said reset driver core is primed for operation each time an output pulse is produced by said third plurality of cores,
the output winding of said reset driver core being connected to the reset windings of said second plurality of magnetic driver cores, whereby upon application of a write pulse to the write winding of said reset driver core, an output pulse is produced by said reset driver core effective to return whichever one of said second plurality of cores is then in its second remanent state back to its first remanent state and thereby produce a storage restore output pulse of opposite polarity from said storage read output pulse for application to said connected memory element line, and
a source of pulses connected to each of said ring counter, said third plurality of cores and said reset driver core for applying reset pulses to said ring counter and said third plurality of cores, whereby said ring counter is reset to said predetermined count setting and said third plurality of cores is reset to said predetermined starting condition, and for subsequently applying alternately read pulses to said third plurality of cores and write pulses to said reset driver core, whereby one after another of said magnetic driver cores is driven and then reset to apply storage read and then storage restore current in one after another of said connected memory element lines.

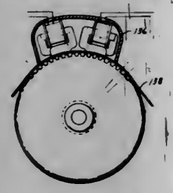
3,296,605
MAGNETIC CARD READER AND TRANSPORT
Franklin M. Raddin, Morristown, and Richard J. La Manna, Whippany, N.J., assignors to Monroe Calculating Machine Company, Orange, N.J., a corporation of Delaware
Filed Sept. 13, 1962, Ser. No. 223,362
8 Claims. (Cl. 340—174.1)



1. Apparatus for transporting and selectively positioning record cards having a magnetizable surface thereon adjacent a magnetic transducing means comprising a record card transport bed along which said record cards are moved, said record card transport bed being flat and rigid; first rotating drive means positioned for selectively moving said record cards in a first direction; second rotating drive means positioned for selectively moving said record cards in a second direction; magnetic transducing means having an air gap positioned adjacent to

and above said bed and spaced apart therefrom by substantially the thickness of said record cards; pressure means positioned in an opening in said bed, said opening being adjacent the air gap of said magnetic transducing means, said pressure means causing intimate contact between the magnetizable surface of said record cards and said magnetic transducing means and preventing unwanted spacing between said magnetizable surface of said record cards and said magnetic transducing means; said first rotating drive means, said second rotating drive means and said pressure means being spaced with respect to said bed to describe a plane parallel with said bed and said magnetic transducing means, said plane being separated from said magnetic transducing means at said air gap by substantially the thickness of said record cards; first selectively operable control means for bringing said record cards into intimate contact with said first rotating drive means to move said record cards in said first direction; second selectively operable control means for bringing said record cards into intimate contact with said second rotating drive means to move said record cards in said second direction; and control means coupled to said first and second selectively operable control means to selectively operate them in accordance with the desired position of said magnetic record card with respect to said magnetic transducing means.

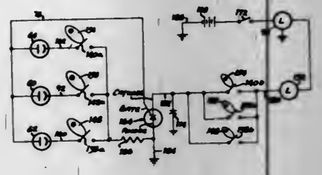
3,296,606
CONTROL SYSTEM FOR MACHINE TOOLS UTILIZING MAGNETIC RECORDING
Leif Eric De Neergaard, deceased, late of Chicago, Ill., by the Northern Trust Company, executor, Chicago, Ill., assignors to Frederic W. Olmstead, Washington, D.C., Hans W. Trechsel, % The Gisholt Machine Company, Madison, Wis., Deryck A. Gerard, Evanston, Ill., as trustees
Original application Apr. 13, 1959, Ser. No. 805,994, now Patent No. 3,230,516, dated Jan. 18, 1966. Divided and this application Oct. 4, 1965, Ser. No. 506,617
3 Claims. (Cl. 340—174.1)



3. A transducer including a flux source, a linearly moving storage member having intelligence recorded thereon, a rotating drum adjacent said linearly moving storage member and positioned to modulate said flux whereby said recorded intelligence is translated into an electrical control signal by means responsive to said flux, a drive mechanism for said rotating drum, electrical means for sensing changes in speed and direction of the storage member, and means responsive to said electrical means for maintaining a constant differential speed between the storage member and the rotating drum.

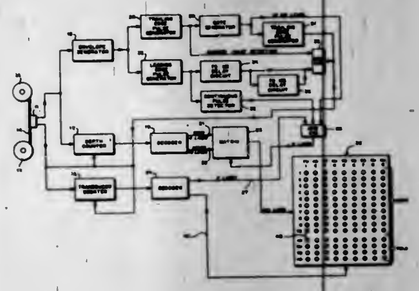
3,296,607
VEHICLE TACHOMETER INDICATING SYSTEM
Ralph R. Pasinski, Detroit, Mich., assignor of one-half to James R. England
Filed May 7, 1965, Ser. No. 457,247
13 Claims. (Cl. 340—263)

1. A device for indicating the rotative speed at which the gears of an internal combustion engine should be shifted comprising a tachometer for indicating the rotative speed of the engine, said tachometer having an output shaft which pivots an amount calibrated to the engine speed, a photocell, means carried on the shaft to trigger the photocell at a given engine speed, normally open switch means in series with the photocell and actuated



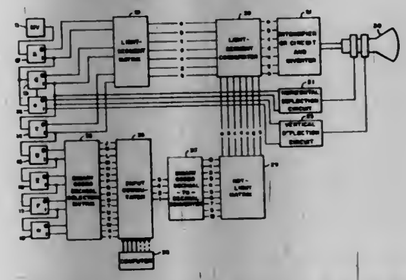
to close by the vehicle gear in one operative position thereof, indicating means, said indicating means being energized upon triggering of the photocell and closure of the switch means.

3,296,608
DIGITAL PULSE INFORMATION READOUT AND CONVERSION TO DISPLAY
Joseph Feitler, Moorestown, N.J., and Robert J. Betz, Ferndale, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 20, 1963, Ser. No. 310,510
12 Claims. (Cl. 340—324)



1. A digital-to-digital converter for indicating in visual form tape recorded sea surface scan date, comprising in combination:
tape means having recorded thereon a plurality of pulse packets,
tape reading means for sensing the pulses recorded on said tape means,
first counter means connected to said tape reading means sequentially counting the pulses in each of said pulse packets and providing successive outputs representative of the number of pulses in successive ones of said pulse packets,
second counter means,
pulse generator means responsive to the termination of each of said pulse packets to produce a pulse advancing the count of said second counter means by one a predetermined time after said termination,
display panel means comprising a plurality of columns of lights,
switching circuit means connected to said first and second counter means and said display panel means connecting said successive outputs of said first counter means to a particular one of said columns of lights as determined by the count in said second counter means whereby each of said columns of lights indicates the number of pulses in a particular successive one of said pulse packets.

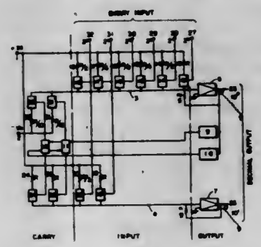
3,296,609
CHARACTER DISPLAY APPARATUS
Carl R. Wilhelmsen, Huntington Station, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois
Filed Nov. 12, 1963, Ser. No. 322,765
8 Claims. (Cl. 340—324)



3. Apparatus for generating signals corresponding to segments of a pattern from which selected segments form particular characters to be displayed at predetermined locations on an indicating device comprising:
first means for supplying groups of signals, each group representative of a particular character to be displayed;
second means for generating a plurality of timing control signals;
third means coupled to said second means and responsive to said timing control signals, for generating signals corresponding to the segments of said pattern;
fourth means coupled to said second means and responsive to said timing control signals for developing signals usable for scanning said pattern and positioning said scanned pattern at each of said predetermined locations in a first sequence;
fifth means coupled to said first and said second means and responsive to said groups of representative signals and said timing control signals for developing resultant signals, corresponding to the particular character represented by each of said groups, in a second sequence which determines the location at which the particular character represented by each of said groups is to be displayed;
and sixth means coupled to said third and fifth means and responsive to said generated signals and said resultant signals for supplying output signals representative of said generated signals corresponding to those segments of said pattern needed to make up each of said particular characters and to display each of said particular characters at its predetermined location.

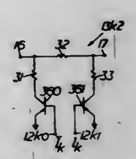
3,296,610
SYSTEM FOR CONVERTING BINARY NUMBERS INTO DECIMAL NUMBERS
Seturō Kinbara, Naka-gun, Ibaraki-ken, Japan, assignor to Nihon Genshiryoku Kenkyu Sho, Tokyo, Japan
Filed June 28, 1963, Ser. No. 291,439
Claims priority, application Japan, July 7, 1962, 37/28,464
3 Claims. (Cl. 340—347)

1. A conversion system in which a number represented in binary code is converted into a number represented in the decimal code, comprising a plurality of gate circuits having resistances introducing a current from a constant voltage source, said current is adapted to correspond to the value of each order of the number represented in the decimal code, said value having a specific value which is adapted to correspond to each figure of the number represented in the binary code, means for summing-up said current at each order of the number represented in the decimal code, means for detecting the summation of said current corresponding to the value of the number represented in the decimal code and for comparing the summation with a reference value, at least one of said gate circuits being opened or closed in accordance with whether the value of the number represented in binary code is (1) or (0) whereby the binary side is constructed to sum up said current only when



said number is (1), amplifier means for converting said current to voltage by means of a feed-back resistance, detecting means adapted to detect the decimal output value of more than ten and less than one, said last named means including a constant voltage source, and a plurality of gates and resistors which in accordance with a detecting circuit are adapted to generate a carry signal.

3,296,611
DECODING CIRCUIT WITH NON-LINEAR COMPANDING CHARACTERISTICS
Hisashi Kaneko, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 8, 1963, Ser. No. 314,765
Claims priority, application Japan, Oct. 11, 1962, 37/45,134
2 Claims. (Cl. 340—347)



1. A decoding circuit with nonlinear companding characteristics for providing from a plurality of digits of a codeword representing an analogue signal a quantized analogue signal represented by said digits, comprising:
(1) a reference power source for producing across a pair of its terminals a predetermined reference power, one of said terminals constituting a ground potential terminal; and
(2) a plurality of spatially cascaded attenuator stages corresponding to said digits, each having
(a) a pair of input terminals, one of which is connected to said ground potential terminal,
(b) a pair of output terminals, one of which is connected to said ground potential terminal,
(c) a resistance network in turn having first, second, and third arms each being composed of at least one resistor, said first arm being connected between said input and output terminals, said second arm being connected at its one end to the input-terminal side of said first arm, said third arm being connected at its one end to the output-terminal side of said first arm,
(d) a common potential terminal connected to said ground potential terminal,

(e) a digit code element input terminal for receiving corresponding one of said digits, and

(f) a two-state switch for selectively connecting in response to said corresponding digit one of the other ends of said second and third arms to said common potential terminal;

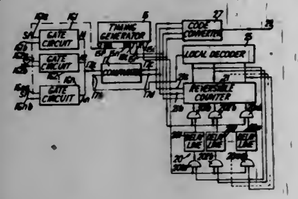
said input terminals of the first one of said stages being connected to said terminals of said power source, said input terminals of each of said stages except said first one being connected to the output terminals of a preceding adjacent one of said stages, said output terminals of the last one of said stages constituting analogue signal output terminals for delivering said quantized analogue signal; and said resistance network having an attenuation ratio determined with reference to a resistance connected across the output terminals of said stage and the desired non-linear companding characteristics, by a predetermined law, the stage to which it belongs, and the value of said code element.

3,296,612

CONVERTER FOR CONVERSION BETWEEN ANALOGUE AND DIGITAL SIGNAL

Atsui Tomozawa, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Oct. 18, 1963, Ser. No. 317,227
Claims priority, application Japan, Nov. 13, 1962, 37/51,205
2 Claims. (Cl. 340—347)



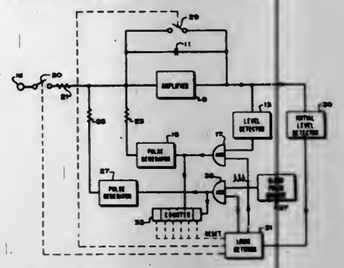
1. A device for converting analogue signals of a plurality of channels into time-division multiplex delta-modulation digital signals, comprising sampling means for sampling said analogue signals at successively displaced time positions and in cyclic order for said channels into an amplitude-modulated pulse series; a comparator for comparing one of said amplitude-modulated pulse series as a first input signal with a second input signal to produce a resultant output signal; a reversible counter composed of a plurality of bistable circuit stages, means for applying said output signal to said counter as a first input, with such set inputs as second inputs as may be supplied to the respective ones of said bistable circuit stages, and with such triggering pulses as third inputs as may cause stepping of said bistable circuit stages, and adapted to add or subtract the number of the triggering pulses to or from the digital value represented by said second inputs in accordance with the value of said first input; a local decoder connected to every one of said bistable circuit stages so as to produce a signal representative of an analogue quantity corresponding to the digital quantity represented by the outputs of said bistable circuits stages and to deliver the produced signal to said comparator as said second input signal; a digital memory device having memory elements which are connected in addition to said local decoder across the respective bistable circuit stages, and adapted to deliver said digital value represented by said outputs of said bistable circuit stages back to the same as said second inputs at a time point of at least a frame of the sampling operation of said sampling means; and means for producing a pulse series constituting a digital signal from said output signal of said comparator.

3,296,613

INTEGRATING CONVERTER

Robert A. Andersen, Palo Alto, and Rodney E. Cooley, Menlo Park, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Dec. 3, 1963, Ser. No. 327,706
2 Claims. (Cl. 340—347)



1. Signal apparatus comprising:

an integrator having an input and an output;

means for applying signal to the input of said integrator only for a selected period to increase the signal at the output of the integrator with time from an initial value and for rendering said integrator inoperative on applied signal substantially at end of said selected period;

circuit means connected to the output of said integrator for producing a control signal during said selected period in response to the signal at said output attaining a predetermined value;

means connecting the output of said circuit means and the input of said integrator for applying a signal thereto during said selected period in response to each control signal to decrease the signal at the output of said integrator by a selected decrement;

means connected to the input of said integrator for applying a signal thereto after said selected period to decrease the signal at the output of said integrator to said initial value; and

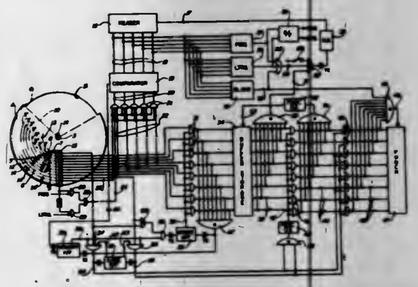
means to produce an output related to the signals applied to the input of said integrator during and after said selected period.

3,296,614

CODE CONVERTER WITH PROVISION FOR AUTOMATICALLY GENERATING PRECEDENCE CODES

Leon Gryk, New Britain, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., a corporation of Delaware

Filed Mar. 4, 1964, Ser. No. 349,279
7 Claims. (Cl. 340—347)



1. Apparatus for converting information representative codes of a first system to corresponding information representative codes of a second system, lower and upper case information in said second system being represented by identical codes distinguishable by precedence codes,

a disc having recorded thereon all of the information representative codes of the first system, all of the upper and lower case information representative codes of the second system, and the case designators of the information represented by each of the second system codes,

the recording of a first system code, a case designator of the information represented by a correspoinding second system code, and a corresponding second system code following in turn on serial radial lines on said disc, the radial lines bearing first system information representative codes including identifying markers,

transducer means,

means for continuously driving said disc relative to said transducer means thereby to generate signals corresponding to said recorded codes, markers and designators,

a source operative to issue first system information representative code signals for conversion,

code comparator means operative to detect coincidence of source issued information representative code signals and code signals generated by said transducer means and to issue an output signal upon coincidence thereof,

first gate means enabled in response to marker signals for gating only first system information representative code signals generated by said transducer means to said code comparator means for comparison with source issued information representative code signals,

second gate means conditioned by the output signal from said code comparator means for gating the second system code signals generated by said transducer means corresponding to the coincident first system code,

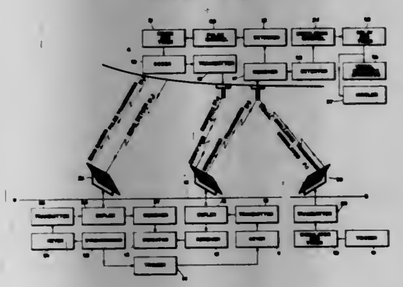
and control means operatively responsive to case designator signals to pass gated second system code signals to a recorder when the case designator signal of the information represented thereby is the same as that generated prior to the last gated second system code, and for delaying passage of the gated second system code signals and for generating precedence code signals for recording during the delay period when the generated case designator signal differs from that generated prior to the last gated second system code.

3,296,615

IDENTIFICATION AND RECOGNITION SYSTEM

Robert M. Page and La Verne R. Philpott, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

Filed Jan. 19, 1942, Ser. No. 427,240
4 Claims. (Cl. 343—6.5)



1. A system for determining whether remote craft are operated by friendly or unfriendly forces comprising:

a first radio transmitter located at a reference station;

keyer means for controlling the rate of pulse transmission by said first radio transmitter;

a first receiver positioned on friendly craft for receiving the pulses transmitted by said first radio transmitter;

a second radio transmitter positioned on friendly craft;

a keyer positioned on friendly craft for controlling the rate of transmission of pulses by said second radio transmitter in response to the output of said first receiver;

coder means positioned on friendly craft for impressing a predetermined code on the pulses emitted from said second radio transmitter and

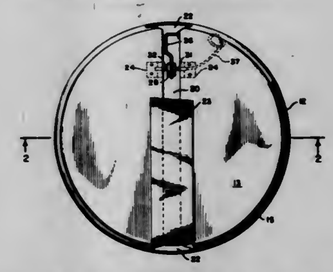
means located at said reference station and including a second receiver for deriving from the reception of the pulses emitted from said second transmitter an indication of the range of said craft from said station, said indication further displaying said code.

3,296,616

COMBINED FREQUENCY DETERMINING CIRCUIT AND ANTENNA

John A. Kuecken, Pittsford, N.Y., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed June 1, 1965, Ser. No. 460,432
10 Claims. (Cl. 343—8)



6. A combined cavity-antenna structure comprising:

a housing of conductive material forming a cavity structure for propagating electromagnetic energy, said housing having a slot therein and together forming an antenna by which electromagnetic energy can be radiated and received,

oscillator means including a multi-element electron conductive device having at least source, control and collector electrodes,

means for directly connecting at least two of said electrodes to said housing at respective points thereon on opposite sides of the slot, the cavity structure forming a frequency determining circuit for said oscillator means,

and feedback means electrically coupled to said housing and one of said electrodes for providing a regenerative signal feedback path between said frequency determining circuit and said electron conductive device whereby said oscillator means produces electromagnetic energy which is radiated by said antenna, the reflected in-phase and out-of-phase energy received by said antenna being coupled by said feedback means to said oscillator means to produce a doppler signal as the antenna moves relative to the target.

3,296,617

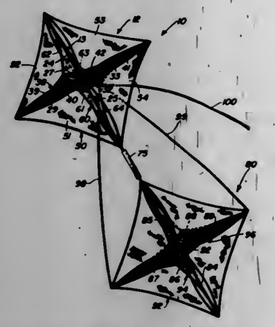
TARGET KITE

Francis M. Rogallo, 17 Milford Road, Newport News, Va. 23601

Filed Jan. 23, 1963, Ser. No. 253,516
18 Claims. (Cl. 343—18)

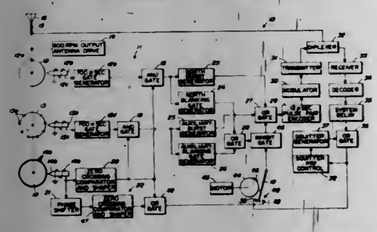
6. A reflective kite comprising: a first three-axis support structure; a second three-axis support structure;

means connecting said first and second three-axis support structures along a common axis; nonporous material means fixed to three of the same axes of said first and second three-axis support structure to form lift and stabi-



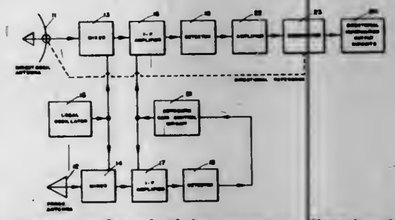
lizing surfaces; porous material means fixed to two of the same axes of said first and second three-axis support structure to facilitate passage of air and flight of the kite; said porous and nonporous material having electromagnetic wave reflecting properties.

3,296,618
CLOCK TIMED REFERENCE GATED PULSE GENERATING SYSTEM FOR A TACAN BEACON
Edward G. Tuthill, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Apr. 24, 1964, Ser. No. 362,378
8 Claims. (Cl. 343—106)



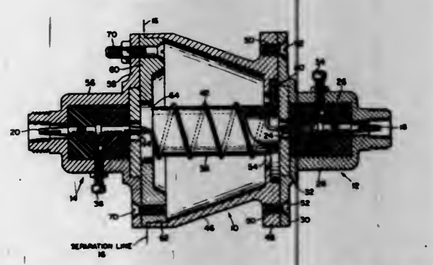
1. A synchronized electromechanical pulse generator for initiating signal burst gates selecting specific accurately timed pulses of a signal clock generator, including: an electromechanical clock signal generating circuit; electromechanical pulse gate generating means; drive means interconnecting said clock signal generating circuit and said pulse gate generating means providing synchronous drive to the clock signal generating circuit and the pulse gate generating means; signal gating means connected for receiving gating input pulses from said electromechanical pulse gate generating means, and with said gating means also receiving the output of said electromechanical clock signal generating circuit for gating of specific accurately timed pulses of the clock signal generator to utilizing equipment; said electromechanical clock signal generating circuit being constructed to provide a train of substantially uniformly spaced, relatively narrow, clock pulses and including a rotatable disc with uniformly spaced elements capable of inducing an electronic pickup in an electronic signal circuit as the disc is being rotated; said clock signal generating circuit also including an induced electronic signal pickup circuit in operative relation with said rotatable disc; said pulse gate generating means being constructed to generate pulses of greater duration than the clock pulses of said clock signal generating circuit and with said gating pulses in synchronism with specific pulses of the clock signal pulse train; with said electromechanical pulse gate generating means including a second rotatable disc having at least one element capable of inducing an electronic pickup in an electronic gate signal circuit as the disc is being rotated; and said pulse gate generating means also including an induced electronic gate signal pickup circuit in operative relation with said second rotatable disc.

3,296,619
SIMPLE FORM OF PROBE ANTENNA NOISE CANCELLATION SYSTEM
Frederick C. Alpers, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 29, 1956, Ser. No. 595,019
4 Claims. (Cl. 343—120)



3. A system for obtaining accurate directional information regarding the relative position of a source of electromagnetic radiation comprising a directional antenna adapted to receive signals from said source alternately from different directions, a probe antenna, and an automatic gain control circuit adapted to receive a signal from said source through said probe antenna and apply a feedback to both the directional antenna channel and the probe antenna channel which is inversely proportional to said probe antenna signal whereby the output of said probe antenna channel is maintained constant and the output from said directional antenna channel is a function resulting from the directional action of said directional antenna, a commutator circuit associated with said directional antenna channel and adapted to receive directional reference information from said directional antenna, and directional information output circuits adapted to utilize the output from said commutator circuit by comparing said alternate signals to determine the direction in which the signals from said source originated.

3,296,620
CONVERTIBLE HORN RADIATOR-COUPLER FOR SEPARABLE MISSILE
Ellsworth N. Rodda, San Jose, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 20, 1963, Ser. No. 325,188
8 Claims. (Cl. 343—705)

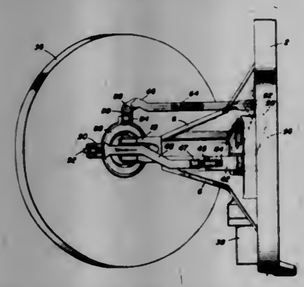


2. A device for coupling microwave energy between two separable portions of an airborne vehicle, said device further providing for the transmission of such energy through the atmosphere from the vehicle to a remote receiving point after the two portions of the vehicle have separated, said device comprising:

a pair of electrical adaptors respectively associated with the two portions of the vehicle and integrally mounted thereon; and

a coupling unit integrally associated with one of said adaptors and separably associated with the remaining adaptor, said coupling unit having the dual function of transferring energy between the two vehicle portions prior to separation thereof and also acting to radiate energy into space following such separation.

3,296,621
TORSIONALLY DECOUPLED ANTENNA SUPPORT
Roger H. Lapp, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 11, 1963, Ser. No. 315,729
1 Claim. (Cl. 343—765)



A torsionally decoupled antenna support, comprising

a supporting base having a support post thereon,

a yoke,

a torsion rod secured to the base and to the yoke,

an antenna element,

means pivotally connecting the antenna element to the yoke,

a first push rod connected to said means and operable for moving the antenna element about one axis on said yoke, and

a second push rod connected to said means for moving the antenna element about another axis on said yoke,

said first push rod including spherical bearings connecting it to the means and said second push rod being slightly flexible,

said push rods cooperating with said torsion rod for torsionally decoupling said antenna element from said base, whereby said antenna element will be isolated from vibrations imparted to the base.

3,296,622
SHEET HOLDING AND RELEASING ASSEMBLY FOR FACSIMILE SCANNER DRUM
Garvice H. Ridings, Summit, and Douglas M. Zabriskie, Northvale, N.J., assignors to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed Feb. 1, 1965, Ser. No. 429,547
8 Claims. (Cl. 346—138)

1. Means for holding copy sheet during scanning in a facsimile machine and for releasing the copy sheet after scanning is completed, comprising:

a cylindrical drum for supporting said sheet while the sheet is wrapped circumferentially around the drum;

means supporting said drum for rotation on its axis;

a carriage carrying a scanning device for scanning a point on said drum;

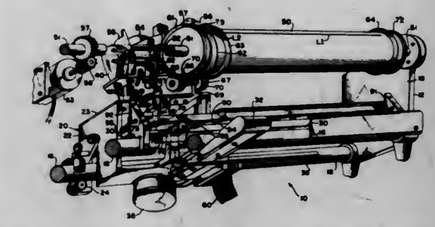
means movably supporting said carriage so that the carriage is movable in a path parallel to the axis of the drum;

first means for engaging said sheet encircling said drum, said first means being movable with the carriage axially along the drum,

a spring garter encircling said drum;

a lever arm assembly pivotally carried by the carriage;

a stationary rail disposed parallel to the axis of the drum, said rail having a camming edge portion contacted by a part of said lever arm assembly as the carriage moves along the drum;

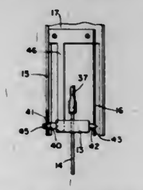


spring means holding said part of said lever arm assembly in contact with said camming edge;

and a finger element carried by said lever arm to engage and move said garter to a predetermined position near one end of the drum to encircle a marginal portion of said sheet as the carriage moves along the drum in one direction;

said camming edge having a recessed step permitting the lever arm to tilt so that said finger releases the garter at said position, whereby the garter remains at said position until the carriage is moved in reverse direction and said first means contacts the garter to move the same off the copy sheet.

3,296,623
SELF-CATCHING PIVOT PEN
Curtis R. A. Johnson, Flourtown Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 10, 1965, Ser. No. 462,951
4 Claims. (Cl. 346—139)



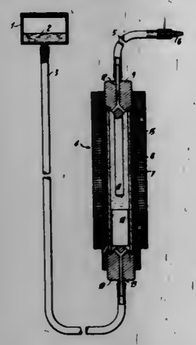
1. A marker assembly for a recorder comprising:

a carrier member having two support arms, each including an aperture therein,

a pen support member supported for rotation about its longitudinal axis between said two support arms by said apertures, and

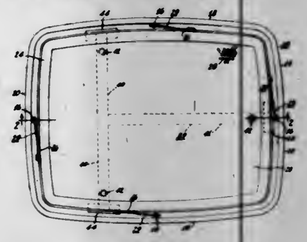
means on at least one end of said pen support member extending laterally from the longitudinal axis thereof and disposed in normally nonengaging relationship with said support arm, on the opposite side thereof, than said pen support member, during normal operation of the marker assembly but suitably dimensioned to engage the support arm to prevent accidental removal of the support member from between the two support arms upon the application of an undue force to the pen support member, tending to move the pen support member in a direction away from said means.

3,296,624
ARRANGEMENT FOR FEEDING INK INTO THE OUTPUT NOZZLE OF A WRITING INSTRUMENT
Enzo Ascoli, Lausanne, Vaud, Switzerland, assignor to Paillard S.A., Vaud, Switzerland, a corporation of Switzerland
Filed Nov. 24, 1964, Ser. No. 413,455
Claims priority, application Switzerland, Dec. 17, 1963, 15,436/63
3 Claims. (Cl. 346—140)



1. In a writing instrument, the combination of an ink container, an output nozzle, a connection between said container and said nozzle, a pump including a cylinder inserted longitudinally in said connection, the ends of said cylinder communicating respectively with the nozzle and with the container, and a piston of magnetic material adapted to be shifted inside said cylinder with a substantial clearance with reference thereto between a first position nearer the container end of the cylinder and a second position nearer the nozzle end of the cylinder, the pressure of said pump being of a value sufficient to form a miniscus at the outer end of said nozzle but insufficient to burst said miniscus, means urging the piston towards its first position and means adapted to transiently produce a magnetic field urging the piston into its second position, the flow of ink out of said nozzle only occurring when a sufficient electrostatic field is generated across the end thereof.

3,296,625
CATHODE RAY TUBE WITH ELECTRODE SUPPORTED BY STRAP-LIKE SPRINGS
Terry M. Shrader, Leacock, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,261
9 Claims. (Cl. 313—85)



1. A cathode ray tube comprising a faceplate panel, at least three support studs extending from said panel, an electrode comprising an apertured portion and a peripheral reinforcing portion disposed within said panel, and at least three mounting means attached to said reinforcing portion and having apertures receiving said studs for mounting said electrode in spaced relation to said panel; at least one of said mounting means comprising a strap-like support spring resiliently disposed between said reinforcing portion and said panel and having two ends and an intermediate bend, an aperture at one end receiving one of said studs, the other end and said bend engaging the outside of said reinforcing portion, means for engaging and holding said other end of said spring against said reinforcing portion during assembly of said spring, and means rigidly attaching said spring to said reinforcing portion independently of said holding means.

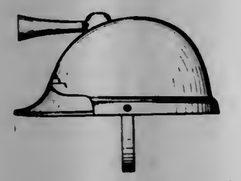
DESIGNS

JANUARY 3, 1967

206,567
AUTOMOBILE IDENTIFICATION MARKER
Irvin W. Sponsler, 12126 Kimberley Lane, Houston, Tex. 77024
Filed Dec. 6, 1965, Ser. No. 84
Term of patent 14 years
(Cl. D1—12)



206,568
HELMET
Laurie J. Campbell, Erie, Pa., assignor to Louis Marx & Co., Inc.
Filed Dec. 14, 1965, Ser. No. 194
Term of patent 7 years
(Cl. D3—13)



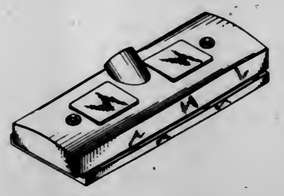
206,569
BIDET
Myron J. Ament, Adrian, Pa. 16210
Filed Sept. 15, 1965, Ser. No. 87,014
Term of patent 14 years
(Cl. D4—5)



206,570
FOOT ORNAMENT
Barbara Kjos Seelicke, 1018 University Ave. SE., Minneapolis, Minn. 55414
Filed Dec. 3, 1965, Ser. No. 37
Term of patent 3½ years
(Cl. D7—7)



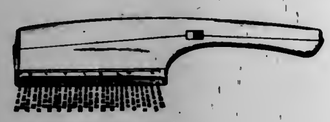
206,571
WAX APPLICATOR AND FLOOR POLISHER HEAD
Moe Herman, 310 Beverly Road, Brooklyn, N.Y. 11218, and Sam Herman, 41 Vista Road, Roslyn, Long Island, N.Y. 11576
Filed Dec. 23, 1965, Ser. No. 302
Term of patent 14 years
(Cl. D9—2)



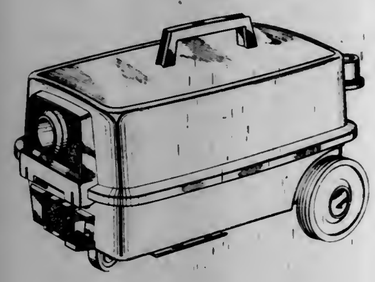
206,572
POWER-OPERATED VIBRATING HAIR BRUSH
Monte Levin, Roslyn Heights, N.Y., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Dec. 30, 1965, Ser. No. 384
Term of patent 14 years
(Cl. D9—2)



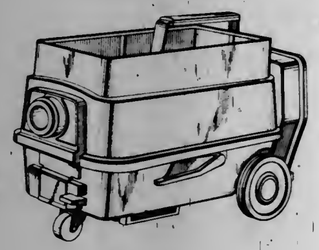
206,573
POWER-OPERATED VIBRATING HAIR BRUSH
Monte Levin, Roslyn Heights, N.Y., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Dec. 30, 1965, Ser. No. 385
Term of patent 14 years
(Cl. D9—2)



206,574
VACUUM CLEANER OR SIMILAR ARTICLE
William J. Cook, Trumbull, Conn., assignor to General Electric Company, a corporation of New York
Filed Mar. 30, 1966, Ser. No. 1,695
Term of patent 14 years
(Cl. D9—2)



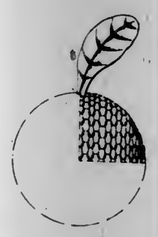
206,575
VACUUM CLEANER OR SIMILAR ARTICLE
William J. Cook, Trumbull, Conn., assignor to General Electric Company, a corporation of New York
Filed Mar. 30, 1966, Ser. No. 1,696
Term of patent 14 years
(Cl. D9—2)



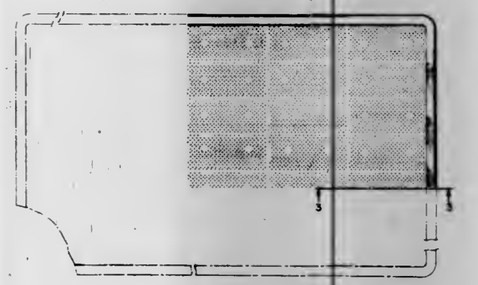
206,576
FLOOR TREATING MACHINE OR SIMILAR ARTICLE
James Gordon Knapp, 280 Bauman Court, West Chicago, Ill. 60185, and Courtney A. Leubner, 37 Meadowood Drive, Oak Brook, Ill. 60521
Filed Apr. 4, 1966, Ser. No. 1,762
Term of patent 14 years
(Cl. D9—2)



206,577
CLEANING PAD
George Halvatzis, Flushing, N.Y., assignor to Anton Products Corporation, New York, N.Y., a corporation of New York
Filed Jan. 5, 1965, Ser. No. 83,279
Term of patent 14 years
(Cl. D9—2)



206,578
FLOOR MAT OR SIMILAR ARTICLE
Evald Torokvei, 30 Cranfield Road, Toronto 16, Ontario, Canada
Filed Feb. 19, 1965, Ser. No. 83,888
Term of patent 14 years
(Cl. D9—6)



206,579
CAT SCRATCHING POST
Robin H. Sherwood, 414 E. 65th St., New York, N.Y. 10021, and William A. Forbes, Farmingville Road, Ridgefield, Conn. 06877
Filed Oct. 24, 1965, Ser. No. 87,893
Term of patent 14 years
(Cl. D12—2)



206,580
BUILDING
Henry W. Beckman, Spanish Lake, Mo. (12330 Larimore, St. Louis, Mo. 63138)
Filed Dec. 8, 1965, Ser. No. 255
Term of patent 14 years
(Cl. D13—1)



206,581
COLLAPSIBLE TRAILER
Klaus E. B. Krutzikowsky, 4331 Lowell Ave., Chicago, Ill. 60641
Filed Feb. 4, 1966, Ser. No. 916
Term of patent 14 years
(Cl. D14—3)



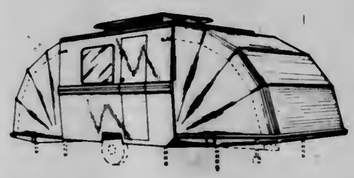
206,582
MOBILE HOME
Stanley A. Harper, Lakewood, Colo. (8700 W. Colfax Ave., Denver, Colo. 80215)
Filed Feb. 23, 1966, Ser. No. 1,159
Term of patent 14 years
(Cl. D14—3)



206,583
TRAVEL TRAILER
Georges Etienne Christin, Marnes-la-Coquette, France, assignor to Etablissements Bertrand Faure, Peteaux, France, a corporation of France
Filed Mar. 14, 1966, Ser. No. 1,460
Claims priority, application France Sept. 30, 1965
Term of patent 14 years
(Cl. D14—3)



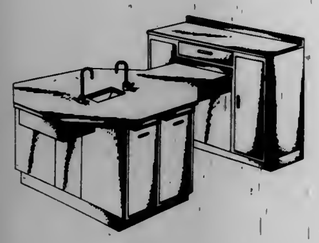
206,584
TRAVEL TRAILER
Georges Etienne Christin, Marnes-la-Coquette, France, assignor to Etablissements Bertrand Faure, Peteaux, France, a corporation of France
Filed Mar. 17, 1966, Ser. No. 1,512
Claims priority, application France Sept. 30, 1965
Term of patent 14 years
(Cl. D14—3)



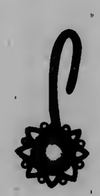
206,585
DENTAL CHAIR OR SIMILAR ARTICLE
John M. Gardella and Rudolph Vetere, Staten Island, N.Y., assignors to The S. S. White Dental Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 27, 1965, Ser. No. 86,309
Term of patent 14 years
(Cl. D15—3)



206,586
MULTI-SCIENCE STUDENT TABLE
James W. Cozad, P.O. Box 1069, Taylor, Tex. 76574
Filed Dec. 17, 1965, Ser. No. 219
Term of patent 14 years
(Cl. D16—2)



206,587
SHOWER CURTAIN HOOK OR SIMILAR ARTICLE
Heinz Nathanson, 160 5th Ave., New York, N.Y. 10010
Filed Jan. 18, 1966, Ser. No. 660
Term of patent 7 years
(Cl. D21—1)



206,588
SECATEURS
Edward A. Rogers, London, England, assignor to Wilkinson Sword Limited, London, England, a British company
Filed Jan. 10, 1966, Ser. No. 559
Term of patent 14 years
(Cl. D22—5)



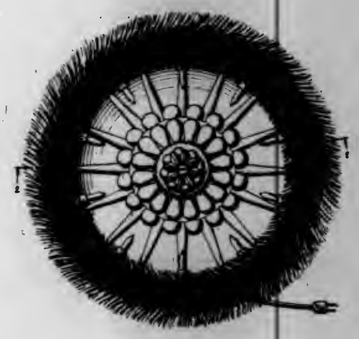
206,589
ELECTRICAL CONNECTOR RECEPTACLE COMPONENT
Elliott Goldbaum, Brooklyn, and Gordon L. Ablett, New York, N.Y., assignors to Lehigh Valley Industries Inc., New York, N.Y., a corporation of Delaware
Original design applications May 25, 1964, Ser. No. 80,127 and Ser. No. 80,139. Divided and this application Nov. 1, 1965, Ser. No. 87,968
Term of patent 14 years
(Cl. D26—1)



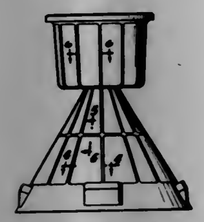
206,590
ELECTRIC CIGARETTE LIGHTER CHARGER AND STORAGE DEVICE OR SIMILAR ARTICLE
Olle E. Haggstrom, Trumbull, Carl N. Johnson, Stratford, and William V. Judson, Westport, Conn., assignors to General Electric Company, a corporation of New York
Filed June 14, 1965, Ser. No. 85,709
Term of patent 14 years
(Cl. D26—15)



206,591
ILLUMINABLE WREATH
Emidio Di Rico, East Elmhurst, N.Y., assignor to Raylite Electric Corporation, Bronx, N.Y., a corporation of New York
Filed Oct. 5, 1965, Ser. No. 87,319
Term of patent 14 years
(Cl. D29—1)



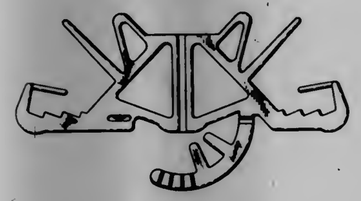
206,592
FLY TRAP
Wilber W. Randle, 3515 Sheffield Ave., Los Angeles, Calif. 90032
Filed Nov. 8, 1965, Ser. No. 88,045
Term of patent 14 years
(Cl. D31—3)



206,593
BOOK REST
William Charles Carlton, Fitches, Finchingfield, Essex, England
Filed Sept. 15, 1965, Ser. No. 87,000
Term of patent 14 years
(Cl. D33—3)



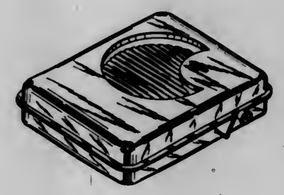
206,594
BOOK REST
William Charles Carlton, Fitches, Finchingfield, Essex, England
Filed Sept. 15, 1965, Ser. No. 87,001
Term of patent 14 years
(Cl. D33—3)



206,595
SLINGSHOT HANDLE
Willard J. Moody, 704 Professional Bldg., Portsmouth, Va. 23704; Clarence T. Wilkinson, 107 Williamson Road, Portsmouth, Va. 23707; and Herskel L. Walker, 203 Beazley Drive, Portsmouth, Va. 23701
Original design application Mar. 25, 1965, Ser. No. 84,433, now Patent No. 204,144, dated Mar. 22, 1966. Divided and this application Oct. 26, 1965, Ser. No. 390
Term of patent 14 years
(Cl. D34—15)



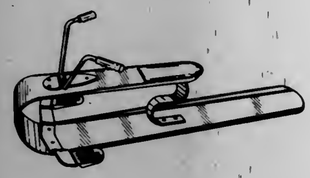
206,596
MUSIC BOX TOY
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., a corporation of California
Filed Jan. 20, 1966, Ser. No. 692
Term of patent 14 years
(Cl. D34—15)



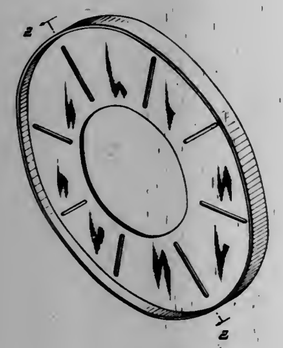
206,597
SNOW SCOOTER
Allen W. Berglund, 865 N. Howell St., St. Paul, Minn. 55104
Filed Mar. 18, 1966, Ser. No. 1,536
Term of patent 14 years
(Cl. D34—15)



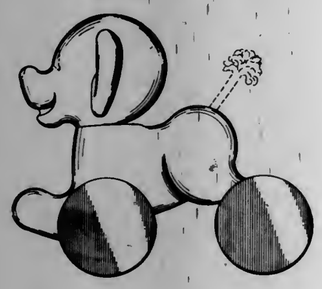
206,598
SNOW RUNNER
Edwin A. Price, 1660 Trenton St., Denver, Colo. 80220
Filed Aug. 17, 1964, Ser. No. 81,305
Term of patent 14 years
(Cl. D34—15)



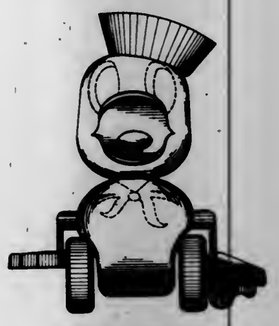
206,599
TOY ROLLING HOOP
Wilton L. Turner, 619 S. Fayetteville St., and John Randolph Ingram, Oakmont Drive, both of Asheboro, N.C. 27203
Filed May 18, 1965, Ser. No. 85,336
Term of patent 14 years
(Cl. D34—15)



206,600
PULL TOY OR SIMILAR ARTICLE
William D. Elzaurdia, Deerfield, and Wesley E. Sharer, Chicago, Ill., assignors to Playskool Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 8, 1965, Ser. No. 88,026
Term of patent 14 years
(Cl. D34—15)



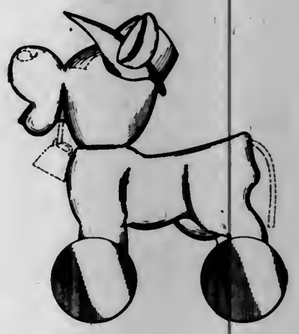
206,601
PULL TOY OR SIMILAR ARTICLE
William D. Elzaurdia, Deerfield, and Wesley E. Sharer, Chicago, Ill., assignors to Playskool Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 8, 1965, Ser. No. 88,028
Term of patent 14 years
(Cl. D34—15)



206,602
PULL TOY OR SIMILAR ARTICLE
William D. Elzaurdia, Deerfield, and Wesley E. Sharer, Chicago, Ill., assignors to Playskool Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 8, 1965, Ser. No. 88,038
Term of patent 14 years
(Cl. D34—15)



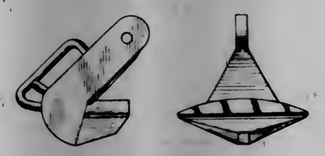
206,603
PULL TOY OR SIMILAR ARTICLE
William D. Elzaurdia, Deerfield, and Wesley E. Sharer, Chicago, Ill., assignors to Playskool Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 8, 1965, Ser. No. 88,043
Term of patent 14 years
(Cl. D34—15)



206,604
SIDE DELIVERY RAKE
Jan Winkel, Sassenheim, Netherlands, and Cornelis van der Lely, Zug, Switzerland, assignors to C. van der Lely, N.V., Maasland, Netherlands, a Dutch limited-liability company
Filed Sept. 27, 1965, Ser. No. 87,186
Claims priority, application Switzerland, June 28, 1965, 37,354/65
Term of patent 14 years
(Cl. D35—2)



206,605
HOOK FOR LIFTING HOLLOW CYLINDRICAL OBJECTS
Harry Nelson VerSoy, New Orleans, and Robert J. Harris, Marrero, La., assignors to H. C. Price Co., Bartlesville, Okla., a corporation of California
Filed Sept. 29, 1965, Ser. No. 87,213
Term of patent 14 years
(Cl. D41—1)



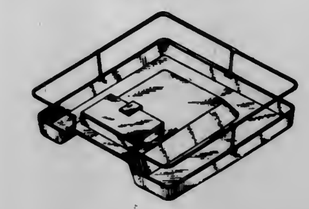
206,606
HAMBURGER PRESS
Charles I. Brown, Butler P.O., Kinnelon, N.J. 07405
Filed Dec. 22, 1965, Ser. No. 293
Term of patent 14 years
(Cl. D44—1)



206,607
LID FOR FRYING PANS
Gunnar Horgard, Trondheim, Norway, assignor to Sintef, Trondheim, Norway, a research foundation of Norway
Filed Nov. 29, 1965, Ser. No. 88,252
Claims priority, application Norway June 1 ,1965
Term of patent 14 years
(Cl. D44—1)



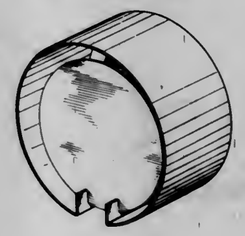
206,608
TRAY
John W. Peer, P.O. Box 1297, Tahoe Valley, Calif. 95731
Filed Nov. 17, 1965, Ser. No. 88,131
Term of patent 14 years
(Cl. D44—10)



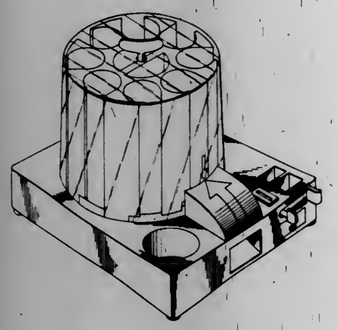
206,609
INCANDESCENT LUMINAIRE REFRACTOR
Vearl S. Wince, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Continuation of design application Ser. No. 74,686, Apr. 30, 1963. This application Jan. 22, 1965, Ser. No. 83,525
Term of patent 14 years
(Cl. D48—16)



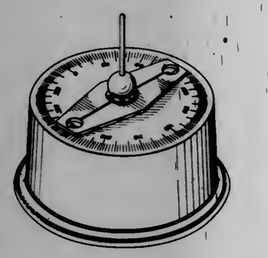
206,610
TABLE LAMP
Leo H. Klausen, 338 Hillcrest Ave., Willowdale, Ontario, Canada
Filed Aug. 2, 1965, Ser. No. 86,404
Term of patent 14 years
(Cl. D48—20)



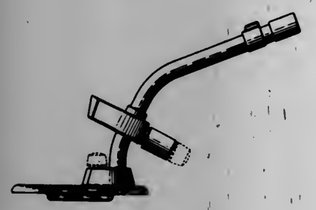
206,611
COIN CONTROLLED VENDING MACHINE
William C. Christine, Catasauqua, and Joseph E. Pierce, Allentown, Pa., assignors to Allen Electronics, Inc., Bethlehem, Pa., a corporation of Pennsylvania
Filed Nov. 23, 1965, Ser. No. 88,198
Term of patent 14 years
(Cl. D52—3)



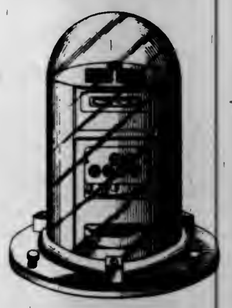
206,612
DEVIATION METER
Ethel J. Crawford, 1902 Woodworth Road, Anaheim, Calif. 92804
Filed Feb. 1, 1966, Ser. No. 824
Term of patent 14 years
(Cl. D52—6)



206,613
METAL DETECTOR
Robert S. Penland, Jr., 405 Elder St., Northfield, N.J. 08225
Filed June 3, 1965, Ser. No. 85,558
Term of patent 14 years
(Cl. D52—6)



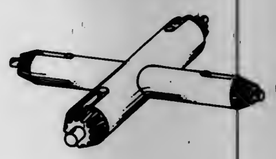
206,614
SOLAR RADIATION MEASURING DEVICE
John I. Yellott, 9051 N. 7th Ave., Phoenix, Ariz. 85020
Filed Aug. 27, 1965, Ser. No. 86,750
Term of patent 14 years
(Cl. D52—6)



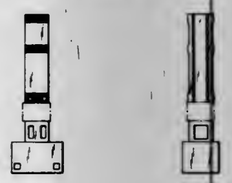
206,615
CARPET STRETCHER
Roy L. Brenner, Highland Park, Ill., assignor to Kinkead Industries Incorporated, Chicago, Ill., a corporation of Illinois
Filed Aug. 15, 1966, Ser. No. 3,467
Term of patent 14 years
(Cl. D54—13)



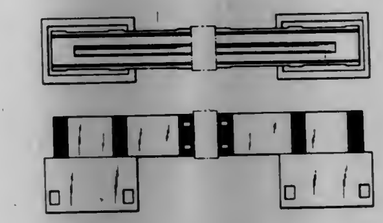
206,616
MULTIPLE CHUCK KEY
Josh Harry Ellis, 14 Leeton Ave., Coogee, New South Wales, Australia
Filed May 14, 1965, Ser. No. 85,291
Term of patent 14 years
Claims priority, application Australia Nov. 30, 1964
(Cl. D54—16)



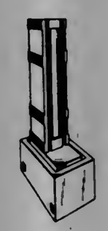
206,617
MACHINE TOOL BASE AND BED UNIT
Harry E. Miles, Jr., 6 W. Hannum Blvd., Saginaw, Mich. 48602
Original design application Apr. 30, 1964, Ser. No. 79,759, now Patent No. 204,207, dated Mar. 29, 1966. Divided and this application Feb. 25, 1966, Ser. No. 1,187
Term of patent 14 years
(Cl. D55—1)



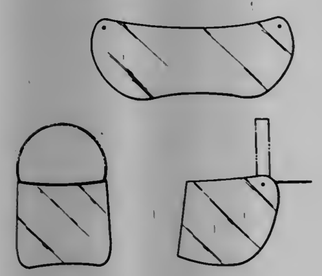
206,618
MACHINE TOOL BASE AND BED UNIT
Harry E. Miles, Jr., 6 W. Hannum Blvd., Saginaw, Mich. 48602
Original design application Apr. 30, 1964, Ser. No. 79,759, now Patent No. 204,207, dated Mar. 29, 1966. Divided and this application Feb. 25, 1966, Ser. No. 1,188
Term of patent 14 years
(Cl. D55—1)



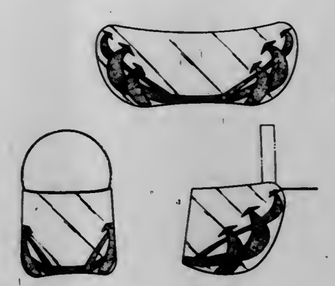
206,619
MACHINE TOOL BASE AND BED UNIT
Harry E. Miles, Jr., 6 W. Hannum Blvd., Saginaw, Mich. 48602
Original design application Apr. 30, 1964, Ser. No. 79,759, now Patent No. 204,207, dated Mar. 29, 1966. Divided and this application Feb. 25, 1966, Ser. No. 1,189
Term of patent 14 years
(Cl. D55—1)



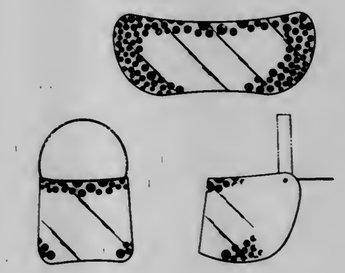
206,620
GLARE SHIELD
Goldie Hoffman, 250 S. 17th St., Philadelphia, Pa. 19103
Filed Dec. 22, 1965, Ser. No. 272
Term of patent 3½ years
(Cl. D57—1)



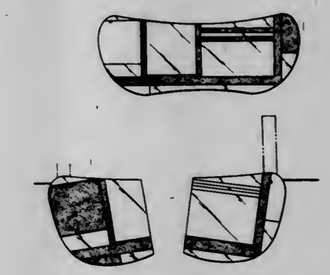
206,621
GLARE SHIELD
Goldie Hoffman, 250 S. 17th St., Philadelphia, Pa. 19103
Filed Dec. 22, 1965, Ser. No. 273
Term of patent 3½ years
(Cl. D57—1)



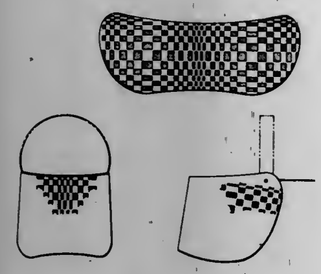
206,622
GLARE SHIELD
Goldie Hoffman, 250 S. 17th St., Philadelphia, Pa. 19103
Filed Dec. 22, 1965, Ser. No. 274
Term of patent 3½ years
(Cl. D57—1)



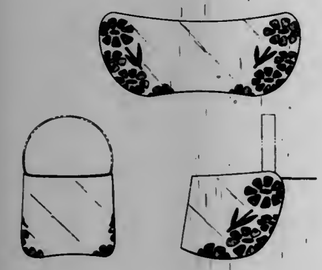
206,623
GLARE SHIELD
Goldie Hoffman, 250 S. 17th St., Philadelphia, Pa. 19103
Filed Dec. 22, 1965, Ser. No. 275
Term of patent 3½ years
(Cl. D57—1)



206,624
GLARE SHIELD
Goldie Hoffman, 250 S. 17th St., Philadelphia, Pa. 19103
Filed Dec. 22, 1965, Ser. No. 276
Term of patent 3½ years
(Cl. D57—1)



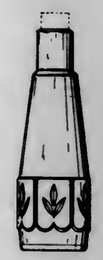
206,625
GLARE SHIELD
Goldie Hoffman, 250 S. 17th St., Philadelphia, Pa. 19103
Filed Dec. 22, 1965, Ser. No. 280
Term of patent 3½ years
(Cl. D57—1)



206,626
BOTTLE OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 21
Term of patent 14 years
(Cl. D58—8)

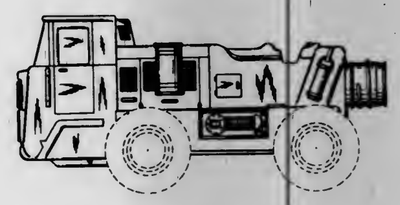


206,627
BOTTLE
Bruce L. Roberts, 1014 E. River Road, Rossford, Ohio 43460
Filed Dec. 22, 1965, Ser. No. 286
Term of patent 14 years
(Cl. D58—8)

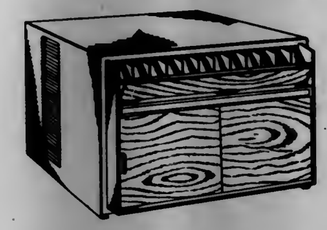


206,628
COMBINED BOTTLE AND CLOSURE THEREFOR
Olof Verner Andersson, North Kingston, R.I., assignor to Anson, Inc., Providence, R.I., a corporation of Rhode Island
Filed Sept. 1, 1965, Ser. No. 86,800
Term of patent 14 years
(Cl. D58—8)

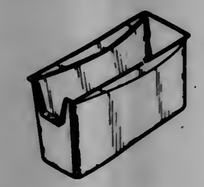
206,629
BOTTLE OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Original design application July 30, 1964, Ser. No. 81,078. Divided and this application Feb. 10, 1966, Ser. No. 1,428
Term of patent 14 years
(Cl. D58—9)



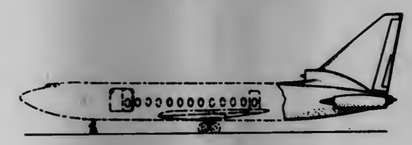
206,630
AIR CONDITIONER
Earl R. Stiegemeier, Palestine, Ill., assignor to Montgomery Ward & Co., Incorporated, Chicago, Ill., a corporation of Illinois
Filed Mar. 18, 1966, Ser. No. 1,535
Term of patent 14 years
(Cl. D62—4)



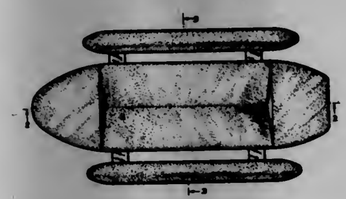
206,631
STORAGE CONTAINER FOR ICE CUBES OR THE LIKE
Robert T. Howitt, Leominster, Mass., assignor to Plastic Academy Products Corp., a corporation of Massachusetts
Filed Mar. 11, 1966, Ser. No. 1,414
Term of patent 7 years
(Cl. D67—3)



206,632
AIRCRAFT OR THE LIKE
Mike Tecton, 5101 45th St. NW., Washington, D.C. 20016
Filed Sept. 3, 1965, Ser. No. 86,836
Term of patent 14 years
(Cl. D71—1)



206,633
SURFBOARD
Arthur J. Curtiss and Cleon V. Wilson, both of 1564 W. Anaheim St., Long Beach, Calif. 90813
Filed Oct. 1, 1965, Ser. No. 87,273
Term of patent 14 years
(Cl. D71—1)



206,634
SIREN
Leo A. Guthart, Old Westbury, N.Y., assignor to Alarm Device Manufacturing Company, a division of Pittsburgh Railways Company, Inc., a corporation of Pennsylvania
Filed June 23, 1966, Ser. No. 2,786
Term of patent 14 years
(Cl. D72—1)



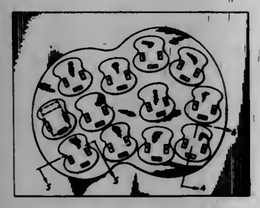
206,635
HIGHWAY MARKER
Cletus Neal Walter, San Diego, Calif., assignor of thirty-seven and one-half percent to McCormick, Barstow, Sheppard, Coyle & Best, Fresno, Calif., a firm
Filed Nov. 5, 1965, Ser. No. 88,013
Term of patent 14 years
(Cl. D72—1)



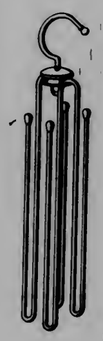
206,636
BALL POINT PEN
Clarence D. Zierhut, Granada Hills, Calif., and John H. Wasson, Madison, Wis., assignors to Paper Mate Manufacturing Company, Santa Monica, Calif., a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 83,762
Term of patent 14 years
(Cl. D74—17)



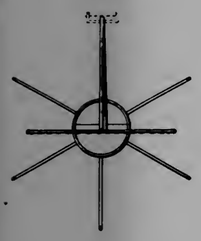
206,637
DISPLAY PANEL FOR CIGARETTE LIGHTERS OR SIMILAR ARTICLES
Ralph Shebitz, 106 Springtime Lane W., Levittown, Long Island, N.Y. 11756, and Hans Fried, 153—15 78th Ave., Flushing, Long Island, N.Y. 13337
Filed Nov. 15, 1965, Ser. No. 88,110
Term of patent 14 years
(Cl. D80—5)



206,638
TIE HANGER
Laurence W. Van Dusen, Escondido, Calif., assignor to Mission Industries, Escondido, Calif., a corporation of California
Filed Jan. 17, 1966, Ser. No. 641
Term of patent 14 years
(Cl. D80—8)

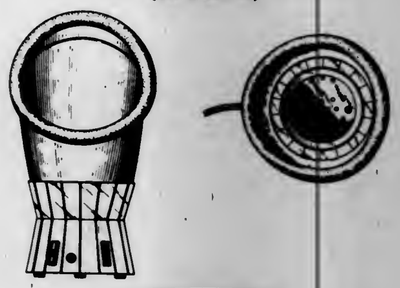


206,639
COMBINED DISPLAY RACK AND SIGN HOLDER
Lester M. Mayber, Skokie, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 14, 1966, Ser. No. 1,889
Term of patent 14 years
(Cl. D80—10)

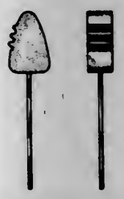




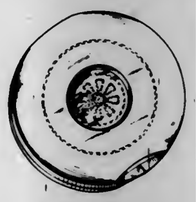
206,640
VAPORIZER APPLIANCE OR SIMILAR ARTICLE
Bernard A. Mitchell, Chicago, Ill., assignor to Heath Products, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 10, 1966, Ser. No. 1,398
Term of patent 14 years
(Cl. D83—1)



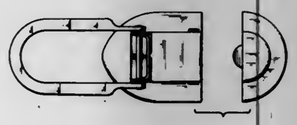
206,641
SPONGE FOR MEDICAL, DENTAL OR SURGICAL USE
Edward J. Hill, Bloomfield Hills, Mich., assignor to Edward Weck & Company, Inc., Long Island City, N.Y., a corporation of Delaware
Filed Aug. 19, 1965, Ser. No. 86,648
Term of patent 14 years
(Cl. D83—12)



206,642
COMPACT
John W. Pfrommer, 368 Highland Ave., Cheshire, Conn. 06410
Filed Jan. 7, 1966, Ser. No. 536
Term of patent 14 years
(Cl. D86—10)



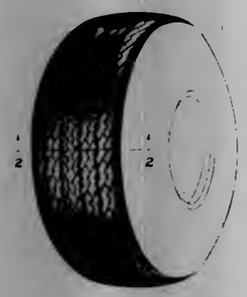
206,643
LUGGAGE DRAWBOLT
Walter Bialo, 836 Broadway, New York, N.Y. 10003
Filed June 1, 1965, Ser. No. 85,523
Term of patent 14 years
(Cl. D87—2)



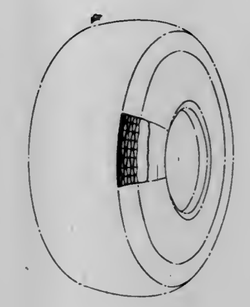
206,644
MOTORCYCLE WINDSHIELD
Ted Zbikowski, Southfield, and John L. Marchello, Ann Arbor, Mich., assignors to Joseph Buegeleisen Co., Southfield, Mich.
Original design application Mar. 14, 1963, Ser. No. 73,969, now Patent No. 202,489, dated Oct. 5, 1965. Divided and this application Sept. 22, 1965, Ser. No. 87,103
Term of patent 14 years
(Cl. D90—1)



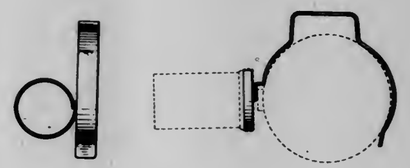
206,645
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Dec. 22, 1965, Ser. No. 287
Term of patent 14 years
(Cl. D90—20)



206,646
TIRE
Aristides Makris, 137 Crescent Ave., Plainfield, N.J. 07060
Filed Dec. 28, 1965, Ser. No. 356
Term of patent 14 years
(Cl. D90—20)



206,647
IRRIGATION SOCK HOLDER
Elmer G. Heinrich, 824 E. 6th, Goodland, Kans. 67735
Filed Aug. 17, 1965, Ser. No. 86,606
Term of patent 14 years
(Cl. D91—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF JANUARY, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Cerutti, Henry P., to October Corp. Apparatus for forming a tunnel. Re. 26,132, 1–3–67, Cl. 61—84.

Fields, Joseph E., and J. H. Johnson, to Monsanto Co. Mineral oil composition. Re. 26,134, 1–3–67, Cl. 252—56.

Ideal Industries Inc.: *See*—
Whitehurst, Joe R. Re. 26,135.

Johnson, John H.: *See*—
Fields, Joseph E., and Johnson. Re. 26,134.

Monsanto Co.: *See*—
Fields, Joseph E., and Johnson. Re. 26,134.

October Corp.: *See*—
Cerutti, Henry P. Re. 26,132.

Tokheim Corp.: *See*—
Wright, George W. Re. 26,133.

Whitehurst, Joe R., to Ideal Industries Inc. Means for feeding slivers to coilers. Re. 26,135, 1–3–67, Cl. 19—159.

Wright, George W., to Tokheim Corp. Separable motor-pump connector. Re. 26,133, 1–3–67, Cl. 103—87.

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Ablett, Gordon L.: *See*—
Goldbaum, Elliott, and Ablett. 206,589.

Alarm Device Mfg. Co., a Division of Pittsburgh Railways Co., Inc.: *See*—
Guthart, Leo A. 206,634.

Allen Electronics, Inc.: *See*—
Christine, William C., and Pierce. 206,611.

Ament, Myron J. Bidet. 206,569, 1–3–67, Cl. D4—5.

American Home Products Corp.: *See*—
Mayber, Lester M. 206,639.

Anderson, Olof V., to Anson, Inc. Combined bottle and closure therefor. 206,628, 1–3–67, Cl. D58—8.

Anson, Inc.: *See*—
Anderson, Olof V. 206,628.

Anton Products Corp.: *See*—
Halvatzis, George. 206,577.

Beckman, Henry W. Building. 206,580, 1–3–67, Cl. D13—1.

Bergland, Allen W. Snow scooter. 206,597, 1–3–67, Cl. D34—15.

Bialo, Walter. Luggage drawbolt. 206,643, 1–3–67, Cl. D87—2.

Brenner, Roy L., to Kinkead Industries Inc. Carpet stretcher. 206,615, 1–3–67, Cl. D54—13.

Brown, Charles I. Hamburger press. 206,606, 1–3–67, Cl. D44—1.

Buegeleisen, Joseph, Co.: *See*—
Zbikowski, Ted, and Marchello. 206,644.

Campbell, Laurie J., to Louis Marx & Co., Inc. Helmet. 206,568, 1–3–67, Cl. D3—13.

Carlton, William C. Book rest. 206,593, 1–3–67, Cl. D33—3.

Carlton, William C. Book rest. 206,594, 1–3–67, Cl. D33—3.

Christin, Georges E., to Etablissements Bertrand Faure. Travel trailer. 206,583, 1–3–67, Cl. D14—3.

Christin, Georges E., to Etablissements Bertrand Faure. Travel trailer. 206,584, 1–3–67, Cl. D14—3.

Christine, William C., and J. E. Pierce, to Allen Electronics, Inc. Coin controlled vending machine. 206,611, 1–3–67, Cl. D52—3.

Colgate-Palmolive Co.: *See*—
Douglas, Livingston C. 206,626.
Douglas, Livingston C. 206,629.

Cook, William J., to General Electric Co. Vacuum cleaner or similar article. 206,574, 1–3–67, Cl. D9—2.

Cook, William J., to General Electric Co. Vacuum cleaner or similar article. 206,575, 1–3–67, Cl. D9—2.

Cozad, James W. Multi-science student table. 206,586, 1–3–67, Cl. D16—2.

Crawford, Ethel J. Deviation meter. 206,612, 1–3–67, Cl. D52—6.

Curtiss, Arthur J., and C. V. Wilson. Surfboard. 206,633, 1–3–67, Cl. D71—1.

DiRico, Emidio, to Raylite Electric Corp. Illuminable wreath. 206,591, 1–3–67, Cl. D29—1.

Douglas, Livingston C., to Colgate-Palmolive Co. Bottle or similar article. 206,626, 1–3–67, Cl. D58—8.

Douglas, Livingston C., to Colgate-Palmolive Co. Bottle or similar article. 206,629, 1–3–67, Cl. D58—9.

Ellis, Josh H. Multiple chuck key. 206,616, 1–3–67, Cl. D34—16.

Elzaurdia, William D., and W. E. Sharer, to Playskool Mfg. Co. Pull toy or similar article. 206,600, 1–3–67, Cl. D34—15.

Elzaurdia, William D., and W. E. Sharer, to Playskool Mfg. Co. Pull toy or similar article. 206,601, 1–3–67, Cl. D34—15.

Elzaurdia, William D., and W. E. Sharer, to Playskool Mfg. Co. Pull toy or similar article. 206,602, 1–3–67, Cl. D34—15.

Elzaurdia, William D., and W. E. Sharer, to Playskool Mfg. Co. Pull toy or similar article. 206,603, 1–3–67, Cl. D34—15.

Empire Brushes, Inc.: *See*—
Levin, Monte. 206,572.
Levin, Monte. 206,573.

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Christin, Georges E. 206,583.
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Sherwood, Robin H., and Forbes. 206,579.

Fried, Hans: *See*—
Shebitz, Ralph, and Fried. 206,637.

Gardella, John M., and R. Vetere, to The S. S. White Dental Mfg. Co. Dental chair or similar article. 206,585, 1–3–67, Cl. D15—3.

General Electric Co.: *See*—
Cook, William J. 206,574.
Cook, William J. 206,575.
Haggstrom, Olle E., Johnson, and Judson. 206,590.

Goldbaum, Elliott, and G. L. Ablett, to Lehigh Valley Industries Inc. Electrical connector receptacle component. 206,589, 1–3–67, Cl. D26—1.

Goodrich, B. F., Co., The: *See*—
Wittenmyer, Glen L. 206,645.

Guthart, Leo A., to Alarm Device Mfg. Co., a Division of Pittsburgh Railways Co., Inc. Siren. 206,634, 1–3–67, Cl. D72—1.

Haggstrom, Olle E., C. N. Johnson, and W. V. Judson, to General Electric Co. Electric cigarette lighter charger and storage device or similar article. 206,590, 1–3–67, Cl. D26—15.

Halvatzis, George, to Anton Products Corp. Cleaning pad. 206,577, 1–3–67, Cl. D9—2.

Harper, Stanley A. Mobile home. 206,582, 1–3–67, Cl. D14—3.

Harris, Robert J.: *See*—
Versoy, Harry N., and Harris. 206,605.

Heath Products, Inc.: *See*—
Mitchell, Bernard A. 206,640.

Heinrich, Elmer G. Irrigation sock holder. 206,647, 1–3–67, Cl. D91—3.

Herman, Moe and S. Wax applicator and floor polisher head. 206,571, 1–3–67, Cl. D9—2.

Herman, Sam: *See*—
Herman, Moe and S. 206,571.

Hill, Edward J., to Edward Weck & Co., Inc. Sponge for medical, dental or surgical use. 206,641, 1–3–67, Cl. D83—12.

Hoffman, Goldie. Glare shield. 206,620, 1–3–67, Cl. D57—1.

Hoffman, Goldie. Glare shield. 206,621, 1–3–67, Cl. D57—1.

Hoffman, Goldie. Glare shield. 206,622, 1–3–67, Cl. D57—1.

Hoffman, Goldie. Glare shield. 206,623, 1–3–67, Cl. D57—1.

Hoffman, Goldie. Glare shield. 206,624, 1–3–67, Cl. D57—1.

Hoffman, Goldie. Glare shield. 206,625, 1–3–67, Cl. D57—1.

Holophane Co., Inc.: *See*—
Wince, Vearl S. 206,609.

Horgard, Gunnar, to Sintef. Lid for frying pans. 206,607, 1–3–67, Cl. D44—1.

Howitt, Robert T., to Plastic Academy Products Corp. Storage container for ice cubes or the like. 206,631, 1–3–67, Cl. D67—3.

Ingram, John R.: *See*—
Turner, Wilton L., and Ingram. 206,599.

Johnson, Carl N.: *See*—
Haggstrom, Olle E., Johnson, and Judson. 206,590.

Judson, William V.: *See*—
Haggstrom, Olle E., Johnson, and Judson. 206,590.

Kinkead Industries Inc.: *See*—
Brenner, Roy L. 206,615.

Klausen, Leo H. Table lamp. 206,610, 1–3–67, Cl. D48—20.

Knapp, James G., and C. A. Leubner. Floor treating machine or similar article. 206,576, 1–3–67, Cl. D9—2.

Krutzikowsky, Klaus E. B. Collapsible trailer. 206,581, 1–3–67, Cl. D14—3.

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Goldbaum, Elliott, and Ablett. 206,589.

Leubner, Courtney A.: *See*—
Knapp, James G., and Leubner. 206,576.

Levin, Monte, to Empire Brushes, Inc. Power-operated vibrating hair brush. 206,572, 1–3–67, Cl. D9—2.

Levin, Monte, to Empire Brushes, Inc. Power-operated vibrating hair brush. 206,573, 1–3–67, Cl. D9—2.
Makris, Aristides. Tire. 206,646, 1–3–67, Cl. D90—20.
Marchello, John L.: *See*—
Zbikowski, Ted, and Marchello. 206,644.
Marx, Louis, & Co., Inc.: *See*—
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Miles, Harry E., Jr. Machine tool base and bed unit. 206,617, 1–3–67, Cl. D55—1.
Miles, Harry E., Jr. Machine tool base and bed unit. 206,618, 1–3–67, Cl. D55—1.
Miles, Harry E., Jr. Machine tool base and bed unit. 206,619, 1–3–67, Cl. D55—1.
Mission Industries: *See*—
Van Dusen, Laurence W. 206,638.
Mitchell, Bernard A., to Heath Products, Inc. Vaporizer appliance. 206,640, 1–3–67, Cl. 83—1.
Montgomery Ward & Co., Inc.: *See*—
Stiegemeier, Earl R. 206,630.
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Nathanson, Heinz. Shower curtain hook or similar article. 206,587, 1–3–67, Cl. D21—1.
Paper Mate Mfg. Co.: *See*—
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Penland, Robert S., Jr. Metal detector. 206,613, 1–3–67, Cl. D52—6.
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Elzaurdia, William D., and Sharer. 206,601.
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Price, H. C., Co.: *See*—
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Raylite Electric Corp.: *See*—
DiRico, Emidio. 206,591.
Roberts, Bruce L. Bottle. 206,627, 1–3–67, Cl. D58—8.
Rogers, Edward A., to Wilkinson Sword Ltd. Secateurs. 206,588, 1–3–67, Cl. D22—5.
Ryan, John W., to Mattel, Inc. Music box toy. 206,596, 1–3–67, Cl. D34—15.
Seelicke, Barbara K. Foot ornament. 206,570, 1–3–67, Cl. D7—7.
Sharer, Wesley E.: *See*—
Elzaurdia, William D., and Sharer. 206,600.
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Elzaurdia, William D., and Sharer. 206,602.
Elzaurdia, William D., and Sharer. 206,603.
Shebitz, Ralph, and H. Fried. Display panel for cigarette lighters or similar articles. 206,637, 1–3–67, Cl. D80—5.
Sherwood, Robin H., and W. A. Forbes. Cat scratching post. 206,579, 1–3–67, Cl. D12—2.
Sintef: *See*—
Horgard, Gunnar. 206,607.
Sponsler, Irvin W. Automobile identification marker. 206,567, 1–3–67, Cl. D1—12.
Stiegemeier, Earl R., to Montgomery Ward & Co., Inc. Air conditioner. 206,630, 1–3–67, Cl. D62—4.
Tecton, Mike. Aircraft or the like. 206,632, 1–3–67, Cl. D71—1.
Torokvei, Evald. Floor mat or similar article. 206,578, 1–3–67, Cl. D9—6.
Turner, Wilton L., and J. R. Ingram. Toy rolling hoop. 206,599, 1–3–67, Cl. D34—15.
Van der Lely, C., N. V.: *See*—
Winkel, Jan, and Van der Lely. 206,604.
Van der Lely, Cornelis: *See*—
Winkel, Jan, and Van der Lely. 206,604.
Van Dusen, Laurence W., to Mission Industries. Tie hanger. 206,638, 1–3–67, Cl. D80—8.
Versoy, Harry N., and R. J. Harris, to H. C. Price Co. Hook for lifting hollow cylindrical objects. 206,605, 1–3–67, Cl. D41—1.
Vetere, Rudolph: *See*—
Gardella, John M., and Vetere. 206,585.
Walker, Herskel L.: *See*—
Moody, Willard J., Wilkinson, and Walker. 206,595.
Walter, Cletus N., 37½% to McCormick, Burstow, Sheppard, Coyle & Best. Highway marker. 206,635, 1–3–67, Cl. D72—1.
Wasson, John H.: *See*—
Zierhut, Clarence D., and Wasson. 206,636.
Weck, Edward & Co., Inc.: *See*—
Hill, Edward J. 206,641.
White, S. S., Dental Mfg. Co., The: *See*—
Gardella, John M., and Vetere. 206,585.
Wilkinson, Clarence T.: *See*—
Moody, Willard J., Wilkinson, and Walker. 206,595.
Wilkinson Sword Ltd.: *See*—
Rogers, Edward A. 206,588.
Wilson, Cleon V.: *See*—
Curtiss, Arthur J., and Wilson. 206,633.
Wince, Vearl S., to Holophane Co., Inc. Incandescent luminaire refractor. 206,609, 1–3–67, Cl. 48—16.
Winkel, Jan, and C. Van der Lely, to C. Van der Lely, N. V. Side delivery rake. 206,604, 1–3–67, Cl. D35—2.
Wittenmyer, Glen L., to The B. F. Goodrich Co. Tire. 206,645, 1–3–67, Cl. D90—20.
Yellott, John I. Solar radiation measuring device. 206,614, 1–3–67, Cl. D52—6.
Zbikowski, Ted, and J. L. Marchello, to Joseph Buegeleisen Co. Motorcycle windshield. 206,644, 1–3–67, Cl. D90—1.
Zierhut, Clarence D., and J. H. Wasson, to Paper Mate Mfg. Co. Ball point pen. 206,636, 1–3–67, Cl. D74—17.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF JANUARY, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Fritz, William B. 3,296,601.
Hammell, Kemper M. 3,295,189.
Laudig, Ronald C., and Stark. 3,296,363.
Abbott, John R., and I. F. Salminen, to Eastman Kodak Co. Novel inhibitors for use in the black and white development of color reversal film. 3,295,976, 1–3–67, Cl. 96—55.
Abbott, Edward A.: *See*—
Charlton, John D., and Abbott. 3,295,616.
Abbott, Thomas I., to Eastman Kodak Co. Photographic spirit duplicating process. 3,295,969, 1–3–67, Cl. 96—28.
Abermeth, Hubert, and P. Combuchen, to Klockner-Humboldt-Deutz Aktiengesellschaft. Rotary piston machine, particularly rotary piston internal combustion engine. 3,295,754, 1–3–67, Cl. 230—145.
Abernathy, Frank W.: *See*—
Raynolds, David W., Smith, and Abernathy. 3,295,308.
Abrams, Gilbert L., to Guild Molders, Inc. Combined closure and sealing member. 3,295,711, 1–3–67, Cl. 220—24.5.
Achon, Marco A., to The General Tire & Rubber Co. Polymerization of organic epoxides using certain metallic oxides and metallo organo compounds. 3,296,152, 1–3–67, Cl. 260—2.
Acker, Eric O., E. O. Acker, Jr., and P. P. Kimball. Forming machine. 3,295,345, 1–3–67 Cl. 72—24.
Acker, Eric O., Jr.: *See*—
Acker, Eric O., E. O. Acker, Jr., and Kimball. 3,295,345.
Adams, Bobby F., and J. H. Wotiz, to Diamond Alkali Co. Cyclic acetylenic hydrocarbon preparation. 3,296,321, 1–3–67, Cl. 260—666.
Adams, Charles H.: *See*—
Larrigan, Harry J., Browne, and Adams. 3,295,365.
Adams, Fred, to General Motors Corp. Brake mechanism. 3,295,636, 1–3–67, Cl. 188—18.
Adams, Floyd S., to Smada Corp. Method and apparatus for preparing brushes for trimming. 3,295,893, 1–3–67, Cl. 300—21.
Adams, Harold W.: *See*—
Hickey, Frank D., Adams, and Hirahara. 3,295,982.
Addison, Harry W., Jr. Stair traversing wheel chair mechanism. 3,295,838, 1–3–67, Cl. 280—5.3.
Addmaster Corp.: *See*—
Busch, Richard E., and Clary. 3,295,757.
Addor, Roger W., to American Cyanamid Co. O- and Δ-allyloxyphenyl and Δ-alkoxyphenyl-N-methyl carbamates and the insecticidal use thereof. 3,296,068, 1–3–67, Cl. 167—30.
Adler, Robert, to Zenith Radio Cory. Cyclotron and synchronous parametric amplifiers and synchronous oscillators and isolators using bifilar helix coupler. 3,296,542, 1–3–67, Cl. 330—4.7.
Adler, Robert, to Zenith Radio Corp. Positive synchronous wave bifilar helix coupler and parametric amplifiers. 3,296,543, 1–3–67, Cl. 330—4.7.
Adler, Robert, to Zenith Radio Corp. Negative synchronous wave amplifier and oscillator. 3,296,548, 1–3–67, Cl. 330—46.
Adolph, Horst G., J. C. Dacons, and M. J. Kamlet, to United States of America, Navy. Preparation of hydroxy nitrophenyl compounds. 3,296,315, 1–3–67, Cl. 260—620.
Aerojet-General Corp.: *See*—
Argyle, Sidney C. 3,296,443.
Fluke, Gordon A., Keating, McGehee, and Peterson. 3,296,043.
Morley, Morgan J., and Gilbert. 3,295,412.
Winkler, Joseph, and Bratoeff. 3,296,211.
Aeroprojects Inc.: *See*—
Maropis, Nicholas. 3,295,349.
Agdur, Nils B., F. Sellberg, K. G. R. Boling, and K. Y. Ohman, to Kooperativa Farbundet Ekonomick Forening. Polarized radiation emitting element for inclusion as a light source in an electric lamp. 3,296,482, 1–3–67, Cl. 313—341.
Agency of Industrial Science Technology: *See*—
Sakuma, Akihiko. 3,296,525.
Agfa Aktiengesellschaft: *See*—
Meckl, Heinz, Haseler, and Morcher. 3,295,975.
Roos, Gunther, and Wick. 3,296,445.
Aidlin, Samuel S. Hopper-type feeding and orienting device for bottles or the like. 3,295,659, 1–3–67, Cl. 198—33.
Air Products and Chemicals, Inc.: *See*—
Doelp, Louis C., Gussow, and Michael. 3,296,120.
Airoil Burner Co. (G.B.) Ltd.: *See*—
Proctor, Albert E. 3,295,584.
Air Reduction Co., Inc.: *See*—
Balch, James L. 3,295,521.
Ajinomoto Co., Inc.: *See*—
Mitsugi, Koji, Kamimura, Okumura, and Katsuya. 3,296,087.
Kato, Keizo, Ide, and Okada. 3,295,983.
Akobjanoff, Lev. Production of depolymerisates from polymers cross-linked by S (Se, Te) halides. 3,296,203, 1–3–67, Cl. 260—48.
Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje: *See*—
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Aktiebolaget Kanthal: *See*—
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Albert, Harry E.: *See*—
Raines, Paul G., Whiton, and Albert. 3,296,177.
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Allbright, Norman J., and A. C. Boldon; said Allbright assor. to said Boldon. Semi-continuous closed circuit apparatus for rendering animal matter. 3,295,929, 1–3–67, Cl. 23—280.
Allen, Clifford W., to Westinghouse Air Brake Co. Bolt joint with screw tethering means. 3,295,874, 1–3–67, Cl. 287—189.36.
Allen, James O. Ink roll cleaning attachment. 3,295,442, 1–3–67, Cl. 101—349.
Allen, Lawrence E., to Allis-Chalmers Mfg. Co. Drive belt tightening idler mounting. 3,295,383, 1–3–67, Cl. 74—227.
Allen, Richard A.: *See*—
Beatrice, Finton J., and Allen. 3,295,316.
Allen, Robert H.: *See*—
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Alley, Ralph D., and D. S Sheridan, to Sheridan Corp. Intercostal catheter. 3,295,527, 1–3–67, Cl. 128—348.
Allied Chemical Corp.: *See*—
Jacoby, Charles W., Tubbs, Wilson, and Storm. 3,296,219.
MacGregor, Rob R., and Moore. 3,296,307.
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Alpers, Frederick C., to United States of America, Navy. Simple form of probe antenna noise cancellation system. 3,296,619, 1–3–67, Cl. 343—120.
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Blayden, James H. 3,295,803.
Amato, Peter. Apparatus for tipping hair including a tube for receiving a tuft of hair and having an expansion chamber. 3,295,535, 1–3–67, Cl. 132—9.
Ambler, Arnold E., and R. W. Tomlinson, to Imperial Chemical Industries Ltd. Pigment composition, process for manufacture, and organic materials containing the same. 3,296,001, 1–3–67, Cl. 106—30.
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Gedde, Erik. 3 295,465.
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American Cyanamid Co.: *See*—
Addor, Roger W. 3,296,068.
Hulliger, Fritz. 3,295,931.
Janes, Raymond H., Novak, and Rawlings. 3,295,926.
Petropoulos, John C., and Coscia. 3,296,334.
Stafiej, Stanley F., and Carvalho. 3,296,274.
Walworth, Bryant L. 3,295,949.
American Foundry & Furnace Co.: *See*—
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American Gas Assn., Inc.: *See*—
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Bell, Stanley C. 3,296,249.
Bell, Stanley C., Wei, and Gochman. 3,296,251.
American Instrument Co., Inc.: *See*—
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American Library Assn.: *See*—
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American Machine & Foundry Co.: *See*—
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American Machine Products, Inc.: *See*—
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Andersen, Robert A., and R. E. Cooley, to Hewlett-Packard Co. Integrating converter. 3,296,613, 1-3-67, Cl. 340—347.
Anderson, Charles. Band saw for butchering meat. 3,295,400, 1-3-67, Cl. 83—661.
Anderson, Donald J., to Chevron Research Co. Monohydroxyhydrocarbyl ureas as lubricating oil detergents. 3,296,128, 1-3-67, Cl. 252—32.7.
Anderson, Floyd R., to Gardner-Denver Co. Composite drill rod and method for making the same. 3,295,613, 1-3-67, Cl. 173—131.
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Antes, Hans-Peter. Electronic stepping switch. 3,296,384, 1-3-67, Cl. 179—100.1.
Apthorp, Carl R., Jr., F. A. Foster, R. L. Nekola, and T. Samar, to The Cleveland Twist Drill Co. Machine tool control system. 3,295,416, 1-3-67, Cl. 90—11.42.
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Argyle, Sidney C., to Aerojet-General Corp. Compact optical tracking system. 3,296,443, 1-3-67, Cl. 250—203.
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Howell, David S. 3,295,815.
Armstrong, William H. Heat transfer apparatus. 3,295,595, 1-3-67, Cl. 165—56.
Arnoldy, Roman F., to R. I. Patents, Inc. Dual arc welding. 3,296,408, 1-3-67, Cl. 219—76.
Arrigo, Joseph T., to Universal Oil Products Co. Selective hydrogenation of trans, cis-1,5-cyclodecadiene to cis-cyclodecene. 3,296,320, 1-3-67, Cl. 260—666.
Arshal, George. Vortex generator. 3,295,608, 1-3-67, Cl. 170—135.
Arthur, Edwin P., to Beckman Instruments, Inc. Method and apparatus for gas analysis. 3,296,098, 1-3-67, Cl. 204—1.
Arvanitakis, Kostas S. Apparatus for purifying liquids. 3,295,689, 1-3-67, Cl. 210—259.
Asano, Hidejiro, and K. Segawa, to Yawata Iron & Steel Co., Ltd. Thinly nickel-plated steel plate. 3,295,936, 1-3-67, Cl. 29—183.5.
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Ascoli, Enzo, to Paillard S.A. Arrangement for feeding ink into the output nozzle of a writing instrument. 3,296,624, 1-3-67, Cl. 346—140.
Ashkin, Arthur, and M. Gershenzon, to Bell Telephone Laboratories, Inc. Semiconductor light modulators. 3,295,911, 1-3-67, Cl. 350—150.
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Ateliers de la Motobecnne: *See*—
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Atkins, Joseph J., and R. J. Geres, to United States of America, Navy. Hypergolic slug igniter. 3,295,322, 1-3-67, Cl. 60—251.
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Attwood, Warren R. Fastener elements. 3,295,873, 1-3-67, Cl. 287—189.36.
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Bahnbaumaschinen, Franz Plasser, Messrs.: *See*—
Bick, Joseph A. 3,295,461.
Baker, Buford M., to Texas Instruments Inc. Intrusion detector system. 3,296,587, 1-3-67, Cl. 340—15.5.
Baker, Bunyani. Machine for digging footing trenches. 3,295,233, 1-3-67, Cl. 37—90.
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Barbashev, Eduard V., L. A. Juditskaya, and V. F. Vorobjev, to Vsesouzny Nauchno-Issledoratelsky Institute Elektromekhaniki. Liquid cooling of generator rotor windings. 3,296,470, 1-3-67, Cl. 310—54.
Barber, Franklin D., to Standard Car Truck Co. Railroad car stabilizing limit and side bearing means. 3,295,463, 1-3-67, Cl. 105—199.
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Barr, Charles R., to Eastman Kodak Co. Light-sensitive photographic elements containing developing agent precursors. 3,295,978, 1-3-67, Cl. 96—76.
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Davy, John R., and Hope. 3,296,049.
Barry, James E., Sr. Gauging fixture for stepped mircometer gauge. 3,295,217, 1-3-67, Cl. 33—170.
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Bauernschub, John P., Jr., to United States of America, National Aeronautics and Space Administration. Folding boom assembly. 3,295,699, 1-3-67, Cl. 214—1.
Bauger, Louis J., B. P. E. Gambet, A. J. B. LaCroix, and P. J. V. Negre, to Societe Nationale d'Etude et de Construction de Menteurs D. Aviation. Burner devices and combustion chambers therefor. 3,295,318, 1-3-67, Cl. 60—39.72.
Bauman, Robert H., to General Motors Corp. Brake shoe centering mechanism. 3,295,638, 1-3-67, Cl. 188—79.5.
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Blackaby, Benjamin E., to Hawker Siddeley Dynamics Ltd. Fuel control system for gas turbine engines. 3,295,317, 1–3–67, Cl. 60—39.28.

Blasehke, Franz, to Chemische Werke Witten G.m.b.H. Process for providing electrically insulated conductors and coating composition for same. 3,296,335, 1–3–67, Cl. 260—860.

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Bleackley, William J., to Canadian Patents and Development Ltd. Polarization converter comprising metal rods mounted on a torsion wire that twists when rotated. 3,296,558, 1–3–67, Cl. 333—21.

Blough, Ronald S., to Fairfield Engineering and Mfg. Co. Automatic feed weighing and liquid distributing apparatus for livestock. 3,295,500, 1–3–67, Cl. 119—51.5.

Blouin, Glenn M., and D. W. Rindt, to Tennessee Valley Authority. Method of making sulfur-coated fertilizer pellet having a controlled dissolution rate. 3,295,950, 1–3–67, Cl. 71—64.

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Briggs, Warren S., W. A. Stover, and J. L. Warthen, to W. R. Grace & Co. Method of treating exhaust gases. 3,295,918, 1–3–67, Cl. 23—2.

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Brooks, Donald H., to International Protected Metals, Inc. Fluidized bed apparatus for coating the interior of hollow body. 3,295,494, 1–3–67, Cl. 118—408.

Brooks, William, to Lockheed Aircraft Corp. Voltage controlled electroluminescent meter display. 3,296,530, 1–3–67, Cl. 324—122.

Brooks, William R., and I. C. Heinzel. Portable, rechargeable dispensing unit for rectable resins. 3,295,724, 1–3–67, Cl. 222—80.

Brophy, Robert B. Cleaning appratus for electric shavers. 3,295,204, 1–3–67, Cl. 30—41.6.

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Buchmann, Louis J., to Aquionics Corp. Water softening apparatus. 3,295,549, 1–3–67, Cl. 137—391.

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Bumpers, George A. Combination squeeze and full bore production packer with connected upper downwardly, and lower upwardly, biting slip jaw segments. 3,295,606, 1–3–67, Cl. 166—131.

Bunn, Edward S., C. R. Mackey, and J. L. Giovannucci, to Revere Copper and Brass Inc. Stainless steel clad with aluminum. 3 295,197, 1–3–67, Cl. 29—497.5.

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Burch, William J., to United States of America, Navy. Method of forming a machinery support. 3,296,349, 1–3–67, Cl. 264—262.

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Burke, James S. Grip plate for wooden truss members. 3,295,405, 1–3–67, Cl. 85—13.

Burkhart, Richard D., and N. L. Zutty, to Union Carbide Corp. Emulsion polymerization of ethylene. 3,296,170, 1–3–67, Cl. 260—29.6.

Burleigh, John E., and S. R. Collins, to Phillips Petroleum Co. Production of diene polymers with a rhodium nitrate catalyst in a 2-ethylenic alcohol as diluent. 3,296,227, 1–3–67, Cl. 260—82.1.

Burns, Harold W., and F. J. Sebelist, to E. I. du Pont de Nemours and Co. Process for purifying methyl ether. 3,296,314, 1–3–67, Cl. 260—616.

Burns, Walter W., and J. L. Brause, to Steri-Therm, Inc. Package of outer unsterile and inner sterile covers for enclosing a substantial portion of an object having an unsterile surface. 3,295,675, 1–3–67, Cl. 206—63.2.

Burnup and Sims, Inc.: *See*—
Smith, Max L. 3,295,452.

Burroughs Corp.: *See*—
Fox, Frederick L. 3,296,371.

Burton, William A.: *See*—
Stark, Kenneth W., and Burton. 3,295,782.

Bus, Johann A., and H. Hirche, to Christian Holzapfel KG. Sealing element. 3,295,260, 1–3–67, Cl. 49—489.

Busch, Richard E., and J. G. Clary, to Addmaster Corp. Selection mechanism for calculating machine. 3,295,757, 1–3–67, Cl. 235—60.

Bush, Richard H., and H. C. Jones. Talking match book. 3,295,670, 1–3–67, Cl. 206—29.

Butcosk, Richard A., and H. Ralch, to Mobil Oil Corp. Corrosion inhibited lubricating compositions. 3,296,127, 1–3–67, Cl. 252—25.

Buttolph, Doyle D., and L. C. Bearer, to Phillips Petroleum Co. Method and apparatus for producing blown thermoplastic tubing. 3,296,343, 1–3–67, Cl. 264—95.

Butts, Mervin R., and M. K. Tucker, to General Motors Corp. Refrigerating apparatus. 3,295,753, 1–3–67, Cl. 230—139.

Butz, Tom E., and S. N. Schlein, to The Fanner Mfg. Co. Dead end and method of making the same. 3,295,311, 1–3–67, Cl. 57—145.

Cadiou, Jean G., to Andre Citroen, S.A. Wheel mounting. 3,295,626, 1–3–67, Cl. 180—48.

Cahn, Robert L. Air passenger meals conveyor. 3,295,635, 1–3–67, Cl. 186—1.

Calderhead, Henry J. (deceased, by C. E. Calderhead, administratrix), and P. F. Puljer, to Bird Electronic Corp. Coaxial line termination. 3,296,560, 1–3–67, Cl. 333—22.

Calderhead, Catharine E.: *See*—
Calderhead, Henry J., and Puljer. 3,296,560.

Caldwell, John R., to Eastman Kodak Co. Sulfonated polyamides. 3,296,204, 1–3–67, Cl. 260—49.

Callahan, Francis J., Jr.: *See*—
Gallagher, Bernard J., and Callahan. 3,295,191.

Callow, Alan E., and B. Harris, to British Titan Products Co. Ltd. Production of halides. 3,295,921, 1–3–67, Cl. 23—87.

Camp, Vernon D., and H. E. Payne, to The Seeburg Corp. Reversible motor driven regulator for dispensing mechanism for articles in staggered stacks. 3,295,716, 1–3–67, Cl. 221—9.

Campbell, George A.: *See*—
Cathey, Thaddeus F., Campbell, and Ryder. 3,296,185.

Canadian General Electric Co., Ltd.: *See*—
Wildberger, John. 3,296,521.

Canadian Patents and Development Ltd.: *See*—
Bleackley, William J. 3,296,558.
Wlaniowski, Henry U. 3,295,506.

Canevari, Gerard P.: *See*—
Ross, Sydney, Canevari, and Fiocco. 3,296,117.

Cann, Everett D.; 40% to W. T. Neiman. Method of treating cellulosic pulping waste liquors with magnesium oxide to form a complex prior to burning thereof. 3,296,064, 1–3–67, Cl. 162—36.

Cappel, Klaus L., to The Franklin Institute. Motion simulator. 3,295,224, 1–3–67, Cl. 35—12.

Caps Research Ltd.: *See*—
Jeffree, John H. 3,295,407.

Cardiosonics Medical Instruments Corp.: *See*—
Machlup, Gustav F. 3,295,631.

Carlisle Tire and Rubber, Division of Carlisle Corp.: *See*—
Parr, Russell D. 3,296,047.

Carlsen, Christian S. Utility pole and base construction. 3,295,275, 1–3–67, Cl. 52—168.

Carlsen, Christian S. Apparatus for forming a cementitious base for fence posts or utility poles. 3,295,817, 1–3–67, Cl. 249—83.

Carlton, Sydney E Gate valve for scale concentrated fluid. 3,295,546, 1–3–67, Cl. 137—242.

Carmstrom, Helge. Arrangement on shelves, preferably for book-cases. 3,295,695, 1–3–67, Cl. 211—148.

Carragan, John F.: *See*—
Yagusic, George J., and Carragan. 3,296,596.

Carrol, Clifford L. Holder and dispenser for toilet paper. 3,295,777, 1–3–67, Cl. 242—55.3.

Carter, Aaron D., and L. G. Johnston. Lubrication system for internal combustion engines. 3,295,507, 1–3–67, Cl. 123—196.

Carter, Russell P., Jr., to The Goodyear Tire & Rubber Co. 2-amino-2-methyl-propanol cross linking agent for polyurethane process and product. 3,296,156, 1–3–67, Cl. 260—9.

Carvalho, Dorothy A.: *See*—
Stafiej, Stanley F., and Carvalho. 3,296,274.

Case, J. I., Co.: *See*—
Yeske, Laurel R. 3,295,300.

Cassagne, Pierre, and G. Melchior, to Compagnie Francaise de Television. Systems for the generation of special effects in colour television. 3,296,367, 1–3–67, Cl. 178—5.4.

Cassarno, George J. Glue-applying apparatus. 3,295,491, 1–3–67, Cl. 118—2.

Cassey, Harold C., to De Walt, Inc. Uni-directional indexing means for power-operated machine. 3,295,568, 1–3–67, Cl. 143—6.

Castaneda, Fernando: *See*—
Jirik, Frank E., and Castaneda. 3,296,168.

Castle & Cooke, Inc.: *See*—
Healy, Robert F. 3,295,573.

Caterpillar Tractor Co.: *See*—
Mayo, Roy E., and Roberts. 3,295,612.

Cathcart, Earl: *See*—
Hibbard, Rowland G., and Cathcart. 3,295,721.

Cathey, Thaddeus F., G. A. Campbell, and L. C. Ryder, to Amerace Corp. High impact hard rubber compound and method of making same. 3,296,185, 1–3–67, Cl. 260—41.5.

Cavanagh, John C. Process for the production of substantially fat free and flavor free proteinaceous foodstuffs. 3,295,985, 1–3–67, Cl. 99—17.

Cayle, Theodore, to Baxter Laboratories, Inc. Stabilized aqueous enzyme solutions. 3,296,094, 1–3–67, Cl. 195—63.

Cellerini, Albert R., to Westinghouse Electric Corp. Circuit breaker with thermal and magnetic trip means. 3,296,564, 1–3–67, Cl. 335—35.

Central Research Laboratories, Inc.: *See*—
Haaker, Lester W. 3,295,702.

Ceraldi, Bernard A., to Westshore Products, Inc. Conductive surgical shoe cover. 3,296,489, 1–3–67, Cl. 317—2.

Cerebos Foods Ltd.: *See*—
Bendle, John H. 3,295,834.

Ceskoslovenska Akademie ved: *See*—
Karpinsky, Jurij. 3,296,533.

Chaffee, Robert H.: *See*—
Manuatty, George S., and Chaffee. 3,295,566.

Chalk, Alan J., and J. F. Harrod, to General Electric Co. Reaction of silanes with unsaturated olefinic compounds. 3,296,291, 1–3–67, Cl. 260—448.2.

Chambers, Worthy L., and G. R. Wolter, to Sunbeam Corp. Hair drier. 3,295,869, 1–3–67, Cl. 285—200.

Chan, William: *See*—
Gillick, Laurance H., Menindez, Daugirdas, and Chan. 3,295,704.

Chandler, Carroll F., to E. I. du Pont de Nemours and Co. Synthetic elastomeric lubricated filament. 3,296,063, 1–3–67, Cl. 161—175.

Chao, Tai S.: *See*—
Eickemeyer, Daniel B., and Chao. 3,296,136.

Chapman, Dennis C., K. O. Johnson, and S. A. Sgrol, to General Motors Corp. Variable configuration blade. 3,295,827, 1–3–67, Cl. 253—78.

Charlton, John D., and E. A. Abbott. Free coring device. 3,295,616, 1–3–67, Cl. 175—5.

Chase-Shawmut Co., The: *See*—
Kozacka, Frederick J. 3,296,399.

Chase, Vance A., and S. A. Miller, to Brunswick Corp. Composition comprising the reaction product of dicyclopentadiene with another epoxy compound, a polycarboxylic acid anhydride, and a polyol. 3,296,332, 1–3–67, Cl. 260—835.

Chassanoff, Arnold L., and B. B. Dalen, to Automatic Switch Co. Voltage sensing relay system. 3,296,498, 1–3–67, Cl. 317—148.5.

Chatten, Clarence K., and M. Hanok, to United States of America, Navy. Hydrostatic pressure responsive apparatus. 3,296,583, 1–3–67, Cl. 340—8.

Chemetron Corp.: *See*—
Gross, Orville, and Alexander. 3,296,825.

Chemirad Corp.: *See*—
Mark, Herman F. 3,296,209.

Chemische Werke Albert: *See*—
Zimmermann, Rolf. 3,296,337.

Chemische Werke Witten G.m.b.H.: *See*—
Blaschke, Franz. 3,296,335.

Chen, Richard J.: *See*—
Land, Edwin H., Chen, Lothrop, and Wareham. 3,295,426.

Cheng, Ten Y. Multipurpose tape recorder and playback system. 3,295,853, 1–3–67, Cl. 274—11.

Chenowith, Edward L., to Machine Products Corp. Checking fixture. 3,295,218, 1–3–67, Cl. 33—174.

Cherdron, Egon: *See*—
Ruter, Hermann, Cherdron, and Bayer. 3,295,958.

Chevron Research Co.: *See*—
Anderson, Donald J. 3,296,128.
Csicsery, Sigmund M. 3,296,324.
Hughes, Mack F. 3,296,281.

Cheyne, Robert H. Water conservation system for commercial laundries. 3,295,339, 1–3–67, Cl. 68—18.

Chiaia, Paolo. Balanced support for overhung table of machine tools particularly for milling machines. 3,295,418, 1–3–67, Cl. 90—58.

Childers, Ross E., to FMC Corp. Produce cutting machine. 3,295,532, 1–3–67, Cl. 130—9.

Chiuminatto, Joseph J. Changeable copy information display panel means. 3,295,241, 1–3–67, Cl. 40—64.

Christian Holzapfel KG.: *See*—
Bus, Johann A., and Hirche. 3,295,260.

Christiansen, Robert L., to H. Robins. Hose. 3,295,557, 1–3–67, Cl. 138—125.

Christie, Howard W.: *See*—
Herrick, Wallace D., and Christie. 3,295,709.

Ciba Corp.: *See*—
Vischer, Ernst, Fechtig, Bickel, Bosshardt, and Urech. 3,296,258.

Cimbali, Vittorio, to Officine Cimbali Giuseppe S.p.a. Discharge spout for coffee making machines. 3,295,765, 1–3–67, Cl. 239—565.

Citroen, Andre, S.A.: *See*—
Cadiou, Jean G. 3,295,626.

Clapper, Genung L., to International Business Machines Corp. Speech analysing system. 3,296,374, 1–3–67, Cl. 179—1.

Clark, Clayton H., and D. J. Stefanik, to SCM Corp. Communications equipment keyboard. 3,296,969, 1–3–67, Cl. 178—17.

Clark, Clayton H., and D. J. Stefanik, to SCM Corp. Communications equipment transmitter and tape recorder. 3,296,370, 1–3–67, Cl. 178—17.

Clark, Compton H.: *See*—
Padgett, Raymond, and Clark. 3,295,200.

Clary, John G.: *See*—
Busch, Richard E., and Clary. 3,295,757.

Claviol Inc.: *See*—
Ottman, John B. 3,295,690.

Clay, Wilburn S.: *See*—
Langner, Eugene E., Jr., and Clay. 3,295,959.

Clayborne, Norman F., M. E. Kerns, and W. E. Hamlin, to Railway Automation Maintenance Specialties Co. Continuous rail straightening press. 3,295,350, 1–3–67, Cl. 72—309.

Cleay, James W., to Phillips Petroleum Co. Copolymers of 1-butene and 1-hexene. 3,296,232, 1–3–67, Cl. 260—88.2.

Clemence, Charles B., and J. Humphries, to National Research Council. Resolver for trignometric functions. 3,296,427, 1–3–67, Cl. 235—186.

Cleveland Trust Co.: *See*—
Miller, Robert L., Webb, Peplin, and Becks. 3,295,439.
Webb, Ernest C., and Mentzer. 3,295,438.

Cleveland Twist Drill Co., The: *See*—
Apthorp, Carl R., Jr., Foster, Nekola, and Samar. 3,295,416.

Clinton, Raymond O., and A. J. Manson, to Sterling Drug Inc. 2-cyano steroids. 3,296,255, 1–3–67, Cl. 260—239.55.

Clinton, William D., D. R. Forry, J. J. Grimm, and R. W. Jones, to American Library Association. Apparatus for producing labels. 3,295,654, 1–3–67, Cl. 197—133.

Coad, Brian C.: *See*—
Pfumm, Heinz R., Durat, and Coad. 3,295,936.

Coal Industry (Patents) Ltd.: *See*—
Hillyar-Russ, Geoffrey, and Newman. 3,295,213.

Coan, Robert L. Process of adhering stainless steel to aluminum and products produced thereby. 3,295,198, 1–3–67, Cl. 29—527.

Cobb, William R., to Westinghouse Electric Corp. Container assembly. 3,295,904, 1–3–67, Cl. 312—270.

Cobe Laboratories Inc.: *See*—
Collins, Robert M. 3,295,297.

Cochardt, Alexander. Dynamoelectric machine. 3,296,471, 1–3–67, Cl. 310—154.

Coe, Merrill J., to Brown Co. Snap recloseable hooded carton with lock. 3,295,742, 1–3–67, Cl. 229—45.

Coen, Alberto, and P. Parrini, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Stereospecific polymerization of olefins. 3,296,237, 1–3–67, Cl. 260—93.5.

Cohen, Hyman L.: *See*—
Minsk, Louis M., and Cohen. 3,296,155.

Cohen, Maurice. Garment display rack having hangers pivotally mounted on horizontal axes. 3,295,696, 1–3–67, Cl. 211—171.

Cohen, Saul G.: *See*—
Blout, Elkan R., Cohen, and Green. 3,295,973.

Cohn, Marius, to United States of America, Navy. General purpose majority-decision logic arrays. 3,296,424, 1–3–67, Cl. 235—152.

Coleman Co., Inc., The: *See*—
Herrick, Wallace D., and Christie. 3,295,709.

Coleman, Vernon E.: *See*—
Craig, George H., Racz, and Coleman. 3,296,010.

Colgate-Palmolive Co.: *See*—
Brant, Joseph H. 3,295,156.
Gagliardi, Domenick D. 3,296,264.

Collins Radio Co.: *See*—
Nissen, Niels A. 3,295,592.
Tuthill, Edward G. 3,296,618.

Collins, Robert M., to Cobe Laboratories Inc. Filter and bubble trap. 3,295,297, 1–3–67, Cl. 55—178.

Collins, Samuel R.: *See*—
Burleigh, John E., and Collins. 3,296,227.

Collins, William O. Ash tray assembly. 3,295,533, 1–3–67, Cl. 131—241.

Colombo, Umberto, and G. Sironi, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Process for the production of iron sponge and the recovery of titanium and aluminum from red slurries of bauxite. 3,295,961, 1–3–67, Cl. 75—101.

Colombo, Umberto P., to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Process for recovering iron, titanium and aluminum from the red slurries obtained in processing bauxite by the Bayer process. 3,295,924, 1–3–67, Cl. 23—143.

Combuchen, Peter: *See*—
Abermeth, Hubert, and Combuchen. 3,295,754.

Commercial Solvents Corp.: *See*—
Frump, John A. 3,296,313.

Commissariat a l'Energie Atomique: *See*—
Boutin, Claude, Foglia, Lemesle, Martin, and Rouge. 3,296,086.
Dupuy, Gerard, and Tarabella. 3,295,883.
Lemesle, Georges, Patarin, and Rouge. 3,296,082.

Compagnie de Saint-Gobain: *See*—
Bre, Michel. 3,295,934.

Compagnie des Ateliers et Forges de la Loire: *See*—
Delporte, Claude. 3,295,863.
Mabru, Marcel. 3,295,943.

Compagnie Francaise de Television: *See*—
Cassagne, Pierre, and Melchior. 3,296,367.

Conard, Robert G., E. A. Deep, T. N. L. Pughe, H. H. Henriksen, and W. E. Thomas, to United States of America, Army. Rocket motor case vent system. 3,295,324, 1–3–67, Cl. 60—254.

Concannon, William F. Method and apparatus for routing and laying wires. 3,295,562, 1–3–67, Cl. 140—93.

Condolios, Ede, to Societe Grenobloise d'Etudes et d'Applications Hydrauliques. Process and apparatus for the sorting of two or more materials. 3,295,677, 1–3–67, Cl. 209—136.

Cones, Van B., to United States of America, Navy. Direct measurement probe for radio frequency energy. 3,296,527, 1–3–67, Cl. 324—72.5.

Conner, John P., and K. A. Grunert, to Westinghouse Electric Corp. Electric control device. 3,296,567, 1–3–67, Cl. 335—126.

Conradt, Rudi: *See*—
Ernst, Wolfgang, Bachmann, and Conradt. 3,295,391.

Consolidation Coal Co.: *See*—
Laufer, Robert J. 3,296,311.
Lee, Arthur L., and Coval. 3,295,624.
Neuworth, Martin B. 3,296,316.

Continental Can Co., Inc.: *See*—
Lodding, William F. 3,295,293.
Barey, Kenneth W., and Kennedy. 3,295,440.

Continental Carbon Co.: *See*—
Latham, Burton F., Jr. 3,295,895.

Continental Oil Co.: *See*—
Bagwell, Calvin C. 3,295,603.
Hagen, Donald F. 3,295,353.
Starks, Charles M. 3,296,818.

Contour Saws, Inc.: *See*—
Kolb, Gerhard G. 3,295,396.

Control Data Corp.: *See*—
Yagusic, George J., and Carragan. 3,296,596.

Controlled Evironment Equipment Corp.: *See*—
Peck, Robert D. 3,295,359.

Controls Co. of America: *See*—
McCarty, Lourdes V., and Duncan. 3,295,586.

Cook, Errol F., and W. A. Szymanski, to Hooker Chemical Corp. Corrosion-inhibiting composition of mixture of molasses, potassium iodide and metal salt of a fatty acid. 3,296,149, 1–3–67, Cl. 252—389.

Cook, Peter C.: *See*—
Potter, William W., and Cook. 3,295,277.

Cook, Robert W. Folding-shelf. 3,295,471, 1–3–67, Cl. 108—111.

Cook, William M.: *See*—
Levy, Leon S., Wennstrom, and Cook. 3,296,603.

Cooley, Gordon A., and P. Kaye, to The Denison Co. Nail-feeding mechanism. 3,295,719, 1–3–67, Cl. 221—277.

Cooley, Rodney E.: *See*—
Andersen, Robert A., and Cooley. 3,296,613.

Cooper, Frederick J., to The National Cash Register Co. Record media handling device. 3,295,779, 1–3–67, Cl. 242—55.12.

Cooper, Joseph E.: *See*—
Duncan, James E., and Cooper. 3,296,005.

Copeland, Herbert R.: *See*—
Kyame, George J., and Copeland. 3,295,307.

Copeland, John R., W. J. Robertson, and J. C. Gilfert, to Ohio State University Research Foundation. Combined antenna and tunnel diode converter circuit. 3,296,536, 1–3–67, Cl. 325—449.

Copolymer Rubber & Chemical Corp.: *See*—
Sutherland, John D., Jr. 3,296,178.

Corbin, Robert L., to Weyerhaeuser Co. Apparatus for pressing composite consolidated articles. 3,295,167, 1–3–67, Cl. 18—17.

Corcoran, Desmond P. Electronic training aids. 3,295,226, 1–3–67, Cl. 35—19.

Cordary, Bruce J., and R. W. Weber, to The Servco Co. Apparatus for cutting multiple tubular conduits. 3,295,604, 1–3–67, Cl. 166—55.8.

Cordier, Jean, to Institute de Recherches de la Siderurgie Francaise. Smelting method and device. 3,295,955, 1–3–67, Cl. 75—11.

Corey, Albert E., to Monsanto Co. Vinyl acetate-methyl methacrylate-acrylic acid copolymer latices. 3,296,169, 1–3–67, Cl. 260—29.6.

Corman, Julian, to Grain Processing Corp. Fermentation process for producing dextrose. 3,296,092, 1–3–67, Cl. 195—31.

Cornell Mfg. Co.: *See*—
Warren, Clinton C. 3,295,456.

Corniello, John P., ½ to R. Iezzi. Air powered current reversing contactor. 3,296,394, 1–3–67, Cl. 200—82.

Corning Glass Works: *See*—
Hall, Harrison R. 3,295,740.
Polucci, Anthony J. 3,296,561.
Stalnecker, Stewart G., Jr. 3,296,012.

Corrigall, James S., R. R. Waterman, and K. M. Deal, to R. T. Vanderbilt Co., Inc. Strap material for garments. 3,295,529, 1–3–67, Cl. 128—510.

Cort, Winifred M., and L. K. Riggs. Ensymatic process of making cheese and cheese product. 3,295,991, 1–3–67, Cl. 99—116.

Corte, Herbert, and O. Nets, to Farbenfabriken Bayer Aktiengesellschaft. Process for introducing secondary aminoalkyl groups into cross-linked aromatic vinyl polymers. 3,296,233, 1–3–67, Cl. 260—88.2.

Coscia, Anthony T.: *See*—
Petropoulos, John C., and Coscia. 3,296,334.

Cotton, Joseph B., to Imperial Chemical Industries Ltd. Inhibiting corrosion of copper and copper-base alloys. 3,295,917, 1–3–67, Cl. 21—2.5.

Coval, Arthur B.: *See*—
Lee, Arthur L., and Coval. 3,295,624.

Cowles Chemical Co.: *See*—
Crain, James R. 3,296,101.

Cox, David B.: *See*—
Savins, Joseph G., and Cox. 3,295,542.

Cox, Frank T., Jr., H. A. Sherretts, and G. P. Mathews, to Rockwell-Standard Corp. Emergency brake actuator. 3,295,423, 1–3–67, Cl. 92—63.

Cox, John E., and G. J. Boehm, to International Telephone and Telegraph Corp. Multifunction automatic switches. 3,296,381, 1–3–67, Cl. 179—16.

Craig, George H., C. A. Racz, and V. E. Coleman, to Inland Steel Co. Method of applying reflectorizing coatings. 3,296,010, 1–3–67, Cl. 117—83.

Craigo, Cecil E.: *See*—
Rollins, Harry E., and Craigo. 3,295,792.

Crain, James R., to Cowles Chemical Co. Cyanide electroplating baths and processes. 3,296,101, 1–3–67, Cl. 204—44.

Crane Co.: *See*—
Bredtschneider, Kurt B., and Magos. 3,295,856.

Critchell, Dean J., to Eastman Kodak Co. Pouch forming and filling method and apparatus. 3,295,289, 1–3–67, Cl. 53—28.

Crosby, Peter F., C. W. Wallis, and W. D. Budynas, to Lamson Corp. Central exchange dispatcher for pneumatic tube systems. 3,295,662, 1–3–67, Cl. 198—38.

Cross, Alexander D., to Syntex Corp. Cyclopentanophenanthrene derivatives and process. 3,296,278, 1–3–67, Cl. 260—343.2.

Cross, Alexander D., to Syntex Corp. Steroid intermediates and process for preparing. 3,296,283, 1–3–67, Cl. 260—347.3.

Crouset, Jean P. Headgears for protection against cold and unclement weather. 3,295,511, 1–3–67, Cl. 126—208.

Crovatt, Lawrence W., Jr., to Monsanto Co. Synthetic linear polycarbonamides having an improved receptivity for acid dyes. 3,296,215, 1–3–67, Cl. 260—78.

Crucible Steel Co. of America: *See*—
Bomberger, Howard B., Jr. 3,295,346.
Steven, Gary. 3,295,966.

Cruickshank, David G., R. E. Males, and J. Nelson, to Leesona Corp. Method and means for readying supply bobbins. 3,295,776, 1–3–67, Cl. 242—35.6.

Csicsery, Sigmund M., to Chevron Research Co. Dehydrocyclodimerization of low molecular weight paraffins. 3,296,324, 1–3–67, Cl. 260—673.

Cullen, Charles G.: *See*—
Lister, Fred, Cullen, and Hopper. 3,296,179.

Cummins, Richard W., to FMC Corp. Process for the production of polyformals of hydroxyalkyl-isocyanurates. 3,296,207, 1–3–67, Cl. 260—67.5.

Cunningham, Thomas W., to U.S. Stoneware, Inc. Ball mill or the like. 3,295,772, 1–3–67, Cl. 241—182.

Cupp, John: *See*—
Laya, Lawrence, and Cupp. 3,295,563.

Cupper, Robert A., and C. A. Wolf, Jr., to Union Carbide Corp. Extreme pressure lubricant additives. 3,296,138, 1–3–67, Cl. 252—49.9.

Cupper, Robert A., and C. A. Wolf, Jr., to Union Carbide Corp. Extreme pressure lubricant additives. 3,296,138, 1–3–67, Cl. 252—499.

Curry, Nolan A.: *See*—
Timmer, William F., and Curry. 3,296,022.

Curtis, Richard P.: *See*—
Farr, Harold K., Frelich, and Curtis. 3,296,579.

Cushing, Vincent J., and W. A. Beaudry, to United States of America, Navy. Dispersal type cluster warhead. 3,295,444, 1–3–67, Cl. 102—7.2.

Cuthbert, Victor W., and R. A. Brenner, to Whirlpool Corp. Instinctive wringer release. 3,295,341, 1–3–67, Cl. 68—256.

Cutler Hammer, Inc.: *See*—
Garnier, John J. 3,295,441.
Hults, Harold W. 3,296,389.

Cutts, Burton: *See*—
Fawcett, Sydney, Moore, and Cutts. 3,296,084.

Czajkowski, George J., and P. E. Liakakos, to Universal Oil Products Co. Hydroforming with a platinum catalyst. 3,296,118, 1–3–67, Cl. 208—100.

Czarnecki, Adolph, to Anchor Steel and Conveyor Co. Mechanical index drive. 3,295,381, 1–3–67, Cl. 74—84.

Dacons, Joseph C.: *See*—
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De Neergaard, Leif E., deceased, by The Northern Trust Co., to F. W. Olmstead, H. W. Trechsel, % The Gisholt Machine Co., and D. A. Gerard, trustees. Control system for machine tools utilizing magnetic recording. 3,296,606, 1–3–67, Cl. 340—174.1.

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Gaylor, Randall, to Sperry Rand Corp. Flight control system. 3,295,796, 1–3–67, Cl. 244—77.

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Gloskey, Carl R., to M & T Chemicals Inc. Dialkyl tin bis (cyclohexyl maleate) compounds. 3,296,289, 1–3–67, Cl. 260—429.7.

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Keuchenius, Thedoor P. E., and J. C. Floyd, to West Virginia Pulp and Paper Co. Semi-bulk shipping bag. 3,295,738, 1–3–67, Cl. 229—6.

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Killoren, Donald J., to Killoren Co. Cable-laying plow. 3,295,333, 1–3–67, Cl. 61—72.6.

Kilmer, Lauren G., to Sinclair Research, Inc. Carrier vehicle for seismic wave generator. 3,295,630, 1–3–67, Cl. 181—.5.

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Kinbara, Seturo, to Nihon Genshiryoku Kenkyu. System for converting binary numbers into decimal numbers. 3,296,610, 1–3–67, Cl. 340—347.

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Kinoshita, Shukuo, K. Nakayama, Z. Sato, and H. Tanaka, to Kyowa Hakko Kogyo Co., Ltd. Process for the production of uridylic acid by fermentation. 3,296,088, 1–3–67, Cl. 195—28.

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Kirk, David N., V. Petrow, M. Stansfield, and D. M. Williamson, to The British Drug Houses Ltd. Progestational compositions which contain 17acyloxy-16-methylene-4-pregnene-3,20-dione. 3,296,075, 1–3–67, Cl. 167—74.

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Kishikawa, Jitsuichi, and S. Yokoyama, to Stauffer Chemical Co. Herbicidal mixture comprising an S-triazine derivative and N-(B-O,O-Di-isopropylidithiophosphorylethyl) benzenesulfonamide. 3,295,947, 1–3–67, Cl. 71—2.5.

Kittle, Walter R., to Simplicity Engineering Co. Antiblinding mechanism for screen panels. 3,295,667, 1–3–67, Cl. 198—220.

Kitz, Norbert, J. G. Lloyd, and J. J. Drage, to Bell Punch Co. Ltd. Portable decimal calculating machine including pulse operated counting devices. 3,296,425, 1–3–67, Cl. 235—160.

Klackowski, Stefan, B. B. Goalby, D. C. Lowe, and R. Salter, to Thomas de la Rue and Co. Ltd. Monetary tokens. 3,295,651, 1–3–67, Cl. 194—4.

Klann, Paul A. Pedal board for organs. 3,295,402, 1–3–67, Cl. 84—366.

Klarfeld, Gloria B.: *See*—
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Klein, Heinz G., and E. Zirngiebl, to Farbenfabriken Bayer Aktiengesellschaft. Process of chemical metal plating and baths therefor. 3,295,999, 1–3–67, Cl. 106—1.

Kleven, Lowell A., to Rosemount Engineering Co. Standard thermometer. 3,296,572, 1–3–67, Cl. 338—28.

Kling, Eugene M., to E. I. du Pont de Nemours and Co. Process for recovery of diethylene glycol monoalkyl ether in an acetylin recovery process. 3,296,826, 1–3–67, Cl. 260—678.

Klint, Joseph E., Jr., ½ to A. Dreier. Pulling head for drapery pressing machine. 3,295,781, 1–3–67, Cl. 223—32.

Klitzke, Loren J.: *See*—
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Klockner-Humboldt-Deutz Aktiengesellschaft: *See*—
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Maeder, Heinz J. 3,295,771.

Klopper, Daniel R., to Union Corp. Ltd. Settling apparatus. 3,295,835, 1–3–67, Cl. 259—108.

Klossika, Walter, to Telefunken Patentverwertungs-G.m.b.H. Semiconductor stabilised mechanically and electrically by a first layer of lacquer and a second layer of boric oxide. 3,296,503, 1–3–67, Cl. 317—234.

Klosterman, Myles F. Spring biased bumper. 3,295,880. 1–3–67, Cl. 293—85.

King, Eugene D., to Hercules Inc. Mixed cellulose ethers. 3,296,247, 1–3–67, Cl. 260—231.

Klumb, Hank, and H. E. Rogers; said Rogers assor. to said Klumb. Telephone operating attachment. 3,296,382, 1–3–67, Cl. 179—99.

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Knauth, Walter T. Diminishing rate battery charger. 3,296,515, 1–3–67, Cl. 320—24.

Knecht, Albert T., Jr., to Sinclair Research, Inc. Antifoamer by hydrocarbon oils. 3,296,131, 1–3–67, Cl. 252—35.

Knerr, Carl J., to Borg-Warner Corp. Control arrangement for a household appliance. 3,296,465, 1–3–67, Cl. 307—141.

Knerr, Richard P., and R. L. Gillespie, to Wham-O Mfg. Co. Bubble maker. 3,295,248, 1–3–66, Cl. 46—6.

Knief, Enno A.: *See*—
Einem, Robert E., and Knief. 3,295,382.

Knies, Robert H., to Richardson Merrell Inc. Container closure. 3,295,707, 1–3–67, Cl. 215—41.

Knoth, Walter H., Jr., to E. I. du Pont de Nemours and Co. Neutral and singly charged derivatives of decarboranes and decaboranes. 3,296,260, 1–3–67, Cl. 260—247.

Knowles, Elmer E., and E. L. Garvin, to SKF Industries, Inc. Cage for rolling bearings. 3,295,899, 1–3–67, Cl. 308—217.

Knox, Lawrence H., to Syntex Corp. 5,10-methylene-19-norpregnanes and their preparation. 3,296,270, 1–3–67, Cl. 260—397.3.

Koch, Ernst, W. Rosskopp, and H. Jost, to Rohm & Haas G.m.b.H. Lubricant additive comprising a bitumen-acrylate polymerization product. 3,296,164, 1–3–67, Cl. 260—28.

Kocher, Ernest-Ulrich, and F. Kolb, to Farbenfabriken Bayer Aktiengesellschaft. Polymerization of gaseous formaldehyde. 3,296,205, 1–3–67, Cl. 260—67.

Kock, Erhard: *See*—
Juvinall, James W., Kock, and McCaslin. 3,296,015.

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Kolb, Otmar, to International Standard Electric Corp. Control circuit for setting the flux of a magnetizable element. 3,296,454, 1–3–67, Cl. 307—88.

Kollsman, Paul. Method of modifying the chemical composition of substances by ion transfer. 3,296,112, 1–3–67, Cl. 204—180.

Kondo, Masao, M. Ohsawa, and T. Arai, to Kabushiki Kaisha Tujikoshi. Titanium-tantalum high-speed steel. 3,295,964, 1–3–67, Cl. 75—128.

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Kovach, John T., Jr., and C. W. Thompson, to American Gas Association, Inc. Apparatus for sensing the composition of gases, and gas burner system employing same. 3,295,585, 1–3–67, Cl. 158—180.

Kovach, Stephen M., to Sinclair Research, Inc. Liquid phase polymerization of olefins using a zinc fluoride-alumina catalyst. 3,296,331, 1–3–67, Cl. 260—683.15.

Kozacka, Frederick J., to The Chase-Shawmut Co. Electric high-voltage fuse having means for effecting sequential vaporization of portions of fusible element. 3,296,399, 1–3–67, Cl. 200—120.

Kragle, Ralph J., to The International Silver Co. Clamp for rod like elements such as a cable. 3,295,872, 1–3–67, Cl. 287—115.

Krants, Karl G. E.: *See*—
Hurtig, Knut I., and Krants. 3,295,896.

Krase, John M.: *See*—
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Kreier, George J., Jr. Lining for lightweight fiberglas reinforced polyesters resin mold. 3,295,818, 1–3–67, Cl. 249—134.

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Krueger, Albert P., to Rockridge Laboratories. Filter unit. 3,295,686, 1–3–67, Cl. 210—455.

Krsycki, Leroy J., to United States of America, Navy. Method and apparatus for injecting a secondary propellant in multi-heat release combustors. 3,295,321, 1–3–67, Cl. 60—207.

Krsyzanowski, Erich M., to Full Mold Process, Inc. Gasifiable feeder pattern with recess to compensate for compressive force of form material. 3,295,175, 1–3–67, Cl. 22—158.

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Kuntze, Hellmuth, to Deutsche Angelgerate Manufaktur (DAM) Hellmuth Kuntze. Fishing rod. 3,295,244, 1–3–67, Cl. 43—22.

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Kuppersbusch, Firma F. & Sohne Aktiengesellschaft: *See*—
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Kyame, George J., and H. R. Copeland, to United States of America, Agriculture. Method and machine for making yarn from staple fiber. 3,295,307, 1–3–67, Cl. 57—58.89.

Kyowa Hakko Kogyo Co., Ltd.: *See*—
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Kinoshita, Shukuo, Nakayama, Sato, and Tanaka. 3,296,088.
Nakayama, Kiyoshi, Sato, and Tanaka. 3,296,089.

Kyser, David D. Suspension for driven multiple axle overland transport vehicle. 3,295,623, 1-3-67, Cl. 180—23.

Laboratory For Electronics, Inc.: *See*—
Main, Robert M. 3,296,438.
Midlock, Bernard J., and Piatt. 3,296,586.

LaCroix, Armand J. B.: *See*—
Banger, Louis J., Gambet, LaCroix, and Negre. 3,295,318.

LaEata, Peter A. Speedometer correction apparatus. 3,295,356, 1-3-67, Cl. 73—2.

Laegreid, Nils, and R. M. Moseson, to G. T. Schjeldahl Co. Sputtering of metals wherein gas flow is confined to increase the purity of deposition. 3,296,115, 1-3-67, Cl. 204—298.

La Fontaine, Edward G. Protection device for protecting vehicles against theft. 3,296,591, 1-3-67, Cl. 340—64.

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Laing, Ingeborg and N. 3,295,597.

Laing, Nikolaus, to Laing Vortex, Inc. Cross flow machine. 3,295,750, 1-3-67, Cl. 230—125.

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L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude: *See*—
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Crosby, Peter F., Wallis, and Budynas. 3,295,662.

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Land, Edwin H., R. J. Chen, J. W. Lothrop, and R. R. Wareham, to Polaroid Corp. Radio transmitter-camera combination. 3,295,426, 1-3-67. Cl. 95—11.5.

Land, Edwin H., to Polaroid Corp. Vapor deposited silver precipitating agent in polymeric receiving layer and photographic use thereof. 3,295,972, 1-3-67, Cl. 96—29.

Landgraf, Walter D. Double utility typewriter spool. 3,295,655, 1-3-67, Cl. 197—175.

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Landsman, Irving and E. 3,295,246.

Landsman, Irving and E. Insect repellent tapes. 3,295,246, 1-3-67, Cl. 43—131.

Laney, Charles C., Jr.: *See*—
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Langella, Frank A. Portable agitator. 3,295,836, 1-3-67, Cl. 259—122.

Langner, Eugene E., Jr., and W. S. Clay, to Union Carbide Corp. Method of producing cast iron in a cupola furnace utilizing an oxygen enriched air blast. 3,295,959, 1-3-67, Cl. 75—43.

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Lapp Insulator Co., Inc.: *See*—
Fiero, Carl D., and Killian. 3,296,358.

Lapp, Roger H., to United States of America, Navy. Torsionally decoupled antenna support. 3,296,621, 1-3-67, Cl. 343—765.

Larrigan, Harry J., M. J. Browne, and C. H. Adams, to Monsanto Co. Extensometer. 3,295,365, 1-3-67, Cl. 73—95.

Larson, Charles O., to Chas. O. Larson Co. Table leg assembly. 3,295,472, 1-3-67, Cl. 108—144.

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Latham, Burton F., Jr., to Continental Carbon Co. Method and apparatus for pneumatically conveying finely divided solids. 3,295,895, 1-3-67, Cl. 302—17.

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Lavallee, Joseph A., to Lavallee & Ide, Inc. Cutting tools. 3,295,186, 1-3-67, Cl. 29—95.

Lava, Lawrence, and J. Cupp, to General Dynamics Corp. Method and apparatus for handling cryogenic liquids. 3,295,563, 1-3-67, Cl. 141—1.

Leaderman, Alexander J., and G. Loeb, to Rockland Bleach and Dye Works, Inc. Fabric coated with light reflecting filler and acrylic polymer. 3,296,023, 1-3-67, Cl. 117—161.

Learn, Arthur J., and R. S. Spriggs, to TRW Inc. High gain cryotron. 3,296,456, 1-3-67, Cl. 307—88.5.

Leatherman, Francis R. Christmas tree stand. 3,295,802, 1-3-67, Cl. 248—44.

Leavell, Charles. Vibrationless percussive tools. 3,295,614, 1-3-67, Cl. 173—139.

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Le Baigne, Jacques L., to Electrolux Corp. Shock absorbing electrical connector. 3,296,387, 1-3-67, Cl. 191—12.4.

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Lee, Duk H., to Shell Oil Co. Mineral lubricating oil containing bisphenol, detergent and phosphite additive. 3,296,134, 1-3-67, Cl. 252—46.7.

Lee, Joseph K. Kim chee pickle canning. 3,295,994, 1-3-67, Cl. 99—154.

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Lee, Robert E. Grain pickup with rubber teeth. 3,295,302, 1-3-67, Cl. 56—364.

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Lehmann, Guenther W., to United States of America, Navy. Deep submergence missile launching vehicle with hovering and missile ejecting systems. 3,295,411, 1-3-67, Cl. 89—1.810.

Leib, Joseph: *See*—
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Leibowitz, Donald, and A. Sommer, to United States of America, Navy. Segmented ferrite sonar transducer with permanent magnet bias. 3,296,584, 1-3-67, Cl. 340—10.

Leimer, Albert, and S. Brunner. Apparatus for the guiding and/or lateral displacement of moving webs of materials for example webs of textiles. 3,295,736, 1-3-67, Cl. 226—190.

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Lemelson, Jerome H. Packaging assemblies. 3,295,672, 1-3-67, Cl. 206—47.

Lemesle, Georges, L. Patarin, and P. Rouge, to Commissariat al'Energie Atomique. Gas cooled nuclear reactor power plant. 3,296,082, 1-3-67, Cl. 176—30.

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Leonard, Henri, to Societe Anonyme Micro-Mega. Dental head assembly. 3,295,207, 1-3-67, Cl. 32—26.

Leonard, Richard L., and R. P. Zundel, to Ford Motor Co. Multiple speed transmission. 3,295,387, 1-3-67, Cl. 74—472.

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Lerner, Nathan B. Toy bank. 3,295,247, 1-3-67, Cl. 46—4.

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Lister, Fred, C. G. Cullen, and T. R. Hopper, to FMC Corp. Epoxidized polymer of butadiene cured with oxalic or malonic acid at room temperature. 3,296,179, 1-3-67, Cl. 260—31.2.

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Lohmann, Adolf W., to International Business Machines Corp. Non-linear optical system. 3,296,368, 1-3-67, Cl. 178—6.8.

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Lorenz, Rudolf A. Motor vehicle seat. 3,295,889, 1-3-67, Cl. 297—299.

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Lyons, Harold, to Electro-Optical Systems, Inc. Broadband traveling-wave maser with both maser and isolator crystals cut at different angles to the optic axis thereof. 3,296,541, 1-3-67, Cl. 330—4.

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Mabru, Marcel, to Compagnie de Saint-Gobain. Process and apparatus for the manufacture of fiber mats. 3,295,943, 1-3-67, Cl. 65—6.

Mabuchi, Takaichi. Brush holder means of a miniature electric motor. 3,296,473, 1-3-67, Cl. 310—239.

Macaluso, John A., to United States of America, Navy. High-speed binary switch. 3,296,461, 1-3-67, Cl. 307—88.5.

Macaulay, Angus J., to General Electric Co. Hinging means for oven heating element. 3,296,417, 1-3-67, Cl. 219—404.

MacDonald, Stephen R., and R. L. Dostal, to The Dow Chemical Co. Recovery of a-olefin polymers from solution. 3,296,240, 1-3-67, Cl. 260—93.7.

MacGlashan, William F., Jr.: *See*—
Webb, James E. 3,295,684.

MacGregor, Rob R., and W. P. Moore, Jr., to Allied Chemical Corp. Production of monoalkylhydrazines. 3,296,307, 1-3-67, Cl. 260—583.

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Chemowith, Edward L. 3,295,218.

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Bunn, Edward S., Mackey, and Giovannucci. 3,295,197.

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Madland, Thorvald, to Youngstown Steel Door Co. Slip clutch for operating cranks under load. 3,295,256, 1-3-67, Cl. 49—219.

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Maeder, Heins J., to Klockner-Humboldt-Deutz Aktiengesellschaft. Vibratory grinding mill of the drum type. 3,295,771, 1-3-67, Cl. 241—153.

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Main, Robert M., to Laboratory for Electronics, Inc. Nuclear particle detection system and calibration means therefor. 3,296,438, 1-3-67, Cl. 250—71.5.

Maines, Robert G., to Ovitron Corp. Coaxial termination utilising boron nitride member to enhance radiation. 3,296,539, 1-3-67, Cl. 333—22.

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Males, Robert E.: *See*—
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Malick, Emil A., and D. L. McKay, to Phillips Petroleum Co. Preparation of reconstituted beer. 3,295,988, 1-3-67, Cl. 99—31.

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Sparrow, Lawrence R., and Braiman. 3,296,505.

Maloof, Emile A. Fastening device. 3,295,575, 1-3-67, Cl. 151—11.

Malott, Thomas J., to The New York Air Brake Co. Valve. 3,295,551, 1-3-67, Cl. 137—596.

Manaresi, Piero, and V. Giannella, to Montecatini Edison, S.p.A. Poly alpha olefins stabilized with dithio-oxamides and phenols. 3,296,163, 1-3-67, Cl. 260—23.

Manchester, James T. Animal amusement and exercising device. 3,295,499, 1-3-67, Cl. 119—29.

Mandell, Harry C., Jr., to Pennsalt Chemicals Corp. Perchloramide compounds and process. 3,295,933, 1-3-67, Cl. 23—356.

Maness, John F., 50% to O. D. Gatewood. Automotive valve spring compressing apparatus. 3,296,193, 1-3-67, Cl. 29—220.

Manlabs Inc.: *See*—
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Mantell, Gerald J., A. F. Helin, and H. K. Stryker, to Gulf Oil Corp. Stable latices comprising polyethylene particles coated with emulsifying agents. 3,296,162, 1-3-67, Cl. 260—23.

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Mark, Herman F., to Chemirad Corp. Copolymerization products of carbonyl compounds and cyclic imines and processes of making same. 3,296,209, 1-3-67, Cl. 260—67.5.

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Markland, Samuel M., O. H. Lampton, and J. J. Urrabas. Universally self-adjusting fitting. 3,296,361, 1-3-67, Cl. 174—86.

Maropis, Nicholas, to Aeroprojects Inc. Method and apparatus applying vibratory energy. 3,295,849, 1-3-67, Cl. 72—293.

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Martin, Roger: *See*—
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Marx, Josef, to Elster & Co. Aktiengesellschaft. Fluid metering device. 3,295,370, 1–3–67, Cl. 73—231.

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Masaki, Kasumi, to Sutetaro Yamashiki, Fukiaiku. Electrical therapeutic equipment. 3,295,528, 1–3–67, Cl. 128—422.

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Massey-Ferguson Inc.: *See*—
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Matlack, Albert S., to Hercules Inc. Stabilization of polyolefins with nickel salts of aromatic compounds. 3,296,192, 1–3–67, Cl. 260—45.75.

Matoba, Kyozo, to Hakukinkairo, Ltd. Igniter of a benzine pocket warmer. 3,295,510, 1–3–67, Cl. 126—208.

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May, John C., to United States of America, Navy. Transistor back bias. 3,296,540, 1–3–67, Cl. 330—3.

Mayer, Herbert, and R. F. Pfeiffer, to Kops Bros., Inc. Panty girdle. 3,295,530, 1–3–67, Cl. 128—522.

Mayo, Roy E., and W. E. Roberts, to Caterpillar Tractor Co. Control linkage for earthworking tools. 3,295,612, 1–3–67, Cl. 172—464.

McAdams, James H., to United States of America, Army. Radio frequency electromagnetic energy R.F. barrier. 3,296,356, 1–3–67, Cl. 174—35.

McAvoy, Bruce R., and T. A. Osial, to Westinghouse Electric Corp. Microwave oven. 3,296,405, 1–3–67, Cl. 219—10.55.

McBride, Richard T., and L. E. Wolinski, to E. I. du Pont de Nemours and Co. Surface treatment of perfluorocarbon polymer structures. 3,296,011, 1–3–67, Cl. 117—47.

McCann, Gordon D., to The Dow Chemical Co. Method of heat sealing treated resin film. 3,296,054, 1–3–67, Cl. 156—308.

McCarty, Lourdes V., and R. J. Duncan, to Controls Co. of America. Control by temperature sensitive gas bleed. 3,295,586, 1–3–67, Cl. 158—136.

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McClellan, Ralph E., to Mellink Steel Safe Co. Knock-down table or the like. 3,295,475, 1–3–67, Cl. 108—153.

McCormick, Loran F., to United States of America, Navy. Position control circuit. 3,295,421. 1–3–67, Cl. 91—363.

McCoy, Robert H., Jr., and R. D. Gilbert, to United States Rubber Co. Process for preparing acrylonitrile/butadiene/unsaturated acid terpolymer with an azobisbutyronitrile/ferric salt catalyst. 3,296,226, 1–3–67, Cl. 260—80.7.

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McCusker, Thomas J., granted to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457 (d). Foldable solar concentrator. 3,295,512, 1–3–67, Cl. 126—270.

McDougall, Robert I.: *See*—
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McGregor, Thomas A., to Star Station, Inc. Advertising device for taxis and the like. 3,295,242, 1–3–67, Cl. 40—129.

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Prieger, Robert H., McGurie, and Beckwith. 3,295,589.

McIntosh, Euell K., to Monsanto Co. Yarn texturing apparatus. 3,295,181, 1–3–67, Cl. 28—71.3.

McKay, Dwight L.: *See*—
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McMaster, Harold A., and N. C. Nitschke, to Permaglass, Inc. Method and apparatus for uniformly heating sheet material. 3,295,843, 1–3–67, Cl. 263—7.

McMeekin, John O., to Hipwell Mfg. Co. Multipurpose plastic container. 3,295,706, 1–3–67, Cl. 215—1.

McQuown, Francis G., to American Foundry & Furnace Co. Volume control damper unit. 3,295,821, 1–3–67, Cl. 251—305.

Mead Corp., The: *See*—
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Meckl, Heinz, H. Haseler, and B. Morcher, to Agfa Aktiengesellschaft. Black-and-white developer for photographic reversal processes. 3,295,975, 1–3–67, Cl. 96—55.

Meda-Plast Products Co.: *See*—
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Medal, Einar, to Allis-Chalmers Mfg. Co. Lock bolt. 3,295,579, 1–3–67, Cl. 151—33.

Meek, Thomas B., Jr., and S. W. Salai, to United Aircraft Corp. Helicopter landing gear unsafe warning system. 3,295,795, 1–3–67. Cl. 244—17.17.

Meier, Donal A., and W. Y. Wong, to The National Cash Register Co. Tunnel diode memory. 3,296,598, 1–3–67, Cl. 340—173.

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Messenger, Charles B. Vehicle steering systems. 3,295,620, 1–3–67, Cl. 180—6.7.

Metz, Henry L. Wall repair device. 3,295,285. 1–3–67, Cl. 52—514.

Metzger, John A., to Stanley Knight Corp. Heat exchanger assembly and method of forming same. 3,295,598, 1–3–67, Cl. 165—172.

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Meyer, Gustave, to Meyer Products, Inc. Toilet stool ventilating device. 3,295,147, 1–3–67, Cl. 4—213.

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Meyer, Richard L., and A. A. Di Frango, to Westinghouse Electric Corp. Controlled braking system for load lifting apparatus. 3,296,512, 1–3–67, Cl. 318—208.

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Meyers, Joseph A., E. G. Shay, and R. C. Taylor, to Atlantic Richfield Co. Alkylbenzene sulfonate detergent compositions containing 2-hydroxy-1-amino alkanes. 3,296,146, 1–3–67, Cl. 252—137.

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Minsk, Louis M., and H. L. Cohen, to Eastman Kodak Co. Polymeric hardners for gelatin. 3,296,155, 1–3–67, Cl. 260—8.

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Mitchell, Henry D., Jr., R. M. Tribble, and H. A. Wells, to Western Electric Co. Apparatus for conveying elongated articles. 3,295,661, 1–3–67, Cl. 198—33.

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Gee, Paul Y. C., and Andress. 3,296,130.
Naro, Paul A., Neiswender, and Offenhauer. 3,296,312.
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Modeme, Robert. Two part clip for attaching a cylindrical member to a support. 3,295,806, 1–3–67, Cl. 248—74.

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Mohar, Norman E., Sr. Fishing lure retrievers. 3,295,243, 1–3–67, Cl. 43—17.2.

Molin, Charles, and M. Pinchemel, to Nord-Aviation Societe Nationale de Constructions Aeronautiques. Junction device for removable panels. 3,295,876, 1–3–67, Cl. 287—189.36.

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Moore, Guy Z., Jr., to El Paso Products Co. Butadiene extraction and purification. 3,296,329, 1–3–67, Cl. 260—681.5.

Moore, Harwood B., to General Electric Co. Signalling circuit for intercommunication system. 3,296,372, 1–3–67, Cl. 179—1.

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Moran, James G. Rotary flow control closure for a container. 3,295,730, 1–3–67, Cl. 222—553.

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Morton, David C., to Bethlehem Steel Corp. Reversing motor control including load sensing to determine optimum reversal point. 3,296,513, 1–3–67, Cl. 318—265.

Morton International Inc.: *See*—
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Moslo, Ernest P. Spring-pressed shutoff for injection nozzle. 3,295,169, 1–3–67, Cl. 18—30.

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Mott, Lambert H., 3rd, to Mott Metallurgical Corp. Equipment for producing synthetic polymer fibers. 3,295,161, 1–3–67, Cl. 18—8.

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Motten, Roger H., Jr., to Marathon Special Products Corp. Electrical connector. 3,296,576, 1–3–67, Cl. 339—176.

Mueller, Klaus P., to Robertshaw Controls Co. Pneumatic control device. 3,295,544, 1–3–67, Cl. 137—85.

Muhe, Richard H. Cattle oiling device. 3,295,502, 1–3–67, Cl. 119—157.

Muhm, Wilhelm, to Etablissement Plastitect. Laminated, load-bearing, heat-insulating structural element. 3,295,278, 1–3–67, Cl. 52—223.

Muller, Johann, to H. and F. W. Deckel. Machine tool with two alternately usable spindles. 3,295,415, 1–3–67, Cl. 90—11.

Mullikin, Arthur J. Fishhook guard and leader aligning device. 3,295,245, 1–3–67, Cl. 43—57.5.

Multi-Contact A.-G.: *See*—
Neidecker, Rudolf. 3,296,575.

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Rab, William K. 3,295,408.

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Murdoch, Peter N. G., to Peter Murdoch Inc. Seats and their construction. 3,295,890, 1–3–67, Cl. 297—445.

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Murphy, Eugene S., to Borg-Warner Corp. Multiple disc spot clutch with booster. 3,295,647, 1–3–67, Cl. 192—85.

Murphy, Robert A., to General Electric Co. Method for making organosilicon polymers. 3,296,199, 1–3–67, Cl. 260—46.5.

Murphy, Walter T., to The B. F. Goodrich Co. Production of microporous coating on substrate. 3,296,016, 1–3–67, Cl. 117—105.5.

Murray, Ernest E. Work wheel mechanism and associated apparatus. 3,295,261, 1–3–67, Cl. 51—108.

Murray, Raymond P. Superregenerative receiver with automatic squelch. 3,296,535, 1–3–67, Cl. 325—429.

Myers, John W., and W. C. Lanning, to Phillips Petroleum Co. Production of benzene. 3,296,323, 1–3–67, Cl. 260—672.

Mylo, John, to Monsanto Co. Apparatus for crimping tow. 3,295,180, 1–3–67, Cl. 28—1.

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Naarmann, Herbert: *See*—
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Nakamura, Takao, to NGK Insulators, Ltd. Method of electrolytic production of high purity beryllium. 3,296,107, 1–3–67, Cl. 204—65.

Nakayama, Kiyoshi: *See*—
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Nakayama, Kiyoshi, Z. Sato, and H. Tanaka, to Kyowa Hakko Kogyo Co., Ltd. Process for the production of riboxylphosphates of 8-azapurine derivatives by fermentation. 3,296,089, 1–3–67, Cl. 195—28.

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Namikawa, Mamoru, and M. Sekine, to TDK Electronics Co., Ltd. Reel for endless magnetic tapes. 3,295,781, 1–3–67, Cl. 242—55.19.

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Naro, Paul A., D. D. Neiswender, and R. D. Offenhauer, to Mobil Oil Corp. Catalytic conversion. 3,296,312, 1–3–67, Cl. 260—614.

Nathan, Amos. Electronic function generator. 3,296,428, 1–3–67, Cl. 235—197.

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Neeley, Arthur C., and W. J. Yaggi, to United States of America, Atomic Energy Commission. Sintering furnace. 3,295,844, 1–3–67, Cl. 266—5.

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Nelson, Iver L., to Waldorf Paper Products Co. Pallet handling apparatus. 3,295,660, 1–3–67, Cl. 198—33.

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Webber, Clarence E., and Drescher. 3,295,174.

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Norrby, Harold W. Self-contained boat trailer. 3,295,864, 1–3–67, Cl. 280—414.

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O'Bannon, Walter A., Jr., and W. R. Bradley, Jr., to Walter O'Bannon Co. Blind valve cage and method of making same. 3,295,822, 1–3–67, Cl. 251—366.

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Okada, Kazuto: *See*—
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Okamoto, Yoshizo, S. Negoya, K. Namatame, and M. Ohuchi, to Nihon Genshiryoku Kenkyujo. Heat transfer fin heat exchanging tube. 3,295,599, 1–3–67, Cl. 165—184.

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De Neergaard, Leif E. 3,296,606.

Olson, Harold G. Gutter system and flexible guard means therefor. 3,295,264, 1–3–67, Cl. 52—12.

Olson, Melford E. Honeycomb melter cleaner. 3,295,996, 1–3–67, Cl. 99—284.

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Oram, Harold G. Fluid pressure developing units. 3,295,457, 1–3–67, Cl. 103—118.

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Orebic, Oleg J., to Westinghouse Electric Corp. High speed automatic mounting and sealing machine. 3,295,183, 1–3–67, Cl. 29—25.19.

Ores, Bernard, F. Zuckerkandl, and J. Philippe, to Societe anonyme dite: Societe Industrielle Pour la Fabrication des Antibiotiques. Derivatives of antibiotics having a basic reaction and process for preparation. 3,296,246, 1–3–67, Cl. 260—210.

Ornstein, Reuben. Wall mounted shelf assemblies. 3,295,474, 1–3–67, Cl. 108—152.

Ortega, Robert, to Anthony Pools Inc. Pool cleaning apparatus. 3,295,540, 1–3–67, Cl. 134—167.

Osborn, Paul V., Jr., to National Distillers and Chemical Corp. Variable drive structure for driving a work head with reciprocating cyclical movement. 3,295,380, 1–3–67, Cl. 74—44.

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Ostrofsky, Bernard, and C. B. Parrish, Jr., to Standard Oil Co. Heat exchanger and cleaning means therefor. 3,295,596, 1–3–67, Cl. 165—84.

Oswald, Robert A. Film magazine. 3,295,427, 1–3–67, Cl. 95—12.

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Paddison, Eric, to The English Electric Co. Ltd. Polyphase protective relay circuits. 3,296,495, 1–3–67, Cl. 317—27.

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Padgett, Raymond, and C. H. Clark. Vacuum attachments for barber's shears. 3,295,200, 1–3–67, Cl. 30—133.

Page, Phyllis D. and W. C. Tray. 3,295,737, 1–3–67, Cl. 229—2.5.

Page, Robert M., and L. V. R. Philpott, to United States of America, Navy. Identification and recognition systems. 3,296,615, 1–3–67, Cl. 343—6.5.

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Page, Phyllis D. and W. C. 3,295,737.

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Paine, William A., II, and L. R. Bauscher. Voltage regulator. 3,296,516, 1–3–67, Cl. 320—35.

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Palmquist, Carl W., to Dynamics Corp. of America. Straight line adjustable diffuser. 3,295,432, 1–3–67, Cl. 98—40.

Papadakis, Emmanuel P., to Manlabs Inc. Acoustical wave translation device. 3,295,629, 1–3–67, Cl. 181—.5.

Papell, Solomon S., and R. W. Graham, to United States of America, National Aeronautics and Space Administration. Liquid storage tank venting device for zero gravity environment. 3,295,545, 1–3–67, Cl. 137—197.

Papesch, Viktor, to G. D. Searle & Co. 3-cyanoethyl-2-oxo-5-phenyl[1,5-a]pyrimidines. 3,296,268, 1–3–67, Cl. 260—256.4.

Papesch, Viktor, to G. D. Searle & Co. 7-ureido-2,4-dioxo-1,2,3,4,5,6-hexahydropyrido[2,3-d]-pyrimidines. 3,296,447, 1–3–67, Cl. 260—256.4.

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Parker, Louis W. Dynamo-electric machines, and rotors therefor. 3,296,475, 1–3–67, Cl. 310—268.

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Parlee, Norman A. D., and W. E. Mahin, to Kaiser Industries Corp. Method of treating metal. 3,295,960, 1–3–67, Cl. 75—93.

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Parrish, Cayce B., Jr.: *See*—
Ostrofsky, Bernard, and Parrish. 3,295,596.

Parry, Forrest C., to International Business Machines Corp. Device for interconnecting terminals on a back panel. 3,296,362, 1–3–67, Cl. 174—88.

Parsons, John T., to Parsons Corp. Method of machining metal castings for screw propellers and the like. 3,295,190, 1–3–67, Cl. 29—156.8.

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Partyka, Richard A., to Bristol-Myers Co. 6-hydroxypyrimidine-5-acetamides. 3,296,261, 1–3–67, Cl. 260—247.2.

Pasinski, Ralph R., ½ to J. R. England. Vehicle tachometer indicating system. 3,296,607, 1–3–67, Cl. 340—263.

Pasquale, Anthony V. Curtain wall support. 3,295,287. 1–3–67, Cl. 52—714.

Passal, Frank, to M & T Chemicals Inc. Bright nickel electroplating. 3,296,103, 1–3–67, Cl. 204—49.

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Patay, Paul: *See*—
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Pearlstine, Morton, to Bunting Co. Inc. Furniture. 3,295,590, 1–3–67, Cl. 160—327.
Pearson, Harry A., to Sonotone Corp. Rechargeable battery unit. 3,296,514, 1–3–67, Cl. 320—5.
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Peck, William S., R. S. Duncan, and A. C. Williams, to United States of America, Atomic Energy Commission. Calandria core for sodium graphite reactor. 3,296,085, 1–3–67, Cl. 176—61.
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Persehy, James A., to United States of America, Navy. Bi-directional current steering switch. 3,296,604, 1–3–67, Cl. 340—174.
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Peters, John L. Ion source having both deflection and repeller electrodes for directing an electron stream. 3,296,481, 1–3–67, Cl. 313—230.
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Petersen, James M., and J. F. Lyons, to Texaco Inc. Alkyl alkenethiophosphonate and their lubricant composition. 3,296,132, 1–3–67, Cl. 252—46.6.
Peterson, Richard L., to Moeller Mfg. Co., Inc. Adjustable tamperproof closure. 3,295,712, 1–3–67, Cl. 220—24.5.
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Pickard, John E., to Ball Bros. Co. Inc. Lubricous coating for glass containing polyvinyl alcohol, polyolefin emulsion and an organic acid. 3,296,174, 1–3–67, Cl. 260—29.6.
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Land, Edwin H., Chen, Lothrop, and Wareham. 3,295,426.
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Brault, James W. 3,296,464.
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Pucino, Vito W. Hair clipper. 3,295,202, 1–3–67, 30—200.
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Quentin, Georges V. J., to Houilleres Du Bassin De Lorraine. Combustion apparatus for agglutinant and swelling coals having a high content of volatile materials. 3,295,476, 1–3–67, Cl. 110—8.
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Rab, William K., to Multiprint, Inc. Optical apparatus for adjusting copy-to-image ratios in graphic arts photography. 3,295,405, 1–3–67, Cl. 88—24.
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Ranebo, Per H. Devices for exploiting the flue gas heat in the flue of a hot water boiler. 3,295,503, 1–3–67, Cl. 122—20.
Rarey, Kenneth W., and J. B. Kennedy, to Continental Can Co., Inc. Electrostatic printing method and apparatus employing corona discharge means. 3,295,440, 1–3–67, Cl. 101—114.
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Rees, William W., and W. H. Russell, to Eastman Kodak Co. Increased efficiency with mucochloric acid hardening by use of 4-substituted urazoles. 3,295,980, 1–3–67, Cl. 96—109.
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Relyea, Douglas I., to United States Rubber Co. 3-substituted amino-6-chloropyridazines as anti-oxidants for rubber. 3,296,187, 1–3–67, Cl. 260—45.8.

Renart, Louis E. A. Kite-type aircraft. 3,295,793, 1–3–67, Cl. 244—3.

Rene, J. Stanley, to J. Stanley Rene, Inc. Bridge. 3,295,276, 1–3–67, Cl. 52—174.

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Richter, Hans H., to Leesona Corp. Tensioning apparatus. 3,295,788, 1–3–67, Cl. 242—154.

Richter, Sidney B., and A. A. Levin, to Velsicol Chemical Corp. Esters and amides of 2,3,5,6-tetrachloromonothioterephthalic acid. 3,296,292. 1–3–67, Cl. 260—455.

Ridings, Garvice H., and D. M. Zabriskie, to The Western Union Telegraph Co. Sheet holding and releasing assembly for facsimile scanner drum. 3,296,622, 1–3–67, Cl. 346—188.

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Riley, Marcia M. Safety belts for infants. 3,295,501, 1–3–67, Cl. 119—96.

Rimmer, Robert V., and L. N. Ricci, to Westinghouse Electric Corp. Enclosure with external means for operating an enclosed circuit interrupter. 3,296,393, 1–3–67, Cl. 200—50.

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Robbins, Robert, and H. R. Baron, to Sanders Associates, Inc. Matched single pole single throw diode microwave switch. 3,296,457, 1–3–67, Cl. 307—885.

Roberts, Phillip H., and W. R. Snook, Jr., to The Boeing Co. Transmission. 3,295,393, 1–3–67, Cl. 74—705.

Roberts, Phillip H., and W. R. Snook, Jr., to The Boeing Co. Aircraft control systems. 3,295,797, 1–3–67, Cl. 244—82.

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Robertshaw Controls Co.: *See*—
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Robertson, Jack Y.: *See*—
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Robertson, Kenneth D. Constant force shock absorber. 3,295,846, 1–3–67, Cl. 267—1.

Robertson, Peter, to Republic Steel Corp. Production of high strength briquettes from solid state reduced iron ores. 3,295,957, 1–3–67, Cl. 75—33.

Robinson, Peter, to Raytheon Co. Diversity combiners. 3,296,532, 1–3–67, Cl. 325—305.

Robertson, William J.: *See*—
Copeland, John R., Robertson, and Gilbert. 3,296,536.

Robinson, David E.: *See*—
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Cox, Frank T., Jr., Sherretts, and Mathews. 3,295,423.

Rodda, Ellsworth N., to United States of America, Navy. Convertible horn radiator-coupler for separable missile. 3,296,620, 1–3–67, Cl. 343—705.

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Rogallo, Francis M. Target kite. 3,296,617, 1–3–67, Cl. 343—18.

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Rollins, Harry E., and C. E. Craigo, to United States of America, Army. Towed glider. 3,295,792, 1–3–67, Cl. 244—2.

Rooney, Peter E. Signal envelope and list protector. 3,295,237, 1–3–67, Cl. 40—16.

Roos, Gunther, and R. Wick, to Afga Aktiengesellschaft. Measuring arrangement using photomultiplier tube with dark current correction. 3,296,445, 1–3–67, Cl. 250—207.

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Szerenyi, Andrew, and Liebscher. 3,295,230.

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Kleven, Lowell A. 3,296,572.

Ross, Arnold R., C. Schroedl, and R. W. Strehlow, to Rex Chainbelt Inc. Mobile batching plant. 3,295,698. 1–3–67, Cl. 214—2.

Ross, John M., to E. I. du Pont de Nemours and Co. Preparation of 2,3-dihydroxy-6-quinoxaline carboxylic acid. 3,296,267, 1–3–67, Cl. 260—250.

Ross, Sydney, G. P. Canevari, and R. J. Flocco, to Esso Research and Engineering Co. Dewatering/upgrading athabaska tar sands froth by a two-step chemical treatment. 3,296,117, 1–3–67, Cl. 208—11.

Rosskopp, Wilhelm: *See*—
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Rothfuss, William J., D. E. Robinson, and R. W. Emus, to Southern Machinery Co. Cloth article hemming and stacking method and apparatus. 3,295,483, 1–3–67, Cl. 112—2.

Rouge, Pierre: *See*—
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Lemesele, Georges, Patarin, and Rouge. 3,296,082.

Routh, Claude C., and M. D. Papineau, to United States of America, Navy. Passive broadband frequency multiplier. 3,296,517, 1–3–67, Cl. 321—1.

Rowenta Metallwarenfabrik G.m.b.H.: *See*—
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Rowland, Stanley P., to Rohm & Haas Co. Tetra(2-ethylhexyl)pyromellitate. 3,296,298, 1–3–67, Cl. 260—475.

Royal Typewriter Co., Inc.: *See*—
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Rubert, George E., G. W. Buchanan, and P. D. Findlay, to Frigid Units Inc. Water cooling and aerating device for fish tanks and the like. 3,295,681, 1–3–67, Cl. 210—169.

Rubin, Jack A., to North American Aviation, Inc. Method of chemically bonding a metal to a ceramic. 3,296,017, 1–3–67, Cl. 117—119.8.

Ruehrwein, Robert A., to United States of America, Army. Process for making polyoxymethylene. 3,296,110, 1–3–67, Cl. 204—169.

Rundell, Herbert A., to Texaco Inc. Sensitive torque meter. 3,295,367, 1–3–67, Cl. 73—136.

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Rusler, George W., Jr., to Honeywell Inc. Apparatus for computing true vertical position, velocity and acceleration for aircraft. 3,296,422, 1–3–67, Cl. 235—150.25.

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Prout, William E., Russell, and Groh. 3,296,128.

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Russell, William H.: *See*—
Rees, William W., and Russell. 3,295,980.

Russo, Angelo. Unidirectional traffic control. 3,295,255. 1–3–67, Cl. 49—49.

Ruter, Hermann, E. Cherdron, and G. Bayer, to Gebruder Geulini G.m.b.H. Method of manufacturing pig iron and steel from iron ore and iron-oxide-containing waste materials. 3,295,958, 1–3–67, Cl. 75—38.

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Clark, Clayton H., and Stefanik. 3,296,370.

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Sabee, Lois E. Disposable diapers and the like. 3,295,526, 1–3–67, Cl. 128—287.

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Sakuma, Akihiko, to Agency of Industrial Science Technology. System for measuring time intervals by means of timing pulses. 3 296,525, 1–3–67, Cl. 324—68.

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Meek, Thomas B., Jr., and Salai. 3,295,795.

Salger, Werner, to Lumoprint Zindler K.G. Time switch for controlling an electrical circuit of a process or apparatus for a preset period. 3,296,390, 1–3–67, Cl. 200—33.

Salminen, Ilmari F.: *See*—
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Klackowski, Stefan, Goalby, Lowe, and Salter. 3,295,651.

Salto, Rinaldo, to Ing. C. Olivetti & C., S.p.A. Interlocking device for electric typewriters. 3,295,653, 1–3–67, Cl. 197—74.

Salvodor, Carmelo. Indicator tape holder. 3,295,816, 1–3–67, Cl. 248—473.

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Sandoz Inc.: *See*—
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Sandoz Ltd. (a.k.a. Sandoz AG): *See*—
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Satourian, Melcon, to Phillips Petroleum Co. Transition zone formation in oil production. 3,295,601, 1–3–67, Cl. 166—9.

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Saslaw, Irving M., and J. J. Brady, to General Foods Corp. Powdered fat compositions and process for manufacture. 3,295,986. 1–3–67, Cl. 99—123.

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Sato, Zenroku: *See*—
Nakayama, Kiyoshi, Sato, and Tanaka. 3,296,089.

Saueressig, Hans, to Gebr. Saueressig K.G. Maschinenfabrik. Self-centering pressure roller. 3,295,188, 1–3–67, Cl. 29—113.

Sauvan, Jacques L., to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Information-processing system. 3,296,593. 1–3–67, Cl. 340—172.5.

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Sauzedde, Rene E.: *See*—
Ordorica, Miguel A., and Sauzedde. 3,295,625.

Savard, Guy, and R. Lee, to L'Air Liquide, Societe Anonyme Pour l'etude et l'Exploitation des Procedes Georges Claude. Method for freezing foodstuffs and biological products. 3,295 220, 1–3–67, Cl. 34—5.

Savins, Joseph G., and D. R. Cox, to Mobil Oil Corp. Method of transporting mineral oils. 3,295,542, 1–3–67, Cl. 137—13.

Savoca, Salvatore, and C. Kuljanich, to Monument Processing Co. Mask for sandblasting indicia in stone and method for making same. 3,295,263. 1–3–67, Cl. 51—262.

Sawada, Yasuhiro, and Z. Ayuha, to Yawata Iron & Steel Co., Ltd. Method and device for measuring pressure of fluid in vessel. 3,295,874, 1–3–67, Cl. 73—395.

Saxton, Harold L., and M. S. Wilson. Underwater direction indicator. 3,296,578, 1–3–67. Cl. 340—3.

Sayigh, Adnan A. R.: *See*—
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Von E. Doering, William, Sayigh, and Tilley. 3,296,305.
Von E. Doering, William, Sayigh, and Tilley. 3,296,306.

Scantlin, John R., E. J. Drummond, M. T. Gray, and R. P. Niquette, to Scantlin Electronics, Inc. Market quotation apparatus. 3,296,597, 1–3–67, Cl. 340—172.5.

Scantlin Electronics, Inc.: *See*—
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Scaramucci, Domer. Foldable check valve. 3,295,547, 1–3–67, Cl. 137—315.

Scaramucci, Domer. Swing-type check valve. 3,295,550, 1–3–67, Cl. 137—527.4

Sceggel, Elton J., to United Aircraft Corp. Compressor stator shroud arrangement. 3,295,751, 1–3–67, Cl. 230—133.

Schaefer, Richard A., to Martin-Marietta Corp. Pulse duty ratio modulator. 3,296,556, 1–3–67, Cl. 332—9.

Shaeren, Sidney F., to Hoffmann-La Roche Inc. Process for the manufacture of pyridine derivatives. 3,296,275, 1–3–67, Cl. 260—297.

Schaich, Wilbur A., to Owens-Illinois, Inc. Cementitious slab with bolt means. 3,295,286, 1–3–67, Cl. 52—584.

Schappel, Joseph W.: *See*—
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Scheidker, John R., and F. C. Teeter, to Sinclair Research, Inc. Method of forming stable emulsions. 3,296,129, 1–3–67 Cl. 52—33.4.

Scheiter, Milton H., to General Motors Corp. Transmission. 3 295,392 1–3–67, Cl. 74—677.

Schiepe, Heinz W. E., to Firma Maschinenfabrik Stahlkontor Weserlenze KG. Stacking apparatus for elongated elements such as molding strips. 3,295,703, 1–3–67, Cl. 214—6.

Schenectady Chemicals, Inc.: *See*—
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Topliss, John G., and Sperber. 3,296,070.

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Schink, Norbert, to Siemens-Schuckertwerke Aktiengesellschaft. Jogging device in apparatus for treating semiconductor wafers in gas. 3,295,492, 1–3–67, Cl. 118—48.

Schippers, Heinz, to Barmer Maschinenfabrik Aktienges. Apparatus for spinning filaments of synthetic thermoplastic fiber-forming polymers. 3,295,160, 1–3–67 ,Cl. 18—8.

Schjeldahl, G. T. Co.: *See*—
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Schlage, Ernest L., and H. K. Graumann, to Schlage Lock Co. Door knob trim. 3,295,879, 1–3–67, Cl. 292—357.

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Schlage, Ernest L., and Graumann. 3,295,879.

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Schlein Seymour N.: *See*—
Butz, Tom E., and Schlein. 3,295,311.

Schlichte, Max: *See*—
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Schlipalius, Alfred R.: *See*—
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Schloss, Fred to United States of America, Navy. Automatic recording phase and ratio meter. 3,296,528, 1–3–67, Cl. 324—83.

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Schmerler, Joseph, to Major Pool Equipment Corp. Filtergrid support. 3,295,687, 1–3–67, Cl. 210—486.

Schmidt, Richard, to Frang Morat G.m.b.H. Dust removing arrangement for circular knitting machines. 3,295,338, 1–3–67, Cl. 66—168.

Schmitt, Eugen, and E. Lieser, to Eastman Kodak Co. Carrying case, particularly for photographic cameras. 3,295,576, 1–3–67, Cl. 150—52.

Schmitz-Josten, Robert, R. Kubens, G. Frank, and R. Wegler, to Farbenfabriken Bayer Aktiengesellschaft. Process for curing polyepoxides. 3,296,202, 1–3–67, Cl. 260—47.

Schneeman, Justin G. Fixture for radiographic examination of small object having means for simultaneously rotating said object. 3 296,436, 1–3–67, Cl. 250—51.

Schneider, Hertha. Cigarette-holding device. 3,295,669, 1–3–67, Cl. 206—19.5.

Schneider, Walter, and E. Fischer. Fastening clamp. 3,295,812, 1–3–67, Cl. 248—229.

Schneider, William J. Jr., to United States of America, Navy. Transistor circuit constructions for active type band pass filters. 3,296,546, 1–3–67, Cl. 330—21.

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Schoenauer, Wolfgang, to Sandoz Ltd. (a.k.a. Sandos AG). Reactive dyes of the 1,4-diamino-anthraquinone-2-sulfonic acid series. 3,296,284, 1–3–67, Cl. 260—372.

Schoenbeck, Melvin A., to E. I. du Pont de Nemours and Co. Method of heat treating ethylene/alpha-monoolefin/nonconjugated diene polymers. 3,296,183, 1–3–67, Cl. 260—41.

Schoenfeld, Samuel J., to Kimberly-Clark Corp. Electrophotographic recording member. 3,295,967, 1–3–67, Cl. 96—1.5.

Scholer, Felix, to Goodrid Incinerator Co., Pty. Ltd. Incinerators or the like. 3,295,479, 1–3–67, Cl. 110—18.

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Schronwald, Siegfried, and G. Hecht, to Siemens-Schuckertwerke Aktiengesellschaft. Control device for individual water-pump installations. 3,295,450, 1–3–67, Cl. 103—25.

Schoonman, Marten L. Apparatus for injecting liquids into trees. 3,295,254, 1–3–67, Cl. 47—57.5.

Schorre, Gustav, to E. Merck Aktiengesellschaft. Bis-4 formyl-5-hydroxy-6-methyl-pyridyl (3) methyl disulfide. 3,296,271, 1–3–67, Cl. 260—294.8.

Schott, Claus, and E. Fischer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Copolymers of acetals. 3,296,206, 1–3–67, Cl. 260—67.

Schrader, Carlton F., to Inland Steel Co. Process of making soft, ductile, galvanized material. 3,295,199, 1–3–67, Cl. 29—527.

Schrader, Terry M., and G. R. Fadner Jr., to Radio Corp. of America. Cathode ray tube with electrode supported by strap-like springs. 3,296,477, 1–3–67, Cl. 313—85.

Schramm, Paul, to Nederlandse Organisatie Voor Toegepast-Natuur-Wetenschappelijk Ondersoek Ten Behoeve Van de Volksgezondheid. Sewage treatment apparatus. 3,295,682, 1–3–67, Cl. 210—195.

Schrewelius, Nils G., to Aktiebolaget Kanthal. Heat-resistant and oxidationproff materials. 3,296,021, 1–3–67, Cl. 117—160.

Schroader, Irvin H., M. E. Hosea, and I. R. Hunter, Jr., to United States of America, Navy. Launcher and capture computer. 3,295,794, 1–3–67, Cl. 244—14.

Schroedl, Charles: *See*—
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Schultz, Mortimer A., V. G. Shaw, and I. Bluestein, to United States of America, Atomic Energy Commission. Shutdown reactivity meter for measuring the subcritical reactivity in a nuclear reactor. 3,296,440, 1–3–67, Cl. 250—83.1.

Schuster, Wilhelm. Collapsible structure with interleaved sections. 3,295,269, 1–3–67, Cl. 52—108.

Schutte, Theodor, and G. Jacobs, to Hanssewerke Lurman, Schutte & Co., Process for providing textile floor covering with latex resin foam coating. 3,296,009, 1–3–67, Cl. 117—10.

Schwartz, Charles A. Resistance welding apparatus. 3,296,409, 1–3–67, Cl. 219—87.

Schwartz, Sidney. Keycase-flashlight construction. 3,296,429, 1–3–67, Cl. 240—6.4.

Schwindt, Benjamin W. Expansible hollow core. 3,296,059, 1–3–67, Cl. 161—69.

Scott, Glendom H.: *See*—
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Scott, Joseph J., to American Air & Power Co. Fluid pump device. 3,295,453, 1–3–67, Cl. 103—50.

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Scuro, Samuel J., and G. W. Wilson, to Westinghouse Electric Corp. Semiconductor device. 3,296,033, 1–3–67, Cl. 136—205.

Seablom, Wendell. Pipe fitting. 3,295,870, 1–3–67, Cl. 285—331.

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Seaton, Stuart L., to United States of America, National Aeronautics and Space Administration. Electrostatic plasma modulator for space vehicle re-entry communication. 3,296,531, 1–3–67, Cl. 325—65.

Sebald, Joseph F., to Worthington Corp. Service water purification system. 3,295,605, 1–3–67, Cl. 165—66.

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Secrist, George R., and H. C. Lohrberg, to Eastman Kodak Co. Friction reducing coatings for photographic elements. 3,295,979, 1–3–67, Cl. 96—76.

Seeburg Corp., The: *See*—
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Seitzinger, Vaughn F., to United States of America, National Aeronautics and Space Administration. Unfired-ceramic flame-resistant insulation and method of making the same. 3,296,060, 1–3–67, Cl. 161—115.

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Sels, Robert L., to Western Electric Co., Inc. Heat control circuit generating pulses synchronized to A.C. source employing the PNPN diodes having different threshold values. 3,296,419, 1–3–67, Cl. 219—499.

Selsted, Walter T., and W. I. Girdner, to Hewlett-Packard Co. Tape recording and reproducing apparatus. 3,295,780, 1–3–67, Cl. 242—55.12.

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Settles, Martin D.: *See*—
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Sewell, Cyrus G. Grade averaging device. 3,295,758, 1–3–67, Cl. 235—61.

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Shannon, Richard F., to Owens-Corning Fiberglas Corp. Slurry pouring means and method. 3,296,346, 1–3–67, Cl. 264—108.

Shapiro, Arthur M., to United States of America, Army. Organic peroxy ester anti-seizure agent. 3,296,139, 1–3–67, Cl. 252—57.

Shapiro, Elliot L.: *See*—
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Shapiro, Jerry: *See*—
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Shapiro, Sidney, P., and J., to Inventions of North America Ltd. Decorative bed cover. 3,295,150, 1–3–67, Cl. 5—334.

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Sharp, Tilmon L. and K. C. Dental equipment. 3,295,206, 1–3–67, Cl. 32—22.

Sharples, Thomas D., to Pennsalt Chemicals Corp. Process and apparatus for measuring mass distribution in a rotating body. 3,295,375, 1–3–67, Cl. 73—466.

Shaw, Elton L., ½ to R. A. Roosevelt. Synchronizing system utilizing capacitive coaxial cable pickup for supplying control signal. 3,296,385, 1–3–67, Cl. 179—100.2.

Shaw, Richard B., and G. Stockton. Head covering with detachable wig for interchanging hairpieces. 3,295,536, 1–3–67, Cl. 132—53.

Shaw, Vincent G.: *See*—
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Clark, Clayton H., and Stefanik. 3,296,370.
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42	3,295,173	42	3,295,860	42	3,296,440	47	3,295,559	48	3,296,515	53	3,295,892
	3,295,174		3,295,874		3,296,461		3,295,708		3,296,587		3,295,902
	3,295,189		3,295,915		3,296,471		3,295,716	49	3,295,328		3,295,914
	3,295,273		3,295,933		3,296,472		3,295,844		3,295,777		3,295,997
	3,295,290		3,295,939		3,296,477		3,296,041		3,295,828		3,296,053
	3,295,295		3,295,941		3,296,479		3,296,204	51	3,295,182		3,296,058
	3,295,309		3,295,952		3,296,491	48	Re.26,132		3,295,232		3,296,516
	3,295,310		3,295,966		3,296,493		3,295,226		3,295,282		3,296,566
	3,295,335		3,296,000		3,296,501		3,295,362		3,295,306	54	3,295,923
	3,295,349		3,296,004		3,296,506		3,295,367		3,295,402		3,295,946
	3,295,356		3,296,005		3,296,507		3,295,377		3,295,487		3,296,037
	3,295,375		3,296,019		3,296,510		3,295,451		3,295,533		3,296,170
	3,295,401		3,296,033		3,296,512		3,295,524		3,295,633		3,296,212
	3,295,432		3,296,044		3,296,547		3,295,542		3,295,830		3,296,229
	3,295,443		3,296,047		3,296,549		3,295,548		3,296,014	55	3,295,154
	3,295,445		3,296,120		3,296,561		3,295,600		3,296,063		3,295,187
	3,295,447		3,296,139		3,296,564		3,295,603		3,296,171		3,295,192
	3,295,453		3,296,146		3,296,567		3,295,606		3,296,262		3,295,214
	3,295,462		3,296,165		3,296,576		3,295,610		3,296,266		3,295,237
	3,295,477		3,296,177		3,296,577		3,295,615		3,296,319		3,295,252
	3,295,514		3,296,182		3,296,601		3,295,628		3,296,332		3,295,333
	3,295,560		3,296,191		3,296,623		3,295,734		3,296,348		3,295,337
	3,295,562		3,296,224		3,296,625		3,295,758		3,296,523		3,295,382
	3,295,565		3,296,228	43	3,296,347		3,295,767		3,296,526		3,295,441
	3,295,568		3,296,249	44	3,295,340		3,295,829		3,296,528		3,295,508
	3,295,587		3,296,251		3,295,498		3,295,831		3,296,531		3,295,521
	3,295,590		3,296,260		3,295,776		3,295,832		3,296,582		3,295,526
	3,295,622		3,296,303		3,295,788		3,295,895		3,296,617		3,295,569
	3,295,629		3,296,311		3,296,050		3,295,922	53	3,295,167		3,295,586
	3,295,642		3,296,316		3,296,264		3,295,930		3,295,249		3,295,589
	3,295,685		3,296,338	45	3,295,483		3,296,060		3,295,275		3,295,811
	3,295,706		3,296,345		3,295,561		3,296,221		3,295,385		3,295,842
	3,295,718		3,296,363		3,296,062		3,296,282		3,295,435		3,295,901
	3,295,761		3,296,382		3,296,123		3,296,310		3,295,468		3,295,967
	3,295,774		3,296,393		3,296,158		3,296,329		3,295,555		3,296,167
	3,295,803		3,296,405	46	3,295,619		3,296,359		3,295,609		3,296,354
	3,295,818		3,296,412		3,295,880		3,296,361		3,295,807		3,296,366
	3,295,823		3,296,419	47	3,295,193		3,296,408		3,295,817		3,296,389
	3,295,845		3,296,426		3,295,200		3,296,466		3,295,864	56	3,295,692
	3,295,855		3,296,433		3,295,206		3,296,504				

DESIGN PATENTS

4	206,608	9	206,575	17	206,639	29	206,580	36	206,587	42	206,611
	206,614		206,590		206,640	34	206,606		206,589		206,620
6	206,592		206,642	20	206,647		206,613		206,591		206,621
	206,596	11	206,632	21	206,618		206,626		206,634		206,622
	206,612	17	206,576		206,619		206,629		206,637		206,623
	206,633		206,581	22	206,605		206,646		206,643		206,624
	206,635		206,600	25	206,631	36	206,571	37	206,599		206,625
	206,636		206,601	26	206,617		206,572	39	206,609	44	206,628
	206,638		206,602		206,641		206,573		206,627	48	206,567
8	206,582		206,603		206,644		206,577		206,645		206,586
	206,598		206,615	27	206,570		206,579	42	206,568	51	206,595
9	206,574		206,630		206,597		206,585		206,569		

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 3, 1967 Volume 834 Number 1

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 151,508(a) (HOMELITE), Home Electric Lighting Company, Electric generating plants; **Reg. No. 424,967(a)**, same, Homelite Corporation, Gasoline-engine-driven blower units for supplying and exhausting air and gases and for general ventilating purposes, etc.; **Reg. No. 546,629(a)**, same, Water pumps, portable chain saws, and paving breakers; **Reg. No. 770,727(a)**, same, Textron, Inc., Outboard engines, filed Aug. 16, 1966, D.C.N.J. (Newark), Doc. 825–66, *Textron, Inc.* v. *American Homelight Corporation et al.* Consent judgment for injunction Nov. 16, 1966.

Reg. No. 151,508(b); **Reg. No. 424,967(b)**; **Reg. No. 546,629(b)**; **Reg. No. 663,782** (HOMELITE), Textron, Inc., Portable flood lights; **Reg. No. 770,727(b)**, filed May 17, 1966, D.C., S.D.N.Y., Doc. 66/1426, *Textron, Inc.* v. *North American Homelight of Westchester, Inc. et al.* Consent judgment, defendants enjoined Nov. 7, 1966. Same, filed Aug. 19, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1530, *Textron, Inc.* v. *American Homelight Corporation of Illinois, Inc.* Consent judgment, defendant enjoined Nov. 17, 1966.

Reg. No. 424,967. (See Reg. No. 151,508.)

Reg. No. 444,894 (WASTE KING), Given Manufacturing Company, Waste disposal units adaptable to the shredding of garbage and attachable to plumbing systems, filed Nov. 8, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66–1795–FW, *Waste King Corporation* v. *Original Equipment Mfg., Inc.*

Reg. No. 516,466 (SALES MANAGEMENT), Sales Management, Inc., Trade magazines and publications circulating among the trade interested in selling and marketing, including manpower problems, space and time advertising, etc., filed Nov. 7, 1966, D.C., S.D.N.Y., Doc. 66/3741, *Bill Brothers Publications, Inc. et ano.* v. *The Management Publishing Group, Inc.*

Reg. No. 521,461 (RAYTHEON AND DESIGN), Raytheon Manufacturing Company, Amplitude-modulated radio transmitters, frequency-modulated radio transmitters, fixed and mobile radio transceivers, etc., filed Oct. 21, 1965, D.C., C.D. Calif. (Los Angeles), Doc. 65–1532–S, *Raytheon Company* v. *Raytron Production Products, Inc. et al.* Stipulation and consent judgment in favor of plaintiff; defendants enjoined Sept. 28, 1966.

Reg. No. 546,629 (GILT EDGE), Blue Bell, Inc., Work shirts, work trousers, men's and boys' overalls, etc., filed Nov. 10, 1966, D.C., M.D. Tenn. (Nashville), Doc. 4590, *Blue Bell, Inc.* v. *Washington Manufacturing Company.*

Reg. No. 546,629. (See Reg. No. 151,508.)

Reg. No. 547,321 (AAA AND DESIGN), American Automobile Association, Services rendered to motor vehicle owners, motorists and travelers generally—namely, disseminating travel information, making travel arrangements, etc.; **Reg. No. 668,115 (AAA APPROVED AND DESIGN)**, The American Automobile Association (Incorporated), doing business as American Automobile Association, Serving of food and bever-

CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	27,353
Date of oldest new application	Dec. 3, 1965
Date of oldest amended application (filing date)	Feb. 3, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	12-9-65	8-24-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-12-66	2-3-64
Renewals (All Classes)	11-6-66	----------
Sec. 12(c) Publications (All Classes)	11-10-66	----------

Applications filed during the month of November—2,166

Registrations Issued ..... 388—No. 821,387 to No. 821,774
Renewals Issued 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

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ages in restaurants and providing lodging in motor courts and hotels; **Reg. No. 706,556** (AAA), The American Automobile Association (Incorporated), Printed maps, printed touring and route information, pamphlets published from time to time, etc., filed Feb. 28, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66–362–EC, *American Automobile Association et al.* v. *AAA Leasing Corporation.* Stipulation and consent judgment in favor of plaintiffs; defendant enjoined Sept. 30, 1966.

Reg. No. 606,115. (See Reg. No. 547,321.)

Reg. No. 687,429 (TELEDYNE), Taber Instrument Corporation, Instruments for measuring pressure, temperature and force, electrical transmitters for process control and research purposes, and accelerometers, filed Feb. 5, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63–135–PH, *Taber Instrument Corporation* v. *Teledyne, Inc. et al.* Stipulation and order of dismissal without prejudice Sept. 26, 1966.

Reg. No. 663,733. (See Reg. No. 151,508(b).)

Reg. No. 689,626 (SH in designed form), Sylvia H. Hood, doing business as Sylvia Hood Industries, Art objects—namely, plaques, figurines, statuettes, filed Jan. 26, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–159–CC, *Sylvia H. Hood* v. *Wolin Manufacturing Co., Inc. et al.* Consent judgment in favor of plaintiff; defendants enjoined Sept. 13, 1966.

Reg. No. 706,556. (See Reg. No. 547,321.)

Reg. No. 707,832 (PURITAN MATES (in script) AND DESIGN), The Puritan Sportswear Corp., Girls' and ladies', boys' and men's shirts, walk shorts, swimwear, etc.; **Reg. No. 727,738** (PRINCESS PURITAN (in script) AND DESIGN), same, Girls' and ladies' shirts, walk shorts, swimwear, etc.; **Reg. No. 727,739** (LADY PURITAN (in script) AND DESIGN), same, filed Feb. 28, 1964, D.C., C.D. Calif. (Los Angeles), Doc. 64–274–JWC, *Puritan Fashions Corp.* v. *The Puritan Sportswear Corp. et al.* Stipulation and order dismissing action without prejudice Oct. 7, 1966.

Reg. No. 716,270 (CONSOLIDATED FREIGHTWAYS AND DESIGN), Consolidated Freightways, Inc., Transporting the goods of others by motor truck, and arranging for the transport of goods by rails, ship, and aircraft; **Reg. No. 815,192** (CONSOLIDATED FREIGHTWAYS), Consolidated Freightways Corporation of Delaware, Transportation of general commodities, filed Nov. 8, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c2040, *Consolidated Freightways Corp.* v. *Consolidated Forwarding Co.*

Reg. No. 727,738. (See Reg. No. 707,832.)

Reg. No. 727,739. (See Reg. No. 707,832.)

Reg. No. 738,875 (GLAD), Union Carbide Corporation, Plastic bags; **Reg. No. 739,033**, same, Plastic wrap; **Reg. No. 791,189**, same, Plastic drinking straws, filed Nov. 7, 1966, D.C., S.D.N.Y., Doc. 66/3752, *Union Carbide Corporation* v. *Point of View House, Inc. et ano.*

Reg. No. 739,033. (See Reg. No. 738,875.)

Reg. No. 750,966 (ASL AND DESIGN), Schering Corporation, assignee of American Scientific Laboratories, Inc., Pesticides, insecticides, rodenticides, and insect repellants, filed Nov. 3, 1966, D.C. Puerto Rico (San Juan), Doc. 565–66, *Schering Corporation, trading as American Scientific Laboratories* v. *American Scientific Laboratories, Inc.*

Reg. No. 770,727. (See Reg. No. 151,508.)

Reg. No. 771,750 (MICRO SHIELD), Arnold Chemical Corporation, Automobile finish preserver used as a foundation coat to cleanse and remove waxes, dirt and other foreign material from the finish, and as automobile sealer coat to preserve the finish, filed Nov. 9, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c2043, *Arnold Chemical Corporation* v. *American Cyanamid Company.*

Reg. No. 772,037 (ECONO-CAR), Econo-Car International, Inc., Leasing of motor vehicles, filed Nov. 4, 1966, D.C. Ariz. (Phoenix), Doc. 6164 Phx., *American, Inc.* v. *William Norton, Jr. et al. "Econo-Car."*

Reg. No. 791,189. (See Reg. No. 738,875.)

Reg. No. 815,192. (See Reg. No. 716,270.)

MARKS PUBLISHED FOR OPPOSITION

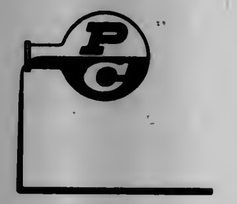
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 166,483. The Plastic Coating Corporation, Holyoke, Mass. Filed Apr. 10, 1963.



Owner of Reg. No. 706,624.

Class 100—Miscellaneous

For Rental of Reproduction Equipment.

Class 103—Construction and Repair

For Installation, Maintenance, and Repair of Reproduction Equipment.

Class 107—Education and Entertainment

For Instruction in the Use of Reproduction Equipment and Supplies.

First use Dec. 1, 1961.

SN 197,357. Louis S. Axelrod, d.b.a. Pixie Vendors, Hasel Park, Mich. Filed July 8, 1964.



No registration rights are claimed for the word "Vendors," apart from the mark shown, but applicant waives none of his common law rights in the mark shown or any feature thereof.

Class 22—Games, Toys, and Sporting Goods

For Vending Machine Merchandise in the Nature of Games and Toys—Namely, Compasses, Magnifying Glasses, Corner Puzzles, Pyramid Puzzles, Nail and Loop Puzzles, Plastic Square Puzzles, Bird Whistles, Harmonicas, Dominoes, Checkers, Magnetic Dogs, Jumping Beans, Running Beetles, Walking Dogs, Magic Coin Slides, Miniature Padlocks, Siren Rings, and Moving Mice.

Class 44—Dental, Medical, and Surgical Appliances

For Vending Machine Merchandise in the Nature of Toilet Articles—Namely, Nail Clips, Tweezers, and Files.

First use June 4, 1964.

SN 212,320. Ideal Industries, Inc., Sycamore, Ill. Filed Feb. 18, 1965.



The drawing is lined for blue which is disclaimed apart from the mark as shown. Owner of Reg. Nos. 133,579, 542,663, and others.

Class 4—Abrasives and Polishing Materials

For Maintenance Equipment—Namely, Abrasive Resurfacer Stones, Commutator Resurfacers, Commutator Dressers, Brush Seaters and Commutator Cleaners, Slip Ring Resurfacers, and Flexible Abrasives.

Class 15—Oils and Greases

For Electrician's Tools and Supplies—Namely, Pulling Lubricants.

Class 21—Electrical Apparatus, Machines, and Supplies

For Maintenance Equipment—Namely, Commutator Cement; Wire Insulation Strippers—Namely, Brushes and Heating Elements; Machine Tool Accessories—Namely, Demagnetisers; Electrical Specialties—Namely, Electronic Dimmers; Electrical Apparatus—Namely, Foot Switches, Hot Blade Strippers for Removing the Insulation From Electrical Conductors, Fuse Clip Clamps, Fuse Reducers, Demagnetisers; Wire Connectors—Namely, Screw-On Type Connectors, Set Screw Connectors, Insulators; Electrician's Tools and Supplies—Namely, Connectors, Fluorescent Fixture Hangers, Fuse Pullers, Fuse Clip Clamps, and Fuse Reducers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Maintenance Equipment—Namely, Carbon Brush Seaters, Precision Grinders, Commutator Undercutters, Slotting Files and Scrapers, Commutator Saws and Cutters, Precision Grinders With Dust Collectors, Mica Undercutters, Saws and Milling Cutters; Small Tools—Namely, Slotting Files, Slotter and Scraper, Hand Blowers; Cleaner Accessories—Namely, Sprayers; Wire Insulation Strippers—Namely, Brush Type Strippers, Rotary Type Strippers, Hand Type Strippers, Lever Type Strippers, Bench Type Strippers, Hot Blade and Thermal Type Strippers, Wire Skinners and Straighteners, Armour Cable Cutters, Cable Rippers and Cable and Wire Cutters, Individual Blades; Machine Tool Accessories—Namely, Live Centers, Etchers, Markers; Wire Connectors—Namely, Crimp Tool and Electrician's Pliers, Electric Connector Drivers, Connector Application Machines; Electrician's Tools and Supplies—Namely, Fish Tapes and Reels, Fish Tape Winders, Fish Tape Leaders and Balls, and Pulling Elbows.

First use Jan. 18, 1965.

SN 222,055. Old Town Corporation, Brooklyn, N.Y. Filed June 25, 1965.

PostScript

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Staples.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Staplers.

Class 29—Brooms, Brushes, and Dusters

For Typewriter Type Cleaners, Especially of the Pile Fabric Type.

Class 37—Paper and Stationery

For Stationery—Namely, Typing Paper, Copy Paper, and Envelopes; and Office Supplies—Namely, Typewriter Correction Paper, Desk Trays, Paper Clips, Writing Pens, and Rubber Bands.

First use on or about Feb. 10, 1965.

SN 230,443. Societe CTA, Compagnie Industrielle de Textiles Artificiels & Synthetiques, Paris, France. Filed Oct. 18, 1965.

TALJAR

Owner of French Reg. No. 453,090, dated Oct. 6, 1955 (Seine); Natl. Inst. No. 62,631.

Class 1—Raw or Partly Prepared Materials

For Synthetic Fibers.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabrics of Synthetic Yarns and Fibers, Ribbons, Household Linens, Rugs and Carpets.

Class 43—Thread and Yarn

For Yarns of Synthetic Fibers.

SN 231,078. Eltra Corporation, Brooklyn, N.Y. Filed Oct. 22, 1965.

PALATINO

Class 14—Metals and Metal Castings and Forgings

For Printing Type.
First use 1951.

Class 50—Merchandise Not Otherwise Classified

For Matrices for Typographical Casting Machines, and for Font Plates for Photo-Typesetting Machines.
First use Oct. 31, 1958.

SN 231,079. Eltra Corporation, Brooklyn, N.Y. Filed Oct. 22, 1965.

OPTIMA

Class 14—Metals and Metal Castings and Forgings

For Printing Type.
First use 1961.

Class 50—Merchandise Not Otherwise Classified

For Matrices for Typographical Casting Machines.
First use Sept. 8, 1961.

SN 231,080. Eltra Corporation, Brooklyn, N.Y. Filed Oct. 22, 1965.

HELVETICA

Class 14—Metals and Metal Castings and Forgings

For Printing Type.
First use 1962.

Class 50—Merchandise Not Otherwise Classified

For Matrices for Typographical Casting Machines, and for Font Plates for Phototypesetting Machines.
First use May 2, 1963.

SN 231,081. Eltra Corporation, Brooklyn, N.Y. Filed Oct. 22, 1965.

MELIOR

Class 14—Metals and Metal Castings and Forgings

For Printing Type.
First use 1957.

Class 50—Merchandise Not Otherwise Classified

For Matrices for Typographical Casting Machines.
First use Mar. 8, 1958.

SN 233,037. Monsanto Company, St. Louis, Mo. Filed Nov. 22, 1965.

LIFE-TIME

Class 6—Chemicals and Chemical Compositions

For Chemical Wood Preservative.
First use Oct. 18, 1965.

Class 12—Construction Materials

For Lumber Treated With a Chemical Preservative Composition.
First use Oct. 19, 1965.

SN 236,442. Puritan Chemical Company, Atlanta, Ga. Filed Jan. 14, 1966.



Owner of Reg. Nos. 626,047, 707,673, and 737,423.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Machines and Apparatus—Namely, Vacuum Cleaners, Carpet Scrubbers, Floor Buffing and/or Polishing Machines, Wax Applicators, Baseboard Stripper Brush, Buffing Machines, Window Washers; Electric Caution Signs; and Electric Vacuum Eraser Cleaners.

Class 29—Brooms, Brushes, and Dusters

For Wax Applicators (Hand Type); Baseboard Stripper Brush (Hand Type); Mops; Mop Heads and Handles Thereof; Brooms, Brushes (Scrub); Dusters (Hand Type); and Window Washers (Squeegee Type).

First use in or about the year 1961.

SN 237,574. The Low Calorie Candy Co., Inc., Yonkers, N.Y. Filed Jan. 28, 1966.

WEIGHT WATCHERS

Owner of Reg. No. 715,515.

Class 45—Soft Drinks and Carbonated Waters

For Low Calorie Cola-Type Soft Drink.

Class 46—Foods and Ingredients of Foods

For Low Calorie Table Syrups, Dietetic Sweeteners, Dietetic Candies and Wafers for Restricted Diets, and Imitation Margarine.

First use Aug. 31, 1965.

SN 239,101. Coleco Industries, Inc., Hartford, Conn. Filed Feb. 18, 1966.

KESTRAL

Class 12—Construction Materials

For Swimming Pools, Components Thereof, Including Liners and Synthetic Plastic Material and Accessories Therefor, Sold Together as a Unit.
First use on or before Dec. 31, 1956.

Class 22—Games, Toys, and Sporting Goods

For Inflatable Pools, Inflatable Animal Toys, Inflatable Figure Toys, Inflatable Plastic Floats, Inflatable Surf Sleds, Inflatable Mattresses for Play and Sport Use and Pumps Therefor, and Wading Pools and Components Therefor.
First use on or before Jan. 1, 1949.

SN 243,613. Park Electrochemical Corporation, Flushing, N.Y. Filed Apr. 18, 1966.

GRAMERCY PARKE

Class 8—Smokers' Articles, Not Including Tobacco Products

For Cigarette Lighters, Ashtrays, and Cigarette Boxes.

Class 32—Furniture and Upholstery

For Smoking Stands and Bookends.
First use Jan. 3, 1966.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 222,034. Vantress Farms, Inc., Duluth, Ga., by change of name from International Genetics Corporation, Duluth, Ga. Filed June 25, 1965.



The representation of a chicken is disclaimed apart from the mark as shown. The drawing is lined for yellow and red.
Owner of Reg. No. 709,463.
For Live Cockerel Chickens.
First use Nov. 1, 1956.

SN 235,405. International Minerals & Chemical Corporation, Skokie, Ill. Filed Dec. 28, 1965.

IMCO

Owner of Reg. Nos. 752,294, 771,364, and 812,798.
For Additives for Well Drilling Fluids in the Nature of Clay, Weighting Materials, Loss Circulation Control Materials, and the Like.
First use February 1962.

SN 235,484. Bates Manufacturing Company, Incorporated, Lewiston, Maine. Filed Dec. 29, 1965.

PHOENIX

For Resin Polymers, Polyesters, and Synthetic Fibers.
First use Dec. 14, 1965.

SN 236,553. Avisun Corporation, Philadelphia, Pa. Filed Jan. 17, 1966.

OLEPLATE

Owner of Reg. Nos. 737,355, 796,183, and others.
For Synthetic Resins.
First use Dec. 14, 1965.

SN 238,560. Pullets Unlimited, Inc., Fort Recovery, Ohio, assignee of Pullets Unlimited, Fort Recovery, Ohio. Filed Feb. 10, 1966.

PULLETS UNLIMITED

Applicant hereby disclaims the word "Pullets" apart from the mark as shown.
For Live Poultry Chicks.
First use July 26, 1965.

SN 245,724. Robert J. Lambert, d.b.a. Lambert Seed Company, Newport, Ark. Filed May 16, 1966.



The drawing is lined for blue.
For Blue Colored Cotton Seed, for Planting Purposes Only.
First use Feb. 16, 1966.

SN 246,101. Reynolds Metals Company, Richmond, Va. Filed May 19, 1966.

REYLINER

Owner of Reg. No. 662,070.
For Laminated Foil-Paper Material, Sold in Sheets or Rolls, for General Use in the Industrial Arts.
First use on or about Mar. 8, 1966.

SN 246,310. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed May 23, 1966.

RUCOTEX

Owner of Reg. No. 749,967.
For Latex and Latex Concentrates.
First use Apr. 29, 1966.

SN 249,435. Kroy Tanning Company, Incorporated, Salem, Mass. Filed July 1, 1966.

FANTASUEDE

For Leather Having a Suede Finish.
First use May 17, 1966.

Class 2—Receptacles

SN 211,352. The Eagle-Picher Company, River Rouge, Mich. Filed Feb. 4, 1965.

Fabricon

The drawing is lined for yellow, red, and blue, but color is not an essential feature of the mark.
For Polyethylene Bags.
First use on or about Nov. 20, 1964.

SN 219,804. Midwest Hanger Co., Liberty, Mo. Filed May 26, 1965.

Snap-Lock

For Shirt Boxes.
First use during October 1963.

SN 229,231. The Genesee Brewing Company, Inc., Rochester, N.Y. Filed Oct. 4, 1965.

RING GO

For Cans for Beer.
First use Sept. 30, 1965.

SN 238,278. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Feb. 7, 1966.

ARMOR-GARD

For Paper Board Cartons.
First use Oct. 18, 1961.

Class 4—Abrasives and Polishing Materials

SN 230,721. Turtle Wax, Inc., Chicago, Ill. Filed Oct. 20, 1965.

ZIP WAX

The word "Wax" is disclaimed apart from the mark as shown.
For Combination Washing, Cleaning, and Polishing Preparations for Automobile Finishes, and the Like.
First use Jan. 14, 1960.

SN 240,319. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Mar. 7, 1966.

EVENRUN

Owner of Reg. No. 423,092.
For Abrasive Paper, Abrasive Cloth, Abrasive Belts, Abrasive Bands, Abrasive Discs, and Abrasive Sleeves.
First use June 1, 1921.

Class 5—Adhesives

SN 224,872. Arcon Coating Mills, Inc., New York, N.Y. Filed July 28, 1965.

E-Z STRIP

For Gummed Paper, Fabric and Tape Used in the Binding of Books.
First use on or about July 15, 1965.

SN 230,513. Conso Products, Inc., New York, N.Y. Filed Oct. 19, 1965.

CONSO PERMA BOND

The word "Bond" is disclaimed apart from the mark as a whole. Owner of Reg. Nos. 351,582, 656,865, and others.
For Liquid Latex Cement for Seaming Carpet.
First use Sept. 29, 1965.

SN 230,514. Conso Products, Inc., New York, N.Y. Filed Oct. 19, 1965.

CONSO PERMA BOND GOLD LABEL

The word "Bond" is disclaimed apart from the mark as a whole. Owner of Reg. Nos. 351,582, 656,865, and others.
For Liquid Latex Cement for Seaming Carpet.
First use Sept. 29, 1965.

SN 233,264. Graphic Electronics, Inc., La Salle, Ill. Filed Nov. 24, 1965.

ENERGIC

For Adhesive Tape in Sheets and Rolls.
First use June 25, 1965.

SN 246,840. Wilco Company, Los Angeles, Calif. Filed May 31, 1966.

WIL-STIK

Owner of Reg. Nos. 653,616 and 691,618.
For Bonding Agents for Adhering Metals to Substrates in Metal Plating Operations.
First use Mar. 18, 1966.

Class 6—Chemicals and Chemical Compositions

SN 208,099. Mobay Chemical Company, Pittsburgh, Pa. Filed Dec. 14, 1964.

MR

For Polyaryl Polyisocyanates.
First use Apr. 9, 1962.

SN 220,983. Chas. J. Webb Sons Co., Inc., Philadelphia, Pa. Filed June 11, 1965.

ConReCor

For Rust and Corrosion Inhibitor and Moistureproofing Agent.
First use May 1964.

SN 225,419. Imperial Chemical Industries Limited, Millbank, London, England. Filed Aug. 10, 1965.

DALTOSEC

Owner of British Reg. No. 852,806, dated Aug. 1, 1963.
For Isocyanates for Use in the Production of Polyurethanes.

SN 225,422. Imperial Chemical Industries Limited, Millbank, London, England. Filed Aug. 10, 1965.



Owner of British Reg. No. 623,935, dated June 18, 1943.
For Dyes, Dyestuffs, and Mordants.

SN 230,480. American Cyanamid Company, Wayne, N.J. Filed Oct. 19, 1965.

PROBAN

Owner of Reg. Nos. 688,612, 622,580, and others.
For Insecticide for Veterinary Use.
First use Sept. 10, 1965.

SN 231,172. Moser Paper Company, Chicago, Ill. Filed Oct. 22, 1965.

ODEX

Owner of Reg. No. 509,027.
For Deodorant Powder for Mortician's Use.
First use October 1927.

SN 236,826. International Salt Company, Clarks Summit, Pa. Filed Jan. 19, 1966.

NAFERITE

For Additive, Comprising Yellow Prussiate of Soda Incorporated as an Anti-Caking Agent in Salt, Used for Commercial and Industrial Purposes.
First use on or about May 3, 1962.

SN 240,144. Apogee Chemical, Inc., Richmond, Calif. Filed Mar. 4, 1966.

APOGEE

For Industrial Chemicals—Namely, Specialty Organic and Inorganic Chemicals and Chemical Intermediates.
First use Sept. 14, 1965.

SN 240,145. Apogee Chemical, Inc., Richmond, Calif. Filed Mar. 4, 1966.



For Industrial Chemicals—Namely, Specialty Organic and Inorganic Chemicals and Chemical Intermediates.
First use Sept. 14, 1965.

SN 247,479. Cabot Corporation, Boston, Mass. Filed June 7, 1966.

CAB-O-TI

Owner of Reg. Nos. 581,369, 793,550, and others.
For Titanium Dioxide for Use as a Chemical.
First use Apr. 27, 1966.

SN 247,577. Cabot Corporation, Boston, Mass. Filed June 8, 1966.

CABLAK

Owner of Reg. Nos. 581,369, 793,550, and others.
For Carbon Black.
First use May 26, 1966.

SN 247,638. Standard X-Ray Company, Chicago, Ill. Filed June 8, 1966.

STANDEX

For X-Ray Film Processing Chemicals.
First use July 1964.

SN 248,087. Extracorporeal and Medical Specialties Company, Inc., Medford, N.J. Filed June 15, 1966.

SAF-T-DIAL

For Dialysate Chemicals for Use With Artificial Kidney Machines.
First use June 6, 1966.

Class 7 — Cordage

SN 231,682. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 27, 1965.

NYGEN

Owner of Reg. No. 584,408.
For Cord Intended Primarily for Use in Tire Construction.
First use May 27, 1953.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 243,565. Mastercraft Pipes, Inc., New York, N.Y. Filed Apr. 15, 1966.

OLD VIC

For Smokers' Products—Namely, Pipes, Lighters, and Tobacco Pouches.
First use Feb. 15, 1961, on pipes.

SN 245,185. S. M. Frank & Co., Inc., New York, N.Y. Filed May 9, 1966.

MEDICO

Owner of Reg. No. 804,764.
For Pipe Cleaning Fluid.
First use December 1956.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 192,992. Coast Manufacturing & Supply Company, Livermore, Calif. Filed May 8, 1964.

SPITTERCORD

Owner of Reg. No. 604,605.
For Relatively Stiff Heavy Twine or Cord Composed Mainly of Textile Fibres Coated With a Composition That Burns at a Controlled Rate of Speed, and Used for Igniting Any Ignitable Articles in Contact Therewith, Such as a Charge of Explosive, or Used for Igniting Safety Fuses or the Like.
First use on or about Jan. 8, 1941.

SN 227,980. Vsesojusnoje Exportno-Importnoje Objedinenije "Rasnoexport," Moscow, U.S.S.R. Filed Sept. 16, 1965.

VOSTOK

The Russian word "Vostok" translated means "east."
For Sporting Rifles and Sporting Pistols.
First use September 1963; in commerce September 1963.

238,405. Coast Manufacturing & Supply Company, Livermore, Calif. Filed Feb. 9, 1966.

PRIMEX

For Detonating Fuse.
First use Jan. 22, 1966.

Class 11 — Inks and Inking Materials

SN 222,054. Old Town Corporation, Brooklyn, N.Y. Filed June 25, 1965.

PostScript

For Office Supplies—Namely, Carbon Paper, Typewriter Ribbons, and Duplicating Inks and Fluids.
First use on or about Feb. 10, 1965.

SN 247,794. Higgins Ink Co., Inc., Brooklyn, N.Y. Filed June 10, 1966.

ARTONE

For Black and Colored Drawing Inks.
First use 1936.

Class 12 — Construction Materials

SN 208,715. Alpana Aluminum Products, Inc., Minneapolis, Minn. Filed Dec. 23, 1964.

ALPANA

Owner of Reg. No. 762,164.
For Doors, Windows, Building Entrances, and Building Curtain Wall Components.
First use in or about July 1963.

SN 223,816. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed July 20, 1965.

PENNSALT

Owner of Reg. Nos. 517,416, 805,888, and others.
For Construction Materials—Namely, Cement and Mortar Sold With Resin and Hardener as a Part Thereof.
First use on or about Oct. 9, 1947.

SN 228,989. Carboline Company, St. Louis, Mo. Filed Sept. 30, 1965.

SANCOURA

For Seamless Resilient Surfacing Compositions for Wood, Metal, Concrete Walls, Floors, Ceilings, and the Like.
First use Sept. 9, 1965.

SN 235,424. "Pull Over" Corporation, Worcester, Mass. Filed Dec. 28, 1965.

Tiger Patch

Applicant disclaims any rights in the word "Patch" when used alone and apart from the mark as shown.
For Fiberglass Tape for Repairing Mufflers and Tailpipes.
First use Apr. 1, 1965.

SN 236,724. The Euclid Chemical Company, Cleveland, Ohio. Filed Jan. 18, 1966.

KUREZ

For Membrane Type, Non-Paint-Like, Compound Made in Several Formulae, Such as Resin Base, Paraffin Base, and Wax-Resin Base, Either Pigmented or Clear, for Curing Concrete Floors, Sidewalks, Pavements, and Run-Ways.
First use on or about Mar. 1, 1956.

SN 237,825. Duracrete Spray Co., Inc., Sarasota, Fla. Filed Feb. 2, 1966.

DURACRETE

For Ready-Mix Cementitious Protective and Decorative Coating, for Use on Exterior Walls and the Like.
First use May 3, 1963.

SN 238,406. Coleco Industries, Inc., Hartford, Conn. Filed Feb. 9, 1966.

TRIUMPH

For Swimming Pools, Components Thereof and Accessories Therefor, Sold Together as a Complete Unit.
First use on or before Apr. 7, 1965.

SN 238,407. Coleco Industries, Inc., Hartford, Conn. Filed Feb. 9, 1966.

SEASIDE

For Swimming Pools, Components Thereof and Accessories Therefor, Sold Together as a Complete Unit.
First use on or before Apr. 7, 1965.

SN 239,125. Coleco Industries, Inc., Hartford, Conn. Filed Feb. 18, 1966.

ROYAL OLYMPIAN

For Swimming Pools, Components Thereof and Accessories Therefor, Sold Together as a Complete Unit.
First use on or before Apr. 7, 1965.

SN 239,407. Garland Manufacturing Company, Detroit, Mich. Filed Feb. 23, 1966.

ARISTOCRAT

For Garage Doors.
First use Aug. 22, 1964.

SN 243,677. R.-L. Kuss & Co., Inc., Findlay, Ohio. Filed Apr. 18, 1966.

PARA-PORT

For Flexible Doors and Partitions for Buildings.
First use Jan. 17, 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 231,546. Continental Oil Company, Ponca City, Okla. Filed Oct. 24, 1965.

PV-DUIT

For Plastic Pipe.
First use 1960.

SN 238,577. Silo-Vac Corporation, Richfield, Minn. Filed Feb. 10, 1966.

ZIP SEAL

For U-Shaped Outer Section Fastener With a Flexible Inner or Outer Member for Securing Plastic or Other Fabric Material Into an Air Tight or Close Fitting Contact To Provide a Securing Method, for One or Usually Two Sheets of Film, To Form an Envelope, or Continuous Membrane.
First use Feb. 10, 1966.

SN 248,444. Eugene Dobish, d.b.a. Fastener Sales Company, Chicago, Ill. Filed June 20, 1966.

FAST-JOINT

For Metal Fastening Devices for Joining Together Seams of Plastic Resinous Laminated Members, Including Table Tops, Sink Tops, and the Like, and for Fastening Together Wood Paneling Elements.
First use in or about February 1959.

Class 14—Metals and Metal Castings and Forgings

SN 230,920. Società Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.



The words "Made in Italy" are disclaimed apart from the mark as shown. The Portrait is not the portrait of a living individual. Owner of Italian Reg. No. 98,267, dated Oct. 20, 1950.

For Semi-Finished Products—Namely, Bars, Sheets, Plates, and Wires Made of Copper and Copper Alloys, of Nickel and Nickel Alloys, and of Aluminum and Aluminum Alloys.

SN 230,939. Società Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

Owner of Italian Reg. No. 161,629, dated Jan. 9, 1963.

For Semi-Finished Products of Copper Alloys, Nickel and Nickel Alloys, Aluminum and Aluminum Alloys, Comprising Sheets, Strips, Bars, Wire Rope, Disks, Pipes, and Bands.

SN 256,133. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 10, 1966.

SEALVAR

For Thermal Expansion Alloys.
First use Aug. 3, 1966.

Class 15—Oils and Greases

SN 224,611. Harvard Oil Company, Forest Park, Ill. Filed July 30, 1965.

GO-TANE

For Petroleum Products—Namely, Motor Fuels, Lubricating Oils, and Greases.
First use July 15, 1965.

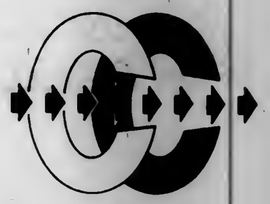
SN 240,093. Gold Eagle Products Co., Chicago, Ill. Filed Mar. 3, 1966.



The word "Auto" is disclaimed separate and apart from the mark as shown.

For Automobile Chemicals—Namely, an Additive for Lubricating Oil for Internal Combustion Engines.
First use January 1966.

SN 243,101. Coulter Electronics, Inc., Hialeah, Fla. Filed Apr. 11, 1966.



Owner of Reg. Nos. 709,046 and 723,572.

For Machine Oil.
First use on or about Apr. 8, 1965.

Class 16—Protective and Decorative Coatings

SN 229,240. Haas Chemical Corporation, Taylor, Pa. Filed Oct. 4, 1965.



Owner of Reg. No. 720,239.

For Colored Enamel Paint, Colored Flat Paint, Clear Paint, Fluorescent Paint, Varnish Stains, Fabric and Vinyl Sprays, and Epoxy Coatings for Refinishing Tile, Porcelain and Ceramics.
First use at least as early as October 1964; Feb. 1, 1959, as to "Color Jet."

SN 229,757. Mary Carter Paint Co., Tampa, Fla. Filed Oct. 11, 1965.

RITE KOTE

For Exterior House Paints.
First use Sept. 15, 1965.

SN 230,500. Badger Manufacturing Corporation, Chicago, Ill. Filed Oct. 19, 1965.



For Spray-Type Paint for Use on Wood and Metal, and Engine Parts and Accessories.
First use Oct. 18, 1965.

SN 230,501. Badger Manufacturing Corporation, Chicago, Ill. Filed Oct. 19, 1965.



For Spray-Type Paint for Use on Wood and Metal, and Engine Parts and Accessories.
First use Oct. 18, 1965.

SN 233,846. The Valspar Corporation, Rockford, Ill. Filed Dec. 2, 1965.

JANNEY BEST

Insofar as applicant is aware the mark "Janney Best" is not the name of a particular living person.

For House Paint for Interior and Exterior Use, Enamel and Varnish for Exterior and Interior Use.
First use in or about January 1946.

SN 243,226. Dal-Worth Paint Mfg. Co., Mesquite, Tex. Filed Apr. 12, 1966.

DAL-SHIELD

The drawing is lined for gold, but applicant makes no claim for color as a part of the mark.

For Exterior House Paint.
First use on or about Sept. 28, 1965.

Class 17—Tobacco Products

SN 241,234. Camacho Cigars, Inc., Miami, Fla. Filed Mar. 17, 1966.



Owner of Reg. No. 738,143.

For Cigars.
First use Sept. 8, 1963.

SN 242,926. Philip Morris Incorporated, New York, N.Y. Filed Apr. 7, 1966.

AVILA

Owner of Reg. No. 745,689.

For Cigarettes and Cigars.
First use May 14, 1962, on cigarettes.

SN 242,927. Philip Morris Incorporated, New York, N.Y. Filed Apr. 7, 1966.

TAMANACO

For Cigars.
First use Dec. 14, 1964.

SN 242,928. Philip Morris Incorporated, New York, N.Y. Filed Apr. 7, 1966.

MIRANDA

For Cigars.
First use Dec. 14, 1964.

SN 243,599. Jno. H. Swisher & Son, Inc., Jacksonville, Fla. Filed Apr. 15, 1966.

KING EDWARD

Owner of Reg. Nos. 219,035, 721,866, and others.

For Cigars and Cigarillos.
First use at least as early as December 1957 on cigars.

SN 243,680. Lane Limited, New York, N.Y. Filed Apr. 18, 1966.

EVENING HOURS

For Smoking Tobacco.
First use November 1965.

SN 243,860. General Cigar Co., Inc., New York, N.Y. Filed Apr. 20, 1966.

PANCHO ARANGO

"Pancho" was the nickname of Francisco Arango, now deceased. Owner of Reg. Nos. 420,668 and 786,302.

For Cigars.
First use Jan. 15, 1916.

SN 244,097. General Cigar Co., Inc., New York, N.Y. Filed Apr. 22, 1966.

BRIGADOON

For Cigars.
First use Feb. 8, 1966.

SN 244,098. General Cigar Co., Inc., New York, N.Y. Filed Apr. 22, 1966.

DEALER'S CHOICE

For Cigars.
First use Jan. 25, 1966.

SN 245,014. Roggio Tobacco Corporation of New York Limited, New York, N.Y. Filed May 5, 1966.

BARRACUDA

For Cigarettes.
First use Apr. 12, 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 230,069. Parke, Davis & Company, Detroit, Mich. Filed Oct. 13, 1965.

HALIVER

Owner of Reg. No. 294,692.
For Vitamin Preparations.
First use prior to Jan. 1, 1933.

SN 230,127. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Oct. 14, 1965.

MYLASE

Owner of Reg. No. 791,255.
For Amylase Preparation for Use as an Ingredient in a Pharmaceutical Intended as a Digestant Aid.
First use Jan. 7, 1960.

SN 235,689. Marion Laboratories, Inc., Kansas City, Mo. Filed Jan. 3, 1966.

LANTABID NO. 1

For Sustained Release Capsules Containing Diphenylhydantoin Used in the Treatment of Grand Mal Epilepsy and Other Convulsive States.
First use Nov. 26, 1965.

SN 236,702. American Pharmaceutical Company, New York, N.Y. Filed Jan. 18, 1966.

TŪTHIN - JEL

For Medicated Gum Preparation for Infants.
First use on or about Dec. 20, 1965.

SN 237,489. Salsbury Laboratories, Charles City, Iowa. Filed Jan. 27, 1966.

SALSBURY LABORATORIES

No claim is made to the word "Laboratories" apart from the mark as shown. Owner of Reg. Nos. 501,220 and 516,874.
For Veterinary Preparations—Namely, Veterinary Biologicals, Tonics and Growth Promoting Agents for Animals, and Bacteriostats for Internal Use.
First use Dec. 30, 1965.

SN 238,142. Bristol-Myers Company, New York, N.Y. Filed Feb. 1, 1966.

WHIP-a-COLD

For Medicines and Pharmaceutical Preparations—Namely, a Cough Preparation.
First use Oct. 25, 1965.

SN 239,872. Beecham Group Limited, d.b.a. The Veno Drug Company, Brentford, Middlesex, England. Filed Mar. 1, 1966.

GERMOLENE

Owner of British Reg. No. 348,726, dated Jan. 14, 1913.
For Antiseptic Ointment for Abrasions, Cuts, Bites, Blisters, Chilblains, Minor Burns, Chapped Hands, Spots, Pimples, and Everyday Skin Troubles.

SN 246,175. Janelly Sales, Ltd., Saratoga Springs, N.Y. Filed May 20, 1966.

VITA MART

Applicant disclaims the word "Mart" apart from the mark as shown.
For Pharmaceutical Preparations—Namely, Burn Ointment, First Aid Spray, Stay Awake Capsules, and Antacid Suspension.
First use Apr. 18, 1966.

SN 246,199. Richardson-Merrell Inc., New York, N.Y. Filed May 20, 1966.

VAD

Owner of Reg. No. 424,690.
For Cream for Soothing, Protecting, Softening or Lubricating the Skin, and/or Stimulating Healing in Chafing, Abrasions, or Minor Skin Irritations.
First use Dec. 17, 1958.

SN 246,527. Armour Pharmaceutical Company, d.b.a. Rebels Chemical Company, Chicago, Ill. Filed May 25, 1966.

REHEPTAR

For Extracted Liver Tissue for Use as a Flavoring Agent for Orally Administered Veterinary Products.
First use on or prior to May 12, 1966.

Class 19—Vehicles

SN 212,226. Meade Manufacturing, Incorporated, Meade, Kans. Filed Feb. 17, 1965.

MEADE

For Vehicular Homes and Campers; Motor Homes; Campers for Vehicular Mounting; and Operator Cabs and Enclosures for Vehicles.
First use at least as early as Jan. 1, 1947.

SN 216,035. Wiscot Products Limited, Hamilton, Ontario, Canada. Filed Apr. 7, 1965.

WISCOT

Priority claimed under Sec. 44(d) on Canadian application filed Oct. 17, 1964; Reg. No. 140,495, dated May 28, 1965.
For Boat, Camping, and Utility Trailers.

SN 226,715. Artnell Company, Chicago, Ill. Filed Aug. 30, 1965.

CUSH-N-AIRE BY NATIONAL

For Vehicle Seats—Namely, Seats for Motor Trucks and Buses.
First use on or about Sept. 18, 1964.

SN 227,274. Strick Corporation, Fairless Hills, Pa., by assignment and change of name from Fruehauf Corporation, Fairless Hills, Pa. Filed Sept. 7, 1965.

T.O.M. TRAILER OF THE MONTH!

Applicant disclaims the term "Trailer of the Month."
For Truck Trailer Bodies and Wheeled Units.
First use Aug. 24, 1965.

SN 239,231. Chrysler Boat Corporation, Plano, Tex. Filed Feb. 21, 1966.

HYDRO-VEE

For Boats.
First use at least as early as Jan. 16, 1966.

SN 239,680. Trade Winds Campers, Inc., Manawa, Wis. Filed Feb. 25, 1966.

TAHITI

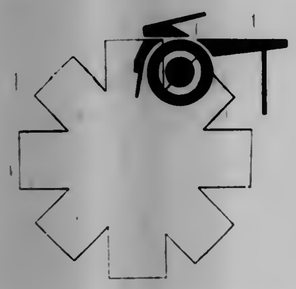
For Camping Trailers.
First use Jan. 25, 1963.

SN 249,912. Cunha Products, Inc., Hayward, Calif. Filed July 11, 1966.

JIFFLOX

For Semi-Trailer Draft Apparatus, and Parts Thereof.
First use Mar. 20, 1964.

SN 249,921. Cunha Products, Inc., Hayward, Calif. Filed July 11, 1966.



For Semi-Trailer Draft Apparatus, and Parts Thereof.
First use Mar. 20, 1964.

SN 255,751. Associated Equipment Company, Inc., Greensboro, N.C. Filed Oct. 5, 1966.

TRAIL-O-SHOP

For Utility Trailers of the Single and Multiple Axle Variety, Exclusive of Engines, for Hauling Construction and Related Equipment.
First use Nov. 17, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 224,121. Ripley Company, Inc., Middletown, Conn. Filed July 23, 1965.

RIPLEY

For Oscillators, Outdoor Lighting Controls and Utility Meter Electrical Control Systems for Recording and Displaying Information Stored in the Utility Meter.
First use 1947.

SN 227,409. Exact Electronics, Inc., Hillsboro, Oreg. Filed Oct. 8, 1965.

EXACT

For Electronics Equipment and Specifically Signal Generators.
First use on or about Dec. 22, 1958.

SN 231,142. Kenwood Manufacturing (Woking) Limited, Havant, England. Filed Oct. 22, 1965.

KENWOOD

Owner of British Reg. No. 712,436, dated Nov. 19, 1952.
For Food Processing Equipment for Home Use—Namely, Electrical Food Mixers With Pulping, Grinding, Mincing, Shredding, and Peeling Attachments and Accessories.

SN 232,315. Instronics Incorporated, Greenville, S.C. Filed Nov. 8, 1965.

INSTRONICS INCORPORATED

For Electrical and Electronic Equipment for Control of Machinery and Processes; and Instruments and Systems for Moisture Measuring and Control.
First use July 13, 1965.

SN 233,300. Allied Stores Corporation, New York, N.Y. Filed Nov. 26, 1965.

LADY ALMART

The term "Lady Almart" is not the entity of a living individual. Owner of Reg. Nos. 562,802 and 788,764.
For Electric Blankets.
First use Nov. 11, 1964.

SN 234,170. Bird Electronic Corporation, Solon, Ohio. Filed Dec. 8, 1965.

TENULINE

For Instruments for Absorbing Electrical Power—Namely, Electrical Co-Axial Line Power Attenuators.
First use Jan. 18, 1964.

SN 235,249. Air Specialists, Inc., Cincinnati, Ohio. Filed Dec. 27, 1965.

SMOKEETER

For Electronic Space Air Filtering Devices for Filtering Impurities From Air in Rooms and Building Interiors.
First use Feb. 25, 1965.

SN 236,463. Channel Master Corporation, Ellenville, N.Y. Filed Jan. 14, 1966.

MAVERICK

For Radio Receivers, and Accessories Therefor—Namely, Batteries, Carrying Cases and Straps, Earphones, and Extension Antennas.
First use Dec. 3, 1965.

SN 237,089. Consolidated Sewing Machine Corp., New York, N.Y. Filed Jan. 24, 1966.

CONSEW

Owner of Reg. No. 287,121.
For Electric Clutch Motors for Sewing Machines, and Controls Therefor.
First use June 1, 1958.

SN 237,485. Reuland Electric Company, City of Industry, Calif. Filed Jan. 28, 1966.

DUOCENTRIC

For Electric Motors.
First use Jan. 5, 1966.

SN 237,745. Rite-O-Lite of California, Inc., Los Angeles, Calif. Filed Feb. 1, 1966.

VAC-A-FLOOD

For Light Bulb Changers and Extensions Therefor.
First use Dec. 28, 1965.

SN 237,764. Union Carbide Corporation, New York, N.Y. Filed Feb. 1, 1966.

NACON

For Insulated Wire and Cable.
First use on or about Jan. 17, 1966.

Class 22—Games, Toys, and Sporting Goods

SN 209,985. Auburn Rubber Company, Inc., Deming, N. Mex. Filed Jan. 15, 1965.



For Wide Variety of Plastic Toys.
First use Nov. 19, 1964.

SN 213,149. Madison Dental Co., Madison, Wis. Filed Mar. 2, 1965.

Safe-T-Gard

Owner of Reg. No. 760,466.
For Protective Mouthpiece for Athletic Use.
First use Jan. 9, 1962.

SN 217,071. New England Fish Company, Seattle, Wash. Filed Apr. 22, 1965.

PINKY THE SALMON

The words "The Salmon" are disclaimed apart from the mark as shown.
For Inflatable Toys.
First use Mar. 8, 1965.

SN 230,732. J. M. Williams, Jr., d.b.a. Champion Slot Racing Products, Chamblee, Ga. Filed Oct. 20, 1965.

CHAMPION

For Slot Car Racing Products—Namely, Motors, Motor Parts, Frames, Wheels, Axles, Tires, Pick-Up Weights, Brushes, Silver Braid, Bodies, Gears, and Controllers.
First use Sept. 5, 1965.
Subj. to Intf. with SN 228,630.

SN 232,004. Lowe's, Inc., Cassopolis, Mich. Filed Nov. 2, 1965.



For Cat Supplies—Namely, Toys, Amusement Devices, Catnip, and Scratching Posts.
First use July 1964.

SN 237,856. Mattel, Inc., Hawthorne, Calif. Filed Feb. 2, 1966.

MIDGE

Owner of Reg. No. 764,237.
For Doll Case, Train Case, and School Bag.
First use on or about June 1963.

SN 237,857. Mattel, Inc., Hawthorne, Calif. Filed Feb. 2, 1966.

SKIPPER

Owner of Reg. No. 774,892.
For Doll Case, Train Case, Hat Case, and School Bag.
First use on or about Mar. 9, 1964.

SN 238,488. R. B. Beurmann & Associates, Cleveland, Ohio. Filed Feb. 10, 1966.

RBB

The mark consists of the letters "RBB" as a part of a diamond design.
For Targets, Target Patches, Target Mounting Means, and Target Scoring Devices.
First use Dec. 10, 1965.

SN 241,005. Regal Toy Limited, Toronto, Ontario, Canada. Filed Dec. 30, 1965.

ROCK-A-TUB

Owner of Canadian Reg. No. 142,882, dated Oct. 22, 1965.
For Plastic Cradle and Bath Combination Toy.

SN 241,355. Manning Manufacturing Corporation, Chicago, Ill. Filed Mar. 18, 1966.

SWIVELERS

For Roller Skates.
First use Feb. 21, 1966.

SN 241,429. Champion Slot Car Products, Inc., Los Angeles, Calif. Filed Mar. 21, 1966.

MOTORMAGIC

For Brushes for Slot Car Motors and Other Miniature Electric Motors, and Lubricant for the Brushes and Commutators Thereof.
First use July 27, 1965.

SN 241,537. Southern Athletic Service, Inc., Leesburg, Fla. Filed Mar. 21, 1966.



For Protective Equipment for Athletes—Namely, Protective Head Coverings, Shoulder Pads, Hip Pads, Rib Pads, Knee Pads, Thigh Pads, Injury Pads, Shin Guards, and Leg Guards.
First use on or about Nov. 28, 1965.

SN 241,544. Margaret Lucile Thomas, d.b.a. Lavender Licorice Products, Broderick, Calif. Filed Mar. 21, 1966.

LAVENDER LICORICE

For Dolls and Accessories.
First use Mar. 1, 1966.

SN 241,640. Colt's Inc., Hartford, Conn. Filed Mar. 23, 1966.

PIONEER

For Archery Bows.
First use Nov. 22, 1965.

SN 241,946. Totsy Manufacturing Co., Inc., Holyoke, Mass. Filed Mar. 25, 1966.

Tiny Blossom

For Dolls and Clothing Therefor.
First use Mar. 15, 1966.

SN 242,202. The "Bingo King" Company, Incorporated, Englewood, Colo. Filed Mar. 30, 1966.

LUCKY JIM

For Bingo Number Selection Apparatus and Scoreboards for Bingo Games.
First use on or about May 1, 1961.

SN 242,203. The "Bingo King" Company, Incorporated, Englewood, Colo. Filed Mar. 30, 1966.

THE IMPERIAL

For Bingo Number Selection Apparatus and Scoreboards for Bingo Games.
First use on or about Mar. 1, 1966.

SN 242,204. The "Bingo King" Company, Incorporated, Englewood, Colo. Filed Mar. 30, 1966.

FLASH ACTION

For Bingo Number Selection Apparatus and Scoreboards for Bingo Games.
First use on or about Aug. 1, 1959.

SN 242,205. The "Bingo King" Company, Incorporated, Englewood, Colo. Filed Mar. 30, 1966.

PORT-O-FLASH

For Bingo Number Selection Apparatus and Scoreboards for Bingo Games.
First use on or about Mar. 1, 1966.

SN 242,207. The "Bingo King" Company, Incorporated, Englewood, Colo. Filed Mar. 30, 1966.

BONUS AWARD

For Bingo Number Selection Apparatus and Scoreboards for Bingo Games.
First use Mar. 1, 1966.

SN 242,209. The "Bingo King" Company, Incorporated, Englewood, Colo. Filed Mar. 30, 1966.

LITTLE JOE

For Bingo Number Selection Apparatus and Scoreboards for Bingo Games.
First use on or about June 1, 1953.

SN 242,222. De Luxe Reading Corporation, Elisabeth, N.J. Filed Mar. 30, 1966.

Johnny Speed

For Toy Automobiles and Toy Automobile Game Equipment.
First use Nov. 2, 1965.

SN 245,489. Mr. Mod Shop, Inc., New Orleans, La. Filed Apr. 4, 1966.



For Bridge Sets Consisting of Playing Cards, Score Pad, and Pencil.
First use March 1962.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 212,496. Camillus Cutlery Company, Camillus, N.Y. Filed Feb. 23, 1965.

SWORD BRAND

The word "Brand" is disclaimed apart from the mark.
Owner of Reg. Nos. 54,356 and 775,330.
For Paring, Bread, Butcher, Boning, Hunting, Sheath, and Kitchen Knives.
First use Jan. 20, 1965.

SN 214,751. The Cleveland Twist Drill Company, Cleveland, Ohio. Filed Mar. 23, 1965.

BAY STATE

Owner of Reg. No. 373,888.
For Tools—viz, Tools and Tool Sets, Namely, Screw Plates, Taps, Tap Wrenches, Chasers, Reamers, Dies, Die Stocks, Collets, Holders, and Gages.
First use Dec. 2, 1964.

SN 222,786. U.S. Anger, Inc., New York, N.Y. Filed July 6, 1965.

ANGER

For Extruder Equipment for the Production of Products From Polyvinyl Chloride or Any Other Thermoplastic Resins, Including Parts and Accessories Thereof—Namely, Extruder Screws, Forming Tools, and Temperature Controls.
First use Jan. 1, 1958.

SN 222,787. U.S. Anger, Inc., New York, N.Y. Filed July 6, 1965.

APM

For Extruder Equipment for the Production of Products From Polyvinyl Chloride or Any Other Thermoplastic Resins, Including Parts and Accessories Thereof—Namely, Extruder Screws, Forming Tools, and Temperature Controls.
First use Jan. 1, 1958.

SN 222,789. U.S. Anger, Inc., New York, N.Y. Filed July 6, 1965.

ANGER APM

For Extruder Equipment for the Production of Products From Polyvinyl Chloride or Any Other Thermoplastic Resins, Including Parts and Accessories Thereof—Namely, Extruder Screws, Forming Tools, and Temperature Controls.
First use Jan. 1, 1958.

SN 226,719. Phillip E. Boxrud, d.b.a. Nokes Rim & Wheel Co., Madelia, Minn. Filed Aug. 30, 1965.

PROBEE

For Mechanical Soil Samplers.
First use Jan. 18, 1965.

SN 229,473. Western Gear Corporation, Lynwood, Calif. Filed Oct. 6, 1965.

DART

For Printing Presses and Parts Thereof.
First use Mar. 30, 1963.

SN 230,288. Crane Co., New York, N.Y. Filed Oct. 15, 1965.

MANOR

For Fluid Handling Pumps for Domestic Use.
First use Sept. 20, 1965.

SN 230,291. Richier, Paris, France. Filed Oct. 15, 1965.

DYNAWEITZ

Priority claimed under Sec. 44(d) on French Reg. No. 531,403, dated May 17, 1965 (Seine); Natl. Inst. No. 248,935. Owner of U.S. Reg. No. 745,781.
For Handling and Lifting Apparatus Designed To Operate at Slow Speeds for Fragile Equipment.

SN 230,292. Richier, Paris, France. Filed Oct. 15, 1965.

ELECTROPOSE

Priority claimed under Sec. 44(d) on French Reg. No. 531,402, dated May 17, 1965 (Seine); Natl. Inst. No. 248,934.
For Handling and Lifting Apparatus Designed To Operate at Slow Speeds and To Handle Fragile Equipment.

SN 231,762. A. W. Kelley, d.b.a. Hura-King Coin-Op Car Wash, San Antonio, Tex. Filed Oct. 28, 1965.

HURA KING

The drawing is lined for red, but no claim is made to color.
For Coin-Operated Car Wash Installation, and Parts Thereof.
First use June 1963.

SN 231,768. Moyer & Diebel Metalcrafts Limited, Jordan Station, Ontario, Canada. Filed Oct. 28, 1965.

SPRAYWAY

For Machines for Washing Glassware.
First use at least Sept. 17, 1965; in commerce at least Sept. 17, 1965.

SN 233,147. Thomas Collators, Inc., New York, N.Y. Filed Nov. 22, 1965.

AUTOMATIC 10

The word "Automatic" is disclaimed apart from the mark as shown.
For Collating Machines, With or Without Stapling Means and With or Without Gaging Means, for Assembling Sheets of Paper.
First use on or about Aug. 1, 1962.

SN 234,238. Roman & Kunsl, Inc., Marshall, Mich. Filed Dec. 8, 1965.

HYDRA-SWING

Owner of Reg. No. 798,766.
For Automatic Door Opening Apparatus, of the Type Including Hydraulically Driven Mechanism and Connecting Drive Means for Opening and Closing Vertically Hinged Doors, and Hydraulic Pump and Drive Mechanism Therefor.
First use Apr. 15, 1965.

SN 238,549. Meyer Products, Inc., Cleveland, Ohio. Filed Feb. 10, 1966.

SNO-FLO

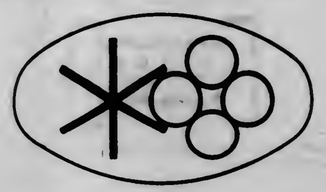
For Snow Plows.
First use on or about Dec. 15, 1965.

SN 238,805. Vermont American Corporation, Louisville, Ky. Filed Feb. 14, 1966.

FIRE-TOOTH

For Saw Blades.
First use Mar. 17, 1965.

SN 239,455. Sullivan Machinery Company, Inc., Michigan City, Ind. Filed Feb. 23, 1966.



For Air Compressors.
First use Jan. 28, 1966.

SN 241,586. Eversharp, Inc., Milford, Conn. Filed Mar. 22, 1966.

SCHICK-BAND

Owner of Reg. Nos. 224,639, 789,658, and others.
For Safety Razors and Safety Razor Blades.
First use Mar. 7, 1966, on or about June 17, 1926, as to "Schick."

SN 242,030. Philip Morris Incorporated, New York, N.Y. Filed Mar. 28, 1966.

MARLBORO

Owner of Reg. Nos. 68,502 and 632,881.
For Razors, Razor Blades, and Blade Container Dispenser.
First use Feb. 17, 1966.

SN 244,399. Eversharp, Inc., Milford, Conn. Filed Apr. 27, 1966.

AUTOBAND

For Safety Razors and Safety Razor Blades.
First use Apr. 13, 1966.

SN 248,760. True Temper Corporation, Cleveland, Ohio. Filed June 23, 1966.

AMERICAN

For Agricultural, Home, and Industrial Hand Tools—Namely, Forks, Rakes, Hoes, Edgers, Trowels, Shears, Grass and Weed Tools, Cutters, Post Hole Diggers, Axes, Hatchets, Adzes, Scythes, Hooks, Machetes, Sledges, Picks, Mattocks, Hammers, Shovels, Spades and Scoops, and Repair Handles Therefor.
First use on or about Jan. 24, 1920.

Class 26—Measuring and Scientific Appliances

SN 225,735. Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany. Filed Aug. 16, 1965.

COMPUR ELECTRONIC

Priority claimed under Sec. 44(d) on German application filed Feb. 17, 1965; Reg. No. 815,786, dated Feb. 9, 1966. Applicant disclaims the use of the word "Electronic" apart from the mark as shown.
For Photographic and Optical Apparatus and Instruments—Namely, Cameras, Projectors, Enlargers; and Parts Thereof and Accessories Therefor—Namely, Flash Apparatus, Diaphragms, Lenses, Photographic Shutters, and Parts Therefor.

SN 230,538. Hoffman Camera Corporation, Farmingdale, N.Y. Filed Oct. 19, 1965.

HOFFMAN

For Cameras and Film Holders Therefor.
First use during 1956.

SN 230,686. The Philadelphia Thermometer Company, Philadelphia, Pa. Filed Oct. 20, 1965.

VISUAL-STAT

For Thermostats.
First use June 26, 1940.

SN 230,804. Elektro-Physik Hans Nix & Dr. Ing. Steingroever, Cologne-Niehl, Germany. Filed Oct. 21, 1965.

MIKROTEST

For Magnetic Thickness Gauges.
First use 1949; in commerce March 1956.

SN 231,879. Ansitron, Inc., Huntington, N.Y., by change of name from ANS, Inc., Huntington, N.Y. Filed Nov. 1, 1965.

ANSITRON

For Electrical and Electronic Apparatus and Equipment—Namely, Electrical and Electronic Test Equipment, Spectrometers, Liquid Scintillation Spectrometers, Including Detectors, Recorders and Monitoring Devices, Amplifiers, Isotope Discriminators, and Radioactive Measuring Equipment.
First use Apr. 30, 1965.

SN 232,378. Federal Products Corporation, Providence, R.I. Filed Nov. 4, 1965.

SURE-SET

For Machine Tool Work Positioning Gage.
First use Oct. 9, 1957.

SN 233,645. Spiratone, Inc., Flushing, N.Y. Filed Nov. 30, 1965.

MONOPAK

For Electronic Flashguns Usable for Photographic Purposes as a One-Piece Unit.
First use Nov. 13, 1965.

SN 234,292. Monroe International Corporation, Orange, N.J. Filed Dec. 9, 1965.

EPIC

For Business Machines—Namely, Calculating, Computing, and Data Processing Machines.
First use on or about Dec. 1, 1964.

SN 237,869. Optische Anstalt Metzler & Cie., Waiblingen, Germany. Filed Feb. 2, 1966.

METZLER

For Spectacles, Sun Glasses, and Frames for Spectacles and Sun Glasses.
First use 1957; in commerce 1960.

SN 237,914. Anelex Corporation, Boston, Mass. Filed Feb. 3, 1966.

TELEMUX

For Data Processing Equipment.
First use Apr. 15, 1964.

SN 238,128. Univis, Inc., Fort Lauderdale, Fla. Filed Feb. 4, 1966.

UNI-LITE

For Ophthalmic Lenses.
First use Aug. 23, 1965.

SN 239,284. John Marshall, d.b.a. John Marshall Productions, Hollywood, Calif. Filed Feb. 21, 1966.

SMOGGLES

For Eyeglasses and Goggles.
First use Nov. 6, 1965.

SN 247,205. The Ealing Corporation, Cambridge, Mass. Filed June 3, 1966.

CPK

For Atomic Models.
First use about February 1966.

Class 27—Horological Instruments

SN 195,308. Emil Leichter Watch Co., Inc., New York, N.Y. Filed June 10, 1964.

JEAN PIQUET

The name "Jean Piquet" is a fictitious name and does not represent any living person.
For Watches.
First use July 15, 1944.

SN 235,824. Ernest Borel & Cie S.A., Neuchatel, Switzerland. Filed Jan. 5, 1966.

ERNEST BOREL

Owner of Swiss Reg. No. 212,079, dated Aug. 20, 1965; and U.S. Reg. Nos. 532,971 and 631,284.
For All Types of Watches, Clocks, Alarm Clocks, and Parts Thereof, Watch Movements, Watch Cases, and Watch Dials.

SN 238,798. Sunbeam Corporation, Chicago, Ill. Filed Feb. 14, 1966.

AMHURST

For Clocks.
First use Jan. 14, 1966.

SN 238,799. Sunbeam Corporation, Chicago, Ill. Filed Feb. 14, 1966.

FUTURITY

For Clocks.
First use Jan. 19, 1966.

Class 28—Jewelry and Precious-Metal Ware

SN 239,013. Cheever, Tweedy & Co., Inc., North Attleboro, Mass. Filed Feb. 17, 1966.

CARRIAGE TRADE

For Jewelry for Personal Wear and Adornment, Not Including Watches.
First use Feb. 10, 1966.

SN 239,532. Peter J. Mamakos, d.b.a. The Demetrios Co., Hollywood, Calif. Filed Feb. 24, 1966.

KOMBOLOGIA

For Strung Beads.
First use Feb. 10, 1966.

SN 239,675. Tela-Time Industries, New York, N.Y. Filed Feb. 25, 1966.

t-t

For Jewelry.
First use Feb. 1, 1966.

SN 256,040. Wells, Inc., Attleboro, Mass. Filed Oct. 10, 1966.

WELLS

For Jewelry for Personal Wear and Adornment, Not Including Watches.
First use 1922.

Class 29—Brooms, Brushes, and Dusters

SN 238,817. The Wooster Brush Company, Wooster, Ohio. Filed Feb. 14, 1966.

GOLDEN-GLO

For Paint Brushes.
First use Aug. 17, 1965.

SN 238,818. The Wooster Brush Company, Wooster, Ohio. Filed Feb. 14, 1966.

WOONEL

For Fabric Covers for Paint Applicators.
First use Aug. 17, 1965.

SN 240,021. Rawson Drug and Sundry Company, Inc., Oakland, Calif. Filed Mar. 2, 1966.

PACIFIC PRIDE

For Brooms, Mops, and Household Brushes.
First use February 1965 on brooms.

Class 31—Filters and Refrigerators

SN 234,456. Nalco Chemical Company, Chicago, Ill. Filed Dec. 13, 1965.

MPC-1

For Ion Exchange Resin.
First use Nov. 2, 1965.

SN 247,078. Sternco Industries, Inc., Allendale, N.J. Filed June 1, 1966.

Delta

For Aquarium Tank Accessories—Namely, Air and Water Filter Devices.
First use Sept. 4, 1962.

Class 32—Furniture and Upholstery

SN 231,021. Russ Bassett Corp., Whittier, Calif. Filed Oct. 22, 1965.



For Office Furniture Comprised of Desks, Chairs, Tables, Cabinets, Files, Desk Trays, and Shelving.
First use Sept. 13, 1965.

SN 231,099. Formco, Inc., Cincinnati, Ohio. Filed Oct. 22, 1965.

Tiara Provincial

The word "Provincial" is disclaimed apart from the mark as shown.
For Provincial, Laminated-Plastic Covered Vanity and Provincial, Laminated-Wood Covered Vanity.
First use Dec. 8, 1964.
Subj. to Intf. with SN 242,994.

SN 236,445. American Metal Products Company, Detroit, Mich. Filed Jan. 14, 1966.

SELECTRA

For Electrically Operated Adjustable Beds.
First use Dec. 18, 1965.

SN 239,477. Visirecord, Inc., Coplague, N.Y. Filed Feb. 23, 1966.

VISI strip

Applicant disclaims the term "Strip" apart from the mark as shown. Owner of Reg. Nos. 389,598, 725,622, and others.
For Reference Strip or Card-Holding Device, Consisting of One or More Visible Reference Panels, for Use in Record-Keeping Systems.
First use Jan. 27, 1966.

SN 242,288. Harry A. Robbins, d.b.a. A.R.M. Display Racks & Co., Danville, Ill. Filed Mar. 30, 1966.

SPOR-TIER

For Display Racks.
First use Feb. 28, 1966.

SN 242,381. Norsk Møbelfabrikk A/S, Oslo, Norway. Filed Mar. 31, 1966.

SCANLINE

Priority claimed under Sec. 44(d) on Norwegian application filed Nov. 17, 1965; Reg. No. 68,900, dated Apr. 29, 1966.
For Tables, Chairs of All Kinds, Benches, Sofas, Beds, Shelves, Wardrobes, Cabinets, and Cupboards.

SN 242,994. Leonetti Furniture Mfg. Co., Inc., Portland, Oreg. Filed Apr. 8, 1966.

TIARA

For Upholstered Furniture—Namely, Sofas, Chairs, Love Seats, and Sectional Pieces.
First use Oct. 15, 1959.
Subj. to Intf. with SN 231,099.

SN 243,104. Directional Industries, Incorporated, New York, N.Y. Filed Apr. 11, 1966.

OMNI-CHAIR

For Chairs.
First use on or about Mar. 21, 1966.

SN 243,247. The Kenmar Manufacturing Company, East Palestine, Ohio. Filed Apr. 12, 1966.

Sigmund

For Upholstered Furniture, Specifically a Chair-Desk Combination.
First use Jan. 3, 1966.

SN 243,590. Simmons Company, New York, N.Y. Filed Apr. 15, 1966.

HOSPITAL-BILT

Owner of Reg. No. 704,303.
For Mattresses.
First use July 6, 1950.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 216,593. Hodgins Combustion Devices Limited, Ottawa, Ontario, Canada. Filed Apr. 15, 1965.

HEAT HOARDER

Applicant disclaims the word "Heat" as a part of the mark.
For Heat Reclaiming Units for Smoke Pipe Installation Between Furnace and Chimney.
First use July 1959; in commerce Feb. 27, 1964.

SN 235,926. The McKay Company, Pittsburgh, Pa. Filed Jan. 6, 1966.

McKAY

For Welding Electrodes.
First use 1936.

SN 242,950. The J. B. Williams Company, Inc., Thomaston, Conn. Filed Apr. 7, 1966.

HORNET

For Oil Burners for Lamps.
First use in or about 1885.

SN 242,952. The J. B. Williams Company, Inc., Thomaston, Conn. Filed Apr. 7, 1966.

EAGLE

For Oil Burners for Lamps.
First use in or about 1900.

SN 242,953. The J. B. Williams Company, Inc., Thomaston, Conn. Filed Apr. 7, 1966.

PET

For Oil Burners for Lamps.
First use in or about 1880.

SN 242,954. The J. B. Williams Company, Inc., Thomaston, Conn. Filed Apr. 7, 1966.

NUTMEG

For Oil Burners for Lamps.
First use in or about 1890.

SN 256,255. The Donley Brothers Company, Cleveland, Ohio. Filed Oct. 12, 1966.

DRAWMASTER

For Fireplace Dampers.
First use Mar. 21, 1966.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 234,105. Approved Equipment Mfg. Co., Inc., d.b.a. Blaze Guard Manufacturing Company, North Bergen, N.J. Filed Dec. 7, 1965.



For Fire Hoses.
First use 1959.

SN 237,689. The Gates Rubber Company, Denver, Colo. Filed Feb. 1, 1966.

Finalist

Owner of Reg. No. 314,361.
For Tires.
First use Nov. 9, 1965.

SN 238,078. The B. F. Goodrich Company, Akron, Ohio. Filed Feb. 4, 1966.

SOLID-MATIC

For Rubber Tires.
First use Jan. 20, 1966.

SN 239,509. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Feb. 24, 1966.

JET-AGE

For Pneumatic Vehicle Tires.
First use Jan. 27, 1966.

Class 36—Musical Instruments and Supplies

SN 218,205. Tel-Ray Electronics, Los Angeles, Calif. Filed May 6, 1965.

Ad+n+echo

For Electrical Signal Delay and Reproduction Apparatus Used in Connection With High Fidelity Sound Reproduction Equipment.
First use Nov. 1, 1964.

SN 231,924. Murphy Music Industries, San Fernando, Calif. Filed Nov. 1, 1965.

Murph

For Guitars.
First use July 10, 1965.

Class 37—Paper and Stationery

SN 193,412. Simon Adhesive Products Corp., Long Island City, N.Y. Filed May 13, 1964.

SIMON

For Adhesive Coated Papers, Fabrics, Films, and Laminated Foils for Use as Base Stock; and Adhesive Labels.
First use in or about 1944.

SN 199,176. Continental Can Company, Inc., New York, N.Y. Filed Aug. 4, 1964.

LIQUI-SEAL

Owner of Reg. Nos. 415,220 and 674,028.
For Coating Material for Paperboard.
First use May 13, 1964.

SN 221,976. Betty Jetton, d.b.a. The Celluclay Co., Midland, Tex. Filed June 24, 1965.

Celluclay

For Sculpture Medium Composed of Papier Maché Impregnated With Clay.
First use Mar. 2, 1965.

SN 238,097. Library Binding Service, Inc., Des Moines, Iowa. Filed Feb. 4, 1966.

TT

Owner of Reg. No. 335,441.
For Bindings and Covers for Books, and Parts and Findings Therefor.
First use Oct. 15, 1965.

Class 38—Prints and Publications

SN 201,100. The Christian Science Publishing Society, Boston, Mass. Filed Sept. 2, 1964.

DIALOGUE WITH YOUTH

For Column for a Daily Newspaper.
First use Feb. 2, 1964.

SN 210,522. Valma B. Bauscher, Seattle, Wash. Filed Jan. 25, 1965.

CHOO-CHOO VALLEE TALES

For Story Sheets and Newsletter for Children.
First use on about Dec. 23, 1964.

SN 229,409. Jose Maria Llovet Catala, d.b.a. AFHA, Barcelona, Spain. Filed Oct. 6, 1965.

AFHA

For Textbooks, Teaching Sheets, Printed Booklets in Connection With Correspondence Courses.
First use May 1955; in commerce April 1964.

SN 230,387. Glen E. Hall, d.b.a. Place Finder, San Diego, Calif. Filed Oct. 18, 1965.

PLACEFINDER

For Maps.
First use April 1964.

SN 241,426. Bohman Industrial Traffic Consultants, Inc., Gardner, Mass. Filed Mar. 21, 1966.

THE FURNITURE TRANSPORTER

For Magazine.
First use Jan. 14, 1966.

Class 39—Clothing

SN 228,331. Commonwealth Shoe & Leather Co., Inc., Whitman, Mass. Filed Sept. 22, 1965.

SLAX

For Men's Shoes.
First use Feb. 15, 1938.

SN 231,059. Craddock-Terry Shoe Corporation, Lynchburg, Va. Filed Oct. 22, 1965.

MARK XII by A.G.

Owner of Reg. Nos. 699,879 and 699,895.
For Shoes for Men and Boys.
First use Feb. 1, 1963.

SN 235,944. Victory Sales, Inc., Brockton, Mass. Filed Jan. 6, 1966.

VICSHU

For Shoes.
First use Dec. 29, 1965.

SN 240,014. Mr. Mod Shop, Inc., New Orleans, La. Filed Mar. 2, 1966.



For Women's Clothing—Namely, Sweatshirts and Outerwear.
First use March 1962.
Subj. to Intf. with SN 207,125.

SN 240,015. Mr. Mod Shop, Inc., New Orleans, La. Filed Mar. 2, 1966.



For Men's Clothing—Namely, Ties, Suits, Shirts, Socks, Sweaters, Swim Wear, Underwear, Shoes, Outercoats, Belts, Sweatshirts, and Hats.
First use March 1962.
Subj. to Intf. with SN 207,125.

SN 241,095. Teen-Age Beachwear Corporation, New York, N.Y. Filed Mar. 15, 1966.

TALL TALK

For Swimwear, Beachwear, and Playsuits.
First use Sept. 22, 1965.

SN 241,400. Welsh Manufacturing Company, Providence, R.I. Filed Mar. 18, 1966.

SOUND-OFF

For Ear Protectors.
First use June 1964.

SN 241,653. Stanley M. Feil, Inc., Cleveland, Ohio. Filed Mar. 23, 1966.

SHAKER SQUARE

For Dresses, Skirts, Blouses, Sweaters, Slacks, Shorts, Suits, Coats, and Jackets.
First use January 1965.

SN 241,818. A. Sulka & Company, New York, N.Y. Filed Mar. 24, 1966.

Sulka

Owner of Reg. Nos. 191,674, 310,430, and 310,431.
For Men's Dress Shirts, Sports Shirts and Undershirts, Formal Shirts, Sport Coats and Jackets, Beach Jackets, Golf Jackets, Suburban Coats, Top Coats, Hosiery, Ties, Handkerchief Sets, Mufflers and Ascots, Rain Coats and Hats, Hats, Gloves, Robes, Slacks and Shorts, Beach Wear Including Cabana Sets, Bathing Trunks, Jackets, and Robes, Sweaters, Vests, Pajamas, Slippers, Underwear, Shirts and Shorts, and Long Underwear, Tie and Cummerbund Sets, Coat Liners, Dickies, Belts, Suspenders, Garters, and Boys' Sweaters; and Women's Scarves, Mantillas, Sweaters, Shirts, Blouses, Pajamas, Rain Coats and Hats, Handkerchiefs, and Robes.
First use 1893.

SN 241,821. A. Sulka & Company, New York, N.Y. Filed Mar. 24, 1966.

A. Sulka & Company

Owner of Reg. Nos. 191,674, 310,430, and 310,431.
For Men's Dress Shirts, Sports Shirts and Undershirts, Formal Shirts, Sport Coats and Jackets, Beach Jackets, Golf Jackets, Suburban Coats, Top Coats, Hosiery, Ties, Handkerchief Sets, Mufflers and Ascots, Rain Coats and Hats, Hats, Gloves, Robes, Slacks and Shorts, Beach Wear Including Cabana Sets, Bathing Trunks, Jackets, and Robes, Sweaters, Vests, Pajamas, Slippers, Underwear, Shirts and Shorts, and Long Underwear, Tie and Cummerbund Sets, Coat Liners, Dickies, Belts, Suspenders, Garters, and Boys' Sweaters; and Women's Scarves, Mantillas, Sweaters, Shirts, Blouses, Pajamas, Rain Coats and Hats, Handkerchiefs, and Robes.
First use 1893.

SN 242,027. Linder Brothers, Inc., Scranton, Pa. Filed Mar. 28, 1966.

CORDONNET

For Women's and Young Ladies' Coats.
First use Dec. 1, 1965.

SN 243,957. Camp and McInnes, Inc., Reading, Pa. Filed Apr. 21, 1966.

FAIRVIEW

For Men's Hosiery.
First use Mar. 8, 1966.

SN 245,062. Byer-Rolnick Corporation, Garland, Tex. Filed May 6, 1966.

TURISTO

For Men's Hats.
First use on or about Aug. 15, 1960.

SN 245,312. Host Pajamas, Inc., New York, N.Y. Filed May 10, 1966.

KARATE

For Pajamas.
First use Mar. 29, 1966.

SN 245,435. Mr. Mod Shop, Inc., New Orleans, La. Filed Apr. 4, 1966.

MR. MOD

For Men's Clothing—Namely, Ties, Suits, Shirts, Socks, Sweaters, Swim Wear, Underwear, Shoes, Outer Coats, Belts, Sweatshirts, and Hats.
First use March 1962.
Subj. to Intf. with SN 207,125.

SN 245,600. Melville Shoe Corporation, New York, N.Y. Filed May 13, 1966.

COMANCHE MOCS

No registration rights are claimed for the word "Mocs" apart from the mark as shown.
For Men's, Women's, and Children's Shoes.
First use at least prior to Jan. 1, 1963.

SN 245,703. Genesco Inc., Nashville, Tenn. Filed May 16, 1966.

SUMMER FRESH

For Brassieres and Girdles.
First use Mar. 16, 1966.

SN 250,004. R. Lowenbaum Manufacturing Company, St. Louis, Mo. Filed July 11, 1966.

lion tree

For Women's Wearing Apparel—Namely, Dresses, Jackets, Skirts, Blouses, Shorts, Slacks, and Pedal Pushers.
First use June 3, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 238,783. Plykon Corporation, Hyde, Md. Filed Feb. 14, 1966.

TI-GEAR

For Locking Device for Holding Shoelaces and Other Lines in a Taut Condition.
First use Dec. 9, 1965.

SN 239,492. Brother International Corporation, New York, N.Y. Filed Feb. 24, 1966.

SPRAY-TECT

For Plastic Shield for Protecting the Face When Spraying.
First use June 1, 1965.

SN 250,118. Reid-Meredith, Inc., Lawrence, Mass. Filed July 13, 1966.

HERITAGE *Collection*

No claim is made to the exclusive right to the use of the term "Collection" apart from the mark as shown.
For Wigs and Wiglets.
First use Apr. 7, 1966.

SN 255,307. Fashion Tress, Inc., Miami Beach, Fla. Filed Sept. 28, 1966.

PRESTIGE

For Ladies' Wigs and Hair Pieces.
First use on or about July 1, 1966.

SN 255,309. Fashion Tress, Inc., Miami Beach, Fla. Filed Sept. 28, 1966.

FASHIONETTE

For Ladies' Wigs and Hair Pieces.
First use on or about Sept. 1, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 230,365. William S. Doxey, Jr., Chapel Hill, N.C. Filed Oct. 18, 1965.

CHEAT SHEETS

Applicant disclaims the name of the goods, "Sheets," apart from the mark as shown.
For Bedding—Namely, Sheets Therefor Having Printing Thereon.
First use Dec. 7, 1964.

SN 236,248. FMC Corporation, Philadelphia, Pa. Filed Jan. 12, 1966.

AVCERAM

For Fabrics Containing Ceramic Fibers for Use Under High Temperature Conditions.
First use Dec. 21, 1965.

SN 245,390. Concord Fabrics Inc., New York, N.Y. Filed May 11, 1966.

CONCORD
FABRICS OF AMERICA

The words "Fabrics of America" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 735,407 and 747,346.
For Textile Fabrics Made of Cotton and/or Synthetic Fibers, and Blends Thereof.
First use Apr. 30, 1965.

SN 246,805. The General Tire & Rubber Company, Akron, Ohio. Filed May 23, 1966.



For Supported Polymeric Material for Further Use in the Manufacture of Handbags, Outerwear, and Other Similar Goods.
First use March 1966.

SN 247,486. Dan River Mills, Incorporated, Danville, Va. Filed June 7, 1966.

DANSANTE

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use May 12, 1966.

SN 247,487. Dan River Mills, Incorporated, Danville, Va. Filed June 7, 1966.

CHARCOMB

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof, Including Fabrics for Making Permanent Press Garments.
First use Apr. 7, 1966.

SN 247,512. P. Kaufmann, Inc., New York, N.Y. Filed June 7, 1966.

"FILKAUF"

For 100% Linen Piece Goods, Linen and Cotton Piece Goods, 100% Acrylic Piece Goods.
First use Mar. 1, 1959.

Class 44—Dental, Medical, and Surgical Appliances

SN 239,826. The Teltscher Corporation, New York, N.Y. Filed Feb. 28, 1966.

VANI-PADS

For Pressure and Friction Relief Pads for Corns, Blisters, Callouses, and Sore Spots on the Toes From Shoe Irritation.
First use Jan. 20, 1966.

SN 243,120. Foster-McClellan Products Limited, Toronto, Ontario, Canada. Filed Apr. 11, 1966.

CUTIPEN

Owner of Canadian Reg. No. 132,684, dated Sept. 13, 1963.
For Device for Applying Preparations to the Finger Nails for Removing Dead Cuticle and Cleaning the Nails.

SN 247,639. Standard X-Ray Company, Chicago, Ill. Filed June 8, 1966.

STANDEX

For Diagnostic X-Ray Equipment.
First use Aug. 2, 1956.

Class 45—Soft Drinks and Carbonated Waters

SN 221,899. Ella Clarke Nuite, d.b.a. Windsor Spring Water Company, Hephzibah, Ga. Filed June 17, 1965.

WINDSOR SPRING WATER

No claim for exclusive right is made to the words "Spring Water."
For Bottled Drinking Water.
First use Apr. 1, 1907.

SN 236,461. A. J. Canfield Company, Chicago, Ill. Filed Jan. 14, 1966.

CHERRY-OLA

For Carbonated Soft Drink.
First use Jan. 3, 1966.

SN 240,502. Carolina Beverage Corporation, Salisbury, N.C. Filed Mar. 9, 1966.

DRINK Cheerwine

Applicant disclaims the word "Drink" apart from the mark as shown.
For Soft Drinks.
First use June 1, 1918.

SN 256,029. PepsiCo, Inc., New York, N.Y. Filed Oct. 10, 1966.

TOP FORM

For Soft Drinks.
First use Oct. 3, 1966.

Class 46—Foods and Ingredients of Foods

SN 191,286. Abilene Flour Mills Company, Inc., Abilene, Kans. Filed Apr. 16, 1964.

PERMA-RISE

For Flour.
First use July 1, 1962.

SN 208,076. International Minerals & Chemical Corporation, d.b.a. Accent International, Skokie, Ill. Filed Dec. 14, 1964.

Accent International

Owner of Reg. No. 435,707.
For Flavor Enhancing Compositions—Namely, Seasoning Compositions Containing Monosodium Glutamate; Food Flavoring Compositions—Namely, Compositions Containing Lemon, Smoke, and Garlic Flavors; Sauce and Salad Bases Used in the Preparation of Soups, Gravies, Creamed Foods, Entrees, Dessert Sauces, Dips and the Like; and Dried Vegetables—Namely, Onions.
First use November 1961.

SN 208,077. International Minerals & Chemical Corporation, d.b.a. Accent International, Skokie, Ill. Filed Dec. 14, 1964.



For Flavor Enhancing Compositions—Namely, Seasoning Compositions Containing Monosodium Glutamate; Food Flavoring Compositions—Namely, Compositions Containing Lemon, Smoke, and Garlic Flavors; Sauce and Salad Bases Used in the Preparation of Soups, Gravies, Creamed Foods, Entrees, Dessert Sauces, Dips and the Like; and Dried Vegetables—Namely, Onions.
First use November 1961.

SN 212,326. Ward Foods, Inc., New York, N.Y., by merger and change of name from Jersey Farm Baking Company, Detroit, Mich. Filed Feb. 18, 1965.

Twin Orbits

The rectangular design is used only for the purpose of displaying the mark, and is not claimed as a feature of the mark. Owner of Reg. No. 297,972.
For Cookies and Pies.
First use Dec. 11, 1964.

SN 212,327. Ward Foods, Inc., New York, N.Y., by merger and change of name from Jersey Farm Baking Company, Detroit, Mich. Filed Feb. 18, 1965.



The rectangular design is used only for the purpose of displaying the mark, and is not claimed as a feature of the mark. Owner of Reg. No. 297,972.
For Cookies.
First use Jan. 5, 1965.

SN 215,170. Bridgford Foods Corporation, Anaheim, Calif. Filed Mar. 29, 1965.

BRIDGFORD

For Frozen, Fresh, Cooked, Canned, and Smoked Meats.
First use at least as early as 1936.

SN 218,781. Krey Packing Company, St. Louis, Mo. Filed May 13, 1965.

KREY PORKY Joes

The drawing is lined for the color red. The word "Porky" is disclaimed apart from the mark as shown.
For Chopped Pork in Barbecue Sauce.
First use Apr. 2, 1965.

SN 222,765. Sebastopol Cooperative Cannery, Sebastopol, Calif. Filed July 6, 1965.

SAUCE-QUIK

For Evaporated Apples.
First use 1940.

SN 225,863. Dan's Bakery, Inc., Huntington Station, N.Y. Filed Aug. 17, 1965.

Dan's FAMOUS

Registration rights are claimed only for the word "Dan's" in the drawing and the design, but the applicant waives none of its common law rights in the mark shown or any feature thereof.
For Bread, Rolls, Cake, Cookies, Bread Crumbs; and Italian Baked Goods—Namely, Fresille, Biscotti, Bread Sticks, Sesame Sticks, and Heros.
First use May 15, 1956.

SN 225,864. Dan's Bakery, Inc., Huntington Station, N.Y. Filed Aug. 17, 1965.



All the words except the word "Dan's" and the representation of a bread are disclaimed apart from the mark as shown.
For Bread.
First use Jan. 30, 1956.

SN 226,652. George Lloyd, d.b.a. G. Lloyd & Son, Huntingdon, Pa. Filed Aug. 27, 1965.

DUTCH DOGS

No claim is made to the word "Dogs" apart from the mark as shown.
For Frozen, Ready-To-Bake Sandwiches Containing Weiners.
First use Apr. 18, 1963.

SN 228,019. Juan Fransisco de Lara, d.b.a. De Lara Sausage Co., Los Angeles, Calif. Filed Sept. 17, 1965.

Pig-Kix

For Foods and Food Products—Namely, Fresh Pork Skins ("Cracklings") Moisture Cooked in Rendered Pork Fat.
First use on or about July 14, 1965.

SN 229,152. Valley Products, Inc., Pine Mountain, Ga. Filed Oct. 1, 1965.



The drawing is lined for red and gold. The representation of a chicken is disclaimed apart from the mark as shown.
For Fresh Dressed or Frozen Chickens.
First use Apr. 15, 1965.

SN 232,205. General Foods Corporation, White Plains, N.Y. Filed Nov. 5, 1965.

NOVA

Owner of Reg. No. 128,967.
For Coffee.
First use Oct. 15, 1965.

SN 234,297. Peavey Company, Minneapolis, Minn. Filed Dec. 9, 1965.

AIRDO

For Prepared Raised Doughnut Base.
First use February 1964.

SN 235,142. United States Tobacco Company, New York, N.Y. Filed Dec. 22, 1965.

CIRCUS

Full of Almonds

Applicant does not make any claim to the words "Full of Almonds" apart from the mark as shown. Owner of Reg. Nos. 260,343, 554,316, and others.
For Candy Bars Wrapped for Retail Sale.
First use Jan. 14, 1960; about 1942 as to the trademark "Full of Almonds."

SN 236,087. General Mills, Inc., Minneapolis, Minn. Filed Jan. 10, 1966.

CHIPATOES

For Fried Potato Snacks.
First use Dec. 15, 1965.

SN 236,156. Stevens Candy Kitchens, Incorporated, Chicago, Ill. Filed Jan. 10, 1966.

CANDY LANE

The word "Candy" is disclaimed apart from the mark as shown.
For Candies.
First use on or before Mar. 21, 1935.

SN 236,742. General Mills, Inc., Minneapolis, Minn. Filed Jan. 18, 1966.

BONUS

Owner of Reg. No. 768,254.
For Non-Dairy Cream Substitute for Use in Coffee, on Breakfast Cereals, and in or on Related Goods.
First use Dec. 30, 1965.

SN 236,759. Houston Foods, Inc., Chicago, Ill. Filed Jan. 18, 1966.

THE JELLY CANE

Applicant disclaims the word "Jelly" apart from the mark as shown.
For Gourmet Food Package Consisting of a Variety of Jelly, Jam, and Preserve Spreads.
First use May 18, 1965.

SN 236,812. General Mills, Minneapolis, Minn. Filed Jan. 19, 1966.

CHIPADOS

For Fried Potato Snacks.
First use Jan. 4, 1966.

SN 236,879. Choc-ola Bottlers, Inc., Indianapolis, Ind. Filed Jan. 20, 1966.

CHOC-OLA

For Non-Carbonated Chocolate-Flavored Food Beverage.
First use March 1944.

SN 237,071. Alpine Brand Meat Products Limited, Toronto, Ontario, Canada. Filed Jan. 24, 1966.



Applicant disclaims the words "Brand" and "Meat Products" apart from the mark as shown.
For Frozen Beef Patties, Frozen Veal Patties, Frozen Breaded Veal Patties, Frozen Beef Steaks, Frozen Veal Steaks, and Frozen Breaded Veal Steaks.
First use June 1960; in commerce October 1962.

SN 237,228. Knapp-Sherriff-Koelle, Inc., Donna, Tex. Filed Jan. 25, 1966.

GOLD SKIN

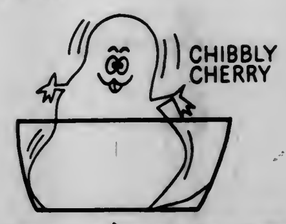
For Fresh Citrus Fruits.
First use Sept. 27, 1944.

SN 237,388. Charles A. Sayous, Inc., New York, N.Y. Filed Jan. 26, 1966.

INDIO

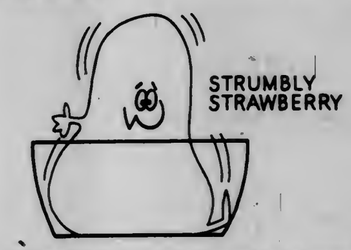
"Indio" is a Spanish word meaning "Indian" in English.
For Canned Meats.
First use Oct. 21, 1958.

SN 237,446. General Foods Corporation, White Plains, N.Y. Filed Jan. 27, 1966.



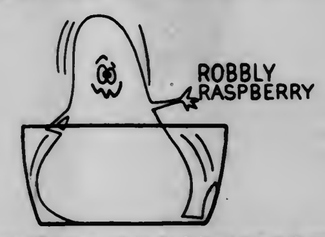
The word "Cherry" is disclaimed apart from the mark as shown.
For Gelatin Dessert Mix.
First use Oct. 29, 1965.

SN 237,446. General Foods Corporation, White Plains, N.Y. Filed Jan. 27, 1966.



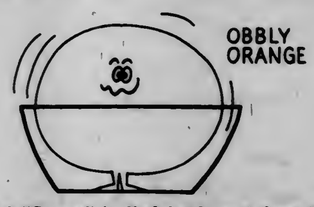
The word "Strawberry" is disclaimed apart from the mark as shown.
For Gelatin Dessert Mix.
First use Oct. 29, 1965.

SN 237,447. General Foods Corporation, White Plains, N.Y. Filed Jan. 27, 1966.



The word "Raspberry" is disclaimed apart from the mark as shown.
For Gelatin Dessert Mix.
First use Oct. 29, 1965.

SN 237,448. General Foods Corporation, White Plains, N.Y. Filed Jan. 27, 1966.



The word "Orange" is disclaimed apart from the mark as shown.
For Gelatin Dessert Mix.
First use Oct. 29, 1965.

SN 237,551. Green Giant Company, Le Sueur, Minn. Filed Jan. 28, 1966.



Owner of Reg. Nos. 230,035, 776,290, and others.
For Frozen Mushrooms.
First use Jan. 22, 1964.

SN 237,552. Green Giant Company, Le Sueur, Minn. Filed Jan. 28, 1966.

GREEN GIANT

Owner of Reg. Nos. 230,035, 753,429, and others.
For Canned and Frozen Mushrooms.
First use Jan. 22, 1964.

SN 237,553. Green Giant Company, Le Sueur, Minn. Filed Jan. 28, 1966.



Owner of Reg. Nos. 230,035, 776,290, and others.
For Canned Mushrooms.
First use June 1, 1965.

SN 238,576. Juan Sanchez Lima, d.b.a. Sanchelima, Miami, Fla. Filed Feb. 10, 1966.

JICOTEA

The interpretation of the word "Jicotea" to the Latin American is the one word "turtle."
For Prepackaged Muenster Cheese for Wholesale Distribution.
First use June 10, 1963.

SN 239,009. C-B Drug Company, Charlotte, N.C. Filed Feb. 17, 1966.

Sweet Sue

For Synthetic Food Sweetener.
First use Jan. 11, 1966.

SN 239,025. Di Giorgio Corporation, San Francisco, Calif. Filed Feb. 17, 1966.

BLUE FLAG

Owner of Reg. Nos. 211,423, 541,453, and others.
For Fresh Fruits.
First use September 1925.

SN 239,026. The Dietene Company, Minneapolis, Minn. Filed Feb. 17, 1966.

PRECISION

For Special Formula Food Concentrate.
First use Jan. 6, 1966.

SN 239,470. United Vintners, Inc., d.b.a. Cella Vineyards, San Francisco, Calif. Filed Feb. 23, 1966.

LITTLE OLD WINEMAKER

For Vinegar.
First use Dec. 14, 1965.

SN 239,622. Heggblade-Marguleas Co., d.b.a. Co-River Citrus Company, San Francisco, Calif. Filed Feb. 25, 1966.



For Fresh Citrus Fruits.
First use Nov. 15, 1964.

SN 239,789. Pacific Cherry & Fruit Corp., Los Angeles, Calif. Filed Feb. 28, 1966.

CHERRY BLOSSOM

The word "Cherry" is disclaimed apart from the mark as shown. Owner of Reg. No. 623,223.
For Maraschino Cherries.
First use at least as early as 1949.

SN 239,851. Irish Potato Chips Ltd., Winnipeg, Manitoba, Canada. Filed Dec. 27, 1965.

POPCURLS

Priority claimed under Sec. 44(d) on Canadian application filed Oct. 29, 1965; Reg. No. 146,007, dated June 30, 1966.
For Popcorn Curls.

SN 240,041. Western Grain Company, Birmingham, Ala. Filed Mar. 2, 1966.

MAGIC-RISE

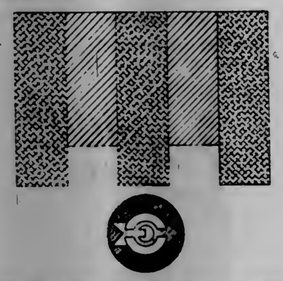
For Leavening Agent Incorporated as an Ingredient in a Corn Bread Mix.
First use Jan. 5, 1965.

SN 240,942. National Tea Co., Chicago, Ill. Filed Mar. 14, 1966.

BUTTERGOLD

For Fresh and Frozen Fowl, and Parts Thereof.
First use Feb. 8, 1965.

SN 246,234. A & W Root Beer Co., Santa Monica, Calif. Filed May 23, 1966.



The drawing is lined for the colors orange and brown.
Owner of Reg. No. 743,858.
For Mustard.
First use Dec. 7, 1962.

SN 246,235. A & W Root Beer Co., Santa Monica, Calif. Filed May 23, 1966.

A&W



The drawing is lined for the color orange. Owner of Reg. Nos. 266,929, 689,586, and 743,858.
For Catsup.
First use Dec. 7, 1962.

SN 250,433. Romney Produce Co., Phoenix, Ariz. Filed July 18, 1966.



For Fresh Fruits (Excluding Apples), and Vegetables.
First use Feb. 1, 1966; at least as early as 1948 as to "RPC" and diamond design.

SN 252,981. Martha White, Inc., Nashville, Tenn. Filed Aug. 23, 1966.

DUFF'S

Owner of Reg. No. 420,835 and others.
For Mixes for Cakes, Frostings, Muffins, Cookies, Biscuits, Dumplings, Waffles, Rolls, Pancakes, and Gingerbread, and Instant Mashed Potatoes.
First use 1931.

SN 255,049. Thomas J. Lipton, Inc., Englewood Cliffs, N.J. Filed Sept. 26, 1966.

LIPTON

Owner of Reg. No. 505,985.
For Tea, Packaged Soups, and Dehydrated Prepared Combination Dinner Products, the Principal Components of Which Are Meat or Poultry, Noodles, Sauce, and Lesser Ingredients.
First use 1893 on tea.

SN 256,038. John Manning, d.b.a. John Manning & Company, Saticoy, Calif. Filed Oct. 10, 1966.

cindy

Owner of Reg. No. 702,370.
For Fresh Strawberries.
First use Mar. 28, 1966.

Class 47 — Wines

SN 237,944. Fernando A. de Terry S.A., Puerto de Santa Maria, Cadiz, Spain. Filed Feb. 3, 1966.

CAMBORIO

For Wine.
First use July 14, 1964; in commerce Oct. 14, 1965.

SN 239,471. United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. Filed Feb. 23, 1966.

LITTLE OLD WINEMAKER

For Wines.
First use Dec. 14, 1965.

Class 49 — Distilled Alcoholic Liquors

SN 235,779. Intercontinental Import & Export Co., Inc., Chicago, Ill. Filed Jan. 4, 1966.

GILT CREST

For Blended Scotch Whisky.
First use on or about Oct. 26, 1965.

SN 239,474. J. & J. Vickers & Co. Ltd., d.b.a. Stratton Distilled Products, Piccadilly, London, England. Filed Feb. 23, 1966.



ONE-EYED KNAVE

The drawing is lined for red.
For Vodka.
First use on or about June 1, 1965; in commerce June 30,

SN 239,475. J. & J. Vickers & Co., Ltd., d.b.a. Stratton Distilled Products, London, England. Filed Feb. 23, 1966.

ONE-EYED KNAVE

For Vodka.
First use on or about June 1, 1965; in commerce June 30, 1965.

Class 50—Merchandise Not Otherwise Classified

SN 224,289. Alta Industries, Inc., Beaverton, Oreg. Filed July 27, 1965.

ALTA-WRAP

For Decorative Synthetic Plastic Sheet Material.
First use May 17, 1965.

SN 237,475. The Osborne Coinage Co., Cincinnati, Ohio. Filed Jan. 27, 1966.

NICKELEEN

For Coins and Like Medallions Having a Nickel-Like Surface, the Same Being Used as Souvenirs, Novelties, and Advertisements.
First use Sept. 28, 1965.

SN 237,584. The Osborne Coinage Co., Cincinnati, Ohio. Filed Jan. 28, 1966.

SILVEEN

For Coins and Like Medallions Having an Antiqued Surface, the Same Being Used as Souvenirs, Novelties, and Advertisements.
First use Dec. 6, 1963.

Class 51—Cosmetics and Toilet Preparations

SN 197,294. Hudson National, Inc., New York, N.Y., by change of name from Hudson Vitamin Products, Inc., New York, N.Y. Filed July 7, 1964.

HUDSON PARADE

For Concentrated Hair Dressing and Conditioner.
First use June 16, 1964.

SN 218,973. Elbon, Inc., Morristown, N.J. Filed May 17, 1965.

SOFTOL

For Cuticle Remover, and Cuticle Remover Kits Consisting of Liquid Cuticle Remover in a Bottle With an Applicator Head, Plus Refill.
First use 1941.

SN 223,953. Avon Products, Inc., New York, N.Y. Filed July 22, 1965.

NUAGE ROUGE

The French term "Nuage" means "cloud" in English.
Owner of Reg. No. 814,173.
For Perfume, Perfume Oil, Solid Perfume, Cologne, Cologne Mist, Cream Sachet, Powder Sachet, and Dusting Powder.
First use June 29, 1965.

SN 228,643. Con-Stan Industries, Inc., El Monte, Calif. Filed Sept. 27, 1965.

Jeunique

For Cosmetics and Toilet Preparations—Namely, Skin Cream, Eye Shadow, Lipstick, Face Powder, Dusting Powder, Bath Oil, and Cover Stick.
First use Aug. 19, 1965.

SN 238,886. Nutress Laboratories, Inc., North Hollywood, Calif. Filed Feb. 15, 1966.

LIVING HAIR

Applicant disclaims the word "Hair" apart from the mark as shown.
For Hair Conditioner.
First use Mar. 19, 1963.

SN 239,709. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Feb. 28, 1966.

ESTRA-LO

For Cosmetic for Face and Skin Care.
First use January 1951.

SN 241,177. Patricia Fell O'Hara, d.b.a. Robin Johns Perfumed Colognes, Frederick, Md. Filed Mar. 16, 1966.

PALE RADIANCE

For Cologne.
First use Sept. 12, 1964.

SN 241,178. Patricia Fell O'Hara, d.b.a. Robin Johns Perfumed Colognes, Frederick, Md. Filed Mar. 16, 1966.

SEVEN SPIRES

For Cologne.
First use Sept. 12, 1964.

SN 241,682. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics, Los Angeles, Calif. Filed Mar. 23, 1966.

SOFT SOFT

For After Bath Skin Freshener.
First use Feb. 23, 1966.

SN 245,440. Mr. Mod Shop, Inc., New Orleans, La. Filed Apr. 7, 1966.



For Perfume and Cologne.
First use March 1962.

SN 245,749. Josephine K. Preston, d.b.a. Jo Preston Cosmetics, Wantagh, N.Y. Filed May 16, 1966.

Jodoresque

For Perfume and Cologne.
First use on or about Jan. 2, 1964.

SN 247,359. Hawaiian Perfumers, Inc., d.b.a. Liana of Waikiki, Honolulu, Hawaii. Filed June 6, 1966.

SANDAL 'N' SPICE

For After-Shave Cologne.
First use May 16, 1966.

SN 254,493. Bobbie Brooks Incorporated, Cleveland, Ohio. Filed Sept. 15, 1966.

WILD ABOUT

For Cologne.
First use Aug. 5, 1966.

SN 254,494. Bobbie Brooks Incorporated, Cleveland, Ohio. Filed Sept. 15, 1966.

WILD ONE

For Cologne.
First use Aug. 5, 1966.

SN 255,261. Alexandra de Markoff Sales Corporation, New York, N.Y. Filed Sept. 28, 1966.

ENIGMA

Owner of Reg. No. 424,698.
For Body Perfume and Cologne.
First use July 1961.

Class 52—Detergents and Soaps

SN 223,058. Aimcee Wholesale Corporation, New York, N.Y. Filed July 12, 1965.

AMCREST

Owner of Reg. Nos. 547,598, 799,752, and others.
For Hair Shampoos and Toilet Soaps.
First use Nov. 18, 1964, on hair shampoo.

SN 227,284. Handi-Clean Products, Inc., Greensboro, N.C. Filed Sept. 7, 1965.

HANDI-CLEAN

For All-Purpose Cleaner.
First use on or about Jan. 1, 1968.

SN 240,340. The Procter & Gamble Company, Cincinnati, Ohio. Filed Mar. 7, 1966.

OFFSET

For Hair Shampoo.
First use Dec. 9, 1965.

SN 247,855. Purex Corporation, Ltd., Lakewood, Calif. Filed June 13, 1966.

PERMA-POWER

For Household Laundry Detergent.
First use May 12, 1966.

SN 249,134. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

CAPTEEN

For Veterinary Medicated Shampoo.
First use Aug. 7, 1959.

SN 252,329. Purex Corporation, Ltd., Lakewood, Calif. Filed Aug. 15, 1966.

HURL

For Disposable Detergent Pads for General Cleaning Purposes.
First use July 20, 1966.

SN 252,330. Purex Corporation, Ltd., Lakewood, Calif. Filed Aug. 15, 1966.

GENTLE FELS

Owner of Reg. Nos. 55,478, 694,080, and 730,603.
For Liquid Detergent for Washing Dishes.
First use Sept. 19, 1960.

SN 252,331. Purex Corporation, Ltd., Lakewood, Calif. Filed Aug. 15, 1966.

CAST

For Disposable Detergent Pads for General Cleaning Purposes.
First use July 20, 1966.

SN 252,332. Purex Corporation, Ltd., Lakewood, Calif. Filed Aug. 15, 1966.

SLING

For Disposable Detergent Pads for General Cleaning Purposes.
First use July 20, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 163,740. McDonald's Corporation (Delaware corporation), Chicago, Ill., by merger of and change of name from McDonald's Corporation (Illinois corporation), Chicago, Ill. Filed Mar. 1, 1963.



The drawing is lined for the colors yellow, red, and green.
Owner of Reg. No. 764,841.
For Restaurant Services.
First use on or about Sept. 25, 1962.

SN 201,582. The Gold Buffet Franchise, Inc., North Kansas City, Mo. Filed Sept. 10, 1964.

PIRATES CLUB

The word "Club" is disclaimed except as used in the mark.
For Key Club Services Consisting of the Providing of Food, Drink, and Entertainment.
First use May 1, 1963.

SN 225,477. Green Ridge Turkey Farm, Inc., Nashua, N.H. Filed Aug. 11, 1965.



For Restaurant Services.
First use October 1959.

SN 233,541. United States Leasing Corporation, San Francisco, Calif. Filed Nov. 29, 1965.

US LEASING

Owner of Reg. Nos. 693,356 and 732,264.
For Leasing of Industrial Equipment, Machinery, and Fixtures.
First use on or about Feb. 18, 1963; on or about Jan. 6, 1955, as to "US Leasing."

SN 235,740. United States Leasing Corporation, San Francisco, Calif. Filed Jan. 3, 1966.

US LEASING

Owner of Reg. Nos. 693,356 and 732,264.
For Leasing of Industrial Equipment, Machinery, and Fixtures.
First use on or about Jan. 6, 1955.

SN 240,413. Leonard A. Cohen, d.b.a. Human Capability Corporation, Valley Forge, Pa. Filed Mar. 3, 1966.



For Services of a Research and Development Nature Pertaining to the Functional Capabilities of the Human Body.
First use November 1965.

Class 101 — Advertising and Business

SN 211,511. Cory Corporation, Chicago, Ill. Filed Feb. 8, 1965.

CORY

Owner of Reg. Nos. 425,394, 773,111, and others.
For Installing, Servicing and Maintaining of Facilities for Making Coffee, Tea, and Similar Beverages in Offices.
First use Sept. 1, 1964.

SN 221,669. Marquette Corporation, Minneapolis, Minn., assignee of Westway Advertising, Inc., Seattle, Wash. Filed June 21, 1965.

BONNIE BLUE RIBBON

For Advertising Services Rendered to Those Engaged in the Sale of Frozen Foods by Continuing and Periodical Stocking of Freezers.
First use June 16, 1965.

SN 230,873. Edward R. Ningard, d.b.a. Systemat, Silver Spring, Md. Filed Oct. 21, 1965.



SYSTEMAT

For Employment Placement Service.
First use on or about Jan. 1, 1962.

SN 240,687. Welcome Wagon International, Inc., Memphis, Tenn. Filed Mar. 10, 1966.

Welcome Wagon INTERNATIONAL

The word "International" is disclaimed apart from the mark as shown. Owner of Reg. No. 735,805 and others.
For Community Services in Bringing Civic, Religious, Social, and Commercial Information to the Public, Through Individual Home Visits Made in Person by Its Representatives, as a Public Service and in Behalf of Interested Sponsors.
First use June 1964; July 1928 as to "Welcome Wagon."

Class 103 — Construction and Repair

SN 233,921. Lawn-A-Mat of Metro, Washington, Inc., Washington, D.C. Filed Dec. 3, 1965.

"The Grass IS Greener on Our Side"

For Lawn Maintenance Services.
First use Mar. 14, 1965.

SN 235,320. Arthur N. Monroe, Portland, Oreg. Filed Dec. 27, 1965.

DRAIN-GUARD

For Cleaning Sewer Lines, Water Mains, Pipes, and Culverts.
First use Apr. 1, 1965.

SN 245,542. Sta-Soil Corporation, Van Nuys, Calif. Filed May 13, 1966.

STA-SOIL

For Agricultural Services Comprising Slope Planting and Turf Grass Installations.
First use August 1962.

Class 105 — Transportation and Storage

SN 229,114. National Tours, Inc., Chicago, Ill. Filed Oct. 1, 1965.

GOLD SEAL TOURS

Applicant disclaims the word "Tours" apart from the mark as shown.
For Travel Agency Services, Including Arranging Travel, Transportation, Travel Accommodations, Vacation Tours, and Hotel Accommodations.
First use Sept. 20, 1965.

SN 235,232. Rite Rate Rent-A-Car, Los Angeles, Calif. Filed Dec. 23, 1965.

RITE-RATE RENT-A-CAR

The words "Rent-A-Car" are disclaimed apart from the mark as shown.
For Car Rental Service.
First use Sept. 1, 1965.

SN 240,294. Gulliver's Trails, Inc., New York, N.Y. Filed Mar. 7, 1966.

GULLIVER'S TRAILS

For Conducting Group Tours, Primarily for Children.
First use July 15, 1960.

SN 240,521. Kadesh Travel Agency, Inc., North Plainfield, N.J. Filed Mar. 9, 1966.

KADESH TRAVEL AGENCY INC.

For Travel Service.
First use Feb. 1, 1966.

Class 107 — Education and Entertainment

SN 202,709. The Peterson System, Inc., Greensburg, Pa. Filed Sept. 25, 1964.

THE PETERSON SYSTEM

For Instructing and Assisting Elementary School Teachers in the Appropriate Manner of Teaching Applicant's Method of Handwriting.
First use in or about January 1930.

SN 223,992. William F. Green, Clio, Mich. Filed July 22, 1965.

FORREST GREEN SHOW

For Entertaining Services Providing Popular Band, Choral, Dance and Variety Music and the Like on Television Shows, Including Services in Stage Performances, Personal Entertainment, and Recordings.
First use in or about April 1961.

SN 229,410. Jose Maria Llovet Catala, d.b.a. AFHA, Barcelona, Spain. Filed Oct. 6, 1965.

AFHA

For Conducting Correspondence Courses in Radio and Television, Electricity, Photography, Drawing, Language, and Confection.
First use May 1955; in commerce April 1964.

SN 234,075. Screen Gems, Inc., New York, N.Y. Filed Dec. 6, 1965.



For Entertainment Services Rendered Through the Medium of Television, and Production for Others of Television Commercials and Industrial Films.
First use May 27, 1965.

SN 235,023. C. Elwin Warren, Seattle, Wash. Filed Dec. 21, 1965.

TV BOWL-AIRO

"TV" is disclaimed apart from the mark as shown.
For Promoting the Sale of Goods and/or Services of Others Through the Conduct of a Contest Based on Bowling Games Broadcast Through the Medium of Television.
First use July 29, 1965.

SN 238,840. Claster Enterprises, Inc., Baltimore, Md. Filed Feb. 15, 1966.

WINK AT THE WEATHER

For Television Program Consisting of Weather Information.
First use Feb. 3, 1966.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 225,038. Kennebunkport Dump Association, Kennebunkport, Maine. Filed Aug. 5, 1965.



The drawing is lined for the colors silver, red, orange, and green.
For Indicating Membership in the Applicant Association.
First use May 1, 1961.

CERTIFICATION MARKS

Class A — Goods

SN 225,263. Baking Industry Sanitation Standards Committee, New York, N.Y. Filed Aug. 9, 1965.

BISSC

The mark certifies that the machinery or equipment bearing it complies with the sanitation standards of applicant.
For Bakery Machinery and Equipment.
First use May 21, 1965.

Class B — Services

SN 220,065. American Motors Corporation, Detroit, Mich. Filed June 1, 1965.

AUTHORIZED SERVICE
Kelvinator

Applicant disclaims the right to the exclusive use of the words "Authorized Service" apart from the mark as shown. The mark certifies that the services to which the mark is applied have been performed according to standards and under conditions established by applicant and meet standards of quality established by applicant. Owner of Reg. Nos. 142,652 and 783,552.
For Services in Connection With the Servicing and Repair of Household Equipment and Other Machinery Produced by Applicant.
First use May 22, 1964.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

821,387. COZY HOME. Rhea L. Adams. SN 235,881. Pub. 10–18–66. Filed 12–28–65.

Class 2—Receptacles

821,388. PLANCO. American Plant Container Co., Inc. SN 205,988. Pub. 10–18–66. Filed 11–12–64.

821,389. RP AND DESIGN. Republic Packaging Company, Inc. SN 217,399. Pub. 10–18–66. Filed 4–26–65.

821,390. BREAKFAST IN BED. Aladdin Industries, Incorporated. SN 220,061. Pub. 10–18–66. Filed 6–1–65.

821,391. DRY COOL. Baker Manufacturing Company. SN 220,446. Pub. 10–18–66. Filed 6–7–65.

821,392. LIQUANURE. A. O. Smith Harvestore Products, Inc. MULTIPLE CLASS (Classes 2 and 23). SN 220,792. Pub. 10–18–66. Filed 6–9–65.

821,393. THE LIGHT ONES. Kaiser Aluminum & Chemical Corporation. SN 221,832. Pub. 10–18–66. Filed 6–23–65.

821,394. SECUREX. Tee-Pak, Inc. SN 224,809. Pub. 10–18–66. Filed 8–2–65.

821,395. PRESSURFLO. United States Borax & Chemical Corporation. SN 229,893. Pub. 10–18–66. Filed 10–11–65.

821,396. E-Z CUPS. Gulf States Paper Corporation. SN 230,047. Pub. 10–18–66. Filed 10–13–65.

821,397. E-Z PLATES. Gulf States Paper Corporation. SN 230,049. Pub. 10–18–66. Filed 10–13–65.

821,398. DURAKEG. The Bishopric Products Company. SN 230,761. Pub. 10–18–66. Filed 10–21–65.

821,399. GROVER AND DESIGN. Grover Smith Manufacturing Corporation. MULTIPLE CLASS (Classes 2 and 23). SN 236,864. Pub. 10–18–66. Filed 1–20–66.

821,400. LUG-A-JUG. Purex Corporation, Ltd., d.b.a. Apex Plastics, Inc. SN 245,130. Pub. 10–18–66. Filed 5–9–66.

821,401. POLYTRIP. National Distillers and Chemical Corporation. SN 249,923. Pub. 10–18–66. Filed 7–11–66.

Class 4—Abrasives and Polishing Materials

821,402. PROLONG. The Drackett Company, assignee of Bristol-Myers Company. SN 229,059. Pub. 10–18–66. Filed 10–1–65.

821,403. MAC'S-IT. Mac's Super Gloss Co., Inc. SN 248,947. Pub. 10–18–66. Filed 6–27–66.

821,404. PERMATEX AND DESIGN. Permatex Company, Inc. SN 250,807. Pub. 10–18–66. Filed 7–22–66.

Class 5—Adhesives

821,405. BRYAN. Morton International, Inc., by change of name from Morton Salt Company. SN 201,725. Pub. 10–18–66. Filed 9–11–64.

821,406. ADHERE-ALL. Roofing Equipment, Inc. SN 229,875. Pub. 10–18–66. Filed 10–11–65.

821,407. ESB AND DESIGN. The Electric Storage Battery Company. MULTIPLE CLASS (Classes 5, 6, 12, 16, 21, 23, 26, 39, and 44). SN 241,014. Pub. 10–18–66. Filed 3–15–66.

821,408. KOLD-FAS. Benjamin Foster Company. SN 243,435. Pub. 10–18–66. Filed 4–14–66.

821,409. SIZE-FAS. Benjamin Foster Company. SN 243,436. Pub. 10–18–66. Filed 4–14–66.

Class 6—Chemicals and Chemical Compositions

821,407. (See Class 5 for this trademark.)

821,410. PRESTO. National Presto Industries, Inc. MULTIPLE CLASS (Classes 6, 23, 26, and 34). SN 224,958. Pub. 10–18–66. Filed 8–4–65.

821,411. BADGER. Badger Fire Extinguisher Company, Inc. MULTIPLE CLASS (Classes 6 and 23). SN 235,255. Pub. 10–18–66. Filed 12–27–65.

821,412. GARDOPRIM. Geigy Chemical Corporation. SN 236,373. Pub. 10–18–66. Filed 1–13–66.

821,413. SURFLEX. The Euclid Chemical Company. SN 236,734. Pub. 10–18–66. Filed 1–18–66.

821,414. FLEX-CON. The Euclid Chemical Company. SN 236,735. Pub. 10–18–66. Filed 1–18–66.

Class 7—Cordage

821,415. STELIC. Steel Cords Limited. SN 244,854. Pub. 10–18–66. Filed 5–3–66.

821,416. HIPULSE. Steel Cords Limited. SN 244,855. Pub. 10–18–66. Filed 5–3–66.

Class 8—Smokers' Articles, Not Including Tobacco Products

821,417. PROMETHEUS AND DESIGN. Prometheus Metallwerke G.m.b.H. SN 238,363. Pub. 10–18–66. Filed 2–8–66.

Class 9—Explosives, Firearms, Equipments, and Projectiles

821,418. TOPCO. Topco Associates, Inc. SN 243,040. Pub. 10–18–66. Filed 4–8–66.

Class 11—Inks and Inking Materials

821,419. CARNATION. Columbia Ribbon & Carbon Manufacturing Co., Inc. SN 230,789. Pub. 10–18–66. Filed 10–21–65.

821,420. CLEAR PRINT AND DESIGN. Phillips Process Co. Inc. SN 236,841. Pub. 10–18–66. Filed 1–19–66.

821,421. KLEENCOTE. The Carter's Ink Company. SN 237,083. Pub. 10–18–66. Filed 1–24–66.

821,422. INK FLOW. Phillips Process Co., Inc. SN 237,151. Pub. 10–18–66. Filed 1–24–66.

Class 12—Construction Materials

821,407. (See Class 5 for this trademark.)

821,423. TUF-FILM. The Wickes Corporation, d.b.a. Wickes Lumber and Building Supply Center. SN 226,321. Pub. 10–18–66. Filed 8–23–65.

821,424. CAMEO. The Flintkote Company. SN 229,227. Pub. 10–18–66. Filed 10–4–65.

821,425. DURALUM. Home Modernizer's Supply, Inc. SN 230,829. Pub. 10–18–66. Filed 10–21–65.

821,426. GEO-ROOF. Kalwall Corporation. SN 231,426. Pub. 10–18–66. Filed 10–23–65.

821,427. MEECO. Marine Engineering & Equipment Company. SN 231,574. Pub. 7–26–66. Filed 10–24–65.

821,428. T-LINE. Titus Manufacturing Corporation. SN 231,606. Pub. 10–18–66. Filed 10–24–65.

821,429. CERTI-PRIME. Red Cedar Shingle & Handsplit Shake Bureau. SN 236,140. COLLECTIVE MARK. Pub. 10–18–66. Filed 1–10–66.

821,430. PIVORAMA. Glaces de Boussois Société Anonyme. SN 236,589. Pub. 10–18–66. Filed 1–17–66.

821,431. KAYLIEN AND DESIGN. Nell Livesay and Kathryn Livesay (joint owners). SN 236,613. Pub. 10–18–66. Filed 1–17–66.

821,432. EUCO AND DESIGN. The Euclid Chemical Company. SN 236,727. Pub. 10–18–66. Filed 1–18–66.

821,433. SATURDAY PATCH. The Euclid Chemical Company. SN 236,732. Pub. 10–18–66. Filed 1–18–66.

821,434. PROTECTO MAGIC. Oil Base, Inc. SN 237,147. Pub. 10–18–66. Filed 1–24–66.

821,435. TWIN LINE. M. E. Grogan Co. SN 239,411. Pub. 10–18–66. Filed 2–23–66.

821,436. PINEX. N.Z. Forest Products Limited. SN 239,784. Pub. 10–18–66. Filed 2–28–66.

821,437. FALCON. Falcon Alarm Company, Inc. SN 242,445. Pub. 10–18–66. Filed 4–1–66.

821,438. 3M. Minnesota Mining and Manufacturing Company. SN 244,289. Pub. 10–18–66. Filed 4–26–66.

821,439. MODERNFOLD AND DESIGN. New Castle Products, Inc. SN 247,295. Pub. 10–18–66. Filed 6–6–66.

821,440. WOODMASTER AND DESIGN. New Castle Products, Inc. SN 247,998. Pub. 10–18–66. Filed 6–14–66.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

821,441. TF AND DESIGN. Talma Fastener Corporation. SN 207,532. Pub. 10–18–66. Filed 12–4–64.

821,442. GEMLINE. Gem Products, Inc. MULTIPLE CLASS (Classes 13, 21, 31, and 35). SN 221,718. Pub. 10–18–66. Filed 6–22–65.

821,443. CONTESSA. Price-Pfister Brass Mfg. Co. SN 223,157. Pub. 8–9–66. Filed 7–12–65.

821,444. WELD+ENDS. The Pipe Line Development Co. SN 227,514. Pub. 10–18–66. Filed 9–9–65.

821,445. RAIN SPRAY. ABFO Manufacturing Co., Inc. SN 227,540. Pub. 10–18–66. Filed 9–10–65.

821,446. "PIC." Pic Design Corp. MULTIPLE CLASS (Classes 13 and 23). SN 233,737. Pub. 10–18–66. Filed 12–1–65.

821,447. PULLA-HOOP. Jacob J. Weier, d.b.a. Weier Wheel Co. SN 234,378. Pub. 10–18–66. Filed 12–10–65.

821,448. PERMAFUSED AND DESIGN. Anchor Post Products, Inc. SN 235,881. Pub. 10–18–66. Filed 1–6–66.

821,449. FRIALATOR AND DESIGN. J. C. Pitman and Sons, Inc. SN 236,329. Pub. 10–18–66. Filed 1–11–66.

821,450. BROTCO. Broughton Corporation. SN 237,528. Pub. 10–18–66. Filed 1–28–66.

821,451. RAIN-WAVE. Melnor Industries, Inc. SN 237,989. Pub. 10–18–66. Filed 2–3–66.

821,452. Q QUEEN AND DESIGN. Queen Manufacturing Co. Inc. SN 239,315. Pub. 10–18–66. Filed 2–21–66.

821,453. LUSTREZIP. Pilling Chain Co., Inc. SN 240,019. Pub. 10–18–66. Filed 3–2–66.

821,454. SKYVALVE. International Research Corp. SN 241,472. Pub. 10–18–66. Filed 3–21–66.

821,455. GT. The Youngstown Sheet and Tube Company. SN 242,525. Pub. 10–18–66. Filed 4–1–66.

821,456. GATES AND DESIGN. The Gates Rubber Company. SN 242,584. Pub. 10–18–66. Filed 4–4–66.

821,457. FTLV. Kabushiki Kaisha Fujiwara Seisakusho. SN 242,825. Pub. 10–18–66. Filed 4–6–66.

821,458. SEALDBLOC. United States Rubber Company. SN 242,943. Pub. 10–18–66. Filed 4–7–66.

821,459. CHEM-SEALD. Homestead Valve Manufacturing Company. SN 242,988. Pub. 10–18–66. Filed 4–8–66.

821,460. THE GLEAM OF GOLD! Empire Slip-On Hook Corp. SN 243,108. Pub. 10–18–66. Filed 4–11–66.

821,461. TREDTITE. Anaconda American Brass Company. SN 243,393. Pub. 10–18–66. Filed 4–14–66.

821,462. JET STREAM. Melnor Industries, Inc. SN 243,463. Pub. 10–18–66. Filed 4–14–66.

821,463. SHOWERTROL. The Powers Regulator Company. SN 243,481. Pub. 10–18–66. Filed 4–14–66.

821,464. MBN AND DESIGN. Michigan Bolt & Nut Co., Inc. SN 243,566. Pub. 10–18–66. Filed 4–15–66.

821,465. ROCKWELL. Rockwell Manufacturing Company. SN 243,585. Pub. 10–18–66. Filed 4–15–66.

821,466. AIR-MITE. Air-Mite Devices, Inc. MULTIPLE CLASS (Classes 13 and 23). SN 243,612. Pub. 10–18–66. Filed 4–18–66.

821,467. REAR-FOLD. Automatic Devices Company. SN 243,626. Pub. 10–18–66. Filed 4–18–66.

821,468. KART-A-RACK. Stephen J. Corey, d.b.a. Corey Manufacturing Company. SN 243,642. Pub. 10–18–66. Filed 4–18–66.

821,469. Y-WASH. K-P Industries. SN 243,786. Pub. 10–18–66. Filed 4–19–66.

821,470. KP AND DESIGN. K-P Industries. SN 243,787. Pub. 10–18–66. Filed 4–19–66.

821,471. QWIK STAND. Economy Design, Inc. SN 245,133. Pub. 10–18–66. Filed 5–9–66.

Class 15—Oils and Greases

821,472. BALL-BEARING RACES (DESIGN). Oliver T. Williams, d.b.a. Depositube Manufacturing Company. SN 213,379. Pub. 10–18–66. Filed 3–4–65.

821,473. MOLY-GOLD. The Meta-Therm Corp. SN 233,270. Pub. 10–18–66. Filed 11–24–65.

821,474. COMPETITION AND FLAG DESIGN. Cromwell Oil Company. SN 237,669. Pub. 10–18–66. Filed 2–1–66.

821,475. GEOMETRICAL DESIGN. S. C. Johnson & Son, Inc. SN 237,977. Pub. 10–18–66. Filed 2–3–66.

Class 16—Protective and Decorative Coatings

821,407. (See Class 5 for this trademark.)

821,476. MASSEY-FERGUSON. Massey-Ferguson Limited. SN 211,293. Pub. 10–18–66. Filed 2–3–65.

821,477. GUITAR AND DESIGN. Teranishi Kagaku Kogyo, Kabushiki Kaisha (Teranishi Chemical Industrial Company, Ltd.). MULTIPLE CLASS (Classes 16 and 37). SN 215,551. Pub. 10–18–66. Filed 4–1–65.

821,478. BEAR. Norton Company. SN 225,341. Pub. 7–12–66. Filed 8–9–65.

821,479. PARCROLOID. Rowe Products, Inc. SN 229,294. Pub. 10–18–66. Filed 10–4–65.

821,480. URALOID. Rowe Products, Inc. SN 229,295. Pub. 10–18–66. Filed 10–4–65.

821,481. EPOLOID. Rowe Products, Inc. SN 229,296. Pub. 10–18–66. Filed 10–4–65.

821,482. MISCELLANEOUS DESIGN. Rohm & Haas Company. SN 236,148. Pub. 10–18–66. Filed 1–10–66.

821,483. LACRYL. Spraylat Corp. SN 236,325. Pub. 10–18–66. Filed 1–10–66.

821,484. KOROTHERM. De Soto Chemical Coatings, Inc. SN 239,883. Pub. 10–18–66. Filed 3–1–66.

821,485. CORDOFLEX. Ferro Corporation. SN 246,765. Pub. 10–18–66. Filed 5–27–66.

Class 17—Tobacco Products

821,486. GREYHOUND. John Chapman Limited. SN 216,050. Pub. 10–18–66. Filed 4–8–65.

Class 19—Vehicles

821,487. BARTLETT. Bartlett Trailer Corporation. SN 219,951. Pub. 10–18–66. Filed 5–28–65.

821,488. SUZUKI S AND DESIGN. U.S. Suzuki Motor Corporation. SN 222,630. Pub. 10–18–66. Filed 7–2–65.

821,489. VAPOR QUIETOR AND DESIGN. Vapor Corporation. SN 223,853. Pub. 10–18–66. Filed 7–20–65.

821,490. DONZI MARINE AND DESIGN. Teleflex Incorporated. SN 224,476. Pub. 10–18–66. Filed 7–28–65.

821,491. RICKBORN ETC. AND ANCHOR DESIGN. Rickborn Industries, Inc. SN 226,492. Pub. 10–18–66. Filed 8–24–65.

821,492. ADD A DASH. Autogear Company. SN 226,608. Pub. 10–18–66. Filed 8–27–65.

821,493. TURN-A-TOT. Turn-A-Tot Corp. SN 228,955. Pub. 10–18–66. Filed 9–29–65.

821,494. GAY CRAFT. Gaycraft Plastics Incorporated. SN 231,640. Pub. 10–18–66. Filed 10–26–65.

821,495. SILVER LINE. Moorhead Plastics, Inc. SN 234,053. Pub. 10–18–66. Filed 12–6–65.

821,496. MAINE COASTER. Myron S. Rapaport. SN 234,235. Pub. 10–18–66. Filed 12–8–65.

821,497. FISK. United States Rubber Company. SN 234,377. Pub. 10–18–66. Filed 12–10–65.

821,498. TINE-E-MITE. Grand Specialties Company. SN 234,896. Pub. 10–18–66. Filed 12–20–65.

821,499. MOULTON STOWAWAY. Moulton Bicycles Limited. SN 234,914. Pub. 10–18–66. Filed 12–20–65.

821,500. MELODY CRADLE. Walter L. Boshart. SN 235,157. Pub. 10–18–66. Filed 12–23–65.

821,501. BIG HORN AND DESIGN. Donald D. Campbell. SN 235,273. Pub. 10–18–66. Filed 12–27–65.

821,502. YAWNING BOY (DESIGN). United States Rubber Company. SN 235,362. Pub. 10–18–66. Filed 12–27–65.

821,503. GO-GO. Chun-Yi Tang, d.b.a. Go-Go Company. SN 235,550. Pub. 10–18–66. Filed 12–30–65.

821,504. GRAVAC. Enterprise Railway Equipment Company. SN 235,641. Pub. 10–18–66. Filed 1–3–66.

821,505. LINE/LOC. Hurst-Campbell, Inc. SN 235,670. Pub. 10–18–66. Filed 1–3–66.

821,506. ARLINGTON. Huntington Distributors, Inc. SN 236,488. Pub. 10–18–66. Filed 1–14–66.

821,507. PARK-AWAY. D. P. Harris Hardware & Manufacturing Co., Inc. SN 236,598. Pub. 10–18–66. Filed 1–17–66.

821,508. LIFETIME. D. P. Harris Hardware & Manufacturing Co., Inc. SN 236,599. Pub. 10–18–66. Filed 1–17–66.

821,509. "1-STEP-30." Daybrook-Ottawa Corporation. SN 236,694. Pub. 10–18–66. Filed 1–3–66.

821,510. UNI-VENT. Uni-Vent Co., Inc. SN 246,240. Pub. 10–18–66. Filed 5–23–66.

Class 21—Electrical Apparatus, Machines, and Supplies

821,407. (See Class 5 for this trademark.)

821,442. (See Class 13 for this trademark.)

821,511. VOICE DIRECTOR. Argos Products Company, Inc. SN 204,442. Pub. 10–18–66. Filed 10–21–64.

821,512. BT AND DESIGN. Blonder-Tongue Laboratories, Inc. SN 207,474. Pub. 10–18–66. Filed 12–4–64.

821,513. DIGIMITE. Bonner Specialties, Incorporated. SN 208,989. Pub. 10–18–66. Filed 12–29–64.

821,514. MASSEY-FERGUSON. Massey-Ferguson Limited. SN 211,294. Pub. 10–18–66. Filed 2–3–65.

821,515. REGAL-AIRE. Regal Plastic Company, d.b.a. Regal-Aire Lamp Company. SN 220,026. Pub. 10–18–66. Filed 5–28–65.

821,516. POLY-C. General Electric Company. SN 221,719. Pub. 10–18–66. Filed 6–22–65.

821,517. MIN-ECON. C-Cor Electronics, Inc. SN 223,196. Pub. 10–18–66. Filed 6–22–65.

821,518. PE AND DESIGN. Perpetuum-Ebner, Fabrik für Feinmechanik und Elektrotechnik, Steidinger & Co., K.G. MULTIPLE CLASS (Classes 21 and 36). SN 224,443. Pub. 10–18–66. Filed 7–28–65.

821,519. VARI-TECH. Vari-Tech Company. MULTIPLE CLASS (Classes 21 and 26). SN 226,805. Pub. 10–18–66. Filed 8–30–65.

821,520. MARK I. Cole-Parmer Instrument & Equipment Co. SN 228,635. Pub. 10–18–66. Filed 9–27–65.

821,521. EXTENDOMATIC. Executone Inc. SN 229,213. Pub. 10–18–66. Filed 10–4–65.

821,522. HYBRIDGE. Alford Manufacturing Company. SN 229,627. Pub. 10–18–66. Filed 10–5–65.

821,523. CYCLOPS. Cyclops Incorporated. MULTIPLE CLASS (Classes 21, 23, 31, and 34). SN 230,113. Pub. 10–18–66. Filed 10–14–65.

821,524. ROSE LITE AND DESIGN. Mary F. Lothman, d.b.a. Nancy Originals. SN 231,157. Pub. 10–18–66. Filed 10–22–65.

821,525. SCHJEL-FLEX. G. T. Schjeldahl Company. SN 231,243. Pub. 10–18–66. Filed 10–22–65.

821,526. PENNCREST. J. C. Penney Company. SN 231,477. Pub. 10–18–66. Filed 10–23–65.

821,527. LUSTERATOR. Adamation, Inc. SN 231,797. Pub. 10–18–66. Filed 10–29–65.

821,528. TELE-LOOKIE. Sony Corporation. SN 232,096. Pub. 10–18–66. Filed 11–3–65.

821,529. DELPAK. General Battery and Ceramic Corp. SN 232,203. Pub. 10–18–66. Filed 11–5–65.

821,530. REVERE WARE ETC. AND DESIGN. Revere Copper and Brass Incorporated. SN 232,349. Pub. 10–18–66. Filed 11–8–65.

821,531. NORBAPOWER. Norbatrol Electronics Corporation. SN 232,415. Pub. 10–18–66. Filed 11–9–65.

821,532. NORBATHERM. Norbatrol Electronics Corporation. SN 232,417. Pub. 10–18–66. Filed 11–9–65.

821,533. PREH. Walter Preh, d.b.a. Preh Elektrofeinmechanische Werke Jakob Preh Nachf. SN 232,419. Pub. 10–18–66. Filed 11–9–65.

821,534. PORTRAIT. The Tappan Company. SN 232,612. Pub. 10–18–66. Filed 11–12–65.

821,535. ACROPAL. Prescolite Manufacturing Corporation. SN 232,852. Pub. 10–18–66. Filed 11–17–65.

821,536. KITCHEN KARE AND DESIGN. CMC Incorporated. SN 233,319. Pub. 10–18–66. Filed 11–26–65.

821,537. PHOTOSTOP. James L. Highsmith & Co. SN 233,344. Pub. 10–18–66. Filed 11–26–65.

821,538. CHROMIX. Sears, Roebuck and Co. SN 235,127. Pub. 10–18–66. Filed 12–22–65.

Class 22—Games, Toys, and Sporting Goods

821,539. V-ROOH! Mattel, Inc. SN 203,510. Pub. 10–18–66. Filed 10–7–64.

821,540. OAK AND DESIGN. The Oak Rubber Company. SN 226,768. Pub. 10–18–66. Filed 8–30–65.

821,541. PORTER. Bliss & Laughlin Industries, Incorporated, assignee of Waco-Porter Corporation. SN 229,156. Pub. 8–30–66. Filed 10–1–65.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

821,392. (See Class 2 for this trademark.)

821,399. (See Class 2 for this trademark.)

821,407. (See Class 5 for this trademark.)

821,410. (See Class 6 for this trademark.)

821,411. (See Class 6 for this trademark.)

821,446. (See Class 13 for this trademark.)

821,466. (See Class 13 for this trademark.)

821,523. (See Class 21 for this trademark.)

821,542. MISCELLANEOUS DESIGN. Bruce Caulkins, Inc. SN 216,800. Pub. 10–18–66. Filed 4–19–65.

821,543. EUROVAL. Grossversandhaus Quelle Gustav Schickedans K.G. MULTIPLE CLASS (Classes 23, 27, 28, and 50). SN 219,784. Pub. 10–18–66. Filed 5–26–65.

821,544. RALPH ZEBARTH INC. AND DESIGN. Ralph Zebarth Inc. SN 221,872. Pub. 10–18–66. Filed 6–23–65.

821,545. QUICK-FILL. Sterling Brewers, Inc. SN 222,776. Pub. 10–18–66. Filed 7–6–65.

821,546. HEIDELBERG ROTASPEED. Schnellpressenfabrik Aktiengesellschaft Heidelberg. SN 223,262. Pub. 10–18–66. Filed 7–13–65.

821,547. LA FAVORITE SANI-CUT. La Favorite Rubber Manufacturing Company. SN 226,845. Pub. 10–18–66. Filed 8–31–65.

821,548 ATOMIST. Wilkerson Corporation. SN 227,198. Pub. 10–18–66. Filed 9–3–65.

821,549. COM-PAK. Stewart-Hunt, Inc. SN 227,350. Pub. 10–18–66. Filed 9–7–65.

821,550. MISCELLANEOUS DESIGN. SKF Industries, Inc. SN 230,294. Pub. 10–18–66. Filed 10–15–65.

821,551. MISCELLANEOUS DESIGN. SKF Industries, Inc. SN 230,295. Pub. 10–18–66. Filed 10–15–65.

821,552. ARTCRAFT. King-Seeley Thermos Co., d.b.a. Structo Division. SN 230,737. Pub. 10–18–66. Filed 9–30–65.

821,553. GUILD MARK. Norman Wilson Thomas, d.b.a. Guild-Mark Products. SN 232,249. Pub. 10–18–66. Filed 11–5–65.

821,554. CHIPPEROON. Myron C. Stephens, d.b.a. Alloy Welding and Fabricating Co. SN 232,611. Pub. 10–18–66. Filed 11–12–65.

821,555. OASIS. McConnell Co. SN 233,513. Pub. 10–18–66. Filed 11–29–65.

821,556. QUIKADRESSER AND DESIGN. Acme Visible Records, Inc. SN 233,975. Pub. 10–18–66. Filed 12–6–65.

821,557. DEA AND DESIGN. DEA Products, Incorporated. SN 234,734. Pub. 10–18–66. Filed 12–16–65.

821,558. JETTE. Dansk Designs, Inc. SN 235,495. Pub. 10–18–66. Filed 12–29–65.

821,559. VAPDRILL. H & M Associates. SN 235,668. Pub. 10–18–66. Filed 1–3–66.

821,560. DOUGHBOY TWISTIE. Doughboy Industries, Inc. SN 236,068. Pub. 10–18–66. Filed 1–10–66.

821,561. MICHIANA MILLS. George O. Graves, d.b.a. Michiana Mills. SN 236,254. Pub. 10–18–66. Filed 1–12–66.

821,562. INDIAN. Coronet Manufacturing Company. SN 236,567. Pub. 10–18–66. Filed 1–14–66.

821,563. DOUBLEMATIC. Eversharp, Inc. SN 236,580. Pub. 10–18–66. Filed 1–17–66.

821,564. BUCKLEIN. Lathan Manufacturing Co. SN 237,002. Pub. 10–18–66. Filed 1–21–66.

821,565. PROLIFIC PROFIT PRODUCING PRODUCTS AND DESIGN. The Paul Abbott Co., Inc. SN 237,149. Pub. 10–18–66. Filed 1–24–66.

821,566. WEAVEMATIC. Bonas Bros., Limited. SN 237,198. Pub. 10–18–66. Filed 1–25–66.

821,567. WILLCOX & GIBBS. Willcox and Gibbs Sewing Machine Company. SN 237,266. Pub. 10–18–66. Filed 1–25–66.

821,568. SEW AND DESIGN. Stroudsburg Engine Works, Inc. SN 237,496. Pub. 10–18–66. Filed 1–27–66.

821,569. STROUDSBURG. Stroudsburg Engine Works, Inc. SN 237,497. Pub. 10–18–66. Filed 1–27–66.

821,570. UNI-CRETOR. Air Placement Equipment Co., Inc. SN 241,300. Pub. 10–18–66. Filed 3–18–66.

821,571. IMPRESS A TONE. Impress A Tone. SN 241,468. Pub. 10–18–66. Filed 3–21–66.

821,572. SLIMLINE. Inglett & Company, Inc. SN 242,609. Pub. 10–18–66. Filed 4–4–66.

821,573. VOLKSDRILL. Volksdrill Sales Co. Inc. SN 242,763. Pub. 10–18–66. Filed 4–5–66.

821,574. QUAD-CONE. The Patterson-Kelley Co., Inc. SN 242,839. Pub. 10–18–66. Filed 4–6–66.

821,575. GMP AND DESIGN. General Machine Products Company, Inc. SN 243,316. Pub. 10–18–66. Filed 4–13–66.

821,576. TRITON. Universal American Corporation. SN 243,363. Pub. 10–18–66. Filed 4–13–66.

821,577. BLACK BRUTE. Jack Woldert, Jr., d.b.a. Woldert Enterprises. SN 243,368. Pub. 10–18–66. Filed 4–13–66.

821,578. HYDROTAPE. Brown & Sharpe Manufacturing Company. SN 243,769. Pub. 10–18–66. Filed 4–19–66.

821,579. DURA-CHURN. Dura Corporation. SN 244,890. Pub. 10–18–66. Filed 5–4–66.

821,580. ENROBOT. National Equipment Corporation. SN 247,471. Pub. 10–18–66. Filed 6–7–66.

821,581. TOUCH-O-MATIC CONTROL. Simplicity Manufacturing Company, Inc. SN 249,195. Pub. 10–18–66. Filed 6–29–66.

Class 26—Measuring and Scientific Appliances

821,407. (See Class 5 for this trademark.)

821,410. (See Class 6 for this trademark.)

821,519. (See Class 21 for this trademark.)

821,582. CHROMA-LAB. The Bendix Corporation. SN 171,078. Pub. 10–18–66. Filed 6–17–63.

821,583. AUDITOR. Cutler-Hammer, Inc. SN 226,831. Pub. 10–18–66. Filed 8–31–65.

821,584. MISCELLANEOUS DESIGN. Eastman Kodak Company. SN 232,536. Pub. 10–18–66. Filed 11–12–65.

821,585. OPTO-MASTER. Micro-Line, Inc. SN 233,116. Pub. 10–18–66. Filed 11–22–65.

821,586. FLAMEOTROL. Barber-Colman Company. SN 233,864. Pub. 10–18–66. Filed 12–3–65.

821,587. INFRAMIKE. General Electric Company. SN 234,744. Pub. 10–18–66. Filed 12–16–65.

821,588. SUPER-SPY. Joseph Karbo, d.b.a. Detection Appliances, Division of Northwestern. SN 234,755. Pub. 10–18–66. Filed 12–17–65.

821,589. RAYMIKE. General Electric Company. SN 234,894. Pub. 10–18–66. Filed 12–20–65.

821,590. WITHSTAND AND DESIGN. Liberty Optical Manufacturing Co. Inc. SN 235,514. Pub. 10–18–66. Filed 12–29–65.

821,591. GMP AND DESIGN. General Machine Products Company, Inc. SN 243,317. Pub. 10–18–66. Filed 4–13–66.

821,592. SEA-SCALE. Nord-New York, Inc. SN 245,885. Pub. 10–18–66. Filed 5–18–66.

Class 27 — Horological Instruments

821,543. (See Class 23 for this trademark.)

821,593. PONTIFA AND DESIGN. Pontifa S.A., Montres et Nouveautes. SN 233,738. Pub. 10–18–66. Filed 12–1–65.

Class 28 — Jewelry and Precious-Metal Ware

821,543. (See Class 23 for this trademark.)

821,594. RING-O-RAMA. Uncas Manufacturing Company. SN 233,201. Pub. 10–18–66. Filed 11–23–65.

Class 29 — Brooms, Brushes, and Dusters

821,595. MISCELLANEOUS DESIGN. American Brush Corporation. SN 233,980. Pub. 10–18–66. Filed 12–6–65.

Class 31 — Filters and Refrigerators

821,442. (See Class 13 for this trademark.)

821,523. (See Class 21 for this trademark.)

821,596. FILTRATION ENGINEERS. Ametek, Inc. SN 187,229. Pub. 10–18–66. Filed 2–24–64.

821,597. FILTER LOC AND X DESIGN. Star Filter Corporation. SN 196,480. Pub. 10–18–66. Filed 6–25–64.

821,598. MASSEY-FERGUSON. Massey-Ferguson Limited. SN 211,295. Pub. 10–18–66. Filed 2–3–65.

821,599. LINDPURE. Union Tank Car Company. SN 235,737. Pub. 10–18–66. Filed 1–3–66.

821,600. LINDCLEAR. Union Tank Car Company. SN 235,738. Pub. 10–18–66. Filed 1–3–66.

821,601. AMERICOLD AND DESIGN. American Motors Corporation. SN 240,572. Pub. 10–18–66. Filed 3–10–66.

Class 32 — Furniture and Upholstery

821,602. LE VOYAGER. Infanseat Company. SN 227,148. Pub. 10–18–66. Filed 9–3–65.

821,603. SPRING-A-WAY AND DESIGN. Vita-Pakt Citrus Products Co. SN 229,155. Pub. 10–18–66. Filed 10–1–65.

821,604. STEREOLOUNGER. The Berkline Corporation. SN 236,434. Pub. 10–18–66. Filed 1–4–66.

821,605. N AND DESIGN. Norwalk Furniture Corp. SN 237,016. Pub. 10–18–66. Filed 1–21–66.

821,606. NORWALK. Norwalk Furniture Corp. SN 237,017. Pub. 10–18–66. Filed 1–21–66.

821,607. DEANHALL. Clarendon Industries, Inc., d.b.a. Deanhall Furniture. SN 237,818. Pub. 10–18–66. Filed 2–2–66.

821,608. PURODOWN. Purofied Down Products Corp. SN 238,008. Pub. 10–18–66. Filed 2–3–66.

821,609. CONESTOGA PEG. Quaker Maid Kitchens, Inc. SN 238,109. Pub. 10–18–66. Filed 2–4–66.

821,610. CONESTOGA RANCHER. Quaker Maid Kitchens, Inc. SN 238,110. Pub. 10–18–66. Filed 2–4–66.

821,611. RESIST-O-LITE. Adirondack Chair Company, Inc. SN 238,145. Pub. 10–18–66. Filed 2–7–66.

821,612. LUXAIRE SPRING. Luxaire Cushion Co. SN 238,254. Pub. 10–18–66. Filed 2–7–66.

821,613. CYLINDRA. Richbilt Manufacturing Co. SN 238,670. Pub. 10–18–66. Filed 2–11–66.

821,614. VELVET TOUCH. The Englander Company, Inc. SN 239,030. Pub. 10–18–66. Filed 2–17–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

821,410. (See Class 6 for this trademark.)

821,523. (See Class 21 for this trademark.)

821,615. ALL-TEMP. Harper-Wyman Company. SN 180,012. Pub. 10–18–66. Filed 10–29–63.

821,616. SPEEDY-MITE. Ametek, Inc. SN 222,100. Pub. 10–18–66. Filed 6–28–65.

821,617. HENES AND DESIGN. Henes Manufacturing Co. SN 223,025. Pub. 10–18–66. Filed 7–9–65.

821,618. AER. AER Corporation. SN 230,116. Pub. 10–18–66. Filed 10–14–65.

821,619. HOTLOCK. Food Conveyors Limited. SN 232,540. Pub. 10–18–66. Filed 11–12–65.

821,620. PORTRAIT. The Tappan Company. SN 232,613. Pub. 10–18–66. Filed 11–12–65.

821,621. PACIFIC NATIONAL. Crane Co. SN 235,627. Pub. 10–18–66. Filed 1–3–66.

821,622. SOLAR. International Harvester Company (Delaware corporation), assignee of International Harvester Company (New Jersey corporation). SN 237,131. Pub. 10–18–66. Filed 1–24–66.

821,623. TARTAN. Eaton Yale & Towne Inc. SN 241,443. Pub. 10–18–66. Filed 3–21–66.

821,624. AIRE-REGULATOR. Food Technology, Inc. SN 245,884. Pub. 10–18–66. Filed 5–18–66.

821,625. HYDRO-AIRE. Stewart-Warner Corporation. SN 247,285. Pub. 10–18–66. Filed 6–10–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

821,442. (See Class 13 for this trademark.)

821,626. MASSEY-FERGUSON. Massey-Ferguson Limited. SN 211,296. Pub. 10–18–66. Filed 2–3–65.

Class 36 — Musical Instruments and Supplies

821,518. (See Class 21 for this trademark.)

821,627. DESIGN OF CROSSED TUNING FORKS. Gustav Pirazzi & Comp. SN 218,865. Pub. 10–18–66. Filed 5–14–65.

821,628. HAGSTROM. Aktiebolaget Albin Hagström. SN 220,437. Pub. 10–18–66. Filed 6–7–65.

821,629. SIDEWINDER AND DESIGN. Richard Eastham and Betty Jean Eastham (joint owners), d.b.a. Veda Enterprises. SN 223,783. Pub. 10–18–66. Filed 7–20–65.

821,630. FILMWAYS RECORDS AND DESIGN. Filmways Records, Inc. SN 248,691. Pub. 10–18–66. Filed 6–22–66.

821,631. UHER. Martel Electronics Sales Incorporated. SN 251,498. Pub. 10–18–66. Filed 8–2–66.

821,632. NEWSICASTER. National Business Music Company of the Southeast, Inc. SN 251,766. Pub. 10–18–66. Filed 8–5–66.

Class 37 — Paper and Stationery

821,477. (See Class 16 for this trademark.)

821,633. SHACHIHATA READY. Shachihata Kogyo Kabushiki Kaisha. SN 208,701. Pub. 10–18–66. Filed 8–24–66.

821,634. CYCLOGRAPHICS. Accounting & Business Forms, Inc. SN 231,717. Pub. 10–18–66. Filed 10–28–65.

821,635. IDENT-A-BAND. Hollister Incorporated. MULTIPLE CLASS (Classes 37 and 50). SN 233,036. Pub. 10–18–66. Filed 11–22–65.

Class 39 — Clothing

821,407. (See Class 5 for this trademark.)

821,636. TORAY. Toyo Rayon Co. Ltd. SN 81,648. Pub. 10–18–66. Filed 9–18–59.

821,637. PONY JAC. Capital-Mercury Shirt Corp. SN 201,183. Pub. 10-18-66. Filed 9–3–64.

821,638. YOUNG LONDON. Gimbel Brothers, Inc. SN 204,673. Pub. 10–18–66. Filed 10–23–64.

821,639. BOY WONDER. B. Altman & Co. SN 206,594. Pub. 10–18–66. Filed 11–20–64.

821,640. STALLION. Boss Manufacturing Company. SN 219,665. Pub. 10–18–66. Filed 5–25–65.

821,641. NYLON ZEPHYR. Rainfair, Inc. SN 220,551. Pub. 10–18–66. Filed 6–7–65.

821,642. MERRI-MERRI. L & S Bernstein, Inc. SN 222,545. Pub. 10–18–66. Filed 7–2–65.

821,643. MISS GALE SMITH. Gladstone-Arcuni, Inc. SN 222,691. Pub. 10–18–66. Filed 7–6–65.

821,644. PINEHILL CASUALS AND DESIGN. Korell Corporation. SN 226,358. Pub. 10–18–66. Filed 8–24–65.

821,645. JUNIOR CAPERS. The Caper Mates Company Inc. SN 229,201. Pub. 10–18–66. Filed 10–4–65.

821,646. COMET SHIRT AND DESIGN. Soren Shirt Company, Inc. SN 229,475. Pub. 10–18–66. Filed 10–6–65.

821,647. DUKE. The Servus Rubber Company. SN 230,091. Pub. 10–18–66. Filed 10–13–65.

821,648. TALL TEEN GEMS AND DESIGN. Mattie Dress Co. SN 230,408. Pub. 10–18–66. Filed 10–18–65.

821,649. WINDOW WITH WOMAN AND DOG (DESIGN). Donald P. Kline, d.b.a. Quality Plus Hosiery and Nylon Company. SN 230,844. Pub. 10–18–66. Filed 10–21–65.

821,650. ERIK'S. Capital Imports, Inc. SN 232,377. Pub. 10–18–66. Filed 10–22–65.

821,651. COTTON PICKIN'. The Atlas Company, d.b.a. The Atlas Co. SN 233,438. Pub. 10–18–66. Filed 11–29–65.

821,652. KOOL KUSHION. Huth-James Shoe, Inc. SN 233,712. Pub. 10–18–66. Filed 12–1–65.

821,653. IMPERIAL GIRL. Imperial Reading Corporation. SN 234,751. Pub. 10–18–66. Filed 12–16–65.

821,654. THE WET SET. Sea B's, Inc. SN 234,775. Pub. 10–18–66. Filed 12–16–65.

821,655. PRINCE CRESTARRA AND DESIGN. Creston Shirt Co., Inc. SN 235,279. Pub. 10–18–66. Filed 12–27–65.

821,656. FLEXI WELT. J. Edwards & Co. SN 235,556. Pub. 10–18–66. Filed 12–30–65.

821,657. SIMA. Rocky Mount Undergarment Co., Inc. SN 235,798. Pub. 10–18–66. Filed 1–4–66.

821,658. MG QUALITY SHOES FOR THE YOUNG SET AND DESIGN. Mother Goose Corporation. SN 236,767. Pub. 10–18–66. Filed 1–18–66.

821,659. DEMI-TALL. Tall Apparel N.Y. Corp. SN 236,854. Pub. 10–18–66. Filed 1–19–66.

821,660. ROYAL ATLANTIC. Atlantic Thrift Centers, Inc. SN 236,874. Pub. 10–18–66. Filed 1–20–66.

821,661. MARDA. Marda Associates, Inc. SN 237,367. Pub. 10–18–66. Filed 1–26–66.

821,662. MISS SANSABELT. Jaymar-Ruby, Inc. SN 237,452. Pub. 10–18–66. Pub. 1–27–66.

821,663. JAYFLEX. Jaymar-Ruby, Inc. SN 237,453. Pub. 10–18–66. Filed 1–27–66.

821,664. THE YOUNG BACHELORS. H. Daroff & Sons, Inc. SN 237,671. Pub. 10–18–66. Filed 2–1–66.

821,665. XTRALON. Mademoiselle Fifth Avenue, Inc. SN 237,718. Pub. 10–18–66. Filed 2–1–66.

821,666. "MR. THOMSON . . . PLEASE!" AND DESIGN. Thomson Company. SN 237,760. Pub. 10–18–66. Filed 2–1–66.

821,667. COVENTRY SQUARE. The Asher Company. SN 237,800. Pub. 10–18–66. Filed 2–2–66.

821,668. MUSCLE AND DESIGN. Norwich Mills, Inc. SN 237,868. Pub. 10–18–66. Filed 2–2–66.

821,669. ZIPPA. Smoler Bros., Inc., d.b.a. Lenbarry Casuals. SN 237,882. Pub. 10–18–66. Filed 2–2–66.

821,670. GOLDEN RAM. Phoenix, Inc. SN 237,903. Pub. 10–18–66. Filed 1–21–66.

821,671. FROST STOPPERS. Wells Lamont Corporation. SN 238,025. Pub. 10–18–66. Filed 2–3–66.

821,672. SNOW-PAWS. Wells Lamont Corporation. SN 238,026. Pub. 10–18–66. Filed 2–3–66.

821,673. CRINK-ALLURE. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 238,217. Pub. 10–18–66. Filed 2–7–66.

821,674. AFTER SIX. S. Rudofker's Sons, Inc. SN 238,298. Pub. 10–18–66. Filed 2–7–66.

821,675. LYNNE CAROL. Lynne Carol Fashions Inc. SN 238,359. Pub. 10–18–66. Filed 2–8–66.

821,676. T'AFFAIRE. Genesco Inc. SN 238,422. Pub. 10–18–66. Filed 2–9–66.

821,677. CANNON. Cannon Mills Company. SN 238,708. Pub. 10–18–66. Filed 2–14–66.

821,678. ROMP-A-ROUND. Apparel, Inc. SN 239,106. Pub. 10–18–66. Filed 2–18–66.

821,679. BODY COCKTAIL. Sarong, Inc. SN 239,173. Pub. 10–18–66. Filed 2–18–66.

821,680. BOOTMAN. Gold Seal Rubber Company. SN 239,513. Pub. 10–18–66. Filed 2–24–66.

821,681. BROOKDALE. J. J. Newberry Co. SN 239,535. Pub. 10–18–66. Filed 2–24–66.

821,682. RHODIALON. Societe Rhodiaceta. SN 240,969. Pub. 10–18–66. Filed 3–14–66.

821,683. G. S. OWEN HOT SHOTS AND DESIGN. Gilbert Shoe Stores, Inc. SN 245,821. Pub. 10–18–66. Filed 5–17–66.

821,684. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 249,705. Pub. 10–18–66. Filed 7–7–66.

821,685. LIGHT 'N EASY. O'Bryan Bros., Inc. SN 250,431. Pub. 10–18–66. Filed 7–18–66.

821,686. MR. NICK. Leslie Fay, Inc. SN 251,037. Pub. 10–18–66. Filed 7–26–66.

821,687. SAND SHARKS. Blue Bell, Inc. SN 251,172. Pub. 10–18–66. Filed 7–28–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

821,688. GARDISETTE AND DESIGN. Gardisette Gesellschaft mit beschrankter Haftung. SN 228,360. Pub. 10–18–66. Filed 9–22–65.

821,689. BEADECORETTES. Guild Arts & Crafts, Inc. SN 235,916. Pub. 10–18–66. Filed 1–6–66.

821,690. COIN-VERTIBLE. Coin Sales Corporation. SN 236,235. Pub. 10–18–66. Filed 1–12–66.

821,691. JUMP. Fabrics by Joyce, Inc. SN 237,322. Pub. 10–18–66. Filed 1–26–66.

821,692. IMPERIAL WALE. Crompton Company. SN 238,409. Pub. 10–18–66. Filed 2–9–66.

821,693. LOCKWOOD. Deering Milliken, Inc. SN 240,509. Pub. 10–18–66. Filed 3–9–66.

821,694. RHODIALON. Societe Rhodiaceta. SN 240,970. Pub. 10–18–66. Filed 3–14–66.

821,695. CAVELOUR. Collins & Aikman Corporation. SN 241,309. Pub. 10–18–66. Filed 3–18–66.

821,696. COLOR FAIR. Deering Milliken, Inc. SN 241,320. Pub. 10–18–66. Filed 3–18–66.

821,697. DANCORD. Dan River Mills, Incorporated. SN 241,438. Pub. 10–18–66. Filed 3–21–66.

821,698. THALPRESS. Alamac Knitting Mills, Inc. SN 241,725. Pub. 10–18–66. Filed 3–24–66.

821,699. ULYSSES. J. P. Stevens & Co., Inc. SN 241,942. Pub. 10–18–66. Filed 3–25–66.

821,700. RIVERLON. Dan River Mills, Incorporated. SN 242,116. Pub. 10–18–66. Filed 3–29–66.

821,701. POWERETTE. H. Warshow & Sons, Inc. SN 242,156. Pub. 10–18–66. Filed 3–29–66.

821,702. MAPLE LEAF TARTAN. Rotex Limited. SN 242,168. Pub. 10–18–66. Filed 3–23–66.

821,703. PABSALON. Pabst Bedding Company, Inc. SN 242,275. Pub. 10–18–66. Filed 3–30–66.

821,704. ORIGO. International Textiles, Ltd. SN 242,364. Pub. 10–18–66. Filed 3–31–66.

821,705. COMFORTONE. J. P. Stevens & Co., Inc. SN 242,400. Pub. 10–18–66. Filed 3–31–66.

821,706. TEPID-AIRE. J. P. Stevens & Co., Inc. SN 242,401. Pub. 10–18–66. Filed 3–31–66.

821,707. SANI AQUA AND DESIGN. Malina Company Inc. SN 251,360. Pub. 10–18–66. Filed 8–1–66.

821,708. MEDITERRANIA. Normandie Bedspread Co., Inc. SN 251,361. Pub. 10–18–66. Filed 8–1–66.

Class 43 — Thread and Yarn

821,709. SAUPOUDREE. Filatures Prouvost & Cie, La Lainiere de Roubaix. SN 235,769. Pub. 10–18–66. Filed 1–4–66.

821,710. A AND DESIGN. Arlen Thread Co., Inc. SN 236,551. Pub. 10–18–66. Filed 1–17–66.

821,711. RHODIALON. Societe Rhodiaceta. SN 240,971. Pub. 10–18–66. Filed 3–14–66.

821,712. CLEVYLON. Societe Rhovyl. SN 241,085. Pub. 10–18–66. Filed 3–15–66.

821,713. CLEVYLASTIC. Societe Rhovyl. SN 241,086. Pub. 10–18–66. Filed 3–15–66.

821,714. CLEVYLIA. Societe Rhovyl. SN 241,087. Pub. 10–18–66. Filed 3–15–66.

821,715. CLEVYLINE. Societe Rhovyl. SN 241,088. Pub. 10–18–66. Filed 3–15–66.

821,716. CLEVYLCO. Societe Rhovyl. SN 241,089. Pub. 10–18–66. Filed 3–15–66.

821,717. ALLIED CHEMICAL AND DESIGN. Allied Chemical Corporation. SN 241,572. Pub. 10–18–66. Filed 3–22–66.

821,718. PAPOTAGES. Filatures Prouvost & Cie, La Lainiere de Roubaix. SN 241,888. Pub. 10–18–66. Filed 3–25–66.

Class 44 — Dental, Medical, and Surgical Appliances

821,407. (See Class 5 for this trademark.)

821,719. GOLDEN ARM. Den-Tal-Ez Chair Manufacturing Co., assignee of Eugene W. Schoeberl. SN 226,167. Pub. 10–18–66. Filed 8–20–65.

821,720. PROMEDCO ETC. AND DESIGN. Edward Weck & Co., Inc., assignee of Promedco Inc. SN 227,708. Pub. 10–18–66. Filed 9–13–65.

821,721. JEANIE RUB MASSAGER AND DESIGN. Joseph A. La Barber. SN 232,700. Pub. 10–18–66. Filed 11–15–65.

821,722. PERMA-FIT. Perma-Fit Company. SN 235,329. Pub. 10–18–66. Filed 12–27–65.

821,723. SURGALOY. American Cyanamid Company. SN 238,150. Pub. 10–18–66. Filed 2–7–66.

821,724. ENTONOX. The British Oxygen Company Limited. SN 238,490. Pub. 10–18–66. Filed 2–10–66.

821,725. C AND DESIGN. Candulor AG (Candulor S.A.) (Candulor Ltd.) SN 238,834. Pub. 10–18–66. Filed 2–15–66.

821,726. CURVELLE. Kimberly-Clark Corporation. SN 238,877. Pub. 10–18–66. Filed 2–15–66.

821,727. SURGICLIP. Specialized Components Corp. SN 239,083. Pub. 10–18–66. Filed 2–17–66.

821,728. SAFELINE AND DESIGN. American Optical Company. SN 244,559. Pub. 10–18–66. Filed 4–29–66.

821,729. SAFELINE. American Optical Company. SN 245,053. Pub. 10–18–66. Filed 5–6–66.

Class 46 — Foods and Ingredients of Foods

821,730. L (DESIGN). Locatelli S.p.A. SN 209,702. Pub. 10–18–66. Filed 1–11–65.

821,731. RONDANINI AND DESIGN. Rondanini Luigi S.p.A. SN 217,401. Pub. 10–18–66. Filed 4–26–65.

821,732. ROBERT W. LETERA, SR. Robert W. Letera, Sr. SN 232,704. Pub. 10–18–66. Filed 11–15–65.

Class 50 — Merchandise Not Otherwise Classified

821,543. (See Class 23 for this trademark.)

821,635. (See Class 37 for this trademark.)

821,733. CENTURY. Century Mausoleums, Inc. SN 211,706. Pub. 10–18–66. Filed 2–10–65.

Class 52 — Detergents and Soaps

821,734. TOP NOTCH. M. A. Notch Corporation. SN 227,322. Pub. 5–3–66. Filed 9–7–65.

821,735. MUREX. The Euclid Chemical Company. SN 236,728. Pub. 10–18–66. Filed 1–18–66.

Service Marks

Class 100 — Miscellaneous

821,736. GOLDEN BEAR. Golden Bear Pancake House, Inc. SN 228,365. Pub. 10–18–66. Filed 9–22–65.

821,737. FANCIFUL R (DESIGN). Roncari Industries, Inc. MULTIPLE CLASS (Classes 100, 101, 102, and 103). SN 234,469. Pub. 10–18–66. Filed 12–13–65.

Class 101 — Advertising and Business

821,737. (See Class 100 for this trademark.)

Class 102 — Insurance and Financial

821,737. (See Class 100 for this trademark.)

Class 103 — Construction and Repair

821,737. (See Class 100 for this trademark.)

Class 104 — Communication

821,738. HARLEQUIN (DESIGN). Storer Broadcasting Company. SN 227,971. Pub. 10–18–66. Filed 9–16–65.

Class 106 — Material Treatment

821,739. ZIP. Crown Drug Company. SN 198,859. Pub. 6–29–65. Filed 5–20–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

821,752. Phillips-Foscue Corporation, High Point, N.C. SN 212,575. Filed P.R. 2–28–65; Am. S.R. 1–3–66.

FORTIFIED FOAM

Class 32—Furniture and Upholstery

For Mattresses and Cushions.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Urethane Carpet Padding.

First use Aug. 20, 1964.

SECTION 2

Class 1 — Raw or Partly Prepared Materials

821,740. Potlatch Forests, Inc., Lewiston, Idaho. SN 212,580. Filed P.R. 2–23–65; Am. S.R. 10–24–66.



For Packaged Fuel Briquettes and Fire Starters.
First use Jan. 20, 1965.

821,741. A. R. McFadden, Kansas City, Mo. SN 232,925. Filed P.R. 11–18–65; Am. S.R. 11–4–66.

LITTER GREEN

The word "Litter" is disclaimed except as a part of the mark as shown.

For Animal Litter.
First use June 8, 1965.

821,742. Rotary Drilling Services, Inc., Tulsa, Okla. SN 244,742. Filed P.R. 5–2–66; Am. S.R. 10–31–66.

KWIK SEAL

For Mixture of Vegetable Fibers, Synthetic Fibers, Cellophane Flakes and Granulated Nut Shells for Addition to Drilling Fluids.
First use Oct. 26, 1965.

Class 6 — Chemicals and Chemical Compositions

821,743. Christopher S. Crowell, d.b.a. Chris Crowell & Co., Darien, Conn. SN 228,812. Filed P.R. 9–28–65; Am. S.R. 10–14–66.

FLORA-CARE

For Preparation for Prolonging the Life of Cut Flowers.
First use on or before Apr. 4, 1965.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

821,744. Stoeger Arms Corporation, South Hackensack, N.J. SN 231,269. Filed P.R. 10–22–65; Am. S.R. 11–7–66.

ROSSI

For Revolvers.
First use July 10, 1965.

Class 18—Medicines and Pharmaceutical Preparations

821,745. The Southern Optical Company, Louisville, Ky. SN 206,085. Filed P.R. 11–12–64; Am. S.R. 9–12–66.

clean-N-wet

For Isotonic Antiseptic and Lubricating Solution for Contact Lenses.
First use Oct. 28, 1964.

Class 19—Vehicles

821,746. C-C Industries, d.b.a. Besler, Emeryville, Calif., by merger from Besler Corporation, Emeryville, Calif. SN 193,098. Filed P.R. 5–11–64; Am. S.R. 10–5–66.

BESLER

For Wheeled Agricultural Trailer Units Adapted To Carry Spray Equipment, Tree Clipping Equipment, Pumps, and Motor Operated Agricultural Tools.
First use about January 1964.

821,747. Arnold, Schwinn & Co., Chicago, Ill. SN 238,693. Filed 2–15–66.

HEAVY-DUTI

For Bicycles.
First use Dec. 17, 1964.

Class 22—Games, Toys, and Sporting Goods

821,748. Groller Enterprises Inc., New York, N.Y. SN 200,720. Filed P.R. 8–27–64; Am. S.R. 11–1–66.

a Learning Toy
FROM THE LEARNING TOY PROGRAM

For Toy Boats, Sleds, Houses, and Dolls.
First use June 26, 1964.

821,749. Groller Enterprises Inc., New York, N.Y. SN 200,721. Filed P.R. 8–27–64; Am. S.R. 11–1–66.

a Learning Toy
FROM THE LEARNING TOY PROGRAM

For Toy Boats, Sleds, Houses, and Dolls.
First use June 26, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

821,750. FMC Corporation, San Jose, Calif. SN 209,684. Filed P.R. 1–11–65; Am. S.R. 11–1–66.

FLUIDRIVE

The word "Fluidrive" is disclaimed apart from the mark as shown.
For Power Transmitting Fluid Couplings.
First use Nov. 21, 1964.

Class 29—Brooms, Brushes, and Dusters

821,751. Helmac Products Corporation, Flint, Mich. SN 207,596. Filed P.R. 12–7–64; Am. S.R. 10–31–66.

D LINT IT

For Roller Type Lint Remover for Use in Lifting Hard To Remove Foreign Particles From Clothing, Furniture, Upholstering and the Like.
First use Aug. 12, 1964.

Class 32—Furniture and Upholstery

821,752. See Section 1 (Combined Certificate).

821,753. National Bedding & Furniture Industries, Inc., Memphis, Tenn. SN 239,068. Filed P.R. 2–17–66; Am. S.R. 11–1–66.



The Norman French Phrases "Honi Soit Qui Mal y Pense" is translated as "evil to him who evil thinks"; "Dieu et Mon Droit" is translated as "God and my right."
For Mattresses and Box Springs.
First use Sept. 13, 1965.

Class 34—Heating, Lighting, and Ventilating Apparatus

821,754. C-C Industries, d.b.a. Besler, Emeryville, Calif., by merger of Besler Corporation, Emeryville, Calif. SN 193,100. Filed P.R. 5–11–64; Am. S.R. 10–5–66.

BESLER

For Boilers, Steam Generators and Control Systems Therefor and Heat Exchangers and Parts Therefor.
First use in about January 1964.

821,755. Hearth Craft, Inc., Portland, Oreg. SN 210,128. Filed P.R. 1–18–65; Am. S.R. 11–4–66.

GLASSCREEN

For Fireplace Screens.
First use Dec. 31, 1963.

821,756. Suntemp Industries, Inc., Blackwood, N.J. SN 210,998. Filed P.R. 1–29–65; Am. S.R. 11–15–66.

"WHERE RESEARCH FOR THE FUTURE KEEPS THE PRESENT IN MIND"

For Baseboard Radiation Equipment and Parts Thereof.
First use Nov. 19, 1962.

821,757. Glass Gorham Company, d.b.a. American Louver Company, Chicago, Ill. SN 225,553. Filed P.R. 8–12–65; Am. S.R. 10–31–66.

CUSTOMLENS

For Lighting Fixture Lenses.
First use May 3, 1965.

Class 37—Paper and Stationery

821,758. Ellingsworth Mfg. Co., Chicago, Ill. SN 210,759. Filed P.R. 1–27–65; Am. S.R. 11–2–66.

DUO-BIND

For Looseleaf Covers.
First use July 1, 1964.

Class 38—Prints and Publications

821,759. Costich & McConnell, Inc., Westbury, N.Y. SN 217,530. Filed P.R. 4–28–65; Am. S.R. 10–19–66.

Almanac

For Magazine of Botanical and Gardening Information.
First use Mar. 5, 1965.

Class 39—Clothing

821,760. McGregor-Doniger Inc., New York, N.Y. SN 208,476. Filed 12–18–64.

SPANDABLE

For Sport Shirts and Jackets.
First use Nov. 30, 1963.

821,761. Oshkosh B'Gosh, Incorporated, Oshkosh, Wis. SN 214,161. Filed P.R. 3–15–65; Am. S.R. 10–31–66.

best/prest

For Men's Pants.
First use Oct. 6, 1964.

821,762. Barr Company, Los Angeles, Calif. SN 229,941. Filed P.R. 10–12–65; Am. S.R. 10–31–66.

SILKNSHARK

For Men's Suits, Coats, and Slacks.
First use January 1959.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

821,752. See Section 1 (Combined Certificate).

Class 46—Foods and Ingredients of Foods

821,763. Livestock Enterprises, Inc., Dalhart, Tex. SN 193,971. Filed P.R. 5–21–64; Am. S.R. 10–26–66.

CEBÓN

The word "Cebón" in Spanish means "stall fed bullocks."
For Feed for Livestock and Fresh Dressed Beef.
First use Apr. 1, 1964.

821,764. Sugarless Candy Corporation of America, Chicago, Ill. SN 198,306. Filed P.R. 7–13–64; Am. S.R. 8–25–65.

SUGARLESS CANDY

For Candy.
First use July 7, 1964.

821,765. Sugarless Candy Corporation of America, Chicago, Ill. SN 198,807. Filed P.R. 7-13-64; Am. S.R. 8-24-65.



For Candy.
First use July 7, 1964.

821,766. John Morrell & Co., Ottumwa, Iowa. SN 218,683. Filed P.R. 5-12-65; Am. S.R. 8-1-66.

TABLE TRIM

For Smoked Ham.
First use Aug. 31, 1964.

821,767. Breddo-Food Products Corporation, Inc., Kansas City, Kans. SN 229,744. Filed P.R. 10-11-65; Am. S.R. 11-1-66.

BAKE SOFT

For Powdered Emulsifier for Yeast Raised Bakery Products.
First use Sept. 16, 1965.

821,768. San Francisco Grocery Co., Ltd., Union City, Calif. SN 230,436. Filed P.R. 10-18-65; Am. S.R. 11-1-66.

SURE FLAVOR

For Canned Fruits and Canned Vegetables.
First use Sept. 27, 1965.

821,769. Casa de Fruta, Hollister, Calif. SN 238,180. Filed P.R. 2-7-66; Am. S.R. 10-4-66.



The drawing is lined for red. The Spanish words "Casa de Fruta" translate into "the house of fruit."
For Fresh and Dried Fruits and Nuts.
First use Aug. 1, 1963.

Class 50 — Merchandise Not Otherwise Classified

821,770. Aquariums Incorporated, Maywood, N.J. SN 229,729. Filed P.R. 10-11-65; Am. S.R. 10-31-66.

SPAWNING GRASS

For Aquarium Breeding Accessory—Namely, a Shredded Plastic Film Which Provides a Hiding Place for Newborn Tropical Fish.
First use in or about August 1961.

Class 52 — Detergents and Soaps

821,771. Barco Chemicals Division, Inc., Miami, Fla. SN 206,213. Filed P.R. 11-16-64; Am. S.R. 10-12-66.

CLEAN BEYOND VISION

For Rug and Upholstery Cleaner, All Purpose Cleaner and Liquid Bowl Cleaner.
First use July 1954.

821,772. The Barcolene Company, Boston, Mass. SN 233,573. Filed P.R. 11-30-65; Am. S.R. 11-3-66.

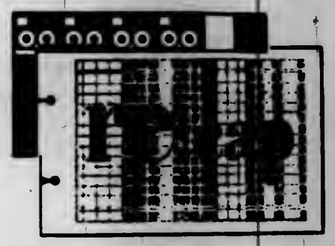
HAND FOAM

For Waterless Hand Cleaner.
First use Oct. 4, 1965.

Service Marks

Class 101 — Advertising and Business

821,773. Partake, Inc., Oak Brook, Ill. SN 233,562. Filed 11-26-65.



For Bookkeeping Services for Others Including the Special Designing of Systems and Forms Therefor.
First use Apr. 7, 1963.

Class 107 — Education and Entertainment

821,774. Famous Artists Schools, Inc., New York, N.Y. SN 165,509. Filed P.R. 3-27-63; Am. S.R. 11-1-66.

FAMOUS PHOTOGRAPHERS SCHOOL

For Correspondence Courses in All Phases of Photography.
First use Feb. 20, 1963.

TRADEMARK REGISTRATIONS RENEWED

29,573. THE RED WARRIOR AXE AND DESIGN. Cl. 23. 2-9-1897.
52,007. ALBANY. Cl. 15. 5-1-06.
57,434. AMERICAN. Cl. 7. 11-13-06.
57,563. LISTERINE. Cl. 52. 11-13-06.
58,533. OILZUM AND DESIGN. Cl. 15. 12-18-06.
58,672. REGAL. Cl. 11. 12-18-06.
59,755. BANQUET AND DESIGN. Cl. 46. 1-15-07.
59,780. PERFECTION. Cl. 15. 1-15-07.
60,375. SERRATED CIRCLE (DESIGN). Cl. 27. 2-5-07.
60,560. BANQUET. Cl. 46. 2-12-07.
60,843. ENGINEER AND FIREMAN. Cl. 39. 2-19-07.
60,844. POSTMAN AND POLICEMAN. Cl. 39. 2-19-07.
61,763. GOLD MEDAL AND DESIGN. Cl. 46. 4-2-07.
61,806. HAVOLINE. Cl. 15. 4-9-07.
212,613. REGO. Cl. 34. 5-11-26.
217,868. CROSSED FISH AND DESIGN. Cl. 46. 9-14-26.
220,053. GEM. Cl. 46. 11-2-26.
220,084. ACME. Cl. 46. 11-2-26.
220,462. OKEH. Cl. 26. 11-9-26.
220,479. MADORA. Cl. 39. 11-9-26.
220,593. BOTOT. Cl. 51. 11-9-26.
220,707. CHEST O' GOLD. Cl. 46. 11-16-26.
220,761. ASPIR-VESS. Cl. 18. 11-16-26.
221,020. LAINETTE. Cl. 42. 11-23-26.
221,121. LISTERINE. Cl. 51. 11-23-26.
221,122. LA SOIREE. Cl. 51. 11-23-26.
221,424. G.F.P. Cl. 18. 11-30-26.
221,606. CURTISTRIP. Cl. 21. 12-7-26.
221,639. GENERALIFE AND DESIGN. Cl. 46. 12-7-26.
221,780. BALL. Cl. 33. 12-14-26.
221,998. 1788. Cl. 35. 12-21-26.
222,662. THE FOX CO. AND DESIGN. Cl. 38. 1-4-27.
223,221. ASHES OF ROSES. Cl. 52. 1-18-27.
223,737. LEMBROSE. Cl. 18. 2-8-27.
223,786. BIG BOY AND DESIGN. Cl. 23. 2-8-27.
226,547. MANSION OF PIRU. Cl. 46. 4-12-27.
226,682. ORGANIST. Cl. 38. 4-19-27.
226,709. THE CHOIR LEADER. Cl. 38. 4-19-27.
226,710. THE CHOIR HERALD. Cl. 38. 4-19-27.
226,802. THE VOLUNTEER CHOIR AND DESIGN. Cl. 38. 4-19-27.
227,614. FOREST FLEECE AND DESIGN. Cl. 37. 5-10-27.
423,277. SPELLBOUND. Cl. 39. 8-27-46.
424,017. RIBENA. Cl. 45. 9-17-46.
424,988. CONTACT. Cl. 42. 10-29-46.
425,120. MOTH DOOM. Cl. 6. 11-5-46.
425,143. JELCALITE. Cl. 18. 11-5-46.
425,292. FFS AND DESIGN. Cl. 14. 11-12-46.
425,293. FFX AND DESIGN. Cl. 14. 11-12-46.
425,358. CHAMPION. Cl. 2. 11-12-46.
425,954. LADY BETTY. Cl. 46. 12-10-46.
425,986. ENDEARMENT. Cl. 28. 12-10-46.
426,074. OPTIMIST INTERNATIONAL. Cl. 38. 12-17-46.
426,255. EMBROSOGRAF AND DESIGN. Cl. 37. 12-24-46.
426,262. BOILER MASTER. Cl. 52. 12-24-46.
426,487. DYNASTY. Cl. 51. 12-24-46.
426,473. SIGNET. Cl. 39. 12-24-46.
426,919. PITTCHLOR. Cl. 6. 1-21-47.
427,266. CHLOR-ISOPOL. Cl. 1. 2-4-47.
427,448. D-V-R. Cl. 18. 2-11-47.
427,478. JOHN ALDEN. Cl. 27. 2-11-47.
427,483. BAN-ICE. Cl. 6. 2-11-47.
427,563. DRINALFA. Cl. 18. 2-11-47.
427,833. DUO-FLEX. Cl. 12. 2-25-47.
428,134. NIRAM. Cl. 18. 3-11-47.
428,626. SCHWINN. Cl. 19. 3-25-47.
428,800. "HASTE." Cl. 27. 4-1-47.
429,026. DYNASTY. Cl. 52. 4-15-47.
429,254. PPG AND DESIGN. Cl. 33. 4-29-47.
429,324. CRESATIN. Cl. 18. 4-29-47.
429,450. PK AND DESIGN. Cl. 41. 4-29-47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Nov. 15, 1960

707,059. PORTA-FLORA. Cl. 2.
707,061. CONVERTABOX. Cl. 2.
707,063. POLYCLEER. Cl. 2.
707,086. KEPONE. Cl. 6.
707,088. TEAKWOOD. Cl. 7.
707,089. AIRCRAFT ARMAMENTS INC. AND DESIGN. Cl. 9.
707,090. EXPLORER. Cl. 9.
707,091. SAYE GREEN AND DESIGN. Cl. 10.
707,096. FLAMETRAP. Cl. 12.
707,097. AIR-CUSHION. Cl. 12.
707,099. VIEW-LITE AND DESIGN. Cl. 12.
707,100. HOLLYVIEW. Cl. 12.
707,101. VITROPANE. Cl. 12.
707,107. STRIP-CLIP. Cl. 13.
707,113. SANI-RIM. Cl. 13.
707,114. COUNT. Cl. 18.
707,121. CASCAROL. Cl. 18.
707,122. RHINALGAN. Cl. 18.
707,125. JOYANA. Cl. 18.
707,128. BLACKRIN. Cl. 18.
707,130. S.P.Q. Cl. 18.
707,131. PANREXIN. Cl. 18.
707,132. PANTEMIC. Cl. 18.
707,133. HARVADAL. Cl. 18.
707,135. HEMORIN. Cl. 18.
707,137. CORLAPHEN. Cl. 18.
707,138. OYSTAMINS. Cl. 18.
707,139. OYSTARS. Cl. 18.
707,140. OYST-AIDS. Cl. 18.
707,141. OYSTABS. Cl. 18.
707,142. ALTI-CRUISER. Cl. 19.
707,145. ACCOWALL. Cl. 20.
707,150. A AND DESIGN. Cl. 21.
707,152. PYLON. Cl. 21.
707,160. BH AND DESIGN. Cl. 21.
707,162. WOGGLE STICK AND DESIGN. Cl. 22.
707,163. BACKYARD BASEBALL. Cl. 22.
707,164. BARBRO. Cl. 22.
707,168. KIMBO. Cl. 22.
707,167. TRADE WINDS. Cl. 22.
707,171. BALLOONOSE. Cl. 22.
707,190. DIGIMATIC. Cl. 26.
707,195. IMR AND DESIGN. Cl. 26.
707,197. GRADE-O-METER. Cl. 26.
707,202. CATHEDRAL. Cl. 30.
707,204. U-NYL-GLIDE. Cl. 32.
707,205. SPACE MATE AND DESIGN. Cl. 32.
707,207. TROPIC-AIRE. Cl. 34.
707,208. POMG METROPOLITAN AND DESIGN. Cl. 34.
707,209. AEROCOLD 65. Cl. 35.
707,210. THE HONEY BUCKET AND DESIGN. Cl. 36.
707,211. THROUGH THE CHURCH WINDOW. Cl. 36.
707,212. MEZH-KNIGA RECORDS AND DESIGN. Cl. 36.
707,213. MEDALIST. Cl. 36.
707,217. PAJAMETTE. Cl. 39.
707,219. RUANA. Cl. 39.
707,220. TRAJES SUIXTIL PARA NARO! AND DESIGN. Cl. 39.
707,221. LITTER BUG. Cl. 39.
707,223. SPACETTE. Cl. 39.
707,226. CLARETTA. Cl. 39.
707,228. SOUPLESSE AND DESIGN. Cl. 39.
707,230. DIANA LYNN. Cl. 39.
707,232. NADINE. Cl. 39.
707,233. SITTING PRETTY. Cl. 39.
707,236. TOKAP. Cl. 39.
707,240. "SHOW-CASE." Cl. 42.
707,248. SECURITONE. Cl. 44.

707,254. PENN DE LUXE. Cl. 46.
707,255. SILVER CHIPS ETC. AND DESIGN. Cl. 46.
707,257. IXL AND DESIGN. Cl. 46.
707,269. ME.DI.VI. Cl. 47.
707,275. QUELQUES FLEURS BATH BAR. Cl. 51.
707,277. ACROLITE PROTECT-A-HAND. Cl. 51.
707,283. AMANUS. Cl. 51.
707,285. IMPERTINENCE. Cl. 51.
707,287. SCENT OF MYSTERY AND DESIGN. Cl. 51.
707,299. SEZSO. Cl. 52.
707,300. FAMILY SHELL HOMES ETC. AND DESIGN. Cl. 100.
707,301. YES STORES AND DESIGN. Cl. 101.
707,306. AMERICAN DANCE CLUB. Cl. 107.
707,307. AMERICANS ALL. Cl. 107.
707,309. TAB ETC. AND DESIGN. Cl. A.
707,310. ROCHETTO. Cl. 1.
707,311. SLIDE-TOP. Cl. 2.
707,318. PRINT STATION AND DESIGN. Cl. 26.
707,322. DUB-L-WALL. Cl. 35.
707,326. BITE PRUF. Cl. 39.
707,327. EVERSOFT. Cl. 39.
707,331. MIEL A L'ANTIQUE. Cl. 46.
707,332. MOCK TAIL. Cl. 46.
707,333. TENDA-MEAT. Cl. 46.
707,334. ACKLEY. Cl. 46.
707,335. "BIG SIX." Cl. 48.
707,337. MOELLE GARNIER. Cl. 51.
707,339. ASSURED SAVINGS AND DESIGN. Cl. 102.

Section 18

112,802. OLD FILE. Cl. 23. 9–26–16.
347,263. BLUE FAWN. Cl. 39. 6–22–37.
436,393. SUNNY BROOK. Cl. 42. 2–3–48.
501,483. 'GREEN-TOUCH." Cl. 1. 8–10–48.
506,279. VIKING. Cl. 19. 2–1–49.
544,347. MILE-O-METER. Cl. 26. 6–26–51.
566,246. SYN-O-SOL. Cl. 18. 11–4–52.
636,632. CONCRETE FACTS AND DESIGN. Cl. 38. 10–30–56.
724,565. CHEREFRESH. Cl. 46. 11–28–61.
746,671. VILLAGE SQUARE. Cl. 39. 3–12–63.
754,342. JB. Cl. 18. 8–6–63.
764,160. RAINBOW AND DESIGN. Cl. 18. 2–4–64.
778,303. BOUTIQUE. Cl. 51. 10–6–64.
778,309. BIG BITE. Cl. 52. 10–6–64.
779,149. GEORGETOWN. Cl. 49. 10–27–64.
782,166. BRISK. Cl. 46. 12–22–64.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

776,829. CROSSED TENNIS RACKETS (DESIGN). Cl. 3. 9–15–64. Eddie Jacobs, Ltd., Baltimore, Md. Corrected:



812,969. RHODES AND DESIGN. Cl. 26. 8–16–66. M. H. Rhodes, Inc., Hartford, Conn. Corrected: In the statement, column 1, line 1, "Connecticut" should be deleted and *Delaware* should be inserted.

816,969. FALCON PLASTICS. Cl. 26. 10–18–66. B-D Laboratories, Inc., East Rutherford, N.J. Corrected: In the statement, column 2, line 7, "Apr. 1" should be deleted and *Apr. 11* should be inserted.

818,144. ST. REGIS. Cl. 12. 11–8–66. St. Regis Paper Company, New York, N.Y. Corrected: In the statement, column 2, line 1, "tiles" should be deleted and *ties* should be inserted.

818,212. LO-CON. Cl. 21. 11–8–66. Russell & Stoll Company, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "Stroll" should be deleted and *Stoll* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1—Raw or Partly Prepared Materials

423,572. Sept. 3, 1946. The Rayon Processing Co. of R.I. Inc., Central Falls, R.I. Pub. by Microfibres, Inc., Pawtucket, R.I.

KINGCOTE

For Finely Cut or Comminuted Cotton Fibres in Natural, Bleached or Dyed State, etc.

Class 6—Chemicals and Chemical Compositions

219,401. Oct. 19, 1926. Louis Holzapfel, d.b.a. Sanitary Supply Company, Greenville, Ohio. Pub. by Sanco Products Co., Inc., Greenville, Ohio.

Sanco

For Fly Killer, Deodorizing Compound, etc.

Class 7—Cordage

59,311. Jan. 8, 1907. The J. E. Fricke Co., Philadelphia, Pa. Pub. by registrant.

JEFFERSON



For Sash-Cord.

Class 8—Smokers' Articles, Not Including Tobacco Products

424,378. Oct. 1, 1946. Lane Tobacco, Ltd., New York, N.Y. Pub. by Lane Limited, New York, N.Y.

CHAMPION

For Pipes.

Class 9—Explosives, Firearms, Equipments, and Projectiles

427,717. Feb. 18, 1947. Aerial Products, Inc., Merrick, N.Y. Pub. by Harvell-Kilgore Corporation, Toone, Tenn.

DAYNITE

For Flares for Lighting Signals and Other Purposes.

Class 11—Inks and Inking Materials

424,378. Oct. 1, 1946. E. J. Kelly Company, Kalamazoo, Mich. Pub. by Sun Chemical Corporation, New York, N.Y.



For Printing Inks.

Class 12—Construction Materials

219,107. Oct. 12, 1926. Flexible Slate Products Co., Chicago Heights, Ill. Pub. by The Flintkote Company, New York, N.Y.

TILE-TEX

For Tile Flooring.

Class 14—Metals and Metal Castings and Forgings

423,920. Sept. 17, 1946. Heppenstall Company, Pittsburgh, Pa. Pub. by registrant.

PYRONEAL

For Steel Forgings.

Class 15—Oils and Greases

423,700. Sept. 10, 1946. Robert J. Bell, d.b.a. Bell Laboratories, Orlando, Fla. Pub. by Bell Laboratory, Inc., Orlando, Fla.

MIX-I-GO

For Lubricant To Be Used in Gasoline for Lubricating the Inner Chamber of Internal Combustion Engines, and for the Prevention of Hard Carbon Formation.

Class 16—Protective and Decorative Coatings

56,587. Oct. 9, 1906. George C. Hascall, Cleveland, Ohio. Pub. by Hooker Chemical Corporation, Niagara Falls, N.Y.

Thermalite

For Mixed Paints.

Class 17—Tobacco Products

339,378. Oct. 6, 1936. The Bankers Club of America, New York, N.Y. Pub. by registrant.

Bankers Club

For Cigars and Cigarettes.

Class 25—Locks and Safes

60,566. Feb. 12, 1907. Russell & Erwin Manufacturing Company, New Britain, Conn. Pub. by Emhart Corporation, Hartford, Conn.

RUSSWIN

For Cylinder Locks, etc.

Class 28—Jewelry and Precious-Metal Ware

442,986. June 21, 1949. Jack Kellmer Company, Philadelphia, Pa. Pub. by registrant.

HEIRLOOM

For Jewelry for Personal Wear, Not Silver or Silver Plate, Not Including Watches; Men's and Ladies' Diamond Mounted Rings of Precious and Base Metal Other Than Silver; Similar Rings Mounted With Other Precious, and Imitation Stones, and Ladies' and Men's Unmounted Wedding Rings of Precious Metal Other Than Silver.

Class 32—Furniture and Upholstery

426,118. Dec. 17, 1946. Wonder-Rest Corporation, Milwaukee, Wis. Pub. by Restonic Corporation, Chicago, Ill.

RESTONIC

For Mattresses.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

58,237. Dec. 11, 1906. Eureka Fire Hose Company, Jersey City, N.J. Pub. by United States Rubber Company, New York, N.Y.

Uncle Sam

For Fabric Hose.

Class 36—Musical Instruments and Supplies

220,771. Nov. 16, 1926. The Brunswick-Balke-Collender Company, Wilmington, Del., and Chicago, Ill. Pub. by Coral Records, Inc., New York, N.Y.

Brunswick

For Machines of the Record Type for Reproducing Sound Electrically.

Class 37—Paper and Stationery

58,649. Dec. 18, 1906. Lanston Monotype Machine Co., Philadelphia, Pa. Pub. by United States Banknote Corporation, New York, N.Y.

MONOTYPE

For Paper Ribbons or Controllers for Type Casting and Composing Machines.

218,755. Oct. 5, 1926. John S. Bridges, d.b.a. John S. Bridges & Co., Baltimore Md. Pub. by Harry S. Scott, Inc., Baltimore, Md.

"WE NEVER DISAPPOINT"

For Printed Mailing Envelopes, Letterheads, Billheads, Stock-Certificate Forms, etc.

228,821. Feb. 1, 1927. The Wrenn Paper Company, Middletown, Ohio. Pub. by The Sorg Paper Company, Middletown, Ohio.

PORCELAIN

For Blotting Paper.

Class 38—Prints and Publications

218,764. Oct. 5, 1926. John S. Bridges, d.b.a. John S. Bridges & Co., Baltimore, Md. Pub. by Harry S. Scott, Inc., Baltimore, Md.

"WE NEVER DISAPPOINT"

For Printed Books, Pamphlets, etc.

Class 39—Clothing

210,083. Mar. 9, 1926. J. Schoeneman, Incorporated, Owings Mills, Md. Pub. by registrant.

DONGANON

For Men's, Youths', and Boys' Outer Garments—Namely, Suits, Coats, Vests, and Trousers.

Class 40—Fancy Goods, Furnishings, and Notions

425,997. Dec. 10, 1946. The Union Pin Company, Winsted, Conn. Pub. by registrant.

SAPPHIRE

For Pins.

Class 45—Soft Drinks and Carbonated Waters

215,478. July 20, 1926. John Noel Nichols, d.b.a. J. N. Nichols & Co., Salford, England. Pub. by J. N. Nichols (Vimto) Limited, Manchester, England.

VIMTO

For Non-Alcoholic, Maltless Beverages Sold as Soft Drinks.

346,867. June 8, 1937. Natural Set Up Sales Corporation, St. Louis, Mo. Pub. by Ma Cherie Sales Corporation of America, St. Louis, Mo.



For Carbonated Soft Drinks With Lemon Flavor, and Extracts and Concentrated Fruit Syrups Used in Preparation.

Class 46—Foods and Ingredients of Foods

425,752. Dec. 3, 1946. The Magic Nut Shop, Los Angeles, Calif. Pub. by Samuel J. Saul, d.b.a. Magic Nut Kitchens, Los Angeles, Calif.

MAGIC
Cockle Shells

For Macaroni Shells Cooked in Hot Oil and Then Flavored With Grated Cheese and Garlic Salt.

438,007. Apr. 6, 1948. American Chewing Products Corp., Newark, N.J. Pub. by registrant.



CHICKS

For Chewing Gum.

Class 50—Merchandise Not Otherwise Classified

427,944. Mar. 4, 1947. S-B Manufacturing Company, Milwaukee, Wis. Pub. by registrant.

Lifetime

For Christmas Tree Stands.

INDEX OF REGISTRANTS

JANUARY 8, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

ABFO Mfg. Co., Inc., Los Angeles, Calif. 821,445, pub. 10–18–66. Cl. 13.
AER Corp., Ramsey, N.J. 821,618, pub. 10–18–66. Cl. 34.
Abbott, Paul, Co., Inc., The, Blytheville, Ark. 821,565, pub. 10–18–66. Cl. 23.
Accounting & Business Forms, Inc., Pittsburgh, Pa. 821,634, pub. 10–18–66. Cl. 37.
Ackley Food Processors, Inc., Ackley, Iowa. 707,334, canc. Cl. 46.
Acme Visible Records, Inc., Crozet, Va. 821,556, pub. 10–18–66. Cl. 23.
Adamation, Inc., Newton, Mass. 821,527, pub. 10–18–66. Cl. 21.
Adams, Rhea L., Edenton, N.C. 821,387, pub. 10–18–66. Cl. 1.
Adcas, Inc., Chicago, Ill. 707,306, canc. Cl. 107.
Adirondack Chair Co., Inc., New York, N.Y. 821,611, pub. 10–18–66. Cl. 32.
Aerial Products, Inc., Merrick, N.Y., by Harvell-Kilgore Corp., Toon, Tenn. 427,717, 12(c) pub. 1–3–67. Cl. 9.
Aero Design and Engineering, Bethany, Okla. 707,142, canc. Cl. 19.
Aeronca Mfg. Corp., Middletown, Ohio. 707,113, canc. Cl. 13.
Aeronca Mfg. Corp., Middletown, Ohio. 707,114, canc. Cl. 13.
Aircraft Armaments, Inc., Cockeysville, Md. 707,089, canc. Cl. 9.
Air-Mite Devices, Inc., Chicago, Ill. 821,466, pub. 10–18–66. Multiple Class (Classes 13 and 23).
Air Placement Equipment Co., Inc., Grandview, Mo. 821,370, pub. 10–18–66. Cl. 23.
Aktiebolaget Albin Hagstrom, Alvdalen, Sweden. 821,628, pub. 10–18–66. Cl. 36.
Aladdin Industries, Inc., Chicago, Ill. 821,390, pub. 10–18–66. Cl. 2.
Alamac Knitting Mills, Inc., New York, N.Y. 821,698, pub. 10–18–66. Cl. 42.
Alda of California: *See*—
Van Buren, Alda R.
Alford Mfg. Co., Boston, Mass. 821,522, pub. 10–18–66. Cl. 21.
Allied Chemical Corp., New York, N.Y. 707,086, canc. Cl. 6.
Allied Chemical Corp., New York, N.Y. 821,717, pub. 10–18–66. Cl. 48.
Alloy Melting and Fabricating Co.: *See*—
Stephens, Myron C.
Altman, B., & Co., New York, N.Y. 821,689, pub. 10–18–66. Cl. 39.
Amanus Products Co.: *See*—
Hulings, H. C.
America Box Corp. of California, San Francisco, Calif. 707,061, canc. Cl. 2.
American Bleached Goods Co., Inc., New York, N.Y., to The Kendall Co., Walpole, Mass. 221,020, ren. 1–3–67. Cl. 42.
American Brush Corp., Chicago, Ill. 821,595, pub. 10–18–66. Cl. 29.
American Chewing Products Corp., Newark, N.J. 438,007, 12(c) pub. 1–3–67. Cl. 46.
American Cyanamid Co., Wayne, N.J. 821,728, pub. 10–18–66. Cl. 44.
American Dietaids Co., Inc., Yonkers, N.Y. 707,125, canc. Cl. 18.
American Foil Mfg. Corp., Akron, Ohio. 707,097, canc. Cl. 12.
American Home Products Corp.: *See*—
Wyeth, John, & Bro., Inc.
American Louver Co.: *See*—
Glass Gorham Co.
American Mfg. Co., The, New York, to American Mfg. Co., Inc., Brooklyn, N.Y. 57,434, ren. 1–3–67. Cl. 7.
American Mfg. Co., Inc.: *See*—
American Mfg. Co., The.
American Motors Corp., Detroit, Mich. 821,601, pub. 10–18–66. Cl. 31.
American Optical Co., Southbridge, Mass. 821,728, pub. 10–18–66. Cl. 44.
American Optical Co., Southbridge, Mass. 821,729, pub. 10–18–66. Cl. 44.
American Plant Container Co., Inc., Downers Grove, Ill. 821,868, pub. 10–18–66. Cl. 2.
American Scientific Laboratories, Inc., Madison, Wis. 707,128, canc. Cl. 18.
American Scientific Laboratories, Inc., Madison, Wis. 707,135, canc. Cl. 18.
Ametek, Inc., East Moline, Ill. 821,596, pub. 10–18–66. Cl. 31.
Ametek, Inc., New York, N.Y. 821,616, pub. 10–18–66. Cl. 34.
Anaconda American Brass Co., Waterbury, Conn. 821,361, pub. 10–18–66. Cl. 13.
Anchor Post Products, Inc., Baltimore, Md. 821,448, pub. 10–18–66. Cl. 13.
Anelex Corp., Concord, N.H. 707,318, canc. Cl. 26.
Apparel, Inc., Mebane, N.C. 821,678, pub. 10–18–66. Cl. 39.
Aquariums Inc., Maywood, N.J. 821,770. Cl. 50.
Argos Products Co., Inc., Genoa, Ill. 821,511, pub. 10–18–66. Cl. 21.
Arkwright, Inc.: *See*—
Syndicate Trading Co.
Armstrong Cork Co., Lancaster, Pa. 707,145, canc. Cl. 20.
Arnold, Schwinn & Co., Chicago, Ill. 426,626, ren. 1–3–67. Cl. 19.
Arnold, Schwinn & Co., Chicago, Ill. 821,747. Cl. 19.
Asher Co., The, Fitchburg, Mass. 821,667, pub. 10–18–66. Cl. 39.
Ashland Oil & Refining Co.: *See*—
Galena-Signal Oil Co.
Associated Products, Inc., Chicago, Ill., to Mandarin Textiles Ltd., Kowloon, Hong Kong. 426,427, ren. 1–3–67. Cl. 51.
Associated Products, Inc., Chicago, Ill., to Mandarin Textiles Ltd., Kowloon, Hong Kong. 429,026, ren. 1–3–67. Cl. 52.
Atlantic Thrift Centers, Inc., New York, N.Y. 821,660, pub. 10–18–66. Cl. 39.
Atlas Co., The, d.b.a. The Atlas Co., Ephrata, Pa. 821,651, pub. 10–18–66. Cl. 39.
Autogear Co., Long Beach, Calif. 821,492, pub. 10–18–66. Cl. 19.
Automatic Devices Co., Allentown, Pa. 821,467, pub. 10–18–66. Cl. 13.
B-D Laboratories, Inc., East Rutherford, N.J. 816,969, cor. Cl. 26.
Badger Fire Extinguisher Co., Inc., Ranson, W. Va. 821,411, pub. 10–18–66. Multiple Class (Classes 6 and 23).
Baker, Franklin, Co., Hoboken, N.J., to General Foods Corp., White Plains, N.Y. 220,058, ren. 1–3–67. Cl. 46.
Baker, Franklin, Co., Hoboken, N.J., to General Foods Corp., White Plains, N.Y. 220,084, ren. 1–3–67. Cl. 46.
Baker Mfg. Co., Evansville, Wis. 821,391, pub. 10–18–66. Cl. 2.
Ball Brothers Co., to Ball Brothers Co. Inc., Muncie, Ind. 221,780, ren. 1–3–67. Cl. 33.
Ball Brothers Co. Inc.: *See*—
Ball Brothers Co.
Bancroft Cap Co., Framingham, Mass. 707,296, canc. Cl. 39.
Bankers Club of America, The, New York, N.Y. 339,378, 12(c) pub. 1–3–67. Cl. 17.
Barber-Colman Co., Rockford, Ill. 821,586, pub. 10–18–66. Cl. 26.
Barco Chemicals Division, Inc., Miami, Fla. 821,771. Cl. 52.
Barcolene Co., The, Boston, Mass. 821,772. Cl. 52.
Barr Co., Los Angeles, Calif. 821,762. Cl. 39.
Bartlett Trailer Corp., Chicago, Ill. 821,487, pub. 10–18–66. Cl. 19.
Bastian-Blessing Co., The, Chicago, Ill. 212,613, ren. 1–3–67. Cl. 34.
Bear Brand Hosiery Co.: *See*—
Paramount Knitting Co.
Beatrice Foods Co.: *See*—
Wheatley Mayonnaise Co., Inc.
Beecham Food & Drink Division: *See*—
Carter, E. W. & Co., Ltd.
Beecham Group Ltd.: *See*—
Carter, E. W. & Co., Ltd.
Bell Laboratory, Inc.: *See*—
Bell, Robert J.
Bell Laboratories: *See*—
Bell, Robert J.
Bell, Robert J., d.b.a. Bell Laboratories, Orlando, Fla., by Bell Laboratory, Inc., Orlando, Fla. 428,700, 12(c) pub. 1–3–67. Cl. 15.
Bendix Corp., The, Detroit, Mich. 821,582, pub. 10–18–66. Cl. 26.
Bentley-Harris Mfg. Co., Conshohocken, Pa. 707,160, canc. Cl. 21.
Berkline Corp., The, West Springfield, Mass. 821,604, pub. 10–18–66. Cl. 32.
Berbro Mfg. Co.: *See*—
Berro Mfg. Co., Inc.
Berro Mfg. Co., Inc., d.b.a. Berbro Mfg. Co., New York, N.Y. 707,164, canc. Cl. 22.
Besler: *See*—
C-C Industries.
Biahopric Products Co., The, Cincinnati, Ohio. 821,398, pub. 10–18–66. Cl. 2.
Bliss & Laughlin Industries, Inc., Oak Brook, Ill., from Waco-Porter Corp., Schiller Park, Ill. 821,541, pub. 8–30–66. Cl. 22.
Blonder-Tongue Laboratories, Inc., Newark, N.J. 821,513, pub. 10–18–66. Cl. 21.
Blue Bell, Inc., Greensboro, N.C. 821,687, pub. 10–18–66. Cl. 39.
Bonas Bros., Ltd., Staffordshire, England. 821,566, pub. 10–18–66. Cl. 23.
Bonner Specialties, Inc., Culver City, Calif. 821,513, pub. 10–18–66. Cl. 21.
Boshart, Walter L., Goshen, Ind. 821,500, pub. 10–18–66. Cl. 19.
Boss Mfg., Co., Kewanee, Ill. 821,640, pub. 10–18–66. Cl. 39.
Bourjois, Inc., New York, N.Y. 228,221, ren. 1–3–67. Cl. 52.

Brach, J., et Compagnie Societe Botot: *See*—
Ste. d'Exploitation des Produits Botot-Jacques Brach & Cie.
Breddo-Food Products Corp., Kansas City, Kans. 821,767. Cl. 46.
Bridges, John S., d.b.a. John S. Bridges & Co., Baltimore, Md., by Harry S. Scott, Inc., Baltimore, Md. 218,755, 12(c) pub. 1-3-67. Cl. 87.
Bridges, John S., d.b.a. John S. Bridges & Co., Baltimore, Md., by Harry S. Scott, Inc., Baltimore, Md. 218,764, 12(c) pub. 1-3-67. Cl. 88.
Bridges, John S., & Co.: *See*—
Bridges, John S.
Bristol-Myers: *See*—
Drackett Co., The.
British Oxygen Co., The, London, England. 821,724, pub. 10-18-66. Cl. 44.
Broughton Corp., Glens Falls, N.Y. 821,450, pub. 10-18-66. Cl. 18.
Brown & Sharpe Mfg. Co., North Kingstown, R.I. 821,578, pub. 10-18-66. Cl. 23.
Brunswick-Balke-Collender Co., The, Wilmington, Del., and Chicago, Ill., by Coral Records, Inc., New York, N.Y. 220,771, 12(c) pub. 1-3-67. Cl. 36.
Builders and Bankers Life Insurance Co., Austin, Tex. 707,-339, canc. Cl. 102.
C-C Industries, d.b.a. Bealer, from Bealer Corp., Emeryville, Calif. 821,746. Cl. 19.
C-C Industries, d.b.a. Bealer, from Bealer Corp., Emeryville, Calif. 821,754. Cl. 34.
C-Cor Electronics, Inc., State College, Pa. 821,517, pub. 10-18-66. Cl. 21.
CMC, Inc., Independence, Kans. 821,536, pub. 10-18-66. Cl. 21.
Campbell, Donald D., Phoenix, Ariz. 821,501, pub. 10-18-66. Cl. 19.
Candulor AG (Candulor S.A.) (Candulor Ltd.), Zurich, Switzerland. 821,725, pub. 10-18-66. Cl. 44.
Cannon Mills Co., Kannapolis, N.C. 821,677, pub. 10-18-66. Cl. 39.
Caper Mates Co., Inc., The, Copiague, N.Y. 821,645, pub. 10-18-66. Cl. 39.
Capital Imports, Inc., Alexandra, Va. 821,650, pub. 10-18-66. Cl. 39.
Capital-Mercury Shirt Corp., New York, N.Y. 821,637, pub. 10-18-66. Cl. 39.
Carter, H. W., & Co., Ltd., Bristol, to Beecham Group Ltd., d.b.a. Beecham Food & Drink Division, Brentford, England. 424,017, ren. 1-3-67. Cl. 45.
Carter's Ink Co., The, Cambridge, Mass. 821,421, pub. 10-18-66. Cl. 11.
Casa De Fruta, Hollister, Calif. 821,769. Cl. 46.
Casbel, Inc., Pennsauken, N.J. 778,303, canc. Cl. 51.
Caulkins, Bruce, Inc., Harper Woods, Mich. 821,442, pub. 10-18-66. Cl. 28.
Century Mausoleums, Inc., Greensboro, N.C. 821,733, pub. 10-18-66. Cl. 50.
Chapman, John, Ltd. Industria, Johannesburg, Republic of South Africa. 821,486, pub. 10-18-66. Cl. 17.
Chittick, Howard A.: *See*—
Murray, Edgar A., Co.
Chun-Yi Tang, d.b.a. Go-Go Co., Seattle, Wash. 821,503, pub. 10-18-66. Cl. 19.
Clarendon Industries, Inc., d.b.a. Deanhall Furniture, High Point, N.C. 821,607, pub. 10-18-66. Cl. 32.
Coin Sale Corp., New York, N.Y. 821,690, pub. 10-18-66. Cl. 42.
Cole-Parmer Instrument & Equipment Co., Chicago, Ill. 821,520, pub. 10-18-66. Cl. 21.
Collective Advertising, Inc., Princeton, N.J. 707,301, canc. Cl. 101.
Collins & Aikman Corp., New York, N.Y. 821,695, pub. 10-18-66. Cl. 42.
Columbia Ribbon & Carbon Mfg. Co., Inc., Glen Cove, N.Y. 821,419, pub. 10-18-66. Cl. 11.
Cook's, Adam, Sons, New York, N.Y., to Adam Cook's Sons, Inc., Linden, N.J. 52,007, ren. 1-3-67. Cl. 15.
Cook's, Adam, Sons, Inc.: *See*—
Cook's, Adam, Sons.
Coral Records, Inc.: *See*—
Brunswick-Balke-Collender Co., The.
Corey Mfg. Co.: *See*—
Corey, Stephen J.
Corey, Stephen J., d.b.a. Corey Mfg. Co., Troy, N.Y. 821,468, pub. 10-18-66. Cl. 19.
Coronet Mfg. Co., Crystal Lake, Ill. 821,562, pub. 10-18-66. Cl. 23.
Costich & McConnell, Inc., Westbury, N.Y. 821,759. Cl. 38.
Crane Co., New York, N.Y. 821,621, pub. 10-18-66. Cl. 34.
Creston Shirt Co., Inc., New York, N.Y. 821,655, pub. 10-18-66. Cl. 39.
Crompton Co., New York, N.Y. 821,692, pub. 10-18-66. Cl. 42.
Cromwell Oil Co., Los Angeles, Calif. 821,474, pub. 10-18-66. Cl. 15.
Crowell, Chris, & Co.: *See*—
Crowell, Christopher S.
Crowell, Christopher S., d.b.a. Chris Crowell & Co., Darien, Conn. 821,743. Cl. 6.
Crown Drug Co., Kansas City, Mo. 821,739, pub. 6-29-65. Cl. 106.
Curtis Lighting, Inc., to Curtis-Electro Lighting, Inc., Chicago, Ill. 221,606, ren. 1-3-67. Cl. 21.
Curtis-Electro Lighting, Inc.: *See*—
Curtis Lighting, Inc.
Cutler-Hammer, Inc., Milwaukee, Wis. 821,583, pub. 10-18-66. Cl. 26.
Cyclops Inc., San Francisco, Calif. 821,533, pub. 10-18-66. Multiple Class (Classes 21, 23, 31, and 34).
DEA Products, Inc., Tempe, Ariz. 821,557, pub. 10-18-66. Cl. 23.
Dalton Foundries, Inc., The, Warsaw, Ind. 223,786, ren. 1-3-67. Cl. 23.
Dan River Mills, Inc., Danville, Va. 821,697, pub. 10-18-66. Cl. 42.
Dan River Mills, Inc., Danville, Va. 821,700, pub. 10-18-66. Cl. 42.
Dansk Designs, Inc., Kisco, N.Y. 821,568, pub. 10-18-66. Cl. 23.
Daroff, H., & Sons, Inc., Philadelphia, Pa. 821,664, pub. 10-18-66. Cl. 39.
Daybrook-Ottawa Corp., Ottawa, Kans. 821,509, pub. 10-18-66. Cl. 19.
Deanhall Furnitures: *See*—
Clarendon Industries, Inc.
Deering Milliken, Inc., New York, N.Y. 821,693, pub. 10-18-66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 821,696, pub. 10-18-66. Cl. 42.
Den-Tal-Ez Chair Mfg. Co., Des Moines, from E. W. Schoeberl, Bettendorf, Iowa. 821,719, pub. 10-18-66. Cl. 44.
Deposilube Mfg. Co.: *See*—
Williams, Oliver T.
De Soto Chemical Coatings, Inc., Des Plaines, Ill. 821,484, pub. 10-18-66. Cl. 16.
Dessy-Atco Inc., New York, N.Y. 707,225, canc. Cl. 39.
Detection Appliances: *See*—
Karbo, Joseph.
Dr. Miles Medical Co., to Miles Laboratories, Inc., Elkhart, Ind. 220,761, ren. 1-3-67. Cl. 18.
Doho Chemical Corp., New York, N.Y. 707,122, canc. Cl. 18.
Doll, Francis, Jr., d.b.a. Donald Francis Co., St. Louis, Mo. 707,219, canc. Cl. 39.
Doughboy Industries, Inc., New Richmond, Wis. 821,560, pub. 10-18-66. Cl. 23.
Drackett Co., The, Cincinnati, Ohio, from Bristol-Myers, New York, N.Y. 821,402, pub. 10-18-66. Cl. 4.
Dreher Leather Mfg. Corp., New York, N.Y. 707,310, canc. Cl. 1.
Duplex Fabrics Corp., New York, N.Y. 436,893, canc. Cl. 42.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 821,684, pub. 10-18-66. Cl. 39.
Dura Corp., Oak Park, Mich. 821,579, pub. 10-18-66. Cl. 23.
Dust Proof Mattress Cover Co., Inc., Ellwood City, Pa. 707,-240, canc. Cl. 42.
Eastham, Richard and Betty Jean Eastham, d.b.a. Veda Enterprises, Los Angeles, Calif. 821,629, pub. 10-18-66. Cl. 36.
Eastman Kodak Co., Rochester, N.Y. 821,584, pub. 10-18-66. Cl. 26.
Eaton Yale & Towne Inc., Cleveland, Ohio. 821,623, pub. 10-18-66. Cl. 34.
Economy Design, Inc., Tinley Park, Ill. 821,471, pub. 10-18-66. Cl. 13.
Edwards, J., & Co., Philadelphia, Pa. 821,556, pub. 10-18-66. Cl. 39.
Eisenstadt Mfg. Co., St. Louis, Mo. 60,375, ren. 1-3-67. Cl. 27.
Eisenstadt Mfg. Co., St. Louis, Mo. 427,478, ren. 1-3-67. Cl. 27.
Elbon, Inc.: *See*—
McNulty, William J.
Electric Storage Battery Co., The, Philadelphia, Pa. 821,407, pub. 10-18-66. Multiple Class (Classes 5, 6, 12, 16, 21, 23, 26, 39, and 44).
Electronic Control Systems, Inc.: *See*—
General Dynamics Corp.
Ellingsworth Mfg. Co., Chicago, Ill. 821,758. Cl. 37.
Embosograf Corp. of America, New York, N.Y. 426,255, ren. 1-3-67. Cl. 37.
Emhart Corp.: *See*—
Russell & Erwin Mfg. Co.
Emiphone International, Inc., New York, N.Y. 707,212, canc. Cl. 36.
Empire Slip-On Hook Corp., Watertown, Mass. 821,460, pub. 10-18-66. Cl. 13.
Englander Co., Inc., The, New York, N.Y. 821,614, pub. 10-18-66. Cl. 32.
Enterprise Railway Equipment Co., Chicago, Ill. 821,504, pub. 10-18-66. Cl. 19.
Euclid Chemical Co., The, Cleveland, Ohio. 821,413, pub. 10-18-66. Cl. 6.
Euclid Chemical Co., The, Cleveland, Ohio. 821,414, pub. 10-18-66. Cl. 6.
Euclid Chemical Co., The, Cleveland, Ohio. 821,432, pub. 10-18-66. Cl. 12.
Euclid Chemical Co., The, Cleveland, Ohio. 821,433, pub. 10-18-66. Cl. 12.
Euclid Chemical Co., The, Cleveland, Ohio. 821,735, pub. 10-18-66. Cl. 52.
Eureka Fire Hose Co., Jersey City, N.J., by United States Rubber Co., New York, N.Y. 58,237, 12(c) pub. 1-3-67. Cl. 35.
Eversharp, Inc., Milford, Conn. 821,563, pub. 10-18-66. Cl. 23.
Executone Inc., Long Island City, N.Y. 821,521, pub. 10-18-66. Cl. 21.
Expanded Shale, Clay & Slate Institute, Washington, D.C. 636,632, canc. Cl. 38.
FMC Corp., San Jose, Calif. 821,750. Cl. 23.
Fabrics By Joyce, Inc., New York, N.Y. 821,691, pub. 10-18-66. Cl. 42.
Fairchild Engine and Airplane Corp., Hagerstown, Md. 707,-090, canc. Cl. 9.

Fairfax Biological Laboratory: *See*—
Murray, Edgar A., Co.
Falcon Alarm Co., Inc., Springfield, N.J. 821,437, pub. 10-18-66. Cl. 12.
Famous Artists Schools, Inc., New York, N.Y. 821,774. Cl. 107.
Farrington Mfg. Co., Needham Heights, Mass. 707,195, canc. Cl. 26.
Fay, Leslie, Inc., New York, N.Y. 821,686, pub. 10-18-66. Cl. 39.
Federazione Italiana Dei Consorzi Agrari, Rome, Italy. 707,-269, canc. Cl. 47.
Ferro Corp., Cleveland, Ohio. 821,485, pub. 10-18-66. Cl. 16.
Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. 821,709, pub. 10-18-66. Cl. 43.
Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. 821,718, pub. 10-18-66. Cl. 43.
Filmways Records, Inc., Los Angeles, Calif. 821,630, pub. 10-18-66. Cl. 36.
Finkl, A., & Sons Co., Chicago, Ill. 425,292, ren. 1-3-67. Cl. 14.
Finkl, A., & Sons Co., Chicago, Ill. 425,293, ren. 1-3-67. Cl. 14.
Flexible Connector Co. of America, Inc., Boston, Mass. 707,-322, canc. Cl. 35.
Flexible Slate Products Co., Chicago Heights, Ill., by The Flintkote Co., New York, N.Y. 219,107, 12(c) pub. 1-3-67. Cl. 12.
Flintkote Co., The: *See*—
Flexible Slate Products Co.
Flintkote Co., The, New York, N.Y. 821,424, pub. 10-18-66. Cl. 12.
Folly Town Co., The, Chicago, Ill., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 220,707, ren. 1-3-67. 46.
Food Conveyors Ltd., London, England. 821,619, pub. 10-18-66. Cl. 34.
Food Technology, Inc., Chicago, Ill. 821,624, pub. 10-18-66. Cl. 34.
Foster, Benjamin, Co., Philadelphia, Pa. 821,408, pub. 10-18-66. Cl. 5.
Foster, Benjamin, Co., Philadelphia, Pa. 821,409, pub. 10-18-66. Cl. 5.
Fox River Valley Knitting Co., The, Appleton, Wis. 707,226, canc. Cl. 39.
Fox-Stanley Photo Products, Inc.: *See*—
Newton, Carl D.
Fredon Co., Spearfish, S.D. 707,197, canc. Cl. 26.
Freeman, Albert, d.b.a. Silver Chips Candy Co., Las Vegas, Nev. 707,255, canc. Cl. 46.
Fricke, J. E., Co., The, Philadelphia, Pa. 59,311, 12(c) pub. 1-3-67. Cl. 7.
Gale Hall Engineering: *See*—
Universal Chemists, Inc.
Galena-Signal Oil Co., Franklin, Pa., to Ashland Oil & Refining Co., Ashland, Ky. 59,780, ren. 1-3-67. Cl. 15.
Gardisette Gesellschaft mit Beschrankter Haftung, Emsdetten, Westphalia, Germany. 821,688, pub. 10-18-66. Cl. 42.
Gates Rubber Co., The, Denver, Colo. 821,456, pub. 10-18-66. Cl. 13.
Gaycraft Plastics Inc., Wausau, Wis. 821,494, pub. 10-18-66. Cl. 19.
Geigy Chemical Corp., Ardsley, N.Y. 821,412, pub. 10-18-66. Cl. 6.
Gem Products, Inc., Los Angeles, Calif. 821,442, pub. 10-18-66. Multiple Class (Classes 13, 21, 31, and 35).
General Battery and Ceramic Corp., Reading, Pa. 821,529, pub. 10-18-66. Cl. 21.
General Dynamics Corp., to Electronic Control Systems, Inc., Rochester, N.Y. 707,190, canc. Cl. 26.
General Electric Co., Hudson Falls, N.Y. 821,516, pub. 10-18-66. Cl. 21.
General Electric Co., Milwaukee, Wis. 821,587, pub. 10-18-66. Cl. 26.
General Electric Co., Milwaukee, Wis. 821,589, pub. 10-18-66. Cl. 26.
General Foods Corp.: *See*—
Baker, Franklin, Co.
General Machine Products Co., Inc., Trevose, Pa. 821,575, pub. 10-18-66. Cl. 23.
General Machine Products Co., Inc., Trevose, Pa. 821,591, pub. 10-18-66. Cl. 26.
General Mills, Inc.: *See*—
Washburn-Crosby Co.
General Mills, Inc., Minneapolis, Minn. 782,166, canc. Cl. 46.
Genesco Inc., Nashville, Tenn. 821,676, pub. 10-18-66. Cl. 39.
Gerstle Medicine Co.: *See*—
Plough Chemical Co.
Gilbert Shoe Stores, Inc., Columbus, Ohio. 821,683, pub. 10-18-66. Cl. 39.
Gimbel Bros., Inc., New York, N.Y. 821,638, pub. 10-18-66. Cl. 39.
Glaces de Boussois Societe Anonyme, Paris, France. 821,430, pub. 10-18-66. Cl. 12.
Gladstone-Arcuni, Inc., New York, N.Y. 821,643, pub. 10-18-66. Cl. 39.
Glass Gorham Co., d.b.a. American Louver Co., Chicago, Ill. 821,757. Cl. 34.
Go-Go Co.: *See*—
Chun-Yi Tang.
Gold Seal Rubber Co., Boston, Mass. 821,680, pub. 10-18-66. Cl. 39.
Golden Bear Pancake House, Inc., Elmwood Park, Ill. 821,-736, pub. 10-18-66. Cl. 100.
Goodrich, B. F., Co., The, Akron, Ohio. 221,998, ren. 1-3-67. Cl. 35.
Gossard, H. W., Co., The, Chicago, Ill. 707,233, canc. Cl. 39.
Graham Mfg. Corp., Needham Heights, Mass. 707,107, canc. Cl. 13.
Grand Specialties Co., Chicago, Ill. 821,498, pub. 10-18-66. Cl. 19.
Graves, George O., d.b.a. Michiana Mills, South Bend, Ind. 821,561, pub. 10-18-66. Cl. 23.
Green Touch Soils Co., Warrensburg, Mo., and Decorah, Iowa. 501,483, canc. Cl. 1.
Grogan, M. E., Co., Chicago, Ill. 821,435, pub. 10-18-66. Cl. 12.
Grolier Enterprises Inc., New York, N.Y. 821,748. Cl. 22.
Grolier Enterprises Inc., New York, N.Y. 821,749. Cl. 22.
Grossversandhaus Quelle Gustav Schickedanz K.G., Ltd., Fuerth (Bavaria), Germany. 821,543, pub. 10-18-66. Multiple Class (Classes 23, 27, 28, and 50).
Guild Arts & Crafts, Inc., Farmingdale, N.Y. 821,689, pub. 10-18-66. Cl. 42.
Guild-Mark Products: *See*—
Wilson, Thomas N.
Gulf States Paper Corp., Tuscaloosa, Ala. 821,396, pub. 10-18-66. Cl. 2.
Gulf States Paper Corp., Tuscaloosa, Ala. 821,397, pub. 10-18-66. Cl. 2.
H. & M. Associates, New York, N.Y. 821,559, pub. 10-18-66. Cl. 28.
Hall, Robert, Clothes: *See*—
Hall, Robert, Clothes, Inc.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 821,673, pub. 10-18-66. Cl. 39.
Hampden-Harvard Breweries, Inc., Willimansett, Mass. 707,-335, canc. Cl. 48.
Harper-Wyman Co., Chicago, Ill. 821,615, pub. 10-18-66. Cl. 34.
Harris, D. P., Hardware & Mfg. Co., Inc., New York, N.Y. 821,507, pub. 10-18-66. Cl. 19.
Harris, D. P., Hardware & Mfg. Co., Inc., New York, N.Y. 821,508, pub. 10-18-66. Cl. 19.
Harvell-Kilgore Corp.: *See*—
Aerial Products, Inc.
Harvey, G. F., Co., Inc., New York, N.Y. 707,133, canc. Cl. 18.
Harvey, G. F., Co., Inc., The, New York, N.Y. 707,137, canc. Cl. 18.
Hascall, George C., Cleveland, Ohio, by Hooker Chemical Corp., Niagara Falls, N.Y. 56,587, 12(c) pub. 1-3-67. Cl. 16.
Havemeyer Oil Co., to Texaco Inc., New York, N.Y. 61,806, ren. 1-3-67. Cl. 15.
Hearth Craft, Inc., Portland, Oreg. 821,755. Cl. 34.
Helmac Products Corp., Flint, Mich., 821,751. Cl. 29.
Hemes Mfg. Co., Phoenix, Ariz. 821,617, pub. 10-18-66. Cl. 34.
Heppenstall Co., Pittsburgh, Pa. 423,920, 12(c) pub. 1-3-67. Cl. 14.
Hermanson, William A., Boston, Mass. 227,614, ren. 1-3-67. Cl. 37.
Highsmith, James L., & Co., Charlotte, N.C. 821,537, pub. 10-18-66. Cl. 21.
Hollister Inc., Chicago, Ill. 821,635, pub. 10-18-66. Multiple Class (Classes 37 and 50).
Holsapfel, Louis, d.b.a. Sanitary Supply Co., Greenville, Ohio, by Sanco Products Co., Inc., Greenville, Ohio. 219,401, 12(c) pub. 1-3-67. Cl. 6.
Home Moderniser's Supply, Inc., Milwaukee, Wis. 821,425, pub. 10-18-66. Cl. 12.
Homestead Valve Mfg. Co., Coraopolis, Pa. 821,459, pub. 10-18-66. Cl. 13.
Honey Bucket Cafe, Costa Mesa, Calif. 707,210, canc. Cl. 36.
Hooker Chemical Corp.: *See*—
Hascall, George C.
Horton & Converse, Los Angeles, Calif. 427,448, ren. 1-3-67. Cl. 18.
Houbigant, Inc., New York, N.Y. 707,275, canc. Cl. 51.
Hudnut, Richard, Morris Plains, N.J. 221,122, ren. 1-3-67. Cl. 51.
Hullings, H. C., d.b.a. Amanus Products Co., Denver, Colo. 707,233, canc. Cl. 51.
Huntington Distributors, Inc., Candor, N.C. 821,506, pub. 10-18-66. Cl. 19.
Hurst-Campbell, Inc., Warminister, Pa. 821,505, pub. 10-18-66. Cl. 19.
Huth-James Shoe, Inc., Milwaukee, Wis. 821,652, pub. 10-18-66. Cl. 39.
I-T-E Circuit Breaker Co., Philadelphia, Pa. 707,096, canc. Cl. 12.
IXL Food Co., San Leandro, Calif. 707,257, canc. Cl. 46.
Imperial Reading Corp., New York, N.Y. 821,653, pub. 10-18-66. Cl. 39.
Impress A Tone, Buena Park, Calif. 821,571, pub. 10-18-66. Cl. 23.
Infanseat Co., Eldora, Iowa. 821,602, pub. 10-18-66. Cl. 32.
Inglett & Co., Inc., Augusta, Ga. 821,572, pub. 10-18-66. Cl. 23.
International Harvester Co., Chicago, Ill., from International Harvester Co., Chicago, Ill. 821,622, pub. 10-18-66. Cl. 34.
International Research Corp., Anaheim, Calif. 821,454, pub. 10-18-66. Cl. 18.
International Textiles, Ltd., Highland, Ill. 821,704, pub. 10-18-66. Cl. 42.
Jacobe, Eddie, Ltd., Baltimore, Md. 776,829, cor. Cl. 8.
Jaymar-Ruby, Inc., Michigan City, Ind. 821,662, pub. 10-18-66. Cl. 39.
Jaymar-Ruby, Inc., Michigan City, Ind. 821,668, pub. 10-18-66. Cl. 39.
Johnson, S. C., & Son, Inc., Racine, Wis. 778,309, canc. Cl. 52.

Johnson, S. C., & Son, Inc., Racine, Wis. 821,475, pub. 10–18–66. Cl. 15.
Junior Prescriptions: *See*—
Junior Prescriptions, Inc.
Junior Prescriptions, Inc., Los Angeles, Calif., from Jay D. Wiener, d.b.a. Junior Prescriptions, Los Angeles, Calif. 754,342, canc. Cl. 18.
K-P Industries, Cleveland, Ohio. 821,469, pub. 10–18–66. Cl. 18.
K-P Industries, Cleveland, Ohio. 821,470, pub. 10–18–66. Cl. 18.
Kabushiki Kaisha Fujiwara Seisakusho, Kobe, Japan. 821,-467, pub. 10–18–66. Cl. 18.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 821,393, pub. 10–18–66. Cl. 2.
Kalwall Corp., Manchester, N.H. 821,426, pub. 10–18–66. Cl. 12.
Karbo, Joseph, d.b.a. Detection Appliances, Division of Northwestern, Los Angeles, Calif. 821,588, pub. 10–18–66. Cl. 26.
Kaynee Co., The, Greenville, S.C. 707,217, canc. Cl. 39.
Kellmer, Jack, Co., Philadelphia, Pa., by Jack Kellmer Co., Philadelphia, Pa. 442,936, 12(c) pub. 1–3–67. Cl. 28.
Kelly, E. J., Co., Kalamazoo, Mich., by Sun Chemical Corp., New York, N.Y. 424,378, 12(c) pub. 1–3–67. Cl. 11.
Kendall Co., The: *See*—
American Bleached Goods Co., Inc.
Kent, Cyril G., d.b.a. Kent and Francis, London, England. 707,228, canc. Cl. 39.
Kent and Francis: *See*—
Kent, Cyril G.
Keuffel & Esser Co., Hoboken, N.J. 220,462, ren. 1–3–67. Cl. 26.
Kimberly-Clark Corp., Neenah, Wis. 821,726, pub. 10–18–66. Cl. 44.
King-Seeley Thermos Co., d.b.a. Structo Division, Freeport, Ill. 821,552, pub. 10–18–66. Cl. 23.
Kline, Donald P., d.b.a. Quality Plus Hosiery and Nylon Co., Chicago, Ill. 821,649, pub. 10–18–66. Cl. 39.
Korell Corp., New York, N.Y. 821,644, pub. 10–18–66. Cl. 39.
Kramer Bros., from Kramer Bros., Inc., New York, N.Y. 347,263, canc. Cl. 39.
L & S Bernestein, Inc., New York, N.Y. 821,642, pub. 10–18–66. Cl. 39.
Labarber, Joseph A., Las Vegas, Nev. 821,721, pub. 10–18–66. Cl. 44.
Laboratoire Garnier, Paris, France. 707,337, canc. Cl. 51.
Laclede-Christy Clay Products Co., St. Louis, Mo., to H. K. Porter Co., Inc., Pittsburgh, Pa. 427,833, ren. 1–3–67. Cl. 12.
La Favorite Rubber Mfg. Co., Hawthorne, N.J. 821,547, pub. 10–18–66. Cl. 28.
Laganella, Anthony B. and C. E. McMeanamin, Philadelphia, Pa. 707,221, canc. Cl. 39.
Lambert Pharmacal Co., St. Louis, Mo., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 57,568, ren. 1–3–67. Cl. 52.
Lambert Pharmacal Co., St. Louis, Mo., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 221,121, ren. 1–3–67. Cl. 51.
Lane Ltd.: *See*—
Lane Tobacco, Ltd.
Lane Tobacco, Ltd., New York, N.Y., by Lane Ltd., 424,373, 12(c), 1–3–67. Cl. 8.
Lanston Monotype Machine Co., Philadelphia, by United States Banknote Corp., New York, N.Y., 12(c), 58,649, pub. 1–3–67. Cl. 37.
Lassiter, Frederick H., New York, N.Y., to Melrose Hosiery Mills, Inc., High Point, N.C., 423,277, ren. 1–3–67. Cl. 39.
Lathan Mfg. Co., San Francisco, Calif. 821,564, pub. 10–18–66. Cl. 23.
Lenbarry Casuals: *See*—
Smoler Bros., Inc.
Letera, Robert W., Sr., New Castle, Pa. 821,732, pub. 10–18–66. Cl. 46.
Liberty Combustion Corp., East Syracuse, N.Y. 707,163, canc. Cl. 22.
Liberty Optical Mfg. Co., Inc., Newark, N.J. 821,590, pub. 10–18–66. Cl. 26.
Livesay, Neil, and K. Livesay, Lakeside, Calif. 821,481, pub. 10–18–66. Cl. 12.
Livestock Enterprises, Inc., Dalhart, Tex. 821,763. Cl. 46.
Locatelli S.p.A., Milan, Italy. 821,730, pub. 10–18–66. Cl. 46.
Lorens Publishing Co., to Lorens Publishing Co., Dayton, Ohio. 226,682, ren. 1–3–67. Cl. 38.
Lorens Publishing Co., to Lorens Publishing Co., Dayton, Ohio. 226,709, ren. 1–3–67. Cl. 38.
Lorens Publishing Co., to Lorens Publishing Co., Dayton, Ohio. 226,710, ren. 1–3–67. Cl. 38.
Lorens Publishing Co., to Lorens Publishing Co., Dayton, Ohio. 226,802, ren. 1–3–67. Cl. 38.
Lothman, Mary F., d.b.a. Nancy Originals, Detroit, Mich. 821,524, pub. 10–18–66. Cl. 21.
Lu-Mont Mfg. Co., Los Angeles, Calif., to Michigan Chemical Corp., St. Louis, Mo. 426,262, ren. 1–3–67. Cl. 52.
Luxaire Cushion Co., Newton Falls, Ohio. 821,612, pub. 10–18–66. Cl. 32.
Lynne Carol Fashions, Inc., Philadelphia, Pa. 821,675, pub. 10–18–66. Cl. 39.
M. A. Notch Corp., Oakland, Calif. 821,734, pub. 5–3–66, Cl. 52.
Ma Cherie Sales Corp. of America: *See*—
Natural Set Up Sales Corp.
Mac's Super Gloss Co., Inc., Los Angeles, Calif. 821,403, pub. 10–18–66. Cl. 4.
Mademoiselle Fifth Avenue, Inc., New York, N.Y. 821,665, pub. 10–18–66. Cl. 39.
Magic Nut Kitchens: *See*—
Saul, Samuel J.
Magic Nut Shop, The, Los Angeles, Calif., by S. J. Saul, d.b.a. Magic Nut Kitchens. 425,752, 12(c), pub. 1–3–67. Cl. 46.
Malina Co., Inc., New York, N.Y. 821,707, pub. 10–18–66. Cl. 42.
Mandarin Textiles Ltd.: *See*—
Associated Products, Inc.
Mann, James H., Lewiston, Pa., to True Temper Corp., Cleveland, Ohio. 29,573, ren. 1–3–67. Cl. 23.
Marda Associates, Inc., New York, N.Y. 821,661, pub. 10–18–66. Cl. 39.
Mariday Casuals, Inc., New York, N.Y. 746,471, canc. Cl. 39.
Marine Engineering & Equipment Co., McAlester, Okla. 821,427, pub. 7–26–66. Cl. 12.
Martel Electronics Sale Inc., Los Angeles, Calif. 821,681, pub. 10–18–66. Cl. 36.
Massey-Ferguson Ltd., Toronto, Ontario, Canada. 821,476, pub. 10–18–66. Cl. 16.
Massey-Ferguson Ltd., Toronto, Ontario, Canada. 821,514, pub. 10–18–66. Cl. 21.
Massey-Ferguson Ltd., Toronto, Ontario, Canada. 821,598, pub. 10–18–66, Cl. 31.
Massey-Ferguson Ltd., Toronoto, Ontario, Canada. 821,626, pub. 10–18–66. Cl. 35.
Mattel, Inc., Hawthorne, Calif. 821,589, pub. 10–18–66. Cl. 22.
Mattie Dress Co., New York, N.Y. 821,645, pub. 10–18–66. Cl. 39.
McConnell Co., Niland, Calif. 821,555, pub. 10–18–66. Cl. 23.
McCormick & Co., to McCormick & Co., Inc., Baltimore, Md. 59,755, ren. 1–3–67. Cl. 46.
McCormick & Co., to McCormick & Co., Inc., Baltimore, Md. 60,560, ren. 1–3–67. Cl. 46.
McCormick & Co., Inc.: *See*—
McCormick & Co.
McFadden, A. R., Kansas City, Mo. 821,741. Cl. 1.
McGraw-Edison Co., Chicago, Ill. 707,207, canc. Cl. 24.
McGregor-Doniger Inc., New York, N.Y. 821,760. Cl. 39.
McNulty, William J. d.b.a. Elbon Lab, Montclair, N.J., to Elbon, Inc., Morristown, N.J. 426,184, ren. 1–3–67. Cl. 18.
Melnor Industries, Inc., Moonachie, N.J. 821,451, pub. 10–18–66. Cl. 18.
Melnor Industries, Inc., Moonachie, N.J. 821,462, pub. 10–18–66. Cl. 13.
Melrose Hosiery Mills, Inc.: *See*—
Lassiter, Frederick H.
Merck & Co., Inc.: *See*—
Sharp & Dohme, Inc.
Merck & Co., Inc., Rahway, N.J. 707,130, canc. Cl. 18.
Meta-Therm Corp., The, New York, N.Y. 821,473, pub. 10–18–66. Cl. 15.
Metropolitan Dry Cleaning Machinery Co., Inc., Richmond Hill, N.Y. 707,208, canc. Cl. 34.
Michigan Bolt & Nut Co., Inc., Madison Heights, Mich. 821,464, pub. 10–18–66. Cl. 13.
Michigan Chemical Corp.: *See*—
Lu-Mont Mfg. Co.
Microfibres, Inc.: *See*—
Rayon Processing Co. of R.I. Inc., The.
Microlab, Ardwin, Inc., Stoneham, Mass. 707,150, canc. Cl. 21.
Micro-Line, Inc., Jamestown, N.Y. 821,585, pub. 10–18–66. Cl. 26.
Miles Laboratories, Inc.: *See*—
Dr. Miles Medical Co.
Mill, Michiana: *See*—
Graves, George O.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 821,488, pub. 10–18–66. Cl. 12.
Moorhead Plastics, Inc., Moorhead, Minn. 821,495, pub. 10–18–66. Cl. 19.
Morrell, John, & Co., Ottumwa, Iowa. 821,766. Cl. 46.
Morton International, Inc., from Morton Salt Co., Chicago, Ill. 821,405, pub. 10–18–66. Cl. 5.
Morton Salt Co.: *See*—
Morton International, Inc.
Mother Goose Corp., Westminster, Md. 821,658, pub. 10–18–66. Cl. 39.
Moulton Bicycles Ltd., Brandford-on-Avon, England. 821,499, pub. 10–18–66. Cl. 19.
Murray, Edgar A., Co., Detroit, Mich., to H. A. Chittick, d.b.a. Fairfax Biological Laboratory, Clinton Corners, N.Y. 425,120, ren. 1–3–67. Cl. 6.
N.Z. Forest Products Ltd., Penrose, Auckland, New Zealand. 821,486, pub. 10–18–66. Cl. 12.
Nancy Originals: *See*—
Lothman, Mary F.
National Bedding & Furniture Industries, Inc., Memphis, Tenn. 821,753. Cl. 32.
National Business Music Co. of the Southeast, Inc., Charlotte, N.C. 821,632, pub. 10–18–66. Cl. 36.
National Distillers and Chemical Corp., New York, N.Y. 821,-401, pub. 10–18–66. Cl. 2.
National Equipment Corp., Bronx, N.Y. 821,580, pub. 10–18–66. Cl. 23.
National Food Marketers, Inc., Blue Anchor, N.J. 707,332, canc. Cl. 46.
National Presto Industries, Inc., Eau Claire, Wis. 821,410, pub. 10–18–66. Multiple Class (Classes 6, 23, 26, and 34).
National Set Up Sales Corp., by Ma Cherie Sales Corp. of America, St. Louis, Mo. 346,867, 12(c) pub. 1–3–67. Cl. 45.
New Castle Products, Inc., New Castle, Ind. 821,439, pub. 10–18–66. Cl. 12.
New Castle Products, Inc., New Castle, Ind. 821,440, pub. 10–8–66. Cl. 12.
Newberry, J. J., Co., New York, N.Y. 821,681, pub. 10–18–66. Cl. 39.

Newton, Carl D., d.b.a. The Fox Co., to Fox-Stanley Photo Products, Inc., San Antonio, Tex. 222,662, ren. 1–3–67. Cl. 38.
Nichols, J. N., & Co.: *See*—
Nichols, John N.
Nichols, J. N., (Vimto) Ltd.: *See*—
Nichols, John N.
Nichols, John N., d.b.a. J. N. Nichols & Co., Salford, by J. N. Nichols (Vimto) Ltd., Manchester, England. 215,478, 12(c) pub. 1–3–67. Cl. 45.
Norbatrol Electronics Corp., Pittsburgh, Pa. 821,531, pub. 10–18–66. Cl. 21.
Norbatrol Electronics Corp., Pittsburgh, Pa. 821,532, pub. 10–18–66. Cl. 21.
Nord-New York, Inc., Tarrytown, N.Y. 821,592, pub. 10–18–66. Cl. 26.
Normandie Bedspread Co., Inc., New York, N.Y. 821,708, pub. 10–18–66. Cl. 42.
North Hollywood Concrete Tile Co., North Hollywood, Calif. 707,099, canc. Cl. 12.
North Hollywood Glass Co.: *See*—
North Hollywood Glass & Paint Co.
North Hollywood Glass & Paint Co., d.b.a. North Hollywood Glass Co., North Hollywood, Calif. 707,100, canc. Cl. 12.
Northland Bag Corp., Yonkers, N.Y. 707,063, canc. Cl. 2.
Norton Co., Watervliet, N.Y. 821,478, pub. 7–12–66. Cl. 16.
Norwalk Furniture Corp., Norwalk, Ohio. 821,605, pub. 10–18–66. Cl. 32.
Norwalk Furniture Corp., Norwalk, Ohio. 821,606, pub. 10–18–66. Cl. 32.
Norwich Mills, Inc., Norwich, N.Y. 821,668, pub. 10–18–66. Cl. 39.
Oak Rubber Co., The, Ravenna, Ohio. 821,540, pub. 10–18–66. Cl. 22.
O'Bryaw Bros., Inc., Chicago, Ill. 821,685, pub. 10–18–66. Cl. 39.
Oil Base, Inc., Houston, Tex. 821,434, pub. 10–18–66. Cl. 12.
Old File Cutlery Co., Havana, Ill. 112,802, canc. Cl. 23.
Optimist International, St. Louis, Mo. 426,074, ren. 1–3–67. Cl. 38.
Osgood and Sons Inc., Decatur, Ill. 707,230, canc. Cl. 39.
Osgood and Sons Inc., Decatur, Ill. 707,231, canc. Cl. 39.
Oshkosh B'Gosh, Inc., Oshkosh, Wis. 821,761. Cl. 39.
Outdoor Development Co., Inc., Augusta, Ga. 707,300, canc. Cl. 100.
Oyster Products Co., Inc., Long Beach, Calif. 707,138, canc. Cl. 18.
Oyster Products Co., Inc., Long Beach, Calif. 707,140, canc. Cl. 18.
Oyster Products Co., Inc., Long Beach, Calif. 707,139, canc. Cl. 18.
Oyster Products Co., Inc., Long Beach, Calif. 707,141, canc. Cl. 18.
Pabst Bedding Co., Inc., Cincinnati, Ohio. 821,703, pub. 10–18–66. Cl. 42.
Pallares Hermanos to Pallares Hermanos, S.A., Cabra, Spain. 221,689, ren. 1–3–67. Cl. 46.
Pan American Laboratories, Inc., New Orleans, La. 707,181, canc. Cl. 18.
Pan American Laboratories, Inc., New Orleans, La. 707,182, canc. Cl. 18.
Paramount Knitting Co., to Bear Brand Hosiery Co., Chicago, Ill. 60,843, ren. 1–3–67. Cl. 39.
Paramount Knitting Co., to Bear Brand Hosiery Co., Chicago, Ill. 60,844, ren. 1–3–67. Cl. 39.
Parker Bros., Inc., Salem, Mass. 707,167, canc. Cl. 22.
Parker Bros., Inc., Salem, Mass. 707,168, canc. Cl. 22.
Pallares Hermanos, S.A.: *See*—
Pallares Hermanos.
Partake, Inc., Oak Brook, Ill. 821,773. Cl. 101.
Patterson-Kelley Co., Inc., The, East Stroudsburg, Pa. 821,-574, pub. 10–18–66. Cl. 23.
Pearson's Liquor Annex, Inc., d.b.a. Plain Old Pearson's, Washington, D.C. 779,149, canc. Cl. 49.
Penn-Akron Corp., Woodside, N.Y. 707,204, canc. Cl. 32.
Penn Fruit Co.: *See*—
Penn Fruit Co., Inc.
Penn Fruit Co. Inc., d.b.a. Penn Fruit Co., Philadelphia, Pa. 707,254, canc. Cl. 46.
Penney, J. C., Co., New York, N.Y. 821,526, pub. 10–18–66. Cl. 21.
Perma-Fit Co., Chicago, Ill. 821,722, pub. 10–18–66. Cl. 44.
Permatex Co., Inc., Brooklyn, N.Y. 821,404, pub. 10–18–66. Cl. 4.
Perpetuum-Ebner, Fabrik fur Feinmechanik und Elektrotechnik, Steidinger & Co., K.G. Ltd., St. Grorgen, Schwarzwald, Germany. 821,518, pub. 10–18–66. Multiple Class (Classes 21 and 36).
Perronneau Freres Successeurs, Dijon (Cote-d'Or), France. 707,331, canc. Cl. 46.
Phillips Process Co. Inc., Rochester, N.Y. 821,420, pub. 10–18–66. Cl. 11.
Phillips Process Co., Inc., Rochester, N.Y. 821,422, pub. 10–18–66. Cl. 11.
Phillips-Foscue Corp., High Point, N.C. 821,752. Multiple Class (Classes 43 and 42).
Phoenix, Inc., New York, N.Y. 821,670, pub. 10–18–66. Cl. 39.
Pic Design Corp., East Rockaway, N.Y. 821,446, pub. 10–18–66. Multiple Class (Classes 18 and 28).
Pilling Chain Co., Inc., West Barrington, R.I. 821,453, pub. 10–18–66. Cl. 13.
Pipe Line Development Co., The, Cleveland, Ohio. 821,444, pub. 10–18–66. Cl. 13.
Pirassi, Gustav, & Comp., Offenbach (Main), Germany. 821,-627, pub. 10–18–66. Cl. 36.
Piru Citrus Association, Piru, Calif. 226,547, ren. 1–3–67. Cl. 46.
Pitman, J. C., and Sons, Inc., Concord, N.H. 821,449, pub. 10–18–66. Cl. 18.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 429,254, ren. 1–3–67. Cl. 32.
Pittsburgh Plate Glass Co., to Pittsburgh Plate Glass Co., Pittsburgh, Pa. 426,919, ren. 1–3–67. Cl. 6.
Plain Old Pearson's: *See*—
Pearson's Liquor Annex, Inc.
Plough Chemical Co., d.b.a. Geratic Medicine Co., to Plough, Inc., Memphis, Tenn. 221,424, ren. 1–3–67. Cl. 18.
Plough, Inc.: *See*—
Plough Chemical Co.
Polan, Katz & Co., Inc., Baltimore, Md. 429,450, ren. 1–3–67. Cl. 41.
Pontifa S.A., Montres et Nouveautes, Les Ponts-de-Martel, Switzerland. 821,693, pub. 10–18–66. Cl. 27.
Porter, H. K., Co., Inc.: *See*—
Laclede-Christy Clay Products Co.
Potlatch Forests, Inc., Lewiston, Idaho. 821,740. Cl. 1.
Powers Regulator Co., The, Skokie, Ill. 821,463, pub. 10–18–66. Cl. 13.
Posnak, Murray P., Irvington, N.J. 707,277, canc. Cl. 51.
Price-Pfister Brass Mfg. Co., Pacoima, Calif. 821,443, pub. 10–18–66. Cl. 13.
Preh Elektrofeinmechanische Werke: *See*—
Preh, Walter.
Preh, Walter, d.b.a. Preh Elektrofeinmechanische Werke Jakob Preh Nach., Postfach, Germany. 821,533, pub. 10–18–66. Cl. 21.
Prescolite Mfg. Corp., San Leandro, Calif. 821,535, pub. 10–18–66. Cl. 21.
Promedco Inc.: *See*—
Week, Edward, & Co., Inc.
Prometheus Metallwerke G.m.b.H., Strasse, Kempten, Germany. 821,417, pub. 10–18–66. Cl. 8.
Pure Food Products, Inc., Dallas, Tex. 707,333, canc. Cl. 46.
Purex Corp., Ltd., Lakewood, Calif. 821,400, pub. 10–18–66. Cl. 2.
Purofied Down Products Corp., Brooklyn, N.Y. 821,608, pub. 10–18–66. Cl. 32.
Quaker Maid Kitchens, Inc., Leesport, Pa. 821,609, pub. 10–18–66. Cl. 32.
Quaker Maid Kitchens, Inc., Leesport, Pa. 821,610, pub. 10–18–66. Cl. 22.
Quality Plus Hosiery and Nylon Co.: *See*—
Kline, Donald P.
Queen Mfg. Co., Inc., Chicago, Ill. 821,462, pub. 10–18–66. Cl. 13.
R.B.R. Co.: *See*—
Robertson, Robert B.
Radion Corp., The, Crystal Lake, Ill. 707,152, canc. Cl. 21.
Rainbow Aluminum Products, Inc., North Miami Beach, Fla. 764,160, canc. Cl. 13.
Rainfair, Inc., Racine, Wis. 821,641, pub. 10–18–66. Cl. 39.
Rapaport, Myron S., New Rochelle, N.Y. 821,496, pub. 10–18–66. Cl. 19.
Rayon Processing Co. of R.I. Inc., The, Central Falls, R.I., by Microfibres, Inc., Pawtucket, R.I. 423,572, 12(c) pub. 1–3–67. Cl. 1.
Red Cedar Shingle & Handsplit Shake Bureau, Seattle, Wash. 821,429, pub. 10–18–66. Cl. 12.
Redden, Carlos B., d.b.a. Redden Laboratories, Cincinnati, Ohio. 566,246, canc. Cl. 18.
Regal Plastic Co., d.b.a. Regal-Aire Lamp Co., Roeland Park, Kans. 821,515, pub. 10–18–66. Cl. 21.
Regal-Aire Lamp Co.: *See*—
Regal Plastic Co.
Republic Packaging Co., Inc., Conober, N.C. 821,589, pub. 10–18–66. Cl. 2.
Restonic Corp.: *See*—
Wonder-Rest Corp.
Revere Copper and Brass Inc., New York, N.Y. 821,530, pub. 10–18–66. Cl. 21.
Reynolds Brothers, Inc., Sturgeon Bay, Wis. 724,565, canc. Cl. 46.
Rhodes, M. H., Inc., Hartford, Conn. 812,969, cor. Cl. 26.
Richbilt Mfg. Co., Cincinnati, Ohio. 821,613, pub. 10–18–66. Cl. 32.
Rickborn Industries, Inc., Fairfield, N.J. 821,491, pub. 10–18–66. Cl. 19.
Riverside & Dan River Cotton Mills, Inc., Danville, Va., to United Merchants and Mfgers., Inc., New York, N.Y. 424,-968, ren. 1–3–67. Cl. 42.
Robertson, Robert B., d.b.a. R.B.R. Co., Hollywood, Calif. 707,211, canc. Cl. 36.
Rockwell Mfg. Co., Washington, D.C. 821,465, pub. 10–18–66. Cl. 13.
Rocky Mount Undergarment Co., Inc., Rocky Mount, N.C. 821,657, pub. 10–18–66. Cl. 39.
Rohm & Haas Co., Philadelphia, Pa. 821,482, pub. 10–18–66. Cl. 16.
Roncari Industries, Inc., East Granby, Conn. 821,737, pub. 10–18–66. Multiple Class (Classes 100, 101, 102, and 103).
Rondanini Luigi S.p.A., Milan, Italy. 821,731, pub. 10–18–66. Cl. 46.
Roofing Equipment, Inc., Wheat Ridge, Colo. 821,406, pub. 10–18–66. Cl. 5.
Rosenbloom, Morris, & Co., Inc., Rochester, N.Y. 425,986, ren. 1–3–67. Cl. 28.
Rotary Drilling Services, Inc., Tulsa, Okla. 821,742. Cl. 1.
Rotex Ltd., Toronto, Ontario, Canada. 821,702, pub. 10–18–66. Cl. 42.
Rowe Products, Inc., Niagara Falls, N.Y. 821,479, pub. 10–18–66. Cl. 16.

Rowe Products, Inc., Niagara Falls, N.Y. 821,480, pub. 10–18–66. Cl. 16.
Rowe Products, Inc., Niagara Falls, N.Y. 821,481, pub. 10–18–66. Cl. 16.
Rudofker's, S., Sons, Inc., Philadelphia, Pa. 821,674, pub. 10–18–66. Cl. 39.
Russell & Erwin Mfg. Co., New Britain, by Emhart Corp., Hartford, Conn. 50,566, 12(c) pub. 1–3–67. Cl. 25.
Russell & Stoll Co., Inc., New York, N.Y. 818,212, cor. Cl. 21.
Rutledge Mfg. Co., d.b.a. Saye Fertilizer Co., Rutledge, Ga. 707,091, canc. Cl. 10.
S-B Mfg. Co., Milwaukee, Wis. 427,944, 12(c) pub. 1–3–67. Cl. 50.
SKF Industries, Inc., Philadelphia, Pa. 821,550, pub. 10–18–66. Cl. 23.
SKF Industries, Inc., Philadelphia, Pa. 821,551, pub. 10–18–66. Cl. 23.
St. Regis Paper Co., New York, N.Y. 818,144, cor. Cl. 12.
San Francisco Grocery Co., Ltd., Union City, Calif. 821,768. Cl. 46.
Sanco Products Co., Inc.: *See*—
Holsapfel, Louis.
Sanitary Supply Co.: *See*—
Holsapfel, Louis.
Sarong, Inc., Dover, Del. 821,679, pub. 10–18–66. Cl. 39.
Saul, Samuel J.: *See*—
Magic Nut Shop, The.
Saye Fertilizer Co.: *See*—
Rutledge Mfg. Co.
Schjeldahl, G. T., Co., Northfield, Minn. 821,525, pub. 10–18–66. Cl. 21.
Schnellpressenfabrik Aktiengesellschaft Heidelberg, Heidelberg, Germany. 821,546, pub. 10–18–66. Cl. 23.
Schoeberl, Eugene W.: *See*—
Den-Tal-Ez Chair.
Schoeneman, J., Inc., Baltimore, by J. Schoeneman, Inc., Owings Mills, Md. 210,083, 12(c) pub. 1–3–67. Cl. 39.
Scott, Harry S., Inc.: *See*—
Bridges, John S.
Sea B's, Inc., New York, N.Y. 821,654, pub. 10–18–66. Cl. 39.
Sears, Roebuck and Co., Chicago, Ill. 707,213, canc. Cl. 36.
Sears, Roebuck and Co., Chicago, Ill. 821,538, pub. 10–18–66. Cl. 21.
Securitone Corp. of America, New York, N.Y. 707,248, canc. Cl. 44.
Servus Rubber Co., The, Rock Island, Ill. 821,647, pub. 10–18–66. Cl. 39.
Sesso Co., Inc., Tonawanda, N.Y. 707,299, canc. Cl. 52.
Shachihata Kogyo Kabushiki Kaisha, Nagoya, Japan. 821,633, pub. 10–18–66. Cl. 37.
Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 425,143, ren. 1–3–67. Cl. 18.
Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 429,324, ren. 1–3–67. Cl. 18.
Shuford Mills, Inc., Hickory, N.C. 707,088, canc. Cl. 7.
Signet Club Plan: *See*—
Signet Hosiery Co.
Signet Hosiery Co., to Signet Club Plan, Cambridge, Mass. 426,473, ren. 1–3–67. Cl. 39.
Silver Chips Candy Co.: *See*—
Freeman, Albert.
Simplicity Mfg. Co., Inc., Port Washington, Wis. 821,581, pub. 10–18–66. Cl. 23.
Slide-Top Packaging, Inc., Philadelphia, Pa. 707,311, canc. Cl. 2.
Smith, A. O., Harvestore Products, Inc., Arlington Heights, Ill. 821,392, pub. 10–18–66. Multiple Class (Classes 2 and 23).
Smith, Grover, Mfg. Corp., San Gabriel, Calif. 821,399, pub. 10–18–66. Multiple Class (Classes 2 and 23).
Smoler Bros., Inc., d.b.a. Lenbarry Casuals, Chicago, Ill. 821,669, pub. 10–18–66. Cl. 39.
Societe Rhodiaceta, Paris, France. 821,682, pub. 10–18–66. Cl. 39.
Societe Rhodiaceta, Paris, France. 821,694, pub. 10–18–66. Cl. 42.
Societe Rhodiaceta, Paris, France. 821,711, pub. 10–18–66. Cl. 43.
Societe Rhovyl, Paris, France. 821,712, pub. 10–18–66. Cl. 43.
Societe Rhovyl, Paris, France. 821,713, pub. 10–18–66. Cl. 43.
Societe Rhovyl, Paris, France. 821,714, pub. 10–18–66. Cl. 43.
Societe Rhovyl, Paris, France. 821,715, pub. 10–18–66. Cl. 43.
Societe Rhovyl, Paris, France. 821,716, pub. 10–18–66. Cl. 43.
Societe Technique de Parfumerie, F. Millot, Paris, France. 707,285, canc. Cl. 51.
Sony Corp., Shinagawa-ku, Tokyo, Japan. 821,528, pub. 10–18–66. Cl. 21.
Soren Shirt Co., Inc., New York, N.Y. 821,646, pub. 10–18–66. Cl. 39.
Sorg Paper Co., The: *See*—
Wrenn Paper Co., The.
Southern Optical Co., The, Louisville, Ky. 821,745. Cl. 18.
Specialized Components Corp., Mineola, N.Y. 821,727, pub. 10–18–66. Cl. 44.
Sperry Rand Corp.: *See*—
Wyckoff, Seamans & Benedict.
Spraylat Corp., New York, N.Y. 821,483, pub. 10–18–66. Cl. 16.
Squibb, E. R., & Sons, to E. R. Squibb & Sons, Inc., New York, N.Y. 427,563, ren. 1–3–67. Cl. 18.
Squibb, E. R., & Sons, Inc.: *See*—
Squibb, E. R., & Sons.
Staley, A. E., Mfg. Co.: *See*—
Union Bay State Chemical Co., Inc.
Standard Oil Co. of California, San Francisco, Calif. 427,483, ren. 1–3–67. Cl. 6.
Star Filter Corp., Detroit, Mich. 821,597, pub. 10–18–66. Cl. 31.
Stavanger Preserving Co. Aktieselskab, Stavanger, Norway. 217,868, ren. 1–3–67. Cl. 46.
Ste. d'Exploitation des Produits Botot-Jacques Brach & Cie., Paris, France, to J. Brach et Compagnie Societe Botot, Levallois-Perret, France. 220,593, ren. 1–3–67. Cl. 51.
Steel Cords Ltd., Conventry, England. 821,415, pub. 10–18–66. Cl. 7.
Steel Cords Ltd., Conventry, England. 821,416, pub. 10–18–66. Cl. 7.
Steele, H., Y Cia., S.A., Mexico City, Mex. 428,800, ren. 1–3–67. Cl. 27.
Stephens, Myron C., d.b.a. Alloy Welding and Fabricating Co., Portland, Oreg. 821,554, pub. 10–18–66. Cl. 23.
Sterling Brewers, Inc., Evansville, Ind. 821,545, pub. 10–18–66. Cl. 23.
Stevens, J. P., & Co., Inc., New York, N.Y. 821,699, pub. 10–18–66. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 821,705, pub. 10–18–66. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 821,706, pub. 10–18–66. Cl. 42.
Stewart Enterprises, Inc., Los Angeles, Calif. 707,162, canc. Cl. 22.
Stewart-Hunt, Inc., Burlington, Mass. 821,549, pub. 10–18–66. Cl. 23.
Stewart-Warner Corp., Chicago, Ill. 821,635, pub. 10–18–66. Cl. 34.
Stoeger Arms Corp., South Hackensack, N.J. 821,744. Cl. 9.
Storer Broadcasting Co., Miami Beach, Fla. 821,738, pub. 10–18–66. Cl. 104.
Stroudsburg Engine Works, Inc., Stroudsburg, Pa. 821,568, pub. 10–18–66. Cl. 23.
Stroudsburg Engine Works, Inc., Stroudsburg, Pa. 821,569, pub. 10–18–66. Cl. 23.
Structo Division: *See*—
King-Seeley Thermos Co.
Sugarless Candy Corp. of America, Chicago, Ill. 821,764. Cl. 46.
Sugarless Candy Corp. of America, Chicago, Ill. 821,765. Cl. 46.
Suixtil Sociedad Anonima Comercial Industrial, Buenos Aires, Argentina. 707,220, canc. Cl. 39.
Sun Chemical Corp.: *See*—
Kelly, E. J., Co.
Suntemp Industries, Inc., Blackwood, N.J. 821,756. Cl. 34.
Syndicate Trading Co., to Arkwright, Inc., New York, N.Y. 220,479, ren. 1–3–67. Cl. 39.
Tall Apparel N.Y. Corp., New York, N.Y. 821,659, pub. 10–18–66. Cl. 39.
Talma Fastner Corp., Rochester, Ind. 821,441, pub. 10–18–66. Cl. 13.
Tappan Co., The, Mansfield, Ohio. 821,554, pub. 10–18–66. Cl. 21.
Tappan Co., The, Mansfield, Ohio. 821,620, pub. 10–18–66. Cl. 34.
Tee-Pak, Inc., Chicago, Ill. 821,394, pub. 10–18–66. Cl. 2.
Teleflex Inc., North Wales, Pa. 821,490, pub. 10–18–66. Cl. 19.
Teranishi Kagaku Kogyo Kabushik Kaisha Ikue-Cho 260, Asahi-ku, Osaka-City, Japan. 821,477, pub. 10–18–66. Multiple Class (Classes 16 and 37).
Texaco Inc.: *See*—
Havemeyer Oil Co.
Thomas, Norman W., d.b.a. Guild-Mark Products, Evanston, Ill. 821,553, pub. 10–18–66. Cl. 23.
Thomson Co., Thomson, Ga. 821,666, pub. 10–18–66. Cl. 39.
Thread, Arlen, Co., Inc., New York, N.Y. 821,710, pub. 10–18–66. Cl. 43.
Titus Mfg. Corp., Waterloo, Iowa. 821,428, pub. 10–18–66. Cl. 12.
Todd, Michael, Jr., New York, N.Y. 707,287, canc. Cl. 51.
Todd, Tomlinson D., Washington, D.C. 707,307, canc. Cl. 107.
Topco Associates, Inc., Skokie, Ill. 821,418, pub. 10–18–66. Cl. 9.
Torch Rubber Co., Inc., New York, N.Y. 707,327, canc. Cl. 39.
Toyo Rayon Co. Ltd., Chuo-ku, Tokyo, Japan. 821,636, pub. 10–18–66. Cl. 39.
True Temper Corp.: *See*—
Mann, James H.
Turn-A-Bore Equipment Co., Fort Worth, Tex. 707,309, canc. Cl. A.
Turn-A-Tot Corp., Decatur, Ill. 821,493, pub. 10–18–66. Cl. 19.
Uncas Mfg. Co., Providence, R.I. 821,594, pub. 10–18–66. Cl. 28.
Under The Name of Redden Laboratories: *See*—
Redden, Carlos B.
Union Bag & Paper Corp., to Union Camp Corp., New York, N.Y. 425,358, ren. 1–3–67. Cl. 2.
Union Bay State Chemical Co., Inc., Cambridge, Mass., to A. E. Staley Mfg. Co., Decatur, Ill. 427,266, ren. 1–3–67. Cl. 1.
Union Camp Corp.: *See*—
Union Bag & Paper Corp.
Union Pin Co., The, Winsted, Conn. 425,997, 12(c) pub. 1–3–67. Cl. 40.
Union Tank Car Co., Chicago, Ill. 821,599, pub. 10–18–66. Cl. 31.
Union Tank Car Co., Chicago, Ill. 821,600, pub. 10–18–66. Cl. 31.

Unisel, Inc., Los Angeles, Calif. 707,059, canc. Cl. 2.
United Merchants and Mfgers., Inc.: *See*—
Riverside & Dan River Cotton Mills, Inc.
United States Banknote Corp.: *See*—
Lanston Monotype Machine Co.
United States Borax & Chemical Corp., Los Angeles, Calif. 821,395, pub. 10–18–66. Cl. 2.
United States Rubber Co.: *See*—
Eureka Fire Hose Co.
United States Rubber Co., New York, N.Y. 821,458, pub. 10–18–66. Cl. 13.
United States Rubber Co., New York, N.Y. 821,497, pub. 10–18–66. Cl. 19.
United States Rubber Co., New York, N.Y. 821,502, pub. 10–18–66. Cl. 19.
U.S. Suzuki Motor Corp., Santa Ana, Calif. 821,488, pub. 10–18–66. Cl. 19.
Uni-Vent Co., Inc., Jacksonville, Fla. 821,510, pub. 10–18–66. Cl. 19.
Universal American Corp., New York, N.Y. 821,576, pub. 10–18–66. Cl. 23.
Universal Chemists, Inc., d.b.a. Gale Hall Engineering, Boston, Mass. 544,847, canc. Cl. 26.
Upjohn Co., The, Dover, Del., from The Upjohn Co., Kalamazoo, Mich. 707,121, canc. Cl. 18.
Van Buren, Alda R., d.b.a. Alda of California, North Hollywood, Calif. 707,223, canc. Cl. 39.
Vapor Corp., Chicago, Ill. 821,489, pub. 10–18–66. Cl. 19.
Vari-Tech Co., Grand Rapids, Mich. 821,519, pub. 10–18–66. Multiple Class (Classes 21 and 26).
Veda Enterprises: *See*—
Eastham, Richard, and Betty Jean Eastham.
Venus Pen & Pencil Corp., New York, N.Y. 707,171, canc. Cl. 22.
Vita-Pakt Citrus Products Co., Covina, Calif. 821,603, pub. 10–18–66. Cl. 32.
Vitron Mfg. Co., Inc., Seattle, Wash. 707,101, canc. Cl. 12.
Voit, W. J., Rubber Corp., Los Angeles, Calif. 707,209, canc. Cl. 36.
Volksdrill Sales Co. Inc., New York, N.Y. 821,573, pub. 10–18–66. Cl. 23.
Vollrath Co., The, Sheboygan, Wis. 707,202, canc. Cl. 30.
Waco-Porter Corp.: *See*—
Bliss & Laughlin Industries, Inc.
Warner-Lambert Pharmaceutical Co.: *See*—
Folly Town Co., The.
Lambert Pharmacal Co.
Warshow, H., & Sons, Inc., New York, N.Y. 821,701, pub. 10–18–66. Cl. 42.
Washburn-Crosby Co., to General Mills, Inc., Minneapolis, Minn. 61,763, ren. 1–3–67. Cl. 46.
Weier, Jacob J., d.b.a. Weier Wheel Co., Chicago, Ill. 821,447, pub. 10–18–66. Cl. 13.
Weier Wheel Co.: *See*—
Weier, Jacob J.
Wells Lamont Corp., Chicago, Ill. 821,671, pub. 10–18–66. Cl. 39.
Wells Lamont Corp., Chicago, Ill. 821,672, pub. 10–18–66. Cl. 39.
Weck, Edward, & Co., Inc., Long Island City, N.Y., from Promedco Inc., Troy, Mich. 821,720, pub. 10–18–66. Cl. 44.
Westfield Mfg. Co., The, Westfield, Mass. 506,279, canc. Cl. 19.
Wheatley Mayonnaise Co., Inc., Louisville, Ky., to Beatrice Foods Co., Chicago, Ill. 425,954, ren. 1–3–67. Cl. 46.
White & Bagley Co., The, Worcester, Mass. 58,538, ren. 1–3–67. Cl. 15.
Wickes Corp., The, d.b.a. Wickes Lumber and Building Supply Center, Saginaw, Mich. 821,423, pub. 10–18–66. Cl. 12.
Wickes Lumber and Building Supply Center: *See*—
Wickes Corp., The.
Wiener, Jay D.: *See*—
Junior Prescriptions, Inc.
Wilkerson Corp., Englewood, Colo. 821,548, pub. 10–18–66. Cl. 23.
Willcox and Gibbs Sewing Machine Co., New York, N.Y. 821,567, pub. 10–18–66. Cl. 23.
Williams, Oliver T., d.b.a. Depositube Mfg. Co., La Puente, Calif. 821,472, pub. 10–18–66. Cl. 15.
Woldert, Jack, Jr., d.b.a. Woldert Enterprises, Tyler, Tex. 821,577, pub. 10–18–66. Cl. 23.
Woldert Enterprises: *See*—
Woldert, Jack, Jr.
Wonder-Rest Corp., Milwaukee, Wis., by Restonic Corp., Chicago, Ill. 426,118, 12(c) pub. 1–3–67. Cl. 32.
Wrenn Paper Co., The, by The Sorg Paper Co., Middletown, Ohio. 223,321, 12(c) pub. 1–3–67. Cl. 37.
Wyckoff, Seamans & Benedict, Ilion, to Sperry Rand Corp., New York, N.Y. 58,672, ren. 1–3–67. Cl. 11.
Wyeth, John, & Bro., Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 223,787, ren. 1–3–67. Cl. 18.
Youngstown Sheet and Tube Co., The, Youngstown, Ohio. 821,455, pub. 10–18–66. Cl. 18.
Zebarth, Ralph, Inc., Kansas City, Mo. 821,544, pub. 10–18–66. Cl. 23.
Zellerbach Paper Co., San Francisco, Calif. 707,205, canc. Cl. 32.

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OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1966

Examiner affirmed	160
Examiner affirmed in part	32
Examiner reversed	49
Total	241

Transfer of Drawings

In view of the recent amendment of Rule 138 to permit the express abandonment of patent applications by the attorney, there is no longer any sufficient reason for delaying the formal abandonment of an application after all the drawings thereof have been transferred to another case. Accordingly, effective February 1, 1967, no request to transfer all the drawings from a pending application will be granted unless and until a formal abandonment of the application has been filed. In order to insure copendency, such an abandonment may be so worded as to become effective only after the transfer of the drawings has taken place.

EDWARD J. BRENNER,
Commissioner.

Dec. 15, 1966.

New Applications Received During November 1966

Patents	7043
Designs	372
Plant Patents	9
Reissues	21
Total	7445

Issue—January 10, 1967

Patents	1,405	No. 3,296,626 to No.	3,298,030, incl.
Designs	59	No. 206,648 to No.	206,706, incl.
Reissues	7	No. 26,136 to No.	26,142, incl.
Total	1,471		

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 21, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-23-63	10-18-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-20-63	9-22-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	7-11-63	2-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-15-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-5-63	4-25-62
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	3-4-63	6-27-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-15-63	8-23-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-31-63	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	8-3-65	3-12-65

Total number of pending applications (excluding Designs)	194, 565
Total number of Design applications pending	4, 290
Total number of applications awaiting action (excluding Designs)	142, 127
Total number of Design applications awaiting action	2, 504
Date of oldest new application awaiting action	March 4, 1963
Date of oldest amended application awaiting action	June 27, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during January 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents ..... Numbers 2,492,944 to 2,496,255, inclusive

Plant Patents ..... Numbers 911 to 918, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	8-6-64	5-22-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	9-2-64	9-24-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-22-64	6-18-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3-5-65	11-14-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	11-16-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-8-64	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE KARL ZIEGLER, HEINZ BREIL, EBHARD HOLZKAMP AND HEINZE MARTIN

No. 7613. Decided July 28, 1966

[53 CCPA —; 363 F.2d 885; 150 USPQ 551]

1. INTERFERENCE—PATENT AND APPLICATION—PRIORITY OF INVENTION—RULE 204(b).

"* * * the Examiner acknowledged that appellants' showing of an earlier date for species within the genus of the patent claims effectively met the requirements of Rule 204(b) with respect to a prima facie showing, undoubtedly on the basis of the well settled proposition, set out in *Kyrides* v. *Andersen*, 28 CCPA 1336, 121 F.2d 514, 50 USPQ 131, that proof of priority as to a single species is enough to defeat an opposing interferant once an interference reaches the stage that only questions of priority and questions ancillary thereto can be considered."

2. SAME—SAME—CLAIMS COPIED FROM PATENT MUST BE PATENTABLE TO APPLICANT—RULES 201(b) AND 205(a)—35 U.S.C. 102(g).

"We cannot agree with appellants' interpretation of Rules 201(b) and 205(a) or that any impossible or unreasonable burden is being placed on appellants. In requiring that claims copied from a patent be patentable in the application, Rules 201(b) and 205(a) are manifestly calling only for a showing that the claims are patentable to appellants on the record without regard to the inter partes question of priority which can be determined only through interference proceedings. Appellants appear to argue that the patentability requirement of 201(b) and 205(a) encompasses a consideration of 35 U.S.C. 102(g) but such is clearly incorrect. The Patent Office has long required that claims be patentable to the parties before an interference will be instituted. This practice was favorably commented upon by the Supreme Court in *Brenner* v. *Manson*, 383 U.S. 519, 528 n. 12, 148 USPQ 689, 693 n. 12. The order of establishing patentability and priority is, we think, clearly within the rule making powers of the Commissioner as granted by 35 U.S.C. 6. See *Geophysical Development Corp.* v. *Coe*, 136 F.2d 275, 58 USPQ 50, cert. den. 320 U.S. 760, 59 USPQ 495. Certainly it is not unreasonable nor contrary to statute to spare a patentee the task of defending an interference * * * a complicated and frequently lengthy factual inquiry, *Brenner* v. *Manson*, supra, until the potential adverse party has shown that the claims on which he seeks to be involved in interference will be allowable to him if he prevails in the interference."

3. APPLICATION—BENEFIT OF FILING DATE OF EARLIER APPLICATION—35 U.S.C. 120.

"As the case comes to us, the only issue to be decided is the propriety of the rejection of the appealed claims under 35 U.S.C. 102(e) in view of Anderson. On the record, appellants' '059 application shows priority with respect to Anderson's filing date only as to the methanol species. Appellants do not even assert that the disclosure of the methanol species of their '059 application entitles them to the benefit under section 120 of its filing date for the *generic* claims in issue. Accordingly, we must *affirm* the Board's decision that the claims in issue are unpatentable over the disclosure of Anderson under 35 U.S.C. 102(e). Our decision, however, is not to be interpreted as ruling appellants are barred from obtaining an interference with Anderson if they present claims which can meet the strictures of Rule 205(a) as well as the other pertinent rules and appropriate practices developed thereunder. See *Tollé* v. *Starkey*, 45 CCPA 979, 255 F.2d 935, 18 USPQ 292; MPEP § 1101.02."

APPEAL from the Patent Office. Serial No. 218,527.

AFFIRMED.

Burgess, Dinklage & Sprung, Arnold Sprung for appellants.

Joseph Schimmel (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*.

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1–8 in appellants' application [1] entitled "Purification of Olefin Polymers." No claim has been allowed.

Appellants' invention relates to the purification of polyethylene, obtained by polymerization using a "Ziegler" catalyst, by washing with a C_1–C_4 alkanol. When polymerizing ethylene utilizing a "Ziegler" catalyst, a certain portion of the catalyst component may be retained in the polyethylene as an impurity. In accordance with the invention, this is washed out with the lower alcohol.

Claims 1–8 stand rejected as fully met (35 U.S.C. 102) by Anderson et al. (Anderson), United States Patent No. 3,012,023, filed January 25, 1955, issued December 5, 1961, the patent from which the rejected claims were copied in order to provoke an interference.

Claims 1 and 7 are illustrative [2] and read:

1. In a process for preparing normally solid polyethylene by polymerizing ethylene in an inert hydrocarbon liquid medium and in the presence of an initiator which supplies groups having an element of the class consisting of titanium and zirconium attached directly to the polymer, said initiator being the product obtained by admixing a component containing a member of the class consisting of titanium and zirconium, attached to a group of the class consisting of -oxyhydrocarbon and -halide, with a second component having -hydrocarbon attached directly to metal, said metal being of the class consisting of alkali metals, alkaline earth metals and aluminum, the improvement which comprises removing such groups from the polymer molecule by reaction with an alkanol having from 1 to 4 carbon atoms per molecule.

7. In a process for preparing hydrocarbon polymers by polymerization in the presence of an initiator which supplies metal-containing groups to the polymer, said initiator being the product obtained by admixing a component containing a member of the class consisting of titanium and zirconium, attached to a group of the class consisting of -oxyhydrocarbon and -halide, with a second component having -hydrocarbon attached directly to metal, said metal being of the class consisting of alkali metals, alkaline earth metals and aluminum, the improvement which comprises removing such groups from the polymer molecule by means of a reactant which is capable of splitting metal-hydrocarbon bonds, said metal being a member of the class consisting of titanium and zirconium said reactant being of the class consisting of oxygen, water, and alcohols of the formula $C_nH_{2n+1}OH$ wherein n is a number from 1 to 4 inclusive.

Appellants rely on their applications Serial No. 469,059 (hereinafter '059), filed November 15, 1954, having an alleged convention date of November 17, 1953 for compliance with the requirements of Rule 204(b). The '059 application discloses washing polyethylene with methanol to remove the catalyst component. It was the Examiner's position that the disclosure of methanol alone was insufficient to support the generic claims copied from Anderson and thus appellants were not entitled to the benefit, under 35 U.S.C. 120, of the filing date of the '059 application as to such generic claims. That being so, the Examiner held the claims unpatentable over Anderson and further stated that an interference with that patent was not in order since

[1] K. Ziegler, A. Breil, E. Holzkamp, and H. Martin, Ser. No. 218,527, filed August 22, 1962.

[2] All claims are generic as to the recited alkanol.

apellants had not met the requirements of Rules 201(b) and 205(a) [3] that the copied claims be "allowable" or "patentable" in the application before an interference is instituted. This court's decision in *In re Rogoff*, 46 CCPA 733, 261 F.2d 601, 120 USPQ 185, was cited as authority for the Examiner's position.

[1] At the same time, the Examiner acknowledged that appellants' showing of an earlier date for species within the genus of the patent claims effectively met the requirements of Rule 204(b)[4] with respect to a prima facie showing, undoubtedly on the basis of the well settled proposition, set out in *Kyrides* v. *Anderson*, 28 CCPA 1336, 121 F.2d 514, 50 USPQ 131, that proof of priority as to a single species is enough to defeat an opposing interferant once an interference reaches that stage that only questions of priority and questions ancillary thereto can be considered.[5]

The Board of Appeals affirmed the Examiner on the authority of *In re Gemassmer*, supra. Appellants seek to distinguish *Rogoff* and *Gemassmer* by contending that Rules 201(b) and 205(a) "* * * must be interpreted to read that *save* for the patent with which interference is sought the claim should otherwise be allowable to the applicant." Unless this gloss is placed on Rule 205(a), according to appellants, a ridiculous situation exists whereby an interference could never be declared between a patent and a later filed application. Appellants state their position this way:

> * * * [T]he Examiner's position *reducto ad absurdum* could be stated:
>
> (*a*) A claim must be allowable to an applicant before it can be put in interference with a patent.
>
> (*b*) A claim copied from a patent for interference purposes is not and cannot be allowable to an applicant unless or until he has been successful in the interference sought with the patentee.
>
> (*c*) As the instant applicants have not yet been successful in interference with the patent, the claim at this time is not allowable to them.
>
> (*d*) Thus the interference cannot be declared.

[2] We cannot agree with appellants' interpretation of Rules 201(b) and 205(a) or that any impossible or unreasonable burden is being placed on appellants.[6] In requiring that claims copied from a patent be patentable in the application, Rules 201(b) and 205(a) are manifestly calling only for a showing that the claims are patentable to appellants on the record without regard to the inter partes question of priority which can be determined only through interference proceedings. Appellants appear to argue that the patentability requirement of 201(b) and 205(a) encompasses a consideration of 35 U.S.C. 102(g) but such as clearly incorrect. The Patent Office has long required that claims be patentable to the parties before an interference will be instituted. This practice was favorably commented upon by the Supreme Court in *Brenner* v. *Manson*, 383 U.S. 159, 528 n. 12, 148 USPQ 689, 693 n. 12. The order of establishing patentability and priority is, we think, clearly within the rule making powers of the Commissioner as granted by 35 U.S.C. 6. See *Geophysical Development Corp.* v. *Coe*, 136 F.2d 275, 58 USPQ 50, cert. den. 320 U.S. 760, 59 USPQ 495. Certainly it is not unreasonable nor contrary to statute to spare a patentee the task of defending an interference, * * * a complicated and frequently lengthy factual inquiry," *Brenner* v. *Manson*, supra, until the potential adverse party has shown that the claims on which he seeks to be involved in interference will be allowable to him if he prevails in the interference.

[3] As the case comes to us, the only issue to be decided is the propriety of the rejection of the appealed claims under 35 U.S.C. 102(e) in view of Anderson. On the record, appellants' '059 application shows priority with respect to Anderson's filing date only as to the methanol species. Appellants do not even assert that the disclosure of the methanol species in their '059 application entitles them to the benefit under section 120 of its filing date for the *generic* claims in issue.[7] Accordingly, we must affirm the Board's decision that the claims in issue are unpatentable over the disclosure of Anderson under 35 U.S.C. 102(e). Our decision, however, is not to be interpreted as ruling appellants are barred from obtaining an interference with Anderson if they present claims which can meet the strictures of Rule 205(a) as well as the other pertinent rules and appropriate practices developed thereunder. See *Tolle* v. *Starkey*, 45 CCPA 979, 255 F.2d 935, 118 USPQ 292; MPEP § 1101.02.

AFFIRMED.

SMITH, *J.*, concurs in the result.

[3] Rules 201(b) and 205(a), at the time in question here, read in pertinent part as follows:

> 201(b) An interference * * * will be * * * declared between pending applications for patent * * * and unexpired original * * * patents, of different parties, when such applications and patents contain claims for substantially the same invention which are allowable in all of the applications involved, in accordance with the provisions of the regulations in this part.
>
> 205(a) Before an interference will be declared with a patent, the applicant must present in his application, copies of all the claims of the patent which also define his invention and such claims must be patentable in the application. * * *

[4] Rule 204(b), at the time in question here, read as follows:

> When the filing date or effective filing date of an applicant is subsequent to the filing date of a patentee, the applicant, before an interference will be declared, shall file an affidavit that he made the invention in controversy in this country, before the filing date of the patentee, or that his acts in this country with respect to the invention were sufficient under the law to establish priority of invention relative to the filing date of the patentee, and, when required, the applicant shall file an affidavit of the nature specified in [Rule] 131 setting forth facts which would prima facie entitle him to an award of priority relative to the filing date of the patentee.

[5] Concerning that proposition, we stated in *In re Gemassmer*, 51 CCPA 726, 319 F.2d 539, 138 USPQ 229:

> In interferences, our consideration is limited to priority of invention and matters ancillary thereto and the question of patentability is not before us. No interference is in progress in connection with the present ex parte appeal and the issue is simply whether the Latourette et al. patent has been overcome as a reference. * * *

[6] It is true that the basis for the holding of unpatentability in *Rogoff* was improper broadening of claims in a reissue application rather than nonpatentability over the patent with which interference was being sought, but that difference has no effect on the principle involved. Moreover, *Gemassmer* involved a situation directly analogous to the present since the rejection there was on the basis of anticipation of the claims by the very patent with which interference was sought on the basis that an application antedating that patent's filing date did not provide adequate disclosure to support the appealed claims.

[7] The date of the '059 application being earlier than Anderson's filing date, there is no need here to consider the still earlier filed foreign application of appellants although its existence has not been overlooked.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,584,413, Baer and Concannon, CLEANING AND POLISHING COMPOSITION, filed Nov. 25, 1966, D.C., Mass. (Boston), Doc. 66-844-J, *Glamour Care, Inc.* v. *Stanley P. Wender et al.*

2,609,836, G. S. Knox, CONTROL HEAD AND BLOW-OUT PREVENTER, filed Oct. 1, 1965, D.C., E.D. Tex. (Tyler), Doc. 4499, *Hydril Company et al.* v. *Crossman Engineering Co., Inc. et al.* Claims 2, 3, 10, 11, 12 and 13 of Patent No. 2,609,836 held valid and infringed; defendants enjoined Nov. 21, 1966.

2,625,335, R. Atwood, TEXTILE SPOOL DRIVING CONNECTION; 2,953,317, Atwood and L'Allemand, SPOOL; 3,051,411, same, TEXTILE BOBBIN; 3,095,161, same, ANTI-SLOUGHING BOBBIN; 3,107,867, same, SLIP SLEEVE TEXTILE BOBBIN; 3,132,817, same, TEXTILE BOBBIN AND DRIVE SHAFT THEREFOR, filed Nov. 21, 1966, D.C., S.D.N.Y., Doc. 66/3966, *Gretener, A.G.* v. *Dyson-Kissner Corporation.*

2,633,251, J. K. Bruce, PALLETIZER, filed Nov. 10, 1966, D.C., E.D. Mo. (St. Louis), Doc. 66C395(2), *Production Aids, Inc.* v. *Crown Cork & Seal Co., Inc.*

2,641,378, H. E. Wilt, HAND-POWERED TOOL FOR UPSETTING HOLLOW RIVETS, filed Nov. 28, 1966, Ct. Cls., Doc. 406-66, *B. F. Goodrich Co.* v. *The United States.*

2,642,679, F. J. Zamboni, ICE RINK RESURFACING MACHINE, filed Nov. 16, 1966, D.C., N. Dak. (Fargo), Doc. 4242, *Frank J. Zamboni* v. *The City of Grand Forks, North Dakota.* Notice of dismissal without prejudice Dec. 7, 1966. Same, filed Dec. 7, 1966, D.C., N. Dak. (Fargo), Doc. 4246, *Frank J. Zamboni* v. *The City of Grand Forks, North Dakota et al.*

2,649,674, H. L. Bartelt, PACKAGING MACHINE, filed Aug. 17, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1373, *Bartelt Engineering Co., Inc.* v. *Pneumatic Scale Corp. Limited et al.* Cause dismissed pursuant to stipulation Nov. 18, 1966.

2,710,649, Griswold and De Haven, COMBINATION SHOULDER AND LAP SAFETY BELTS, filed Nov. 16, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66-1836-TC, *Volvo, Inc.* v. *Cummings & Sander, Inc.*

2,721,148, R. R. Reading, SPRAY DEVICE FOR RETREADING TIRES AND THE LIKE USES; 3,026,045, same, SPRAY DEVICE, filed Nov. 16, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66-1827-IH, *Ralph R. Reading* v. *Goodyear Tire & Rubber Co.* Same, filed Nov. 18, 1966, D.C., C.D. Calif. (Los

Angeles), Doc. 66–1851–R, *Ralph R. Reading* v. *Firestone Tire & Rubber Co.* Same, Doc. 66–1852–R, *Ralph R. Reading* v. *Gen'l Tire & Rubber Co.*

2,728,156, C. F. Wandell, Jr., HOLDER FOR TEXTILE PRINTING, filed Sept. 29, 1964, D.C.N.J. (Trenton), Doc. 910–64, *Artex Hobby Products, Inc.* v. *Tri-Chem, Inc.* Case dismissed Nov. 9, 1966.

2,731,925, T. Carvel, ONE-PIECE BARREL END AND DISPENSER TIP; Des. 167,443, same, COMBINATION COVER AND DISPENSING FAUCET, filed May 10, 1965, D.C., W.D.N.Y. (Buffalo), Doc. 11,411, *Dari-Freeze Stores, Inc.* v. *Chester J. Jablonski.* Order of dismissal Nov. 4, 1966.

2,742,327, T. Marks, FULLY AUTOMATIC MACHINE FOR MAKING BRUSHES, filed Nov. 17, 1966, D.C., S.D.N.Y., Doc. 66/3913, *American Technical Machinery Corp.* v. *Eckmar Corporation.* Same, filed Dec. 2, 1965, D.C., S.D.N.Y., Doc. 65/3671, *American Technical Machinery Corp.* v. *Krdin and Canton, Inc.* Consent judgment; defendant enjoined Nov. 18, 1966. Same, filed Mar. 21, 1966, D.C., E.D.N.Y., Doc. 66C–235, *American Technical Machinery Corp.* v. *Living Aluminum, Inc.* Consent judgment for injunction Nov. 21, 1966.

2,742,462, G. Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, filed Nov. 26, 1966, D.C., W.D. Wash. (Seattle), Doc. 6969, *The Norwich Pharmacal Company* v. *Herbert W. Beaverstone.* Same, filed Dec. 6, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66–1947–F, *The Norwich Pharmacal Company* v. *Julius Goldman's Egg City.* Same, Doc. 66–1948–FW, *The Norwich Pharmacal Company* v. *Ryckebosch & Sons.*

2,768,479, L. Zweig et al., ABRADING MACHINE, filed Feb. 4, 1966, D.C., S.D.N.Y., Doc. 66/359, *Zweig Bros.* v. *Davicon, Inc.* Stipulation and order of discontinuance Nov. 1, 1966.

2,772,419, M. Silverstein, LADIES' UNDERGARMENT, filed Sept. 29, 1965, D.C., S.D.N.Y., Doc. 65/2912, *Murray Silverstein* v. *Milco Undergarment Co., Inc. et ano.* Stipulation and order of dismissal with prejudice as to defendants and dismissing counterclaims Nov. 25, 1966.

2,780,864, J. L. Kleinman, SHAVING IMPLEMENTS; 2,787,053, same, SHAVING IMPLEMENT HAVING RECIPROCATING CUTTERS IN A PIVOTALLY CONNECTED HEAD AND WASTE COLLECTING MEANS; 2,822,610, same, SHAVING IMPLEMENT HAVING A FRICTIONAL MOTOR COMPARTMENT COVER, filed Feb. 10, 1964, D.C., S.D.N.Y., Doc. 64/441, *Jacob L. Kleinman* v. *North American Philips Company, Inc.* Stipulation and order dismissing action Nov. 10, 1966.

2,781,453, D. J. Belcher et al., METHODS AND APPARATUS FOR DETERMINATION OF CHARACTERISTICS OF MATTER IN A SURFACE LAYER, filed Apr. 27, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c739, *Cornell Research Foundation, Inc.* v. *Nuclear-Chicago Corporation.* Order of dismissal with prejudice Nov. 28, 1966.

2,787,053. (See 2,780,864.)

2,795,258, M. J. Berry, BAG, filed Mar. 25, 1966, D.C., S.D.N.Y., Doc. 66/872, *Fashioncraft-Excello* v. *Baby Bliss, Inc. et ano.* Stipulation and order of discontinuance Nov. 28, 1966.

2,811,882, J. Hess, LUGGING DISC FOR STRAINER WIRE, filed Nov. 18, 1966, D.C., S.D. Tex. (Houston), Doc. 66–H–797, *Houston Well Screen Company* v. *Mustang Well Supply Corporation.*

2,815,399, F. A. Harte, Jr. et al., TRAY OR SUPPORT THEREFOR, filed Nov. 25, 1963, D.C., E.D. Mich. (Detroit), Doc. 24648, *Francis A. Harte, Jr. et al.* v. *Retracto-Tray, Inc. et al.* Judgment in favor of defendants and dismissing case with prejudice Nov. 23, 1966.

2,822,610. (See 2,780,864.)

2,831,609, Montbriand and Montpetit, LIQUID DISPENSING APPARATUS, filed Feb. 17, 1965, D.C. Minn. (Minneapolis), Doc. 4–65/44, *Bar-Boy, Inc. et al.* v. *McPherson Enterprises, Inc. et al.* Consent judgment for injunction against defendant A. A. & W. Tool Co.; stipulation of dismissal as to remaining defendants Nov. 22, 1966.

2,835,791, M. A. Horwitz, RECESSED LIGHTING FIXTURE ASSEMBLY; 3,099,404, J. Kaufman et al., RECESSED LIGHTING FIXTURES, filed Feb. 2, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c204, *Markstone Manufacturing Co.* v. *Lithonia Lighting, Inc. et al.* Pursuant to stipulation, complaint dismissed without prejudice Nov. 15, 1966.

2,842,072, G. O. Graves, FOOD PROCESSING MACHINE, filed Nov. 23, 1962, D.C., W.D. Mo. (Kansas City), Doc. 14152–2, *Michiana Mills* v. *Kell-Dot Industries, Inc. et al.* Finding for defendants Nov. 17, 1966.

2,852,639, M. G. Nelsen, RELAY; 2,962,804, same, METHOD OF ASSEMBLING A RELAY, filed May 31, 1966, D.C. Del. (Wilmington), Doc. 3214, *Struthers-Dunn, Inc.* v. *Leach Corporation.* Plaintiff dismisses cause with prejudice Nov. 7, 1966.

2,864,112, A. T. Nielsen, STREET SWEEPER BRUSH AND HOLDER, filed Nov. 14, 1966, D.C., E.D. Mich. (Detroit), Doc. 29195, *Newark Brush Company* v. *Jenkins Equipment Co., Inc. et al.*

2,867,324, G. Hirs, FILTER APPARATUS; 2,867,325, same; 2,867,326, same, filed Nov. 14, 1966, D.C., M.D. Fla. (Tampa), Doc. 66–389–T, *Gene Hirs et al.* v. *De Laval Turbine, Inc. et al.*

2,867,325. (See 2,867,324.)

2,867,326. (See 2,867,324.)

2,876,985, Birchall and Purdy, ROTARY VALVES FOR LABORATORY GLASSWARE AND THE LIKE, filed Nov. 15, 1966, D.C.N.J. (Newark), Doc. 1149–66, *Mercer Glass Works, Inc.* v. *Fischer & Porter Co.*

2,885,824, J. H. Lemelson, SOUNDING JUMPING TOY; 2,962,837, same, TOY GUN CONTAINING RICOCHET NOISE MECHANISM; 3,064,389, same, SOUND PRODUCING MECHANISM, filed Nov. 28, 1966, D.C. Conn. (New Haven), Doc. 11,711, *Jerome H. Lemelson* v. *Sears, Roebuck & Co. et al.*

2,891,223, M. Dolin et al., COAXIAL LINE ATTENUATOR, filed June 7, 1966, D.C., S.D. Ind. (Indianapolis), Doc. IP66–C–272, *Applied Research, Inc.* v. *Texscan Corporation.* Stipulation and final consent judgment—patent held valid and infringed; defendant enjoined Nov. 18, 1966.

2,895,821, E. R. Redmond, PROCESS FOR REFINING BLISTER COPPER, filed Mar. 25, 1960, D.C. Ariz. (Phoenix), Doc. 3–297 Phx., *Brian Jackson Associates, Inc. et al.* v. *San Manuel Copper Corporation.* Claims 1 and 3 of Patent No. 2,895,821 held infringed by defendant (notice Nov. 21, 1966).

2,899,242, G. Bombardier, ENDLESS TREAD FOR MOTOR DRIVEN VEHICLES, filed Nov. 23, 1966, D.C., E.D. Mich. (Detroit), Doc. 29263, *Bombardier Snowmobile, Ltd.* v. *Lakeshore Amusement Company (Inc.).*

2,953,317. (See 2,625,335.)

2,962,804. (See 2,852,639.)

2,962,837. (See 2,885,824.)

3,026,045. (See 2,721,148.)

3,051,411. (See 2,625,335.)

3,064,389. (See 2,885,824.)

3,095,161. (See 2,625,335.)

3,099,404. (See 2,835,791.)

3,107,067. (See 2,625,335.)

3,132,817. (See 2,625,335.)

3,146,330, R. G. Miller, TOGGLE SWITCH LEVER MOUNTING, filed Oct. 14, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–680, *Cutler-Hammer, Inc.* v. *Lucerne Products, Inc.* Consent decree—patent held valid and infringed; license agreement which limits defendant's use of invention; defendant enjoined from any other use; defendant's counterclaim dismissed Nov. 9, 1966.

Re. 25,560, R. T. Gifford, METHOD OF MAKING A RIGID RESILIENT TIPPED NEEDLE VALVE ELEMENT, filed Mar. 17, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–207, *Vernay Laboratories, Inc.* v. *Industrial Electronic Rubber Co. (Inc.).* Stipulation and order dismissing complaint and counterclaims with prejudice Nov. 18, 1966.

Des. 167,443. (See 2,731,925.)

REISSUES

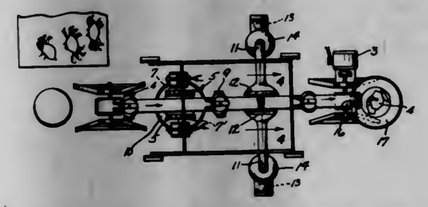
JANUARY 10, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,136
APPARATUS FOR REMOVING MEAT FROM CRABS

Michael Roesman, 11724 Lovejoy St., Silver Spring, Md. 20902

Original No. 3,249,962, dated May 10, 1966, Ser. No. 489,622, Sept. 23, 1965. Application for reissue June 22, 1966, Ser. No. 562,977
9 Claims. (Cl. 17—2)

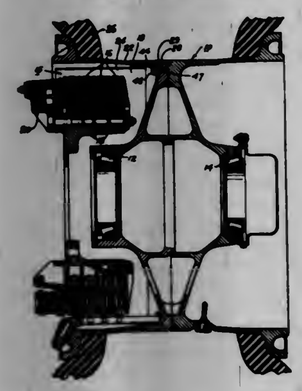


8. An apparatus for removing the meat from crab bodies, including in combination, a driven conveyor means, a plurality of crab receiving means in spaced relation carried by said conveyor means, crab holding means at each crab receiving means, means for cutting the claws, paddles, and crawling fingers from the body of the crab, means for sucking the meat from the body cavities of the held crab, and means for releasing the holding means to permit the crab body to fall from the conveyor means.

26,137
SAFETY DEVICE FOR AIRCRAFT WHEELS

George E. Stanton, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Original No. 3,201,174, dated Aug. 17, 1965, Ser. No. 821,754, June 22, 1959. Application for reissue Sept. 27, 1965, Ser. No. 492,354
5 Claims. (Cl. 301—5)

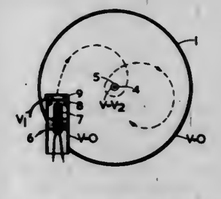


4. In an aircraft wheel having a rim with a tubeless tire mounted thereon and a brake disposed within the confines of said rim, *at least one opening formed in said wheel and extending through said rim and exposed to atmospheric pressure at a location within a central portion of the wheel,* a safety device *mounted in said opening* [responsive] *to respond* to a combination of pressure and temperature to deflate said tire [mounted on said rim], said safety device comprising a stem [extending through the rim of said wheel] *received in said opening,* means removably securing said stem in sealing engagement with said [rim] *opening,* means defining a passage extending through the length of said stem and [opening] *communicating* at one end to the interior of said tire and at another end to the atmosphere, and a charge of metal eutectic fuse material having a sharply-defined melting point range received within said passage and formulated to reach a dischargeable liquid-solid condition under temperature and pressure combination conditions which are productive of tire failure to deflate the tire to atmospheric pressure and within a time period preceding tire burst.

26,138
IONIC VACUUM PUMPS

Dennis Gabor, London, England, assignor to Edwards High Vacuum International Limited, Crawley, England

Original No. 3,118,077, dated Jan. 14, 1964, Ser. No. 68,183, Nov. 9, 1960. Application for reissue Jan. 4, 1966, Ser. No. 523,833
9 Claims. (Cl. 313—7)



6. An ionic vacuum pumping device comprising an outer electrode having a surface of gettering material and a rotationally symmetric wall defining a space adapted to contain gas molecules, said electrode being adapted to be maintained at a negative potential to serve as an ion collector, a second electrode within said space adapted to be maintained at a positive potential to serve as an anode so that a radial electric field is established between said outer electrode and said anode, and means for producing ionizing electrons comprising an electron source positioned to direct electrons emitted by said source tangentially with respect to said outer electrode whereby the electrons are caused by said radial electric field to travel in extended paths within said space notwithstanding that said device does not comprise means applying any strong magnetic field across said space.

26,139
MOUTHPIECE FOR DOUBLE REED MUSICAL INSTRUMENTS

Charles L. Roberts, Box 325, Chamberlain, S. Dak. 57101

Original No. 3,152,506, dated Oct. 13, 1964, Ser. No. 315,217, Oct. 10, 1963. Application for reissue Mar. 31, 1966, Ser. No. 544,652
10 Claims. (Cl. 84—383)

1. In a mouthpiece for a double reed instrument,

(a) an elongated body having an intermediate portion providing spaced parallel planar reed-supporting surfaces,

(b) a tubular stem on the inner end of said body adapted to telescopically receive the staple of said instrument,

(c) said stem and said intermediate body portion defining a longitudinally extended passageway therethrough,

(d) a pair of laterally spaced rail elements projecting longitudinally outwardly from the said intermediate body portion, one on each side of said passageway and having opposite side surfaces which are coplanar with and form extensions of the planar surfaces of said intermediate body portion,

(e) a tie-bar connecting the extreme outer ends of said rail elements and cooperating with said intermediate body portion, said rail elements and a pair of reeds



supported on said planar surfaces to provide a tone chamber,

(f) said tie-bar intermediate said rail elements being formed to define laterally outwardly opening notches which cooperate with the reed elements supported on said planar surfaces to define longitudinally extended air passages between said tone chamber and atmosphere, and

(g) ligature means longitudinally inwardly of said tone chamber for clamping the inner end portions of reed elements supported on said planar surfaces to said body.

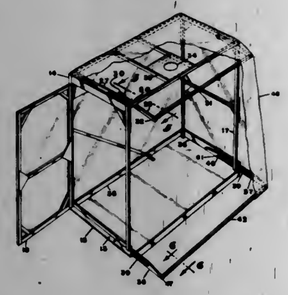
26,140

COLLAPSIBLE ICE SHELTER

John Schoenike, 147 8th St., Clintonville, Wis. 54929

Original No. 3,157,185, dated Nov. 17, 1964, Ser. No. 125,819, July 21, 1961. Application for reissue Oct. 24, 1965, Ser. No. 505,078

11 Claims. (Cl. 135—4)



1. In a collapsible shelter for ice fishing having a sled mounted floor section the combination of; a first frame section having the bottom edge thereof in hinged connection with one edge of the sled floor; a second frame section having one edge in hinged connection with the top edge of the said first frame section; a third frame section in hinged connection with the opposite end of the said second frame section; a lower extension means extending outwardly from one side of the sled floor and having an opening therein; top extension means coextensive with said lower extension means and extending outwardly from the said second frame section; and a flexible covering enveloping the outside of the structure aforesaid.

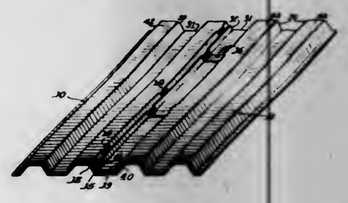
26,141

SIDE LAP VAPOR VENT

John S. Hickman, Shorewood, Wis., assignor to Inland Steel Products Company, Milwaukee, Wis., a corporation of Delaware

Original No. 3,208,189, dated Sept. 28, 1965, Ser. No. 49,466, Aug. 15, 1960. Application for reissue Nov. 8, 1965, Ser. No. 507,083

13 Claims. (Cl. 52—534)



10. A concrete form comprising a plurality of adjacent metal sheets;

each sheet having longitudinal trough-shaped portions parallel to a pair of opposite side edges;

the outermost trough-shaped portion along each of said pair of side edges defining a terminal side portion of the sheet;

at least one of said outermost trough-shaped portions lapping and nesting with at least a portion of an outermost trough-shaped portion of an adjacent sheet;

each outermost trough-shaped portion having an upwardly and outwardly inclined outer side wall terminating as one of said side edges;

a bottom wall extending tranversely of said side edge as a continuation of the lower portion of the outer side wall to define the base of said respective outermost trough-shaped portion and an upwardly and inwardly inclined inner side wall extending as a continuation of said respective bottom wall and to a position at least above a plane containing said side edges;

a plurality of top walls extending transversely of said side edges connecting said trough-shaped portions;

each of said upwardly and outwardly inclined outer side walls having venting and spacing means projecting away therefrom;

said venting and spacing means being located at spaced intervals along the extent of said outer side wall;

the inner side wall of each of said outermost trough-shaped portions being substantially smooth and free of said venting and spacing means for substantially the length of the respective outermost trough-shaped portions;

whereby said spacing means on said outer side wall on the first of said nested trough-shaped portions abuts said inner side wall of said remaining nested trough-shaped portion and said spacing means on said outer side wall of said remaining trough-shaped portion abuts the inner side wall of said first trough-shaped portion thereby defining a transverse moisture-venting passageway between the nested and lapped outermost trough-shaped portions of adjacent sheets.

26,142

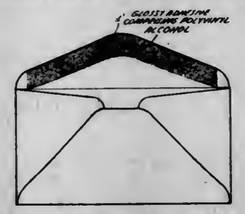
ENVELOPES AND THE LIKE WITH REMOISTENABLE ADHESIVE COMPRISING POLYVINYL ALCOHOL

Setrak Krikor Boyajian, P.O. Box 973, Worcester, Mass. 01601

Original No. 2,804,395, dated Aug. 27, 1957, Ser. No. 378,683, Sept. 4, 1953. Application for reissue June 9, 1959, Ser. No. 818,990

17 Claims. (Cl. 117—44)

6. As an article of manufacture, paper having on one side thereof a glossy layer of remoistenable adhesive coating composition having as its essential ingredient polyvinyl alcohol which has been boiled in aqueous solution for a time sufficient to give it a lustrous, structurally stabilized, integrated, homogenized, quicker adherent, non-jelling and free-flowing while in cooled solution, more resistant to humidity, more responsive to applied moisture,



clearer, smoother, stronger, and more flexible film-forming, and quicker-drying, character.

PATENTS

GRANTED JANUARY 10, 1967

GENERAL AND MECHANICAL

3,296,626
VENTILATED RAINWEAR
Stanley W. Ludwikowski, P.O. Box 20962, Pico Heights Station, Los Angeles, Calif. 90006
Filed Jan. 27, 1965, Ser. No. 428,428
7 Claims. (Cl. 2—87)



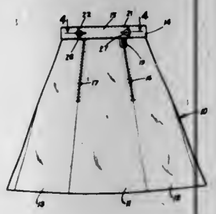
1. A two-piece garment for wear during rainy weather consisting of a coat-like upper piece supported from the shoulders of the wearer and a lower piece supported by and depending from the waist of the wearer, said upper piece partly overlapping said lower piece and having louvred egress vents in the upper front portion thereof; each of said garment pieces having an outer covering of essentially moisture-impermeable material; shape-retaining air-circulating distender means attached inside said outer covering of said lower piece in the areas which normally make said supporting contact with the body of the wearer and in the area which is overlapped by said upper piece; and a plurality of vent means in the areas adjacent said distended portions of said outer covering for the ingress of fresh air and the egress of body-heated air from the space between said outer covering and the body of the wearer.

3,296,627
GARMENT CONSTRUCTION
Ralph L. Beard and James Fred Hester, Winston-Salem, N.C., assignors to Hanes Corporation, Winston-Salem, N.C., a corporation of North Carolina
Filed June 30, 1965, Ser. No. 468,539
1 Claim. (Cl. 2—113)



A garment collar edge construction, comprising: a knitted fabric body portion having an edge defining a neck opening; an elongate strip-form collarette member of constant width extending along said edge in a closed endless configuration to frame said opening, said collarette member comprising an elongate strip of rib knitted material of constant width folded upon itself along a first fold line so as to form a doubled layer of material, said doubled layer of material being folded along a second fold line parallel to said first fold line to form first and second double layers, said collarette member being mounted on said fabric body portion so as to have the double layers of said second fold extend from said edge continuously straight along opposite faces of said fabric body portion and so as to have said edge extend along said second fold line immediately adjacent thereto, said first fold line being located at the extreme end of the first double layer formed by said second fold and opposite the extreme end of the second double layer formed by said second fold; and at least one row of stitching parallel to said folds and to said edge, and penetrating successively said first double layer, said fabric body portion, and said second double layer, said double layers being secured to said fabric body portion only by said row of stitching.

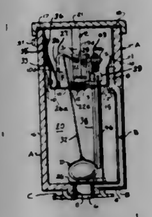
3,296,628
REVERSIBLE GARMENTS
Arline J. Collins, 1510 E. Minnehaha Parkway, Minneapolis, Minn. 55417
Filed July 17, 1964, Ser. No. 383,412
1 Claim. (Cl. 2—211)



A reversible garment having two different fabric faces and adapted to be worn with either fabric face outermost,

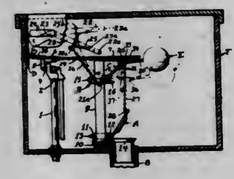
(A) a pair of laterally spaced apart plackets incorporated into said garment,
(B) each of said plackets presenting a finished appearance from both sides,
(C) said plackets being located symmetrically relative to the central longitudinal axis of said garment,
(D) each of said plackets extending generally longitudinally of the garment and enclosing a single elongated zipper-type slide fastener garment closure means,
(E) each of said slide fastener closure means being adapted for operation from only one fabric face of said garment by virtue of each fastener being provided with a pull tab adapted to extend outwardly for grasping by the wearer's fingers when in use in operating the closure means, the pull tab of one of said slide fasteners being on the same side of the garment as one of the fabric faces and the pull tab of the other of said slide fasteners being on the same side as the other fabric face of the garment whereby only one of the slide fastener pull tabs is readily accessible on the outside of the garment regardless of which fabric face is outermost,
(F) one of said plackets being incorporated into the garment for operation of its closure means from the outside of the garment and at a predetermined location relative to the body of the wearer when worn with one fabric face outermost,
(G) the other of said plackets being incorporated into the garment for operation of its closure means from the outside of the garment and at the same predetermined location when worn with the other fabric face outermost and
(H) one of said closure means normally remains closed while the other is used for ingress to and egress from said garment.

3,296,629
FLUSHING MECHANISM FOR DRY TANK WITH BUILT IN OVERFLOW PASSAGE
Charles J. Clark, 18584 Carlwyn Drive, Castro Valley, Calif. 94546
Filed July 13, 1964, Ser. No. 381,999
3 Claims. (Cl. 4—19)



1. The combination with
(a) a toilet flush tank having a built in overflow passage communicating with a water outlet; the water outlet having a water entrance opening lying substantially flush with the inner surface of the bottom tank wall;
(b) a water inlet pipe for said tank and communicating with a source of water under pressure;
(c) a water inlet valve for said pipe for controlling the flow of water through said pipe and entering said tank;
(d) means including a swingable rod for closing the inlet valve when the rod is swung upwardly, said means swinging the rod downwardly when the water pressure opens the valve;
(e) a flap valve for closing said water outlet for said tank and being pivotally mounted on the inner surface of the tank bottom wall;
(f) a frame disposed within and supported by said tank;
(g) a member pivotally carried by said frame and above said flap valve and being swingable from a raised to a lowered position;
(h) a flexible connection between said member and said flap valve for holding said flap valve open when said member is in raised position;
(i) yielding means for holding said member in raised or lowered position;
(j) interconnecting means carried by said member and engaging with said rod when the member is raised, for holding the rod in raised position for keeping the inlet valve closed against the water pressure;
(k) hand-operated means for swinging said member into lowered position for permitting said flap valve to close said water outlet and for causing said interconnecting means to free said rod and permit the inlet valve to open due to water pressure and to swing said rod downwardly; and
(l) a float operatively connected to said member and raised by the water entering said tank for swinging said member into raised position and causing said interconnecting means to swing said rod upwardly and close said inlet valve when the water level in the tank reaches a predetermined point;
(m) said member when in raised position causing said flexible connection to open said flap valve and permit water to flow from the tank and out through said water outlet.

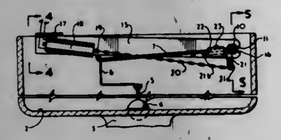
3,296,630
TOILET TANK FLUSHING MECHANISM
Charles J. Clark, 18584 Carlwyn Drive, Castro Valley, Calif. 94546
Filed May 22, 1964, Ser. No. 369,474
2 Claims. (Cl. 4—19)



1. The combination with
(a) a toilet flush tank;
(b) a water inlet pipe for the tank and communicating with a source of water under pressure;
(c) a water inlet valve for the water inlet pipe for controlling the water entering the tank;
(d) means including a swingable rod for closing the inlet valve when the rod is swung upwardly, said means swinging the rod downwardly when the water pressure opens the valve;
(e) a water outlet pipe for the tank and having a valve seat at its entrance end;
(f) a non-flexible flush valve pivotally mounted adjacent to said valve seat and adapted to swing into closed position to cover the valve seat;
(g) a member pivotally mounted in said tank above said flush valve and being swingable from a raised to a lowered position;
(h) a flexible connection between said member and said flush valve for swinging said flush valve into open position when said member is in raised position;
(i) yielding means for holding said member in raised position;
(j) a roller carried by said member and engaging with the underside of said rod when the member is raised, for holding the rod in raised position for keeping the inlet valve closed against the water pressure;
(k) hand-operated means for swinging said member into a lowered position for permitting said flush valve to close and for causing said roller to move away from said rod and permitting the inlet valve to open and to swing said rod downwardly;
(l) a stop attached to said water outlet pipe and positioned in the path of said swingable rod for limiting further swinging movement of said member into its lowered position when said member contacts with the stop;
(m) said yielding means holding said member in contact with said stop when said hand-operated means is freed; and
(n) a float operatively connected to said member and raised by the water entering said tank for swinging said member into raised position and causing said roller to swing said rod upwardly and close said inlet valve when the water level in the tank reaches a predetermined point;

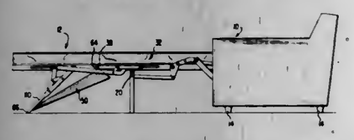
(o) said member when in raised position causing said flexible connection to swing said flush valve open and permit water to flow from the tank and out through said outlet pipe.

3,296,631
FLUSHING ACTUATOR FOR A TOILET BOWL TANK
Llewellyn E. Pickett and John Albert Collett, Port Credit, Ontario, Canada, assignors, by mesne assignments, to Palleon Electronics Limited, Cornwell, Ontario, Canada, a corporation of Canada
Filed Feb. 14, 1964, Ser. No. 344,940
7 Claims. (Cl. 4—249)



1. An electrically operated flushing mechanism for installation in a conventional flush toilet tank comprising
an elongated mounting bracket having
a notch in one end and
a tab extending laterally near the other end;
a solenoid secured to said bracket near the tab-carrying end;
a bell crank for attachment to the tank's flushing lever; and
a flexible member connecting said solenoid and said bell crank.

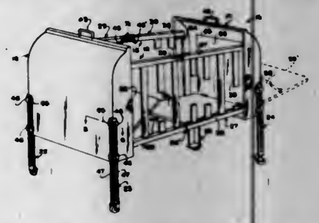
3,296,632
SOFA BED IMPROVEMENTS
Frank D. Hoffman, Jr., High Point, N.C., assignors to Lambeth Designs, Inc., High Point, N.C., a corporation of North Carolina
Filed Dec. 3, 1965, Ser. No. 511,512
20 Claims. (Cl. 5—13)



12. In combination with a sofa bed or the like including a frame foldable between a retracted position for use as a sofa and an extended position for use as a bed, a bed spring on the frame, and a mattress on the bed spring; a deck including a resilient deformable body and a stretchable skin covering and enclosing said body such that upon stretching of said skin said deck body will be compressed in thickness, means attaching said deck to said frame for movement therewith between a first position located on said mattress when said mattress and frame are in folded retracted position and a second position below said frame when the frame is in extended position, said means being such that upon movement of said deck into said first position thereof said skin will stretch and compress said deck body in thickness.

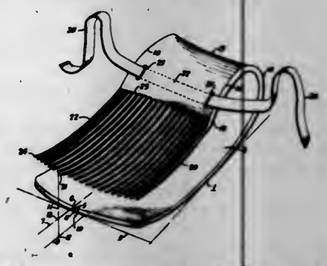
3,296,633
PORTABLE COLLAPSIBLE COMBINATION CRIB AND PLAY PEN
Jack Rieger, 333 W. 56th St., New York, N.Y. 10006
Filed Feb. 5, 1965, Ser. No. 430,609
6 Claims. (Cl. 5—99)

1. In a crib and the like, first and second open box structures positioned in horizontally spaced relation, with their mouth rims opposite each other; the first box structure serving as the head end and the second box structure serving as the foot end of the crib, first and second opposite, spaced, vertical side wall structures, each extending into both of said box structures and each hingedly connected at its ends to said box structures; said hinge connections being equi-distant from the mouth rim in each box structure; each side wall structure comprising two hingedly connected sections in horizontal extension of each other; the axes of all said hinge connections being vertical; each side wall structure being foldable inwardly of the crib, the lengths of the sections of the first side wall structure being unequal; the lengths of the sections of the second side wall structure being respectively equal to the lengths of the first side wall structure; the longer section of each of said side wall structures being opposite the shorter section of the other side wall structure; each section being longer than half the distance between the side wall structures when said latter structures are parallel, means on each of said wall structures for



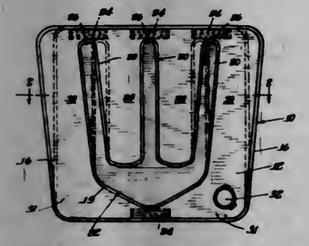
releasably holding its sections in horizontal extension of each other, bottom wall structure extending into both box structures and positioned between the side wall structures; the ends of the bottom wall structure being hingedly connected to the respective box structures; said bottom wall structure comprising two separate sections having meeting edges between said box structures; said bottom wall sections resting on ledges on said side wall structures and swingable upwardly into said box structures respectively; the mouth rims of said box structures being substantially identical in size and shape, and in parallel vertical planes respectively, whereupon first swinging the sections of the floor structure upwardly into the respective box structures, then releasing the sections of the side wall structures for relative movement and then moving said box structures together, their mouth rims will be in abutment in vertical plane and said box structures will form a closed casing housing said floor sections and the folded side wall structures, and means on said box structures for releasably holding the casing in closed condition.

3,296,634
HEAD REST
Thomas L. Rusnak, Box 38, Hawk Run, Pa. 16840
Filed June 8, 1965, Ser. No. 462,350
8 Claims. (Cl. 5—336)



1. A head rest to support the head free of the hair consisting of a base which extends forwardly with a loop that projects upwardly and back over said base to provide a top in overlying spaced relation with said base, comb tine means included in said top to engage the head when extending through the hair about the back of the head and allowing the hair to be suspended between said base and said top, and said base having a transversely convexly curved under surface to permit said base and said top to roll sideways with the head of the wearer.

3,296,635
INFLATABLE SEAT CUSHION
Joseph Treacy O'Hanlan, 220 Rosser Ave., Waynesboro, Va. 22980
Filed Nov. 17, 1964, Ser. No. 411,891
8 Claims. (Cl. 5—348)



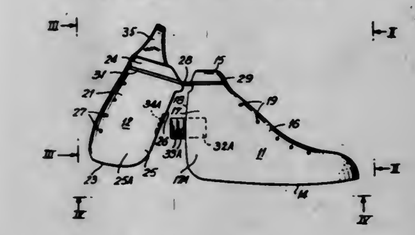
1. A fluid inflatable cushion for a supporting seat adapted to the shape of the seat and to the shape of the buttocks and thighs of the occupant of the seat and including fluid inlet and fluid stopper means, said cushion comprising: a top and a bottom sheet of elastomeric fluid impervious material being joined together at their peripheral edges to form a forward and rear edge and two sides edges; a noninflatable area within said cushion comprising a pair of fingers and a palm, said fingers having forward tips, said fingers being of predetermined width and extending longitudinally toward the forward edge of said cushion, said palm being of relatively greater width than said fingers extending transverse the seat intermediate the sides and rearwardly of the fingers to permit bearing contact of the thighs and buttocks of the occupant downwardly on the seat; and a plurality of transversely extending tubes positioned between the sheets forwardly of said fingers intermediate the tips of said fingers and the forward joined edge of said cushion, said tubes being of relatively more rigid material than the balance of said cushion and a plurality of said tubes being positioned rearwardly of said palm intermediate the palm and the rear edge of said cushion, said tubes permitting a free flow of fluids from one inflatable portion of the cushion to another.

3,296,636
BUOYANCY RING
Bernhard Markwitz, Brodersweg 9–10, Hamburg, Germany
Filed Nov. 18, 1964, Ser. No. 412,172
Claims priority, application Germany, Apr. 3, 1964, M 47,800
4 Claims. (Cl. 9—340)



1. A buoyancy ring particularly suitable as a swimming aid comprising, in combination, an inflatable ring of tubular cross section having an inner layer and an outer layer of flexible material which define a ring when deflated having an axial dimension with respect to the axis of the ring at least one eighth the peripheral dimension of the deflated ring, a non-inflatable portion defined on said ring having a flattened configuration generally disposed parallel to the ring axis, means for introducing a gas into the space defined between said layers, the peripheral dimension of said ring being such as to permit said ring to snugly encompass a limb of the wearer upon inflation of the ring, and said non-inflatable portion being of such peripheral dimension as to underlie the inner side of the wearer's limb to prevent interference with the movement thereof.

3,296,637
DISPOSABLE SHOE TREE DEVICE
Nathan Fleisig, 1727 Gerritsen Ave., Brooklyn, N.Y. 11229
Filed Feb. 3, 1966, Ser. No. 524,923
6 Claims. (Cl. 12—115.6)



1. A shoe tree device, comprising
a toe portion having a lower edge in the shape of the border of the sole of a shoe, an upper part, a front intermediate part in the shape of the front of a shoe between the lower edge and the upper part and a back intermediate part between said lower edge and said upper part having a back edge;
a heel portion having a lower edge in the shape of the border of the heel of a shoe, an upper part, a back part in the shape of the back of a shoe between the lower edge and the upper part and a front part between said lower edge and said upper part having a front edge;
coupling means pivotally coupling said toe portion and said heel portion, said coupling means comprising a flexible plastic strip affixed at one end to said toe portion at the upper part thereof and affixed at its opposite end to said heel portion at the upper part thereof; and
adjusting means for adjusting the positions of said toe and heel portions relative to each other, said adjusting means being spaced from said coupling means and comprising first components affixed to said toe portion at the back intermediate part thereof and second components cooperating with said first components and affixed to said heel portion at the front part thereof.

3,296,638
BRIDGE DEVICES
Jean Morlon, Bourg-la-Reine, France, assignor to Ste Commerciale Paulstra, Levallois-Perret (Seine), France, a society of France
Filed Apr. 17, 1964, Ser. No. 360,654
Claims priority, application France, Apr. 24, 1963, 932,575
6 Claims. (Cl. 14—16)

1. A device for bridging the space between a first and a second pier comprising:
(a) a beam located above the piers and having a longitudinal axis extending between the said two piers,
(b) a first bearing member fixed to the first pier and having an at least partially cylindrical portion, a first rigid member fixed to the beam above the bearing and having an at least partially cylindrical portion

matable with and resting upon the said at least partially cylindrical portion of the first bearing, and an at least partially cylindrical resilient bushing mounted between the said at least partially cylindrical portion of the bearing and the matable portion of the said first rigid member,

(c) a second bearing member fixed to the second pier and a third bearing member fixed to the beam above the second bearing member, said second and third bearing members having at least partially cylindrical portions,

(d) a rigid link having at least partially cylindrical upper and lower ends located between and matable with the at least partially cylindrical portions of the third bearing member and the second bearing member respectively, and an at least partially cylindrical



resilient bushing mounted between each of said at least partially cylindrical portion of the second and third bearings and the respective corresponding mating end of the rigid link,

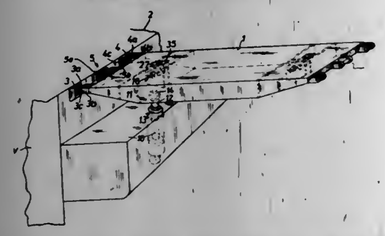
wherein the axes of the at least partially cylindrical portions, members and bushings are substantially perpendicular to the said longitudinal axis in the absence of a force applied to displace one pier relative to the other, whereby when one pier moves obliquely in horizontal plane relative to the other pier the said at least partially cylindrical portion of the first rigid member and the said ends of the link turn relative to the adjacent coresponding resilient bushings and bearings to compress opposite sides of the said resilient bushings against opposite sides of the adjacent corresponding bearings, thereby providing limited freedom of horizontal oblique movement of the first pier with respect to the second pier.

3,296,639

COUPLING ARRANGEMENT FOR PLATFORMS, ESPECIALLY OF AMPHIBIOUS BRIDGING AND FERRYING VEHICLES

Rudolf Pawlus, Mainz, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany

Filed Dec. 9, 1964, Ser. No. 416,992
Claims priority, application Germany, Dec. 10, 1963, K 51,577
2 Claims. (Cl. 14—27)



1. In combination with a body adapted to float, especially an amphibious vehicle: a platform hingedly connected to said body, hoisting means arranged on said body below the top surface of said platform, said hoisting means having a reciprocable member adapted to engage said platform from below, said reciprocable member forming first coupling means and being provided with a first coupling bore therethrough, second coupling means provided with a second coupling bore adapted to be moved into substantially axial alignment with said first coupling bore, coupling bolt means reciprocably supported by said platform and in substantially axial alignment with said second coupling bore, rotatable shaft means rotatably journalled in said platform and extending downwardly therefrom, said shaft means having a polygonal head, sleeve means surrounding said polygonal head and slidably engaging the same so as to be rotatable with said shaft means, arm means connected to said sleeve means and provided with indexing means, said platform being provided with recesses within the range of said indexing means for engagement thereby in two definite positions of said arm means, spring means continuously urging said sleeve means upwardly to thereby urge said indexing means into engagement with the recess means in alignment therewith, said spring means yieldably supporting said sleeve means to thereby permit withdrawal of said indexing means from said recess means in response to the pressure exerted by a pressure socket pressed onto said polygonal head, and means operatively connected to said shaft means and operable in response to the movement of said indexing means from one of said two definite positions to the other one of said two definite positions and vice versa to move said coupling bolt means through said second coupling bore into said first coupling bore and out of said first coupling bore to thereby respectively establish and interrupt coupling engagement between said hoisting means and said platform.

3,296,640

METHOD AND APPARATUS FOR ERECTING A BRIDGE STRUCTURE

Wilbur C. Gunn, 1643 S. Gunn Road, Holt, Mich. 48842

Filed Nov. 17, 1965, Ser. No. 508,322
4 Claims. (Cl. 14—77)



1. In erection of a bridge span the steps comprising:

(a) positioning a pre-fabricated bridge span into a horizontal stationary placement resting on the ground directly below, and laterally oriented in vertical register with, the horizontal position to be occupied by the span upon completion of said bridge;

(b) guidably driving support members vertically into the ground through pre-selected support points established by the bridge span whereby entry to the ground surface is proximate to said support points;

(c) vertically elevating the assembled span in control by said support members toward the top of the support members; and

(d) securing the assembled span to the support members at a final selected horizontal load bearing position.

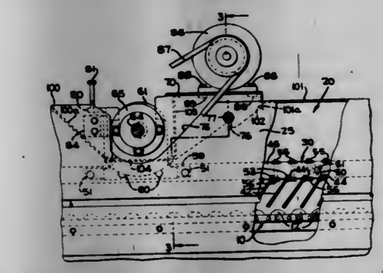
3,296,641

EGG WASHER

Boyd W. Rose and Harold J. Mumma, Riverside, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Original application Sept. 28, 1962, Ser. No. 226,994, now Patent No. 3,252,607. Divided and this application Oct. 13, 1965, Ser. No. 495,542
1 Claim. (Cl. 15—3.13)

In an egg processing machine, a washer having a housing defining an egg washing chamber, a conveyor movable through said housing to carry a plurality of eggs through said washing chamber, means for subjecting eggs on said conveyor to cleaning fluid in said chamber, a support frame having a first portion pivotally mounted on the upper end of said housing, a plurality of bristle units mounted on said frame for movement relative thereto along a predetermined path in said chamber closely adjacent the conveying surface of said conveyor to engage



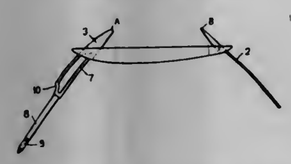
eggs on said conveyor, a drive unit mounted in said frame and connected to said brush units for moving said units along said path, and adjusting means supporting a portion of said frame that is spaced from said first portion, actuation of said adjusting means being effective to pivot said frame and raise or lower said brush units relative to said conveying surface.

3,296,642

COSMETIC BRUSHES

Eric Victor Aylott, Welwyn Garden City, England, assignor to Eylure Limited, Welwyn Garden City, England, a British company

Filed Apr. 1, 1965, Ser. No. 444,574
1 Claim. (Cl. 15—185)



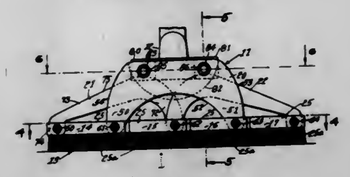
A folding cosmetic brush comprising a channel shaped body member having a bottom wall and two side walls which project at each end beyond the bottom wall; a brush flap pivoted to the body member at one end of the body member between the protecting side walls and including a handle section which is relatively thick, a brush holder which is relatively thin, a step portion joining the handle section to the brush holder and a brush projecting axially at the end of the brush holder; the brush flap being angularly displaceable on its pivot from an open position in which the brush is ready for use to a closed position in which the brush and brush holder are disposed within the channel shaped body member with the brush lying along the channel and in which the handle section of the brush flap is disposed between the walls of the body member and is substantially flush with the top surface of the walls; a cover flap including a cover terminating in a free end, the said cover flap being pivoted to the body member at the end of the channel opposite the pivot of the brush flap and between the protecting side walls, said cover flap being angularly displaceable on its pivot from an open position to a closed position in which the free end of the cover flap seats against said step portion in the brush flap so that the brush is fully protected; an extension on the brush flap projecting outwardly beyond the end of the side walls of the body member to abut against the botom to act as a stop when the brush flap is in its fully open position and an extension on the cover flap projecting outwardly beyond the end of the side walls of the body member to abut against the bottom to act as a stop when the cover flap is in its fully open position.

3,296,643

SWIMMING POOL BRUSH

Ray Fortune, 9240 Enico Ave., Northridge, Calif. 91324

Filed Nov. 5, 1964, Ser. No. 409,172
8 Claims. (Cl. 15—201)



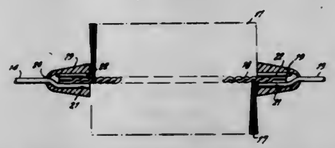
3. A swimming pool brush, including: a series of four independent brushes arranged in end to end alignment, separate means pivotally interconnecting contiguous ends of the brushes, a bracket secured to the pivotal means at spaced points to provide fixed pivotal points for pairs of the brushes, and links pivotally secured to the outermost ends of the outermost brushes and secured to the pivotal means connecting contiguous ends of the innermost brushes whereby a tipping in either direction of the outermost brushes relative to the fixed pivotal means secured to the bracket produces a tipping movement between the innermost brushes.

3,296,644

WIRE CORE BACK BRUSH ASSEMBLY

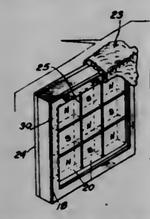
Sidney Weisberg, Maplewood, N.J., assignor to Worthy Products Corp., New York, N.Y., a corporation of New York

Filed Mar. 10, 1966, Ser. No. 533,162
4 Claims. (Cl. 15—206)



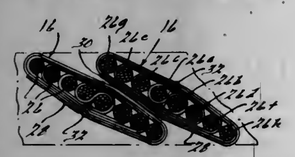
1. A back brush comprising a plurality of brush members each consisting of a twisted core and bristle members radially extending from the said core and secured thereto, said wire core extending axially outwardly beyond the bristles at each end of the said brush, a flexible link interconnecting adjacent brushes, a first set of hollow conical members overlying each end of the wire core and the end of the adjacent flexible link, a securing means carried within the first set of hollow conical members in frictional engagement with the end of the core and the link whereby each core is secured to a link, a flexible handle member secured to each end of the linked together brushes, a second set of hollow conical members overlying each end of the wire core and the end of the adjacent handle member, a securing means carried within the second set of hollow conical members in frictional engagement with the end of the core and the handles whereby the cores are secured to the handle members and a looped portion on the free end of each of the handle members.

3,296,645
APPARATUS FOR CLEANING WINDOWS
Melvin Shore, 2720 W. Summerdale, Chicago, Ill. 60625
Filed Dec. 5, 1963, Ser. No. 329,609
2 Claims. (Cl. 15—220)



1. Magnetic window cleaning apparatus comprising a pair of self-contained magnetic units adapted to be positioned on either side of a windowpane opposite one another for remote-control cleaning of one of the window surfaces, each of said units comprising a frame, multiple generally rectangular magnetic elements secured to said frame, a connecting plate for magnetically connecting together said magnetic elements, each of said magnetic elements of each of said two units being oriented so that when the apparatus is in operating position one of the poles of that element is positioned adjacent the windowpane to provide an inner pole face, and the other pole of that element is positioned away from the windowpane to provide an outer pole face, said connecting plate engaging the outer poles of said elements to magnetically connect them together, the generally rectangular magnetic elements of one of said units being oriented and arranged with their inner pole faces in a checkerboard-type alignment, whereby inner pole faces of one polarity lie adjacent to inner pole faces of the opposite polarity, the magnetic elements of the other unit being oriented and arranged so that when the apparatus is in operating position the inner pole faces of these elements have polarities opposite to those of the inner pole faces, respectively, of the magnetic elements of said first unit which are positioned opposite from them, means separating said adjacently disposed elements to reduce any neutralizing effect at the corners of said elements, whereby when the apparatus is operated each of the magnetic elements is located opposite from an element of opposite polarity and the resultant structure provides substantially sustained multi-directional magnetic connection between the units, and window cleaning means attached to one of said units.

3,296,646
BUFFING WHEEL
Dan D. Bizovi, 8171 New Bradford Blvd., Utica, Mich. 48087
Filed June 1, 1964, Ser. No. 371,298
3 Claims. (Cl. 15—230.16)



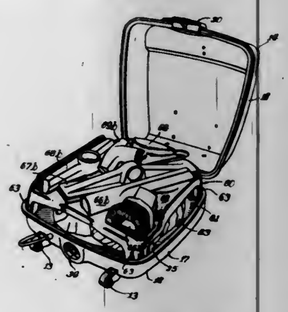
1. A buffing wheel section comprising a central hub, a series of individual finger-like buffing elements affixed at substantially uniformly spaced increments to said hub and extending outwardly therefrom, each of said buffing elements being of a substantially planar rectangular configuration and comprised of a plurality of sisal cords disposed in side-by-side relationship and individually and progressively wrapped by a continuous fabric sheet commencing with a cord disposed centrally of said buffing element and moving progressively and alternately therefrom to the cords at the opposite edges thereof, said buffing elements arranged in mutual partial overlapping relationship along the entire lengths thereof with the next adjacent buffing element, the plane of each said buffing element disposed at an angular inclination of from about 15° to about 45° relative to the plane of the buffing wheel section.

3,296,647
WINDSHIELD WIPER BLADE WITH WASHER ATTACHMENT
James J. Gumbleton, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich, a corporation of Delaware
Filed July 10, 1964, Ser. No. 381,629
5 Claims. (Cl. 15—250.04)



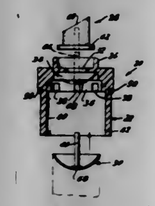
3. A wiper blade assembly including, an elongate squeegee comprising a flexible squeegee having a wiping lip along one edge and a retention portion along the opposite edge, a pressure applying superstructure connected at longitudinally spaced points to said retention portion, a wind deflector of airfoil cross section attached to said pressure applying superstructure, said wind deflector having a liquid distributor tube along its inboard edge with a plurality of longitudinally spaced apart spray orifices therein, and conduit means for supplying pressurized liquid solvent to said distributor tube for delivery through said spray orifices onto a surface to be cleaned.

3,296,648
VACUUM CLEANER WITH INTERNAL ACCESSORY TOOL CARRIER
Harold W. Schaefer, Bloomington, Ill., assignor to National Union Electric Corporation, Stamford, Conn., a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,794
4 Claims. (Cl. 15—323)



1. In a suction cleaner of the canister type including a casing having a generally rectangular cross-sectional configuration, and normally disposed horizontally during use of the cleaner, said casing comprising upper and lower casing sections, an upright motor-fan unit mounted on said lower casing section, and filter bag mounting means supported on said lower casing section for mounting a filter bag within said casing the improvement which comprises a removable internal tool carrier comprising a generally rectangular tray portion having a size such as to extend substantially fully across the interior of said casing in all directions and to substantially enclose the top of said lower casing section, leg portions depending from the corners of said tray portion and freely engaging said lower casing section for removably supporting said tray portion in said casing in overlying relation above said motor-fan unit and above said filter bag, when the latter is installed on said mounting means, and means on the upper surface of said tray portion for receiving and retaining cleaning tools thereon, the height of said leg portions being such that said tray portion is disposed in spaced relation above said motor-fan unit and above said filter bag, when the latter is installed on said mounting means, and such that said tray portion and said tools when mounted thereon are disposed in spaced relation below said upper casing section when the casing is closed, whereby said carrier and said tools are completely contained within the closed casing but are readily removable as a unit when the casing is open.

3,296,649
SEALED APPLICATOR
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Oct. 20, 1964, Ser. No. 405,191
15 Claims. (Cl. 15—566)



1. A fluid applicator comprising a retainer ring having a tubular projecting portion, a resilient dauber head secured to said ring, said ring having an opening therein, a valve member for closing said opening and including a valve stem extending through said opening and engaging said head, said valve member being initially compressed under stress engaging one part of said ring to primarily seal said opening so that upon depression of said head, said valve member is pushed out of engagement with said one part of said ring allowing said valve member to expand, said head when released resiliently urging said valve member against another part of said ring to secondarily seal said opening.

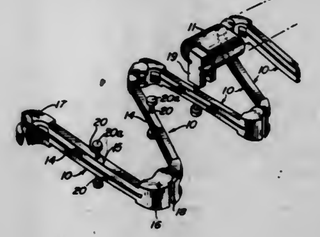
3,296,650
CASTER
Edward E. Emrey, 2128 Harper St., Newberry, S.C. 29108, and Edward M. Emrey, 2339 Chestnut Drive, Doraville, Ga. 30040
Continuation of application Ser. No. 283,748, May 28, 1963. This application Oct. 23 ,1965, Ser. No. 511,273
11 Claims. (Cl. 16—18)

1. A caster comprising a flat substantially rectangular base provided with holes through which screws may pass for securing said base to an object, a horn extending downwardly from said base, said horn having a pair of opposed side edges which taper downwardly and a front surface inclined inwardly and downwardly from the perpendicular with respect to said base, a disk secured to the lower portion of said front surface of said horn along the major diameter of said disk, a shaft disposed essentially perpendicular to said disk and extending forwardly therefrom, a roller rotatably mounted on said shaft, said roller having an inner face provided with an annular ledge concentric with and overlying the periphery of said disk, said roller having a conical periphery such that the lower surface of said periphery is essentially parallel to said base, a pair of spaced bearings mounted on said shaft and carrying said roller, and a spacer sleeve on said shaft between



said bearings, said spacer sleeve being provided with an annular groove along its inside surface, said shaft being provided with a passageway from one end thereof inwardly, said passageway communicating with said annular groove, said sleeve being provided with an opening between said bearings and communicating with said annular groove.

3,296,651
DRAPERY SUPPORT
George H. Baker, Dunlap, Ill. (% Baker Drapery Studio, 2126 N. University, Peoria, Ill. 61604)
Filed Dec. 16, 1964, Ser. No. 418,760
9 Claims. (Cl. 16—87.4)

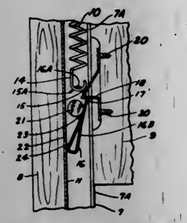


1. In combination with a drapery and supporting rod, a drapery support comprising: a plurality of elongated drapery folding plates hinged together in end to end relation; means suspending said drapery folding plates from said rod for longitudinal movement along said rod and for rotation with respect to said rod; means for hanging the drapery from said plates; and means on said plates for receiving said last named means so that said drapery is slidable longitudinally with respect to said plates.

3,296,652
ANCHOR FOR SASH BALANCER
James G. Perry, 12981 Capital Ave., Oak Park, Mich. 48237
Filed May 21, 1965, Ser. No. 457,729
4 Claims. (Cl. 16—197)

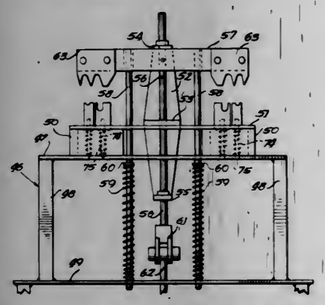
1. An anchor for a removable sash balancer spring positioned in the channel of a window weather strip, comprising the combination of a roller and a body member having an inverted V shaped portion and a straight portion, said V shaped portion having a cut out therein for receiving a hook formed on said spring and the end of a bracket carried on said sash, said straight portion having an extension bent at an angle with respect to the back

wall of said weather strip so as to form a wedging angle for said roller, said extension having a lip at the free end



and being inclined toward the back wall of said weather strip for holding said roller out of wedging position when the weight of the sash is on the body.

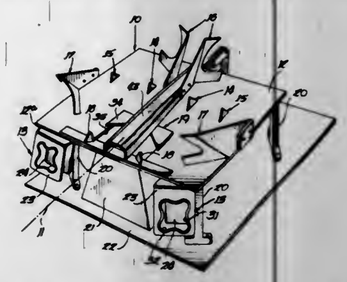
3,296,653
APPARATUS FOR USE IN REMOVING MEAT FROM POULTRY WINGS
Asa B. Segur, 1185 S. Ridgeland Ave., Oak Park, Ill. 60302
Original application Sept. 3, 1963, Ser. No. 306,042, now Patent No. 3,233,282, dated Feb. 8, 1966. Divided and this application Apr. 27, 1965, Ser. No. 451,291
6 Claims. (Cl. 17—11)



1. In an apparatus for removing the skin and meat from poultry appendages, a clamping device having upper and lower jaws comprising parallel vertical plates mounted for relative movement towards and away from each other along separate and adjacent vertical planes, said jaws having a pair of opposing recesses for receiving and clampingly engaging a skeletal component of a poultry appendage extending substantially normal to the planes of said plates to hold said appendage securely in place as meat is stripped therefrom, means operatively associated with one of said jaws for moving the same towards and away from the other of said jaws, and spring means operatively associated with said other of said jaws and urging the same in a direction towards said one of said jaws for limiting the extent of clamping force exertable by said jaws upon a poultry appendage when said jaws are closed.

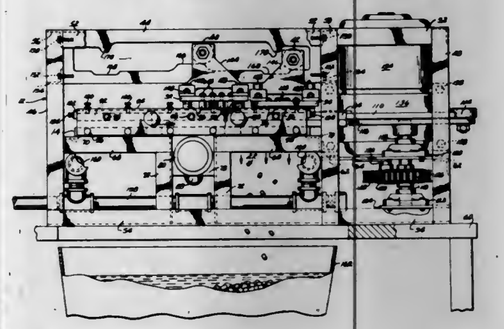
3,296,654
APPARATUS FOR REMOVING MEAT FROM POULTRY WINGS
Asa B. Segur, 1185 S. Ridgeland Ave., Oak Park, Ill. 60302
Original application Sept. 3, 1963, Ser. No. 306,042, now Patent No. 3,233,282, dated Feb. 8, 1966. Divided and this application Oct. 1, 1965, Ser. No. 492,250
10 Claims. (Cl. 17—11)

1. In an apparatus for removing meat from poultry wings, a generally horizontal platform, a cutting blade projecting upwardly from said platform, and a plowing device mounted upon said platform and spaced horizontally from said blade along the plane of the blade, said plowing device providing an arcuate edge engagable with the skin of a wing section urged horizontally over said



blade to plow said skin laterally and upwardly away from the line of slicing of said skin.

3,296,655
APPARATUS FOR MOLDING COMMINUTED MATERIAL
Frank V. Vidjak, San Pedro, and Peter W. Bynagte, Wilmington, Calif., assignors to Star-Kist Foods, Inc., Terminal Island, Calif., a corporation of California
Filed Aug. 6, 1963, Ser. No. 300,210
8 Claims. (Cl. 17—32)

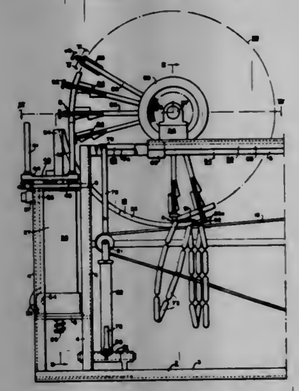


8. Molding apparatus for comminuted material, said apparatus comprising:
- frame and receiving means including an inlet opening and a discharge opening;
- a plate including a plurality of material receiving openings, and reciprocable across said frame and receiving means to bring said material receiving openings into successive registry with said inlet opening and said discharge opening;
- a piston mount adjacent said plate;
- a plurality of pistons carried by said piston mount for vertical reciprocation in said material receiving openings at all times whereby said pistons and said piston mount are movable in common with said plate, and said pistons are always aligned with said material receiving openings;
- drive means for moving said plate;
- and means operatively engageable with said piston mount during movement thereof with said plate to alternately raise and lower said piston mount upon registry of all of said material receiving openings with said inlet and discharge openings, respectively, whereby comminuted material is simultaneously drawn into all of said material receiving openings upon registry thereof with said inlet openings, and simultaneously discharged from all of said material receiving openings upon registry thereof with said discharge opening.

3,296,656
PROCESSING OF SHRIMP AND THE LIKE
James L. Self, 213 Frazer St., Lake Charles, La. 70601
No Drawing. Filed June 2, 1965, Ser. No. 460,813
8 Claims. (Cl. 17—45)

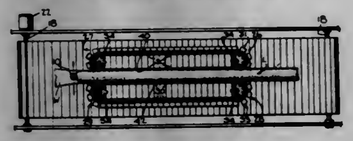
1. The method of deheading and deshelling crustaceans which include chilling the same in a liquid chilling solution to an extent which is sufficient to weaken the joint between the flesh and the shell; and then subjecting the chilled crustaceans to a degree of agitation for a sufficient period which collectively are sufficient to cause complete separation.

3,296,657
METHOD FOR MAKING LINKED PRODUCTS
Charles D. Moekle, Penn Hills Township, Allegheny County, Pa. (10063 Grandview Ave., Pittsburgh, Pa. 15235)
Original application Dec. 24, 1963, Ser. No. 333,148, now Patent No. 3,264,679, dated Aug. 9, 1966. Divided and this application Oct. 19, 1965, Ser. No. 497,796
13 Claims. (Cl. 17—45)



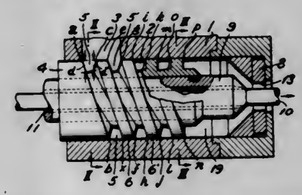
1. The method of forming a stuffed product as a series of integrally-connected links comprising the steps of: rotating a vertically disposed casing about a generally vertical axis, injecting a fluid-like product into the vertically-rotating casing, transporting the stuffed casing in an arcuate path, constricting spaced portions of the rotating stuffed casing at the origin of entry of said arcuate path of travel to effect thereby a twisting action upon the stuffed casing at the points of constriction to thereby produce the links.

3,296,658
MANUFACTURE OF EXPANDED CELLULAR PRODUCTS
Fred Buff, Paramus, N.J., and Marcus French, Hazleton, and Warren N. Pollock, Conyngham, Pa., assignors to General Foam Corporation, New York, N.Y., a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,479
6 Claims. (Cl. 18—4)



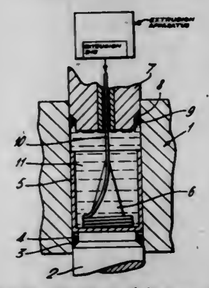
1. Apparatus for the production of molded free-rise polyurethane foamed articles from a liquid reaction mixture, said apparatus comprising a laterally extending conveyor means, said conveyor means including means defining a substantially flat moving surface which moves along a given path and further including means along said path for gradually changing said moving surface from flat to rounded contour in such a manner that the width of the flat portion of said surface becomes narrower by virtue of the formation of arcuate side surfaces on either side thereof, a mixture deposit station located above said flat moving surface, and means at said deposit station for depositing a polyurethane foamed forming liquid reaction mixture uniformly onto said flat moving surface changes from flat to rounded contour.

3,296,659
CROSS-HEAD OF AN EXTRUDER ADAPTED FOR PROVIDING UNIFORM FLOW OF EXTRUDED MATERIAL
Naotaro Okazaki, 72 Hakuraku, Yokohama-shi, Japan
Filed Oct. 13, 1964, Ser. No. 403,457
10 Claims. (Cl. 18—12)



1. A cross head of an extruder comprising a hollow body having an inlet and an outlet, a stationary sleeve in said body, thread means on said sleeve defining with said body a groove constituting a passageway for material from said inlet to said outlet, said thread means having opposite surfaces which bound said groove and which have different lengths as measured from the inlet to the outlet, said opposite surfaces having different depths, the opposite surface with the greater length having the greater depth to establish substantially constant resistance to flow of said material in said passageway whereby uniform flow is obtained therein.

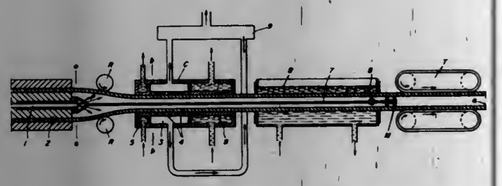
3,296,660
EXTRUSION APPARATUS
Derek Green, Lytham St. Annes, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed July 16, 1965, Ser. No. 472,628
Claims priority, application Great Britain, July 31, 1964, 30,279/64
2 Claims. (Cl. 18—12)



1. Extrusion apparatus comprising an extrusion die having an exit face, means for extruding material through the extrusion die, a pressure resistant chamber having an entrance opening for receiving wire formed by extrusion of material through the die, said entrance opening being in sealed relationship with the exit face of the extrusion die, a fixed guide member within the pressure chamber, said guide member having a means inclined to the direction of extrusion of the wire for forming the wire which contacts, the guide member into a coil in the chamber.

3,296,661
APPARATUS FOR EXTRUDING SUITABLY OUTLINED PARTS MADE OF THERMOPLASTIC SYNTHETIC MATERIAL

Henri de Moustier, Clerval, Doubs, France
Filed Dec. 5, 1963, Ser. No. 328,246
Claims priority, application France, Dec. 7, 1962, 917,938
3 Claims. (Cl. 18—14)



1. In combination with an extruding press for the extrusion of warm hollow bodies of thermoplastic material and having an outlet consisting of a nozzle having a given outer periphery surrounding a punch provided with an opening;

(A) means for passing compressed gas through said opening and into said hollow body as the said body is extruded from said press at a predetermined extrusion speed;

(B) first drawing out means positioned immediately after said nozzle for pulling out and preliminarily shaping said hollow body;

(C) an outline-shaping device having the cross-section to be given to the hollow body and adapted to receive said hollow body coming from said first drawing means and having a first cooling chamber wherein said hollow body is preliminarily cooled; a suction chamber having perforated walls for urging the outer periphery of said hollow body thereagainst and means for applying suction to said chamber; a second cooling chamber for further cooling the hollow chamber;

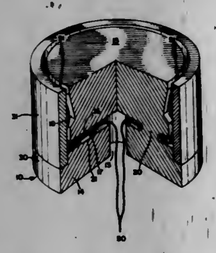
(D) a diaphragm adapted to be removably fitted in the outer end of said hollow body;

(E) means controlled from said nozzle to set said diaphragm into position;

(F) second drawing means for drawing out said hollow body at a speed greater than said extrusion speed so as to obtain an increase in the length thereof.

3,296,662
ANNULAR DIE

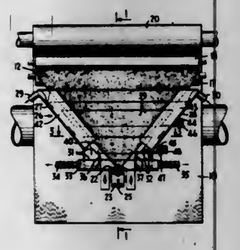
Garland E. Raley, Terre Haute, Ind., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Jan. 27, 1965, Ser. No. 428,409
11 Claims. (Cl. 18—14)



1. An annular die assembly comprising a cup having a cylindrical recess and an aperture centrally positioned within its circular face, and a cylindrical mandrel having a diameter less than the diameter of the recess, the mandrel being supported and disposed within the recess such that a circular face of the mandrel is in proximity to the aperture-containing circular face of the cup thereby forming a uniform horizontally disposed radial flow channel leading to a vertically disposed annular flow channel about the peripheral surface of the mandrel.

3,296,663
ARRANGEMENT FOR GUIDING THE WEB AT THE DISCHARGE SIDE OF THE DOFFER IN CARDING MACHINES

Ferdinand Reiterer, Rueil-Malmaison, France, assignor to Whitin Machine Works, Whitinsville, Mass., a corporation of Massachusetts
Filed June 22, 1964, Ser. No. 376,641
Claims priority, application France, July 3, 1963, 940,199
4 Claims. (Cl. 19—106)

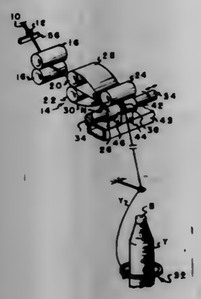


1. In a carding machine including a cylinder upon which a web of fibers is carried, web-detaching means adjacent to the cylinder for removing the web of fibers therefrom, and trumpet means for condensing the web into a sliver, means disposing the trumpet means substantially in a vertical plane which includes the web-detaching means so that the trumpet means receive the web of fibers from the web-detaching means along a substantially vertical path, thereby causing any loose web portions to remain in substantially the same plane as the remainder of the web, pneumatic web guiding means disposed adjacent to the vertical path of the web between the web-detaching means and the trumpet means to facilitate smooth convergence of the web toward the trumpet means, wherein the pneumatic web-guiding means comprises a pair of channel means directed toward the trumpet means in the vertical plane of the web and air supply means for directing a current of air along each channel means toward the trumpet means, and wherein one side wall of each channel means is hingedly mounted so that it may be opened to facilitate threading of the web from the web-detaching means to the trumpet means.

3,296,664
AIR DRAFTING ARRANGEMENT

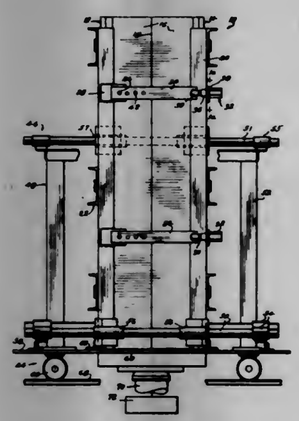
Robert M. Ingham, Jr., Norman E. Klein, and Richard V. Putnam, all of Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Continuation of application Ser. No. 302,211, Aug. 14, 1963. This application Oct. 22, 1965, Ser. No. 507,628
20 Claims. (Cl. 19—288)

1. Textile drafting apparatus comprising: a plurality of drafting rolls including a pair of rolls in nip forming engagement, one roll of said pair of rolls having a cavity therein, means forming a plurality of apertures in the periphery of said one roll of said pair of rolls, said apertures communicating with said cavity, said pair of rolls being the fiber discharge end of said drafting apparatus and means external of and supporting said one roll of said pair of rolls and connected to a negative fluid pressure to pull air into a portion of said apertures, through said cavity, and out another portion of said apertures.



3,296,665
CUT-OFF FOR SPLIT MOLD

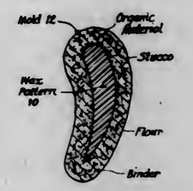
William R. Fenzan, Oak Lawn, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Oct. 29, 1963, Ser. No. 319,722
5 Claims. (Cl. 22—75)



1. Mold apparatus of the character disclosed comprising a support having a pouring opening and movable onto and out of a pouring station in which it is disposed over a pouring tube with said pouring opening in register therewith, a pair of mold parts mounted on the support and relatively movable into and out of interengagement and having a cavity formed therebetween when in interengagement, said mold parts being also movable together as a unit into and out of position with said cavity in register with said pouring opening, a bottom plate having greater heat conductivity than the material of the mold parts forming said cavity interposed between the mold and said support, means for holding down said mold parts in tight engagement with said support while enabling the mold parts to be moved along the support, and power means for moving said mold parts individually and moving the mold parts together as a unit.

3,296,666
METHOD OF PREPARING AN INVESTMENT MOLD FOR USE IN PRECISION CASTING

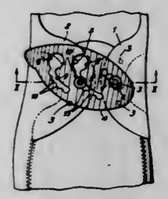
Nick G. Lirones, North Muskegon, Mich., assignor to Howmet Corporation, a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,728
11 Claims. (Cl. 22—196)



1. In the method of producing a mold for use in casting shaped products of metals selected of the group consisting of refractory metals, reactive heavy metals and metals of Group IV*b* of the periodic system, the steps of wetting the surfaces of a heat disposable pattern corresponding to the shape of the product to be molded with a dip coat composition containing a binder component and a finely divided flour, applying a stucco in the form of solid particles to the surfaces of the pattern while wet with the dip coat composition whereby a layer of stucco is retained on the wet surfaces, drying the applied coating, impregnating the dried coating with a fluid composition containing an organic material which is easily thermally decomposed in a non-oxidizing atmosphere to a stable form of a carbonaceous decomposition product when heated to decomposition temperature, repeating the applications of the dip coat composition, stucco and drying followed by impregnation for a number of cycles to form a composite layer of the dip coat, solid and stucco impregnated with the organic material, treating the composite to effect removal of the pattern and providing a mold having a mold cavity shaped to correspond to the pattern that has been removed, heating the mold to a temperature in excess of 800° F. in a non-oxidizing atmosphere to cure the mold and thermally to decompose the organic material in situ in the mold walls to a carbonaceous decomposition product.

3,296,667
ADJUSTABLE SHOE CLOSURE

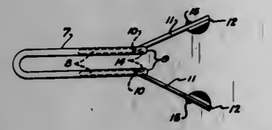
Josef Streule, untere Klus, Brulisau, Switzerland, and Blasius Brot, Nieschbergstrasse 28, Herisau, Switzerland
Filed Mar. 18, 1965, Ser. No. 440,724
7 Claims. (Cl. 24—68)



1. A shoe closure for a shoe having two shoe shank portions, said closure comprising an arched flexible closure shield bridging the two shoe-shank portions and being detachably pivoted to one of said portions so that it is swingable above same, said shield being provided with a plurality of slots spaced from the pivot and being equipped with notches for the engagement of an adjusting stud fixed to the other of said portions, said stud being engageable in one of said notches which defines the instep width of the shoe, said shield being a platelike oblong body made of elastic and flexible material which

gives said shield a self-resilience in the longitudinal direction thereof, the pivot being an axle pin comprising two detachably interconnected parts passing through a lacing eyelet of the shoe shank portion and being provided with a holding plate for holding together said portion and said shield.

3,296,668
CLIP FOR SHEETS AND THE LIKE
Winthrop J. Aiken, 3700 Haines Road, Apt. 2, St. Petersburg, Fla. 33704
Filed Mar. 3, 1965, Ser. No. 436,814
1 Claim. (Cl. 24—72.5)



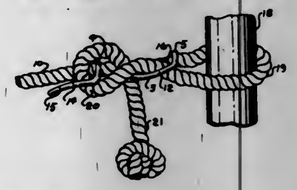
In a clip for bed sheets, blankets, and the like, the combination which comprises a U-shaped sheath having arms with elongated longitudinal recesses in inner surfaces and extended inwardly from an outer open end thereof, said arms being integrally connected at the opposite end of the clip, a pin with ends thereof slidably and pivotally mounted in said elongated longitudinal recesses and with members extended longitudinally of the clip and from the center of said pins, said members terminating in spaced inwardly facing half-spherical rubber knobs, said members also terminating in spaced half-spherical projections on the outer flat surfaces thereof, and the outer ends of the arms of said sheath having a centrally located recess in the inner surface thereof and having a pair of spaced half-spherical depressions that are adapted to receive the said half-spherical projections when said half-spherical knobs are pressed together, such as with the forefinger and thumb of a hand, against a sheet or blanket positioned between the half-spherical knobs and when the said U-shaped sheath covering has been moved forwardly until the said half-spherical projections are aligned with the said half-spherical depressions, and the pressure on the said half-spherical knobs has been released.

3,296,669
LACE OR LINE LOCKING DEVICE
George H. Elder, Jr., Hydes, Md., assignor to The Plykon Corporation, a corporation of Maryland
Filed Apr. 13, 1965, Ser. No. 447,837
5 Claims. (Cl. 24—121)



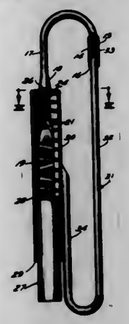
1. A line locking device including a body member, said body member being substantially thicker and wider than the line being retained, said body being provided with a single aperture substantially larger than the line being retained, a resilient line retaining means integral with said body member, said resilient means including at least two pairs of opposing resilient elements having opposed gripping surfaces, each of said pairs of resilient elements being disposed in a generally V-shaped configuration in spaced apart relation, said spaced apart relation of said members defining a frictional line engaging slot, said two pairs being equidistantly spaced from said single aperture, said frictional line engaging slot being adapted to frictionally engage a line inserted therein, said single aperture being larger than the distance between the opposed gripping surfaces of the opposed resilient elements, said generally V-shaped resilient retaining means being pointed away from the direction of the forces tending to pull on the line while frictionally gripping the line retained therein.

3,296,670
ROPE FASTENING DEVICE
Lauren W. Burnett, 2021 Penn, Kansas City, Mo. 64108
Filed July 23, 1965, Ser. No. 474,304
10 Claims. (Cl. 24—131)



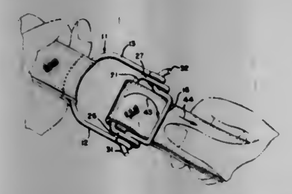
1. A securing device, comprising:
(a) a shaft having a forward and rearward end,
(b) a first eyelet on the shaft at the forward end and having an opening therein,
(c) a second eyelet on the shaft in spaced relation to the first eyelet and the rearward end of the shaft and having an opening substantially aligned with the opening in the first eyelet, and
(d) a laterally offset portion of the shaft between the first and second eyelets, said offset being in a direction opposite from said eyelets and offset from a plane generally through the periphery of said openings,
(e) the rearward end portion of said shaft including a tail portion extending rearwardly from said second eyelet.

3,296,671
SAFETY PIN
Gabriel Pawlowski, 4105 N. Denley Ave., Schiller Park, Ill. 60176
Filed June 9, 1964, Ser. No. 373,699
7 Claims. (Cl. 24—156)



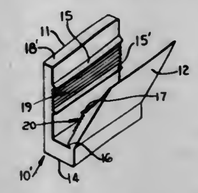
5. A self-closing safety pin comprising:
a U-shaped socket member having a cylindrical socket formed in the end of one leg and having a flared end on the other leg,
a rectangular shank member projecting from said flared end,
said shank being gradually twisted a predetermined distance from said flared end,
a tubular housing having a wall with a rectangular slot formed therein and facing said flared end,
said shank slidably passing through the rectangular slot into said housing,
said rectangular slot being sized complementary with the cross-sectional dimensions of the rectangular shank to turn said shank as the shank twisted portion passes therethrough,
said flared end having a diameter larger than the width of said rectangular slot,
a plunger attached to the shank,
said plunger being slidable in said tubular housing,
a J-shaped pin member having the end of its long leg being pointed and having its short leg connected to said housing such that when the safety pin is in its closed position, the pointed end is within the cylindrical socket,
self-closing means connected to said housing to normally urge said plunger and safety pin into a closing position, and
said spring maintaining said safety pin closed except when its spring force is overcome by a force exerted on said plunger to axially and pivotally move said socket away from said pointed end.

3,296,672
BUCKLING DEVICE AND METHOD
Lew G. Knight, 9 Germack Apartments, Clyde, Calif. 94710
Filed Oct. 19, 1965, Ser. No. 505,304
(Filed under Rule 47(b) and 35 U.S.C. 118)
8 Claims. (Cl. 24—193)



1. A device for securing the lapped first and second sections of a looped flexible member in fixed relation to one another and to said device comprising:
a support having a pair of spaced depending legs;
clamping means having a first transverse member adapted for slidably engaging said first section in a first position, and having a pair of arms depending from said transverse member pivotally connected to said support legs, said first transverse member having a second rotated position clamping said first section against said second section;
a second transverse member adapted for carrying said looped flexible member and having a length spanning said arms of said clamping means and slidably riding along a portion of the length of said clamping means arms from a first position permitting movement of said sections of said flexible member relative to one another to a second position clamping said first section against said first transverse member, and said second transverse member forcing said first transverse member to said second position of said first transverse member thereby restricting relative movement of said lapped sections;
means selectively creating tension in said second section of said looped member so as to move said second transverse member to said second position of said second transverse member;
said first transverse member in said second rotated position exerting a force on said first and second sections as a function of the magnitude of the tension exerted by said means.

3,296,673
PRINTING BLANKET EDGING AND ANCHORING MEANS
Alven D. Kirkpatrick, Westminster Place, Morristown, N.J. 07960
Filed May 4, 1964, Ser. No. 364,457
3 Claims. (Cl. 24—265)



1. An edging for a rubber printing blanket used on an offset printing press, comprising,
a channel having a straight side thicker at its open end than at the juncture, and an outwardly-bent side which is thinner at its open end, in a manner such that the two inner surfaces of the sides are disposed in substantially parallel relation when said bent side is pressed so that the outer side surfaces are substantially in parallel position,
a multiplicity of pointed ridges projecting from the inner surface of one side and designed to bite into but not through said blanket,
at least one similar ridge disposed on the inner surface on the other channel side in off-register relation with respect to those on the opposite side, and
said edging being designed to accommodate an edge of a blanket at said juncture and be anchored to said blanket edge by application of pressure upon the bent side, whereby said bent side is bent into outer substantially parallel relation with said other side.

3,296,674
HOSE CLAMP
Avram M. Meshulam, 15 Linden Terrace, Baltimore, Md. 21208
Filed July 13, 1965, Ser. No. 471,630
2 Claims. (Cl. 24—274)



1. A hose clamp assembly including a circular formed open end band having one end overlapping the other wherein the outer lapped end of the band is provided with transverse slots and means for holding the unslotted end of the band and means for moving the slotted end over the unslotted end, comprising:
(a) the means for holding and moving the band being in the form of a hollow single unit having a length greater than its width, said unit being formed from at least two parts, a lower member and an upper member formed from a rigid sheet-like material of substantially the same thickness;
(b) a spiral threaded screw rotatably mounted longitudinally of the said hollow housing, said screw having an elongated shank portion about which is formed intermediately thereof a spiral thread, bearings about the screw shank and each end of the spiral thread, and a head extending outwardly from one end of the shank portion beyond the adjacent bearing for providing means for connecting the screw to a separate tool for rotating said screw;

(c) the lower member having its central section substantially flat in cross-section and two opposite parallel side sections formed at right angles with and at each side of the flat central section, the width of the central section being such as to slidably receive the ends of the circular band, the inner lapped end of the band being fixedly secured to the central flat section of the lower member, the side sections of the lower member having a step at each end of each of the side sections at a predetermined distance from the plane of the flat section and extending inwardly from then end thereof for a predetermined distance toward the center of the said side sections, the central portion of each of the said side sections extending outwardly beyond said steps for a predetermined distance;

(d) the upper member of the hollow housing unit having a central section of cross-sectional arcuated form having end sections at each end thereof providing journals therein for rotatably receiving the screw bearings and the sides of said upper member each terminating at the lower edge thereof in an outwardly extending lateral section which is provided with an aperture at the junction thereof with the side of said upper member and of such dimensions as to receive the extended portions of the lower side wall said extended portion extending beyond the said steps extending through the said slots, said extended portions being bent outwardly and downwardly into engagement with the upper surface of said outwardly extending lateral sections thereby forcing said lateral sections downwardly into engagement with said steps and securely clamping said lower and upper members together.

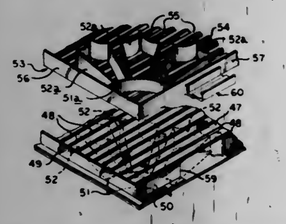
(e) whereby the size of the hollow housing formed between the lower and upper members and the size of the screw and the spiral threads carried thereon, are such as to engage the lateral slots carried by the outer lapped end of the band for moving the band through the housing by rotating the said screw.

3,296,675

APPARATUS FOR MOLDING ORNAMENTAL BUILDING BLOCKS

Dominick Filangeri, 70 Ave. V, Brooklyn, N.Y. 11209

Filed Jan. 27, 1965, Ser. No. 428,336
12 Claims. (Cl. 25—41)



1. In a molding apparatus for ornamental building blocks;

a mold head, said mold head being adapted to be positioned over a mold frame;

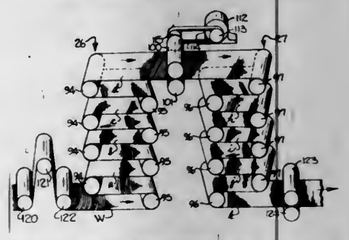
said mold head including a first blade means projecting from the lower face thereof downwardly into said mold frame and defining design compartments within said mold frame, an upper compartmented box for receiving and holding a hardenable plastic mix in separated colors, said compartments being defined by a second blade means projecting upwardly from the bottom of said box, said second blade means having the same configuration as said first blade means and being in superposed alignment therewith, and passageway means connecting each of the compartments of said box with its corresponding compartment in said mold frame as defined by said first blade means.

3,296,676

WEFT STRAIGHTENING APPARATUS AND METHOD

Wistar Wright Macomson, Charlotte, N.C., assignor of fifty percent to Dan C. Page, Jr., Gastonia, N.C.

Filed June 3, 1964, Ser. No. 372,265
16 Claims. (Cl. 26—51.3)



1. Apparatus for straightening weft yarns of an elongate woven fabric web to remove a skewed, bowed or doglegged distortion therefrom and to bring the same into perpendicularity with the warp yarns of the fabric web, said apparatus including

(a) first means defining a first zone for rearranging the weft yarns in the fabric web regardless of their initial condition into a predetermined, substantially uniform straight-line skew by moving one side edge of the fabric web through a longer path of travel than the other side edge thereof, and

(b) second means defining a second zone for rearranging the weft yarns in the fabric web to remove said straight-line skew therefrom and to bring the weft yarns into perpendicular relation to the warp yarns by moving said other side edge through a longer path of travel than said one side edge thereof.

12. A method of straightening weft yarns of an elongate woven fabric web to remove a skewed, bowed or doglegged distortion therefrom and to bring the weft yarns into perpendicularity with the warp yarns of the fabric web, said method comprising the steps of

(a) moving the fabric web warpwise through a first zone while rearranging the weft yarns into a predetermined, substantially uniform straight-line skew by moving one side edge of the fabric web through a a longer path of travel than the other side edge thereof, and then

(b) moving the fabric web warpwise through a second zone while rearranging the weft yarns to remove the predetermined, straight-line skew therefrom and to bring the same into perpendicular relation to the warp yarns by moving said other side edge of the fabric through a longer path of travel than said one side edge thereof.

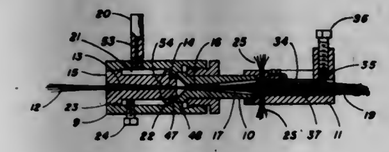
3,296,677

CRIMPING APPARATUS AND PROCESS

Merwyn L. Chase, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 20, 1963, Ser. No. 281,644
3 Claims. (Cl. 28—1)

1. The process of crimping and similarly treating a compact multifilament yarn which comprises motivating the yarn to be thus treated into and through a jet zone supplied with a high velocity heated fluid, bringing said compact yarn into intimate contact with the heated fluid in a uniform cross-section passageway, the exit end of which is connected to a divergent passageway wherein the fluid expands rapidly causing said yarn to open and disengage into a non-compact fluid-porous mass of separated filaments, the diameter of said mass of separated filaments being substantially greater than the diameter of the compact yarn fed to the jet, then directly feeding said mass of separated filaments into a stuffer box crimper chamber wherein the separated filaments are caused to individually bend and fold upon themselves in said crimp chamber, exhausting at least a portion of said hot fluid through exhaust ports located closely adjacent the entrance of said crimp chamber, and retaining and passing the remainder of said heated fluid admixed with the yarn through the length of the crimp chamber and exhausting said remaining portion of said heated fluid with the individually separated and crimped filaments from the end of said crimp chamber, followed by withdrawing said crimped filaments from the stuffer box crimper and reforming them into a yarn.



3. A device for the crimping and like treatment of any kind of filamentary yarn comprised of the unitary combination of a fluid operated jet and stuffer box crimper, said device containing in its structure in series (1) a yarn entrance nozzle jet, (2) a straight enclosed chamber, (3) a divergent enclosed chamber having a downstream diameter substantially greater than its upstream diameter, (4) a stuffer box crimper chamber, (5) fluid inlet means circumferentially surrounding said yarn entrance nozzle jet, (6) lateral fluid exhaust means located adjacent the intersection of the downstream end of the divergent enclosed chamber and the upstream end of the stuffer box chamber, and (7) said stuffer box crimper chamber terminating in a clapper gate mechanism whereby a multifilament yarn is motivated through the entrance jet section and is caused to be separated into a loose filamentary mass in the divergent chamber, which separated filaments may then be individually compressed and folded upon themselves in the stuffer box crimper chamber to impart crimp to the individual filaments and the crimped filaments discharged from the stuffer box crimp chamber and reformed into a yarn by take-up rolls and wind-up means positioned beyond the outlet end of said stuffer box crimper chamber.

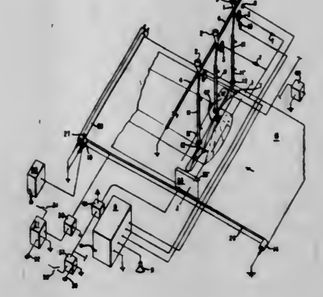
3,296,678

METHOD AND APPARATUS FOR PRODUCING NONWOVEN WEBS

Robert Wendel Bundy, Nashville, Tenn., and Thomas Melvin Sheets, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,904
8 Claims. (Cl. 28—1)

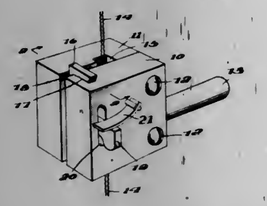
1. An improved process for forming an elongated wide unitary coherent nonwoven web structure from a plurality of electrostatically charged fibrous elements carried in an elastic fluid medium, said process comprising forming a plurality of separate moving streams each comprising an elastic fluid medium carrying a plurality of dispersed fibrous elements, directing said streams in laterally aligned relationship in parallel initial lines of direction into an elastic fluid atmosphere at a plurality of laterally aligned first positions, simultaneously at each of said first positions, aerodynamically laterally diverting and oscillating each of a first group of said plurality of moving streams in regular periodic laterally aligned diverging patterns overlapping at a plurality of laterally aligned second positions to form a first elongated fibrous element deposition zone extending laterally through said second positions, simultaneously aerodynamically laterally diverting and oscillating each of a second group of said plurality of moving streams in regular periodic laterally aligned diverging patterns overlapping at a plurality of laterally aligned third positions to form a second elongated fibrous element deposition zone extending laterally through said third positions, said second deposition zone spaced from said first deposition zone, collecting the fibrous elements from the laterally aligned overlapping patterns in said first deposition zone in the form of a plurality of continuous laterally interlaced elongated strips of nonwoven web structure, continuously moving said web structure from said first deposition zone at a uniform speed through said second deposition zone, collecting the fibrous elements from the laterally aligned overlapping patterns in said second zone in the form of a plurality of continuous laterally interlaced strips of nonwoven web structure superimposed upon the web structure collected in said first zone, and continuously conveying said superimposed web structures from said second deposition zone as a composite web structure, the positions of said stream patterns within each group of streams so positioned and arranged to maintain an alignment of the elongated strips and interlaced boundaries of said strips in each superimposed web structure so that the resultant composite web structure is provided with extremely uniform density, thickness and directional properties.



5. An improved apparatus for forming an elongated wide unitary coherent nonwoven web structure from a plurality of fibrous elements dispersed in and carried in an elastic fluid medium, said apparatus comprising, in combination, a plurality of first means for forming a plurality of separate moving streams, each stream comprising an elastic fluid medium carrying a plurality of dispersed fibrous elements, a plurality of second means cooperating with said first means for directing said streams in laterally aligned relationship in parallel initial lines of direction into an elastic fluid atmosphere at a plurality of laterally aligned first positions, a first group of third means at said first positions each cooperating with one of said second means for simultaneously aerodynamically laterally diverting and oscillating a first group of said plurality of the moving streams in regular periodic laterally diverging patterns, said patterns overlapping at a plurality of laterally aligned second positions to form a first elongated fibrous element deposition zone extending laterally through said second positions, a second group of said third means at said first positions each cooperating with one of said second means for simultaneously aerodynamically laterally diverting and oscillating a second

group of the moving streams in regular periodic laterally aligned diverging patterns, said patterns overlapping at a plurality of laterally aligned third positions to form a second elongated fibrous element deposition zone extending laterally through said third positions, said second deposition zone spaced from said first deposition zone, a fourth means comprising a supporting structure extending through said first and second deposition zones for collecting fibrous elements from the overlapping moving stream patterns in the first deposition zone in the form of a continuous laterally interlaced strips of nonwoven web structure, a fifth means operatively engaged with said fourth means to move the supporting structure of the fourth means in continuous uniform movement from the first deposition zone through said second zone so that a second group of laterally interlaced strips of nonwoven web structure are collected and superimposed upon the strips formed in said first zone to form a composite nonwoven web structure with highly uniform thickness, density, and directional properties, and to convey the composite structure away from said second deposition zone at a constant rate.

3,296,679
FLUID NOZZLE
Robert Walden Jobson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 27, 1963, Ser. No. 326,515
7 Claims. (Cl. 28—1)



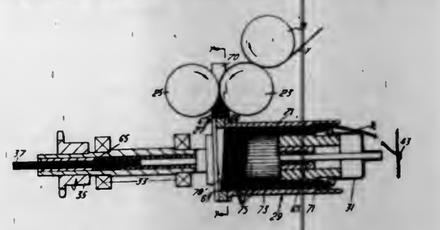
1. A fluid nozzle for treating yarn comprising a body assembly having a yarn passageway therethrough and at least one inlet for admitting fluid into said yarn passageway, a string-up slot adjacent said yarn passageway and adapted to accommodate the introduction of said yarn into said yarn passageway, a slideable closure plate operatively positioned to close and seal said string-up slot by gravity, a lifting bit integral with said slideable closure plate and capable of being actuated to move said slideable closure plate transversely to said string-up slot to expose at least a portion of said string-up slot for introducing said yarn into said yarn passageway, whereby upon release of said lifting bit said slideable closure plate automatically closes said string-up slot.

3,296,680
APPARATUS FOR TREATING AND ADVANCING FILAMENTARY MATERIAL
Kurt Iwnicki, Ponthir, and James Frederick Thomas, Newport, England, assignors to British Nylon Spinners Limited, Pontypool, Monmouthshire, England
Filed Sept. 14, 1964, Ser. No. 396,176
Claims priority, application Great Britain, Sept. 26, 1963, 37,847/63
6 Claims. (Cl. 28—1)

1. Apparatus for treating and advancing filamentary material consisting of

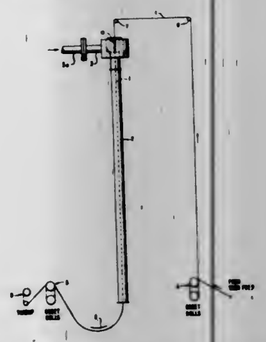
(a) inner and outer cylindrical members defining between them an annular space in which filamentary material is to be treated, at least one of said members being adapted for rotation about its axis, and

(b) means closing one end of said annular space, the inwardly-facing side of which means is provided with



a filamentary material-contacting and advancing cam surface of helical nature.

3,296,681
METHOD OF CRIMPING POLYOLEFIN FIBERS
George Lopatin, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 16, 1964, Ser. No. 383,186
4 Claims. (Cl. 28—72)



1. The method of crimping previously stretched fibers of predominantly crystallizable polypropylene which comprises rapidly heating the fibers while free of substantial tension to a treating temperature which is within 15° C. of, but below, the temperature at which two fibers of the same composition would adhere to each other, maintaining the fibers at said treating temperature for a time not exceeding 10 seconds, and sufficient to result in formation of a crimp in said fibers, and thereafter cooling said fibers at least to about 100° C., and keeping them free of substantial tension until the crystal structure of the fibers has substantially stabilized.

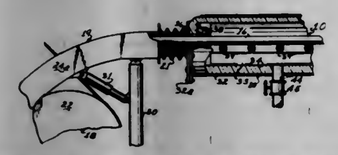
3,296,682
APPARATUS FOR PRODUCING A SHAPED METAL PRODUCT
Daniel B. Cofer, George C. Ward, and Dale D. Proctor, Carrollton, Ga., assignors to Southwire Company, Carrollton, Ga., a corporation of Georgia
Original application Nov. 12, 1964, Ser. No. 410,805, now Patent No. 3,257,835, dated June 28, 1966. Divided and this application Jan. 21, 1966, Ser. No. 522,169
7 Claims. (Cl. 29—33)

1. Apparatus for producing a shaped metal product comprising:

(A) casting means including a casting wheel having a peripheral groove, a band cooperating with said groove of said casting wheel to form a mold cavity, and a means for introducing molten metal to said mold cavity whereby cast metal is obtained,

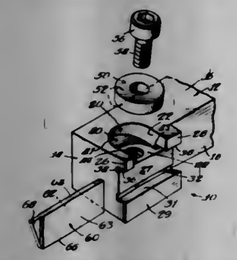
(B) working means for working said cast metal into a shaped product,

(C) and enclosure means having an inert environment for enclosing said cast metal from the region of take-



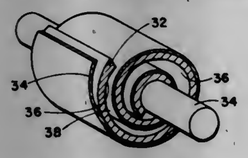
off from said casting wheel to a region beyond said working means, said enclosure means including an entrance means adapted to immediately receive said cast metal from said mold cavity.

3,296,683
TOOL HOLDER FOR BITS AND THE LIKE
William Henry Kaiser, 2915 Weisser Park Ave., Fort Wayne, Ind. 46806
Filed May 7, 1965, Ser. No. 454,072
15 Claims. (Cl. 29—96)



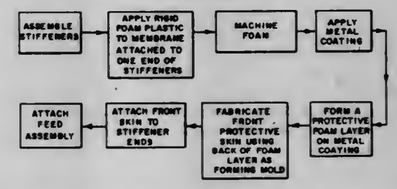
1. A holder for bits or cutting tools, said holder having a recessed portion adjacent the top thereof, said recessed portion having a bottom and a surface raised with respect to said bottom, a threaded bore adapted to receive a screw having a head, a ring positioned in said recess and engaged by the head of the screw, means for supporting the bit, said ring engaging the top of the bit for locking said bit in said holder.

3,296,684
METHOD OF FORMING INTERMETALLIC SUPERCONDUCTORS
Lloyd R. Allen, Belmont, and Robert A. Stauffer, Weston, Mass., assignors, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 24, 1962, Ser. No. 225,784
3 Claims. (Cl. 29—155.5)



1. The process of forming a superconductive Nb_3Sn layer on a ductile base comprising at least an outer layer of niobium comprising the steps of: placing a layer of tin in contact with the niobium surface, heating the tin and niobium to produce an interdiffusion layer of Nb_3Sn at the niobium tin interface, simultaneously physically confining said tin so that it remains in contact with the niobium surface, the heating being continued for a sufficiently long time and at a sufficiently elevated temperature to produce an intermetallic layer that can be identified by X-ray diffraction, the heat treatment being stopped before interdiffusion proceeds to the point where the composite structure loses ductility, wherein said physically confining step is accomplished by tightly winding the contacting niobium and tin into a spool and the heating step comprises placing the spool into a metallurgical furnace, and wherein the turns of the spool are separated by a refractory wash to prevent sticking of adjacent turns via the formation of Nb_3Sn bridges.

3,296,685
METHOD OF MAKING DIELECTRIC FOAM ANTENNA
Menahem Sulliteanu, Palo Alto, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Original application May 31, 1962, Ser. No. 199,121, now Patent No. 3,167,776, dated Jan. 26, 1965. Divided and this application Sept. 28, 1964, Ser. No. 399,631
6 Claims. (Cl. 29—155.5)



1. The method of forming an antenna having a parabolic reflector of a precise focal length consisting of the steps of

assembling stiffener components to form a support structure having first and second end portions defining imaginary convex surfaces,

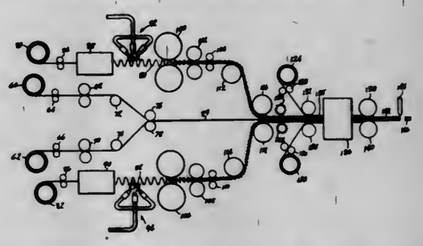
forming a convexo-concave support element to said first end portion of said structure, said element being composed of plastic foam material,

applying a metallic film to the convex surface of said element,

fabricating a convexo-concave cover member using the convex surface of the metallic film as a forming mold, and

attaching the cover to said second ends of said support structure.

3,296,686
METHOD OF MAKING A FINNED HEAT EXCHANGER
William O. Stauffer, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 16, 1964, Ser. No. 360,230
8 Claims. (Cl. 29—157.3)



1. The method of making a finned sheet metal article comprising the steps of

(A) forming a plaited fin stock layer by providing a corrugated metal sheet, coating one side of said corrugated sheet with weld preventing material, forming said coated sheet into a substantially flat layer of a plurality of partially overlapped plaits with

oppositely facing end portions of immediately adjacent plaits extending beyond the ends of alternate adjacent plaits respectively, and removing the coating from the exposed end portion of said plaits of said layer,

(B) forming a blank by disposing said layer of plaited fin stock intermediate a pair of metal sheets with the uncoated end portions of oppositely facing alternate adjacent plaits being in contact with said other sheets,

(C) forming an integrated unitary structure by pressure welding said plaited fin stock layer to said other sheets in the area of said uncoated end portions, and

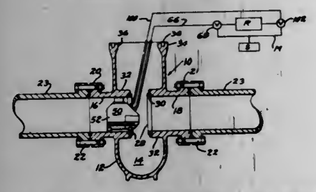
(D) effecting relative outward and lateral movement between said other sheets thereby raising the unjoined alternate adjacent plaits of said plaited fin stock layer to provide integral erect fins secured to said other sheets in the area of said uncoated end portions.

3,296,687

VALVE SERVICING MACHINE

Ray G. Quast, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Aug. 3, 1964, Ser. No. 386,995
9 Claims. (Cl. 29—213)



1. A machine for extracting press-fitted seats from the seat recesses of a valve having flow passages, the machine comprising a power head, a first fluid motor positioned within the power head and having means engaging the wall of said valve bore upon actuation of said first motor means to lock the power head within the flow passage of the valve, means for actuating the first fluid motor, a pushing block fitted to the power head, a second fluid motor disposed within the power head and extending the pushing block relative to the power head upon actuation of said second motor means, means for actuating the second fluid motor, means for locking the pushing block to the valve seat, means for returning the pushing block to its unextended position upon deenergization of the second fluid motor.

3,296,688

ADJUSTABLE CENTERING SPACER

Harold C. Hervig, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 8, 1964, Ser. No. 381,049
4 Claims. (Cl. 29—272)



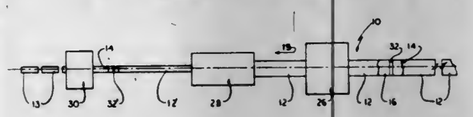
1. A centering device, suitable for centrally mounting a cylindrical object within a tubular shell of substantially larger cross-section, comprising a flat frame having at least three straight legs the ends of which are interconnected in equiangular configuration thereby permitting the insertion within the frame of cylindrical objects, and an inwardly extending spacer slidably mounted along the length of each of said legs adapted to engage cylindrical objects of various sizes positioned within said frame.

3,296,689

METHOD FOR IDENTIFYING SELECTIVE SECTIONS OF A METALLIC MATERIAL

Harold H. Daughters, Upland, Calif., assignor to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada

Filed Feb. 1, 1965, Ser. No. 429,262
5 Claims. (Cl. 29—407)



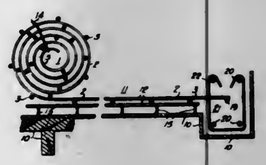
1. In the method for identifying and maintaining the identity of selected portions of a strip of metal of a given material during the processing thereof, the steps of applying a coating of material dissimilar to said strip of metal and having the characteristics of heat reflection to selected surface areas of said metal being processed, subjecting the coated and uncoated areas to heat and thereafter detecting the coated and uncoated areas by observing the noticeable difference in the temperature characteristics of the coated and uncoated areas of the metal due to the different temperature levels reached by the coated and uncoated areas.

3,296,690

WELDED MESH REINFORCEMENT AND METHOD OF USING SAME

Maurice Barron, 291 Ridgeway, White Plains, N.Y. 10605

Filed Nov. 26, 1962, Ser. No. 239,942
12 Claims. (Cl. 29—426)



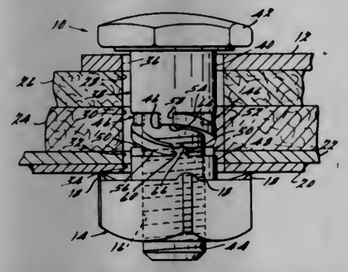
8. A fabric roll for reinforced concrete construction, comprising at least two wires extending longitudinally and at least two wires extending transversely and crossing and connected to said longitudinally extending wires, said longitudinally extending wires being rolled into a roll whereby to form a coiled fabric of the longitudinally and transversely extending wires, each of the longitudinally extending wires being of spring material, and at least one mechanical tie means connected between selected portions of said longitudinally and said transversely extending wires for holding said fabric roll in its coiled condition thereby preventing roll out of said coiled fabric under pressure from the tension of the said longitudinally extending wires, and to divide said coiled fabric into segments from the interior to the exterior of said coiled fabric to thereby control the speed of rollout of said coiled fabric whereby removal of said mechanical tie means enables the said fabric roll to roll out into its flat condition to form a substantially flat mesh of reticulated material.

3,296,691

FASTENER ARRANGEMENT, METHOD OF SECURING A SEAT BELT WITH THE FASTENER ARRANGEMENT, AND THE JOINT PRODUCED THEREBY

Alfred A. Blen, Dearborn, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Oct. 16, 1963, Ser. No. 316,553
9 Claims. (Cl. 29—434)



1. A lock-type fastener assembly, comprising a screw having a plurality of first circumferentially spaced axially directed abutment surfaces, a nut threadably receiving said screw and having a plurality of second circumferentially spaced axially directed abutment surfaces, and a resilient annular lock member received generally about said screw and between said first and second abutment surfaces, said lock member being discontinuous at one point in order to provide axially spaced end surfaces, an axially extending recess formed in the outer circumference of said lock member at a point generally circumferentially spaced from said point of discontinuity, said end surfaces being effective to respectively abuttably engage one of said first abutment surfaces and one of said second abutment surfaces so as to prevent accidental disengagement of said screw from said nut and to resist relative motion of said screw in the disengaging direction until said lock member is caused to fail at said recess.

6. An arrangement for pivotally anchoring a safety seat belt to a structural member of a vehicle, comprising a nut carried by said structural member at one side thereof, a threaded portion formed internally of said nut in a manner having the axis of said internally threaded portion disposed generally perpendicularly to said structural member, a plurality of first axially directed projections formed on said nut and spaced generally circumferentially about said internally threaded portion, a screw having a head and an externally threaded portion threadably engaging said internally threaded portion of said nut, a generally cylindrical body axially intermediate of said head and externally threaded portion, said screw extending through an aperture formed in said belt and loosely radially confining said seat belt generally about said cylindrical body, a plurality of second axially directed projections formed on said screw and spaced generally circumferentially about the axis thereof, and a resilient helical annular lock member contained by said screw circumferentially thereabout, said lock member having axially spaced ends for simultaneously abuttably engaging one of said first axially directed projections and one of said second axially directed projections for preventing relative movement of said screw in the direction of threadable disengagement from said nut while at the same time permiting said screw to be relatively loosely threadably engaged with said nut.

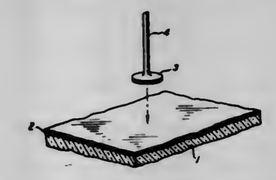
9. A method of pivotally securing a safety seat belt to a structural member of a vehicle wherein said member is adapted to carry thereon layers of insulating and floor forming materials, comprising the steps of forming a nut member to have an internally threaded portion and a plurality of first axially extending abutment surfaces circumferentially spaced about said threaded portion; forming an aperture through said structural member; welding said nut member to the underside of said structural member in a manner so as to have the axis of said threaded portion in general axial alignment with the axis of said aperture; forming apertures through said insulating and floor forming materials and arranging layers of said materials atop said structural member in a manner resulting in said apertures formed through said materials being in substantial axial alignment the axis of said threaded portion; forming an aperture through a safety seat belt; forming a screw to have a head portion, a threaded shank portion and a cylindrical body portion intermediate said head portion and threaded shank portion; forming a plurality of second axially extending abutment surfaces on said screw circumferentially spaced about said shank portion; forming a metallic lock member to be of helical configuration so as to have axially spaced ends which ends form axially extending end surfaces; inserting the screw shank portion through said seat belt aperture, through said apertures in said materials, through said helical lock member and into threadable engagement with said threaded nut portion; and threadably rotating said screw into engagement with said nut until said end surfaces are axially urged toward each other at least one time by the screw and nut and subsequently allowed to move axially away from each other so as to be in general juxtaposition to at least one of said first abutment surfaces and one of said second abutment surfaces.

3,296,692

THERMOCOMPRESSION WIRE ATTACHMENTS TO QUARTZ CRYSTALS

Jack P. Griffin, Short Hills, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 13, 1963, Ser. No. 308,724
2 Claims. (Cl. 29—472.9)



1. A method for making a quartz crystal device which comprises vapor plating on both major surfaces of a quartz crystal wafer, a layer of aluminum 100 A. to 1000 A. thick, said vapor plating being done at a pressure between 10^{-4} torr and 10^{-6} torr and at a temperature of said quartz crystal surface between 200° C. and 400° C., thermocompressing to each of said aluminum layers on each of said major surfaces at least one gold-plated beryllium copper wire contact by heating the wire end and said layer to a temperature in the range from 350° C. to 500° C. and then pressing the wire end against the aluminum layer at a pressure of between 10,000 p.s.i. and 25,000 p.s.i. for a period of approximately one to five seconds.

3,296,693

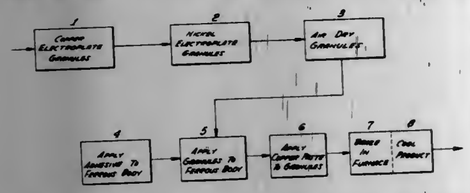
TUNGSTEN CARBIDE BRAZING

Shirley J. Carter, 6225 Outlook Ave., Oakland, Calif. 94605

Filed Sept. 21, 1962, Ser. No. 225,247
10 Claims. (Cl. 29—473.1)

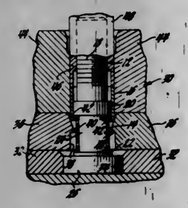
1. A method of brazing tungsten carbide to ferrous bodies comprising the steps of forming the tungsten carbide in granules, encapsulating the tungsten carbide granules before brazing in a thin electroplate of copper, encap-

sulating the coated granules with a second thin electroplate of nickel, attaching the granules to the ferrous body by a heat decomposable resin and a copper brazing paste con-



taining an ethylene glycol-glycerine mixture and brazing the granules to the ferrous body in a brazing furnace while chemically decomposing said resin.

3,296,694
METHOD OF FABRICATING A FASTENER UNIT
Anthony J. De Mastry and Julius A. Guggenaster, Columbus, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 5, 1964, Ser. No. 349,603
5 Claims. (Cl. 29—520)

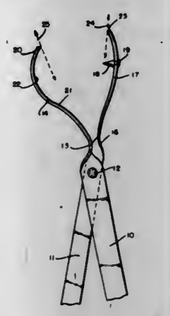


1. A method of fabricating a fastener unit comprising, forming a fastener member with an axially extending annular portion bounded by spaced annular radially projecting ribs, forming an annular sleeve of a size sufficient to permit said sleeve to be moved past one of said ribs and a length less than the distance between said annular ribs, moving said sleeve past said one rib and over said annular portion, extruding one portion of said sleeve onto said annular portion and thereby increasing the length of said sleeve, and extruding the other portion of said sleeve onto said annular portion and thereby further increasing the length of said sleeve, the over-all length of said sleeve after extrusion being substantially equal to the distance between said annular ribs and said sleeve extending therebetween in tight engagement with said annular portion of said fastener member.

3,296,695
PRODUCTION OF PLURAL-PHASE ALLOYS
Allen S. McDonald, Samuel O. Spooner, and Charles D. Coxe, Fairfield, Conn., assignors to Handy & Harman, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 18, 1963, Ser. No. 324,225
13 Claims. (Cl. 29—528)

1. The method of producing a wrought plural-phase alloy which comprises the steps of reacting, at an elevated temperature, a sheet of a solid solution alloy comprising a major proportion of a matrix metal and a minor proportion of another metal, with a non-metallic element capable of forming a non-metallic compound with said other metal, until particles of said compound are formed and substantially uniformly dispersed as a separate phase throughout said matrix metal, coiling the resulting plural-phase alloy sheet on itself to form a billet, heating the coiled sheet billet to the extrusion temperature of the plural-phase alloy, and extruding the heated billet to form a coalesced extruded shape.

3,296,696
PERFORATING DEVICE FOR DEFLATING CANS
Merlin Kamla, Arriba, Colo. 80804
Filed June 28, 1965, Ser. No. 467,266
5 Claims. (Cl. 30—16)



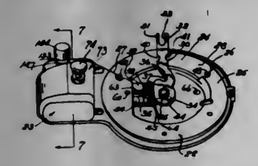
1. A tool for use in venting an empty aerosol can comprising a pair of flat metallic straps pivoted to one another at a pivot point located intermediate the opposing ends of said straps, said flat straps being positioned in substantially contiguous plane parallel relation to one another at and to one side of said pivot point thereby to form a pair of flat handles adapted to be moved toward and away from one another about said pivot point, said flat straps each being twisted through substantially 90° on the opposite side of said pivot point to define a pair of integral jaws having interior planar surfaces positioned in relatively widely spaced facing relation to one another, each of said jaws being smoothly curved with the directions of curvature of said two jaws being opposite to one another, whereby said curved interior planar jaw surfaces are adapted to embrace opposite sides of an aerosol can to be deflated, and a tapered punch member on the interior curved planar surface of one of said jaws at a location spaced from the free end of said jaw toward said pivot point, said punch member haivng a perforating point facing the interior curved planar surface of the opposite jaw.

3,296,697
GRASS SHEARS
Lars Hedstrom, Mendham, N.J., assignor to J. Wiss and Sons Co., Essex, N.J., a corporation of New Jersey
Filed Nov. 6, 1964, Ser. No. 409,482
9 Claims. (Cl. 30—248)



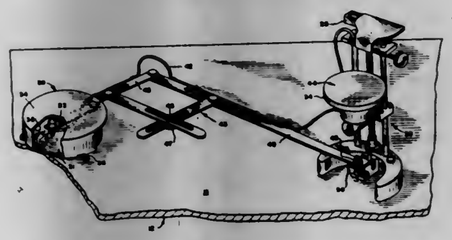
1. Shears comprising a stationary blade, a fixed handle member connected to said stationary blade at its rear end portion, a shaft projecting upwardly from said stationary blade at a point forward of its said rear end portion, a movable blade having a raised rear end portion, said raised portion having an opening through which a portion of said shaft extends, said opening being larger than the cross-section of the extending portion of said shaft at which said raised portion of said movable blade is pivotally connected to said shaft, said shaft having a head larger than said opening and being disposed over and contactable with said raised portion of said movable blade, a movable handle member pivotally connected to said fixed handle member, a link connected to said movable handle member and being substantially in parallel relation to said stationary blade, a pin projecting downwardly from said raised rear end portion, said link being pivotally connected to said pin, and a torsion spring about said shaft and interposed between said rear end portion of said movable blade and said stationary blade and maintaining said blades in resilient contact relation, said spring having an extended end bearing against said fixed handle member, said blades being manipulatable for a cutting operation by pivotal movement of said movable handle member towards said stationary handle member.

3,296,698
FOOT CONTROLLER AND CONTROL SYSTEM FOR AIR DRIVEN AND ELECTRIC MOTOR DRIVEN DENTAL HANDPIECES
Martin Staunt, Des Plaines, Ill., assignor, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed Jan. 28, 1963, Ser. No. 254,400
7 Claims. (Cl. 32—28)



1. A foot actuated controller assembly for dental handpieces comprising a base secured to the bottom of a rheostat dental engine controller, said rheostat having a radially projecting foot lever, a second lever pivotally mounted on said base and projecting radially from the assembly below the foot lever, upwardly extending lugs on said second lever located outside the engine controller and engaging the foot lever on its opposite sides so that the second lever moves with the foot lever of the controller, and an air controlling valve carried by said plate and actuated by said second lever to regulate the flow of turbine-driving air discharged from said assembly.

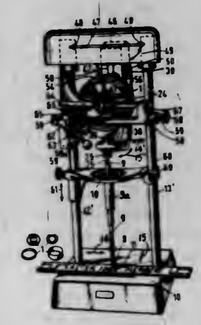
3,296,699
PHOTOGRAMMETRIC STEREO MAP PLOTTERS
Robert F. McGivern, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,372
8 Claims. (Cl. 33—1)



1. An earth curvature correction device for a photogrammetric stereo map plotter having a tracing table platen whereon a stereo image is formed and having a vertically adjustable mounting bracket for carrying said platen at a predetermined elevation above a mapping surface, means for slightly varying the elevation of said platen in proportion to an earth curvature correction factor, said means having in combination

a lifting device operatively positioned between said platen and said mounting bracket for changing the vertical distance therebetween by an amount proportionate to said factor,
a spherical cam member fixedly mounted adjacent to the border of said mapping surface,
an actuator mechanism including a movable sensing member which lies in contact with said cam member and is displaced in a vertical direction thereby as said member is moved from side to side thereover, said member being operatively connected to actuate said lifting device,
a pantograph linkage characterized by a long operating arm and a short operating arm, said arms being operatively connected respectively to said tracing table and said element whereby the vertical displacement of said element by said cam causes a correctional adjustment in the elevation of said platen.

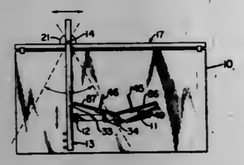
3,296,700
ENGRAVING MACHINE
Hans Schmidbauer, Kolpingstrasse 5, and Christian Claas, Beethovenstrasse 13, both of Singen, Hohentwiel, Germany
Filed Aug. 20, 1964, Ser. No. 390,910
Claims priority, application Germany, Aug. 21, 1963, Sch 33,738
11 Claims. (Cl. 33—24)



1. In an engraving machine having a tool for inscribing a workpiece in accordance with the configuration of a stencil and provided with an elongated frame, a support member adjacent one end of the frame for positioning the stencil thereon, a workpiece holder operatively-mounted adjacent the other end of the frame for positioning the workpiece thereon, a movement transmitting member operatively-carried by the frame adjacent the other end thereof for back and forth movement along one line and for back and forth movement along another line at right angles to the one line, means operatively-connecting said movement transmitting member to said workpiece holder to impart movement to said holder induced by back and forth movement thereof along the two lines; control rod means having a scanner at a forward end thereof for tracing the stencil, having an intermediate Cardan joint mounted on an intermediate portion of the frame, and having a universal ball joint connection at a back end thereof with said movement transmitting member for moving said movement transmitting member in accordance with tracing of the stencil by said scanner; an engraving tool holder mounted adjacent the other end of the frame in alignment with said workpiece holder to position the tool in engagement with the workpiece, said operatively-connecting means including a tension cable carried by said movement transmitting member and connected with said workpiece holder for actuating said holder in accordance with

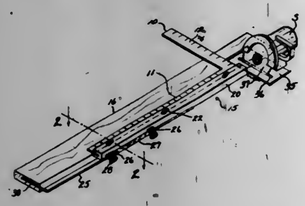
back and forth movement of said movement transmitting member along the one line, and said operatively-connecting means including swingably-mounted means for enabling movement of said workpiece holder in accordance with back and forth movement of said movement transmitting member along the other line.

3,296,701
MITERING DRAFTING MACHINE FOR THE DEVELOPMENT OF ISOMETRIC VIEWS
Jesse David Wolf, Aurora, Colo., assignor to Universal Drafting Systems, Inc., Denver, Colo., a corporation of Colorado
Filed June 22, 1964, Ser. No. 376,841
2 Claims. (Cl. 33—77)



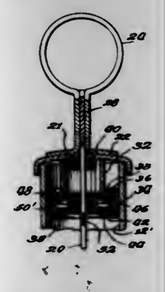
1. A drafting machine which comprises horizontal guide means for mounting on a drafting board, vertical guide means coupled to the horizontal guide means for pivotal rotation to the right and left of the vertical and for longitudinal movement of the vertical guide means in any orientation thereof, means cooperatively associated with the horizontal guide means and the vertical guide means for positioning the vertical guide means to the right and to the left of the vertical, horizontal rule means coupled to the vertical guide means, and two straight edges mounted on the horizontal rule means inclined about 15° to the horizontal and inclined toward each other to form an included angle of about 150°, and two straight edges slidably mounted respectively on said two straight edges and disposed at right angles to said two straight edges.

3,296,702
FRAMING SQUARE GAUGE
Peter Feddish, 25511 Chardon Road, Richmond Heights, Ohio 44124
Filed Mar. 24, 1965, Ser. No. 442,439
2 Claims. (Cl. 33—95)



1. A framing square gauge device for use with a carpenter's framing square having right angularly disposed measuring arms of flat, bladelike form for squaring and sawing a multiple number of boards of uniform length; said gauge device comprising an elongated linear bar of generally rectangular cross section having elongated parallel side faces and parallel top and bottom faces, there being an elongated linear slot in one of said side faces parallel to and intermediate said top and bottom faces, said slot being of a width to snugly receive the thickness dimension of an arm of a framing square and being of a depth less than the width dimension of said arm, whereby a framing square arm bottomed in said slot will extend over the upper surface of a board to be cut with the other arm of said square extending across said board when said one side face of said bar below said slot abuts a side edge of said board, quickly adjustable means on said bar for fixing an arm of a framing square in said slot; a gauge rod having a linear main section; means on said bar for mounting said rod main section thereto for adjustable movement longitudinally of said main section, quickly adjustable means on said bar for fixing said rod in longitudinally adjusted position relative to said bar with said rod main section extending beyond the end of said bar opposite the other arm of said square, and said rod main section having at its free end an angularly disposed stop section of a length to abut the end of a board in position for squaring and sawing by said gauge device.

3,296,703
DIP STICK AND HOUSING THEREFOR
Bertil Stade, Oak Park, and Edward Hoglund, Park Ridge, Ill., assignors to Mercury Metal Products, Inc., Hillside, Ill., a corporation of Illinois
Filed Apr. 20, 1964, Ser. No. 360,822
6 Claims. (Cl. 33—126.7)

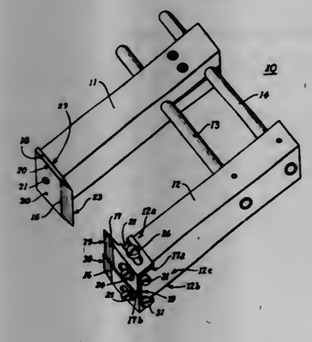


1. A dip stick comprising an elongate blade of strip stock, an annular cap member having a center slot, the blade end extending through the slot and arranged coaxial with the cap member, a finger piece secured to the top of the cap member and to said blade end, thereby also securing said blade end to the cap member, the cap member having a protective depending flanged edge, a cylindrical sleeve member coaxial with said blade, and disposed adjacent the bottom of the cap, a pair of identical dished washers engaged back to back and each having a slot of configuration to slidably engage upon said blade, the upper washer having its concavity facing upward and seating said sleeve member therein, the lower washer having its concavity facing downward, the washers having offset flanged formations about their circumference and forming between them an annular groove when so engaged, a resilient O-ring in the groove and protruding slightly radially outward from the washers, a deformation in the blade engaging beneath the lower washer and securing said sleeve member and washers against axial sliding and in aligned engagement with the bottom of the cap member.

3,296,704
ADJUSTABLE GAUGING DEVICE
Walter John Zajkowski, E. Park Road, Hyde Park, N.Y. 12538
Filed Nov. 3, 1964, Ser. No. 408,485
1 Claim. (Cl. 33—158)

In an adjustable gauging device having a frame including a pair of arms, a fixed gauging blade exteriorly mounted on the first of said arms and an adjustably secured gauging blade exteriorly mounted on the second of said arms, an improved adjustable blade mounting arrangement comprising,

(a) a true flat surface defined on the outer end face of each of the arms,
  said flat surfaces being in a common plane normal to the longitudinal axes of the arms,
(b) a true flat surface defined on each of the outermost portions of the sides of the second arm,
  said flat surfaces being in vertical parallel planes normal to the said common plane,
(c) a gauging blade having an L-shape in sectional outline,
  the inner faces of the blade being true flats in planes normal to each other,
(d) the blade being mounted on the second arm with one of its true flat inner faces adjacent the true flat outer end face of the second arm and the other of its true flat inner faces adjacent one of the ground flat surfaces on the outermost portion of the sides of the second arm, whereby the planes defined by the said faces of the L-shaped blade and the said face and said one surface of the second arm coincide,
(e) the blade being detachably secured to the second arm by means arranged in two planes normal to each other, and
(f) the blade being adjustably secured to the second arm by means arranged in a third plane normal to each of the two last mentioned planes,
  said adjustable securing means comprising a threaded bore in the under surface of the second arm and a coacting threaded screw arranged in said bore, the head of the screw being of a sufficient diameter to overlap and engage the bottoms of the sides of the said blade.



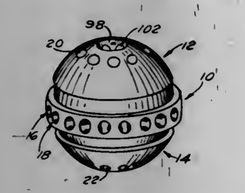
3,296,705
GAGE WITH AXIALLY MOVABLE OPERATING MEANS
Paul W. Johnson, Bloomfield, Conn., assignor to The Johnson Gage Company, Bloomfield, Conn., a corporation of Connecticut
Filed July 29, 1963, Ser. No. 299,682
3 Claims. (Cl. 33—174)

1. A gage for a test part with a groove having opposite surfaces and adapted to carry at least one indicator having a contactor comprising a frame member, an axially extending guideway carried by the frame member, a plurality of radially extending guideways carried by the frame member, gaging means mounted in each radial guideway and moving radially thereon, each gaging means including a gaging element with a gaging surface, operating means including an operating member mounted on the guideway for axial movement and having an axis, a taper surface carried by the operating member and having an angle of 26°, 34′, the taper surface engaging each gaging means to operatively connect the same with the operating member, a first spring means propelling the operating member axially along the guideway and in a direction to propel the gaging means into contact with the groove of the test part, a second spring means engaging the gaging means to propel the same away from contact with the test part when the first spring means is contracted and manual means connected with the operating member to move the same against the spring means to release the test part; each gaging means moving radially an equal amount to engage the groove to gage the same and to centralize the groove of the test part with respect to the axis of the operating member, ball bearing mounting means including balls and cooperating ball surfaces mounting at least the radially movable gaging means of the gage, the balls being oversized by about one and a half ten-thousandths of an inch for the ball spaces between cooperating ball bearing surfaces and requiring pressure for their insertion into the ball spaces, and indicator mounting means carried by one member and located to have the indicator contactor engage the other member for indicating the relative position of the members and the gaging means the frame member having an axial hole extending therethrough, the stem rotatably mounted in the hole, a lever pivotally mounted on the stem and projecting from the inner end of the frame and extending to the outer end thereof, and indicator mounting means carried by the stem in a position to have the indicator contactor engage the lever.

3,296,706
DEVICE FOR DETERMINING FINGER-HOLE POSITIONS IN A BOWLING BALL
Robert E. Moreo, Fraser, Mich., assignor to Stowe-Woodward, Inc., Newton Upper Falls, Mass., a corporation of Massachusetts
Filed May 17, 1965, Ser. No. 456,235
2 Claims. (Cl. 33—174)

1. A device for measuring bowling grip, said device comprising a medial body section and a pair of opposed cap sections that pivotable and rotatable with respect to said medial body section, said medial body section presenting an outer spherical surface and a pair of inner spherical surfaces on opposite sides of said ridge spherical surface, each of said opposed cap sections including an outer spherical surface and an inner spherical surface, the distance between the outer spherical surface of said body section being approximately equal to the distance between the outer spherical surface of said cap section and the inner spherical surface of said cap section, said body sec-

tion including a hub portion extending therewithin generally perpendicularly with respect to an axis about which said outer spherical surface of said body section is developed, a pair of opposed rods, one of said opposed rods having its inner extremity universally pivoted in said hub portion and its outer extremity threaded and extending roughly along said axis in one direction, the other of said opposed rods having its inner extremity universally pivoted in said hub portion and its outer extremity threaded and extending roughly along said axis in the other direction, said cap sections having axial bores receiving said rods, the inner spherical surfaces of said cap sections being seated on the outer spherical surfaces of said body section, threaded nuts turned onto the threaded outer extremities of said rods in order to clamp said cap sections against said body section, said cap sections being rotatable about said rods, the outer peripheral surfaces of said body section and said cap sections defining a continuous spherical



surface except for holes in said cap sections and said body section and gaps between said cap sections and said body section, said holes including pairs of ring finger and middle finger holes in said outer spherical surface of said body section, one of the holes of each pair being of lesser diameter and the other of the holes of each pair being of greater diameter, the holes of different pairs being of different diameters, said holes including a sequence of thumb holes in one of said cap sections and a sequence of thumb holes in the other of said cap sections, the holes of each sequence being of different diameters, the holes of one sequence being of different diameters from the holes of the other sequence, said cap sections being removable from and interchangeable on said rods so that any selected hole of either cap section is available to receive the thumb of a right or left handed bowler when his middle and ring fingers are received in a selected pair of holes in the body section.

3,296,707
PRECISION BORE GAUGE
Andrew Eisele, 20460 Brookwood Ave., Dearborn Heights, Mich. 48127
Filed Apr. 24, 1964, Ser. No. 362,318
11 Claims. (Cl. 33—178)



1. A combined concentricity and perpendicularity gauge for measuring the concentricity and perpendicularity of a workpiece bore and adjacent transverse face respectively relatively to the axis of a reference bore, said gauge comprising

a hollow stationary support having a stationary handle with a dial indicator holder therein,

a rotary handle rotatably mounted on said stationary support,

an elongated stem connected in coaxial relationship to said handle for rotation thereby,

said stem having an external pilot portion adapted to snugly but rotatably fit the reference bore and a reduced diameter portion adjacent thereto with a shoulder face therebetween,

said stem having therein a main longitudinal bore coaxial with the axis of rotation of said rotary handle and a transverse bore disposed within said reduced diameter portion in communication with said longitudinal bore,

said stem also having therein an auxiliary longitudinal bore extending rearwardly from said shoulder face parallel to said main bore,

said stem also having a transverse passageway leading from said auxiliary to said main bore,

a transversely-reciprocable bore-concentricity measuring member reciprocably mounted in said transverse bore,

a longitudinally-reciprocable face-perpendicularity measuring member reciprocably mounted in said auxilary bore and extending into said transverse passageway,

and motion-transmitting mechanism extending from said measuring members through said stem and support to the dial indicator in said holder,

said motion-transmitting mechanism during rotation of said stem relatively to said support by said rotary handle being responsive to the transverse shifting of said bore measuring member as a result of eccentricity of the thereby-engaged workpiece bore relatively to said pilot portion and reference bore and also responsive to the longitudinal shifting of said face-measuring member as a result of non-perpendicularity of the thereby-engaged workpiece face relatively to the axis of said pilot portion and reference bore to shift the dial indicator.

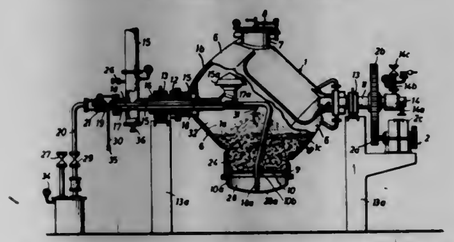
3,296,708
LEVEL
Willard Bruce Moody, 1711 Hillcrest Drive, Durham, N.C. 27705
Filed Jan. 27, 1964, Ser. No. 340,252
3 Claims. (Cl. 33—207)



1. A level comprising an elongated substantially rectangular body member having opposite flat face surfaces, a peripheral flange extending about the sides and ends of said body member on each side thereof defining opposed flat side and end surfaces, a plurality of openings cut

through said body member, a level in each opening visible from each flat face, an upwardly extending boss at each end of said body member on each side thereof, each boss being of less height than the portion of said flange on the adjacent side, a plurality of hook members, each comprising a shank of flexible resilient material, and oppositely extending flexible resilient hook members at one end of said shank, the other end of each shank being pivotally secured to a boss, whereby when said hooks are folded inwardly they lie in flush relation beneath the level of said flange and when in operative position extend outwardly thereover, the flexibility of said hook members permitting twisting out of the plane of said face surfaces to engage openings in an adjacent surface lying in a plane parallel to said flat surfaces.

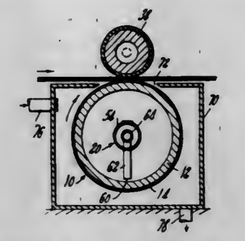
3,296,709
ROTARY DRIER
Hermann Barsch, Remscheid-Lennep, Germany, assignor to Haas Vakuum-Technik G.m.b.H., Remscheid-Lennep, Germany
Filed Aug. 1, 1963, Ser. No. 299,320
Claims priority, application Germany, Aug. 3, 1962, H 46,545
10 Claims. (Cl. 34—82)



1. A drier installation in which a batch of moisture containing solid material is dried by simultaneous generation of vapors and in which such material is otherwise treated in the presence of fluid and/or solid treating substances, comprising a container defining a material receiving chamber and arranged to rotate about a fixed axis, said container comprising a hollow portion located at one side of said axis and a fluid permeable wall spaced from said axis and separating the interior of said hollow portion from the remainder of said chamber so that such interior forms a compartment which may receive fluid matter admitted into the remainder of said chamber and passing through said wall, said hollow portion forming in a predetermined position of said rotary container the lowermost portion of said chamber; inlet means provided on said container for admission of material into the remainder of said chamber; conduit means rotatable with said container about said fixed axis and communicating with said compartment for withdrawing fluid matter from said compartment, said conduit means having an inlet end opening in said compartment and an outlet end located outside of said receiving chamber, and said conduit means including a portion whose axis substantially coincides with said fixed axis; and suction creating means connected to said outlet end of said conduit means.

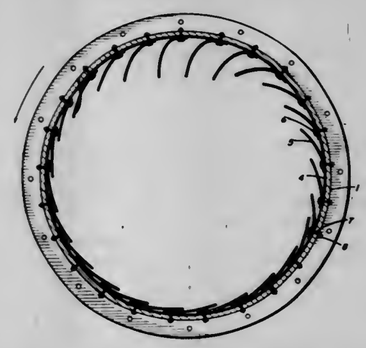
3,296,710
ABSORBENT DRYER
Garo Krikorian, Paxton, Mass., assignor to Rice Barton Corporation, Worcester, Mass., a corporation of Massachusetts
Filed July 15, 1965, Ser. No. 475,315
4 Claims. (Cl. 34—95)

1. An absorbent dryer having, in combination, a rotary drying drum and press roll supported in press nip producing relation, said rotary drum having an external layer of a porous absorbent material of sufficient hardness to prevent closing of said pores under the pressure of said press nip, steam heating means extending within the drum for uniformly heating the drum surface including said external absorbent layer to a sufficient degree to effect



rapid vaporization of liquid from said pores, a vapor collecting hood substantially enclosing the absorbent layer covered surface of said drum, means for introducing a drying medium into said hood, and means for exhausting the vapors collected in said hood.

3,296,711
LINING FOR ROTARY VESSELS
Earl Eugene Langford and Wesley William Atwood, Lakeland, Fla., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed June 18, 1964, Ser. No. 376,163
2 Claims. (Cl. 34—109)

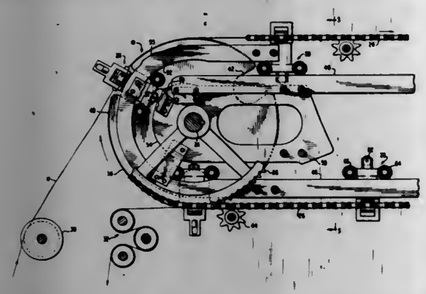


1. In an improved rotary drum adapted to dry, wet sticky solid substances, which comprises in combination: a rubber lined rotary drum; a plurality of equidistant bolting strips positioned parallel to the center line of said drum; a plurality of flexible rubber flaps, each being the length of the drum and at least as wide as the distance between adjacent bolting strips; means for fastening each of said flaps positioned longitudinally along the axis of said rubber lined drum in an overlapping fashion, whereby one edge of each flap is fastened to the rubber lined drum by means of a bolting strip and the other edge of the flap overlies an adjacent bolting strip.

3,296,712
GRIPPER DRYING TUNNELS
Hans W. Sachs, 29 Virginia Ave., Binghamton, N.Y. 13905
Filed Aug. 7, 1964, Ser. No. 388,209
14 Claims. (Cl. 34—158)

1. In an elongated drying tunnel for drying a moving web entering the tunnel over a head drum passing over a return drum and leaving the tunnel adjacent the head

drum, by means of gases contacting the web, the tunnel being of the type including a plurality of openable grippers attached to endless conveyor chains which run in vertical planes parallel to the edges of the web being dried, the improvements comprising; each of the operable grippers having a body including a fixed gripper jaw and a movable gripper jaw pivoted therefrom, the grippers being attached to the chain such that the fixed gripper jaws of all grippers are inside the path of travel of the endless chain and the web, a reciprocable cam follower



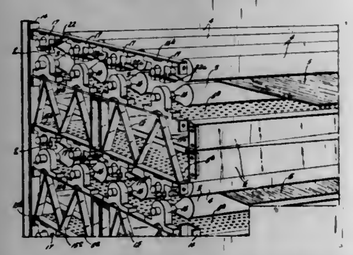
for each gripper movable in a vertical line perpendicular to the plane of the web, each cam follower connected to a gripper for opening and closing the movable jaw thereof in only one direction with a single movement and to an extent to clear a vertical plane through the edges of the web, a compression spring directly contacting the cam follower to urge the movable gripper jaw to a closed position and a two-dimensional stationary cam positioned to cause reciprocation of the cam follower to open the movable jaws at the point the web leaves the tunnel and subsequent closing after receiving a web.

3,296,713

ARRANGEMENT IN MULTI-DECK DRIERS WITH ROLLER CONVEYORS

Kurt Roland Larsén, Bromma, and Helge Brekell, Vaxjo, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed Aug. 7, 1964, Ser. No. 388,187
Claims priority, application Sweden, Aug. 7, 1963, 8,664/63; Mar. 19, 1964, 3,416/64
4 Claims. (Cl. 34—205)



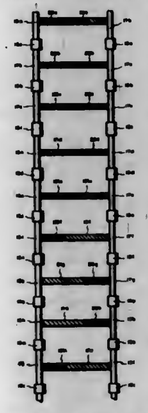
1. In multi-deck driers and like apparatus for the treatment of sheet material or webs, comprising means in the form of roller conveyors with a plurality of upper and lower rollers for conveying the material to be treated, said lower rollers being mounted in lower bearings and said upper rollers being mounted in upper bearings, and distribution boxes mounted between the decks for the supply of the treating agent, said apparatus being constructed of a support structure comprising vertical posts connected with one another by horizontal vertically-elongated beams, the improvement wherein the horizontal beams are designed as framework beams made of flat iron bars comprising an overlying and an underlying member connected by sloped struts, said beams being constructed to serve as front walls for securing thereon said distribution boxes, said overlying member mounting thereon said lower bearings and said underlying member mounting thereon said upper bearings.

3,296,714

MOLECULAR MODELS

Theodore Klotz, Tappan, N.Y., assignor to Eastview Corporation, Pearl River, N.Y., a corporation of New York

Filed Sept. 4, 1964, Ser. No. 394,428
17 Claims. (Cl. 35—20)



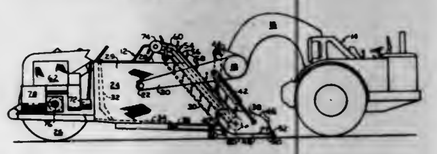
1. A model of a nucleic acid molecule comprising
(a) first and second strands, each of said strands being composed of
(1) a plurality of elongated resilient members for simulating sugar units
(2) means connecting said resilient sugar-simulating members to each other and
(3) a plurality of spaced flexible elements affixed to said resilient sugar-simulating members, said flexible elements simulating phosphate units,
(b) a plurality of rigid elongated elements for simulating the purine-pyrimidine units of said nucleic acid molecule, and
(c) means coupling one of said purine-pyrimidine simulating elements between each sugar-simulating member in said first strand and a corresponding sugar-simulating member in said second strand, the resulting nucleic acid model being adapted for twisting into a helical configuration.

3,296,715

SELF-LOADING SCRAPER

John E. Jass and Robert J. Sullivan, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Sept. 12, 1963, Ser. No. 308,446
3 Claims. (Cl. 37—8)



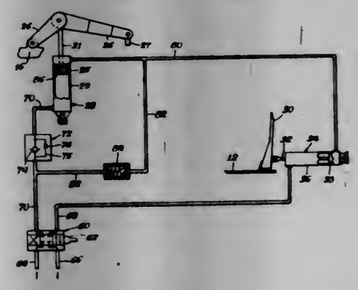
3. Excavating equipment of the type including a tractor and a scraper and wherein the scraper comprises: a main bowl open at its top, supported by wheels; an auxiliary bowl extending forwardly of said main bowl, means for effecting vertical adjustment of said main and auxiliary bowls; a conveyor including a belt having spaced carriers thereon communicating said auxiliary bowl with the open top of the main bowl; means mounting said conveyor on said scraper independently of said auxiliary bowl whereby vertical adjustment of said auxiliary bowl does not affect the position of said conveyor; a cutting edge transversely spanning the auxiliary bowl across the bottom edge of the open front and disposed forwardly of said conveyor.

3,296,716

HYDRAULIC CIRCUIT FOR ACTUATING ELEVATOR LIFT AND EJECTION MECHANISM FOR SELF-LOADING SCRAPER

Vernon E. Rezabek, Palatine, and Sherwin D. Katz, Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Aug. 29, 1963, Ser. No. 305,271
7 Claims. (Cl. 37—8)



1. A hydraulic circuit for a self-loading scraper having an ejector and an elevator comprising, a double acting elevator cylinder for raising and lowering said elevator, a double acting ejector cylinder having a displacement larger than said elevator cylinder for moving said ejector forward and backward, a first conduit connected to one end of said ejector cylinder, a second conduit connected to the other end of said ejector cylinder and to one end of said elevator cylinder, a third conduit connected to the other end of said elevator cylinder, a fourth conduit connected to each of said second and third conduits and a metering valve including a fixed orifice having a restricted two-directional flow; interposed in said third conduit between said elevator cylinder and the connection of said third and fourth conduits for controlling the egress of fluid from said elevator cylinder whereby fluid under pressure in said first conduit will cause said ejector cylinder to move said ejector backward and said elevator cylinder to slowly lower said elevator.

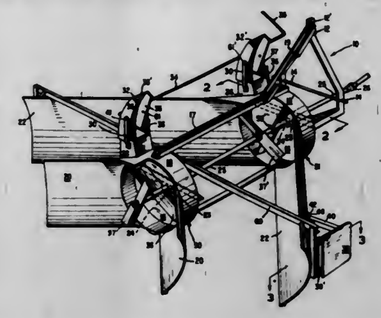
3,296,717

SNOW BLOWER

Ernest C. Sedore, Mount Albert, Ontario, Canada

Filed Nov. 6, 1963, Ser. No. 321,742
Claims priority, application Canada, Dec. 12, 1962, 864,324
10 Claims. (Cl. 37—43)

1. A snow blower apparatus comprising axially aligned front and rear snow blower units connected together in spaced relation in tandem and having impellers therein for discharge of snow, said snow blower units open at the front for receiving snow, power means for driving said impellers, wing means for scooping snow, said wing means including at least one snow-directing element diverging outwardly and forwardly from each of the front openings of said front and rear snow blower units wherein the snow-directing element on the rear blower unit is of a greater lateral extent than the snow-directing element on



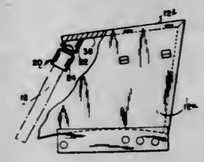
the front blower unit and projects outwardly thereof, and means for enabling the snow blower apparatus to be propelled forwardly in a snow removing operation.

3,296,718

EXCAVATING MACHINE

Melvin K. Rear, Chesterland, Ohio, assignor to The Cleveland Trencher Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 22, 1963, Ser. No. 317,934
10 Claims. (Cl. 37—91)



1. In an excavating bucket comprising, laterally spaced side walls and a bridging transverse outer wall, laterally spaced socket assemblies secured to said outer wall and extending inwardly therefrom, each socket assembly being adapted to receive therein a tine for forming a semi-open back for the bucket, each socket assembly comprising a base portion secured to said outer wall and a head portion, said head portion having a cavity therein for receiving the tine, means coacting between said base and head portions for providing for adjustment of said head portion at an angle with respect to the longitudinal central axis to the base portion, and means locking said head portion in said angularly adjusted position with respect to the base portion.

3,296,719

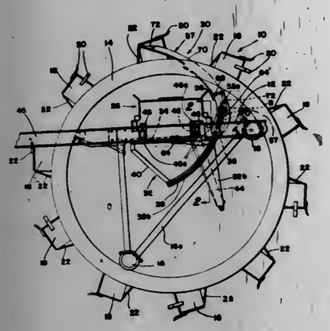
BUCKET CLEANER FOR EXCAVATING MACHINE

Vincent S. Penote, Shaker Heights, and Melvin K. Rear, Chesterland, Ohio, assignors to The Cleveland Trencher Company, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 8, 1963, Ser. No. 300,727
11 Claims. (Cl. 37—97)

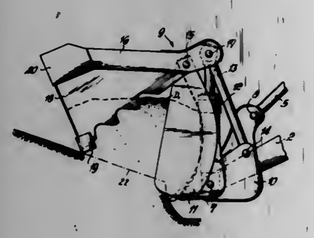
1. In an excavating machine comprising a generally horizontally extending support, a digging unit rotatably mounted on said support, buckets mounted on the periphery of said digging unit, and a bucket cleaner mechanism mounted on said support and movable from an inactive position to an active bucket cleaning position and vice versa, said bucket cleaner mechanism comprising an arcuate shaped, in side elevation, finger assembly, rail means on said support, means movably coupling said

arcuate shaped finger assembly to said rail means, and reciprocable fluid powered means coacting between said support and said finger assembly for moving said bucket cleaner from said inactive to said active position and



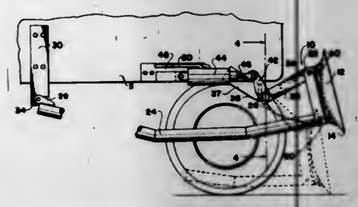
vice versa, said arcuate shaped finger assembly comprising a base section movably coupled to said rail means and a comb section detachably secured to said base section and extending upwardly therefrom.

3,296,720
GRAB SHOVEL FOR TRACTIVE VEHICLES
Johann Sagerer, Unterhaching, near Munich, Germany, assignor to F. X. Meiller Fahrzeug- und Maschinenfabrik K.G., Munich, Germany, a company of Germany
Filed Aug. 29, 1963, Ser. No. 305,365
Claims priority, application Germany, Sept. 4, 1962, M 54,132
5 Claims. (Cl. 37—117.5)



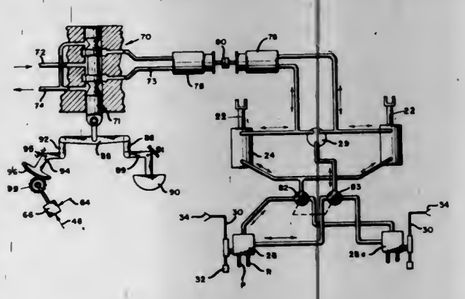
1. A grab shovel for tractive vehicles having a longitudinal axis, said grab shovel comprising:
(a) a first or shield part;
(b) a second or swing part;
(c) bracket means;
(d) link means;
(e) first pivot means for pivotally connecting said shield and swing parts;
(f) second pivot means for pivotally connecting said shield part and bracket means;
(g) third and fourth pivot means for pivotally connecting said link means at one end thereof with said swing means, and at the other end with said bracket means,
(1) the pivotal axes of said first, second, third, and fourth pivot means extending transversely of the vehicle axis; and
(h) power means pivotally connected to said second and third pivot means for causing said swing part to swing about said first means.

3,296,721
BULLDOZER
John Coontz, 131 N. 6th St., Kiowa, Kans. 67070
Filed Aug. 31, 1964, Ser. No. 393,240
4 Claims. (Cl. 37—144)



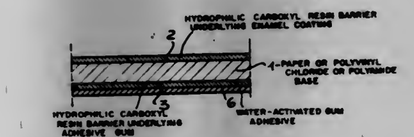
3. A bulldozer attachment for a tractive vehicle comprising, an elongated generally transversely extending blade having a bottom cutting edge, a pair of longitudinally extending elongated push member means, means pivotally securing the forward ends of said push member means to the lower portion of said blade, means pivotally connecting the rear opposite end of said push member means to the rear portion of the tractive vehicle, a transversely extending rock shaft, a pair of laterally spaced lift arms rigidly secured at one end to said rock shaft, means securing said opposite extending ends of said lift arms to the upper portion of said blade in spaced vertical relation to said cutting edge, a means mountable on the forward portion of the tractive vehicle for rotatably supporting said rock shaft, said last-mentioned means constructed when mounted to pivotally support said rock shaft at a height that is greater than the distance between the cutting edge of said blade and said means pivotally securing the extending ends of said lift arms, a rocking arm rigidly secured to said rock shaft, an actuating means secured to the extending end of said rocking arm, said actuating means operable to move said lift arms to a horizontal position with said blade vertically extended, and said actuating means operable to raise and lower said lift arms from said horizontal position and simultaneously tilt the upper portion of said blade rearwardly.

3,296,722
AUTOMATIC CONTROL SYSTEM FOR CONSTRUCTION VEHICLES
John Curlett, Los Gatos, Calif., assignor to Gurries Manufacturing Co., San Jose, Calif., a corporation of California
Continuation of application Ser. No. 266,597, Mar. 20, 1963. This application Mar. 29, 1965, Ser. No. 446,468
7 Claims. (Cl. 37—144)



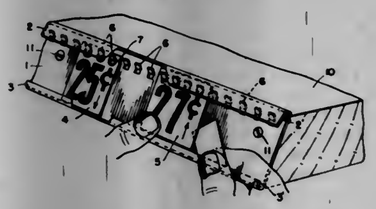
1. A control system for a construction vehicle having a working tool frame adapted for vertical adjustment relative to the vehicle frame which system comprises means including a pair of extensible members connected between the vehicle frame and the working tool frame at laterally spaced portions thereof for individually adjusting the respective sides of the working tool frame, a first sensing means operative to energize said extensible members simultaneously in the same direction to vary the elevation of the working tool frame, and a second sensing means operative to automatically energize said extensible members simultaneously in opposite directions to vary the cross-slope of the working tool frame.

3,296,723
GUMMED LABELS AND THE LIKE
Johannes Göbel, Aschaffenburg, Germany, assignor to Buntpapierfabrik A.G., Aschaffenburg, Germany
Filed Jan. 6, 1965, Ser. No. 423,717
Claims priority, application Germany, May 26, 1964, B 76,928
3 Claims. (Cl. 40—2)



1. Gummed labels adapted to be adhered to bottles, cans and boxes through adherence of the moistened gum coating comprising in combination, a base selected from the class consisting of paper and polyvinyl chloride and polyamide, a barrier layer of a carboxyl group containing hydrophilic resin on one side of said base, said hydrophilic resin selected from the class consisting of polyacrylic acid, polymethacrylic acid, polymaleic anhydride, polycrotonic acid, acrylic ester-acrylic acid copolymer, acrylic ester-methacrylic acid copolymer, methacrylic ester-acrylic acid copolymer, methacrylic ester-methacrylic acid copolymer, vinyl chloride-acrylic acid copolymer, vinylidene chloride-acrylic acid copolymer, vinyl chloride-methacrylic acid copolymer, vinylidene chloride-methacrylic acid copolymer, vinyl acetal-acrylic acid copolymer, styrene-acrylic acid copolymer, styrene-methacrylic acid copolymer, shellac of acid 40–70, copal of acid 65–190, said hydrophilic resin barrier layer being tightly adhesive to the gum applied thereto which has an aqueous dispersion base and further resisting the penetration of the gum through itself to the base, and a coat of moisture activated gum adhesive on said barrier layer.

3,296,724
PRICE TAG MOLDING
Francis Warwick Deuchar, Beryl St., Croydon, Victoria, Australia
Filed Mar. 17, 1964, Ser. No. 352,604
Claims priority, application Australia, Mar. 27, 1963, 28,873/63
10 Claims. (Cl. 40—10)



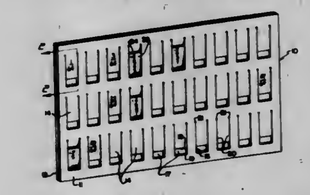
1. A price tag molding comprising an elongated base strip adapted to be mounted on a supporting surface, said base strip having a substantially flat back wall and a forwardly projecting re-entrant flange along each of the upper and lower edges of said back wall, said flanges defining oppositely disposed parallel longitudinal grooves adapted to receive the upper and lower marginal edges of price tags, and said base strip also having a longitudinal row of spaced hooks projecting outwardly from said back wall such that the outermost hook extension falls within the upper longitudinal groove for insertion of the hooks through corresponding apertures along the upper marginal edges of said price tags, the upper flange of said base strip forming a deeper tag retaining groove and a wider angle with the back wall than does the lower flange and said hooks being arranged within said upper groove in order to permit an individual price tag to be inserted upwardly along the inner surface of said top flange at about the same angle as said inner surface until the lower edge of said price tag is capable of clearing the upper lip of said lower flange with said hooks being inserted in said price tag apertures.

3,296,725
SIGN MOUNTING
Jay G. Fenwick, Mundelein, Ill., assignor to Morton Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed July 6, 1965, Ser. No. 469,380
10 Claims. (Cl. 40—10)



1. A sign mounting, comprising a frame providing an access opening in the top thereof, a press fitting inserted into said opening, said fitting being generally U-shaped in vertical section to provide upstanding wing portions and constructed of resilient material, said wing portions being equipped with lock means for engaging said frame, and a sign-equipped post mounted in said fitting, the engagement of said post with said wing portions urging said wing portions into locking engagement with said frame.

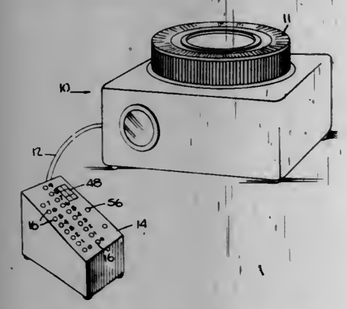
3,296,726
INDICIA CONVERTER
George A. Hill, 3393 Fairmont Road, North Vancouver, British Columbia, Canada
Filed Nov. 30, 1964, Ser. No. 414,632
4 Claims. (Cl. 40—28)



1. An indicia converting device comprising a pair of elongated flaps, each having an indicia carrying viewing surface at an end, means spacedly and resiliently mounting the flaps at their other ends so that they normally extend towards each other with the free end of one overlapping the viewing surface of the other, said flaps being swingable in a direction away from their viewing surface

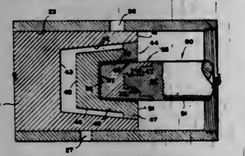
to permit the overlapped flaps to clear the free end of the overlapping flaps and automatically return to its normal position ahead of the latter to cover the latter's viewing surface.

3,296,727
RANDOM ACCESS PROJECTOR
Stephen A. Liguori, Parkridge, N.J., assignor to Decision Systems Incorporated, Teaneck, N.J., a corporation of Delaware
Filed Oct. 9, 1964, Ser. No. 402,837
7 Claims. (Cl. 40—79)



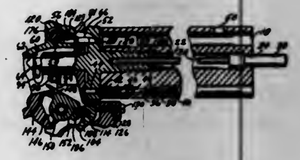
1. In a slide projector having a movable slide tray with slots for slides and an automatic slide changing mechanism, the improvement comprising:
means to move said tray,
pulse means to generate a pulse signal each time one of said slots moves past a predetermined position,
counting means responsive to said pulse signal to provide an indication of the position of said tray,
manually operable selection means to provide the designation of a desired position of said tray,
control means responsive to said indication of said counting means and responsive to said designation of said selection means to brake said tray and actuate said automatic slide changing mechanism when said indication of said counting means coincides with said designation of said selection means.

3,296,728
METHOD AND APPARATUS FOR COMPENSATING FOR A CHANGE IN DIMENSION OF A FIRING PIN
Robert C. Kvavle, Hillsboro, Oreg., assignor, by mesne assignments, to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed May 17, 1965, Ser. No. 456,059
23 Claims. (Cl. 42—1)



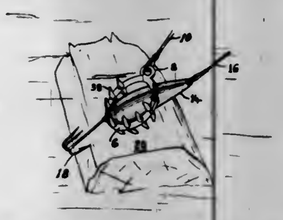
18. Apparatus for use in the deflagration of low explosive comprising a body of relatively ductile material, means defining a cavity in said body at one surface thereof adapted to receive a piston-like firing pin, a body of relatively hard material surrounding and engaging said ductile body and in surrounding relationship to said cavity, at least one of said bodies including means for squeezing said ductile body upon relative translational movement of said bodies, whereby to cause plastic flow of said ductile body and diminution in the size of said cavity to compensate for enlargement thereof by erosion.

3,296,729
REVOLVER-TYPE FIREARM WITH A BARREL ASSEMBLY INCLUDING A MULTIPLE-BORE BARREL AND A BREECH PART RELEASABLY CONNECTED THERETO
Frederick F. Stevens, Jr., Northford, Conn. (R.F.D. 1, Sandy Hook, Conn. 06482)
Filed Aug. 30, 1965, Ser. No. 483,576
21 Claims. (Cl. 42—59)



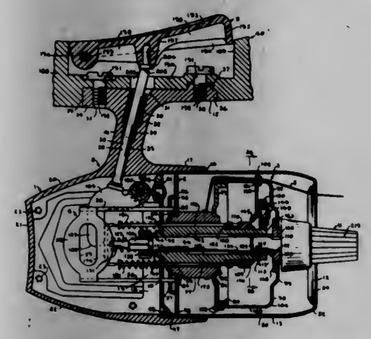
1. A firearm comprising a grip assembly and a barrel assembly, said barrel assembly including a barrel having a plurality of bores spaced circumaxially about a central axis and extending through the length thereof and a breech part releasably connected with said barrel, said breech part having a portion which closes the breech ends of said bores when said breech part is connected with said barrel, said breech ends of said bores being open for the insertion and removal of cartridges when said breech part is disconnected from said barrel, and said grip assembly including means for releasably mounting said barrel assembly to said grip assembly for rotation of said barrel assembly relative to said grip assembly about said central axis and also including a firing mechanism for firing cartridges positioned in said bores.

3,296,730
RETRIEVING DEVICES FOR FISH LURES
Ferdinand B. Leverdingen, Toronto, Ontario, Canada (60 Lurgan Drive, Willowdale, Ontario, Canada)
Filed Aug. 28, 1964, Ser. No. 392,744
4 Claims. (Cl. 43—17.2)



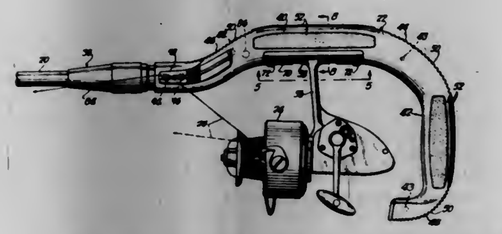
1. A lure retrieving device for use with a hauling line in retrieving a snagged lure suspended on an end of a fishing line, comprising: ring means having a central opening of sufficient size to loosely receive said snagged lure, said ring means including a portion movable relative to an adjacent portion thereof to selectively open and close an entrance slot communicating with said central opening to permit the positioning of said fishing line within said ring, an eyelet secured to said ring means and positioned in the plane thereof for attachment to said hauling line, a plurality of pairs of rigid fluke members secured to said ring means in spaced relation about a portion of the periphery thereof and curvingly inclined outwardly from the plane thereof in opposed relation towards the central axis of the ring means, whereby in operation the ring is lowered over a snagged lure and the hauling line is tensioned, adjacent ones of the fluke members providing pulling engagement of the device with the snagged lure to permit the exertion of retrieving force thereagainst by the hauling line.

3,296,731
SPINNING REEL
Morris E. Wood, Bronson, Mich., assignor, by mesne assignments, to Bronson Specialties, Inc., Bronson, Mich., a corporation of Michigan
Continuation of application Ser. No. 133,907, Aug. 25, 1961. This application Jan. 6, 1964, Ser. No. 339,571
25 Claims. (Cl. 43—20)



1. In combination: a pole for fishing, a spinning reel having a frame, a post securing said frame to one side of said pole, a spool having a line connected thereto, a rotatable assembly comprising a drum and an extendible and retractable line control element mounted on said drum for movement with respect thereto, means for rotating said assembly to cause said element to direct the line onto said spool, means for shifting the assembly relative to the spool to a predetermined position to render said element inoperative to wind line onto the spool and thereby permit the line to freely unwind therefrom, reciprocable means for engaging and disengaging said element so the latter may be caused to stop or release the line from the spool when said assembly is in said position, and means substantially coextensive with said post and operatively connected to said reciprocable means and to other means carried by an opposite side of said pole for actuating said reciprocable means.

3,296,732
CASTING RIG
Finn H. Magnus, Washington Valley Road, Morristown, N.J. 07960
Filed May 14, 1964, Ser. No. 367,596
4 Claims. (Cl. 43—23)



4. A fishing rig comprising an elongated pole portion and an elongated handle portion, said handle portion including two elongated handgrips adapted to be grasped simultaneously by the left and right hands, respectively, of a user, said two handgrips being disposed at substantially right angles to each other, means mounting said pole portion to extend out from and substantially parallel to one of said handgrips, the other of said handgrips including an arcuate thumb rest portion at each end thereof, and means mounting a reel to extend out from said handle portion to a location where it becomes partially gravity is substantially on a line between the tip of the encircled by both said handgrips and where its center of pole portion and the center of the other handgrip.

3,296,733
FISHING LURE
Robert E. McLean, 11003 E. 53rd St., Raytown, Mo. 64134
Filed Feb. 12, 1965, Ser. No. 432,187
6 Claims. (Cl. 43—42.06)



1. A fishing lure comprising:
(a) a buoyant, generally cylindrical body member adapted to float on the water surface with its axis horizontal, the forward end of said body member being conically tapered,
(b) a non-buoyant weight included in said body member and disposed eccentrically to the axis thereof, whereby to resist rotation thereof about its axis as it rests in the water,
(c) a fishhook attached to said body member,
(d) a spindle carried coaxially by said body member and extending forwardly therefrom,
(e) a nose piece affixed to the forward end of said spindle in spaced relation from said body member,
(f) means for attaching a fishing line to the forward end of said nose piece, whereby said lure may be drawn forwardly along the water surface, and
(g) a rotor comprising a hub rotatably mounted on said spindle, a cylindrical shell coaxial therewith, and helical vanes interconnecting said hub and shell, said shell being open at both ends and of larger diameter than said nose piece, whereby water may pass longitudinally therethrough and impinge on said vanes to rotate said rotor on said spindle, the external surface of said shell having areas of contrasting colors imprinted thereon.

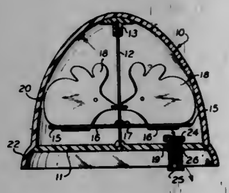
3,296,734
FISH LURE
Clarence R. Johnson, 1248 Montana St., Gary, Ind. 46403
Filed Oct. 1, 1964, Ser. No. 400,761
2 Claims. (Cl. 43—42.09)



1. A lure for fish, said lure comprising a body provided with a rear recess having upper and lower substantially parallel surfaces and a forwardly extending axial opening communicating with said recess, a resilient insert having a forward elongate portion curved in a vertical plane throughout its length extending through said opening and provided with means at the front of said body for connection with a line, said insert also including a pair of divergent legs curved in a vertical plane throughout their lengths and joined to said elongate portion and disposed in said recess and extending laterally

and rearwardly from said body, said surfaces and the curvature of said insert providing a binding fit between said insert and said surfaces whereby to facilitate rapid assembly and disassembly between said body and insert, and hooks carried by said legs in trailing positions at the rear of said body.

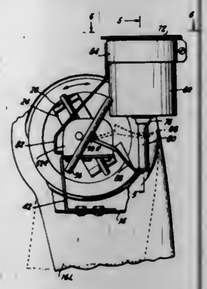
3,296,735
WHIRLING TOY DRIVEN BY SUCTION-PRODUCED AIR CURRENT
Fouad H. Djedda, Riverdale, N.Y., assignor to Jedso Industries Inc., New York, N.Y., a corporation of New York
Filed Dec. 13, 1963, Ser. No. 330,463
3 Claims. (Cl. 46—11)



2. In combination, a liquid container having a bottom, sidewalls and an open top, a drinking tube having one end within the container adjacent the bottom and its other end projecting outwardly through a sidewall of the container adjacent its upper lend and having a fluid-tight connection with said sidewall; an amusement device for inducing children to drink liquids from said container through said drinking tube, such amusement device comprising a transparent housing having sidewalls and a top wall, a base having fluid-tight connection with said housing and forming therewith a hollow body, and means on said body and beneath said base for establishing fluid-tight connection with the open top of said container; a shaft mounted within said housing having mounted thereon a plurality of radially-extending equally-spaced rotatable members having air-impinging surface means thereon, said surface means extending between said base and said top wall; a first opening in said housing at approximately the median plane of said air-impinging surface means, a second opening in said base radially-spaced from said first opening for withdrawing air from said housing, said housing, base and openings constituting means providing a path of air flow from the atmosphere through the first opening to and through the second opening when liquid is removed from the container by suction on the drinking tube, whereby said air flow will impinge upon said air-impinging surface means of said rotatable members to cause rotation thereof.

3,296,736
WALKING AND TALKING DOLL
Ruth Kaplan, New York, N.Y.
(230—41 131st Ave., Laurelton, N.Y. 10040)
Original application June 27, 1961, Ser. No. 119,873, now Patent No. 3,228,143, dated Jan. 11, 1966. Divided and this application July 19, 1965, Ser. No. 472,831
5 Claims. (Cl. 46—118)

1. A combined walking and talking mechanism for a doll having a hollow torso portion and a pair of limbs rotatably supported by one end on said torso portion on opposed sides thereof, comprising a pair of pinions, means within said hollow torso portion supporting said pinions in meshed relation for reciprocal axial rotation in a plane normal to the longitudinal axis of said torso, means operatively interengaging each of said pinions with one of said limbs for movement of said limb upon rotation of said pinion, a sound-producing device including a movable member for actuating said sound-producing device, means including a housing for said sounding device immovably supported on said torso fixedly supporting said sound-producing device within said torso with its movable operating member adjacent said pinion, a member secured to one of said pinions for rotation therewith engageable upon rotation of said pinion against said operating member for moving the same to actuate said device for sound production.



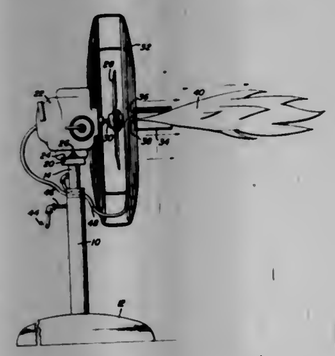
3,296,737
SHEETS HINGEDLY CONNECTED BY MASKING TAPE AND BENDABLE METAL STRIP
William V. Doyle and Margaret D. Doyle, both of 5323 Washburn Ave. S., Minneapolis, Minn. 55410
Filed Aug. 13, 1962, Ser. No. 216,383
16 Claims. (Cl. 46—157)



1. In combination: two adjacent surfaces, each said surface being a surface of a sheet member, said surfaces being disposed in non-coincident planes; elongated shape retaining means being comprised of a band of elongated bendable metal deformable lengthwise, an elongated flexible crepe sheet having pressure sensitive adhesive material on one side thereof and having a width substantially greater than the width of said metal band, and said crepe sheet being affixed by said adhesive material along its lengthwise median portion to said metal band; and said shape retaining means extending between said surfaces and being affixed to the latter by said adhesive material along the lengthwise marginal portions of said crepe sheet for retaining said surfaces in any preselected relative position.

9. A doll construction comprising: a paper doll member including flexible sheet portions; crease means extending transversely of at least one portion of said doll member whereby one part of said doll member may be disposed out of the plane of the adjacent part of said doll member; elongated shape retaining means being comprised of a band of elongated bendable metal deformable lengthwise, elongated flexible crepe sheet having pressure sensitive adhesive material on one side thereof and having a width substantially greater than the width of said metal band, and said crepe sheet being affixed by said adhesive material along its lengthwise median portion to said metal band; and said shape retaining means extending transversely of said crease means and being affixed to said two parts of said doll member by said adhesive material along the lengthwise marginal portions of said crepe sheet for retaining the said one part in any preselected position relative to the said adjacent part.

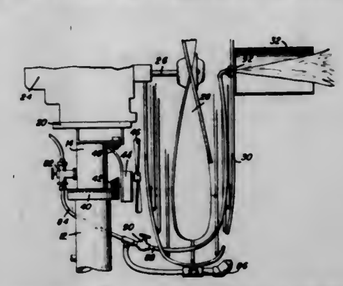
3,296,738
DEFROSTER AND ORCHARD HEATER
Louis A. Wiegel, Orlando, Fla., assignor of fifty percent to B. L. Johnson, Orlando, Fla., and fifty percent to Carol Mary Wiegel
Filed May 11, 1964, Ser. No. 366,288
4 Claims. (Cl. 47—2)



4. A space heater comprising, a stationary standard, a support rotatably mounted by the standard about a vertical axis, a drive motor mounted on the support, a blower connected to the motor, a guard mounted by the motor in enclosing relation to the blower, a burner mounted on the guard, a source of fuel connected to the standard, fuel supply means mounted by the support and connected to the burner, and leakage preventing joint means enclosed by the standard for establishing fluid communication between the source of fuel and the supply means, said joint means including a conduit section connected to the support and extending into the standard, bearing means rotatably supporting the section within the standard, a coupling connecting the fuel supply means to the section, a fitting connected to the source of fuel and rotatably received within the section, said fitting having a port establishing fluid communication between the source of fuel and the section, closure means sealing the fitting within the section and retaining means holding the fitting in assembled relation to the sealing means and the section.

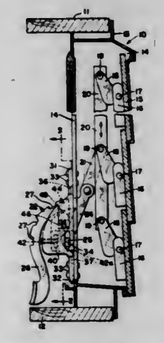
3,296,739
ROTATING ORCHARD HEATER
Louis A. Wiegel, Orlando, Fla., assignor of one-half to B. L. Johnson and one-half to Carol Mary Wiegel, both of Orlando, Fla.
Filed Feb. 17, 1965, Ser. No. 433,434
9 Claims. (Cl. 47—2)

6. A revolving air stream generator comprising an elongated support having upper and lower sections, said upper section being rotatable relative to the lower section about a substantially vertical axis, an air blower producing a generally horizontal stream of air, means mounting said blower upon said upper section for rotation about said vertical axis, a power source connected to and operating said blower, rotary coupling means between said upper and lower support sections, fluid discharging nozzle means mounted by said blower mounting means forwardly of the blower and connected to the upper conduit section, and means mounted by the upper section adjacent to said blower and driven by said stream of air for rotating said upper section about the vertical axis.



7. The combination of claim 6 wherein said fluid is a combustible fuel discharged by the nozzle means and said lower conduit section is connected to a source of fuel and conduit means extending through said coupling means connecting said source of fuel to the nozzle means.

3,296,740
TENSIONED LOCKING DEVICE FOR LOUVRES AND THE LIKE
Thomas G. Sconzo, Macon St., Sayville, Long Island, N.Y. 11782
Filed July 3, 1964, Ser. No. 380,140
2 Claims. (Cl. 49—87)



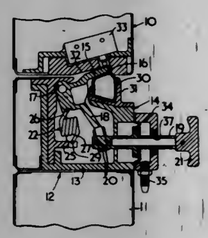
1. An auxiliary locking device for operating a movable member for louvres for tightly closing louvre panes and the like in a jalousie construction, comprising a housing attachable to one of the jambs of the jalousie construction, said housing having an opening therein, a notched movable elevating and depressing arm extending through said opening of the housing pivotally connected at one end to the movable member for the louvres, said arm further having an extending portion pivotally connected in the housing, said extending portion being connected intermediate the ends of said movable arm, means at the extending portion for pivotally retaining said arm, riding tensioned means in the housing for the pivoted arm in the housing, said notched arm engaging the housing to permit setting of said arm, said housing being provided with a movable wedge to regulate the movement of the extending portion.

3,296,741
SPRING OPERATED GATE
Elmont C. Lubmann, Browns Valley, Calif. (Rte. 3, Box 19201, Marysville, Calif. 95901)
Filed May 22, 1964, Ser. No. 369,482
7 Claims. (Cl. 49—131)



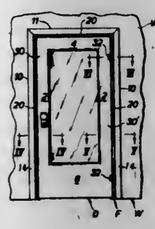
1. A self-closing gate structure comprising a pair of upright posts disposed in spaced aligned relation, a gate member disposed between the posts, means at the lower edge of the gate member hingedly supporting the gate member for pivotal movement about a horizontal axis from a vertical closed position between the posts to a horizontal open position, spring means interconnecting the gate member and at least one of said posts for returning the gate member to a vertical position, a stationary support spaced from one of the posts, and spring means interconnecting the gate member and said stationary support for dampening oscillation of the gate when it returns to its closed position, said dampening spring means including a pair of oppositely extending coil springs attached to the gate member adjacent the lower edge thereof, and pivotal arms mounted on the stationary support and engaging the ends of the springs, and means limiting the inward pivotal movement of the arms whereby springs on opposite sides of the gate will be tensioned as the gate oscillates to opposite sides of its vertical closed position.

3,296,742
LOCKING AND SEALING DEVICES
Frank Radcliffe Mortimer, Coventry, England, assignor to Dunlop Rubber Company, Limited, Erdington, England, a corporation of Great Britain
Filed May 12, 1964, Ser. No. 366,815
Claims priority, application Great Britain, May 17, 1963, 19,618/63
9 Claims. (Cl. 49—319)



1. A combined locking and sealing means for a closure member and a surround member comprising a rigid latch attached to one of said members, and adapted to engage the other member to secure said closure member in a locked closed position, sealing means which is expandable and disposed around said closure member, said sealing means being expandable to effect movement of the latch to a latch closing position, said sealing means being in the form of an inflatable tube which is located to seal a clearance around confronting surfaces of said closure member and surround member, said latch being pivotally movable by expansion of said inflatable tube to be brought into locking relation between said closure member and said surround member.

3,296,743
COMBINATION METAL DOOR AND DOOR FRAME UNIT
Donald S. Curl, Pickering, Ontario, Canada, assignor to Al Lipson and Bernard Smith, both of Toronto, Ontario, Canada
Filed Mar. 31, 1964, Ser. No. 356,134
5 Claims. (Cl. 49—382)



1. In a combination metal door and door frame unit installable in an opening of a wall, wherein said door frame includes a pair of integral door posts of substantially similar and uniform cross-section throughout their length, said door having integral stiles of substantially similar and uniform cross-section throughout their length and being dimensioned to fit said door frame with each of its stiles adjacent to a door post of the doorway, the combination consisting of:

A pair of flanges included in the construction of each said door post, said flanges being angularly related to each other and dimensioned and contoured to serve respectively as a jamb flange against which the door closes and as a surface flange for the wall adjacent said opening;

A corner merging said flanges on each said door post;

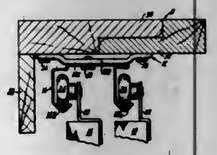
A bead on the surface flange of each said door post;

A ledge adjacent to the corner of each said door post of the surface flange thereof, said ledge being disposed between said corner and said bead;

Means for hingedly hanging said door by one of its said stiles on the door post adjacent thereto for movement thereon between an open position relative to said door frame and a closed position in which said door is centered between said doorposts, said means including said bead on said door post, and

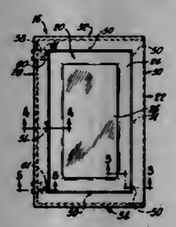
A fin on each said stile, each said fin being dimensioned to overlap and engage substantially the whole of the ledge on the adjacent door post when the door is in its said closed position but to clear the bead on said adjacent door post when the door is moved between its open and closed positions as aforesaid.

3,296,744
ADJUSTABLE HEADER ASSEMBLY
Joffre E. R. Hentzi, Kensington, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Oct. 6, 1964, Ser. No. 401,849
6 Claims. (Cl. 49—409)



1. For use in suspending a sliding door, a header assembly adapted to be mounted in the top of a door opening and comprising an overlying split header having a pair of longitudinally extending header portions laterally adjustable to accommodate walls of varying thickness, an underlying track for supporting the sliding door for traversing movement and a track mounting device including a reversible bracket having one end attachable to one of the header portions and the opposite end attachable to the other of the header portions, the bracket having an aperture formed proximate but offset from a point midway between the ends, and a cooperating fastener extending through the track and received in the offset aperture of the bracket for rigidly fixing the track to the bracket.

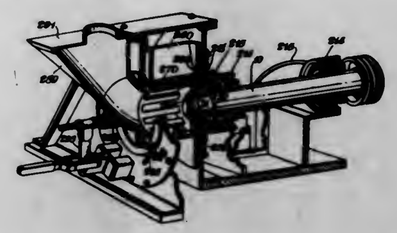
3,296,745
COMPOSITE DOOR FOR CABINETS AND THE LIKE
Xa D. Johnson and George C. Hilfinger, Toledo, Ohio, assignors, by mesne assignments, to Roy C. Fisher and George C. Hilfinger, Toledo, Ohio
Filed Mar. 2, 1964, Ser. No. 348,696
4 Claims. (Cl. 49—501)



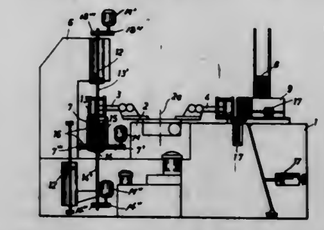
3. A composite cabinet door comprising a rectangular center panel having a margin extending around the entire periphery of said panel, said margin being of predetermined thickness, a die-cast metal frame extending around said margin and over the edges of said panel, said frame comprising four integral frame members including a latch side frame member, a hinge side frame member, an upper end frame member, and a lower end frame member, each of said frame members having a web of substantially uniform width and an inner flange integral with said web and in contact with the margin of said panel, said hinge side frame member and said end frame members each also having an intermediate flange extending from said web along the edges of said panel substantially to the back surface of said panel and an outer flange integral with said web and extending in the same direction from said web as said intermediate and inner flanges, said outer flange being of uniform width which is less than the width of said intermediate flange, said outer flange being spaced from said intermediate flange and adapted to contact the front surface of the cabinet when the door is closed, said latch side frame member also having an outer flange integral with the web and extending along the edge of said panel to the back surface, said latch side outer flange being substantially the same width as said intermediate flanges, said hinge side frame member having means for fastening the panel and a hinge thereto, and said latch side frame member having means to fasten said panel thereto.

3,296,746
PARTICLE THROWING APPARATUS
Joseph E. Bowling, Jr., 21 Northeast Ave., Waynesboro, Pa. 17268, and George W. Powell, 866 View St., Hagerstown, Md. 21740
Original application Apr. 27, 1962, Ser. No. 190,725. Divided and this application Feb. 9, 1965, Ser. No. 431,359
4 Claims. (Cl. 51—9)

1. A particle throwing apparatus for soft abrasive particles having a runnerhead, a number of relatively thin sheet-like throwing vanes radially disposed on the working face of said runnerhead with their ends spaced from its center and with the faces of said vanes perpendicular to said working face whereby rotation of said runnerhead causes particles to be thrown radially outward from the forward faces of said vanes when such particles are supplied to the center, said runnerhead and vanes being integral portions of a single casting, said runnerhead being secured to an unprotected spindle, said spindle being mounted in exposed bearings, an impeller at the center of said runnerhead secured to said spindle, and a slotted impeller cage being between said impeller and said ends of said vanes.



3,296,747
METHOD OF AND APPARATUS FOR HONING PISTON RINGS
Hans Philippsen, Opladen, and Theo Müller, Pattscheid, Germany, assignors to Goetzewerke Friedrich Goetze Aktiengesellschaft, Duesseldorf, Germany
Filed Oct. 23, 1964, Ser. No. 405,909
9 Claims. (Cl. 51—73)

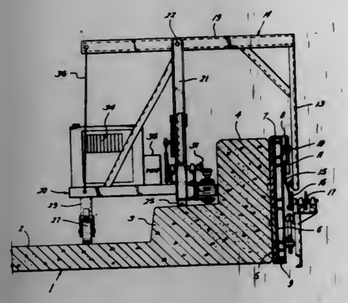


1. In an apparatus for honing split piston rings; a supply station for rings to be honed, a honing station comprising a honing bushing having an internal diameter smaller than the free outer diameter of the rings to be honed, and a discharge station for honed rings, means to convey rings in the form of loose packets from said supply station to said honing station and from said honing station to said discharge station, and means in said honing station for reciprocating and rotating said packet of rings and bushing relatively to carrying out a honing operation, the last mentioned said means in said honing station including members adapted to be introduced into opposite ends of said bushing for engagement with opposite ends of a packet of rings therein, and drive means connected to said members to drive said members in unison in the axial direction of said bushing.

3,296,748
SIDE WALL BUFFER
Dolen E. Talley, Houston, Tex., assignor to Crutcher-Rolfs-Cummings, Inc., Houston, Tex., a corporation of Texas
Filed Aug. 21, 1964, Ser. No. 391,205
7 Claims. (Cl. 51—180)

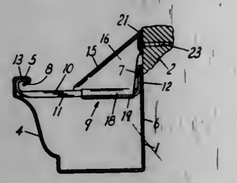
5. A traveling machine for dressing the outer surface of a vertical wall adjoining a concrete road surface, said machine including an engine driven vehicle adapted to

ride on the road surface and provided with an engine driven wheel for traction engagement with one side of said wall, an abrading member engageable with the other side of said wall for the working thereof, a support for



the abrading member and means movably mounting said support on the vehicle for biased action in a direction to push the abrading member toward said engine driven wheel.

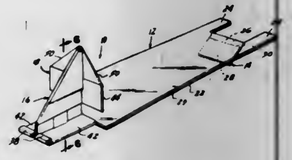
3,296,749
EAVESTROUGH AND HANGER ASSEMBLIES
James L. Cotter, Hastings, Mich., assignor to Hastings Aluminum Products, Inc., Hastings, Mich.
Filed Dec. 23, 1963, Ser. No. 332,376
9 Claims. (Cl. 52—11)



9. The combination with an eavestrough of a first hanger member having end portions engageable with the front and rear walls of said trough and constituting a strut for the walls of said trough, said first hanger member having an opening therein spaced from its rear end, and a second hanger member disposed upon said first hanger member in supporting engagement therewith, said second hanger member comprising a second portion which is of generally triangular shape in side elevational view and which has attaching ears projecting from its rearward edge and mounting means along its lower edge engaging said first hanger member, said first and second hanger members having interlocking parts preventing relative sliding movement thereof when the members are in fully assembled relation, said second hanger member being adapted to receive means for attaching the assembled hanger to a support.

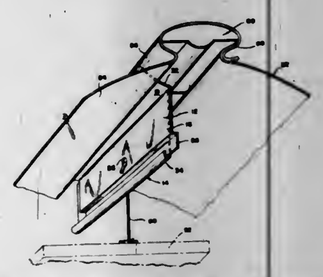
3,296,750
ROOF SNOW GUARD
Joseph D. Zaleski, 100 S. Mountain Drive, New Britain, Conn. 06015
Filed May 4, 1964, Ser. No. 364,396
3 Claims. (Cl. 52—24)

1. A roof snow guard of the type to be hooked on the upper edge of a shingle that is partially overlapped by the next higher course of shingles, said guard being made of weather resistant sheet metal in strip form to include a base, a web, and a foot, the base comprising two superimposed strips the lowermost of which has an upper end extending beyond the uppermost but which is bent downwardly a distance from its upper end to form a hook and to bring its upper end below the uppermost strip which is bent downwardly around the upper end of the lowermost strip for connection therewith, the lower end of the superimposed strips having a longitudinal slot defining a pair of spaced tongues, the web comprising a strip bent into flat inverted U-shape and having end portions which are flared and bent around the longitudinal edges of the base adjacent the lower end thereof so that the web stands substantially in a plane normal to the base and longitudinally thereof, the foot comprising a strip having its



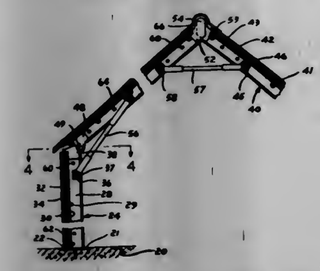
ends bent inwardly to form a T-shape with said ends tucked into the inverted U-shaped web so that the head of the T-shaped foot faces toward the upper end of the base and resides substantially in a transverse plane normal to the base, the said base, web and foot being interconnected and reinforced by bending the base tongues over the flared end portions of the web, by bending the corner of the web remote from the foot downwardly into a closed flap upon the body of the web, and by bending the corners of the head of the T-shaped foot into closed flaps.

3,296,751
CLIP ASSEMBLY FOR CANOPY AND WALL PANELING CONSTRUCTIONS
William C. Heirich, 2912 Wauhillah Drive, Muskogee, Okla. 74401
Filed Dec. 28, 1965, Ser. No. 516,886
10 Claims. (Cl. 52—38)



1. In a building structure of the type having adjacent elongated panels with side portions terminating in locking flanges, the combination with said panels of a clip assembly, comprising first and second clips including wall portions resting in sliding relationship with respect to each other, said wall portions terminating at each end thereof in first and second flanges, one of said first flanges of said first clip overlying a portion of the other of said first flanges of said first clip enabling said wall portions to slide relative to each other, said second flanges including surfaces generally complementarily configured with respect to selected portions of said locking flanges and wedged within said locking flanges of adjacent panels of said building structure, said clip assembly further being provided with attachment means for securing additional structure thereto.

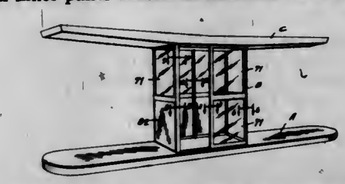
3,296,752
PREFABRICATED FOLDABLE BUILDING
Richard Philp, P.O. Box 41, Cochrane, Alberta, Canada
Filed Feb. 10, 1964, Ser. No. 343,837
2 Claims. (Cl. 52—70)



1. In a foldable building structure, the combination of a pair of foundation sills provided with a pair of upstanding abutment menas spaced apart transversely by a distance corresponding to a desired building width, a plurality of individual building units assembled in juxtaposed relation to provide a desired building length, each of said building units comprising a pair of vertical wall sections having their lower edges removably resting on the respective foundation sills in engagement with the respective abutment means whereby to prevent the wall sections from moving apart beyond the desired building width, a pair of upwardly and inwardly convergent roof sections hingedly connected to upper edges of the respective wall sections and hingedly connected to each other at their point of convergence corresponding to the ridge of the building roof, a horizontal ridge brace extending transversely between and removably connected to said roof sections at points spaced downwardly from the roof ridge, and a pair of removable corner braces extending diagonally from the respective wall sections to the respective roof sections, each of said wall sections and roof sections of each of said building units comprising a pair of spaced parallel side members of a U-shaped cross-section having inner and outer flanges with connecting webs defining a pair of channels open towards each other, a plurality of vertically spaced cross bars extending between and secured to the webs of said side members in inwardly spaced relation from said outer flanges thereof, a covering panel positioned in the space between said outer flanges and said cross bars with its side edge portions projecting into said channels and retained against said outer flanges by said cross bars, means rigidly securing said side edge portions of said covering panel to said outer flanges, and means connecting together the webs of said side members of adjacent building units in back to back relationship.

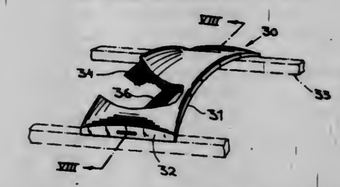
3,296,753
PREFABRICATED SERVICE BUILDING
Joseph Stanley McGee, Dorval, Quebec, George Jacques Miron, Montreal, Quebec, and Margaret E. A. Pitt, Westmount, Quebec, Canada, assignors to Modenco Ltd., Montreal, Quebec, Canada
Filed May 13, 1963, Ser. No. 279,877
4 Claims. (Cl. 52—73)

3. A prefabricated service station, comprising in combination, a metal base having a plurality of spaced-apart uprights connected thereto and extending upwardly therefrom at positions to provide window siding and door frames, a ceiling frame connected to said uprights and encompassing an area corresponding to that of said base, said ceiling frame being spaced from the tops of said uprights, and a canopy mounted on the top of said uprights, a metal roof sheet having marginal eaves and a hollow marginal wall extending downwardly therefrom and made up of an outer inwardly sloping panel welded to the roof sheet inwardly of said eaves and provided with an inwardly extending substantially horizontal panel terminating at its inner end in an upwardly extending flange, and an inner panel welded to said roof sheet and extend-



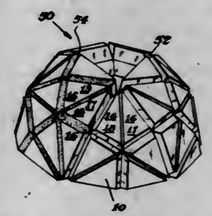
ing downwardly therefrom to meet said upwardly extending flange, said wall extending about the entire roof sheet just inside the eaves to define beneath the roof sheet a light well, said inner panel being connected to said uprights whereby the canopy is mounted on said frame.

3,296,754
SHELL STRUCTURE FOR CONCRETE CONSTRUCTION
Wilhelm Johannes Silberkuhl, Uwe Kastl, and Ernst Haeussler, all of Moorenstrasse 24, Essen, Germany
Filed Nov. 22, 1963, Ser. No. 325,704
Claims priority, application Germany, Nov. 28, 1962, S 82,611
11 Claims. (Cl. 52—80)



1. A structure adapted to be used in roof construction and the like, comprising a concrete shell of substantially rectangular horizontal outline with upwardly arched longitudinally edges at the longer sides of the rectangle, said shell being of upwardly concave transverse curvature at least over the major part of its surface and having a substantially crescent-shaped central cross-section, and reinforcing means imbedded within the body of said shell, said shell having a low center of gravity and being substantially free from edge torques in the region of said central cross-section.

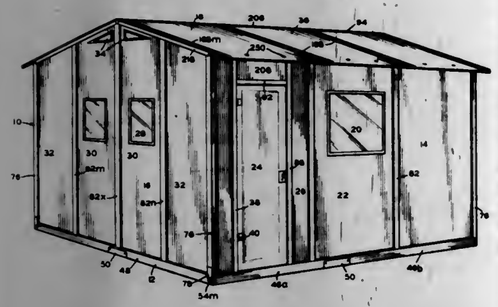
3,296,755
STRUCTURAL PANELS AND STRUCTURES THEREFROM
Douglas S. Chisholm, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 28, 1962, Ser. No. 198,123
12 Claims. (Cl. 52—81)



4. A generally spherical structure comprising a plurality of structural panels, said structural panels being of a generally triangular configuration and having angles

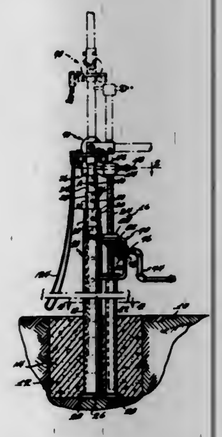
A, B and C, said angles being about 34°36', 58°7' and 87°17', respectively, said panels being joined together with similar edges in totally abutting arrangement and like angles adjacent to form a generally spherical surface.

3,296,756
PRE-FABRICATED DWELLING UNIT
Glenn S. Wade, 753 Steele, Denver, Colo. 80206
Filed Aug. 24, 1964, Ser. No. 391,431
19 Claims. (Cl. 52—93)



1. The pre-fabricated dwelling unit which comprises: a rectangular base frame including front and rear wall-supporting elements interconnected at their ends by side-wall supporting members to form corners, said wall-supporting members each having an upwardly-opening longitudninal groove in the top surface thereof adapted to receive and retain a wall panel; first connector means releasably interconnecting the frame elements at the corners formed thereby; upright stud-forming elements having longitudinal grooves in the surfaces thereof facing along a wall, said stud-forming elements including a stud at each corner and at least one intermediate stud located between the corner studs on each wall, one of said intermediate studs comprising a center stud positioned midway between the corner studs on both end walls, the corner and intermediate studs on the front and rear walls being of uniform length, the intermediate studs on the end walls being longer than the corner studs and adapted to define a gabled roof line with uniform pitch sloping downwardly toward the eaves from the ridge thereof defined by the center studs, and two of said studs including at least one intermediate stud cooperating to define jamb elements of a door frame; second connector means releasably fastening the intermediate studs to the base frame elements in fixed spaced parallel relation to one another; third connector means carried on the lower ends of the corner studs releasably fastening the latter to the first connector means of the base frame; a main ridge beam spanning the space between the center studs of the end walls; rafters including end rafters connecting each corner stud and at least one intermediate rafter connected to one of the intermediate studs on both the front and rear walls, and each of said rafters having each side thereof facing along the roof shaped to provide a ledge adapted to support a roof panel; fifth connector means releasably interconnecting the intermediate rafters to the main ridge beam; sixth connector means releasably interconnecting the intermediate rafters to one of the intermediate studs; seventh connector means releasably interconnecting the end rafters to the main ridge beam; eighth connector means releasably interconnecting the end rafters to one of the corner studs; a plurality of wall panels inserted into the grooves in the studs and base frame elements to form a rectangular enclosure; a door hingedly attached to one of the jamb-forming studs; front and rear stringer elements having grooves in the underside thereof receiving the upper edges of the front and rear wall panels; ninth connector means releasably interconnecting the ends of the stringers to the corner studs; a plurality of roof panels covering the openings defined between the rafters and extending from the main ridge beam to the stringers, said panels resting upon the stringers and projecting therebeyond to form overhanging eaves, and the side edges of said roof panels resting upon the rafter ledges so as to leave a portion of said rafters accessible therebetween; tenth connector means releasably fastening the roof panels to the stringers; rafter cap members overlying each rafter and resting upon the roof panels so as to seal the joints therebetween; eleventh connector means carried by the intermediate rafter caps releasably fastening same to the sixth connector means; twelfth connector means carried by the end rafter caps releasably fastening same to the seventh connector means; a main ridge beam cap element overlying the main ridge beam and resting upon the roof panels so as to seal the joints therebetween; thirteenth connector means releasably interconnecting the main ridge beam cap element to the main ridge beam; and, fourteenth connector means carried by the main ridge beam cap in position to overlie the uppermost ends of the rafter caps and hold the latter down upon the roof panels.

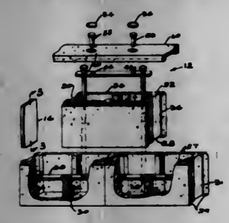
3,296,757
EQUIPMENT MAST ARRANGEMENT
Louis N. Goodman, 5510 S. Claiborne Ave., New Orleans, La. 70125
Filed June 23, 1965, Ser. No. 469,052
14 Claims. (Cl. 52—111)



1. An antenna mast comprising:
a plurality of telescopic tubular sections including an outer section and at least one inner section,
means for mounting said outer section for holding said inner section at a position of minimum height so that a portion of the inner section protrudes above said outer section,
said inner section being slidably movable upwardly in said outer section to a desired position therein,
means secured above ground to said outer section, including an axially movable lead screw extending into the ground and having at its upper end a means for holding onto said protruding inner section portion, for lifting said inner section to said desired position,
means for releasably securing said inner and outer sections together at said desired position, and

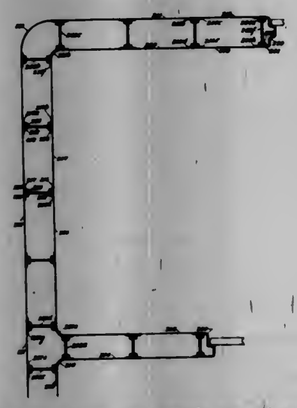
means atop the innermost one of said telescopic sections for receiving an antenna when said sections are closed up and for holding the antenna in correct position when the said telescopic sections are fully extended.

3,296,758
SUPERIMPOSED BUILDING BLOCKS WITH VERTICALLY SPACED FLAT BARS INTERFITTED THEREWITH CONNECTED BY THREADED STUD MEMBERS
Kirkkejner O. Knudsen, 13918 Ramhurst, La Mirada, Calif. 90638
Filed June 28, 1963, Ser. No. 291,477
4 Claims. (Cl. 52—227)



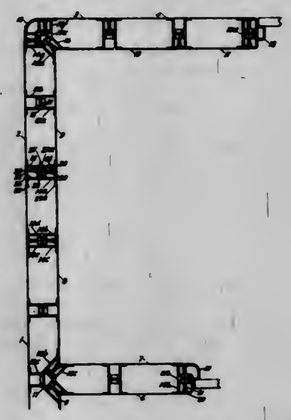
1. A wall construction comprising:
a multiplicity of hollow blocks laid in superimposed rows, said blocks including a bottom, side walls and end walls to define an opening to the top thereof, said blocks further including a seat defined therein intermediate said top and said bottom, and still further defining coupling spaces in said end walls;
a plurality of locking members engaged in said coupling spaces in adjacent blocks for mating adjacent blocks in each of said rows, said locking members in each of said rows being offset from the locking members in adjacent rows; and
clamp means interlocking said blocks in different rows including flat bar means seated against said seats defined in said blocks, said bar means defining one pair of locking apertures and one pair of bores, said clamp means further including bolts passing through bores in one of said bars and locking to said locking apertures in other of said bars.

3,296,759
INTERLOCKED HOLLOW PANEL STRUCTURE
John Pavlecka, 8797 Capital, Oak Park, Mich. 48237
Filed Dec. 7, 1964, Ser. No. 423,887
35 Claims. (Cl. 52—236)



1. In a structure, two panels spaced apart from each other, a number of stringers extending on said panels at modular intervals apart from each other and in opposition with each other, each stringer bearing a marginal shoulder and a ledge and reentrant mortise and tenon means therebetween, said mortise and tenon means being asymmetrical about the stringer median plane and each mortise being wider than each tenon, said mortise and tenon means on said stringers in opposition being identical with each other and being interfitted with each shoulder opposite each ledge thereof and with gaps between at least the reentrant portions of each mortise and each tenon thereof, and linear keys slid endwise into said gaps for blocking said stringers in opposition against separation from each other, said stringers on each panel having said shoulder and ledge thereof on corresponding sides whereby said panels may be identical with each other and may be faced with each other by any number of said modular intervals.

3,296,760
INTERLOCKED PANEL STRUCTURE
John Pavlecka, 8797 Capital, Oak Park, Mich. 48237
Filed Sept. 29, 1964, Ser. No. 400,116
37 Claims. (Cl. 52—277)



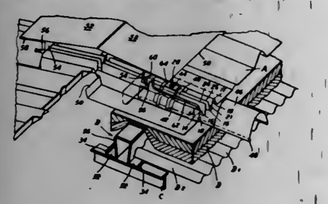
1. In a structure, a panel unit, a tenon extending lengthwise, on said panel unit and having obliquely reentrant flanks, a linear key or keying member having a mortise and obliquely reentrant flanks therein in a slidable engagement with said tenon flanks, said tenon flanks being convex and said mortise flanks being concave, ledges and marginal corners thereon extending on said panel unit along said tenon flanks and forming acute corners therewith, and shoulders and marginal corners thereon extending on said key or member along said mortise therein, said shoulders being in contiguity with said ledges at and between said acute corners and said marginal corners for abutment therewith.

3,296,761
GABLE ROOF COVERING AND MEANS FOR SECURING THE SAME
Giovanni Varlonga, Via B. Verro 90, Milan, Italy
Filed Dec. 3, 1963, Ser. No. 327,694
Claims priority, application Italy Dec. 11, 1962
8 Claims. (Cl. 52—278)

1. A gable roof comprising
(a) a framework which is at least partly metallic;
(b) metal sheets supported by the framework and placed edge to edge to cover said framework, two opposite edges of each sheet each being folded to form an upwardly projecting rib and a downwardly projecting rib, the latter rib being nearer the edge of the sheet than the first mentioned rib and having

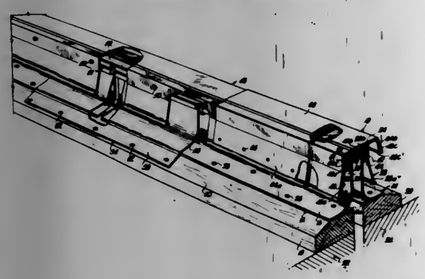
its apex in the plane of the sheet, both ribs extending the length of the edge of the sheet and defining two oppositely facing channels, the covering sheets being separated adjacent the ridge of said roof and forming a gap extending along said ridge;

(c) clamps securing each ribbed edge part of each sheet to the ribbed edge part of an adjacent sheet, each clamp including a member spanning and engaging the two adjacent ribbed edge parts and screw means mounted on the framework for tightening this member down onto the ribbed edge parts and clamping the sheets to the framework;



(d) spring strips covering the ribbed edge parts and clamps, each strip having inwardly hooked longitudinal edges for engaging the ends of said members and maintaining the longitudinal edges of the strip hooked on said members; a ridge cap covering said gap and comprising flanges projecting downwardly from the underside of said cap and having bent-up edges forming channels; and hooks held by the clamps most adjacent said ridge and engaging in the last-mentioned channels for holding said ridge cap on said roof.

3,296,762
ROOF EXPANSION JOINT
Wenzel W. Thom, Wichita, Kans., assignor of one-half to Cecil D. Jones, Wichita, Kans.
Filed Dec. 31, 1962, Ser. No. 248,579
7 Claims. (Cl. 52—395)



2. Expansion joint structure for a pair of relatively shiftable roof sections having respective upper surfaces separated by a join therebetween, said structure comprising:

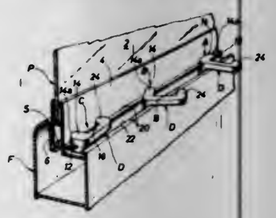
a pair of expansion members adapted to be secured to respective sections adjacent the margins thereof defining said joint and to extend upwardly from the corresponding surface;

means on one of said members and extending laterally therefrom in overlying relationship to the uppermost margin of the other member for closing said joint when said members are secured to the sections and for permitting relative movement of said other member and said means as the members move toward and away from one another upon expansion and contraction of said sections; and

a flexible element secured to and spanning the distance between said members below said closing means, said element being disposed for sealing said joint when said members are secured to said sections, said element being provided with a pair of opposed sides, said closing means being disposed for clamping said sides to the uppermost margins of said members,

said other expansion member including a flashing member having a first portion overlying the corresponding side of the element and slidably engaging said closing means, said flashing member being provided with a second portion extending downwardly from said first portion and being normally spaced from the major portion of said other member to present a region therebetween for receiving a quantity of roofing material.

3,296,763
DEVICES FOR REMOVABLY LOCKING PANELS IN FRAMING
Donald S. Curl, Pickering, Ontario, Canada, assignor to Al Lipson and Bernard Smith, both of Toronto, Ontario, Canada, as nominees
Filed July 28, 1964, Ser. No. 385,669
7 Claims. (Cl. 52—475)



1. Structure installable in a building aperture including:

Framing for surrounding and providing seating for a removable panel;

Detents for releasably retaining said panel in its seating on said framing, and

A formation on said framing with which one, at least, of said detents is withdrawably engageable for movement between panel retaining and panel releasing positions;

Said detent being withdrawable from engagement with said formation when it is in its panel releasing position;

Means on said formation cooperating with said detent whereby said detent is non-withdrawably captured by said means when it is in its panel retaining position and being then wedged between said formation and said panel to apply an expansive thrust therebetween, and

Said framing being of uniform cross-section throughout its length rendering said formation continuous substantially along each side of said framing enabling said one detent to be selectively engaged with said formation at various points along the length of a side of said framing and to be movable between said points while engaged with the formation as aforesaid.

3,296,764
COUPLING FOR CONSTRUCTION ELEMENTS
Joseph Rosaire Tremblay, St. Romuald, Portneuf County, Quebec, Canada
Filed Dec. 26, 1963, Ser. No. 333,586
8 Claims. (Cl. 52—584)

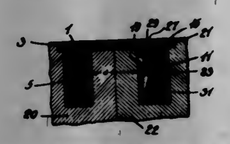
6. In a construction joint, the combination comprising:

(a) two construction panels disposed in edge facing relationship each with a generally planar surface normal to the edge thereof in alignment with a similar

surface of the other panel; said panels formed with holes extending at least partially therethrough and through said aligned planar surfaces; the bores of said holes generally parallel to said facing edges;

(b) a generally flat plate sitting on both said planar surfaces and bridging said facing edges;

(c) a pair of spaced parallel legs projecting from one face of said plate; one leg snugly fitting in one of said holes and the other leg loosely fitting in the other hole;

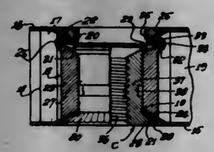


(d) said loosely fitting leg formed with a wedge recess defining a sliding surface inclined toward said other leg;

(e) a wedge in said recess having an inclined surface applied against said sliding surface of said recess and a frontal surface abutting the bore of the corresponding hole whereby displacement of said wedge in one direction along said sliding surface causes displacement of said frontal surface toward said other leg and said panels toward edge abutting relationship, and

(f) means extending through said plate to displace said wedge for sliding thereof along said sliding surface.

3,296,765
MECHANICAL SANDWICH PANEL SPACER WITH IMPROVED TORQUE RESISTANT ANCHORAGE
Frederick W. Rohé, 5191 S. Bradford, Placentia, Calif., and Charles S. Phelan, Tustin, Calif.; said Phelan assignor to said Rohé
Filed June 29, 1964, Ser. No. 378,714
11 Claims. (Cl. 52—617)



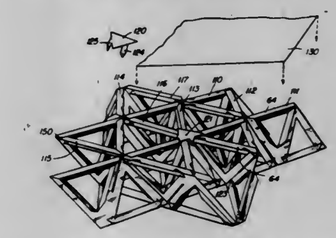
1. A fastener for installation in a sandwich panel having spaced skin sheets joined by a core of low density, comprising: a tubular body including a relatively thick main body portion, a weakened section defined by a counterbore in one end of said tubular body and joined to one end of said main body portion by an annular offset shoulder, and a preformed head on the end of said weakened section, projecting radially therefrom, and having a frusto-conical abutment shoulder engageable in a dimple in the outer face of one of said skin sheets around an aperture therein in which said fastener is receivable, said weakened section being adapted to be bulged outwardly under compression applied to said fastener, whereby to form a secondary head engageable with the inner face of said one skin sheet at the edge of said aperture in adjacent opposed relation to said preformed head so as to clamp said edge between said head and secondary head, said weakened section including a base portion gradually increasing in thickness toward said shoulder, its inner wall being concavely curved and substantially tangent to the cylindrical wall of said counterbore and to said shoulder, on a radius substantially equal to the difference between the radii of said counterbore and of the interior of said thick-walled section, said weakened portion being of uniform thinness full length from its point of tangency with said base portion to a junction with said abutment shoulder, said base portion providing a buttressing characteristic effective to direct the outwardly bulging fold of said weakened section toward said skin sheet inner face under the effect of compression utilized for collapsing said weakened section and effectively clamping the dimple of said one skin sheet between said heads, with said secondary head leaning axially behind said dimple.

3,296,766
CORRUGATION END FINISH
Albert G. Dean, Narberth, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 12, 1964, Ser. No. 389,015
3 Claims. (Cl. 52—625)



1. In combination, a panel having a plurality of corrugations extending in a given direction, ones of said plurality of corrugations being flattened along their end portions and terminating along an edge transverse to said given direction, a member having a flat portion underlying said panel beneath said flattened portions of said corrugations thereby stiffening said panel against bending between corrugations, said member having a marginal edge portion extending upwardly from said flat portion to overlie the same and to abut said flattened corrugations terminating along said transverse edge..

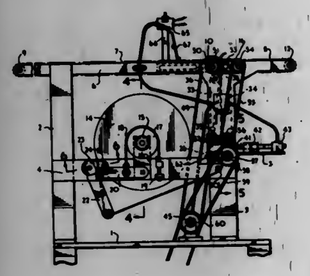
3,296,767
TRUSS CONSTRUCTION
Samuel Lebowitz, Brooklyn, N.Y., assignor to Spatruss, Inc., New York, N.Y., a corporation of New York
Filed June 27, 1963, Ser. No. 290,962
11 Claims. (Cl. 52—634)



1. An octa-tetra truss composed of a multiplicity of structural units, each unit comprising structure defining a plurality of reversely juxtaposed, coplanar triangular areas, arranged so that the bases of the triangular areas lie in respectively opposite parallel edges of the unit, said triangular areas being defined by structural portions in each unit extending obliquely between the parallel edges, said units being engaged with each other along said oblique portions, and being arranged in a plurality of sets of parallel rows, each row consisting of endwise successive units disposed obliquely between the upper and lower faces of the truss, with the parallel edges of each unit respectively lying in said faces, and the aforesaid sets of rows being arranged to intersect each other along oblique portions of the units so that the parallel edges of the units

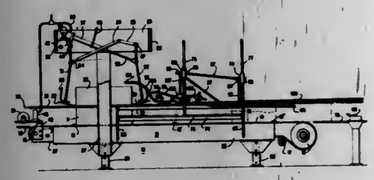
define obliquely-angled grid patterns in the faces of the truss.

3,296,768
INTERLEAVING MACHINE
Walter Lotz, 1133 Don Mills Road, Apt. 605, Don Mills, Ontario, Canada
Filed Dec. 16, 1963, Ser. No. 330,793
3 Claims. (Cl. 53—74)



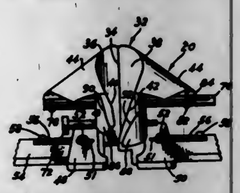
1. An interleaving machine comprising in combination a product conveyor formed in two spaced longitudinally arranged sections, a sheet feeding mechanism including a holder for a supply of sheet material, a pair of confronting feed rollers between which the material from said holder passes, a pair of confronting force-feed carriers comprising vertically arranged pressure loaded belts in continuous engagement with the sheet at the delivery end and discharging at the space between the sections of said conveyor, said carriers being spaced from said feed rollers, a sheet severing device disposed between said feed rollers and said carriers, and driving means for the machine subject to the control of product on said conveyor.

3,296,769
DEVICE FOR OPENING CARTON FLAPS
William R. Patton, Streator, Ill., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Sept. 26, 1963, Ser. No. 311,825
11 Claims. (Cl. 53—76)



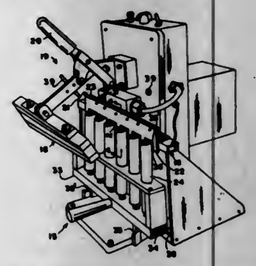
3. A carton flap folding machine arranged to cooperate with a conveyor moving cartons successively therethrough, comprising a sensing lever arranged to respond to arrival of a carton, thrust arm means controlled by said lever to fold forward a leading end flap of said carton upon sensing arrival of the carton, said arm means being retractable upon passage of the carton, an end flap plow member arranged to receive thereunder said leading end flap as the carton approaches said member and for folding rearwardly a trailing end flap as the carton passes under said member, side plow means engaging side flaps and being shaped to fold outwardly each of said side flaps, metering means releasing one carton at a time to said machine, and power means operating said thrust arm in response to actuation of said sensing lever.

3,296,770
ADJUSTABLE PACKAGE-FORMING MACHINE
Russell W. Wilson, 134 Highland Road, York, Pa. 17403
Filed Jan. 13, 1965, Ser. No. 425,170
14 Claims. (Cl. 53—182)



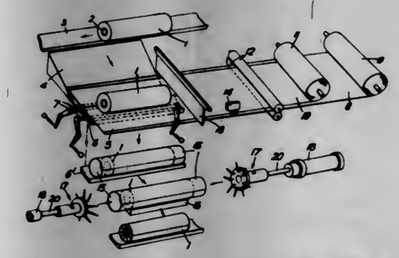
1. A device for forming and filling packages formed from sheet material of continuous length and comprising in combination, a substantially cylindrical collar comprising a filling tube and package former, means to feed and guide sheet material of continuous length to one end of said collar and draw the sheet through said collar to overlap the edges thereof and form a tubular package, means to seal said overlapping edges continuously, means to seal the leading end of said tubular package, means to discharge a predetermined amount of material into said package, means to seal the opposite end of said package transversely thereof adjacent the trailing portion of the material in said package and sever the same from the oncoming tubular package adjacent said sealed opposite end of said package, in combination with means to adjust the circumference of said collar correspondingly to vary the circumference of the formed packages and thereby permit adjustability of the volume of the formed packages irrespective of the length thereof.

3,296,771
APPARATUS FOR HEAT SEALING AN OPEN END OF THERMOPLASTIC TUBES
Alfred Feuer, 422 Beach 146th St., Neponsit, N.Y. 11694
Filed Oct. 7, 1964, Ser. No. 402,279
12 Claims. (Cl. 53—373)



1. In a heat sealing apparatus of the thermal impulse type comprising, in combination, sealing and pressure bars positioned opposite each other and mounted for relative movement towards and away from each other; said sealing bar including a sealing band facing the pressure bar, adapted to be heated by passing a pulse of current therethrough, means for relatively moving said bars to apply pressure on one end region of a thermoplastic tube positioned between them whereby said tube end is closed and made to assume a fantail form contacting ply portions, a substantially flat element positioned between said bars; said element having a notch which has opposite walls and an intermediate floor wall; the contacting ply portions of said fantail form being adapted to enter said notch, fit therein and contact said floor wall; said sealing band extending along said contacting ply portions across the tube when said ply portions are entered in said notch; said bars and notched element when holding said ply portions, forming a mold cavity therefor, and switching means operable in timed relation with said bar moving means, for passing a pulse of current through said sealing band whereby said contacting ply portions will be made to conform to said mold cavity and be sealed together.

3,296,772
WRAPPING OF CYLINDRICAL ROLLS
John Sidney Barker, Burnham-on-Sea, England, assignor to British Cellophane Limited, Somerset, England, a British company
Filed Dec. 30, 1963, Ser. No. 334,347
Claims priority, application Great Britain, Jan. 9, 1963, 1,071/63
8 Claims. (Cl. 53—389)



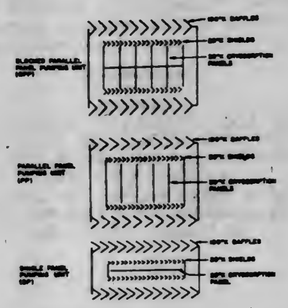
2. A device for applying a cylindrical envelope of wrapping material around a cylindrical roll, said wrapping material extending beyond the end face of said roll, said device adapted to fold the extending end portions of said wrapper against said end face, which device comprises, in combination:

(1) means for folding inwardly the said end portion of the cylindrical envelope, whereby a plurality of radially disposed folds are formed in the said end portion of the envelope, and the said end portion of the envelope at the said folds is brought into contact with the end face of the roll by pressure exerted on the said end portion of the envelope at the said folds,

(2) a compressing member capable of movement towards the end face of the roll whereby those portions of the envelope between the folds which are upstanding relative to the end face of the roll may be flattened against the said end face of the roll, said folding means comprising a body member capable of relative movement axially towards the end of the roll and having a ring of fingers projecting forwardly and outwardly from the face of the body member for engaging and folding the said end portion of the cylindrical envelope of wrapping material, the said fingers being pivoted to the body member and being capable of being splayed outwardly against a return spring and the fingers having heel portions which press the portion of wrapping material beneath each finger firmly into contact with the end face of the roll when the fingers are caused to splay outwardly when making contact with the end of the roll.

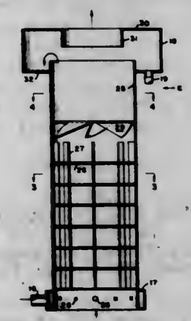
3,296,773
ADSORBENT-COATED THERMAL PANELS
Russell A. Hemstreet, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Mar. 24, 1964, Ser. No. 354,290
5 Claims. (Cl. 55—27)

4. Process for creating a vacuum in a closed chamber containing a mixture of gases, some of which condense and freeze at a temperature at which the remainder are uncondensed, which comprises providing in gaseous communication with said closed chamber a cryosorption panel baffled by a condensation array and optically shielded by a radiation shield, said cryosorption panel, condensation array and radiation shield each having cooling means; and sequentially cooling first the radiation shield to a predetermined low temperature, but not sufficiently low to condense any of the gases of the mixture, secondly



cooling the condensation array to a temperature lower than that of said radiation shield and sufficiently low to condense and freeze the condensible gases of the mixture, and thirdly cooling the cryosorption panel to a temperature sufficiently low to adsorb and hold in the adsorbed state the remaining gases of the mixture whereby the number of gas molecules in the chamber in free molecular motion is substantially lessened.

3,296,774
GAS-LIQUID CONTACTOR WITH WALL OBSTRUCTIONS AND CONTACTING METHOD
Carolus J. Hoogendoorn and Willem H. Manger, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 30, 1963, Ser. No. 305,772
Claims priority, application Netherlands, Sept. 5, 1962, 282,917
7 Claims. (Cl. 55—92)



7. The method of contacting a liquid and a gas by concurrent flow which comprises the steps of:

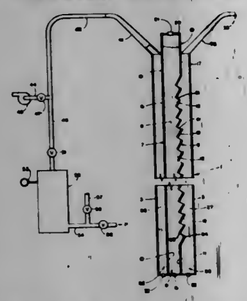
(a) flowing a stream of said gas upwards along an open linear path through a confined contacting zone,

(b) supplying liquid from outside said zone directly to said gas stream at a lower part of said zone and entraining the liquid in the gas stream as small droplets,

(c) within said contacting zone depositing said droplets on surfaces situated laterally of said path, coalescing said deposited droplets on said surfaces, and reentraining the coalesced liquid in said gas stream from said surfaces,

(d) above said contacting zone imparting to said gas stream and the liquid droplets entrained therein a rotating motion about the vertical axis of said path and thereby inertially flinging the liquid droplets outwards,
(e) flowing said rotating stream through a confined separating zone, coalescing the liquid droplets at the periphery of said zone, and
(f) separately discharging the coalesced liquid from the periphery of said separating zone and the gas from the central region of said separating zone.

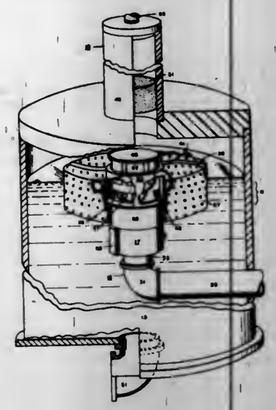
3,296,775
METHOD AND APPARATUS FOR TREATING FLUIDS AND NON-FLUID MATERIALS
Arthur Morton Squires, 245 W. 104th St., New York, N.Y. 10025
Continuation of application Ser. No. 230,822, Oct. 16, 1962. This application Oct. 4, 1965, Ser. No. 492,439
12 Claims. (Cl. 55—98)



1. The method of treating at least one of a granular material and a fluid by contact with one another comprising arranging the granular material in a bed having a plurality of transversely disposed, upwardly spaced, fluid entry portions separated and supported by interposed members having outer and inner edges with respect to said bed, said bed having fluid exit portions spaced from said inner edges, passing fluid through said fluid entry portions and outwardly from the fluid exit portions of the bed, and thereafter causing a surge flow of a gas sharply peaking substantially above and substantially immediately declining below the minimum steady flow rate at which the flow of gas causes motion of the granular material and in a reverse direction through said fluid entry portions to remove a portion of the granular material from the bed.

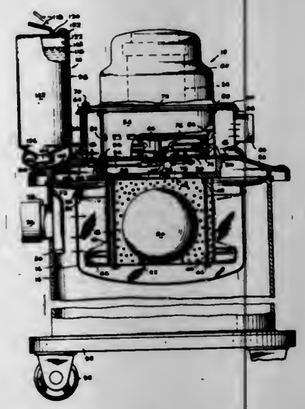
3,296,776
APPARATUS FOR SEPARATING GASES FROM LIQUIDS
Carl A. Youngman, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 30, 1964, Ser. No. 407,747
6 Claims. (Cl. 55—165)

1. A gas separator for removing gaseous components from water comprising
(a) a breakout chamber,
(b) a gas-water inlet means connected to said chamber terminating as a vertically disposed standpipe having a groove formed about its circumference and communicating passageways between the interior of said standpipe and said groove,
(c) a sleeve valve slidably mounted on said standpipe and rotatable about same for controlling flow from said groove which valve has radially extending tubular members through which said flow is discharged into said chamber,
(d) a float responsive to the level of water in said chamber and fixedly attached to said valve for moving same upward and downward on said standpipe thereby adjusting said flow to maintain a predetermined water level,



(e) a gas outlet means connected to said chamber, and
(f) a water outlet means connected to said chamber.

3,296,777
COMBINATION VACUUM SWEEPER AND LIQUID VAPORIZER
Clark E. Jackson and Sydney G. Thornbury, Rolling Hills, Calif., assignors to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed Aug. 6, 1964, Ser. No. 387,743
11 Claims. (Cl. 55—216)



1. In combination with a vacuum sweeper comprising an outer case, a blower, means in said case forming a blower chamber, an air inlet to said blower chamber, filter means in advance of said inlet, an air discharge outlet from said blower chamber, bracket means, fastener means mounting said bracket means on said outer case, said bracket means comprising a vertically disposed bracket, a bent strap portion connected to the lower end portion of said bracket, means on said strap portion forming a container support, a container, guide means on said strap portion to receive the inverted upper end of the container, means carried on the upper end portion of said bracket for engaging the bottom of the inverted container, a tube for drawing off liquid from said container, said tube extending from the lower end of said bracket means, into the interior of said case to a location therein adjacent the inlet to said blower chamber, and a nozzle connected to the inner end of said tube adjacent said inlet, for aspirating liquid withdrawn from said container via said tube.

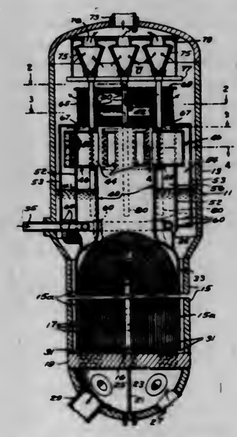
3,296,778
CLEANING DEVICE FOR DUST SEPARATING APPARATUS
Nils Dock, Saltsjo-Duvnas, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Mar. 23, 1965, Ser. No. 442,111
Claims priority, application Sweden, Mar. 31, 1964, 3,897/64
4 Claims. (Cl. 55—296)



1. In apparatus for separating dust consisting of a partition arranged across a gas channel or a channel-like housing, a number of small cyclones having clean gas outlets mounted in apertures in said partition in superposed relation in a vertical row, and dust outlets connected to an outlet duct for said vertical row, the improvement wherein the vertical outlet duct is provided with a cleaning device axially displaceable in said duct and consisting of a vertical rod and scrapers, said scrapers corresponding in number to the cyclones of said vertical row, each scraper comprising a pair of wire bows fastened at their upper and lower ends to said rod and having an upper horizontal part with an arched shape corresponding to the curvature of the outlet duct, a vertical part, and a lower end curved towards the rod and having an arched shape similarly corresponding to the curvature of the duct.

3,296,779
VAPOR-LIQUID SEPARATOR
Ernest L. Daman, Westfield, and John J. Vail, Rahway, N.J., John Blizard, Garden City, N.Y., and Henry Phillips, Metuchen, N.J., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Continuation of application Ser. No. 107,698, May 4, 1961. This application Mar. 6, 1964, Ser. No. 350,066
2 Claims. (Cl. 55—337)

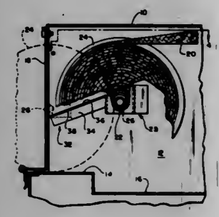
1. An apparatus for separating a mixture of liquid and vapor flowing from a vapor generator, said vapor-liquid mixture containing a majority by weight of liquid, comprising:
a vertical cylindrical outer housing having an open lower end for association with a vapor generator said housing having a closed upper end defining a vapor discharge port;
a vertical cylindrical collection member having an open lower end for association with a vapor generator for receiving a flow of vapor-liquid mixture and a closed upper end, said vertical cylindrical collection member defining a series of evenly-spaced rectangular slots about the periphery of said vertical cylindrical collection member adjacent said upper end;
a plurality of radially disposed horizontal conduits with rectangular cross-sections, each radially disposed horizontal conduit in communication with one of said slots and having an arcuate end defining a discharge opening, the outer ends of said radially disposed horizontal conduits forming a concentric circle about said vertical cylindrical collection member;
a vertical cylindrial outer baffle concentrically located within said vertical cylindrical outer housing and closely spaced about the outer ends of said plurality of radially disposed horizontal conduits, said vertical cylindrical outer baffle having a vapor discharge means in the upper portion thereof and extending from at least the uppermost edge of said plurality of radially disposed horizontal conduits along a substantially major portion of said vertical cylindrical collection member;
a series of downwardly sloping vanes located in each of said discharge openings whereby said vapor-liquid



mixture is discharged downwardly and tangentially onto said vertical cylindrical outer baffle thereby imparting a centrifugal motion which separates a substantial part of the liquid from the vapor;
a vertical cylindrical inner baffle concentrically located about said vertical cylindrical collection member and within said vertical cylindrical outer baffle, said vertical cylindrical inner baffle extending from the lower edge of said plurality of radially disposed horizontal conduits along a major portion of said vertical cylindrical collection member, said vertical cylindrical inner baffle forming a concentric circle about said collection member smaller than the concentric circle formed by said radially disposed horizontal conduits, said vertical cylindrical outer baffle and said vertical cylindrical inner baffle forming an annular vapor-liquid separation chamber;
filtering means including a cylindrically shaped wire-mesh filter for additionally filtering out remaining liquid and drying the vapor, said cylindrically shaped wire-mesh filter being located directly above said plurality of radially disposed horizontal conduits, said discharge port being located above said filtering means so that the vapor passes through the following means; and

a plurality of vertically oriented pipes extending downwardly from said filtering means below said plurality of radially disposed horizontal conduits between said vertical cylindrical inner baffle and said vertical cylindrical collection number.

3,296,780
FILTER MEDIA LOADING ARRANGEMENT FOR ROLL-TYPE AIR FILTER
Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed July 30, 1963, Ser. No. 298,677
4 Claims. (Cl. 55—354)



1. A roll-type air filter of the type including a filter medium supply section, a filter medium rewind section, an open face air passage intermediate the supply section and said rewind section, filter medium extending through said air passage from said supply section to said rewind section so all air to be filtered is passed through said medium in said air passage, where said filter medium in said supply section is wound upon a mandrel having end rims and spindles projecting outwardly from said end rims, including an improved filter medium supply section comprising:

(a) a housing including fixed end walls, a forward open face through which said roll is inserted, and a bottom wall;

(b) bearing means projecting inwardly from the inner faces of said end walls to receive said spindles in nesting relation and support said spindles with said rims therebetween when said roll is in operative position;

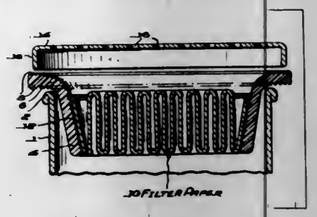
(c) ramp means extending forwardly and inclined downwardly from each of said bearing means toward said forward open face,

(i) each of said ramp means providing an upper surface supporting said spindles during movement to said bearing means position with the forward ends of said upper surfaces being spaced a distance above said bottom wall slightly less than the radius of said end rims so the center of said projecting spindles is above said forward end of said upper surface when said roll of filter medium rests on said bottom wall,

(ii) said ramp means having opposing edges spaced in converging relation in a front-to-rear direction to provide for lateral centering of said roll during insertion by contact of either of said rims with its respective edge of said ramp means.

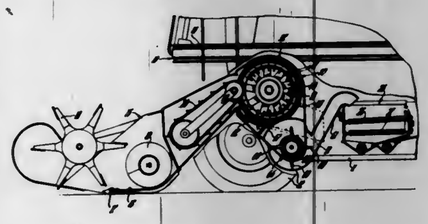
3,296,781
FILTER
Helmut F. Schumann, Berlin, Germany, assignor to Auergesellschaft G.m.b.H., Berlin, Germany, a corporation of Germany
Filed Nov. 10, 1964, Ser. No. 410,174
2 Claims. (Cl. 55—497)

1. A filter comprising a tubular housing having a sidewall and an open end, a filter holder of flexible, resilient, solid, polymeric material having a tubular portion within said housing and an integral flange portion extending outwardly over said end and downwardly along said sidewall, each surface of said flange portion having a plurality of circumferential grooves, a self-supporting corrugated filter media adhesively sealed to said tubular portion, a



perforated cap having a sidewall surrounding said flange and holding said flange in sealing frictional engagement against said housing and said cap, said cap being removably secured to said housing solely by said frictional engagement.

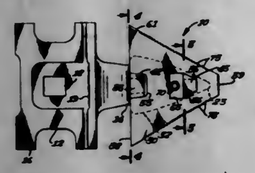
3,296,782
THRESHING AND SEPARATING MECHANISM
Alexander Hing Mark, Livonia, Mich., and Joseph Necas and Jerzy M. Brzustowski, Toronto, Ontario, Canada, assignors to Massey-Ferguson Limited, Toronto, Ontario, Canada
Filed Feb. 4, 1964, Ser. No. 343,192
11 Claims. (Cl. 56—21)



1. A combine including a grain harvesting and gathering header disposed transversely at the forward end of the combine and a grain cleaning mechanism disposed rearwardly of the header, characterized by having an elongated threshing and separating cylinder assembly journaled transversely of the combine between said header and said cleaning mechanism, a concave and grate assembly fitted about said cylinder assembly and having a peripheral opening allowing harvested material to be fed from said header to the center portion of said cylinder, means for rotating said cylinder assembly to drive harvested material axially of the cylinder assembly in a generally helical path toward one side of the combine, means for carrying grain passing through said concave and grate assembly to said cleaning mechanism, and means for discharging straw from the end of said cylinder assembly adjacent said side of the combine.

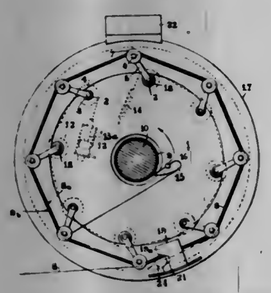
3,296,783
GUARD FINGER AND LEDGER PLATE
James R. Sutherland, Minneapolis, Minn., assignor to Viking Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed June 16, 1964, Ser. No. 375,540
11 Claims. (Cl. 56—311)

1. A guard finger and ledger plate assembly comprising, a guard finger having a connecting body part and a pedestal support integral therewith and extending transversely thereto with a flat surface thereon adapted to mount a ledger plate, first and second pedestal clamping means positioned on the flat surface of the pedestal support and projecting therefrom, each of said pedestal clamping means being tapered to provide wedge shaped sides which provide downward clamping action on the ledger plate when mounted thereon, a triangular shaped ledger plate mounted on the flat surface of the pedestal



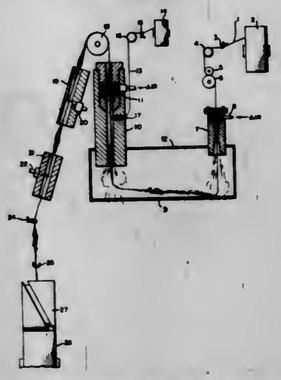
support, said ledger plate having a pair of openings therein with tapered sides which conform to the wedge shaped sides of the pedestal clamping means, aperture means in the pedestal support positioned between the pedestal clamping means, and pin means positioned through the aperture means in said pedestal support and one of the openings in the ledger plate and adapted to retain the ledger plate on said pedestal support.

3,296,784
CENTERLESS MACHINE FOR COIL-WINDING TAPES AND THE LIKE
Charles Guiton, 18 Ave. de Messine, Paris, France
Filed Mar. 31, 1964, Ser. No. 356,102
Claims priority, application France, Apr. 10, 1963, 931,069, Patent No. 1,378,838
5 Claims. (Cl. 57—18)



1. A centerless machine for the continuous helical winding of a tape from a feed spool carried by a fixed support, which comprises a rotary annular plate, supports carried by said plate, rollers mounted on said supports to constitute the vertices of a polygon, said tape being adapted to be wound to form concentric convolutions on said rollers before being finally wound as a helix in the central portion of said annular plate, means pivotally mounting said supports on said annular plate for movement toward and away from the axis of rotation of said plate to provide a variable perimeter of said polygon on which the concentric tape convolutions are wound, and roller positioning means for moving said rollers outwards under normal operating conditions of the machine in order constantly to keep said tape under mechanical tension, and for simultaneously moving all of said rollers towards the axis of rotation of said annular plate when as a consequence of the exhaustion of a feed spool the free trailing end of the tape has to be connected to the leading end of a refill spool without stopping the machine.

3,296,785
PRODUCTION OF INTERLACED PLIED YARN FROM SLUB YARN AND CARRIER YARN BY MEANS OF FLUID JETS
John Arthur Hardy III, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 30, 1964, Ser. No. 386,125
9 Claims. (Cl. 57—34)



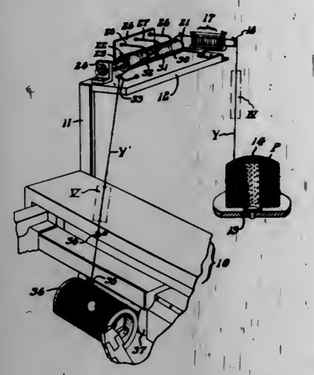
1. The process for producing a slub yarn plied with a carrier yarn which comprises continuously feeding a multifilament yarn to a supply jet and forwarding the yarn in a high velocity stream of compressible fluid onto a screen surface; directing a second high velocity stream of compressible fluid from a slub jet against the screen surface to provide a turbulent zone between the two streams adjacent to the screen surface; interlacing slubs in the yarn by continuously withdrawing the yarn from the screen surface through the turbulent zone and through the slub jet in a direction counter-current to the stream; continuously feeding a carrier yarn to the slub jet and combining the two yarns; then false twisting the combined yarns with a high velocity single vortex stream of compressible fluid, by passing the yarns through a torque jet, and interlacing the yarn plies with a high velocity, plural vortex stream of compressible fluid, by passing the combined yarns through an interlacing jet, to form a plied yarn of slub yarn and carrier yarn.

4. Yarn treating apparatus comprising means for supplying yarn at a controlled rate, a feed jet for forwarding the yarn in a high velocity stream of compressible fluid, screen means positioned across the path of the high velocity stream so that the yarn is deposited on the screen and the fluid passes through the screen, a slub jet for forming slubs in the yarn positioned to direct a high velocity stream of compressible fluid against the screen adjacent to the stream from said feed jet to provide a turbulent zone, means for withdrawing the yarn from the screen through said slub jet in a direction counter-current to the high velocity stream, means for feeding a carrier yarn to said slub jet to be combined with the yarn from the screen, an interlacing jet for interlacing the combined yarns to form a unitary plied yarn, and a torque jet for false twisting the combined yarns.

3,296,786
APPARATUS FOR PROCESSING A TWISTED BULKY YARN
William Kirk Wyatt, Lansdale, Pa., assignor to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania
Filed Nov. 6, 1964, Ser. No. 409,413
4 Claims. (Cl. 57—34)

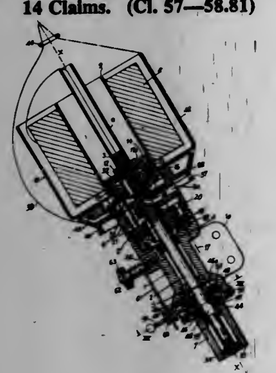
1. Apparatus for processing a twisted bulky yarn which deviates from uniformity at spaced-apart locations along

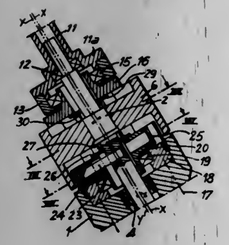
its length, comprising means for tensioning said yarn, means for continuously moving said tensioned yarn in a predetermined path, means providing an external rotatable arcuate surface arranged to rotate about a predetermined axis which extends at an angle to said yarn path, means



continuously urging said yarn against said arcuate surface in a manner to engage frictionally and at least partially to detwist said yarn, and means for continuously moving said yarn away from said arcuate surface thereby retwisting said yarn.

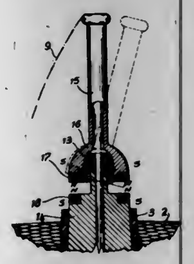
3,296,787
DOUBLE-TWISTING DEVICE FOR TEXTILE YARNS
Paul Maurin, 44 Rue Lafayette, Oullins, France
Filed May 25, 1964, Ser. No. 369,920
Claims priority, application France, Jan. 28, 1964, 936,121
14 Claims. (Cl. 57—58.81)





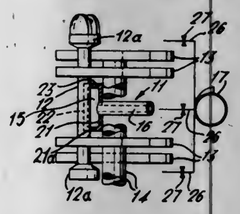
1. A double-twisting device for textile yarns, of the kind wherein an axially bored spindle, having one end rotatably mounted in a frame, carries a bobbin holder, freely rotatably mounted thereon at its opposite end, and a casing which is secured to an intermediate part of the spindle, the casing being provided with a radial yarn passage communicating with the axial bore in the spindle, including means for preventing the bobbin holder from rotating with respect to the frame comprising a relatively small unbalance weight associated with the bobbin holder and rotary mechanical connecting means associated with the bobbin holder and the frame and rotatable about an axis other than the axis of rotation of the spindle.

3,296,788
DOUBLE-TWIST SPINDLE
Gustav Franzen, Neersen, near Krefeld, Germany, assignor to Palitex Project-Company G.m.b.H., Krefeld, Germany
Filed July 31, 1964, Ser. No. 386,626
Claims priority, application Germany, Aug. 9, 1963, N 23,586
8 Claims. (Cl. 57—58.83)



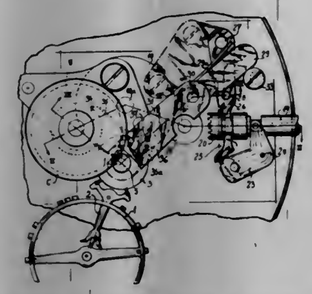
1. A double twist spindle having a shank portion adapted to support a bobbin and being provided with an axial bore adapted to convey a thread therethrough, tubular means connected to the upper end portion of said shank portion and tiltable toward the side of said shank portion about a point within the confines of said shank portion so as to be able to circumscribe an upside-down cone with the tip thereof on said shank portion.

3,296,789
TEXTILE APPARATUS
Ernest Philip Rushton Scragg, Macclesfield, Walter Parker, Wilmslow, and Harold William Lee, Poynton, England, assignors to Ernest Scragg & Sons Limited, Macclesfield, England
Filed Apr. 7, 1966, Ser. No. 541,937
Claims priority, application Great Britain, Apr. 8, 1965, 14,933/65
24 Claims. (Cl. 57—77.45)



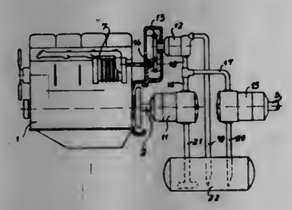
3. Twisting arrangement comprising, in combination, drive means; yarn twist tube means located adjacent said drive means; and means for creating a fluid pressure differential in the proximity of said twist tube means for holding the same in an operative position in driving connection with said drive means.

3,296,790
HANDS SETTING MECHANISM FOR AN ELECTRIC TIMEPIECE
Edouard Schwaar, Bienne, Switzerland, assignor to Societe Suisse pour l'Industrie Horlogere S.A., Geneva, Switzerland, a firm of Switzerland
Filed Aug. 23, 1965, Ser. No. 481,638
Claims priority, application Switzerland, Aug. 27, 1964, 11,247/64
5 Claims. (Cl. 58—85.5)



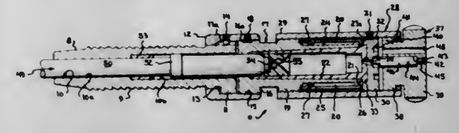
1. In an electric timepiece having a driving mechanism, an hour indicator hand, a minute indicator hand and a second indicator hand; an improvement comprising means linking the indicator hands together such that none of them can be moved without the other two, coupling means between the driving mechanism and said hands for the drive of the latter, a hands-set mechanism having operative and inoperative positions, and means between said hands-set mechanism and the coupling means for freeing the latter from the driving mechanism when the hands-set mechanism is in said operative position, such that the driving mechanism can remain in operation while the hands-set mechanism is being operated.

3,296,791
SYSTEM FOR PROPORTIONALLY SUPERCHARGING POWER UNITS
Paul Pierre Richard, Les Buissonnets, Saint-Cyr au Mont d'Or, Rhone, France, and Jean Louis Joseph Pellat-Finet, 22 Quai Saint-Vincent, Lyon, Rhone, France
Filed May 20, 1965, Ser. No. 457,336
Claims priority, application France, June 4, 1964, 44,868, Patent 1,406,081; Dec. 15, 1964, 45,399, Patent 1,427,868
3 Claims. (Cl. 60—19)



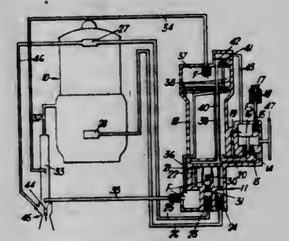
1. A power unit comprising a heat engine, a supercharger for continuously feeding said heat engine, at least one hydraulic pump driven by the heat engine, at least one main hydraulic engine, a hydraulic circuit connecting said pump with said hydraulic engine, at least one auxiliary hydraulic engine driving the supercharger and means whereby said auxiliary hydraulic engine is fed by said circuit under the same pressure as the main hydraulic engine to provide constant proportionality between the output of the supercharger and the output of the heat engine.

3,296,792
EXPLOSIVELY-OPERATED TOOL
Carl Raymond Hedberg, Harrisburg, and Frederick William Wahl, Middletown, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 30, 1964, Ser. No. 341,283
10 Claims. (Cl. 60—26.1)



7. Gas release means for an explosively-operated device comprising a power unit adapted to receive an explosive cartridge in a chamber thereof, means for actuating said explosive cartridge and along with said explosive cartridge defining an enclosed chamber, and plug means on said power unit to maintain said enclosed chamber closed and including means movable relative thereto to allow release of the explosive gases generated after the explosive cartridge has been actuated.

3,296,793
GAS TURBINE LUBRICATION SYSTEMS
David Omri Davies, Kingsway, Derby, Donald Maynard Anley, Hucknall, and Cedric Herbert Briggs, Mickleover, Derby, England, assignors to Rolls-Royce Limited, Derby, Derbyshire, England, a company of Great Britain
Filed July 8, 1966, Ser. No. 563,916
Claims priority, application Great Britain, July 26, 1965, 31,856/65
15 Claims. (Cl. 60—39.08)

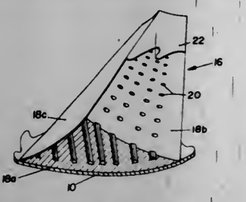


1. Means for supplying a single, predetermined quantity of lubricant to the bearings of a gas turbine engine comprising a lubricant reservoir, a lubricant dispensing chamber adapted to be filled from said lubricant reservoir, means operative when the engine is running to supply compressed air to the surface of the lubricant in the dispensing chamber to force lubricant from said chamber into the engine, and means operative when the engine stops to refill said dispensing chamber automatically from the reservoir.

3,296,794
ROCKET MOTOR
David Lewis Nash, Bountiful, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 9, 1965, Ser. No. 438,189
5 Claims. (Cl. 60—39.47)

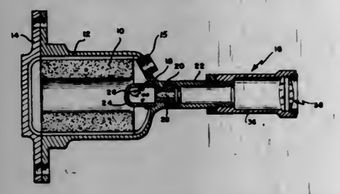
1. A solid propellant rocket motor comprising:
a motor case;
an internal burning combustible charge disposed within said motor case; said charge being formed with a cavity comprising a plurality of circumferentially spaced, longitudinally extending recesses; and

a plurality of combustible slivers each having at least one surface which is disposed adjacent said charge and a second surface adjacent said motor case, each



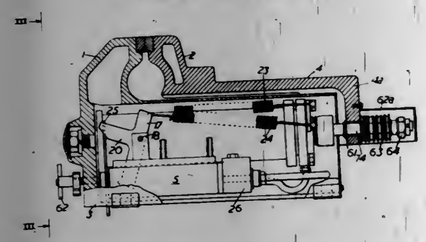
sliver including a plurality of holes which respectively extend from said first mentioned surface to a point adjacent said motor case.

3,296,795
LASER INITIATED ROCKET TYPE IGNITER
Floyd B. Nielsen, San Jose, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 4, 1964, Ser. No. 387,538
4 Claims. (Cl. 60—39.82)



1. A laser initiated rocket-type igniter comprising a casing for the containment of a solid fuel, a neck element on said casing providing an opening, a perforated basket for containing initiator pellets secured to said neck and internally of said casing, said initiator pellets being capable, when ignited, of igniting said initiator pellets, a heat lens, a lens focusing assembly, an initiator train, said train comprising initiator material in granular form, capable, when ignited, of igniting said initiator pellets, a heat sensitive primer located at the focal point of said lens, said lens being capable of focusing an electromagnetic beam upon said heat sensitive primer, whereby ignition follows through the whole train to the said pellets and to said solid fuel.

3,296,796
HYDRAULICALLY OPERATED TOOLS
Moshe Hadari, 44 Haganah St., Givat Rambam, Israel
Filed Apr. 6, 1965, Ser. No. 448,914
Claims priority, application Israel, Apr. 8, 1964, 21,124
4 Claims. (Cl. 60—52)

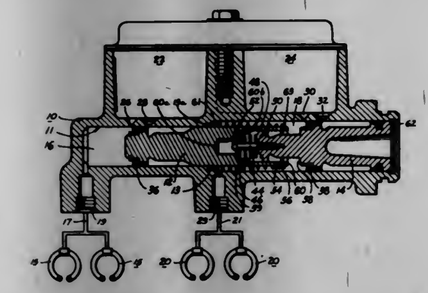


1. A hydraulically operated tool having a pump unit comprising first and second juxtaposed pump cylinders of different diameters, a main cylinder integral with said pump unit, a duct system effecting communication between the pump unit and the main cylinder, a hydraulic fluid reservoir, a first set of unidirectional valves permitting flow of the hydraulic fluid into the pump unit from the reservoir, a second set of unidirectional valves permitting flow of the hydraulic fluid from the pump unit to the main cylinder via the duct system, a manually controllable control valve assembly arranged to direct the fluid into either end of the main cylinder and from either end of the main cylinder back into the reservoir, first and second pistons respectively slidable in the pump cylinders, manually operable, pivotally mounted rocker arms adapted respectively to bear on said first and second pistons, means for displacing said rocker arms against a restoring force so as to displace said first or second piston, a main piston slidable in the main cylinder under the influence of the hydraulic fluid, a displaceable tool component, a rod secured to said main piston and slidably articulated with respect to said tool component, a fixed abutment constituting a limit to the relative sliding motion of said tool component and rod and spring biasing means for biasing said tool component and rod together.

3,296,797
CONTROL DEVICE FOR HYDROSTATIC PUMPS OR MOTORS
Karel Tlusty, Prague, Czechoslovakia, assignor to Technometra, nardoni podnik, Prague, Czechoslovakia
Filed June 28, 1965, Ser. No. 467,493
Claims priority, application Czechoslovakia, July 15, 1964, 4,100/64
4 Claims. (Cl. 60—52)

1. A control device for hydrostatic pumps or motors comprising a hollow body divided by a central wall into two mutually interconnected parts, in the first part being slidably accommodated a distribution valve controlling the flow of control liquid to an intake branch of a servo-actuated stroking cylinder coupled to a member varying the displacement of the pump, said distribution valve being loaded by a spring and having two annular circumferential spaces on an axial part, the first annular space communicating via holes in the axial part with an internal space of said distribution valve, the other annular space communicating via holes in the hollow body with the pressure-less medium of a control liquid tank, a collar situated between both said annular spaces movable together with the distribution valve and opening and closing an aperture in the hollow body connected by a tube to the aforementioned servo-actuated stroking cylinder, the other part of the hollow body being connected to the pump output by an intake branch, having an orifice formed in the hollow body, from which the pressure control liquid through an outlet branch flows to driven hydrostatic motors, in said other part of the hollow body being slidably accommodated a pressure measuring member having the shape of a differential piston loaded by a spring and varying by its movement the active cross section of said orifice in relation to the pressure of the control liquid, the intake branch before the orifice being connected to a space at one side of the distribution valve, an inner space of the pressure measuring member being connected with a space on the other side of the distribution valve.

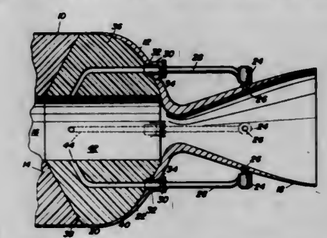
3,296,798
MASTER CYLINDER
Paul B. Shutt, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 23, 1965, Ser. No. 466,214
12 Claims. (Cl. 60—54.6)



1. In a master cylinder housing comprising:
a longitudinal stepped bore with the smaller diametered portion being forward of the larger diametered portion, a pair of axially spaced plungers disposed in said bore, the forward most plunger separating said bore into a forward fluid chamber and a rear fluid chamber, separate reservoir port means opening into each chamber, separate outlet port means for each chamber, one of said plungers having a recessed end extending away therefrom toward the other of said plungers, said other plunger having a portion projecting into said recess, first stop means located in said recess, second stop means carried by said projecting portion located on the side of said first stop means which is in an axial direction toward said one plunger for engagement with said first stop means, third stop means carried by said projecting portion axially spaced from said first and second stop means, an abutment member slidably carried by said other plunger, resilient means carried by said other plunger urging said abutment member into engagement with said third stop means, an abutment shoulder on said one plunger abutting said abutment member, and means providing a thrust connection between said plungers when said plungers move relatively toward each other a predetermined distance.

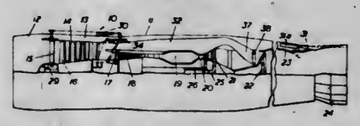
3,296,799
THRUST VECTOR CONTROL SYSTEM
Manuel Fuentes, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,158
2 Claims. (Cl. 60—231)

1. In a rocket motor having a casing with an aft end closure, a thrust nozzle mounted on said aft end closure, a solid propellant grain disposed within said casing with the aft end surface thereof spaced from said aft end closure, and a perforation extending longitudinally of said grain, a thrust vector control system comprising:
at least one valve mounted on said thrust nozzle, said valve having a passage therethrough that communicates with the interior of said thrust nozzle through an aperture in the wall thereof and including means for selectively opening and closing said passage;
a duct connected at one end thereof to said valve and at the other end thereof to said aft end closure, the passage of said duct communicating with said passage in said valve and with the interior of said casing through an aperture in the wall of said aft end closure thereof; and a solid propellant insert disposed within said casing, the forward and aft surfaces of said insert



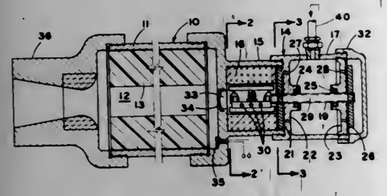
abutting the aft end surface of said grain and the inner surface of said aft end closure respectively, said insert having a perforation therein that extends between the forward and aft ends thereof and communicates with said perforation in said grain and with the orifice of said thrust nozzle, said insert forming a solid-free gas when burned and having a passage therein that extends between the inner and aft surfaces thereof and communicates with said passage in said duct and with said perforation.

3,296,800
GAS TURBINE POWER PLANT
John Gregory Keenan, Derby, Jack Palfreyman, Tansley, and John Bertram Holliday, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Dec. 6, 1963, Ser. No. 328,659
Claims priority, application Great Britain, Dec. 17, 1962, 47,629/62
7 Claims. (Cl. 60—244)



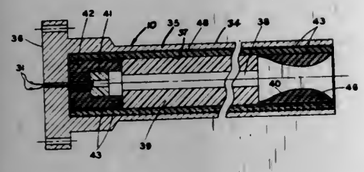
1. Combined turbo-jet and ram-jet power plant having a flow duct which is provided in flow series with an air intake passage, compressor means, primary combustion equipment, turbine means, and reheat combustion equipment; a by-pass duct whose upstream end communicates with the compressor means so as to receive part of the air which has been compressed therein, the by-pass duct by-passing the primary combustion equipment and the turbine means, and the downstream end of said by-pass duct having at least one opening which communicates with said flow duct upstream of the reheat combustion equipment; means for varying the effective area of said opening; a supplementary air duct which is arranged to receive ram air from the air intake passage; and a valve device through which the supplementary air duct selectively communicates with the by-pass duct, so as to supply the ram air thereto, said valve device having a first operative position for ram-jet operation in which ram air passes from the supplementary air duct to the by-pass duct and therefrom to the reheat combustion equipment and a second operative position for turbo-jet operation in which the flow of ram air from the supplementary air duct into the by-pass duct is blocked.

3,296,801
HIGH ENERGY ADDITIVE ADDITION MEANS FOR A ROCKET MOTOR
Allan E. Williams, Elkton, and Leslie M. Dyson, Rising Sun, Md., and Lowell F. Matthies, Ogden, Utah, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Oct. 23, 1964, Ser. No. 406,039
14 Claims. (Cl. 60—253)



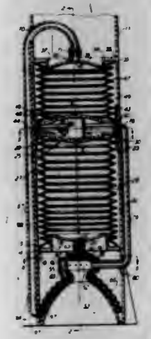
1. A high performance solid propellant rocket motor including a combustion chamber, an exit nozzle, a propellant ignition means, and a solid propellant charge in said combustion chamber, said high performance derived from combustible, energy imparting material added to said propellant charge, comprising, an additive supply means adaptable for attachment to the head end of said motor comprising a casing having a chamber, a solid, annular body in said casing chamber having a central opening bonded to the interior of said casing chamber, a rotating grinder contacting said body in said opening for particulating said additive material, power means for rotating said grinder, means communicable with said motor combustion chamber and said casing interior for transporting said energy imparting additive material to said combustion chamber through said communication means, said additive material ignitable by said ignited solid propellant charge in said chamber to provide a high performance motor.

3,296,802
LAMINATED MATERIAL AND ARRANGEMENT THEREOF FOR USE IN PRESSURE VESSELS
Allan E. Williams, Elkton, Md., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Pennsylvania
Filed Feb. 3, 1964, Ser. No. 342,306
22 Claims. (Cl. 60—256)



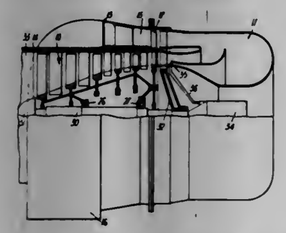
9. A pressure vessel adaptable for use as a rocket motor comprising, an outer tube formed of a plurality of convoluted laminations of resin impregnated base material defining a chamber, at least one end closure having an opening comprising a nozzle in said tube communicable with said chamber and formed of a plurality of convoluted laminations of resin impregnated base material, said tube and nozzle laminations, in section, being parallel to each other and to the longitudinal axis of said motor, a propellant charge in said chamber for producing high temperature and pressure propulsive fluid, means for igniting said propellant charge, and means on said tube for attaching said motor in a vehicle.

3,296,803
STORAGE TANK FOR DISCHARGING FLUIDS IN A BLEND
Rolf Heinz Werner Kroekel, West Greenwich, R.I., assignor to Sealol, Inc., Warwick, R.I., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,414
7 Claims. (Cl. 60—259)



1. A storage tank for discharging fluids in a blend comprising a shell, a first piston slidably mounted in said shell, a bulkhead provided with a first passageway, means securing said bulkhead to said shell, a bellows fastened on one end to said piston and on the other end to said bulkhead to form a first collapsible fluid storage cavity, a second piston slidably mounted in said shell, a second bulkhead provided with a second passageway, means securing said second bulkhead to said shell, a second bellows fastened on one end to said second piston and on the other end to said second bulkhead to form a second collapsible fluid storage cavity, means forming a chamber between said first mentioned piston and said second piston, means located in said chamber for actuating said first piston toward said first bulkhead and said second piston toward said second bulkhead to discharge the contents of said first collapsible fluid storage cavity and said second collapsible fluid storage cavity, respectively, said shell having a wall forming a fluid blending chamber, horizontal and vertical ports in said wall, a shield having an entrance opening overlying said vertical ports, means fastening said shield to said wall and providing a cell between said entrance opening and said vertical ports, a first burst diaphragm valve interposed and fastened between said first passageway and said entrance opening, a second shield fastened to said wall and forming a second chamber around said horizontal ports, a pipe provided with an axial passageway, a second burst diaphragm valve interposed between said pipe and said second passageway with said second burst diaphragm blocking communication between said second passageway and said axial passageway, and means connecting said pipe and axial passageway with said last mentioned chamber whereby upon movement of said first piston and second piston away from each other fluid, in said first collapsible fluid storage cavity and in said second collapsible fluid storage cavity will break said first burst diaphragm valve and said second burst diaphragm valve to allow fluid in said first collapsible fluid storage cavity to flow through said entrance opening into said cell and through said vertical ports into said blending chamber and fluid in said second collapsible fluid storage cavity to flow through said second passageway into and through said axial passageway and horizontal ports to said blending chamber, and feedback conduit means providing communication between said first mentioned chamber and said blending chamber for assisting said piston actuating means.

3,296,804
GAS TURBINE VERTICAL LIFT ENGINE
John Gregory Keenan, Shelton Lock, Derby, and Jack Palfreyman, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Aug. 19, 1963, Ser. No. 302,788
Claims priority, application Great Britain, Aug. 24, 1962, 32,716/62
4 Claims. (Cl. 60—269)



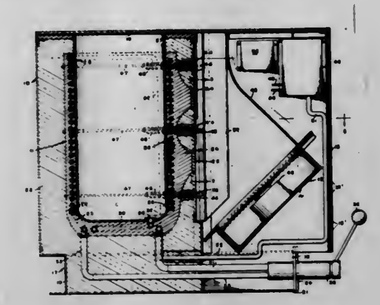
1. A gas turbine vertical lift engine having in flow series an axial flow compressor having a casing and at least one rotatable stage mounted therein, combustion equipment which reverses the direction of flow of the gases passing therethrough, a turbine having rotor blades which are connected to a rotatable stage of the compressor, and an exhaust duct, structurally separate from the compressor but removably attached thereto, the exhaust duct having an upstream portion which surrounds and is concentric with the compressor casing, and a downstream portion which is divided into two parts which extend closely about the compressor casing on opposite sides thereof and which extend in a direction substantially perpendicular to the axis of the compressor, the turbine exhaust gases being first directed by the said upstream portion of the exhaust duct towards the inlet of the compressor, and then passing through said two parts of the downstream portion of the exhaust duct so as to be downwardly directed when the engine is in a predetermined horizontal disposition.

3,296,805
METHOD OF STORING BUTYRALDEHYDES
Talford W. Graham, Longview, Tex., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,689
6 Claims. (Cl. 61—.5)

1. A method for the underground storage of a butyraldehyde which comprises injecting said butyraldehyde into an underground salt cavity containing a brine solution whereby said butyraldehyde is brought into contact with said brine solution and said brine solution is displaced from said salt cavity until said salt cavity is substantially filled with said butyraldehyde and said brine solution.

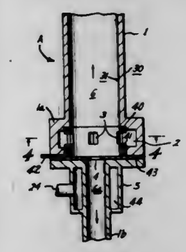
3,296,806
LIQUID COOLING APPARATUS
Frank A. Gonzalez, New York, N.Y., assignor to Medical Electroscience, Inc.
Filed Oct. 4, 1965, Ser. No. 492,648
8 Claims. (Cl. 62—3)

1. A liquid cooling apparatus including a housing, a heat-conducting body within said housing, a liquid passageway through said heat-conducting body, a liquid heat-conducting container positioned in thermal engagement with said heat-conducting body, thermoelectric means engaged with said heat-conducting body for removing heat



therefrom, and heat-dissipating means engaged with said thermoelectric means for receiving heat from the latter, the heat-dissipating means including a fan member for directing heat to a point externally of said housing.

3,296,807
PROCESS AND DEVICE FOR THE SEPARATION OF GASES
Lancelot Andrew Fekete, Houston, Tex., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Nov. 26, 1965, Ser. No. 513,653
17 Claims. (Cl. 62—5)



1. A gas separating device of the vortex tube type, which consists of a cylindrical separation chamber into which a gas enters through a spiral channel and tangential slots at high velocity, forming a fast turning spiral vortex, the center of which is colder than, the outer part hotter than, the entering gas, whereby the cold gas is removed through two central tubes toward both ends of the separation chamber and the hot gas is discharged through an annular cylinder outwards, on both sides of said chamber, and flow control means for regulating the flow of gas into the device.

3,296,808
HEAT ENERGIZED REFRIGERATOR
Marvin J. Malik, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 25, 1965, Ser. No. 482,531
8 Claims. (Cl. 62—6)

1. In a heat energized refrigerator or the like having a pair of displacers reciprocable within a cylinder to provide three variable volume chambers which are interconnected through regenerative heat exchangers to become progressively cooler regions when heat is added to one of the chambers and a constant volume of fluid flows

between the variable volume chambers through the regenerators at varying pressures, the improvement comprising:

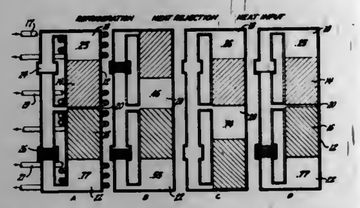
a fixed central stud extending into the cylinder, said stud having an enlarged hollow upper portion,

a first hollow displacer having a pair of spaced faces slidably mounted on said stud, one of said faces movably engaging said upper portion, said one face being of smaller area than said other face,

a stem on said first displacer slidably mounted in said hollow upper portion,

a compartment defined by said hollow differential displacer and stud,

means to maintain the pressure in said compartment substantially at the mean pressure of the system,



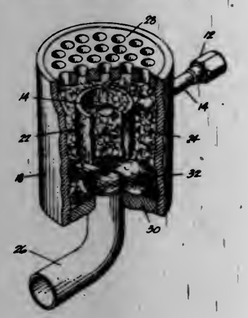
a first spring disposed within said compartment and secured to said first displacer and said stud,

a second displacer having a second stem slidably mounted in the hollow upper portion of said stud,

a second spring disposed in said hollow portion and secured to said second stem and said hollow portion, and

a third spring disposed in said hollow portion and secured to said first and second stems, whereby the displacers and springs become a spring-mass system reciprocating at a resonance frequency with the force created by fluid pressure acting on the differential area faces on said first displacer sustaining the system motion.

3,296,809
DEVICE FOR POURING LIQUEFIED GAS
Seymour Feuerstein, Los Angeles, Calif., assignor to The Aerospace Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 23, 1965, Ser. No. 481,844
6 Claims. (Cl. 62—55)



1. A device for the removal of liquefied gas from a zone of high pressure to a zone of reduced pressure comprising:

an expansion chamber having an upper cap and a lower closure cap;

vent means in the upper cap freely communicating the interior of the expansion chamber with the atmosphere;

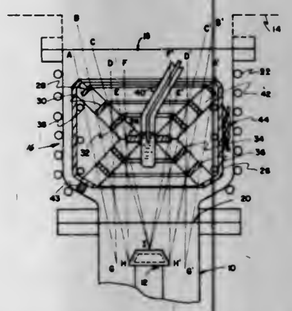
an inlet duct discharging liquefied gas from the zone of high pressure into the expansion chamber at a region remote from the vented cap;

liquid outlet means at the lower end of the chamber;

a fibrous material loosely packed within and substantially filling the interior of the expansion chamber; and

baffle means within the expansion chamber dispersing the liquefied gas and its vapors discharged from the inlet duct.

3,296,810
HIGH CONDUCTANCE COLD TRAP FOR VACUUM SYSTEMS
Marsbed Hablanian, Wellesley, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 24, 1964, Ser. No. 391,577
3 Claims. (Cl. 62—55.5)

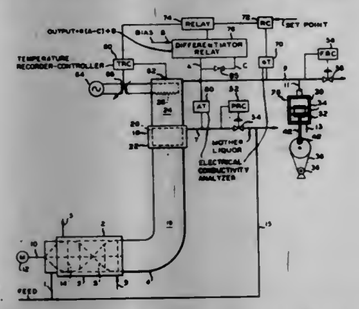


1. A cryogenic baffle for reducing back migration of pumping vapors from a diffusion pump or the like, characterized by retention of approximately 50% of the unbaffled speed of the pump, and comprising, in combination, a vertically arranged tubular housing having an upper inlet port and having a lower exit port transverse to the tubular axis, of smaller area than the average cross-section area of the housing, a central obstacle in the tubular body arranged along the axis thereof and having a smaller axially projected area than said exit port, a tubular shroud within the housing located in closely spaced relation to the inner wall thereof and covering a major portion of the inner wall, tubular semi-chevrons located within the tubular shroud and coaxial with the tubular axis of the shroud and being arranged to open towards the said obstacle and co-operating with said obstacle and shroud to define an optically tight baffle with respect to the exit port, the semi-chevrons lying susbtantially along diagonals of the tubular shroud above and below the central obstacle to leave an annular space of triangular cross-section around the said central obstacle, pointing inwardly, and means for maintaining the obstacle, shroud, and semi-chevrons at temperatures below the condensation point of the pump vapors.

3,296,811
FRACTIONAL CRYSTALLIZATION MELT CONTROL RESPONSIVE TO PRODUCT COMPOSITION
Frederick L. Stoller, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 20, 1963, Ser. No. 332,166
6 Claims. (Cl. 62—58)

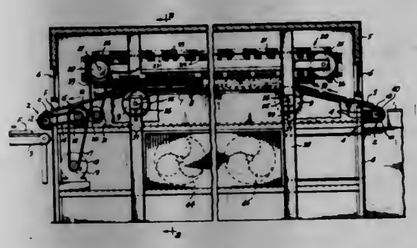
1. In a process for fractional crystallization wherein a crystal mass containing some mother liquor is introduced into a purification zone and passed to a melt zone so that

a first portion of resulting melt is caused to be displaced countercurrently through at least a portion of the crystal mass, the mother liquor stream is removed from the system and a second portion of the melt is removed from



the system as products, the improvement which comprises determining the composition of one of the products removed from the purification zone by measuring the electrical conductivity of the said product and manipulating the heat input to the melt zone in response thereto.

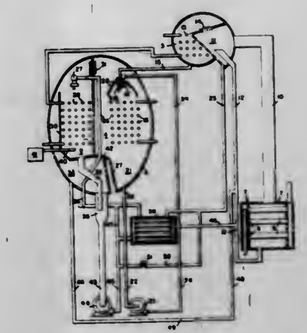
3,296,812
FOOD FREEZER AND ACCELERATED FREEZING PROCESS
Westley R. Cloudy, Edmonds, Wash., assignor to Lewis Refrigeration Co., Woodinville, Wash., a corporation of Washington
Filed Mar. 1, 1965, Ser. No. 435,825
7 Claims. (Cl. 62—63)



7. The process of freezing food product slabs which comprises heat-conductively piercing a food product slab at closely-spaced locations distributed over substantially one entire surface of the slab and thereby conductively extracting heat through the walls of the incisions from the interior thereof rapidly and substantially uniformly from the entire slab, which heat is conducted to heat-radiating means, conveying such food product slabs while being thus pierced through a refrigerated space for radiation of such extracted heat from the heat-radiating means into the refrigerated space and freezing of such food product, and terminating such heat-conductive piercing during such conveying, leaving unfilled pierced cavities in the frozen food product open at the surface of such food product.

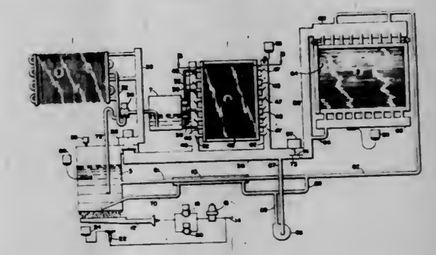
3,296,813
METHOD OF OPERATION OF AN ABSORPTION REFRIGERATION SYSTEM
Keith V. Eisberg, Camillus, and Joseph R. Bourne, De Witt, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,426
5 Claims. (Cl. 62—101)

1. In a method of operation of an absorption refrigeration system including a generator, a condenser, an absorber, an evaporator, means to forward weak solution from the absorber to the generator, means to supply strong solution from the generator to the absorber and a heat exchanger for placing strong solution and weak solution in heat exchange relation, the steps which consist in, during normal operation, forwarding strong solution from the generator through the heat exchanger to the absorber, forwarding weak solution from the absorber through the heat exchanger in heat exchange relation with the strong



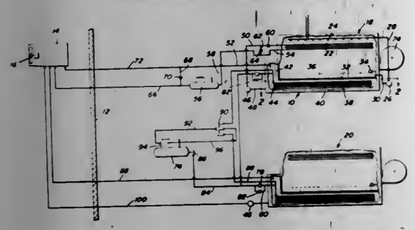
solution to the generator, passing cooling medium through the absorber in heat exchange relation with solution therein, and, when refrigeration effect is not required, discontinuing passage of strong solution to the absorber, and circulating at least a portion of the weak solution from the absorber through the strong solution passage of the heat exchanger without passage of that portion of weak solution to the generator and then to the absorber to prevent precipitation of strong solution in the heat exchanger.

3,296,814
ABSORPTION REFRIGERATION SYSTEMS, METHODS, AND ABSORBENT COMPOSITIONS
Paul J. Lynch, La Crosse, and Robert J. Modahl, Galesville, Wis., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Oct. 28, 1965, Ser. No. 505,489
13 Claims. (Cl. 62—112)



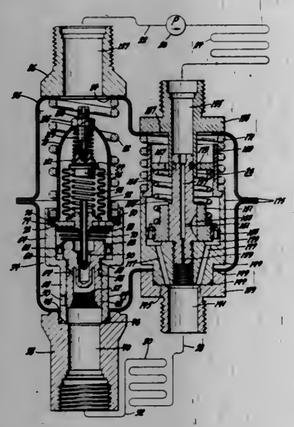
1. Absorption refrigeration system comprising, in combination, an absorption refrigeration apparatus comprising a generator, a condenser, an evaporator, and an absorber connected to form a refrigeration unit with an absorbent composition in said apparatus, said absorbent composition comprising a solution of lithium bromide and lithium iodide in water, the lithium bromide being about 0.01 to 0.94 times the weight of lithium iodide.

3,296,815
HEATING AND AIR CONDITIONING SYSTEM
Maurice W. White, Medford, Oreg., assignor to Frigid-Heat Corporation, a corporation of Oregon
Filed Sept. 10, 1964, Ser. No. 395,400
2 Claims. (Cl. 62—118)



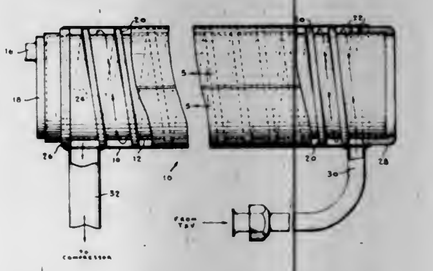
1. The method of heating and air conditioning a building such as a food store or supermarket having cooling devices therein employing a refrigeration system and producing a heat rejection load consisting of the steps of collecting the rejected heat load in a heat exchange medium at a point exteriorly of the space in which the heat rejection load is produced, conveying the heat exchange medium to the space in which the heat rejection load was produced, passing the heat exchange medium through a heat exchange coil in the space, and passing air over the heat exchange coil for heating the space in which the heat rejection load was produced.

3,296,816
FLOW CONTROL DEVICE FOR REFRIGERATING APPARATUS
John Weibel, Jr., and Richard E. Widdowson, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 10, 1964, Ser. No. 358,906
8 Claims. (Cl. 62—210)



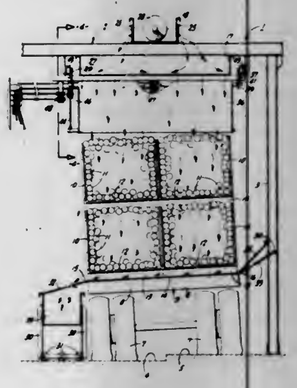
1. Refrigerating apparatus including a compressor having an inlet and an outlet, a condenser having an inlet connected to said outlet and having an outlet, evaporating means having an inlet and an outlet, a suction line control valve connected between the outlet of said evaporating means and the inlet of said compressor, a flow control device having an inlet connected to the outlet of said condenser and having an outlet connected to the inlet of said evaporating means, said flow control device comprising valve means provided with pressure responsive operating means substantially responsive to the difference between the pressure in the evaporating means and the pressure between the suction line control valve and the inlet of said compressor, said pressure responsive operating means being oriented and connected to provide increased opening of the valve means in response to reduced pressure between said suction line control valve and the inlet of said compressor.

3,296,817
FREEZER CYLINDER CONSTRUCTION
Carl R. Stoelting, Kiel, Wis., assignor to Stoelting Brothers Company, Kiel, Wis., a corporation of Wisconsin
Filed May 27, 1964, Ser. No. 370,564
5 Claims. (Cl. 62—225)



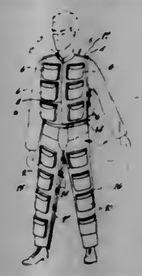
3. In a refrigerating system, a tube, a thermostatic control device including a feeler bulb, a longitudinal dent in the tube receiving the bulb therein, and a transverse dent in the tube adjacent the longitudinal dent to increase turbulence.

3,296,818
SYSTEM OF PRECOOLING PRODUCE ON TRUCKS
Herbert D. Buxton, P.O. Box 1492, Modesto, Calif. 95352
Filed Nov. 26, 1965, Ser. No. 509,774
10 Claims. (Cl. 62—259)



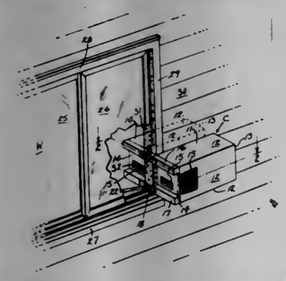
1. A system of precooling a load of bulk produce on a truck, comprising a precooling station having a floor on which the truck stands, the truck having a waterproof sheet under the load, said floor being arranged to tilt the truck to impart a lateral incline to the waterproof sheet, and means to deliver a shower of low temperature water into the load from above the same, the water upon passing through the load being received on the waterproof sheet and then shedding from the low side thereof.

3,296,819
SELF-CONTAINED COOLING SYSTEM
Edward W. Gough, Sierra Madre, Calif., assignor to Protection, Inc., Gardena, Calif., a corporation of California
Filed Feb. 2, 1966, Ser. No. 533,747
4 Claims. (Cl. 62—259)



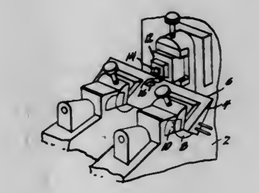
4. A self-contained cooling system for the human body comprising:
an impermeable protective first garment adapted to cover the entire body;
a permeable second garment adapted to be worn interiorly of said first garment;
at least one vaporizable refrigerant container, said container comprising:
a refrigerant charge-receiving portion;
a layer of insulating material defining an external wall of said charge-receiving portion for shielding the charge-receiving portion from heat sources located externally of the system;
a layer of an open cell foamed plastic of a predetermined thickness defining an interior wall of said charge-receiving portion for spacing a charge of refrigerant placed within the charge-receiving portion a predetermined distance from a wearer's body while permitting the passage of cooling vapors therethrough;
vapor permeable receptacle means for disposing the refrigerant charge between the external and interior walls of the receiving portion;
means for closing the container portion to hold the refrigerant charge therewithin; and
mounting means for disposing said container between the first garment interior and the second garment exterior with the interior panel of the container portion being located closest to the wearer's body.

3,296,820
WINDOW MOUNTED AIR CONDITIONING UNIT
Robert R. Bauman, Burlington, Wis. 53105
Filed Oct. 23, 1965, Ser. No. 503,220
5 Claims. (Cl. 62—262)



1. A room air conditioning unit adapted to be mounted on the vertical casing of a window frame having a slidable sash, including two separate casings, one casing housing the evaporator unit of a refrigeration apparatus, the other casing housing the condenser unit thereof, each casing being substantially rectangular in shape to provide side bottom top front and rear walls, provided with suitable openings for the circulation of air, a box-like elongated channel member secured to the front wall of each casing having an open end in alignment one with the other, a substantially rectangularly shaped channeled brace member adapted to be slidably received within said open box-like channel member, means for adjustably securing said channelled brace member to a respective portion of a respective channel member, the connecting lines and wiring for said refrigeration apparatus adapted to extend through said channel openings, and means for securing said brace member to said vertical window casing with the evaporator unit casing being positioned in the room and the condenser unit casing outside of the room.

3,296,821
MICROTOME INCLUDING FREEZING ATTACHMENTS
Theodore Malinin, 1912 Swan Terrace, Alexandria, Va. 22307
Filed May 5, 1965, Ser. No. 453,316
8 Claims. (Cl. 62—320)

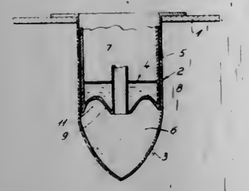


1. Microtome apparatus adapted to maintain the specimen to be cut at a very low temperature, comprising, in combination:
(a) a knife member;
(b) a frame for supporting a specimen holder;
(c) a specimen holder adapted to carry a specimen and containing a partitioned expansion chamber and inlet and outlet passages communicating with said expansion chamber for connecting the same as a functional component of a closed cryogenic refrigeration system;
(d) means for moving said specimen holder relative to said knife member to sever thin sections from the specimen; and
(e) closed circuit cryogenic refrigeration means including a cryogenic refrigerant gas having a liquefaction temperature of the order of about minus 183° C. and lower, in communication with said specimen holder.

3,296,822
APPARATUS FOR THE PRODUCTION OF FROZEN BODIES
Hans Gram, Vojens, Denmark, assignor to Brødrene Gram A/S, Vojens, Denmark
Filed Jan. 26, 1965, Ser. No. 428,141
Claims priority, application Denmark, Feb. 4, 1964, 536
3 Claims. (Cl. 62—341)

1. An apparatus for the production of frozen bodies in a plurality of freezing chambers, comprising a freezing table, a plurality of pockets mounted in said freezing table, each pocket having an upper and lower portion, the lower portion of said pockets having a downwardly tapering shape, a plurality of corresponding plungers to

be positioned in said pockets, each plunger having an end surface extending across the pocket so as to close the same and thereby form said freezing chambers, the sides of each plunger having a sliding fit in the upper portion of the pocket, and a cavity formed in the end surface



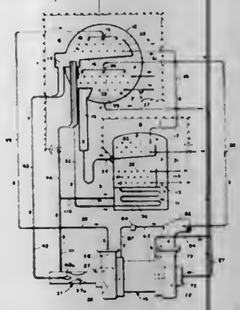
of each plunger so as to face the lower portion of the pocket, whereby said frozen bodies are shaped by said chambers with a tapered lower section and a projecting upper section corresponding to the lower portion of the pocket and the cavity in the end surface of the plunger, respectively.

3,296,823
ABSORPTION REFRIGERATING SYSTEM HAVING PUMP MEANS CIRCULATING ABSORBENT AND REFRIGERANT
Robert P. Novak, Mindoro, and James M. Porter, La Crosse, Wis., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed June 16, 1965, Ser. No. 464,359
8 Claims. (Cl. 62—476)



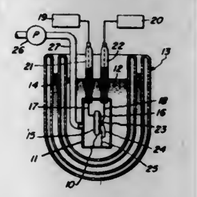
1. In an absorption refrigerating system having a refrigerant and an absorbent, the combination of an absorber, an evaporator, a generator, a condenser and a pump to circulate refrigerant and absorbent in said system, said pump having a shaft rotatably mounted therein, a motor drivingly connected to said shaft, a first impeller mounted on said shaft, conduit for conducting absorbent from said absorber to the inlet of said first impeller, conduit for conducting absorbent from the outlet of said first impeller to said generator, a second impeller mounted on said shaft in adjacent back-to-back relationship with said first impeller, conduit for conducting absorbent from a first portion of said absorber to the inlet of said second impeller, conduit for conducting absorbent from the outlet of said second impeller to a second portion of the absorber, a third impeller mounted on said shaft, conduit for conducting refrigerant from a first portion of the evaporator to the inlet of said third impeller and conduit for conducting refrigerant from the outlet of said third impeller to a second portion of the evaporator.

3,296,824
MULTIPLE PUMP SYSTEM FOR ABSORPTION APPARATUS
Marvin K. Rohrs, Fanwood, and David Aronson, Upper Montclair, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,345
8 Claims. (Cl. 62—487)



1. An absorption refrigerant system comprising:
(a) an absorber,
(b) an evaporator,
(c) a generator,
(d) a condenser,
(e) a first conduit loop means to circulate the saline solution in varying concentration between the absorber and the generator,
(f) a second conduit loop means to circulate the refrigerant in the evaporator,
(g) a saline pump disposed in the first conduit loop means and having an inlet and discharge therein,
(h) a refrigerant pump disposed in the second conduit loop means and having an inlet and discharge therein,
(i) a motor having at least one shaft connected to and driving the saline pump and the refrigerant pump,
(j) a casing housing the saline pump, the refrigerant pump, and the motor therein,
(k) a coolant conduit connected to the discharge of the refrigerant pump to circulate refrigerant to cool the motor.
(l) a seal means disposed on the shaft having one side adjacent the saline pump and exposed to the inlet suction pressure thereof, and the other side of the seal exposed to the refrigerant at the refrigerant pump discharge pressure to cause leakage through the seal in the direction of the saline pump.

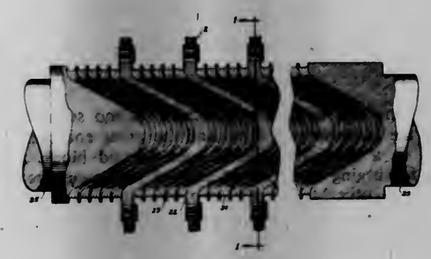
3,296,825
SOLID STATE ELECTRONIC DEVICE AND METHOD
Werner Känzig, Zurich, Switzerland, assignor to General Electric Company, a corporation of New York
Filed Nov. 2, 1964, Ser. No. 408,298
9 Claims. (Cl. 62—514)



1. An electronic device comprising an alkali metal halide body containing hydroxyl ions, means for maintaining

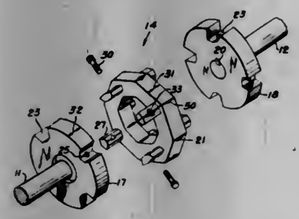
the said body at a temperature below 25° K., and means for subjecting the body while at a temperature below 25° K. to an electric field.

3,296,826
INSULATING SHAFT
Robert J. Van de Graaff, Lexington, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Original application June 29, 1960, Ser. No. 39,539, now Patent No. 3,239,702, dated Mar. 8, 1966. Divided and this application Mar. 4, 1966, Ser. No. 531,865
3 Claims. (Cl. 64—1)



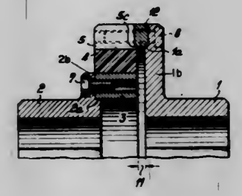
1. An insulating shaft for the transmission of mechanical force between regions having substantially different electrical potentials comprising solid metal end portions, a multiplicity of alternating dished conductive members and correspondingly dished insulating members in nesting relationship between said end portions, means securing said conductive members, insulating members, and end portions together to form a substantially rigid shaft, said conductive members being much more rigid than said insulating members.

3,296,827
RESILIENT COUPLING
Fred K. Landon, Jr., Reisterstown, and Herbert C. Diniar, Baltimore, Md., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,220
5 Claims. (Cl. 64—11)



1. A coupling for two generally coaxially arranged shafts comprising an annulus that is a series of rectilinear resilient and compressible columns arranged with their longitudinal axes along the sides of a flat polygon, an arm extending transversely of said longitudinal axes at each intersection of two adjacent columns, alternate arms extending forwardly and rearwardly with respect to the plane of said flat polygon, and means for attaching said arms to said shafts and for decreasing the radius of said polygon whereby the columns are placed under a pre-compressive load including a hub for each of said shafts, and means operative radially for simultaneously securing said arms to said hubs and compressing said columns.

3,296,828
FLEXIBLE COUPLING HAVING TORQUE-TRANSMITTING UNIT RADIALLY INSERTABLE BETWEEN FLANGES OF HUB MEMBERS
Karl Stübner, Unna, and Werner Rüggen, Holzwickede, Germany, assignors to Maschinenfabrik Stromag G.m.b.H., Unna, Germany
Filed July 1, 1965, Ser. No. 468,808
Claims priority, application Germany, July 2, 1964, M 61,597
9 Claims. (Cl. 64—11)

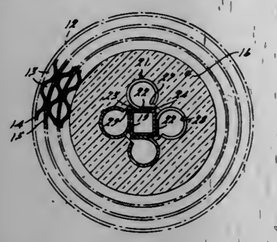


1. A flexible coupling comprising in combination:
(a) a pair of coaxial rotatable members having a predetermined axial spacing, one of said pair of members being provided on one side thereof juxtaposed to the other of said pair of members with circular centering means having a predetermined depth in axial direction;
(b) a torque-transmitting unit arranged coaxially to said pair of members for transmission of torques between said pair of members, said unit having an axial length less than said predetermined axial spacing between said pair of members to allow radial insertion of said unit into the space bounded by said pair of members, said unit including a pair of coaxial substantially rigid radially spaced torque-transmitting rings and said unit further including an intermediate torque-transmitting ring of an elastomer transmitting torques from one of said pair of rings to the other of said pair of rings, one of said pair of rings cooperatively engaging end centering means on one of said pair of members to center said unit in regard to said one of said pair of members, the other of said pair of rings having an axial spacing from said other of said pair of members in excess of said depth in axial direction of said centering means on said one of said pair of members;
(c) spacer means arranged inside of a gap formed between said other of said pair of members and said other of said pair of rings; and
(d) fastener means firmly holding said spacer means in the position thereof.

3,296,829
SHAFT-TO-HUB COUPLING FOR NON-METALLIC HUBS
Sam B. Williams, Walled Lake, Mich., assignor to Williams Research Corporation, Walled Lake, Mich., a corporation of Michigan
Filed June 23, 1965, Ser. No. 466,224
5 Claims. (Cl. 64—15)

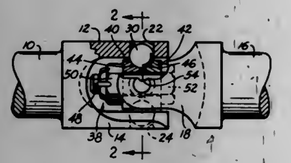
1. In a shaft-to-hub coupling, a hollow elongated member, and a plurality of sets of spring fingers secured to angularly spaced side portions of said member and extending outwardly therefrom, each set of spring fingers comprising a base portion secured to the corresponding

side of said elongated member and a plurality of identically shaped arcuate spring-like fingers extending out-



wardly from one edge of said base portion and forming the major portion of a complete circle, the outer ends of said spring fingers being adjacent said base portion.

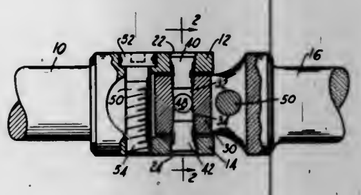
3,296,830
UNIVERSAL JOINT
Dean E. Runkle, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,431
10 Claims. (Cl. 64—17)



1. A universal joint comprising two members capable of being rotated with their axes angularly disposed with respect to one another, a pair of spaced arms located at the end of each of said rotatable members, diametrically opposed spherical surfaces fixedly connected to and protruding from the arms of each of said rotatable members, said spherical surfaces of one of said members being centered in the same plane with the spherical surfaces of the other of said members but at right angles with respect thereto, and adjustable coupling means for joining said rotatable members, said coupling means including torque transmitting center retaining means having inner seats for receiving said spherical surfaces, said inner seats including cylindrical surfaces having a radius substantially equal to that of said spherical surfaces for maintaining virtual line contact at all times with said spherical surfaces to eliminate backlash in any direction of movement, and means operatively connected to said torque transmitting center retaining means for causing movement thereof in a direction tending to preload said arms by moving said arms in an outward direction.

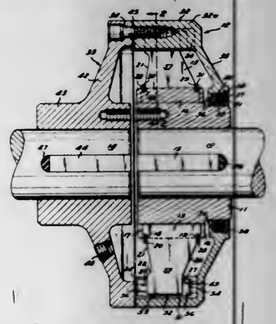
3,296,831
UNIVERSAL JOINT
James W. Miller, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,173
10 Claims. (Cl. 64—17)

1. A universal joint comprising two members capable of being rotated with their axes angularly disposed with respect to one another, a pair of spaced arms located at the end of each of said rotatable members, coaxial conical bores located in the arms of each of said rotatable members, said coaxial bores of one of said members being centered in the same plane with the coaxial bores of the other of said members but at right angles with respect thereto, a block interposed between said spaced arms, said block having intersecting conical bores disposed at right angles with respect to each other and in coaxial alignment with the conical bores of said arms, two pairs of diametrically opposed conically tapered pins



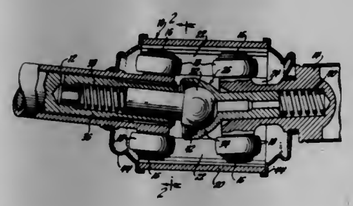
each having one end thereof located in and secured to one of the bores in said arms and the other end thereof located in a coaxially aligned bore in said block, and means for urging the arms of each of said members towards each other to thereby provide intimate lash-free contact between the conically tapered pins and the conical bores of said block.

3,296,832
FLEXIBLE COUPLING
Thomas L. Fawick, Shaker Heights, Ohio, assignor to Fawick Corporation, a corporation of Michigan
Filed Nov. 3, 1965, Ser. No. 506,182
4 Claims. (Cl. 64—15)



1. A flexible coupling comprising a rotatable outer coupling structure, a rotatable inner coupling structure spaced radially inward from said outer coupling structure, and a plurality of torsionally flexible spring plates anchored to said inner coupling structure at circumferentially spaced locations thereon and extending laterally outward from the latter into torque-transmitting sliding engagement with said outer coupling structure, said spring plates being circumferentially spaced from one another and in unobstructed confronting relationship to one another throughout their lateral extent between said inner and outer coupling structures, said spring plates laterally outward from said inner coupling structure being progressively smaller in longitudinal section and presenting a progressively decreasing resistance to torsional flexing in a laterally outward direction for substantial equalization of the torque loading on the spring plate across its lateral extent between said inner and outer coupling structures, each of said spring plates having a substantial extent laterally between said inner and outer coupling structures and throughout said lateral extent having an extent longitudinally of the coupling which is not substantially less than said lateral extent and being thin circumferentially, each said spring plate being substantially flexible both circumferentially and transverse to both the length and the circumferential extent of the coupling.

3,296,833
CONSTANT VELOCITY UNIVERSAL JOINT
William E. McCarthy, Grand Blanc, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,198
2 Claims. (Cl. 64—21)



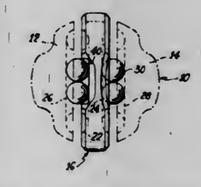
1. A double pot-type universal joint comprising a first drive member, a second drive member, each drive member including a pair of opposed trunnions, a pot member drivingly interconnecting the trunnions, the first drive member being angularly and axially movable relative to the pot member, means preventing axial movement of the second drive member relative to the pot member while permitting angular movement relative thereto, and articulated means slidably interconnecting the first and second drive members, the articulated means including a first pivot member slidably carried coaxially by the first drive member, a second pivot member slidably carried coaxially by the second drive member and pivotally connected to the first pivot member and means biasing each of the first and second pivot members outwardly of the respective first and second drive members to maintain the pivot point of the pivotal connection equidistant from each of the first and second drive members, the articulated means maintaining the angle between the rotational axes of the first drive member and the pot member equal to the angle between the rotational axes of the second drive member and the pot member to provide constant velocity operation upon relative angular and axial movement between the pot member and the first and second drive members.

3,296,834
UNIVERSAL JOINT
Charles R. Grauel, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Feb. 18, 1965, Ser. No. 433,659
2 Claims. (Cl. 64—21)



1. A universal joint comprising an inner member formed in the shape of a triangular prism, an outer member having a corresponding triangular bore therein for receiving said inner member, two straight parallel ball race grooves formed on each of the three prismatic faces of said inner member and on each of the corresponding prismatic faces in the triangular bore of said outer member, said race grooves on each of said faces of said inner member having the axes thereof in a plane parallel to the axis of said inner member but angularly disposed with respect thereto, said race grooves on each of said bore faces in said outer member having the axes thereof in a plane parallel to the axis of said outer member but angularly disposed with respect thereto, said race grooves on said inner member being crosswise with respect to the oppositely disposed race grooves of said outer member, a plurality of power transmitting balls disposed between said inner and outer members for transmitting torque from one of said members to the other of said members, each of said balls being engaged by a pair of said oppositely disposed crosswise race grooves, said ball race grooves each having a depth which is substantially constant throughout the length thereof, and clearance means between said inner and outer members for permitting relative angular and axial movement between said members.

3,296,835
UNIVERSAL JOINT
Jacques Seidermann, Livry-Gargan, France, assignor to Societe Anonyme D.B.A., Paris, France, a company of France
Filed June 30, 1965, Ser. No. 468,322
Claims priority, application France, July 1, 1964, 980,376; June 18, 1965, 21,420
12 Claims. (Cl. 64—21)

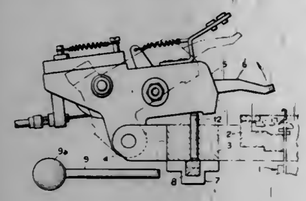


1. A homokinetic universal joint comprising two shafts, a fork having a pair of spaced arms extending from one shaft, a plate extending from the other shaft and projecting between said spaced arms, grooves in the opposed faces of said spaced arms and in the faces of said plate, the axis of each groove, in a face of one of said arms intersecting the axis of a groove in the adjacent face of said plate, the points of intersection lying symmetrically in the plane which bisects the angle between the axes of said shafts and which includes the point of intersection of said axes, balls located between each arm of said pair of arms and the adjacent face of said plate, each said ball engaging in two grooves at the point of intersection of the axes thereof, at least a frontal slot near the free end of at least one of said plate and arms, said slot merging into at least one of the grooves and having a size permitting the introduction of the balls into their respective grooves.

3,296,836
ANNULAR RING CONTROL OF FEED STATIONS FOR CIRCULAR KNITTING MACHINES
Giorgio Billi, Viale Torricelli 23, Florence, Italy
Filed July 13, 1964, Ser. No. 382,115
Claims priority, application Italy, July 18, 1963, 15,022/63
4 Claims. (Cl. 66—138)

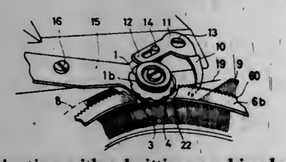
1. In a circular knitting machine of the type comprising a needle cylinder, a plurality of yarn feed stations, and a plurality of yarn guides at each station, each yarn guide being individually movable between operative and inoperative positions, the improvement which comprises the

provision of a fixed ring member concentric with said cylinder; a pivotally mounted support member at each feed station, each support member being carried by said ring member and supporting all of the yarn guides at one of said stations, each of said support members being movable between an operative position wherein said yarn guides at each station are individually movable between said operative and inoperative positions and an inoperative position wherein all of said yarn guides at each station are held in their inoperative positions, a cam ring member carried by said fixed ring member concentrically with said needle cylinder for limited angular displace-



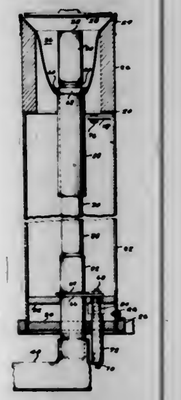
ment coaxially with said cylinder, said cam ring member having a plurality of recesses formed therein each connected to one of the surfaces of said cam ring member by a cam surface, a plurality of cam follower members each engageable with one of said pivotal support members to displace the same between its operative and inoperative positions, each of said cam follower members being displaced by one of said cam surfaces in response to said angular displacement of said cam ring member, all of said pivotal members being displaced in unison between said operative and inoperative positions by said angular displacement of said cam ring member, and means for selectively causing said angular displacement.

3,296,837
THREAD CUTTING DEVICE
Siegfried Keck, Stetten, near Hechingen, Hohenzollern, Germany, assignor to Maschinenfabrik Carl Merz K.G., Hechingen, Hohenzollern, Germany
Filed Dec. 16, 1964, Ser. No. 418,832
Claims priority, application Germany, Dec. 20, 1963, M 59,329
7 Claims. (Cl. 66—140)



1. In combination with a knitting machine having a rotatable cylinder with independent needles arranged along a circle, and a dial disc; a cutting device for cutting off threads, especially reinforcing threads in the sole and heel area of stockings and for cutting off threads during the change of threads with round knitted stockings, said cutting device comprising: rotatable cutting means arranged eccentrically with regard to the axis of rotation of said cylinder, nonrotatable cutting means adjacent said rotatable cutting means and together therewith forming a cutting station for cutting off threads fed into the circle of needles, said nonrotatable cutting means protruding beyond said rotatable cutting means for protecting the latter against damage by non-withdrawn broken needles, said rotatable cutting means and said nonrotatable cutting means being inclined with regard to the axis of rotation of said cylinders so that the plane of said cutting station is located between said dial disc and the withdrawn needles whereby the thread to be cut off from a knitting being withdrawn can be cut off very closely to the knitting, means supporting said cutting device for movement of said cutting station in said plane from an idle position outside the needle circle into cutting position where the cutting station intersects the needle circle in the region of the withdrawn needles, and means for initiating rotation of said rotatable cutting means in response to movement of said cutting station into cutting position.

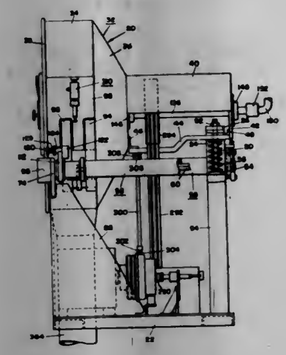
3,296,838
METHOD AND MEANS FOR TURNING TUBULAR ARTICLES AT A CIRCULAR KNITTING MACHINE
Clarence B. Boylen, High Point, N.C., assignor to Russell Hosiery Mills, Inc., Star, N.C., a corporation of North Carolina
Filed Sept. 3, 1963, Ser. No. 305,929
15 Claims. (Cl. 66—149)



1. A method of turning tubular articles at a circular knitting machine using a stationary turning tube having an open turning end in the needle cylinder adjacent the knitting end thereof and an extension tube slidable on said stationary turning tube, said method comprising positioning said extension tube in a raised position extending beyond the turning end of the turning tube during the initial portion of each knitting cycle to prevent the first-knit portion of the article from entering said turning end, allowing the extension tube to slide downwardly away from said turning end before completion of the knitting cycle with said first-knit portion below the turning end, creating a suction in said turning tube at the end of each knitting cycle to turn articles into the turning tube.

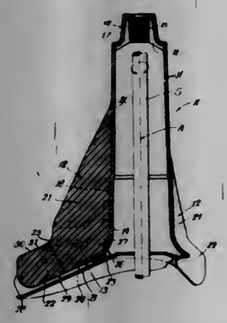
3,296,839
WASHING MACHINE
Frank C. Lornitzo, Pawtucket, R.I., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Substituted for abandoned application Ser. No. 829,140, July 23, 1959. This application Oct. 8, 1963, Ser. No. 317,865
9 Claims. (Cl. 68—24)

1. A washing machine comprising a base, a pair of spaced upright posts mounted on the back end of said base, a pair of spaced upright supports mounted on the front end of said base, a casing above said base and between said posts and supports, a basket within said casing, said basket being rotatably supported on said casing for rotation about a horizontal axis, a pair of elongated torsion rods extending horizontally along opposite sides of said casing, the back end of each of said torsion rods being fixedly supported on a separate one of said posts, the front end of each of said torsion rods being rotatably supported on a separate one of said upright supports, and



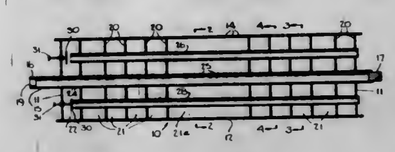
means connecting said casing to each of said torsion rods so that the casing is supported on said torsion rods and so that vertical vibration of said casing twists said torsion rods to take up the vibration.

3,296,840
LAUNDRY AGITATOR
James A. Tichenor, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 15, 1965, Ser. No. 487,560
7 Claims. (Cl. 68—134)



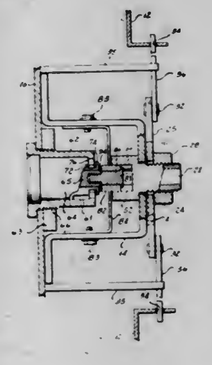
1. A laundry machine agitator comprising a structure formed of a single piece of plastic material and defining a center post, a plurality of vanes circumferentially spaced about said post, and a semi-skirt at one end of said vanes, at least one of said vanes comprising a thin wall having an inner portion connected to and extending lengthwise of said post, and a highly flexible paddle portion extending outwardly from said inner portion to below said inner portion, said semi-skirt extending coaxially outwardly from said post at said one end of the vane, said semi-skirt being connected to said inner portion and extending toward the paddle portion less than the radial extent of said inner portion, the connection of said inner vane portion to said post and to said semi-skirt strengthening and controlling the flexure thereof while permitting said paddle portion to have free flexibility.

3,296,841
APPARATUS FOR TREATMENT OF WEBS OR YARNS
Hans Fischer, Wattwil, Switzerland, assignor to Heberlein Patent Corporation, New York, N.Y., a corporation of New York
Filed Sept. 3, 1964, Ser. No. 394,271
Claims priority, application Switzerland, Sept. 18, 1963, 11,529/63
5 Claims. (Cl. 68—150)



1. Apparatus of the class described comprising, a drum formed with a series of perforations in an intermediate zone of its cylindrical surface, means mounting said drum for rotation about its longitudinal axis, means dividing said zone of said drum into a plurality of cylindrical chambers positioned longitudinally within said drum, and conduit means admitting fluid under pressure into one of said chambers, means communicating with said conduit means and the other of said cylindrical chambers, and valve means controlling fluid flow through said last mentioned means selectively to permit fluid to enter said other chambers according to the width of material to be treated.

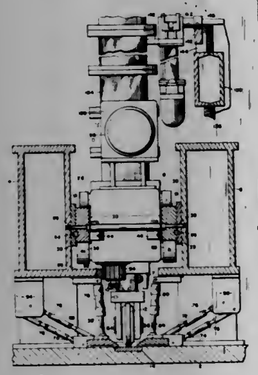
3,296,842
BARREL LOCK
William A. Auerbach, Morristown, and Albert Kurimsky, Rockaway, N.J., assignors to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,537
13 Claims. (Cl. 70—82)



1. An assembly of the character described including in combination a cabinet having a door, a latch actuator rotatably carried by said door, said latch actuator including a keying member adapted to receive a latch operating wrench, an opening in said door to permit access to said actuator, a plug lock housing mounted in said opening, a lock plug, said lock plug being movable from a first position blocking said door opening to a second position clear of said opening, movement of said plug from said first to said second position including rotation of

said plug, an extension carried by said plug, a locking member rotatably mounted on said extension, a spring washer carried by said extension urging said locking member into frictional engagement with said extension, said locking member engaging said keying member when said plug is in said blocking position, a stationary element, said stationary element having a keying opening therein aligned with said keying member, said locking member positioned in said opening and keyed to said stationary element when it is in engagement with said keying member whereby said locking member is immobilized.

3,296,843
PLANISHING METHOD AND APPARATUS
Howard C. Gillen, Inglewood, and Rudolph Horn, Los Angeles, Calif., assignors to North American Aviation, Inc.
Filed Aug. 1, 1960, Ser. No. 46,528
18 Claims. (Cl. 72—28)



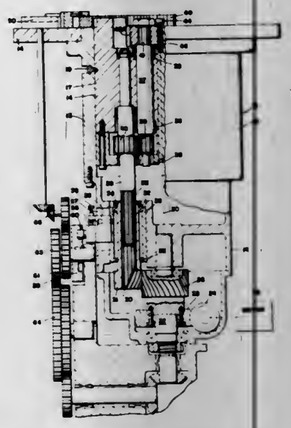
1. In apparatus for planishing a metallic workpiece, support means for supporting said workpiece in a stationary state during planishing thereof, and force means for applying force progressively and continuously along an area of said workpiece, said force means including compressing means for applying sufficient force to planish said workpiece material in the unheated condition in said area.

3,296,844
COLD-WORKING LUBRICATION
Frank B. Quinlan, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Feb. 18, 1963, Ser. No. 259,467
7 Claims. (Cl. 72—42)

3. A method of drawing fine wire selected from the class consisting of zirconium, zirconium alloys, uranium, uranium alloys, titanium, titanium alloys, tantalum and tantalum alloys, comprising applying to the wire a first coating consisting essentially of a solution having a first solvent selected from the class consisting of aromatic hydrocarbons and chlorinated aliphatic hydrocarbons with asphalt melting between 225° and 300° F. dissolved therein, evaporating the first solvent, applying to the first coating a second coating consisting essentially of dry lubricant, drawing the wire through successively smaller diameter dies, and removing the first and second coatings with a second solvent.

7. A metal shape selected from the class consisting of zirconium, zirconium alloys, uranium, uranium alloys, titanium, titanium alloys, tantalum and tantalum alloys, having a first coating consisting essentially of asphalt melting between 225° and 300° F. and a second coating consisting of dry lubricant.

3,296,845
FORM-ROLLING MACHINE
Daniel H. Prutton, 5305 W. 130th St., Cleveland, Ohio 44130
Filed Apr. 8, 1964, Ser. No. 358,161
16 Claims. (Cl. 72—100)



1. A form-rolling machine comprising in combination, a frame having an axis, a plurality of form-rolling dies journalled relative to said frame generally parallel to a main axis and equally spaced therearound for cooperation with a workpiece positionable on said axis, means to relatively rotate any said workpiece and said dies for rolling a form on said workpiece, radial depth means to control radial movement of said form-rolling dies to control radial depth of form-rolling on any workpiece coaxial with said axis, a means to adjust the relative timing of the form-rolling means on the respective dies to be synchronized at the end of each cycle of operation, and control means connected to move one of said dies to change the effective timing thereof relative to the others first in one direction and then return in the opposite direction to said synchronized position to perform a finishing operation on the form rolled on the workpiece during the thread-rolling operation.

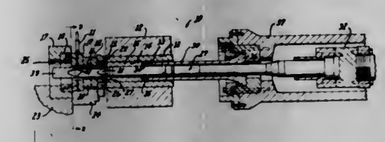
3,296,846
METHOD OF ROLLING STEEL
John B. Guernsey, Crafton Borough, Pa., assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
No Drawing. Filed June 5, 1964, Ser. No. 373,075
8 Claims. (Cl. 72—200)

1. A method of working deformation-transformable austenitic stainless steel selected from the group consisting of AISI Type 201 and AISI Type 301 stainless steel while suppressing the formation of deformation-induced martensite therein, which consists in

working said steel to effect an initial thickness reduction of about 40 to 60 percent at a temperature between about 100° F. and the recrystallization temperature of said steel and then subsequently

further working said steel at about room temperature to effect further thickness reduction such that the total reduction in thickness from said working operations is about 70 to 90 percent.

3,296,847
METHOD AND APPARATUS FOR RELIEVING A VACUUM CONDITION IN AN EXTRUDED TUBULAR MEMBER OR THE LIKE
Allen D. Gettig, Phoenix, Ariz., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 317,521
22 Claims. (Cl. 72—254)



1. Apparatus for extruding a tubular member from a billet comprising means for extruding said tubular member from said billet through an annular cavity defined between cooperating male die means and female die means whereby said tubular member has a closed leading end creating a vacuum condition therein between said closed leading end and said male die means as said leading end moves away from said male die means during the extrusion of said tubular member, and means for piercing said tubular member intermediate said closed end and said male die means to relieve said vacuum condition before said vacuum condition collapses said tubular member.

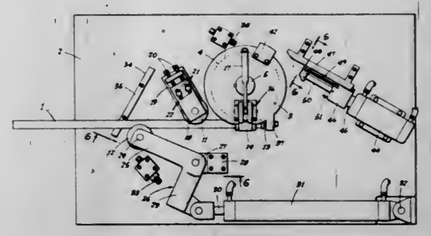
3,296,848
METHOD AND APPARATUS FOR EXTRUDING TUBULAR MEMBERS FROM SOLID BILLETS OR THE LIKE
Alfred M. Murphy and Carl M. Filak, Chester, and Thomas P. Long, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 317,463
10 Claims. (Cl. 72—265)



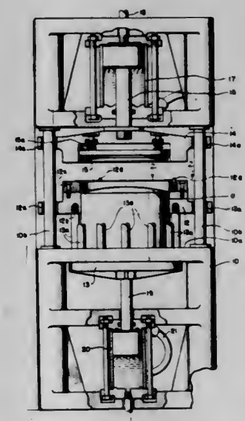
1. Apparatus for extruding a tubular length from a solid billet comprising a female die means, means for holding said billet adjacent said die means, a piercing mandrel means including an exchangeable extruding surface means, means for forcing said mandrel means into said billet until said extruding surface means is received in and cooperates with said die means to define an annular cavity therebetween, and means for extruding said billet through said annular cavity to form said tubular length whereby said die means forms the exterior surface of said tubular length and said extruding surface means forms the interior surface of said tubular length.

3,296,849
SWITCH ARM BENDING AND PUNCHING MACHINE
John G. Pahl, 1624 E. Alpine Ave., Stockton, Calif. 95205, and Emil F. Pahl, 1025 Edan Ave., Stockton, Calif. 95207
Filed Dec. 8, 1964, Ser. No. 416,758
11 Claims. (Cl. 72—294)

9. In a machine for bending metallic tubing, a support, a tubing engaging and bending roll on the support arranged, upon rotation of the roll in one direction, to bend and wrap an end portion of the tubing thereabout, a stop on the roll engaging the adjacent end of the tubing, means to limit tubing bending rotation of the roll, and a longitudinally movable punch mounted on the support tangentially of the roll and in alinement with but back from said stop when the roll is halted operative to then punch an opening through the outer face of said tubing.



3,296,850
MASK FORMING
Joseph P. Fiore, Wheeling, Ill., assignor to The Rauland Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 25, 1964, Ser. No. 391,986
6 Claims. (Cl. 72—351)



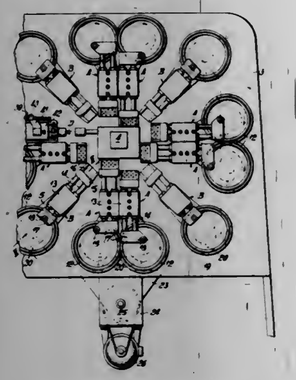
1. In the manufacture of a shadow-mask type of color cathode-ray tube, the method of forming a shadow-mask from a sheet of metal having a multiplicity of apertures within a field of predetermined configuration bounded by a strip of said metal and without introducing non-uniformities into said field, which method comprises:

clamping said sheet along a clamping line within said strip and spaced a predetermined minimal distance from said field;

drawing said sheet over a punch to drape draw said sheet to the contour of said punch and to draw a fillet in said sheet, said punch having the same peripheral configuration as said field and an area larger than said field but smaller than that enclosed by said clamping line to locate said fillet in the portion of said strip between said field and said clamping line;

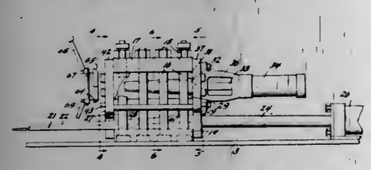
unclamping said sheet and forming the remaining portion of said strip beyond said clamping line into a skirt extension of said fillet.

3,296,851
WIRE-BENDING MACHINE
Heinz Breuer, Van der Giesestrasse 19, Duren, Rhineland, Germany
Filed Apr. 20, 1964, Ser. No. 361,307
Claims priority, application Germany, Apr. 20, 1963, R 34,989
15 Claims. (Cl. 72—383)



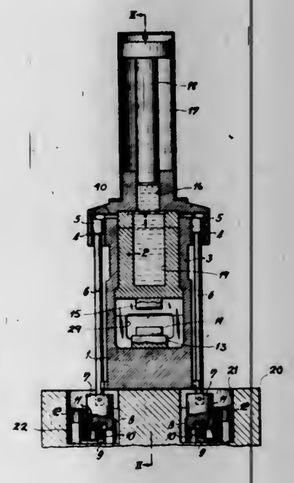
1. Wire-bending machine for the production of articles made of wire or flat material or the like, the machine comprising a mandrel which is stationary during the bending operation, a number of carriages being provided which are movable towards the mandrel and which bear the bending tools and which are operated by a common motorised driving element through the agency of cam discs or eccentrics or the like, characterised in that the torque of the driving motor is transmitted to the crank drives, which are associated with the various tool elements and which all have the same crank radius, by a substantially frame-like driving member to which the crank pins are secured and which the driving motor causes to orbit at the radius of the crank drives.

3,296,852
METAL FORMING PRESS
Francis J. Fuchs, Jr., Princeton, and William F. Morgan, Millington, N.J., and Henry R. Tillman, Winston-Salem, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,824
7 Claims. (Cl. 72—398)



1. In a forming press,
a pair of spaced end plates having a first and second inclined lower surface,
means for securing said end plates together,
a top plate mounted between said end plates,
means for holding said top plate stationary,
a first die holder mounted on said top plate,
a second die holder having an inclined surface mounted between said end plates for movement along said end plates toward and away from said stationary stop plate,
a mandrel mounted on one of said end plates and projecting between said die holders, and
a wedging device cooperating with said first and second inclined surfaces for moving the second die holder at twice the rate of the movement of said mandrel.

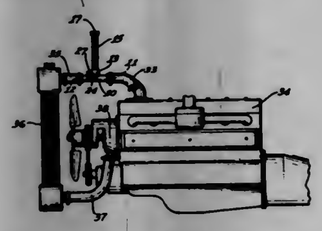
3,296,853
FLUID-OPERATED PRESS
Hans Bêché, Gardelenbergstrasse 29, Huckeswagen, Rhineland, Germany
Filed Jan. 25, 1966, Ser. No. 522,921
Claims priority, application Germany, Jan. 26, 1965, B 80,273
8 Claims. (Cl. 72—453)



1. A fluid-operated press comprising a frame forming a bed adapted to support a first die; a ram reciprocally guided on said frame and adapted to support a second die confronting said first die; a main cylinder rigid with said frame, said ram having a part guided in said main cylinder for displacement by a hydraulic fluid present therein; plunger means disposed in a passage communicating with said main cylinder for exerting pressure upon said hydraulic fluid, said main cylinder being provided with an extension forming at least one auxiliary cylinder communicating with said passage at least in an off-normal position of said ram; piston means disposed in said auxiliary cylinder for displacement concurrently with said ram by said hydraulic fluid; an accelerable mass positioned for entrainment by said piston means; biasing means acting upon said piston means for substantially preventing displacement thereof by a hydraulic pressure below a predetermined limit, said limit being substantially less than the maximum hydraulic force developed by said plunger means upon operative displacement of said ram; and driving means for actuating said plunger means to displace said ram, said piston means and said mass.

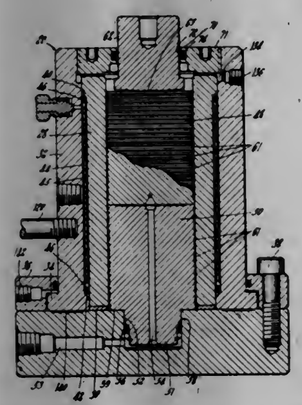
3,296,854
WATER PUMP TESTING APPARATUS
Charles I. Morgan, Scottsdale, Ariz., assignor of thirty-three and one-third percent to Bruce MacNaughton, Phoenix, Ariz.
Filed Mar. 19, 1964, Ser. No. 353,125
2 Claims. (Cl. 73—118)

1. An apparatus for testing a conventional cooling system of an internal combustion engine having a water jacket including input and output connections, a radiator and a water pump, comprising in combination:
(A) a main straight cylindrical flow pipe placed in operative position with its input end connected to the output connection of said water jacket and an output end connected to the top input connection of said radiator,
(B) a vertically disposed open top indicating standpipe tube having a chamber exposed to normal atmospheric pressure mounted intermediate said ends of said main flow pipe,



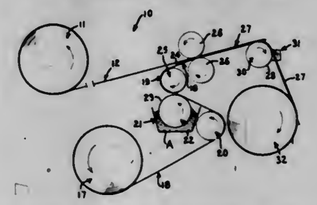
(C) said main flow pipe including an orifice communicating with the bottom of said indicating standpipe tube chamber for gravity flow of fluid from said main flow pipe into and out of said chamber,
(D) and a flow regulating valve in said main flow pipe located between the output end thereof and said orifice, to cause a pressure drop from said input end to said output in said main flow pipe so that the fluid flowing in said main flow pipe enters and discharges through said orifice in said indicating standpipe tube chamber.

3,296,855
PRESSURE CYLINDER TYPE MEASURING APPARATUS
Donald H. Newhall, Walpole, Mass., assignor to Harwood Engineering Company, Walpole, Mass., a corporation of Massachusetts
Filed Sept. 11, 1964, Ser. No. 395,859
7 Claims. (Cl. 73—141)



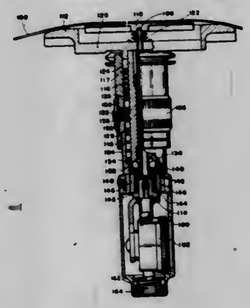
1. For use in a pressure cylinder type measuring apparatus for balancing fluid pressure against an externally applied force, the combination of a base, a metallic cylinder supported on said base to rotate on a vertical axis, a piston disposed within and having a leakage fit clearance with the cylinder for movement relative thereto, a plug disposed within the cylinder below the piston having a leakage fit clearance with the cylinder and forming with the base a bottom closure for the cylinder, means for supplying fluid under pressure into said cylinder between the piston and plug for balancing said piston against said external force, a fluid pressure measuring device connected with said fluid pressure supply means, jacketing means providing a pressure fluid cavity extending circumferentially about said cylinder, and means for applying fluid at control pressures within said cavity for contracting said cylinder radially within the limits of elasticity to maintain said leakage fit clearance between the cylinder and each of said piston and plug.

3,296,856
TESTING DEVICE FOR ADHESIVES
Robert Theodore Elias, Downers Grove, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 17, 1963, Ser. No. 273,639
14 Claims. (Cl. 73—150)



1. An apparatus for determining the tack or degree of bond of an adhesive applied between a plurality of relatively bendable members, at least one of the plurality of bendable members including a break-away portion comprising: first means for maintaining the bendable members in a first substantially, common planar condition, and second means for diverting all of the bendable members from said first substantially common planar condition into a second and different substantially common planar condition and for moving said break-away portion from said second planar condition whereby the degree of movement of the break-away portion with respect to said second planar condition is indicative of the tack of the adhesive.

3,296,857
APPARATUS FOR MEASURING THE TENSION OF FLEXIBLE MATERIALS
Steve L. Kaczeus, Milford, Conn., assignor to Huyck Corporation, Rensselaer, N.Y., a corporation of New York
Filed Aug. 19, 1964, Ser. No. 390,644
9 Claims. (Cl. 73—159)



8. A tension measuring device comprising:
a semi-cylindrical pressure sensing element,
a pressure recording device,

a connecting rod movably affixed to said pressure sensing element and said pressure recording device,

a rectangular frame positioned around said connecting rod between said sensing element and said recording device on a plane which is at right angles to said connecting rod and parallel with the axis of said sensing element,

a cylindrical locking shaft positioned coaxially with and about said connecting rod, said locking shaft having round apertures at the end thereof nearest said recording device in which are positioned metal balls normally in touching contact with said connecting rod and slightly smaller in diameter than the diameter of said apertures,

a cylindrical insert positioned below said apertures in said locking shaft and around said connecting rod coaxially with said locking shaft and said connecting rod and having an inwardly beveled surface facing said balls positioned in said apertures in said locking shaft and so spaced from said balls that the balls do not contact said beveled surface when said locking shaft is in the normal position but do contact said beveled surface when said locking shaft is moved toward said recording device,

counterdirectionally acting springs coaxial with, surrounding, and interconnected with said locking shaft exercising comparative extension forces such that said locking shaft is normally held in a position such that said balls are not in contact with said beveled surface of said insert,

means for increasing or decreasing the extension forces exercised by said springs,

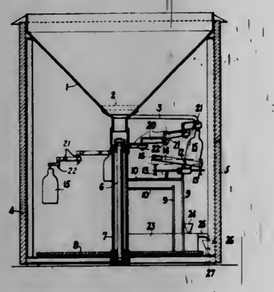
and a lamp circuit comprising at least an electrical energy source, an electrical lamp, means electrically interconnecting the elements of the lamp circuit, and a normally open switch so positioned and designed that said switch is closed and said lamp thereby caused to light when said locking shaft is moved toward said recording device to the greatest extent permitted by said balls bearing on said beveled surface of said insert and on said connecting rod.

3,296,858

APPARATUS FOR COLLECTING AND DISTRIBUTING ATMOSPHERIC PRECIPITATIONS

André Doury, Vaucresson, Cyr Grave, Reze, and Jean Vertut, Paris, France, assignors to Commissariat à l'Energie Atomique, Paris, France

Filed Aug. 21, 1962, Ser. No. 218,286
Claims priority, application France, Sept. 5, 1961, 872,303
6 Claims. (Cl. 73—170)



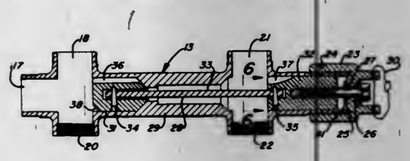
1. Fractionizing receiving apparatus for atmospheric precipitation, comprising: a collector having an outlet; a plurality of rocking supports, each for mounting thereon a container for receiving in succession precipitation from said collector; a feeding channel rigidly mounted on each of said rocking supports for disposition above the container of the same support; a funnel rigidly mounted on one of the lateral surfaces of each of said channels on each of said supports and at one end of the respective channel for disposition above the container of the same support with its outlet disposed for communication with the mouth of the container of the same support; the other end of each feed channel being provided at its lower portion with a feed spout for communicating successively with the funnel and with the channel of the support and container to subsequently receive precipitation, said supports being arranged for successive rocking movement between a first position with the mouth of the funnel mounted thereon in communication with said collector outlet and a second position with the feeding chanel in communication with said collector outlet.

3,296,859

METER BAR

Charles W. Stewart, 952 Sheridan Drive, Lancaster, Ohio 43130

Filed May 20, 1964, Ser. No. 368,969
9 Claims. (Cl. 73—201)



1. In a meter bar formed with a pair of spaced inlet connections; formed with a pair of spaced gas meter connections; formed with an outlet connection; formed with a longitudinal hollow therethrough; and provided with a valve member with spaced solid portions, said valve member being positioned in said hollow for movement between a fully closed position and a fully, normally open position; wherein, in said fully open position, the path of gas flow is limited to a normal path from one of said inlet connections through said meter from one of said gas meter connections to the other, and thence out said outlet connection, said normal path making two transverse intersections with said hollow; the improvement which comprises, as said valve member, a plunger which is movable along a longitudinal linear path; which plunger is formed with a passageway longitudinal of the hollow in the meter bar, said passageway leading from a portion of said plunger proximate to one of said inlet connections to a portion of said plunger proximate to said outlet connection; and wherein, in said fully closed position, said solid portions occupy said intersections, said normal path of gas flow is completely blocked at both said gas meter connections by said respective solid portions and gas flow is limited to a path through said longitudinal passageway and through the longitudinal hollow of said bar; wherein said plunger is sufficiently shorter in length than said hollow to provide, in said fully open position, for the substantial removal of said solid portions from the occupation of said intersections.

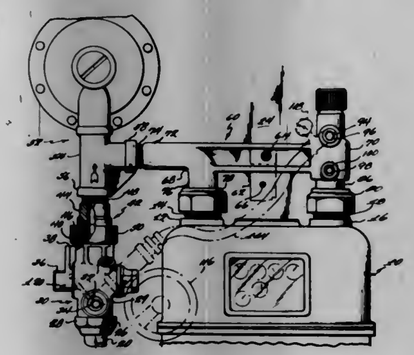
3,296,860

SIMPLIFIED METER SETTING INCLUDING RIGID METER BAR

John J. Smith and Lawrence F. Luckenbill, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois

Filed June 4, 1964, Ser. No. 372,469
5 Claims. (Cl. 73—201)

1. An improvement in a by-pass type fluid meter setting for connecting a gas supply line to a service line of a dwelling or the like comprising: a fluid meter having an exteriorly threaded inlet and an exteriorly threaded outlet spaced from and extending parallel to the inlet; a rotary plug valve connected to the supply line upstream of the meter, said rotary plug valve including a valve body having an interiorly threaded inlet for connection to a threaded end of the supply line, an exteriorly threaded outlet, and a by-pass port with a removable closure therein; coupling means including a hollow body portion having exterior threads at one end thereof, an enlargement at the other end thereof, and a coupling nut cooperating with said enlargement and having interior threads threadedly received on the exterior threads of the outlet of said rotary plug valve; a pressure regulator including an elbow shaped body having an interiorly threaded inlet for threadedly receiving the exteriorly threaded end of the body portion of said coupling means and an interiorly threaded outlet; an elbow type meter inlet fitting having exterior threads at the inlet end thereof



for engagement with the interior threads in the outlet of the body portion of said pressure regulator and an enlargement at the outlet end thereof and an interiorly threaded coupling nut on the outlet end cooperating with said enlargement, said interiorly threaded coupling nut being threaded onto the exteriorly threaded inlet of said meter; an outlet meter fitting valve having a valve body with an inlet end and an outlet end, said inlet end having an enlargement thereon and an interiorly threaded coupling nut thereon cooperating with said enlargement, said coupling nut being threaded onto the exterior threads of the outlet of said meter, said outlet end of the valve body of said outlet meter fitting valve having interior threads engaging exterior threads on the service line, said valve body further having a by-pass port and a removable closure for said port, and a by-pass line detachably connectable to and between the by-pass port of said rotary plug valve and the by-pass port of said outlet meter fitting valve.

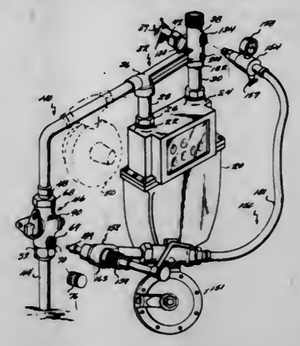
3,296,861

BY-PASS TYPE METER SETTING

Frank H. Mueller and John J. Smith, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois

Filed Dec. 17, 1963, Ser. No. 331,212
19 Claims. (Cl. 73—201)

1. A by-pass type meter setting: a fluid line; a fluid meter detachably connected into said line; a first valve connected into said line upstream of said meter and having at least two positions, an open position wherein flow takes place therethrough to said meter and a closed position wherein flow from the upstream side of said line to said meter is blocked; means in said line upstream of said valve including a by-pass port, and a plug threadedly received in said by-pass port and closing the same to the flow of fluid therethrough; a second valve connected to said line downstream of said meter and having a body provided with a by-pass port, said second valve having at least two positions, an open position wherein flow takes place therethrough from said meter and flow from said port is blocked and a by-pass position wherein flow



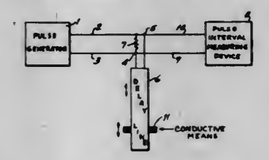
takes place from said port to the downstream side of said line and flow from said meter is blocked; and a by-pass line detachably connected to and between said by-pass ports said by-pass line including means therein at its upstream end thereof for removing the plug from the by-pass port in said means upstream of said first valve after said by-pass line is connected to said port.

3,296,862

FLUID LEVEL MEASURING APPARATUS

Michael A. Ziniuk, Melvindale, Mich., assignor to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York

Filed Oct. 2, 1963, Ser. No. 313,224
6 Claims. (Cl. 73—290)



1. A fluid level detector comprising a relatively long and narrow electrical delay line mounted with its length extending substantially perpendicular to the surface of the fluid, the level of which is to be detected, and supported by said fluid, a high conductivity member mounted in a fixed position with respect to said fluid and having an aperture for receiving said line, said line having an input located remotely from said member, means for applying an electrical pulse to said input, and means for measuring the time interval between said pulse and the pulse energy reflected at the discontinuity in said line caused by said member.

3,296,863

SHIP DRAFT GAGE

Robert J. Levine, Briarcliff Manor, N.Y., assignor to Magnetic Instruments Co., Division of Polymetric Devices Co., Inc., Jenkintown, Pa.

Filed Apr. 1, 1964, Ser. No. 356,388
8 Claims. (Cl. 73—304)

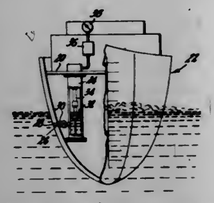
1. A draft gaging system for a sea borne ship comprising:

(a) a vertical well positioned aboard the ship, said well having means communicating with the surround-

ing sea whereby sea water floods said well to the mean level of the surrounding sea;

(b) a sensing probe having a plurality of isolated sections, said probe being mounted in said well for sensing the level of the sea water in said well;

(c) display means connected to said sensing probe and responsive thereto for indicating the sea water level sensed by said probe, said display means including a self-balancing probe circuit connected to each section of each of said plurality of isolated probe sections;



(d) an amplifier to which all of said probe circuit outputs are connected;

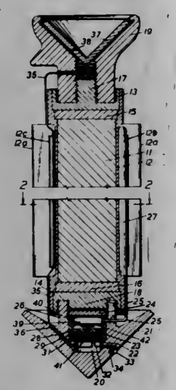
(e) a servo motor electrically connected to and controlled by said amplifier, said servo motor being arranged to rebalance said probe circuits;

(f) cam means rotated by said servo motor;

(g) a plurality of switches actuated by said cam means; and

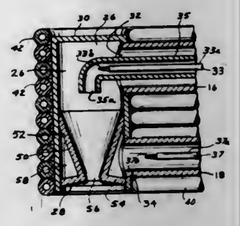
(h) a plurality of annunciators each connected to a respective one of said switches whereby said annunciators are responsive to the condition of said switches.

3,296,864
MEASUREMENT OF TEMPERATURE AND PRESSURE
Wellesley Ashe Kealy, Lymm, Richard Smart, Urmston, and Edward Duncombe, Great Saughall, Chester, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Feb. 26, 1962, Ser. No. 175,495
Claims priority, application Great Britain, Mar. 6, 1961, 8,164/61
4 Claims. (Cl. 73—339)



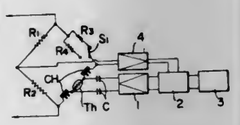
3. In combination with a nuclear reactor fuel element and encompassed within the contours of said fuel element a pressure sensitive transducer comprising means defining a small gas-filled cavity of length less than its transverse dimensions, a diaphragm in said cavity, means for supporting said diaphragm transverse to said cavity and partway along the length of the cavity, means defining a passageway for gas from one side of said diaphragm to the other, and means for oscillating said diaphragm over a range of frequencies including its resonant frequency.

3,296,865
HEAT SENSING PROBE AND PROCESS
Perry L. Blackshear, Jr., Mahtomedi, and Frank D. Dorman, St. Paul, Minn., assignors to The Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 14, 1963, Ser. No. 323,780
13 Claims. (Cl. 73—359)



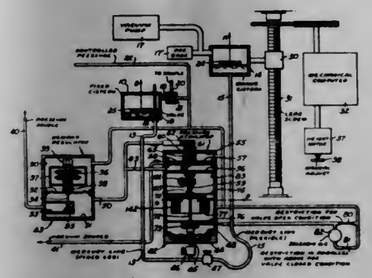
1. A temperature sensing probe comprising in combination, an elongated probe body, a jacket defining the exterior of said probe, said jacket being composed of a plurality of tubules extending over the probe, a gas inlet opening in said jacket, a duct means communicating with the area adjacent said inlet opening for supplying a relatively cool diluent gas to the area immediately surrounding the inlet opening and a collection duct means also communicating with the inlet opening for withdrawing a sample of gas mixture composed in part of a gas from the atmosphere within which the probe is placed and also composed in part of the diluent gas through said duct means and a first and second temperature means for sensing the temperature of the diluent gas and the gas passing into the collection duct means, respectively.

3,296,866
ELECTRIC THERMOMETER
Zenmon Abe and Takaji Suzuki, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Jan. 29, 1964, Ser. No. 341,025
Claims priority, application Japan, Feb. 4, 1963, 38/4,485; Mar. 18, 1963, 38/17,087; Mar. 25, 1963, 38/20,195
3 Claims. (Cl. 73—362)



1. An electric thermometer comprising a bridge circuit having a thermistor element in one arm, switch means in another arm of the bridge to change the impedance value therein between first and second values, a first amplifier for amplifying the unbalance current of said bridge, a generator for generating a definite alternating current signal, a modulator for modulating the output of said first amplifier with the output of said generator, a second amplifier for amplifying the output of said modulator, means to add the output of said second amplifier to both terminals of said thermistor, wherein the thermistor is heated by the unbalance current when the impedance value of said bridge arm has been set to the first value by said switch means, and the temperature of a human body is measured from the unbalance current when the said impedance value has been set to the second value by said switch means.

3,296,867
MANOMETER
Leo Nevin Schwien, Los Angeles, Calif., assignor to Schwien Engineering, Inc., Los Angeles, Calif., a corporation of California
Filed Nov. 2, 1964, Ser. No. 407,969
16 Claims. (Cl. 73—401)



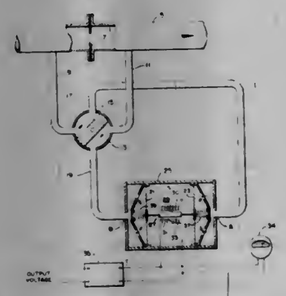
14. In a manometer having interconnected first and second cisterns carrying pools of mercury with one of said cisterns disposed vertically relative to the other, a first pressure source connected to the upper cistern above the pool, a pressure line connected to the lower cistern above the pool, and means for generating an error signal varying as a function of unbalance at the first and second cisterns, the improvement comprising:

a chamber interconnected with said first and second cisterns and having a movable wall member;

drive means for moving one of said cisterns vertically relative to the other; and

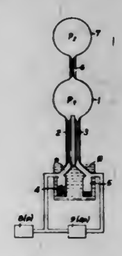
means for generating a control signal for energizing said drive means with said control signal varying as a function of the movement of said movable wall member and of said error signal.

3,296,868
DIFFERENTIAL PRESSURE TRANSMITTER
Harold H. Koppel, Cleveland, and John V. Werme, Painesville, Ohio, assignors to Bailey Meter Company, a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,713
3 Claims. (Cl. 73—407)



1. A differential pressure transmitter, comprising, a housing, a diaphragm means internally mounted in said housing and positioned to flex axially therein in response to changes in the difference in pressures applied to the opposite sides thereof, means connected to said diaphragm means to sense the axial flexing thereof, a pressure transmitting connection into said housing on one side of said diaphragm means connected to a first source of fluid pressure, a pressure transmitting connection into said housing on the opposite side of said diaphragm means connected to a second source of fluid pressure, and means for cyclically reversing said connections for predetermined increments of time so that the first source of fluid pressure is cyclically applied to the one side and then the opposite side of said diaphragm means for predetermined equal increments of time while said second source of fluid pressure is cyclically applied to the opposite side and then the one side of said diaphragm means.

3,296,869
METHOD FOR DETERMINING THE SPECIFIC SURFACE OF NON-UNIFORMLY SHAPED SUBSTANCES
Hans-Joachim Bültemann, Schlossparkstrasse 57, Bremen, Germany
Filed Nov. 24, 1964, Ser. No. 413,537
Claims priority, application Germany, Dec. 3, 1963, A 44,696
8 Claims. (Cl. 73—432)



1. A method for determining the specific surface of non-uniformly shaped substances by measuring the adsorption of noble gases or inert gases at the specimen to be investigated, said method comprising,

feeding a gas from a gas supply container through an inlet in the form of a flow throttle into a measuring vessel containing the specimen, and during measuring time increasing but not decreasing the gas inflow rate from the supply container to the measuring vessel,

and determining the adsorption isotherms which are dependent on the specific surface by gas pressure measurement for obtaining the so called BET line in the measuring vessel.

3,296,870
FORCE SENSING DEVICE
Richard C. Turnblade, Sepulveda, and Thomas R. Edmonds, Woodland Hills, Calif., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Jan. 8, 1964, Ser. No. 336,561
11 Claims. (Cl. 73—504)

6. A combination gyroscope and accelerometer comprising:

an outer case,

an inner case supported for rotation within said outer case,

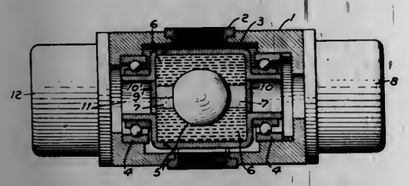
means to rotate said inner case,

a spherical rotor disposed within said inner case for rotation therein about the axis of rotation of said inner case, said rotor having an oblate portion on

one end of the rotor about said axis and normal thereto, the other end of the rotor opposite said oblate surface being spherical,

first fluid means having a density greater than that of said rotor supporting said rotor from said inner case for rotation therein,

second fluid means having a density less than that of said first fluid means supporting said rotor from

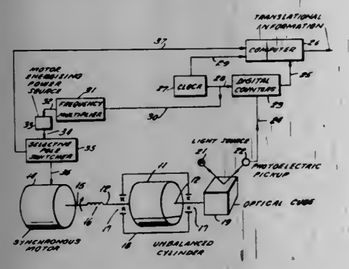


said inner case in the direction of the axis of rotation,

first optical means disposed adjacent said oblate surface to sense the inertial stability of said rotor, and

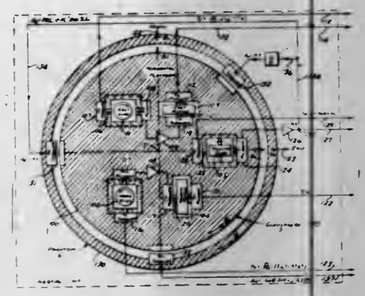
second optical means disposed adjacent the spherical surface of said rotor opposite said oblate surface to sense acceleration forces exerted upon said rotor perpendicular to the axis of rotation thereof.

3,296,871
SYNCHRONOUS ROTATING PENDULUM ACCELEROMETER
Henry Blazek, Nyack, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Company Division, a corporation of Delaware
Filed Feb. 19, 1964, Ser. No. 346,041
3 Claims. (Cl. 73—517)



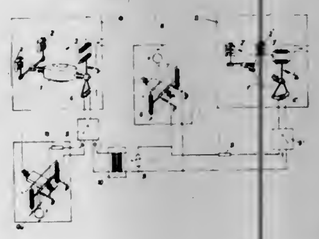
1. In an accelerometer including an acceleration responsive sensor, first means defining an axis of rotation for said sensor at a position remote from its center of gravity, a synchronous motor for rotating said sensor in one direction about said axis, transducer means for generating signals responsive to variations in angular velocity of said sensor throughout each cycle of revolution thereof, computer means for receiving said signals and adapted to produce an output indicative of translating acceleration of said sensor, a flexible coupling constituting a driving connection between said motor and said sensor, a device controlling operation of said motor such that rotation of said sensor is maintained at a predetermined average speed, said device including an energizing source for said motor and a clock means controlling the output frequency of said source, said clock means generating signals fed to said transducer means and said computer means whereby said signals generated by said transducer means and said output of said computer means are related to said signals generated by said clock means.

3,296,872
INERTIAL NAVIGATION SYSTEM
Maurits Ten Bosch, White Plains, and Donald S. Bayley, Bedford Village, N.Y., assignors to M. Ten Bosch, Inc., Pleasantville, N.Y., a corporation of New York
Filed Oct. 4, 1960, Ser. No. 60,336
28 Claims. (Cl. 74—5.34)



1. In a lightweight inertial navigation system for aircraft and other moving vehicles to give longitude and latitude positions, a unit comprising a single platform carrying the east-west, north-south and azimuth gyroscopes and east-west and north-south rotor members, a phantom gimbal enclosing and encircling said platform and pitch and roll gimbals carrying said phantom gimbal and a housing enclosing the unit.

3,296,873
AUTOMATIC PILOT
Waldemar Möller, Hellingenberg, Baden, Germany, assignor to Bodenseewerk Perkin-Elmer & Co. G.m.b.H., Uberlingen (Bodensee), Germany
Filed Aug. 31, 1964, Ser. No. 393,078
Claims priority, application Germany, Oct. 26, 1963, 74,036
6 Claims. (Cl. 74—5.34)



1. In an automatic pilot for a vehicle having freedom of motion about roll and yaw axes,

an integrating restrained gyro for roll stabilization and having a precession axis, a spin axis perpendicular to said precession axis and an axis mutually perpendicular to said precession and spin axes;

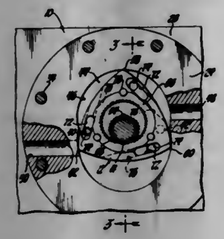
a motor acting on said gyro about the precession axis of said gyro;

means for determining the deviation of the yaw axis from the apparent vertical about the roll axis and for developing a first signal proportional to said deviation;

means for developing and differentiating a second signal which is proportional to the desired rate of turn of said vehicle;

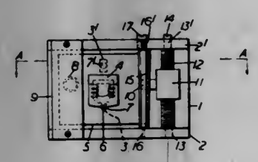
and means for adding and applying said first signal and said second differentiated signal to said motor.

3,296,874
VIBRATION GENERATOR
Floyd A. Wyczalek, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 16, 1964, Ser. No. 418,780
20 Claims. (Cl. 74—87)



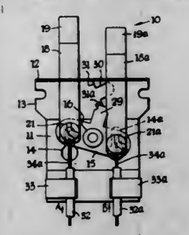
1. A vibration generator comprising a housing having a cavity with an inner surface formed therein, a rotor having an outer surface, said rotor supported in said cavity for rotation therein with the axis of the rotor offset and parallel to the axis of the cavity, one of said surfaces being shaped as a trochoid with the other of said surfaces being generally of an enveloping shape, a plurality of apex portions formed on the periphery of the rotor and being equally spaced about the axis of the rotor, each of said apex portions continuously located proximate said inner surface during the rotation of said rotor so as to form a plurality of variable volume working chambers, a source of pressurized fluid, and means formed in said housing for establishing communication between said source and said working chambers whereby said rotor is drivingly rotated about said cavity.

3,296,875
DEVICE FOR SETTING THE ANGULAR POSITION OF A FIRST OBJECT WITH RESPECT TO A SECOND
Leo Jacobin, Antwerp, and Willy Camiel Maria Gielen, Hoboken-Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 28, 1964, Ser. No. 363,168
Claims priority, application Belgium, May 14, 1963, 632,294
6 Claims. (Cl. 74—89.15)



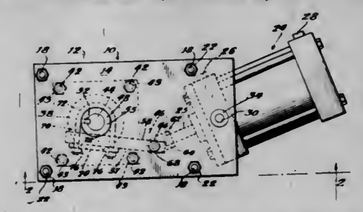
1. A device for setting the angular position of a first object with respect to a second object comprising means supporting said first object adjacent said second object, means hinging said support means whereby said support means is rotatable about the axis of said hinging means and rotatable in a transverse direction, a force applying member urging said support means about said hinge axis, a stop member disposed adjacent said support means to control the rotation of said support means and means to displace said stop member in a direction parallel to said hinge axis so that said support means pivots about said hinge axis.

3,296,876
SWITCH ACTUATOR UNIT
Paul Carl Roger Fernberg, Farnham Common, England, assignor to United-Carr Incorporated, a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 360,874
Claims priority, application Great Britain, May 3, 1963, 17,606/63
3 Claims. (Cl. 74—100)



1. A two way switch actuator comprising a link pivoted intermediate its length for limited rotation on a support, a spring and a fixed member, in which the spring is attached between the link and the fixed member to exert a permanent rotational force on the link in one or other rotational direction to either side of a dead centre position, an actuating member attached to each end of the link, said actuating members comprising two shafts arranged in parallel relationship and constrained for lengthwise movements along their own axes and operable to rotate the link against said support having two parallel slots running lengthwise of the direction of movement of the shaft and a pin pivotally connecting each shaft to the link and extending through a slot in said support for sliding movement therealong, each pin having an axial bore and a cable engaged in said axial bore in each pin for movement in response to rotational movement of the link.

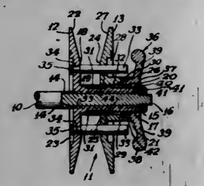
3,296,877
LEVER ARM FOR VALVE OPERATOR
Francis S. Flick, Oak Park, Roy Wilkes, Melrose Park, and Rollin J. Frantz, Elmhurst, Ill., assignors to Flick-Reedy Corporation, a corporation of Illinois
Continuation of application Ser. No. 263,292, Mar. 6, 1963. This application Apr. 12, 1965, Ser. No. 447,481
3 Claims. (Cl. 74—102)



1. A crank unit for imparting linear movement from the piston of a piston and cylinder device as rotary movement to a shaft, comprising: a rigid frame including a pair of plates held apart by spacer means, one of said plates mounted about said shaft and having a bearing surface about said mounting, the other plate having an opening with a bearing surface therein formed opposite the first opening; a sleeve keyed to said shaft and pivoted in the bearing in said one plate; a pin keyed to said sleeve and pivoted in the opening in said other plate; a pair of substantially parallel elongate flat bars having means for detachably pivotally securing adjacent ends thereof to said piston rod for pivoting in a plane parallel to the plane of travel of said rod, the other ends of said bars positioned against said sleeve; and clamp means for detachably securing said arms in predetermined relation to

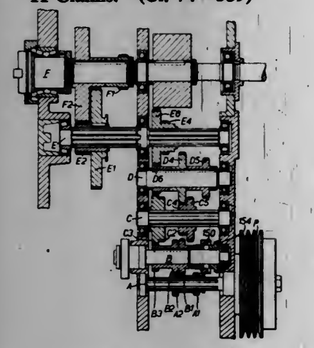
said sleeve including a plate having a flat surface against the edges of the bars opposite the edges against the sleeve and a U-bolt positioned around said sleeve with the free threaded ends thereof extending between said arms and through said plate and the rounded U-portion of the bolt adjacent the sleeve, to form a unit having a predetermined lever arm length for translating the linear movement of said rod to rotary movement of said shaft while transmitting the linear forces to the plates of said unit.

3,296,878
VARIABLE SPEED DRIVE SHEAVE
Howell N. James and Edward C. Collins, Moline, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Dec. 31, 1964, Ser. No. 422,590
7 Claims. (Cl. 74—230.17)



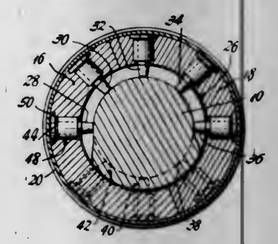
1. An adjustable pulley adapted to be mounted upon a shaft having an axis comprising; a first pulley section having a threaded hub adapted to be fixed to said shaft, a second pulley section including a hub portion adapted to move axially of said shaft and said first pulley section but restricted from relative rotation with respect to said first pulley section, means including an irregular surface formed on the free end of said hub portion rigidly connected to said adjustable pulley section, a threaded member mounted on said threaded hub including a second surface interlockable with said irregular surface and means for moving said threaded member axially to lock and unlock said pulley sections.

3,296,879
GEAR CHANGING MECHANISM
Hans Gronau, London, England, assignor to B. Elliott (Machinery) Limited
Filed Feb. 12, 1964, Ser. No. 344,314
Claims priority, application Great Britain, Feb. 15, 1963, 6,222/63
11 Claims. (Cl. 74—339)



7. Gearing comprising a pair of shafts, a plurality of gears on said shafts, an hydraulically operable gear shifter for shifting one of said gears on one of said shafts into and out of engagement with another of said gears on the other of said shafts, a locking mechanism normally locking said shiftable gear against shifting movement, hydraulically operable actuating means for actuating said mechanism to release said shiftable gear, a motor, a reduction gear mechanism driven by said motor for producing a slow speed oscillating rotary motion, a normally disengaged hydraulically operable clutch for coupling said mechanism to one of said shafts and applying said oscillating rotary motion thereto while said gears are disengaged, an hydraulic pump driven by said motor, and operative hydraulic connections from the motor to said gear shifter, said locking mechanism and said clutch.

3,296,880
RADIAL ROLLER ANTI-FRICTION TRANSMISSION
Arthur M. Maroth, % Maroth Engineering Co., Grumman Hill Road, Wilton, Conn. 06897
Filed Oct. 18, 1965, Ser. No. 497,419
20 Claims. (Cl. 74—424.8)



1. An anti-friction transmission mechanism engageable and cooperable with projections of a shouldered part, comprising in combination:

(a) a support member having an annular portion adapted to extend along the projections of said part in spaced relation thereto,

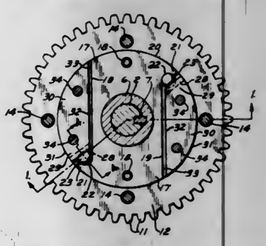
(b) a plurality of roller elements carried by and projecting from the annular portion of the support member and arranged for engagement and line contact with side surfaces of the projections of said part, and

(c) anti-friction bearing devices disposed between said roller elements and annular portion of the support member, mounting the elements thereon in substantially radial disposition with respect to said annular portion,

(d) the projecting portions of the roller elements tapering to a small end diameter, and

(e) spring means yieldably urging said roller elements outwardly of the annular portion of the support member.

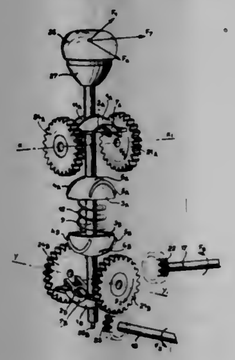
3,296,881
ANTI-BACKLASH GEAR
Howard C. Seabeck, Lyndhurst, Ohio, assignor to The Cleveland Twist Drill Company, Cleveland, Ohio, a corporation of Ohio
Filed June 29, 1964, Ser. No. 378,701
18 Claims. (Cl. 74—440)



1. A self-contained sectional gear with built-in provision for substantially completely eliminating backlash

comprising a main gear member; an auxiliary gear member coupled thereto; a plurality of segmental wedging elements of which there is at least one that is fixedly associated with the main gear member and at least one that is fixedly associated with the auxiliary gear member; juxtaposed surfaces on adjacent portions of said segmental wedging elements, said juxtaposed surfaces leaving a wedge-shaped space therebetween; a locking component in the wedge-shaped space so formed, the locking portion of said locking component comprising a surface of revolution; and means biasing said locking component into a tenaciously maintained locking position in which it is at all times in intimate contact with both of said juxtaposed surfaces.

3,296,882
PLURAL DIRECTION SINGLE LEVER OPERATING DEVICE
Roger Claude Durand, Saint-Germain en Laye, France, assignor to La Télémécanique Électrique, Nanterre, France, a joint-stock company of France
Filed May 4, 1964, Ser. No. 364,677
Claims priority, application France, May 6, 1963, 934,297; Jan. 7, 1964, 960,044
14 Claims. (Cl. 74—471)



1. A plural direction single lever operating assembly comprising:

a core having two parts with a hole through each of said parts;

two cap shaped slides enclosing said core and arranged in their neutral position in such manner that their longitudinal planes of symmetry are perpendicular to each other and each of said slides having a slot therein;

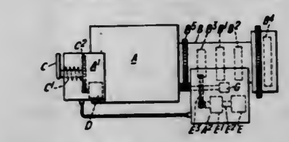
lateral guiding ribs located on each of said parts of said core along two half-circles parallel to said plane of symmetry of said part of said core spaced from each other on each of said parts of said core and adjacent said slides with which they are complementary and in contact;

lateral chamfers on said slides located adjacent to and supporting said guiding ribs;

a single operating lever passing through the slots in each of said slides and through the holes in each of said parts of said core with the longitudinal axis of said lever passing through the geometric center of said slides and core;

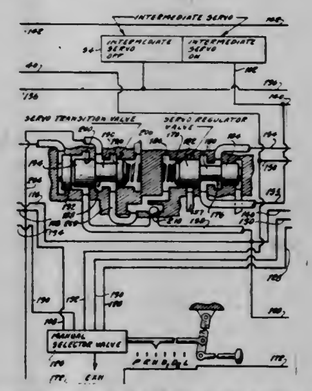
and means for transmitting movements of rotation of each of said slides about its longitudinal axis of symmetry by pivotal movement of said operating lever about the geometric center of the assembly.

3,296,883
CONTROL DEVICES
Dexter R. Plummer, Leicester, England, assignor to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a British company
Filed Feb. 3, 1964, Ser. No. 341,967
Claims priority, application Great Britain, Feb. 5, 1963, 4,640/63
16 Claims. (Cl. 74—472)



9. A control device wherein movement of a demand element controls movement of a driven member in each of two opposite directions over a limited range of travel, comprising transmission means acting under the control of the demand element to control the speed of movement of the driven member in each direction, such transmission means including an electrical driving device for driving the driven member, electrical means responsive to the position of the demand element on either side of a zero position thereof and providing a voltage output dependent on the position of the demand element, means for applying to the driving device a voltage derived at least in part from such voltage output whereby the speed of the driving device is primarily dependent on such voltage output, feed-back means responsive to the position of the driven member, and means whereby such feed-back means acts at the end portions of the maximum range of travel of the driven member to reduce the voltage applied to the driving device and thereby to reduce the speed of such device at least to a relatively small value.

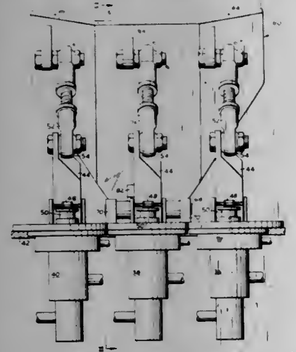
3,296,884
AUTOMATIC CONTROL SYSTEM FOR A MULTIPLE SPEED RATIO POWER TRANSMISSION SYSTEM
Richard L. Leonard, Farmington, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,666
8 Claims. (Cl. 74—472)



2. In a control system for a multiple speed ratio power transmission mechanism comprising a hydrokinetic torque converter and gear elements that cooperate to define multiple speed ratios torque delivery paths, driven portions of said converter being connected to power input portions of said gear elements, a power output shaft connected to driven portions of said gear elements, power

input portions of said converter being adapted to be connected to an engine, clutch and brake means for controlling the relative motion of said gear elements to establish multiple speed ratios, fluid pressure operated servos for applying and releasing said clutch and brake means automatically, a fluid pressure pump drivably connected to said engine, conduit structure interconnecting said servos and said pump, fluid pressure distributor valve means disposed in and partly defining said conduit structure for controlling distribution of pressure to said servos, one servo being adapted to condition said mechanism for low speed ratio operation and another servo being adapted to condition said mechanism for higher speed ratio operation, a servo regulator valve disposed in portions of said conduit structure that extend to said other servo, a source of a pressure signal that is proportional in magnitude to engine torque, means for distributing said signal to said servo regulator valve to modify the regulating characteristics thereof thereby producing a reduced effective servo pressure in said other servo during a speed ratio change to said higher speed ratio under reduced torque, and a servo transition valve means sensitive to a speed ratio of said torque converter for applying another pressure signal to said servo regulator valve that causes the latter to assume a higher regulated effective pressure in said other servo.

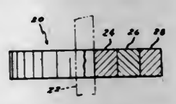
3,296,885
ACCELERATOR SYSTEM FOR MULTIPLE ENGINE CONTROL
Robert A. Peterson, San Leandro, Calif., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 21, 1965, Ser. No. 426,915
6 Claims. (Cl. 74—478)



1. An acceleration system for multiple engine control which comprises three engine fuel control valves disposed adjacent each other, a control pedal, an operating connection between said pedal and each of said valves to enable opening of any valve by downward movement of said connection, one of said connections being with the mid portion of said pedal and the other two connections being at the respective side portions of the pedal, and a support enabling universal pivotal movement of the pedal, and selective depression of one, two, or all of the operating connections.

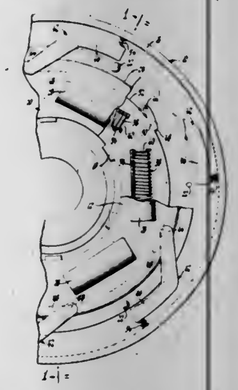
3,296,886
LAMINATED ROTARY STRUCTURES
Theodore J. Reinhart, Jr., 4116 Woodedge Drive, Bellbrook, Ohio 45305
Filed Jan. 12, 1965, Ser. No. 425,098
6 Claims. (Cl. 74—572)

1. A balanced rotary structure rotatable about an axis of rotation therethrough and comprising: a plurality of nonresilient radially laminated rings concentric about the axis of rotation and bonded together on all common mating surfaces into a unitary structure, each of said



rings from the inside outward being of a material having a higher modulus of elasticity than the preceding ring.

3,296,887
VIBRATION DAMPER
Hugh W. Larsen, Milford, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 28, 1964, Ser. No. 406,988
6 Claims. (Cl. 74—574)

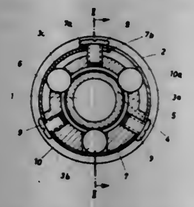


1. A torsional vibration damper comprising:
a driving member;
a driven member resiliently secured to said driving member and rotatable with respect thereto;
a plurality of mass elements pivotally secured to said driving member;
a friction applying means fixed to each of said mass elements and rotatable therewith;
and means for biasing said mass elements and said friction applying means to engage said friction applying means with said driven member during periods of low rotational speed of said driving member to cause said driving member and said driven member to rotate together, said mass elements being adapted to be rotated by centrifugal force to overcome said biasing means during periods of high rotational speed of said driving member to disengage said friction applying means from said driven member.

3,296,888
APPARATUS FOR STEP-DRIVING
Eugen Schweitzer, Munich, Germany, assignor to Movit Industrieanstalt, Schaan, Liechtenstein, a corporation of Liechtenstein
Filed Jan. 14, 1965, Ser. No. 425,541
Claims priority, application Germany, Jan. 30, 1964, M 59,742
7 Claims. (Cl. 74—574)

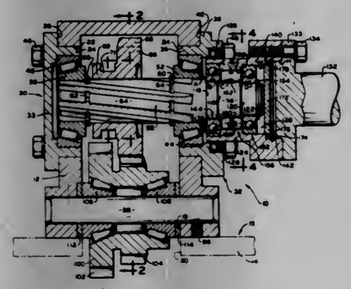
1. In step drive means, especially stepping motors, apparatus for damping oscillations of the driven member, comprising:
a driven shaft adapted to be driven by said step drive means;

an annular load mass mounted for rotation with respect to said driven shaft;
brake means for retarding rotational movement of said load mass relative to said driven shaft, said brake means including three rigid rolling bearing elements coupled to one of said load mass and said driving shaft for rotation therewith, the other one of said



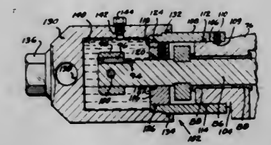
driven shaft and said load mass having an annular bearing race thereon in which said bearing elements are received for rolling movement therealong, and resilient means for resiliently urging said bearing elements radially toward the other one of said driven shaft and said load mass in order to apply a friction braking force between said driven shaft and said load mass.

3,296,889
POWER TAKE-OFF UNIT INCLUDING MEANS FOR INHIBITING FEEDBACK LOAD PULSES FROM DEVICES DRIVEN THEREBY AND INCLUDING A LUBRICATING ARRANGEMENT FOR SUCH MEANS
Robert W. Wagner, Chelsea, Mich., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed July 6, 1965, Ser. No. 469,623
6 Claims. (Cl. 74—606)



1. In an arrangement for supplying torque to a device which generates pulsating feedback torsional loads, which arrangement includes a source of power, a lubricant containing gear transmission having a casing with a first access opening therein and a power take-off unit secured to said casing and driven through the first access opening therein and drivingly connected to the device, said power take-off unit comprising in combination
(a) a housing having a lubricant containing internal first chamber and a second access opening therein to said chamber,
(b) said housing including means for securing the same to the casing of the transmission with said second access opening in registration with the first access opening of said casing,
(c) an output shaft including means mounting the same to the housing for rotation relative thereto and having at least a first portion thereof disposed within the first chamber of said housing and a second portion extending axially from said first portion,
(d) means driveable through said second access opening and connected to the first portion of said output shaft for transmitting torque thereto from the gear transmission,
(e) driving means coaxial with said output shaft for drivingly connecting said output shaft to the device and having a first and a second axially spaced end with said second end disposed externally of said housing and adapted to drive the device,
(f) said driving means including means mounting the same for rotation relative to said output shaft and said housing,
(g) said first end of said driving means including means forming a second chamber therein confluent with said first chamber and sealing said second chamber from leaking externally of said housing whereby lubricant in said housing may circulate between said first and second chambers, and
(h) one way clutch means disposed in said second chamber for connecting said output shaft to the first end of said driving means when said output shaft has a greater angular velocity than said driving means in a first direction and for disconnecting the same when said driving means has a greater angular velocity in said first direction than said output shaft.

3,296,890
VALVE OPERATOR
Clifford E. Anderson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 24, 1964, Ser. No. 398,998
11 Claims. (Cl. 74—608)



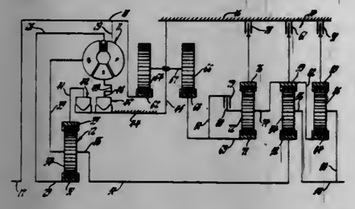
1. A protective mechanism comprising a housing, a shaft extending from within the housing in movable relation therewith, a tubular member disposed about a portion of the shaft and being fixed in sealing relation to the housing, a collar fixed in sealing relation to the shaft and being disposed within one extremity of the tubular member in sealing relation thereto, said collar being movable with said shaft relative to said tubular member, means on said tubular member sealingly enclosing the outer extremity of said shaft.

3,296,891
TRANSMISSION
Robert M. Tuck, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,595
19 Claims. (Cl. 74—677)

1. In a transmission,
(a) an input member, an output member and a torque converter,
(b) a first torque multiplying planetary gear set having input means, output means and another means,
(c) said output means being connected to said output member,
(d) said first gear set being operable to provide drive to said output member when both said input means and said another means are driven,
(e) first input drive means including said torque converter operatively connecting said input member to said input means to provide a first torque path,

(f) second input drive means operatively connecting said input member to said another means to provide a second torque path,

(g) and a second torque multiplying planetary gear set in said first torque path comprising a sun gear con-



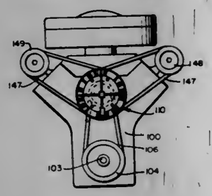
nected to be driven by said torque converter, a ring gear, a one-way brake connected to said ring gear and a carrier having pinions meshing with said sun gear and ring gear and connected to be driven by said torque converter and connected to drive said input means of said first gear set.

3,296,892

CONSTANT SELECT SPEED ACCESSORY GROUP DRIVE

Gordon M. Gibson, 740 Venice St., San Antonio, Tex. 78201

Continuation of application Ser. No. 71,856, Oct. 21, 1960. This application Apr. 24, 1964, Ser. No. 362,439
12 Claims. (Cl. 74—722)



1. In combination, an engine having a drive shaft, a counter shaft driven by said drive shaft at a stepped-up ratio, output means for operation of accessories, and means coupling said drive shaft to said output means for operating the latter at a substantially constant speed irrespective of a wide range of engine speeds, said coupling means comprising first means including a disc, second means including at least one friction element adapted to exert frictional force against the face of said disc, and speed responsive means connected to said output means for adjusting the frictional force between said friction element and said disc in accordance with the rotational speed of said output means, said drive shaft being operatively connected to one of said first and second means and said output means being operatively coupled to the other of said first and second means.

3,296,893

POWER TRANSMISSION

Jack T. Shaffer, Tulsa, Okla., and Wade A. Eskridge, Minneapolis, Minn., assignors to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware

Filed July 16, 1964, Ser. No. 383,090
7 Claims. (Cl. 74—750)

1. In a transmission for a winch or the like, the combination of:

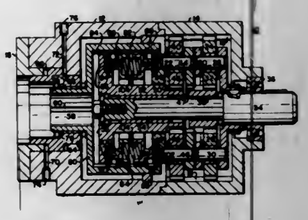
an axially shiftable, rotary input member;

a rotary output member;

a planetary gear set having ring, sun and planet elements, one of said elements being fixed;

a first frictional clutch having one element nonrotatably coupled to said input member and one element nonrotatably coupled to a first non-fixed element of said planetary gear set;

a second frictional clutch having one element nonrotatably coupled to said input member and one element nonrotatably coupled to a second, non-fixed element of said planetary gear set;



means coupling one of the non-fixed elements of said planetary gear set to said output member;

resilient biasing means disposed to apply loading forces simultaneously to said first and second frictional clutches thereby locking together said first and second elements of said planetary gear set;

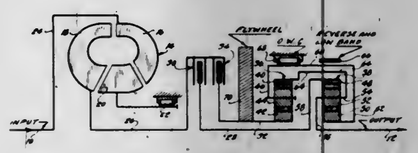
and means for selectively relieving said loading force from said first and second frictional clutches, said means including said input member and being effective upon axial shifting thereof.

3,296,894

MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM WITH BALANCED INERTIA SHIFTS

Richard D. Moan, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Mar. 16, 1964, Ser. No. 352,167
4 Claims. (Cl. 74—751)



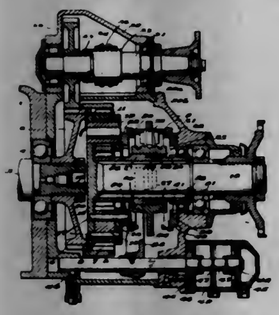
1. In a power transmission mechanism adapted to deliver driving torque from a driving member to a driven member, a pair of simple planetary gear units, each gear unit comprising a ring gear, a sun gear, planet pinions drivably engagable with said sun and ring gears, and a carrier rotatably supporting said pinions, the ring gear of a first of said gear units being connected to the carrier of a second of said gear units, said driven member being connected to the carrier of said second gear unit, the carrier of said first gear unit being connected to the sun gear of said second gear unit, brake means for anchoring the carrier of said first gear unit and the sun gear of said second gear unit during low speed ratio forward drive operation and during reverse drive operation, first clutch means for connecting the ring gear of said second gear unit to said driving member, second clutch means for connecting the sun gear of said first gear unit to said driving member, and an inertia flywheel drivably connected to the sun gear of said first gear unit.

3,296,895

SUPPLEMENTARY GEAR SET INSERTABLE BETWEEN A MAIN GEAR SET AND A TRANSMISSION CONNECTED TO THE DRIVEN ROAD WHEELS OF A MOTOR VEHICLE

Folke Elis Karlsson, Sodertalje, Sweden, assignor to Aktiebolaget Scania-Vabis, Sodertalje, Sweden, a corporation of Sweden

Filed Dec. 17, 1962, Ser. No. 245,049
Claims priority, application Sweden, Dec. 19, 1961, 12,685/61
8 Claims. (Cl. 74—781)



1. A supplementary gear set insertable between a main gear set and a transmission connected to the drive road wheels of a motor vehicle, said complementary gear set comprising a planetary gear having three elements, namely, a sun gear, a ring gear and a planet gear carrier, an input shaft, a main output shaft, and a power take-off shaft, a first gear wheel secured to said input shaft and a second gear wheel mounted on said power take-off shaft and meshing with said first gear wheel, adjustable coupling means adapted in a first position to connect said sun gear to said planet gear carrier and in a second position to connect said sun gear to a stationary member and in a third position to leave said sun gear idling, said planet gear carrier being connected to said main output shaft and its planet gears being in mesh with said sun gear and said ring gear, the rim of said first gear wheel being broader than that of said second gear wheel and the rim of said ring gear being broader than that of said planet gears, a portion of said first gear wheel being inserted in said ring gear and having its teeth projecting into and fitting in the gaps between the teeth of said ring gear, the interengaging parts of the teeth of these two elements being provided with recessed portions of receiving a locking ring for preventing relative axial displacement of the elements.

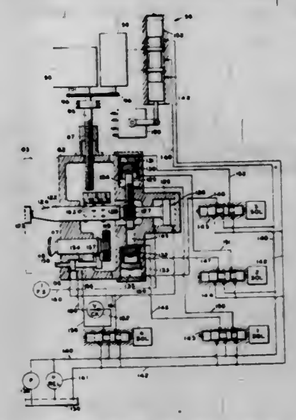
3,296,896

TURRET DRILLS

Herbert R. Uhtenwoldt, Worcester, Mass., assignor to Cincinnati Milling Machine Company, Cincinnati, Ohio, a corporation of Ohio

Original application Sept. 6, 1960, Ser. No. 57,100, now Patent No. 3,173,315, dated Mar. 16, 1965. Divided and this application Oct. 9, 1964, Ser. No. 402,735
6 Claims. (Cl. 77—25)

1. A locating and clamping mechanism for a tool turret movable to a plurality of index positions comprising a frame, a shaft supported for rotary and axial movement in said frame, a turret fixed on said shaft for movement therewith, said turret having a locating recess therein for each index position, a piston motor connected to said shaft for effecting axial movement thereof to clamp and unclamp the turret, a hydraulically operated plunger mounted in said frame for axial movement into and out of engagement with the locating recesses in said turret, a valve for controlling the operation of said plunger, and a hydraulic circuit controlled by portions on said plunger as it moves into engagement with a locating



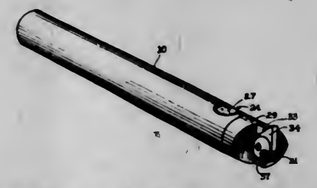
recess in said turret for energizing said piston motor and clamping said turret.

3,296,897

BORING BARS

Ignatius Konwal, 335 Parkview Ave., Elmhurst, Ill. 60126

Filed Dec. 23, 1964, Ser. No. 420,597
9 Claims. (Cl. 77—58)



1. A tool of the class described comprising a boring bar having a shank and a removable head at one end of the shank, said head having an arm projecting from the end thereof providing a relatively flat surface providing a seat for a bit, means for securing said bit in said seat, said shank and head having longitudinally aligned bores formed therein, a shaft having a portion positioned in the bore of the shank and a stud shaft positioned in the bore of the head, said shaft being of a diameter less than the diameter of the bore of said shank, and means for connecting said shaft to said shank for movement relative to the bore of said shank in the plane of said bit seat to adjust the position of the bit relative to work being operated upon by said bit, and co-axially related means carried by said shank and engageable with said shaft at a point adjacent said connecting means for adjusting said bit relative to said work.

3,296,898

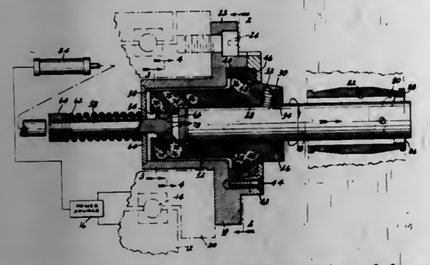
RETRACTABLE BORING BAR

Don R. Osborn, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 15, 1965, Ser. No. 439,860
3 Claims. (Cl. 77—58)

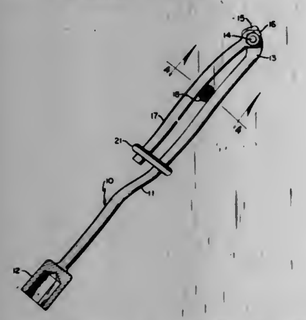
1. A boring device for a boring machine having force producing means, said boring device comprising: a body including a circular bearing having an arcuately shaped inner periphery and being carried for rotation by the boring machine and adapted for sliding movement in and

out of engagement with an element to be bored, the rotation and sliding movement being in response to forces from the force producing means; said body including elastomeric means positioned adjacent to the arcuately



shaped inner periphery to receive a portion of the arcuate shaped portion of said carrier means extending past said arcuately shaped inner periphery during tilting movement of said carrier means.

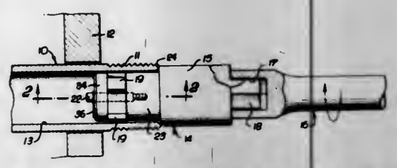
3,296,899
GROMMET PLACING TOOL
Albert J. Portanova, 1257 Allison St., Lakewood, Colo. 80212
Filed Sept. 10, 1965, Ser. No. 486,376
4 Claims. (Cl. 81—3)



1. A tool for installing grommet or rivet elements having shanks made of resilient material in positions of operative use comprising a drive unit, a pivot member disposed on said drive unit, a locking lever joined to said drive unit by said pivot member for movement toward and away from said drive unit, a lock element for holding a surface of said locking lever in near contacting side by side relationship with respect to said drive unit whereby the shank of a grommet element disposed therebetween will be resiliently deformed for secure frictional engagement, and means for rotating said drive unit whereby said grommet shank will be wrapped about said drive unit and locking lever.

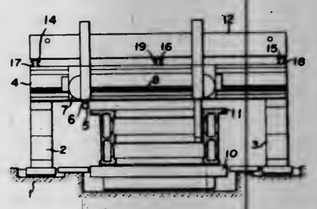
3,296,900
PIPE ROTATING DEVICE
Howard N. Behnke, Monterey Park, Calif., assignor to Collins Machinery Corporation, Monterey Park, Calif., a corporation of California
Filed Dec. 22, 1964, Ser. No. 420,317
8 Claims. (Cl. 81—72)

1. A pipe connecting and unconnecting device, comprising a shank adapted to be axially rotated, a pair of like jaws having teeth presented outwardly to engage a pipe bore, means at the shank terminal releasably mounting the jaws to the shank so that the jaws may be shifted between a first position in which the jaws are swingable outwardly in one rotary direction to engage a pipe bore for rotating the pipe in unconnecting sense, and a second position in which the jaws are swingable outwardly in the opposite rotary direction to engage the pipe bore for rotating the pipe in connecting sense, and other means



including a coil spring to urge the jaws outwardly in each of said positions, the coil spring extending between said jaws and transversely generally across the shank axis beyond the shank terminal, the spring attached to each jaw for shifting therewith.

3,296,901
MACHINE TOOLS
Kiyoshi Sawada, Numazu-shi, Japan, assignor to Toshiba Machine Co., Ltd., Tokyo, Japan
Filed May 13, 1964, Ser. No. 367,164
Claims priority, application Japan, May 14 ,1963, 38/24,042
5 Claims. (Cl. 82—2)

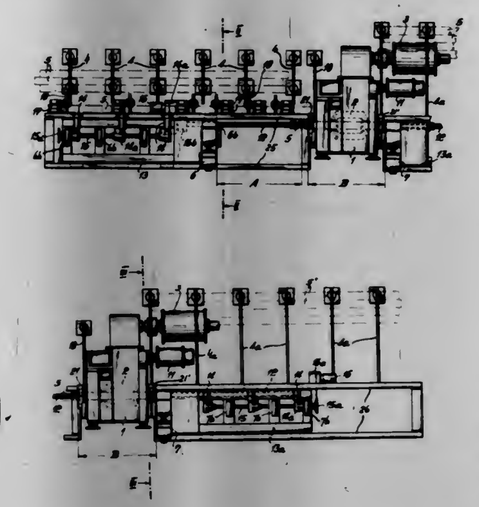


1. A machine tool comprising a horizontal girder supported at its opposite ends, on columns spaced-apart, a beam extending along said girder and connecting means interconnecting said beam and said girder, a plurality of said connecting means being made thinner than the remaining connecting means and made variable in height to vary the degree of the compensation for the bending of said girder.

3,296,902
MACHINE TOOL
Hans Pfeiffer, Solingen-Wald, and Erich Krafft, Solingen, Germany, assignors to Th. Kieserling & Albrecht, Solingen, Germany
Filed Sept. 1, 1964, Ser. No. 393,534
18 Claims. (Cl. 82—20)

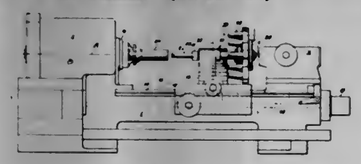
1. An apparatus for removing material from peripheral surfaces of elongated workpieces, comprising a shaving machine including cutter means arranged to treat the peripheral surface of a workpiece which is being fed lengthwise through said machine; a first and a second feed conveyor respectively located ahead of and past said machine as seen in the direction of feed, said conveyors being movable toward and away from said machine to perform working strokes and to feed a workpiece through said machine while moving in the direction of feed; first supporting means adjacent to and located ahead of said first conveyor to support the trailing portion of a workpiece which is being fed by at least one of said conveyors; second supporting means adjacent to and located past said second conveyor for supporting that portion of a workpiece which has been fed past said second conveyor, at least one of said supporting means comprising a plurality of

supporting members distributed in the longitudinal direction of and arranged to support longitudinally spaced portions of a workpiece to prevent flexing of the work-



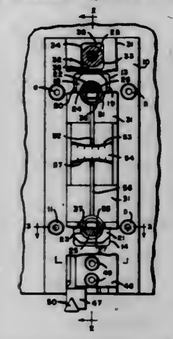
piece; and means for reciprocating said conveyors and said supporting means in and counter to the direction of feed.

3,296,903
MAGAZINE FOR A MACHINE TOOL
William C. E. Coate, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Original application Oct. 5, 1961, Ser. No. 143,076, now Patent No. 3,186,266, dated June 1, 1965. Divided and this application Apr. 15, 1965, Ser. No. 448,400
15 Claims. (Cl. 82—34)



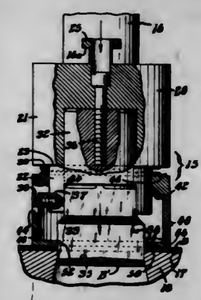
1. In tool changing and supporting apparatus for a machine tool having a bed, magazine apparatus comprising:
a frame member on the bed;
cylinder means connected with said frame member and a piston mounted in said cylinder for reciprocating motion along the cylinder axis;
first support mechanism and second support mechanism;
means connecting said first support mechanism with said piston for reciprocating motion therewith;
means mounting said second support mechanism on said first support mechanism for rotation about said axis relative to the first support mechanism and for reciprocating motion therewith;
a plurality of tool holder carriers;
means respectively mounting said tool holder carriers on said second support mechanism so as to be respectively disposed about said axis; and
drive means connected between said first and second support mechanisms for rotating the second support mechanism.

3,296,904
TOOL BLOCK
Edward P. Bullard III, Fairfield, Conn., assignor to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut
Filed July 1, 1964, Ser. No. 379,645
8 Claims. (Cl. 82—36)



1. In a tool block, a base; a tool support pivotally mounted on said base; a tool adjustably attached to said support; first rotatable eccentric means between said base and tool support for adjusting said tool support longitudinally of said base, guide means including a pivot pin for preventing transverse movement of said tool support during longitudinal adjustment thereof, second rotatable eccentric means between said base and tool support for pivoting said tool support relative to said base about said pivot pin to adjust said tool support transversely of said base; and pointer means connected to and rotatable with said eccentric means adapted to cooperate with scale means on said support for indicating the adjustment of said tool support.

3,296,905
COMPRESSIVE STRIPPING UNIT AND INDEXING TYPE NIBBLING PUNCH FOR TURRET PUNCH PRESSES AND THE LIKE
John S. Killaly, P.O. Box 86, Spring House, Pa. 19477
Filed Jan. 8, 1965, Ser. No. 424,230
10 Claims. (Cl. 83—140)



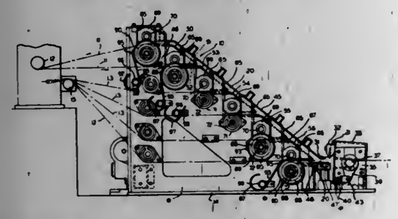
1. A turret type press punch or the like having a punch mounted for vertical movement relative to a work surface, a compressive type stripping unit mounted for partial movement with the punch comprising
a sleeve surrounding the punch having a downwardly directed surface adjacent the punch cutting surface and having means for attaching a sleeve to the punch so that the sleeve moves partially with the punch but is free to move within defined limits in vertical directions relative to the punch,
compression spring means for continually urging the sleeve in the direction of the work surface, said spring

means being mounted concentric to one portion of the press and bearing on an upwardly directed surface of the sleeve,

a stripper comprising a flat metal disk supported by the sleeve on its downwardly directed surface by a plurality of magnets located within the downwardly directed surface of the sleeve, said stripper forming a surface contiguous to and in the same plane as the punch cutting surface when said surface is not in contact with the blank whereby upon positioning of the blank and lowering of the punch proximate the blank the stripper contacts and presses the blank against the work surface while the punch passes through the blank and as it is withdrawn,

an axial directed slot formed in the sleeve and a stub mounted in the punch and extending through said slot, whereby movement of the sleeve independent of the punch is determined by the limits of the slot.

3,296,906
WRAPPER FEED FOR ROLL WRAPPER
George J. Prager, Rosemont, Pa., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware
Filed Sept. 29, 1964, Ser. No. 400,190
16 Claims. (Cl. 83—175)



1. A wrapper feed comprising a frame,

a feed roll rotatably journalled in said frame,

a rider roll slidably guided in and rotatably journalled in said frame to engage the top surface of said feed roll and maintain a pressure nip therebetween,

means selectively operable to drive said feed roll in one direction,

a drag brake associated with said feed roll and retarding rotation thereof,

means accommodating rotation of said drag brake with said feed roll for a portion of a cycle of rotation thereof and returning said drag brake and said feed roll in a direction contra to a feeding direction upon discontinuance in the drive to said feed roll, to release tension from the web fed thereby.

3,296,907
TAPE CUTTING APPARATUS
Irving Edelman, Franklin Square, N.Y., assignor to Maid-Rite Novelty Corp., Long Island City, N.Y., a corporation of New York
Filed Mar. 10, 1965, Ser. No. 438,641
7 Claims. (Cl. 83—215)

1. An apparatus for cutting lengths of tape from a continuous supply thereof, comprising

guide means for directing the tape along a straight horizontal path,

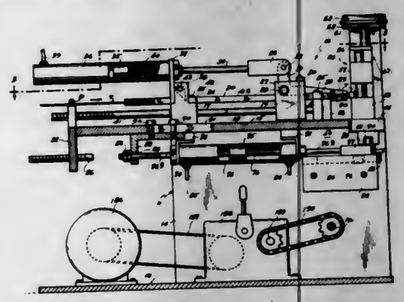
reciprocable feeding means actuated by a first fluid pressure operated cylinder for advancing the tape a predetermined distance along said path upon each operation of said first cylinder,

a reciprocable cutting assembly actuated by a second fluid pressure operated cylinder to cut across the tape projecting beyond an end of said guide means,

mounting means supporting said cutting assembly for angular displacement relative to said guide means about a vertical axis intersecting said path so as to vary the angle, relative to the longitudinal edges of the tape, at which the tape is cut,

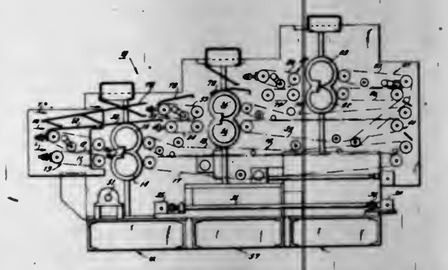
a third fluid pressure operated cylinder having a piston reciprocable therein and connected with said mounting means to effect said angular displacement of the cutting assembly, and

control means including first, second and third valve means through which fluid under pressure is supplied to said first, second and third cylinders, re-



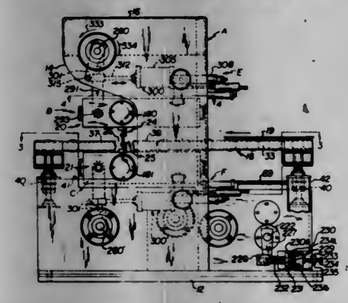
spectively, a rotated cam shaft, and first, second and third cams on said shaft actuating said first, second and third valve means, respectively, to cause at least one reciprocation of said feeding means during each revolution of the cam shaft, to cause a reciprocation of said cutting assembly during a portion of each said revolution following said reciprocation of the feeding means, and to urge said piston to move in opposite directions within said third cylinder during successive revolutions of said cam shaft.

3,296,908
MULTIPLE CUT-OFF DEVICE FOR WEB MATERIAL
Albert F. Shields, 43 Exeter St., Forest Hills, N.Y. 11375
Filed May 25, 1965, Ser. No. 458,724
2 Claims. (Cl. 83—303)



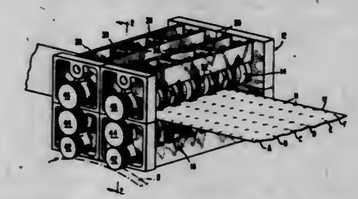
1. Apparatus for receiving a web of material slit into a plurality of longitudinal strips all moving through the apparatus in the same general direction of travel at the same speed and cutting said strips transverse to the direction of travel to form sheets with the sheets cut from a first of said strips being of a different dimension measured along said path than the corresponding dimension of sheets cut from a second of said strips; said apparatus including a first cutoff, and a second cutoff; first means conveying said first strip into said first cutoff and second means conveying said second strip over said first cutoff into said second cutoff; a main drive shaft through which driving power is supplied to said apparatus; a first transmission means and a first disengageable clutch means connected to transmit power from said shaft to said first cutoff and said first means; a second transmission means and a second disengageable clutch means connected to transmit power from said shaft to said second cutoff and said second means; said first and said second transmission means and said first and said second clutch means all positioned on one side of said apparatus; said first and said second transmission means including a first and a second input shaft, respectively, as well as a first and a second output shaft, respectively; said first input shaft connected to said main drive shaft; said second input shaft connected through said first transmission means to said main drive shaft; each of said output shafts extending generally at right angles to said input shafts; said first and said second output shafts connected to said first and said second cutoffs, respectively, by said first and said second clutch means, respectively; said first transmission means also including an auxiliary output shaft axially aligned with and connected to said second input shaft; said first transmission means further including bevel gear means transmitting driving power from said first input shaft to said first output shaft and spur gear means transmitting driving power from said first input shaft to said auxiliary output shaft.

3,296,909
ROTARY KNIFE CLIPPER
Edward G. Hudak, Painesville, and Robert A. Browning, Jr., Mentor, Ohio, assignors to The Coe Manufacturing Company, Painesville, Ohio, a corporation of Ohio
Filed Mar. 3, 1965, Ser. No. 436,760
9 Claims. (Cl. 83—305)



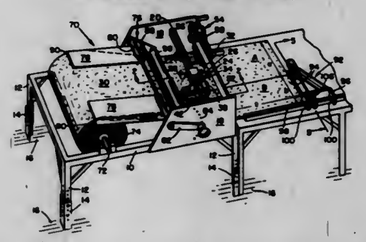
1. An apparatus for cutting a moving length of material at spaced intervals along its length, a frame assembly including support means for supporting the material to be cut as it is moved through the apparatus, a pair of knife assemblies having co-operating rotary knives, one of said assemblies being supported adjacent to one side of the support means and the other of said assemblies being supported adjacent to the other side of said support means, drive means operatively connected with said rotary knives for continuously rotating the same in opposite directions, said drive means including a mechanism whereby the rotational speed of said rotary knives may be automatically varied during different portions of each cycle of operation, adjusting means for said mechanism for changing the variation of the rotational speed of said rotary knife means during the cycle whereby the peripheral speed of the knife means during the cutting operation can be made the same as the speed of the material being cut, positioning means operatively connected with said knife assemblies for selectively moving the same between a cutting position in which said rotary knives cut the moving material and a second position in which said knives make no contact with the material; and control means for automatically and sequentially actuating said positioning means to move said knife assemblies between said positions in accordance with a predetermined operating sequence.

3,296,910
PUNCHING APPARATUS
Lawrence H. Haskin, Jr., and George W. Kesler, Richmond, Va., assignors to The Inta-Roto Machine Company, Inc., Richmond, Va., a corporation of Virginia
Filed Mar. 8, 1965, Ser. No. 437,902
18 Claims. (Cl. 83—328)



1. Apparatus for forming a plurality of transversely spaced rows of longitudinally spaced apertures in a continuous longitudinally moving web of sheet material, comprising a frame having a planar web path therethrough, a plurality of laterally spaced punch and die means each including corresponding upper and lower links arranged longitudinally of, parallel with, and on opposite sides of said web path, one of said links carrying at least one punch and the corresponding other of said links containing at least one die opening for receiving the punch, means for alternately displacing said links toward and away from each other including first and second pairs of parallel crank shaft means extending transversely of said web path on opposite sides thereof, respectively, and eccentric connections between the ends of the links and the respective pair of crank shaft means for displacing said upper and lower links toward and away from each other in orientations parallel with said web path to effect punching cooperation between the punches and the die openings carried thereby, said eccentric connections being angularly distributed relative to the axes of rotation of said crank shaft means to cause the resultant load of the links on each of the crank shaft means to be balanced.

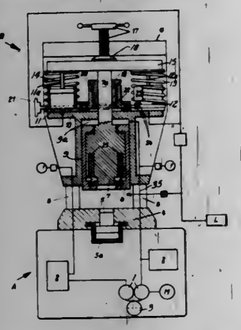
3,296,911
SEVERING APPARATUS
Jack S. McLane, Greensboro, N.C., assignor of one-half to John W. Buchanan, Greensboro, N.C.
Filed June 4, 1965, Ser. No. 461,293
12 Claims. (Cl. 83—408)



1. An apparatus for cutting a continuous web of selectively advanced material into definite areas comprising in combination: a frame having a plurality of depending adjustable legs; a pair of upstanding spaced-apart flanges mounted on said frame; a graduated cutter support bar interconnecting said flanges and positioned substantially parallel to said frame; a releasably secured longitudinal cutter assembly movably secured to a preselected graduation along said support bar, said assembly having a downwardly extending arm carrying a cutter disc for engaging and severing longitudinally material urged thereagainst subsequent to positioning said assembly at a selected bar graduation; a guide support rail extending

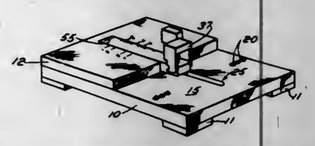
between said flanges substantially parallel to said frame and said cutter support bar; a transverse cutter assembly carried by said rail having a roller base plate supporting a pluarlity of rotatable grooved rollers positioned to cooperatively engage said rail and allow said assembly to move thereon; a depending cutter carrying arm mounted to said assembly and a cutter disc revolvably held by said arm for engaging and severing material transversely; a feed mechanism mounted on said frame and adapted to control the delivery of material to said cutter assemblies including an idler shaft for receiving a continuous roll of material, tensioning means including a pivot shaft, support brackets maintaining said shaft therebetween, a positionable control lever operably connected to said shaft, a pressure roller rotatably secured to said support brackets and responsive to movement of said control lever, and locking means to secure and retain said lever in a selected position, said roller biasing said material against movement upon selective displacement of said control lever and guide means having laterally adjustable guide members pivotally connected to said pivot shaft, said guide members having flared downwardly extending edges adapted to engage the edges of the web of advancing material and maintain the web in registry and alignment; and means for measuring said material prior to severing by said longitudinal cutter, said measurement constituting the length of the slit made by said longitudinal cutter when said material is selectively advanced thereagainst whereby a continuous web of wound material is selectively dispensed in registry and under tension from the idler shaft, severed substantially longitudinally for a measured distance and subsequently severed substantially transversely to form material segments of preselected dimensions.

3,296,912
PRECISION STAMPING PRESS
Walter Wanner, Romanshorn, Thurgau, Switzerland, assignor to Hydrel A.G., Romanshorn, Thurgau, Switzerland
Filed Apr. 8, 1965, Ser. No. 446,626
Claims priority, application Switzerland, Apr. 10, 1964, 4,593/64
12 Claims. (Cl. 83—461)



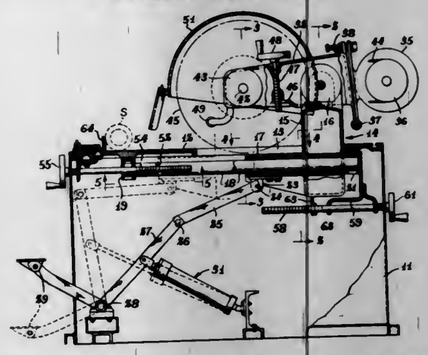
1. A precision stamping press comprising: a bed plate; means for supporting part of a workpiece on said bed plate; said means comprising a counterpressure piston; means holding a cylinder spaced from said bed plate; an end wall in the cylinder; a main piston in the cylinder; a cylinder chamber defined between said end wall and said main piston; a cutter piston coaxially arranged within said main piston; a first end and a second end on said cutter piston; a stamping face at said first end; a piston rod extending from said cutter piston at said second end and through said end wall; a yoke on said piston rod; pneumatic displacement means disposed between said yoke and said cylinder; a fluid pressure conduit leading into said chamber and a hydraulic pressure source communicating with said fluid pressure conduit.

3,296,913
DATA TAPE PUNCHING DEVICE
Jasper Gilbert Dresser, Boynton Beach, Fla., assignor to Dresser Products Incorporated, a corporation of Rhode Island
Filed July 16, 1965, Ser. No. 472,428
2 Claims. (Cl. 83—467)



1. A data tape punching device comprising a body having a slot in said body presenting a generally horizontal tape supporting surface on either side of said slot, a guide upstanding from said body at generally right angles to said slot for engaging the tape to locate the tape on said surface, a slide movable in said slot laterally with respect to said upstanding guide and having an overhanging portion with an anvil beneath to be moved over the tape when the tape is engaging said guide, punching means carried by said overhanging portion to punch a hole in the tape beneath it, and means to selectively hold the slide in different positions with reference to said guide.

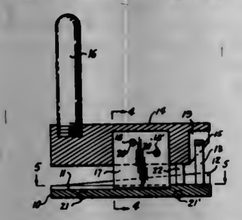
3,296,914
HIGH SPEED CUT OFF SAW
Robert L. Shallenberg, Wheaton, Ill., assignor, by mesne assignments, to K-Line Corporation, Geneva, Ill., a corporation of Illinois
Filed Jan. 29, 1965, Ser. No. 428,983
5 Claims. (Cl. 83—488)



1. In a machine of the character described, a base, at least one guide rod on said base, a carriage mounted on said guide rod for reciprocation on said base, means operable to reciprocate said carriage, adjustable means to limit reciprocable movement of said carriage, a beam pivotally mounted on said carriage, a circular saw blade rotatably mounted at one end on said beam, and a drive motor for said circular saw blade carried on the other end of said beam.

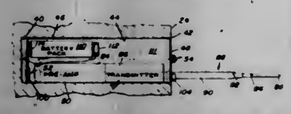
3,296,915
CUTTING DEVICE
Gaylen D. Johnson, North Sacramento, Calif. (5540 Sapunor Way, Carmichael, Calif. 95608)
Filed Nov. 19, 1964, Ser. No. 412,404
2 Claims. (Cl. 83—564)

1. A device for cutting sheet material comprising an elongated base having a central longitudinal slot open at one end extending partially through said base for a major portion of its length; side guide walls on each side of said base tapering upwardly from a low point adjacent the open end of said slot to a high point at the opposite end, a pivot rod extending upwardly from a central point on said base adjacent the high points of said guide walls, a generally rectangular cutting block having a pivot rod clearance slot in one end pivoted at said one end to said pivot rod, the lower end portion of said block adjacent said one end being angularly cut away,



said block having a blade holding slot in the under side thereof and a pair of transverse bores intersecting said blade holding slot, a cutting blade in said blade holding slot having a cutting edge projecting into said longitudinal slot and having openings therein aligned with said bores, pins extending through said bores and openings releasably holding said blade in said blade holding slot, blade and said pivot pin limiting the downward movea stop pin on the underside of said block between said ment of said cutting edge, and an operating handle on the upper side of said blade.

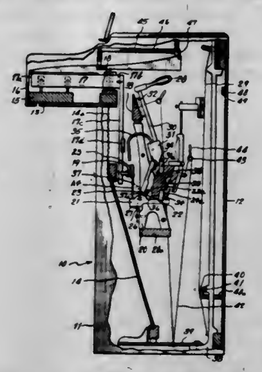
3,296,916
MUSICAL INSTRUMENT AND AMPLIFICATION SYSTEM
Rundlette K. Palmer, P.O. Box 69, Newcastle, Maine 04553
Filed Mar. 17, 1964, Ser. No. 352,489
10 Claims. (Cl. 84—1)



3. An electrical transmitter housing adapted to be secured to a supporting surface, said housing comprising a plurality of sections attached to one another, one of said sections adapted to store a battery pack therein and another of said sections adapted to store a preamplifier and transmitter therein, said transmitter section having a plurality of spaced apart apertures therein, one of said apertures receiving a telescopic antenna therethrough and another of said apertures receiving an operating switch therein, said sections being pivotally secured to one another along one of the adjacent edges thereof and having a closure means along another adjacent edge thereof, and means for releasably fastening said housing to a supporting surface.

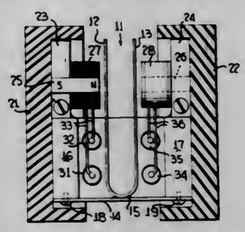
3,296,917
PRACTICAL SMALL PIANO
William S. Fisholm, 640 Riverside Drive, New York, N.Y. 10031
Filed Aug. 26, 1964, Ser. No. 392,287
8 Claims. (Cl. 84—174)

1. A compact upright piano comprising a keyboard having a plurality of bent keys each pivoted near the bend thereof and each having a relatively short horizontal playing portion and a vertically depending portion, a plurality of wippens mounted below and rearwardly of said key horizontal playing portions, a plurality of hammers above said wippens, a vertically disposed metal frame carrying a plurality of strings across a bridge and rearwardly of said plurality of hammers, a sounding board disposed essentially parallel to and rearwardly of said plurality of strings and communicating with said bridge,



an actuating element for each hammer in operative relation to a corresponding one of said wippens and extending upward therefrom, and an upward extension of each said wippen adapted to receive the keying thrust of a corresponding one of said depending key portions.

3,296,918
TEMPERATURE COMPENSATION OF TUNING FORKS
Orba O. Alderman, Alexandria, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed June 4, 1964, Ser. No. 372,461
5 Claims. (Cl. 84—457)

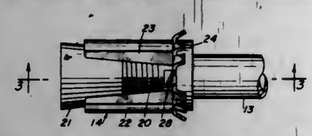


1. A method for shifting the temperature vs. frequency curve of a magnetic tuning fork so that a predetermined point on said curve has a specified temperature value comprising heat treating the fork tine assembly to translate said curve to a lower temperature value, then placing said fork tine assembly in the driver assembly, and then adjusting the flux level of the magnets associated with the fork input and output coils until said point has said temperature value by first driving said magnets to a flux level of sufficiently high value that said predetermined point has a temperature coordinate less than said specified temperature value and thereafter decreasing said flux level until said point attains a temperature coordinate of substantially said specified temperature value.

3,296,919
RETAINING DEVICE FOR ROCK BOLTS
Chester L. Williams, 347 Greenbriar SE., Grand Rapids, Mich. 49506
Filed Oct. 26, 1964, Ser. No. 406,270
1 Claim. (Cl. 85—73)

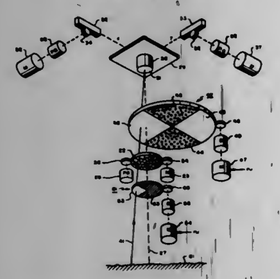
In combination with a rock bolt having a bolt rod and an anchoring device including an expansible shell with a C-shaped cross sectional configuration having an axial

discontinuity, a cone member at least partially within said shell for expanding the same, said cone member having threaded engagement with said rod, said shell being a one-piece member having a slot extending from end to end, with the walls of said slot providing abutment shoulders, and wherein said shell has a conical bore complementary to said cone member, said rock bolt also having a thrust member normally fixed with respect to said rod, a retaining ring axially fixed with respect to said rod, said ring having a central portion interposed between said



thrust member and the end of said shell, said ring also having a plurality of resilient fingers extending to a radial distance beyond the periphery of said shell, certain of said fingers being inclined with respect to a plane normal to the axis of said rod in a direction from said central portion away from the end of said shell, said ring further having a pair of diametrically opposed fingers extending in the opposite direction from the inclined fingers, one finger of said pair being disposed within the said slot, and the other engaging the external surface of said shell.

3,296,920
OPTICAL CORRELATOR
Lester I. Goldfischer, New Rochelle, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed June 21, 1963, Ser. No. 290,881
4 Claims. (Cl. 88—1)



1. In an optical correlator in which a radiant energy sensor generates signals in response to light transmitted from an illuminated body and passing through a rotatable transparency representative of the light transmitting characteristics of said body in reduced scale, the improvement which comprises;

a first shutter having alternately arranged diffusing and nondiffusing portions,

said first shutter being positioned adjacent to said transparency and optically aligned therewith and said first shutter being rotated continuously at a first speed for periodically diffusing all light transmitted through said transparency for causing the signals generated by said sensor to include first alternating components at a first frequency,

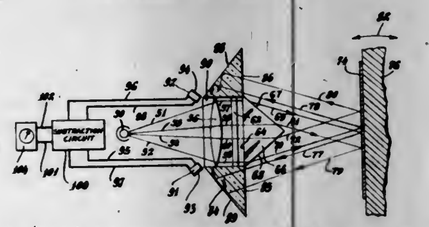
a second shutter having a minor portion of its area transparent and the remainder opaque,

said second shutter also being positioned adjacent to said transparency and optically aligned therewith, said second shutter being rotated continuously, in axial alignment with said transparency, at a second speed, for periodically passing light transmitted from said body through said transparency whereby if said transparency is not aligned rotationally with said illuminated body, the signals generated by said sensor include second alternating components at a second frequency,

first means for detecting said first components for generating error signals indicative of translation misalignment, and

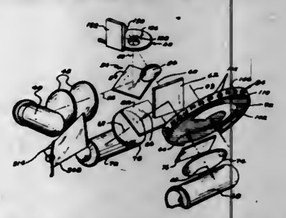
second means for detecting said second components for generating error signals indicative of rotational misalignment.

3,296,921
ALIGNMENT AUTOCOLLIMATOR
Harry D. Polster, Stamford, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Oct. 30, 1961, Ser. No. 148,561
10 Claims. (Cl. 88—14)



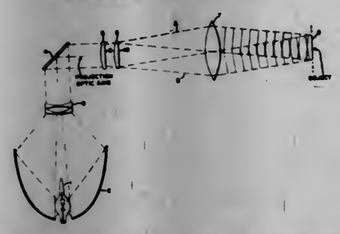
5. A device for monitoring the angular position of an object with a substantially planar reflective surface comprising: a light source for creating a beam of radiant energy; a lens for collimating said beam of radiant energy; means for dividing said collimated beam into two different beam parts; a prism of refractive transparent material having a front surface and a pair of rear surfaces inclined to said front surface at equal angles, said prism being positioned so as to receive at said front surface both of said two different parts of said collimated beam reflected by said object said rear surfaces being at such an angle relative to each other that the part of said reflected beam which strikes each of said rear surfaces will be incident thereon at the same angle, substantially equal to the critical angle, for one angular position of said object; said two rear surfaces being inclined to said beam at angles differing in sense so that a rotation of said object from said one position will cause said parts of said beam to be incident on said rear surfaces at mutually different angles; and means for detecting any radiation transmitted by said rear surfaces thereby detecting and deviation of said beam and therefore of said object.

3,296,922
APPARATUS FOR DETERMINING OXYGEN SATURATION OF BLOOD
Herbert Goldberg, Keene, N.H., assignor to American Optical Company, Southbridge, Mass.
Filed Apr. 22, 1963, Ser. No. 274,636
9 Claims. (Cl. 88—14)



1. Apparatus for determining the percentage of oxygen saturation of whole blood comprising means for supporting a sample of blood to be tested, means for directing light onto said sample of blood to be at least partially reflected thereby, optical means for receiving at least a portion of said light reflected from said sample, said optical means being arranged to divide said portion of reflected light and direct portions thereof along separate paths, a light filter in each of said paths, each of said filters being adapted to transmit light of a preselected band of wavelengths different from the other, means for comparing the intensity of light passed through one of said filters with that passed through the other, optical attenuator means in one of said paths for adjusting the light in said one path to equality with the other, said attenuator means being calibrated in percentage of oxygen saturation in said sample, a reference standard of reflection positioned adjacent said means for supporting said sample, means for substituting said standard for said sample to reflect light from said source into said optical means, and means responsive to said means for moving said standard for positioning said attenuator at a predetermined calibration and an adjustment in said comparing means to cause said comparing means to indicate equality in the quantity of light in each of said paths.

3,296,923
LENTICULATED COLLIMATING CONDENSING SYSTEM
John R. Miles, Glenview, Ill., assignor to General Electric Company, a corporation of New York
Filed Jan. 4, 1965, Ser. No. 422,908
5 Claims. (Cl. 88—24)



1. A light condensing system for uniformly illuminating a projection object comprising:

(a) a light source providing substantially collimated light energy,

(b) a first lenticular lens plate having a first multiplicity of lens elements,

(c) a second lenticular lens plate having a second multiplicity of lens elements corresponding to said first multiplicity, said lenticular lens plates being spaced apart and coaxially arranged so as to intercept light energy emitted from said source and produce an array of diverging light beams, one beam for each pair of corresponding lens elements, and

(d) lens means disposed between said lenticular lens plates and said projection object for collimating said light beams along converging principal axes so as to superimpose said light beams onto said object, thereby providing a uniform intensity, uniform angular spread illumination of said object.

3,296,924
SINGLE CELL IMAGE PLANE POSITION APPRAISAL SYSTEM FOR A SLIDE PROJECTOR
Herman Levin, Glenview, and Eric K. Maxon, Evanston, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 23, 1965, Ser. No. 434,252
9 Claims. (Cl. 88—26)

1. A focus determination apparatus for a projector for slides including a projection lens having a focal plane located a predetermined distance therebehind, each of said slides including a film held along its edges in a mount, the interior peripheral edges of the mount defining the image area to be projected along a projection axis of the projection lens, the image area establishing an image plane capable of shifting out of coincidence with the focal plane of the projection lens upon "popping" of said film during projection, the invention comprising:

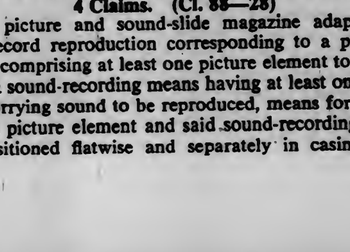
support means adapted to be moved with respect to the image plane;

means for adjustably mounting said projection lens on said support means for movement therewith;

a unidirectionally operable motor;

means operably connecting said motor and said support means for causing said support means to be cyclically moved and causing said focal plane of said lens to be cyclically moved with respect to said image plane;

a source of light rays mounted on said support means



so as to direct said light rays toward said film at an angle relative thereto;

a single photocell mounted on said support means at an angle relative to said image plane such that light rays from said source are reflected to impinge upon said photocell when said image plane and said focal plane are coincident and to impinge upon other than said photocell when said image plane and said focal plane are out of coincidence;

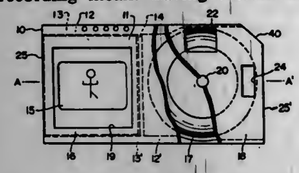
a power source for energizing said motor;

circuit means selectively connectable between said motor, said source and said photocell wherein said motor is energized by said source when said light rays impinge upon other than said photocell and is deenergized when said light rays impinge upon said photocell when said image plane is coincident with said focal plane.

3,296,925
PICTURE PROJECTING AND SOUND RECORD REPRODUCING MAGAZINES
Kozo Yamamoto, Hirakata-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Oct. 22, 1963, Ser. No. 317,895
Claims priority, application Japan, Oct. 25, 1962, 37/47,711; Oct. 26, 1962, 37/63,854; Oct. 29, 1962, 37/64,322, 37/64,323, 37/66,324, 37/64,325, 37/64,326, 37/64,327, 37/64,328, 37/64,329; Dec. 15, 1962, 37/57,223; Dec. 17, 1962, 37/77,194, 37/77,195, 37/77,196, 37/77,197, 37/77,198; Dec. 18, 1962, 37/77,462, 37/77,463; Dec. 19, 1962, 37/77,710; Dec. 24, 1962, 37/79,054; Dec. 25, 1962, 37/79,443, 37/79,444; Dec. 28, 1962, 37/80,676; Mar. 8, 1963, 38/17,507, 38/17,509, 38/17,510; Mar. 27, 1963, 38/22,186; July 8, 1963, 38/52,806
4 Claims. (Cl. 88—28)

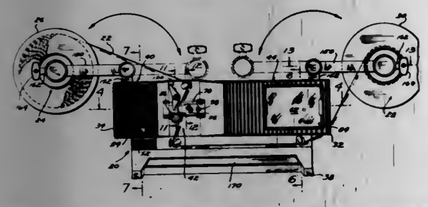
1. A picture and sound-slide magazine adapted for sound-record reproduction corresponding to a projected picture, comprising at least one picture element to be projected, a sound-recording means having at least one sound track carrying sound to be reproduced, means for mounting said picture element and said sound-recording means juxtapositioned flatwise and separately in casings, said

casings being of a thin thickness, said casing carrying said sound-recording means having therein an opening



providing access for engaging a reproducing head with said recording means and means for detachably coupling said casings in frictional engagement.

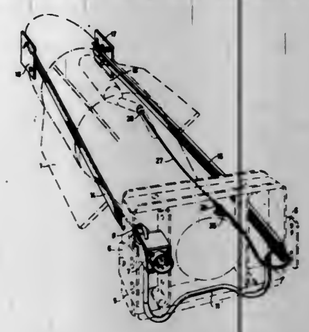
3,296,926
MOTION PICTURE FILM EDITOR
Marvin Kapilow, Rye, N.Y., assignor to Kamar Products Inc., Irvington-on-Hudson, N.Y., a corporation of New York
Continuation of application Ser. No. 386,968, Aug. 3, 1964. This application Sept. 22, 1964, Ser. No. 402,052
14 Claims. (Cl. 88—28)



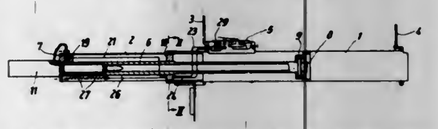
1. An editor for motion picture film comprising: a housing having a front, a rear and a supporting base; a rewind reel station having a reel of the film to be edited and being supported by the housing; an illuminating station mounted interiorly at one end of the housing for providing a beam of light for illuminating frames of the film to be edited; a viewing station at the other end of the housing and having a rear projection screen on which the image of the frames is adapted to be projected for viewing; a shutter and focusing station on the housing between its ends for directing and focusing the image of the illuminated frames onto the screen, the shutter and focus station being movable relative to the housing for adjustably directing the projected image onto the screen; and editing tool means supported by the housing adjacent the shutter and focusing station for marking selected frames of the film to be edited.

3,296,927
GUIDED MISSILE
Olof Olsson, Bofors, and Nils Gunnar Nedeby, Sodertalje, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a Swedish company
Filed Oct. 7, 1964, Ser. No. 402,164
Claims priority, application Sweden Oct. 16, 1963, 11,371/63
7 Claims. (Cl. 89—1.8)

1. A wire-guiding device of a ground-controlled rocket-type missile which is launched from a stationary launching barrel and when in flight is connected to a stationary transmitter by at least one conductor wire for transmitting control signals to the missile, said device comprising a wire magazine arranged to be secured on the missile, a wire guide arranged to be secured on the missile, a wire-retaining means arranged to be secured on the launching barrel, said retaining means including an elongated gripping member for gripping a wire portion with a frictional grip, a conductor wire extending from within said magazine through said wire guide to said gripping member and along the same and being secured at its outer end to said retaining means, and a protective pliable sleeve loosely encompassing the wire between a point thereof adjacent to said wire guide and a point adjacent to the secured outer end of the wire, whereby a wire portion between the wire guide on the missile and the secured end on said retaining means is protected by said sleeve from the exhaust gases generated when the missile is launched and is gradually pulled out of said gripping member for withdrawal of the wire from the magazine when the missile becomes airborne.



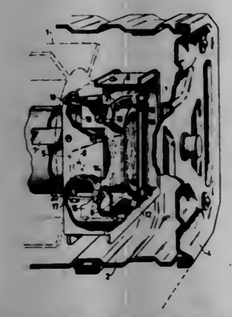
3,296,928
SHOOTING TRAINING DEVICE WITH SUBCALIBER TUBE FOR RECOIL-FREE WEAPON WITH TELESCOPIC TUBES
Willi Lübbers, Trittau Bezirk Hamburg, Germany, assignor to Nico Pyrotechnik Hanns-Jurgen Diederichs KG., Trittau, Germany
Filed Feb. 19, 1965, Ser. No. 433,914
Claims priority, application Germany, Feb. 22, 1964, N 24,494
6 Claims. (Cl. 89—1.701)



1. A shooting training device for an armor piercing recoil-free telescopic weapon comprising inner and outer telescopic tubes, said inner tube being rearwardly extendable relative to said outer tube to an extended operative position, a subcaliber tube mounted within said telescopic tubes, a bearing mounted within the outer telescopic tube, said subcaliber tube being substantially as long as the weapon in the closed inoperative position and being secured to the rear end of the inner telescopic tube, and being slidably guided in said bearing in the outer telescopic tube, and electrical ignition means being provided for the subcaliber cartridge which is inserted in the rear end of the subcaliber tube.

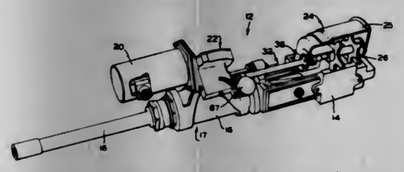
3,296,929
MISSILES
Gunnar Jacobson, Bofors, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed Sept. 16, 1964, Ser. No. 396,869
Claims priority, application Sweden, Oct. 16, 1963, 11,370/63
2 Claims. (Cl. 89—1.806)

1. A device for securing a rocket-type missile in a box constituting a support for the missile when in transport and a launching barrel for the missile, said device comprising releasable locking means for locking the box and a missile therein to each other, said locking means including two locking members pivotally mounted within the box on opposite sides thereof in reference to the lengthwise position of the missile, each of said locking members being pivotal into and out of locking engagement with the body of the missile and a release means for pivoting said locking means from the locking position into the release position, said release means including a



flexible strip secured at each end to one of said locking members and extending across the path of gases generated by the missile when launched, said strip having an initial effective length such that the two locking members are held in locking engagement and being deformable by the impact of the gases into a curved configuration in which the effective length of the strip between the locking members is reduced to a length such that the locking members are pivoted out of locking engagement with the body of the missile.

3,296,930
CLUTCH-LOCK FOR EXTERNALLY POWERED FIREARM FEEDING MECHANISM
John G. Rocha, Westfield, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 23, 1965, Ser. No. 434,717
3 Claims. (Cl. 89—33)



1. A machine gun for firing cartridges delivered thereto in a cartridge belt, said machine gun including a receiver; an operating mechanism; an electric motor; a transmission for transmitting the torque of said motor to said operating mechanism; a feeding mechanism including a sprocket device with a plurality of teeth engageable with the cartridges in the cartridge belt for movement thereof, a stripper for removing the cartridges from the cartridge belt onto a feed tray while being moved by said sprocket device and a feed pawl for successively moving the stripped cartridges along the feed tray to a firing position; a drive shaft disposed between said transmission and said sprocket device for transmitting the torque of said motor thereto; a clutch arranged in said drive shaft to provide releasable engagement of said sprocket device with said transmission; means for actuating said clutch to a disengaged position for releasing said sprocket device from said transmission when said motor is de-energized and to an engaged position for connecting said sprocket device to said transmission when said motor is energized; a lock cooperating with said clutch for locking said sprocket device against rotation when said clutch is actuated to the disengaged position and for unlocking said sprocket device when said clutch is actuated to the engaged position; said clutch including a drive member connected to said transmission for rotation thereby without angular displacement relative thereto and for longitudinal displacement relative thereto between an engaged and a disengaged position, a driven member integral with said sprocket device and means for engaging said lock with said drive member for actuation thereby to locked and unlocked positions relative to said sprocket device; said sprocket device, said feed pawl, said stripper and the firing position being so located relative to each other that two stripped cartridges are disposed between said sprocket device and said firing position during operation of said machine gun; said driven member being provided with a plurality of notches equal to the number of said teeth in said sprocket device, said sprocket device being disposed in a locked position in response to said lock engaging one of said driven member notches and wherein one of said teeth blocks displacement of one of the two stripped cartridges into position for engagement by said feed pawl and the other one of the two stripped cartridges is free to be delivered to the firing position by said feed pawl and fired during continued operation of said operating mechanism after said feeding mechanism is locked against displacement; said driven member including a shaft extending integrally from said sprocket device, a pin plate coaxially formed on the free end of said shaft and a plurality of pins equal to the number of teeth in said sprocket symmetrically mounted in said pin plate for extension therefrom; and said drive member including a clutch plate in coaxial relationship with said driven member, a plurality of apertures in said clutch plate equal to the number of said pins, said apertures being arranged to receive said pins when said drive member is actuated to the engaged position; said pins having such a length that said pins are free of said apertures when said drive member is in the disengaged position; and a plurality of arcuate ramps respectively leading into a related one of said apertures from a face of said clutch plate facing said pin plate, said ramps being arranged for respective contact by said pins when said drive member is actuated to the engaged position to ease said pins into said apertures and said drive member into the engaged position.

3,296,931
DEVICE FOR CONTROLLING A HYDRAULICALLY OR PNEUMATICALLY DRIVEN CARTRIDGE RAMMING MECHANISM OF AN AUTOMATIC GUN
Carl Mauritz Christiansson, Bofors, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed Nov. 24, 1964, Ser. No. 413,514
Claims priority, application Sweden, Nov. 26, 1963, 13,079/63
1 Claim. (Cl. 89—47)

A device for ramming cartridges by conveying a cartridge along a cartridge-guide means forward to the cartridge chamber of an automatic gun, said device comprising, in combination:

a ramming mechanism including a reciprocating ramming means;

a reciprocating pressure fluid-operated motor;

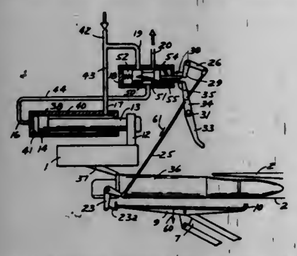
control means including a flow valve for controlling the flow of pressure fluid to said motor;

a cartridge conveying means for feeding a cartridge to the cartridge-guide means;

said flow valve having a first position, in which said motor is connected to a source of pressure fluid

for driving said ramming means backward from a forward position thereof towards a rearmost position thereof in which rearmost position the ramming means is in position for starting a following ramming movement, and a second position in which the motor is connected to said fluid source for driving the ramming means forward from said rearmost position in the direction towards the cartridge-chamber, and said control means further including a first flow valve actuating means for moving the flow valve from said first position to said second position during a return movement of said cartridge conveying means from an end position thereof for feeding the cartridge to the cartridge-guide means;

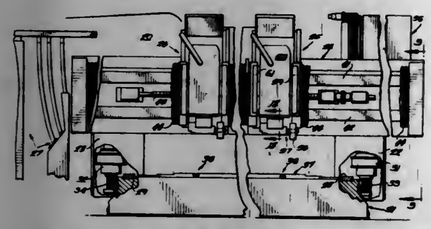
and a second flow valve actuating means cooperative



with the ramming means at the end of the forward movement thereof for moving the flow valve from said second position to said first position;

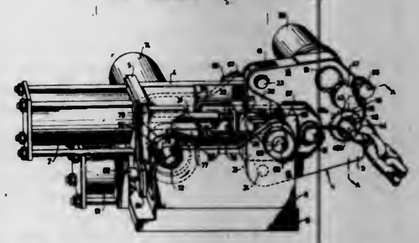
said cartridge conveying means being movable upwardly and downwardly in a reciprocating movement between a position to feed the cartridge to the cartridge-guide means and a position externally of said cartridge-guide means to receive the cartridge to be conveyed to the cartridge-guide means, and said first flow valve actuating means including unidirectional actuating members to actuate said first flow valve actuating means during the return movement only of the cartridge conveying means from said end position thereof, to feed the cartridge to the cartridge-guide means.

3,296,932
MILLING MACHINE
Earl Pankonin, Elmwood Park, and Karl P. Ohlig, Chicago, Ill., assignors to Onsrud Machine Works, Inc., Niles, Ill., a corporation of Illinois
Filed Mar. 18, 1965, Ser. No. 440,813
5 Claims. (Cl. 90—15)



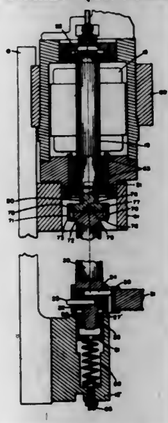
1. In combination with a milling machine having a relatively longitudinally movable machine bed and a carriage having members disposed at opposite sides of said bed, and a tool carrying cross-rail mounted adjacent each end on a member of such carriage; apparatus for vertical positioning of such cross-rail on the members of such carriage comprising four vertical screw members disposed at four selected locations within such cross-rail, two each of such locations being at each member of such carriage, two bases on each of such members for receiving the lower ends of two of said screws, four screw-nut members attached to such cross-rail at said four locations and engaged with respective ones of said screw members, drive motor means, drive mechanism connected between said motor means and said screw-nut members for simultaneously driving said screw-nut members upon energization of said motor means, and spacer members for disposition between the upper portions of such carriage members and the corresponding lower surfaces of said cross-rail.

3,296,933
TOOL FOR EXTERNAL MACHINING OF WORKPIECES
Elis Kallaes, Orsa, Sweden, assignor to Jarnbirger Aktiebolag, Orsa, Sweden, a Swedish company
Filed Apr. 27, 1965, Ser. No. 451,112
Claims priority, application Sweden, Apr. 27, 1964, 5,235/64
13 Claims. (Cl. 90—15)



1. Tool for external machining of workpieces, comprising a workpiece holder for fixing the workpiece therein, an annular cutter holder adapted to embrace said workpiece, fixed cutters extending inwardly from said cutter holder, driving means for rotating said cutter holder about its annular axis, and means for translationally moving one of said holders perpendicularly to the annular axis of said cutter holder relative to the other of said holders to feed and retract said cutters relative to the workpiece.

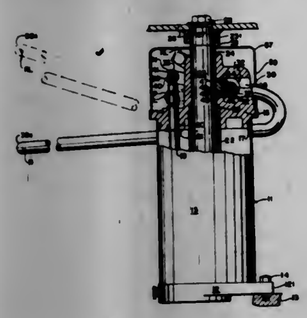
3,296,934
BORING MACHINE FOR SEMI-CYLINDRICAL BEARINGS
Fred C. Kelly, Cleveland, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Filed Nov. 25, 1964, Ser. No. 413,841
6 Claims. (Cl. 90—26)



3. A boring machine for boring a semi-cylindrical bearing having a pair of parting line faces, the boring

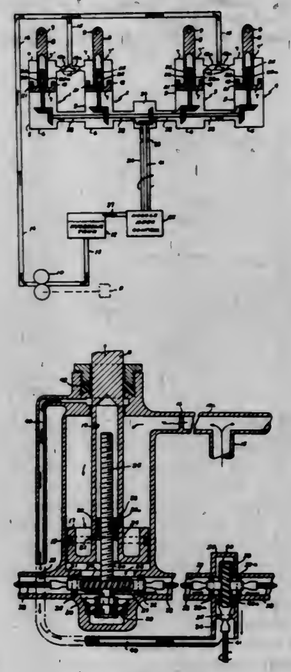
machine comprising a frame, a slide reciprocably mounted in the frame and having a longitudinal axis parallel with the axis of reciprocation, a boring bar having a fixed axis about which it rotates, means connecting both ends of said boring bar to said slide with the bar at an angle of less than one degree with respect to the longitudinal axis of the slide, a first cutter having a given length arranged at right angles to the boring bar and secured thereto, a second cutter having a different length arranged at right angles to the boring bar and spaced longitudinally of the boring bar from the first cutter and secured to the boring bar, the semi-cylindrical bearing while being bored being positioned so that its longitudinal axis is parallel to the longitudinal axis of the slide, motor means for rotating the boring bar and having an axis aligned with the axis of said boring bar, means for moving the slide and the boring bar with respect to the frame and with respect to the bearing in the direction of its longitudinal axis so that the first cutter and the second cutter remove material from the inner periphery of the bearing resulting in the formation of the bearing surface and of parting line relief areas in the inner periphery of the bearing adjacent the parting line faces of the bearing, and means located between the said slide and the said first and second cutters to compensate for possible slight misalignment of the fixed boring bar axis and the motor axis without changing the parallel relationship between the direction of motion of said boring bar and the longitudinal axis of said bearing.

3,296,935
HYDRAULIC LIFT WITH ROTATION LOCK FOR BEAUTY CHAIR
Philip C. Johnson, Cincinnati, Ohio, assignor to F & F Koenigkramer Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 17, 1964, Ser. No. 390,168
10 Claims. (Cl. 91—41)



5. In an elevatable chair having a base, an hydraulic lift fixedly mounted on said base and having a rotatable piston rod extendable between predetermined upper and lower limits, the combination comprising a guide, a cylindrical lift piston rod movable longitudinally and rotatably in said guide, a lock shoe movable in said guide toward and away from said rod in said guide, the lock shoe having a concave cylindrical surface engageable with said cylindrical rod and a convex spherical surface remote from said rod, a pressure shoe having a concave spherical surface in supporting cooperating relation to said spherical surface of said lock shoe and cam means actuatable to urge said pressure shoe to press said lock shoe against said lift piston rod to secure same in fixed relation to said guide.

3,296,936
FLUID MOTOR ACTUATORS
Thomas B. West, Cincinnati, and Richard A. Kroc, Mason, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 25, 1964, Ser. No. 414,037
10 Claims. (Cl. 91—49)



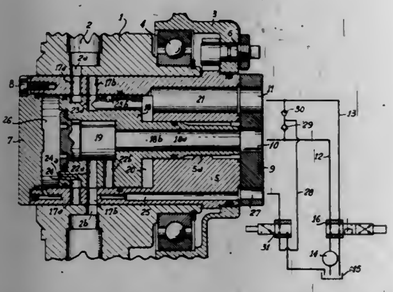
1. In a synchronized plural actuator system, a plurality of similar extensible actuators adapted to be connected at one end to a part or parts to be actuated, each actuator comprising a cylinder, a piston reciprocative in said cylinder, an actuator piston rod fixed to said piston and extending out through said end of said cylinder in sealed relation adapted to be connected to said part to be actuated, common high pressure hydraulic fluid supply conduit means connected into each of said cylinders at the actuator rod ends thereof, a constant flow high pressure hydraulic fluid pump connected to said supply conduit means for supplying a uniform high pressure hydraulic constant fluid flow into said supply conduit means, identical fixed area flow restriction means in said conduit means for each cylinder, a flow outlet in the opposite end of each cylinder, a fluid return conduit connecting said flow outlets of all of said cylinders with the inlet side of said pump, a flow restriction in said fluid return conduit having a fixed flow restrictive area for maintaining similar fluid pressures in each of said cylinders between the opposite ends thereof, variable area flow restriction means between the opposite ends of each of said cylinders located between the aforesaid fixed flow restrictions, for varying the relative pressure of the pressure fluid in each cylinder at the opposite sides of the piston therein, mechanical adjusting means connected for simultaneously varying the flow areas of said variable area flow restriction means in all of said cylinders to simultaneously vary the differential pressures at opposite sides of the pistons in all of said cylinders, and means operable by the piston in each cylinder for varying the area of said variable area flow restriction means in predetermined ratio to the relative movement of the pistons in said cylinders responsive

to the differential pressures on the opposite sides of said pistons.

3,296,937
SPEED CHANGE DEVICE FOR AN HYDRAULIC MOTOR

Gabriel L. Guinot, Le Plessis-Belleville, France, assignor to Societe Anonyme Poclain, Le Plessis-Belleville, France, a society of France

Filed May 28, 1965, Ser. No. 459,865
8 Claims. (Cl. 91—205)

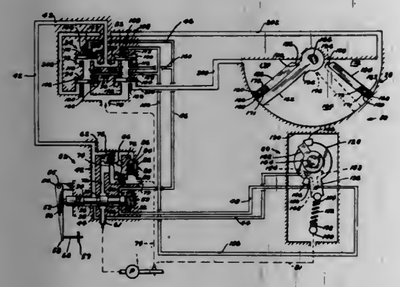


1. A speed change device for an hydraulic motor of the kind comprising a cylinder block, at least two groups of cylinders in said cylinder block, means for supplying pressure fluid to each of said groups of cylinders separately, said means including a distributor mounted coaxially within said cylinder block and having openings leading to the periphery of said distributor and being grouped in transverse planes corresponding respectively to planes of the fluid supply conduits of the cylinders of each group, said distributor comprising a fixed sleeve provided with radial openings and having mounted therein an axially movable slide valve having an inlet chamber and an outlet chamber communicating respectively with a plurality of radial conduits arranged in transverse planes and capable of being brought opposite the inner ends of the radial openings in the fixed sleeve.

3,296,938
RECIPROCATING HYDRAULIC MOTOR

Dennis J. Hayman, East Detroit, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Dec. 21, 1964, Ser. No. 419,774
10 Claims. (Cl. 91—266)

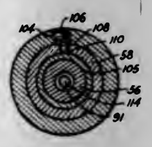


1. A reciprocating motion device responsive to fluid under pressure, said device comprising a means for controlling the rate of flow of said fluid, a plurality of chambers, each chamber having valve seats formed on two opposing sides thereof, a valve in each chamber, said valves being alternately seated upon said opposing valve seats, an additional chamber including an oscillating vane therein, means for alternately supplying said fluid to the opposite sides of said oscillating vane depending upon the positions of said valves, and means for reversing the positions of said plurality of valves from one of said valve seats to its opposing valve seat.

3,296,939
POWER STEERING MECHANISM

Robert T. Eddy, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Aug. 31, 1964, Ser. No. 393,108
3 Claims. (Cl. 91—375)

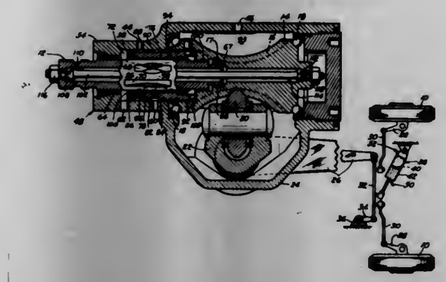


1. In a power steering mechanism including an input member having a bore therein, an output member, and a fluid motor operatively connected to said output member for applying power thereto, the combination of a housing having a valve bore and a steering gear cavity therein, an inlet, outlet, and two cylinder ports located in said housing, an hourglass worm having a cam track thereon and a stepped diameter bore located within and at one end thereof which extends substantially to the bottom of the cam track without interfering therewith, a follower operatively connected to said output member and engaging said cam track, said hourglass worm and follower being located in the steering gear cavity of said housing, a pair of relatively rotatable nested tubular elements through which fluids flow to and from said motor is controlled, said tubular elements being located in the valve bore of said housing, one of said elements being said input member and the other of said elements being a sleeve member connected to said hourglass worm and located between said input member and housing, said tubular elements each having one end thereof extending into and located substantially within said stepped diameter bore of said hourglass worm, means for opposing rotation of said input member, only one annular groove formed on the outer periphery of said sleeve member and defined by two annular lands each having sealing means in contact with said valve bore, passage means for communicating said annular groove with one of said cylinder ports, a plurality of axially extending slots formed on the inner periphery of said sleeve member and the outer periphery of said input member, said slots being in overlapping relation when said input member and sleeve member are in a neutral position, inlet passage means located in said input member for communicating half of the slots in said input member with said inlet port via the bores in said input member and worm, outlet passage means located at the end of the sleeve member furthest removed from said worm for communicating the other half of the slots in said input member with said outlet port, first cylinder passage means located in said sleeve member for communicating half of the slots in said sleeve member with one of the cylinder ports via said annular groove, second cylinder passage means located in said sleeve member for communicating the other half of said slots in said sleeve member with the other of said cylinder ports via said steering gear cavity, and mechanical drive through pickup means located on said one end of said input member and in said stepped diameter bore of said hourglass worm for permitting limited relative rotary motion between said input member and said worm.

3,296,940
POWER STEERING MECHANISM

Robert T. Eddy and Martin E. Wiese, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Nov. 30, 1964, Ser. No. 414,557
4 Claims. (Cl. 91—375)



1. In a power steering mechanism including an input member having a first bore extending therethrough, said first bore having a conical taper at one end thereof the imaginary base of which is located within said first bore and the imaginary apex of which is located without said first bore, an output member, and a fluid motor operatively connected to said output member, the combination within a housing of a worm having a second bore extending therethrough and groove means formed thereon, said second bore having a conical taper at one end thereof the imaginary base of which is located within said second bore and the imaginary apex of which is located without said second bore, follower means operatively connected to said output member and engaging said groove means, a pair of relatively rotatable telescoped tubular elements through which fluid flow to and from said motor is controlled, one of which is a part of said input member and the other of which is connected to said worm, a torsion bar located in and extending through said first and second bores, said torsion bar having oppositely disposed conical tapers formed thereon, one of which sealingly engages the conical taper in said first bore and the other of which sealingly engages the conical taper in said second bore, and means for locking one end of said torsion bar to said input member and the other end of said torsion bar to said worm, said means being operatively connected to the ends of said torsion bar and located externally of said input member and worm.

3,296,941
LOGIC CONTROL SYSTEM

Jerry Edward Rochte, Long Beach, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Feb. 15, 1965, Ser. No. 432,803
4 Claims. (Cl. 91—404)

1. In a control system having a logic output consistent with the logic input, the combination of:

a power unit comprising a cylinder with a piston movable between set and reset positions and having a pressure inlet at each end for moving said piston;

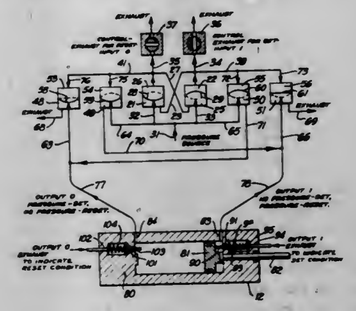
a set exhaust valve in said power unit communicating with one of said inlets and engageable by said piston when in said set position to open said valve;

a reset exhaust valve in said power unit communicating with the other of said inlets and engageable by said piston when in said reset position to open said valve;

a four-way valve for selectively connecting a pressure source to one of said power unit inlets and connecting the other inlet to an exhaust;

a pneumatically controlled set-reset flip-flop comprising a bistable device having first and second stable states for controlling said four-way valve;

set and reset control valves for said flip-flop, with each of said control valves selectively connecting said flip-flop to an exhaust, with said flip-flop going to said first stable state when said set control valve is opened and going to said second stable state when said reset control valve is opened; and

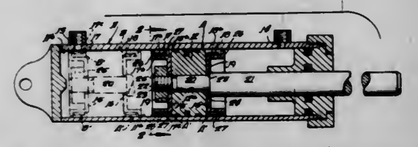


means connecting said flip-flop to said four-way valve for actuating said valve to move said piston to the set position when said flip-flop is set and to move said piston to the reset position when said flip-flop is reset such that opening of said set control valve causes movement of said power unit to said set position followed by opening of said set exhaust valve and opening of said reset control valve causes movement of said power unit to said reset position followed by opening of said reset exhaust valve.

3,296,942
DECELERATION CONTROL FOR PISTON OF CONVENTIONAL HYDRAULIC CYLINDER

Vaughn A. Nelson, Downers Grove, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Mar. 8, 1965, Ser. No. 437,667
3 Claims. (Cl. 91—409)

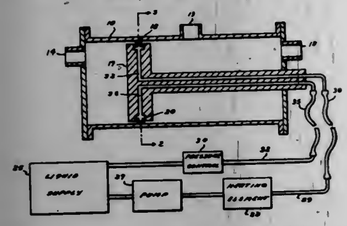


1. In a hydraulic system comprising a conventional hydraulic cylinder having a reciprocating piston therein and a plurality of ports respectively arranged in predetermined spaced relation with opposite ends of said cylinder and in communication with the system, whereby upon operation of the piston in the direction of one of said ports fluid in the cylinder will be discharged through said port, apparatus for controlling deceleration of the piston as it approaches the end of its stroke including a radially and axially displaceable ring provided with a groove extending circumferentially thereof and reducing the restrictive surface of the ring and adapted in response to said discharge of fluid to move into a position substantially restricting said one port and reducing the discharge of fluid therethrough progressively as the piston advances thereby to modulate deceleration of the piston in the completion of its stroke according to a predetermined pattern.

3,296,943
APPARATUS WITH A THERMALLY ACTUATED SEAL

Irwin E. Rosman, Woodland Hills, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed May 12, 1965, Ser. No. 455,353
2 Claims. (Cl. 92—111)



1. An apparatus for providing a seal between a cylindrical wall and a piston within said cylindrical wall comprising a cylindrical chamber; a port in the cylindrical wall of said chamber; a piston within said chamber adapted to be positioned on either side of said port; an annular groove in the periphery of said piston; an annular seal within said groove; said seal having a substantially U-shaped cross section with the legs of the U extending into said groove; an annular projection on each of said legs projecting toward the sides of said groove; means for supplying a heated fluid under pressure into said groove adjacent said seal, to thereby provide expansion of said seal into sealing engagement with said cylindrical wall in response to the combined effect of heat and pressure.

3,296,944
SWAB CONSTRUCTION

Raymond G. Taylor, Jr., Santa Monica, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware

Continuation of application Ser. No. 174,625, Feb. 20, 1962. This application Feb. 8, 1965, Ser. No. 433,838
5 Claims. (Cl. 92—180)

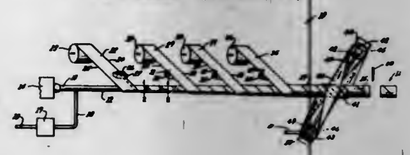


1. A well swab adapted to be lowered in a well pipe and elevated to lift a body of fluid comprising: a rigid support, a rubber-like body on said support, said body having integral therewith a disc-like member and a subjacent supporting member extending radially therefrom in spaced relation longitudinally of said support, said disc being flexible upwardly away from said supporting member and downwardly into engagement with said supporting member, said supporting member cooperating with said disc to resist downward flexure of the latter, and wherein said disc-like member has an upwardly extended flange about its outer periphery.

3,296,945
METHOD AND APPARATUS FOR MAKING A CONTAINER OR THE LIKE ON A FLUID COVERED AND/OR VIBRATED MANDREL

Daniel S. Cvacho and Calvin L. Wilson, Chesterfield County, and Charles T. Payne, Jr., Richmond, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Nov. 23, 1962, Ser. No. 239,610
6 Claims. (Cl. 93—80)

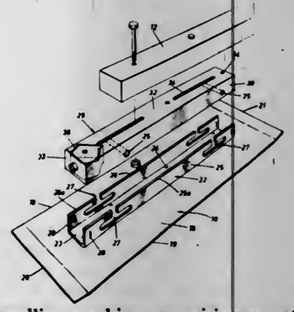


1. A method for making a container or the like comprising the steps of providing a mandrel, holding one end of said mandrel stationary, helically winding and axially advancing container material on said mandrel, and vibrating said mandrel relative to said rotating and axially advancing container material to facilitate rotational and axial movement of said container material relative to said mandrel while said one end thereof is held stationary.

3,296,946
TROWELLING BLADE ASSEMBLIES

Luigi Cagno, Hamilton, Ontario, Canada, assignor to Hamilton Float & Trowel Limited, Hamilton, Ontario, Canada

Filed Oct. 21, 1964, Ser. No. 405,552
14 Claims. (Cl. 94—45)



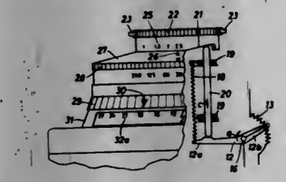
1. In a trowelling machine comprising a motor-driven member rotatable about a generally vertical axis, and at least one trowelling blade carrying arm carried by the member and extending radially therefrom whereby a blade carried by the arm is rotated in a generally horizontal plane upon rotation of the member and the arm about the said axis, the provision of a trowelling blade and attaching means for detachably attaching the same to the said rotatable arm; said trowelling blade having an upper surface, a working surface opposite to said upper surface, two ends and two sides; said attaching means comprising an attaching portion secured to the upper surface of the trowelling blade and a cooperating attaching portion secured to the said rotatable arm, one of said attaching portions comprising two spaced straddling members and the other attaching portion being interposed between said spaced straddling members of the said one attaching portion, each member attached to the blade being positioned between the sides of the blade and extending generally towards the ends of the blade, one of the two attaching portions having for each member thereof a free edge with two spaced slots formed therein, each slot commencing at said free edge of the

associated member, having an entry portion extending into the member away from the free edge, and branching inwardly of the free edge towards both of the ends of the member to constitute two corresponding retaining portions and thereby permit reversing end-for-end of the attachment of the blade to the said rotatable arm, the other of said two attaching portions having secured thereto two transversely extending pins spaced apart a distance corresponding to the spacing of the said slots, the said pins being engaged in the said slot entry portions by movement of the trowelling blade toward the said arm and thereafter engaged in respective retaining portions of the slots to retain the blade on the said arm by longitudinal sliding of the said two attaching portions relative to one another upon corresponding endwise movement of the blade relative to the said arm.

3,296,947
DEVICES FOR MAKING EXPOSURES WITH ARTIFICIAL LIGHT

Dieter Engelsmann and Alfred Bräth, Unterhaching, near Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed July 27, 1964, Ser. No. 385,144
Claims priority, application Germany, July 26, 1963, A 43,691
10 Claims. (Cl. 95—1)



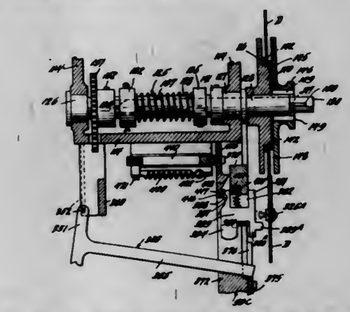
1. In a device for making photographic exposures with artificial illumination, in combination, illuminating means for artificially illuminating a subject which is to be photographed; regulating means operatively connected to said illuminating means for regulating the intensity of the illumination provided thereby; an objective assembly including focusing means for setting into the device the distance between the subject and the device and diaphragm-adjusting means for adjusting the exposure aperture, said focusing means being operatively connected to said regulating means for actuating the latter to regulate the light intensity of said illuminating means according to the distance set by said focusing means, said diaphragm-adjusting means being adjustable through at least two ranges, one of which provides adjustment for daylight exposures and the other of which provides adjustments for exposures with artificial illumination; and a scale of film speeds operatively connected with said diaphragm-adjusting means and cooperating therewith when the latter is in the other of said ranges for setting said diaphragm-adjusting means according to the speed of the film which is exposed.

3,296,948
PHOTOGRAPHIC COMPOSING MACHINES

George J. H. Sausele, New Providence, N.J., assignor to American Type Founders Co., Inc., Elizabeth, N.J., a corporation of Delaware

Original application June 3, 1964, Ser. No. 372,211. Divided and this application Mar. 25, 1966, Ser. No. 537,372
4 Claims. (Cl. 95—4.5)

1. Character selecting mechanism for photographic composing machines or the like, comprising a supporting frame, a rotatable master character disc bearing matrix characters around its circumference, said characters arranged upon the disc in a plurality of sectorial groups, friction driving means for continually urging said disc in a forward direction of rotation, stop means for selectively halting the rotation of the disc against the urging of the driving means at substantially the point for the presentation of a selected character to a light beam for image transmission, said stop means comprising a plurality of stop pins projecting from said disc, one pin for each of said sectorial groups of characters, a series of stop abutments movably carried by said frame and selectively projectable into the paths of said stop pins, the stop pins being disposed on said disc at different radial

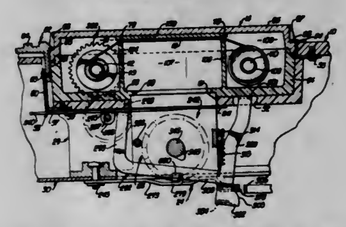


distances from the center thereof, and said stop abutments being projectable to blocking positions located at different radial distances from said center to be abutted only by corresponding pins on the disc, the characters occurring on a given sector of the disc being represented by the stop abutments cooperating with the pin appropriate to the sector in which said characters occur, said projectable stop abutments comprising tabs formed on slidable blades at different distances along the edges of said blades, said blades all being projectable substantially equal distances.

3,296,949
CAMERA

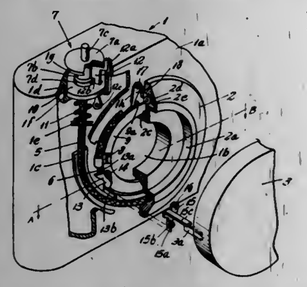
William E. Bounds, 1205 Pine Ave., Manhattan Beach, Calif. 90266

Filed Apr. 20, 1961, Ser. No. 104,378
12 Claims. (Cl. 95—11)



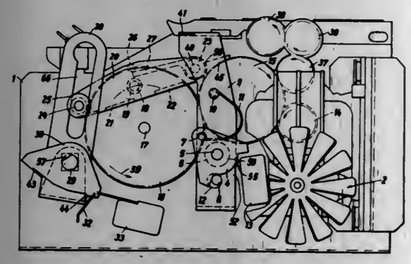
1. A camera comprising a camera case; a photographic lens unit in said case; a film loaded magazine in alignment with and spaced from said lens unit and removably attached to said case; a shutter assembly a portion of which is in alignment with said lens unit; manually operable means connected to said shutter assembly for actuating the shutter assembly to admit light through said shutter assembly; an electrically energized driving means connected to said film magazine for advancing a lead-in portion thereof, for advancing the film from frame to frame, and for advancing a tail-end portion of the film; and electrical circuit means electrically connected to said driving means and actuated by said magazine when the magazine is initially attached to said case to energize said driving means to advance the lead-in portion of the film; said electrical circuit means being further actuated by said shutter assembly to momentarily energize said driving means to advance said film from frame to frame and to advance the tail-end portion of the film.

3,296,950
PHOTOGRAPHIC CAMERA WITH A CABLE RELEASE
Franz W. R. Starp, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Jan. 28, 1964, Ser. No. 340,655
Claims priority, application Germany, Jan. 30, 1963, G 36,932
6 Claims. (Cl. 95—53)



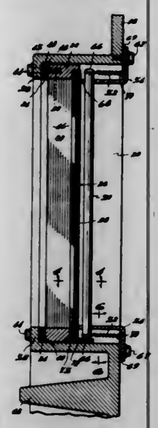
1. A photographic camera comprising a camera case; a cable release which is permanently connected to the camera and which comprises a flexible cable member displaceably arranged in said camera case; channel in said camera case into which said flexible cable member is invisibly arranged and guided when the cable release is extended or retracted; a carrier member movable through a predetermined distance from a first position to a second position; a lever pivotally mounted on said carrier member; said flexible cable member being connected to said movable carrier member to move therewith; and a shutter and actuating means therefor, said lever engaging said actuating means only when said cable release is in said first position and when it is in said second position.

3,296,951
PHOTOCOPYING APPARATUS
Georg Cranskens, Wedel, Holstein, and Werner Salger, Hamburg-Langenhorn, Germany, assignors to Lumoprint Zindler K.G., Hamburg, Germany
Filed Apr. 21, 1964, Ser. No. 361,494
Claims priority, application Germany, Apr. 27, 1963, L 44,768
12 Claims. (Cl. 95—89)



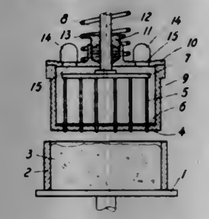
1. In a copying apparatus, in combination: a frame, transport means for feeding copy material through said frame; a drive motor mounted in said frame for driving said transport means; an operating element mounted for limited movement in said frame, said operating element being arranged to be moved before the carrying out of a copy operation in the copying apparatus from the first position to a second position and to be returned after termination of said copying operation from said second position into said first position; a drive connection between said drive motor and said operating element, said drive connection being mounted in said frame; switch means for energizing and de-energizing said drive motor, said drive connection being constructed and arranged such that upon energization of said drive motor said operating element initially moves through a predetermined angle from said first position into said second position, whereupon said drive motor and said transport means are further driven, while after de-energization said drive connection maintains further running of said motor; and connecting means between said switch means and said drive connection whereby movement of said drive connection to selectively engage and disengage said drive connection ensures the further running of said motor until said operating element has reached its first position, said switch means being connected in circuit with said motor and including two start-and-stop switch means connected in parallel, one of said start and stop switch means being actuable in dependence on the position of an actuating element arranged in said frame and the other of said start-and-stop switch means being actuatable in dependence on the position of said operating element, said other start-and-stop switch means, after movement of said actuating element for said one of said start-and-stop switch means into the open position, ensuring a further running of said motor during a period in which said operating element is moved back into said first position.

3,296,952
BLAST CLOSURE
Harry J. Lingal, Hamilton, Ohio, assignor to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed June 19, 1964, Ser. No. 376,447
8 Claims. (Cl. 98—119)



1. A blast closure comprising,
a frame having at least one grating receiving opening,
at least one grating having spaced bars with air passageways therebetween, each grating positioned within a grating receiving opening,
means elastically securing each grating to said frame in said opening, said means allowing unidirectional movement of each grating,
an elastomeric grid secured to each grating, said grid having spaced strips coextensive with and engaging said bars,
a plurality of spaced closure rods engageable with the edges of adjacent strips, said rods providing a closure of the air passageways between said bars,
aligning means secured to said frame for maintaining the spaced relationship of said rods,
yieldable means connected to said rods and to said frame for holding said rods away from said grid, and
means secured to said grating for maintaining the vertical alignment of said rods.

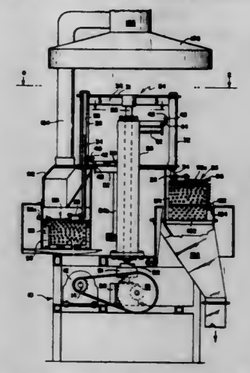
3,296,953
APPARATUS FOR INJECTING BRINE INTO MEAT PRODUCTS
Preben Bjørn-Henriksen, Sorup pr. Fredensborg, Fredensborg, Denmark, and Poul Christian Hansen, Roskildevej 149A, Tastrup, Denmark
Filed Sept. 24, 1964, Ser. No. 399,041
2 Claims. (Cl. 99—256)



1. An apparatus for injecting brine into meat products comprising a vertically movable table, an open topped meat receiving container adapted to be placed on the table, a liquid-tight box mounted above said table and having an outside dimension slightly smaller than the inside dimension of said container so that the box may be telescoped into the container, a lower wall of said box functioning as a pressure plate to compress the meat product in said container, said box being resiliently urged toward said table, a fixedly mounted hollow rod extending into the interior of said box through the top thereof and having a series of hollow, perforated needles attached thereto so as to provide a path for brine through the hollow rod and through the needles, a series of openings in said lower wall through which said needles extend, the ends of the needles being imperforate and normally extending in a liquid-tight relationship through said openings so as to prevent the escape of any brine out of the box, whereby when the container on said table is raised toward said box the box will be pushed upwardly and the needles will penetrate the meat product and form a brine flow path into the meat.

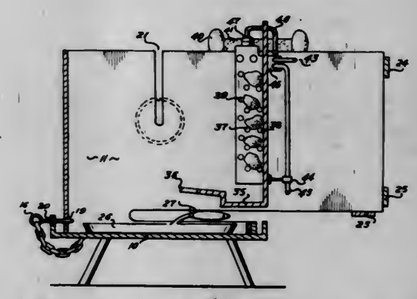
3,296,954
DEEP FAT FRYER
John T. Haub, Stanley C. Rustad, and Mark Hasten, all of Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,224
6 Claims. (Cl. 99—404)

1. A deep fat fryer, comprising:
(a) a mounting structure,
(b) a merry-go-round frame mounted to said structure for rotary motion about a generally vertical axis,
(c) a plurality of food carrying baskets mounted to said frame so as to be moved in a generally circular path thereby, and movable vertically with respect to said frame, the direction of rotation of said baskets being considered as being forward,
(d) a generally circularly curved deep fry tank, the length of which is located along an arc length of said circular path of said baskets, said tank having a rearwardly located infeed end and a forwardly located outfeed end,
(e) a track assembly extending substantially in a circle about the axis of said merry-go-round frame, said track assembly comprising a lower portion being generally coextensive with and having generally the same angular location as said fry tank, an upper portion located generally diametrically opposite to said lower track portion, and two elevator track portions, each located between respective proximate ends of said upper and lower track portions, said elevator portions each being movable between the elevation of said upper track and said lower track,



(f) each of said baskets having secured thereto a track riding member by which each of said baskets is supported from said track assembly, whereby each of said baskets as it travels a circular path, is lowered into said tank by one of said elevator track portions, moves through said tank from the infeed end to the outfeed end thereof, and is lifted from said tank by the other of said elevator portions to travel on said upper track portion.

3,296,955
PORTABLE CHARCOAL-ELECTRIC GRILL
Francis J. Schaniel, 1825 Shoreland Drive, Apt. 113, Alameda, Calif. 94501
Substituted for abandoned application Ser. No. 172,920, Feb. 13, 1962. This application Sept. 3, 1963, Ser. No. 309,366
5 Claims. (Cl. 99—421)

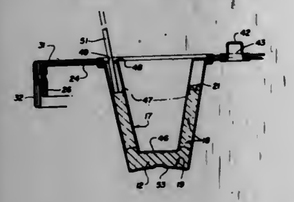


1. A barbecue unit, comprising:
a portable base having a detachable drip and basting pan thereon;
an open upper edged detachable casing surrounding said base and having parallel sides extending laterally thereof, said casing having vertical spitrod receiving notches on either side of said base;
a spitrod disposed in said notches, said spitrod having driving gears on both casing extending ends and capable of manually detachable 180° repositioning;
a power driven output shaft on said casing having a worm engageable with said spitrod gears irrespective of placement; and

a vertically disposed charcoal or briquet firebox between the parallel sides of said base and having upper manually graspable handles extending thereover and slideable thereon so as to be physically withdrawn vertically for ash dumping.

3,296,956
APPARATUS FOR EDIBLE BAKED CUP-SHAPED PRODUCT

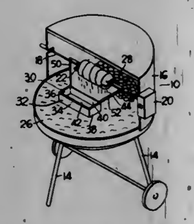
Wesley Turner, 906 Curtis St., Albany, Calif. 94706
Original application May 13, 1964, Ser. No. 367,032. Divided and this application June 4, 1965, Ser. No. 473,264
1 Claim. (Cl. 99—439)



Apparatus for making edible baked cup-shaped products comprising, a female mold including a first generally planar member having a plurality of spaced cavities formed therein each having downwardly converging side walls, a male mold including a generally planar member adapted for disposition in overlying relation to said first planar member and including a plurality of downwardly extending open topped protuberances adapted for insertion respectively into said cavities, said cavities and protuberances each respectively defining therebetween a cup-shaped chamber when molds are placed in overlying relation wherein said central portion of said chamber bottom has a thickness greater than said chamber side walls and the thickness of said chamber bottom at its outer edge is greater than said central portion, and said planar members having a plurality of corresponding registering vent holes disposed respectively between said cavities and protuberances, said male mold being provided with a plurality of gauge openings each disposed above the side wall of one of said cup-shaped chambers, and said cup-shaped chambers each fully enclosed except for said gauge openings.

3,296,957
DRIP COLLECTING MEANS FOR BARBEQUE

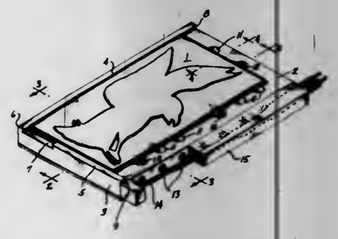
James E. Gagnon, 1823 Lyndale Ave., and Michael J. Lawrence, 2643 Monroe St., both of Eau Claire, Wis. 54701
Filed Apr. 14, 1964, Ser. No. 359,585
3 Claims. (Cl. 99—444)



1. An article of manufacture fabricated from a single sheet of metal and for use as a dripping collecting means with a spit type barbeque device, comprising a receptacle portion having a bottom, a pair of integrally formed upwardly extending end walls, and a pair of integrally formed upwardly extending side walls, a collecting portion integrally formed with and extending in upwardly sloping relationship from the top edge of one of said side walls, said collecting portion having a pair of side edges and integrally formed upwardly extending flanges therealong, said collecting portion further having an edge remote from its attached edge which is longer than its attached edge, and at least one supporting member integrally formed with and extending downwardly from said collecting portion, said member being of such a length as to reach a flat horizontal plane in which said bottom of said receptacle portion lies when said member is disposed transverse to said bottom.

3,296,958
HEATED TYPE PLATE

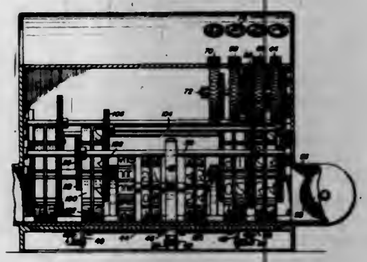
Dirk Liepelt, 13741 Bothell Way NE., Seattle, Wash. 98125
Filed May 7, 1965, Ser. No. 453,907
3 Claims. (Cl. 101—31)



1. A heated type plate for mounting a plate cut, comprising backing plate means having a generally rectangular cut-mounting face, a flange projecting above said cut-mounting face along one edge thereof, said backing plate means having therein a set of anchor holes extending into it from said cut-mounting face for receiving clamping means engageable with edge portions of a cut on said cut-mounting face, such holes being spaced lengthwise of said flange and spaced therefrom, said backing plate means having a plurality of elongated substantially parallel bores located substantially parallel to and beneath said cut-mounting face with their lengths extending transversely of said flange and disposed in spaced relationship staggered with respect to such anchor holes, and a heating element received in each of such bores in said backing plate means.

3,296,959
CHECK WRITER

Cyrus G. Sewell, P.O. Box 738, Sweetwater, Tex. 79556
Filed May 21, 1965, Ser. No. 457,656
2 Claims. (Cl. 101—80)

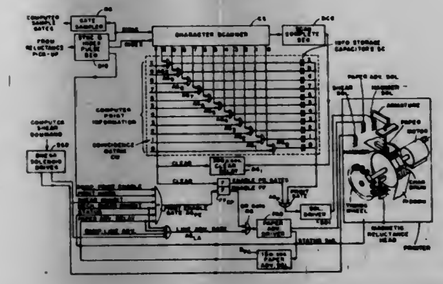


1. A check writer comprising a housing having an entrance slot formed therein for receiving a check to be

printed, a first set of printing elements movably mounted within said housing and disposed adjacent said throat, means engaged with said printing elements of the first set for moving the printing elements of the first set independently of each other, indicating means operatively connected with said means for moving the printing elements for indicating the position of the individual printing elements in the first set, a second set of printing elements in said housing and orientated in laterally spaced and offset relation to the first set of printing elements, drive means interconnecting the first and second sets of printing elements for simultaneous movement thereof, and means carried by said housing for moving the check and printing elements into printing relation to each other, a printing ribbon disposed between said printing elements and the check, said printing ribbon having transfer material thereon, and means supporting the printing ribbon in position between the printing elements and the check, said means for moving the check and printing elements into printing relation including a plate for supportingly engaging the check when inserted into the housing, means engaged with the plate for moving the plate toward and away from said printing elements, said printing elements of each set being disposed in circumferentially spaced relation on a plurality of coaxial printing wheels, said means for moving the printing elements of said first set including an operating wheel operatively connected to each printing wheel of the first set of printing elements, each operating wheel disposed adjacent the printing wheel to which it is operatively connected and having a portion of the periphery thereof disposed exteriorly of the housing, said operating wheels being orientated in coaxial relation, said indicating means being operatively connected with each operating wheel to indicate the position of each printing wheel, wherein said means interconnecting the first and second sets of printing elements for simultaneous movement thereof including a plurality of parallel drive shafts with one end of each shaft being operatively connected to a printing wheel of the first set of printing elements and the opposite end of each shaft being operatively connected to a corresponding printing wheel of the second set of printing elements.

3,296,960
ELECTRONIC CONTROL OF PRINTER IN RESTAURANT BILLING SYSTEM

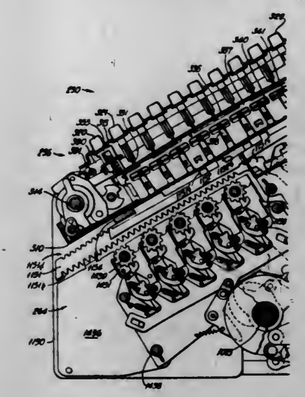
Marvin Felcheck, Bayside, N.Y., and Nanjundiah N. Murthy, Norwalk, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 3, 1965, Ser. No. 430,052
16 Claims. (Cl. 101—93)



1. In a data processing system, in combination with an electromechanical printer having a plurality of character printing controls, and a plurality of separate data sources each with an output information line, electronic circuit means for converting the data from said sources into electric signals suitable for operating said printer including means for generating a plurality of synchronizing (sync) pulses at a given frequency representing different operating positions of said controls in a printing cycle plus an index pulse at the start of each cycle; a multi-stage character scanner having an output for each stage, said scanner being set to its first stage by each index pulse and stepped through all its stages in response to the sync pules in synchronism with the respective characters on said conrtol; means also triggered by each sync pulse for sampling the output of said sources in turn to determine the presence of data therein and, if present, to apply the sampled information to the associated information line; a coincidence circuit comprising a plurality of gates each having as inputs thereto a different one of the stage outputs of said scanner and a different one of said information lines, and a single output for each of said gates including an individual storage capacitor; print gating means and associated printer driving means; the coincidence of information in both inputs to any gate causing the enablement of that gate to pass the information in the associated information line therethrough to charge the associated capacitor for storage therein; means responsive to the stepping of said scanner to the next stage position to cause the information in the charged capacitor to pass to said print gating means; and means responsive to a comamnd generated in said system to cause the enablement of the print gating means to pass a signal therethrough to the associated driving means to generate a high energy pulse for operating the printing controls.

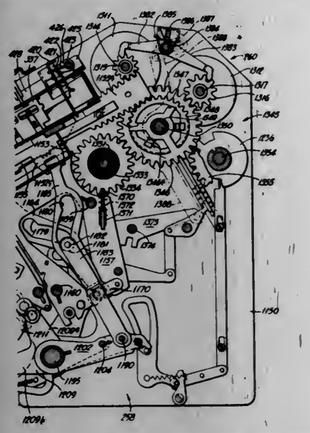
3,296,961
RECORDING ASSEMBLY FOR ACCOUNTING MACHINE

Gosta R. Englund, Stockholm, and Mats E. Mattsson, Sollentuna, Sweden, assignors to Svenska Dataregister AB, Stockholm, Sweden, a corporation of Sweden
Original application Mar. 14, 1962, Ser. No. 179,595. Divided and this application Sept. 22, 1965, Ser. No. 489,300
Claims priority, application Sweden, Mar. 17, 1961, 2,839/61
22 Claims. (Cl. 101—93)



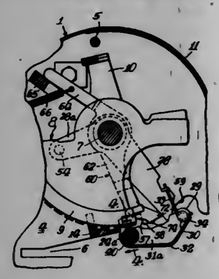
1. In an accounting machine, a plurality of differential means operable to different data representing positions; a recording assembly for recording data on a record in a plurality of different formats, said recording assembly being supplied with at least part of the data to be recorded from said differential means; a plurality of coded means for controlling the recording assembly to provide the desired formats, each of said coded means representing a

given recording format; and control means controlled by at least one of said differential means for selecting one



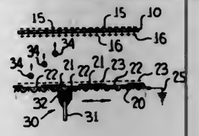
of said coded means and for rendering the selected coded means effective to control the recording assembly.

3,296,962
CHECKWRITER INKING ROLL MEANS
Ardath A. Gopperton, Mount Prospect, Ill., assignor to Theodore B. Hirschberg, Jr., Chicago, Ill.
Filed Apr. 19, 1965, Ser. No. 449,110
7 Claims. (Cl. 101—95)



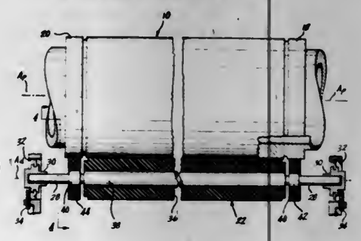
1. In a checkwriter, means defining a printing line, type members having printing characters positionable on said printing line, inking means comprising an inking roller normally spaced from said printing characters and movable into contact therewith, platen means cooperating with said printing characters, an operating member having a normal position and movable therefrom and thereto for effecting a printing operation, means actuated by said member effective for holding said inking roller spaced from said printing characters in said normal position of said member and for moving said inking roller into pressure contact with said printing characters in the initial movement of said member from normal position, means for moving said inking roller over said printing characters and clear thereof and of said platen means and then moving the latter into pressure contact with an instrument disposed between said platen means and printing characters, in the continued movement of said member from its said normal position, said last mentioned means being effective for returning said inking roller to its said normal position in the return movement of said operating member to normal position, and means effective for moving said inking roller away from said printing characters in the continued movement of said operating member beyond its said initial movement and thereafter holding said inking roller out of contact with said printing characters until said operating member is returned to its said normal position upon completion of a printing operation.

3,296,963
ELECTROSTATIC SCREEN PRINTING OF ARTICLES MADE OF HIGHLY INSULATING MATERIALS
Kenneth W. Rarey, South Holland, John B. Kennedy, Jr., Chicago, and James G. Buck, Western Springs, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed July 27, 1964, Ser. No. 385,431
15 Claims. (Cl. 101—114)



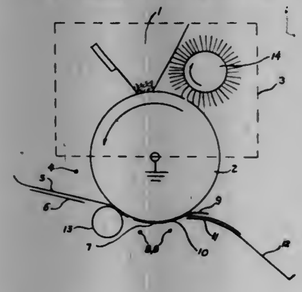
1. A method of electrostatic screen printing upon an article of highly insulating material, said method comprising the steps of charging one side of the article to be printed with positive ions and the other side of the article with negative ions to provide said article with a distributed electrostatic charge having a net charge of approximately zero, placing the charged article in proximate spaced relation to an electrically conductive screen while maintaining said distributed electrostatic charge to induce electrical charges on said conductive screen and to establish an electric field between the charged article and the conductive screen, forcing toner particles through apertures in the conductive screen causing said toner particles to be transported by said electric field from said screen to said charged article.

3,296,964
DAMPENING ROLLER MECHANISM FOR OFFSET PRINTING PRESSES
William J. Orr, Alameda, Calif., assignor to Roberts & Porter, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 9, 1964, Ser. No. 358,496
3 Claims. (Cl. 101—147)



1. In an offset press having a plate cylinder carrying a printing surface, means for dampening the printing surface comprising a dampening roller, means for mounting said dampening roller in rolling contact with the plate cylinder on an axis parallel therewith, said dampening roller having a relatively soft elastic contact surface, a hard cylindrical bearer adjacent each end of the plate cylinder and rotative with the plate cylinder on a common axis, and a cylindrical truck adjacent each end of the dampening roller and rotative with the dampening roller on a common axis, said trucks having a relatively hard elastic contact surface in frictional rolling engagement with the respective bearers, the sum of the diameters of the plate cylinder and roller slightly exceeds the sum of the diameters of each bearer and its associated truck whereby the roller contacts the plate cylinder before the trucks contact the bearers during advancement of the roller toward the plate cylinder, said press including means to adjust contact pressure between the trucks and respective bearers, and thereby to establish the zone and pressure of contact between the printing surface and the dampening roller.

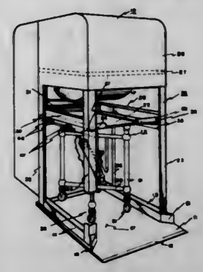
3,296,965
METHOD OF ELECTROSTATIC POWDER GRAVURE PRINTING AND APPARATUS THEREFOR
Robert B. Reif, Grove City, Ohio, Norman S. Cassel, Ridgewood, N.J., and Daniel Smith, Riverdale, N.Y., assignors, by direct and mesne assignments, to Interchemical Corporation, New York, N.Y., a corporation of Ohio
Filed June 3, 1964, Ser. No. 372,226
9 Claims. (Cl. 101—170)



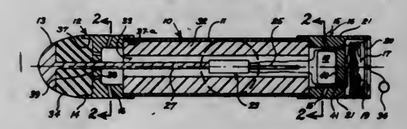
1. The method of gravure printing wherein an image is formed on a substrate with a dry printing powder which comprises:
(a) furnishing to cells etched in the surface of a rotating gravure cylinder a printing powder adapted to receive and retain an applied electrostatic charge;
(b) creating an electrostatic field at a point traversed by the surface of said gravure cylinder after the printing powder is furnished to the cells etched therein;
(c) feeding a substrate so that it travels through said field at substantially the same rate and direction as the etched surface of said gravure cylinder and in proximity to said etched surface;
(d) applying an electrostatic charge to the powder in said cells at a point located between the point where the powder is furnished to said cells and the point where said cells travel through said electrostatic field;
(e) rotating said cylinder at such speed that a substantial portion of the electrostatic charge applied to said powder is retained on said powder as it enters said electrostatic field, so that said printing powder is transferred from said cells to said substrate under the influence of said electrostatic field; and
(f) then fixing the powder on the surface of said substrate.

3,296,966
PROOF PRESS WITH CHASE CART HOLDING MEANS
Fred W. Standiford, Salt Lake City, Utah, assignor to Electro-Aire Corporation, a corporation of Utah
Filed June 29, 1964, Ser. No. 378,574
10 Claims. (Cl. 101—269)

10. A proof press including, in combination, a platen, support structure operatively containing said platen and defining an accessible, open area beneath said platen and configured to receive a cart bearing a printing form, said cart having a bed for bearing said printing form, said support structure including rigid members disposed above the bottom of said support structure, said rigid members being engagable by said cart for determining the height of said bed, means cooperating with said support structure for clamping said cart upwardly against said rigid members to retain said bed at a predetermined height level, and means for activating said clamping means.

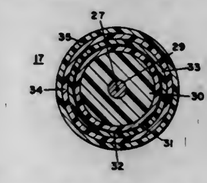


3,296,967
INCENDIARY DEVICE
Billy E. Bounds, Yardley, Pa., and Lowell F. Matthies, Ogden, Utah, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 428,987
13 Claims. (Cl. 102—6)



2. A self-propelled incendiary device comprising, a cylindrical outer casing, an incendiary charge having a central, longitudinal perforation bonded to the interior of said casing, means in said casing for initiating combustion of said incendiary charge, and a plurality of incendiary gas passage means, each in off-set radial relation and angularly disposed with respect to the central axis of said casing, in said casing proximate to the ends of said charge for passage of incendiary gas from said casing, said gas passage from said casing providing a propelling force thereto for rolling and turning said incendiary device on a surface and simultaneously exposing objects in its path over said surface to said incendiary gas.

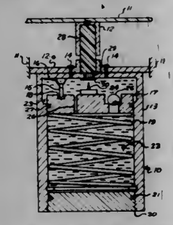
3,296,968
REMOTE IGNITION LINE
Robert S. Shulman, deceased, late of Langhorne, Pa., by Jean Shulman Biberman, administratrix, Philadelphia, Pa., and Thomas Q. Ciccone, Langhorne, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed June 19, 1964, Ser. No. 376,596
12 Claims. (Cl. 102—27)



1. In a low detonating cord having a core of pentaerythritol tetranitrate encased in a lead sheath, the combination therewith of the improvement for enhancing the safety and utility of such cord for firing a gun from a distance as well as reducing the weight of said cord, said improvement including said sheath enclosed in a layer of 600 denier rayon having a thickness of about

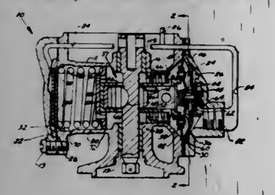
0.55 inch, a layer of polyethylene about .01 inch thick and said core within said lead sheath weighing only about 1 grain per foot and the lead sheath being about .04 inch in diameter, said cord being reinforced for about 10 feet from each end with a second layer of polyethylene about .196 inch in diameter, a layer of fiber glass woven fabric outside the foregoing about .22 inch in diameter, and an outer layer of polyethylene about .244 inch outside diameter.

3,296,969
TIME DELAY INITIATOR
James H. Mueller, Plymouth Meeting, and Charles M. Pascale, Yardley, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Oct. 14, 1964, Ser. No. 406,655
7 Claims. (Cl. 102—82)



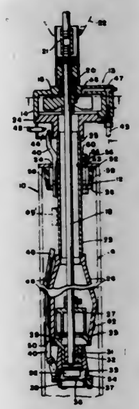
1. A device for initiating a deflagration in a combustible charge wherein said initiation is delayed for a predetermined time interval said device subjected to vertical acceleration in a flying body comprising, a walled housing, a quantity of hydraulic fluid in said housing, a compression spring in said housing, a removable fluid sealed end plate threadably engaged in the bottom of said housing for supporting said spring, a firing pin assembly supported on said spring in said housing for compressing said spring when said device is subjected to vertical acceleration comprising a firing pin, a check valve, and a hydraulic time delay means, a limiting pin swiveled on the upper, inner wall of said housing, said limiting pin engaging said pin assembly prior to acceleration of said device and disengaging therefrom when said device is accelerated, primer means in said housing upper wall for initiating a deflagration in said charge upon contact by said firing pin, and a cup-like shroud mounted on said housing for containing said charge, said shroud adaptable for installing said device in a flying body.

3,296,970
PUMP
Ralph K. Londal, Detroit, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed July 1, 1964, Ser. No. 379,618
8 Claims. (Cl. 103—38)



1. A pump assembly, comprising a chamber including a shaft having an eccentric formed thereon, an inlet and an outlet, a pump element at times being moved by said eccentric away from said outlet; an accumulator chamber; a passageway communicating between said accumulator chamber and said outlet; a pressure responsive device forming a movable wall between said first mentioned chamber and said accumulator chamber; and a spring mounted between said pressure responsive device and said pump element for urging said pump element toward said outlet when said pump element is not being moved by said eccentric.

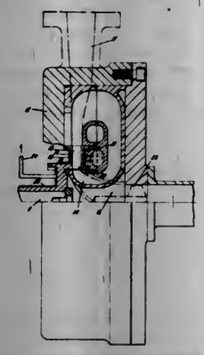
3,296,971
MOUNTING MEANS FOR SUB-FLOOR PUMP
Axel L. Nielsen, 1316 E. Elza, Hazel Park, Mich. 48030
Original application Jan. 21, 1963, Ser. No. 252,712, now Patent No. 3,246,606, dated Apr. 19, 1966. Divided and this application Sept. 1, 1965, Ser. No. 484,396
11 Claims. (Cl. 103—102)



1. In combination with a floor riser or like upright liquid casing, a pump unit having an above-floor housing and an impeller in said housing driven by a shaft, said housing having a tubular intake member opening upwardly thereto, and an expandable plug unit having means engaging said intake member to support said pump unit on the plug unit, said plug unit including an elastically deformable sleeve telescopingly receivable in said riser adjacent the top thereof, and means engaging said sleeve and adjustable to cause outward expansion of the latter to grip said riser and support said plug unit and said pump unit on the riser.

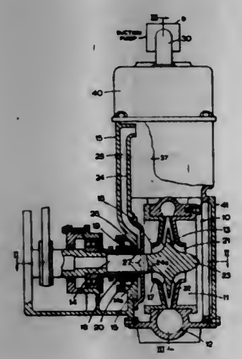
3,296,972
FLUID OPERATED MULTI-STAGE MACHINE
George Frederick Arkless and Harold Henry Anderson, both of Cathcart, Glasgow, Scotland, assignors to G. & J. Weir Limited
Filed Apr. 20, 1965, Ser. No. 449,452
Claims priority, application Great Britain, June 4, 1964, 23,120/64
7 Claims. (Cl. 103—103)

1. A fluid operated multi-stage machine including a rotatable shaft, a casing, a fluid impeller within said casing and rotatable with said shaft, the impeller having vanes which, together with shroud plates define fluid passes, a plurality of diffuser passages in the casing and spaced around the periphery of the impeller vanes, each diffuser passage communicating at one end with the outer ends of a number of fluid passes, and the vanes serving to seal adjacent fluid passages from one another, a number of return passages being provided to enable fluid communication between the other end of each diffuser passage and the inner ends of the fluid passes which are in communication with the next successive diffuser passage, and fluid inlet and outlet passages into and out of said casing, said inlet passage communicating with the fluid passes in communication with the first stage diffuser and said outlet passage communicating with the diffuser of the last stage when the machine is operating as a pump, the impeller being overhung from the shaft



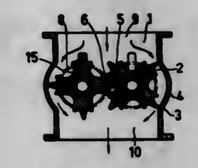
and being annular, said return passages communicating with the inner periphery of the impeller, said diffusers with the outer periphery of the impeller.

3,296,973
CENTRIFUGAL PUMPS
Harold Philip Sidney Paish, Harold Lloyd Dagwell, and Peter John Amley, all of London, England, assignors to Henry Sykes Limited, London, England, a British company
Filed Mar. 16, 1965, Ser. No. 440,153
Claims priority, application Great Britain, Mar. 20, 1964, 11,939/64
12 Claims. (Cl. 103—113)



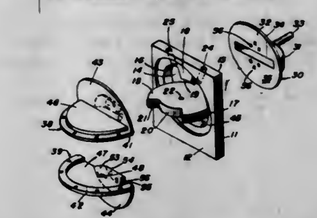
1. A centrifugal pump of the class described, comprising: a rotary shaft; an impeller mounted on said shaft for rotation therewith; pump housing means surrounding said impeller, said pump housing means comprising a volute for the delivery of liquid pumped by said impeller; means defining at least one annular inlet passage concentric with said shaft and communicating between the exterior of said pump housing means and said impeller; means defining a chamber, said pump housing means being located in a lower portion of said chamber, said shaft extending into said chamber from the exterior thereof; continuously operative suction means separate from said impeller communicating with an upper portion of said chamber above said pump housing means; a liquid inlet communicating with said chamber; control means connected to said suction means for maintaining a substantially constant liquid level above said inlet passage in said chamber independently of the operation of said impeller; gland means sealing said shaft where it enters said chamber for prevention of the entry of air into said chamber by longitudinal flow along said shaft; and means defining a separating chamber communicating with the interior of said first-named chamber above said constant level of said liquid, the lower end of said separating chamber communicating with said gland means in close proximity thereto interiorly of said first-named chamber, said shaft passing through said separating chamber with close clearance into said first-named chamber.

3,296,974
MEANS FOR REDUCING PRESSURE IN PACKING BOXES OF PUMPS
Sven Allan Sigvard Johansson, Lidingo, Sweden, assignor to Sunds Verkstader Aktiebolag, Sundsbruk, Sweden
Filed July 15, 1965, Ser. No. 472,251
Claims priority, application Sweden, July 16, 1964, 8,693/64
3 Claims. (Cl. 103—126)



1. A pump for pulpy material, such as cellulose pulp, comprising a pump housing with a pump rotor provided therein and substantially axially extending blades for the transfer of material from the low-pressure side of the pump to the high-pressure side thereof, at least one of the end walls of the rotor sealing, with the least possible play, against an adjacent wall of the pump housing through which extends the shaft of the rotor, at least one groove being provided in the end wall of the rotor and extending around the shaft of the rotor, said groove being arranged to be put into draining communication with the low-pressure side of the pump for preventing high pressure fluid from the high pressure side of the pump from reaching the packing box for the shaft of the rotor.

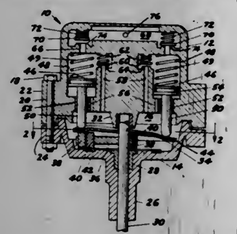
3,296,975
GYRATING PUMP
Ricardo Chicurel, 730 Palmer Drive, Blacksburg, Va. 24060
Filed Jan. 13, 1965, Ser. No. 425,171
12 Claims. (Cl. 103—143)



1. A constant discharge positive displacement pump comprising: a ring assembly having a rotor-receiving cavity therein, said cavity having a toroidal perimeter and said assembly having a depending ring tooth extending into said aperture, and an inlet and an outlet port within said ring assembly separated by said tooth and communicating with said cavity perimeter; a disk rotor cooperatively received within said assembly for rotation, said rotor having a circular ring sector matched therein for complementary cooperation with said depending ring tooth and a rotating flexible shaft secured thereto for revolving said rotor about its axis; means for rotating said shaft; a

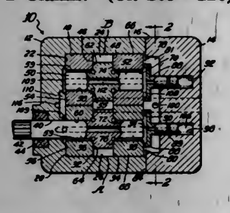
pair of complementary rotor enclosing casing shells, said shells forming a cavity therebetween for partially enclosing said rotor; a flexible shaft-receiving bushing mounted in one of said shells; a rotor cavity closing end for sealably enclosing the remaining portion of said rotor, said end being secured to said shells and having a rotating shaft rigidly fastened thereto; and means for rotating said shaft whereby the casing is turned within the ring assembly while the rotor is simultaneously turned within the enclosing shells and end, the rotor drawing a pumped substance within the aperture of the assembly through the inlet port while simultaneously expelling a pumped substance from the aperture through the outlet port, the rotation of the bonded shells and end positioning the circular ring sector notched within the rotor to mesh with and pass the depending ring tooth on each revolution of the revolving rotor.

3,296,976
PUMP
Raymond A. Soeters, Royal Oak, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Mar. 19, 1965, Ser. No. 441,078
10 Claims. (Cl. 103—173)



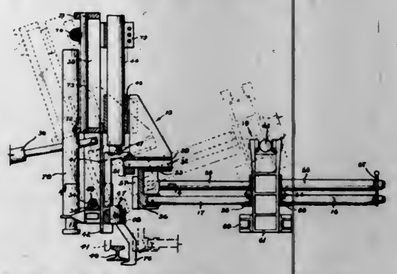
1. A pump, comprising a housing, a shaft having one end thereof extending externally of said housing, a plate loosely fitted around said shaft, a plurality of pistons, a spring urging each of said pistons into continual contact with said plate, means associated with said shaft and said housing for providing three-point sloping support and drive for said plate, wherein said means includes a ledge formed around the inside of said housing, an arm fixedly secured at its center to said shaft, and a pair of roller bearings mounted at each end of said arm, said arm includes an obtuse angle formed at its center.

3,296,977
PRESSURE LOADED PUMP
George C. Kinnamon, Lyndhurst, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 10, 1965, Ser. No. 478,623
2 Claims. (Cl. 103—126)



1. In a pressure loadable gear pump, the combination comprising:
a housing including a cover plate;
means defining a pumping chamber in said housing;
an inlet leading to and an outlet leading from said pumping chamber;
rotatable pumping means disposed in said pumping chamber for drawing fluid from said inlet under inlet pressure, pressurizing the fluid and forcing it out said outlet under outlet pressure, said pumping means provided with axially extending journals;
bearing means situated in said housing and adapted for rotatably mounting said journals;
at least one of said bearing means being an axially movable pressure loadable bearing means, said pressure loadable, bearing means having means defining pressure loading chambers at the rear thereof, which loading chambers are adapted to be subjected to outlet pressures;
first fluid communication means between said outlet and said pressure loading chamber means at the rear of said pressure loadable bearings for directing outlet fluid pressure to said chamber means;
second fluid communication means between said journals and said inlet for directing journal leakage to said inlet;
pressure confining loading member means circumferentially extending around said journals and in sealing engagement with said pressure loadable bearing means, said loading member means having forward portions of large diameter and rearward piston portions extending into said cover plate, said larger diameter forward portions adapted to seal said journals from said loading chamber means,
said forward portion of said loading member means overlaying said journals and engaging said pressure loadable bearings to define low pressure chamber means and said piston portions extending into said cover plate to define high pressure loading chamber means;
said high pressure loading chamber means at the rear of said loading member means being in communication with said outlet by means of said first communication means;
said forward portions of said loading member means characterized by being offset toward the inlet side of the pump and said rearward piston portions being offset toward the outlet side of the pump, whereby said loading member means compensate for that pressure gradient condition existing between inlet and outlet.

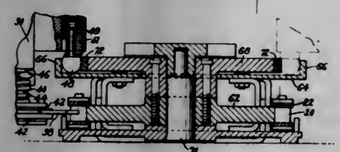
3,296,978
RAILROAD SLEEPER EXTRACTOR
William J. Yard, Cavan, South Australia, Australia, assignor to Australian Railway Equipment Supply Company Proprietary Limited, Adelaide, South Australia, Australia, and Trak-Chief Manufacturing Proprietary Ltd., Cavan, South Australia, Australia
Filed Sept. 2, 1964, Ser. No. 393,945
8 Claims. (Cl. 104—9)



1. A railroad sleeper extractor comprising:
a main frame,
a guide frame extending upwardly from one side of the main frame,
guide means extending along the guide frame,
a clamp sub-frame extending outwardly from the guide frame,

complementary guide engaging means on the sub-frame engaging said guide means on the guide frame and guiding the sub-frame in vertical movement relative to the guide frame,
a reaction track on the guide frame disposed parallel to the guide means thereon, and
reaction track engaging means on the clamp sub-frame engaging the inner surface of the reaction track, said clamp sub-frame carrying a horizontal extractor cylinder and a sleeper clamp operatively connected thereto,
whereby the moment applied by the clamp sub-frame in the direction of its overhung weight is partly resisted by the reaction track.

3,296,979
CONVEYOR SYSTEMS
Edward S. Babson, Ipswich, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Nov. 25, 1964, Ser. No. 413,756
4 Claims. (Cl. 104—172)



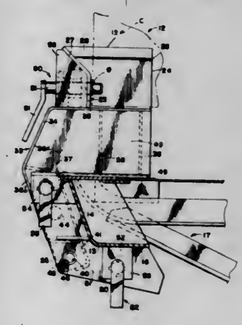
1. A transfer mechanism for use with a conveyor system in which an article carrying device is provided with a rotatable guide detent, comprising a guide rim adapted to guide the detent through a predetermined path, and a drive member associated with said guide rim and having a resilient drive surface spaced therefrom so that the detent is resiliently gripped therebetween, and means moving said drive member in relation to said guide rim so that the rotatable detent is rotatably driven along said rim.

3,296,980
RAILWAY HOPPER CAR CLOSURE LATCHING AND SEALING MEANS
William E. Fritz, Hinsdale, Ill., assignor to Union Tank Car Company, a corporation of New Jersey
Filed Aug. 26, 1963, Ser. No. 304,445
5 Claims. (Cl. 105—248)



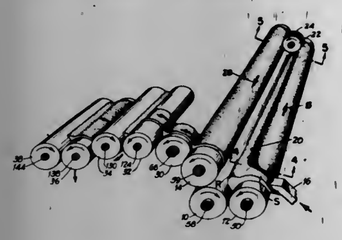
1. In a railroad car comprising:
(A) means defining a discharge outlet,
(B) means for opening and closing said outlet, and
(C) independently operable cover means for sealing said outlet below said opening and closing means,
the improvement in means for preventing inadvertent opening of either said opening and closing means or said cover means comprising:
(1) first means for operating said opening and closing means,
(2) second means for closing said cover means,
(3) said first and second means being independently operable,
(4) means providing aligned openings in said first and second means when said opening and closing means and said cover means are both closed,
(5) a car seal passing through said aligned openings so as to fixedly interconnect said said first and second means, and
(6) said first and second means being constructed and arranged such that movement of either said first means or said second means relative to the other breaks said car seal,
(D) whereby presence of an unbroken car seal confirms that neither said opening and closing means nor said cover means has been opened.

3,296,981
CONTAINER HOLD DOWN BRACKET ARRANGEMENT
Ralph B. Bergstrand, Clearwater, Fla., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Mar. 18, 1965, Ser. No. 440,763
3 Claims. (Cl. 105—366)



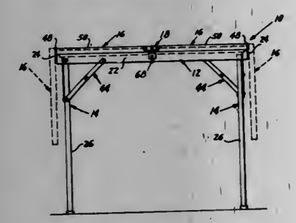
1. A container hold down bracket arrangement for indexing and latching a container on the floor of a railway flat car having a side sill including an upstanding web and a inwardly projecting substantially horizontal web spaced below said floor, said container hold down bracket arrangement comprising a substantially vertical right angular corner engaging means adapted to engage the lower corner of a container, horizontal base means supporting said corner engaging means adapted to rest on the floor of said flat car overlying said side sill in an operative container engaging position, hinge leaf means extending downwardly from said base means in substantial parallelism with said upstanding web of said side sill when said base means is in said operative container engaging position, hinge plate means formed complementary to said side sill, pivot means pivotally connecting the lower end of said hinge leaf means to said bracket means at the juncture of said upstanding portion with said horizontal portion, and means mounted on said upstanding portion engageable with said hinge leaf means for detachably latching said corner engaging means in said operative container engaging position, and means on said horizontal portion engageable with said hinge leaf means for detachably latching said corner engaging means in a position underlying said side sill when said corner engaging means is turned from the operative position about said pivot means so that said hinge leaf means lies substantially parallel to said horizontal portion and said corner engaging means are in an inoperative stored position beneath said side sill.

3,296,982
CONTINUOUS MIXING AND DEVELOPING MACHINE
Joseph A. Zang, Rockville Centre, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed June 16, 1964, Ser. No. 375,526
7 Claims. (Cl. 107—30)



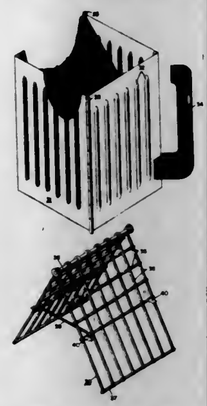
6. Apparatus adapted for work input into a plastic substance comprising a pair of parallel spaced counter rotating rollers, a doctor blade engaging one of said rollers along its length in a line subsequent in the direction of rotation thereof to the line of closest adjacency of said roller to the other of said pair, first means adjacent one end of said rollers to deliver plastic substances to said pair of rollers at one point and removal means at a second point adjacent the other end of said rollers from said first point.

3,296,983
TABLE
James A. Brush, P.O. Box 163, La Crosse, Wis. 54601
Filed July 29, 1965, Ser. No. 475,819
4 Claims. (Cl. 108—90)



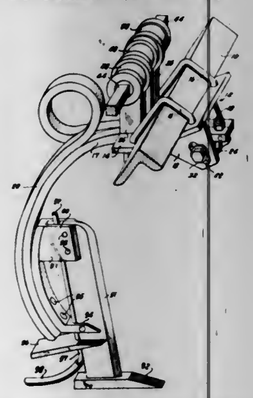
1. A table comprising a flat quadrangular top having a smooth upper surface defining a game playing area adapted for the reception of playing pieces, foldable legs secured to the underside of said top, upstanding first hinge leaves secured to the edges of two opposed sides of said top, hinge pins at the upper extremities of said first hinge leaves, second hinge leaves pivoted on said hinge pins, rigid opaque rectangular cover sections, each of an area substantially equal to one half the area of said upper surface, each having an edge secured to the second hinge leaves on one of said opposed sides, so as to fold over said upper surface to completely cover the same, said cover sections each having a pad of an area substantially coextensive therewith secured to its underside when in folded-over relation, said pad being formed of soft compressible resilient material to overlie playing pieces remaining on said playing area, said upstanding first hinge leaves extending above said upper surface a distance substantially equal to the combined thickness of the adjacent cover and its associated pad, whereby said cover sections lie in flat relation when folded over said top.

3,296,984
POLYGONAL BRIQUETTE IGNITER
Arden N. Durfee, 6633 S. Datura, Littleton, Colo. 80120
Original application July 22, 1963, Ser. No. 296,681, now Patent No. 3,216,379, dated Nov. 9, 1965. Divided and this application Oct. 15, 1965, Ser. No. 505,111
5 Claims. (Cl. 110—1)



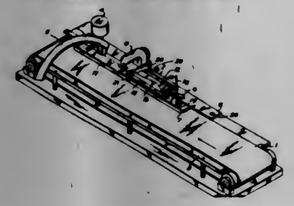
1. An igniter for a charge of sized, particulate solids, wherein said charge is exposed to a flame until ignited: comprising a substantially polygonal chimney means and substantially openwork support means including a substantially openwork grate adapted to support said chimney intermediate the top and bottom of said support means and to support, on substantially the entire surface of said grate within the chimney, said charge.

3,296,985
OSCILLATING PLOW AND FERTILIZING APPARATUS
Dothan L. Shelton, 2100 S. Polk, Amarillo, Tex. 79109
Filed May 24, 1963, Ser. No. 283,151
13 Claims. (Cl. 111—7)



1. An agricultural implement comprising in combination:
(a) a frame member,
(b) at least one clamp attached to the frame member,
(c) a depending shank pivoted to the clamp about an axis normal to the direction of draft,
(d) means interconnecting the clamp and shank for oscillating the shank about the axis by which it is pivoted to the clamp,
(e) a plow point on the bottom of the shank,
(f) a tube adapted to carry fluid soil treatment material attached to the bottom of the shank,
(g) a portion of the tube trailing behind the plow so that the fluid material is expelled at a point to be sealed in the ground, and
(gg) said portion of the tube trailing behind the plow constructed of pliant material.

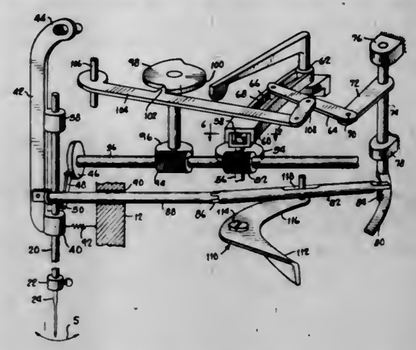
3,296,986
APPARATUS FOR FOLDING MATERIAL
Hy Gansl, New York, N.Y.
(138—15 Franklin Ave., Flushing, N.Y. 11355)
Filed Feb. 26, 1964, Ser. No. 347,551
9 Claims. (Cl. 112—2)



1. Apparatus for forming a hem on a foldable piece of material, said apparatus comprising: a driven conveyor belt adapted for longitudinally advancing a piece of material supported thereon, a stationary folding device supported adjacent said belt and in the path of the material, said folding device comprising a flat plate on which a portion of the material is adapted to rest as said material is being advanced, a second flat plate located above the conveyor belt and spaced from the first flat plate to define a gap of substantially uniform width extending in the direction of advancement of the belt, a bar on said first plate extending upwardly therefrom towards said second plate and in the direction of travel of the material to pass over said gap for gradually and guidably folding the material laterally extending beyond the gap upwardly about an axis coincident with the gap, a longitudinally extending folder supported on said second plate, said folder having a curved shape and extending from said second plate over said first plate, said folder including a portion adjacent said bar at a level substantially higher than said second flat plate for receiving the thus folded material from said bar, the curvature of said folder being such that it gradually folds the material downwardly as the material is advanced by said belt, and a longitudinally extending guide supported on said first plate and extending over said gap to overlie said second plate and be positioned adjacent said folder to define a second longitudinal gap of substantially uniform width through which the material is caused to pass as said material is folded downwardly by the folder.

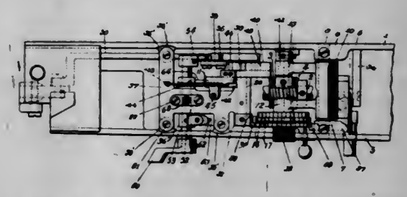
3,296,987
CONTROL DEVICE FOR CHANGING THE RANGE OF STARTING POINT AND SWING AMPLITUDE OF A NEEDLE IN A ZIGZAG SEWING MACHINE
Shinichi Kawaguchi, Tokyo, Japan, assignor to Riccar Sewing Machine Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed July 21, 1965, Ser. No. 473,666
5 Claims. (Cl. 112—158)

1. In a zigzag sewing machine having a push rod, a needle bar which moves sidewards in response to said push rod acting thereagainst, an adjustable swing amplitude control mechanism comprising a rocker bar connected at one end to pivot about a fixed point in said machine in a plane parallel to said push rod, a connecting arm also pivoted at one end to a fixed point in said machine, a connecting link pivotally connected at one end to the other end of said connecting arm, the other end of said connecting link being pivotally and slidably connected to said rocker bar at selectable points therealong to control the swing amplitude of said needle bar, an arcuate arm, means mounting said arcuate arm parallel to and rotatable with said connecting arm, an interlocking lever having



means pivotally connecting one end thereof to said push rod and control means operatively connected to said lever to cause the other end of said interlocking lever to pivotally and slidably interconnect with said arcuate arm at selected points therealong.

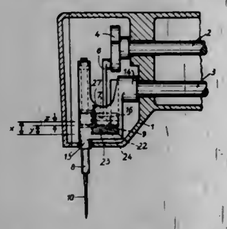
3,296,988
ZIGZAG SEWING MACHINE
Juji Yamagiwa, Kawachinaganoshi, Japan, assignor to Fukuske Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed May 21, 1959, Ser. No. 814,839
Claims priority, application Japan, Nov. 17, 1958, 33/33,174
6 Claims. (Cl. 112—158)



1. In a sewing machine, in combination, a buttonhole stitching device, comprising, in combination, cam follower means; mounting means for mounting cam follower means for oscillation about an axis and for movement between three positions; operating means for moving said cam follower means between said three positions; cam means having two first cam tracks and one second cam track respectively engageable with said cam follower means in said three positions of said cam follower means, each of said first cam tracks having a plurality of alternating projections and recesses for oscillating said cam follower means about two spaced centers of oscillations, respectively, and said second cam track having a plurality of alternating projections and recesses for oscillating said cam follower means about a center of oscillation located intermediate said centers of oscillations and at such an amplitude as to overlap the oscillations of said cam follower means under control of said first cam tracks; a needle bar assembly; means for connecting said cam follower means to said needle bar assembly so that the same is transversely oscillated under the control of said cam follower means, said needle bar assembly producing transverse stitches in transversely spaced positions when said cam follower means cooperate with said first cam tracks, and producing transverse stitches overlapping with the

stitches produced under control of said first cam tracks when said cam follower means cooperates with said second cam track; feed reversing means for reversing the feeding direction in which a material is fed to said needle bar assembly; and means for actuating said feed reversing means for effecting feeding in opposite directions only when said cam follower means is in the two positions, respectively, in which said cam follower means cooperates with said first cam tracks.

3,296,989
LUBRICATING MEANS FOR SEWING MACHINE DRIVE ASSEMBLIES
Hans Orth, Alsenborn, and Karl Weber, Kaiserslautern, Germany, assignors to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany
Filed July 16, 1964, Ser. No. 383,191
Claims priority, application Germany, July 24, 1963, P 32,267
4 Claims. (Cl. 112—256)



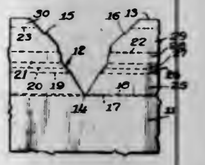
1. Lubricating means for drive assemblies of sewing machines comprising a machine drive assembly including a driven component, said driven component having a portion defining a container having a closed bottom and which is open at the top, a store of lubricant in said container extending a distance x above said bottom, at least one operating component movable relative to said container and a bearing means for said operating component, said portion defining said lubricant container being disposed at a lower level than said operating component said operating component and said bearing means, said operating component having at least one surface portion adapted to dip into said lubricant during each cycle of operation to a distance y above said bottom which is less than said distance x.

3,296,990
METHOD FOR REINFORCING SEWN MATERIAL
Luther G. Simjian, Laurel Lane, Greenwich, Conn. 06830
No Drawing. Filed Sept. 1, 1964, Ser. No. 393,770
4 Claims. (Cl. 112—262)

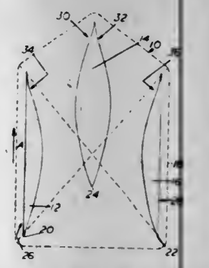
1. A method for reinforcing sewn material in which a thread penetrates the material comprising the steps of: applying a tool at the area of thread penetration, and subjecting said area by means of said tool to ultrasonic energy of a power level sufficient to cause the dissipated energy to soften the material and flow around the thread. thread.

3,296,991
CORNER CONSTRUCTION FOR METAL CABINETS
Emanuel Rawson, Chicago, Ill., assignor to Grand Sheet Metal Products Co., Melrose Park, Ill., a corporation of Illinois
Filed May 13, 1964, Ser. No. 367,006
4 Claims. (Cl. 113—116)

1. A method of forming a miter corner for a cabinet which comprises the steps of cutting a triangular notch in one edge of a blank of sheet metal, bending said blank along a plurality of lines parallel to said edge to provide a plurality of angularly disposed sections with angles of different magnitudes between adjacent bend lines, the bend line most remote from said notched edge of said blank passing through the apex of said triangular notch, cutting each side of said notch at an angle of 45° to the front and back surfaces of the blank through the thickness of said blank, the angle of 45° on one side of said notch being oppositely directed to the angle of 45° on the opposite side of said notch, and bending said blank along a line extending through the apex of said triangular notch at right angles to said parallel bend lines, thereby bringing the edges of said angularly disposed sections together to form a miter corner free of any gap between meeting edges in the area exposed in the completed cabinet structure.



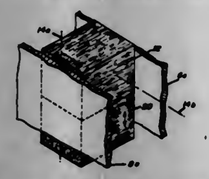
3,296,992
SHIPS
Harrison Lackenby, 55 Warwick Square, London, England
Filed Nov. 16, 1964, Ser. No. 411,519
Claims priority, application Great Britain, Nov. 25, 1963, 46,462/63
2 Claims. (Cl. 114—61)



1. A ship comprising three hulls spaced apart in the athwartships direction and relatively staggered in the fore-and-aft direction, and deck means interconnecting said hulls, the port and starboard hulls corresponding in shape and size to starboard and port halves, respectively, of the central hull considered as divided longitudinally along its central vertical plane, said port and starboard hulls, thus having mutually-remote flat outer sides and single starboard and port bows, respectively, and the relative positions of adjacent bows being such that the bows of the port and starboard hulls are spaced in a fore-and-aft direction relative to the bow of the central hull a distance more than one-third and less than one-half the length of said central hull, whereby, when the ship is in motion, the wave systems generated by adjacent curved hull surfaces are phased so as to interfere favourably with one another and so reduce the wave-making component of resistance to progress of the ship.

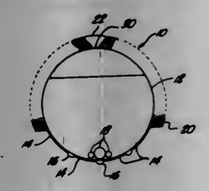
3,296,993
PACKING MEANS
Henry Vranian, Rte. 1, West Point, Va. 23181
Filed Apr. 30, 1965, Ser. No. 452,272
24 Claims. (Cl. 114—69)

1. In combination, a pair of elements defining a space therebetween, expandable means at least partially filling said space, said expandable means expanding to completely fill said space upon exposure to, and absorption of, a liquid and said expandable means including a fixative



which sets upon reaction with the liquid to stabilize said expandable means in its expanded condition.

3,296,994
STRUCTURE FOR TRANSPORT OF MATERIALS THROUGH WATER
Joseph F. Schirtzinger, Pasadena, Calif., assignor to Air Logistics Corporation, Pasadena, Calif., a corporation of California
Filed Oct. 26, 1964, Ser. No. 406,507
5 Claims. (Cl. 114—74)



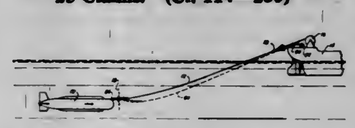
1. A structure for transport of materials through the water comprising:
(a) an elongate semi-rigid tubular member;
(b) a plurality of sheets, each having two longitudinal edges;
(c) plastic means joining each edge of each sheet in the plurality to an edge of different adjacent sheets to provide a substantially corrugated pattern of sheets in a folded position;
(d) means joining a longitudinal edge of two different sheets of the plurality of sheets to a portion of the outer surface of the tubular member along its length to form an envelope of sheets encompassing the tubular member; and
(e) means at the ends of the sheets to define a fluid-tight enclosure together with the sheets and the joining means;
(f) said plastic having a high ratio of tensile strength to tensile modulus of elasticity enabling the joining means to be opened to expand the sheets to a substantially elliptical cross-section by pressure from within the enclosure and further enabling the joining means to return the sheets to the folded position upon removal of the pressure.

3,296,995
METHOD AND APPARATUS FOR TOW FIXATION
Harold E. Van der Linde, New Canaan, Conn., assignor to The Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,165
7 Claims. (Cl. 114—235)



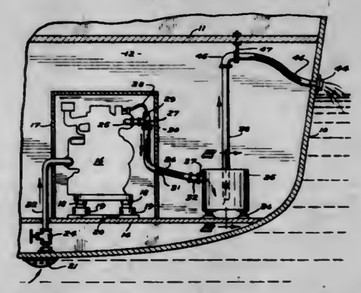
1. Apparatus for parting a cable extending between a towing vessel and a barge comprising a replaceable explosive canister mounted intermediate the ends of said cable and upon detonation dividing said cable into a first length secured to said tow vessel and a second length secured to said barge, electrical conduits extending along said first length from said vessel to said canister to provide a detonating charge to said canister, means for securing one end of said canister to said first length, means to secure the opposite end of said canister to said second length, a sea anchor secured to said first length at a position adjacent said canister, and means for releasing said sea anchor upon detonation of said charge in said canister.

3,296,996
METHOD AND APPARATUS FOR SLOWING THE FORWARD SPEED OF A TOWED SUBMERGED VESSEL
William J. Miller, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,285
25 Claims. (Cl. 114—235)



1. A device for decelerating a submerged vessel towed by a vessel on the surface by means of a flexible tow line, said device comprising:
fluid flow resistance means adapted for movement on said tow line between said submerged vessel and the towing vessel, and including
an annular body dimensioned to slidably encircle said tow line for sliding movement therealong, and
a hydrodynamic resistance element mounted on and movable relative to said annular body; and
control means connected to said fluid flow resistance means and dimensioned to extend at least from said resistance means to said towing vessel whereby the movements of said resistance means on said tow line can be controlled from said towing vessel.

3,296,997
EXHAUST AND MUFFLING SYSTEM FOR MARINE ENGINES
James C. Holby, Minnetonka, and Joseph D. Menth, Fridley, Minn., assignors to Studebaker Corporation, South Bend, Ind., a corporation of Michigan
Filed June 22, 1965, Ser. No. 465,946
4 Claims. (Cl. 115—5)



1. In an exhaust system for an internal combustion engine mounted within the hull of a marine craft so as to be disposed below the water line when the craft is afloat, an exhaust line adapted to be connected to the engine for carrying off combustion gases, a liquid line for connection to the engine for carrying off engine coolant liquid, a muffler drum having a bottom and adapted

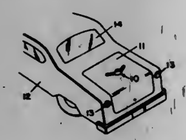
to be disposed beside the engine and below the water line, a fluid discharge line having a singular internal passageway and having one end connected to said exhaust line and said liquid line to receive and intermix in said passageway fluids therefrom and then extending away and downwardly from the engine and having its other end connected to the drum to be in open communication therewith to discharge said intermixed fluids into the drum so that the liquids fall upon the bottom thereof, an upright imperforate walled stack on the drum extending downwardly into the drum and having its lower open end disposed within the drum below said other end of the fluid discharge line spaced relation to the drum bottom and its upper end disposed above the water line, conduit means connected to the upper end of the stack and extending through the hull above the water line, and the space within the drum between connection of the fluid discharge line to the drum and the lower open end of the stack being unencumbered whereby as the liquid on the bottom rises toward said lower open end of the stack a pressure differential will be set up between the drum interior and the stack interior so that the kinetic energy of the combustion gases will carry portions of the liquid upwardly through the stack and out the conduit means.

3,296,998

INERTIALLY ACTUATED SIGNAL DEVICES

Norbert A. Kirk, 1048 Byron, Chicago, Ill. 60613

Filed Mar. 9, 1966, Ser. No. 532,994
8 Claims. (Cl. 116—28)



1. In an inertially actuated signal device for vehicles, the combination of elongated hollow signalling means formed from light-transmitting material, a source of light oriented to illuminate said signalling means from the interior thereof in a longitudinal direction, and inertia-responsive light blocking means movable in said signalling means longitudinally toward and away from said source of light, said light blocking means being operative to permit illumination of only that portion of the signalling means between the light source and the light blocking means while leaving the remaining portion of the signalling means substantially without illumination by the light source, whereby the illuminated portion of the signalling means is variable in length in accordance with the distance of said light blocking means from said light source.

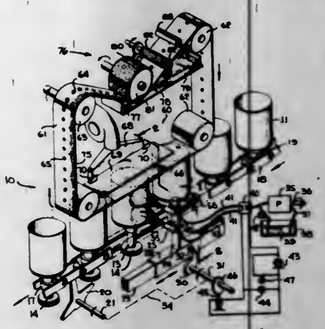
3,296,999

APPARATUS FOR SHIELDING PAIL OPEN TOPS WHILE SPRAYING BODY EXTERIORS

Burton L. Gamble, Hinsdale, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Nov. 27, 1963, Ser. No. 326,428
5 Claims. (Cl. 118—2)

1. An apparatus for spraying a coating material upon an article, said apparatus comprising a conveyor means for transporting said article through a spraying zone, support means on said conveyor means for supporting said article, spraying means for directing a coating of material upon said article, masking means for shielding a portion of said article to prevent a coating from being applied thereto, said masking means including an endless belt having a horizontal flight thereof disposed adjacent to and slightly spaced above said article, and means for directing



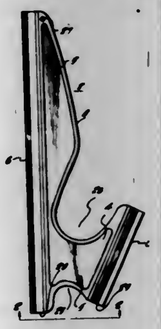
a sheet of air between said belt and said article toward said spraying means.

3,297,000

PAINT SHIELD

David F. Jorgensen, 6220 Aldama St., Los Angeles, Calif. 90042

Filed Apr. 11, 1966, Ser. No. 541,559
10 Claims. (Cl. 118—504)



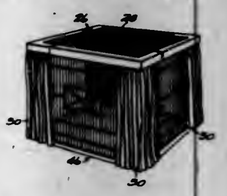
1. A paint shield comprising in a thin substantially flat unitary structure a first arm portion having a long straight masking edge, a second arm portion having a short straight masking edge and converging in direction at one end with one end of the first arm, the converging ends being truncated and squared off and a web portion connecting the arms together near the converging ends.

3,297,001

BIRD CAGE COVER

Bernard W. Locke, Pine Lake Trailer Camp, and Helen E. Kerchner, 245 Pine Lake Ave., both of La Porte, Ind. 46350

Filed July 9, 1965, Ser. No. 470,811
8 Claims. (Cl. 119—17)



2. A bird cage cover comprising
an extensible and retractable multiple part frame

adapted to bear on the margin of the top of a bird cage,
an elastic band carried by said frame and urging it to a retracted position, and
a plurality of flexible drape panels having apertures and threaded on said band.

3,297,002

FOUNTAIN PEN

Werner Engler, 26 Rankestrasse, Kusnacht, Zurich, Switzerland

Filed Oct. 23, 1964, Ser. No. 406,016
Claims priority, application Switzerland, Oct. 25, 1963, 13,103/63
7 Claims. (Cl. 120—42.04)



1. A fountain pen comprising an outer sleeve, a nib carrier which is displaceable from an inoperative position in which the nib is within the sleeve to an operative position in which the nib is outside the sleeve, an ink chamber within the sleeve and a valve which stops the flow of ink to the nib when the carrier is in the inoperative position, the said valve comprising a valve seat, a resiliently deformable cover over the valve seat, a pressure member adjacent the cover at the valve seat, a leaf spring attached to the carrier and supporting the pressure member and means mounted on the outer sleeve and engaging the pressure member only when the carrier is in the inoperative position to displace said pressure member and cause the cover to contact the valve seat whereby the valve stops the flow of ink to the nib.

3,297,003

PENCIL OR PEN WITH A MOVING POINT

Bernard S. Benson, Chateau de Chaban, Saint-Leon-sur-Vezere, Dordogne, France

Filed Feb. 15, 1965, Ser. No. 432,699
Claims priority, application France, Feb. 20, 1964, 964,544
6 Claims. (Cl. 120—45.6)



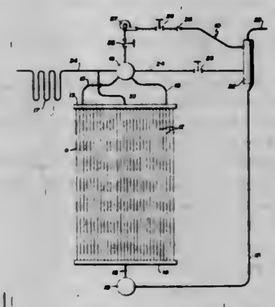
1. A marking device for use in applying decorative markings on a surface, said device comprising a housing having a bore therein, a marking element positioned in said bore, said marking element having a marking surface on one end thereof, first support means supported on said housing, said support means movably supporting said marking element within said bore at a point remote from said marking surface, projection means supported on said housing projecting radially inward in said bore, said projection means pivotally supporting said marking element by contacting the periphery of said marking element between said marking surface and said first supporting means, power means associated with said housing for moving said marking element, and guide means mounted on said housing adjacent said marking surface, said guide means including a noncircular aperture defined by wall means contacting said marking element and confining pivotal movement thereof by said drive means for applying noncircular decorative markings to the surface.

3,297,004

SUPERCRITICAL PRESSURE RECIRCULATING BOILER

Carl R. Midtlyng, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Aug. 26, 1965, Ser. No. 482,814
4 Claims. (Cl. 122—406)



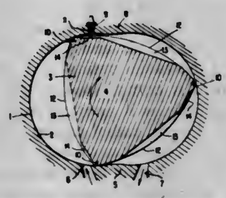
1. A supercritical pressure boiler having a combustion chamber, comprising
(a) a main heat absorption section having an inlet header at its lower end and an outlet header at its upper end, the section being located in the combustion chamber and means to heat said section whereby one part receives less heat than another part and delivers fluid of lower than average temperature to a portion of the outlet header,
(b) a recirculating circuit including a mixing device joining the said inlet and outlet headers,
(c) a feed circuit including a main feed pump connected to the mixing device,
(d) a recirculating system connected in the recirculating circuit,
(e) means connecting said portion of the said outlet header receiving fluid of lower than average temperature to the mixing device, and
(f) a superheater conduit connected to a portion of the outlet header receiving fluid of higher than average temperature.

3,297,005

ROTARY PISTON ENGINE

Heinz Lamm, Stuttgart-Bad Cannstatt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany

Filed July 17, 1963, Ser. No. 295,632
Claims priority, application Germany, July 25, 1962, D 39,452; Dec. 14, 1962, D 40,501
14 Claims. (Cl. 123—8)



1. A rotary-piston internal combustion engine of trochoidal construction, comprising:
enclosure body means provided with a multi-arched

inner surface and with side parts, said multi-arched inner surfaces having zones approaching more closely the axis of the engine,

recessed spark plug means accommodated within bore means provided in said enclosure body means,

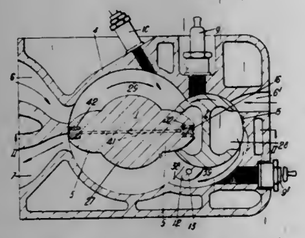
polygonal piston means provided with piston recesses in the piston flanks thereof,

means including eccentric means for supporting thereon said piston means to provide a sliding movement of the piston corners along said inner surfaces during the rotary movements of said piston means relative to said enclosure body means and to said eccentric means,

gas exchange channel means provided in said enclosure body means within the area of one of said zones, said gas exchange channel means being valved by the rotary movements of said piston means,

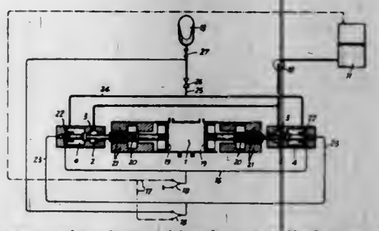
and groove means arranged in each piston flank below the normal piston flank surface which extends from the corresponding piston recess into the area of the trailing piston corner and terminates near said trailing piston corner, said groove means being substantially in alignment with the aperture of said bore means to permit the escape of gases from said bore means through said groove means.

3,297,006
ROTARY PUMPS AND ENGINES
John Wilmott Marshall, 19 Eastfield Road, Royston, England
Filed Apr. 14, 1964, Ser. No. 359,587
Claims priority, application Great Britain, Apr. 19, 1963, 15,430/63; May 22, 1963, 20,336/63; July 31, 1963, 30,264/63
19 Claims. (Cl. 123—13)



1. A rotary internal combustion engine comprising a male rotor having a plurality of substantially cycloidal shaped lobes about the circumference of said rotor, at least one female rotor adjacent said male rotor having its axis parallel to the axis of said male rotor, the periphery of said female rotor having a plurality of cavities therein for receiving said lobes, said cavities being shaped to effect sealing with the sides of said lobes and being deeper than the length of said lobes, a casing having radial walls defining intersecting parallel cylindrical bores housing said respective rotors, gear means for synchronizing the rotation of said rotors whereby each of the cavities in said female rotor receives a lobe of the male rotor during rotation, means for introducing an air and fuel mixture between said male rotor and the radial casing wall whereby during rotation said mixture is compressed by the leading face of each male rotor lobe as it approaches a female rotor cavity, a spark plug in said radial casing wall, and means synchronized with the rotation of said rotors for firing said spark plug, said spark plug being located adjacent the position at which said female rotor cavity is closed by said male rotor lobes and said firing means being synchronized to fire said spark plug just prior to the closing of said female rotor cavity.

3,297,007
ENGINE STARTING DEVICE
Louis Monpetit, L'Etang-la-Ville, France, assignor to Gemoter S.A., Zug, Switzerland, a company of Switzerland
Filed Nov. 17, 1964, Ser. No. 411,790
Claims priority, application France, Nov. 18, 1963, 954,118
5 Claims. (Cl. 123—46)

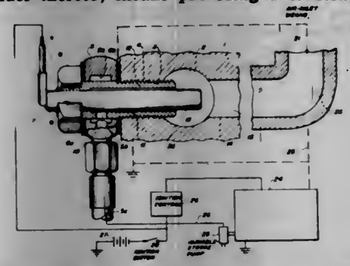


1. In an engine, in combination, a cylinder; a pair of floating piston means respectively extending into said cylinder for respective movement from outer dead center positions inwardly toward the interior of said cylinder toward each other to inner dead center positions, respectively, and then simultaneously and in synchronism from said inner dead center positions respectively back to said outer dead center positions; a pair of hydraulic means operatively connected to said pair of floating piston means for respectively urging the latter, at least during starting of the engine, from said outer dead center positions simultaneously toward each other to said inner dead center positions, respectively; blocking means operatively connected to said pair of hydraulic means for temporarily blocking movement of said pair of piston means by said pair of hydraulic means respectively from said outer to said inner dead center positions, said blocking means including a pair of valves which are respectively in closed positions preventing communication between said pair of hydraulic means and said pair of piston means while said blocking means temporarily blocks movement of said pair of piston means by said pair of hydraulic means; and a single control means operatively connected with said blocking means for rendering the latter ineffective to prevent movement of said pair of piston means by said pair of hydraulic means in a manner simultaneously releasing said pair of piston means for movement by said pair of hydraulic means toward each other from said outer to said inner dead center positions, respectively.

3,297,008
LUBRICATION SYSTEM FOR INTERNAL-COMBUSTION ENGINES
Ernst Alt and Bernhard Büchner, Ingolstadt, Günter Reges, Lenting, and Alfred Horak, Bittenbrunn, Germany, assignors to Auto Union G.m.b.H., Ingolstadt (Danube), Germany, a corporation of Germany
Filed Sept. 21, 1964, Ser. No. 397,791
Claims priority, application Germany, Sept. 24, 1963, A 44,124
14 Claims. (Cl. 123—127)

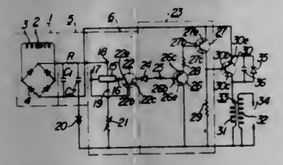
1. In an internal-combustion engine wherein a lubricant is admixed with fuel to lubricate moving parts of the engine upon operation thereof, the improvement which comprises: mixing means for admixing flowing lubricant with a liquid fuel, said mixing means including: a body formed with a passage for lubricant/fuel mixture; fuel-supply means along said passage for introducing said liquid fuel thereto; a lubricant-supply duct provided in said body and communicating with said passage for introducing said flowable lubricant thereto; and heating means along said duct for heating said lubricant prior to the introduction thereof into said passage.

3. In an internal-combustion engine wherein a lubricant is admixed with fuel to lubricate moving parts of the engine upon operation thereof, the improvement which comprises mixing means for admixing a flowable lubricant with a liquid fuel, said mixing means including: a body formed with a passage for lubricant/fuel mixture; fuel-supply means along said passage for introducing said liquid fuel thereto; means providing a lubricant-supply



duct communicating with said passage rearwardly of said fuel-supply means in the direction of flow of said mixture for introducing said flowable lubricant to said passage; and an element disposed within said duct and defining therein a narrow elongated annular clearance for said lubricant whereby the latter is admixed as a tubular stream with said fuel upon introduction into said passage.

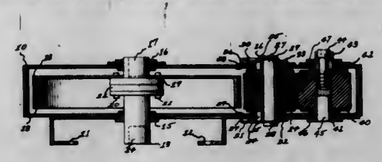
3,297,009
CONTACTLESS IGNITION DEVICES
Toshiyuki Sasaki and Yoshisada Takakura, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed July 8, 1964, Ser. No. 381,045
Claims priority, application Japan, July 10, 1963, 38/50,951
6 Claims. (Cl. 123—148)



1. A contactless ignition device adapted for automotive vehicles and the like comprising igniting position detecting means including a Hall element having input terminals and output terminals and disposed in a magnetic field produced in synchronism with the revolution of the engine, the density of the magnetic flux producing said magnetic field being variable at the fringes thereof for varying the igniting position of the engine, means for applying an adjustable control current to the input terminals of the Hall element an igniting semi-conductor, an ignition coil energized by said igniting semi-conductor, and ignition control means operatively coupled to the output terminals of said Hall element and to the input of the igniting semi-conductor for controlling conduction through said igniting semi-conductor to thereby control the time of production of an ignition spark by said ignition coil.

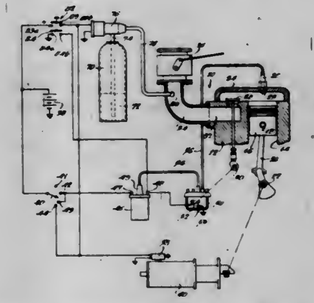
3,297,010
AUXILIARY POWER-DRIVEN SMALL ENGINE STARTER
Da Ruben L. Beck, Orlando, Fla., assignor of one-third to David E. McGinnis, Absecon, N.J., and one-third to David E. Nickerson, Orlando, Fla.
Filed Sept. 21, 1964, Ser. No. 397,921
1 Claim. (Cl. 123—179)

In a starter mechanism for an internal combustion engine having an engine driving shaft with one end projecting from the engine, the improvement comprising a flywheel having a cylindrical rim, means for connecting said flywheel in driving relation with the projecting end of said driving shaft, a friction gear train for engaging the rim of said flywheel to drive the flywheel and crank said engine, said gear train including a drive roll of compressible rubber-like material and an idler roll, said rolls being mounted on axis parallel with one another and with the



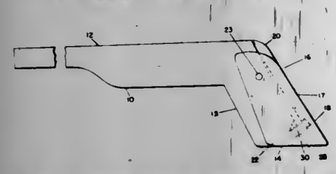
axis of said flywheel, means including a frame for rotatably supporting said drive roll in a fixed, radial position with respect to said flywheel and for rotatably supporting said idler roll for radial movement into, and out of, contact with the rim of said flywheel, and drive means for said drive roll to connect with a power source, said means being movable to apply a force to also compress said drive roll axially to thereby expand said roll diametrically forcing said idler roll to engage and drive said flywheel.

3,297,011
PRESERVATION SYSTEM FOR ENGINES
Lysle B. Gray, Baltimore, Md., assignor to Brunswick Corporation, a corporation of Delaware
Filed Feb. 2, 1965, Ser. No. 429,834
10 Claims. (Cl. 123—198)



4. An internal combustion engine comprising an engine block having at least one combustion chamber therein, a piston within said combustion chamber, ignition means for igniting fuel within said combustion chamber and including means responsive to the position of said piston within said combustion chamber for actuating said ignition means; motor means for cranking said engine, and an engine presevation control means comprising: means for holding preservative oil, a spray nozzle in said engine, a valve having an electric operator, conduit means including said valve and connecting said nozzle to said holding means whereby when said valve is opened, preservative oil may pass from said holding means to said nozzle to be sprayed therefrom, a switch, and circuit means including said switch for connecting said electric valve operator and said motor means across a source of electrical power and at the same time disabling the ignition means whereby when said switch is closed, said valve is opened to permit preservative oil to flow into said engine and said motor means cranks said engine to draw preservative oil into said combustion chamber to preclude rusting and corrosion within the latter.

3,297,012
TOY RUBBER BAND-PROJECTING GUN
Kenneth D. Kirkland, 123 S. Downing St., Denver, Colo. 80209
Filed Aug. 28, 1963, Ser. No. 305,052
4 Claims. (Cl. 124—18)



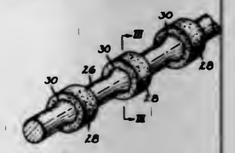
1. A toy gun for firing rubber bands and the like comprising a barrel, and coextensive and complementary stationary and movable handle portions, said stationary handle portion being secured to one end of the barrel and inclining rearwardly and downwardly therefrom to provide a rearward, downwardly inclined surface, said movable portion having an upper hammer and lower trigger arm in facing relation to the downwardly inclined surface and forwardly extending sides overlapping opposite sides of said stationary handle portion, pivot means pivotally interconnecting said movable and stationary handle portions, each of said side plates extending from above said pivot means downwardly to the bottom of the respective sides of said stationary handle and resilient means enclosed between the inclined surface and said trigger arm normally biasing said trigger arm away from said inclined surface and biasing said hammer against the upper end of said inclined surface to yieldingly engage a rubber band placed between said hammer and the upper end of the inclined surface whereupon inward pressing of said trigger arm against the bias of said spring the rubber band is released for discharge.

3,297,013
BOW STRING SERVINGS
Earl W. Smith and Mildred Morgan, Pine Bluff, Ark., assignors to Ben Pearson Incorporated, Pine Bluff, Ark., a corporation of Arkansas
Filed Nov. 12, 1963, Ser. No. 322,610
3 Claims. (Cl. 124—30)



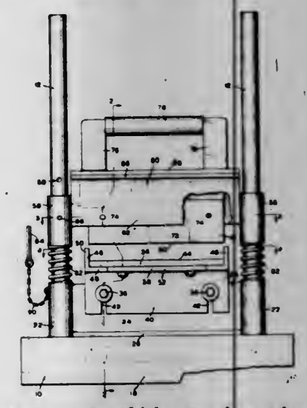
1. Means serving at least one section of a bow string to protect and reinforce said section, said serving means comprising a filament of extruded plastic closely spirally wound about said section in a plurality of turns, the terminal part of said filament lying beneath a number of said turns and extending externally of said turns between two adjacent said turns, and an integral globule on the distal end of said terminal part, spanning the space between said two turns and abutting against the exterior of said two turns, locking said terminal part against removal from said turns, said globule adhering to said two turns.

3,297,014
CABLE-TYPE STONE CUTTING SAW
Henry A. Snow, Shrewsbury, Mass., assignor to Snow Diamond Products, Inc., Marlboro, N.H., a corporation of New Hampshire
Filed May 13, 1964, Ser. No. 367,152
2 Claims. (Cl. 125—21)



1. An improved saw of the type utilized in cutting stone comprising a combination of an elongated flexible cable, a plurality of small diameter abrasive wheels on said cable, said wheels provided with centrally extending passageways substantially the diameter of said cable to provide a tight threading of said cable therethrough, the outside diameter of said wheels corresponding to the desired width of the cut to be made in said stone, each of said wheels having throughout a unitized malleable bond integrally fabricated with a diamond abrasive substance, means for maintaining each of said abrasive wheels in fixed, non-rotatable spaced relationship on said cable, said means comprising slightly raised portions of said cable to form shoulders on said cable at either side of each said wheels, said shoulders having outside diameters larger than the inside diameters of said centrally extending passageways, the extremities of said cable joined to form an endless cutting element, and means for continuously driving said cutting element in one direction.

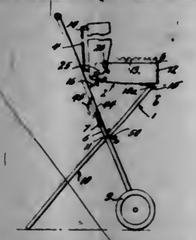
3,297,015
MASONRY CUTTER
Marvin S. Crawford, Boulder, Colo., assignor of one-half to Delbert R. Long, Boulder, Colo.
Filed Mar. 30, 1964, Ser. No. 355,725
4 Claims. (Cl. 125—23)



1. The masonry cutter which comprises, a base, a pair of track-forming uprights fastened to the base in upstanding spaced parallel relation to one another, a stationary blade supported in fixed position on the base and extending upwardly therefrom in the plane defined by the uprights, said stationary blade having the exposed upper edge thereof sharpened, horizontally-disposed vertically adjustable tray means having upstanding side walls and

located adjacent the stationary blade on one side thereof adapted to support the material to be cut in overhanging relation to said stationary blade and in position to maintain substantially continuous line contact therewith, a reciprocating frame mounted on the uprights for vertical sliding movement thereon and spanning the space therebetween, a movable blade secured within the reciprocating frame for movement therewith, said movable blade having the lower edge thereof sharpened and exposed to lie in co-planar relation to the sharpened edge of the stationary blade, said frame and movable blade cooperating to provide a cutter assembly that can be raised on the track-forming uprights and allowed to drop free onto the top of the material to be cut with a guillotine-like impact fracturing action, and means comprising at least one compression spring mounted on one of said uprights between the base and reciprocating frame adapted to prevent the movable blade from contacting the fixed blade registering apertures in one of said uprights and said reciprocating frame and latch pin means releasably fitted into said apertures to interconnect the reciprocating frame and said track-forming uprights to lock the movable blade in fixed position.

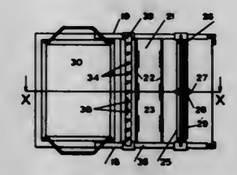
3,297,016
PORTABLE, FOLDING BARBECUE GRILL
Harold E. Rhodes, P.O. Box 53, Etna Green, Ind. 46524
Filed Mar. 10, 1965, Ser. No. 438,625
14 Claims. (Cl. 126—25)



1. In a combination portable outdoor grill and cart, an elongated handle portion terminating at one end in an axle-supporting fork, an axle mounted across said fork, wheels mounted on said axle, an elongated leg portion pivoted intermediate its ends on said handle portion intermediate its ends for angular movement relative to said handle portion between a folded position in which said leg portion lies in the plane of the handle portion and an erected position in which said portions are substantially angularly displaced from each other, said leg portion terminating at one end in a ground-engaging foot and at the other end in a firebox-supporting member, a firebox having sides, a front end, a rear end and a bottom, said firebox being pivotally mounted adjacent one edge of said bottom on said member for angular movement toward and away from the plane of said leg portion, catch means on said firebox adjacent the opposite edge of said bottom, means on said leg portion for engaging said catch means in the folded position of said firebox, and means on said handle portion for engaging said catch means in the erected position of said firebox.

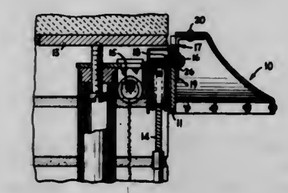
3,297,017
FOLDING BARBECUE STOVE
David Levin, 608 Lucerne Mansions, De Villiers St., Johannesburg, Transvaal, Republic of South Africa
Filed Oct. 25, 1965, Ser. No. 505,161
Claims priority, application Republic of South Africa, Feb. 11, 1965, 65/0732
8 Claims. (Cl. 126—25)

1. A collapsible barbecue stove comprising a hollow rectangular base forming a water retaining compartment, a pair of oppositely disposed side walls hinged along their lower edges to the top edges of a pair of walls of the base, supporting formations projecting inwardly from said side walls, an adjustable fire basket releasably sus-



pended from one oppositely disposed set of supporting formations and means for releasably retaining the side walls in an upright position and for suspending viands adjacent at least one open side of the fire basket.

3,297,018
FIREPLACE CANOPIES
Leonard Quittner, 1711 Lorraine Road, Reading, Pa. 19604
Filed Sept. 30, 1965, Ser. No. 491,610
2 Claims. (Cl. 126—142)

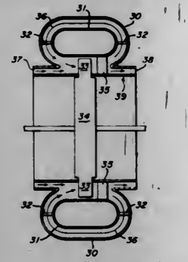


1. In combination, a fireplace canopy and a fireplace screen, said fireplace canopy comprising a pair of separately formed corners, an intermediate member assembled with said corners and holding said corners in spaced apart fixed relative positions, and a bracket extending longitudinally of said canopy, said bracket having an upright leg and a transverse leg intgral with said upright leg, said canopy being suspended from said transverse leg, said fireplace screen including a frame, said frame including support means for disengageably engaging said bracket, and said upright leg of said bracket including means for disengageable engagement with said support means, whereby said fireplace canopy is demountably mounted on said frame of said fireplace screen.

3,297,019
GAS HEATERS
Maurice O. Lawson, 119 Rubicon Road, Dayton, Ohio 45409
Original application July 24, 1963, Ser. No. 297,389, now Patent No. 3,245,399, dated Apr. 12, 1966. Divided and this application Feb. 10, 1966, Ser. No. 526,458
13 Claims. (Cl. 126—247)

1. A gas heater including a housing having means defining therein a continuous flow path, an inlet to said flow path and an outlet therefrom, said heater comprising a rotor the vanes of which are driven through a portion of said flow path and stator vanes positioned in said flow path relatively adjacent said outlet, said outlet providing for a limited discharge of gas from said flow path fractionally related to the gas driven in recirculating fashion through said flow path by said rotor vanes, the rotor adding an increment of heat to the recirculating gas in each cycle thereby, the vanes of said

rotor extending radially, generally co-planar with its hub portion, and said stator vanes being arranged to influ-



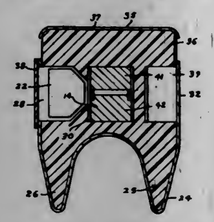
ence a high speed recirculation of gas through said flow path.

3,297,020
APPARATUS FOR DETECTING ESTRUS IN ANIMALS
Erik Mathiesen, P.O. Box 881, Petaluma, Calif. 94952
Filed Sept. 30, 1963, Ser. No. 312,458
2 Claims. (Cl. 128—2)



1. In apparatus for detecting estrus in animals, a casing insertable into the vagina of an animal and having an open compartment for receiving mucous secretions from the vagina, a pair of electrodes positioned in the compartment in spaced relation to each other and connected in an electrical circuit to be closed by the mucous secretions filling the open compartment sufficiently to contact the electrodes simultaneously, means to supply an electrical current to the circuit, and means electrically connected in the circuit to indicate visibly the closing of the circuit.

3,297,021
SELF-CONTAINED INTRA ORAL STRAIN GAUGE
Walter V. Davis, Washington, D.C., and Laurel H. Maxwell, Kensington, Md., said Maxwell assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 22, 1964, Ser. No. 361,914
4 Claims. (Cl. 128—2)



4. An intra oral strain gauge comprising; a tooth-shaped hollow element said tooth-shaped element being filled with a compressible potting material, a first cavity in said potting material centrally located within said tooth-shaped element; at least one additional cavity in said potting material adjacent said first cavity; a transmitter having a high frequency oscillator circuit therein; a pressure sensitive capacitor in oscillator circuit; said pressure sensitive capacitive element including two spaced electrodes, a dielectric spacer secured to one of said electrodes, and a resilient rubber ring located between said electrodes to provide a variable space therebetween, said pressure sensitive capacitor being located in said first cavity; the other circuit elements of said oscillator circuit being located in said additional cavity; antenna means, connected to the output of said oscillator circuit; and means, responsive to pressure on said tooth, for transmitting said pressure to said compressible potting material and to said pressure sensitive capacitor.

3,297,022
ENDOSCOPE
Frederick J. Wallace, New York, N.Y., assignor to American Cystoscope Makers, Inc., Pelham Manor, N.Y., a corporation of New York
Filed Sept. 27, 1963, Ser. No. 312,079
6 Claims. (Cl. 128—6)



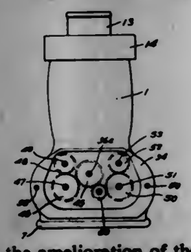
1. An endoscope suitable for use in examining internal cavities, comprising elongated tubular means forming side by side longitudinally extending chambers, said tubular means having a laterally presented opening formed therein adjacent one end thereof, a bridge member extending transversely of said tubular means in said opening, a plurality of light-carrying fibers extending in one of said chambers toward and beyond said bridge member with said fibers passing to one side of said bridge member away from said opening, said fibers adjacent said bridge member being rigidly adhered together and forming an end wall said fibers extending partially about said bridge member with said end wall disposed in said opening, and said fibers at the end thereof remote from said bridge member being adapted for connection to a source of light, whereby light conducted by said fibers and exiting through said end wall is directed primarily laterally relative to said tubular means.

3,297,023
PULSATING BODY SUPPORTING PAD WITH ALTERNATELY INFLATABLE, SUPERPOSED CELLS
Kenneth C. Foley, East Aurora, N.Y., assignor, by mesne assignments, to Affiliated Hospital Products, Inc., St. Louis, Mo., a corporation of Delaware
Filed June 9, 1964, Ser. No. 373,698
8 Claims. (Cl. 128—33)



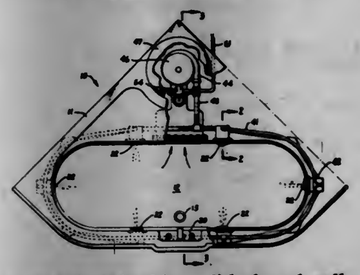
7. A pulsating body supporting pad comprising a casing, a first series of cells extending in a first direction in said casing, a second series of cells extending in substantially the same direction as said first series of cells and in alternating relationship with said first series of cells, third cell means, said third cell means on one hand and said first and second cell means on the other hand being in superposed relationship with respect to each other, first conduit means in communication with said first series of cells for conducting air to and from said first series of cells, and second conduit means in communication with said second series of cells for conducting air to and from said second series of cells, said superposed relationship preventing a body supported on said superposed sets of cells from continuously contacting and pressing upon a surface underlying said pad during alternate inflation and deflation of said first and second series of cells.

3,297,024
MASSAGING MACHINE HAVING SUCTION MEANS AND OPPOSITELY ROTATING ROLLERS
Fred M. Robinson, 1730 Maywood Place, Clarksdale, Miss. 38614
Filed Nov. 4, 1963, Ser. No. 321,147
6 Claims. (Cl. 128—38)



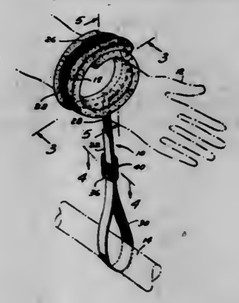
1. A device for the amelioration of the skin and subjacent portions of the body comprising a tubular handle having one end capable of being connected to a source of a vacuum, a hollow open end housing having a top connected to said handle with the bore of said handle opening therein and a downwardly extending skirt, a pair of shafts rotatably supported by and extending across said skirt, a pair of rubber members fixedly mounted on said shafts for rotation therewith and having intermeshing radial teats and driving means carried by said skirt and connected to said shafts for rotating the same in opposite directions.

3,297,025
HYDROTHERAPY TUB
Candido Jacuzzi, Lafayette, Calif., assignor to Jacuzzi Bros., Inc., Richmond, Calif., a corporation of California
Filed June 16, 1964, Ser. No. 375,474
13 Claims. (Cl. 128—66)



1. In a bathtub defined by a dish-shaped wall and having an overflow conduit opening through said wall adjacent the upper extremity thereof,
an improved hydrotherapy system incorporated into the bathtub, comprising:
(a) a plurality of water-air injection nozzles sealingly received in spaced openings formed through the wall of the bathtub at a level below the level at which the overflow conduit opens through said wall, said nozzles having air and water inlets;
(b) a pump and driving motor therefor mounted exteriorly of said bathtub, said pump having a vacuum inlet and pressure outlet;
(c) an inlet conduit extending in fluid communication between the interior of the bathtub below the level at which the overflow conduit opens through the wall thereof and the vacuum inlet of the pump;
(d) a first fluid manifold extending in fluid communication between the pressure outlet of the pump and the water inlets of each of the injection nozzles; and,
(e) a second fluid manifold extending in fluid communication between the air inlets in each of said water-air injection nozzles and the overflow conduit.

3,297,026
RESTRAINING DEVICE
Verona L. Van Pelt, 350 E. 17th St., New York, N.Y. 10003
Filed Dec. 15, 1964, Ser. No. 418,484
11 Claims. (Cl. 128—133)



1. A restraining device for an anatomical limb comprising: an elongated cushioning member for application to the limb being restrained; a strap extending from the cushioning member and having a free end and a connected end; holding means including an elongated flat band having a free end and a connected end for holding the cushioning member about the limb; connecting means for connecting the connected end of the strap to the band intermediate its ends and for connecting the band connected end to the cushioning member; an anchoring means forming part of the free end of the strap for anchoring the free end of the strap to a relatively stationary object, and locking means for locking the free end of the strap in its anchored position.

3,297,027
DEVICE FOR MOUTH TO MOUTH RESPIRATION
Willy Rüsch, Rommelshausen, near Stuttgart, Württemberg, Germany, assignor to Willy Rüsch KG., Rommelshausen, Stuttgart, Württemberg, Germany
Filed Apr. 22, 1963, Ser. No. 274,587
Claims priority, application Germany, May 12, 1962, R 32,690
6 Claims. (Cl. 128—145.5)

1. In a respiration device for mouth-to-mouth or mouth-to-nose respiration, the invention essentially consisting of:
an elongated, substantially erect soft pliable tube,
means for introducing respiratory air orally into and through said elongated tube consisting of a second tube angularly disposed with respect to said elongated tube and in communication with the hollow interior adjacent to one end thereof,
said elongated tube being essentially linear in the region

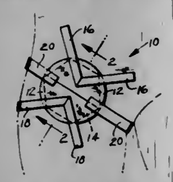
of said second tube so as to provide less resistance to the passage of fluids than said second tube,

said one end of said elongated tube being provided



with vent means having an enlarged outer surface portion with an outer diameter greater than the outer diameter of the elongated tube body.

3,297,028
GROIN BANDAGE
Pearl B. Murray, Pine Tree Road, Litchfield, Maine 04350
Filed Sept. 5, 1963, Ser. No. 306,903
4 Claims. (Cl. 128—157)



1. A groin bandage comprising, in combination, a pair of semi-circular panels made of cloth of such weave as to allow the bandage to breathe and said panels being stitched together along a central seaming line thus forming a circular configuration, a pair of V-shaped adhesive tapes carried by each of said panels providing securing and holding means for said bandage, a hexagonal absorbent pad carried by said panels providing absorption and covering for a wound, a pair of spaced apart straight tapes secured to said seaming line providing further holding of said bandage to a patient's skin, said spaced apart tapes adhering to said panels and being in alignment with each other on said seaming line of said panels external of said bandage.

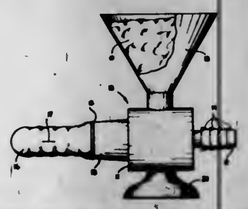
3,297,029
INHALATOR DEVICE
David C. Brinkman and Michael M. Robbins, Indianapolis, Ind., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 13, 1964, Ser. No. 351,675
2 Claims. (Cl. 128—188)

1. A device for the administration of an inhalation anesthetic which comprises:

an integral body member having a relatively larger cylindrical central portion and first and second smaller projecting portions, said first smaller projecting portion having a generally cylindrical form and being adapted to be readily received by an open end of patient connecting means, said second smaller projecting portion being generally cylindrical in form and having first and second ends, said first end being joined to said larger cylindrical central portion and said second end being partially flattened so as to be elliptical in section and having a non-rebreathing valve operatively appended thereto, and said cylindrical central portion and said first and second smaller projecting portions being substantially aligned along substantially parallel axes;

means defining an air passage through each of said cylindrical central portion and said first and second smaller projecting portions, each said air passage being disposed approximately parallel to the axis of each said portion, and said air passage being so interconnected that air may pass sequentially through said first smaller projecting portion, said cylindrical central portion and said second smaller projecting portion and vice versa;

said non-rebreathing valve being a generally cylindrical finger cot formed of elastomeric material having a



closed end and an open end, the open end being attached to said second end of the second smaller projecting portion, said finger cot having at least one slit formed without substantially any removal of material from said finger cot and said slit being formed longitudinally of the finger cot;

means defining an approximately radially disposed inlet air passage in the cylindrical central portion extending through and from a surface of the cylindrical central portion to the air passage axially disposed therein and communicating therewith;

imperforate walled fibrous pad holding means having an inlet and outlet, said outlet being operatively attached to said cylindrical central portion so as to provide direct communication between said outlet and the said means defining an approximately radially disposed inlet air passage;

and a fibrous pad substantially wetted by inhalation anesthetic and disposed within said holding means.

3,297,030
CATHETER PLACEMENT UNIT WITH REMOVABLE CANNULATED NEEDLE
Vasil P. Czorny, Wallace H. Ring, Karl A. Pannier, Jr., and James L. Sorenson, Salt Lake City, Utah, assignors to Sorenson Research Corp., Salt Lake City, Utah, a corporation of Utah
Filed Mar. 13, 1964, Ser. No. 351,691
10 Claims. (Cl. 128—214.2)



1. In a catheter placement unit,

a base member having a longitudinal groove therein,

a cannulated needle with the blunt end thereof firmly secured in said groove and the remainder projecting beyond the end of said base member,

said needle having a longitudinal slot therein in the upper portion thereof,

a catheter advancer including a passaged nipple thereon slidably mounted on said base member,

stop means at the end of said base member opposite said needle to prevent accidental separation of the base member and said advancer,

a catheter in said groove with one end extending into the projecting portion of said needle and the other end firmly anchored in the advancer nipple,

a cover frictionally associated with said base member to completely house said catheter and with one end overlying the adjacent end of said advancer, and

a needle hub member frictionally connected to said base member over the fixed end of said needle and overlying the adjacent end of said cover,

whereby as the advancer is moved along said base member to advance the catheter through said needle the cover is separated from the base member, the hub member is freed by the cover, and as the needle is withdrawn the catheter passes through the needle slot, leaving only the advancer associated with the placed catheter.

3,297,031
SUPPOSITORY APPLICATOR
Henry F. Bray, 1324 W. Knox St., Tucson, Ariz. 85705
Filed Feb. 7, 1966, Ser. No. 525,628
2 Claims. (Cl. 128—264)



1. An applicator for rectal contact laxative suppositories comprising

(a) a resilient tubular member having a substantially smooth, continuous outer surface and an outside diameter adapted for comfortable insertion into a rectal cavity, the length of said tubular member being sufficient to permit injection of a suppository at a point in a rectal cavity substantially higher than is possible by manual application;

(b) a substantially solid suppository retaining ring having an annular opening therein adapted to receive and hold a suppository for application, said ring being disposed coaxially within said resilient tubular member proximate the forward end thereof and having an outside diameter slightly in excess of the normal internal diameter of said tubular member to provide a press fit between said ring and said tubular member when said ring is positioned therewithin;

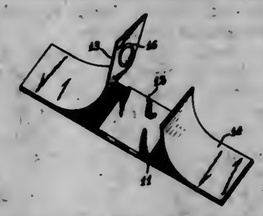
(c) a resilient, flexible plunger rod slidably disposed coaxially within said tubular member and being of a length sufficient to extend rearwardly of said tubular member forming an ejecting handle projection but extending no further than the forward end thereof when said handle is fully depressed;

(d) a positioning stop member comprising

(i) an annular retarding O-ring having an internal diameter substantially equal to the outer diameter of said tubular member and adapted to frictionally engage the outer surface of said tubular member, but slidable thereupon; and

(ii) a cylindrical member having a central aperture therein adapted for coaxial disposition upon said tubular member proximate said O-ring, the internal surface of the aperture having two surfaces, a first surface conforming generally to the cylindrical cross-section of said tubular member and a second surface adjoining said first surface having an expanding conical shape adapted to engage said O-ring when said lock stop member is in the locked position, said cylindrical member having an external surface tapered from a diameter substantially equal to the external diameter of said tubular member at the side of said cylindrical member remote from said O-ring to the diameter of said cylindrical member at a point intermediate said remote end and said O-ring.

3,297,032
ADHESIVE BANDAGE HAVING CONTAINER OF MEDICAMENT CARRIED BY REMOVABLE PROTECTOR STRIP
Alan S. Antonik, 609 W. Elk Grove Blvd., Elk Grove Village, Ill. 60007
Filed Feb. 6, 1964, Ser. No. 343,023
6 Claims. (Cl. 128—268)



1. A medicated device for attachment to the skin of the human body comprising a cover sheet of thin material having an adhesive on one surface, an absorbent pad of less length than said cover sheet attached to the adhesive surface, a protective layer of thin material attached to the adhesive surface and overlying the pad, and a rupturable container of medicament carried by said layer and lying against said pad.

3,297,033
SURGICAL SUTURES
Edward Emil Schmitt, Norwalk, Conn., and Rocco Albert Polistina, Port Chester, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Oct. 31, 1963, Ser. No. 320,543
9 Claims. (Cl. 128—335.5)

1. In a surgical needle and suture combination the improvement comprising a suture of at least one filament of stretched and oriented normally solid polyhydroxyacetic ester, said needle and suture being sterile, and the polyhydroxyacetic ester having sufficient heat resistance to withstand autoclaving, good knotability, good knot strength, and good handleability, the total denier of the suture being from 1 to 4,000.

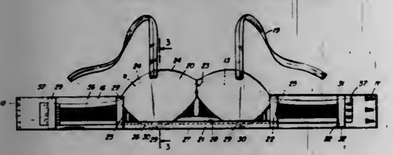
3,297,034
BENEFICIAL SKIN AND TISSUE COVER DEVICE
Paulina Peavy, 390 West End Ave., New York, N.Y. 10024
Filed May 21, 1963, Ser. No. 281,991
1 Claim. (Cl. 128—390)



An article of manufacture for covering limited facial areas of the body in the vicinity of the nose and on the nose and over sinus containing areas thereof for bene-

ficially therapeutically elevating the temperature thereof while applied thereto, said article of manufacture comprising a main article body formed of flexible sheet material, a layer of temperature elevation provoking therapeutic agent carried on an undersurface of said main article body, a self adhesive agent also carried by said surface and intermixed with said therapeutic agent, for rendering said main article body and said agents self adherent to a limited surface area of the body of the user in the facial nose and sinus areas, and a releasably adherently secured layer of flexible covering material adhered to said self adhesive agent layer for protectively covering the same before application to said body surfaces, said covering material being formed of material relatively impervious to penetration by said self adhesive agent so as to render the same readily removable by peeling when it is to be used, to expose said self adhesive layer for placement against the said skin surface and adherence thereto so as to expose said skin surface to said heat and temperature elevating beneficial effect of said therapeutic agent while covered by said main article body layer, and where said main article body layer is formed with a main central area portion, left and right wing portions for covering respectively the nose of the user, and the immediately adjacent face portions on left and right sides thereof, and an upwardly extending top area portion secured to and carried by said main central area portion, for covering portions of the forehead of the user, all for rendering said beneficial therapeutic effects thereto and to the underlying skin and sinus portions thereof, and wherein said temperature elevation provoking therapeutic agent comprises an activating and heat provoking agent selected from the class consisting of oleo resin of capsicum, chillies, peppers, and *Capsicum frutescens*.

3,297,035
OUTER GARMENT AND BRASSIERE
Janine Wright, 22 Warren Road, Maplewood, N.J. 07040
Filed Mar. 10, 1965, Ser. No. 438,502
7 Claims. (Cl. 128—455)



1. In an upper garment for women, including an outer garment and a removable brassiere, an outer garment containing an outer layer having a pair of breast cups and a body encircling portion in combination with a lining portion including

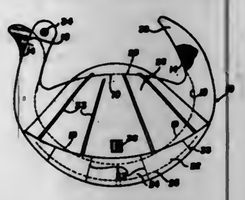
(a) a pair of breast cups attached along the top edge to the breast cups of the outer layer but free of the outer layer along the side edges and the bottom of the breast cups

(b) a strip attached along its lower edge to the outer layer below the breast cups but free along its upper edge and separable cooperating fastening means on said strip and on the bottom of the breast cup of the lining, and

(c) a plurality of straps spaced across the inside of the body encircling portion of the outer layer,

whereby the brassiere may be inserted between the outer layer and the lining of the breast cups of the outer garment and between the spaced straps of the lining and the body encircling straps of the outer layer of the outer garment and thus be held concealed and prevented from slipping up or down beyond the outer garment when the combined outer garment and brassiere are being worn.

3,297,036
STRAPLESS BRA
Angela L. Williams, 205 E. 85th St., New York, N.Y. 10024
Filed Sept. 21, 1964, Ser. No. 397,752
3 Claims. (Cl. 128—505)



1. A female garment comprising a breast covering, said covering having a peripheral adhesive strip for attachment to the body, an outer layer secured to said covering and arranged to enclose the top portion of the breast, said outer layer having a bottom portion covering substantially the entire area of said covering and a top portion covering less area than said bottom portion and extending beyond said covering, said covering having one lateral extension, means for detachably securing said extension to the top portion of said outer layer, said covering having a second extension and means for detachably securing the second extension to said one extension, said first and second extensions projecting upwardly and curvilinearly from the upper side portions, respectively, of said covering.

3,297,037
CONCAVE FOR THRESHING CYLINDERS
William S. Ausherman, Wichita, Kans. (Belleville, Kans. 66935)
Filed Nov. 27, 1963, Ser. No. 326,468
3 Claims. (Cl. 130—27)



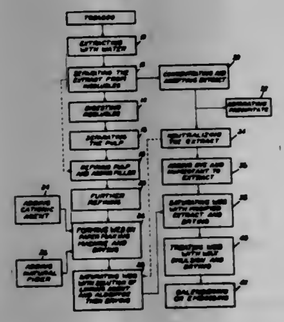
1. For use with threshing cylinders, an improved threshing concave comprising a plate having an arcuate configuration so as to be generally conformable to a cylindrical surface having an axis, said plate having opposite axial ends, said plate being of corrugate configuration along its arcuate extent to define a plurality of axially extending, alternate and contiguous valleys and substantially flat topped ridges spacing such valleys with each of said flat topped ridges being disposed to be substantially tangential to said cylindrical surface and being substantially equidistant from said axis and with all the valleys being of substantially equal depth relative to the flat topped ridges, said plate being integral and of substantially uniform wall thickness throughout its arcuate extent with such thickness being substantially less than the depth of the valleys, an elongated rasp bar removably disposed in each of said valleys in parallelism with said axis, with each pair of adjacent rasp bars being spaced by the flat topped ridge intermediate the valleys in which such rasp bars are disposed, each of said rasp bars including a web having an integral, upstanding, longitudinally extending row of longitudinally spaced teeth thereon, with the web of each rasp bar substantially filling the valley in which the rasp bar is disposed and with each web having upper and opposite lateral edges substantially contiguous with the flat topped ridges on the opposite sides thereof, means extending through the plate releasably securing the rasp bars to the plate, said row of teeth on each web projecting toward said axis, with the teeth of all the rasp bars terminating in their projection toward the axis substantially equidistant from the latter and in closer proximity thereto than the flat topped ridges, and arcuate mounting flanges extending along substantially the entire arcuate extent of the plate and fixed to the opposite axial ends of the latter for reinforcing the latter against bending about its axial extent and also for mounting the same in operative relationship to a threshing cylinder.

3,297,038
FILTER CIGARETTE
Freddy Homburger, 759 High St., Dedham, Mass. 02026
Filed Apr. 20, 1964, Ser. No. 361,121
7 Claims. (Cl. 131—10.5)



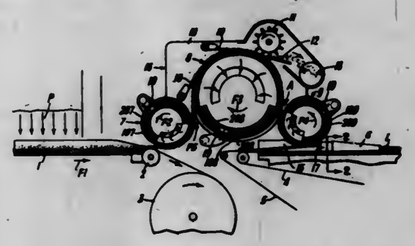
1. In a cigarette comprising an elongate body of tobacco and a wrapper enveloping the body, a flexible capsule interposed in the body adjacent one end, said capsule having a continuous wall in circumferential engagement with the interior surface of the wrapper, and containing a granulated material activated to render the deleterious components of the smoke harmless hermetically packed in the capsule, and means embodied in opposed wall portions of the capsule rupturable by distortion of the capsule to permit smoke to flow through the capsule containing the granulated material.

3,297,039
TOBACCO WEB MATERIAL
Fay H. Osborne, Windsor Locks, Conn., and Warren J. Bodendorf, Montgomery, Mass., assignors to The Dexter Corporation, a corporation of Connecticut
Original application Oct. 22, 1959, Ser. No. 847,952, now Patent No. 3,145,717, dated Aug. 25, 1964. Divided and this application Dec. 11, 1963, Ser. No. 329,803
12 Claims. (Cl. 131—17)



1. A tobacco material comprising a thin, continuous, water-laid, self-supporting web consisting essentially of tobacco fibers from which substantially all of the water-soluble constituents have been extracted, said web being strengthened by a cationic starch and said web further carrying an impregnation of completely alkali neutralized water-soluble constituents of natural tobacco.

3,297,040
TOBACCO ROD FORMING DEVICE
Goffredo Gamberini, Bologna, Italy, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Mar. 8, 1963, Ser. No. 263,889
Claims priority, application Italy, Mar. 30, 1962, 6,314/62
3 Claims. (Cl. 131—84)



1. In a cigarette making machine having a first linear conveyor on which shredded tobacco in excess of that required for a uniform rod is showered forming a filler stream, a second linear conveyor spaced from the first conveyor and adapted to advance a rod stream to means for forming individual cigarettes, and pneumatic means between said conveyors for transporting and converting the filler stream into a rod stream, the improvement wherein said pneumatic means comprises a plurality of rotating suction wheels each formed with a peripheral groove having a foraminous bottom and means for communicating with a source of suction, and an arcuate shoe member associated with said groove for blocking the flow of air through a portion of the periphery of said groove so as to permit only a portion of each wheel to be placed under suction, said wheels serially spanning the space between said linear conveyors, the shoe in each conveyor being so located and the direction of rotation of each wheel being such that tobacco is transferred from the first linear conveyor to the first of said wheels at the initial suction boundary of that portion of the groove which is adapted to be placed under suction, and transported thereon to the terminal suction boundary of the same adjacent to the initial suction boundary in a second wheel whereby tobacco is transferred from the groove in the first wheel to that in the second wheel under the influence of centrifugal force and suction from the second wheel and a third wheel between the second wheel and the second linear conveyor adapted to receive and transfer tobacco therebetween under the influence of centrifugal force of the second wheel and suction from the third wheel, the suction in the periphery said third wheel terminating adjacent the rod conveyor, and means adjacent to the groove in the second wheel for removing excess tobacco therefrom thereby forming a uniform rod stream.

3,297,041
TOBACCO SMOKE FILTER OR THE LIKE
Reavis C. Sproull, Richard M. Berger, and John B. Lynch, Richmond, Va., assignors to American Filtrona Corporation, a corporation of New York
Filed Mar. 15, 1965, Ser. No. 439,531
16 Claims. (Cl. 131—266)



1. A tobacco smoke filter body or the like consisting essentially of a multitude of fibers randomly disposed in

said filter body and free of any substantial directional orientation within said body, said fibers having a length substantially shorter than the minimum dimension of said filter body, and a bonding agent within said body randomly bonding said fibers together, said bonding agent being at least substantially uniformly dispersed within said filter body, said bonding agent joining said fibers at spaced locations and covering only a minor portion of the surface of the individual fibers, said bonding agent being free of any substantial directional orientation within said body.

3,297,042
TUBULAR HAIR CURLER WITH OPENINGS AND PROTRUSIONS THEREABOUT
Charles F. Hutcheon, Roslyn Heights, N.Y., assignor to Forest Plastics, Inc., Westbury, N.Y.
Filed Apr. 14, 1966, Ser. No. 542,629
2 Claims. (Cl. 132—40)



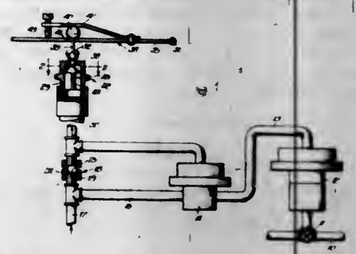
1. An improved hair curler comprising:
(a) a tubular body member having a plurality of apertures formed in the wall thereof;
(b) at least two petals positioned about each of the apertures, said petals extending from the outer surface of said body member, each of said petals being defined by irregular edges.

3,297,043
CONTINUOUS FLOW COUNTER-CURRENT LIQUID AND SOLIDS CONTACT APPARATUS
Robert E. Adams, Hudson, N.Y., assignor to Gifford-Wood, Inc., Newton, Mass., a corporation of Massachusetts
Filed Jan. 4, 1965, Ser. No. 422,943
5 Claims. (Cl. 134—60)



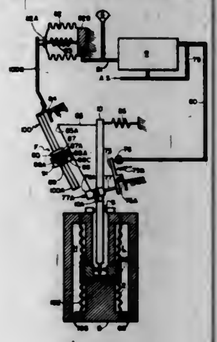
2. A counter-current contactor for liquid and solids comprising a plurality of side-by-side elongated generally U-shaped substantially level troughs, a shaft extending rotatably and lengthwise through each trough, adjustable pitch paddles on each shaft collectively forming an interruped helix on each shaft for advancing solids in one direction in each trough while permitting counter flow of liquid therein, means to drive said shafts in unison and in the same direction, low level transfer rotary scoops rigidly connected with certain of said shafts and driven thereby to transfer solids from one trough to another trough in said contactor and permitting counter flow of liquid between said troughs, a higher level solids discharge rotary scoop rigidly connected with another shaft of said contactor and driven thereby to lift and discharge solids from the contactor and retaining liquid therein, and a vertically adjustable weir on one side of the contactor to regulate the outlet of liquid from one of said troughs and also regulating the level of liquid in all of said troughs of the contactor.

3,297,044
AIR BLEED NOZZLE
David H. Thorburn, Oak Park, Ill., assignor to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois
Filed Oct. 25, 1963, Ser. No. 318,973
6 Claims. (Cl. 137—82)



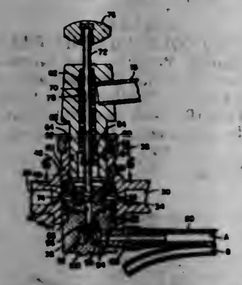
1. A flapper nozzle arrangement comprising a valve member having a stem portion, a spherical valve mounted on one end of said stem and a spherical swivel member on the other end of said stem opposite said spherical valve, a movably mounted valve support member having an opening therein through which said stem portion of the valve extends, a spring biased member in engagement with the spherical swivel member for maintaining the same in a seated position on said opening, and a valve seat member having a port therein, said valve member cooperating with said valve seat member in coaxial relationship with said port for controlling the flow therethrough.

3,297,045
PROCESS VARIABLE TRANSMITTER AND IMPROVEMENTS THEREIN
Richard G. Beach, Greece, Carl E. Ekstен, Jr., Sweden, Howard R. Jaquith, Rochester, and Stanley C. Norton, Jr., Spencerport, N.Y., assignors to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Filed Jan. 22, 1964, Ser. No. 339,553
16 Claims. (Cl. 137—85)



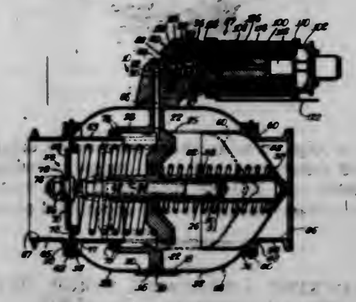
1. A force balance mechanism including a four bar linkage wherein a bar linking one deflectibly-mounted bar with another deflectibly-mounted bar is in the form of a fulcrum member fixed to the second-said bar and having a knife edge contacting the third-said bar, whereby the effective length of said second-said bar and of said third-said bar are determined by the position of said fulcrum member, and wherein said fulcrum is constructed and arranged for occupying different fixed positions along said second-said bar, the improvement comprising adjustment means interconnecting said knife edge and said fulcrum member and being constructed and arranged to provide different positions of said knife edge with respect to said fulcrum member and with respect to any of the said different positions of said fulcrum member along said second-said bar, whereby to afford a fine adjustment of said effective lever arms as defined by the location of the deflection axes of said second-said and said third-said bars and the place of contact of said knife edge and said third-said bar; said mechanism also including first responsive means arranged to deflect said second-said bar about one of said deflection axes and second responsive means arranged to deflect said third-said bar about another of said deflection axes, one of said responsive means being responsive to deflection of one of said bars to exert a force on said bars such as to deflect said one of said bars in opposition to said deflection, and the other of said responsive means being responsive to a variable independent of said mechanism for causing said deflection.

3,297,046
MIXING AND DIVERTER VALVE
Fred W. Hall, Toledo, Ohio, assignor to Gerity Products, Inc., Toledo, Ohio, a corporation of Michigan
Filed Feb. 4, 1964, Ser. No. 342,385
4 Claims. (Cl. 137—119)



1. In a dishwashing apparatus, an upright open ended housing having an intermediate lateral water inlet, a cap-like member in one open end of said housing provided with an axially disposed socket open at the inner end, a lateral spout at one end portion of said cap-like member communicating with said socket, a shiftable valve stem extending axially through said socket to the outside for manipulation, a valve body on the inner end of said stem adapted to seat against the inner end of said cap-like member for closing said socket and preventing the flow of water to said spout, a spring urging said stem to hold said valve body normally out of sealing engagement with said socket, a plug-like member insertable in the opposite open end of said housing having an annular row of L-shaped passages communicating with said water inlet enabling water to flow from the inlet to said socket and thence to said spout, said L-shaped passages extending radially inwardly and then longitudinally toward said cap-like member, an annular resilient flap valve interposed between the inner end of said plug-like member and the housing for closing said L-shaped passages to prevent back flow to said water inlet, a chamber in the inner end of said plug-like element within and in communication with said L-shaped passages and having an open inner end to receive said valve body, a check valve chamber in the outer end portion of said plug-like element having a spray outlet, an axial passage in said plug-like element connecting said first chamber and said check valve chamber for enabling water to flow to said spray outlet, said check valve chamber being in axial alignment with said axial passage in said plug-like element, a valve seat in said first chamber against which said valve body seats for closing said axial passage, and a spring tensioned check valve in said check valve chamber normally closing said last axial passage for preventing back flow and adapted to be unseated by pressure of water passing to said spray outlet.

3,297,047
VALVE ASSEMBLY
Malcolm A. Sime, Des Plaines, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 17, 1964, Ser. No. 352,565
5 Claims. (Cl. 137—220)



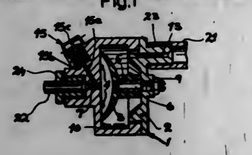
1. A combined inline shut-off and check valve assembly comprising, a housing having axially aligned inlet and outlet openings and intermediate transverse wall means, a first valve seat at said inlet opening and a second valve seat at said outlet opening, said intermediate transverse wall means having a tubular portion and a concentric annular shoulder portion, a sleeve member slidably mounted on said tubular portion, a hollow check valve piston at the end of said sleeve member, means interposed between said intermediate transverse wall means and said check valve piston for normally biasing the latter into engagement with said first valve seat, said check valve piston being disengageable from said first valve seat when the pressure of fluid at said inlet opening is greater than the pressure of fluid within said housing to permit flow of fluid through said inlet opening into said housing, said check valve piston when disengaged from said valve seat being seatable against said shoulder portion of said transverse wall means whereby to eliminate flutter and oscillation of said check valve piston during flow of fluid through said inlet opening into said housing, said intermediate transverse wall means having a cylinder portion, shut-off valve piston means being slidable in said cylinder portion of said intermediate transverse wall means, said shut-off valve piston means having a valve closure portion engageable with said second valve seat to prevent flow of fluid from said housing through said outlet opening and having an effective piston portion, means for selectively opening the interior of said cylinder portion to the atmosphere for reducing the pressure of fluid within said shut-off valve piston means whereupon the pressure of fluid within said housing exteriorly of said shut-off valve piston means initially exerts a force primarily against said effective piston portion causing said shut-off valve piston means to move inwardly of said cylinder portion of said intermediate transverse wall means and said valve closure portion to be disengaged from said second valve seat to permit flow of fluid through said outlet.

3,297,048
SAFETY VALVE
Augustin Imhof, Welschensteinach, Kreis Wolfach, Germany
Filed Oct. 10, 1963, Ser. No. 315,292
14 Claims. (Cl. 137—512)

1. A safety valve inserted between two conduits of a fluid line, comprising a valve chamber with two ports respectively connected to said conduits, said chamber having an inner wall forming a seat around one of said ports, a generally cup-shaped membrane of resilient material in said chamber bearing on said seat with its concave side facing one of said ports, said membrane being pro-

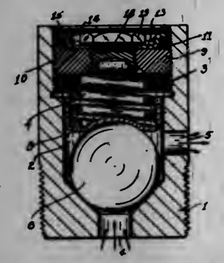
vided with at least one cutout normally enabling communication between said ports but blocking said communication upon a partial deflection of said membrane against

Fig. 1



said seat in response to an abnormal pressure differential across said membrane, and guide means extending into said chamber and slidably received in said membrane for centering same relative to said one of said ports.

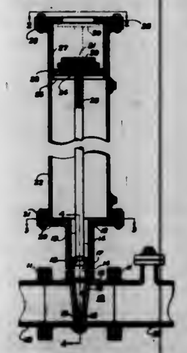
3,297,049
SELF-LOCKING ADJUSTABLE SCREW DEVICE
Milton A. Moskovitz, 7 Chapel Hill, St. Louis County, Mo. 63128
Filed Oct. 1, 1963, Ser. No. 313,016
7 Claims. (Cl. 137—540)



6. A self-locking adjustable screw device for repeatable installation in a threaded opening comprising a follower member having a resiliently yieldable cylindrical unthreaded side wall larger in diameter than the minor diameter of the internal threads of the said opening, and a rigid member positioned axially adjacent to the follower member, the rigid member having external threads complementary to and engageable with the internal threads of the opening, and means for connecting the rigid member to the follower member and for causing the latter member to rotate with the rigid member and yield to form threads on its cylindrical side wall mating tightly with the internal threads of the opening when the rigid member is threaded into the opening, and a retainer means rigidly connected to said follower member and rigid member to prevent relative rotation therebetween.

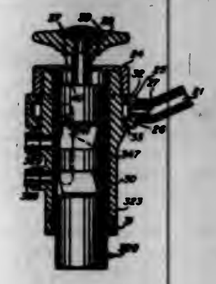
3,297,050
INDICATOR POST VALVE
Harry N. Rider, Youngstown, Ohio, assignor, by mesne assignments, to Automatic Sprinkler Corporation of America, Youngstown, Ohio, a corporation of Ohio
Filed Feb. 6, 1964, Ser. No. 343,086
6 Claims. (Cl. 137—556)

1. An indicator post valve for installation in a pipe line for controlling the same, said valve comprising a first valve body having spaced valve seats transversely thereof and a valve element movable relative to said valve seats, a stem attached to said valve element for imparting movement thereto and a secondary valve body secured to said first valve body and extending outwardly therefrom, a member removably positioned in said secondary valve body, said stem having a threaded section engaged in a threaded opening in said member and means on said secondary valve body removably positioning said member therein, said means comprising an apertured cap, a secondary cap for registry with said apertured cap, said secondary cap attached to said stem above said



member and comprising means for imparting motion to said stem.

3,297,051
SINGLE HANDLE MIXING FAUCET
James Walter Church, Preston, and Gordon Frederick Pearce, Waterloo, Ontario, Canada, assignors to Wallaceburg Brass Limited, Wallaceburg, Ontario, Canada
Filed Feb. 10, 1964, Ser. No. 343,684
Claims priority, application Canada, Jan. 15, 1964, 893,336
2 Claims. (Cl. 137—625.17)



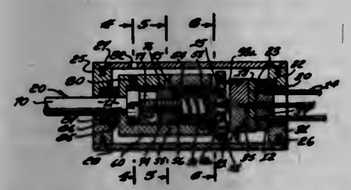
2. A fluid flow control valve operable as a hot water mixing faucet and comprising a faucet body having a first and a second water inlet connected to a central passage in said body, said water inlets being radially displaced one from the other, an annular mixing recess in said central passage longitudinally displaced from said first and second water inlets and connected to an outlet from said body, a mandrel positioned within said central passage having an indentation in the surface thereof of sufficient axial extent to span said inlets and said mixing recess, said indentation diminishing in depth in both the longitudinal and circumferential directions, said indentation diminishing to zero in the longitudinal direction towards said mixing recess, a resilient sleeve being interposed between said mandrel and said central passage, said mandrel being movable longitudinally within said passage between a position whereas said indentation extends between said mixing recess and at least one of said first and second inlets whereby fluid at said one inlet deflects said resilient sleeve into said indentation and flows to said mixing recess, and a position whereas said indentation is displaced from said mixing recess and said inlets whereby fluid flow to said mixing recess is blocked; said mandrel being further movable rotatably whereby said indentation may be moved proportionally into and out of alignment with said first and second inlets respectively to thereby control the relative amounts of fluid flowing to said mixing recess from said first and second inlets when said mandrel is in said first mentioned longitudinal position.

3,297,052
ROTARY VALVE
Phillip E. Robinson, Cleveland Heights, Ohio, assignor, by mesne assignments, to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 9, 1965, Ser. No. 446,826
10 Claims. (Cl. 137—625.21)



1. A rotary valve for controlling the flow of fluid pressure comprising a body having a cylindrical portion provided with a flat face, an upstanding rim around said face, a centrally positioned hub extending upwardly from said face, inlet, outlet and exhaust ports terminating at said face, and means for controlling the flow of fluid pressure between said ports comprising a rotor disc positioned on said face and rotatable about said hub, said disc having a generally arcuate shaped valve recess, an O-ring valve element formed of rubbery material deformed and confined within said valve recess, the thickness of said O-ring being greater than the height of said upstanding rim, a cover plate secured to said body in contact with said upstanding rim, said O-ring being thereby compressed between said cover plate and said face, and cooperating means on said body and said rotor disc for limiting the extent of movement of said rotor disc and valve element with respect to said body.

3,297,053
SELECTOR VALVE
Carlton B. McKinney, South Gate, Calif., assignor to Carle Instruments, Inc.
Filed Dec. 30, 1963, Ser. No. 334,272
2 Claims. (Cl. 137—625.46)



1. In a valve having a housing, an actuator member rotatably mounted by said housing, a valve body maintained stationary with respect to said housing, and a movable valve body rotatably mounted with respect to said housing, with each valve body including passages which selectively register with passages of the other upon rotational movement of said movable valve body;

means for applying a loading force concentrated substantially solely along the axis of rotation of said movable and stationary plates in intimate contact comprising

a backing plate parallel to and abutting said movable valve body and

a ball bearing tangential with said backing plate at the point thereof on the axis of rotation;

means for producing said loading force comprising

a cylindrical member rotatably mounted within said housing,

a piston axially movable within said cylindrical member and having a socket formed in its outward end for retaining said ball bearing,

a coil retainer member axially movable within said piston, and

a compression spring retained between said piston and said coil retainer member;

means for selectively varying the loading force produced by said compression spring comprising

an end portion of said actuator member threadedly engaged by said coil retainer member so that rotation of said actuator member with respect to said cylindrical member varies the axial position of said coil retainer member and hence the loading force produced by said compression spring and

means for keying said actuator member to said cylindrical member so that torques supplied said actuator member are transmitted to said cylindrical member; and

means coupling said cylindrical member to said backing plate for transforming rotary movement of said cylindrical member into a substantially pure couple for driving said backing plate, said means comprising

a generally disc-shaped member having plural radial slots separated by approximately 90° angles and an aperture concentric with said ball bearing,

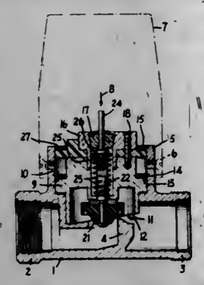
a pair of pins separated by approximately 180° and extending from said cylindrical member parallel said rotational axis and engaged in opposite ones of said radial slots, and

another pair of pins separated by approximately 180° and extending from said backing member parallel said rotational axis and engaged in the other set of oppositely disposed radial slots, said pins being free to translate both radially and along axes parallel the rotational axis of said movable valve body so that the rotational axes of said cylindrical member and said backing plate may be non-parallel without introducing any tipping moments between said stationary and movable valve bodies.

3,297,054
PACKED STEM VALVES
Helmar Trjst Nielsen, Nordborg, and Knud Aage Hansen, Sonderborg, Denmark, assignors to Danfoss ved ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed Dec. 17, 1963, Ser. No. 331,230
Claims priority, application Germany, Dec. 20, 1963, D 40,568
6 Claims. (Cl. 137—637.4)

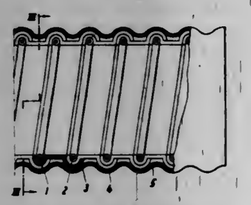
1. A packed stem valve comprising, a valve body having an inlet and an outlet, a throttle member mounted rotatably in said valve body and positionable selectively in operation in a plurality of different angular positions relative to said valve body corresponding to a plurality of throttle positions in which a flow through said valve body is throttled different amounts for varying flow through said valve body, a valve member operable independently of said throttle member to a position closing said valve and to another position opening said valve, means defining a packing box removably mounted on said throttle member and removable from said valve body independently of said throttle member and mounted for angular rotation with said throttle member when

mounted thereon, valve stem means operably connected to said valve member and actuatable axially disposed extending through said packing box and throttle member for actuating said valve member to said another position independently of said throttle member, a plurality of threaded screws disposed parallel to said stem means for removably mounting said means defining said packing



box on said throttle member, and self-acting means biasing said valve member to said position opening said valve and to a position engaging the underside of said throttle member in an area circumferentially of said valve stem means to preclude leakage along said valve stem means upon removal of said means defining said packing box for packing thereof during operation.

3,297,055
HOSES OF SYNTHETIC PLASTIC MATERIAL
Heinz Beck, Langen, near Frankfurt am Main, Germany, assignor to Techno-Chemie Kessler & Co. G.m.b.H., Frankfurt am Main, Germany, a firm
Filed Oct. 2, 1963, Ser. No. 313,328
Claims priority, application Austria, Oct. 10, 1962, A 7,999/62; Germany, July 6, 1963, T 24,243
9 Claims. (Cl. 138—122)



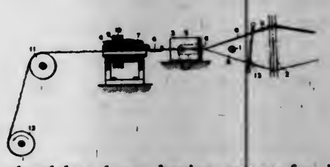
1. A hose comprising, in combination, a support helix formed of a spirally wound strand of resilient material; a strip having a cross-section in the form of two curved marginal portions of unequal radii joined by a web, said strip being wound helically about the turns of the support helix and being seated in a channel formed in the marginal strip portion of smaller radius and with said smaller radius marginal strip portion seated in overlapped engagement with the marginal strip portion of larger radius to form a tubular body having an outer corrugated configuration; and a tube made of synthetic plastic material externally encompassing said tubular body in pressure engagement therewith, said external tube having a corrugated configuration the valleys of which are located in the spaces between successive marginal strip portions of the larger radius, the molecular chains of the strip material forming said tubular body being oriented in a direction approximately transversely to the axial direction of the hose and the molecular chains of the material of said external tube being oriented in a direction substantially parallel to the axial direction of the hose.

3,297,056
CONCRETE PIPE HAVING A LINER OF AN EPOXY RESIN-COAL COMPOSITION
William T. McLaughlin and John R. Weinert, Pittsburgh, Pa., assignors, by mesne assignments, to United States Steel Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,335
4 Claims. (Cl. 138—145)



1. A concrete pipe having an integral liner for the inner surface thereof of a cured epoxy resin composition also including coal, said epoxy resin composition having been applied to the inner surface of the concrete pipe while the concrete was still in the wet, uncured stage and said resin was in the settable stage.

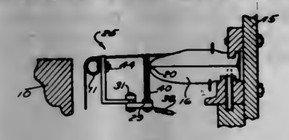
3,297,057
DEVICE FOR GRASPING AND GUIDING TRAVELLING ENDS OF WEFTS
Yukio Mizuno and Shigenori Tanaka, Tokyo, Japan, assignors to Prince Jidosha Kogyo Kabushiki-Kaisha, Tokyo, Japan
Filed May 27, 1964, Ser. No. 370,497
Claims priority, application Japan, June 1, 1963, 38/28,912
2 Claims. (Cl. 139—291)



1. In a shuttleless loom having means for injecting successive lengths of weft yarn into a warp shed and causing them to pass from one side of the shed to the other under the control of a fluid under pressure, means for grasping and guiding the end of the length of moving weft yarn and tensioning it, the combination comprising a plurality of binding yarns along one side of the array of warp yarns, yarn manipulating means engaging said binding yarns and manipulating said binding yarns for successively grasping the ends of the lengths of weft yarns which have been driven through the shed, yarn moving means downstream of the shed engaging said binding yarns and moving them in the direction of the length of the fabric, and yarn twisting means between said yarn moving means and said shed and engaging said binding yarns and twisting at least the portion of the length of said binding yarns between said yarn twisting means and the shed which have grasped said weft yarns for insuring that the ends of the weft yarns are securely bound by the binding yarns and for maintaining tension on said weft yarns.

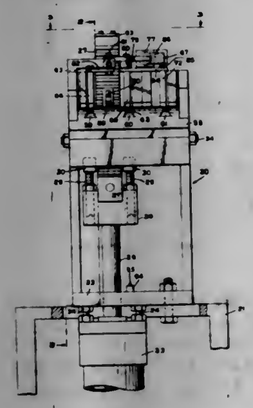
3,297,058
LOOM STOP MOTION DEVICE
Roland Albert Dupre, 27 Kent St., Cumberland, R.I. 02864
Filed May 7, 1965, Ser. No. 454,000
2 Claims. (Cl. 139—371)

1. In a stop motion for a loom of the character where a part carried by the lay completes a circuit by contact with a part carried by the loom frame, said part carried by the loom frame comprising a pair of grooved studs fixed on the frame, resilient posts comprising helical coils,



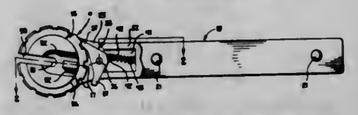
said studs and helical coils having telescopic engagement for removably securing a post to each stud for bridging engagement by a part carried by the lay.

3,297,059
AUTOMATIC MULTIPLE WIRE WRAPPING MACHINE
Leonard J. Trotta, 17811 Locherbie, Southfield, Mich. 48075
Filed Sept. 24, 1964, Ser. No. 399,005
8 Claims. (Cl. 140—3)



1. An automatic wire wrapping machine for winding a plurality of wires around a base wire at the same time comprising,
- a plurality of wire wrapping gears on a common rotational axis, each said gear having opposite sides, a hub projecting axially on either side of each said wire wrapping gear, a circumferential edge, and a radial slot leading through said circumferential edge and said hub to a point beyond and including the rotational axis of said wire wrapping gear;
- a machine frame,
- paired mounting plates on said machine frame on either side of each said wire wrapping gear; said plates having aligned bearing apertures receiving and rotatably mounting each said hub and abutting the opposite sides of each said wire wrapping gear;
- each said mounting plate having a receiving slot leading to its said bearing aperture and aligned parallel relative to one another defining a wire receiving mouth in the machine leading to the radial slot in each said wire wrapping gear;
- said wire wrapping gears being rotatable to align their radial slots with the receiving slots in said plates so that a base wire moved radially sidewise through said plate slots also moves through said radial slots of said wire wrapping gears so as to take a proper work position with the axis of the base wire lying on the rotational axis of said wire wrapping gears so that said wire wrapping gears may rotate around said base wire;
- a drive gear engaging each said wire wrapping gear,
- a drive shaft rotatably mounted on said machine frame supporting said drive gears,
- a drive pinion gear on said drive shaft,
- a rack reciprocably supported on said machine frame engaging said pinion gear,
- a rack cylinder mounted on said machine frame having a piston rod connected to said rack for reciprocating said rack;
- movement of said rack rotating said pinion gear, drive shaft, and drive gears with said drive gears rotating said wire wrapping gears; and
- a radially positioned axially projecting wire wrapping dog on each said hub adjacent the radial slot in each said wire wrapping gear;
- said rack being adjusted in reciprocating movement so that at the ends of travel in both directions said wire wrapping gears are positioned with their radial slots in alignment with the slots in said mounting plates so that the base wire may be inserted and extracted relative to said wire wrapping gears;
- said base wire being inserted and extracted together with cross-tie wires lying normal to the base wire with their ends projecting beyond said base wire and past and in the plane of said dogs on said wire wrapping gears;
- rotation of said wire wrapping gears with said wires so disposed orbiting said dogs around said base wire with said dogs engaging said cross-tie wires while orbiting, thereby wrapping the extending ends of said cross-tie wires around said base wire.

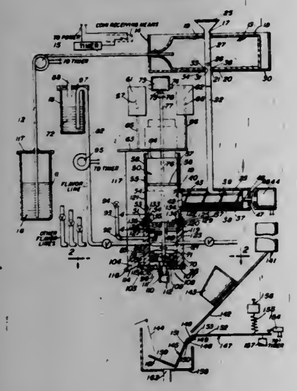
3,297,060
WIRE SPLICER
Jacob E. Richardson, R.R. 3, Box 137, Peru, Ind. 46970
Filed Apr. 29, 1964, Ser. No. 363,552
4 Claims. (Cl. 140—122)



1. A wire splicing tool comprising a handle, a head rotatably mounted on said handle at one end thereof, said head having a cylindrical shape with a radially projecting annular portion formed integrally of said head and located generally centrally of the outer periphery of said cylindrical portion, said annular portion having ratchet teeth thereon each of which has radially extending surfaces on the opposite pawl-engaging faces thereof, said handle including a pair of elongated plate elements each of which has a circular opening therethrough at the one end of said handle, said annular portion of said head being nested between said plate elements with said cylindrical shape of said head projecting through said circular openings, said handle having aligned slots each through a respective plate element and leading into said circular openings for passing a wire through said handle into said head, a pawl member pivotally mounted in said handle between said elongated plate elements, said pawl member having a generally triangular shape with two of the apices of said triangular shape forming pawls alternatively engageable with said ratchet teeth to block rotation of said head relative to said handle in one direction or the other, a compression spring received within said handle and acting between said handle and the third apex of said triangular shape with a toggle action to urge one of said pawl portions and alternatively the other of said pawl portions into engagement with said ratchet teeth, said head having a first slot extending radially through said annular portion and radially through said cylindrical shape the complete length of the cylindrical shape and to include the axis of said cylindrical shape, said head having

a further pair of slots at one end of said cylindrical shape and extending parallel to one another and to said first slot and extending oppositely away from said axis to said first slot, each of said slots of said pair of slots having straight portions extending from the outside of said cylindrical shape in a path spaced from the axis thereof and having surfaces which curve into said first slot at a radius to said axis, said head having a counterbore about said axis at said one end of the head to provide the curving surfaces of the further pair of slots, said straight portions being tangent to said carrying surfaces.

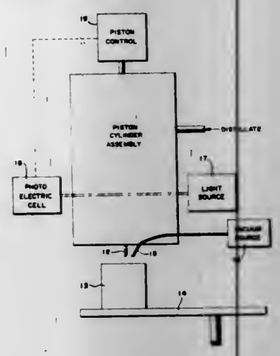
3,297,061
AUTOMATIC VENDING MACHINE FOR COMESTIBLES
George R. Nimee, 104 W. Dakota St., Spring Valley, Ill. 61362
Filed Aug. 28, 1963, Ser. No. 305,080
17 Claims. (Cl. 141—9)



12. The method of selectively dispensing any of a plurality of flavored products
which method comprises
cooling a base mix to provide a refrigerated product,
aspirating air into said refrigerated product to provide an aerated refrigerated product,
delivering said aerated refrigerated product into a blending chamber,
feeding a controlled quantity of a flavoring agent into said blending chamber for incorporation in said aerated product,
adding said flavoring agent to said aerated product and distributing said flavoring agent substantially uniformly throughout said aerated product to provide a flavored comestible,
dispensing said flavored comestible for delivery into a receptacle provided therefor,
and terminating delivery of said flavored comestible into said receptacle upon delivery of a predetermined quantity thereto.

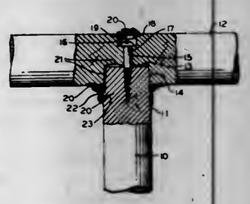
3,297,062
FRACTION COLLECTOR FOR OPERATION AT REDUCED PRESSURE
Maarten van Swaay, 401 Wickham Road, Manhattan, Kans. 66502
Filed June 25, 1964, Ser. No. 377,927
Claims priority, application Netherlands, July 8, 1963, 295,047
6 Claims. (Cl. 141—130)

1. An apparatus for continuously drawing off given quantities of liquid samples which are liberated at reduced pressure, in particular, for analytical distillation comprising a cylindrical trap chamber, a lower portion of which is of a reduced diameter for receiving and trapping a liquid sample therein, means to feed said liquid to said chamber, piston means movably mounted within said chamber, means responsive to the level of the liquid



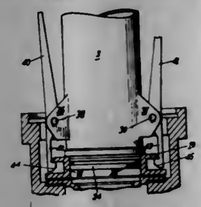
within said chamber to initiate a downward movement of said piston means, valve means mounted at the lower end of said reduced portion and responsive to an increase in pressure caused by said piston on said liquid, collector means positioned below said valve, and means for directing the liquid from said valve into said collector means.

3,297,063
FURNITURE TRANSVERSE BUTT JOINT
John C. McGuire, 44 Normandie Terrace, San Francisco, Calif. 94115
Filed Oct. 14, 1964, Ser. No. 403,893
2 Claims. (Cl. 144—318)



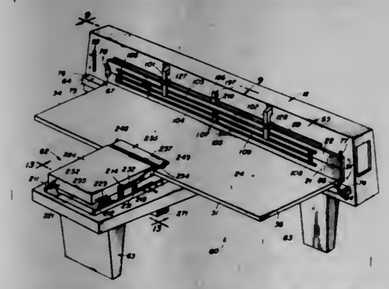
1. The method of making a transverse butt joint for whole stem rattan members comprising tapering the butt end of a first rattan member, preparing a tapered socket in a transverse second rattan member at right angles to the longitudinal axis thereof to snugly receive the butt end of said first member, treating a single length to rawhide binding strip with a solution of alcohol and water and then stretching the same to its maximum limit, placing one end of the wet and stretched rawhide binding strip in the bottom of said socket and holding the same in place by inserting said butt end into said socket into engagement with the rawhide strip, drawing said first and second rattan members into firm engagement without bottoming the butt end in said socket, tightly lacing the rawhide binding strip while wet and stretched around said first rattan member and over the second rattan member in a crossing pattern, securing the free end of the rawhide binding under one of the turns thereof, and drying said rawhide for gripping deformation of the rattan members and further moving the first rattan member into the socket of the second rattan member by shrinkage of the rawhide binding strip.

3,297,064
FLUID DELIVERY MEANS
Glenn E. Moore, Fairfield, and Wallace D. Boone, Cincinnati, Ohio, assignors to Dover Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,275
10 Claims. (Cl. 141—383)



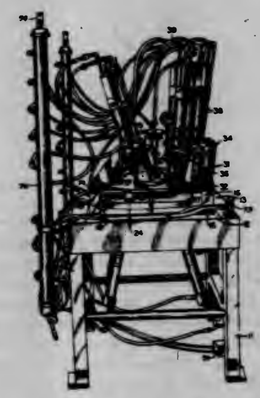
1. In a device for effecting both a vapor-tight connection between a filling nozzle and a receiving conduit and for effecting a vapor-tight connection between the said receiving conduit and a cover means therefor, the combination of a hollow fitting having upper and lower spaced flanges, said fitting having an interior surface defining an unobstructed central opening, means for effecting attachment of the lower flange of said fitting to said conduit means, a removable cap member having a body portion for entering the opening of said fitting, said body portion having an exterior surface adapted to lie adjacent said interior surface of said fitting, means for effecting a vapor-tight connection between said interior and exterior surfaces, and releasable means for holding said cover member in place on said fitting, said last mentioned means engaging the upper flange of said fitting.

3,297,065
APPARATUS FOR FABRICATING DOOR ASSEMBLIES
Walter J. Zenner, 1776 Sherwood Ave., Des Plaines, Ill. 60016
Filed Jan. 21, 1965, Ser. No. 426,970
16 Claims. (Cl. 144—27)



11. An automatic drilling machine for drilling a door to receive a lockset, comprising:
means, comprising a T-shaped frame for supporting a door in a given horizontal plane with one longitudinal edge of said door extending along the cross-bar of the T and the other longitudinal edge intersecting the leg of the T;
a first clamping device, mounted on the leg of said frame adjacent said other longitudinal edge of said door, for clamping said door against said frame to prevent vertical movement of said door;
a second clamping device, mechanically connected to and actuated by said first clamping device, for engaging said other longitudinal edge of said door and clamping said door against the cross-bar of the T to prevent horizontal movement in said plane normal to said cross-bar;
a drill carriage, mounted on the leg of said frame for movement toward and away from said one edge of said door;
a first drill mounted on said drill carriage, for drilling said one edge of said door horizontally to form a lockset bolt receptacle therein;
connecting means for adjustably connecting said drill carriage to said second clamping device to limit movements of said drill carriage to a predetermined range and thereby adjust the backset of said bolt receptacle;
and a second drill, mounted on said drill carriage and connected to said connecting means, for drilling a transverse lockset cylinder receptacle, communicating with said bolt receptacle, in said door.

3,297,066
AUTOMATIC SEAT BORER
Albert J. Brouillette, Winchendon, Mass., assignor to Heywood-Wakefield Company, Gardner, Mass., a corporation of Massachusetts
Filed Dec. 28, 1964, Ser. No. 421,199
3 Claims. (Cl. 144—110)



1. A chair seat boring machine for simultaneously boring holes in the top and bottom surfaces of a seat blank comprising:
a master template having spaced parallel top and bottom supporting plates with said bottom plate apertured for four leg hole drills and said top plate apertured for a set of back spindle drills;
a back spindle template removably secured to the outer surface of said top plate, said back spindle template having an array of drill support pedestals thereon with the spatial and angular relation of the back spindles for a particular chair seat blank and a pneumatic drill actuator mounted on each of said pedestals, said actuators each operable to rotate, drive to a predetermined depth and retract a drill bit mounted therein on a boring axis parallel to the axis of its respective mounting pedestal;
leg template means removably secured to the outer surface of said bottom plate and supporting four leg pedestals having the spatial and angular relation of the legs for said chair seat blank, each of said leg pedestals supporting a pneumatic drill actuator similar to said actuators on said back spindle template;
a transverse clamping bar between said top and bottom plates extending substantially the width of said seat blank;
an actuator on said top plate coupled to drive said clamping bar toward said bottom plate and positioning said clamping bar to avoid interference with the drill travel of any holes bored in the top surface of said seat blank;

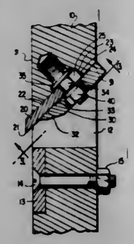
positioning means for locating a seat blank in predetermined position between said top and bottom plates of said master template; and

means operable to energize said actuator to clamp said seat blank securely against the inner surface of said bottom plate and subsequently energize all of said drill actuators to bore all of the holes in the top and bottom of said seat blank, retract said drills and finally retract said clamping bar to permit removal of the drilled seat blank.

3,297,067
CUTTING APPARATUS FOR CHIPPERS

Andrew Zaichkowsky, Montreal, Quebec, Canada, assignor to Carthage Machine Company, Inc., Carthage, N.Y., a corporation of New York

Filed Dec. 9, 1964, Ser. No. 417,032
9 Claims. (Cl. 144—176)



1. A cutting apparatus for a chipper comprising a rotatable disc, one side of which provides a disc face, said disc, having a slot extending therethrough generally toward the periphery thereof and spaced away from the axis of rotation of said disc, the top of said slot defining a recess, a chipping knife positioned within said recess, said knife including a cutting edge at its front end, the distance between said cutting edge and the rear end of the knife defining the width of said knife, said recess opening at said disc face and extending partially through said disc for less than the width of said knife to terminate at a shoulder which forms a seat against which the rear end of said knife abuts with said cutting edge projecting beyond said face, means for removably clamping said knife within said recess, said means comprising a clamping plate having a first bearing surface abutting said disc rearwardly of said seat and a second bearing surface abutting said knife near the front end of said knife, and fastening means connecting said clamp to said disc between said bearing surfaces to urge said first bearing surface against said disc and said second bearing surface against said knife, whereby the force of said clamp is directed to the front of said knife adjacent the cutting edge thereof, to securely clamp said knife within said recess in a cutting position on said disc.

ERRATUM

For Class 144—318 see:
Patent No. 3,297,063

3,297,068
MACHINE FOR CUTTING MATERIAL INTO STRIPS

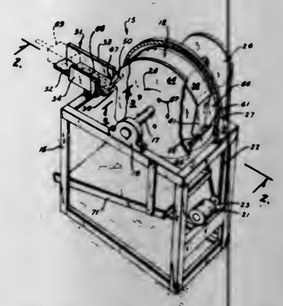
Evert V. Bloomquist and Gerald E. Bloomquist, both of P.O. Box 807, Wausau, Wis. 54980

Filed Mar. 4, 1964, Ser. No. 349,438
4 Claims. (Cl. 146—117)

1. A cutter head for a material cutting machine comprising:

(a) a cylindrical body member adapted to be mounted for rotation about the longitudinal axis thereof, said body member having at least one axially extended cavity in the outer peripheral surface thereof having a leading portion and a trailing portion,

(b) knife means secured to the body member adjacent said trailing portion, said knife means having a first cutting edge extended axially of the body member
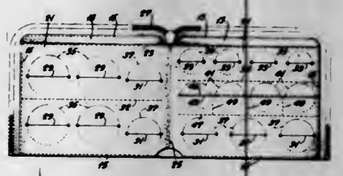


and second cutting edges extended circumferentially of the body member, said cutting edges being positioned radially of said cavity, and

(c) the leading side of the knife means having an axially extended arcuate concave contour and the trailing portion of the cavity having an arcuate concave contour which joins with the contour of the knife means to form a smooth arcuate surface for guiding strips of material into the cavity.

3,297,069
WALLET COMPRISING COMBINATION BILLFOLD AND COIN CARRIER

Carlos Mota Aburto, Donceles 86, Mexico City, Mexico

Filed Sept. 10, 1964, Ser. No. 395,518
7 Claims. (Cl. 150—35)



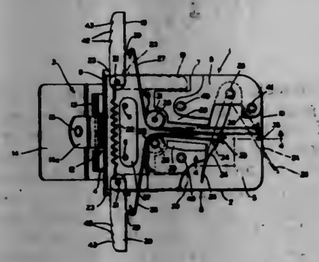
1. A combination coin carrier and billfold comprising first and second flexible sheets of leather-like material fastened to each other partially around their peripheries to define a pocket adapted to receive paper currency, a third sheet of leather-like material fastened to said second sheet all the way around its periphery, the assembly of said first, second and third sheets being folded in half with said third sheet on the inside, said third sheet having a plurality of slits defined therethrough, said third sheet being fastened to said second sheet at points spaced beneath each of said slits in a direction perpendicular to said slits, said slits having lengths corresponding to the diameters of coins so that such coins may be inserted through said slits and held with their lower halves sandwiched between said second and third sheets and their upper halves positioned in front of said third sheet.

3,297,070
ANTI-PICKPOCKET DEVICE

Carl H. Jeffers, 1021 W. Main St., Louisville, Ohio 44641

Filed Feb. 17, 1965, Ser. No. 433,314
7 Claims. (Cl. 150—47)

1. An anti-pickpocket device for preventing clandestine removal of a wallet from a person's pocket including a base plate having a side surface, upper and lower ends, and opposite edges, the plate having a width substantially comparable to that of a wallet, arms pivotally attached to one side surface of the plate and being movable between positions retracted within the edges of the plate

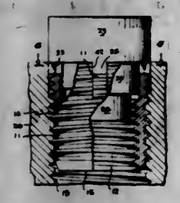


and positions extending outwardly therefrom, each arm having spaced notches along one edge, spring means for holding the arms in the outwardly extending positions, means for holding the arms in the retracted position, and means for detachably securing the plate on a wallet.

3,297,071
LOCKING OF THREADED PARTS AGAINST REMOVAL

Robert Neuschotz, Beverly Hills, and Cullen E. James, Southgate, Calif., assignors to Newton Insert Co., Los Angeles, Calif., a corporation of California

Filed Oct. 8, 1964, Ser. No. 405,647
11 Claims. (Cl. 151—22)

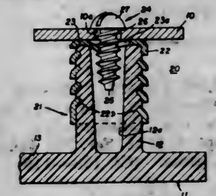


11. The combination comprising a carrier part having an internal thread, and an element mounted in said carrier part and having a locking portion with a generally tubular side wall, said element having an external thread engaging said internal thread and formed at least partially on said tubular side wall of the locking portion, said element having a second thread for engaging another member, said external thread having a turn formed on said tubular side wall which has a first portion driven axially relative to and out of alignment with an adjacent but circularly offset second portion of the same turn and forming a localized axially displaced irregularity in said external thread locking the element in said carrier part, and said tubular side wall having a localized recess extending axially thereinto at the location of said first portion of said turn and recessed inwardly across the entire radial thickness of said tubular side wall.

3,297,072
FASTENING DEVICES

Herbert W. Galer, Highland, Ind., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York

Filed June 16, 1965, Ser. No. 464,343
1 Claim. (Cl. 151—41.73)

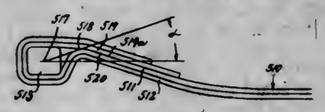


A device for fastening an element molded of synthetic plastic material to a member, wherein said element includes a boss formed integrally therewith and projecting outwardly therefrom, and wherein said boss has a substantially cylindrical outer surface and an opening extending substantially axially into the outer end thereof; said device comprising a part formed of resilient sheet metal and of generally cup-shaped configuration including a substantially tubular side wall being open at one end and having an end wall at the opposite end thereof, said side wall having at least one slot formed therein and extending from the open end thereof toward said end wall so as to facilitate slipping of said side wall over the outer end of said boss, said side wall surrounding and frictionally engaging the outer surface of said boss with said end wall engaging the outer end of said boss, said side wall carrying a plurality of helically disposed and radially inwardly projecting thread-forming structures, whereby rotation of said side wall in surrounding and frictional engaging relation with the outer surface of said boss causes said structures to thread the outer surface of said boss so as securely to anchor said part to said boss and thus to said element, whereby said side wall subjects said boss to radially inwardly directed forces, said end wall having a hole therein disposed generally in alignment with the outer end of said opening, said hole having a notch extending radially therefrom, whereby said hole may be deformed into a helical configuration, and a metal screw disposed in said hole and in threaded engagement with said end wall, said screw frictionally engaging said member so as securely to anchor said end wall and thus said part to said member, the inner end of said screw projecting into the outer end of said opening, the minimum diameter of said opening being greater than the maximum diameter of said screw, wherein said screw is out of contact with said surrounding boss, whereby said screw subjects said boss to no radially outwardly directed forces.

3,297,073
INTERMEDIATE ARTICLE

Sheppard A. Black, Wayne, and John D. Heide, Ramsey, N.J., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Original application Dec. 4, 1962, Ser. No. 242,116. Divided and this application Feb. 18, 1966, Ser. No. 528,633
3 Claims. (Cl. 152—362)



1. As an intermediate article of manufacture, a substantially uncured tire carcass comprising: a tube of

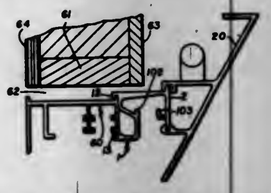
fabric, a bead disposed at each end region of said fabric tube and surrounded by the end region of said fabric; said carcass having a cylindrically tubular central portion the internal diameter of which is no greater than the internal diameter of said carcass in the region of said beads; said fabric in the bead region of said carcass forming an angle with the axis of said carcass greater than 0° but less than approximately 70°.

3,297,074
PILOT LIGHT BURNER
Raymond E. Murphy, % The Essco Supply Co., Edgemoore Ave., Salisbury, Md. 21801
Filed Sept. 9, 1965, Ser. No. 486,001
2 Claims. (Cl. 158—115)



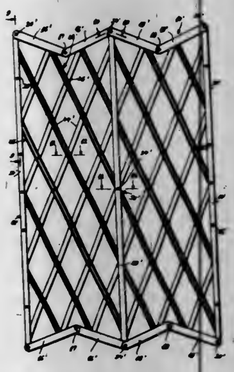
1. In a gas burner, the combination of a frame, a gas burner having a predetermined flame area mounted on said frame, a pilot light burner mounted on said frame, gas supply means for said gas burner, gas supply means for said pilot light burner, and a thermocouple for controlling flow of gas through said gas supply means of said gas burner; said pilot light burner including a burner guard for the gas pilot light, said guard including an elongated tubular body portion having an elongated combustion chamber, means at one end of said tubular body portion for attachment thereof to said pilot light gas supply means in juxtaposition whereby gas emitted from said pilot light gas supply means enters said elongated combustion chamber, said elongated tubular body portion having air intake passageways opening from the periphery of said tubular body portion to said elongated combustion chamber, and a burner flame baffle mounted at the end of said tubular body portion opposite to said means for attachment thereof to said pilot light gas supply means, said burner flame baffle having a body portion including a cover member positioned for impingement thereagainst of the burner flame from said elongated combustion chamber and having an elongated flame receiving opening therethrough, said cover member including flame directional means positioned over said flame receiving opening in juxtaposition whereby to direct a tongue of flame to the flame area of said gas burner and another tongue of flame to said thermocouple, said flame directional means comprising a channel member of substantially inverted U-shaped cross section, said channel member being open at each end thereof and extending axially over the elongated flame receiving opening of said cover member in juxtaposition whereby the open ends thereof comprise port means for directional discharge of flame from said pilot light to the flame area of said gas burner and said thermocouple, one side of said inverted U-shaped member adjoining said cover member and the other side thereof terminating adjacent said cover member and defining therebetween a longitudinally extending slot opening at each end thereof into one of said port means in juxtaposition whereby to comprise an ignition way communicant between said port means to provide means for ignition of raw fuel passing through one of said port means by the flame emitted from the other of said port means, said gas burner, pilot light guard and thermocouple being mounted on said frame with said pilot light guard disposed intermediate said thermocouple and said gas burner in juxtaposition whereby said gas pilot light guard shields said thermocouple from direct heat of said gas burner and said thermocouple shields said pilot light guard from outside drafts.

3,297,075
SNAP-LOCKING FIXTURES FOR INTERIOR DECORATING
Raymond P. Howell, Richmond, and George F. Swenck and Norbert A. Hamm, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Jan. 28, 1964, Ser. No. 340,697
7 Claims. (Cl. 160—19)



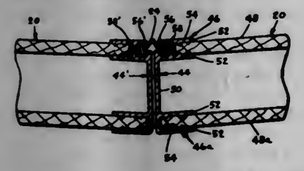
1. A snap-locking fixture for interior decorating comprising a generally inverted U-shaped channel member, one leg of said channel member being a facing panel defining a transverse juncture with the center section of said channel member and extending past said juncture forming an engaging ridge and the end of said panel opposite the engaging ridge forming an engaging element, the engaging ridge and the engaging element being suitable to function as complementary snap-locking members, the other leg of said channel member at the juncture to the channel center forming a transverse flange terminating with a downwardly facing slot, said other leg intermediate its length being inwardly offset toward said panel and then outwardly folded to define a ledge terminating with a groove centered under said slot, the openings of said slot and said groove mutually opposing to provide snap-locking attachment onto a support structure having complementary elements therefor and a hanger member provided within said inverted U-shaped channel member for suspension of various materials.

3,297,076
ADJUSTABLE WINDOW GRILLE WITH COLLAPSIBLE GUARD BARS
Albert Udin, % Albert Udin, Inc., 4236 Park Ave., Bronx, N.Y. 10457
Filed Sept. 30, 1964, Ser. No. 400,415
1 Claim. (Cl. 160—161)



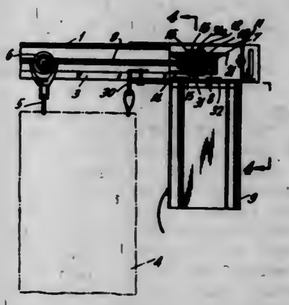
A grille of the character described comprising a spaced pair of vertically disposed side stiles and a central intermediate stile assembly, each of said side stiles and stile assembly comprising a pair of spaced opposed channel irons connected together at the lower and top ends thereof, with the side flanges thereof extending inwardly toward each other, by pivot pins which extend through space sleeves interposed between opposed channel irons; a lazy-tong grille work composed of a plurality of angularly disposed channel-shaped links arranged back to back with the flanges thereof presented outwardly and pivotally riveted together at their points of crossing and at the upper and lower ends thereof; said grille work extending between said side stiles through said central stile assembly and pivotally connected to each of said side stiles and central stile assembly; front pairs of longitudinally disposed straight flat bottom and top sectional bar links, one section of each of said bottom and top sectional bar links having one end thereof pivotally connected to the forward surface of one of said side stiles at the lower and upper ends thereof, respectively, by the pivot pins by which the lower and upper ends of the channel irons of the said one of said side stiles are connected together, the other section of each of said bottom and top sectional bar links having one end thereof pivotally connected to the forward surface of said central stile assembly at the lower and upper ends thereof, respectively, by the pivot pins by which the lower and upper ends of the irons of the central stile assembly are connected together, the other end of said bottom and top sectional bar links being connected to the free end of said one section of the bottom and top sectional bar links, the other bottom sectional bar link and top sectional bar link of said front pair of bottom sectional bar links and top sectional bar links having one end thereof pivotally connected to the forward surface of the other of said side stiles at the lower and upper ends thereof by the said pivot pins by which the lower and top ends of the channel irons of the said other of said side stiles are connected together; a rear pair of longitudinally disposed bottom and top sectional bar links which are similarly pivotally connected to the rearward surface of the said side stiles, in transversely spaced relation to said front pairs of bottom and top sectional bar links, said top sectional bar links are all inclined slightly downwardly from their pivotal connections with said side stiles and central stile assembly; the lower and upper pivotally connected ends of the channel-shaped links of said grille work being normally disposed within the space between the said front and rear pairs of bottom sectional bar links and top sectional bar links, respectively, whereby access to said channel links is prevented.

3,297,077
FOLDING DOOR STRUCTURE
Sol Garbus, 63—60 102nd St., Forest Hills, Long Island, N.Y. 11375
Filed Sept. 10, 1964, Ser. No. 395,418
1 Claim. (Cl. 160—231)



A folding door of the character described comprising a plurality of similar vertically disposed panels and a plurality of similar connectors by which adjacent panels are pivotally connected together for swinging movement between end to end closed position and side to side folded open position during the opening and closing of said door; each of said panels comprising a pair of spaced rectangular similar front and rear side walls and a pair of similar channel frame members one of which is connected to the side edges of each of said side walls at one end thereof and the other of which is connected to the side edges of each of said side walls at the other end thereof; each of said channel frame members extending from the top to the bottom of said side walls and comprising an elongated web and a pair of spaced parallel legs which are integral with said web and extend outwardly therefrom one at each side edge thereof, said web constituting an end wall of said panel and said legs being provided with slots for the reception of the adjacent side edges of said front and rear walls and constituting mounting means of said frame members, and each of said frame members being provided with a slotted circular bore which extends from end to end of said frame member at one corner thereof; one of said frame members being connected to said side walls with the said slotted bore thereof disposed adjacent the said rear wall and the other of said frame members being connected to said side walls with the slotted bore thereof disposed adjacent the said front wall; and each of said connectors comprising an elongated narrow flexible strip having an enlarged cylindrical bead secured to each side edge thereof; one of said beads being disposed in the slotted bore in the frame member of one panel and the other of said beads being disposed in the slotted bore in the confronting frame member of an adjacent panel.

3,297,078
MOTOR-DRIVEN CURTAIN MECHANISM
Seizo Miki, Sumiyoshi-ku, Osaka-shi, Japan, assignor to Sansei Kinzoku Kogyo Kabushiki Kaisha, Osaka-shi, Japan
Filed Mar. 31, 1964, Ser. No. 356,179
Claims priority, application Japan, Apr. 13, 1963, 38/27,563, 38/27,564
3 Claims. (Cl. 160—331)



1. A curtain rail assembly for motor-driven curtains comprising, in combination, a curtain rail; a pair of pulleys each mounted adjacent a respective end of said rail and each adjustable longitudinally of said rail; an endless drive transmission member trained around and drivingly interconnecting said pulleys; a driving motor disengageably directly coupled to one of said pulleys constituting a drive pulley, the other pulley constituting a driven pulley; said drive pulley having a passage extending axially therethrough, the passage having a polygonal cross section; said driving motor having a driving shaft extending from an end thereof, said driving shaft having a polygonal cross section over at least its outer end portion and mating with said axial passage, whereby said driving motor may be coupled to said drive pulley by inserting said drive shaft into said axial passage; a casing mounted on said rail, and housing and rotatably supporting said drive pulley, said casing having a bottom wall; oppositely directed inturned fingers on said bottom wall; and oppositely directed outturned offset fingers on the drive end of said motor; the fingers on said motor being interengageable with the fingers on the bottom wall of said casing to couple said motor tightly to said casing.

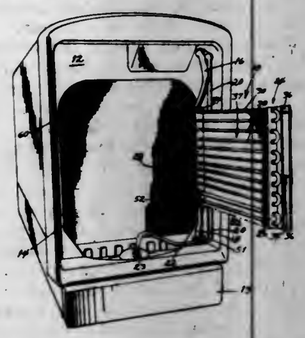
3,297,079
COMBINATION COOLING AND SEALED FUEL COMBUSTION HEATING MEANS
Hugh M. Blumenshine, Whittier, Calif., assignor to Lear Siegler, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 12, 1964, Ser. No. 402,992
2 Claims. (Cl. 165—27)



1. In an air heater adpated to be disposed between a pair of adjacent standardly-spaced studs in a wall of a habitable structure and the like, the air heater including a vertically elongated casing having a width less than the distance between the opposing surfaces of said studs, partition means disposed in the casing defining upper and lower portions of the casing, a fuel burner disposed in the lower portion of the casing, a hollow elongated heat exchanger disposed in the casing vertically above the fuel burner principally in the casing upper portion in spaced relation to the inner surfaces of the casing with its lower end positioned in the casing lower portion to receive hot gases from the fuel burner, a flue connected to the upper end of the heat exchanger and extending vertically from the casing within an upward extension of the casing sides, the improvement comprising a squirrel cage air blower located substantially midway between the ends of the heat exchanger exteriorly thereof in the casing upper portion forwardly of the heat exchanger and having a pair of outlets opening upwardly and downwardly therefrom, the blower being operable for drawing air from the exterior of the casing and for discharging air in substantially equal volumes upwardly and downwardly therefrom through said outlets, and baffle means in the casing for directing air discharged from the blower means around and along the heat exchanger and from the casing through an upper front portion thereof, said baffle means including the lower portion of the heat exchanger below the blower being reduced in width transversely of the casing relative to the remainder of the length thereof and being increased in depth along a line forwardly and rearwardly of the casing relative to the remainder of the length thereof.

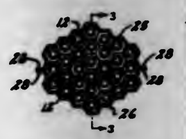
3,297,080
SWING OUT OIL COOLER MOUNTING
Robert D. Williams, La Grange, and Eugene F. Mielnikowski, Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Mar. 4, 1965, Ser. No. 437,077
4 Claims. (Cl. 165—77)

1. In a vehicle having a supporting frame, a liquid cooling radiator and a housing thereabout encompassing same and having an opening in a vertical transverse wall of the housing, said radiator and said housing being supportably carried by the frame, the combination comprising: a hydraulic oil cooler positioned operatively extending generally parallel to and in front of and on the opposite side of said housing opening from said radiator; means providing a source of hydraulic oil under pressure to be cooled; an oil reservoir; an inlet line and an outlet line connected communicatively to said cooler; means disposed between the inlet and outlet line connections to said cooler pivotally mounting said cooler on a front face of said



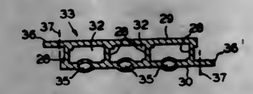
housing for pivotal movement outwardly from said radiator; and fluid communicating means flexibly connecting said inlet and outlet lines respectively to said source of hydraulic oil and said oil reservoir to permit said cooler to be swung radially outwardly without injury to said inlet and outlet lines for cleaning and general access to said radiator.

3,297,081
TUBE-SHELL HEAT EXCHANGER
Lester M. Nunemaker, Buffalo, N.Y., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,612
2 Claims. (Cl. 165—159)



1. A heat exchanger comprising a tubular shell; spaced parallel heat exchange tubes of generally circular cross section extending axially within the shell for conducting fluid of one temperature through the tube interiors; the tubes having expanded end portions providing flat surfaces which abut against one another to seal and space the tubes from each other and from the shell; an inlet for introducing fluid of another temperature into the shell to permit same to flow around the outsides of the tubes; an outlet for discharging the second fluid out of the shell; each of said tubes having at least two integral flat-surfaced enlargements formed at spaced points therealong; said tubes including first and second groups of tubes located on opposite sides of an imaginary longitudinal diametrical plane bisecting the shell; the enlargements in adjacent tubes of a given group being engaged with one another to preclude any appreciable flow of shell fluid through the enlargement-to-enlargement joints; the enlargements in the tubes of the first group being staggered axially from the enlargements in the tubes of the second group, whereby the shell fluid travels in a sinuous path as it flows from the inlet to the outlet; said shell having a constant cross section from end-to-end; said shell having an internal configuration which mates with and conforms to the flat surfaces of the tube end portions and tube enlargements.

3,297,082
HEAT EXCHANGERS OF HOLLOW CONSTRUCTION
Lester J. Trimel, St. Louis, Mo., and Elmer H. Carr, Brighton, Ill., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Original application May 9, 1961, Ser. No. 108,862, now Patent No. 3,206,839, dated Sept. 21, 1965. Divided and this application May 18, 1965, Ser. No. 474,193
1 Claim. (Cl. 165—170)



A hollow article of the character described, comprising
(A) at least two separate sheet metal structures having adjacent faces in opposed relationship to each other, at least one of said structures comprised of at least two superimposed metal sheets selectively joined together at their adjacent faces to define between said sheets a pattern of internally unjoined portions corresponding to a desired system of fluid passages,
(B) said unjoined portions being distended so as to form said passages with a portion of the walls of said passages which are adjacent to the other of said structures being of a bulged configuration, and
(C) spaced cross-members coextending with each other extending from and substantially perpendicular to the plane of said structures, each of said cross-members being of a unitary construction of substantially uniform thickness and integrated at its opposite ends to said structures, said cross-members being integral with said joined portions.

3,297,083
SUBSURFACE CHEMICAL TREATMENT OF WELLS
Frank H. Taylor, Farmers Branch, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,254
3 Claims. (Cl. 166—1)



1. The method of dissolving a substance in well fluids flowing through a well flow conductor which includes the steps of: positioning a holder having a chamber which opens downstream of the well fluid flow and valve means for preventing downstream movement of a solid body from the chamber; closing the flow conductor to prevent flow of well fluids therethrough; introducing a solid body of the substance into the downstream end of the flow conductor for movement through the flow conductor and into the chamber past the valve means; and then opening the flow conductor to flow of well fluids therethrough past the solid body in the holder to cause the substance to be dissolved in the well fluids.

3,297,084
MISCIBLE FLOOD VISCOSITY CONTROL THROUGH pH REGULATION
William B. Gogarty and William C. Tosch, Littleton, Colo., and Claude P. Coppel, Woburn, Mass., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,338
18 Claims. (Cl. 166—9)

9. The method of controlling the viscosity of a soluble oil suitable for petroleum recovery from subterranean formations comprising mixing into said soluble oil an amount of an ionic additive effective to reduce the viscosity of the soluble oil while maintaining the soluble oil substantially stable.

3,297,085
VISCOSITY CONTROL IN A MISCIBLE RECOVERY TECHNIQUE
Joseph C. Herring, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,339
11 Claims. (Cl. 166—9)

1. The process for recovering petroleum hydrocarbon from hydrocarbon-bearing, subterranean formations comprising injecting into the formation, through at least one injection well, a plurality of slugs made up of soluble oils, the first of said slugs having a viscosity lower than the remainder of said plurality; thereafter, injecting at least one drive material into said formation to displace the hydrocarbon within the formation; and recovering fluid hydrocarbon from said formation through at least one production well drilled into said formation.

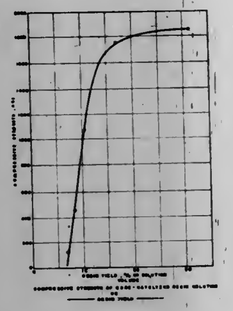
3,297,086
SAND CONSOLIDATION METHOD
Horace H. Spain, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
No Drawing. Filed Mar. 30, 1962, Ser. No. 183,751
15 Claims. (Cl. 166—33)

1. In a method for consolidating the sands of an incompetent subsurface petroleum-bearing formation in which a mixture of resin-forming liquids comprising a low molecular weight hydroxy aryl compound, a water-soluble aldehyde and a catalyst is introduced into said formation, said liquids reacting and setting in said formation and binding the sand particles thereof together, the improvement comprising: introducing into said formation a preflush water solution containing an amino-functional organo silane preceding introduction of said resin-forming liquids.

3,297,087
SAND CONSOLIDATION WITH RESIN-FORMING LIQUIDS
Horace H. Spain, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,970
5 Claims. (Cl. 166—33)

1. In a method for consolidating the sands of an incompetent, subsurface, petroleum-bearing formation in which a mixture of resin-forming liquids comprising a low molecular weight hydroxy aryl compound, a water soluble aldehyde, and a catalyst is introduced into said formation, said liquids reacting and setting in said formation and binding the sand particles thereof together and in which an amino-functional organo silane also is introduced into said formation, the improvement comprising

diluting said resin-forming liquids with amounts of a methyl alcohol and water solution diluent dissolvable in said resin-forming liquids such that the resin yield of the resultant resin solution is in the range from a minimum



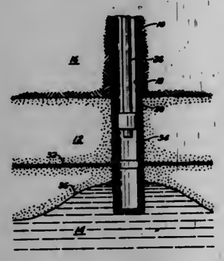
where a desired minimum compressive strength of the sands is provided to a maximum where increased resin yield does not substantially increase the compressive strength of the sands.

3,297,088

PROCESS FOR PREVENTING THE CONING OF AN UNDESIRABLE FLUID INTO A PRODUCTION WELL

Jimmie L. Huitt, Glenshaw, Bruce B. McGlothlin, O'Hara Township, Allegheny County, and Joseph L. Pekarek, Penn Hills, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,101
12 Claims. (Cl. 166—33)



1. A method of reducing the production into a well of an undesirable fluid with a desirable fluid from an underground formation having a zone of the undesirable fluid adjacent a zone of the desirable fluid comprising creating a substantially horizontal fracture extending from the well into the zone of the desirable fluid, displacing particles of a material insoluble in oil and in water into the fracture in an amount forming at least a full monolayer of the particles in the fracture, said particles being deformable to form a continuous barrier of low permeability when subjected to the overburden pressure at the temperature of the zone of desirable fluid reducing the pressure in the formation by producing the well to let the deformable particles be subjected to the overburden pressure, and withdrawing the desirable fluid from the underground formation into the well at a location in the zone of desirable fluid more remote than the barrier from the zone of undesirable fluid.

3,297,089

SAND CONSOLIDATION

Horace H. Spain, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 191,409, May 1, 1962. This application Oct. 24, 1965, Ser. No. 505,051
11 Claims. (Cl. 166—33)

1. In a method for consolidating the sands of an incompetent formation in which a resin-forming mixture is introduced into said formation in two parts, the first part injected miscibly displacing liquid wetting the sand grains of the formation and a portion of the first part remaining on the surface of the sand grains, and the second part injected immiscibly partially displacing the first part injected, the portion of the first part injected remaining on the sand grain surfaces extracting a fraction of the second part injected to form the resin and thereby consolidating the sands of the formation, the improvement comprising: including an amino-functional organo silane in one of the parts of said resin-forming mixture.

3,297,090

ACIDIZING OIL FORMATIONS

Richard E. Dilgren, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 24, 1964, Ser. No. 362,482
11 Claims. (Cl. 166—38)

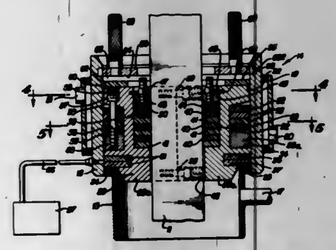
1. A process of treating a subterranean formation penetrated by a well bore, which comprises introducing through said well bore and injecting into said formation a liquid mixture comprising an organic halide and, as a solvating medium, a compound containing an atom with unshared electron pairs from the group of atoms consisting of oxygen and nitrogen atoms, said solvating medium being capable of reacting at the temperature of the subterranean formation with the organic halide to yield hydrogen halide, said liquid mixture containing an organic halide solvolysis-reaction catalyst to speed up the formation of said hydrogen halide.

3,297,091

ROTATING GAS DRILLING HEAD

Clarence R. Dale, 121 Real Road, Bakersfield, Calif. 93309

Continuation of abandoned application Ser. No. 286,352, June 7, 1963. This application June 30, 1965, Ser. No. 470,332
14 Claims. (Cl. 166—84)



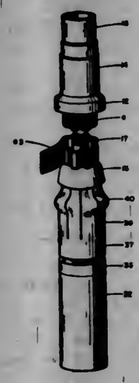
1. A gas drilling head for well casing and adapted to receive a polygonal cross section kelly extent of a drill string through which pressurized gas is introduced to the well and casing, comprising a tubular stationary body including means for attachment to the casing, a metallic tubular diametrically split packing holder within said body and exposed to casing pressure inside the bottom of the body, said holder having a polygonal kelly-passing opening extending therethrough coaxially of the body and having such size that the holder is rotatably driven by the kelly, packing means carried by the inside and outside of said holder for rotation therewith and having sealing engagement with the kelly and body wall, said holder and packing being movable up and down relative to both the body and kelly, stop means carried by the body and normally spaced above the holder and packing whereby the holder and packing are simultaneously rotatable in the body and upwardly displaceable therein by the casing gas pressure.

3,297,092

CASING PATCH

Earl R. Jennings, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed July 15, 1964, Ser. No. 382,729
16 Claims. (Cl. 166—207)



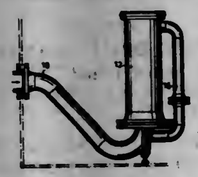
1. An article of manufacture suitable for expansion to form a liner for casing in wells, comprising a longitudinally corrugated tube of malleable metal coated on the exterior surface with a mat of glass fibers filled with a thermoplastic resin which is solid at surface storage temperatures but which softens at the temperature at which it is to be used in a well, said resin containing dispersed therein from about 4 to about 40 percent by volume of finely divided particles of a material insoluble in said resin and solid at the temperatures at which it is to be used in said well.

3,297,093

FIRE EXTINGUISHING APPARATUS COMPRISING A BUOYANT HOSE

Lars Gustav Anders Eriksson, Solna, Sweden, assignor to Svenska Skumslacknings Aktiebolaget, a corporation of Sweden

Filed May 27, 1965, Ser. No. 459,387
Claims priority, application Sweden, Feb. 23, 1965, 2,310/65
7 Claims. (Cl. 169—4)



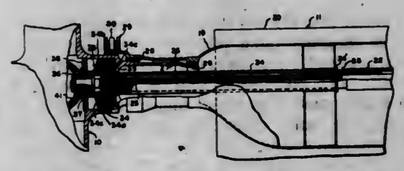
1. A fire extinguishing apparatus for tanks and other reservoirs for storing inflammable liquid to levels including a maximum level, comprising a magazine disposed in the reservoir below the maximum level thereof and provided with an inlet for a fire extinguishing agent and an outlet opening, a diaphragm normally closing said outlet opening, a hose having its one end open toward said inlet and its other end closed, said hose being folded in the magazine in a state of readiness to be developed by the fire extinguishing agent to be introduced into the hose through the inlet end thereof, a diaphragm closing said outlet opening and thus normally preventing development of the hose, said diaphragm being of a nature to burst at an interior pressure in the magazine lower than the exterior pressure exerted on the diaphragm by the inflammable liquid in the reservoir when the latter is filled with inflammable liquid to the maximum level.

3,297,094

AIRCRAFT PROPELLING ASSEMBLY

Adrian V. Kisovec, Morton, Pa., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 498,278
15 Claims. (Cl. 170—160.11)



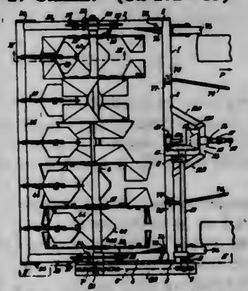
1. An aircraft propelling assembly comprising a hub adapted to be rotated, a blade, means connecting said blade to said hub for rotation therewith, said connecting means including an elastomer bearing to permit movement of said blade with respect to said hub, said elastomer bearing having one of its bearing surfaces contacting a portion of said hub and the other of its bearing surfaces contacting a portion of said blade, means to deflect said elastomer bearing when said blade is rotated about its pitch axis and means to limit the deflection of said elastomer bearing irrespective of the amount of rotation of the blade about its pitch axis.

3,297,095

ROTARY PLOW

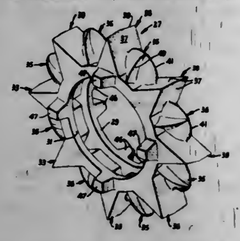
Cornelis van der Lely, Zug, Switzerland, assignor to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company

Filed June 23, 1965, Ser. No. 480,230
17 Claims. (Cl. 172—39)



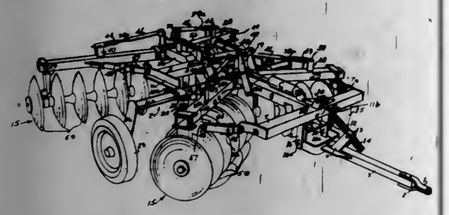
17. A rotary plow comprising a movable frame, having a rotatable shaft, at least three paired cutting members, each pair comprising co-operating cutting elements, said elements being rigidly connected to said shaft by substantially straight supports arranged side by side, said cutting elements having portions provided with cutting edges, the said cutting edges of said cutting elements extending towards each other and to the rear with reference to the normal direction of rotation of the said shaft, each of said cutting members of a pair being provided with a catching member, said catching member extending to the rear with reference to the normal direction of rotation of the said shaft and inwardly.

3,297,096
COMPACTION, CUTTER, CRUSHER UNIT
Darrel M. Wooldridge, Oakland, Calif., assignor to American Tractor Equipment Corporation, a corporation of California
Filed Dec. 7, 1964, Ser. No. 416,259
8 Claims. (Cl. 172—464)



1. A cutter disc for use on a road working device, comprising in combination a plurality of spaced hoe teeth having sharpened edges generally parallel with the axis of the disc and intervening scallop teeth having sharp cutting edges, placed at right angles to the axis of the disc, said hoe teeth extending outwardly substantially further than said scallop teeth, the sides of each hoe tooth forming an acute angle with each other and each of the scallop teeth being integral with the sloping sides of adjacent hoe teeth and having their cutting edges extending substantially from the sloping side of one adjacent hoe tooth to the other, and each of the scallop teeth having a secondary cutting edge extending at right angles to its first mentioned cutting edge.

3,297,097
WHEELED TANDEM DISC HARROW
Joseph E. Pryor, Athens, Tenn., assignor to Athens Plow Company, Athens, Tenn., a corporation of Tennessee
Filed Jan. 21, 1965, Ser. No. 426,910
6 Claims. (Cl. 172—595)



1. A disc harrow comprising:
(a) a main frame comprising a front frame assembly and a rear frame assembly, said front frame assembly being pivotally connected to said rear frame assembly,
(b) a tongue connected to said front frame assembly and adapted to be attached to a source of power,
(c) a leveling means resiliently connected between said tongue and said front frame for resiliently and adjustably positioning said tongue with respect to said front frame assembly,
(d) a front pair of disc gangs disposed on each side of said front frame assembly,
(1) said front pair of disc gangs each being pivotally connected at their inner ends to said front frame assembly,
(2) adjustable angling straps connecting the outer ends of each of said front pair of disc gangs to said front frame assembly whereby said front pair of disc gangs can be adjusted in the horizontal plane with respect to said main frame,
(e) a leveling means connected between said front frame assembly and said rear frame assembly for resiliently adjusting said front frame assembly and said rear frame assembly with respect to each other in the vertical position,
(f) a rear pair of disc gangs disposed on each side of said rear frame assembly,
(1) said rear pair of disc gangs each being pivotally connected at their inner ends to said rear frame assembly,
(2) adjustable angling straps connecting the outer ends of each of said rear pair of disc gangs to said front frame assembly whereby said rear pair of disc gangs can be adjusted in the horizontal plane with respect to said main frame,
(g) leveling rods resiliently connected between said front frame assembly and each of said front disc gangs and between said rear frame assembly and each of said rear disc gangs whereby each disc gang is permitted to be independently raised or lowered with respect to each other,
(h) a wheel carriage assembly connected to said main frame and adapted to transport said disc harrow, and
(i) hydraulic means connected between said main frame assembly and said wheel carriage assembly and adapted to raise and lower said wheel carriage assembly with respect to said main frame assembly.

3,297,098
PROCESS FOR AERATED DRILLING
Stanley H. Elman, Dallas, Tex., Fred E. Woodward, Plainfield, N.J., and Frank F. Sullivan, Carmel, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 13, 1963, Ser. No. 301,917
16 Claims. (Cl. 175—65)

1. In a process of drilling a well wherein there is circulated through the well during said drilling a drilling fluid into which gases are injected to produce foam for carrying cuttings from the well; the improvement which comprises incorporating in said drilling fluid as a foaming agent, antiwear agent and corrosion inhibition agent, a minor amount of a phosphate selected from the group consisting of
(1) mono- and
(2) di-esters and
(3) tri-esters and
(4) mixtures thereof of phosphoric acid with a nonionic surfactant derived by condensation of
(5) an organic compound containing at least 6 carbon atoms and containing a reactive hydrogenatom and
(6) at least three moles of ethylene oxide,
to improve fluid displacement during drilling, to reduce friction on the drilling tools and to decrease corroson of the drilling tools to thereby improve the efficiency of the drilling process and extend the life of said drilling tools.

3,297,099
ROCK DRILL REAMER
John W. Adams, Staten Island, N.Y., and Edward F. Wickens, Phillipsburg, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed May 28, 1964, Ser. No. 370,961
5 Claims. (Cl. 175—96)

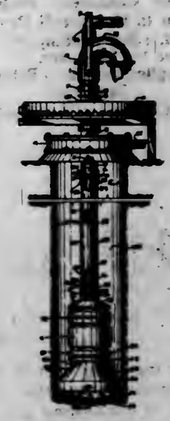
1. A rock drill reamer of the percussive type comprising:
(a) a frame including an elongated axial tube which is adapted at both ends to be connected to and supported on the bottom end of a drill pipe for feeding fluid pressure to the tube;
(b) closure means to cap an end of the tube, said closure means being used to close the end of the tube which is not connected to the drill pipe;
(c) said frame including a backhead fixed to the rear end portion of the tube and containing fluid passages connected to the interior of said tube for receiving fluid pressure from said tube;
(d) a plurality of individual percussive-type down hole drills located alongside of said tube in parallel relationship and having their rear ends connected to and supported on said backhead with the passages in said backhead feeding fluid pressure to said drills;



(e) holder means fixed on the front end portion of said tube and holding the front ends of said drills in parallel relationship to each other and to said tube;
(f) said holder means being operative to release said drills from said tubes by sliding said drills axially forward relative to said tube; and
(g) means for axially clamping said drills to said backhead to prevent them from moving axially forward relative to said tube.

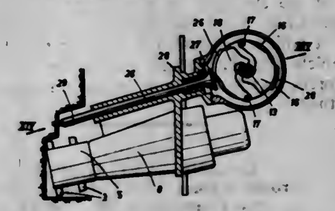
3,297,100
DUAL DRILL STEM METHOD AND APPARATUS
Sim H. Crews, Mercury, Nev., assignor to Large Mine Shaft Drillers, Incorporated, Amarillo, Tex., a corporation of Texas
Filed Apr. 13, 1964, Ser. No. 359,214
2 Claims. (Cl. 175—195)

1. In combination with earth drilling apparatus a vertical elongated kelly, a rotary drive table through which said kelly extends for rotating same, said kelly having an outer non-circular pipe engaging said drive table and an inner pipe of smaller diameter than the inside dimensions of said kelly outer pipe and extending longitudinally within said kelly outer pipe forming inner and outer concentric flow passageways within said kelly, said kelly outer pipe terminating at the lower end thereof in a drill string coupling collar, said kelly inner pipe terminating at the lower end thereof in a conduit string coupling collar, said kelly inner pipe having a longitudinally telescoping sealed joint spaced above said latter coupling collar permitting the longitudinal positioning of said latter coupling between a first



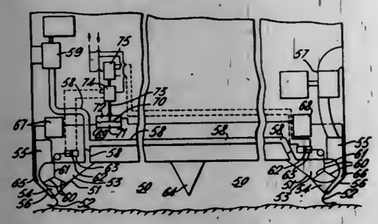
position depending below said kelly outer pipe coupling collar and a second position spaced above said kelly outer pipe coupling collar.

3,297,101
APPARATUS FOR BORING A HOLE IN ROCK
Josef Wohlmeyer, Blaustrasse 13, Vienna, Austria
Original application Apr. 26, 1962, Ser. No. 190,285. Divided and this application Oct. 16, 1964, Ser. No. 412,274
Claims priority, application Austria, Apr. 27, 1961, A 3,295/61
7 Claims. (Cl. 175—415)



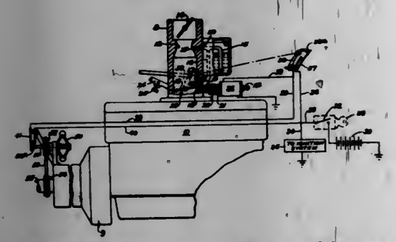
1. Apparatus for boring holes in rock comprising:
(a) a carrier;
(b) means for feeding said carrier in a predetermined direction;
(c) striking tool means carried by said carrier and operable in an operative position of the apparatus to deliver successive impacts to successive incremental rock surface portions to loosen the rock adjacent thereto; and
(d) cutting tool means carried by said carrier, spaced from said striking tool means in a direction opposite to said predetermined direction, and operable in said operative position of the apparatus to act on each of said surface portions after such impact has been delivered thereto, said striking tool means including
(1) a rotatable hammer shaft having an axis arranged to extend substantially parallel to a rock surface to be acted upon,
(2) striking weights mounted on said shaft for radial outward movement under the action of centrifugal forces when said shaft rotates about said axis,
(3) motor means for rotating said shaft about said axis, and
(4) stop means for limiting said outward movement of said weights.

3,297,102
AIR CUSHION VEHICLES HAVING ATTITUDE-CORRECTING SKIRTS
Christopher Sydney Cockerell, Bassett, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed June 16, 1964, Ser. No. 375,496
Claims priority, application Great Britain, June 21, 1963, 24,819/63
5 Claims. (Cl. 180—7)



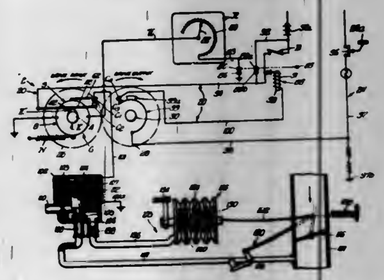
1. A vehicle for travelling over a surface and which in operation is supported above that surface, at least in part, by a cushion of pressurised gas formed and contained in a space beneath the vehicle, comprising a movable structure attached to the main body of the vehicle and extending downwardly away from the bottom surface of said main body, said structure comprising an upper stage and a lower stage flexibly attached to the lower part of the upper stage, means for moving the structure vertically, as a whole or locally, relative to the vehicle so as to vary the position of the lower part of the structure relative to the surface, said means including means for moving vertically at least the lower part of the upper stage, means for detecting a variation in attitude of the vehicle from a desired attitude relative to the mean surface, and control means operative to control the movement of the structure in accordance with the variation so detected to move the structure downwardly at a locality at which the clearance between the main body of the vehicle and the surface is decreased to produce vertical forces on the vehicle in opposition to such variation in attitude.

3,297,103
ENGINE FUEL SUPPLY
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133
Filed Mar. 24, 1964, Ser. No. 354,232
3 Claims. (Cl. 180—77)



3. In an automotive vehicle comprising an internal combustion engine, a drive shaft for driving said vehicle, and means for connecting and disconnecting the drive shaft to and from the engine, said engine having a carburetor and throttle valve therefor; an idle fuel system for supplying fuel to said engine, and means for shutting off and turning on the flow of fuel through said idle system, said latter means comprising a speed responsive device connected to the drive shaft for turning on the flow of idle fuel when the drive shaft rotates below a preselected speed and means indepedent of said speed responsive device connected to the throttle for turning off the flow of idle fuel when the throttle is closed and the drive shaft rotates above said preselected speed whereby on deceleration of the engine with the drive shaft stationary and the throttle closed fuel will flow through the idle system, while on deceleration of the drive shaft and engine to the preselected speed with the throttle closed there is no flow of idle fuel.

3,297,104
SPEED CONTROL DEVICE
Clarence D. Fox, Macon, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 27, 1964, Ser. No. 414,124
13 Claims. (Cl. 180—82.1)

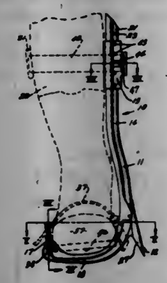


1. In an automatically operable, manually selectable, speed maintaining device particularly adapted for the prime mover of a ground vehicle, said device including means for sensing the ground speed of the vehicle, means including an armature arranged to be driven by said speed sensing means effective to generate a varying magnetic field in proportion to said speed, a magnet reaction means automatically arcuately movable in proportion to the intensity of said magnetic field, electrical contact means, a means defining a control circuit containing said contact means, said reaction means being operably responsive to a predetermined valve of said magnetic field effective to operate said contact means, resistance means in said circuit for regulating the value of the current delivered to said armature as a function of the desired vehicle speed to be maintained and hence the intensity of said magnetic field correspondingly determining the extent of arcuate movement of said reaction means in relation to a predetermined vehicle speed, said resistance means providing a resistance to the current flow to said armature and hence the intensity of said magnetic field generated, and means in said circuit to regulate the fuel delivery to said prime mover, said contact means being operative in open and closed positions of said contacts to increase and decrease the vehicle speed.

3,297,105
STIRRUP FOR POLE CLIMBER
Delmer C. Lawrence, R.F.D. 2, Dowling Road, Hope Township, Barry County, Mich. 48628
Filed Aug. 30, 1965, Ser. No. 483,628
4 Claims. (Cl. 182—46)

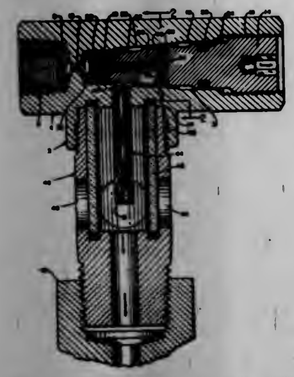
1. A pole climber comprising:
an L-shaped, resin impregnated fiberglass stirrup having relatively long and short elements disposed at substantially right angles to each other;
means defining a groove in the outer surface of said short element and in the portion of the outer surface of said long element adjacent said short element;
a metal spur and an elongated metallic member rigidly secured to said spur, said metallic member being snugly disposed within said groove and said spur extending substantially parallel with said long element adjacent said short element;

means rigidly securing said elongated member within said groove;
strap and buckle means engaged with said L-shaped member adjacent said spur and engaged with said short element adjacent the free end thereof for holding a foot snugly adjacent said short element;



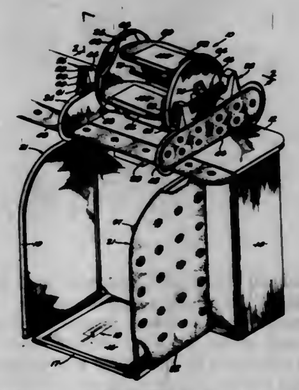
a strap-engaging bracket secured to said long element near the free end thereof, said bracket being adjustable lengthwise of said long element; and
strap means mounted upon said bracket for engaging and thereby holding the leg associated with said foot snugly adjacent to and substantially parallel with said long element.

3,297,106
PULSATING LUBRICATOR
Herbert G. Hanson and Walter E. Draxler, Arlington Heights, Ill., assignors to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 23, 1964, Ser. No. 353,952
4 Claims. (Cl. 184—7)



2. In a fluid pressure system a lubricator having a body with an inlet port, an outlet port and a passage between the ports, said inlet port communicating with a source of lubricant under constant pressure, said outlet port communicating with a portion of said system subjected to a varying pressure, means to pass a measured amount of lubricant from said inlet port to said outlet port including a resilient radially expandable annular movable means free to move in said passageway alternately movable to seal one of the two ports and unseal the other port, said movable means having an unstressed size less than that of the passageway to permit said measured amount of lubricant to pulse flow while said movable means is moving between said ports and being normally closing on one port by its own resiliency under substantially equal pressures at the inlet and outlet ports and urged by unequal pressures at the inlet and outlet ports to seal on the other port, adjusting means in said passageway to vary the distance between said ports including an element moving one of said ports in said passageway.

3,297,107
BAR SERVICE APPARATUS
James R. Shipp, 67—134 San Gabriel Circle, Palm Springs, Calif. 92262
Filed June 19, 1964, Ser. No. 376,372
4 Claims. (Cl. 186—1)



1. A bar service apparatus for use on a counter top to expedite the handling of orders by a bartender for a plurality of waiters serving patrons seated at tables, comprising:
a wheel supported on said counter top for rotation about a horizontal axis;
a plurality of tray-supporting platforms on said wheel, each of said platforms having means identifying it as being the platform assigned to one of said waiters;
means for maintaining said platforms level as said wheel revolves;
normally-open switch means associated with each of said platforms, said switch means being closed by the weight of a loaded tray standing on the platform;
visual signal means actuated by said switch means when the latter is closed, to show that there is a tray waiting on one of said platforms for the waiter to whom it is assigned; and
means operable by either the bartender or the waiter for driving said wheel to bring a tray around to a convenient location with respect to the operator.

3,297,108
SHOPPING CARRIER
Lynn N. Davis, Emmett Township, Calhoun County, Mich., assignor to United Steel and Wire Company, Battle Creek, Mich., a corporation of Michigan
Filed Sept. 9, 1965, Ser. No. 486,161
9 Claims. (Cl. 186—1)

1. In a basket construction for a shopping carrier, the combination comprising:
a spaced pair of generally upstanding side walls and a bottom wall extending between said side walls;
a movable end wall disposed adjacent the ends of said side and bottom walls and operable for opening or closing the end of the basket construction;
hinge means pivotally connecting the lower edge of said end wall with the forward edge of said bottom wall;
interengageable means on said end wall and side walls adjacent the upper edges thereof for resisting rela-

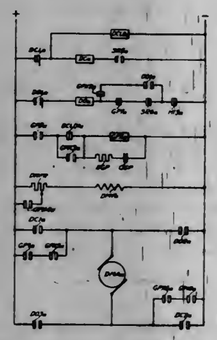
tive movement between said upper edges of said walls adjacent said end wall when said end wall is positioned to close the end of said basket, said interengageable means including elements projecting transversely from said side walls and interfitting members



on said end wall projecting toward said side walls and capable of interfitting with said element;

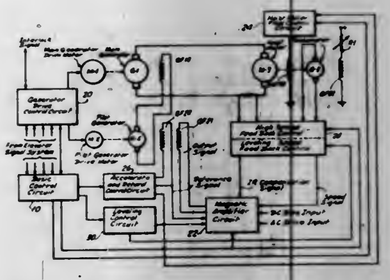
latch means for preventing pivotal movement of said end wall about the hinge means, said latch means being releasable to allow such pivotal movement.

3,297,109
CUSTODY CONTROL FOR ELEVATORS WHEREBY CARS ARE STOPPED AND DOORS HELD CLOSED UNTIL EXTERNALLY OPENED
John E. Magee, Greenburgh, N.Y.
(191 Forest Blvd., Ardsley, N.Y. 10502)
Filed Feb. 12, 1963, Ser. No. 258,073
7 Claims. (Cl. 187—29)



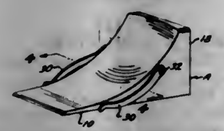
1. In an automatic elevator system comprising a plurality of elevator cars operating between a plurality of floors, each car having a door which opens and closes and car call registering means therein for registering calls for service to said floors by a passenger therein, hoistway doors at a plurality of said floors providing access to said cars, floor call registering means at a plurality of said floors for registering calls for service at said floors, means for opening and closing the car doors, means for opening and closing the hoistway doors, normal control circuit means controlled by said call registering means for normally causing said cars to move between said floors and to stop at floors for which calls are registered and controlling said door opening and closing means for normally causing the door of a car stopped at a floor and the hoistway door providing access to said last mentioned car to open automatically thereby to permit passengers to enter and leave the stopped car, the combination therewith of manually operable, overriding custody control means external to said cars for modifying the operation of said normal control means comprising means connected in circuit with said normal control means for causing all the cars which are not at a predetermined one of said floors to move to and stop at a predetermined one of said floors, and for preventing the stopping of cars in response to car and floor calls at floors other than said one floor, means connected in circuit with said normal control means for preventing the opening by said normal control means of the car doors of the cars stopped at said one floor and the hoistway doors providing access to the stopped cars, and manually operable door opening means for selectively and individually opening said doors at said one floor whereby when the custody control means is operated, passengers in the cars and persons at the floors are prevented from causing movement of the cars to, and stopping of the cars at, floors under control of the car call and floor call registering means and are prevented from opening the doors, passengers in the cars thereby being confined in the cars until said last-mentioned door opening means is operated.

3,297,110
GENERATOR STARTER USED IN AN ELEVATOR MOTOR DRIVE
Gino Bagnasco, Bronx, N.Y., assignor to Serge Elevator Company, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 208,513, July 9, 1962. This application Feb. 10, 1965, Ser. No. 431,670
1 Claim. (Cl. 187—29)



In an elevator control system containing a main generator and means for generating a start signal, a starting interlock circuit comprising a start relay coupled to said start signal to be energized thereby, means for shorting said start relay to prevent energization when the start relay of another elevator control system is energized, a first timing relay coupled to said start signal to be energized thereby, said first timing relay being operable to de-energize said start relay at the end of a predetermined maximum starting time interval, a second timing relay coupled to said start relay to be energized thereby, said second timing relay being operable to de-energize said start relay at the end of a predetermined normal starting time interval and to energize a main generator relay, said start relay being coupled to said main generator to apply starting power thereto, said main generator relay being coupled to said main generator to apply running power thereto, means for preventing the start relay and the main generator relay from being energized at the same time, and means for de-energizing the main generator relay in response to a stop signal to de-energize the main generator.

3,297,111
AUTOMOTIVE WHEEL BLOCK
Miguel Lisboa, 903 E. 8th St.,
Long Beach, Calif. 90813
Filed Apr. 7, 1965, Ser. No. 446,149
1 Claim. (Cl. 188—32)



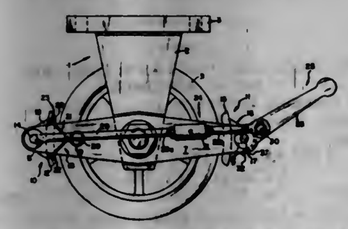
A wheel block for use in preventing inadvertent movement of an automotive vehicle, including:

(a) a block of rigid non-metallic material having a forwardly extending tongue on which the tire of a vehicle rests, with said block also including an upwardly curved surface rearwardly of said tongue against which said tire abuts when resting on said tongue, which block has a flat lower surface and an upwardly extending rear end surface, with said end surface having two transversely spaced recesses formed therein that extend forwardly therefrom and cooperatively define a hand grip therebetween that can be grasped by the user in disposing said block in a position relative to the wheel of said vehicle to prevent inadvertent movement thereof;

(b) two elongate tire-engaging members disposed on opposite sides of said block; and

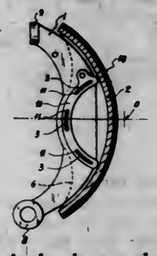
(c) means for pivotally supporting said tire-engaging members from said block, with said members when not in use extending along opposite longitudinal sides of said block being substantially parallel to said lower surface thereof, and which members are used to engage a tire that is not appreciably greater in width than said block when said members are pivoted to an upwardly extending position while said tire rests on said tongue, with said members being automatically disengaged from said tire when said wheel supporting said tire rotates in a direction to move away from said upwardly extending rear surface when in use extend upwardly above said block to removably engage opposite sides of said tire that is in engagement with said upwardly and rearwardly curving surface.

3,297,112
CASTER WHEEL AND BRAKE ASSEMBLY
George Keith Mulholland and John C. Taylor, Saginaw, Mich., assignors to Saginaw Products Corporation, Saginaw, Mich., a corporation of Michigan
Filed Sept. 24, 1964, Ser. No. 398,878
17 Claims. (Cl. 188—75)



17. A relative movement restraining construction for use with a rotatable member, said construction comprising first and second brake means, each mounted for movement from a first position free of engagement with said rotatable member toward a second position in engagement therewith; actuating means supported on one of said brake means for movement from a brake releasing to a brake applying position and carried by said brake means for movement with said brake means toward and away from said rotatable member; and means interconnecting said actuating means and the other of said brake means, said interconnecting means effecting movement of said first and second brake means toward their respective second positions in response to said movement of said actuating means.

3,297,113
BRAKE MECHANISM
Carlos Pujana Ocerin, Villarreal de Urrechua, Spain, assignor to Aparicio Hermanos & Cia., S.A., Guipuzcoa, Spain, a joint-stock company of Spain
Filed Apr. 22, 1965, Ser. No. 450,217
Claims priority, application Spain, Mar. 4, 1965, 310,121
3 Claims. (Cl. 188—78)



1. A self-centering brake shoe mechanism comprising:

a brake shoe which can be moved into and out of contact with a brake drum,

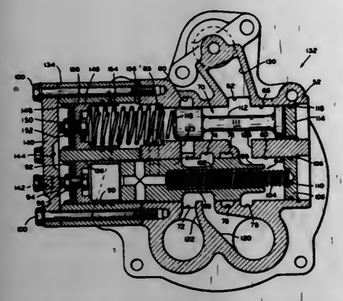
a lever for supporting said brake shoe and for displacing the shoe toward and away from the drum, said lever being mounted for pivotal movement at one end and contacted by an operating rod means at its opposite end for displacement of the lever about an axis at said pivotal mounting point, and

means for articulating said brake shoe to said lever so that said shoe can be rotated slightly relative to said lever about an imaginary axis of rotation which is located outwardly from the point of articulation of said shoe to said lever and toward said brake drum, said axis of rotation being positioned along a median line drawn equidistant from the pivotal mounting axis of said lever and the end of said lever at which said operating rod is contacted with the lever, said means for articulation including transverse arcuate members located in arcuate slots which are formed in alignment in said shoe and said lever, said arcuate members and arcuate slots being disposed along an imaginary arc of a circle having its center in the imaginary axis of rotation for said shoe, whereby a movement of the brake shoe toward the brake drum will effect a self-centering, uniform pressure contact of a lining for the shoe with the drum.

3,297,114
HYDRAULIC RETARDER AND CONTROL VALVE
William C. Erdman, Jackson, and Burton S. Zeller, Parma, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Jan. 25, 1965, Ser. No. 427,774
6 Claims. (Cl. 188—90)

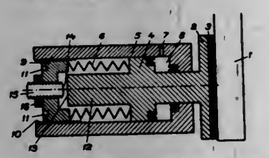
1. In a hydraulic system including a hydraulic fluid retarder with an inlet side and an outlet side, a source of hydraulic fluid under pressure and hydraulic fluid receiver means, a control valve assembly comprising a first valve member having one position in which the source of hydraulic fluid is placed in communication with the hydraulic fluid receiver means for maintaining the hydraulic fluid retarder inactive, said first valve member

having a second position in which the source of hydraulic fluid is placed in communication with the inlet side of the hydraulic fluid retarder for activating the latter, first spring means for biasing said first valve member to said first position, fluid operated means for moving said first valve member from said first position to said second position in opposition to said first spring means, a second valve member having a first position in which communication between the outlet side of the hydraulic fluid retarder and the hydraulic fluid receiver means is blocked,



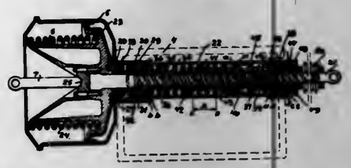
second spring means for biasing said second valve member to said first position, fluid operated means for varying the spring rate of said second spring means, and said second valve member when said first valve member is in said second position being movable in response to the pressure within the hydraulic fluid retarder to modulate communication between the outlet side of the hydraulic fluid retarder and the hydraulic fluid receiver means whereby to maintain a substantially constant pressure within the hydraulic fluid retarder for any given spring rate of said second spring means.

3,297,115
ADJUSTMENT DEVICE FOR SPRING PRESSURE BRAKES
Åge Walöen and Eckil Tunebjörn, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Oct. 2, 1964, Ser. No. 401,024
Claims priority, application Germany, Oct. 8, 1963, A 44,246
3 Claims. (Cl. 188—170)



1. A brake comprising a movable brake block, a stationary brake cylinder member, a piston member slidable in said cylinder member connected to said movable block, said cylinder and piston members having cooperating spring abutment means thereon, a brake power developing spring between said spring abutments urging said brake block in brake applying direction, said cylinder member forming a pressure chamber, one side of said piston member facing said pressure chamber, pressure medium supply means connected to said pressure chamber for moving said piston member against the force of said spring, one of said spring abutment means being adjustable with respect to its member in the direction of said movement of said piston, said adjustable abutment means having stop means engageable by the other member to limit the movement of said piston member in brake releasing direction, said spring being located in said cylinder member on the side of said piston member opposite the one facing said pressure chamber, said adjustable abutment means constituting an end wall of said brake cylinder member remote from said pressure chamber mounted for adjustment with respect to the brake cylinder member.

3,297,116
SLACK ADJUSTERS
Nils Börje Lennart Sander and Ingmar Valentin Larsson, Malmo, Sweden, assignors to Svenska Aktiebolaget Bromsregulator, Malmo, Sweden
Filed Jan. 4, 1965, Ser. No. 423,033
Claims priority, application Great Britain, Jan. 7, 1964, 636/64
7 Claims. (Cl. 188—196)

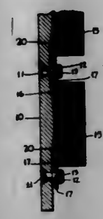


1. An automatic slack adjuster for a vehicle brake system having a brake actuator, said slack adjuster comprising a reference member, a tubular sensing member movable in its longitudinal direction in proportion to the movement of said brake actuator, a rod extending into the bore of said sensing member, said rod being pushable towards said reference member at a pushing force representative of the braking force, said rod being constructed with a non-self-locking screw thread, a leader nut and an adjuster nut carried by said rod in engagement with the screw thread thereof, a sleeve slidably and rotatably surrounding said tubular sensing member, a barrel surrounding said tubular sensing member, said sleeve and said leader and adjuster nuts, said barrel being mounted for limited axial movement with respect to said reference member, a ring rotatably surrounding said tubular sensing member adjacent the forward end of said barrel, a barrel spring between said ring and said sleeve, means on said tubular sensing member and said sleeve for axially engaging same upon a predetermined travel of said sensing member from its neutral position, clutching means for holding said ring against rotation at braking forces up to a predetermined value, an adjuster spring between said leader nut and said adjuster nut, said adjuster spring being rotatably supported against said leader nut, spring detaining beans engaging between said adjuster spring and said adjuster nut, stop means on said sleeve for co-operation with said spring detaining means, said leader nut being forwardly clutchably engageable with said sleeve, said adjuster nut being alternatively forwardly and rearwardly engageable with said barrel.

3,297,117
CONFORMABLE ROTARY DISK BRAKE SHOE ASSEMBLY
Omar E. Freholm, Jenkintown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 30, 1965, Ser. No. 452,196
2 Claims. (Cl. 188—234)

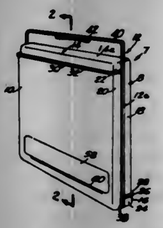
1. A rotary disk brake shoe assembly, comprising in combination, a brake shoe plate having a lining supporting surface, said supporting surface having a plurality of convex projections constituting multi-direction rocking support elements extending therefrom, a plurality of segmental brake lining blocks distributed over the surface area of said shoe plate with each block disposed above rocking support elements, resilient supporting sheet means disposed beneath and bonded to said brake

blocks and engaging the rocking support elements, and means securing said supporting sheet means to said shoe plate to hold it down thereon and hold it against torque produced lateral movement relative thereto, said resilient



supporting sheet means comprising a springy metal sheet having local spring flexing to provide separate universal tilting movement of the brake blocks about the rocking support elements.

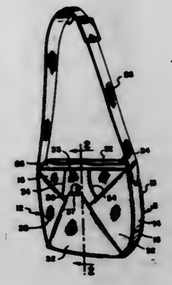
3,297,118
COMBINED CARRYING AND DISPLAY CASE
Norman J. Van Skyhawk, Los Angeles, Calif., and Joseph J. Kelly, Jr., Brigham City, Utah, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 10, 1964, Ser. No. 350,730
9 Claims. (Cl. 190—1)



1. A combined carrying case and display easel comprising complemental shell halves which cooperate to form a closed case, a locking bar on at least one side of the complemental shell halves where the edges engage, said locking bar having separate pin and slot connections with each of the shell halves and arranged in spaced relation to each other along the sides thereof, means for latching the locking bar upon sliding movement in one direction to lock the shell halves in closed position and releasing the bar upon movement in the opposite direction whereby to permit both relative sliding movement of the shell halves and pivoted movement of at least one shell half with respect to the locking bar to open the case, said pin and slot connection between one of the shell halves and the locking bar being located a distance from one end of said one shell half less than the distance between said pin and slot connection and the other shell half to adapt said one shell half to rock by the other shell half through an angle of more than 180°, and to adapt said locking bar to be rocked relative to said other shell half through an angle of less than 90° to form an easel.

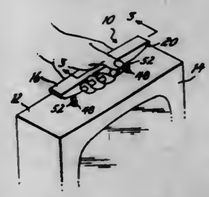
3,297,119
CONVERTIBLE SHOULDER BAG
Arya Viol, 1217 15th St., Fort Lee, N.J. 07024
Filed Oct. 23, 1964, Ser. No. 406,111
4 Claims. (Cl. 190—8)

1. A combined tote bag and infant's breeches-type seat which comprises a combined seat and bag portion and a breeches portion; said seat and bag portion comprising a U-shaped wall member, a top member secured to the upper peripheral edge of said wall member an a bottom member secured to the lower peripheral edge of said wall member, said top member, wall member and bottom member together forming a U-shaped bag having an open front, said wall member and top member being formed of materials having sufficient strength and rigidity to support the weight of an infant, seated on said top member, said bag being provided with a front closure member hingeably secured to at least one front edge of



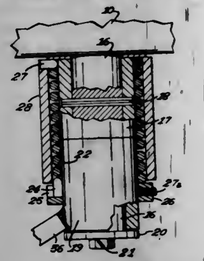
the U-shaped bag and adapted to close the open front thereof, and also with a carrying strap; said breeches portion comprising a side and back panel the lower edge of which is secured to the upper peripheral edge of the U-shaped bag, and a front panel the lower edge of which is secured to the upper front edge of the U-shaped bag, the front panel being formed with openings adapted to receive the legs of an infant seated on the top member of the U-shaped bag, and both the side and back panel and the front panel being formed of a pliant foldable material.

3,297,120
COLLAPSIBLE SELF-RETURNING HANDLE WITH HIDEAWAY LINKAGE
George W. Bush, Haddonfield, N.J., assignor to Philadelphia Handle Company, Inc., Camden, N.J., a corporation of New Jersey
Filed June 28, 1965, Ser. No. 467,566
7 Claims. (Cl. 190—55)



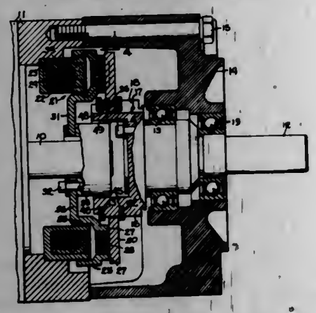
1. In combination with a carrying case having a wall, a collapsible self-returning handle comprising an elongated hand-grip having a lower surface including a flat portion, at least one recess in said grip opening through said flat portion, a pair of pivotally interconnected links, means pivotally securing one of said links to said grip in said recess, and means pivotally securing the other of said links to said wall, said recess being dimensioned to encompass said links and said means when said grip is in its non-carrying position with its flat portion flush against said wall and said links are in generally horizontal positions, said grip adapted to be raised so that said links extend in a generally vertical position and said grip is spaced above said wall in its carrying position.

3,297,121
CLUTCH
Glen Dale Hansen, Maple Plain, Minn., assignor to Van Dale Corporation, Wayzata, Minn., a corporation of Minnesota
Filed Aug. 3, 1964, Ser. No. 386,973
6 Claims. (Cl. 192—26)



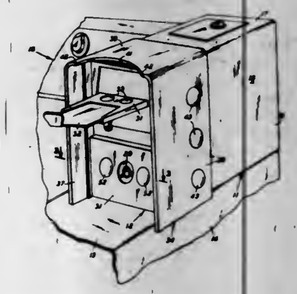
1. A clutch assembly for connecting a driving shaft to a driven member comprising: two substantially cylindrical members adjacently mounted on said driving shaft, one cylindrical member being rotatably mounted on the driving shaft and the other cylindrical member being secured to said driving shaft, a resilient helix embracing said substantially cylindrical members, means securing one end of said resilent helix to said rotatably mounted cylindrical member, an outer member secured to the other end of the helix, and arm means movable into and out of engagement of said outer member for selectively holding and releasing the outer member, and means secured to the outer end of said driving shaft that is larger in diameter than said driving shaft whereby said rotatably mounted cylindrical member is held against substantial axial movement on said driving shaft between said means secured to the outer end of said driving shaft and said non-rotatably secured cylindrical member.

3,297,122
WEAR TAKE-UP DEVICE FOR MAGNETIC FRICTION COUPLINGS
Leroy W. Simonson, Beloit, Wis., assignor to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,336
7 Claims. (Cl. 192—111)



1. In a magnetic friction coupling having a centrally apertured armature disk and a magnet ring mounted for relative rotation and adapted to be drawn into axial gripping engagement threading a toroidal flux through the disk and magnet and including a support mounting the disk for axial shifting, a device for automatically taking up wear at the friction faces of said disk and magnet and maintaining a narrow axial gap of predetermined width between such faces when said flux is dissipated, said device comprising an elongated member paralleling the axis of said disk and extending through a hole in the disk, said member including resilient means continuously acting to develop radial pressure between the disk and member and maintain a predetermined friction force yieldably resisting axial shifting of the member relative to the disk, two abutments axially fixed relative to said support beyond opposite ends of said member and axially spaced apart a distance greater than the effective length of the member by the desired width of said gap, and spring means acting between said disk and one of said abutments to urge the disk and the member thereon axially and away from said magnet with a force of lesser magnitude than said friction force.

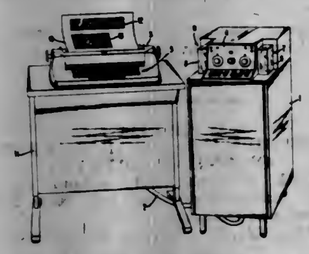
3,297,123
SECURITY STRUCTURE FOR A COIN METER
Marlyn R. Hutchins, Spring Lake Park, Minn., assignor to Andrew P. Simon, doing business as Pak Distributing Co., Spring Lake Park, Minn.
Filed June 30, 1965, Ser. No. 468,545
7 Claims. (Cl. 194—97)



1. In combination a coin operated meter included a housing having spaced side walls, a top wall and a front wall, a coin box releasably locked to a portion of the housing and slidably through an opening in the front wall, coin transporting slide means mounted on said front wall above said coin box for carrying coins from a position outside said front wall into said coin box, a heavy inverted U-shaped strap member positioned about said housing, said strap member having flat legs positioned adjacent the outside of the spaced side walls and a flat top wall secured to the upper ends of the legs positioned over the housing top wall, said legs and top wall of the strap member projected forwardly from the front wall and ends of the side walls forming a protective extension for the coin box and slide means, and fastening means for securing the legs to the housing side walls.

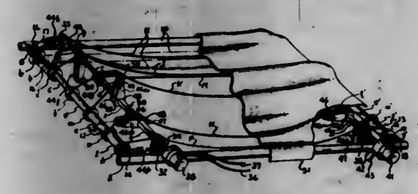
3,297,124
DATA RECORDING AND PRINTING APPARATUS CAPABLE OF RESPONDING TO CHANGED FORMAT
Donald E. Sims, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 377,897, June 25, 1964. This application Apr. 6, 1966, Ser. No. 540,777
20 Claims. (Cl. 197—19)

1. Data processing, recording and printing apparatus, comprising:
a printer,
means in said printer for defining lateral left and right margins of copy on a document to be printed;
a document supporting means and printing means in said printer, said document supporting means and said printing means being mounted for relative movement from a left margin position during printing;
a keyboard on said printer, said keyboard having a plurality of informational and functional character keys;
recording apparatus interconnected with said printer, said recording apparatus including first and second stations and associated means for recording in and reading record media at each of said stations;
means in said recording apparatus responsive to depression of each key on said printer for recording a coded representation of the related character on a said record media concurrently with its printing;
selector means for selectively placing said apparatus in a Playback mode, a Transfer Mode, an Adjust mode, or a Transfer Adjust mode of operation;
means controlled by said selector means when in a Playback mode for reading, printing, and responding to the recorded characters as originally recorded;



means controlled by said selector means when in a Transfer mode for reading characters from the record media at one station and recording the same characters on the record media at the other station;
means controlled by said selector means when in an Adjust mode for reading, printing, and responding to the recorded characters in accordance with the document format limitations imposed by said left and right margin defining means;
and means controlled by said selector means when in a Transfer Adjust mode for transferring characters from one station to the other as in a Transfer mode and concurrently printing and responding to the characters under control of said left and right margin defining means as in an Adjust mode.

3,297,125
STATIC FRUIT CONVEYOR
Stuart D. Pool, Naperville, Harold G. Meitl, Clarendon Hills, and John F. Reynolds, La Grange, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 28, 1964, Ser. No. 392,849
7 Claims. (Cl. 198—1)
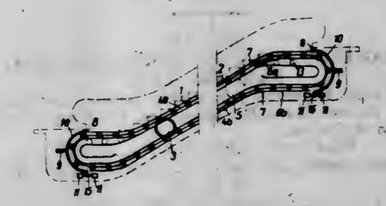


2. A static conveyor for conveying fruit and the like comprising means providing a frame including end portions and side portions; means providing a bed on said frame, and means for undulating said bed comprising a plurality of wave producing members carried on said frame below said bed, means for moving said wave producing members comprising
pairs of cam-like members rotatably mounted on opposite side portions of said frame, and cables draped upon said cam-like members and extending from one of said end portions to the other in underposed relation to said bed.

3,297,126
METHOD AND APPARATUS FOR PULLING CONVEYOR BELTING
Clair E. Forney, R.D. 1, Saltsburg, Pa. 15681
Filed Feb. 11, 1965, Ser. No. 431,842
5 Claims. (Cl. 198—1)



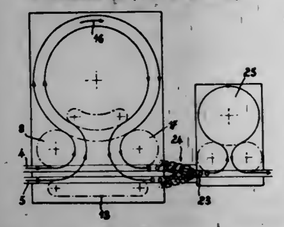
1. The method of removing belting from an endless flexible belt conveyor which has an upper conveying reach, a lower return reach, a plurality of belt supports, a head end having power drive means and a tail end comprising the steps of removing a number of belt supports from adjacent the tail end, separating the belt transversely of its length adjacent the head end to provide two belt ends, securing the end of the belt extending from the return reach against movement, operatively engaging the conveying reach of the belt with the drive means, driving the drive means, and producing increased driving engagement of the belt with the drive means whereby the conveying reach and the tail end are pulled thereby.

3,297,127
CONTINUOUSLY MOVING STAIRWAY
Paul Dennerlein, Krahhalmstrasse 15, Kassel, Germany
Filed Nov. 2, 1964, Ser. No. 408,131
Claims priority, application Germany, Nov. 19, 1963, D 42,978/63
5 Claims. (Cl. 198—16)



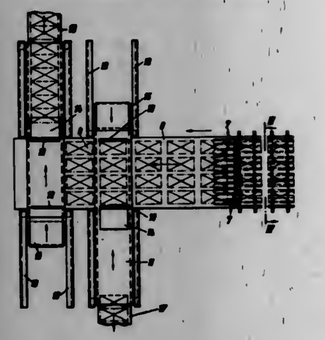
1. A continuously moving stairway comprising, in combination, a housing including a pair of grooves each defining an endless guide track having two slanted substantially parallel rectilinear portions superimposed spaced apart in a vertical plane and a curved portion at each end of said rectilinear portions joining the same, said grooves being disposed mutually parallel and spaced apart in a horizontal relationship, a plurality of toothed racks, hinge means pivotally joining each two adjacent racks to form two endless conveyors, each of said conveyors being disposed in one of said guide track grooves for movement along the base thereof, a plurality of steps for supporting persons and merchandise thereon, each of said steps being disposed between the conveyors and coupled to one of said racks of each conveyor for movement in unison therewith, and a power driven gear between said superimposed rectilinear guide track portions of each conveyor at the lower part thereof in simultaneous driving engagement with successive racks passing through said rectilinear portions thereby driving the conveyor along said guide track.

3,297,128
ARRANGEMENT FOR TREATING BOTTLES AND THE LIKE RECEIVERS AT A HIGH RHYTHM
Roger Pagay, 130 Cours du Docteur Long, Lyon, France
Filed June 21, 1965, Ser. No. 465,400
Claims priority, application France, July 7, 1964, 44,972, Patent 1,408,967
3 Claims. (Cl. 198—22)



1. In a bottle treating machine, the provision of an arrangement feeding bottles two by two into the machine, comprising two parallel bottle distributing worms lying side by side at the input of the machine and rotating in synchronism, a guideway associated with each worm in parallelism therewith and wherein the bottles progress with a uniform spacing under the action of the worm, a rotary toothed wheel the teeth interval of which is equal to the pitch of the worms, said wheel engaging the bottles distributed by one worm in the corresponding guideway to shift them along with said wheel, a toothed chain extending in a plane perpendicular to the axis of the wheel and the intervals between the teeth of which are equal to the pitch of the worms, said chain engaging the bottles distributed by the other worm in the corresponding guideway to shift them along said chain, a partition separating the bottles conveyed by the wheel from those conveyed by the chain, a plurality of moving supports adapted to be fed by successive pairs of bottles conveyed by the wheel and the chain respectively and means driving the chain and wheel in synchronism.

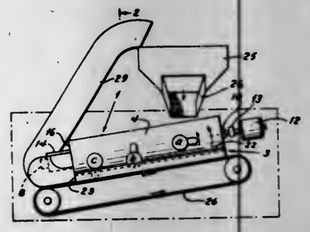
3,297,129
APPARATUS FOR CONVEYING CHOCOLATE BARS OR SLABS
Hans Lesch, Hannover-Kirchrode, Germany, assignor to Otto Hansel G.m.b.H., Hannover, Germany, a corporation of Germany
Filed June 1, 1964, Ser. No. 371,377
Claims priority, application Germany, Feb. 19, 1964, H 51,745
12 Claims. (Cl. 198—32)



1. An apparatus for conveying chocolate bars, blocks or slabs from a chocolate molding machine or from a cooling plant in sequential ranks of bars or the like extending across the direction of feed, to a stacking or further processing station, comprising

a main feeder conveyor for carrying consecutive ranks of chocolate bars,
at least one cross conveyor crossing the feeding direction of said main feeder conveyor,
a slideway feeding said ranks of chocolate bars from said main feeder conveyor to said cross conveyor and positioned over the end of said main feeder conveyor,
means moving in the same direction as that of said main feeder conveyor and including an endless pusher element in the longitudinal direction of and above and overlapping said main feeder conveyor and said slideway, and said pusher elements being adapted to engage and to align the rear edges of said chocolate bars disposed in a single row,
said cross conveyor being positioned transverse and below said slideway,
said slideway having a slidable member positioned above said cross conveyor, and
means for moving said slidable member.

3,297,130
METHOD AND APPARATUS FOR ORIENTING ARTICLES
Eugene Greck, Westfield, N.J., assignor to American Flange & Manufacturing Co., Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 337,472
8 Claims. (Cl. 198—33)

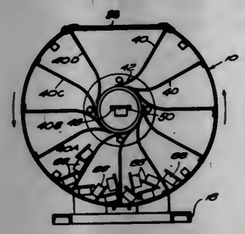


1. Apparatus for surface orienting articles having a flat disc-like top surface, a cylindrical skirt depending therearound forming an interior cupped surface and an ear extending downwardly and radially outwardly away from the lower free edge of said skirt, comprising a pair of identical longitudinally extending members disposed in parallel relationship, each of said members including a hard, smooth, continuous surface, said surfaces being horizontally spaced from each other a distance less than the overall height of the cap and greater than the height of said skirt, and a longitudinally extending deflecting element extending parallel to said members and vertically spaced beneath the midpoint between said members a distance no greater than the maximum overall diameter of the cap.

3,297,131
PARTS FEEDER
Walter F. Pawlowski, Holbrook, Mass., assignor to Thermoplastic Industries, Inc., Brockton, Mass., a corporation of Massachusetts
Filed Dec. 21, 1964, Ser. No. 419,827
3 Claims. (Cl. 198—33)

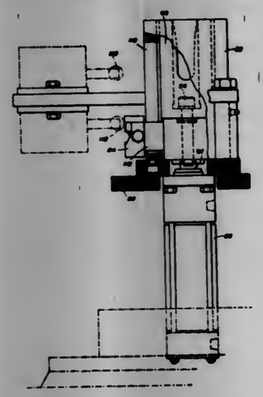
1. A parts feeder, comprising
(a) a generally cylindrical drum adapted to hold a quantity of said parts and mounted for rotation about a generally horizontal axis,
(b) conveyor means mounted for movement through said container and generally along said axis,
(c) a plurality of spaced inwardly extending radial vanes mounted to the inner walls of the said contained and generally parallel to said axis,

(d) said vanes being arranged in angularly spaced groups about the drum, each group comprising a number of axially staggered, angularly spaced vanes whereby rotation of said drum will cause said vanes



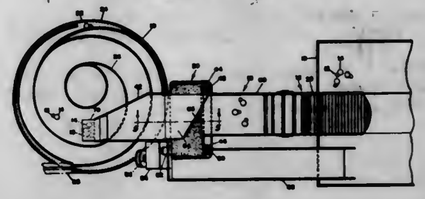
to carry at least some of said parts from a position below said conveyor means to a position above said conveyor means whereby said parts will be deposited sequentially along the length of said conveyor means for delivery out of said container.

3,297,132
ORIENTATION DEVICE
William M. Ripple, Metairie, La., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 19, 1965, Ser. No. 433,899
2 Claims. (Cl. 198—33)



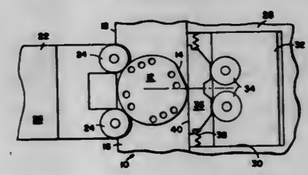
1. An orientation cam adapted to orient a rotatable means to a predetermined stationary position relative to its axis of rotation and to maintain the same thereat comprising:
(a) a cylindrical member having an axial bore extending thereinto and a diametrically extending slot disposed normal to said bore said slot being disposed intermediate the longitudinal length of said member,
said member having a bifurcated end portion extending above said slot to define a pair of opposed end portions,
the opposed end portions having their respective diametrically disposed edges formed as a cooperating camming surface generated in the form of a helical surface of said cam,
(b) actuating means operative for moving said cam number between operative and inoperative positions, and
(c) a housing disposed about said cam number to guide the same between operative and inoperative positions.

3,297,133
CLOSURE HANDLING APPARATUS
Walter S. Sterling, Quincy, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
Filed Apr. 13, 1965, Ser. No. 447,676
9 Claims. (Cl. 198—33)



1. In a closure handling machine of the character described, in combination, means for supplying hollow closures open at one end to the machine including a delivery chute having upper and lower portions arranged to receive randomly arranged closures deposited on said upper portion, and orienting means cooperating with said chute comprising a transversely extended moving belt interposed between said upper and lower portions, said belt having a piled surface such as to permit passage thereacross of those closures positioned with their open ends up, the piled surface of said moving belt arranged to impede the passage of those closures positioned with their open ends down and to carry such closures out of the chute.

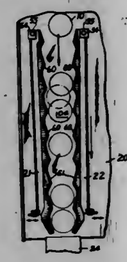
3,297,134
ORIENTING DEVICE FOR DISCS AND THE LIKE ARTICLES
Ronald F. Pastuszak, Allentown, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Feb. 10, 1966, Ser. No. 526,636
5 Claims. (Cl. 198—33)



1. In an article handling apparatus, an orienting device for orienting a disc formed with a flat portion on its periphery comprising, in combination: a generally rectangular support member disposed in a horizontal plane and having a first longitudinally extending edge, a second edge parallel to said first edge, and an upper surface adapted to receive said disc for support thereon, said support member having a pair of spaced, arcuate recesses formed in said first side edge and opening outwardly thereof; a reciprocable slide mounted adjacent said first side edge of the support and adapted for reciprocation in a direction normal to said first side edge, said slide being disposed with its forward end extending toward said support member; a pair of spaced rollers carried by the forward end of said slide, each of said rollers being mounted for rotation about a vertical axis, said rollers being disposed in alignment with said recesses and adapted to be received therein; a stationary frame member adjacent said second side of said support member and having an elongated recess formed in the side thereof contiguous said support member; a reciprocable stop member mounted in said frame recess, said stop member defining a vertically disposed forward face for engagement by the periphery of said disc whereby said flat peripheral

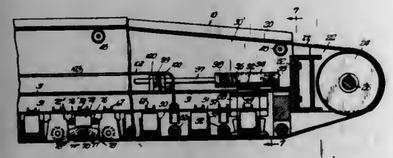
portion of the disc is adapted to assume a flush position against said vertical face of the stop member so as to position said disc in a predetermined, oriented position on said support member.

3,297,135
HIGH SPEED SYSTEM FOR SPACING AND TIMING THE DELIVERY OF MOVING ARTICLES
Miroslav J. Piroutek, Stamford, Conn., assignor to AEL Development and Research Division, Inc., Stamford, Conn., a corporation of Connecticut
Filed Oct. 11, 1965, Ser. No. 494,510
10 Claims. (Cl. 198—34)



1. A system for spacing and timing the delivery of moving articles comprising a conveyor belt, drive means moving said conveyor belt for advancing the articles along a path, a pair of opposed jaw members movably mounted in opposed relationship on opposite sides of said path, said jaw members having a plurality of opposed inwardly projecting teeth at spaced points along the length of said jaw members, and reciprocating drive means for moving said jaw members toward and away from each other.

3,297,136
MAGNETIC RAIL-TYPE CONVEYOR
Dario Buccicone, Gary, Ind., assignor to Bucciconi Engineering Co., Inc., Gary, Ind., a corporation of Indiana
Filed Oct. 21, 1965, Ser. No. 499,202
14 Claims. (Cl. 198—41)



1. A conveyor for metal sheets which comprises an elongate frame having an endless traveling belt supported on end pulleys mounted in longitudinally spaced relation on said frame, a plurality of magnets disposed in longitudinally spaced relation along said frame, which magnets are operative to hold the sheets against the bottom surfaces of the belt by magnetic force, means including an elongate, thin, flat plate member having substantial flexibility for supporting said magnets, said plate member extending along said frame in generally parallel relation to the bottom surface of the belt, and means for suspending said plate member at longitudinally spaced points so as to permit the plate member to flex and thereby enable the belt and associated magnets to move vertically in order that the belt may conform to the belt engaging surfaces of the sheets as the sheets advance along the bottom surface of the belt.

3,297,137
CONVEYORS FOR PACKING MACHINES
John William McCombie and Leonard Thornton, London, England, assignors to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed Apr. 5, 1965, Ser. No. 445,360
Claims priority, application Great Britain, Apr. 16, 1964, 15,801/64
4 Claims. (Cl. 198—76)



1. A packing machine having a plurality of parallel conveyor systems, each carrying pushers equally spaced along its length for pushing articles to be packed, the pushers of one conveyor system being staggered with respect to those of another, a single constant-speed drive means coupled to said conveyor systems to impart movement thereto, variable speed devices each coupling said drive means to one of said conveyor systems and operative in regular sequence to impart to their respective associated conveyor systems a cyclically varying speed so that the resulting speed variations in said different conveyor systems are substantially regularly out of phase with each other.

3,297,138
APPARATUS FOR FEEDING CIGARETTES FROM CIGARETTE-MAKING MACHINES TO PACKING MACHINES
Alan K. McCombie, Deptford, London, England, assignor to The Molins Organisation Limited, London, England, a British company
Continuation of application Ser. No. 319,846, Oct. 29, 1963. This application Apr. 11, 1966, Ser. No. 547,702
Claims priority, application Great Britain, Nov. 1, 1962, 41,395/62
16 Claims. (Cl. 198—84)

1. Apparatus for feeding cigarettes from a cigarette making machine to a packing machine, comprising a reservoir having upper and lower compartments, an inlet at one end of the upper compartment and an outlet at the corresponding end of the lower compartment, an extensible endless band conveyor having an upper run forming the base of the upper compartment, and a lower run forming the top of the lower compartment and a roller about which the band turns at the end of the upper run, a movable back plate forming the end of the reservoir remote from the inlet and outlet and spaced from said roller to provide a passage between the compartments, and means for moving the back plate and the roller to and fro along the reservoir to increase or decrease the capacity of the reservoir as the supply and demand for cigarettes fluctuates.

3,297,139
STORAGE APPARATUS AND INDEXING MECHANISM
James L. Speigle, 617 Bristol Drive, Statesville, N.C. 28677
Filed Jan. 6, 1965, Ser. No. 423,725
5 Claims. (Cl. 198—35)

1. A storage apparatus characterized by horizontally extending support members movable to various positions

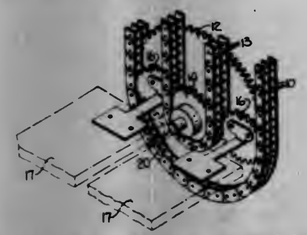
while being maintained in a predetermined orientation, the apparatus comprising:

a first endless double width sprocket chain bounding a predetermined area,

first sprocket means engaging a first width portion of the first chain for supporting the same for movement along a predetermined closed path,

a second endless double width sprocket chain disposed within the area bounded by the first chain,

second sprocket means engaging a first width portion of the second chain for supporting the same for movement along a predetermined closed path parallel to and spaced from the path of the first chain,

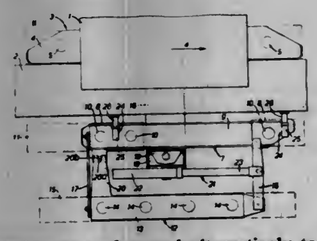


at least one support sprocket disposed between and engaging a second width portion of each of the first and second chains and supported thereby for movement therewith,

at least one horizontally extending support member fixed to and carried by a support sprocket and adapted to receive stored articles, and

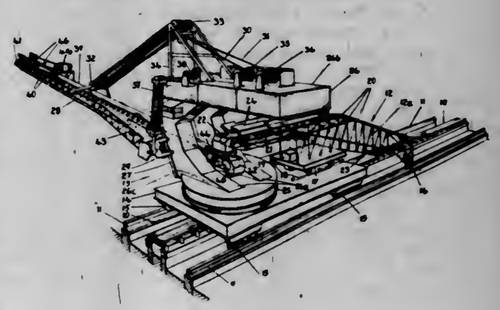
drive means operatively connected to the first and second sprocket means for rotating the sprocket means in a predetermined rotational speed relation to move the chains at the same lineal speed for maintaining the support sprocket and support member in a constant orientation as the support sprocket and support member move with the chains.

3,297,140
CONVEYOR ANCHORING AND ADVANCING APPARATUS
Dennis Henry Cannon, St. Marks, and Richard John Hollis and Michael Charles Potts, Prestbury, England, assignors to Dowty Mining Equipment Limited, Tewkesbury, England, a British company
Filed Feb. 25, 1965, Ser. No. 435,133
Claims priority, application Great Britain, Feb. 27, 1964, 8,230/64
9 Claims. (Cl. 198—88)
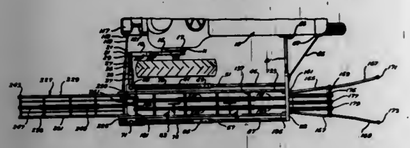


1. Mechanism to anchor and alternatively to advance an end of a first conveyor that in use extends along the working face of a mine, said mechanism including, in addition to the first conveyor and releasable prop means operable to anchor the first conveyor in a given position, a second conveyor disposed adjacent the end of said first conveyor in position to receive mined material from and to convey the same in a direction transverse to the first conveyor, a frame located adjacent the second conveyor, fluid-pressure-operated prop means carried by said frame and operable to wedge the frame between the mine roof and floor, fluid-pressure-operated advancing jack means operatively interconnecting said frame and the end of the first conveyor to shift each, upon release of its respective prop means, relative to the other in the direction of the second conveyor, and guiding means operatively connected to the end of the first conveyor and guided by the frame in the direction lengthwise of the second conveyor, to control the direction of their respective advances.

3,297,141
CONVEYOR APPARATUS
Anthony D. Janitsch and Matthieu Suykens, Belleville, Ontario, Canada, assignors to Stephens-Adamson Mfg. Co. of Canada Limited, Belleville, Ontario, Canada, a corporation of Canada
Filed Dec. 28, 1964, Ser. No. 421,519
3 Claims. (Cl. 198—94)



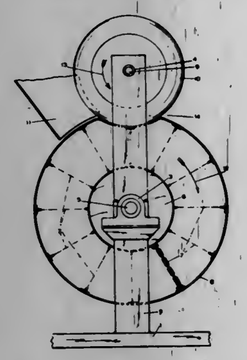
1. Apparatus for conveying material in a forward sense from a first location and for stacking it at a second location, and also for reclaiming stacked material at the second location and for conveying it in a reverse sense to the first location, comprising a belt conveyor extending from the first location and which is operable in a forward sense as well as in a reverse sense, a tripper for the belt conveyor and means mounting the same for translation along a path parallel to the belt conveyor to a multiplicity of positions intermediate the first and the second locations, the tripper having a fixed elevated end which elevates and deflects a cooperating portion of the belt conveyor so that it overhangs an adjacent portion of the belt conveyor at a predetermined level, a boom conveyor having a tail end adjacent and cooperatively associated with the overhanging portion of the belt conveyor and also having a head end, means mounting said boom conveyor for movement along the belt conveyor and for vertical swinging movement to selectively position said head end at the second location at different elevations, the boom conveyor being operable in a forward sense to convey material from the tail end and to discharge material at the second location from the head end, and also being operable in a reverse sense to load material at the head end from the second location and to convey it towards the tail end, means supporting the tail end of said boom conveyor for selective up and down movement whereby it is positionable at either of two vertical positions relatively to the belt conveyor at the tripper, namely at a lower, stacking position where the tail end is underneath the overhanging portion of the belt conveyor thus to receive material from the belt conveyor when the belt conveyor and the boom conveyor are operating in a forward sense, and at an upper, reclaiming position where the tail end is above the overhanging portion of the belt conveyor thus to discharge material on the belt conveyor when the belt conveyor and the boom conveyor are operating in a reverse sense.

3,297,142
HAY BALE LOADING DEVICE
Clifford R. Edwards, Russell, Iowa 50238
Filed Nov. 12, 1964, Ser. No. 410,679
2 Claims. (Cl. 198—117)



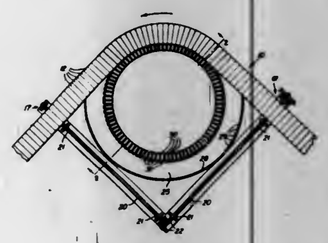
1. In combination with a tractor,
a supporting frame operatively secured to said tractor at one side thereof, said supporting frame comprised of first and second spaced apart telescopic arm means substantially parallel to the longitudinal axis of said tractor, a third telescopic arm means secured to the forward ends of said first and second telescopic arm means and extending transversely therefrom towards said tractor, said third telescopic arm means being secured to said tractor, a fourth telescopic arm means secured to the rearward ends of said first and second telescopic arm means and extending transversely therefrom towards said tractor and being operatively secured thereto,
an elongated conveyor means mounted on said supporting frame having its longitudinal axis substantially parallel to the longitudinal axis of said tractor, said conveyor means being adapted to receive a hay bale at its forward end and move said hay bale rearwardly and upwardly therefrom.

3,297,143
APPARATUS FOR CONVEYING OR STACKING BULK MATERIALS
Cornelis Doyer, Wladimirlaan 6A, Bussum, Netherlands
Filed Oct. 13, 1965, Ser. No. 495,390
7 Claims. (Cl. 198—128)



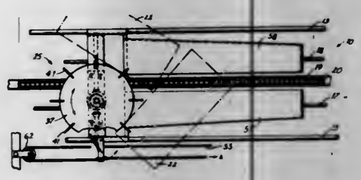
1. In a device of the character disclosed, a framing provided with uprights, a pair of parallelly spaced roller means and means rotatably mounting said roller means to said uprights, one of said roller means comprising a flexible continuous belt, a number of flexible connecting means connecting said belt with an axle in such a way that on rotation the belt describes a general cylindrical surface around said axle and the belt will just contact the periphery of the other roller means forming a nip, means for feeding bulk material adjacent said nip formed on rotation to be discharged from between said nip by centrifugal force.

3,297,144
ENDLESS BELT CONVEYOR AND BELT THEREFOR
Stanley D. Michaelson, Salt Lake City, Utah, and Karl F. Eilers, Hayden Lake, Idaho, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 419,743
13 Claims. (Cl. 198—181)



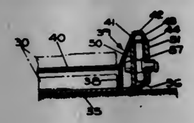
1. A conveyor belt for traversing both vertical and horizontal curves comprising an endless flexible backing member; wear strips on one face of said backing member, each wear strip slightly overlapping the one ahead in the direction of travel of the belt to form a material transporting surface; drive rods on the other face of said flexible backing member, said drive rods extending across said flexible backing member normal to the longitudinal axis thereof with each rod opposite a respective one of said wear strips; and means interconnecting each of said wear strips with its respective drive rod, the flexible backing member being clamped tightly therebetween.

3,297,145
DIVERTER FOR CONVEYOR
Wilbur E. Schwerdtfeger, Western Springs, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 9, 1964, Ser. No. 358,535
7 Claims. (Cl. 198—185)



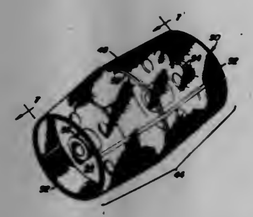
1. A diverter for dumping objects from a conveyor having a longitudinal centerline and lateral bounds defining the width thereof, comprising: an endless member having pusher elements thereon, a frame, means on said frame for supporting it on said conveyor, rotary diverter means for dumping objects from said conveyor, means to disengage the object from the endless member and to elevate the object into the line of action with said rotary diverter means, said rotary diverter means having an axis of rotation and a breadth less than said conveyor width, means mounting said rotary diverter means on said frame and locating said axis of rotation within said lateral bounds of said conveyor and to the side of said longitudinal centerline thereof, drive means on said frame and on said rotary diverter means for selectively rotating said rotary diverter means in one direction or the direction counter thereto, and control means on said frame for effecting said selective rotation of said rotary diverter means.

3,297,146
PAN CONVEYOR
Fay E. Munger and Joseph L. McCloskey, Columbus, Ohio, assignors to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed Feb. 14, 1964, Ser. No. 344,956
10 Claims. (Cl. 198—204)



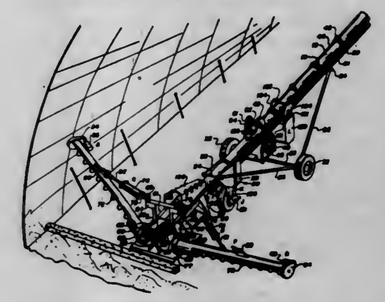
1. In a pan conveyor section, the construction comprising a rigid base frame member for supporting the conveyor section on a supporting surface and having a substantially planar portion that is coextensive with the pan conveyor section and bears on the supporting surface, separate upright wall members secured to said base member and laterally spaced one from the other, a pan member having a longitudinally extending bed and opposite sides extending upwardly from the bed for the conveying run of an endless conveying device, said pan member being secured to said upright wall members, said base frame member including said substantially planar portion thereof, said separate upright wall members and said pan member including said longitudinally extending bed thereof being secured together in the conveyor construction and forming a longitudinally extending compartment for the return run of an endless conveying device, said base member having opposite side portions thereof extending laterally beyond the upright wall members, said pan member having opposite sides extending upwardly from the bed thereof and laterally outwardly beyond the upright wall members, and reinforcing members disposed between said side portions of the base member and the sides of the pan member.

3,297,147
SELF-CLEANING PULLEY SYSTEM
Walter J. Sackett, Sr., Baltimore, Md., assignor to A. J. Sackett & Sons Co., Baltimore, Md., a corporation of Maryland
Continuation of application Ser. No. 261,624, Feb. 28, 1963. This application May 25, 1965, Ser. No. 463,460
4 Claims. (Cl. 198—230)



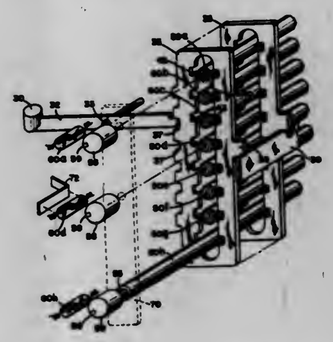
1. In combination with a conveyor belt for conveying pulverulent materials, a self-cleaning pulley for said conveyor belt, comprising a cylindrical-like structure of expanded metal screening having a medial diameter larger than the diameter of each of its ends, said structure being self-supporting except for a disc member spaced inwardly from each said ends, each said disc member having a hub mounted thereon and apertures for providing sideways egress for pulverulent material entering said screening, and a reinforcement ring for each said ends, whereby said pulley is light in weight and therefore of low inertia.

3,297,148
CONVEYOR STRUCTURE
Charles C. Andrews, 4 S. Sycamore, Villa Grove, Ill. 62707
Filed May 20, 1965, Ser. No. 457,315
19 Claims. (Cl. 198—233)



1. A conveyor structure comprising a main conveyor and a pair of secondary conveyors laterally disposed on opposite sides of said main conveyor at its input end, means secured to said pair of secondary conveyors which are operable to individually pivot said secondary conveyors horizontally and vertically to a desired position, a pair of ground wheels, a first and a second pair of arms each having one end thereof pivotally secured to an axle shaft for said ground wheels, the opposite ends of said first and second pair of arms being pivotally coupled to said main conveyor in spaced relation so as to form a triangular relationship with said main conveyor, means for increasing and decreasing the length of one side of said triangle to angularly adjust the position of said main conveyor, and a castor wheel assembly adapted to said main conveyor including means for extending and retracting said main conveyor.

3,297,149
MECHANICAL-ELECTRICAL KEYBOARD ENCODING DEVICE
William A. Hadley, Tappan, N.Y., assignor to Harris Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 11, 1965, Ser. No. 463,200
2 Claims. (Cl. 199—18)



1. In an encoding device of the character described, the combination of:
a plurality of keybars mounted for vertical movement;
a heel member extending outwardly from each of said keybars;
a supporting bar horizontally mounted adjacent said

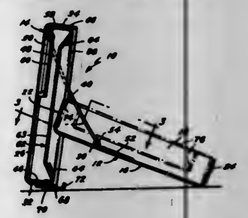
keybars to engage each heel member to define a rest position and to support said keybars;
actuating means connected to each corresponding keybar for shifting the keybar vertically upwardly from said rest positions;
each of said keybars being identical and having a vertically oriented elongated opening therein provided with a set of code elements along a first edge portion thereof and interlocking elements along the opposite edge portion thereof, said interlocking elements being positioned directly opposite said code elements;
means mounting said keybars in side by side relation with said code elements and said interlocking elements of corresponding keybars aligned in the rest position;
a plurality of code bars mounted for rotation about their respective longitudinal axis and extending through the elongated openings in all of said keybars;
a plurality of electrical switches operatively connected to be controlled by rotation of respective ones of said code bars;
circuit means including said switches for transmitting a code according to the opening and closing of said switches by said code bars;
code fin means on said code bars extending from one side of said bars into the path of movement of certain of said code elements of said keybars according to the code pattern such that vertical movement of a keybar from its rest position will cause engagement of some of the code elements with the code fin means on certain ones of said code bars to cause rotation in one direction of one or more of said code bars; and
interlocking fin means on said code bars extending from the other side of said code bars into the path of said interlock elements in a pattern complementary to said code fin means for tending to cause rotation of said code bars in the opposite direction such that vertical movement of any keybar will produce rotation of one or more of said code bars in a unique code pattern and simultaneously move at least one interlocking fin means into engagement with an interlocking element on each of said other keybars to prevent the effective movement of more than one keybar at a time.

3,297,150
DISPLAY DEVICES
Francis MacMahon, Digswell, Welwyn, and Reginald John Emery, Welwyn Garden City, England, assignors to Eylure Limited, Welwyn Garden City, England, a company of Great Britain
Filed Sept. 30, 1964, Ser. No. 400,521
2 Claims. (Cl. 206—45.14)



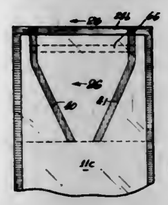
1. A display device for displaying artificial nails for personal wear comprising a tray, only ten recesses formed around the periphery of the tray, each recess having undercut sides to permit a nail to be slid into and out of the recess and having an inclined base so that when the tray is horizontal the bases are inclined downwardly and inwardly with respect to the periphery of the tray to enable ready insertion and removal of the nails by a slidable motion in a direction lengthwise of the nails, the sides of the recesses being of such a length that the nails, when in display position, project beyond the sides and towards the periphery of the tray.

3,297,151
DISPLAY BOX AND WIRE HINGE FOR USE THEREWITH
Richard C. J. Palson, Medfield, Mass., assignor to Wismar Packaging Corp., Central Falls, R.I., a corporation of Rhode Island
Filed May 10, 1965, Ser. No. 454,271
14 Claims. (Cl. 206—45.23)



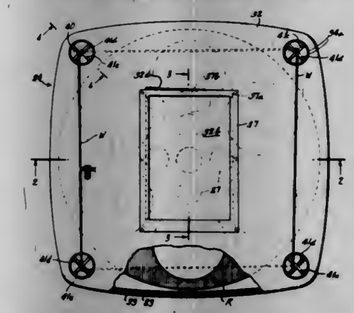
5. In a box for displaying an article therein, a bottom section having a shell configuration that is defined by a bottom wall, side walls and front and rear walls, a top section having a shell configuration that is defined by a top wall, side walls and front and rear walls, the outer edges of the side, front and rear walls of said top and bottom shells being located in mutual engagement in the closed position thereof but being disconnected from each other, and a wire hinge interconnecting said top section to said bottom section such that relative movement of said sections from the closed to an open position causes the bottom shell to slide relative to the top shell to an inclined position and the top shell to move rearwardly of the bottom shell to a substantially upright position, the open position of said sections defining an easel effect and providing for display of the article located within the box.

3,297,152
VALVED MIXING CONTAINER OR PACKAGE
Arthur P. Corella, North Hollywood, and William S. Schneider, Glendale, Calif., assignors to V. Wayne Rodgers, South Pasadena, Calif.
Filed Mar. 4, 1964, Ser. No. 349,267
6 Claims. (Cl. 206—47)



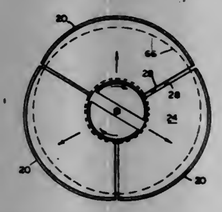
1. A container, comprising:
a pair of opposed, flexible outer walls defining a product-receiving space;
wall means defining an inlet passage extending inwardly of the container from one edge thereof and communicating with the product-receiving space, said wall means comprising a pair of opposed flexible walls of which at least one wall is in addition to the outer walls;
a strip of pressure sensitive adhesive extending across the inlet passage on the inner face of one of the opposed walls of the last mentioned pair of walls to hold said opposed walls in mutual contact normally to close the passage to reverse flow of fluid out of the product-receiving space yet allowing the walls to be separated to permit a fluid to flow through the passage into the product-receiving space.

3,297,153
SHOCK RESISTANT PLASTIC CONTAINERS WITH SELF-CONTAINED LOCKING MEANS
Lazzaro A. Fattori, 84 Rose Ave., Woodcliff Lake, N.J. 07680
Filed Sept. 28, 1964, Ser. No. 399,658
15 Claims. (Cl. 206—52)



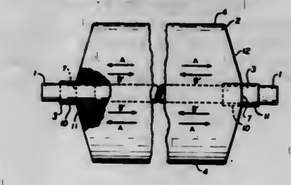
8. A shipping and storing case comprising an open top box having a substantially flat bottom wall and upstanding peripheral side wall, said box bottom wall being sized and shaped to receive a flat side of a reel thereon in substantially concentric relation and having four rounded corners extending beyond the periphery of the reel, a fitted cover for the box open top having a substantially flat top wall shaped to conform to the box bottom wall and a downwardly extending side wall telescopingly engaging said box side wall, said bottom and top walls in each corner being formed with aligned wells depressed inwardly toward each other from the exterior surfaces thereof, said wells having aligned openings therein, the openings in said bottom wall wells being shaped as diametric slots, said diametric slots in opposite corners being parallel and in adjacent corners being at right angles to each other for rotational symmetry providing self indexing of said cover on the box, and a rotatable latch mounted for rotation in each of the top wall well openings and having latching means conforming to said diametric slot for entering therein when in alignment therewith for rotation to an angular snap locking position with respect to said slot, said rotatable latch having means coacting with companion means formed in the top wall well for snap locking the rotatable latch in position aligning the latching means with the slot.

3,297,154
REEL CLOSURE
George F. Lyman, South Hadley, Mass., assignor to The Morningstar Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 23, 1965, Ser. No. 450,276
8 Claims. (Cl. 206—52)



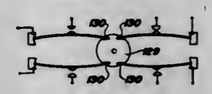
5. A reel closure comprising,
a round tray-like member having a bottom wall and a cylindrical side wall for receiving a reel, said member being divided into a plurality of parts which may move relative to one another for changing the diameter of the side wall,
a channel provided on the inner face of the side wall for securing the periphery of a reel placed on the bottom wall when the diameter of the side wall is minimized,
and a handle located in the center of the tray-like member and secured to its parts for increasing and decreasing the side wall diameter.

3,297,155
TUBULAR CORES
Miles Nadin Gattenby, Jr., Lowell, Anthony Salvatore D'Amato, Chelmsford, Jerold Julius Golner, Lowell, and Sumner Sheldon Feinstein, West Peabody, Mass., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 26, 1965, Ser. No. 509,882
3 Claims. (Cl. 206—59)



1. A roll of soft, elastic film comprising:
(1) a core;
(2) a plurality of convolutions of said film wound under tension onto said core; and
(3) a movable collar disposed between and substantially in circumferential contact with said core and said film and being in axially slidable relation with said core covering at least one line of intersection between said core and said film.

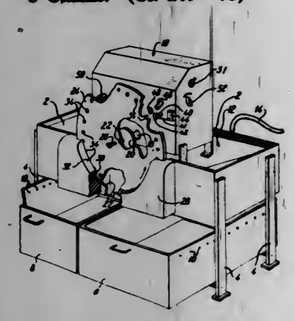
3,297,156
ELECTRICAL SWITCH
Irving Strauss, 81 Cherry Hill, Fairfield, Bridgeport, Conn. 06604
Original application Aug. 24, 1959, Ser. No. 835,631, now Patent No. 3,109,901, dated Nov. 5, 1963. Divided and this application Nov. 4, 1963, Ser. No. 321,208
6 Claims. (Cl. 200—67)



1. In an electrical switch, a first and a second elongate actuator device, each of said devices comprising: a pair of substantially aligned actuator arms joined together to include an obtuse angle and resiliently biased to increase said angle, said arms having juxtaposed ends operatively connected together; means mounting the remote end of one of said arms of each of said devices to permit at least limited angular movement of said one of said arms and to prevent substantial longitudinal movement of said one of said arms; a pivotal support member pivoted about an axis and having first and second engagement receptacles disposed on opposite sides of said support member and engaging the remote end of the other said arms of said first and second devices, respectively, said axis being between said receptacles but offset from the tangential line of movement of said receptacles, whereby pivoting of said member in one direction produces angular movement of said arms of said first actuator device to reduce the angle between said arms of said first device, thereby laterally shifting in one direction the juxtaposed ends of said arms of said first actuator device,

said pivotal movement of said member simultaneously increasing the angle between said arms of said second actuator device and laterally shifting the juxtaposed ends of said arms of said second device in the opposite direction; a first electrical switch contact engageable with one of said arms of said first actuator device to move therewith in the same direction as the juxtaposed ends of the arms of said first actuator device; a second electrical contact engageable with one of said arms of said second actuator device to move therewith in the same direction as the juxtaposed ends of said arms of said second actuator device; and third and fourth switch contacts engageable with said first and second switch contacts, respectively, when said first and second switch contacts are shifted in predetermined directions by rotation of said member.

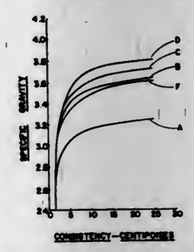
3,297,157
FISH EGG SORTING
Gunnar Borgbjerg Jensen, Hasselager, and Arden Donald Winther, Dorup pr. Horning, Denmark
Filed Feb. 9, 1965, Ser. No. 431,362
Claims priority, application Great Britain, Feb. 11, 1964, 5,592/64
8 Claims. (Cl. 209—73)



1. A method of sorting fish eggs of a first and a second character comprising the steps of passing a receiver body provided with a plurality of egg receiving apertures dimensioned for receiving one and only one egg each into a mixture of said eggs in water, bringing eggs into said apertures by a relative water flow thereagainst, moving the part of said receiver body having egg filled receiving apertures from said mixture to a sorting station spaced from said mixture by a movement in a direction relative to the water which is different from the direction of entry of said eggs in said apertures, and removing the eggs of one of said characters from said apertures in said sorting station and collecting the removed eggs in collecting means outside said mixture.

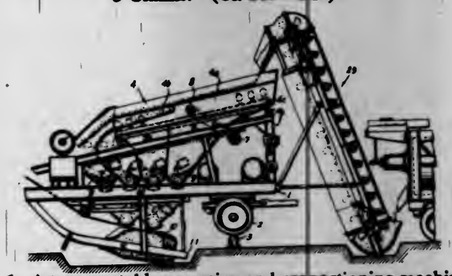
3,297,158
HEAVY MEDIUM SEPARATION MEDIA AND PROCESS
Lester B. Anthes, Niagara Falls, Ontario, Canada, assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,259
4 Claims. (Cl. 209—172.5)

4. A process for separating a mixture of solids of different specific gravities into a light fraction and a heavy fraction which comprises forming a bath of a fluid separation medium, said medium consisting essentially of water and particles of ferrosilicon that are solid and dense and are characterized by a rough, unfused surface, said ferrosilicon having a bulk density of at least 3.5 g./cc., and said medium having at a consistency of 15 centipoises, a specific gravity of about 3.5–3.9, introducing said mixture onto said medium, separating the said light fraction together with a small amount of medium and subsequently



separating said heavy fraction from the remainder of said medium.

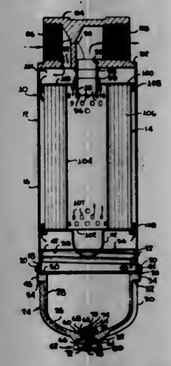
3,297,159
TRANSPORTABLE SCREENING AND PROPORTIONING MACHINE
Carl-Hermann Heise, 12 Kalandstrasse, Alfeld, Leine, Germany
Filed Sept. 9, 1963, Ser. No. 307,629
Claims priority, application Germany, Apr. 26, 1963, H 48,970
3 Claims. (Cl. 209—319)



1. A transportable screening and proportioning machine particularly adapted for road building materials, and comprising, a plurality of hoppers for containing aggregates of various sizes, a vibratory sorting screen assembly above said hoppers, said assembly having vertical longitudinal side walls and a plurality of vertically spaced screens extending laterally between said side walls operable for receiving mixed aggregate supplied to said screen assembly and for delivering various sizes of aggregates to the corresponding hoppers, a plurality of supplemental screens in said screen assembly located above respective ones of said spaced screens, and supplemental screens being of smaller mesh size than the respective ones of said spaced screens therebeneath, said supplemental screens being movable between screening and nonscreening positions, said supplmental screens being divided longitudinally into screen halves, pivot means pivotally connecting each screen half with a respective side wall of the screen assembly so that each screen half is swingable between an idle vertical position adjacent the respective side wall into a horizontal working position, and locking means on said screen halves for locking the screen halves of a respective supplemental screen together when in their said horizontal position.

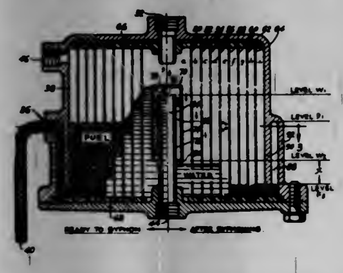
3,297,160
FILTER APPARATUS
Kingsley E. Humbert, Jr., Gastonia, N.C., assignor to Wix Corporation, Gastonia, N.C., a corporation of North Carolina
Filed Dec. 31, 1963, Ser. No. 334,878
12 Claims. (Cl. 210—94)

1. A filter apparatus comprising a container having opposite ends, one of said ends provided with inlet and outlet passage means, a glass bowl closing the other end of said container, the glass bowl having an open end and including an annular flange integrally secured to said open end, said flange projecting radially from said bowl, a metal sleeve comprising an annular body having threads on one end thereof, a radial flange on the other end of said annular body, a ring secured to said radial flange and



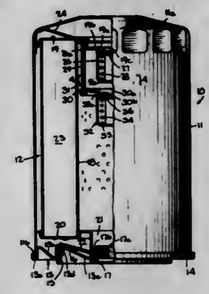
crimped over said annular flange of the bowl, a sealing gasket compressed between the radial flange and the annular flange, a filtering means within the container, the other end of said container having threads thereon mating with the threads of the annular body to releasably secure the glass bowl and sleeve to the other end of the container.

3,297,161
WATER DISCHARGE DEVICE FOR A FUEL FILTER WATER SEPARATOR
Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, Madison Heights, Mich., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 337,401
14 Claims. (Cl. 210—114)



2. A water discharge device for receiving coalesced water and/or fuel from the sump port of a fuel filter water separator unit comprising a housing having an inlet port operatively connected to said sump port for receiving the flow therefrom, a fuel outlet port, and a coalesced water drain port, means located in said housing for separating the fluid therein into a volume of water and a separate volume of fuel, first syphon means operatively connected only to said volume of water for continuously discharging water via said water drain port after the volume of water has risen to a first predetermined level and until said water subsides to a second lower predetermined level, and second syphon means operatively connected only to said volume of fuel for continuously discharging fuel via said fuel outlet port after said fuel has risen to a first predetermined level and until said fuel subsides to a second lower predetermined level.

3,297,162
FLUID FILTER WITH EXTENDED SERVICE LIFE
Herman C. Mouwen, Elberon, N.J., assignor to Purolator Products, Inc., Rahway, N.J., a corporation of Delaware
Filed Sept. 4, 1963, Ser. No. 306,452
3 Claims. (Cl. 210—132)

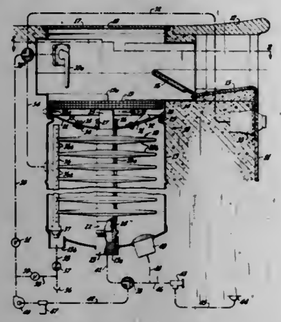


1. A filter element for filtering a flow of fluid with respect thereto comprising a tubular member having a plurality of apertures extending therethrough, a first filter means disposed about the side portion of said tubular member, one end portion of said tubular member being adapted for connection to a discharge passage, a first valve housing disposed adjacent the other end portion of said tubular member disposed opposite said one end portion, said first valve housing having a first opening in communication with the exterior of said first filter means and the interior of said first valve housing, a first pressure responsive valve mounted within said first valve housing adjacent said first opening therein, said first valve normally closing said first opening and being responsive to a predetermined pressure drop across said first filter means for bypassing at least a portion of said flow with respect thereto through said first valve housing, a second filter means extending about said first valve housing for filtering said portion of said fluid being bypassed by said first valve into said tubular member, said second filter means having a second opening in communication with said first valve, a second valve housing extending adjacent said second opening, said second valve housing having a third opening therein, and a second pressure responsive valve mounted within said second valve housing adjacent said third opening, said second valve normally closing said third opening and being responsive to an additional predetermined pressure drop across said second filter means for bypassing into said tubular member at least a fraction of said portion of flow with respect thereto to relieve the pressure drop across said first filter means and said second filter means, whereby the opening of said second valve enables at least a fraction of said portion of flow bypassing said first filter by flowing through said first opening to flow serially through said second opening into the interior of said tubular member.

3,297,163
JET-WASHED ROTATABLE FILTERS
Everett W. Landon, San Mateo, Calif., assignor to Landon, Inc., North Hollywood, Calif., a corporation of California
Continuation of application Ser. No. 146,748, Oct. 23, 1961. This application May 6, 1965, Ser. No. 456,894
3 Claims. (Cl. 210—331)

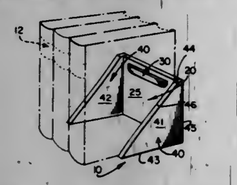
1. A filter structure for swimming pools comprising: a closed pressurized filter tank, a filter element disposed in said tank and rotatably mounted therein on a fixed axis, said filter element including a hollow filter core having a plurality of filter plates having convex outer surfaces mounted concentrically thereon in axially spaced

relationship therealong, means to rotate said filter connected to said filter core, said filter element having a fluid outlet coaxial with said axis of rotatable mounting, means within said housing for directing a stream of water in a direction impinging on said filter plates with a glancing action, said water directing means comprising an elongate jet manifold disposed in spaced parallel relationship with said axis of said filter element and having a plurality of openings directed toward said filter core and filter plates at angles displaced from radii of said axis to produce said glancing action, means in fluid communication with said filter core for conducting filtered water from



said tank, and means fluidly communicating with the interior of said tank exteriorly of said filter element for introducing unfiltered water and for removing waste fluids, said last named means including a first passageway for introducing water into said tank, a second passageway for withdrawing waste water from said tank, a pump, valve means for alternatively connecting the discharge side of said pump to said first fluid passageway and to said water directing means, and valve means for alternatively opening said means communicating with the fluid outlet of said filter element and said second passageway and alternatively closing said outlet and said second passageway.

3,297,164
COMBINATION BOOKEND AND BOOKRACK AND CARTON THEREFOR
Richard E. Hutchinson, Crystal Lake, Ill., assignor to Field Enterprises Educational Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 2, 1965, Ser. No. 436,630
6 Claims. (Cl. 211—42)



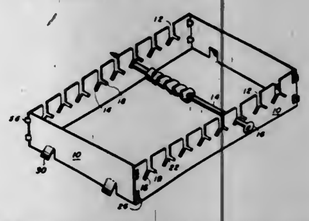
1. A bookholder for use as a combination bookend and bookrack comprising a substantially rectangular base member having a pair of side edges and a front edge and a rear edge and top and bottom surfaces, a pair of substantially triangular side members each having a bottom edge and a front edge arranged substantially normal to each other and an inclined edge and inner and outer side surfaces, means securing said side members to the sides of said base member along the side edges thereof with the inner side surfaces of said side members disposed toward each other and with said side member front edges disposed toward and parallel to said base member bottom surface, and resilient pads on said side member bottom edges for supporting said bookholder upon an associated support surface with said base member bottom surface disposed substantially vertically for holding a book resting thereagainst and with said side member inner side surfaces disposed substantially vertically for holding books therebetween.

3,297,165
RUG DISPLAY RACK
John R. Radek, Hinsdale, Ill., assignor to Ready Metal Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 8, 1964, Ser. No. 416,734
10 Claims. (Cl. 211—46)



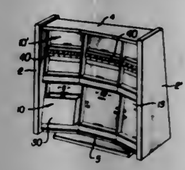
1. In a device for supporting and displaying a freely depending sheet and comprising a fixed hanger providing a generally horizontal track,
(a) a holder for detachably engaging a top marginal portion of a swatch of sheet material, said holder being supported by and below said hanger in generally parallel relation thereto for sliding movement into and out of the hanger, said holder comprising
(b) a pair of relatively narrow, elongated clamping members of substantial width,
(c) one of said members having means slideable in said track,
(d) means for pivotally securing said members together adjacent one end thereof, and
(e) manually operable means adjacent their opposite ends for detachably latching said members together,
(f) said clamping members having cooperating portions adapted to engage the top of the depending sheet at a plurality of levels thereof, thereby to distort the top of the sheet at said plurality of levels to effectively clamp the sheet therebetween.

3,297,166
PORTABLE SKEWER RACK FOR BRAZIERS
Bernadette Summers, 2122B 41st St., Los Alamos, N. Mex. 87544
Filed May 10, 1965, Ser. No. 454,256
8 Claims. (Cl. 211—60)



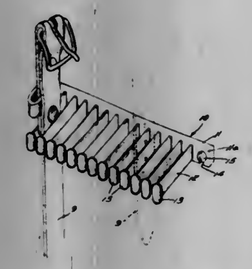
1. A portable multi-support skewer rack comprising two elongated sheet metal end walls and two sheet metal elongated side walls, said end walls being provided with similarly positioned vertical skewer receiving slots extending from the upper edge thereof, the skewer slots in at least one of said end walls each having a pair of skewer confining elongated pockets with the direction of elongation of each of the pair of elongated pockets being at an angle of 90° to the other, said pockets having a length of elongation equal substantially to the major cross-sectional dimension of a flattened type skewer, and the width of said pockets being a clearance fit with the cross-sectional thickness of a skewer.

3,297,167
MULTI-ASPECT DISPLAY DEVICE
Charles L. Metzler, Alpine, N.J., and Henry A. Holzwarth, Bayside, N.Y., assignors to Paper Mate Manufacturing Company, Santa Monica, Calif., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,097
11 Claims. (Cl. 211—69)



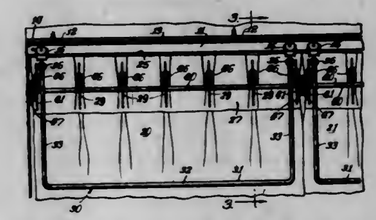
1. A display assembly including a plurality of components for interengagement in different arrangements whereby displays of different appearance and for different articles may be produced, comprising: a panel including at least two angularly related panel areas, each having a front surface and a rear surface; a flange structure carried by at least one horizontally extending marginal portion of said panel tending to hold said panel areas in fixed angularly related relation to each other; vertical outstanding rib portions delineating vertical margins of each of said panel areas and spacing the same, each panel area including a pair of attachment ports adjacent the ribs delineating said areas, a locking slot located in a plane above said ports, and a locking slot located below said ports; a plurality of backless holder components, each having a front, sides and a bottom, a pair of rearwardly extending, laterally spaced hinge lugs adapted to extend into one pair of spaced attachment ports and a rearwardly extending tongue provided with a detent adapted to extend into a locking slot below said ports; said hinge lugs and tongue being narrower than the cooperating ports and slot and said tongue being laterally displaced toward one side of said holder component whereby a holder component may be attached to the front surface and another to the rear surface of the same panel area by cooperative engagement of said lugs and tongues with the panel adjacent said ports and slot.

3,297,168
BELT HOLDER
Alexander F. Fleming, P.O. Box 364, Maywood, Ill. 60153
Filed Dec. 3, 1964, Ser. No. 415,722
2 Claims. (Cl. 211—89)



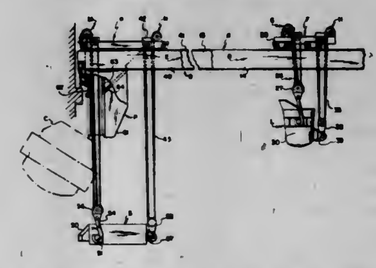
1. A belt holder comprised of an attachment plate, a series of spaced arms disposed in parallel relation on one side of and integral with said attachment plate, the holder being comprised of synthetic plastic material of a flexible type whereby the arms can be spread relative to one another from their outer ends, means for securing the attachment plate to a mounting surface,
said arms each having a substantially rectangular vertical cross section having a large width to thickness ratio and a bulged area at its outer end with the bulged areas being cooperable with one another to prevent accidental displacement of belts from between the arms, and
each of said bulged areas being slightly spaced from adjacent bulged areas,
whereby said spaced arms may deflect to allow the insertion of an item therebetween without interference with an adjacent spaced arm.

3,297,169
DRAPERY DISPLAY CARRIER
Edward E. Schaefer, River Forest, Ill., assignor to Central Specialties Co., a corporation of Illinois
Filed Oct. 1, 1964, Ser. No. 400,660
8 Claims. (Cl. 211—94)



3. A display carrier for displaying a drapery panel or the like from a horizontal track having freely shiftable support members mounted thereon, said carrier comprising a U-shaped frame having a horizontal bar portion and spaced vertically extending arm portions having upper ends, the upper end of each arm portion engaging a shiftable support member on said track for connecting said carrier to said horizontal track, a horizontal crossbar secured to said arm portions adapted to support a drapery panel or the like from a marginal edge thereof, and means carried by said crossbar for maintaining a marginal edge in a uniformly extended condition when a panel is mounted on said carrier, whereby said carrier is effective to permit a drapery panel mounted thereon to be freely shifted with respect to said horizontal track with the material of a marginal edge in a uniformly extended condition.

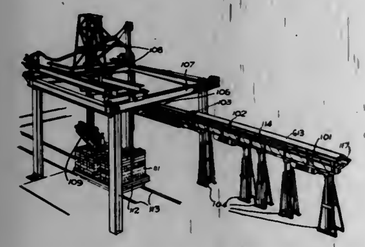
3,297,170
FURNACE CHARGER CRANE
Ross B. McCready, Alliance, and Klaus W. Forster, Brecksville, Ohio, assignors to Kerma Corporation, Alliance, Ohio, a corporation of Ohio
Filed Feb. 23, 1965, Ser. No. 434,394
4 Claims. (Cl. 212—14)



1. In a crane having an overhead bridge, a crane trolley movable along said bridge and including depending mem-

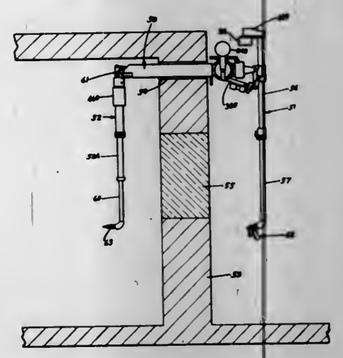
bers forming guide means, auxiliary hoist mechanism on said trolley comprising auxiliary hoist flexible cable means, auxiliary load grab means adapted to be detachably connected to a load, said auxiliary load grab means being connected to said auxiliary hoist cable means, main hoist mechanism comprising main hoist flexible cable means, and main load grab means adapted to be detachably connected to a load, said main load grab means being connected to said main hoist cable means and movable vertically between a position below and free of said guide means for connection to a load and a position above the lower end of said guide means for moving and discharging a load while suspended from said trolley by said main and auxiliary cable means, said guide means being operative to restrain lateral movement of a load carried by said main and auxiliary load grab means when said main grab means is elevated to a position above the lower end of said guide means, said auxiliary load grab means being vertically movable relative to said trolley independently of said main load grab means.

3,297,171
MECHANICAL HANDLING APPARATUS
Antony Charles Teago, Whitehall Orchard, Ifield, Crawley, Sussex, England
No Drawing. Filed Jan. 22, 1964, Ser. No. 339,556
Claims priority, application Great Britain, Jan. 22, 1963, 2,723/63
5 Claims. (Cl. 214—1)



1. Apparatus for mechanically handling articles comprising, carrier means for the acquisition, conveyance and release of a predetermined number of articles, means supporting said carrier means for displacement in at least three diverse directions, driving means for displacing said carrier means in the aforesaid directions to predeterminable extents, assembly means for conveying said articles to a pickup point convenient to said carrier means including selection means for presenting at said pickup point a selectively predetermined number of articles for acquisition and conveyance by said carrier means to the exclusion of other articles at said pickup points, said carrier means including head means and means for effecting movement of said head means with respect to said structural means, and operations control means for selectively effecting control of said driving means and said means effecting movement of said head means including means for selecting the number of articles presented at said pickup point for acquisition, said assembly means including a plurality of individual support means in number corresponding to the maximum number of articles capable of being conveyed by said carrier means at a given time, said selection means being connected to each support means to selectively displace a number of said support means in response to control from said operations control means in a direction toward said head means at said pickup point, said assembly means further including guide means for ensuring correct disposition of said articles on said support means and means for slightly separating said support means from each other prior to acquisition of said articles by said carrier means.

3,297,172
MASTER-SLAVE MANIPULATOR
Lester W. Haaker and Demetrius G. Jelatis, Red Wing, and Carleton E. Jennrich, St. Paul, Minn., assignors to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota
Filed Nov. 13, 1964, Ser. No. 410,924
24 Claims. (Cl. 214—1)



1. A remote-control through-the-wall master-slave manipulator comprising a horizontal support adapted for insertion through a barrier wall and rotation about its longitudinal axis, a master arm having a relatively stationary portion pivotally connected to one end of said support and a slave arm having a relatively stationary portion pivotally connected to the other end of said support, the relatively stationary portions of said master arm and slave arm being movable relative to said horizontal support on their pivotal connections and movable with said horizontal support about its longitudinal axis, but stationary as to movement transverse to the longitudinal axis of said horizontal support, a longitudinally extensible portion on said master arm and a longitudinally extensible portion on said slave arm movable in response to movement of the extensible portion of the master arm, said slave arm being movable in response to corresponding movement of said master arm in its movement relative to the horizontal support and with the horizontal support and in the movement of the extensible portion relative to the stationary portion, structural means interconnecting said master arm and slave arm for moving said slave arm simultaneously in direct coordination with said master arm but at a different rate and over a different distance from corresponding movement of said master arm.

3,297,173
WORKPIECE POSITIONING MECHANISM FOR A MACHINE TOOL
Arthur K. Schott, Clarence, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Oct. 9, 1964, Ser. No. 402,864
11 Claims. (Cl. 214—1.3)

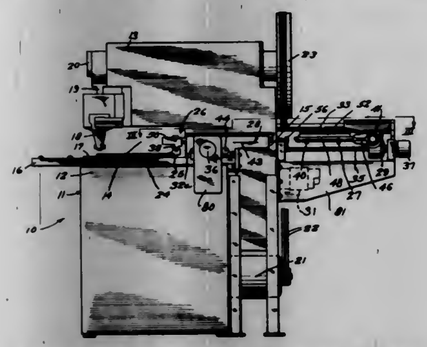
3. A workpiece positioning mechanism in a machine tool, comprising in combination:

(a) a stationary frame;

(b) a movable open-rectangular rigid frame comprising four rectangularly arranged spaced sides defining a central opening, said open-rectangular frame being supported for movements in directions parallel to each of its sides, and to which frame the workpiece is to be secured adjacent to said opening at the outside of said movable frame;

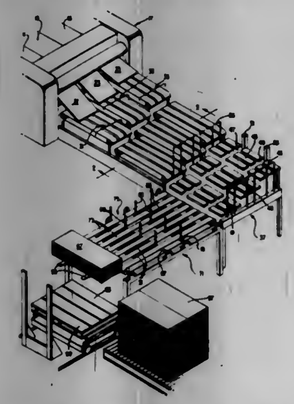
(c) a first stationary motor drivingly connected to one side of said movable frame and supported by said stationary frame, and operative to reciprocably move said frame in a first direction which is perpendicular to a first side; and

(d) a second stationary motor drivingly connected to a further side of said movable frame immediately



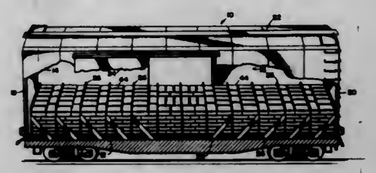
adjacent to said one side and supported by said stationary frame, and operative to reciprocably move said movable frame in a direction which is perpendicular to said first direction and parallel to said first side.

3,297,174
APPARATUS FOR STACKING SHEET MATERIAL
Herman R. Letchworth, Savannah, Ga., assignor to Union Camp Corporation, a corporation of Virginia
Filed Mar. 24, 1964, Ser. No. 354,357
3 Claims. (Cl. 214—6)



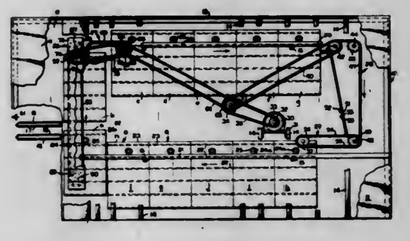
1. Apparatus for stacking sheets cut from a web of sheet material comprising: Conveying means for receiving the sheets as they are cut, said conveying means comprising a plurality of conveying parallel tiers which are in vertical offset relation, one tier for each course of sheets; a tiered stacking table located below said conveying tiers which is provided with a plurality of supports arranged in registry with and corresponding in vertical offset to said conveying tiers to form stacks of sheets on each tier of said stacking table; further conveying means located in receiving relation to said stacking table; means for pushing said tiered stacks together to form a combined stack, and for pushing said combined stack onto said further conveying means; stack overturning means located on said further conveying means for overturning predetermined combined stacks; said overturning means including first and second rotatably mounted supports, each of said supports having first and second rows of spaced radial elements mounted approximately 90 degrees apart in a shaft, said spaced elements being movable through said further conveying means; the shaft of said first support means being spaced longitudinally from the shaft of said second support means by a distance approximately equal to the height of the stack which is to be overturned, thereby permitting a predetermined height of stack to be overturned; and means for receiving said combined stacks in a pile thereof for transfer and storage.

3,297,175
BULKHEAD STRUCTURE
Willard H. Gooding, Encino, Calif., assignor to Western Velo & Cement Specialties Co., Los Angeles, Calif., a corporation of California
Filed Nov. 3, 1964, Ser. No. 408,571
5 Claims. (Cl. 214—10.5)



1. A bulkhead structure adapted to be used with pallet loads of material and adapted to be used in plural quantities within a vehicle so as to restrain the material upon the pallet, said bulkhead structure comprising first and second floor plates adapted to be positioned upon the floor of the vehicle, first and second uprights respectively secured to said first and second floor plates at substantially right angles with respect thereto and first and second angle braces respectively secured to said first and second floor plates and to said first and second uprights to retain said uprights in substantially right angular relationship with respect to said floor plates, said floor plates being adapted to be engaged so as to carry the weight of the material and said uprights and said angle braces being adapted to restrain said material to prevent its shifting.

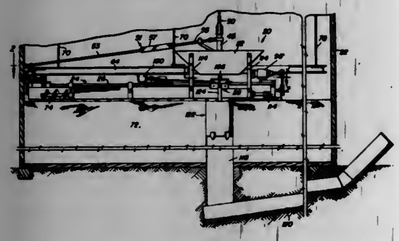
3,297,176
CONVEYOR MECHANISM FOR COOLING OR PROOFING ARTICLES
Hiram E. Temple, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Mar. 27, 1964, Ser. No. 355,220
8 Claims. (Cl. 214—16.4)



1. Product proofing or cooling apparatus comprising: frame means; rails defining upper and lower generally longitudinally extending article supporting runs supported thereon; elevator frame means supported on said frame means; vertically movable elevator slide means supported by said elevator frame means; endless elevator conveyor means mounted on said slide means having a generally

vertically disposed run substantially connecting the front ends of said rails; lowerator conveyor means connecting the rear ends of said rails; carriers with vertically spaced shelves; means on said endless elevator conveyor means and lowerator conveyor means for engagement and disengagement with said carriers successively to lift and lower the carriers vertically from one rail to the other in a circuitous travel; vertically stationary loader surface means adjacent said elevator run for supporting products to be loaded on said shelves of the carriers; vertically stationary unloading surface means adjacent said elevator run for supporting products to be unloaded from said carrier shelves successively; drive means; connecting means driven continuously by said drive means and connected with said endless elevator conveyor means for moving said elevator run continuously; means at predetermined intervals moving said elevator slide means downwardly at the speed of travel of said run to cancel the lifting effect of said run on said carriers and at intervals hold the shelves of the carriers stationarily adjacent the loader and unloading surfaces for short periods of time sufficient to permit loading and unloading; and means for loading products from said loader surface to said shelves and unloading products from said shelves to said unloading surface during said periods of time.

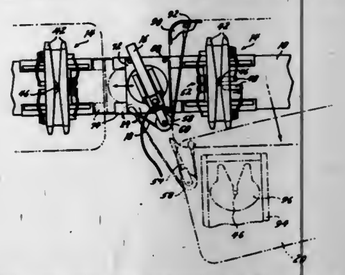
3,297,177
SILAGE HANDLING APPARATUS
Wayne D. Zeiter, R.R. 1, Bloomville, Ohio 44818
Filed Jan. 25, 1965, Ser. No. 427,563
16 Claims. (Cl. 214—17)



1. A silage handler comprising horizontal conveying means, a channel former suspended from the handler, said handler and former being positionable in a silo for concurrent raising and lowering, said former having a substantially vertical passage therethrough, an openable closure for said passage, means for opening the passage closure after the silo has been filled so as to open the passage through said former, and means for driving the conveying means to cut silage from the surface of the silage and feed it through the former and the vertical channel in the silage below the former formed by the former.

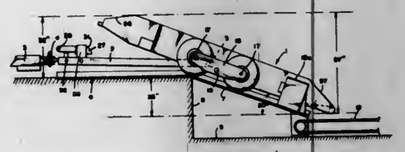
3,297,178
SYSTEM OF TRANSFERRING CONTAINERIZED CARGO
Charles I. Boblen, Doylestown, Pa., assignor to Strick Corporation, Fairless Hills, Pa., a corporation of Pennsylvania
Filed May 17, 1965, Ser. No. 456,357
10 Claims. (Cl. 214—38)

7. In a freight handling system, a railroad car comprising a turntable mounted thereon for rotation about a vertical axis and adapted to support one end portion of a freight carrying body, a cable adapted for removable connection terminally to said railroad car and the other end portion of the body, a hydraulic cylinder mounted for rotation around a vertical axis on said railroad car, and a piston operable in said cylinder having means at its outer end adapted to engage said cable and push the other end portion of the body relative to the railroad



car when the one end portion of the body is supported on said turntable.

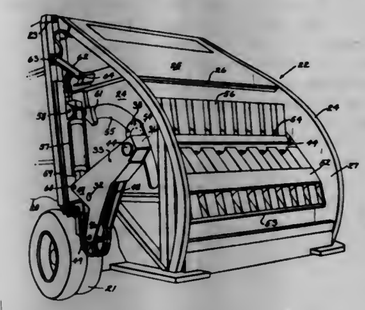
3,297,179
CAR DUMP ASSEMBLIES
John L. Kersey, Jr., Frank N. Kersey, and Trent H. Kemp, Bluefield, Va., assignors to "Automatic" Sprinkler Corporation of America, Youngstown, Ohio, a corporation of Ohio
Filed Sept. 1, 1964, Ser. No. 393,635
18 Claims. (Cl. 214—64.2)



1. In combination, a haulage unit comprising a body structure including side wall portions and a floor, wheel mounting torque rods extending transversely of the floor and beneath the bottom of the floor medially of the haulage unit length, said torque rods extending laterally beyond the side walls of each side of said unit, means securing the torque rods to the car floor centrally of its length, mounting plates rigidly fixed to each of the torque rods outwardly of the side walls of the body structure and having laterally projecting end portions, means rigidly securing the mounting plates to the torque rods, spaced wheels mounted at the end portion of each of said plates, and a dump arrangement for said haulage unit comprising a pair of trackways having generally horizontal portions and downwardly extending angular portions, stop means at the extremities of the downwardly extending portions, and power means connected to the haulage unit for moving the same over the angular trackways, whereby the mounting plates will be partially rotated with their torque rods to apply inertia to the haulage unit when the latter is moved to inclined dumping position.

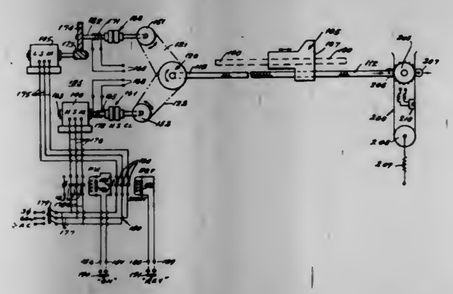
3,297,180
REFUSE BODIES
Glenn S. Park, New Berlin, and Raymond R. Szaj, Hales Corners, Wis., assignors to The Heil Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 23, 1965, Ser. No. 434,448
16 Claims. (Cl. 214—83.3)

1. In a refuse body having a refuse hopper provided with a bottom and sides, said bottom having a rear portion and a forward portion, booms pivoted to said sides and having upwardly-projecting portions, a scraper-packer plate for scraping refuse from said hopper into said body, a pivotal connection between an upper portion of said scraper-packer plate and upwardly-projecting portions of said booms, operating means operatively connected to said booms and scraper-packer plate for causing simultaneous rearward swinging movement of the booms and swinging of the scraper-packer plate on its pivotal connection with the booms over a load in the hopper to a rearward position, said operating means also providing for independent swinging movement of said scraper-packer plate on its pivotal connection with the booms when the booms are in said rearward position, said



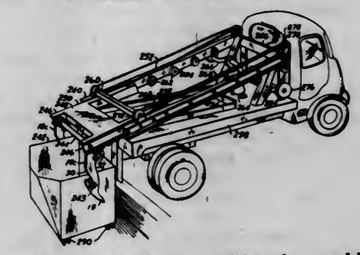
booms being so located with respect to the hopper bottom and the hopper bottom being so curved that when the booms are in said rearward position the hopper bottom is concentric with the axis of swinging movement for the scraper-packer plate on its pivotal connection with the booms, whereby the scraper-packer plate may scrape refuse from the rear portion of the hopper to the forward portion thereof while the booms are stationary.

3,297,181
GUILLOTINE PAPER CUTTERS—BACK GAGE CONTROL
Carl Thumim, Westbury, N.Y., assignor to The Lawson Company Division of Miehle-Goss-Dexter, Incorporated, a corporation of New York
Original application Sept. 16, 1959, Ser. 840,281, now Patent No. 3,174,370, dated Mar. 23, 1965. Divided and this application Dec. 31, 1964, Ser. No. 429,702
4 Claims. (Cl. 214—152)



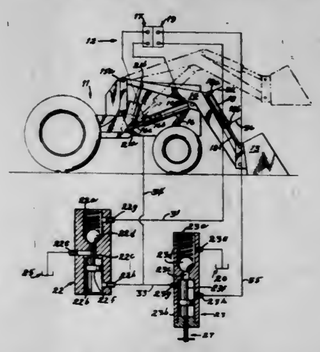
1. A method of controlling the movement of a back gauge of a paper cutting machine in accordance with a recorded program, for cutting predetermined lengths of paper from a stack, which method comprises the steps of recording a series of stop signals and respective associated slow signals on a magnetic tape wherein said slow and stop signals are each recorded at a respective frequency and wherein a slow signal precedes a stop signal, sensing said signals so as to initially sense a slow signal prior to its respective stop signal, and using said sensed signals to effect initial slowing and subsequent stopping of said back gauge for a sequence of movements thereof.

3,297,182
TRANSFER DEVICE
Leonard D. Barry, 19300 Pennington Drive, Detroit, Mich. 48221
Original application Sept. 7, 1960, Ser. No. 54,541, now Patent No. 3,164,406, dated Jan. 5, 1965. Divided and this application Jan. 4, 1965, Ser. No. 422,988
10 Claims. (Cl. 214—317)



7. A container transfer comprising in combination; boom means for mounting on a vehicle to swing vertically through a horizontal plane even when loaded, a carrier for riding said boom means, cable means for pulling said carrier back and forth on said boom means, means on said carrier for automatically engaging and releasing a container, said carrier being of shorter length than said boom means and being designed to ride partly out of the end of the boom means and to travel substantially the length of the boom means to position said means for engaging the container clear of the vehicle and to be pulled back in with the load to position the load along the boom as viewed lengthwise of the boom means.

3,297,183
HYDRAULIC SELF-LEVELING DEVICE FOR A FRONT MOUNTED BUCKET TYPE MATERIAL LOADER
Robert A. Klaviter, Hickory Hills, and Robert D. Williams, La Grange, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,615
7 Claims. (Cl. 214—771)



1. A device for automatically controlling the level of the work bucket of a material loader having
(a) a work bucket supported forwardly of the loader by a boom structure mounted on the frame thereof for pivotal movement about a generally horizontal axis extending transversely of said boom structure adjacent one end thereof, said boom structure being mounted adjacent its opposite end for pivotal movement about a generally horizontal axis on the frame of said loader, and
(b) hydraulic power operated mechanism operatively

associated with a source of hydraulic power on said loader,

said mechanism comprising a first hydraulic cylinder for actuating said boom structure to raise and lower said bucket under control of a boom valve, and a second hydraulic cylinder for actuating said bucket under control of a bucket valve,

said first cylinder being mounted adjacent its piston rod end for pivotal movement about a generally horizontal axis on said loader frame and having its head end pivotally connected adjacent its outer extremity to said boom structure in predetermined spaced relation with said horizontal axes of said boom structure and said bucket,

said second cylinder being mounted adjacent its head end for pivotal movement about a generally horizontal axis on said boom structure and having its piston rod pivotally connected adjacent its outer extremity to said bucket in predetermined spaced relation with said boom structure,

said device comprising auxiliary hydraulically operated mechanism operatively associated with said source including

(c) a single-acting third hydraulic cylinder

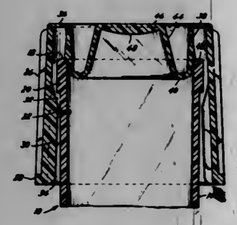
(d) a first relief, anti-cavitation valve, and

(e) a second relief, diverter valve said third cylinder being of the slave type,

said third cylinder and said relief valves being in operative hydraulic communication with one another and with said second cylinder and arranged to operate whereby upon operation of said first cylinder to raise said boom structure and said bucket, said third cylinder and said first relief valve are operated to apply fluid under pressure to said second cylinder opposing retraction of the piston rod thereof thereby to prevent pivoting of the bucket about the said horizontal axis thereof,

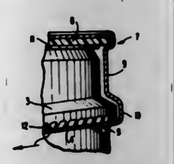
said third cylinder and said relief valves being further arranged to operate whereby upon operation of said first cylinder to lower said boom structure and said bucket, said third cylinder and said second relief valve are operated to apply fluid under pressure to said second cylinder enabling retraction of the piston rod thereof thereby to prevent pivoting of the bucket about the said horizontal axis thereof.

3,297,184
CAP FOR CULTURE TUBES
John Philip Andelin, Los Angeles, Calif., assignor to B-D Laboratories Inc., East Rutherford, N.J., a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,635
8 Claims. (Cl. 215—41)



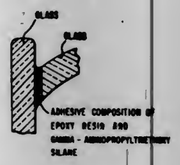
1. A cap for culture tubes comprising an upper plug portion and a downwardly extending side wall, sealing means on said cap for sealing the top of the tubes, and gripping means including elongated and vertically extending ribbing on said cap for maintaining said cap in an elevated position with respect to the top of the tubes, whereby passages are adapted to be defined when the cap is in the elevated position between the ribbing and the interior of the cap side wall and exterior of the tube upper end to permit passage of a gaseous medium through the passages so that aerobic and anaerobic conditions are adapted to be selectively attained for culturing purposes, said cap being so constructed and arranged so as to provide a stop means intermediate said sealing means and said gripping means for permitting the sensing of attainment of the cap sealing and elevated positions on the top of the tubes.

3,297,185
PLASTIC BOTTLE FINISH
Charles E. Plymale, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Apr. 12, 1965, Ser. No. 447,439
4 Claims. (Cl. 215—43)



1. In combination, a container having a neck portion of circular cross section with screw threads formed on the outer surface thereof, a closure member having an end panel and a skirt portion with screw threads formed on the internal surface thereof for engaging the threads on said neck to tighten said closure on said container, one of said threaded portions being molded from a resilient synthetic resin material, and resilient retaining means molded from said synthetic resin material integrally with said one of said threaded portions on the load bearing surface of the threads thereon in position to be engaged by the screw thread on the other of said threaded portions when said closure is installed on said container, said retaining means being deformed upon application of closing torque between said closure and said container to thereby increase the torque required to loosen said closure.

3,297,186
TRANSPARENT GLASS CONTAINER AND METHOD OF MAKING SAME
Lowell J. Wells, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed July 24, 1962, Ser. No. 212,141
16 Claims. (Cl. 215—100)



1. A method of permanently adhering two transparent glass surfaces together with a transparent seal which retains its adhesive strength after a plurality of washings in an aqueous medium comprising applying to at least one of said surfaces a solvent-free adhesive composition consisting essentially of a liquid epoxy resin, a curing agent for said resin and a silane having the formula

$$\begin{array}{c} R' \\ | \\ R-Si-R'' \\ | \\ R'' \end{array}$$

wherein R is an amino-substituted alkyl, R' is a member selected from the group consisting of alkyl, amino-substituted alkyl, and alkoxy, and R'' is an alkoxy group, placing the other glass surface in contact with the coated glass surface and curing said adhesive composition to securely bond said glass surfaces together, said silane being present in an amount sufficient to render said cured composition resistant to attack by moisture.

9. A transparent glass container having a transparent glass member permanently secured to the outer surface thereof by means of a transparent, water-resistant, bubble-free, cured resin seal located between the outer surface of said container and the adjacent end surface of said handle, said transparent resin seal, prior to curing consisting of a solvent free mixture of a liquid epoxy resin, a curing agent for said epoxy resin and a silane having the formula

$$\begin{array}{c} R' \\ | \\ R-Si-R'' \\ | \\ R'' \end{array}$$

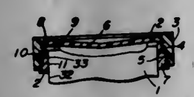
wherein R is an amino substituted alkyl, R' is a member selected from the group consisting of alkyl, amino-substituted alkyl and alkoxy, and R'' is an alkoxy group, said silane being present in an amount sufficient to render said cured resin seal resistant to attack by moisture.

15. A solvent-free adhesive composition suitable for sealing glass surfaces and forming a cured seal therebetween which is resistant to attack or weakening by moisture, said seal retaining its adhesive strength after a plurality of washings in an aqueous medium, said composition consisting essentially of a liquid epoxy resin, a curing agent for said resin and from about 1 to about 2.5% of a silane of the formula

$$\begin{array}{c} R' \\ | \\ R-Si-R'' \\ | \\ R'' \end{array}$$

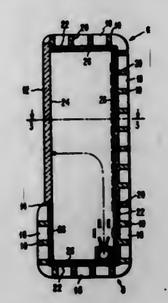
wherein R is an amino-substituted alkyl, R' is a member selected from the group consisting of alkyl, amino-substituted alkyl and alkoxy, and R'' is an alkoxy group.

3,297,187
CLOSURE DEVICES FOR CONTAINERS, JARS AND THE LIKE
William C. Thiesen, 3 N. Meyer Court, Des Plaines, Ill. 60016
Filed Nov. 2, 1964, Ser. No. 408,177
21 Claims. (Cl. 215—43)



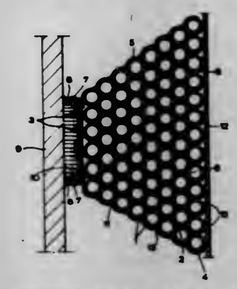
1. An elastic closure device adapted to close the open end of containers, jars and the like having an annular bead portion adjacent to the open end thereof and a circumferential wall below said annular surface portion, said closure device comprising a first member having an annular groove portion below its upper end adapted to mate with said annular bead portion of the container, said first member also having an annular portion of predetermined axial extent below said annular grooved portion, adapted to fit snugly with the circumferential wall of the container below its said annular surface portion, a second member adapted to retain the first member in position, said second member having an annular portion of predetermined axial extent, said first member having a tapered exterior surface, said second member having a tapered interior surface of larger cross section, both said tapered surfaces having spaced parallel ridges disposed perpendicular to the axis of said members and being adapted to interfit between the ridges of the other when the second member is assembled with the first member.

3,297,188
ENVELOPE FOR CATHODE RAY TUBES
William R. Aiken, 10410 Magdalena Ave., Los Altos Hills, Calif. 94022
Filed May 14, 1964, Ser. No. 367,921
6 Claims. (Cl. 220—2.1)



1. A flat envelope for cathode ray tubes having a transparent picture area and areas containing metallic reinforcing members in the regions subject to tensile stress.

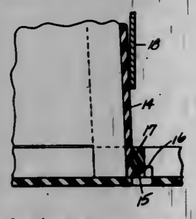
3,297,189
THERMAL INSULATORS
Jean Marie Pierre Carrasse, Antony, France, assignor to Societe Generale de Constructions Electriques et Mecaniques (Alsthom) Paris, France, a corporation of France
Filed Sept. 27, 1963, Ser. No. 312,171
Claims priority, application France, Oct. 1, 1962, 2,360, Patent 1,344,343
3 Claims. (Cl. 220—15)



2. Thermal insulator applied against a wall, comprising a plurality of sealed tubes containing a fluid, arranged with their longitudinal axes extending parallel to one another and parallel to said wall, assembly means for connecting said tubes in a plurality of distinct bundles, in the form of prisms, each constituted by an assembly of said tubes juxtaposed in a plurality of superimposed layers, thin anti-convection sheets inserted between at least some of said layers, and said bundles presenting in profile, two opposite parallel end faces, and lateral faces connecting said end faces, the first of said end faces being larger than the second, fixing means for fixing alternate bundles on the wall with the second of said end faces against said wall, whilst the other bundles present the

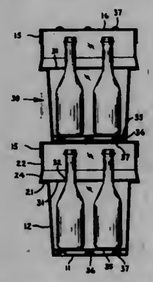
first of their said end faces against said wall and are held in place against the latter by said alternate bundles, so that said bundles are stacked against one another along said wall in a direction perpendicular to the axes of said tubes, a perforated screen disposed parallel to said wall, and means for fixing said screen to said assembly means on that end face which is opposite to the end face contacting said wall.

3,297,190
BOTTLE CASE
Harold S. Cloyd, Erie, Pa., assignor to Nosco Plastics, Incorporated, Erie, Pa., a corporation of Pennsylvania
Filed May 6, 1964, Ser. No. 365,256
3 Claims. (Cl. 220—21)



1. A bottle case having a compartment for a carton of a plurality of individual bottles, said compartment having side, bottom and end walls, a divider in said compartment having a top wall and side walls depending from the top wall, said side walls of the divider being generally concave and cooperating with the adjacent side and end walls of the pocket to provide pockets for supporting individual bottles, adjacent side walls of said divider being joined by junctions, the lower ends of the junctions being adjacent the bottom wall of the compartment, and interlocking shoulders on the lower end of the junctions and bottom wall of the compartment for securing the divider in the compartment.

3,297,191
MOLDED SHIPPING CONTAINER
Watson S. Eastman, 7325 SW. Newton Place, Portland, Oreg. 97225
Filed Apr. 12, 1965, Ser. No. 447,163
5 Claims. (Cl. 220—21)



1. A molded container comprising a polygonal bottom and lower side walls on all sides of said bottom, an outward offset at the top of each of said lower side walls, upper side walls extending upward from said offset, said upper side walls being formed with vertical lower portions connected with and extending upward from the outer edges of said offsets and formed with outwardly inclined upper portions, a horizontal separator board resting on said offsets, said upper side walls having notched corner portions permitting the upper side walls to bend inward to bring their upper portions into vertical positions and close said corner portions together, and a cover having side walls holding said upper portions of said upper side walls in vertical positions causing said lower portions to bend inward and lock said separator board against said offsets, said upper side walls having a tendency to spring outward to their molded positions and clamp the cover on the container.

3,297,192
HINGED CAP
James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,609
6 Claims. (Cl. 220—31)



1. A hinge construction for a pivoted lid member comprising a container top wall supporting surface, a spout opening having an upstanding peripheral flange in said supporting surface, the lid member selectively opening and closing the opening by engagement with said peripheral flange thereof,

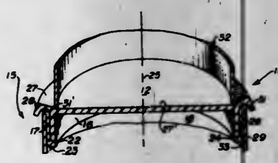
(a) a pair of spaced bosses integral with and extending upwardly from said supporting surface, each of said bosses having a cylindrical opening therethrough, said cylindrical openings being axially aligned,

(b) means forming shoulders defining restricted entrances to each one of said cylindrical openings, said entrances each being of a width less than the diameter of said cylindrical openings,

(c) said lid member comprising a closure portion for engagement with the upstanding flange of said spout opening, a connecting strap integral with said closure portion, an axle member on said strap at the end thereof distal from said closure portion, said axle member having a pair of flanges each integral and coaxial with said axle member and spaced apart a distance generally equal to the spacing of said bosses, a trunnion on either end of said axle member outwardly of said flanges and in general prolongation and axial alignment with said axle member, said trunnions being of a diameter substantially less than said flanges and the diameters of the trunnions being substantially equal to the diameter of the cylindrical openings of said bosses,

(d) said bosses being formed of yieldable flexible plastic so that said trunnions can be forced inwardly through the respective restricted entrances and being substantially held against removal therefrom by said shoulder forming means.

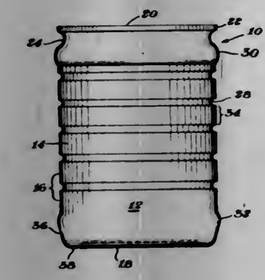
3,297,193
CONTAINER CLOSURE
Peter P. Stevens, Jr., Point Reyes Station, Calif., assignor to Walter Landor, San Francisco, Calif.
Filed Dec. 3, 1964, Ser. No. 415,648
12 Claims. (Cl. 220—60)



1. A sealing cap for a flexible container body of paperboard or the like which has a top edge about its mouth, and an integrally downwardly folded skirt of uniform

thickness throughout hingedly depending from said top edge alongside the side wall of said container body and terminating in a shoulder having a latching surface extending laterally with respect to said side wall; said cap being of relatively stiff elastic plastic material capable of restoration to its original shape after flexing thereof and comprising a top wall for overlying said mouth and for engaging said top edge, a pair of spaced flanges depending from said top wall adjacent the periphery thereof which with an undersurface portion of said top wall therebetween define an open bottom groove for gripping the side wall and the skirt of said container body at said mouth with a first of said flanges in tight flush engagement with said side wall, and a second of said flanges in tight flush engagement with said skirt, and a ridge projecting laterally from said second flange and having a latching surface for dogging engagement with said latching surface of said skirt, the distance between said latching surface on said cap and said cap undersurface portion being such compared to the distance between said body top edge and said container body latching surface as to effect tight dogging engagement between said body and cap latching surfaces when said cap is sealed on said body and said top wall undersurface portion engages said body top edge.

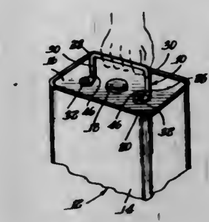
3,297,194
CONTAINER
Earl L. Schaper, Midland, Mich., and Bobbie G. Caldwell and Carroll J. Macalusa, both of Baton Rouge, La., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,445
11 Claims. (Cl. 220—72)



1. A container including a cup-shaped body having a side wall, bottom wall and top peripheral opening, said body being formed entirely of a resinous material, the side wall of said body generally defining a cylinder including a plurality of circumferential substantially planar surfaces, an outwardly directed bumper about the upper portion of said body, at least one circumferential groove located about the mid-section of said side wall, an outwardly directed bumper located about the lower portion of said body, said bumpers and at least one groove cooperating to give said container a spring-like resiliency upon axial loading and serving to maintain the container in round prior to capping.

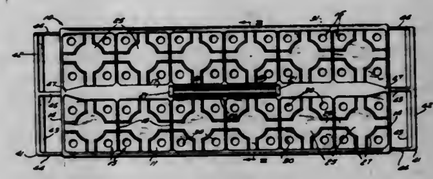
3,297,195
HANDLE SUPPORT FOR METAL CANS
Walter E. Hidding, % Blackhawk Plastic Mfg. Co., 589 Commercial Road, Addison, Ill. 60101
Filed Sept. 9, 1963, Ser. No. 307,527
4 Claims. (Cl. 220—94)

1. A handle device for assembly to a container having a top with spaced attachment holes, said handle device comprising: a generally U-shaped flexible handle of polymeric material including a grippable central portion and end portions secured to said central portion; and mounting means at each of the end portions of said handle for cooperation with said attachment holes in assembling said handle device to said container, including a tubular, radially resilient bushing integrally connected directly to the terminus of the corresponding end portion and having a central bore and a reduced



diameter, medially disposed peripheral portion for receiving the edges of a said hole, said mounting means also including a plug wedgedly insertable in said bore for expanding the same into sealing engagement with the edges of said hole, said plug being connected exclusively to the remainder of said handle device by engagement with said bushing and said handle being molded to said bushings to be disposed normally laterally thereof and to be flexibly raised to carrying position.

3,297,196
BOTTLE CARRIER
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed May 6, 1965, Ser. No. 453,631
15 Claims. (Cl. 220—102)



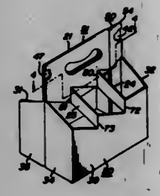
1. A one-piece molded shell plastic bottle-carrier comprising:

(a) base, side and end walls defining an upwardly opening tray and dividers extending above said base and between said side and end walls and subdividing the tray into a plurality of upwardly opening bottle-receiving cells;

(b) and means for assembling the carrier with another like carrier to provide a coupled-twin assembly and comprising a downwardly projecting hook-like flange structure extending longitudinally along the outer side of one of said side walls and defining a downwardly opening socket groove, and an upwardly extending interlock flange longitudinally along the outer side of the opposite side wall complementary to said downwardly projecting interlock flange and socket groove and adapted for interlocking interengagement within the socket groove of the downwardly projecting interlock flange of a like carrier.

3,297,197
COMPARTMENT-CARRIER HAVING REINFORCED HANDLE PARTITION JUNCTURES
George V. Woodling, 22077 W. Lake Road, Rocky River, Ohio 44116
Filed Oct. 22, 1965, Ser. No. 501,616
3 Claims. (Cl. 220—113)

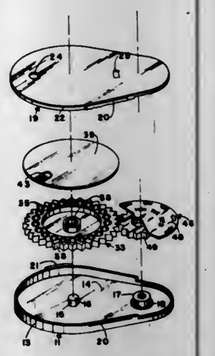
1. A compartment-carrier constructed of paperboard and comprising a box compartment having first and second opposed side walls with each having a lower edge and having first and second opposed end walls with each having a riser portion, a base having outer edges connected respectively to the lower edges of said side walls, handle means extending substantially co-extensive with and disposed substantially centrally of said side walls, said handle means having a first end portion connected to the riser portion of said first end wall and a second end portion connected to the riser portion of said second end wall, said handle means generally having at least four panel thicknesses joined together, said at least four panel thicknesses comprising at least first and second inside panels and third and fourth outside panels, at least first and second opposed partition members having inner ends connected back-to-back to said handle means and having outer ends connected respectively to said first and



second side walls, first hinge-connection means connecting the inner end of said first partition member to said first inside panel, second hinge-connection means connecting the inner end of said second partition member to said fourth outside panel, said first and second hinge-connection means being joined back-to-back to opposite sides of said second inside panel, whereby said first and second hinge-connection means and said second inside panel constitute a firm back-to-back partition juncture for connecting the inner ends of said first and second opposed partition members to said handle means, said first partition member in a foldable collapsed condition being foldable flatwise in a reverse direction against said first inside panel and said second partition member in the same foldable collapsed condition being foldable flatwise in a straight-line direction against said first inside panel.

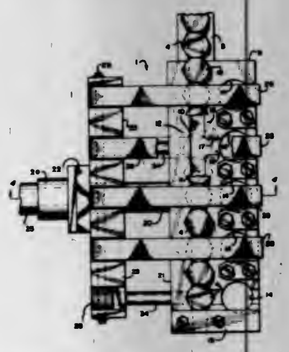
3,297,198
MEDICAMENT DISPENSER WITH CARTRIDGE AND INDICATING MEANS
Thomas Hardin Wright, Jr., Roanoke, Va., assignor to Creative Packaging, Incorporated, Roanoke, Va.
Filed June 30, 1965, Ser. No. 468,374
4 Claims. (Cl. 221—5)

1. A pill dispenser comprising: a base; a cover mounted on said base and defining a pill exit opening; a circular pill cartridge removably mounted between said cover and base, said pill cartridge comprising a rotatably mounted pill receptacle containing a plurality of pill compartments arranged in a pattern for individual alignment with said pill exit opening; a pill retainer freely coupled to said pill receptacle and covering said pill compartments, said pill retainer having an aperture in fixed alignment with said cover's pill exit opening; an indicia-bearing dial rotatably mounted on said base and positioned for successive individual alignment of said indicia with a reference means on said cover; said dial and said pill cartridge being in torque transmitting en-



gagement whereby advancement of said dial indicia is simultaneous with the advancement of said pill compartments.

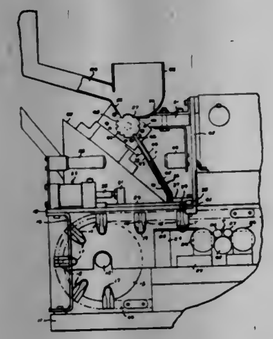
3,297,199
FASTENER ESCAPEMENT INCLUDING A DISCHARGE ASSISTANT MEANS
John P. Law, Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 30, 1965, Ser. No. 483,681
7 Claims. (Cl. 221—93)



1. An escapement for dispensing headed fasteners, comprising:
- a frame having an inclined trackway including spaced parallel rails defining a slot therebetween for receiving a row of fasteners having heads resting on said rails with the fastener shanks depending in said slot;
- a fastener dispensing chute provided in said frame sized to receive a single fastener and located beside said trackway in an offset relationship;
- a transfer passage formed in said frame interconnecting said trackway and said chute for a fastener to pass through in being transferred from said trackway to said chute, said transfer passage being located between opposing shoulders formed on said frame to support the head of a fastener during its transfer from said trackway to said chute;
- a carrier movably mounted on said frame for movement between a fastener receiving position and a fastener delivering position and arranged to engage the side of a fastener head for carrying said fastener from said trackway through said transfer passage to said chute; and

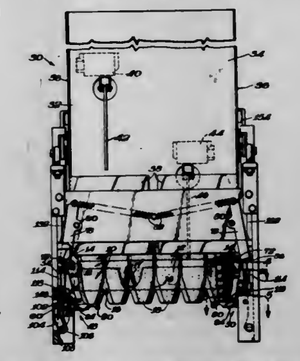
- a holder movably mounted on said frame for movement into said chute to catch the head of the fastener after it drops clear of said carrier and to prevent the drop of the fastener further through the chute until after the carrier is retracted to its fastener receiving position.

3,297,200
DUAL FEED OF TRANSVERSELY DISPOSED TUBES
Julian N. Andrews, Los Angeles, Calif, and Harry C. Gersbacher, Dayton, Ohio, assignors to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed Sept. 1, 1965, Ser. No. 484,179
3 Claims. (Cl. 221—175)



1. Feed mechanism in a tube working machine, including continuously moving conveyor means, a stationary plate overlying said conveyor means and having a slot through which a tube may drop through said stationary plate on to said conveyor means, a reciprocable plate slidable on said stationary plate and having a through slot therein which at one end of its reciprocating stroke overlies and is aligned with the slot in said stationary plate, an open ended chute carrying tubes stacked one upon another, said chute rising generally vertically above the plane of movement of said reciprocable plate and having its lower end positioned to align with the slot in said reciprocating plate at the other end of its reciprocating stroke, means for introducing tubes into the upper end of said chute, said tubes descending by gravity through said chute and dropping one at a time into the slot in said reciprocable plate on successive strokes thereof, the lower end of said chute being of a size to pass only a single tube and terminating in such proximate relation to said reciprocable plate as to be closed thereby except when said slot in said reciprocable plate is aligned therewith, said reciprocable plate being in such proximate relation to said stationary plate as to close the bottom of said slot in said reciprocable plate except when aligned with the slot in said stationary plate, said conveyor means including dual transversely spaced sets of longitudinally spaced apart fingers, corresponding fingers of the dual sets aligning with one another, each finger having a vertically elongated slot open at its top and closed at its bottom and having front and rear edges which are parallel over a substantial part of their length and divergent near the bottom of the slot, said fingers being conducted successively beneath the slot in said stationary plate each to receive in its upper end a tube falling by gravity therethrough, and a table disposed between said dual sets to intercept said tubes prior to their dropping to the bottom of said slots, the tube having a length to exceed the width of the table, said fingers carrying said tubes lengthwise along said table in response to movement of said conveyor means.

3,297,201
DISPENSING APPARATUS FOR STACKED ARTICLES PROVIDED WITH MEANS TO STRIP THE END ARTICLE FROM THE STACK
Donald E. Burt, Boston, Mass., assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine
Filed July 6, 1965, Ser. No. 469,532
11 Claims. (Cl. 221—221)
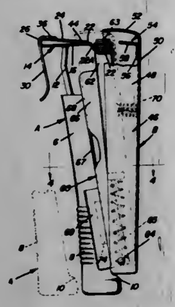


1. An arrangement for dispensing articles of the type having dished portions adapted for nested stacking as well as opposed edge portions from one end of a stack of such articles comprising means for holding a stack of such articles generally uniformly nested with their edge portions in generally straight alignment, dispensing means for removing articles singly from one end of a stack in the holding means including stripping finger means mounted for to and fro longitudinal travel relative to the stack and in and out lateral shifting to engage or avoid the end article to be removed from the stack, first stack retaining means mounted for in and out lateral shifting to engage or release the balance of the stack, second stack retaining means mounted for in and out lateral shifting to engage or release the dished portion of the end article of the stack, mechanical means connected to operate through a cycle of motion including initially shifting the first stack retaining means laterally in to engage the balance of the stack, shifting the stripping finger means laterally in to engage the end article to be removed from the stack, shifting the second stack retaining means laterally out to release the dished portion of the end article to be removed from the stack, generating longitudinal travel of the stripping finger means from the stack to remove the end article from the balance of the stack, shifting the stripping finger means laterally out to insure release of the article removed from the stack, then immediately shifting the second stack retaining means laterally to its inward position for engaging the dished portion of a new end article of the stack, generating longitudinal travel of the stripping finger means back toward the stack while maintaining it in its laterally outward position to avoid the new end article in the stack, and finally shifting the first stack retaining means laterally out to release the balance of the stack and permit forward longitudinal shifting of the stack until the dished portion of the new end article engages the second stack retaining means to support the stack.

3,297,202
SAFETY RAZOR BLADE DISPENSER
Henry H. Lemonjian, 8904 65th Drive, Rego Park, N.Y. 11374
Filed Dec. 24, 1963, Ser. No. 333,080
4 Claims. (Cl. 221—232)

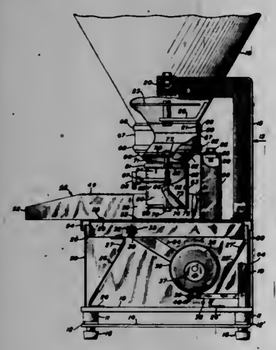
1. A holder and dispenser for razor blades comprising an elongated hollow shell having a web portion and flanges enclosed at one end and constituting a channel-

shaped sheath, a tubular magazine having one end hingedly mounted between the flanges at the end of the sheath remote from the closed end thereof, said magazine having an open discharge end provided with turned-in limit stop members to check and retain the blade proximal thereto, a stack of dispensable blades in said magazine, spring



means engaging the stack and serving to permit positioning and ejection of the blades one at a time, spring means interposed between the magazine and web of the sheath intending to press the magazine to a given normal position, adapter means fixedly mounted on an exposed lengthwise side of said magazine, said adapter means including guide flanges in spaced parallel relationship.

3,297,203
MATERIAL FEEDER
Eugene A. Wahl, 294 Forest Ave., Glen Ridge, N.J. 07028
Filed Apr. 26, 1965, Ser. No. 450,925
20 Claims. (Cl. 222—44)



1. In apparatus for discharging particulate material at a constant predetermined rate from a supply hopper having a discharge opening, the combination of,

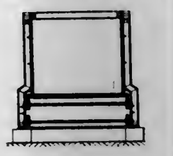
(a) an auxiliary hopper comprising a conical portion terminating in a vertical downspout, said hopper having a material-receiving opening at the conical end and an adjustable outlet orifice at the lower end of the downspout,

(b) means supporting the auxiliary hopper with its material-receiving opening disposed to receive material from the supply hopper discharge opening,

(c) a baffle member disposed within and secured to the auxiliary hopper, the peripheral surface of said baffle member being spaced from the wall of the auxiliary hopper to define a flow path for material to the said outlet orifice, and

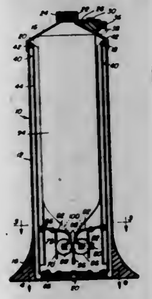
(d) means vibrating the auxiliary hopper and outlet orifice at a constant frequency and amplitude.

3,297,204
BUNKER CONVEYORS
James M. Adamson, Inverness, Scotland, assignor to Cable Belt Limited, Inverness, Scotland, a British company
Filed July 12, 1965, Ser. No. 471,103
Claims priority, application Japan, Sept. 1, 1964, 39/50,169
4 Claims. (Cl. 222—55)



1. A bunker conveyor comprising a housing, a plate belt mounted for reciprocal movement in said housing, an endless rope in frictional engagement with said belt to drive same, means to drive said rope in opposite directions, and means to vary the tension in said rope according to the desired direction of travel.

3,297,205
PASTE DISPENSING DEVICE FOR COLLAPSIBLE PASTE TUBES
William E. Sumner, 9730 SW. 162nd St., Miami, Fla. 33156
Filed Sept. 13, 1965, Ser. No. 486,981
5 Claims. (Cl. 222—102)



1. A paste dispensing device for collapsible tubes comprising an elongate housing of flexible material open at one end through which a collapsible paste tube may be inserted, the opposite end being closed and having a flaring base extending therefrom, two opposed trackways pivoted at their top ends to said housing adjacent said open end, a scissors connecting means pivoted at its center to said housing base, the bottom ends of said trackways being pivoted to the opposite ends of said scissors connecting means, yieldable means urging said scissors to space said trackway bottom ends apart, said trackways each comprising a track countersunk below inturned flanges of said trackways, a pair of opposed followers, each follower having a spool wheel riding on said track and having an extending axle retained within said trackway flanges, each follower comprising a curved acute angular member bifurcated at each end, one pair of bifurcations providing bearings for said spool wheel extending axle, a serrated wheel riding on another extending axle having a bearing in said other pair of bifurcations, a slotted yieldable ratchet plate secured on and depending from said follower angular member between said spool wheel and the curved angle of said curved member, said serrated wheel extending into the slot of said depending plate an ratcheting against the slot end, and means yieldably urging said serrated wheels toward each other, whereby when said housing is manually squeezed, the bottom

ends of said trackways are pivoted toward each other, causing said angular followers to squeeze a paste tube extending between said followers and between said serrated wheels to eject paste from an open end thereof, said scissors connecting means urging said bottom ends of said trackways apart when manual pressure is released, said serrated wheels being held by said ratchet plates against reverse rotation as said followers are pulled slightly away from the paste tube by their said spool wheels to provide a gap therebetween, into which gap said followers advance on the next squeezing action, as said serrated wheels then rotate until the followers again contact the paste tube to repeat the cycle of operation.

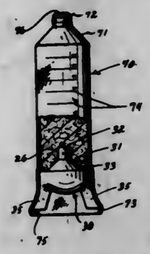
3,297,206
ASSEMBLY FOR CONTAINING AND DISPENSING LIQUID MATERIAL
William R. Scholle, Long Beach, Calif., assignor to Scholle Container Corporation, Northlake, Ill., a corporation of Illinois
Filed Oct. 11, 1965, Ser. No. 494,778
5 Claims. (Cl. 222—105)



1. An assembly for containing and dispensing liquid material comprising a rigid outer container and a flexible thermoplastic inner liquid container disposed therein, said inner container including a spigot adapted to project through an opening formed in a wall of said outer container, said spigot including a first tubular member, a relatively rigid first annular flange embracing said first tubular member including a relatively flexible peripheral portion sealed to said inner container about a communicating aperture therein, a second tubular member having one end in telescopic engagement with the first at the outer end portion thereof providing a common conduit therewith, a closure at the opposed end of said second tubular member, said second tubular member being formed with an aperture adjacent said end closure, and resilient means extending from said rigid container to said end closure for yieldably retaining said tubular members in telescoped relationship whereby the aperture in said second tubular member is covered by said first tubular member, said first tubular member including a second axially spaced relatively rigid annular flange, said rigid outer container being formed with a slot having an enlarged portion adapted to receive therethrough said second annular flange, and a relatively narrower slot portion adapted to anchor between said pair of annular flanges, said resilient means being disposed adjacent said narrower slot portion.

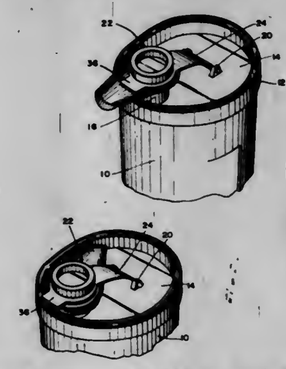
3,297,207
COLLAPSIBLE TUBES WITH FOLLOWER AND THE METHOD OF FILLING THEREOF
Gene Ballin, 13 Lansdowne Ave., Merrick, N.Y. 11566
Filed Apr. 28, 1964, Ser. No. 363,140
10 Claims. (Cl. 222—107)

1. In combination a resilient, deformable plastic tube having a discharge opening at one end thereof and adapted to house material to be extruded through said opening, a follower positioned within said container for extruding material housed therein through said discharge opening, said follower having a body portion slidably fitted to the interior wall of said container, said body portion having an end facing said discharge opening, an upstanding peripheral edge projecting forwardly from said end of said follower facing the discharge opening to define a tapered squeegee edge slidably fitted to the interior of said container to remove material from the wall therefrom as the follower is moved forwardly in the container, said squeegee edge having a shape complementary to the interior wall of the container and being slightly larger than said interior wall to form a pressure seal to prevent the tube contents from passing back of the follower when pressure



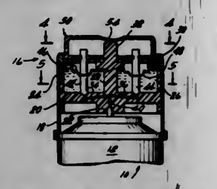
is exerted on the resilient, deformable plastic tube, the opposite end of said follower terminating in a resilient skirt which extends a substantial distance rearwardly of the squeegee edge to keep the follower aligned in the tube when pressure is applied thereto to maintain the seal at the squeegee edge, said follower being slidable coaxially within the tube toward said discharge opening responsive to pressure exerted on the wall of said tube.

3,297,208
CONTAINER SPOUT, WITH AXIALLY MOVABLE, HORIZONTALLY SWINGABLE POURING EXTENSION, AND A CAPTIVE CLOSURE
James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed June 23, 1965, Ser. No. 466,213
6 Claims. (Cl. 222—111)



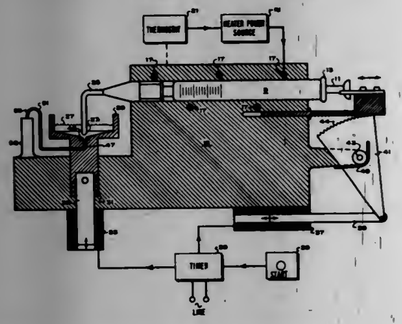
5. A collar member adapted to vertically slide upon an upwardly directed cylindrical spout having an upper outwardly flared peripheral rim comprising a lower cylindrical neck portion, fluid directing means and an outwardly flared intermediate portion connecting said lower neck portion with said fluid directing means, said fluid directing means comprising a concave rim upwardly extending from the terminus of said intermediate portion wherein one side thereof is provided with a laterally extending lip smoothly merging therewith, said lip of general concave configuration and extending upwardly and outwardly from the intermediate portion of said one end, said lip abruptly terminating in a downwardly outwardly directed extension, said extension in turn terminating in a thin edge.

3,297,209
AEROSOL DEVICE
Vincent F. Pungitore, 945 E. 214th St., Bronx, N.Y. 10467
Filed Dec. 31, 1964, Ser. No. 422,778
3 Claims. (Cl. 222—132)



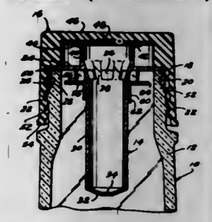
2. An aerosol device for use with a pre-pressurized container having an outlet spout, said device comprising, in combination, a multi-compartment atomizer cap for said container, said cap having a plurality of separate liquid-holding compartments, first conduit means selectively operable for guiding the liquid from a pre-selected one of said compartments to a position adjacent the exterior of said cap and beyond the confines of said cap, second conduit means for guiding pressurized gas from said container to said position, said second conduit means being adapted to guide said gas with respect to said first conduit means so as to tend to draw liquid from said first conduit means and atomize and spray said liquid from said cap, means for providing an air vent passageway to each of said compartments from which liquid flows and is atomized, but only while said liquid is flowing from said compartment, and container valve means for selectively releasing quantities of said pressurized gas from said container.

3,297,210
DISPENSING APPARATUS
Derek A. Lucas, Dover, Mass., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Dec. 28, 1964, Ser. No. 421,407
1 Claim. (Cl. 222—146)



Fluid dispensing apparatus comprising:
a reservoir for containing a fluid to be dispensed;
a fluid outlet in a lower region of said reservoir having a terminal end remote from the reservoir which is disposed above the level of a fluid to be dispensed contained within said reservoir;
a tube having an end disposed in line with said fluid outlet;
means coupled to at least one of said tube and reservoir for moving said one in a direction toward the other of said tube and reservoir between limits of travel to form a fluid-tight seal betwen the end of said tube and the outlet at one limit of travel and to position said end of the tube away from the outlet at another limit of travel for said end of the tube to communicate with a fluid to be dispensed contained in the reservoir, said means including an electro-mechanical solenoid coupled to said reservoir for moving the reservoir vertically along an axis passing through said end of the tube; and
additional means including a chamber with a plunger therein for altering the volume of said chamber and a heater disposed about said chamber for heating fluid present in said chamber connected to said tube for withdrawing fluid to be dispensed therethrough from said reservoir when the tube and reservoir are disposed near said other limit of travel and dispensing a portion of the withdrawn fluid through said tube and outlet when said tube and reservoir are disposed near said one limit of travel.

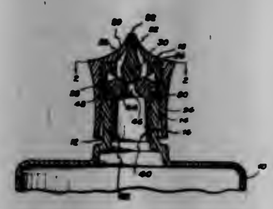
3,297,211
LIQUID DISPENSER HAVING PLURAL DISCHARGE GUIDES
Earl D. Unger, Louisville, Ky., assignor to Joseph E. Seagram & Sons, Inc., New York, N.Y., a corporation of Indiana
Filed Apr. 5, 1965, Ser. No. 445,576
9 Claims. (Cl. 222—479)



1. A pouring device for attachment to the neck of a liquor bottle for accurate control over the quantity of liquor dispensed and the rate of pouring, comprising a pouring tube adapted to be arranged essentially concentrically inside the bottle and interiorly of the neck, said tube having a restricted inner end provided with a central air vent hole for directing ambient air inwardly into the bottle replacing the liquid being poured, said tube having an outer end and a series of liquid drainage ports spaced inwardly of the outer end and communicating with the interior of the tube, a radially extending annular flange integrally connected with the tube at the tube outer end, a circumferentially extending rim integral with and depending from the outer periphery of the flange, said rim having means for sealing engagement with the lip of the bottle neck, a substantially concentric tubular pouring spout extending integrally and outwardly from the flange and communicating with the interior of the tube to direct air thereto and communicating with the drainage ports for directing liquid passing through such ports in a controlled manner, and annular gating means being disposed concentrically and radially outwardly with respect to the drainage ports and being provided with a second series of spaced openings spaced from one another by spaced panels and through which the liquor is adapted to pass into the said liquid drainage ports.

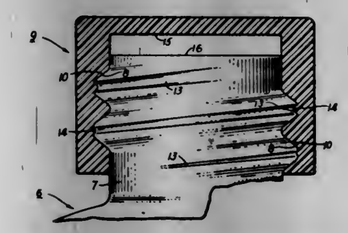
3,297,212
BOTTLE CAP AND CLOSURE
Nikolaus Neuner, Gabelsberger Strasse 22a, Aschaffenburg, Germany
Filed Jan. 21, 1965, Ser. No. 426,823
2 Claims. (Cl. 222—521)

1. A bottle closure comprising an exteriorly threaded bottle neck, a bottle cap having a threaded skirt portion screwed to said neck and a cap portion having a centrally positioned outlet orifice, a resilient sealing member secured within said cap and composed of a disc portion and an annular cylindrical portion, boss means on said disc portion for bearing on said neck to close the neck outlet opening, and a plurality of holes through said disc portion and surrounding said boss means for forming a passageway from said neck through said outlet orifice when said cap is partially unscrewed from said



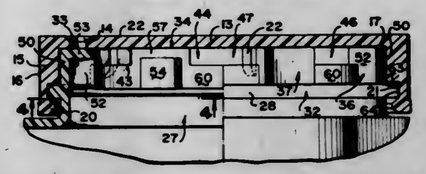
neck, a resilient insert secured to said neck and having an insert opening closable by said boss means, an annular groove in the periphery of said insert, and an inwardly turned annular flange on said cylindrical portion engaged in said groove, said flange having a thickness less than the width of said groove for being movable therein to contact a side of said groove to form a seal when said cap is partially unscrewed from said neck.

3,297,213
LEAK ARRESTING CLOSURE
Edward Henderson, 236 Midland Ave., Montclair, N.J. 07042
Filed Apr. 7, 1965, Ser. No. 446,361
2 Claims. (Cl. 222—542)



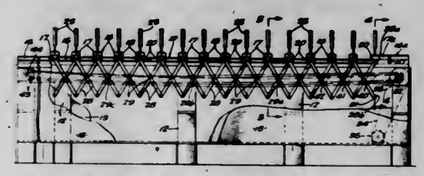
1. A leak arresting connection and closure for fluid containers of the type wherein two generally cylindrical screw threaded parts, one including a helical main groove and the other including a helical main rib, are rotatably interengaged to effect relative axial movement between them, said main rib having a secondary groove extending along its ridge and said main groove having a secondary rib complementary to said secondary groove extending along and rising out of the trough of said main groove and being arranged in non-interfering cooperative relation to said main rib, said connection and closure being characterized in that said secondary groove and rib terminate at their inner ends short of the inner ends of said main rib and main groove respectively, said secondary groove being gradually tapered in the direction toward its inner end and said secondary rib being correspondingly tapered in the direction toward its inner end and being of a shape and dimensions whereby inner end portions of said secondary rib substantially occupy inner end portions of said secondary groove thereby to maintain effective leak resisting nesting contact with opposed conforming surface portions of said secondary groove.

3,297,214
DISPENSING CONTAINER HAVING A ROTARY FLOW CONTROLLER
Richard C. Allen, Glen Ellyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 19, 1965, Ser. No. 441,010
8 Claims. (Cl. 222—548)



1. A dispensing container comprising a container body and a closure, said container body having a neck terminating axially in at least one valley and one land portion, said land portion including at least one wall, at least one dispensing opening in said closure, said closure being mounted for rotation relative to said container body, said dispensing opening being closed by said land portion in a first non-dispensing position of said closure and being placed in communication with said body by means of said valley portion in a second dispensing position of said closure, and said closure including means positioned in rotational alignment with at least one wall of said land portion for limiting the rotation of said closure in at least one direction by the contact between said last-mentioned means and said one wall.

3,297,215
PLEATING APPARATUS AND METHOD
Enrique Soto, 981 Montecito Drive, Los Angeles, Calif. 90031
Filed Jan. 23, 1962, Ser. No. 168,213
11 Claims. (Cl. 22?—28)

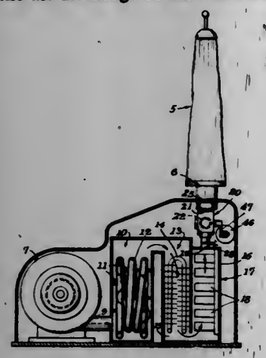


1. A pleating machine comprising a frame having an elongated guide track, means comprising a plurality of material clamping devices movable along the track, means interconnecting the clamping devices whereby they may be moved in one direction while maintaining equal spacing between adjacent clamping devices, variably settable stop means positioned along the guide track whereby to stop movement of the clamping devices at a desired predetermined point whereby material to be pleated can be clamped to individual clamping devices and then the clamping devices moved in closing direction until interrupted by the stop means, the said clamping devices being arranged to form folds between adjacent clamping devices, extending upwardly from the material.

3,297,216
APPARATUS AND METHOD FOR HIGH TEMPERATURE CURING OF FABRICS
David L. Radford, Salt Lake City, Utah, assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Oct. 5, 1965, Ser. No. 493,173
10 Claims. (Cl. 223—73)

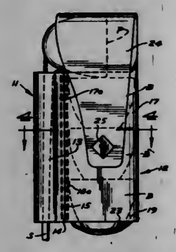
1. Apparatus for high temperature curing of resin-impregnated fabrics comprising:
(a) at least one air-pervious bag adapted to be dressed with a garment made of such a fabric,

(b) a source of compressed air,
(c) first means to heat said air to a generally constant heat level,
(d) second means to increase the level of heat of air discharged from the first-mentioned means,
(e) a high-resistance electrical sensor located in the flow of the air discharge of the latter means,



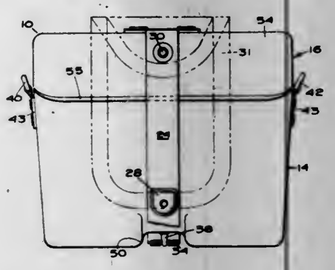
(f) means responsive to changes in the level of the temperature of the air flowing around the sensor to control the means to increase the level of heat discharged from said first mentioned means, and
(g) a conduit to conduct the flow of heated air to the interior of the bag for passage under the pressure of said air through the bag and to the interior of the garment dressed thereon.

3,297,217
PIPE HOLDER
Dale A. Nichols, 22 Dayton Park, Rte. 3, Osseo, Minn. 55369
Filed Mar. 1, 1965, Ser. No. 435,824
5 Claims. (Cl. 224—5)



5. A pipe and multiple bowl holder unit adapted to be attached to a person's clothing comprising;
(a) a pair of longitudinally extending conduits, one of said conduits being of a size to receive the stem of a pipe longitudinally therethrough, the other of said chambers having a cross section of sufficient diameter to permit a pipe bowl to be placed therein;
(b) means arranged on at least one of said conduits to permit the same to be attached to an article of clothing;
(c) flap means arranged on said bowl receiving conduit adjacent one end thereof to cover at least selected portions of the ends of at least one of said conduits to normally prevent upward removal of articles contained therein but movable to permit extraction of articles therein; and
(d) section of said bowl receiving conduit extending the longitudinal length of said bowl receiving conduit is provided with means for decreasing the normal diameter of said conduit when occupied to provide a pressure against pipe bowls within the conduit and prevent longitudinal slipping thereof of each bowl within the conduit.

3,297,218
BINOCULAR CARRYING CASE
Patrick J. Cassidy and Milton L. Quammen, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Feb. 25, 1966, Ser. No. 531,648
8 Claims. (Cl. 224—26)

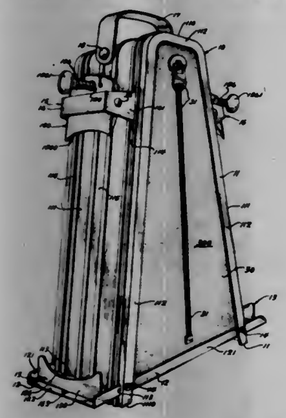


1. A binocular carrying case comprising a body portion including,
a shell having front, rear, side and bottom portions,
said bottom portion of said shell defining a depression,
a first stud located in said depression,
a second stud located on the front portion of said shell, and
a first plate located on the rear upper portion of said shell,
a lid portion including,
a cover having front, rear, side and top portions,
a second plate on the rear portion of said cover,
a third plate on the top portion of said cover,
a hinge secured between said first and second plates,
a belt strap attached at one end to said third plate,
a stud fastener on the other end of said belt strap for fastening to said first stud,
a catch strap attached at one end to said third plate, and
a stud fastener on the other end of said catch strap for fastening to said second stud.

3,297,219
ACCESSORY BAG AND SKI BOOT TREE
Norman W. Selnes, 3725 W. Outer Drive, Detroit, Mich. 48221
Filed Apr. 13, 1965, Ser. No. 447,777
3 Claims. (Cl. 224—45)

1. An accessory bag and ski boot carrier comprising
a rigid arch shaped frame member forming the top and sides of said carrier and having a pair of laterally spaced reentrant ways therealong,
a bottom frame member telescoped through the lower portion of said arch shaped frame member and extending outwardly therefrom,
an upper ski boot clamping member slidably mounted in said ways along each side of said arch shaped frame member engageable with the heel of a ski boot,
a lower ski boot clamping member slidably mounted along each extended end of said bottom frame member,
each said ski boot clamping member including manually operable means securing the clamping member in any position to which said clamping members may be moved to removably secure the heel and toe of a ski boot on each side of said carrier frame,

flanges formed along the edges of said arch shaped frame member and said bottom frame member forming within said frame members a front and rear open pocket to accommodate an accessory bag,
an accessory bag including formed substantially rigid liner means lining all except the front wall thereof disposed in said pocket within said arch shaped and bottom frame members and the flanges thereof,



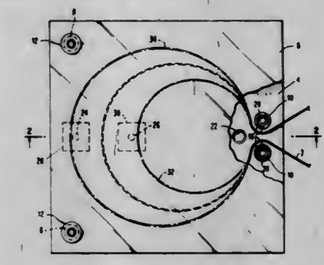
said accessory bag including zipper means in said front wall thereof providing access thereto, and
a hand grip element for carrying said accessory bag and ski boot carrier fixed to the upper portion of said rigid arch shaped frame member.

3,297,220
BOTTLE PACK CARRIER
Edgar T. Leeberg, Alexandria Township, Hunterdon County, N.J. (500 Amsterdam, Roselle, N.J. 07203)
Filed Jan. 24, 1966, Ser. No. 522,718
6 Claims. (Cl. 224—45)



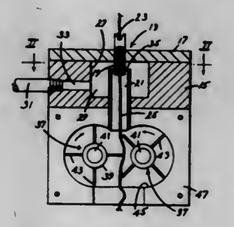
1. In combination with a pair of box-like bottle cartons each having upstanding central partitions with transverse partitions on each side thereof forming bottle pockets,
said central partitions having respective hand hold slots therein and positioned in parallel side by side relation with their hand hold slots aligned,
a carrying handle comprising flexible material having a central hand grip portion and a bottle engaging portion at each end,
each bottle engaging portion being inserted through a respective central partition hand hold slot to engage a bottle in a pocket therebeyond to contact the neck of the bottle,
said hand hold slots keeping said bottle engaging portions down around said bottle necks when said central hand grip portion is raised to lift the pair of cartons,
and said bottle necks preventing withdrawal of said bottle engaging portions from said hand hold slots when said central hand grip portion is lifted.

3,297,221
TRANSPORT MECHANISM FOR FLEXIBLE MATERIALS
Lazar Licht, Irvington, David E. Brickl, New York, and Bendix H. Indergard, Croton-on-Hudson, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 10, 1964, Ser. No. 388,622
13 Claims. (Cl. 226—97)



1. A transport mechanism for flexible strip material comprising, in combination:
two essentially parallel plates that are spaced apart from each other by a distance that slightly exceeds the width of the strip of material to be transported;
material guiding means located between the plates for controlling the position of the open end of a loop of material extending into the mechanism such that the opening forms a relatively small gap;
and means for applying fluid under pressure to a chamber formed by the plates and the loop of material that is within the mechanism to cause a loop of material to be formed in the mechanism, where said plate constitute the sole confining means for said loop.

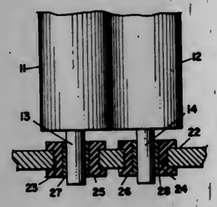
3,297,222
STRAND CONVEYOR PROVIDED WITH FLUENT DRIVE MEANS
Henry J. McDermott, Collingdale, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,227
5 Claims. (Cl. 226—97)



1. Apparatus for conveying a continuous strand including means providing a generally enclosed passage having strand inlet and outlet openings, a conduit for delivering a stream of gas under pressure and introducing a portion thereof into said passage between said openings and in a direction extending toward said outlet opening to thereby induce a suction at said inlet opening, a pair of rotatable strand advancing units positioned to receive a strand therebetween as it issues from said outlet opening, a pair of wheels located within a chamber and fixed to rotate with the respective strand advancing units, vanes projecting from said wheels, a nozzle for directing the remainder of the stream of gas which is delivered through said conduit into said chamber along a path extending be-

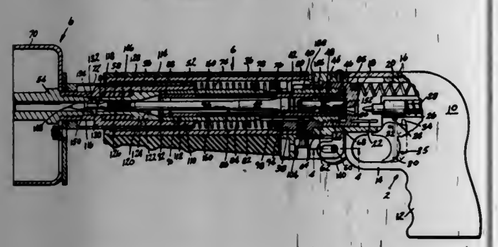
tween said wheels and against the vanes thereof to thereby drive said strand advancing units, and means for venting the spent gas from said chamber.

3,297,223
FLEXIBLE CONTROL FOR A ROLLER TRANSPORT SYSTEM
Robert A. Bueker, Palos Verdes, Calif., assignor, by mesne assignments, to National Research and Chemical Company, Hawthorne, Calif.
Filed Jan. 12, 1965, Ser. No. 424,989
3 Claims. (Cl. 226—183)



1. A flexible control for a roller transport system including a pair of rollers in parallel tangential relationship having extending shaft end portions, comprising, in combination: a frame having a pair of spaced bores of larger diameter than said shafts; and resilient members of cylindrical shape in said bores having side walls of substantial thickness, each of said members including integral radially outwardly extending annular end flanges overlying the peripheries of said bores so that said members are resiliently supported in said bores, said shaft end portions extending through said members whereby changes in the lateral spacing between said shaft end portions are accommodated by compression of portions of said side walls.

3,297,224
POWER ACTUATED TOOL
William E. Osborne, East Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 30, 1965, Ser. No. 452,183
8 Claims. (Cl. 227—10)



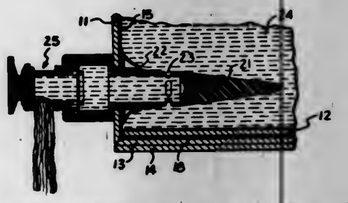
1. A power-actuated piston tool comprising barrel means having an axially extending bore, hollow cylinder means removably disposed within said bore, piston means axially slidable within said cylinder and including a head portion and a ram portion, cartridge-receiving means secured to said cylinder means at one end thereof, a first circumferential groove in the internal surface of said cylinder means adjacent the other end thereof, a second circumferential groove in said head portion, and resilient means positioned within said second circumferential groove, said resilient means being compressed between said second circumferential groove and the internal surface of said cylinder and adapted to expand into said first circumferential groove to prevent accidental withdrawal of said piston means from said cylinder means.

3,297,225
CAN BODY
Robert J. Bransten, San Francisco, Calif., assignor to M.J.B. Co., a corporation of Delaware
Filed May 13, 1964, Ser. No. 366,997
1 Claim. (Cl. 229—3.5)



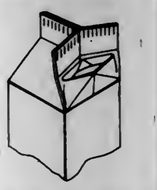
As a new article of manufacture a can body consisting of a central paper member with outer foil members laminated thereto and covering the sides thereof, said outer foil members comprising thin steel sheets having a tin-plating on the exposed surfaces thereof, said can body having a straight side seam, said side seam being a soldered lock joint.

3,297,226
PACKAGING
William R. Scholle, Long Beach, Calif., assignor to Scholle Container Corporation, Chicago, Ill., a corporation of Illinois
Filed June 9, 1964, Ser. No. 373,627
3 Claims. (Cl. 229—14)



1. A lined container comprising an outer rigid rectangular paperboard container body including side and end walls, first and second opposed full end closure flaps hinged to said side walls, and opposed half flaps hinged to said end walls, a pillow-shaped plastic flexible liner bag disposed in same rigid container with at least one corner portion projecting outwardly of said side walls and folded about a lateral edge of said first side flap with one of said end flaps folded thereover, said second side flap lying in sealed engagement to and over said end flaps, one of said end walls including a defined probing area disposed adjacent to the hinge line of its end closure flap and adjacent to the lateral edge of said first side closure flap about which said bag corner portion is folded.

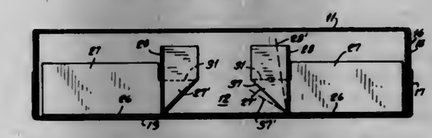
3,297,227
POURING SPOUTS FOR CONTAINERS
Hans I. Wallsten, Dals-Langed, Sweden
Filed Jan. 18, 1965, Ser. No. 426,202
Claims priority, application Sweden, Jan. 16, 1964, 548/64
4 Claims. (Cl. 229—17)



1. A container of sheet-like material having a tubular body closed at its lower end, a gable-type closure on the upper end of said body comprising a pair of side panels connectable with opposed sides of said body, a pair of end panels, said end panels being connectable to the sides of said body adjoining said opposed sides thereof, said

end panels being foldable along horizontal folding lines so as to project over said body and define with said side panels a gable cavity at each end of said closure, said side panels being foldable so as to project over the end panels and to complete the gable-type closure, the confronting upper edge portions of said side and end panels being sealed together along generally aligned horizontal zones, one of said end panels containing a continuous slit in it, said slit extending along a line which is parallel to said folding lines, lying below and close to the sealing zones between the upper edges of the panels, and passing completely through the sheet-like material of said one end panel, a cover strip completely covering said slit and being sealed to the inside of said one end panel to completely seal said slit, each of said side panels being swingable away from each other to expose said one end panel, a portion of said one end panel being swingable outward from the tubular body to form a pouring spout, said pouring spout having a pouring edge which is formed by the lower edge of said slit, said cover strip remaining sealed to the upper edge of said slit when said portion of said one end panel swings out to form a pouring spout while the seal between the lower edge of said slit and said strip is broken.

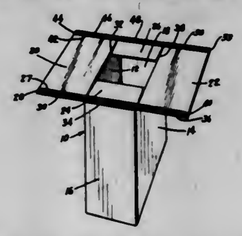
3,297,228
CARTON DIVIDER CONSTRUCTION
Robert J. Contratto, Milwaukee, Wis., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed July 8, 1965, Ser. No. 470,360
3 Claims. (Cl. 229—27)



1. In a folding carton blank formed of panels of sheet material joined along longitudinal fold lines, a portion for forming a transversely-extending divider in the carton, said portion being retained along a fold line at its base edge, with respect to a first of said panels, such fold line extending transversely of the panel, said portion being applied to and normally extending generally flatwise of said first panel before the blank is erected to form a carton, a side edge of said portion being connected along a fold line to web portions which are applied to and normally extend substantially flatwise of a second of said panels, said web portions being joined at a crease line extending from said base edge fold line diagonally of said second panel, whereby when the carton is being erected and said first panel is swung into upstanding relation to said second panel, said web portions will become folded over upon each other along said diagonal crease line and cause said divider portion to swing to a position extending transversely of the space within the carton.

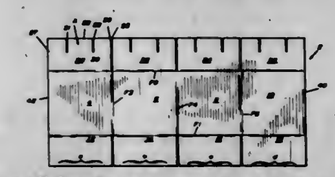
3,297,229
GASTIGHT BOX
Gary R. Bluem, Minneapolis, Minn., assignor to Possis Machine Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed May 20, 1965, Ser. No. 457,358
5 Claims. (Cl. 229—37)

1. A blank for constructing an airtight box comprising:
(1) a flat sheet of non-porous material having;
(a) a first rectangular portion
(b) a second rectangular portion hinged to said first rectangular portion along a fold line defining adjacent edges of said rectangular portions;
(c) a third rectangular portion similarly hinged to said second rectangular portion;
(d) a fourth rectangular portion similarly hinged to said third rectangular portion; the first and third portions being substantially alike and the second and fourth portions being substantially alike;
(e) a first pair of flaps, each of which shares a common foldline edge with one edge of said first rectangular portion;
(f) a second pair of flaps each of which is foldably secured to said second rectangular portion along an edge and each of said second pair of flaps having a length which is the same as the width of said second rectangular portion;
(g) a third pair of flaps each of which is foldably secured to said third rectangular portion along an edge and each of said third pair of flaps having a length which is the same as the width of said third rectangular portion;



(h) a fourth pair of flaps each of which is foldably secured to said fourth rectangular portion along an edge and each of said fourth pair of flaps having a length which is the same as the width of said fourth rectangular portion;
(i) an end flap foldably secured to said first rectangular portion along the edge corresponding and opposite to the edge shared with said second rectangular portion;
(j) said blank being foldable into a rectangular tube with said end flap overlapping a part of said fourth rectangular portion and opposed flaps folded inward at each end of said tube to close the ends thereof;
(2) and beads of non-porous adhesive placed on said blank so that every flap edge that would otherwise be exposed to the surrounding atmosphere and is adjacent another flap edge will be secured to said other flap edge by said adhesive; said adhesive being placed on said blank in such quantity adjacent the corners thereof that when said blank is folded into a box, some of the adhesive is exuded over the box corners.

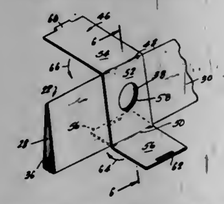
3,297,230
FLAP PANEL CONTAINER
Douglass M. Stegner, 1301 Covington St., Baltimore, Md. 21230
Filed May 17, 1965, Ser. No. 456,057
5 Claims. (Cl. 229—38)



1. A parallelogram box comprising a bottom wall, side walls extending upwardly from said bottom wall, and a top wall including a first pair of flap panels hingedly joined

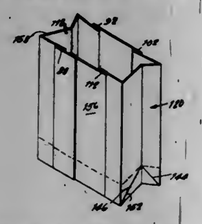
to a first pair of opposed top edges of said side walls and adapted to be folded inwardly parallel to said bottom wall, and a second pair of flap panels hingedly joined to a second pair of opposed top edges of said side walls extending perpendicularly to said first pair of opposed top edges and adapted to be folded inwardly over said first pair of flap panels, adhesive means disposed between said first pair of flap panels and said second pair of flap panels for securing the top faces of said first pair of flap panels to the bottom faces of said second pair of flap panels, and flap members formed integrally with said flap panels in said first pair, said flap panels in said second pair having slots therein, said flap members extending through said slots and being secured above said first pair of flap panels.

3,297,231
DISPOSABLE FILTER BAG
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York
Filed Mar. 11, 1964, Ser. No. 351,165
1 Claim. (Cl. 229—53)



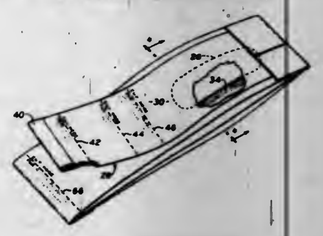
A cannister vacuum cleaner filter bag comprising an elongated tubular member formed of air permeable sheet material, said member having a pair of elongated opposing side walls diverging from a common fold line and a bottom wall extending between said side walls to define a transverse triangular cross-sectional conformation for said member, said tubular member being closed at the opposite ends thereof, and an opening defined substantially centrally of one of said side walls whereby dirt laden air entering said opening will strike the opposing side wall to deflect said air creating air currents extending toward both said opposite ends, said bottom wall having a plurality of pleats defined therein which extend longitudinally of said member, and collar overlying said one side wall and having an aperture in registry with said wall opening, said collar being folded over said side and bottom walls, the opposite ends of said collar being secured together below said bottom wall.

3,297,232
VACUUM CLEANER FILTER BAG
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York
Filed Nov. 27, 1964, Ser. No. 414,285
10 Claims. (Cl. 229—53)



1. A bag formed of a blank of sheet material folded to define a front wall, a rear wall and opposing sides, said bag being closed at one end thereof, each of said walls having means for incerasing the widthwise dimension thereof, said means comprising pleats defined in each of said walls and extending longitudinally thereof, said pleats being movable transversely of the respective walls to increase the surfaces thereof, said pleats extending without deformation into said closed end and being movable transversely of said closed end to increase the area thereof.

3,297,233
VACUUM CLEANER BAG WITH CLOSED TUBE
Carl E. Meyerhoefer, Little Neck, N.Y., assignor to Equitable Paper Bag Co., Inc., Long Island City, N.Y., a corporation of New York
Filed June 10, 1965, Ser. No. 462,976
6 Claims. (Cl. 229—53)



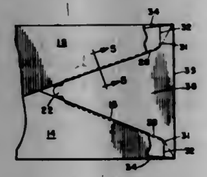
1. A vacuum cleaner bag construction comprising a bag made of air-pervious paper, the bag having front and back panels, and being closed at both ends, a tube having an interior that connects with the interior of the bag through an opening in the front panel of the bag, the sides of the tube being secured to the front panel around the entire periphery of the opening for preventing leakage of air between the sides of the tube and the front panel of the bag around the periphery of said opening, the tube being closed at both ends, and a portion of the length of the tube for a substantial distance from one end being free of any connection with the bag around the entire periphery of the tube corresponding end portions of the bag and tube, where the bag and tube are not connected with one another, being adapted to be cut off to leave the end of the bag or tube open, the periphery of the end of the bag being different from that of the end of the tube for fitting different vacuum cleaners with which the bag is intended to be used.

3,297,234
PLASTIC BAG WITH INLET VALVE
Karl-Heinz Honsel, Bielefeld, Paul Maurer, Beckum, and Karl-Friedrich Duwe, Oberkassel, near Bonn, Germany, assignors to PSG Plastik-Sack G.m.b.H., Rosbach (Sieg), Mauel, Germany, a limited-liability company of Germany
Filed July 6, 1965, Ser. No. 469,472
13 Claims. (Cl. 229—62.5)



1. A bag of plastic material having a peripherally closed side body and an end closure, at least a part of said bag being formed as a valve structure for the insertion of a filling nozzle, said valve structure including:
(a) at least two parallel, juxtaposed sheets of plastic material that constitute a terminal part of said bag, are separate from said side body, and are sealed to said body,
(b) each of said sheets being formed with an incision, the incisions in different sheets being displaced from each other so that the sheet portions between incisions in different sheets lie in flat, juxtaposed relation to form a seal against the escape of material from the bag,
(c) the incision in the outermost sheet being accessible to the outside of the bag for the insertion into the incision therein of a filling nozzle to separate the said portions for introducing said material into the bag through the incisions, and
(d) the end of said side body which is adjacent to said terminal wall including a pair of narrow flaps that lie flatly against and are in sealed relation to the outside of said terminal wall and are in laterally spaced relation to each other.

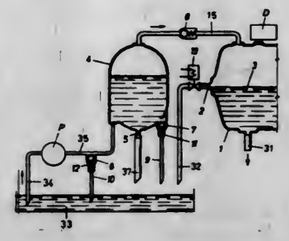
3,297,235
EASY-OPEN ENVELOPE
Daniel T. Robbins, Sun Valley, Calif., assignor to JFTJ Corporation, Beverly Hills, Calif., a corporation of California
Filed Oct. 19, 1964, Ser. No. 404,722
1 Claim. (Cl. 229—85)



An easy-opening envelope having a generally rectangular front panel and a back panel formed of generally triangular segments including two end segments, a flap and an opposing bottom segment folded from the edges of said rectangular front panel, adjacent segments overlapping and secured by marginal adhesive areas;
one of said end segments having a slit forming a fold-out tab and linear weakened areas extending from each of the slit toward an end edge of the envelope and terminating adjacent to but spaced from said end edge, thus defining two edges of a single layer tear-out section extending from each of said slit divergently toward said end edge of the envelope, said slit and tab being in the apex of an angle defined by adjacent portions of said flap and said opposing bottom segment, and said tab being thus protected against inadvertent dislocation by said adjacent portions;
and a transverse slit in said one segment from the outer end of each linear weakened area to the adjacent edge of said one segment, whereby the final stage of the separation of the tear-out section from said one segment is facilitated.

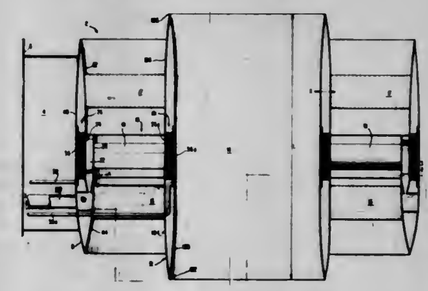
3,297,236
APPARATUS FOR REPLENISHING THE AIR CUSHION IN THE SURGE TANK OF A HYDRAULIC SYSTEM
Otto Eckerle, 3 Am Bergwald, Malsch, Germany, and Helmut Weinzierl and Ernst Putschky, both of 5 Liszstrasse, Rastatt, Germany
Filed Mar. 2, 1964, Ser. No. 348,665
17 Claims. (Cl. 230—17)

1. An apparatus for replenishing the air cushion in a surge tank comprising, in combination:
(a) an auxiliary tank;
(b) means for supplying air to said tank and for compressing the supplied air;
(c) a connecting conduit communicating with said auxiliary tank and adapted to be connected with said surge tank;
(d) check valve means in said connecting conduit;
(e) first vent means for continuously releasing a small amount of fluid from said auxiliary tank; and



(f) second vent means adapted to be connected to said surge tank for continuously releasing a small amount of fluid from said surge tank.

3,297,237
BYPASS CORE DUCTED FAN WITH INNER AND OUTER PERIPHERAL BEARINGS
Irving R. Sherman, 131 Magazine St., Cambridge, Mass. 02140
Filed Feb. 5, 1965, Ser. No. 430,528
11 Claims. (Cl. 230—116)



1. A ducted fan for aircraft, comprising a concentric pair of radially spaced hollow cylindrical ducts of relatively small and large diameter, respectively, radially extending stator blades rigidly connecting said ducts to one another, first bearing means on the small diameter duct, a fan surrounding the small diameter duct and rotatably supported by said first bearing means for rotation about an axis in common with said ducts, turbine means affixed to and surrounding said fan for rotating the latter, and second bearing means in the large diameter duct rotatably supporting said turbine means, said small diameter duct defining a hollow substantially cylindrical axial passage substantially open from front to rear.

3,297,238
BYPASS CORE DUCTED FAN WITH OUTER PERIPHERAL BEARINGS
Irving R. Sherman, 131 Magazine St., Cambridge, Mass. 02140
Filed Feb. 5, 1965, Ser. No. 430,581
11 Claims. (Cl. 230—116)

1. A ducted fan for aircraft, comprising a fan having radial blades angularly spaced about an axis of rotation, annular turbine means concentric with said fan connected to outer ends of said blades and surrounding the same, bearing means for rotatably supporting said turbine means in said aircraft, means for supplying gas under pressure to said turbine means for driving the same,

whereby to rotate said fan, said blades having inner ends terminating radially outward from the rotational axis of the fan, and means comprising an annular hollow ring



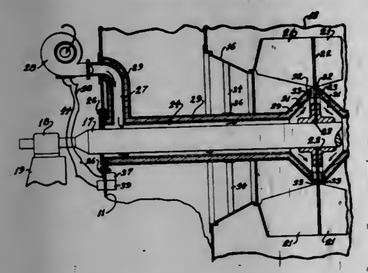
rigidly affixed to at the inner ends of said blades, the last-named means defining a substantially cylindrical substantially hollow space.

3,297,239

COOLING SYSTEM FOR SHAFTS AND THE LIKE

Ellis W. Bullock, Birmingham, Ala., assignor to The Fly Ash Arrestor Corporation, a corporation of Alabama

Filed Apr. 29, 1965, Ser. No. 451,899
15 Claims. (230—128)



1. In a centrifugal blower having a lateral inlet chamber, an outlet, an impeller and a rotatable impeller shaft extending through the inlet chamber, means for cooling the impeller shaft comprising:

(a) a sleeve surrounding and in closely spaced relation to the shaft with one end of the sleeve extending to a point adjacent the outer side of the inlet chamber and the other end thereof terminating adjacent the impeller to define a passageway between said sleeve and said shaft for the passage of cooling air,

(b) an air blower communicating with said sleeve adjacent said one end thereof and disposed to supply cooling air to said sleeve, and

(c) means to energize and deenergize said air blower in response to predetermined variations in temperature or pressure within the centrifugal blower.

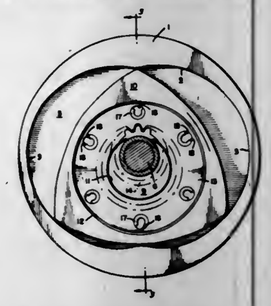
3,297,240

ROTARY PISTON MOUNTING MECHANISM

Yasuo Tatsutomi, Aki-gun, Hiroshima-ken, Japan, assignor to Toyo Kogyo Company Limited, Hiroshima-ken, Japan

Filed Apr. 18, 1966, Ser. No. 543,116
Claims priority, application Japan, Apr. 19, 1965, 40/31,261
2 Claims. (Cl. 230—145)

1. In a rotary piston internal combustion engine, the combination of an annular casing, a pair of end walls on said casing defining a working chamber therein; a crankshaft having shaft portions and a crank portion and extending through the center of the working chamber and having the shaft portions journaled in said end walls; a rotary piston positioned in the working chamber and eccentrically drivably journaled on the crank portion of the crankshaft; an external gear secured to the inside face of one of the end walls coaxial with the crankshaft portion journaled therein; one end face of the rotary piston having a circular recess therein coaxial with the central axis of the rotary piston; and internal gear rotatably coaxially positioned within the said recess and meshing with the said external gear; said internal gear having a plurality of holes therethrough spaced circumferentially thereof and extending parallel to the axis thereof; said rotary piston



having holes therein corresponding to the said holes through said internal gear and extending parallel to the axis thereof; and a plurality of radially resilient cylindrical spring pins, one for each pair of corresponding holes in the internal gear and rotary piston and positioned in the respective pairs of holes for resiliently securing the internal gear to the rotary piston to withstand loads and shocks during the engagement of the internal and external gears.

3,297,241

DEVICE FOR PRESSING IN AIR INTO INFLATABLE OBJECTS, E.G. AIR MATTRESSES

Bror Elis Andréasson, Bangatan 21, Vanersborg, Sweden

Filed Nov. 29, 1965, Ser. No. 510,232
3 Claims. (Cl. 230—160)



1. A device for pressing air into inflatable objects comprising a rectangular bag of air-tight material normally open at one end, said bag having a diagonal partition adjacent one closed corner of said bag forming a chamber, a mouth-piece arranged in the wall of said chamber and a closable valved opening provided in said partition.

3,297,242

APPARATUS AND METHOD FOR HANDLING COINS

Norman Karp, 106 Lincoln Parkway, Lowell, Mass. 01851

Filed Apr. 15, 1965, Ser. No. 448,421
14 Claims. (Cl. 232—1)

1. Coin handling apparatus comprising

a hollow vertical post having its lower end embedded for a substantial distance below ground level to form an underground coin depository within said end, said post having a predetermined inside area in section, and said post upstanding, above ground level to an upper end;

at least one coin-receiving device firmly secured to said post proximate the upper end thereof, said apparatus having a coin-receiving slot communicating with the interior of said post for passing coins downwardly therewithin into said underground depository;

openable closure means covering a coin discharge opening located above ground level in said post;

a hollow, elongated agitator tube extending axially within said post, said tube having a predetermined outside area in section less than the inside area of said post, to form an annular air passage therebetween, having a lower end for successively agitating the uppermost coins in said depository, and having an upper end for connection to the suction conduit of a mobile suction coin collector through said coin discharge opening,



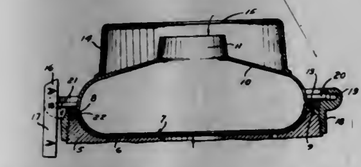
whereby said coins are safeguarded in said underground depository but are removable therefrom when said closure means is opened, suction applied to the upper end of said tube and the lower end of said tube is reciprocated axially within said depository to peel off the successive uppermost layers of said coins.

3,297,243

CENTRIFUGE DISC RETAINER

George N. Hein, 331 Chesham Ave., San Carlos, Calif. 94070

Filed Aug. 6, 1964, Ser. No. 387,942
2 Claims. (Cl. 233—26)



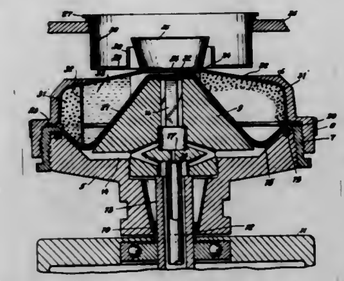
1. In combination a rotatable centrifuge head assembly including an open topped rotor having a central dished-shaped recess accessible from the rotor open top, a flexible diaphragm in and conforming to said recess, said diaphragm providing an upper receiving surface and adapted to be flexed under fluid pressure while the rotor is rotating, a receptacle disposed upon said surface and adapted to contain liquid to be centrifuged, said receptacle having lower flexible portions adapted to be engaged by said diaphragm and adapted to be flexed along with said diaphragm to change the capacity of said receptacle, centrifugally induced retaining means carried by the rotor and automatically movable under the action of centrifugal force to grasp and retain said receptacle against said diaphragm, said retaining means comprising a plurality of spaced lugs, each pivotally supported by said assembly to provide a smaller and a larger arm, the latter arm swinging outwardly under the action of centrifugal force and the smaller arm moving into clamping relationship and engagement with said receptacle as said larger arm thus swings.

3,297,244

CENTRIFUGE AND RECEPTACLE ASSEMBLY THEREFOR

George N. Hein, 331 Chesham Ave., San Carlos, Calif. 94070

Filed Aug. 27, 1964, Ser. No. 392,567
10 Claims. (Cl. 233—27)



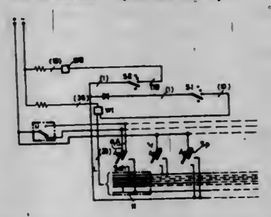
1. A receptacle assembly for use with a centrifuge comprising a base portion and an upper portion associated therewith, at least one of said portions being formed of substantially flexible material, the upper portion being substantially light transparent and having a substantially centrally located opening, said lower portion having a centrally located upwardly extending conical portion defining a substantially truncated cone the top of which includes substantially flat annular zones in close proximity to surfaces of the upper portion defining the central opening whereby relatively small fractions of liquid to be separated by centrifugation are caused to enter the space of relatively reduced volume adjacent the central opening between the upper portion and the base of the cone upon flexing of the flexible material and the small fractions are adapted to assume relatively wide proportions in the space of relatively reduced volume and be visibly observed through the upper portion to facilitate controlled expulsion of the fractions out through the central opening.

3,297,245

DEVICE FOR CONTROLLING A COUNTER COMPRISING MATRIX WIDTH AND SPACE LINE-WEDGE INDICATORS IN A KEY ACTUATED COMPOSING PERFORATOR

Josef Bander, Munich-Solln, and Wolfgang Herrmann and Josef Swozil, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

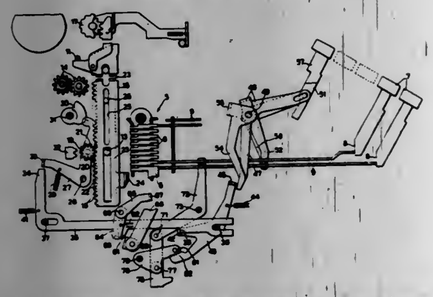
Filed Nov. 27, 1961, Ser. No. 155,541
Claims priority, application Germany, Nov. 29, 1960, S 71,453
15 Claims. (Cl. 234—5)



1. An arrangement for controlling, in connection with a key operated composing perforator, a counting device having a common indicator for the sum of the matrix

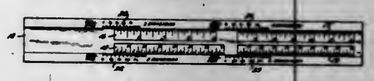
width plus the sum of the word clearances corresponding to the minimum settings of the width of the space line wedges, comprising a first circuit containing an electromagnetically controlled device for determining the magnitude of the indicator motion stages, a second circuit containing an electromagnetically controlled device for determining the magnitude of the motion stage of a space wedge indicator, a common indicator for the sum of the letter widths plus the sum of the minimum word spacing corresponding to the wedge adjustments, said indicator being operatively connected to and governed by said first electromagnetically controlled device, two multiple switches, one of which switches is disposed in said first circuit and adjustable in accordance with the desired minimum word clearance or intervening space wedge, such switch lying in series with the first electromagnetic control device with the latter being under control of the intermediate space key switch, and the other switch being adjustable in accordance with the desired difference between the maximum and minimum word clearance or space wedge, the latter switch extending in series relation with the intermediate space key switch and the second electromagnetic control device, and in parallel to the first circuit.

3,297,246
ADDING MACHINE FOR SYSTEMS NOT HAVING UNIFORM DECIMAL DENOMINATIONS
Alessandro Cortona, Banchette, and Remo Falconieri, Giorgio Canavese, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Sept. 22, 1965, Ser. No. 489,276
Claims priority, application Italy, Sept. 30, 1964, 21,452/64
6 Claims. (Cl. 235—60)



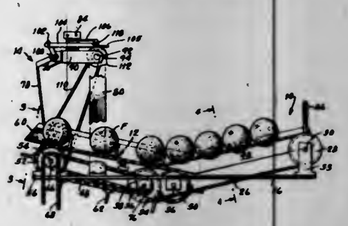
1. An adding machine for systems not having uniform decimal denominations, of which at least one denomination may have a number of units higher than nine, said machine having a key for setting each figure of said denomination higher than nine, a differentially movable actuating rack for said one denomination, a sensing rack, a pair of integral gears normally engaging said racks for reducing the motion from said sensing rack to said actuating rack, and a cyclically operating mechanism, and comprising in combination:
(a) a member for supporting said gears, said supporting member being adapted to be operated by said operating mechanism for disabling said gears,
(b) means settable by said key according to the units of said one denomination besides ten units and adapted to be sensed by said sensing rack,
(c) a settable member normally preventing the operation of said supporting member and adapted to be set by said key together with said stop means for causing said supporting member to be operated,
(d) and means effective when said settable member is so set for causing said actuating rack to be moved besides its nine position under the control of said sensing rack.

3,297,247
SLIDE RULE TYPE COMPUTER
Adolph Tomisek, Box 11, Montverde, Fla. 32756
Filed Oct. 24, 1965, Ser. No. 505,427
11 Claims. (Cl. 235—70)



1. A slide rule for dividing the difference between a minuend and a subtrahend scale comprising a number of members mounted for movement relative to each other including:
A. A quotient scale member having successive numerical indicia equally spaced.
B. A plurality of minuend scales on a member movable relative to the quotient scale member,
(1) each minuend scale intended to be used with a different divisor *n*,
(2) a given distance on any particular minuend scale indicating a quantity which is a multiple *n* of the quantity indicated by the same distance on the quotient scale,
(3) having their numerical indicia increasing from the origin in a direction opposite the quotient scale direction,
C. A plurality of subtrahend scales on a member movable relative to the quotient scale, each having,
(1) a spacing (*n*—1) times the spacing of the minuend scale used with the same divisor *n*,
(2) their numerical indicia increasing from the origin in the same direction as on the minuend scale,
D. A chart showing quotients of particular numbers by particular divisors in whole numbers plus adjusted remainder quantities carried by one of said members.
E. Means for positioning the minuend and the subtrahend scales relative to each other such that the distance between a number on the minuend and a number on the subtrahend scale is equal to the distance on the minuend scale that would indicate a quantity equal to the difference between the minuend number and (*n*—1) times the associated subtrahend number.

3,297,248
FRUIT COUNTER WITH IMPROVED CONVEYOR AND CAMMED SWITCH OPERATOR
Herbert M. McLearn, Maitland, Fla., assignor to American Machinery Corporation, Orlando, Fla., a corporation of Delaware
Filed Aug. 20, 1965, Ser. No. 481,368
10 Claims. (Cl. 235—98)



10. In a machine for delivering and counting generally spherical objects, a plurality of downwardly inclined delivery conveyors arranged in a common inclined plane, an upwardly inclined discharge conveyor intersecting each of said delivery conveyors, said discharge conveyors being arranged in a common inclined plane, equally spaced means on said discharge conveyors for engaging and advancing objects, said last named means on respective discharge conveyors being staggered in respect to each other whereby said conveyors are conditioned to dischrge objects in serial order, a counter, an electric switch associated with each discharge conveyor, object operated means in the discharge path of each of said discharge conveyors adapted to precondition its associated switch for operation, separate rotary means associated with each of said switches adapted for the sequential closure of said switches when preconditioned, and common drive means for said conveyors and said switch closure means whereby said conveyors and said switch closure means are driven in synchronism.

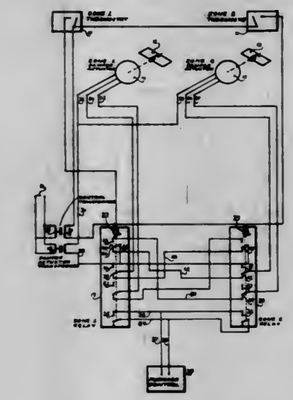
3,297,249
MAINTENANCE AID INDICATOR
Maurice M. Light, 151 N. Kenilworth, Oak Park, Ill. 60301
Filed Oct. 12, 1965, Ser. No. 495,159
1 Claim. (Cl. 235—114)



An indicator to locate maintenance information on an article receiving maintenance service which comprises in combination:
a housing attached to the article having an upper side and a lower side, the distance between the upper side and the lower side at the front edge of the indicator being less than the distance between the upper side and the lower side at the rear edge of the indicator;
at least two discs interposed between the upper side and the lower side attached at the center area on the bottom side of the disc to the lower side of the housing, said disc being rotatable about the area of attachment;
an opening in the upper side of the housing for each disc;
a series of information items carried by each disc and positioned to expose at least one of said items on each disc through the openings in the upper side of the housing;
a protrusion for each disc attached to the lower side of the housing to engage one of a series of grooves and secure the disc in a predetermined rotational position to expose at least one predetermined item from each disc through the opening; and
a slot area cut out partially along the lower side to prevent accidental rotation of one disc when resetting an exposed item on an adjacent disc.

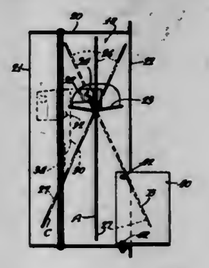
3,297,250
HEATING AND COOLING TEMPERATURE CONTROL FOR A PLURALITY OF ZONES
Randolph P. Capps, Lynchburg, Va., assignor to Multi-Zoner, Inc., Lynchburg, Va., a corporation of Virginia
Filed Mar. 16, 1964, Ser. No. 352,024
12 Claims. (Cl. 236—1)

1. In a temperature control system selectively operable in heating or cooling condition for conditioning first and second zones, first zone and second zone dampers positionable to open and preset partially closed positions to control flow of heating and cooling medium to said respective zones; first and second electrical actuators for driving respectively said first and second dampers, each said actuator characterized by having first electrical means for causing its respective damper to occupy a first preset partially closed position for regulating flow of heating medium during heating operation and second electrical means for causing its respective damper to occupy a second preset partiallly closed position for regulating flow of cooling medium during cooling condition independent of said first position, and each of said actuators having other means operative when said electrical means are deenergized to cause said damper to be held in said open position; first and second zone temperature responsive switches; each having a demand and a satisfied condition;



and electrical circuit control means responsive to said switches to activate said actuator means to cause both said dampers to occupy open positions when both said switches are in satisfied condition or in demand condition and responsive to only one of said switches assuming a demand condition to cause the damper for the zone associated with the non-demanding switch to occupy said first or second preset partially closed position correlated to the heating or cooling condition of the system.

3,297,251
DOUBLE ACTING DRAFT CONTROL WITH SLEEVE
Leo F. Pfister, Mendota, Ill., assignor to Conco Engineering Works, Inc., a corporation of Illinois
Filed Jan. 14, 1965, Ser. No. 425,393
7 Claims. (Cl. 236—45)



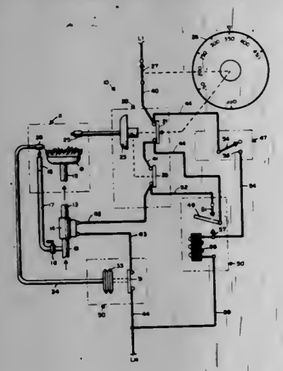
1. In a double acting barometric draft control including a cylindrical housing having an end adapted to be attached to a flue; a gate including a control portion and having a shape and size substantially conforming to the cross section of said housing such that said gate will close said housing in at least one position of said gate within said housing, and means pivotally mounting said gate within said housing for swinging movement to either side

of said one position; the improvement comprising: an arcuate plate having an inner edge facing said end and an outer edge directed away from said end and mounted on the other end of said housing and projecting outwardly therefrom to one side of said gate whereby at least the control portion of said gate may swing into an overlapping relation with said plate; said housing abutting said inner edge along the entire extent thereof; said plate extending about the portion of the periphery of said housing adjacent said control portion at least 120°; the outer end of said plate being a distance of about 62–75% of the diameter of said housing from said gate when said gate is in said one position.

3,297,252
SELF-CLEARING TIMER CONTROL CIRCUITS FOR COOKING STOVES AND THE LIKE

Douglas T. King, Mountainside, and Marsden L. Miller, Springfield, N.J., assignors to The Wilcolator Company, Elizabeth, N.J., a corporation of Delaware

Filed May 13, 1963, Ser. No. 279,704
12 Claims. (Cl. 236—46)

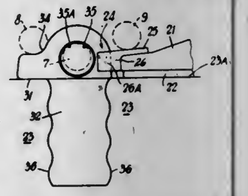


1. A control circuit of the character described comprising:
(a) electrically actuated heating means for effecting temperature changes in an area to be controlled,
(b) first thermostatic switch means responsive to relatively high temperatures in said area and including a movable temperature selecting member,
(c) second thermostatic switch means responsive to relatively low temperatures in said area,
(d) means for connecting said first thermostatic switch means, said second thermostatic switch means, and said electrically actuated heating means in series across a source of electrical power, whereby said second thermostatic switch means effects thermostatic control of said electrically actuated means,
(e) relay means operative between first and second positions, said relay being operative in said first position to complete a by-pass circuit around said second thermostatic switch means so as to shift control of said heating means to said first thermostatic switch, said relay being operative in its second position to open said by-pass circuit and to complete a relay holding circuit,
(f) relay energizing circuit means for temporarily actuating said relay to said second position, whereby thermostatic control of said heating means is returned to said second thermostatic switch means, and
(g) switch means actuated by said movable temperature selecting member for opening said holding circuit when said selecting member is moved to a predetermined position.

3,297,253
RAILWAY RAIL AND FASTENING ARRANGEMENT

Harold Trevor Astley, Petts Wood, Kent, and Alfred Illtyd Webber-Jones, Woking, Surrey, England, assignors to Lockspike Limited, London, England, a British company

Filed May 18, 1964, Ser. No. 367,952
Claims priority, application Great Britain, July 16, 1963, 28,195/63
7 Claims. (Cl. 238—349)

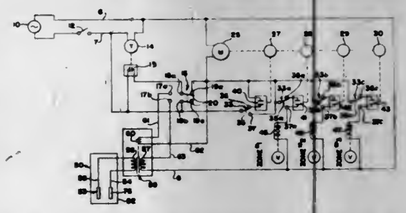


1. A railway track assembly comprising an electrically conductive railway sleeper, a flange-footed rail resting crosswise on the sleeper, electrically insulating material between the rail and the sleeper, an anchoring member fixed to the sleeper, portions of the anchoring member defining a substantially horizontal passage in the anchoring member beside the rail flange and substantially parallel to the length of the rail, a fixed unyielding surface which, as seen from the rail, is disposed outward of said passage, an elongate member of electrically insulating material of substantially L-shaped cross-section having one leg of the L lying on the top of the rail flange and the other leg of the L lying between the outer edge of the rail flange and said portions of the anchoring member and also having two projections extending from said other leg on opposite sides of the anchoring member for abutting the anchoring member in the event of there being any tendency for said elongate member to move in a direction parallel to the length of the rail, and a resilient railway rail-fastening member of rod form having one portion constituting a substantially straight leg and lying in said passage, another portion bearing downwardly upon said one leg of said elongate member and a further portion bearing downwardly upon said fixed unyielding surface.

3,297,254
RAIN-CONTROLLED LAWN SPRINKLER

Alfred C. Coffman, 1236 Sunset View Drive W., Akron, Ohio 44313

Filed Aug. 6, 1964, Ser. No. 387,825
5 Claims. (Cl. 239—63)

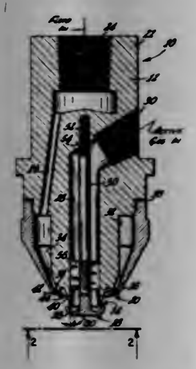


1. A rain-controlled automatic lawn-sprinkler system comprising a timer establishing a periodic sprinkler-system initiation pattern, a motor operable for a predetermined interval in response to activation of said timer, a timer by-passing circuit including a cam-operated pair of contacts closable in response to activation of said motor, a water valve, a solenoid controlling the activation of said water valve, a pair of normally opened contacts connected in circuit with said solenoid, a cam mounted for rotation in the shaft of said motor to close said contacts at preselected times, circuit means operable to connect said solenoid in circuit with said timer by-passing circuit, a rain-accumulating pan which is open to the sun and has an impervious bottom and walls the bottoms of which are impervious whereby removal of accumulated water from said impervious portion is by evaporation only, two vertically separated electrodes within the pan adapted to be shorted by rainfall collected therein, a transformer having primary and secondary windings wound upon an iron core, the primary winding thereof connecting to a suitable supply of electrical potential and the secondary thereof having individual ends connected to individual ones of said electrodes, and a normally closed pair of contacts electromagnetically associated with the iron core of said transformer, said contacts being in circuit with said motor and said contacts associated with said timer to permit activation of said motor upon energization of said timer in the absence of sufficient rainfall to complete an electrical path between said pair of electrodes, and operable to prevent activation of said motor in the event that sufficient rainfall has failed to provide a circuit path between said electrodes.

3,297,255
REVERSE FLOW ACOUSTIC GENERATOR SPRAY NOZZLE

William K. Fortman, Essex, Conn., assignor to Astrosonics, Inc., Syosset, N.Y.

Filed Apr. 19, 1965, Ser. No. 449,189
15 Claims. (Cl. 239—102)

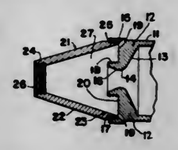


1. A liquid spraying apparatus employing an acoustic generator comprising:
(a) a body member including independent gas and liquid cavities in communication with gas and liquid inlet ports, respectively, the gas and liquid cavities being concentrically disposed with respect to each other;
(b) a gas dispensing outlet extending from said body member in a downstream direction, said gas dispensing outlet having a bore contiguous with the gas cavity;
(c) a gas flow reverser member rigidly supported from said body member in spaced relation to said gas dispensing outlet, said reverser member being provided with a concave upwardly facing annular groove in opposition to said gas dispensing outlet, the annular groove being nonresonant to the flow of gas therethrough;
(d) an annular cavity resonator deployed in said body member coaxial with said gas dispensing outlet; and
(e) liquid nozzle orifice means carried by said body member, said liquid nozzle orifice means being deployed in concentric relationship to said cavity resonator and in communication with the liquid cavity.

3,297,256
THRUST CONTROLLED ROCKET MOTOR

Frederick R. Hickerson, Newton, and Carl P. Iosso, Dover, N.J., assignors to the United States of America as represented by the Secretary of the Army

Filed July 8, 1965, Ser. No. 470,647
2 Claims. (Cl. 239—265.19)

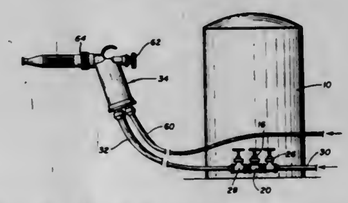


1. In a rocket motor construction having a nozzle structure for exhausting pressure fluid to normally provide a predetermined rocket motor thrust, means adjacent and downstream of said nozzle for selectively varying the rocket motor thrust, said nozzle including a throat member having concentrically spaced attaching means on rearward surfaces thereof, said throat member having diametrically opposed aperture means between said spaced attaching means and communicating with a rocket exterior surface, and said selectively varying means including a reversible nozzle expansion section having a conical lateral surface terminating in axially and transversely spaced attachment members, matingly engageable with corresponding ones of said concentrically spaced attachment means, a selected one of said section attachment members being secured to its mating throat attachment means.

3,297,257
PRESSURIZED WASHING AND RINSING APPARATUS

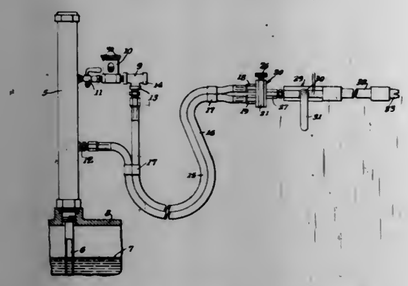
George Henry Roser, 801 Crescent Drive, Boulder, Colo. 80302

Filed Feb. 17, 1965, Ser. No. 433,293
1 Claim. (Cl. 239—310)



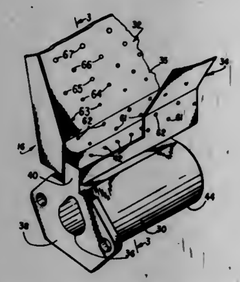
A system for selectively washing with aqueous detergent solution and water when both are mixed with air comprising:
a tank arranged to be pressurized having a bottom outlet;
a valve having an inlet and an outlet connected to said outlet;
a T connected to the opposite side of said valve;
a water line connected to said T;
first valve means in said water line for selectively opening and closing the same;
a flexible outlet line connected to the opposite side of said T;
second valve means in said outlet line, whereby selective control of said valves permits water to be selectively charged into said tank or passed through said outlet line and aqueous detergent solution may be passed alone from said tank through said outlet line;
a flexible line for air under pressure associated with said outlet line;
mixing means connected to both said air line and said outlet line for mixing liquid with air; and means for descharging mixed liquid and air as a mist from said mixing means.

3,297,258
FOAM-GENERATING APPARATUS
Roy M. Parker, Brea, Calif., assignor to Cee-Bee Chemical Company, Inc., Downey, Calif., a corporation of California
Filed Dec. 14, 1964, Ser. No. 418,197
6 Claims. (Cl. 239—361)



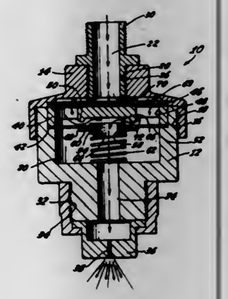
1. Foam-generating apparatus comprising:
(a) a container for a solvent emulsion liquid,
(b) a reciprocating pump to draw liquid from the container,
(c) a fitting connected to a source of compressed air to operate the pump and having a branch through which air may be diverted from the flow thereof to the pump,
(d) a mix adjuster having an open port to receive liquid under pressure of the pump and a second port to receive air diverted through said branch from the air flow to the pump, a passage in the adjuster being connected to both said ports and having an outlet port, and
(e) means to adjust the second port to vary the air flow therethrough and, thereby, to correspondingly vary the flow of air to the pump, the pump speed varying according to the variation in the flow of air therethrough.

3,297,259
AIR HEATING GAS BURNER
Harry R. Maxon, Jr., and Robert H. Yeo, Muncie, Ind., assignors to Maxon Premix Burner Company, Inc., Muncie, Ind., a corporation of Indiana
Filed Feb. 26, 1964, Ser. No. 347,514
20 Claims. (Cl. 239—397.5)



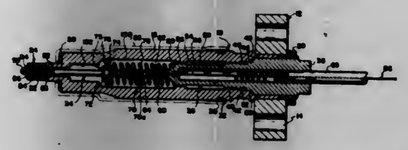
1. A high turn-down gas burner adapted to be disposed in and to heat an air stream, comprising burner body means, burner fuel ports defined in said burner body means and through which burner fuel passes in the form of jets, generally diverging mixing plate means supported from said body means to define a mixing space substantially within which said burner fuel and air from the air stream are intimately mixed to obtain complete combustion of said fuel, means in one or both of said means defining a plurality of apertures through which air from the air stream passes to produce air jets, apertures at the same distance from the fuel ports being staggered so that each air jet is directed toward and intercepts an imperforate portion of said one means, whereby the air jets substantially ring the fuel jets to form a pattern of interlacing flames having a zipper appearance.

3,297,260
NOZZLE AND VALVE ASSEMBLY
Conrad R. Barlow, 103 Via Mesa Grande, Redondo Beach, Calif. 90277
Filed Sept. 21, 1964, Ser. No. 397,772
6 Claims. (Cl. 239—533)



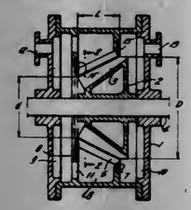
1. A nozzle and valve assembly for spraying fluid from an aircraft wherein the nozzle and valve assembly is connectible to a source of fluid having an upstream conduit to which the supply of fluid is intermittently shut off, the combination of:
a body having a passageway therethrough defining an inlet connectible to the upstream conduit to receive the fluid therefrom and a valve chamber intermediate said inlet and said outlet;
spray nozzle means at said outlet for spraying the fluid from said body;
a valve ring secured to said body within said valve chamber, said valve ring having aperture means in communication with said inlet and a valve seat facing downstream;
a sealing disc secured to said body within said valve chamber downstream of said valve seat and being engageable with said valve seat when the supply of fluid to the upstream conduit is shut off, said sealing disc having an aperture of less cross-sectional area than said valve seat and lying entirely within the area of said valve seat when said sealing disc engages said valve seat to define a barrier for the fluid flowing through said aperture means, said aperture means extending downstream through said valve ring and terminating at a point lying radially outwardly of said aperture in said sealing disc; and
resilient means for biasing said sealing disc upstream and into engagement with said valve seat to maintain said sealing disc in sealing engagement with said valve seat when the supply of fluid to the upstream conduit is shut off to prevent the fluid in the upstream conduit from dripping through said passageway out through said spray nozzle means, said sealing disc being engageable by the fluid flowing through said aperture means of said valve ring to move said sealing disc downstream and out of engagement with said valve seat so that the fluid may flow through said aperture of said sealing disc to said spray nozzle means when fluid is supplied to the upstream conduit.

3,297,261
FUEL INJECTION NOZZLE VALVE
Richard P. Heintz, Kalamazoo, Mich., assignor to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Dec. 2, 1964, Ser. No. 415,390
11 Claims. (Cl. 239—534)



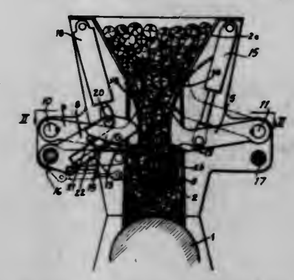
11. A fuel injection nozzle valve comprising a valve body having an outlet portion defining injector opening means, a poppet within said body having a forward end portion adapted to close said opening means, spring means biasing said poppet to a closed position, said poppet and said body defining therebetween an accumulator chamber in which pressurized fuel collects during valve pressurization, means for supplying fuel under pressure to said valve, axially fixed sleeve means telescopically disposed around and supporting the trailing end of said poppet, said sleeve means thereby serving to align said poppet in said housing, said sleeve and said poppet being spaced when fuel under pressure is supplied to said sleeve to define an annular passage for supplying such fuel to said accumulator chamber.

3,297,262
ARRANGEMENT IN A BEATING MACHINE FOR TREATMENT OF PAPER STOCK
Karl Arvid Skardal, Stockholm, Sweden, assignor to Aktiebolaget Celleco, Stockholm, Sweden, a corporation of Sweden
Filed Feb. 17, 1964, Ser. No. 345,288
Claims priority, application Sweden, Mar. 21, 1963, 3,068/63
1 Claim. (Cl. 241—90)



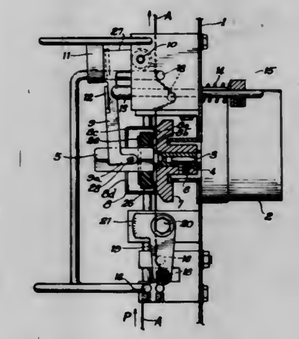
In a beating machine for treating paper stock, in which the beating operation is effected within a beating zone, which has the shape of the side wall surface of a truncated cone, between the wings of a rotating conical wing wheel and stationary beating means surrounding said wing wheel, said stationary beating means comprising elongated stationary knives which, supported at their both ends only, run side by side from the small end to the large end of the conical beating zone distributed in spaced relation around the wing wheel so as to form a cage surrounding the wing wheel, in which cage the interspaces between the knives form passages for paper stock from the beating zone radially outwards through said cage, the arrangement that said stationary knives between their end supports extending in a direction substantially axial in relation to the wing wheel from the small end of the beating zone are curved to run along helical paths towards the large end of the beating zone so as, viewed in the direction of rotation of the wing wheel, to restrict the width of said passages through said cage all along the beating zone to not less than 30 percent of the pitch between the knives and within a maximum width of 8 mm.

3,297,263
FEEDING DEVICE FOR A WOOD PULP GRINDER
Olof J. G. Hedberg, Karlstad, Sweden, assignor to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden, a company of Sweden
Filed Sept. 6, 1963, Ser. No. 307,175
Claims priority, application Sweden, Sept. 11, 1962, 9,721/62
9 Claims. (Cl. 241—281)



3. In a continuously operating magazine grinder for making wood pulp, the combination therewith of a feeding device, comprising means defining a hopper, a plurality of arms pivotally mounted on opposite sides of said hopper, each of said arms having a pressing surface thereon and being positioned such that the pressing surfaces extend into and are movable in said hopper in a direction generally downwardly and inwardly, and means for selectively pivoting said arms between predetermined positions in said hopper, at least one of said arms on each side of said hopper having a guard plate extending upwardly from the outer ends of the pressing surface, said guard plate being curved and being disposed generally concentrically to the axis about which the arm is pivoted.

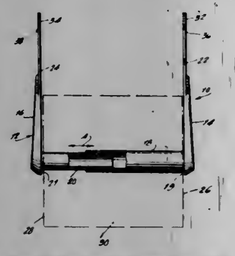
3,297,264
TENSION AND WAXING DEVICE FOR WINDING MACHINES
Georges Emiel Gilbos, Aalst, Belgium, assignor to Constructiewerkhuizen Gilbos P.V.B.A., Aalst, Belgium
Filed May 26, 1964, Ser. No. 370,224
Claims priority, application Belgium, Aug. 29, 1963, 42,929, Patent 636,742
9 Claims. (Cl. 242—35.6)



1. A tension and waxing device for a yarn winding machine adapted to be located between a supply bobbin and a winding drum guide of said machine and comprising a rotatable shaft, first and second members mounted on said shaft for rotation therewith and adapted to receive a moving yarn strand therebetween, said first member being fixed on said shaft and said second member being movable axially on said shaft relative to said first member, means normally biasing said second member

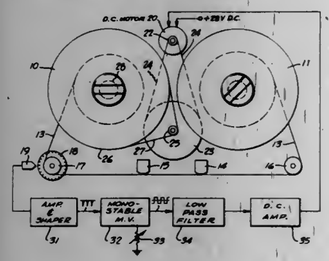
into engagement with said first member but being movable to move said second member out of engagement with said first member, means for rotating said shaft to rotate said members in a direction opposite to the direction of movement of said yarn strand, and means adapted to be actuated by the knotting mechanism of said winding machine upon breakage of said yarn strand for moving said second member away from said first member so as to release said yarn strand whereby said yarn strand may be acted upon by said knotting mechanism.

3,297,265
HOLDER FOR RESERVE TOILET TISSUE ROLL
Jerome C. Turro, 245 Rumsey Road, Yonkers, N.Y. 10705
Filed Aug. 26, 1965, Ser. No. 482,875
6 Claims. (Cl. 242—55.2)



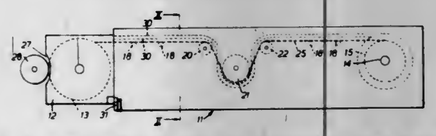
1. A device for holding a reserve roll of toilet paper comprising a pair of members, each of said members having a tubular horizontal portion and an arm fixed at one end of each of said tubular portions at right angles thereto, each arm having a flange provided with an inwardly facing planar surface of a length at least as great as the radius of the reserve roll to be held, each tubular horizontal portion adjustably and telescopically mating with the other to allow variation in the distance of the inwardly facing planar surface of one arm from the other.

3,297,266
SPEED CONTROL SYSTEM
Wilburn L. Rumple, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Jan. 11, 1963, Ser. No. 250,876
5 Claims. (Cl. 242—55.12)



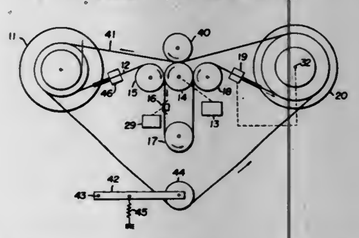
2. A variable speed magnetic tape transport system comprising:
supply and takeup reels;
D.C. motor means coupled to drive at least the takeup reel;
rotatable pulse generator means coupled to be driven by the tape, the pulse generator means providing a selected pulse repetition rate at a given nominal tape speed;
controllable pulse generator means coupled to the pulse generator means and providing pulses of controlled duration and fixed amplitude in response thereto, said pulses being separated by time intervals varying in accordance with variations in said pulse repetition rate;
low pass filter means responsive to pulses from the controllable pulse generator means to produce an output signal having an amplitude proportional to the actual tape speed; and
circuit means coupled to receive the output signal of the low pass filter means for delivering a control signal to the D.C. motor means.

3,297,267
TAPE DECKS
Bryan W. Wiggs, London, England, assignor to Elliott Brothers (London) Limited, Lewisham, London, England, a British company
Filed Feb. 12, 1965, Ser. No. 432,342
Claims priority, application Great Britain, Feb. 13, 1964, 6,003/64
6 Claims. (Cl. 242—55.13)



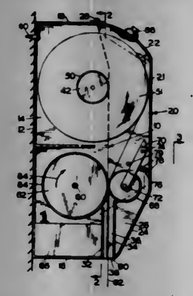
1. In a tape deck for use in combination with a magnetic recording tape having a leader which is stiffer and wider than the tape,
a pair of elongate members each having a surface facing but parallel spaced from the corresponding surface of the other member,
tape guides extending between said surfaces and defining a guide path for the tape, the guide path being bounded laterally by said surfaces
each said elongate member having a slot therein disposed opposite the corresponding slot of the other member for engaging an edge of said leader and defining a guide a path for said leader, said slots being spaced from said tape guides to space the guide path for the leader from the guide path for the tape over at least part of the length of the latter.

3,297,268
MAGNETIC RECORDING SYSTEM
Norikazu Sawazaki, Kohoku-ku, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Sept. 30, 1964, Ser. No. 400,405
Claims priority, application Japan, Sept. 30, 1963, 38/52,968
2 Claims. (Cl. 242—55.14)



1. A magnetic recording system for video signals comprising a fine magnetic recording tape, a capstan and two pinch rollers which cooperate to clamp said magnetic recording tape to advance it in a definite direction, a stationary magnetic head positioned close to said magnetic recording tape located between said two pinch rollers to record thereon video signals, a first reel supporting a coil of said magnetic recording tape to supply it to said magnetic head, a second reel to take up and store said magnetic recording tape after it has passed through said magnetic head, and an endless driving tape passing around the coils of said magnetic recording tape formed on said first and second reels, said endless driving tape being driven by said capstan at the same speed as said magnetic recording tape so as to control the revolution of both of said reels, said capstan and said pinch rollers being so arranged that said capstan is in contact with said pinch rollers at both its sides so that the tape may be clamped and driven between said capstan and said pinch rollers so that no tension is applied on said tape by said capstan and said pinch rollers.

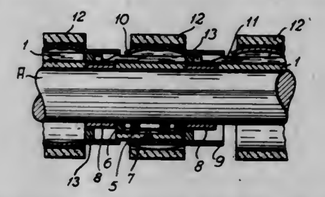
3,297,269
ELECTRIC TOILET PAPER DISPENSER
Elwood F. McGrew, 4804 SE. 118th, Portland, Oreg. 97266
Filed Mar. 1, 1965, Ser. No. 435,988
2 Claims. (Cl. 242—55.53)



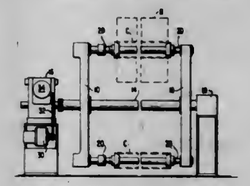
1. A toilet paper dispenser comprising a housing, means in said housing adjacent the upper end thereof for rotatably supporting a supply roll of paper, a front cover hingedly attached to said housing and arranged to be opened for providing access to the interior of said housing, a first dispensing roll mounted in said housing, a second dispensing roll mounted in said cover, said dispensing rolls having surface engagement with each other when said front cover is closed whereby to frictionally grip a layer of paper from said supply roll and pull paper therefrom when one of said dispensing rolls is rotated, said dispensing rolls being spaced from each other when said cover is open whereby to permit manual feeding of paper from said supply roll therebetween, means defining a discharge opening in said housing below said dispensing rolls, electric drive means connected wtih one of said dispensing rolls for driving the same to dispense paper through said opening, an electric circuit for said drive means, and a switch in said circuit for selectively operating said electric drive means.

3,297,270
DRIVING SPINDLE FOR WINDING UP OF STRIPS OF FOIL MATERIAL
Viggo Larsen, Herlev, and Borge Larsen, Vanlose, Copenhagen, Denmark, assignors to Nordisk Plaster Industri A/S, Copenhagen, Denmark
Filed Mar. 27, 1964, Ser. No. 355,342
Claims priority, application Denmark, Apr. 5, 1963, 1,609/63
5 Claims. (Cl. 242—56.9)

1. A driving spindle for the winding of strips of foil material on a number of cores to form uniform rolls of said material wound to the same degree of tightness, said spindle comprising, a through-going shaft, a number of support rings along said shaft each having an internal axial groove, friction means in each said groove engaging the shaft to frictionally couple the associated ring and the shaft together, each said ring having external grooves, axialy slidable fixing members mounted on said shaft and extending into the external grooves of the rings, said fixing members including portions of wedge shape, one radially expansible expansion ring suspended on each support ring for the fixing of at least one individual core thereon, each expansion ring including resilient members which engage said fixing members for being expanded by the wedge shape portions thereof during axial movement of said fixing members to press against the inside of the associated core, spacer rings along the shaft between adjacent support rings to maintain the same apart, one thrust collar supported at a distance around and axially slidable over each spacer ring and having a smaller diameter than the support rings, for engaging the fixing members to transmit axial pressure thereto and cause sliding thereof, and actuator bushes mounted on the shaft at least at one end of the spindle for the transmission of axial pressure to the thrust collars and the fixing members.



3,297,271
SUPPORTING SHAFT ASSEMBLY FOR ROLL SUPPORTING ARMS
Lawrence H. Haskin, Jr., Richmond, Va., assignor to The Inta-Roto Machine Company, Inc., Richmond, Va., a corporation of Virginia
Filed Apr. 8, 1965, Ser. No. 446,500
11 Claims. (Cl. 242—58)



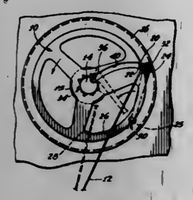
1. A roll supporting assembly comprising a shaft, a pair of sleeve members circumposed on said shaft with their inner ends adjacent the central portion of said shaft and their outer ends spaced therefrom, a pair of arms respectively fixed on the outer end portions of said sleeve members and disposed in spaced parallel relation to receive therebetween and rotatably support a roll, and means securing the inner ends only of said sleeve members to the central portion only of the shaft, whereby torsion within the shaft between said arms is not transmitted to said arms.

3,297,272
MEANS TO WIND A FLEXIBLE STRIP
Frank Dekker, Inglewood, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 20, 1963, Ser. No. 332,017
6 Claims. (Cl. 242—74.2)

1. In an apparatus for handling a flexible strip, for example a magnetic recording tape, the combination of:
a reel having a hub with a recess in the periphery of the hub;

a member separate from the hub adapted to releasably engage one end of the strip;

an arm fixedly carrying the strip-engaging member, the arm being pivoted to carry the member along a predetermined arcuate path between an outermost accessible position adjacent the periphery of the reel



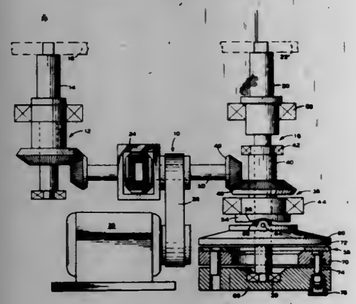
and an innermost position nested into the recess of the hub; and resilient yielding means biasing the arm from its innermost position to its outermost position whereby when the strip-engaging member is released from confinement by unwinding of the strip, the arm automatically swings the member to its outermost position.

3,297,273

CONSTANT TENSION REELING MECHANISM

James Ippolito, 1624 Stillwell Ave., Bronx, N.Y. 10461

Filed June 18, 1965, Ser. No. 464,905
11 Claims. (Cl. 242—75.5)



1. A winding and reeling mechanism for handling spirally wound material comprising:

(a) a take-up reel means,

(b) a supply reel means,

(c) a differential means interconnecting said supply reel means in driving relationship with said take-up reel means whereby said differential means distributes the driving torque between the take-up means and supply means to complement the relative velocities therebetween during a reeling operation,

(d) a drive means operatively connected to said differential means for driving the same,

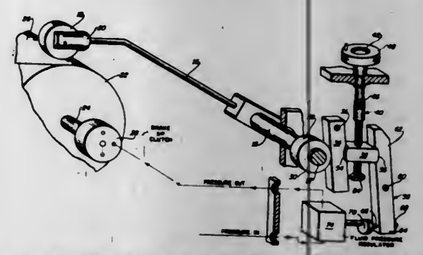
(e) and a control means operating on said supply reel means for coupling of said supply reel means in driving relationship with said differential means to assist the pull of the material in rotating said supply reel means for maintaining the material being wound therebetween under constant tension during any relative speed condition therebetween to prohibit overrunning or breakage during starting and stoppage or speed controlling of the reeling mechanism.

3,297,274

VARIABLE-RATE-TORQUE CONTROLLER

Duane R. Elmore, Tariffville, Conn., assignor to The Pneumatic Applications Company, Simsbury, Conn., a corporation of Connecticut

Filed Mar. 11, 1965, Ser. No. 438,965
5 Claims. (Cl. 242—75.45)



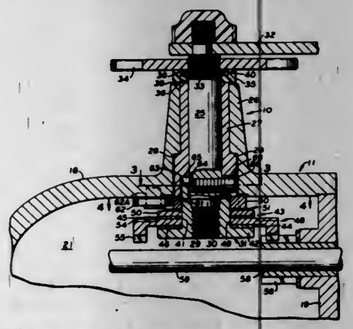
1. A controller for automatically regulating the brake torque applied to a mill roll of flexible material to vary the rate of rotation of the roll as the diameter changes during a winding or unwinding operation to regulate the web tension and lineal speed of the material comprising a shaft mounted for rotative movement and a follower arm nonrotatively carried by said shaft and adapted to engage the roll of material for movement in response to changes in the diameter thereof, a cam also secured to the shaft for rotative movement therewith responsive to movement of said follower arm, a first pivotally supported lever arm operatively associated with the cam to pivot in response to rotative movement of the cam, a second lever arm supported for pivotal movement in response to rotative movement of the cam, means connecting the first and second lever arms to transmit movement of the first arm to the second arm whereby the magnitude of movement transmitted from the first arm to the second arm may be adjusted, and regulating means actuated by and associated with the second lever arm to regulate the brake torque applied to the roll to vary the rate of rotation thereof.

3,297,275

CRANK OPERATED DRAG FOR FISHING REELS

Thomas F. Sarah, Akron, Ohio, assignor to Pflueger Corporation, Akron, Ohio, a corporation of Ohio

Filed July 24, 1964, Ser. No. 384,835
5 Claims. (Cl. 242—84.45)



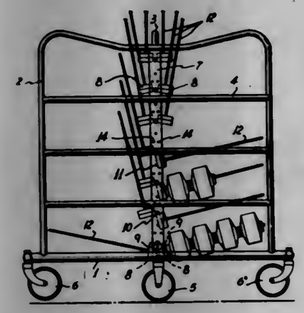
1. In a fishing reel for paying out and retrieving line having a housing, a shank journaled for rotation in said housing and having a first end interiorly of said housing and a second end exteriorly of said housing, a crank handle nonrotatably attached to the second end of said shank and rotatable therewith in a forward and reverse direction, a first thread means on the first end of said shank and a second thread means axially inwardly of said second end, a spindle threaded into said first thread means for selective rotation with and with respect to said shank, ratchet means connected between said housing and said spindle to permit the spindle to rotate with said shank when the latter is rotated to retrieve line and to maintain said spindle in stationary position when said shank is reversely rotated, a drag mechanism carried on said spindle, a star wheel, said star wheel threaded onto said second thread means between said crank handle and said housing, rotation of said star wheel in one direction with respect to said shank translates said shank and spindle to increase the drag afforded by said drag mechanism, rotation of said star wheel in a reverse direction reversely translates said shank and spindle to decrease the drag afforded by said drag mechanism, forward rotation of said crank handle rotates the shank with the spindle to retrieve the line when the resistance offered by the line is less than the drag and forward rotation of said crank handle when the resistance offered by the line is at least equal to the drag rotates the shank with respect to the spindle to translate the spindle along said first thread means to increase the drag, reverse rotation of said crank handle reversely translates said spindle to decrease the drag, and stop means for limiting the degree of axial translation of said spindle.

3,297,276

TRANSPORTER TRUCK FOR INDUSTRIAL ESTABLISHMENTS

Francisco Skufca, 953 Uspallata St., Buenos Aires, Argentina

Filed Dec. 18, 1964, Ser. No. 419,296
12 Claims. (Cl. 242—131)



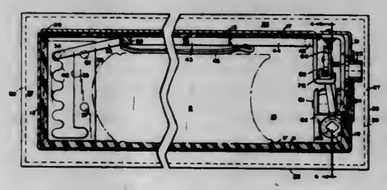
7. A transporter truck, particularly useful in the textile industry for transporting cones, bobbins, reels, spools and the like, which consists of a chassis comprising a rectangular framework with a horizontal base, mounted upon four wheels, two of which are fixed and two being swivelled, the fixed pair having bearings attached at the center part of the longer sides of the base, while the swivelled wheels have their bearings attached at the center part of each of the remaining sides of the base frame, the longer sides of the base bearing at least two upright frames and at least one transverse frame fixed across the said base frame, a pair of upright struts fixed to the base frame in the same vertical plane as the pair of fixed wheels and the said transverse frame and joined to the latter, a plurality of pairs of horizontal strips supported by said upright struts and carried by hinges, each axis of articulation carrying two hinges and each hinge supporting one of the strips, the two strips hinged on the same axis being disposed divergently and being movable independently of each other, a plurality of rods adapted to receive said cones, bobbins, reels, spools and the like, fixed in a row on one face of each hinged strip, abutment means provided on the upright struts adapted to limit the downwardly inclined movement of said strips with their rods to the required angle of inclination for loading and unloading, and a set of locking means provided on the said upright struts for securing the rods in their inoperative, substantially vertical position.

3,297,277

CARRIER FOR PNEUMATIC TUBE SYSTEMS

Glen B. MacKenzie, Pleasant Hill, Calif., assignor to Lamson Corporation, Syracuse, N.Y., a corporation of New York

Filed May 11, 1964, Ser. No. 366,398
3 Claims. (Cl. 243—34)



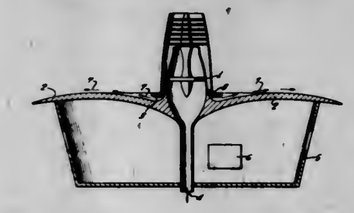
1. A carrier for pneumatic tube systems, said carrier being formed with side and end walls, an article clamping member pivotally mounted at one end adjacent one of said side walls and extending across the carrier, with the opposite end of said member terminating adjacent the opposite side wall of the carrier, said clamping member being movable about said pivotal mounting into engagement with an article positioned on a third intermediate side wall, an arm pivotally mounted at one end in the carrier for movement in a plane parallel and adjacent to said opposite side wall, actuating means operable to move said arm about its pivotal mounting to bring the opposite end of said arm into engagement with the said opposite end of said clamping member to move said clamping member under pressure against the article, said actuating means including self locking mechanism operable to maintain said arm under clamping pressure.

3,297,278

VERTICAL RISING AERODYNAMIC VEHICLES

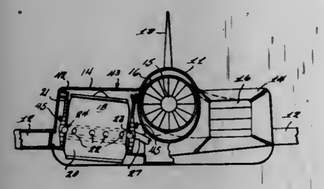
Augustus S. Hawkins, 1893 Skyline Drive, Santa Ana, Calif. 92705

Filed Dec. 4, 1964, Ser. No. 415,952
2 Claims. (Cl. 244—23)



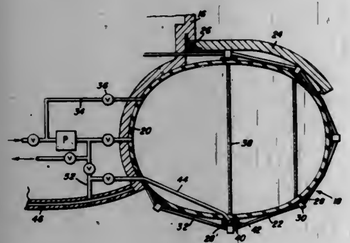
1. A vehicle comprising a turbo-compressor engine mounted vertically, a disc-shaped annular airfoil section substantially at right angles to the axis of said engine, said section being so located with respect to said engine that air, generated by the compressor of said engine and discharged annularly by said engine, flows over said airfoil section to provide lift, said lift being further augmented by the jet exhaust discharge from said engine.

3,297,279
AIRCRAFT
Geoffrey Light Wilde and Maurice Ian Taylor, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed May 5, 1965, Ser. No. 453,284
Claims priority, application Great Britain, Dec. 11, 1964, 50,649/64
7 Claims. (Cl. 244—54)



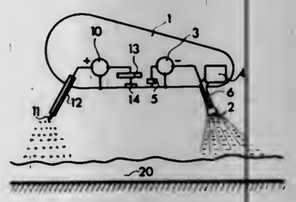
1. An aircraft including an engine housing, a gas turbine engine having a casing mounted within said housing, said casing and said housing defining an annular chamber therebetween, said casing being provided with a plurality of circumferentially disposed bleed air apertures through which bleed air may flow from the compressor of the engine into said chamber, and annular seals disposed within said chamber between the housing and said engine casing and defining therebetween a bleed air manifold which communicates with said apertures.

3,297,280
AIRCRAFT WITH INFLATABLE LANDING GEAR
Shao-Tang Lee, 25 Chi-Kuang St., Taichung, Taiwan, China
Original application June 15, 1964, Ser. No. 375,391. Divided and this application Sept. 22, 1965, Ser. No. 489,126
8 Claims. (Cl. 244—105)



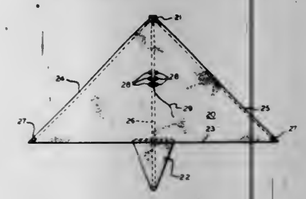
1. In an aircraft, an elongated fuselage, air expansible pontoon means mounted thereon for enabling a landing of the aircraft on water, means for selectively introducing and extracting air from said pontoon means, and means for discharging the air extracted from said pontoon means downwardly relative to said aircraft along a substantial portion of the length thereof so as to effectively reduce surface tension between the aircraft and the water on which it floats, said means for discharging air downwardly including internal air chamber means within the belly portion of said fuselage, a plurality of downwardly directed air ports communicating said air chamber means with the exterior of the fuselage, and air line means selectively communicating the pontoon means with the air chamber means.

3,297,281
METHOD AND MEANS FOR CONTROLLING THE ELECTRIC POTENTIAL OF AIRCRAFT IN FLIGHT AND APPLICATIONS TO THE ELECTROSTATIC SPRAY TREATMENT OF VEGETATION
Noel Jean Olivier Joseph Felici, 13 rue Charles Peguy, Grenoble (Isere), France
Filed Dec. 28, 1964, Ser. No. 421,337
Claims priority, application France, Jan. 9, 1964, 4,640, Patent No. 1,390,315
11 Claims. (Cl. 244—136)



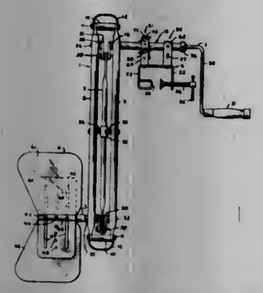
1. In an aircraft, the combination comprising a store of sprayable treating agent carried by the aircraft, sprayer means connected to the store and projecting from the aircraft at at least one first point thereof for emitting said agent in divided form from the aircraft including means for applying electric charges of one polarity to the particles of said agent as they are emitted, ionizing means projecting from the aircraft at at least one second point spaced from said first point, means for applying a variable D.C. voltage to the ionizing means of a polarity opposite from said one polarity, and means for controlling said variable voltage so as to vary the rate of ion emission from said ionizing means to maintain the aircraft potential at a prescribed level through the emission of said charged particles of treating agent.

3,297,282
KITE
Francis V. Cunningham, 5316 Central, Western Springs, Ill. 60558
Filed Nov. 12, 1963, Ser. No. 322,709
16 Claims. (Cl. 244—153)



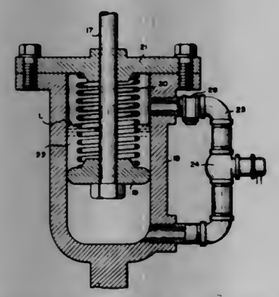
1. A kite including sheet material defining a kite body, said sheet material having a shape such as to define an apex at the top of the body, a central stiffening member attached to said sheet material and positioned to divide said kite body into half sections, additional stiffening members spaced from said central stiffening member on opposite sides thereof and fixed to said sheet material, said additional stiffening members being inclined to said central stiffening member, a tethering line fixed to said central stiffening member, and means for holding ends of said additional stiffening members joined together at said apex and in a common plane while allowing movement of said central stiffening member into and out of said plane and while allowing flexure of the additional stiffening members along substantially the entire lengths thereof.

3,297,283
BRACKET ASSEMBLY
Louis G. Knaver, 6914 Alabama Ave., Hammond, Ind. 46323
Original application Feb. 5, 1965, Ser. No. 430,526. Divided and this application Nov. 19, 1965, Ser. No. 508,756
4 Claims. (Cl. 248—4)



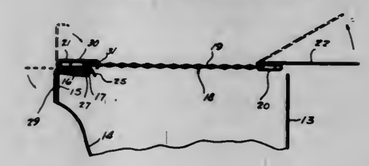
1. A bracket assembly comprising a clamp having an upper portion, a pair of spaced depending legs, a screw for clamping a mounting between the legs, a member carried by said upper portion and having spaced unstanding portions, a sleeve pivotally carried by said upstanding portions for slidably and rotatably supporting an elongate cylindrical element; a pair of fittings, one of said fittings being carried by said upper portion in spaced relation to said member and provided with a fastener, and the other of said fittings being provided with means for adjustably accommodating said fastener whereby the latter may be manipulated to secure said fittings in different relative positions, said other fitting also being provided with means for slidably and rotatably receiving a cylindrical element, and means carried by said other fitting for locking the latter in any desired slidable or rotatable position on a cylindrical element.

3,297,284
SUSPENSION SYSTEM FOR MACHINES
Norvin L. Pellerin, New Orleans, La., assignor to Pellerin Milnor Corporation, New Orleans, La., a corporation of Louisiana
Filed Nov. 6, 1964, Ser. No. 409,396
5 Claims. (Cl. 248—18)



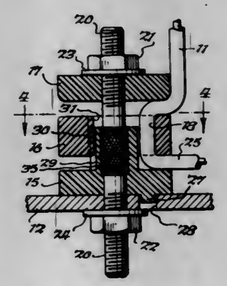
1. A suspension system for a machine which at different times during its cycle of operations generates vibrations of different frequencies, said system comprising a support, and a plurality of shock absorbers, each shock absorber comprising two relatively movable members, one of which is a cylinder and the other of which is a rod projecting from one end of said cylinder, a piston carried by said rod and slidably mounted in said cylinder, end means closing the ends of each cylinder, one of said end means being apertured to pass said rod, and spring means positioned between each piston and an end of said cylinder to resist movement of said piston in said cylinder, thereby damping vibrations of said machine, one of said relatively movable members being connected to vibrate with said machine and the other of said relatively movable members being connected to said supporting means, a fluid in each cylinder, a tube connected to each cylinder on opposite sides of said piston through which said fluid may flow from each side of said piston to the other, and a valve in said tube for regulating the resistance to the flow of fluid therein.

3,297,285
GUTTER SCREEN ATTACHMENT
Roy P. Simmons, 9759 Main St., Fairfax, Va. 22030
Filed Mar. 12, 1965, Ser. No. 439,287
2 Claims. (Cl. 248—48.1)



1. A gutter screen clip for use on a gutter having an inwardly-directed horizontal top flange, comprising a U-shaped outwardly-facing sheet metal main body shaped to closely receive the gutter horizontal top flange, a downwardly-bendable outwardly-projecting tab member on the top arm of said U-shaped main body to secure said main body to the flange of the gutter in a position to receive the longitudinal edge of a gutter screen on said top arm, at least one bendable arm projecting from the top arm of said main body deformable to extend over the said gutter screen longitudinal edge, and a hook-like prong projecting from the outer end portion of said bendable arm and being lockingly-engageable with the gutter screen.

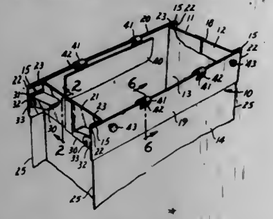
3,297,286
STRAIN RELIEVING CLAMP
Richard F. Bemb, Tonawanda, N.Y., assignor to Reliever, Inc., Buffalo, N.Y.
Filed Mar. 30, 1965, Ser. No. 443,983
11 Claims. (Cl. 248—74)



1. A strain relief device for preventing the transmission of strains to which a group of wires is subjected to individual wires separated from the group, said device comprising,
a housing to which wires are connected and including
a pair of clamping members between which individual wires are adapted to extend,
means for confining individual wires between said clamping members,

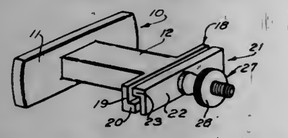
means for urging said clamping members toward each other to secure individual wires in fixed relation to said device,
and means for securing said device to said housing.

3,297,287
BAG HOLDER
Karl O. Larson, 2323 Ellis Ave., St. Paul, Minn. 55114
Filed Mar. 2, 1965, Ser. No. 436,458
6 Claims. (Cl. 248—101)



1. A bag holder comprising:
(a) a frame having a bag-receiving opening therein;
(b) a plurality of guide channels mounted on said frame and having one edge thereof open and in communication with said bag-receiving opening for receiving folded portions of a bag therein; and
(c) a cam-acting, gripping dog pivotally mounted on said frame for gripping engagement of said folded bag portions in each of said guide channels, said gripping dog being mounted so as to increase the gripping pressure as the downward force on the bag increases.

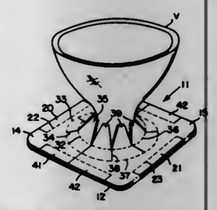
3,297,288
COLLAPSIBLE TUBE HOLDER
James Cardoza, 23 Lorraine St., Pawtucket, R.I. 02860
Filed Mar. 19, 1965, Ser. No. 441,040
1 Claim. (Cl. 248—108)



A collapsible tube holder comprising a mounting bracket having a base with an integral forwardly protruding arm of molded plastic, said arm having a bore extending inwardly from its outer end and a fixed gripping jaw at the outer end of said bracket provided with a forwardly extending lip, a post in said bore having a threaded portion extending outwardly of said jaw and bracket and spaced from said lip, a movable jaw provided with a rearwardly extending lip mounted on said post, a nut on said post and engaging said movable jaw to urge the movable jaw toward the fixed jaw, one of said lips being of sufficient extent and spaced downwardly from said post a distance sufficient to receive the bottom end of a collapsible tube when bent at right angles to the axis of the tube to extend parallel to the axis of said post and form the clamping edge of said jaw.

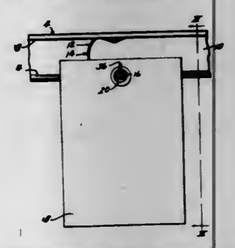
3,297,289
FLORISTS' FLOWER DELIVERY HOLDER
Julius La Raus, 56 Harvester Ave., Batavia, N.Y. 14020
Filed May 17, 1965, Ser. No. 456,098
10 Claims. (Cl. 248—152)

1. A holder for a flower container, comprising
(a) a blank having a central panel and pair of side panels, each side panel being foldable to overlie said central panel, and
(b) each of said side panels having integral therewith a plurality of flexible tongues, the free ends of which are resiliently engageable with a container, when said container is disposed on said central panel, and said side panels are folded over said central panel toward said container,
(c) each of said side panels having a central arcuate recess in its outer edge,
(d) said central recesses being complementary to one another and facing opposite sides of the container when said side panels are folded toward said container,



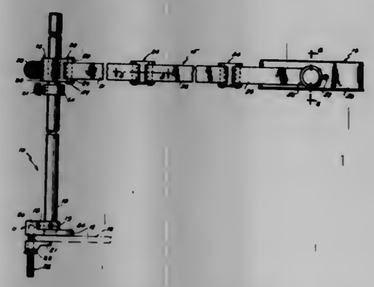
(e) each of said side panels being hinged along its inner edge to said central panel and having a plurality of cuts in it which radiate away from said arcuate recesses to provide flexible tongues that are sector-shaped, and
(f) each of said side panels having in it a plurality of semi-circular score lines, which are disposed concentric of said midpoint and which intersect said tongues intermediate the ends thereof, to provide lines on which tongues may fold.

3,297,290
DISPLAY FIXTURE
Herman W. Patterson, 7209 W. 65th St., Overland Park, Kans. 66202
Filed Mar. 29, 1965, Ser. No. 443,309
1 Claim. (Cl. 248—223)



A display fixture for use in connection with a horizontal, channel-shaped molding having confronting, spaced apart upper and lower grooves at the forward face thereof defined by opposed lip portions of said molding, said display fixture comprising a length of spring wire formed to present a planar, generally C-shaped loop portion operable by resilient compression thereof to have diametrically opposite portions thereof engaged respectively in said upper and lower grooves, and an arm portion extending from one end of said loop transversely to the plane of said loop whereby to project outwardly from said molding between the lips thereof, said loop being generally arcuately curved except that the end portion thereof engageable in said upper groove, and opposite to that from which said arm extends, is formed with a re-entrant bend, the extreme ends of said re-entrant bend defining spaced apart points of contact of said loop with said upper groove, and the point of contact of said loop with said lower groove being defined at the point of tangency with said loop at a point diametrically opposite said re-entrant bend of a line parallel to a line connecting the extreme ends of said re-entrant bend portion, said last defined contact point, as well as the end of said loop from which said arm extends, both being disposed between a pair of lines drawn respectively through the points of contact of said re-entrant bend portion and at right angles to a line interconnecting said points, said arm being connected to said loop immediately above the lip defining said lower groove.

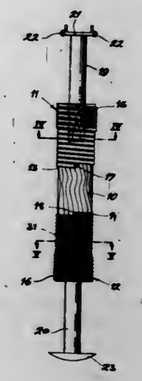
3,297,291
ARTICULATE SUPPORT ARM ASSEMBLY FOR OPTICAL DEVICES
Hazen F. Everett, Hillsdale, N.J., assignor to The Ednalite Corporation, Westchester County, N.Y., a corporation of New York
Filed Feb. 3, 1965, Ser. No. 430,090
8 Claims. (Cl. 248—278)



4. An adjustable support for an optical device comprising
a vertical post;
a mounting bracket slidable on said post and carrying locking means for securing said bracket in adjusted position along said post; and
an articulate arm assembly mounted at one end on said bracket for horizontal swinging with respect to the bracket and having means at its other end for carrying an optical device, said arm assembly including a plurality of elongated, horizontally directed arm elements arranged in successive end-to-end relation and having vertical bores in their adjacent end portions, joint elements between said adjacent ends of the arm elements and each having top and bottom walls and a vertical central web spacing said walls to permit said adjacent end portions of the arm elements to extend between said walls at opposite sides of said web, and vertical pivot pins mounted in said walls at said opposite sides of the web and being received in said bores of the adjacent end portions of the arm elements so that each joint element and the arm elements connected thereby are relatively swingable through approximately 180 degrees and the arm elements connected by each joint element are swingable relative to each other through approximately 360 degrees.

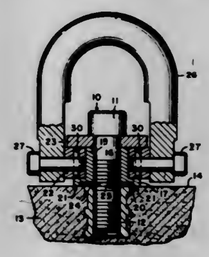
3,297,292
MINE PROP
Friedrich-Wilhelm Paurat, Friedrichsfeld, Germany
Filed Nov. 3, 1965, Ser. No. 506,186
Claims priority, application Germany, Nov. 4, 1964, P 35,438
10 Claims. (Cl. 248—354)

1. A yieldable mine prop comprising an elongated solid body of a compressible material; an elongated hollow-profile member composed of a material substantially more rigid than that of said body of a cross-sectional area less than that of said body and forced into the latter at one end thereof whereby the material of said body resists further displacement of said member into said body, and an elongated flexible element wrapped around at least



said end of said body and anchored thereto for resisting outward expansion of said body upon insertion of said member therein.

3,297,293
FASTENING DEVICE
Gary E. Andrews, Florissant, Mo., and John A. Palmer, Columbus, Kans., assignors, by direct and mesne assignments, to American Drill Bushing Company, Los Angeles, Calif., a corporation of Maryland
Filed Jan. 13, 1965, Ser. No. 425,259
11 Claims. (Cl. 248—361)

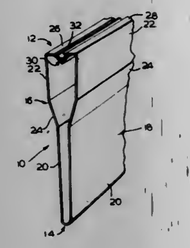


1. A fastening device for anchoring a load to a base comprising:
(a) a stud adapted to be fastened to the base,
(b) a bushing mounted about the stud, the bushing including a bearing surface located a predetermined distance from the axis of the bushing and engageable with the base, and
(c) a load-attaching means operatively and pivotally connected to the bushing and stud for transferring a couple load in tension on the stud and in bearing to the base through the bearing surface.

3,297,294
COLLAPSIBLE JOINT FORMING STRUCTURE
William F. Middlestadt, Arnold, Md.
(6720 Whitestone Road, Baltimore, Md. 21207)
Filed Apr. 9, 1965, Ser. No. 446,888
3 Claims. (Cl. 249—9)

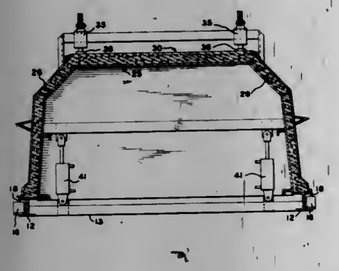
1. A joint forming structure comprising a metallic sheet folded to form a hollow envelope, said envelope tapering

inwardly from a top portion to the bottom thereof, said bottom being smoothly rounded in transverse section and said top portion being formed by overlapping and releas-



ably interlocking the edges of said folded sheet to provide a zone of weakness for collapsing the envelope when an inwardly directed force is applied to the top portion.

3,297,295
APPARATUS FOR REMOVING FORMS FROM LARGE CONCRETE TANKS HAVING A BOTTOM
Bernard Peter Haas, Bradenton, Fla., assignor to Defiance Incorporated, Bradenton, Fla., a corporation of Florida
Continuation of application Ser. No. 287,855, June 14, 1963. This application Jan. 7, 1966, Ser. No. 533,740
2 Claims. (Cl. 249—66)

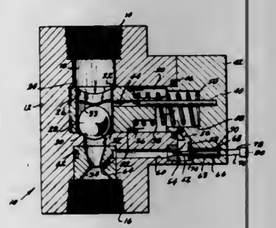


2. Apparatus for removing molds from heavy green concrete tank bodies having a closed bottom at least two feet across with extending side walls comprising in combination, a set of complementary inner and outer mold sections for forming the bottom and side walls of said concrete body, an immovable base plate receiving the tank body molded between said sections in inverted position about the lower perimeter of said side walls, means including a power unit for vertically moving the inner mold section downwardly by exerting force between the mold section and the base plate, means for vertically moving the outer mold section upwardly by exerting a first force between the outer mold section and said base plate and a second force between said outer mold and the bottom of said concrete body including respective first and second power units affixed respectively to the base plate and the outer mold to release the form for further use while the concrete is curing in position on said base plate and programmable force control means operable to sequentially actuate firstly the two power units in unison for moving the outer mold and thereafter the power units for moving the inner mold, whereby the inner mold is in place to support the green concrete bottom of the tank when said control means applies said second force to the bottom of the concrete body.

3,297,296
HOT TOP COMPOSITION FOR CASTING MOLDS
John Olof Edstrom and Hans Holmar De Geer, Sandviken, Sweden, assignors to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a Swedish corporation
No Drawing. Continuation of application Ser. No. 319,944, Oct. 29, 1963. This application Jan. 3, 1966, Ser. No. 517,936
Claims priority, application Sweden, Oct. 29, 1962, 11,576/62
3 Claims. (Cl. 249—197)

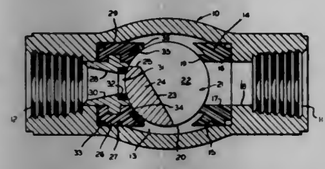
3. A hot top for casting molds having a high heat resistance, a high heat insulation ability and a low heat capacity, said hot top being a self supporting thin-walled structure and consisting essentially of a homogeneous composition of from 4 to 12% by weight of a finely divided organic, heat-insulating fibrous material selected from the group consisting of paper and paper pulp, from 2 to 8% dry weight of an organic glue, up to 10% by weight of refractory fibrous material, from 70 to 90% by weight of a fine grained substantially non-porous, refractory material having a bulk density in its uncompacted dry condition greater than 0.5 kg./liter selected from the group consisting of olivine, silica, silicates, magnesium oxide, slags, fly ash and ball mill dust and from 3 to 15% by weight of a fine grained, porous refractory material having a bulk density in its uncompacted dry condition of less than 0.3 kg./liter selected from the group consisting of infusorial earth, vermiculite, diatomaceous earth and kieselguhr.

3,297,297
BALL VALVE
Allan C. Hoffman, 2891 Rumsey Drive, Riverside, Calif. 92506
Filed July 10, 1964, Ser. No. 381,776
4 Claims. (Cl. 251—30)



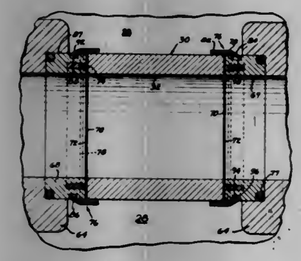
4. A valve for controlling a flow of fluid under pressure comprising a valve body having a fluid inlet port and a fluid outlet port provided therein in fluid communication with each other, a valve seat in said valve body intermediate said ports, valve means mounted in said valve body for seating engagement with said valve seat by the force of fluid entering said inlet port when said valve means is in the flow path of said fluid, means connected to said valve means for moving it into and out of said flow path, said valve means comprising a spherical ball, said connecting means comprising a piston provided with an opening caging said spherical ball, said piston being slidably mounted in said valve body in such a manner that it can be slid into and out of said flow path, means whereby said piston is moved by creating a pressure differential between its opposite ends, said connecting means being arranged to roll the spherical ball transversely off its seat, the said means for creating a pressure differential between opposite ends of said valve comprising passageway means extending longitudinally through said piston and providing communication between the inlet side and outlet side of the said valve, and pilot valve means for controlling the passageway.

3,297,298
THROTTLING VALVES AND EROSION-RESISTANT SEATS THEREFOR
Norman H. Sachnik, Houston, Tex., assignor to Texsteam Corporation
Filed Aug. 26, 1964, Ser. No. 392,130
3 Claims. (Cl. 251—316)



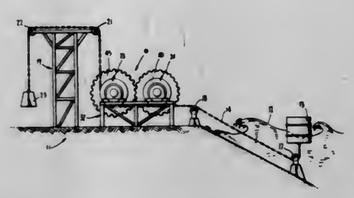
1. A throttle valve comprising, a valve body having a flow control plug rotatably mounted therein intermediate inlet and outlet ports in said valve body, a throttle seat mounted in said valve body adjacent said outlet port, said seat having a hollow, inner, metal core having an axial, fluid passage therethrough and an outer, hollow core in surrounding relationship to said metal core, said outer core being a thermosetting resin, the upstream faces of said inner and outer cores being curved to define an arcuate saddle portion of said seat matingly seated against said flow control plug, and a ring of erosion-resistant material seated in an annular recess in said inner core at the upstream end of said passage, the upstream face of said ring being arcuately flush with said saddle portion and defining the upstream end of said passage.

3,297,299
GATE VALVE SEAT SKIRT
Clifford E. Anderson, Houston, Tex., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 30, 1964, Ser. No. 379,292
8 Claims. (Cl. 251—327)



1. A seat and gate guide assembly for a valve having flow passages and a reciprocating gate having parallel sealing surfaces for controlling flow of fluid through the flow passages, said assembly comprising a generally cylindrical seat ring having a bore formed therein for alignment with the flow passage, a substantially planar annular sealing face on the seat ring for sealing engagement with the sealing surfaces of the gate, a groove formed in the outer periphery of the seat ring, a gate guide member having a body portion fitted about the outer periphery of the seat ring, a pair of gate guide flanges on the body portion and extending substantially normal thereto, a pair of locking flanges on the gate guide flange portions and extending therefrom in angular relation with the body portion and with the guide flanges, the locking flanges extending into the groove to prevent axial movement of the body portion relative to the seat ring.

3,297,300
APPARATUS FOR DERIVING USEFUL ENERGY FROM SEA WAVES
Demetrios K. Mountanos, 132 Eddy St., San Francisco, Calif. 94102
Filed Sept. 30, 1964, Ser. No. 400,335
1 Claim. (Cl. 253—8)

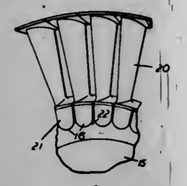


Apparatus for converting wave motion into useful energy comprising, in combination, a support, a pair of aligned spaced power producing shafts rotatably mounted on said support, a power take-off means connected to one of said shafts, a pair of meshing gears, one mounted on each shaft, interconnecting said shafts for simultaneous rotation in opposite directions, a rectangular block fixed to an intermediate point on each shaft, oppositely disposed pawls pivotally mounted on each block, a sprocket having a hallow circular interior opening rotatable on each shaft surrounding an associated block, ratchet teeth on the inner periphery of each opening, the ratchet teeth of the two sprockets being oppositely disposed, said sprockets being linearly aligned, spring means biasing each pawl towards the ratchet teeth of its associated sprocket, the exterior periphery of each sprocket being transversely concaved and provided with chain engaging teeth, a chain extending beneath both aligned sprockets in engagement with said teeth, a first exteriorly mounted pulley over which said chain extends, a second exterior pulley located beneath the surface of an adjacent body of water under which said chain extends, a float in the body of water connected to that end of the chain, a tower adjacent said support, a transversely extending arm at the top of said tower, a third pulley at one end of said arm directly over the outside periphery of the sprocket remote from said float, the other end of said chain extending upwardly perpendicular to the length of chain beneath said aligned sprockets, a fourth pulley at the other end of said arm, said other end of said chain extending over said fourth pulley and depending vertically, and a weight secured to the depending end of said chain, said weight being equal to one-half the weight of the water displaced by said buoy.

3,297,301
BLADED ROTOR FOR USE IN A FLUID FLOW MACHINE
James Alexander Petrie and Thomas Steel, Littleover, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Apr. 2, 1965, Ser. No. 445,121
Claims priority, application Great Britain, Aug. 11, 1964, 32,751/64
4 Claims. (Cl. 253—39.15)

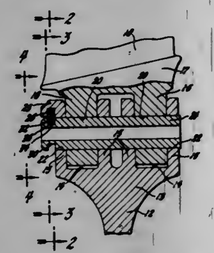
1. A bladed rotor which is adapted for use in a gas turbine engine, said rotor having a disc whose periphery is provided with a plurality of recesses arranged circumferentially adjacent to each other around the said periphery, each recess having a curvilinear profile with a gradient of its curve passing through only one reversal of direction, said rotor further having a plurality of angularly spaced apart blades, each blade having a root portion which is a close fit in, and is secured in one of said recesses, said rotor having a circumferential width in

each region between adjacent recesses which at its radially outer end is less than one-quarter of the circumferential width of each of said recesses at its radially outer end,



whereby parts of said periphery between adjacent recesses will, in operation, have a reduced tendency to crack due to hoop stresses.

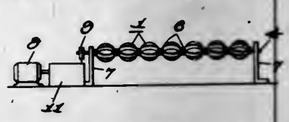
3,297,302
BLADE PIN RETENTION
Esten W. Spears, Jr., Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,945
7 Claims. (Cl. 253—77)



1. A blade pin retainer for a bladed rotor in which the blade roots are mounted on the rotor by axial pins disposed in aligned apertures in the blade roots and rotor and in which the rotor has a flange extending axially from a face thereof provided with a groove opening toward a groove adjacent an axial end of each of said pins, said pin grooves being aligned with said rotor groove, comprising, in combination, a lock tab for each of said pins having one end portion circumferentially insertable between said aligned grooves with a bendable portion on the end thereof, a retainer element for each of said pins overlying each of said lock tabs and having one end portion circumferentially insertable between said aligned grooves and a locking edge adjacent the opposite end thereof, said locking tabs and retainer elements being inserted from opposite sides of said pins and said bendable portions on said lock tabs being bent over said lock edges, whereby said lock tabs and said retainer elements are held in their operative positions to form said blade pin retainers, said blade pin retainers having a portion disposed in said rotor groove, and a portion disposed in said pin grooves whereby said pins are retained in said aligned apertures to mount said blades on said rotor.

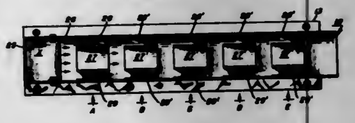
3,297,303
FISHING-NET HAULING APPARATUS
Masami Aizawa, 57 Aza Odomari Oaza Tashirohama, Ishinomaki, Japan
Filed Jan. 5, 1965, Ser. No. 423,427
Claims priority, application Japan, Nov. 5, 1964, 39/86,264
6 Claims. (Cl. 254—138)

1. A fishing net hauling apparatus comprising a rotatable mounting spindle and a plurality of substantially spherical ball members mounted on said spindle in side-by-side relationship therealong and affixed to said spindle for rotation therewith about the axis of said spindle, said ball members defining upwardly and downwardly curved



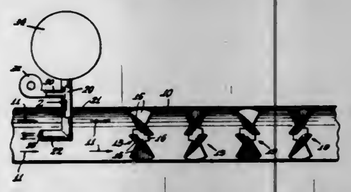
surfaces along said spindle for facilitating the even feeding of a fishing net thereover when said spindle is rotated with said ball members.

3,297,304
VIBRATORY CONVEYOR-MIXER APPARATUS
Eugene A. Wahl, 294 Forest Ave., Glen Ridge, N.J. 07418
Filed Feb. 8, 1965, Ser. No. 431,074
13 Claims. (Cl. 259—2)



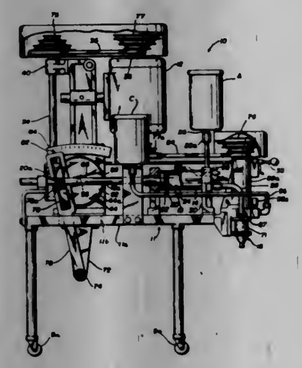
1. Apparatus for mixing particulated materials comprising,
(a) an elongated trough adapted to receive the materials at one end,
(b) means vibrating the trough to cause the materials to flow as a continuous, composite stream toward the other end thereof, and
(c) a plurality of flat inclined members carried by the trough and spaced from each other along the trough axis, each member having an upstream end in engagement with the trough bottom and a downstream end spaced above the trough bottom.

3,297,305
FLUID MIXING APPARATUS
Willie W. Walden, Henry Bldg., Hugo, Okla. 74743
Filed Aug. 14, 1957, Ser. No. 678,118
4 Claims. (Cl. 259—4)



1. An apparatus for mixing chemical fluids, comprising an elongate, tubular mixing chamber of substantially constant cross-sectional area, adapted to have fluid flow through it under pressure axially in a predetermined direction, said chamber having relatively smooth inner walls; a plurality of stationary means disposed in succession within said chamber at different, longitudinally-spaced locations, to divide said chamber into a plurality of compartments, and each of said means being engaged with said inner walls for support thereby and being formed to impede the flow and impart a swirling rotative action to the fluid flowing through said chamber, each succeeding one of said means reversing the direction of action of the swirl of the fluid caused by said preceding means, whereby each compartment comprises a separate mixing area in which a turbulence of the mixing fluids is set up which is different from that in the preceding or succeeding areas, a fluid injection tube extending into said mixing chamber ahead of said fluid-swirling means, having a discharge nozzle in the chamber directed axially of the chamber and generally against the direction of the intended flow of fluid through the chamber, said discharge nozzle having a plurality of inclined orifices disposed about a central point and directed angularly outward of the axis of the mixing chamber in divergent directions and angularly toward the said smooth inner walls; and means disposed exteriorly of the mixing chamber, for forcing a chemical fluid under pressure into said injection tube.

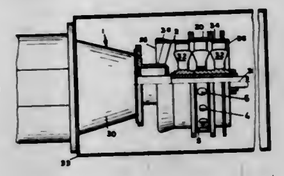
3,297,306
METERING AND MIXING MACHINE
Maurice A. Napier, 841 Timberline Drive, Akron, Ohio 44313
Filed Mar. 1, 1965, Ser. No. 436,192
7 Claims. (Cl. 259—8)



1. A metering and mixing machine of the character described, comprising; a plurality of fluidity substance tanks; a similar plurality of pumps disposed so that one pump is in association to one tank; a single mixer unit; intake lines cooperating between said tanks and said pumps; outlet lines leading from said pumps to empty into said mixer unit; each said pump including a piston; a driven shaft having a gear at one terminal end; an axle with a second gear associated therewith; means for transferring power from said driven shaft through said gear and said second gear actuating each said piston in a mechanically forced linear stroke; the actuation of each said piston forcing the measured flow of fluidity substance from its associated tank to said mixer unit.

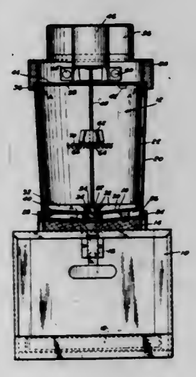
3,297,307
MULTI-STAGE CIRCULATORS
Hans Jahns, Aachen, Germany, assignor to H. Krantz, Aachen, Germany
Filed Jan. 29, 1964, Ser. No. 340,986
Claims priority, application Germany, Jan. 30, 1963, K 48,810
5 Claims. (Cl. 259—97)

1. In a fluid circulator system, a pressure container and a multi-stage axial flow circulator mounted within said pressure container for liquid processing, said circulator having a cylindrical pump housing composed of a plurality of cylindrical fixed sleeves, a plurality of stages ranging from the first stage to the last stage including a central shaft driving a plurality of liquid activating members arranged so that there will be one member for each stage and one member within each sleeve, one stage of said pump having its fixed sleeve provided with a plurality of ports therein around the periphery thereof and a movable porting sleeve positioned around said ported



sleeve with a plurality of matching ports and means to move said movable sleeve to open and close the ports in the fixed ported sleeve.

3,297,308
BEVERAGE DISPENSER
Virgil John Philipps, Chicago, Ill., assignor to American Machine & Foundry Company, a corporation of New Jersey
Continuation of application Ser. No. 103,803, Apr. 18, 1961, now Patent No. 3,106,383. This application Dec. 11, 1964, Ser. No. 437,334
1 Claim. (Cl. 259—97)



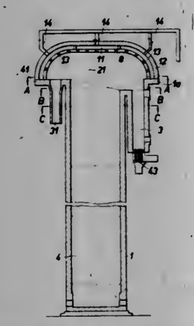
In a beverage dispenser, a reservoir for the storage of a quantity of liquid, comprising a pair of substantially cylindrical light permeable bowls, one of said bowls being smaller in dimension than the other and formed with a substantially open top and a bottom wall, said bottom wall being formed with a central aperture, said aperture being substantially small with respect to the size of said bottom wall, a plurality of radial vanes protruding upwardly therefrom and an annular flange member surrounding said hole depending therefrom, said smaller bowl being mounted within said other bowl so as to form a relatively narrow space between their respective bottom and side walls, and circulating means comprising a motor mounted above said smaller bowl, an elongated rotatable rod connected to said motor extending within said smaller bowl, a helical screw impeller member secured at the end of said rod and located within said hole in the bottom wall of said smaller bowl, for creating and continuously moving a substantially unbroken sheet of said liquid, without substantial agitation, in a path flowing from said smaller bowl upwardly between said spaced bowls to the top of said smaller bowl for discharge thereinto so that even a partially empty reservoir appears full.

3,297,309
MIXING APPARATUS
Robert E. Adams, Hudson, N.Y., assignor to Gifford-Wood, Inc., Newton, Mass., a corporation of Massachusetts
Filed Oct. 29, 1964, Ser. No. 407,403
3 Claims. (Cl. 259—115)



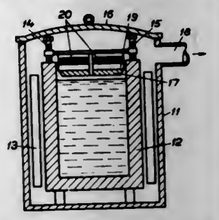
1. A mixing apparatus comprising in combination an elongated stator tube having an enlarged stator ring on its lower end, a mixing shaft extending rotatably through the stator tube, a bladed mixing rotor on the lower end of said shaft rotating within the confines of said ring, an adjustable mounting plate clampingly secured to the stator tube, an enlarged head on the upper end of the stator tube, a bearing housing extending above the stator tube and having a head at its lower end abutting said head of the stator tube, quick release clamping means holding said heads detachably in abutting relation, said mixing shaft extending through said bearing housing and above said head, a pair of spaced ball bearings supporting said mixing shaft within the bearing housing, and motor means on the bearing housing and coupled to the mixing shaft near and above the bearing housing.

3,297,310
HOT BLAST STOVES FOR COMBUSTING QUALITY FUELS
István Péntek, Miskolc, Hungary, assignor to Licencia Talalmanyokat Ertekesito Vallalat, Budapest, Hungary
Filed Jan. 18, 1965, Ser. No. 426,279
Claims priority, application Hungary, Feb. 3, 1964, TU 126
4 Claims. (Cl. 263—19)



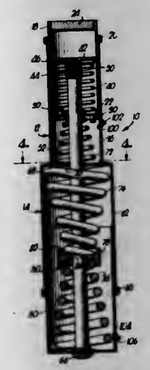
1. A hot blast stove for combusting quality fuels comprising, in combination, a furnace shaft, a heat exchanger shaft, a double roof structure covering said furnace shaft and said heat exchanger shaft and composed of an inner roof and of an outer roof, said inner roof and said outer roof being self-contained stabile structures of other than semi-spherical shape and enclosing an intermediate chamber, at least one passage in said outer roof opening into said intermediate chamber, secondary air supply means connected to said passage in said outer roof, a plurality of passages in said inner roof opening into said furnace shaft and said heat exchanger shaft, means for combusting fuel in said furance shaft, and means for abducting hot air from said heat exchanger shaft.

3,297,311
APPARATUS FOR DEGASIFYING LIQUID METAL
Sven-Einar Stenkvist, Croton-on-Hudson, N.Y., assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Nov. 2, 1964, Ser. No. 408,011
Claims priority, application Sweden, Nov. 11, 1963, 12,383/63
3 Claims. (Cl. 266—34)



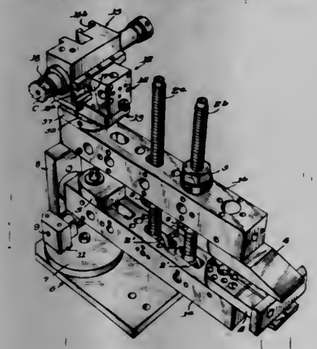
1. Device for refining molten metal such as steel, said device comprising a ladle for said molten metal, a vacuum tank, said ladle being inclosed in said vacuum tank, at least one electromagnetic, multi-phase stirrer for developing frequencies between 0.2 and 10 cycles per second at one side of said ladle, a cover of heat conducting material with good temperature resistivity being positioned at the upper part of the ladle within said vacuum tank, means for raising and lowering said cover, said cover being provided at its upper surface with a heat insulating layer and an electrical induction heating coil, said induction heating coil being positioned adjacent the heat insulating layer.

3,297,312
COMBINATION SHOCK ABSORBER AND SPRING
James E. Hines, Raytown, Mo.
(1007 S. Pope, Independence, Mo. 64050)
Filed Mar. 29, 1965, Ser. No. 443,465
12 Claims. (Cl. 267—34)



1. Shock-absorbing apparatus comprising:
a pair of sections, each section including a pair of elongated members coupled together in longitudinal alignment and being longitudinally shiftable relative to each other, one of the sections being secured to and extending outwardly from one end of the other section in longitudinal alignment therewith;
first spring means coupled between the members of said one section for biasing the members thereof away from each other;
second spring means coupled between the members of said other section for biasing the members thereof away from each other; and
means coupling the opposite end of said one section with said second spring means, whereby inward or outward movement of the outer member of either of said sections is minimized by the spring means corresponding to the adjacent section.

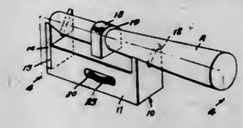
3,297,313
UNIVERSAL CLAMP FIXTURE
Nichols Stevens, 2414 N. Spaulding Ave., Chicago, Ill. 60647
Filed Jan. 12, 1965, Ser. No. 424,986
18 Claims. (Cl. 269—71)



1. A machine tool and work holder, comprising a base structure, a pair of elongated blocks of rectangular cross-section, means mounting one of said blocks on said base structure for adjustment about a horizontal axis, a plurality of screw members carried by said last mentioned block in longitudinally spaced relation therealong, and extending through the second block, said screws being pivotally connected to said first block on respective parallel axes extending at right angles to the longitudinal block axis, nuts threaded on said screws, operative to retain said second block in a selected relation with respect to the first block, a tool and work supporting structure mounted for pivotal adjustment on said second block about an axis extending at right angles to the longitudinal axis of said second block, said supporting structure having an intermediate carriage slidably mounted thereon, movable along an axis extending parallel to the axis of said second block, and a work and tool supporting carriage mounted on said intermediate carriage for movement along an axis extending at right angles to the direction of movement of said intermediate carriage relative to said tool and work supporting structure.

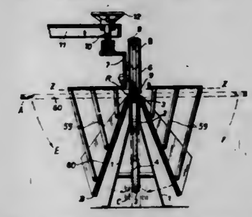
3,297,314
VARIABLE V-BLOCK AND CLAMPING DEVICE OR ASSEMBLY
John S. Brown, Framingham, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed May 20, 1964, Ser. No. 369,044
1 Claim. (Cl. 269—243)

A variable V-block and clamping device for supporting and holding a workpiece having different diameters and a centerline common to all of the diameters, said device comprising, in combination, a base having an upstanding, integral V-shaped portion at one end thereof, there being a cut-out portion at its other end, said base being further provided with a vertical smooth bore therethrough and located medially thereof, an elongated counter bore at the upper portion of said vertical bore and a transversely disposed, elongated recess intersecting said vertical bore and normal thereto; a clamp received in said vertical and counter bores, said clamp including an eye of predetermined diameter; an elongated boss adjacent said eye and



adapted to be received in said elongated counterbore; and an externally threaded extension depending from said boss and adapted to be received in said vertical bore, said extension having a length to intersect said recess; a thumb nut threaded on said extension and rotatable in said transverse recess; and a V-shaped plate detachably mounted in said cut-out portion in said base, said thumb nut raising or lowering said clamp when rotated to secure and align a work piece when threaded through said eye.

3,297,315
SHEET STACK FOLDING MACHINE
Jakob Kunz, Zurich, Switzerland, assignor to Tages-Anzeiger fur Stadt und Kanton Zurich A.-G., Zurich, Switzerland
Filed Feb. 17, 1965, Ser. No. 433,302
Claims priority, application Switzerland, Feb. 20, 1964, 2,031/64
19 Claims. (Cl. 270—86)

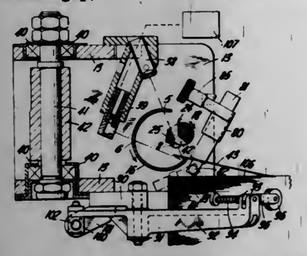


1. A folding machine for folding stacks of sheets, particularly newspapers, comprising at least two endless, driven belt members for fixedly clamping the stack of sheets to be folded at their region to be folded, and guide elements positioned to fold said stack of sheets about one of said belt members during such time as said stack of sheets are entrained by said two belt members, a row of stationarily mounted rollers over which travels said one belt member about which said stack of sheets are folded, a further row of rollers cooperating with said row of stationarily mounted rollers, support means mounted to be displaceable with respect to said row of stationarily mounted rollers, said further row of rollers being carried by said support means, the other of said belt members being trained about said further row of rollers.

3,297,316
SHEET SEPARATING APPARATUS
Sidney Haines, Dovercourt, England, assignor to Vacuumatic Limited, Harwich, England
Filed July 15, 1964, Ser. No. 382,725
Claims priority, application Great Britain, July 16, 1963, 28,191/63
16 Claims. (Cl. 271—27)

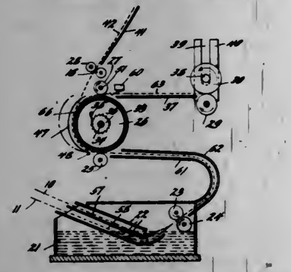
1. Apparatus for successively separating at least a part of each of a number of sheets from a neighboring sheet in a stack without disrupting the stack as a whole, comprising

(a) a support for the stack of sheets,
(b) a sheet deflecting head comprising a carrier mounted to rotate in one direction about an axis substantially parallel to the planes of the sheets in the stack,
(c) a suction device mounted on the carrier to rotate in one direction relatively to the carrier about an axis parallel to and spaced from the axis of rotation of the carrier,
(d) a suction opening on the suction device arranged during a portion of each rotation to overlie part of a sheet in the stack and cause a part of that sheet to cling to the suction device and, due to the rotation of that device, to be deflected from an adjacent sheet to form a gap,



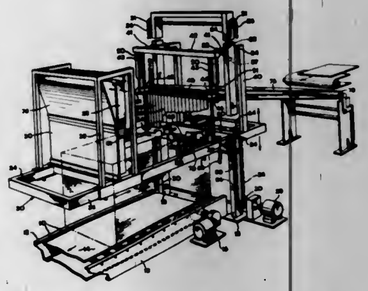
(e) a part of the carrier, separate from the suction device, which part is arranged, as the carrier rotates, to enter the gap and move the sheet from one side of the deflecting head to the other so that the suction opening may overlie a part of the next sheet in the stack during a portion of its next rotation,
(f) means for effecting relative movement between the deflecting head and the support for the stack in a direction substantially at right angles to the planes of the sheets, and
(g) means for normally operating a counter each time the carrier rotates about its axis but the effectiveness of which means on the counter is dependent on the deflection of a sheet by the deflecting head, so that the counter is only operated when a sheet is deflected.

3,297,317
PHOTOGRAPHIC COPYING APPARATUS STRIPPING MECHANISM
Emile Frans Stievenart, Kiel-Antwerpen, Belgium, assignor to Gavaert-Agfa N.V., Mortsel, Belgium, a Belgian company
Filed July 30, 1964, Ser. No. 386,189
13 Claims. (Cl. 271—64)



1. In a copying apparatus wherein light-sensitive sheet material is intimately brought by sheet-pressing means into sandwich relationship with an image-receiving sheet material and subsequently separated therefrom, the improvement of a mechanism for separating sheets delivered thereto, comprising means for frictionally engaging one of said sheets of said sandwich adjacent the leading edge thereof to temporarily immobilize said sheet against movement, and means for applying a dynamic frictional force to the exposed face of said other sheet along a limited longitudinal locus adjacent its leading edge, said force being directed generally away from said edge and of sufficient magnitude to overcome the coefficient of friction between the contacting faces of said sheet and buckle said other sheet away from said first sheet, means for supporting said sandwich against said force at least in the areas of its application, means for removing said first sheet from between said frictional force-applying means and said supporting means after said other sheet has buckled, and means for guiding the other sheet away from said first sheet as the same is removed.

3,297,318
MEANS AND METHOD FOR STACKING SHEETS OF PAPERBOARD OR CARDBOARD
John E. Knecht, Pointe Claire, Quebec, Canada, assignor to Bathurst Paper Limited
Filed Mar. 26, 1964, Ser. No. 354,959
13 Claims. (Cl. 271—68)



1. Means for the continuous stacking of sheets comprising: a frame having mounted thereon, first guide extents extending generally vertically; second guide extents spaced from said first guide extents, arranged and oriented to guide sheets into position with one edge extending along said first guide extent and the other edge extending along said second guide extent, whereby sheets may be stacked one on the other with the edges in such relationship; clamping surfaces mounted on said frame to move from a retracted position clear of such stack to an extended position to clamp sheets in said stack between such clamps and said first guide extents; base for supporting sheets stacked between said first and second extents, and means for gradually raising said frame relative to said base.

3,297,319
MERRY-GO-ROUND
Madeleine Cheréau, 15 Blvd. du Marechal Joffre, Angers, France
Filed July 31, 1963, Ser. No. 298,902
Claims priority, application France, July 31, 1962, 905,663, Patent No. 1,339,597; Feb. 20, 1963, 925,407, Patent No. 1,357,059
4 Claims. (Cl. 272—36)



1. A merry-go-round comprising an undulating circular track having a vertical axis, a plurality of cars on said track, each of said cars having a base and a frame provided with wheel means supporting said frame on said track, a power-driven central member within said track rotatable about said vertical axis, respective radial link means connecting each said frame with said member for rotary motion about said vertical axis, respective pivot means connecting each said base with the respective frame and defining a substantially horizontal axis for each car transverse to a respective plane containing said vertical axis and containing a longitudinal axis of the respective radial link means, and the base of each said car having an extensible connection means coupling it to the respective frame at a point remote from the associated one of said horizontal axes for selectively tilting said cars about said respective horizontal axes and individual control means at the respective car actuating said respective extensible connection means to produce a rolling movement of each car independently of the remaining cars.

3,297,320
DEVICE FOR STRETCH EXERCISING MUSCLES
Salvatore P. Di Benedetto, Buffalo, N.Y., assignor to Anarel, Inc., Kenmore, N.Y., a corporation of New York
Filed Sept. 10, 1963, Ser. No. 307,824
5 Claims. (Cl. 272—57)



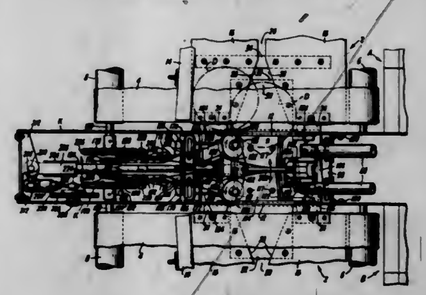
1. A device upon which the user stands for exercising the muscles of the human body to improve physical fitness, said device comprising: a base in the form of an elongated generally rectangular box molded in one piece of plastic material and including a bottom wall, an open top, a front end wall, a lower rear end wall, and longitudinally inclined transversely spaced side walls connecting said end walls, said front and rear end walls being inclined transversely of said box in the same direction, said front end wall being provided with a through finger receiving recess in its upper edge and a pair of outstanding internal supports recessed below said upper edge on each side of but above the bottom of said recess, said bottom wall being provided with several elongated longitudinal lugs adjacent said front end wall, two of said lugs being spaced transversely a substantial distance apart on each side of a third lug extending along the longitudinal center line of said box, each of said lugs being provided with longitudinally spaced wall portions forming a series of longitudinally spaced transverse through slots, with the slots in each of said lugs being transversely alined with the slots in the other lugs to form longitudinally spaced transverse sets of slots; an elongated foot supporting platform molded in one piece of plastic material and adapted to be inclined longitudinally above said box, said platform including a rear end, a front end adapted to rest upon said supports and accessible through said recess, and an upper surface inclined transversely of said box in the same direction as said end walls; a generally U-shaped round wire bale including a pair of transversely spaced arms connected by a lower transverse leg adapted to be inserted into and out of engagement with said sets of slots; a front hinge pivotally connecting said arms and said platform adjacent said front end thereof and along a first transverse axis at points space a substantial distance apart on each side of the longitudinal center line of said platform common to the longitudinal center line of said box; and a rear hinge pivotally connecting said rear end of said platform to said bottom wall adjacent said rear wall along a second transverse axis parallel to said first axis at points spaced a substantial distance apart on each side of said common longitudinal center line; whereby the inclination of said platform can be varied readily by manually raising and lowering said front end of said platform for selective engagement and disengagement between said bale and sets of slots.

3,297,321
BASEBALL BATTING TRAINER
Val D. Kuhnes, Greensburg, Ind. (134 Main St., Lakeview Apartments, Apt. 300, Hobart, Ind. 46342), and David H. Porter, 153 North St., Osgood, Ind. 47037
Filed Feb. 26, 1964, Ser. No. 347,493
1 Claim. (Cl. 273—26)



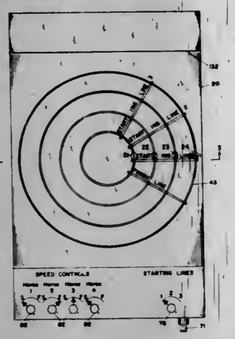
A baseball training device comprising a ball, a length of cord having one end attached to said ball, a length of elastic material attached at one end to the other end of said cord, a coil spring attached at one end to the other end of said elastic material, a stake attached to the other end of said spring, and weight means fixed to the junction of said cord and elastic material for imparting a curvilinear trajectory to said ball.

3,297,322
PIN AND BALL HANDLING MECHANISM WITH CYCLICALLY MOVABLE SEPARATING MEANS
John M. Ernst, Shelby, and John Zuercher, Mansfield, Ohio, assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed May 13, 1963, Ser. No. 279,870
20 Claims. (Cl. 273—43)



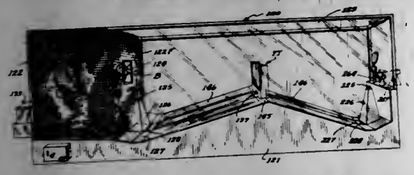
1. A bowling ball and pin handling apparatus comprising a bowling ball elevating device, means mounting said device in operative position exteriorly of the kickback of a bowling alley, said kickback having an opening through which a ball may exit from the pit of said alley, ball support means mounted without said opening and coacting with said elevating device to receive and support a ball exiting from said pit of said alley, movable means mounted exteriorly of said kickback for engaging and moving any pins tending to pass out of said pit through said opening onto said support means back through said opening into said pit, driving means for moving said movable means to and from said opening a plurality of times during a given time cycle, and means for conveying such pins from said opening.

3,297,323
RACING GAME
John C. Gibson, Jr., 22 N. Prospect Ave., Madison, Wis. 53705
Filed May 20, 1963, Ser. No. 281,628
9 Claims. (Cl. 273—86)



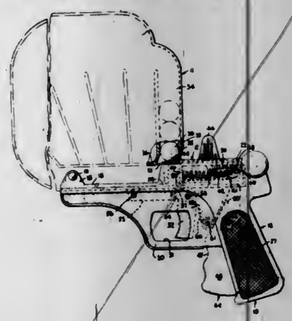
9. In an electric racing game of skill having a plurality of racing figures, a motor control circuit for each of said racing figures, each of said motor control circuits comprising electric supply lines, an electric drive motor, a first fixed control, a switch, and a first variable control means connected in series across said supply lines, said switch being closed at the start of a race, said first variable control means being adapted to vary the speed of said drive motor, an electric meter motor and a second variable control means connected in series across said supply lines, means ganging said first and second variable control means whereby the variation of said first variable control means to increase the speed of said drive motor results in a variation of said second variable control means to increase the speed of said meter motor disproportionately, means connecting said meter motor to the switch which is in series with said first variable control means so that after a fixed number of revolutions of said meter motor, said switch will open thereby stopping said drive motor.

3,297,324
TRAINED ANIMAL OPERATED AMUSEMENT APPARATUS
Grant Evans, Hot Springs, Ark., assignor to Animal Behavior Enterprises, Inc., a corporation of Arkansas
Filed Sept. 20, 1963, Ser. No. 310,307
9 Claims. (Cl. 273—101)



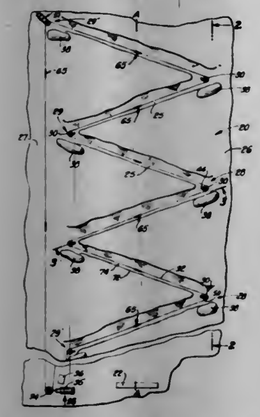
1. In an animal operated amusement apparatus, a cage having walls through which a trained animal housed in the cage may be viewed, and including a front wall having an opening therein through which such an animal may reach to strike and impel a ball, an air discharge nozzle mounted in front of said front wall in the vertical center plane of said opening and positioned to discharge a column of air in a vertical direction past and spaced a short distance forwardly of said opening, a target located substantially forwardly of said nozzle and having an open top ball-receiving pocket into which a ball striking said target will fall, a gravity return path for a ball including a ball return passage into which a ball will roll from said pocket, a ball-operated switch having an operating element extended into said passage in position to be actuated by a ball moving through the passage, said gravity return path comprising a floor over which a ball may roll to a low point immediately in front of and substantially below the discharge orifice of said nozzle, said floor at said low point having an air discharge slot over which the ball comes to rest, an upwardly and rearwardly directed surface at the rear side of the slot along which an air blast issuing from said slot may actuate a ball upwardly into position over said nozzle for subsequent support of the ball in front of said opening on the air column issuing from said nozzle, fan means effective when operating to discharge air from said slot and nozzle, coin controlled means for initiating operation of said fan means, feeder means associated with said cage for discharging a measured quantity of feed within the cage whenever said feeder means is operated through a feeding cycle, and means governed by said ball operated switch to initiate a feeding cycle of said feeding means each time the ball switch is closed.

3,297,325
SPRING TYPE PISTOL-BAGATELLE
George Lerner, 12 Prospect Court, Freeport, N.Y. 11520, and Julius Ellman, 1672 E. 7th St., Brooklyn, N.Y. 11232
Filed Feb. 17, 1964, Ser. No. 345,322
1 Claim. (Cl. 273—101)



A bagatelle toy comprising a casing having an elongate barrel part and a transverse grip part, said barrel part having one end-region open for discharging a pellet, its other end-region having compressible resilient propulsion means releasable for propelling a pellet from said one end-region, trigger means carried by said grip part for releasing said propulsion means, and a hollow body configured to define a game field, removably and replaceably carried by said barrel and having an inlet opening communicating with said barrel end-region for receiving a propelled pellet, and having an outlet opening communicating with an intermediate region of said barrel part for passing pellets to said barrel part in position to be propelled, energy-input means carried by said casing and operative to compress said propulsion means prior to release thereof, and comprising a lever pivoted to said gripping part, and having one end extending from said gripping part for movement by an operator and having its other end extending into said other barrel end-region for compressing engagement with said propulsion means, a stop mounted in said casing for movement into and out of said barrel for restraining and releasing said propulsion means, and being located proximate to the outlet opening of said hollow body for receiving a pellet from said body, and having a seat for supporting a received pellet in position to be propelled, said trigger means being operatively connected to said stop for actuating the latter, and cooperating interfitting formations on said barrel part and on said hollow body for releasably securing the latter to the former.

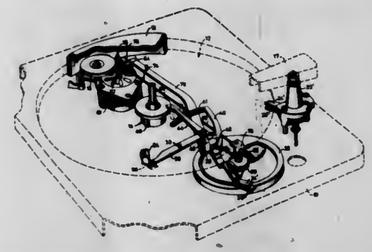
3,297,326
MOVING TARGET SYSTEM FOR SHOOTING PRACTICE
Roy E. Corwin, Alhambra, Len A. Corwin, Woodland Hills, Charles K. Hanawalt, La Puente, and Ernest L. Fuller, Temple City, Calif., assignors to Grandad's Ranch, Inc., Palmdale, Calif., a corporation of California
Filed July 16, 1963, Ser. No. 295,311
16 Claims. (Cl. 273—105.2)



3. A moving-target system for shooting practice from a shooting station, including in combination:
- a shooting range extending from said shooting station along a shooting axis;
- grooved guide wheels on opposite sides of said shooting axis at progressively greater distances from said shooting station, there being equal-length shooting runs between said guide stations;
- a continuous drive cable extending around said guide wheels with suspended portions of the cable extending along said shooting runs in the path of bullets shot from said shooting station, said drive cable having target stations therealong spaced equally from each other a distance substantially equal to the length of each shooting run;
- a target attachment means carried by said cable at each target station thereof;
- a target connected to each target attachment means; and
- drive means for said cable including means for stopping the movement of said cable at positions in which said targets are respectively adjacent said guide wheels.

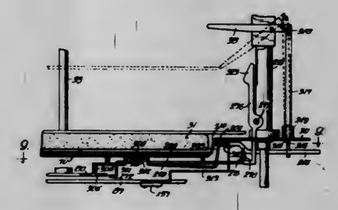
3,297,327
CYCLE CONTROL PHONOGRAPHS
Hans Christian Hansen, 14 Christiansholmsvej, Copenhagen, Denmark
Filed Aug. 12, 1963, Ser. No. 301,451
Claims priority, application Great Britain, Aug. 10, 1962, 30,713/62; Sept. 10, 1962, 34,578/62
12 Claims. (Cl. 274—10)

1. A cycle controlled phonograph having a turntable, a driving motor adapted to drive the turntable at a plurality of selectable speeds, a tone arm adapted to carry stylus means, cycle control means operable to move said tone arm between a termination-of-play position and a start-of-play position, including a rotatable cam member, an elongated shaft, first worm drive means at one end of said shaft operatively connecting said shaft and said cam member, second worm drive means at the other end of said shaft operatively connecting said shaft and said driving motor for driving said cam member from said driving motor through said elongated shaft independently of the



driving connection between said driving motor and the turntable, means operable to engage said second worm drive means after playing of a record, and means operable to disengage said second worm drive means at the start-of-play of a record.

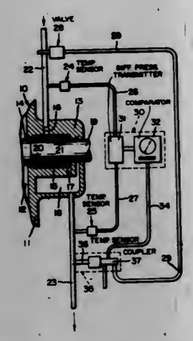
3,297,328
RECORD CHANGER
James T. Dennis, 812 American National Bldg., Oklahoma City, Okla. 73102
Application Apr. 18, 1962, Ser. No. 190,848, now Patent No. 3,231,282, which is a continuation of application Ser. No. 17,039, Mar. 23, 1960, now abandoned, which is in turn a division of application Ser. No. 319,975, Nov. 12, 1952, now Patent No. 2,939,714, dated June 7, 1960. Divided and this application Dec. 15, 1965, Ser. No. 513,941
6 Claims. (Cl. 274—15)



1. In an automatic record changer, a rotatable turntable, a centering spindle, means including said spindle for supporting a stack of records of small and large diameters on said spindle above said turntable, a tone arm adapted to be moved into engagement with a record after it is deposited on said turntable, automatic record changing means for successively releasing individual records from said stack to said turntable during successive record changing cycles, a first tone arm indexing member positioned between the record stack and said turntable and movable by engagement of the outer edge portion of either a small diameter or a large diameter record as the record is released to said turntable, a second tone arm indexing member positioned between the record stack and said turntable and movable only by engagement of the outer edge portion of a large diameter record as the record is released to said turntable, means responsive to movement of said first tone arm indexing member only in those instances when said second tone arm indexing member is not simultaneously moved by a large diameter record for positioning said tone arm to the small diameter record position, and means responsive to movement of said second tone arm indexing member for positioning said tone arm to the large diameter record position.

3,297,329
PUMP SEAL INJECTION CONTROL
John Pearson Smith, Westfield, Samuel A. Carswell, Martinsville, Gilbert Samuelson, Westfield, and Herbert A. Rainbird, Ramsey, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 26, 1964, Ser. No. 392,171
12 Claims. (Cl. 277—3)



1. In combination with a pump for fluids at elevated temperatures having a casing defining a pump chamber, a pump shaft extending through the casing from the casing, and a wet seal in the casing encircling the shaft providing a pair of spaced restrictions and being subject to a head of hot fluid at one end with a drain at its other end for limited flow of fluid therethrough from the pump chamber; a system for controlling flow of fluids at elevated temperature through the seal, comprising:

(a) an inlet adapted to receive cold fluid connected to the casing in communication with the seal intermediate its restrictions and having signal responsive means for controlling flow of cold fluid therethrough,

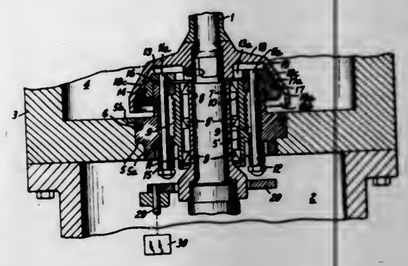
(b) means operatively associated with the inlet and drain for sensing flows of cold fluid and seal drainage and for providing signals representing the second flows, and

(c) regulator means connected to the sensing means to receive signals representing sensed flows and connected to the flow control means to provide actuating signals thereto in response to signals representing sensed flows to control flow of cold fluid to the seal for controlling flow of fluid therethrough from the pump chamber.

3,297,330
MECHANICAL SEAL BETWEEN SHAFT AND VESSEL
Oskar Krieger, 25 Frohburgstrasse, Muttenz, Basel-Land, Switzerland

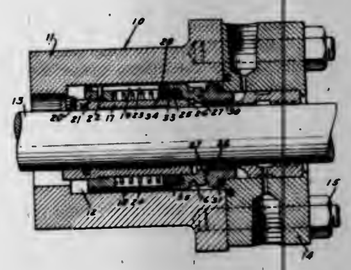
Filed Mar. 23, 1964, Ser. No. 353,726
Claims priority, application Switzerland, Mar. 21, 1963, 3,569/63
7 Claims. (Cl. 277—12)

1. In combination, a vessel provided at its floor with a shaft entrance, a cylindrical extension provided at the floor of said vessel in the region of said shaft entrance, a shaft extending through said shaft entrance into the interior of the vessel, a sealing device for said shaft arranged at said shaft entrance, said sealing device comprising means for sealing said shaft entrance, a hollow, downwardly directed, bell-shaped socket member mounted in sealing relation upon said shaft and fixed for rotation thereto, said bell-shaped socket member being disposed within said vessel and spaced from and encircling said cylindrical extension, an annular body member located within said bell-shaped socket member and spaced therefrom to form a clearance between the inner wall of said bell-shaped socket member and the outer surface of said annular body member said clearance communicating with the interior of said vessel, and said annular body member surrounding said cylindrical extension in sealing fashion, and means for mounting said annular body member for displacement along said cylindrical extension to enable said annular body member to be advanced in sealing relation against the inner wall of said bell-shaped socket member over an annular portion thereof spaced from said shaft for providing a gas path between the exterior of said vessel and said clearance and for sealing off said clearance from the interior of said vessel, and a gas cushion located within said clearance.



3,297,331
MECHANICAL SEAL WITH IMPROVED SPRING HOLDER
Herbert E. Tracy, Alhambra, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed July 24, 1963, Ser. No. 297,285
3 Claims. (Cl. 277—30)



1. For use in an assembly for sealing a rotating shaft within a housing, the improvement comprising:

an articulated spring-holder assembly including an expander ring adapted to engage a seal, said ring being subject to a helical spring;

a housing enclosing said helical spring;

and means for articulately connecting said expander ring to said housing so that said seal assembly accommodates vibration, misalignment and run-out including:

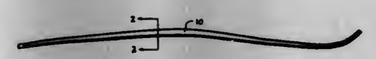
a shoulder on said expander ring;

a retaining ring on said expander ring and defining with said shoulder a peripheral groove; and

a flange on said housing loosely received in said groove.

3,297,332
SKIS
Robert Warner, Warren, Mich., assignor to Jet Stream Industries, Mt. Clemens, Mich., a corporation of Michigan

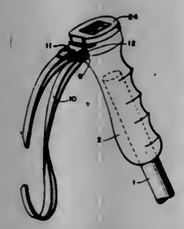
Filed Jan. 15, 1964, Ser. No. 337,916
10 Claims. (Cl. 280—11.13)



1. In a ski, the combination of a glass fibered resinous body, metal runners at the lower outer edges of the said body extending longitudinally thereof, said body having integrally molded recesses at said edges accommodating said runners, means bonded to said body over the length thereof and retaining said runners in said recesses so that they are flush with the bottom surface of said body and project laterally at least to the side walls thereof, and antistubbing members fixedly secured to said body in said recesses to overlie each end of each runner in a zone in longitudinal alignment with the latter.

3,297,333
COMBINATION SKI POLE AND SKI LOCK
Robert C. Schwedt, Buffalo, and Edward A. Atwill, Eggertsville, N.Y., assignors to Golding Wave Clip Co., Inc., Buffalo, N.Y.

Filed May 27, 1964, Ser. No. 370,621
9 Claims. (Cl. 280—11.37)



4. A combination ski pole wrist strap and locking device comprising, in combination with a ski pole handle, a wrist strap carried by said handle, a lock carried within said handle, said lock having a member movable into and out of locking position, and a latch member carried by said strap for releasable engagement with said lock member within said handle.

3,297,334
SLED SKI
Wilbur R. Jenks, 1850 Cedar St., White Bear Lake, Minn. 55110

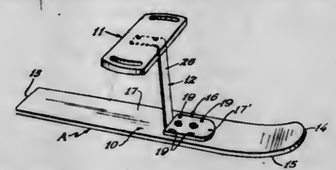
Filed Dec. 21, 1964, Ser. No. 419,888
4 Claims. (Cl. 280—12)

1. A ski sled including:

a ski body comprising an elongated flat wooden strip having an upwardly curved forward end,

a clamping plate secured to the upper surface of said strip intermediate the ends thereof and defining on its under surface a rearwardly opening socket of substantially rectangular section,

a seat support having a forward end portion detachably engageable in said socket and an intermediate portion extending upwardly from said strip,

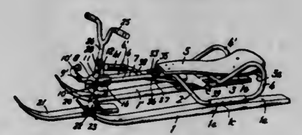


a seat, and

means detachably connecting said seat to the upper end of said ski support.

3,297,335
MULTIPLE RUNNERED STEERABLE SKI SLED
Tsugio Ogata, Tokyo, Japan, assignor to Kabushiki Kaisha Tokyo Gurafikku Dezainazu, Chuo-ku, Tokyo, Japan

Filed Feb. 2, 1965, Ser. No. 429,761
Claims priority, application Japan, Nov. 28, 1964, 39/67,130
1 Claim. (Cl. 280—16)



A ski sled comprising a pair of similar runners, a tubular frame having a U-shaped rear end portion having a reverse bend, a laterally extending medial portion and spaced apart longitudinally extending front end portions, a seat for the user being fixedly mounted on said rear end and front end portions of said frame, a steering rod extending laterally between said frame front end portions, means rotatably supporting said steering rod, a steering runner pivotally connected to said steering rod, resilient means tending to retain said steering runner slanting from said steering rod, a pair of plates fixedly attached to said steering rod supporting means and slidably embracing said frame front end portions, a pair of pin carrying members pivotally connected to said plates, said frame front end portions each having a series of holes therein and resilient means tending to pivot said pin carrying members each with their pin detachably inserted in one hole of the series of holes in each of said frame front end portions detachably retaining said plates at a desired position on said frame front end portions.

3,297,336
VERTICALLY SHIFTABLE TRAILER CONSTRUCTION
Hans Gustav Lassen, 404 Freeland Ave., Long Beach, Calif. 90807

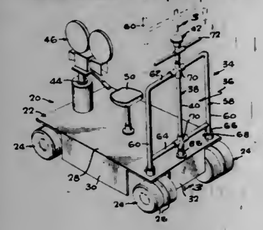
Filed June 17, 1965, Ser. No. 464,718
15 Claims. (Cl. 280—43.21)



1. A trailer wheel suspension means including, an elongate, horizontal chassis having front and rear ends and parallel sides, a wheel at each side of the frame, an elongate, horizontally disposed shaft related to each wheel carried by and projecting laterally outwardly from the frame at a point spaced rearward of the axis of its

related wheel, an elongate crank fixed to and projecting forwardly from the shaft between the frame and the wheel and having a vertically extending forwardly disposed semicircular rack at its forward end and a laterally outwardly projecting trunnion between its ends and concentric with the rack, a carrier plate arranged adjacent the outer side of the crank and pivotally carried by the trunnion, a bearing housing on the plate radially outward from the rack, said plate being pivotally shiftable from a normal position where the bearing housing occurs rearward of the lower end of the rack to an actuated position where said housing occurs rearward of the upper end of the rack, an axle shaft rotatably carried by the bearing housing and having its outer end fixed to the wheel, a pinion on the inner end of the shaft in engaging alignment with the rack, manually operable actuating means carried by the crank to selectively establish driving engagement with the pinion when the construction is in its normal or in its actuated position, whereby the pinion advances into engagement with the rack upon longitudinal shifting of the trailer and rotation of the wheel.

3,297,337
CAMERA CRAB DOLLY
William Sargent, Los Angeles, Calif., assignor, by direct and mesne assignments, to Colortran Industries, Inc., Burbank, Calif., a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,758
15 Claims. (Cl. 280—91)

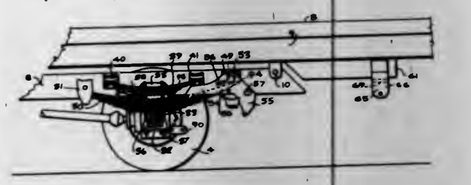


1. A camera dolly comprising: a supporting base including a pair of front caster wheels and a pair of rear caster wheels, each said wheel having a generally vertical swivel axis and a generally horizontal rotation axis and being rotatable on its swivel axis to a neutral position wherein the rotation axis of the respective wheel is approximately normal to the longitudinal center line of the dolly, a steering handle rotatably supported on said base, and transmission means mounted on said base and operatively connected between said wheels and said steering handle for selectively locking either wheel pair in their neutral positions while driveably coupling the other wheel pair to said handle for rotation of said other wheel pair in unison on their respective swivel axes in such manner that the rotation axes of said other wheel pair remain approximately parallel, and driveably coupling both said wheel pairs to said steering handle for rotation of both wheel pairs in unison on their respective swivel axes in such manner that the rotation axes of both wheel pairs remain approximately parallel.

3,297,338
TAG WHEEL APPARATUS FOR TRUCK BEDS WITH EQUALIZER
Glenn J. Underwood, 1214 S. Hickory, Ottawa, Kans. 66067
Filed Sept. 14, 1964, Ser. No. 396,260
12 Claims. (Cl. 280—104.5)

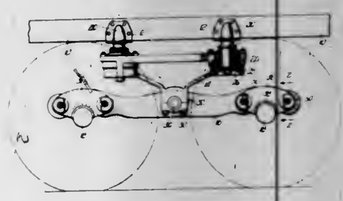
1. A detachable load-bearing spring and axle assembly for trucks and the like, said truck having a live axle and transversely spaced spring assemblies for attachment to side members of the main frame of the truck having a subframe pivotally mounted on said main frame comprising,

(a) spaced, forwardly extending arms carried by said detachable axle assembly,
(b) means connecting the forward end of said arms to said live axle,
(c) an equalizer bar,
(d) means pivotally mounting said bar to each side member of the frame of the truck between said live and detachable axles,



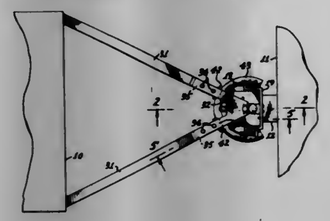
(e) a transverse pin rigidly carried by said equalizer bar rearwardly of said pivotal mounting means,
(f) means carried by said subframe engaging the rear of the spring assembly of the detachable axle, the forward end of said last named spring assembly engaging said pin on said equalizer bar and the rear portion of the spring assembly on the live axle engaging said means pivotally mounting said equalizer bar.

3,297,339
SUSPENSION SYSTEM FOR VEHICLES
Robert T. Hendrickson, Hinsdale, Ill., assignor to Hendrickson Mfg. Co., Lyons, Ill., a corporation of Illinois
Filed Oct. 9, 1964, Ser. No. 402,863
11 Claims. (Cl. 280—104.5)



1. In a tandem axle suspension system for a vehicle frame including a load distributing beam extending beneath each side of the vehicle frame, and a saddle member which has a pivotal connection with the midpoint of the load distributing beam and resilient connections at longitudinally spaced points with the vehicle frame, the improvement which comprises a connecting bracket at each end of the load distributing beam, said bracket cradling the end portion of the load distributing beam, said bracket having transversely extending bushings which are spaced in the direction longitudinally of the load distributing beam and which extend through correspondingly spaced transverse apertures in the end portion of said load distributing beam, said bracket being secured to the axle housing with the bushings on opposite sides thereof and said load distributing beam being disposed substantially level with the axles, said bushings each including a cylindrical sleeve member extending between the bracket and the load distributing beam which is formed of resilient material so as to cushion the movement between the bracket and the load distributing beam and absorb transverse and vertical stresses.

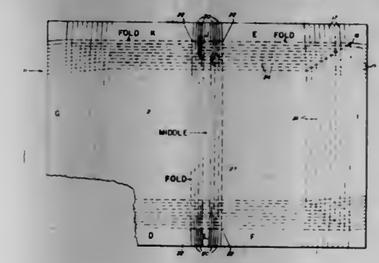
3,297,340
TRAILER HITCH
William L. Rensdessy, Phoenix, Ariz., assignor of fifteen percent to Phoenix Electronics Components, Inc., Phoenix, Ariz., a corporation of Arizona
Filed June 24, 1965, Ser. No. 466,763
5 Claims. (Cl. 280—432)



1. A trailer hitch for pivotally interconnecting the trailer with the towing vehicle comprising in combination:

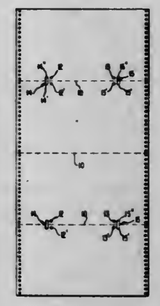
(A) a trailer frame,
(B) a towing vehicle frame,
(C) a carriage fixed on said towing vehicle frame,
(D) a slide mounted for limited forward and rearward movement on said carriage,
(E) a trailer hitch pivot ball fixed on said slide,
(F) a trailer ball receptacle fixed to said trailer frame,
(G) a braking ring fixed to said carriage,
(H) a brake shoe movably mounted on said trailer frame for movement relative to said braking ring,
(I) and means on said trailer frame to yieldingly urge said brake shoe toward said braking ring.

3,297,341
BOOK PROTECTOR
Stanley Foster Reed, 4005 Brookside, McLean, Va. 22101, and Fred P. Andrews, 2924 McKinley St. NW., Washington, D.C. 20015
Filed Aug. 19, 1964, Ser. No. 390,537
2 Claims. (Cl. 281—34)



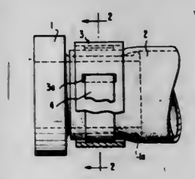
1. A book cover protector comprising a self-supporting flexible web having ends, a top and a bottom; said web being coated with adhesive; a peelable protecting cover positioned over said adhesive coating; said peelable cover having spaced weakened tear lines across the width of the cover defining specific portions of the peelable protecting cover to be sequentially removed; each of the corners having cut-outs along lines which make a small angle with an imaginary perpendicular line with respect to each end, top and bottom and the cut-outs defining obtuse angles; substantially mid-way between the ends, the top and bottom each having two spaced V-shaped cut-outs thereby producing tabs.

3,297,342
METHOD AND APPARATUS FOR SEPARATING CONTINUOUS MULTI-PART STOCK FORMS
Robert S. Barr, Goldsborough Village, Apt. 112, Bayonne, N.J. 07002
Filed Mar. 16, 1965, Ser. No. 440,234
6 Claims. (Cl. 282—11.5)



1. A multi-stock form composed of a sheet of carbon paper between each two adjacent sheets of printing paper, wherein each individual sheet has regularly-spaced, transversely-extending, perforated lines forming the folding and eventual tearing edges of a fan-folded report, each sheet being provided with a first set of apertures spaced from and on opposite sides of every other of said perforated lines and a second set of apertures extending from opposite sides of said every other perforated line up to the respective perforated line so that two such apertures form one larger aperture, each sheet of printing paper within said form having said sets of apertures arranged identically and each sheet of carbon paper within said form having the relative positions of the two said apertures of each set reversed from the arrangement of the said sheets of printing paper.

3,297,343
FASTENING ARRANGEMENT FOR FIRE HOSES AND THE LIKE
Hans Oetiker, 21 Oberdorfstrasse, Horben, Switzerland
Filed Mar. 11, 1965, Ser. No. 439,053
Claims priority, application Switzerland, Apr. 27, 1962, 4,972/62; Mar. 14, 1964, 3,202/64
2 Claims. (Cl. 285—37)



1. A securing arrangement for securing large diameter hoses, particularly fire hoses to the connecting nipples, comprising:

a connecting nipple,
a hose telescoped over said nipple in snug engagement therewith,
sleeve means placed over said hose, said sleeve means being provided with an annular passage of a greater diameter than the outer diameter of said hose and forming a space with said hose and being further

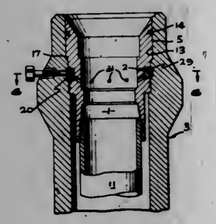
provided with a slot for the insertion of a winding band into the space between said sleeve means and said hose,

means on said sleeve means to rotate said sleeve means about the hose axis,

and a band insertable into said slot and essentially consisting of a readily compressible and foldable material of essentially synthetic resin fibers having a high tensile strength and surface characteristics enabling mutual sliding movements between individual turns so that each layer of said band, when placed under considerable tensional and compressive stress, can be wrapped tightly around and slide relative to the adjacent layers, the inner end of the band extending laterally approximately in the axial direction outside of said sleeve means to enable the fixing of the inner end,

said sleeve means being rotated until the band is subjected to considerable compressive stress as a result of substantially completely filling the space between the outer surface of said hose and the inner surface of said sleeve means thereby opposing a considerable resistance to the further rotation of said sleeve means in such a manner that the layers of the band in effect form a densely compacted supstantially solid filler-like element pressing the hose surface into tight sealing abutment against said nipple with the compression of said layers preventing rotation of said sleeve means in at least the reverse direction of rotation.

3,297,344
CONNECTORS FOR WELL PARTS
James W. E. Hanes, Ventura, Calif., assignor, by mesne assignments, to Ventura Tool Company, Ventura, Calif., a corporation of California
Filed June 18, 1964, Ser. No. 376,117
2 Claims. (Cl. 285—141)



1. A well head assembly comprising: a tubular head member having an axial bore, a tubular hanger member axially movable into the bore of said head member; stop means for landing said hanger member in said head member, said hanger member having an external circumferential groove, said head member having an internal circumferential groove, a split resilient latch ring mounted in said external groove and extending into said internal groove to latch said members together, said external groove being radially deeper than said latch ring, a resilient deformable filler in said external groove within said latch ring filling the space between said ring and the base of said external groove when said ring is in latching position within said internal groove to prevent accumulation of foreign matter in said external groove, and means in said head member engageable with said ring to contract the same into said external groove fully from said internal groove and compress said filler, said hanger member having a chamber communicating with the region of said external groove containing said filler to enable said filler to be deformed into said chamber when compressed.

3,297,345
INTERLOCKING BEAM CONNECTORS
Lucien R. Downing, Jr., Avon Lake, Ohio, assignor to Donn Products, Inc., a corporation of Ohio
Filed Feb. 13, 1964, Ser. No. 344,623
3 Claims. (Cl. 287—189.36)



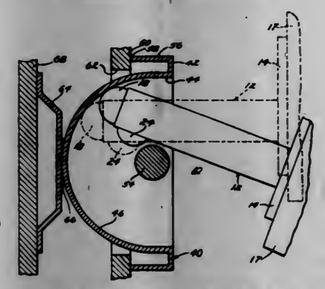
1. An integral connector for a structural beam, said beam including a web portion defining longitudinally extending spaced parallel marginal edges, said connector including a tongue portion extending beyond the extremity of the web portion and integral therewith, and lying substantially in a plane displaced from, and parallel to the plane of said web, said tongue portion having a distal and a proximal marginal edge, the proximal marginal edge of said tongue being substantially normal to said longitudinal marginal edges of said web, said web having a slot adjacent said proximal edge of said tongue, said slot being dimensioned to receive a corresponding but oppositely disposed tongue of another beam, means disposed adjacent the slot for deflecting and guiding the corresponding but oppositely disposed tongue of said another beam through the slot and into overlapping relation with said tongue, and detent means projecting from the tongue and toward the plane of the web and disposed solely adjacent the distal edge thereof for interlockingly engaging the proximal edge of a corresponding, oppositely disposed and overlapped tongue thereby providing the sole means for holding the beams together.

3,297,346
DEVICE FOR CONTROLLING THE KNOTS MADE BY THE KNOTTER OF CROSS-WINDING MACHINES
Georges Emiel Gilbos, Aalst, Belgium, assignor to Constructiewerkhuizen Gilbos P.V.B.A., Aalst, Belgium
Filed Apr. 14, 1965, Ser. No. 448,183
Claims priority, application Belgium, Apr. 24, 1964, 43,593, Patent 647,020
6 Claims. (Cl. 289—18)



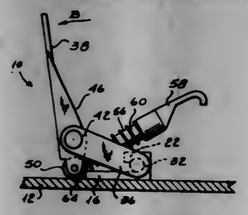
1. A device for controlling the knots made by the knotter of cross-winding machines comprising in combination electronic means controlling the character of the knot, a cutter tool operated by said electronic means for cutting down the knotted yarn when the predetermined character of the formed knot is transgressed, guiding means guiding the knotted yarn accurately within the aforesaid electronic control means and under the cutter tool, means for holding the knotted yarn during a predetermined time within the electronic control means and under the cutter tool and a cleaning means for making the control means dust-free.

3,297,347
COMBINATION DOOR BUMPER AND HOLDER
John B. Rogers, 2052 S. Fillmore, Denver, Colo. 80210, and Jerome K. Nagel, 275 S. Milwaukee, Denver, Colo. 80206
Filed Oct. 15, 1964, Ser. No. 404,007
5 Claims. (Cl. 292—74)



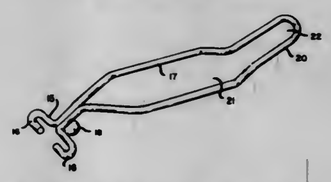
1. A combined door bumper and holder which comprises an arm having a base flange on one end for mounting the arm on a door, a bumper of resilient material connected to the end of the arm opposite the end having the base flange, a recess in the arm opening onto the side thereof adjacent the end to which the bumper is connected, a cylindrically shaped strike positioned in the recess for limited movement transversely of said arm, spring means biasing said strike for movement outwardly of said arm and a bumper plate mounted adjacent the door having a recessed portion with a circular concave back wall and upper and lower wall portions, said recessed portion being adapted to receive and receiving the bumper of said arm, an elongated cylindrical roller mounted in the recess between the upper and lower wall portions for rotary movement about an axis containing the center of curvature of said concave wall portion in position to pass the strike of said arm in retracted position and permit the strike to extend and be retained therebehind.

3,297,348
DEMOUNTABLE TOGGLE LATCH
Edward G. Griffiths, Franklin Lakes, Norman S. Johnson, New Milford, and Werner Delilth, Ringwood, N.J., assignors to Camloc Fastener Corporation, Paramus, N.J., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,446
4 Claims. (Cl. 292—113)



1. A latch assembly for securing one member to a second member having a strike thereon including in combination a pivot pin, a handle, a link connecting said pivot pin to said handle at a point intermediate the ends thereof, a drawhook, a pivotal connection between said drawhook and said handle adjacent one end thereof, a bracket carried by said one member, said bracket having a pivot pin receiving recess with a mouth opening out of said recess in a direction away from said strike, a bracket base and resilient means retaining said pivot pin in said recess, said bracket base providing a shoulder spaced from said mouth in a direction away from said strike, said handle provided with a part adapted to engage said shoulder, the aggregate of the distance between the recess and said shoulder and the distance between the pivotal connection of the link and handle and said part being greater than the length of said link between the connection of the link and the handle and said pivot pin whereby said part thereon may be engaged with said bracket base to draw said pivot pin out of said recess against the action of said resilient means.

3,297,349
DETACHABLE HANDLES
Vaughn K. Pryce, 417 4th St., Derry, Pa. 15627
Filed Jan. 18, 1965, Ser. No. 426,309
1 Claim. (Cl. 294—2)



A detachable handle for cooking vessels having a lug member and depending lip comprising a hand gripping portion, a fixed gripping jaw integral with one end of said hand gripping portion, opposed U-shaped portions on said fixed gripping jaw at opposite sides thereof and cam means on the hand gripping portion adjacent the fixed gripping jaw, said hand gripping portion being provided with a keyhole slot adapted to receive and engage beneath a lid knob.

3,297,350
CARRIER HANDLE FOR GABLED MILK CARTON
Walter E. Hidding, 505 Banbury Road, Addison, Ill. 60101
Filed Feb. 1, 1965, Ser. No. 429,535
16 Claims. (Cl. 294—33)

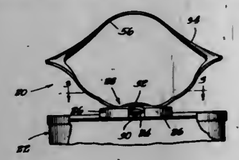


1. A carrier handle for gabled cartons comprising a pair of coupling means and a carrying strap attached thereto, at least one of said coupling means including a coupling element having spaced upper and lower dihedrally angulated plates disposed in generally parallel position and an outboard plate joining said angulated plates in rigid relationship, said carrying strap being attached to said upper plate adjacent the inboard edge thereof and to said other coupling means to define a force-applying locus.

3,297,351
GRIPPING-TYPE CAN CARRIER HANDLE
Walter E. Hidding, 505 Banbury Road, Arlington Heights, Ill. 60005
Original application June 1, 1964, Ser. No. 371,599. Divided and this application Mar. 21, 1966, Ser. No. 536,037
5 Claims. (Cl. 294—33)

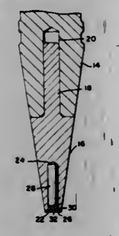
1. A handle device for use in carrying container means of the type including spaced ridge formations, said handle device comprising: a plurality of equiangularly disposed radial arm means having gripping means for use in cou-

pling said handle device to said container means at said ridge formations; and bridge means connected to said radial arm means inwardly of said gripping means, including a comparatively rigid central portion forming a hub for said radial arm means and including a flexible bail



portion attached to said central portion inboard of said gripping means whereby to resist the development of a substantially reflected section inwardly of said gripping means and including a graspable portion for use in providing a lift.

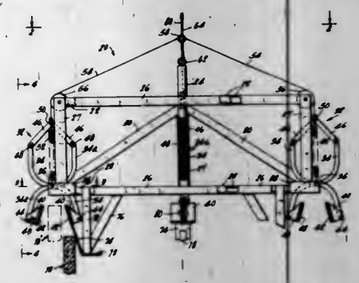
3,297,352
MAGNETIC PICKUP DEVICE
John E. Larrison, Costa Mesa, and Bob G. Bender, Garden Grove, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,548
3 Claims. (Cl. 294—65.5)



1. A magnetic pickup device comprising:
an elongated cylindrical body shaped for gripping between the fingers of the hand in a pencil-like fashion;
a tapered point affixed to one end of the body and including a blunt tip defining the end of a chamber having a chamfered edge;
an elongated magnetic element retained in said chamber and having an exposed end positioned inwardly from said blunt tip; and
a resilient plug of slightly larger diameter than said chamber wedged into said chamber into engagement with said magnetic element, said plug being inserted into said chamber sufficiently to define with said chamfered edge a detent.

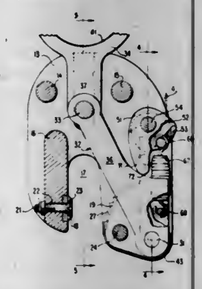
3,297,353
LIFTING GRAPPLE WITH SCISSORS TONGS FOR HANDLING CONCRETE DRAINAGE RINGS
Andrew Clifford Carlson, deceased, late of Suffolk County, N.Y., by Erna L. Carlson, executrix, 9 Bluff Point Road, Suffolk County, Long Island, N.Y. 11978
Filed Nov. 23, 1964, Ser. No. 413,370
4 Claims. (Cl. 294—81)

3. A lifting device for handling cylindrical objects, comprising a frame having upper and lower portions movable relative to each other, a plurality of scissors tongs spacedly mounted around the pheriphrey of said frame, each of said tongs having a pair of mutually swingable levers pivotally linked to said lower frame portion, said levers being provided at their lower ends with horizontally opposed jaws arranged to define a load-receiving opening downwardly, means for urging said jaws into normally open position, and control means for simultaneously closing said jaws, each of said levers having a link pivotally attached to its upper end, the other ends of the links of each tongs being pivotally attached at a common point on the upper frame, said tongs including telescopic mounting means with tube



means and rod means arranged for slidable telescopic engagement with each other, said tube means being connected to one of said frame portions and said rod means being connected to another of said frame portions.

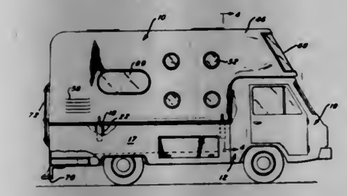
3,297,354
LIFTING CLAMP
Raymond L. Renfroe, Jacksonville, Fla., assignor to J. C. Renfroe & Sons, Inc., Jacksonville, Fla., a corporation of Florida
Continuation of application Ser. No. 381,193, July 8, 1964. This application Apr. 11, 1966, Ser. No. 544,662
13 Claims. (Cl. 294—104)



1. A lifting clamp which comprises
a clamp body including a pair of spaced side plates, said body defining a slot through said side plates to receive an article to be lifted,
a pair of opposed jaws mounted on opposite sides of said slot, one of said jaws being pivotally mounted for opening and closing movement relative to the other jaw,
a shackle mounted for guided movement in said clamp body and adapted for connection to a lifting force,
link means connecting said shackle to said movable jaw to close said movable jaw when a lifting force is applied to said shackle, said link means and said movable jaw forming an assembly,
locking means comprising
a pair of spaced locking plate members,
a pair of coaxial pivots extending outwardly from and connecting said plate members to said side plates, one of said pivots having one of its ends non-rotatably connected to one of said plate members,
a handle connected outside of said clamp body to the other end of said one pivot,
a cross member eccentric with said pivots connecting said plate members together, and
a spring connecting said cross member to said assembly,

said handle being manually rotatable about the axis of said pivots between a closed position where said spring exerts a jaw closing force on said assembly and an open position where said spring permits said movable jaw to remain open, and
stop means to retain said locking means with said handle in closed position.

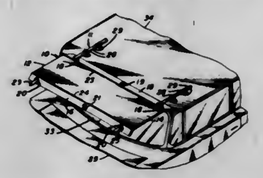
3,297,355
PICK-UP TRUCK WITH REMOVABLE LIVING QUARTERS
Harold B. Robinson, 6600 N. Broad St., Jenkintown, Pa. 19046
Filed Oct. 19, 1964, Ser. No. 404,678
4 Claims. (Cl. 296—23)



1. A pick-up truck including a horizontal bed, a pair of side walls on said bed, each of said side walls having a pair of upstanding legs, said upstanding legs defining an opening therebetween, vertically extending pockets in each of said side walls defined by said upstanding legs and further structural members extending between said legs of said side walls, a cab attached to one end of said bed and said side walls, a housing adapted to be removably mounted on said pick-up truck to form an enclosed shelter, said housing comprising a frame, said frame including a first pair of parallel, longitudinally extending beams, a second pair of parallel longitudinally extending beams, said first and second pair of beams lying in vertically spaced, substantially horizontal planes, a series of generally U-shaped structural elements, said U-shaped structural elements connecting said beam pairs and occupying horizontally spaced, parallel, vertical planes, said U-shaped structural elements being securely connected to the lower of said two beam pairs, a covering for said frame secured to said U-shaped structural elements, a floor element supported by said frame below the plane defined by the lower of said two beam pairs, means in said floor element for removably receiving fasteners for securing said floor element to the bed of said truck, said frame further including vertically depending structural elements slidably received within the pockets in said side walls so that said structural elements are supported by the upstanding legs of said side walls and the structural members extending therebetween, and a frame portion projecting from one end of said frame and supported upon the top of said cab.

3,297,356
AUTOMOBILE WINDSHIELD RAIN VISOR
John P. Francis, 20 Boston St., Haverhill, Mass. 01830
Filed May 6, 1966, Ser. No. 548,319
6 Claims. (Cl. 296—95)

1. A weather visor structure for the windshield of a motor vehicle secured to the roof top thereof comprising a removably attached rain visor panel, a longitudinally disposed visor support, said removably attached rain visor panel being attachable and longitudinally adjustable upon sliding movement of said rain visor panel on said visor support, said rain visor panel having a laterally disposed vertical supporting extension extending at a downward angle from the rear lateral edge of said rain visor panel and provided with an aperture through said vertical supporting extension, roof engaging means mounted on the roof top and engaging the rear portion of said support in supporting said support therefrom and over the roof top and the windshield area, said visor support freely engaging the



said aperture of said vertical supporting extension of said rain visor panel in adjustably supporting said rain visor panel for removable attachment thereto, the lower portion of said laterally disposed vertical supporting extension adapted to frictionally engage the lateral contour of the roof top.

3,297,357
CONVERTIBLE TOP MECHANISM
Joseph Adamski, Brooklyn, Mich., assignor to Dura Corporation, Oak Park, Mich., a corporation of Michigan
Filed May 28, 1965, Ser. No. 459,712
6 Claims. (Cl. 296—117)



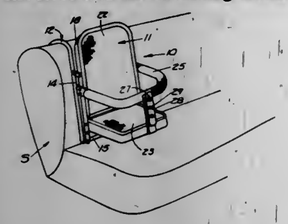
1. A folding top mechanism for vehicles, comprising: a pair of relatively spaced articulated side rails each including front, center and rear rail sections, a pivot plate connecting the adjacent ends of said front and center rail sections together and providing for relative pivotal movement therebetween, means pivotally connecting said center and rear rail sections together intermediate their respective ends, a balance link pivotally connected to the rear end of said center rail section, means pivotally connecting the lower ends of the rear rail section and the balance link in spaced relation to a supporting unit therefor, a power transfer plate, means pivotally connecting the power plate to the rear rail section rearwardly of the rear rail section's pivotal connection to the support unit, means pivotally connecting the power plate to the balance link rearwardly of the pivotal connection of the balance link to the support unit, means for transmitting force and motion to said power plate, said force and motion transmitting means including a power actuator, means pivotally connecting one end of the power actuator to the power plate forwardly of the pivotal connections of said power plate to the rear rail and to the balance rail during all operational positions of said folding top mechanism.

3,297,358
CONVERTIBLE CAR SEAT AND BED FOR A CHILD
Adam Coutts, 914 24th St., Santa Monica, Calif. 90403, and Marshall R. Hanson, Northridge, Calif. (2351 Rosado Way, Rancho Cordova, Calif. 95670)
Filed Aug. 16, 1965, Ser. No. 479,819
8 Claims. (Cl. 297—118)

1. A convertible car seat and bed for a child, comprising in combination:
a seat structure on which a child sits;

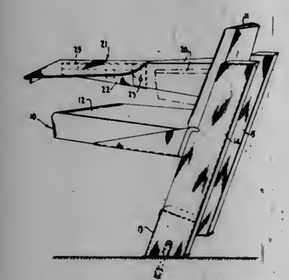
a mounting frame for supporting the seat structure on a vehicle seat;

and universal joint type of hinge means interconnecting the seat structure and the mounting frame to permit



the entire seat structure to be rotated about two axes relative to the mounting frame without disconnecting the heat structure from the mounting frame at the hinge means.

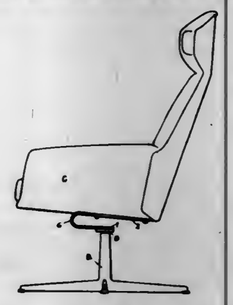
3,297,359
THEATRE SEAT WITH FOLDING ARM TABLET
James Bruce Douglas, 5840 McLynn Ave., Montreal, Quebec, Canada
Filed Oct. 1, 1965, Ser. No. 492,192
Claims priority, application Canada, Oct. 14, 1964, 913,894
5 Claims. (Cl. 297—162)



1. In a theatre seat including a seat portion mounted between a pair of hollow supports having their lower ends resting on a floor, the improvement comprising an inverted substantially U-shaped channel member secured in end abutting relationship between the internal surfaces of a pair of opposed walls of each said hollow supporting member, an aperture in said channel member through which a bolt is adapted to extend, said bolt being adapted to be secured to the floor, and a nut threadedly received on the portion of said bolt extending through said aperture, each said hollow supporting member being so constructed as to provide access for positioning and tightening said bolt.

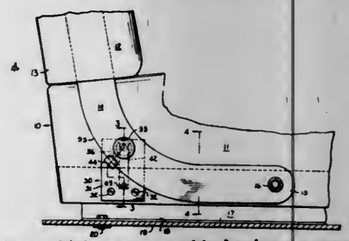
3,297,360
CHAIR
Erik Folke Holmström, Strandgatan 12B, Vasa, Finland
Filed Apr. 23, 1965, Ser. No. 450,349
Claims priority, application Germany, Apr. 23, 1964, H 52,480
5 Claims. (Cl. 297—300)

1. A chair comprising seat means having a front edge, leg means and spring means connecting said seat means to said leg means, said spring means constituting the sole connection between said seat means and said leg means and comprising leaf spring means with two pairs of substantially U-shaped arms, the arms of said arm pairs having different lengths and being disposed in substantially parallel relationship with the arms extending in two superposed substantially horizontal planes, the shorter arms in the lower one of said planes being connected with one another and with said leg means, and the longer



arms being directly connected with said feet means with the U-bend of said arms disposed a substantial distance from said front edge of said seat means.

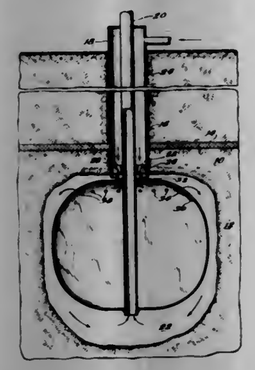
3,297,361
AUTOMOBILE SAFETY DEVICE
Colin D. Murdoch, Walnut Creek, Calif., assignor to Susan May, San Lorenzo, Calif.
Filed Sept. 20, 1965, Ser. No. 488,499
8 Claims. (Cl. 297—379)



1. In a vehicle seat assembly having a mounting member to which is pivotally hinged a backrest that is tiltable between a folded forward position and a normal upright position at which a portion of the backrest structure away from the hinge point closely overlaps a portion of said mounting member, a releasable latching assembly comprising a latching pin secured in the area of said overlap to said mounting member for reciprocal movement substantially parallel with the hinge axis of said backrest, said backrest structure defining a bore in the area of said overlap which is in alignment with said pin when said backrest is in the upright position, spring means for resiliently urging said pin into engagement with said bore to interlock said backrest to said mounting member when said backrest is in said upright position and prevent its tiltable movement to said folded forward position, and a plunger member extendable into the bore of said backrest structure to force said latching pin therefrom against the pressure of said spring means to selectively release said backrest structure for tilting movement into the folded forward position.

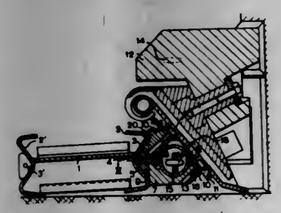
3,297,362
METHOD AND APPARATUS FOR SOLUTION MINING
James W. Currier, Palatine, Ill., assignor to International Minerals & Chemical Corporation, New York, N.Y., a corporation of New York
Filed June 24, 1963, Ser. No. 289,919
7 Claims. (Cl. 299—5)

1. In the removal of soluble minerals from a subterranean formation by providing an input conduit having an outlet within said formation and an output conduit having an inlet within said formation and spaced from said outlet, and circulating a solvent through said formation between said outlet and inlet, whereby a cavity is formed, the improvement comprising disposing a collapsed, flexible bladder within said cavity between said



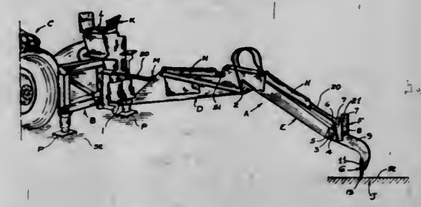
inlet and outlet and inflating said bladder to a size smaller than said cavity to provide a substantial bulk between said outlet and inlet, and continuing the circulation of solvent from said outlet to said inlet over a course defined as lying between said bladder and the periphery of said cavity.

3,297,363
FACE CONVEYOR WITH GUIDE TUBE FOR PLANER HAULAGE MEANS
Johannes M. Hermes, Heerlen, and Izaak S. Van Dommelen, Hoensbroek, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
Filed July 29, 1963, Ser. No. 298,344
5 Claims. (Cl. 299—34)



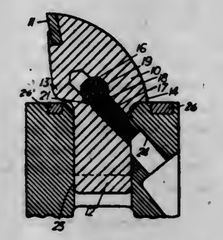
1. A continuous-flow articulated face conveyor comprising a plurality of conveyor sections, each of said sections having side walls, a sloping guide wall associated with each of said sections and adapted to guide winning means and intermediate mounting means including guide means for the return reach of hauling member for said coal winning means, said guide means comprising a metal tube fitted into said intermediate mounting means, said metal tube having a hardened inner face and the flared ends, said intermediate mounting means detachably connected to said sloping guide wall and to the side wall of said face conveyor section nearest the coal face so that when said conveyor is installed for use and said hauling member is in position, said sloping guide wall can be disconnected from its associated conveyor section and removed while the hauling member remains in place.

3,297,364
TOOTH FOR CUTTING HARD MATERIAL SUCH AS BLACKTOP
Arthur W. McPherson, 1658 Mary C. Drive, Napa, Calif. 94558
Filed Nov. 16, 1964, Ser. No. 411,487
2 Claims. (Cl. 299—36)



1. A tooth for cutting blacktop and the like comprising:
(a) an elongated body having a flat top surface; the front end of said body being pointed with the flat top surface at this pointed end being provided with inclined side edges that meet at the pointed end, the portion of the pointed end adjacent to the inclined side edges being undercut on a bevel so that any transverse section taken through said pointed end will have its widest expanse at the flat top surface;
(b) the flat top surface of the body of said tooth having parallel side edges that extend rearwardly from the inclined side edges of the pointed end; the sides of the body having their outer parallel surfaces spaced inwardly from the parallel side edges of the flat top surface; and the body having inwardly curved portions extending from said parallel side edges of the flat top surface and merging into the outer parallel surfaces of said inwardly spaced sides; whereby any transverse section taken through said body and in back of said pointed end will have its widest expanse at the flat top surface; and
(c) means for securing said tooth to a supporting shank.

3,297,365
COAL CUTTER PICKS AND PICK BOXES THEREFOR
Sidney E. Proctor, Saunderton, High Wycombe, England, assignor to Austin Hoy and Company Limited, High Wycombe, England, a British company
Filed July 6, 1965, Ser. No. 469,667
Claims priority, application Great Britain, July 28, 1961, 27,573/61; Dec. 8, 1961, 44,027/61; July 9, 1964, 28,376/64
12 Claims. (299—92)



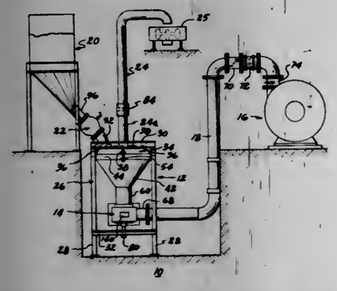
1. In combination a cutter pick having a shank, a pick box having walls shaped to define a socket and engageable by said shank, at least one guideway inclined to the axis of said shank, which guideway comprises a first bore in two sections, one section defined in said shank and the other section defined in one of said socket walls, the two sections registering when the shank is fully engaged between the socket walls, a latch housed in the guideway and guided for movement between a latched position at

which the latch extends into both sections of said guideway and an unlatched position at which the latch is retracted into one section only of said guideway, a resilient member co-operating with the latch to urge the latch positively into the latched position, which resilient member is stressed when the latch is retracted to the unlatched position and is located in a second bore communicating with and transversely intersecting said first bore, a channel formed as an extension of said second bore extending in the direction of the axis of said latch and a part on the latch projecting through said channel from said guideway for forcible retraction of the latch to the unlatched position.

3,297,366
APPARATUS FOR FEEDING AND TRANSPORTING MATERIALS

John H. Kauffman, Crystal Lake, Ill., assignor, by mesne assignments, to National Engineering Company, Chicago, Ill., a corporation of Delaware

Filed June 30, 1965, Ser. No. 468,345
4 Claims. (Cl. 302—17)



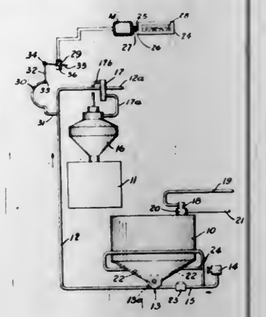
1. Apparatus for feeding and transporting materials comprising a sealed feed hopper for containing a batch of said material having a lower member including inwardly tapering wall portions converging to encircle an inlet orifice adjacent the lower end thereof, said hopper including an upper member movable toward and away from said lower member and seal means for sealingly interconnecting said upper and lower members, a material delivery tube extending downwardly into said hopper having an inlet mouth centered over and spaced upwardly from said orifice, a fluid supply chamber below said hopper in communication with said orifice having an inlet adapted for connection to a source of pressurized fluid, valve means in said supply chamber movable between an orifice closing position and an open position permitting fluid flow from said supply chamber through said orifice for transporting material in said hopper upwardly in said delivery tube, material feeder means having an outlet in communication with said hopper operable to feed metered batches of material into said hopper at selected intervals and to close said outlet between said intervals, and control means for actuating said feeder and valve means in selected synchronous relation wherein said feeder outlet is closed when said valve means is open and said valve means is in orifice closing position when said feeder is feeding material into said hopper.

3,297,367
FLUID CONVEYING SYSTEM

Norman O. Krenke, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York

Filed July 21, 1965, Ser. No. 473,714
8 Claims. (Cl. 302—42)

1. In a fluid conveying system; conduit means; fluid stream introducing means communicating therewith; supply means for particulate material to be entrained in and conveyed by said fluid stream; means for delivering said material from the supply means to the conduit means; quantity measuring means; motor means for driving said measuring means; and motor control means communi-

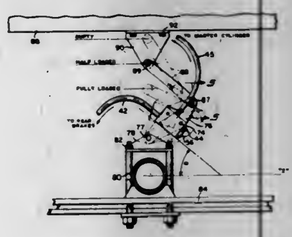


cating between said motor means and said conduit means for operating said motor means at varying speeds in accordance with the flow of material through said conduit means to indicate the quantity of material delivered through said conduit means.

3,297,368
LOAD CONTROLLED BRAKE PROPORTIONING SYSTEM

James Charles Cumming, Pleasant Ridge, Mich., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware

Filed July 29, 1965, Ser. No. 477,654
6 Claims. (Cl. 303—22)

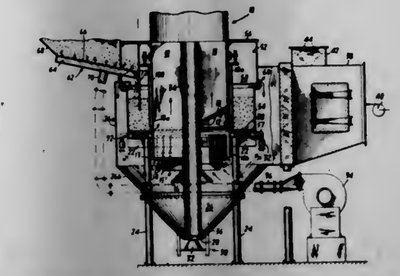


1. A braking system for use with a vehicle having a body and spring suspended axles carrying front and rear ground engaging wheel sets each equipped with a fluid pressure operated brake comprising an operator controlled fluid pressure source, conduits connecting said source to said brakes, a normally open valve assembly in the conduit leading to certain of said brakes, said valve assembly comprising a valve chamber having a seat adjacent one end, a valve closure element received in said chamber for free movement toward and away from said seat, a scissors linkage comprising a pair of articulated links the free ends of which are connected, respectively, to said spring suspended axle and to said body, means mounting said valve on one of said links to incline said chamber and to dispose said seat at the upper end thereof whereby said valve elements is urged away from said seat by gravity and toward said seat by inertia when the vehicle is decelerated, said articulated linkage being operable to increase the angle of inclination of said chamber upon an increase in vehicle load.

3,297,369
METHOD AND APPARATUS FOR INTRODUCING PARTICULATE MATERIAL INTO A PNEUMATIC CONVEYING SYSTEM

Jean-Paul Vandenboeck, New York, N.Y., assignor to Buell Engineering Company, Inc., Lebanon, Pa., a corporation of Delaware

Filed Dec. 17, 1964, Ser. No. 419,056
15 Claims. (Cl. 302—36)

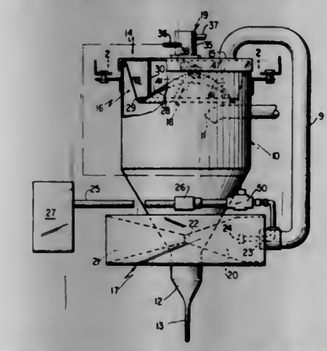


1. Pneumatic conveying apparatus for conveying particulate material comprising a generally vertically aligned conduit having a slot extending about the periphery thereof, means for producing an upward flow of conveying gas through the conduit, means defining a chamber surrounding the conduit with its lower end disposed adjacent the slot and in communication therewith, means for feeding particulate material into the chamber, a porous member disposed above the lower end of the chamber and closely adjacent the conduit slot, means for introducing a gas into the chamber below the porous member, whereby the gas diffuses through the member and flows upwardly therethrough to produce a fluidized bed of particulate material therein, and a sleeve surrounding the conduit, the sleeve having an edge overlying and closely adjacent the slot and spaced a predetermined distance from the porous member and from an edge of the conduit slot so as to provide a passage of predetermined dimension for conducting the fluidized particulate material therethrough at a predetermined rate radially inward into the conveying gas flow with a substantial component of velocity perpendicular to the direction of the conveying gas flow.

3,297,370
FILTER CLEANER MECHANISM FOR PNEUMATIC MATERIAL CONVEYING SYSTEM

Edward John Moriarity, Cincinnati, Ohio, assignor to Vac-U-Max, Belleville, N.J., a corporation of New Jersey

Filed Dec. 31, 1964, Ser. No. 422,660
8 Claims. (Cl. 302—59)



1. Filtering apparatus comprising a flexible filter bag for fine particles of material conveyed pneumatically, radially extending flexible straps having their outer ends secured to said bag and having their inner ends secured to each other substantially at the center of said bag, and a member secured to said straps at the inner ends thereof from within a bearing bore for the reception of an element driven to move said straps to effect shaking of said bag to loosen and remove material adhered to said bag.

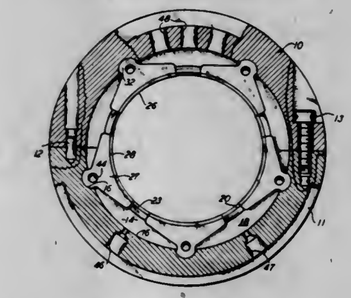
ERRATUM

For Class 303—22 see:
Patent No. 3,297,368

3,297,371
JOURNAL BEARING

Allen W. Salzman, Milwaukee, Wis., assignor to The Harris Corporation, Grafton, Wis., a corporation of Wisconsin

Filed Jan. 27, 1964, Ser. No. 340,263
2 Claims. (Cl. 308—73)



1. A bearing for supporting a rotating shaft, comprising in combination a housing of two halves separably mated together and having a circularly-shaped interior recess defined by axially spaced-apart walls on axially opposite sides of said recess and defined by a circular wall between said spaced-apart walls, said circular wall having pockets therein, a plurality of shoes disposed in said recess and spaced therealong for presenting a circular journal for a rotating shaft and including bosses disposed in said pockets and being in radial supporting contact with said pockets, the radially outer surfaces of said bosses in contact with said pockets being arcuate about axes in the directions both axially and transversely of said interior recess, said shoes having pin holes on one axial side thereof facing one of said walls and extending only part way into said shoes, said one of said walls having openings aligned with said pin holes, and pins disposed in said openings and extending into said pin holes and having clearance therein and being anchored to said housing for retaining said shoes to said housing.

3,297,372
STORING AND DISPENSING APPARATUS

Allen C. Brader, 1350 Hamilton St., Allentown, Pa. 18102

Filed Feb. 19, 1965, Ser. No. 434,031
2 Claims. (Cl. 312—45)

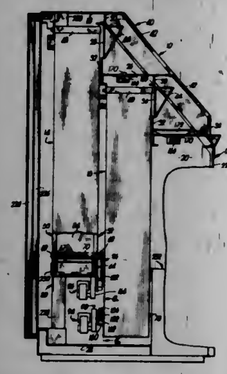
1. A dispensing receptacle comprising a body having a vertically extending storage chamber therein for receiving a vertical stack of articles of a disk-like configuration, said body having a vertically elongated dispensing opening in the lower portion of a side wall opening into said chamber, through which articles may be dispensed, a pair of vertically elongated slits in each of a pair of opposed side walls of said body extending upwardly from the bottom of said dispensing opening and one pair of slits defining said dispensing opening, a pair of resilient strips

each disposed between a pair of said slits and each strip having its upper end mounted on said side wall and having its lower end freely movable laterally of said chamber and adjacent and above the lower end of said dispensing opening and confining articles in said chamber, a dispensing lever pivotally mounted in said chamber and including a support surface supporting the lowermost ar-



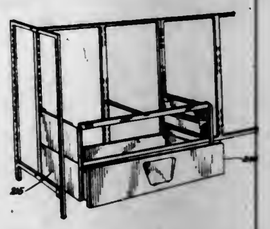
ticle of a stack in said chamber adjacent said dispensing opening, said lever having a vertically extending thrust surface upon the exterior of said receptacle positioned for engagement with the adjacent strip upon pivoting of said lever, whereby said adjacent strip will be flexed toward the other strip and will frictionally and resiliently grip the next lowermost article while the lowermost article is discharged through said dispensing opening.

3,297,373
AUTOMATIC CAFETERIA COUNTER
Boley A. Andrews, Mission, Kans., and Le Roy D. Gore and James F. Ptacek, Independence, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Oct. 15, 1964, Ser. No. 404,094
6 Claims. (Cl. 312—97)



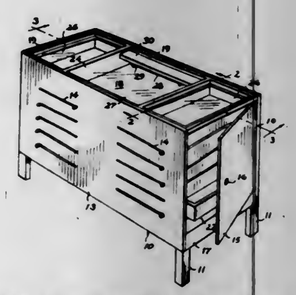
1. In a dispensing machine having a cabinet provided with an opening, a product conveyor comprising:
a pair of spaced-apart, rotatable structures;
an endless, flexible element trained around the structure for movement thereby;
a plurality of shelves swingably mounted on the element for movement therewith;
power means operably coupled with one of the structures for rotating the latter to move the element; and
means disposed to maintain at least certain of the shelves in product supporting disposition extending outwardly from the element when the shelves are moved in one direction, each shelf comprising an inner section adjacent the element and an outer section normally folded on the inner section with surfaces thereof normally generally parallel with the element for minimizing space occupied by the shelf, each outer section being mounted on a respective inner section for movement in relationship thereto to an extended position to thereby present a product-supporting disposition.

3,297,374
MERCHANDISE DISPLAY CABINET
John R. Radek, Hinsdale, Ill., assignor to Ready Metal Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Jan. 2, 1964, Ser. No. 335,329
11 Claims. (Cl. 312—108)



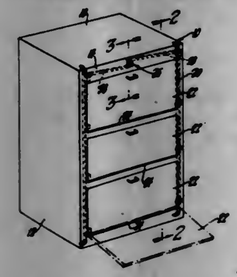
7. In knock-down merchandise display and storage equipment,
(a) frame means comprising at least a pair of uprights and a stretcher connecting adjacent uprights,
(b) a floor supported outrigger detachably connected to each of said uprights and extending transversely from the plane defined by said uprights,
(c) a first pair of housing panels each detachably secured to a respective upright and outrigger and disposed vertically in spaced parallel relationship to each other,
(d) a second pair of housing panels each stacked on a respective one of said first pair of outer panels and in coplanar relationship therewith,
(e) a receptacle arranged to be received in the space between at least one of said pairs of panels, and
(f) cooperating means carried on at least one pair of said panels and on said receptacle for supporting said receptacle for sliding movement relative to said outer panels.

3,297,375
DISPLAY CABINET
Blanche E. Reeves, 520 E. Paces Ferry Road, NE., Atlanta, Ga. 30327
Filed May 22, 1964, Ser. No. 369,473
3 Claims. (Cl. 312—117)



1. A display cabinet including a glass top, opaque bottom, front, rear and end walls, a tray compartment formed at each end of said cabinet directly below said glass top, a plurality of pairs of parallel rails within said cabinet, an article tray slidably mounted on each pair of parallel rails, each tray being selectively movable between obscure positions beneath said tray compartment at each end of said cabinet and a position below said glass top inwardly of said tray compartments, and means connected to each of said trays and extending outwardly of said cabinet for moving said trays along said rails from outside said cabinet.

3,297,376
CABINET LATCHING MECHANISM
Laurence E. Barstow, Kalamazoo, Mich., assignor to American Metal Products, Kalamazoo, Mich., a corporation of Michigan
Filed Nov. 2, 1964, Ser. No. 408,141
6 Claims. (Cl. 312—219)



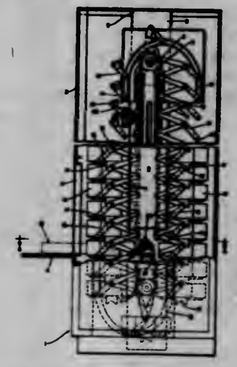
1. A cabinet having apertures along one side thereof comprising:
closure members insertable in said respective apertures, first and second elongated bars,
a plurality of fingers rigidly attached to and extending from said respective bars,
a pin attached to each end of each of said bars,
pin receiving means disposed within and attached to said cabinet for rotatably supporting said bars respectively along opposite extremities of said apertures,
finger receiving means on a first end of each of said closure members for engaging said fingers of said first bar,
finger receiving means on a second end of each of said closure members for engaging said fingers of said second bar,
a lock disposed in said cabinet, and
linkage means connecting said lock and each respective bar for rotating said bars to engage and disengage said respective fingers with said finger receiving means of said closure members to lock and unlock said closure members.

3,297,377
OIL CAN DISPLAY AND CAN DRAINING CABINET
Harvey J. Smith, Greensboro, N.C., assignor to Modern Metal Products Company, Greensboro, N.C., a corporation of North Carolina
Filed Apr. 27, 1965, Ser. No. 451,229
12 Claims. (Cl. 312—219)



12. A combination service cabinet for displaying and storing motor oil cans, and for draining and collecting drained motor oil cans comprising; a pair of end panels, one of said end panels having a can draining drawer-receiving opening and a drained oil container-receiving opening in spaced vertical relation, a top wall extending across and at the top of said end panels forming a cover, a rack having a plurality of vertical can-displaying and storage channels supported between said end panels at each side thereof, pairs of inverted U-shaped tracks mounted on each end panel, each of said tracks partially enscribing said racks, a flexible partition reaching between said end panels and slidably mounted in a pair of said tracks for enclosing a rack and cans positioned thereon in the cabinet closed position and exposing the rack and cans thereon in the cabinet open position, an oil can supporting and draining drawer slidable through said panel end opening having an oil draining trough and a panel for sealing said panel end opening, said drawer having means for releasably receiving a locking member in the drawer closed position, a drained oil-receiving container supported beneath said oil draining trough and removable through said other end panel opening, a closure gate for said other end panel opening vertically slidable between a closed to an open position, a pair of partition locking members movable between partition locking and unlocking positions mounted to one of said end panels, means for shifting said partition locking members between locking and unlocking positions on said closure gate, and a key operated locking means for releasably locking said closure gate and drawer with the drawer and closure gate closed positions securing the partitions in the cabinet closed position.

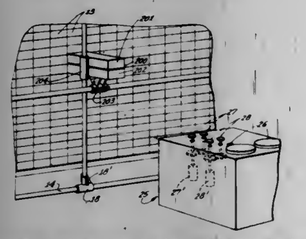
3,297,378
AUTOMATIC EJECTOR POWER FILING APPLIANCE
Newton J. Krug, Canton, Carl D. Graber, Orrville, and Leo J. Grosswiller, Jr., East Canton, Ohio, assignors to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio
Filed Apr. 8, 1965, Ser. No. 446,682
16 Claims. (Cl. 312—223)



1. Power-operated, ejector-retractor construction for a power file of a type in which a plurality of pans are mounted on an endless conveyor carried by support means for movement in either direction in a continuous orbit of travel having at least one flight of travel in a plane extending parallel with the orbital axes and any selected pan is delivered by power means to a predetermined work station location, and in which a drawer is supported on each pan on suspension mechanism which permits the drawer to be moved between ejected and retracted positions at the work station; the construction including in combination, drawer-moving mechanism, means mounting said mechanism on the file support means adjacent the work station and between flights of orbital conveyor travel, drawer latch means interengageable between each drawer and its pan and including a handle slide latch actuator, the drawer-moving mechanism including thrustor means hav-

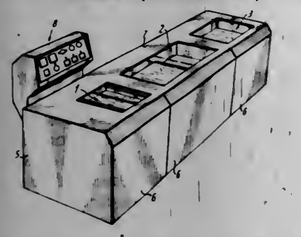
ing an electromagnet engageable and disengageable with the handle slide of a drawer located at said predetermined work station location and movable in a direction normal to the plane of said one flight of conveyor travel to eject and retract such drawer and to unlatch said latch means for drawer ejection and retraction, and control means for said drawer-moving mechanism including limit switch means and means operative automatically upon arrival of a preselected pan at said predetermined work station location to initiate ejector movement of said thrustor means.

3,297,379
FILE SELECTOR
Maurice H. Artaud, Torrance, Robert L. Laurent, Palos Verdes, and William E. Roberts, Culver City, Calif., assignors to The Magnavox Company, a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,628
20 Claims. (Cl. 312—223)
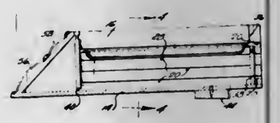


1. A document retrieving apparatus for placing selected magazines containing documents into a processing station and for removing such magazines therefrom, comprising:
a plurality of stationary compartments, each compartment being open for access, and being adapted to house a magazine containing documents;
a carriage having two compartments each having dimensions to receive one such magazine;
means for individually aligning each of said carriage compartments with any of said cabinet compartments and with the processing station; and
means on said carriage for selectively driving a magazine into and out of either one of said carriage compartments.

3,297,380
ELECTROPLATING INSTALLATION
Marius Danemark and Rene Rochat, Geneva, Charles Steiner, Vernier, and William Zwerner, Geneva, Switzerland, assignors to Sel-Rex Corporation, Nutley, N.J., a corporation of New Jersey
Filed July 10, 1963, Ser. No. 294,060
2 Claims. (Cl. 312—228)



1. In a device for supporting a series of treating means including at least two liquid-containing tanks and especially useful in electroplating installations comprising
at least seven rectangularly shaped frame members comprising a first series of at least three of the same size and at least a second and third series made up of matching pairs of said frame members,
at least three pairs of legs,
each of said legs having, at least in the upper portion thereof, a substantially uniform, rectangular cross-sectional area defining opposed pairs of planar side portions,
each of said frame members having planar outer surfaces at opposite ends thereof of a width which is substantially equal to the width of one of the planar side portions of said legs whereby surface to surface contact between the ends of at least two frame members and the planar side portions of a leg may be obtained,
means connecting the first series of frames transversely between said three pairs of legs with the planes of the rectangularly shaped frame members being vertical,
means connecting said second and third pairs of frame members between adjacent pairs of legs,
tank-supporting means suspended from the inside of at least two adjacent parallel frames for supporting a liquid-holding tank therebetween.

3,297,381
SALES DISPLAY UNIT
Lewis H. Tripp, 3468 Bonita Ave., Riverside, Calif. 92506, and John R. Weinberger, 182 W. Madrona, and Thomas O. Wheatley, 526 N. Oakdale, both of Rialto, Calif. 92376
Filed Sept. 2, 1964, Ser. No. 393,947
6 Claims. (Cl. 312—234.1)

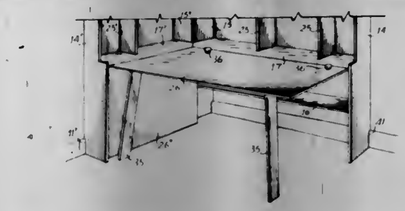


2. A sales display unit comprising an elongated base member, an upstanding side member on each length dimension of the base member, a plurality of generally parallel grooves on the inner sides of the side members disposed in pairs and parallel to the base member, a panel disposed vertically in the front portion of the sales display unit, a plastic slide pan having a recess for receiving meat products and having edges to be received in one of said pair of grooves, said elongated base member and upstanding side members being integrally formed of plastic material, a short panel disposed vertically in the rear portion of said sales display unit, shroud pins disposed at the upper corners of said sales display unit, and a shroud having eyelets for being received upon the shroud pins when in its stretched condition for covering the meat products when not being displayed.

3,297,382
CABINET WITH FOLDABLE TABLE
Norman D. Snowden, 3691 Asbury Lane, Atlanta, Ga. 30331
Filed June 30, 1965, Ser. No. 468,222
2 Claims. (Cl. 312—238)

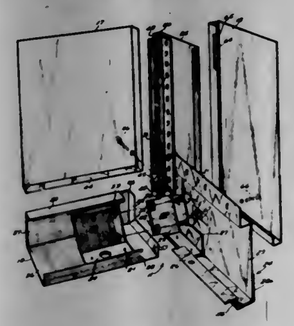
1. In a cabinet of the type having in its upper portion a series of exposed horizontal shelves for housing small articles and in its lower portion a generally closed storage area, the combination therewith of a slide support attached to the underside of one of said horizontal shelves, a slide slideably received in said slide support, a hinge having one of its leafs connected to said slide, a panel support of dimensions effectively equal to said slide connected to the other leaf of said hinge on the side thereof adjacent said slide, a rectangular panel of a size substantially equal in its length and depth to the length and depth of said one of said horizontal shelves and in width

to the height of said lower portion of said cabinet, said slide support being displaced from the edge of said one of said shelves and the pin of said hinge being positioned parallel to and downwardly of said slide and said panel support, at least one leg pivotally attached to said panel whereby said panel is selectively positioned in a



vertical plane, inwardly of the edge of said one of said shelves, with said leg folded to a position substantially parallel with said panel, or in a horizontal plane in contiguous parallel relationship with said one of said shelves with said leg folded to a position substantially perpendicular with said panel.

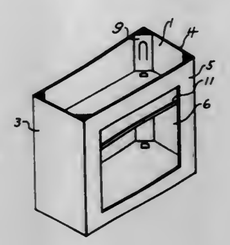
3,297,383
CORNER CONSTRUCTION FOR A CABINET
Lawrence J. Fay, Elgin, Ill., assignor to Equipto Electronics Corporation, Aurora, Ill., a corporation of Illinois
Filed Apr. 29, 1965, Ser. No. 451,796
13 Claims. (Cl. 312—257)



1. In an equipment enclosure having a rectangular frame defining corners.
(a) said frame including at each of said corners a first channel member defining a pocket at one end thereof,
(b) a second channel member inserted into said pocket transverse to said first channel member,
(c) a first flanged bracket secured to said first member, and
(d) a second flanged bracket secured to said second channel member and having an integral flange portion rigidly secured to said first bracket forming an interlocking corner joint to substantially minimize distortion of said enclosure frame.

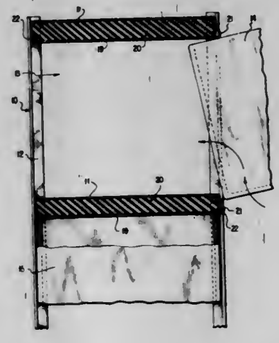
3,297,384
EASILY ASSEMBLED STEEL STRUCTURE
Sam D. Buice, 5107 18th Ave. N., St. Petersburg, Fla. 33707
Filed Apr. 9, 1965, Ser. No. 447,009
2 Claims. (Cl. 312—263)

1. A structure of generally rectangular shape comprising four separate walls made of rigid sheet material, the contiguous edges thereof being formed to provide abutting lips which aline with the adjacent lips, the planes of each of said alining pairs of lips being generally perpendicular to the plane which bisects the angle formed by the planes of adjacent walls, each of said pairs of lips being held in rigid juxtaposition by means of a joiner strip



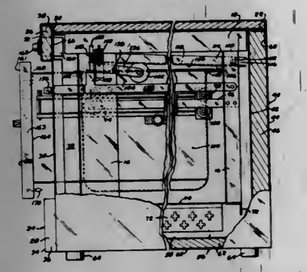
which substantially encloses said pair of lips, said joiner strip being provided with a longitudinal series of perforations of such design as to permit the bending outwardly from said strips of tabs at right angles to the longitudinal axis of said strips.

3,297,385
STORAGE UNIT FOR BOXES HAVING OPEN TOPS
David Meade Peebles, 325 Marcy Ave., Oxon Hill, Md. 20021
Filed Apr. 27, 1965, Ser. No. 451,213
2 Claims. (Cl. 312—270)



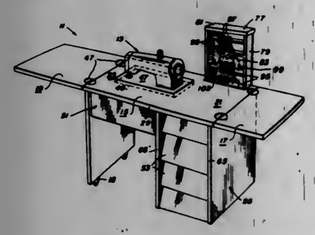
1. A storage unit comprising vertical corner members constituting legs, horizontal vertically spaced substantially rigid shelves secured rigidly to the legs and forming therewith a multiple compartment shelf-type storage structure, resilient compressible pads secured to the bottom faces of the shelves and substantially coextensive therewith and projecting below the bottoms of the shelves when in an uncompressed condition, flat substantially rigid plates secured to the bottom faces of said compressible pads and being vertically movable relative to the shelves when the pads are compressed upwardly, downturned flanges on the longitudinal edges of the shelves engageable with said plates to positively limit upward displacement thereof, and a plurality of open top storage boxes adapted to slidably enter said compartments between adjacent shelves and said plates and being of a vertical height to cause compression of said pads upwardly and upward displacement of said plates upon entry into the compartments between the shelves, said plates completely covering the open tops of said boxes and firmly sealing the open tops.

3,297,386
FOOD SERVER
Frank Stanek and Joseph Pavelka, Jr., both of St. Louis, Mo., assignors to The Toastwell Company, St. Louis, Mo., a company of Missouri
Filed July 6, 1965, Ser. No. 469,824
14 Claims. (Cl. 312—270)



1. A food server construction comprising an enclosure having front and rear walls and a pair of side walls, the front wall having at least one drawer opening therein, a drawer supported by the side walls and being movable from a closed position within the opening to and extended captive position beyond the opening, a food pan carried by said drawer and being removable therefrom, a crisper lid disposed within the enclosure and being pivoted at one end thereof on the side walls adjacent the rear wall, means retaining the other end of the crisper lid, said means cooperating with said drawer frame to support said other end of the crisper lid in inclined relation with the food pan in positions other than the closed position of the drawer and to allow the crisper lid to rest on the food pan in the closed position of the drawer thereby sealing the food pan.

3,297,387
SEWING MACHINE CABINET
Joe T. Parsons, P.O. Box 212, Osceola, Ark. 72370
Filed Mar. 29, 1965, Ser. No. 443,343
6 Claims. (Cl. 312—290)



1. In a sewing machine cabinet including portions thereof defining a vertically extending upwardly opening chamber with said portions including a vertical panel, a sewing accessory compartment slidably mounted in said chamber for vertical movement between a raised in-use position and a lowered position; said accessory compartment including means for holding sewing accessories, a pair of guide members respectively located on opposite sides of said means for holding sewing accessories, and a backboard member spanning said guide members; a check tab fixedly attached to said backboard member for removable engagement over the upper edge of said vertical panel to hold said accessory compartment in said raised in-use position, when said accessory compartment is in said raised in-use position said means for holding sewing accessories being exposed to view for removal and replacement of sewing accessories therein.

3,297,388
INFRARED IMAGE TRANSMITTING FIBER DEVICES
Richard F. Woodcock, South Woodstock, and George A. Granitsas, Marlboro, Mass., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Original application Aug. 16, 1960, Ser. No. 49,914. Divided and this application May 27, 1964, Ser. No. 370,609
4 Claims. (Cl. 350—1)



1. An image transmitting means comprising an aluminum plate having a multiplicity of smooth-walled perforations therethrough, coatings of aluminum oxide of said perforation walls, and fiber-like members filling said perforations, said members embodying a material adapted to transmit electromagnetic energy and having an index of refraction higher than that of said aluminum oxide.

3,297,389
RIFLE SCOPE WITH BALL JOINT MOUNTING FOR ADJUSTABLE ERECTOR LENS TUBE
Dale E. Gibson, Portland, Oreg., assignor to Leupold & Stevens Instruments, Inc., Portland Oreg., a corporation of Oregon
Filed Jan. 11, 1963, Ser. No. 250,867
2 Claims. (Cl. 350—10)

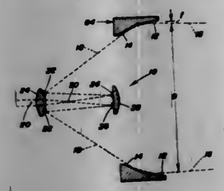


1. In a rifle scope,
elongated tubular housing means having a front end and a rear end,
a split ball ring mounted in the front end of the housing means, the housing means having keying means projecting inwardly between the ends of the split ball ring,
an erector lens tube having a ball portion universally adjustable in the ball ring and extending rearwardly in the housing means from the ball ring, the ball portion having keying means projecting outwardly between the ends of the split ring,
erector lens means in the rear end portion of the erector lens tube,
recticle means fixed in the rear end portion of the housing means,
and means located intermediate the ends of the housing means for adjusting the rear end of the erector lens tube transversely of the housing means.

3,297,390
OPTICAL SIGHTING INSTRUMENT UTILIZING TWO ANNULAR CONICAL REFLECTING SURFACES
Kent E. Erickson, Ridgewood, N.J., assignor of fifty percent to Walter G. Finch, Baltimore, Md.
Filed Nov. 5, 1962, Ser. No. 235,339
3 Claims. (Cl. 350—55)

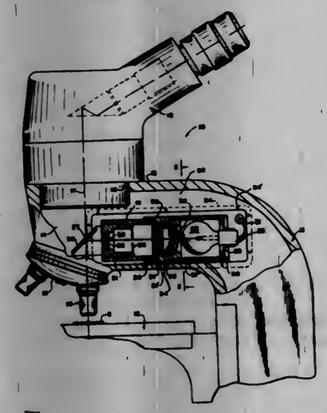
1. A sighting system comprising a first annular conical surface for receiving and reflecting radiation from a remote source, a face plate having an annular aperture for blocking the central portion of said radiation from said first conical surface, whereby the radiation reflected by said first conical surface is in the form of a hollow cone of radiation, a second annular conical surface of smaller

diameter than said first annular conical surface coaxially positioned with said first conical surface and in the direction away from said source of radiation for receiving said hollow cone of radiation and reflecting it to a focal point, a first lens having an annular reflecting zone for intercepting the reflected hollow cone of radiation and reflecting it in converging fashion back towards said source of radi-



ation, a second lens having an annular reflecting zone for intercepting the radiation reflected by said first lens and reflecting said radiation to a focal point between said first lens and said second lens to form a real image of said source of radiation, with said first lens serving as a magnifying eyepiece through the center of said reflecting zone thereon for viewing said real image under magnification.

3,297,391
UNITARY VERTICAL ILLUMINATION DEVICE FOR DETACHABLE MOUNTING IN MICROSCOPE FRAME
James R. Benford, Irondequoit, and Harold E. Rosenberger, Brighton, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Mar. 26, 1963, Ser. No. 268,009
2 Claims. (Cl. 350—91)



1. In a microscope having a first opening extending through the frame thereof between its objective and eyepiece and a second opening extending along said frame laterally from the first opening,
a self-contained episcopic illuminating device housed and positioned within said second opening so as to project light through the first opening and said objective upon a specimen, said device having in combination,
a mounting tube extending along said second opening,
a lamp and a reflector therefor mounted in the end of said tube most remote from the first opening,
a beam divider mounted on the other end of said tube obliquely across the first opening in alignment with said lamp and objective,
a plurality of light modifying devices including a light condenser located between said lamp and said beam divider in said tube for producing a specified kind of illumination,
a cover plate secured to the outer surface of that part of said frame which contains the second opening, said cover being substantially coextensive with said mounting tube and overlying and closing an elongated side opening which connects said second opening to said outer surface, and means for securing the tube to the frame including at least one strut which is fixed at one end to said plate and at the other end to said tube so as to provide the sole support for the tube whereby demountability of said device as a unit with the cover plate is secured.

3,297,392
LENS ALIGNMENT MEANS
James E. Ballmer, Chili, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,262
10 Claims. (Cl. 350—178)



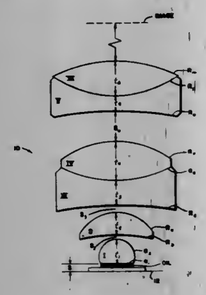
1. A method of aligning a lens element in a supporting means comprising placing a lens element within a recess of a rigid lens supporting means, placing thermoplastic material having a memory characteristic intermediate the outer periphery of said lens element and the inner periphery of said lens supporting means, heating the material to release the elastic forces in said material to urge against said supporting means and said lens element to cause said lens element to be aligned centrally within said lens supporting means.

4. A lens and supporting means therefor comprising in combination, a rigid lens supporting means defining a recess, a lens element having a perimeter dimension of lesser magnitude than said recess disposed within said supporting means recess, a plurality of at least three pads of thermoplastic material having a memory characteristic, due to unreleased stress therein, coupled between said lens supporting and said lens element aligning and holding said lens in the recess of said lens supporting means through a force exerted between said lens element and said lens supporting means by substantial release of said stress.

3,297,393
OIL IMMERSION TYPE MICROSCOPE OBJECTIVE
George F. Ziegler, Gates, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,626
2 Claims. (Cl. 350—179)

1. A high power microscope objective of the oil immersion type having a numerical aperture of substantially 1.30, said objective comprising a succession of four optically aligned lens members, the two foremost being singlet lenses designated I and II, and the two rearmost lens members being doublets in which each is composed of a front double concave lens element in contact with a rear double convex lens element, said elements being successively numbered III to VI, the specific constructional data for said objective being given in the table of mathematical statements herebelow wherein F designates the equivalent focal length of said objective, R_1 to R_{10} designate the radii of the successive lens surfaces numbering

from the front of the objective, the minus (—) sign used therewith being applied to those surfaces whose centers of curvature lie on the entrant side of their vertices, t_1 to t_6 represent the axial thicknesses of the successive lens elements, S_1 to S_4 represent the successive axial air spaces rearwardly of the object plane, except that S_1 is occupied by cover glass and oil and n_D and ν represent respectively



the refractive index and Abbe number of the optical materials whereof the elements are formed,

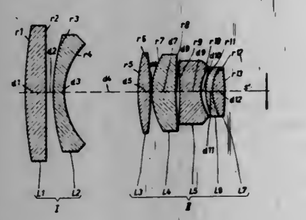
R_1=Plano	S_1=.161F
$-R_2$=.406F	S_2=.01074F
$-R_3$=4.060F	S_3=.0307F
$-R_4$=1.00F	S_4=.531F
$-R_5$=18.17F	n_D(I)=1.523
t_1=.473F	n_D(II)=1.511
t_2=.512F	n_D(III)=1.649
t_3=.611F	n_D(IV)=1.513
t_4=.914F	n_D(V)=1.720
t_5=.508F	n_D(VI)=1.511
t_6=.817F	ν(I)=58.6
R_6=2.754F	ν(II)=63.5
$-R_7$=2.053F	ν(III)=33.8
$-R_8$=47.20F	ν(IV)=60.5
R_9=2.565F	ν(V)=29.3
$-R_{10}$=3.257F	ν(VI)=63.5

the n_D and ν values being absolute values.

3,297,394
PROJECTION OBJECTIVE CONSISTING OF OBJECT-SIDE NEGATIVE COMPONENT AND IMAGE-SIDE POSITIVE MULTILENS COMPONENT

Rudolf Solisch, Bad Kreuznach, Germany, assignor to Jos. Schneider & Co., Bad Kreuznach, Rhineland, Germany, a corporation of Germany

Filed Dec. 3, 1964, Ser. No. 415,643
Claims priority, application Germany, Dec. 4, 1963, Sch 34,267
2 Claims. (Cl. 350—215)



1. An optical objective system consisting of a positively refracting image-side multi-lens component and a negatively refracting object-side component constituted by a positive first member and a negative second member air-spaced from said first member, said components being axially separated from each other by an air space greater than 1.5 times the axial length of said image-side component, the axial length of said image-side component, being greater than 1.5 times the axial length of said object-side component, the individual focal length of said object-side component having an absolute value greater than 2.5 times that of the individual focal length of said image-side component and also greater than 2.5 times the value of the overall focal length of the system, said image-side component consisting of a positive third member, a positive fourth member, a negative fifth member and a positive sixth member all air-spaced from one another, said third, fourth and fifth members being singlets, said sixth member being a doublet with a positively refracting cemented surface, the numerical values of the radii of curvature $r1$–$r13$ and of the thicknesses and separations $d1$–$d12$ of the lenses L1, L2, L3, L4, L5 respectively constituting said first, second, third, fourth and fifth members and of the lens elements L6, L7 of the doublet constituting said sixth member, based upon a numerical value of 100 for said overall focal length, along with their refractive indices n_e and Abbé numbers ν, based upon the E-line of the spectrum, being substantially as given in the following table:

Lens	Radii of Curvature	Thicknesses and Separations	n_e	ν
L1	$r1$ =+555.40	$d1$=30.0	1.65285	33.5
	$r2$ =∞	$d2$ =10.0	Air Space	
L2	$r3$ =+281.00	$d3$ =15.0	1.61521	58.4
	$r4$ =+103.40	$d4$ =290.0	Air Space	
L3	$r5$ =+242.00	$d5$ =20.0	1.62287	60.1
	$r6$ =−566.50	$d6$ =0.5	Air Space	
L4	$r7$ =+110.20	$d7$ =40.0	1.62287	60.1
	$r8$ =+980.20	$d8$ =5.0	Air Space	
L5	$r9$ =−1,697.50	$d9$ =35.0	1.76846	26.8
	$r10$=+64.50	$d10$=7.0	Air Space	
L6	$r11$=+88.15	$d11$=10.0	1.52031	58.8
L7	$r12$=+71.02	$d12$=20.0	1.73692	50.8
	$r13$=−347.20			

3,297,395
OFF AXIS ADAPTER FOR USE WITH A SUN SENSOR DEVICE

Sahag Dardarian, Ridgefield, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,660
7 Claims. (Cl. 350—285)

1. An off-axis adapter for use with a sun sensor device, comprising a casing having a main opening at one end for receiving light rays from the sun,

a pair of optical wedges adjustably mounted in said casing,

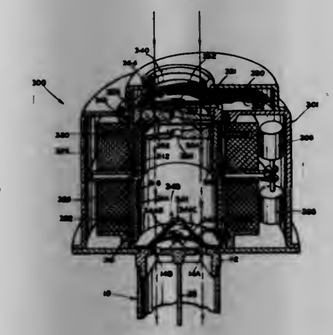
each of said optical wedges having an opening therein positioned in alignment one with the other and with said main opening for the passage of light rays therethrough,

a shutter interposed between said main opening and the optical wedges,

said shutter including an opaque portion for occulting the openings in said wedges for preventing the passage of the light rays through said openings in one adjusted position of the shutter,

said shutter including a transparent portion about the opaque portion effective in said one adjusted position of the shutter to permit light rays entering through the main opening to be directed through the optical wedges so as to effect a deviation in the light rays as a function of the angular positions of each of the optical wedges,

said shutter having an opening therein effective in a second adjusted position of the shutter to permit



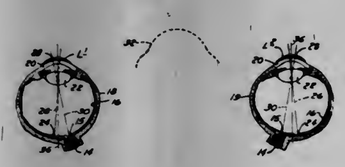
the passage of light rays from the main opening in said casing through the openings in the optical wedges,

and light transmitting means at an opposite end of the casing cooperating with said optical wedges for directing light rays passing therethrough into said sun sensor device.

3,297,396
CONTACT LENS WITH BLIND SPOT APERTURE

Newton K. Wesley, Chicago, Ill., assignor to The Plastic Contact Lens Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 7, 1964, Ser. No. 357,886
3 Claims. (Cl. 351—160)

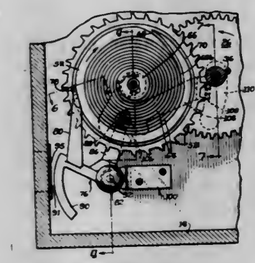


1. A contact lens of generally concavo-convex cross section having its posterior surface so fitted to the eye of a patient as to preclude rotation thereof relative to the eye and with a tendency to remain in a predetermined position relative thereto whereby the position on said lens of the fixation axis of the lens may be determined and will remain substantially fixed on said lens when worn, the central optical zone of said lens having a single aperture therethrough for tear interchange, the diameter of said aperture being not greater than approximately .35 millimeter, the axis of said aperture being positioned on said lens in offset relationship to said fixation axis to coincide with the axis of the blind spot of the eye, said aperture being defined by walls and means for reducing the reflective light produced by the aperture, said means comprising an application of low light reflecting material to said walls.

3,297,397
COMBINED FOOTAGE COUNTER AND END OF FILM RUN INDICATOR MECHANISM FOR MOTION PICTURE CAMERA

Peter H. Grant, Lincolnwood, and Arthur C. Mueller, Niles, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Oct. 2, 1964, Ser. No. 401,161
15 Claims. (Cl. 352—172)



1. An indicator mechanism for use in a motion picture camera having a housing, a view-finder associated therewith, and a drive motor in the housing, comprising:

guide means in operable connection with said drive motor;

an elongated guide path at least partially formed as a substantially uniformly space spiral on said guide means and terminating in a control portion;

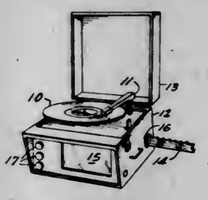
guide engaging means to engage said path so as to be moved as said guide means is moved; and

means to indicate when said guide engaging means is moved along said path and into said control portion, a part of said last named means being visible in said viewfinder when said guide engaging means is in said control portion.

3,297,398
FILM STRIP HOLDER

Alfonso M. Donofrio, Toledo, Ohio, assignor to Dodge-Audio Visual Corporation, Toledo, Ohio, a corporation of Ohio

Filed Oct. 30, 1964, Ser. No. 407,681
3 Claims. (Cl. 352—232)



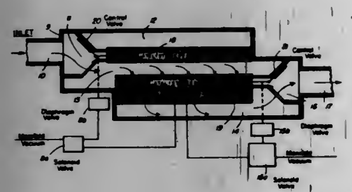
1. A holder for a transparent film strip, said holder comprising a sheet of transparent resinous material contiguous with and laminated to the entire surface of one face of said film strip and having a width greater than the width of said film strip and length at least equal to the length of said film strip, and a second sheet of transparent resinous material contiguous with and laminated to the entire surface of the other face of said film strip and having a width greater than the width of said film strip and a length at least equal to the length of said film strip, the edges of said sheets of resinous material extending beyond the edges of said film strip and being sealed to each other and defining continuous margins of said holder and retaining said film strip therebetween.

CHEMICAL

3,297,399
PROCESS OF MERCERIZING A CELLULOSIC MATERIAL WHILE SIMULTANEOUSLY DEPOSITING SILICA THEREON
Aubrey A. Hobbs, 710 Airport Road, Marion, N.C. 28752
No Drawing. Filed Nov. 22, 1961, Ser. No. 154,357
20 Claims. (Cl. 8—115.6)

1. The method of producing an improved cellulose containing fibrous material having increased tensile strength, added lustre, greater smoothness and improved receptivity to dyes, comprising the steps of treating said material with an aqueous dispersion of colloidal silica and thereafter subjecting such silica treated material while in the wet condition to the caustic of a mercerization bath simultaneously to mercerize said material and to deposit silica on the fibers thereof.

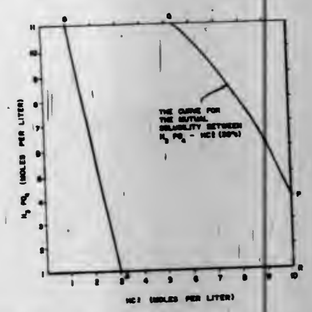
3,297,400
CATALYTIC PURIFICATION OF EXHAUST GASES
Sylvander C. Eastwood, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed Sept. 11, 1962, Ser. No. 222,782
4 Claims. (Cl. 23—2)



1. A method for controlling catalyst bed temperatures in the oxidation of exhaust gases of an internal combustion engine which comprises flowing a gaseous mixture of said exhaust gases and air into a catalytic converter combining at least a pair of serially arranged oxidation catalyst beds and through the initial and ultimate catalyst beds until a temperature of the ultimate catalyst bed of about 900° F. is attained; sensing the temperature within the ultimate catalyst bed; diverting the flow of said gaseous mixture when the temperature of the ultimate bed ranges from about 900° F. to about 1600° F., to by-pass the initial catalyst bed and flow through the ultimate catalyst bed; and bypassing the flow of said gaseous mixture through the catalytic converter without passing through any of the catalyst beds when the ultimate catalyst bed temperature exceeds about 1600° F.

3,297,401
PROCESS FOR REFINING PHOSPHORIC ACID PREPARATIONS
Toshio Sakomura and Mitsuo Kikuchi, Tsuno-gun, Yamaguchi-ken, and Hiroshi Shimizu, Tokyo, Japan, assignors to Toyo Soda Mfg. Co., Ltd., and Japan Organo Co., Ltd, both of Tokyo, Japan
Filed Dec. 21, 1965, Ser. No. 515,334
Claims priority, application Japan, Nov. 10, 1960, 35/45,131; Aug. 18, 1961, 36/29,894
2 Claims. (Cl. 23—165)

1. A process for removing iron and arsenic from crude phosphoric acid, which comprises charging said crude phosphoric acid with hydrochloric acid, mixing weakly basic liquid anion exchanger with the resultant mixture, separating the weakly basic liquid anion exchanger containing substantially all the iron impurity and part of the arsenic impurity from the partially purified phosphoric acid mixture, and concentrating said partially purified phosphoric acid mixture by evaporation, thereby removing

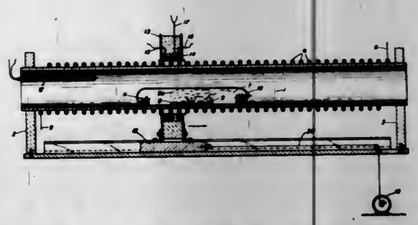


substantially all the hydrochloric acid and remaining arsenic by evaporation to produce concentrated phosphoric acid.

3,297,402
TREATMENT OF SAND AND OTHER INDUSTRIAL MINERALS
Philip A. Chubb, 100 Adelaide St. W., Suite 1010, Toronto, Ontario, Canada
Filed June 24, 1964, Ser. No. 377,679
Claims priority, application Great Britain, July 20, 1963, 28,811/63
8 Claims. (Cl. 23—182)

1. A method of decreasing the quantity of iron sulphide contaminates in silica sand which comprises the step of leaching the sand with a hypochlorite selected from the group consisting of hydrogen hypochlorite, sodium hypochlorite, potassium hypochlorite and calcium hypochlorite.

3,297,403
METHOD FOR THE PREPARATION OF INTERMETALLIC COMPOUNDS
Gottfried Christian Haacke, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Mar. 26, 1964, Ser. No. 354,891
4 Claims. (Cl. 23—204)



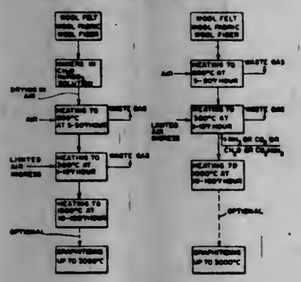
1. In a process for preparing a crystallized intermetallic compound in the vapor phase at a temperature below its decomposition temperature by bringing into chemical reaction stoichiometric amounts of (a) a cationic element selected from the group consisting of Group II and Group III of the Periodic Table and (b) an anionic element selected from the group consisting of Group V and Group VI of the Periodic Table, said elements being present in stoichiometric amounts, the improvement which comprises the steps of: incorporating into an ampoule maintained substantially under vacuum stoichiometric

amounts of (a) said cationic element and (b) said anionic element; heating the contents in said ampoule to a temperature sufficiently high to both vaporize said anionic element and to melt, but not to vaporize, the said cationic element; maintaining said initial temperature whereby intermetallic compound forms, solidifies and blankets the said molten cationic element; locally applying sufficient heat to a portion of said ampoule to insure the vaporization, but not the decomposition, of the formed intermetallic compound surrounding said molten cationic element; crystallizing the latter vaporized intermetallic compound from the surface of the molten cationic element in a non-locally heated portion of said ampoule; and continuing to heat the ampoule locally at the latter temperature until the molten cationic element therein has been totally consumed.

3,297,404
PURIFICATION OF HYDROGEN PEROXIDE
Ralph B. Elliott, Pema Yan, and James H. Young, Niagara Falls, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 8, 1957, Ser. No. 670,621
5 Claims. (Cl. 23—207)

1. The method of removing anion impurities from acidic impure aqueous hydrogen peroxide having a pH not more than 2 pH units above the pH representing its equivalence point and an H_2O_2 content of at least 15% by weight, said method comprising intimately contacting said impure aqueous hydrogen peroxide at a temperature not exceeding 40° C. under fluid flow conditions with an anion-exchange resin having functional quaternary ammonium groups whose basic nitrogen atoms are attached through saturated aliphatic hydrocarbon groups to the aromatic nuclei of a cross-linked copolymer of styrene and divinyl benzene, said resin being in the form of a salt selected from the group consisting of the carbonate and the bicarbonate salts of said resin, and said impure aqueous hydrogen peroxide containing as impurities anions other than the anion of said selected salt, then separating the resin and the aqueous hydrogen peroxide.

3,297,405
METHOD OF CARBONIZING ANIMAL FIBER MATERIALS
Edgar Sperk, Meitingen, near Augsburg, Otto Vohler, Nordendorf, near Meitingen, and Franz Jeltner and Volker Gierth, Meitingen, near Augsburg, all of Germany, assignors to Siemens-Planiawerke Aktiengesellschaft für Kohlefabrikate, Meitingen, near Augsburg, Germany, a corporation of Germany
Filed Nov. 23, 1964, Ser. No. 413,679
Claims priority, application Germany, Nov. 21, 1963, S 88,377
15 Claims. (Cl. 23—209.1)



1. The process of carbonizing animal fiber material, which comprises subjecting the animal fiber material to carbonizing heat treatment in several consecutive stages of gradually increasing temperature up to about 1000° C., permitting access of air to the material during the first stage, and reducing such access during the subsequent stages down to exclusion of air in the last stage, whereby the resulting carbonized material substantially retains mechanical fiber characteristics of the starting material.

14. The process of carbonizing animal fiber material, which comprises subjecting the animal fiber material to carbonizing heat treatment in several consecutive stages of gradually increasing temperature up to about 1000° C., permitting access of air to the material during the first stage, reducing such access during the subsequent stages down to exclusion of air in the last stage, and thereafter graphitizing the material under exclusion of air at temperatures above 1000° C. up to about 3000° C.

3,297,406
METHOD OF FORMING PYROLYTIC GRAPHITE SHEETS
Russell J. Diefendorf, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 19, 1962, Ser. No. 245,879
4 Claims. (Cl. 23—209.1)

1. A method of forming a sheet which comprises providing a body with a plurality of generally parallel first pyrolytic graphite layers, and with a second pyrolytic graphite layer with different properties located between each pair of adjacent first pyrolytic graphite layers, contacting said body with an intercalation material, said intercalation material being a fluid selected from the group consisting of an electron acceptor material with high electron affinity and an electron donor material with low ionization potential whereby said intercalation material enters said second layers decreasing the strength thereof and the continuity between said first layers, and separating said first layers into sheets.

3,297,407
METHOD OF GROWING DIAMOND ON A DIAMOND SEED CRYSTAL
Robert H. Wentorf, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 10, 1962, Ser. No. 243,335
7 Claims. (Cl. 23—209.1)

1. A method of growing diamonds at high pressures and high temperatures above the graphite-to-diamond equilibrium line on the phase diagram of carbon which comprises the steps of:

selecting components for a reaction vessel to provide a predetermined temperature gradient therein under operating conditions; assembling said components and enclosing a charge therein, said charge comprising:

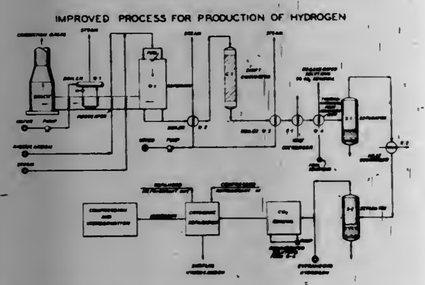
(a) at least one diamond seed crystal located in a region of said reaction vessel, which under operating conditions will be at a temperature near the minimum value of temperature for said temperature gradient,

(b) a source of substantially pure carbon located in a region of said reaction vessel, which under operating conditions will be at a temperature near the maximum value for said temperature gradient, and

(c) a barrier of catalyst metal interposed between said diamond seed crystal and said source of carbon, said catalyst metal being selected from the class consisting of the metals of Group VIII of the Periodic Table of the Elements, chromium, tantalum, manganese and alloys containing at least one of the aforementioned metals;

simultaneously subjecting said reaction vessel and said charge to pressure in the diamond-stable region of the phase diagram of carbon and to heat at a temperature in excess of the melting point of said metal barrier at the operating pressure whereby carbon is dissolved in the molten metal in the hotter region of said reaction vessel and then percipitated as new diamond growth on said diamond seed crystal, and recovering said seed crystal.

3,297,408
PROCESS FOR PRODUCTION OF HYDROGEN
Walton H. Marshall, Jr., Laurel Grove, Downings, Va. 22452
Filed Apr. 5, 1965, Ser. No. 446,790
7 Claims. (Cl. 23—212)

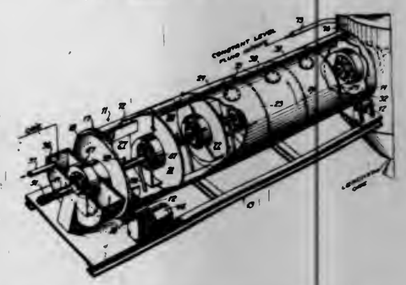


1. In the process of producing hydrogen from hydrocarbons by the steps of catalytic reforming of the hydrocarbons with steam to produce hydrogen, carbon monoxide and carbon dioxide, catalytic shift conversion with steam of the product from the aforesaid catalytic reforming to convert most of said carbon monoxide to carbon dioxide and additional hydrogen, cooling the product from the aforesaid shift conversion to condense the steam therein and separate it as condensate from the hydrogen, and removal of carbon dioxide from the hydrogen, the improvement which comprises converting in said step of catalytic reforming about 50% to about 85% of the hydrocarbons to hydrogen and oxides of carbon, by maintaining in said step of catalytic reforming a steam to carbon ratio of about 3.0 to about 7.0, a pressure of about 300 p.s.i.a. to about 700 p.s.i.a. and a temperature sufficient to give such conversion, and, after said step of removal of carbon dioxide, cryogenically separating from the hydrogen most of the unconverted hydrocarbons to give hydrogen of a high purity, said cryogenic separation being conducted substantially in the range of approximately —200° F. to approximately —310° F.

3,297,409
SULFUR RECOVERY APPARATUS AND METHOD
Lorenz V. Kunkel and George M. Franklin, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Aug. 14, 1963, Ser. No. 302,107
5 Claims. (Cl. 23—225)

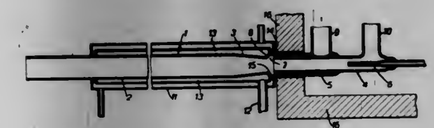
1. A method for recovering free sulfur from an initial hydrogen sulfide-containing gas stream of low combustibles content, which comprises diverting through a burner about 40% of said stream together with sufficient oxygen to substantially completely convert about 75% of the hydrogen sulfide in said diverted stream to sulfur dioxide, discharging the resulting gaseous products from said burner into a reaction zone, thereafter introducing the remainder of said initial stream into said reaction zone via a path independent of that by which said gaseous products are discharged into said zone where sulfur dioxide and said remainder of said initial stream are thoroughly mixed at reaction temperature to form free sulfur in the absence of a catalyst, and withdrawing sulfur vapors thus produced from said reaction zone.

3,297,410
COUNTERCURRENT ROTARY LEACHES WITH SPIRAL SCOOP SOLIDS CONVEYORS
Auguste Louis de Lisle, deceased, late of Scottsdale, Ariz., by Frances S. de Lisle, executrix, Scottsdale, Ariz., assignor to University of Arizona Foundation, Tucson, Ariz.
Filed Nov. 9, 1965, Ser. No. 506,988
6 Claims. (Cl. 23—269)



1. Apparatus for countercurrent contact of liquid and solid comprising, in combination:
(a) a longitudinally extending cylinder mounted for rotation;
(b) a plurality of spaced, transversely extending bulkheads within and rotatable with said drum dividing it into a plurality of side by side cells, the sides of each of which, except the end cells, are defined by adjacent pairs of said bulkheads and the sides of the end cells of which are defined by the end of the cylinder and the bulkhead closest thereto, the ends of said cylinder and said bulkheads each having a central in line opening therein and otherwise providing a gas-tight closure for the cells defined thereby;
(c) a scoop in each cell fastened to a bulkhead and rotatable therewith, said scoop comprising:
(1) a drum-like projection on the bulkhead in the cell containing said scoop, said drum-like projection surrounding said opening in said bulkhead; and
(2) a spiral passageway communicating at one end with said drum-like projection and at the opposite end terminating in a member positioned to engage solid particles upon rotation of the scoop, said spiral passageway extending over a circumferential distance of at least 360°;
(d) means for supplying solid particles to one end of said cylinder and withdrawing solids at the other end;
(e) means for supplying liquid to said cylinder at the solid discharge end and withdrawing it at the other end;
(f) means for maintaining a greater liquid pressure at the liquid inlet end than at the liquid outlet to prevent backflow of liquid;
(g) means for maintaining a level of liquid in each cell above the level of the openings in the bulkheads defining the sides of said cell to provide a liquid seal for each opening in each of the opposite bulkheads defining the sides of said cells to maintain adjacent cells in gas-tight condition relative to each other while communicably connected through said liquid seals for flow of liquid and solid particles through said liquid seals from one cell to an adjacent cell; and
(h) means for rotating said cylinder and said scoops whereby each of said scoops scoops up some solid particles immersed in the body of liquid maintained in each cell, and upon rotation of the scoop effects flow of the solid particles through the spiral passageway of the scoop and through said liquid seal into the adjacent cell.

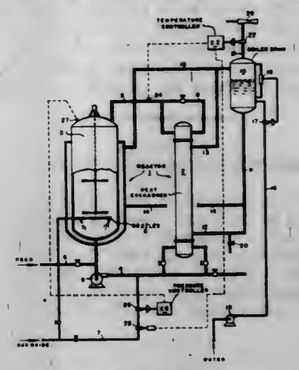
3,297,411
BURNER REACTOR APPARATUS
William Noel Dear, Theydon Bois, Essex, England, assignor to Laporte Titanium Limited, London, England, a British company
Filed May 13, 1964, Ser. No. 367,057
Claims priority, application Great Britain, June 10, 1963, 23,047/63
10 Claims. (Cl. 23—284)



1. Apparatus for the manufacture of an oxide of one of the elements titanium, zirconium, iron, aluminum and silicon by reacting, as one reactant, a chloride of the element with, as another reactant, an oxidizing gas in the vapor phase which comprises a reaction chamber having a generally tubular refractory part provided with an intermediate portion which is tapered inwardly in an upstream direction with respect to the reactant flow and an upstream portion comprising a tubular refractory outer wall having a diameter greater than the diameter of the tapered portion at its upstream end, said outer wall surrounding, for a part of its length, a tubular refractory inner wall, one end of the inner wall providing a first inlet means and terminating in cooperative association with said tapered portion to define a circumferentially extending second inlet means, means for feeding one reactant into the region between the outer and inner tubular walls for introduction through said circumferentially extending second inlet means, means for feeding the other reactant through the inner wall for introduction through said first inlet means, said second inlet means being situated downstream of said first inlet means, a nozzle arranged coaxially within the chamber upstream of the second inlet means which is adapted to direct a conical spray of particulate material suspended in a carrier gas upon at least the tapered portion of the generally tubular refractory part adjacent to said second inlet means, the degree of taper of said refractory part immediately adjacent to and downstream of the second inlet means being sufficiently small to enable the whole of the tapered surface to be seen from the end of the nozzle, and cooling means disposed coaxially about said reaction chamber downstream of said second inlet means.

3,297,412
APPARATUS FOR CONDUCTING EXOTHERMIC REACTIONS
Cecil Phillips, Jr., Baytown, and Roy D. Stanphill, Pasadena, Tex., assignors to Esso Research and Engineering Company, a corporation of Delaware
Original application Dec. 11, 1963, Ser. No. 329,817. Divided and this application Oct. 18, 1965, Ser. No. 497,015
3 Claims. (Cl. 23—285)

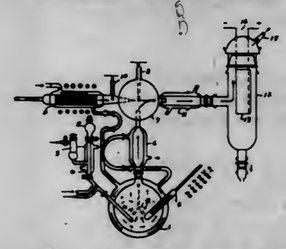
1. An apparatus for conducting exothermic reactions which comprises a reactor including a tube and shell heat exchanger and a reactor vessel connected in series, a boiler drum for supplying a boiling fluid as the heat exchange fluid to said reactor, means for connecting said boiler drum in indirect heat exchange with said reactor, means for changing the pressure in said boiler drum, and a temperature controller means responsive to the temperature of the reaction mixture which is operatively connected to said means for changing the pressure in the boiler drum whereby the vapor pressure on the heat exchange fluid is controlled in response to the temperature of the reaction mixture.



3,297,413
METHOD OF PREPARING $MgSO_4 \cdot 3H_2O$ CRYSTALS
Wallis R. Bennett, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 20, 1964, Ser. No. 353,607
5 Claims. (Cl. 23—301)

1. A method for preparing magnesium sulfate trihydrate crystals from magnesium sulfate solutions which comprises:
(a) concentrating by heating an unsaturated aqueous solution of magnesium sulfate to a boiling temperature, at atmospheric pressure, within the range of from about 106° to about 111° C.,
(b) maintaining the said temperature range while precipitating magnesium sulfate trihydrate crystals in the reaction mass, and
(c) separating and recovering said crystals of magnesium sulfate trihydrate from the aqueous solution.

3,297,414
METHOD FOR MAKING HIGH PURITY FINE PARTICLE OXIDES
Khodabakhsh S. Mazdiyasni, Dayton, Charles T. Lynch, Fairborn, and Jerome J. Krochmal, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed June 30, 1964, Ser. No. 379,422
7 Claims. (Cl. 23—345)



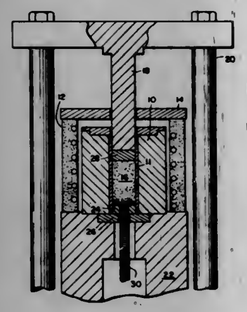
1. In the method of making extremely fine metallic oxides of high purity in excess of 99.9% by weight and having an average diameter of about 100 angstroms and less comprising the steps of refluxing an alkoxide having

from 3 to 7 carbon atoms of a metal selected from the group consisting of titanium, zirconium, hafnium, thorium, yttrium, dysprosium, ytterbium, magnesium, beryllium, strontium, boron, aluminum, silicon, and germanium with an inert carrier gas so as to vaporize the alkoxide, there after thermally decomposing the alkoxide of the mixed alkoxide and carrier gas to the corresponding metallic oxide by means of a dry preheated gas inert to the carrier gas, and then collecting the metallic oxide formed.

3,297,415
DISPERSION STRENGTHENED ULTRA-FINE WIRES

Lloyd R. Allen, Belmont, Mass., assignor, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Original application Mar. 22, 1963, Ser. No. 267,208, now Patent No. 3,199,331, dated Aug. 10, 1965. Divided and this application Oct. 16, 1964, Ser. No. 418,573
10 Claims. (Cl. 29—191.6)

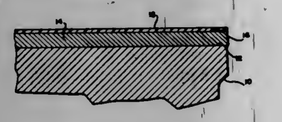


1. As an article of manufacture, a wire having a diameter of less than about .01 inch, said wire consisting of a matrix metal and an insoluble particle phase dispersed therein, said insoluble particle phase consisting of particles having a size less than 20 percent of said wire diameter.

3,297,416
CONTROL OF HYDROGEN EMBRITTLEMENT

Donald J. Ransom, Sylmar, and Eli Simon and Myron Levine, Los Angeles, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Apr. 24, 1964, Ser. No. 362,397
14 Claims. (Cl. 29—195)



1. An article of manufacture which comprises:
a high-strength steel member of a type susceptible to hydrogen embrittlement, said member having a surface;
a porous, hydrogen-permeable metal coating covering said surface; and
an oxidant located adjacent to said coating, said oxidant being chemically inert with respect to said steel member, being stable under the ambient conditions to which said steel member may be subjected and being capable of reaction with nascent hydrogen at the surface of said steel member in order to prevent hydrogen from entering said surface.

3,297,417
BERYLLIDE COATING FOR BERYLLIUM

Charles J. Speerschneider, Minnetonka, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Mar. 26, 1964, Ser. No. 354,904
8 Claims. (Cl. 29—199)



1. An article comprising: a beryllium body having thereon in adherent relationship a wear resistant coating composed of first and second regions, said first region comprising a two phase composition of a beryllium-silver alloy and gamma-nickel beryllide, said second region comprising gamma-nickel beryllide.

3,297,418
MAGNETIC THIN FILM ELEMENT AND METHOD OF MANUFACTURE

Stanley Firestone, Neptune, and Eugene J. Chabak, West Long Branch, N.J., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Apr. 24, 1964, Ser. No. 362,528
4 Claims. (Cl. 29—199)

3. A thin magnetic film element, comprising a magnetically oriented film, said film being an alloy consisting essentially of 1 to 5 percent cobalt, and the remainder of said magnetically oriented film being nickel and iron in a ratio of from 80:20 to 75:25, said magnetically oriented film being deposited on an electrically conductive metallic substrate.

3,297,419
SYNTHETIC FUEL LOG AND METHOD OF MANUFACTURE

Edward E. Eyre, Jr., Atherton, Calif., assignor to Fyr Tech Products, Inc., San Francisco, Calif., a corporation of California

Filed Aug. 17, 1965, Ser. No. 480,423
14 Claims. (Cl. 44—6)

1. A synthetic fuel log comprising a compacted mass of particles of sawdust having a wax absorbed thereon and a high temperature binder dispersed throughout the mass between the sawdust particles, said wax including a low temperature binder, the sawdust comprising between 25 to 75% the weight of the mass, the wax comprising between 25 to 75% the weight of the mass and the high temperature binder comprising between 2½ and 10% by weight of the mass.

3,297,420
CHARCOAL FIRE KINDLER

John D. Klink and Arthur W. Gooz, Marquette, Mich., assignors to Cliffs Dow Chemical Company, Marquette, Mich., a corporation of Michigan

Filed Sept. 27, 1962, Ser. No. 226,541
5 Claims. (Cl. 44—34)

1. A fire kindler for charcoal lumps and briquets which comprises sheet cellulose pulp material about 0.025 inch thick folded in alternating pleats each having a width of about ¾ inch, there being approximately 6 pleats, said pleats being about 4½ inches long and being compressed and secured together at one end and expanded at the other end to form a wedge shaped body including a flared upper part, said sheet cellulose material being impregnated with paraffin wax to a degree which is less than saturation.

3,297,421
COMPOSITION FOR FLAME CULTIVATION

Jack Ryer, East Brunswick, and Paul M. Kerschner, Trenton, N.J., assignors to Cities Service Oil Company, Bartlesville, Okla., a corporation of Delaware

No Drawing. Filed Mar. 25, 1965, Ser. No. 442,804
13 Claims. (Cl. 44—52)

1. a liquified petroleum gas composition consisting essentially of liquified petroleum gas having not more than four carbon atoms as the major ingredient and dissolved therein a readily vaporizable compound of a chromophoric element in an amount sufficient to impart a visible color to a flame of said liquified petroleum gas.

3,297,422
METHOD OF MAKING MOLDS FOR MULTI-FOCAL OPHTHALMIC LENSES

Stanley A. Emerson and George A. Beasley, Fort Lauderdale, Fla., assignors to Univis, Inc., Fort Lauderdale, Fla., a corporation of Ohio

Filed Apr. 5, 1963, Ser. No. 270,964
5 Claims. (Cl. 65—54)



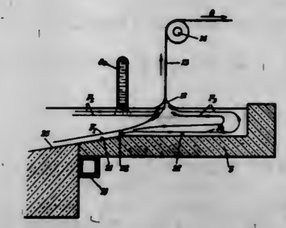
1. The method of making a mold for use in molding multi-focal ophthalmic lens surfaces on the front surface of the lens from plastic material which comprises: first providing a glass blank; grinding and polishing on the rear face of the blank a first concave curved surface for molding one of the fields of vision of the front lens surface and having a curvature complementary to the desired curvature of the near field of vision and covering a portion of the rear face; providing a small glass segment having a back convex curved surface curved to conform with the first curved surface of the blank; applying the glass segment to the face of the glass blank with the curved back surface in contact with the first curved surface of the blank and adhering them to each other; and, finally, grinding and polishing on the near face of the assembly including at least the face of the segment a second concave surface for molding another field of vision of the lens surface and having a curvature complementary to the desired curvature of said another field of vision so that an edge of the segment defines a boundary between the two fields of vision.

3,297,423
DRAWING CHAMBER FOR THE CONTINUOUS MANUFACTURING OF SHEET GLASS

Georges Prisian, Wingles, France, assignor to Société dite: Glaces de Boussois, Paris, France

Filed Sept. 16, 1963, Ser. No. 309,058
Claims priority, application France, Sept. 25, 1962, 910,338
7 Claims. (Cl. 65—204)

1. In an installation for the vertical drawing from a molten glass bath of a soft glass ribbon which is thereafter horizontally bent, said installation comprising a glass melting tank, a thermal conditioning chamber and a draw pot, arranged in end to end communicating relationship and defined by separating walls, said thermal conditioning chamber being positioned between said glass melting tank and said draw pot and having a bottom at least partly upwardly inclined towards said draw pot, said draw pot including an inclined spout section and a drawing chamber, said drawing chamber being defined by two spaced, parallel, transversely extending coolers and a horizontal floor and communicating with the thermal conditioning chamber through said inclined spout section, said inclined spout section having an inclined floor located



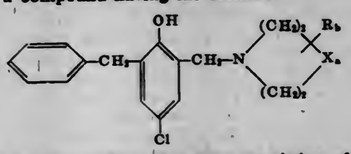
between said heat conditioning chamber inclined bottom and said draw-pot horizontal section, and being substantially aligned with said thermal conditioning chamber inclined bottom.

3,297,424
METHOD FOR CONTROLLING THE GROWTH OF FUNGI AND PLANTS

Dale R. Dill, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Original application Sept. 21, 1962, Ser. No. 225,367, now Patent No. 3,255,194, dated June 7, 1966. Divided and this application May 20, 1965, Ser. No. 470,285
4 Claims. (Cl. 71—2.5)

1. A method for controlling plant growth comprising applying to soil at a rate of about 0.1 to 25 pounds per acre of a compound having the formula



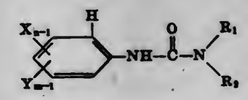
where R is selected from the group consisting of methyl and ethyl, *b* is an integer from 0 to 2, X is selected from the group consisting of oxygen, N—CH_3, and CH_2, *a* is an integer from 0 to 1, and the hydrochloric acid salts thereof.

3,297,425
HERBICIDAL COMPOSITION

Glen D. Barbaras, Harold E. Cupery, and Donald J. Loder, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 28, 1962, Ser. No. 220,829
1 Claim. (Cl. 71—2.6)

A herbicidal composition comprising a solution of (1) a polar solvent selected from the group consisting of chloroform, methylene chloride, trichloroethylene, 1,1,2,2-tetrachloroethylene, 1,1,2,2 - tetrachloroethane, amylene dichloride, and o-dichlorobenzene and (2) a herbicidally effective amount of a chemical complex of an acid selected from the group consisting of sulfuric acid, hydrochloric acid, monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, boron fluoride, and aluminum chloride, and a substituted urea compound from the group having the formula:



wherein:

X is selected from the group consisting of hydrogen and halogen;

Y is selected from the group consisting of hydrogen, alkyl of 1 to 4 carbon atoms, and alkenyl of 1 to 4 carbon atoms;
n is a positive integer of less than 5;
m is a positive integer of less than 4;
the sum of *m* and *n* is 2 through 5;
R_1 is a hydrocarbon radical of 1 through 4 carbon atoms; and
R_2 is selected from the group consisting of hydrogen, methyl and ethyl.

3,297,426
METHOD OF WIDENING CROTCH ANGLES OF FRUIT TREES
Martin J. Bukovac, Ingham County, Mich., assignor to Michigan State University, East Lansing, Mich.
No Drawing. Filed Feb. 24, 1964, Ser. No. 346,996
9 Claims. (Cl. 71—2.6)

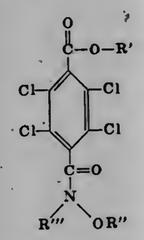
1. A method of widening the crotch angles of fruit trees which comprises spraying on immature fruit trees 2,3,5-triiodobenzoic acid, said acid being applied during vegetative development stage and before the trees reach the fruiting stage in a concentration sufficient to widen crotch angles without causing phytotoxic effects.

3,297,427
SYNERGISTIC HERBICIDAL COMPOSITION AND METHOD
Sidney B. Richter, Chicago, Ill., assignor to Velsico Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Dec. 15, 1965, Ser. No. 514,106
9 Claims. (Cl. 71—2.6)

1. A herbicidal composition comprising a herbicidally toxic amount of a combination of a herbicide of the phenoxyacetic acid class selected from the group consisting of 2,4-dichlorophenoxyacetic acid, 2,4,5-trichlorophenoxyacetic acid, 2-methyl-4-chlorophenoxyacetic acid, its esters in which the esterification group contains up to 10 carbon atoms, alkali metal and amine salts in which the amine component contains up to 10 carbon atoms and a second herbicide selected from the group consisting of 2-methoxy, 3,6-dichlorobenzoic acid, 2-methoxy-3,5,6-trichlorobenzoic acid, its esters in which the esterifying group contains up to ten carbon atoms, alkali metal and amine salts, in which the amine component contains up to ten carbon atoms; and an inert diluent therefor.

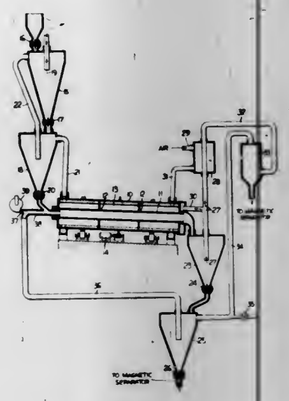
3,297,428
HERBICIDAL COMPOSITION AND METHOD
Sidney B. Richter, Chicago, and Alfred A. Levin, Skokie, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Original application July 27, 1962, Ser. No. 213,023. Divided and this application Mar. 14, 1966, Ser. No. 533,790
10 Claims. (Cl. 71—2.6)

1. A herbicidal composition comprising an inert carrier and herbicidally toxic amount of a compound of the formula



wherein R', R'' and R''' are lower alkyl radicals.

3,297,429
CONTROLLED ATMOSPHERE MAGNETIC ROASTING OF IRON ORE
Calvin L. Stevenson, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 28, 1963, Ser. No. 319,125
9 Claims. (Cl. 75—1)



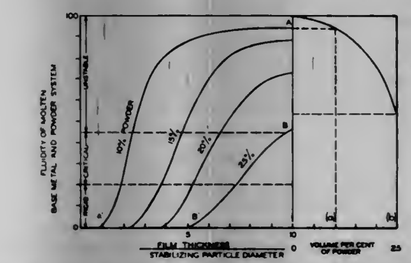
1. The method of converting nonmagnetic iron ores to magnetic magnetite which comprises the steps of:
(a) drying and preheating minus 65 mesh nonmagnetic iron ore;
(b) blowing the preheated ore into the interior tube of a concentric double tube kiln with a reducing gas of sufficient reducing strength to reduce said ore to magnetite under sufficient pressure to blow the finer particles of said ore through the reaction zone to effect flash roasting thereof to magnetite;
(c) tumbling the remaining preheated ore in said kiln for sufficient time to effect partial reduction to magnetic magnetite;
(d) separating the spent reducing gases from the partially reduced ore;
(e) cooling a portion of said spent reducing gases;
(f) heating the annulus portion of the kiln with the remaining portion of the spent reducing gases; and
(g) cooling the partially reduced ore with the cooled portion of said spent reducing gases and fresh hydrocarbon gas.

5. In an apparatus for converting nonmagnetic iron oxide ores to magnetic magnetite:
(a) means for drying and preheating minus 65 mesh nonmagnetic iron oxide ore;
(b) means for blowing the preheated ore into a reaction zone with a reducing gas of sufficient reducing strength to reduce said ore to magnetite under sufficient pressure to blow the finer ore particles through the reaction zone to effect flash roasting thereof;
(c) means for tumbling the remaining preheated ore in said reaction zone for sufficient time to effect at least a partial reduction to magnetic magnetite;
(d) means for separating the reduced ore from the reducing gas;
(e) means for conducting the separated reducing gas to the ore recited at (a) for preheating the ore; and
(f) means for preheating the reducing gas recited at (b) with the separated reduced ore.

3,297,430
METHOD FOR PRODUCING LEDEBURITIC STEEL SHOWING A GLOBULAR SOLIDIFIED STRUCTURE
Franz Sperner, Grossauheim, Germany, assignor to Rochling'sche Eisen- und Stahlwerke G.m.b.H., Volklingen, and W. C. Heraeus G.m.b.H., Hanau, Germany
No Drawing. Filed Dec. 24, 1963, Ser. No. 333,169
Claims priority, application Germany, Jan. 4, 1963, R 34,173
1 Claim. (Cl. 75—12)

A method of producing a ledeburitic steel solidified with a globular structure consisting of melting a ledeburitic steel in the presence of air, cooling said melted steel to solidify same, remelting said solidified steel in the presence of an electric arc in an inert atmosphere comprising nitrogen at an absolute pressure between approximately 5 and 760 mm. of mercury.

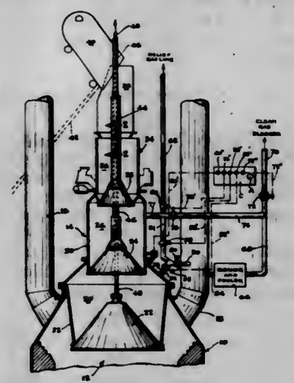
3,297,431
CELLARIZED METAL AND METHOD OF PRODUCING SAME
John A. Ridgway, Jr., La Porte, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed June 2, 1965, Ser. No. 460,754
7 Claims. (Cl. 75—20)



1. In the method of producing cellularized metal by decomposition of a heat-decomposable gas evolving compound in molten metal followed by rapid cooling of said metal, the improvement which comprises adding to said metal prior to decomposition of said heat-decomposable gas evolving compound an intimately dispersed finely divided powder,
said powder present in an amount not exceeding 50 percent by weight but in an amount sufficient to render a matrix of the metal stable when said metal is in molten condition to confine predominantly contiguous and compact gas-filled cells,
said powder possessed of the properties of:
(1) being wetted by the metal when the latter is in molten condition, and
(2) being substantially stable in the presence of the metal when said metal is in molten condition.

3,297,432
BLAST FURNACE CHARGING APPARATUS PRESSURIZATION
Albert Mohr, Jr., Chicago, Ill., assignor to John Mohr & Sons, Chicago, Ill., a corporation of Illinois
Filed Dec. 26, 1963, Ser. No. 333,539
4 Claims. (Cl. 75—41)

1. An improved method for blast furnace gas pressurization of a blast furnace having a charging apparatus with a lower chamber and an upper chamber the lower chamber being separated from the top furnace area by a lower movable bell, the upper chamber being separated from the lower chamber by a middle movable bell and from atmosphere by an upper movable bell, said method including the steps of: passing raw blast furnace gases from the top furnace area of the blast furnace to the lower chamber to pressurize said lower chamber to top furnace pressure level to equalize pressure levels in the lower chamber and the top furnace area across the lower movable bell; passing raw blast furnace gases through a gas cleaner to remove suspended particles therefrom; and pressurizing said upper chamber to top furnace pressure level to equalize the pressures in the upper chamber, lower chamber and top furnace area across the lower



bell and the middle bell, said pressurization of the upper chamber being accomplished in a two step manner wherein first the cleaned blast furnace gas at a pressure level lower than the top furnace pressure level is passed from the gas cleaner to the upper chamber until the upper chamber pressure level is equal to the pressure level of the cleaned gas, and second passing raw blast furnace gases to the upper chamber to pressurize the upper chamber to top furnace pressure level with raw blast furnace material laden gases.

3,297,433
PROCESS FOR PREPARING A CADMIUM ELECTRODE MATERIAL FOR USE IN ELECTRIC STORAGE DEVICES
Robert E. Stark, Avon Lake, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 6, 1964, Ser. No. 335,798
10 Claims. (Cl. 75—109)



1. A process for preparing a cadmium electrode material for use in electric storage devices, which process comprises forming a uniform admixture comprising at least

about 80 weight percent of a cadmium compound selected from the group consisting of cadmium oxide, cadmium hydroxide, cadmium acetate, cadmium carbonate, cadmium chloride, cadmium chlorate, cadmium sulfate and cadmium nitrate, and a cadmium replacing metal selected from the group consisting of aluminum and zinc in an amount of up to 20 percent by weight of the admixture, contacting said admixture with an aqueous alkaline hydroxide solution having a concentration of from about 0.001 normal to about 14.5 normal at a temperature of at least 10° C. to form a product containing cadmium metal, and recovering and removing residual alkaline hydroxide from said product.

3,297,434

NICKEL-IRON MAGNETIC SHEET STOCK

Martin F. Littmann and Edwin S. Harris, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Filed July 19, 1965, Ser. No. 473,175
10 Claims. (Cl. 75—124)

1. A nickel-iron alloy for magnetic purposes having an initial composition consisting of the following ingredients in substantially the proportions stated:

Ni	47% to 49%.
C	Less than .035%.
Mn	.30% to 1.0%.
P	Less than .005%.
S	From .0030% to .010%.
Si	From .30% to .50%.
Al	From .010% to .035%.
Fe	Balance, excepting for residual impurities in trace amounts.

3,297,435

PRODUCTION OF HEAT-TREATABLE ALUMINUM CASTING ALLOY

James E. Hanafee, Westfield, N.J., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,239
10 Claims. (Cl. 75—142)



4. A heat-treatable, iron-containing aluminum casting alloy consisting essentially, by weight, of 4% to 9% nickel, 5% to 25% silicon, up to 1% copper, up to 1% magnesium, the sum of copper and magnesium being between 0.2% and 2%, iron in an amount which is correlated to nickel, silicon and copper plus magnesium and which is less than

$$1-0.1\,(\text{percent Ni})-0.02\,(\text{percent Si})+0.05\,[2-(\text{percent Cu}+\text{Mg})]$$

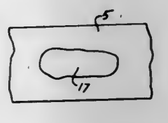
up to 1% titanium, up to 0.05% boron, up to 0.03% phosphorus, up to 0.05% sodium added, up to 0.5% cadmium, up to 0.5% indium, up to 0.5% tin, up to 1% lithium, up to 0.5% chromium, up to 0.5% manganese, with the balance essentially aluminum; said alloy being characterized by having a microstructure that is substantially devoid of harmful, coarse, massive aluminides.

3,297,436

METHOD FOR MAKING A NOVEL SOLID METAL ALLOY AND PRODUCTS PRODUCED THEREBY

Pol Edgard Duwez, Pasadena, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California

Filed June 3, 1965, Ser. No. 463,983
10 Claims. (Cl. 75—134)



1. A novel metastable solid metal alloy film which has not undergone the normal process of nucleation and growth of equilibrium phases prepared by the steps of commingling the constituents of said alloy film, heating said constituents to a molten state under high pressure, forcibly impinging the pressurized molten constituents upon the interior of a rotating chilled cylindrical surface, permitting said molten constituents to be instantly flattened to a thickness of less than 100,000 Angstroms on said surface by centrifugal force and adhering to said cylindrical surface, to form an intimately contacted film thereon, extracting heat from said constituents to said surface to yield a novel metastable solid alloy film, and subsequently stopping said rotating surface and removing said novel cooled alloy film from said surface.

3,297,437

COPPER BASE ALLOYS CONTAINING MANGANESE AND ALUMINIUM

Leendert Bosman, Drunen, Netherlands, assignor to Lips N.V., Drunen, Netherlands, a corporation of the Netherlands

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,515
Claims priority, application Netherlands, Feb. 13, 1963, 288,920
4 Claims. (Cl. 75—157.5)

1. An alloy having the following weight composition: 1 to 9% iron, up to 7% of a member selected from the class consisting of nickel, cobalt, and mixtures thereof, 3 to 9% aluminum, 10 to 16% manganese, 1 to 7% zinc, balance essentially copper, the sum of the iron and any nickel being 3 to 14%, in which the aluminum equivalent, calculated by adding to the aluminum percentage 0.15 times the manganese percentage and 0.35 times the zinc percentage, is between 7 and 13.

3,297,438

HIGH TEMPERATURE STRENGTH COLUMBIUM BASE ALLOYS

Elihu F. Bradley, West Hartford, Conn., Robert I. Jaffee and Dean N. Williams, Columbus, and Edwin S. Bartlett, Worthington, Ohio, assignors, by direct and mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 65,962, Oct. 31, 1960. This application Apr. 6, 1964, Ser. No. 358,972
8 Claims. (Cl. 75—174)

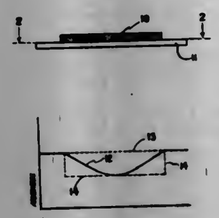
2. A ductile columbium-base alloy having good stress-rupture strength at high temperatures and consisting essentially of about 20% by weight of tantalum, about 10% by weight of tungsten, about 5% by weight of molybdenum, about 5% by weight of hafnium, and balance essentially columbium.

3,297,439

SIMULTANEOUS SINTER BOND AND NITRIDE FOR POWDERED MATERIAL AND BACKING ASSEMBLY

Fred E. Kendall, Cleveland, and Jacob Nitz, Solon, Ohio, assignors, by mesne assignments, to Abex Corporation, a corporation of Delaware

Filed Nov. 18, 1963, Ser. No. 324,303
3 Claims. (Cl. 75—208)



2. Method of bonding a compact of powdered predominantly metallic material to a metal support member, which method comprises the steps of

cleaning the support member,

placing the support member with said compact adjacent thereto both in a case hardening atmosphere, and

subjecting the assembly of compact and support member to heat and pressure while in said case hardening atmosphere whereby the case hardening of support member ultimately varies differentially from maximum at uncovered surfaces thereof to minimum at a position intermediate limits of the interface between support member and compact.

3,297,440

PHOTOPOLYMERIZATION OF ETHYLENICALLY UNSATURATED ORGANIC COMPOSITIONS AND THE FORMATION OF A RELIEF IMAGE

Gerard Albert Delzenne, Kessel-Lo, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company

No Drawing. Filed May 2, 1963, Ser. No. 277,460
16 Claims. (Cl. 96—35.1)

1. Process for the photopolymerization of ethylenically unsaturated organic compositions, which comprises exposing said ethylenically unsaturated organic compositions to actinic light rays in the presence as a photopolymerization initiator of a cobalt (III)-ammine complex.

3,297,441

PHOTOGRAPHIC PRODUCTS, COMPOSITIONS AND PROCESSES UTILIZING AZONAPHTHOL DYE DEVELOPERS

Milton Green, Newton, and Phyllis T. Moore, Lexington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Mar. 4, 1963, Ser. No. 262,358
15 Claims. (Cl. 96—29)

10. In a process of forming a photographic image in color, the steps which comprise developing an exposed silver halide emulsion with an aqueous alkaline processing solution containing a compound of the formula:

$$Q-(Z)_{m-1}-NH-\overset{O}{\overset{\|}{C}}-R-O-Y$$

wherein Q is a member selected from the group consisting of p-dihydroxyphenyl, o-dihydroxyphenyl, and alkyl and halogen nuclear substituted p-dihydroxyphenyl and o-dihydroxyphenyl radicals; Z is a member selected from the group consisting of phenylene, lower alkylene and phenalkylene radicals; R is an alkylene radical; *m* is a positive integer from 1 to 2, inclusive; and Y is the radical of an azonaphthol dye, said —O— substituent being bonded directly to a nuclear atom of said dye, to provide in said emulsion a predetermined distribution of unoxidized dye developer, and transferring at least part of said distribution of said unoxidized dye developer, by imbibition, from said emulsion to an image-receiving material in superposed relationship with said emulsion to impart to said image-receiving material a positive dye image of the developed image.

3,297,442

METHOD OF MANUFACTURE OF CIRCUIT BOARDS

Robert D. Spiers, Treasure Island, Fla., assignor to General Components Incorporated, St. Petersburg, Fla., a corporation of Florida

Filed Apr. 30, 1964, Ser. No. 363,701
1 Claim. (Cl. 96—36.2)



A method of producing a circuit board having a conductive circuit of a given pattern of such soldering pad areas thereof are uncovered and segments interconnecting pad areas are covered with a protective metal plating, comprising the steps of providing a surface having the complete circuit delineated thereon, reproducing from said delineated circuit a photographic negative film of an exact delineation of said circuit, wherein the circuit is delineated by the transparent portions of said negative film, opaquing said pad areas appearing on said negative film to provide a modified circuit delineation, providing a positive photographic film from said modified negative film, providing a panel of electrical insulating material having a sheet of copper attached to one face thereof and having an area greater than the area of said given pattern, coating said one face with a photosensitive emulsion, photographically printing the modified circuit on said coated face by exposing said face to said positive film, electro-plating the resultant uncovered areas of said sheet of copper with a gold deposit, removing said coating material, providing a negative photographic film of an exact delineation of said entire given circuit pattern thereon by clear areas on an opaque background, applying a coating of photographic emulsion over said face, placing the second mentioned negative film relative to said coated face to cause said interconnecting segments of said given circuit thereon to coincide with the plated segments on said sheet and photographically printing said complete circuit on said coated sheet, subjecting said sheet to an etching bath to remove the exposed portions of said sheet, and then removing said emulsion coating.

3,297,443

LIGHT SENSITIVE QUINOLINE DIAZO COMPOUNDS

Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 19, 1963, Ser. No. 266,220
10 Claims. (Cl. 96—91)

1. A light-sensitive printing material coated with 6-(N-sec-alkyl-1,2,3,4-tetrahydroquinoline)diazonium chloride metal chloride salt.

3,297,444
PHOTOGRAPHIC PRODUCT AND METHOD OF MAKING SAME

Robert A. Wilferth, Pittsford, N.Y., and Edward Hartouni, Claremont, Calif., assignors, by direct and mesne assignments, to Technical Operations Incorporated, a corporation of Delaware

No Drawing. Filed July 8, 1963, Ser. No. 293,265
9 Claims. (Cl. 96—94)

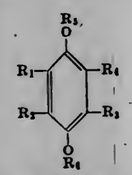
1. In the method of producing a vapor deposited silver halide photographic material, wherein high purity silver halide, containing small amounts of impurities, is evaporated from a molten pool under high vacuum conditions, and the effluent vapors are condensed on a substrate layer to form on said layer a stratum of silver halide microcrystals, said microcrystals being adhered directly to said substrate and cohered directly to each other; the improvement wherein said silver halide is first treated before the vapor deposition by pelleting said silver halide in water from a molten state, and prevaporating a portion of the pelleted silver halide at a temperature substantially in excess of that employed for the vapor deposition, to improve the uniformity of photographic properties of the photographic material.

3,297,445
PHOTOGRAPHIC INHIBITOR RELEASING DEVELOPERS

Frederick C. Duennebier and James T. Kofron, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,731
10 Claims. (Cl. 96—95)

5. A process for forming a visible photographic image comprising developing an exposed photographic element comprising a support and a photographic silver halide emulsion layer, and integral with said photographic element, a water-permeable hydrophilic colloid layer containing a compound represented by the following general formula:



wherein R_1, R_2, R_3 and R_4 each represent a member selected from the class consisting of a hydrogen atom, an iodine atom, alkyl groups having about 1–20 carbon atoms, OH, amine and aryl groups provided at least one of the substituents, R_1, R_2, R_3 or R_4, must be iodine and one of the other substituents, R_1, R_2, R_3 and R_4, must be a group other than hydrogen, and R_5 and R_6 represent a member selected from the class consisting of a hydrogen atom, and an alkaline splittable masking group by imbibing throughout said photographic silver halide emulsion layer an aqueous alkaline solution containing sufficient alkali to give a pH of at least about 9.0.

3,297,446
SYNERGISTIC SENSITIZATION OF PHOTOGRAPHIC SYSTEMS WITH LABILE SELENIUM AND A NOBLE METAL

Joseph Stanley Dunn, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 1, 1965, Ser. No. 468,972
28 Claims. (Cl. 96—107)

1. In a photographic system capable of being sensitized with a noble metal, the improvement which comprises increasing the sensitivity of said system with a noble metal and labile selenium.

3,297,447
STABILIZATION OF SYNERGISTICALLY SENSITIZED PHOTOGRAPHIC SYSTEMS

Patricia A. McVeigh, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

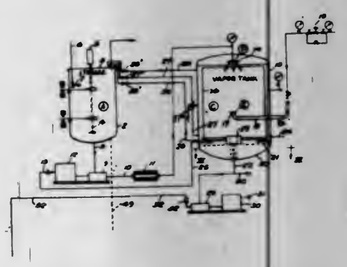
No Drawing. Filed Sept. 9, 1965, Ser. No. 486,235
22 Claims. (Cl. 96—109)

1. In a photographic system sensitized with a noble metal and labile selenium, the improvement which comprises utilizing a labile sulfur compound as a stabilizer.

3,297,448
METHOD FOR CONTINUOUS COOKING AND STERILIZATION OF LIQUIDS AND SUSPENSIONS

Richard A. Smith, Gibsonia, and Francis Wojnar, Cheswick, Pa., assignors to H. J. Heinz Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original application May 23, 1958, Ser. No. 737,430, now Patent No. 3,139,812, dated July 6, 1964. Divided and this application June 26, 1964, Ser. No. 388,744
4 Claims. (Cl. 99—2.11)



1. The method of heat processing a flowable liquid product comprising

continuously transferring liquid from a storage vessel and dispersing it through a spray nozzle into the upper part of an enclosed environment having a bottom into which the liquid product gravitates and is collected,

maintaining an atmosphere of steam in said environment at a constant pressure and temperature with the temperature higher than the temperature of the incoming product and rapidly heating the liquid product to a predetermined temperature,

flowing the liqiud product form said bottom into a tubular holding section through which it flows and in which it remains at a predetermined temperature, regulating the rate of flow of the product through the holding section to retain the product in the holding section for a predetermined time period,

and regulating the rate of transfer of liquid from the storage vessel to the spray nozzle by the liquid level in said bottom and thereby limit the average retention time of the liquid product in the bottom of said closed environment.

3,297,449
PACKAGED PRELEAVENED DOUGH CONTAINING SODIUM ACID PYROPHOSPHATE, AND SODIUM AND POTASSIUM BICARBONATE

Joseph S. Baker, Green Township, Hamilton County, Ohio, and Charles G. Lindeman, Westfield, N.J., assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Nov. 13, 1963, Ser. No. 323,478
1 Claim. (Cl. 99—90)

In a preleavened packaged dough composition comprising flour, water and leavening comprised of from about 1.4 percent to about 2.1 percent by weight of the dough of sodium acid pyrophosphate and a blend of sodium and potassium bicarbonate salts sufficient to at least substantially neutralize said pyrophosphate, the improvement wherein said blend of sodium and potassium bicarbonate salts contains from about 20 mol percent to about 70 mol percent potassium salt, whereby said preleavened packaged dough exhibits during storage a substantial reduction in both the occurrence and size of orthophosphate crystals.

3,297,450
METHOD OF PRODUCING POTATO CHIPS

Stephen J. Loska, Jr., Des Plaines, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 20, 1966, Ser. No. 549,745
6 Claims. (Cl. 99—100)

1. In a method of producing a potato chip, the steps comprising blending a mixture comprising a major portion of ungelatinized potato powder and a minor portion of ungelatinized potato starch with water to provide a dough, forming said dough into a ribbon, subjecting said dough ribbon to steam and heat for a period of time sufficient to gelatinize the starch constituents in said dough, and drying said steamed dough.

3,297,451
CITRATE TREATMENT OF CHEESE WITH HIGH TEMPERATURE TREATMENT

Ingmar B. Eggen and Robert H. Bundus, Chicago, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,846
6 Claims. (Cl. 99—116)

1. In a process for making cheese by heating skim milk at a high temperature within the range of 185° F. and holding for 900 seconds and 305° F. and holding for not over 1 second, the time being inversely proportional to the temperature, and culturing the said previously high heat treated milk to a pH of 4.8 to 5.1 and cooking the cultured skim milk to destroy any remaining culture organism, the improvement comprising homogenizing the skim milk prior to said high temperature treatment.

4. In a process of making cottage cheese by heating skim milk at a high temperature within the range of 185° F. and holding for 900 seconds and 305° F. and holding for not over 1 second, and culturing the said previously high heat treated milk to a pH of 4.8 to 5.1 and cooking the cultured skim milk to destroy any remaining culture organisms, the improvement comprising adding a small amount of a member of the group consisting of citric acid and non-toxic salts thereof prior to said high heat treatment.

3,297,452
SILICONE POLYMER CHEWING COMPOSITION

James C. Wing, New York, and Arthur Price, Great Neck, N.Y., assignors to James C. Wing, New York, N.Y., and Arthur Price, Great Neck, N.Y., trustees

No Drawing. Filed Nov. 20, 1963, Ser. No. 325,158
3 Claims. (Cl. 99—135)

1. An elastomeric chewing composition consisting essentially of an effective amount of a flavoring agent in combination with a non-toxic elastomeric solid silicone polymer having a tensile strength of 150 to 2000 pounds per square inch, a tear strength of 20 to 200 pounds, and an elongation of 50 to 700 percent, said polymer having a brittle point at about —190° F. and a melting point at about 300° F.

3,297,453
METHOD FOR THE TREATING OF HONEY AND THE LIKE

Berthold Kranz, Duren, Germany, assignor to Carl Canzler, Duren, Germany

Filed Mar. 31, 1964, Ser. No. 356,247
10 Claims. (Cl. 99—146)

1. A method of producing a molten honey which is substantially clear and free of solid constituents, comprising the steps of mixing a major portion of honey to be treated and a minor portion of distillate of honey, at a temperature and for a period of time sufficient to form thereof a substantially clear melt consisting of said honey and said distillate, said minor portion of distillate being so chosen as to form of said distillate and said honey to be treated a mixture having a water content in excess of 16%; and subjecting the thus-formed melt to vacuum distillation at a residual pressure sufficiently low and for a period of time sufficiently long to remove from the thus formed melt distillate in an amount corresponding to said minor portion of distillate, whereby separately clear molten honey and distillate are obtained.

3,297,454
CURTAILED IMMERSION FOOD FREEZING

Robert C. Webster and Ernest J. Benson, both of Madison, Wis., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 379,960, July 2, 1964. This application Feb. 3, 1966, Ser. No. 524,809
2 Claims. (Cl. 99—193)

1. A method of freezing a food product selected from the group consisting of fruits and vegetables which undergo cracking and splitting when immersed in a cryogenic liquid and frozen throughout during immersion, which method essentially comprises cooling said product to a temperature slightly above its freezing temperature by heat exchange with cold nitrogen gas; immersing said product in liquid nitrogen at atmospheric pressure and at a temperature of about —320° F. for a time sufficient to freeze to a rigid solid state at least 60% of the total mass of the said product, passing nitrogen vapor evolved from said liquid nitrogen through a zone, said nitrogen vapor having a temperature at the inlet of said zone approximating the —320° F. temperature of said liquid nitrogen a temperature at the exit of said zone not higher than 0° F., withdrawing said product from contact with said liquid nitrogen while an inner core thereof remains in the unfrozen, relatively soft state and constitutes at least 20% of the total product mass, and passing said food product immediately following withdrawal from contact with the liquid nitrogen through said zone in contact with said nitrogen vapor therein for a time period sufficient to allow the inner relatively soft core to be frozen to the rigid solid state and to allow the temperature throughout the product to equalize at a temperature below its freezing temperature.

3,297,455
METHOD OF FREEZE DRYING LIQUID MILK PRODUCTS

Ralph P. Ogden, 7522 Walnut St., Hammond, Ind. 46324

Filed Oct. 22, 1965, Ser. No. 507,623
9 Claims. (Cl. 99—201)

1. The method of freeze drying a liquid milk product which includes concentrating the product to a volume in the range of ½ to ¼ of its original volume, flash freezing the concentrate into a film, forming the film into chips, compacting the chips into cakes, and drying the cakes under conditions of temperature and pressure that preclude melting of the cakes to a final moisture content that does not exceed approximately 5 percent.

3,297,456
SURFACE COATING AND PRESERVING COMPOSITION
Owen W. Newell, 102 W. Bobe St., Pensacola, Fla. 32501
No Drawing. Filed May 13, 1966, Ser. No. 549,827
3 Claims. (Cl. 106—3)

1. A floor cleaning and polishing composition which on the basis of volume consists essentially of about 6–12 oz. of an aqueous solution of 80–85% lactic acid, about 6 oz. of an aqueous solution of 40–70% methanol, about 6 oz. of an aqueous solution of 30–50% hydrogen peroxide and about 3–4 oz. of an aqueous solution of about 26% ammonia.

3,297,457
BASIC REFRACTORY BRICKS
Fedia R. Charvat, Williamsville, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 7, 1961, Ser. No. 150,653
2 Claims. (Cl. 106—59)

1. A basic refractory brick consisting essentially of bonded agglomerate of particles of magnesia-chrome ore refractory material, said chrome ore having a silica content of less than 5% and said particles consisting of a coarse fraction formed of particles between 8 and 65 mesh and a fine fraction formed of particles of less than 65 mesh, the iron oxide content of the fine fraction being less than 3% and the iron oxide content of the coarse fraction being between 6 and 15%.

3,297,458
PLASTIC CHROME ORE
Harry M. Mikami, Norristown, Pa., assignor to E. J. Lavino and Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed June 5, 1964, Ser. No. 373,073
11 Claims. (Cl. 106—66)

3. A chrome ore refractory composition consisting essentially of from 75 to 92 parts chrome ore, from 4 to 12 parts liquid sodium silicate solution, from 1 to 10 parts clay selected from the group consisting of kaolin and bentonite, from 0.5 to 3 parts fiber selected from the group consisting of asbestos and flock, and the remainder water, all of said parts being by weight of the total composition.

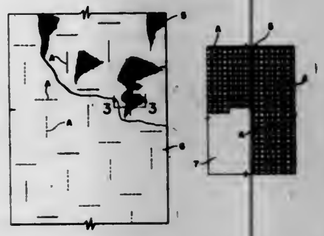
3,297,459
PROCESS OF PREPARING FORMED COLLAGEN BODIES
Arthur Veis, Skokie, and Jerome Cohen, Chicago, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Apr. 8, 1965, Ser. No. 446,718
7 Claims. (Cl. 106—161)

1. The process of preparing formed collagen bodies from a flowable mixture of finely-divided native collagen material and reconstitutable collagen solubilized in an aqueous solution, comprising the steps of:
(a) forming said mixture into a body of the desired shape; and
(b) contacting said formed body with an aqueous solution of ammonium sulfate having a pH above 5.5 up to about 9.0, while said solubilized collagen remains in intimate association with the native collagen material of said body,
the ammonium sulfate concentration of said solution being sufficient to cause said solubilized collagen to reconstitute to fibrous collagen having the cross-striations of native collagen;
whereby a cross-linked collagen body of high strength is obtained.

3,297,460
PHOSPHATE GEL COMPOSITIONS
Eric Rau, Lawrence Township, Mercer County, and Ray Phillips, Murray Hill, N.J., and James P. Hamilton, Anne Arundel County, Md., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 7, 1963, Ser. No. 314,532
4 Claims. (Cl. 106—177)

1. A triorganic phosphate coating composition for viscous-impingement filters which comprises as a major in which n is 0–1, the alkyl radical is of 1–8 carbon atoms and the aryl radical is derived from tar acid, and which contains as essential ingredients 0.5–5% by weight, based upon the total mixture, of substantially pure pyrogenic silica having a particle size no greater than 0.025 micron, and 0.1–2.5% by weight, based on the total mixture of an agent selected from the group consisting of non-ionic surfactants, cationic surfactants, polyglycols and water.

3,297,461
REINFORCED PLASTIC SHEETING
Don F. Siddall, Akron, Ohio, assignor, by mesne assignments, to U.S. Stoneware, Inc., a corporation of Massachusetts
Filed May 10, 1963, Ser. No. 279,367
13 Claims. (Cl. 117—4)



10. The method of treating a screen of crossed, parallel filaments, which method comprises cutting all of the filaments into sections which are relatively short compared to their original length, by cutting across a number of adjacent filaments at a plurality of locations in the screen scattered throughout the area of the screen, said number being relatively small compared with the total number of filaments parallel thereto, the adjacent filaments at each location being cut substantially simultaneously.

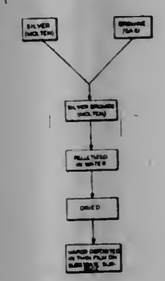
11. The method of treating a screen as in claim 10, which is followed by coating at least one surface of the screen with a plastic.

3,297,462
PROCESS FOR RENDERING ORGANIC POLYMERIC SHAPED STRUCTURE RESISTANT TO DEGRADATION BY ULTRAVIOLET LIGHT
Herbert H. Fanning, Columbus, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 10, 1963, Ser. No. 307,784
8 Claims. (Cl. 117—33.3)

1. A process for imparting resistance to degradation by ultraviolet light to a thermoplastic organic polymeric shaped structure which comprises, in combination, the sequential steps of (1) immersing a thermoplastic organic polymeric shaped structure having a zero strength temperature of at least 200° C. in a solution maintained at a temperature within the range of from about 130° to about 170° C., and comprising at least 10% by weight, based on the total weight of the solution, of a benzophenone derivative compound selected from the group consisting of 2,2'-dihydroxy-4,4'-dimethoxy benzophenone

and 2,2'-dihydroxy-4-methoxy benzophenone, dissolved in a solvent mixture consisting of diethylene glycol and glycerol, the weight ratio of diethylene glycol/glycerol being within the range of from 75/25 to 40/60, for a sufficient length of time to absorb into the surface of said structure at least 0.8 gram of benzophenone derivative per square meter of treated surface; (2) washing said structure in a bath of diethylene glycol maintained at a temperature within the range of from about 65° to about 95° C.; (3) further washing said structure in water to remove solvent; and (4) drying said structure.

3,297,463
METHOD OF MAKING A PHOTOGRAPHIC PRODUCT
Edward Hartouni, Claremont, Calif., assignor, by mesne assignments, to Tox Corporation, a corporation of New York
Filed July 8, 1963, Ser. No. 293,252
10 Claims. (Cl. 117—34)



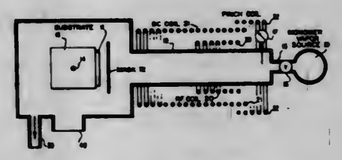
1. In a process of producing a silver halide photographic material wherein silver halide is evaporated from a molten pool under high vacuum conditions, and the effluent vapors are condensed on a substrate layer to form on said layer a stratum of silver halide microcrystals, said microcrystals being adhered directly to said substrate and cohered directly to each other; the improvement wherein the silver halide is first purified by pelleting in water from a molten state.

3,297,464
METHOD OF MAKING A PHOTOGRAPHIC PRODUCT
Robert A. Wilferth, Pittsford, N.Y., assignor, by mesne assignments, to Technical Operations, Incorporated, a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,288
8 Claims. (Cl. 117—34)



1. In the method of producing silver halide photographic material wherein silver halide, containing impurities, is evaporated from a molten pool under high vacuum conditions, and the effluent vapors are condensed on a substrate layer to form on said layer a stratum of silver halide microcrystals, said microcrystals being adhered directly to said substrate and cohered directly to each other; the improvement wherein prior to producing said photographic material a minor percentage of said silver halide is pre-evaporated under a vacuum approximating, and at a temperature substantially in excess of, the conditions of evaporation during production of said photographic material.

3,297,465
METHOD FOR PRODUCING ORGANIC PLASMA AND FOR DEPOSITING POLYMER FILMS
Richard A. Connell, Shawnee Mission, Kans., and Lawrence V. Gregor, Briarcliff Manor, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,721
17 Claims. (Cl. 117—38)



1. A method for depositing polymer films onto a substrate comprising:
confining monomer vapors and a substrate in a chamber, subjecting said monomer vapors to a radio-frequency electromagnetic field having a peak magnetic field component of up to about 2 oersteds,
simultaneously subjecting said monomer vapors to a D.C. magnetic field having a strength of at least about 300 oersteds and formed to confine said monomer vapors, confining of said monomer vapors increasing the probability of collision between particles therein to produce a glow discharge and to form a plasma, and
contacting said substrate with said plasma to effect condensation of said plasma onto said substrate in the form of a polymerized film.

3,297,466
CONTINUOUS PROCESS FOR ENCAPSULATING INDIVIDUAL PARTICLES OF PARTICULATE MATERIAL WITH A POLYOLEFIN
Daniel F. Herman, Princeton, and Uno Kruse, Neptune, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 1, 1962, Ser. No. 234,625
14 Claims. (Cl. 117—47)

1. A continuous process for encapsulating particulate material with a polymer to form shells of polymer on each individual particle of said particulate material comprising forming a flowable slurry of particulate material preconditioned to remove substantially all water therefrom with a compatible vaporizable conveying fluid flowing through a continuous path with a concentration of said particulate material in said slurry so that, after polymer shells are formed on the particles of said particulate material, the concentration of particles in said slurry is not substantially greater than 15% of the total weight of the slurry, continuously adding a first component of a two component organometallic-transition metal catalyst system, the components of which, upon reaction with each other, provide an initiator effective for polymerizing 1-olefins, to said slurry flowing in said path, contacting said particulate material flowing in said path

with said first component, thereafter continuously adding a second component of said catalyst system to said slurry flowing in said path, reacting said first component in contact with said particulate material with said second component, thereafter continuously introducing into the flowing slurry a 1-olefin monomer containing fewer than six carbon atoms and polymerizing said monomer on the individual particles of said particulate material to form said monomer as a polymer shell encapsulating each individual particle of said particulate material flowing in said path separately and independently of the other particles flowing in said path and separate and independent from said conveying fluid, continuously removing said encapsulated particles from said fluid and continuously recycling said conveying fluid through said continuous path by admixing said conveying fluid, after said encapsulated particles are removed, with additional particulate material to form said flowable slurry.

3,297,467

TREATMENT OF POLYETHYLENE TEREPHTHALATE FILAMENTS FOR IMPROVED RUBBER ADHESION

Karl Macura, Klingenberg am Main, Franz Josef Schmitz, Erlenbach am Main, and Erhard Siggel, Seckmauern uber Hochst im Odenwald, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Nov. 10, 1964, Ser. No. 410,256
Claims priority, application Germany, Nov. 20, 1963, V 24,903
3 Claims. (Cl. 117—47)

1. An improved process for pretreating a non-woven polyethylene terephthalate yarn for subsequent rubber adhesion, which process comprises: applying substantially concurrently as a base coating onto said non-woven yarn an aqueous dispersion of

(A) the curable combination of a polyglycidic ether of an acyclic hydrocarbon substituted by at least three hydroxy groups and an amine curing agent, and

(B) a lubricating agent which is adapted to lubricate the filaments in said non-woven yarn during subsequent transport and handling; and

then heating the base coated yarn to a temperature of about 160° C. to 245° C. for a period of time sufficient to fix the ether and amine components thereto.

3,297,468

TREATMENT OF POLYETHYLENE TEREPHTHALATE FILAMENTS FOR IMPROVED RUBBER ADHESION

Karl Macura, Klingenberg am Main, Franz Josef Schmitz, Erlenbach am Main, and Erhard Siggel, Seckmauern uber Hochst im Odenwald, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Nov. 10, 1964, Ser. No. 410,266
Claims priority, application Germany, Nov. 20, 1963, V 24,905
3 Claims. (Cl. 117—47)

1. An improved process for pretreating a non-woven polyethylene terephthalate yarn for subsequent rubber adhesion, which process comprises: applying substantially concurrently as a base coating onto said nonwoven yarn an aqueous dispersion of

(A) the curable combination of a polyglycidic ether of a cyclic hydrocarbon substituted by at least two hydroxy groups and an amine curing agent, and

(B) a lubricating agent which is adapted to lubricate the filaments in said non-woven yarn during subsequent transport and handling; and

then heating the base coated yarn to a temperature of about 160° C. to 245° C. for a period of time sufficient to fix the ether and amine components thereto.

3,297,469

PROCESS FOR PREPARING SHEET METAL SURFACES WITH DRY LUBRICANT COATINGS

Charles L. Otis, Inkster, and Bruno J. Osak, Warren, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Aug. 2, 1963, Ser. No. 303,200
1 Claim. (Cl. 117—49)

A process of preparing sheet metal of between .030" to .125" thickness for subsequent drawing and forming operations comprising moving said sheet rapidly past successive treating stations at a speed of about 95 to 165 feet per minute, applying a hot cleaning solution to said sheet at a first station to clean said sheet, said solution having a temperature above about 150° F. but under the boiling point thereof to impart substantial heat to said sheet such that it attains a temperature in the order of 150° to 200° F., immediately following cleaning pressing a film of hot non-congealing aqueous soap solution containing between about 5 to 36% by weight of soap and in amount between about 100 to 300 milligrams per square foot, into intimate contact with a surface of said heated sheet at a second station while said sheet is at a temperature above about 150° F. but not high enough to cause bubbling of the soap film, said soap solution being liquid at ambient temperature and having a temperature between 115 to 180° F. and below the boiling point thereof, and evaporating water from said film by the residual heat stored in said sheet whereby to reduce the moisture content thereof to an amount less than 15% wherein said film is sufficiently dry to inhibit sticking between layers of said soap filmed sheet metal when brought into pressure contact with each other, said film being sufficiently dry when it has moved within a distance in the order of about seven feet from said film applying station but not more than 30 feet.

3,297,470

METHOD OF LUBRICATING VITREOUS FIBRES

Richard A. Martel, Sylmar, Calif., assignor to General Precision, Inc., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 215,784, Aug. 9, 1962. This application Oct. 13, 1965, Ser. No. 495,714
1 Claim. (Cl. 117—54)

A method of adhering boron nitride to vitreous fibres comprising the steps:

immersing the vitreous fibers in a bath of water having a dielectric constant of about 80;

ultrasonically vibrating the fibres at about 60 kc.;

removing the vitreous fibres from the bath of water and immersing the vitreous fibres in a bath of acetone;

ultrasonically vibrating the vitreous fibres in the bath of acetone at about 60 kc.;

removing the vitreous fibres from the bath of acetone and allowing the residue of acetone to evaporate;

immersing the vitreous fibres in a bath of normal heptane which has a dielectric constant of about 2 and which has a suspension of boron nitride therein; and

ultrasonically vibrating the bath of normal heptane at about 60 kc.

3,297,471

ACRYLIC OR METHACRYLIC ACID GRAFTING COPOLYMERIZED ON NYLON AND FORMING SALT OF SAID GRAFT

Klaus Friedrich Traumann, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 8, 1965, Ser. No. 446,581
The portion of the term of the patent subsequent to Sept. 5, 1978, has been disclaimed
5 Claims. (Cl. 117—62.1)

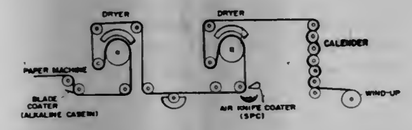
1. A process which comprises contacting a solid structure of the linear, synthetic polycarbonamide, polyhexamethylene adipamide, the said polycarbonamide being free of free-radical initiating peroxy sites prior to said contact and being characterized by recurring carbonamide linkages as an integral part of the polymer chain, with a solution consisting essentially of (a) a chemical, free radical initiator from the class consisting of a peroxide, an azine and an azo initiator and (b) a polymerizable acidic compound selected from the class consisting of (1) acrylic acid and (2) methacrylic acid, the contact between the said shaped structure and the said solution being performed at a temperature below 60° C. and at a concentration of initiator sufficiently low so that substantially no polymerization of the said polymerizable compound occurs below a temperature about 60° C. and the said contact being maintained until the said solution penetrates into the said shaped structure to a depth from the surface of the said shaped structure of at least about 30% measured along the cross-sectional dimension of the said shaped structure, thereafter raising the temperature of the said shaped structure to initiate polymerization of the said polymerizable compound whereby the said polymerizable compound is graft copolymerized to the said polycarbonamide and provides at least about 200 titratable acid radicals per 10^6 grams of polymer throughout the area into which the said solution has penetrated, and thereafter forming a salt of the said acid radicals, the said salt being selected from the class consisting of a metal salt, an amine salt, and an ammonium salt.

3,297,472

PROCESS FOR PRODUCING A HIGH GLOSS COATED PAPER

Warren B. Gilman, Gorham, Lindsay O. Goff and Laurence W. Porter, Westbrook, and Eben W. Freeman, Portland, Maine, assignors to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts

Filed June 24, 1964, Ser. No. 377,763
6 Claims. (Cl. 117—62.2)



1. A process for producing a high gloss coated paper, comprising coating a uniformly dense cellulosic paper web with a flat smooth wet aqueous coating of a paper-coating-grade mineral pigment and a proteinaceous adhesive therefor which proteinaceous adhesive is in free-form and upon drying is malleable, smoothing the still wet coating by pressing the same against a smooth finishing surface, drying said paper sufficiently to accept calendering and imparting gloss to the coated surface thereof by passage through a narrow roll-finishing nip, said proteinaceous adhesive being selected from the group consisting of casein and soy protein and said coating being an alkaline proteinaceous adhesive mineral pigment slurry prepared by admixing a water solution of said proteinaceous adhesive in an alkaline form with said mineral pigment, applying the slurry to said paper and while the resulting coating is still wet and before the smoothing treatment contacting the coating with a water solution of a volatile lower organic acid and a salt of a multivalent metal ion and coagulating said alkaline proteinaceous adhesive, the amount of said multivalent metal ion incorporated in the said coating being sufficient only to prevent said coating from sticking to said finishing surface.

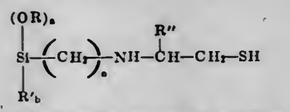
3,297,473

SEALANT COMPOSITION AND PROCESS

George F. Bulbenko, Levittown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,391
15 Claims. (Cl. 117—72)

5. A process for bonding a curable, liquid polysulfide polymer based sealant composition in cured form, to a substrate which comprises treating said substrate, prior to the application of said composition thereto, with a primer which is essentially a compound having the structure



in which R is a lower alkyl group; R' and R'' are selected from the group consisting of H and lower alkyl groups; a is a whole number of 1 to 3, b is a whole number of 0 to 2 and $a+b=3$ and n is a whole number of 1 to about 6; applying said composition to the primed substrate and adhesively curing said composition on said substrate.

3,297,474

METHOD FOR SPREADING VISCOUS MASSES

Julian W. Shields, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

Filed Mar. 25, 1963, Ser. No. 267,476
2 Claims. (Cl. 117—104)

1. A process for applying liquids in thin layers of carefully controlled thickness which comprises the steps of:

(a) imparting a spiralling velocity to a liquid in a generally vertically oriented enclosed zone having a predetermined length, an annular cross-section, and a longitudinal axis,

(b) discharging the spiralling liquid from the lower end of said enclosed zone onto a body of rapidly moving air having a circular velocity in the same direction as the circular component of the spiralling velocity of said liquid, said body of rapidly moving air having a substantially conical shape with the longitudinal axis of the cone traced by said body of air being substantially coincidental with the said longitudinal axis of said enclosed zone, wherein the diameter of said cone increases in the direction away from said enclosed zone and

(c) projecting said liquid away from said enclosed zone in a substantially hollow spiralling mass of ever increasing diameter.

3,297,475

COATING METHOD AND APPARATUS EMPLOYING ROTATING WORKHOLDER

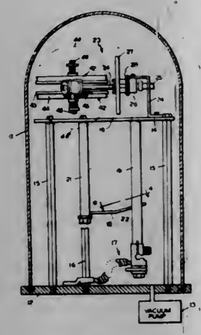
Louis A. Flacche, Audubon, N.J., assignor to The New York Air Brake Company, a corporation of New Jersey

Filed May 27, 1963, Ser. No. 283,373
5 Claims. (Cl. 117—106)

1. The method of coating a convex spherical surface with a uniform thickness of material comprising the steps

of simultaneously rotating the surface about its center in three different directions and projecting the coating material onto said surface while it rotates.

3. Apparatus for coating a convex spherical surface with a uniform thickness of material comprising



(a) a workholder for supporting said surface;
(b) means spaced from said surface for projecting the coating material onto said surface; and
(c) means for simultaneously rotating said surface about its center in three different directions.

3,297,476

PRODUCTION OF NON-BLOCKING ADHERENT FILM AND FOIL

William Paul Kane, Bon Air, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 17, 1963, Ser. No. 273,557
18 Claims. (Cl. 117—132)

1. A process for rendering base sheets adherable to other materials and for rendering said base sheet nonblocking comprising applying to a base sheet a solution consisting essentially of polyalkylenimine derived from the polymerization of 1,2-alkylenimine wherein the alkylene radical contains 2–8 carbon atoms, said polymer having a molecular weight within the range of from about 5000 to about 800,000, and a surface-active agent in proportion and in amount effective to uniformly deposit at least about 5 milligrams of polyalkylenimine and between about 2 and about 30 milligrams of surface-active agent per square meter of the surface of base sheet, and thereafter drying said base sheet to remove solvent.

3,297,477

HEAT-SEALABLE COMPOSITE SHEET

Edward Barkis, Philadelphia, and Thomas M. Quinn, Ridley Park, Pa., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 30, 1965, Ser. No. 444,037
5 Claims. (Cl. 117—138.8)

1. A composite sheet comprising an oriented thermoplastic base sheet and a coating on at least one side thereof comprising a composition of (1) from 50 to 80%, based on the weight of the composition, of an interpolymer of from 50 to 60 wt. percent of a C_1–C_4 alkyl methacrylate, from 50 to 40 wt. percent of a C_1–C_4 alkyl acrylate and from 1 to 5 wt. percent of an acid selected from the group consisting of methacrylic, acrylic and itaconic acid, the individual monomer units not exceeding a total of 100%; (2) from 50 to 20%, based on the weight of the composition of a compound selected from the group consisting of an adduct of rosin and an alpha-beta unsaturated dicarboxylic acid, and the partial esters of said adduct and a polyhydric alcohol; and (3) from 1 to 5%, based on the weight of the composition, of a wax selected from the group consisting of paraffin wax and microcrystalline hydrocarbon wax, the components of the composition not exceeding a total of 100% by weight.

3,297,478

ELECTRICAL CABLES INSULATED WITH POLYETHYLENE STABILIZED WITH A p-PHENYLPHENOL FORMALDEHYDE CONDENSATION PRODUCT

Hans R. Larsen, Montreal, Quebec, Canada, assignor to Union Carbide Canada Limited, Ontario, Canada, a corporation of Canada

No Drawing. Filed Dec. 27, 1963, Ser. No. 334,012
4 Claims. (Cl. 117—232)

1. An electrical cable insulated with a normally solid polyethylene blended with from about 0.005 percent by weight to about 0.2 percent by weight, based on the weight of the polyethylene, of the resinous condensation product of para-phenylphenol and formaldehyde.

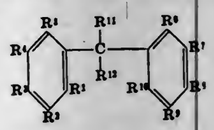
3,297,479

INSULATED COPPER ARTICLES CONTACTING ISOTACTIC POLYPROPYLENE CONTAINING A THIODIALKANOIC ACID DIESTER AND A POLYNUCLEAR PHENOLIC ANTIOXIDANT

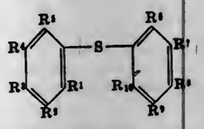
Robin Henry Burgess, Market Drayton, and Vivien Griffiths, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,811
Claims priority, application Great Britain Dec. 31, 1959
10 Claims. (Cl. 117—232)

1. Articles comprising copper and a polymeric composition in contact therewith, said polymeric composition comprising isotactic polypropylene and a stabiliser composition comprising a diester of a thiodialkanoic acid selected from the class consisting of β-thiodipropionic and thiodibutyric acids and of an alcohol containing from ten to twenty carbon atoms, and a phenolic compound selected from compounds having the formula



and compounds having the formula



in which R^3 and R^8 are hydroxyl groups, and R^2 and R^7 are alkyl groups, the remaining nuclear substituents being selected from the class consisting of hydrocarbon groups, and hydrogen atoms, and in which R^{11} and R^{12} together contain at least three carbon atoms and are selected from the class consisting of alkyl groups, alkylated hydroxyaryl groups, hydrocarbon and oxacycloalkyl groups having as a substituent an alkylated hydroxyaryl group, and hydrogen atoms, the amount of said phenolic compound being up to 5% and the amount of said diester being such that there are from 1 to 10 hydroxyl groups provided to the composition by said phenolic compound for each sulfur atom provided to the composition by said diester.

3,297,480

METHOD FOR PREPARING STARCH HAVING IMPROVED AMYLASE ADSORPTIVE CAPACITY

Osaharu Matsuda, Ikeda, Kiyoshi Kusai, Toyonaka, Makoto Tsukamoto, Koya, Itami, and Toshiaki Komaki, Amagasaki, Japan, assignors to Nagase & Co., Ltd., Osaka, Japan

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,351
Claims priority, application Japan, Sept. 11, 1962, 37/39,156
4 Claims. (Cl. 127—71)

1. A method for preparing starch having improved amylase adsorption capacity which comprises treating starch containing not more than 25%, by weight, of water with steam having a temperature of between 100° and 135° C. until substantially all of the starch reaches a temperature higher than 100° C.

3,297,481

CLEANING AND DESCALING PROCESS

Kenneth W. Newman, Tarzana, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California

No Drawing. Filed June 19, 1961, Ser. No. 127,422
7 Claims. (Cl. 134—22)

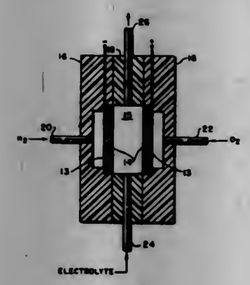
1. A process for cleaning of foreign matter from an internal surface of a piece of equipment by means of a water soluble cleaning agent, which comprises dispersing externally of said piece of equipment, said agent in a substantially chemically inactive form in superheated steam, conducting the resulting steam dispersion of said agent in said chemically inactive form to said piece of equipment and interiorly thereof to said surface, condensing said steam dispersion on said surface, and forming a concentrated aqueous solution of said agent in the resulting steam condensate, in contact with said surface.

3,297,482

CARBON ELECTRODE WITH POLYTETRAFLUOROETHYLENE ON ONE SIDE AND PLATINIUM ON THE OTHER SIDE, FUEL CELL WITH SAME AND ELECTRODEPOSITING METHOD OF PREPARING SAME

Jon W. Zimmer, Chicago, Ill., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 4, 1963, Ser. No. 314,072
5 Claims. (Cl. 136—86)



1. The method of preparing a carbon electrode for use in a fuel cell using an acid electrolyte, said method comprising firing the carbon electrode in a carbon dioxide-air atmosphere, electrodepositing polytetrafluoroethylene onto one side of the carbon electrode to form a deposit consisting essentially of polytetrafluoroethylene and electrodepositing platinum onto the other side of the carbon electrode to form a deposit consisting essentially of platinum.

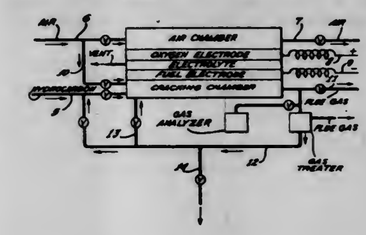
5. A fuel cell unit using an acid electrolyte, said fuel cell unit comprising an oxidizing electrode of prepared carbon and means for passing an oxidizing gas to an end face of said oxidizing electrode, a reducing electrode of prepared carbon and means for passing a fuel gas to an end face of said reducing electrode, an electrolyte chamber for acid electrolyte disposed between the oxidizing and reducing electrode, means for passing the acid electrolyte into one end of said electrolyte chamber, means for passing a mixture of acid electrolyte and cell reaction products out of the other end of said electrolyte chamber, and where said electrodes are prepared prior to use in the fuel cell by the method comprising firing the carbon electrode in a carbon dioxide-air atmosphere, electrodepositing polytetrafluoroethylene onto one side of the carbon electrode to form a deposit consisting essentially of polytetrafluoroethylene and electrodepositing platinum onto the other side of the carbon electrode to form a deposit consisting essentially of platinum.

3,297,483

METHOD FOR GENERATING ELECTRICAL ENERGY FROM LIGHT GASEOUS FUEL

James E. McEvoy, Morton, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., and Northern Natural Gas Company, Omaha, Nebr., both corporations of Delaware

Filed Apr. 7, 1965, Ser. No. 446,272
7 Claims. (Cl. 136—86)

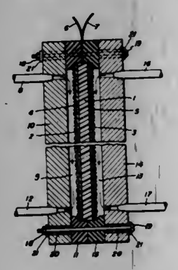


1. The method for generating electrical energy from a preheated stream consisting essentially of light gaseous fuel containing light, normally gaseous acyclic hydrocarbons normally decomposable only at temperatures well in excess of 1000° F., which comprises the steps of:

(a) introducing said fuel stream into the fuel chamber of a fuel cell adapted for high-temperature operation in the range of about 1400–1800° F. and having porous catalytic electrodes separated by a body of molten carbonate electrolyte which is stable at the aforesaid high temperature and contains carbonate ions;
(b) thermochemically cracking the light hydrocarbons within the fuel chamber at a temperature within the range of between 1400°–1800° F., in the absence of any free oxygen, to form hydrogen which is then electrochemically oxidized at the anode, with release of electrons, and carbon which is deposited as a contaminant which gradually seals off the catalytically active sites, with resultant loss of cell efficiency;
(c) simultaneously introducing free oxygen-containing gas into the oxygen chamber of said cell and transferring electrons released at said anode through an external electroconductive path to the cathode, said electrons combining with the free oxygen and with available carbon dioxide derived from the anodic reactions to maintain a continuous flow of carbonate ions through the body of electrolyte to the anode;

(d) continuously withdrawing the gaseous effluent of the concomitant cracking and electrochemical reactions and treating the same to recover as fuel any unused hydrocarbons and hydrogen;
(e) discontinuing the flow of gaseous fuel when the decrease in cell efficiency resulting from the carbon deposition renders continued operation impractical;
(f) simultaneously introducing preheated free oxygen-containing gas into the fuel chamber to effect substantially instantaneous combustion of deposited carbon, with resultant formation of a gaseous combustion product rich in carbon monoxide, which latter is then electrochemically oxidized at the anode, with release of electrons;
(g) continuously withdrawing the gaseous effluent of the combustion and electrochemical reactions and treating the same to recover as fuel any unused carbon monoxide;
(h) discontinuing the flow of free oxygen-containing gas into the fuel chamber when sufficient carbon has been removed to reactivate the catalytic material;
(i) and repeating the cycle of operation to maintain the uninterrupted generation of electrical energy.

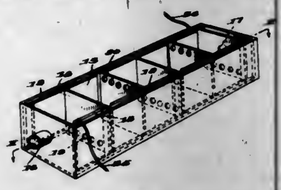
3,297,484
ELECTRODE STRUCTURE AND FUEL CELL INCORPORATING THE SAME
Leonard W. Niedrach, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 8, 1961, Ser. No. 108,418
22 Claims. (Cl. 136—86)



1. A gaseous fuel cell comprising an aqueous electrolyte solution sorbed in a solid matrix which is positioned between and in direct electrical contact with a pair of gas permeable, hydrophobic, electronically conductive electrode elements, each of said electrode elements comprising gas adsorbing metal particles bonded together into a unitary mass with polytetrafluoroethylene in the ratio on a volume basis of from 0.2 to 2.5 parts of the metal particles per part of polytetrafluoroethylene, means for supplying a fuel gas to one of said electrode elements and means for supplying an oxidant gas to the other of said electrode elements.

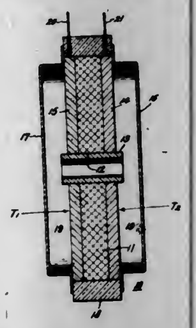
3,297,485
CASCADE BATTERY
Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 26, 1963, Ser. No. 275,976
8 Claims. (Cl. 136—86)

8. An electrode unit adapted for use in a battery employing an electrolyte comprising: at least two electrical insulating support members constructed and arranged to maintain a flow path therebetween; an alternating series of thin film anodes and thin film cathodes positioned on each of said support members, said anodes and cathodes in each series disposed alternately in electrical contact and out of contact and providing an electrical series from side to side of the flow path which includes an anode.



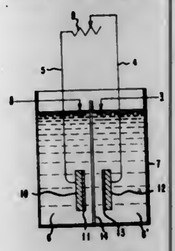
conductivity across said flow path, a cathode, a second anode, conductivity across said flow path, a second cathode and thus to the final cathode of said battery.

3,297,486
NON-ISOTHERMAL VOLTAIC CELL HAVING IODINE ELECTRODES
Joseph L. Weininger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 15, 1963, Ser. No. 280,582
3 Claims. (Cl. 136—86)



1. A non-isothermal voltaic cell comprising iodine electrodes, each of said electrodes comprising an inert carbon conductor and iodine in the gaseous state, a silver iodide electrolyte, the inert carbon conductor in contact with said electrolyte and with said iodine in the gaseous state, and passage means for permitting iodine to travel from the anode side of the cell to the cathode side of the cell.

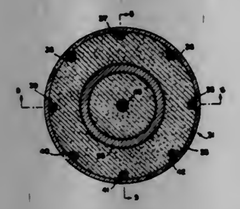
3,297,487
FUEL CELL
Chester M. Pomeroy, Wilmington, Del., and John W. Way, West Chester, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 16, 1964, Ser. No. 404,435
9 Claims. (Cl. 136—86)



1. In a fuel cell composed of two conductive electrodes separated by an acidic electrolyte, a fuel supply, an oxidant supply and means for electrically connecting the

electrodes, the improvement wherein at least one electrode is a catalyst-coated metal/silicon combination selected from the group consisting of metal/silicon alloys and metal silicides, the percentage of silicon in said combination being from about 8% to about 75% by weight, the balance being substantially said metal selected from the group consisting of nickel, cobalt, iron, molybdenum, manganese, vanadium, tungsten and chromium.

3,297,488
DRY CELL BATTERY HAVING A PLURALITY OF CARBON ELECTRODES SPACED AROUND THE PERIPHERY AND IN CONTACT WITH THE CONTAINER
Rodolfo Rodriguez Balaguer, Fort Lauderdale, Fla., assignor, by mesne assignments, to Patent Holding Corporation, Fort Lauderdale, Fla., a corporation of Florida
Filed Aug. 25, 1964, Ser. No. 391,918
8 Claims. (Cl. 136—107)



1. A dry cell battery, comprising a hollow, elongated, electrically insulating container, closure means for the top and bottom of said container, a plurality of axially extending elongated carbon electrodes disposed within said container and being substantially in contact with the wall of said container and being spaced from each other around the periphery of said container, an additional elongated carbon electrode disposed along the central axis of said container, a first contact element external to said container, means to electrically interconnect said contact element, said additional carbon electrode and the electrodes of said plurality of electrodes, a hollow, elongated, metallic anode disposed within said container and being disposed along the axis of said container, said anode being located intermediate said additional carbon electrode and the electrodes of said plurality of electrodes, a second contact element external to said container, means to electrically interconnect said second contact element and said anode, and battery mix substantially filling the space within said container between said additional electrode and said anode and between said anode and the wall of said container.

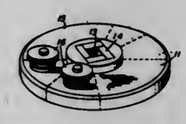
3,297,489
LAYERED ELECTRODE
I-Ming Feng, Westfield, and Barry L. Tarmy, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 418,984
10 Claims. (Cl. 136—120)

1. An electrode consisting essential of a porous rectangular sheet having fused thereto a plurality of strips arranged in layers such that each successive layer is at an angle to each juxtaposed layer, said strips and said sheet each consisting essentially of a porous material comprising a mixture of a polymer and a component, said component selected from the group consisting of an electrically conductive catalyst and a mixture of a catalyst and an electrically conductive material.

3,297,490
PROCESS FOR PREPARING CATALYST SUPPORT AND PRODUCT THEREOF
William Austin Barber, Springdale, and Robert George Haldeman, Rowayton, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Mar. 1, 1963, Ser. No. 262,114
9 Claims. (Cl. 136—122)

1. In an improved process for preparing an electrode adapted for use in a hydrogen oxygen containing gas fuel cell comprising conductive filler and catalytic amounts of an active metal dispersed thereon, the improvement which comprises: incorporating said catalyst into conductive filler, said filler being (a) prepared from a nitrogen-carbon polymer pyrolyzed at temperatures above about 700° C. for from one-half hour to about one hour, and (b) said conductive filler containing a major amount of carbon and a minor amount of nitrogen; and thereafter forming an electrode of enhanced performance at high current densities and voltages.

3,297,491
MICROSCOPE STAGE WITH TEMPERATURE MAINTAINING MEANS
Evgeny Andreevich Kolenko, ul. Academica Paviova 14, Apt. 26, Leningrad, U.S.S.R.
Filed Sept. 14, 1961, Ser. No. 139,042
3 Claims. (Cl. 136—204)

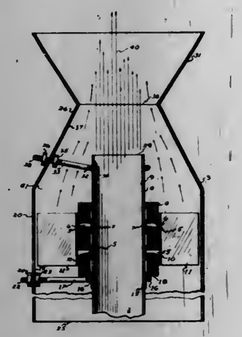


1. A microscope stage for supporting a microscopic slide and for maintaining said slide at a predetermined temperature, said stage comprising a base provided by a current conducting plate having a central opening, said plate having passages for conducting a liquid heat transfer medium therethrough and inlet and outlet fittings connected to said passages, a thermoelectric pile comprising a plurality of thermoelements disposed on said plate surrounding said opening, said thermoelements being joined to said plate, a plurality of current conducting plates disposed on the upper surface of said thermoelements surrounding said opening and joined thereto, said last named plates providing a supporting surface for said slide, and electrical supply terminals on said first mentioned current conducting plate to provide power for operating said pile to cool said slide to said predetermined temperature.

3,297,492
INTERNAL COMBUSTION ENGINE EXHAUST WITH THERMOELECTRIC GENERATOR
Vernon D. Pepper, 101 Montrose Drive, Lockport, Ill. 60441
Filed Mar. 2, 1962, Ser. No. 177,046
4 Claims. (Cl. 136—208)

1. The combination of an internal combustion engine having a hot gas exhaust duct with an outlet end, a thermoelectric generator comprising a body surrounding the duct defining a space therebetween, thermal electrical energy generating elements mounted on said body and having one of their ends in electrically insulated thermal contact with said duct, heat dissipating means connected to the other ends of said elements, shroud means surrounding the outlet end of said duct, said shroud means having a frusto-conical section extending from an area before said outlet end of the exhaust duct and terminating beyond the end of the exhaust duct, and a frusto-conical section extending from said first-mentioned frusto-conical

section and inverted with respect thereto and defining a venturi therewith at an area spaced with respect to the discharge end of the exhaust duct whereby the flow of gases through the exhaust duct and out through the ven-



turi induces a flow of cooling air in the space between said duct and body about said heat dissipating means to provide a substantial temperature difference between opposite ends of said elements.

3,297,493

PROCESS FOR PROVIDING AN IMPROVED PHOSPHATE INSULATING COATING ON FERROUS MAGNETIC MATERIAL

Heinz Blum and Hans-Joachim Edler, Frankfurt am Main, Germany, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,222
Claims priority, application Germany, Mar. 20, 1962, M 52,192
1 Claim. (Cl. 148—6.15)

A process for forming an improved electrically insulating phosphate coating on ferrous magnetic sheet material which comprises the steps of immersing said sheet material in a phosphating solution containing a phosphate salt selected from the group consisting of zinc phosphates, manganese phosphates, iron phosphates, calcium phosphates, magnesium phosphates, and mixtures thereof for a period of time sufficient to deposit a porous adherent phosphate layer thereon, rinsing said phosphate coating with water, and thereafter immersing the rinsed and coated said sheet material in an aqueous emulsion containing an oil selected from the group consisting of petroleum oils, vegetable oils, synthetic oils, and mixtures thereof having a viscosity less than about 10 Engler degrees and a boiling point greater than about 300° C., removing said sheet material from said emulsion leaving a residuary emulsion film thereon containing oil in an amount up to that which can be absorbed within the pores of said coating, and thereafter drying said sheet material to evaporate substantially all of the residuary water therefrom and effecting penetration of said oil and impregnation of said pores by said oil, leaving a coating on the surface which is substantially dry and oil free.

3,297,494

CONCENTRATED MATERIAL FOR USE IN PREPARING AND REPLENISHING ZINC PHOSPHATE COATING SOLUTIONS

George C. Harrison, Roslyn, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,078
5 Claims. (Cl. 148—6.15)

1. A concentrated, aqueous, zinc phosphate composition suitable for dilution with water, consisting essentially of:

	Mols per liter
Na	From 0.5 to 4.5.
ClO_3	From 0.5 to 4.5.
Zn	From 1.13 to saturation.
H	From 0.63 to saturation.
H_2PO_4	From 3.13 to saturation.
BF_4	From 0.3 to saturation.

said composition being further characterized by having an ionic strength of at least 5.06.

3,297,495

PROCESS AND COMPOSITION FOR PHOSPHATIZING METALS

William J. Vullo, Tonawanda, N.Y., and Donald H. Campbell, Niagara-on-the-Lake, Ontario, Canada, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,016
The portion of the term of the patent subsequent to Nov. 30, 1982, has been disclaimed
19 Claims. (Cl. 148—6.17)

13. A method of improving the phosphatizing effects of a chlorinated hydrocarbon non-aqueous phosphatizing solution which comprises mixing said phosphatizing solution with a composition comprising a dihydroxyaromatic compound selected from the group consisting of dihydroxybenzene and dihydroxynaphthalene compounds, and a substance having the following general formula:



wherein R_1, R_2, R_3 and R_4 are substituents selected from the group consisting of hydrogen and lower alkyl groups having one to four carbon atoms, wherein at least one of the substituents R_1, R_2, R_3 and R_4 is a lower alkyl group having one to four carbon atoms.

3,297,496

HEAT TREATMENT OF COLUMBIUM AND MOLYBDENUM BASE ALLOYS

Winston H. Chang and Robert G. Frank, Cincinnati, Ohio, assignors to the United States of America as represented by the Secretary of the United States Air Force

No Drawing. Filed June 7, 1963, Ser. No. 286,430
8 Claims. (Cl. 148—11.5)

1. A method of heat treating an alloy selected from the group consisting of a columbium base alloy and a molybdenum base alloy for the purpose of improving the useful characteristics, and particularly the strength thereof, consisting of the steps of (1) partially working the alloy and thereafter (2) annealing the alloy within the temperature range of (a) about 2500° F. to (b) about 100° F. below the incipient melting temperature of the alloy within a vacuum of about 10^{-5} mm. Hg for about one to six hours.

3,297,497

COPPER BASE ALLOY

George H. Eichelman, Jr., and Irwin Broverman, Cheshire, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Jan. 29, 1964, Ser. No. 341,121
8 Claims. (Cl. 148—32.5)

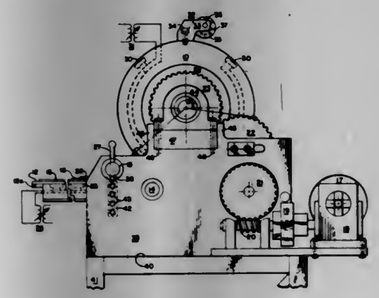
1. A high strength cold rolled and heat treated aluminum-bronze alloy having a minimum tensile strength of 120,000 p.s.i., a minimum yield strength of 60,000 p.s.i. at 0.2 percent offset consisting essentially of (A) from 9.0 to 11.8 percent aluminum; (B) from 0.05 to 5.0 percent of at least one additional element having a solid solubility in copper of less than 4.0 percent and which forms at least one intermetallic compound with aluminum, with the total quantity of said additional elements being less than 10.0 percent; and (C) the balance essentially copper, said alloy having a metallographic structure containing from 5 to 95 percent beta phase, wherein the beta phase has a martensitic structure, and remainder alpha phase and having a uniformly fine metallographic grain structure with a grain size less than 0.065 mm., said alloy containing a discrete, uniformly distributed dispersion rich in said additional element.

3,297,498

CURVED METAL PLATES AND METHOD AND APPARATUS FOR MAKING SAME

Marvin S. Munford, Boulder, Colo., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

Filed Oct. 1, 1962, Ser. No. 227,433
8 Claims. (Cl. 148—11.5)



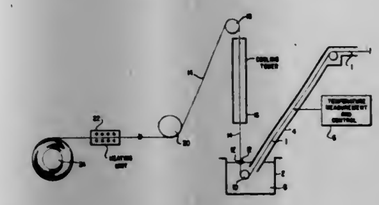
1. A method of forming a curved zinc alloy plate for photoengraving comprising applying pressure to progressively form a plate to a desired configuration while maintaining said plate at a temperature above 135° F. but below 330° F. to permit formation thereof with at least one surface being substantially free of check marks, and completing the forming of said plate by subjecting said plate to an increased forming pressure and to a temperature within the range of 330° F. and 430° F. for a time period which renders the plate dimensionally stable without a substantial change in grain size.

3,297,499

METHOD FOR HEAT TREATING STEEL STRIP

John T. Mayhew, Toronto, Ohio, assignor to National Steel Corporation, a corporation of Delaware

Filed Apr. 2, 1964, Ser. No. 357,861
5 Claims. (Cl. 148—156)



4. Method for heat treating steel strip to eliminate undesirable mechanical properties stemming from handling, heating, and cooling of continuous strip during processing comprising

continuously annealing steel strip,

cooling the continuously annealed strip to a temperature below 500° F. during processing of the strip such that undesirable mechanical properties are developed,

subjecting the cooled strip to a continuous-strip heating operation in which the strip is heated to a temperature within a temperature range having a lower limit about 600° F. and an upper limit about 800° F., and then

heat soaking the strip by coiling the heated strip directly after the heating step with successive convolutions of the strip in contact with one another, the heat soaking temperature being within a temperature range having a lower limit about 500° F. and an upper limit about 800° F., maintaining the strip under conditions such that the coiled strip is within the heat soaking temperature range for a period of time to eliminate the undesirable properties.

3,297,500

METHOD OF PASSIVATING SEMICONDUCTOR DEVICES

Cyril Francis Drake and Kenneth Leopold Ellington, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,212
Claims priority, application Great Britain, Feb. 15, 1963, 6,257/63
6 Claims. (Cl. 148—174)

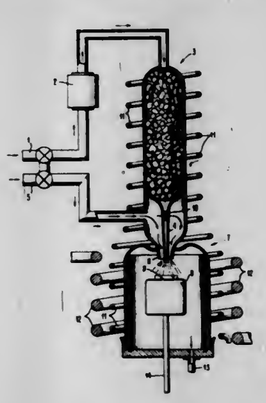
1. A method of passivating a silicon semiconductor device which includes the step of heating the said device in an oxidising atmosphere in the presence of a substance selected from the grouping consisting of vanadium and its compounds.

3,297,501

PROCESS FOR EPITAXIAL GROWTH OF SEMICONDUCTOR SINGLE CRYSTALS

Arnold Reisman, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1963, Ser. No. 334,859
15 Claims. (Cl. 148—175)



1. A method of epitaxially depositing a semiconductor on a substrate comprising the steps of providing a bed of said semiconductor material, generating a non-etching semiconductor polyhalide vapor which is in equilibrium with said semiconductor material and reducing said polyhalide vapor to cause epitaxial deposition on said substrate.

3,297,502
EXPLOSIVE COMPOSITION CONTAINING COATED METALLIC FUEL

Joseph D. Chrisp, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 19, 1965, Ser. No. 441,319
13 Claims. (Cl. 149—6)

1. Aqueous explosive compositions comprising water, inorganic oxidizing salt, and metallic fuel particles, said particles having a continuous, preformed coating composed of about from 10 to 90% by weight of a normally liquid oil having a viscosity of from 30 to 400 Saybolt Universal seconds at 100° F. and about from 90 to 10% by weight of monocarboxylic aliphatic acid containing about from 8 to 22 carbon atoms.

3,297,503
CYCLOTOL AND THERMITE EXPLOSIVE COMPOSITION

Paul O. Hoffmann, Maplewood, and Irving L. Kintish, Rockaway, N.J., assignors to the United States of America as represented by the Secretary of the Army

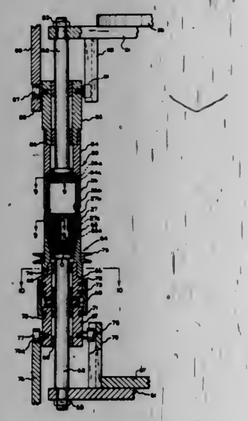
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,084
3 Claims. (Cl. 149—39)

1. A high blast, good afterburning and good fireballing explosive composition comprising cyclotol and thermite, said thermite being selected from the group consisting of $Al+Fe_2O_3$, $Zr+B_2O_3$, $Li+MoO_3$, $Li+WO_3$, $Al+Mn_3O_4$, and $Al+V_2O_5$.

3,297,504
METHOD AND APPARATUS FOR ASSEMBLING AND JOINING THERMOPLASTIC CONTAINER SECTIONS BY FRICTION WELDING

Gaylord W. Brown, Donald J. Rise, and Robert T. Johnson, Beaverton, Mich., assignors to Brown Machine Company of Michigan, Inc., a corporation of Michigan

Filed Mar. 13, 1963, Ser. No. 264,809
23 Claims. (Cl. 156—73)



1. A method of joining thermoplastic hollow sections in end-to-end relation comprising: applying a drive to bring one of the sections to a state of relative rotation with the other section; releasing said drive while permitting said one section to spin; and bringing said sections into end-to-end engaging relation while said sections have relative rotation to weld the sections together with the controlled frictional energy created by their engaging relation during relative rotation.

3,297,505
METHOD OF MAKING ELECTRICAL CAPACITORS

James J. Eaton, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Oct. 24, 1961, Ser. No. 159,809
15 Claims. (Cl. 156—89)

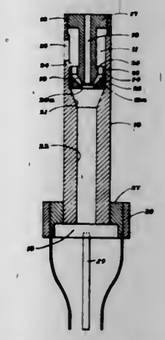


1. The method of making electrical capacitors comprising the steps of applying to a temporary backing a first layer of electro-conductive material, a substantially homogenous layer of dielectric material and a second layer of electro-conductive material in a stacked relation and in the order named, removing said backing, heating the thus formed article to a temperature sufficient to fuse said electro-conductive layers to said dielectric material layer, thereafter cooling said article.

3,297,506
PROCESS AND APPARATUS FOR BLOOMING TOW

James K. Pannill, Jr., and Robert C. Yantz, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 8, 1962, Ser. No. 229,022
6 Claims. (Cl. 156—152)



1. A process for jet treatment of tow in the preparation of filter elements with use of reduced amount of air and lower air pressures coupled with a lessened degree of filament breakage and simultaneously an increase in the available rod pressure drop range for the filter element produced thereby, said process comprising withdrawing a continuous multifilament crimped tow from a supply package, then applying plasticizer to said tow, next passing said tow containing plasticizer into a shortened air-treatment zone under tension created by suction in said zone, subjecting said tow in said zone to an explosive expansion of compressed air with sudden release to atmospheric pressure by expelling tow and air rapidly from a small diameter to a much larger diameter and then conducting through a straight cylindrical passage the length of which is not greater than eight times the inside diameter thereof, said tow being under the influence of an expanding air flow while at the same time being retarded and partially confined by spring fingers as it exists from said straight cylindrical passage, thereby being bloomed under a reduced air pressure and air volume without substantial breakage of filaments, and forming the bloomed tow into a filter-forming zone wherein are formed filter elements of increased available filter rod pressure drop range.

3,297,507
METHOD OF SETTING UP AND APPLYING ADHESIVE TRANSFERS

Edgar F. Twomey, Jr., Glendale, Calif., assignor to E. F. Twomey Co., Inc., Los Angeles, Calif., a corporation of California

Filed Nov. 13, 1962, Ser. No. 236,850
6 Claims. (Cl. 156—240)



1. The method of setting up and applying pressure-sensitive adhesive-coated dry transfer images to a mounting surface comprising the steps of: assembling each dry transfer image on a backing sheet, applying pressure sensitive adhesive to each of said images and a portion of each of said backing sheets, applying a sectional protective sheet including a relatively narrow section over each of said coated portions of said backing sheet, and the other section being relatively wide over each of said dry transfer images, removing said relatively narrow section, predetermining the location of a plurality of said dry transfer images on said mounting surface by positioning indicia means thereon, orienting a guide strip means upon said mounting surface with said positioning indicia means, aligning at least one elongated edge of said guide strip with said positioning indicia means to index said guide strip therewith, aligning guide lines formed on the backing sheets on the reverse side from said dry images with said elongated edge of said guide strip, affixing said backing sheets to said guide strip where said narrow section has been removed, removing said relatively wide section of said protective sheets, affixing by pressure said dry transfer images to said mounting surface, and removing said guide strip and said backing sheets.

3,297,508
DRY STRIP DECALCOMANIA OR TRANSFER AND METHOD OF USE

Clifford J. Jahp, Batavia, Ill., assignor to The Meyercord Co., Chicago, Ill., a corporation of Illinois

Filed Dec. 10, 1962, Ser. No. 243,572
9 Claims. (Cl. 156—249)

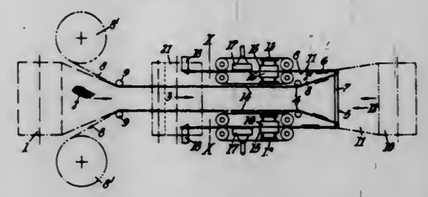


9. The method of applying indicia to an object which comprises: forming a laminated decalcomania having a pair of superimposed indicia carrying and backing sheets with a layer of pressure sensitive adhesive material therebetween, said indicia carrying sheet having an indicia portion at the outermost side thereof and said backing sheet being readily strippable from said adhesive material, said sheets being of larger size than said indicia portion so as to provide waste material in said sheets around said indicia portion; impressing die cuts in said decalomania from the backing sheet side thereof, said die cuts extending fully through said backing sheet and entirely around the periphery of said indicia portion, and said die cuts also extending fully through said indicia carrying sheet and around the periphery of said indicia portion except for a plurality of restricted uncut tabs in said indicia carrying sheet spaced around the periphery of said indicia portion for disruptably connecting the indicia portion of the indicia carrying sheet to the surrounding waste material thereof; removing the fully die cut portion of said backing sheet overlying said indicia portion and thereby exposing the adhesive material on said indicia portion of said indicia carrying sheet; pressing the decalcomania against the surface of the object to adhere the exposed adhesive material to said surface; and thereafter removing as a laminated unit the waste material of said sheets thereby breaking said tabs and leaving said indicia portion adhered to said surface.

3,297,509
MANUFACTURE OF PLASTIC BAGS

Frank Brian Mercer, Blackburn, England, assignor to Plastic Textile Accessories Limited, Blackburn, England, a British company

Filed Feb. 3, 1964, Ser. No. 341,984
5 Claims. (Cl. 156—271)



1. A method of manufacturing bag tubes for the production of layflat bags of the type indicated which comprises advancing a first continuous tube of a first plastic material along a first linear path, reversing the direction of movement of the first tube by turning it inside out so that it passes along a second linear path back over and outside the first linear path, advancing a second continuous tube of a second plastic material along a third linear path aligned with said second linear path and in the same direction of movement and at the same speed as the reversed tube of said first plastic material so that the second tube surrounds and touches, or is closely adjacent to, said reversed first tube and moves therewith, passing the adjacent tubes of said first and second plastic materials through narrow heat and pressure applying zones spaced apart around the periphery of the tubes so as to seal the tubes together along spaced longitudinal sealing lines and thereafter slitting the tubes along the median line of each of said sealing lines to divide the tubes into two or more separated bag tubes having one face of the first plastic material and the other face of the second plastic material.

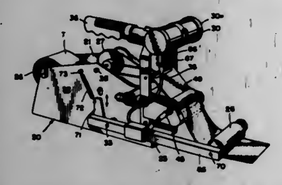
3,297,510
PORTABLE TAPE DISPENSER

Warren Du Broff, 550 Carol Court, Highland Park, Ill. 60035

Filed Mar. 5, 1964, Ser. No. 349,690
11 Claims. (Cl. 156—357)

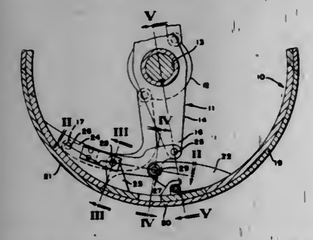
1. A portable gummed tape dispenser, comprising a manually-manipulable frame, means on said frame providing a source of gummed paper, a pressure roller pivotally mounted on said frame positioned in the path of tape being withdrawn from said source means, moisture-applying means on said frame interposed in said path between said source means and said roller, a reservoir of

water on said frame, flexible conduit means interconnecting said reservoir and moisture applying means, and resiliently mounted lever means pivotally connecting said



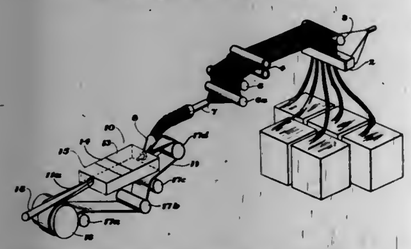
roller to said frame, said lever means being arranged to clamp said flexible conduit except when pressure is applied to said roller for dispensing tape.

3,297,511
COLLAPSIBLE DRUM
William T. Bills, Clawson, and Henry G. Seitz, Detroit, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 4, 1963, Ser. No. 270,762
3 Claims. (Cl. 156—420)



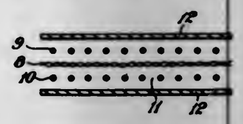
1. A collapsible drum comprising: a rotatable segment-supporting spider having arms including hinge portions; peripheral drum segments having hinge portions; hinge pins extending through said hinge portions of said spider and extending through hinge portions of said drum segments; at least one of said hinge pins having an extremity affixed to a selected hinge portion to prevent relative rotation between said one hinge pin and said selected hinge portion.

3,297,512
APPARATUS FOR FORMING RODS FROM CONTINUOUS FILAMENT TOW
Phara L. Cobb, Jr., and Joel B. Stevens, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 26, 1962, Ser. No. 246,954
3 Claims. (Cl. 156—433)



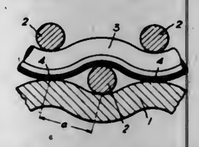
1. A heated forming die adapted for forming a substantially rigid filter rod from continuous filament tow having (1) a tongue positioned at the entrance thereof whereby filament clogging in said die is substantially eliminated, (2) a continuous belt in association with said die, (3) means for moving said belt continuously through said die and wrapping said belt in a cylindrical configuration within said die as it moves therethrough and (4) means for unwrapping said belt as it leaves said die at an opposite end thereof, said heated forming die comprising three sections, the first of which is an entrance end with a converging funnel section containing the tongue whereby smooth shaping of the belt is permitted, said entrance end being heated, the second of which is an unheated and uncooled intermediate section and the third of which is a cooled section forming an exit portion of said die.

3,297,513
BELTING
Peter Michael Robinson, Wootton, Liverpool, England, assignor to Dunlop Rubber Company Limited, London, England, a British company
Filed July 14, 1961, Ser. No. 124,038
Claims priority, application Great Britain, July 29, 1960, 26,413/60
5 Claims. (Cl. 161—57)



1. Conveyor belting suitable for carrying human passengers which is flexible longitudinally and substantially rigid transversely and capable of providing a stable platform for the conveyance of passengers when supported at the edges only comprising a flexible plastic material having embedded therein a composite reinforcement comprising at least two transversely extending layers of metal cords arranged substantially continuously and uniformly along the length of the belting, the metal cords in each layer lying substantially parallel with each other and substantially at right angles to the length of the belting, and at least one layer of textile cords extending longitudinally of the belting between any two metal cord layers.

3,297,514
TENSILE BAND
Rudolf Poeschl, 135 Mariahilferstrasse, Vienna, Austria, and Wilhelm Poeschl, Rohrbach, Upper Austria, Austria
Filed Mar. 11, 1963, Ser. No. 264,321
Claims priority, application Austria, Mar. 13, 1962, A 2,091/62
14 Claims. (Cl. 161—76)



1. An elastic tensile band for machine elements stressed in tension, comprising a first layer constituted of a woven fabric of thermoplastic material, said fabric having fiber-oriented warp filaments and fiber-oriented weft filaments extending substantially perpendicular to one another, said warp filaments extending in the longitudinal direction of the tensile band, a second layer constituted by an extensible, substantially non-compressible sheet of thermoplastic material free of oriented fiber having opposite surfaces, said band further comprising means constituted by a binding agent engageably connecting individual filaments of said fabric in restricted tangential contact zones to said sheet, said sheet abutting said fabric transversely to the direcion of tension, such that the additive coaction of the intrinsic elasticity of said warp filaments and the resistance against deformation of said supported weft filaments results in a modulus of elasticity of the entire tensile band below 5000 kg./sq. cm., substantially the whole tension exerted on the tensile band being taken up by said fabric.

ERRATUM

For Class 161—184 see:
Patent No. 3,297,518

3,297,515
LAMINATED PRODUCTS AND A PROCESS FOR THE PRODUCTION THEREOF
Joseph Regenstein, Jr., Chicago, and John C. Tapas, Glenview, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Aug. 27, 1965, Ser. No. 483,353
9 Claims. (Cl. 161—250)

8. A laminated product comprising a plurality of plies of kraft paper bonded together by interposed adhesive containing as its essential consistuents substantially completely polymerized, aromatic, thermoplastic, hydrocarbon resin produced by polymerization of unsaturated petroleum fractions, having a softening point range of from about 200 to about 300° F., a mixed aniline point of from about 20 to about 60° C., an iodine number of from about 70 to about 160, an acid number of from 0 to about 4, a specific gravity at 60° F. of from about 1.05 to about 1.1, a carbon to hydrogen ratio of about 9/1, and a molecular weight of from 600 to about 1400 as determined by cryoscopic means; and a plasticizing oil selected from the group consisting of aromatic oil having an aniline point of from about 20 to about 60° C., naphthenic oil consisting essentially of viscous cyclic hydrocarbon compounds having an aniline point of from about 50 to 150° C., and mixtures thereof.

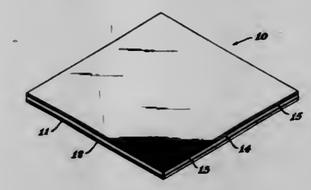
3,297,516
PROCESS FOR DISPERSING ASBESTOS
Alfred W. Naumann, Suffern, and William H. Dresher, Warwick, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,217
10 Claims. (Cl. 162—3)

1. A process for the preparation of a stable suspension of finely divided chrysotile asbestos which comprises contacting an aqueous slurry of chrysotile asbestos with a metal aluminate selected from the class consisting of sodium aluminate, potassium aluminate, calcium aluminate and barium aluminate, adding a monobasic acid selected from the class consisting of acetic acid, formic acid, hydrochloric acid, and nitric acid until the pH of the resulting aqueous slurry is from about 4.0 to about 6.0, thereby forming a highly charged, strongly adsorbable, polymolecular colloid of material selected from the class consisting of aluminum hydroxides and hydrated aluminum oxides and then applying high speed shearing forces to the slurry.

3,297,517
MANUFACTURE OF MINERAL FIBERBOARD
John E. Cadotte, St. Paul, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Apr. 7, 1966, Ser. No. 540,808
10 Claims. (Cl. 162—145)

1. The method comprising forming an aqueous slurry consisting of cooked starch, raw starch, and a mixture thereof, and a small quantity of colloidal asbestos, dewatering the resulting suspension of flocs and thereby forming a wet mineral fiber felt, and drying the resulting felt under conditions effecting bonding of the fibers by the dried residue of starch gel.

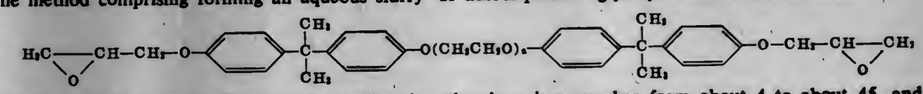
3,297,518
COMPOSITE LAMINATE FILM AND METHOD OF MAKING SAME
Norman S. Maschner, Fairview Park, and Donald W. Seidler, Rocky River, Ohio, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 19, 1963, Ser. No. 296,339
7 Claims. (Cl. 161—184)



4. A transparent composite film structure which comprises, (1) a substrate layer of saran coated nylon film having a thickness between about 0.5 and 2.5 mils including said saran coating of between about 0.02 and 0.5 mil, said saran being a copolymer containing between about 80 and 85 weight percent of vinylidene chloride and between about 20 and 15 weight percent of acrylonitrile, and said saran being firmly bonded to said nylon with an intermediate adhesion-promoting layer of an epoxy modified polyester resin, said substrate layer being uniformly coated on its saran coated surface with; (2) an intermediate adhesion-promoting layer of a polyurethane resin comprising the reaction product of a diisocyanate and a polyalkylene glycol having a molecular weight of between about 300 and 750, said diisocyanate and said polyalkylene glycol being reacted in such proportion that the NCO/OH ratio is about 2; and (3) a tightly adhered superficial layer over the applied layer of said polyurethane resin of a non-aromatic aliphatic hydrocarbon polymer film having a thickness between about 0.5 and 10 mils.

3,297,519
WATER DISPERSIBLE GLYCIDYL ETHER OF POLY(BISPHENOL A) ETHER OF POLYETHYLENE GLYCOL
George M. Rambosek, Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Apr. 13, 1964, Ser. No. 359,439
15 Claims. (Cl. 162—164)

15. A cellulosic paper stock characteristized by repellency to organic oils comprising as adjuvant the reaction product in substantially stoichiometric proportions of autodispersible glycidyl ether of the formula:



wherein n is a number from about 4 to about 45, and distally perfluoroalkyl amine.

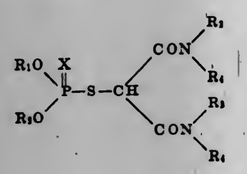
3,297,520

INSECTICIDES

Heiner Dickhaeuser and Heinz Pohlemann, Ludwigshafen (Rhine), Herbert Stummeyer, Mannheim, Heinrich Adolphi, Limburgerhof, Pfalz, and Siegfried Winderl, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 5, 1961, Ser. No. 157,254
Claims priority, application Germany, Dec. 10, 1960, B 60,433
4 Claims. (Cl. 167—22)

1. A process for destroying insects which comprises contacting the insects with an insecticidal quantity of a compound of the formula



in which R_1 and R_2 is lower alkyl, X is a member selected from the group consisting of oxygen and sulfur, R_3 and R_4 are each selected from the group consisting of hydrogen, lower alkyl when considered separately and piperidino when taken with the nitrogen atom.

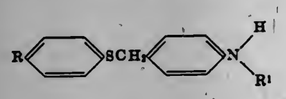
3,297,521

FUNGUS CONTROL WITH 4-(PHENYLTHIOMETHYL)ANILINES

Philip T. S. Lau, Rochester, and Gerald F. Grillot, Syracuse, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 22, 1964, Ser. No. 369,594
6 Claims. (Cl. 167—30)

1. The method of controlling fungi which comprises applying to said fungi a fungicidally effective amount of a 4-phenylthiomethyl aniline of the formula



wherein R represents a member selected from the group consisting of hydrogen and chlorine, R^1 represents a member of the group consisting of hydrogen and methyl, and wherein, when R is chlorine, R^1 is methyl.

3,297,522

METHOD OF USING N-CYCLOHEXYL DIHALO MALEIMIDE AND N-(4-METHYLPHENYL) DIHALO MALEIMIDE FUNGICIDES

Denis Lee, Widnes, and John Norman Turner and John Angus William Turner, Bracknell, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 31, 1963, Ser. No. 284,381
Claims priority, application Great Britain, Jan. 23, 1956, 2,146/56; Jan. 13, 1958, 1,139/58
10 Claims. (Cl. 167—33)

1. The method of controlling fungi in living plants which comprises treating said plants with a fungicidally effective but non-phytotoxic amount of N-(4-methylphenyl) dichloromaleimide.

3,297,523

COMPOSITIONS AND METHODS FOR PROTECTING SEEDS

Heinz Frensch and Helmut Goebel, Frankfurt am Main, and Maximilian Czech and Kurt Hartel, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,313
Claims priority, application Germany, Sept. 1, 1964, F 43,874
5 Claims. (Cl. 167—38)

1. Seed protectants containing as active substance a mixture of 3,3,4,4 - tetrachlorotetrahydrothiophene - 1,1-dioxide—in a ratio within the range of 1:1 to 6:1—with tributyltinphthalimide, tributyltin-p-toluenesulphonamide, tributyltin chloride or with their mixtures, in conjunction with an inert carrier material.

3,297,524

WATER-SOLUBLE, NORMALLY SOLID ORGANIC MERCURY COMPOSITION AND NOVEL ORGANIC MERCURY ADDITION COMPOUNDS

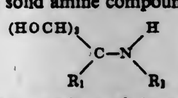
Sergey V. Chodsky, New York, N.Y., and John Geraci, Ridgefield, N.J., assignors to Guard Chemical Company, Inc., Ossining, N.Y., a corporation of New York

No Drawing. Filed Dec. 6, 1963, Ser. No. 328,488
12 Claims. (Cl. 167—42)

1. A solid organic mercury composition readily soluble in water comprising a thoroughly blended mixture of (A) an organic mercury compound of the formula:

$$R\text{-}(Hg\text{—}X)_n$$

where R is an organic hydrocarbon radical selected from the group consisting of aromatic, aliphatic and alicyclic radicals; *n* represents the degree of mercuration of the radical R; and X is a member of the group consisting of hydroxyl, an anion of an organic acid, and an anion of an inorganic acid; together with (B) from about 5 to about 95 percent by weight, based on the total weight of the mixture, of a normally solid amine compound of the formula:

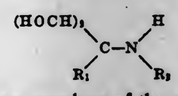


where R_1 and R_2 are members of the group consisting of hydrogen, alkyl radicals, aryl radicals, cycloalkyl radicals and hydroxyalkyl radicals containing from 1 to 3 carbon atoms.

12. In the preparation of a solution of an organic mercury compound of the formula:

$$R\text{—}[Hg\text{—}X]_n$$

where R is an organic hydrocarbon radical selected from the group consisting of aromatic, aliphatic and alicyclic radicals, *n* represents the degree of mercuration of the radical R, and X is a member of the group consisting of hydroxyl, an anion of an organic acid, and an anion of an inorganic acid, in a solvent selected from the group consisting of water, water miscible solvents, and mixtures thereof, the improvement which comprises dissolving in said solvent a normally solid amino compound having the formula:



where R_1 and R_2 are members of the group consisting of hydrogen, alkyl radicals, aryl radicals, cycloalkyl radicals and hydroxyalkyl radicals containing from 1 to 3 carbon atoms, and dissolving in said solvent an amount of said organic mercury compound substantially in excess of the amount normally soluble in the same volume of solvent in the absence of said amino compound, the quantity of said amino compound dissolved in said solvent being in the range of from about 5 to 95 percent by weight of the total weight of said amino compound and said organic mercury compound.

3,297,525

FUNGICIDAL COMPOSITIONS COMPRISING SALICYLATES OF 8 HYDROXY QUINOLINE CARBOXYLIC ESTERS

Nathaniel Grier, Englewood, N.J., assignor, by mesne assignments, to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,813
22 Claims. (Cl. 167—58)

20. A pharmaceutical preparation for the treatment of fungal infections comprising a pharmaceutical carrier mixed with 8-benzoyloxy-quinoline salicylate.

3,297,526

PROCESS FOR PRODUCING COPROGEN AND DESFERRICOPROGEN

Ernst Gaeumann, Zurich, and Ernst Vischer, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 2, 1963, Ser. No. 270,031
Claims priority, application Switzerland, Apr. 5, 1962, 4,188/62; Nov. 19, 1962, 13,537/62
8 Claims. (Cl. 167—65)

1. A process for the manufacture of a member selected from the group consisting of coprogen and desferricoprogen, wherein a member selected from the group consisting of *Penicillium citrinum* M 3614, *Penicillium camemberti* M 98, *Penicillium urticae* 4277, *Penicillium notatum* 1613 and *Penicillium chrysogenum* 4360 is grown under aerobic conditions in an aqueous nutrient solution containing a carbon source and a nitrogen source and inorganic salts, and a member selected from the group consisting of coprogen and desferricoprogen is isolated from the culture filtrate.

8. Desferricoprogen.

3,297,527

PROPARGYLAMINE AS AN ANTI-DEPRESSANT

Edward F. Elslager, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,861
1 Claim. (Cl. 167—65)

A method of combatting depression which comprises administering to a depressed animal a composition in dosage unit form containing as active ingredient an amine compound of the group consisting of propargylamine and physiologically acceptable acid addition salts thereof, the dosage being sufficient to provide about 10 to 250 mg. of the amine compound calculated as free base per kilogram of body weight per day.

3,297,528

STABLE PERFUSABLE COMPOSITION FOR THE TREATMENT OF TUBERCULOSIS

Paul Metadier and Alphonse Voisin, Tours, France, assignors to Laboratoires Paul Metadier Societe Anonyme, Tours, France, a corporation of France

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,622
Claims priority, application France, Jan. 10, 1963, 920,945
6 Claims. (Cl. 167—65)

1. A perfusable composition for the treatment of tuberculosis having a pH between 6 and 8.5 and containing, (A), a compound selected from the group consisting of ethionamide and its non-toxic, therapeutically acceptable acid addition salts, (B), 1 to 5% by weight of the total composition of a compound selected from the group consisting of p-aminosalicylic acid, its alkali metal salts and its non-toxic, therapeutically acceptable acid addition salts, and (C) a compound of the formula R'—CO—NH_2 wherein R' is selected from the group consisting of hydrogen and lower alkyl.

3,297,529

MAGNESIUM SULFATE STABILIZED CHOLINE SALICYLATE

Philip A. Berke, Millburn, N.J., assignor to Sutton Laboratory Inc., Roselle, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 25, 1964, Ser. No. 414,016
15 Claims. (Cl. 167—65)

1. A solid composition comprising a combination of choline salicylate and a stabilizing amount of magnesium sulfate.

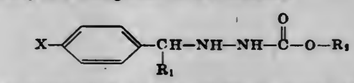
3,297,530

ANTIDEPRESSANT COMPOSITIONS AND METHODS OF USING SAME

Albert Frederick Crowther and Edwin Harry Paterson Young, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 16, 1959, Ser. No. 852,951
Claims priority, application Great Britain, Dec. 23, 1958, 41,454/58; June 22, 1959, 21,291/59
3 Claims. (Cl. 167—65)

1. The method of producing an antidepressant effect which comprises administering to animals and humans a therapeutic amount of a stimulant selected from the group consisting of a compound of the formula



and the nontoxic acid addition salts thereof, wherein R_1 and R_2 are lower alkyl and wherein X is a member selected from the group consisting of halogen, hydrogen and lower alkoxy.

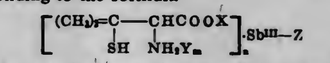
3,297,531

COMPLEXES OF TRIVALENT ANTIMONY WITH PENICILLAMINE, AND ADMIXTURES OF EXCESS PENICILLAMINE WITH SAID COMPLEXES

Ernst A. H. Friedheim, 333 W. 52nd St., New York, N.Y. 10019

No Drawing. Filed Dec. 11, 1963, Ser. No. 329,898
14 Claims. (Cl. 167—68)

1. Compositions for the treatment of trypanosomiasis, leishmaniasis, filariasis, onchocerciasis and schistosomiasis, selected from (a) the group consisting of complexes corresponding to the formula



wherein *n* stands for an integer of 2–5, X is selected from the group consisting of H and salt-forming inorganic and organic cationic radicals, Y_m is selected from therapeutically applicable monobasic organic and inorganic acids and the value of *m* is selected from 0 and 1; Z is selected from the group consisting of OH and organic and inorganic anionic groupings; and (b) from mixtures of at least one member of (a) with a compound selected from the group consisting of penicillamine and penicillamine salts; and the component b is present in the composition in an amount up to 5 mols for one mol of (a).

3,297,532

CENTRIFUGATION METHOD

Alan R. Jones, Miami, Fla., assignor to International Equipment Company, Boston, Mass., a corporation of Massachusetts

Filed Apr. 19, 1962, Ser. No. 188,643
8 Claims. (Cl. 167—74)

1. In a centrifuge-separation method for liquid suspensions containing a discontinuous phase whose dimen-

sions do not exceed colloidal dimensions, the steps of freezing the said liquid suspension, and centrifuging the frozen suspension while maintaining the liquid suspension in a frozen state and thereby causing separation of the discontinuous phase of said frozen liquid suspension.

3. The method of claim 1 in which the suspension is plasma and the discontinuous phase is fibrinogen.

3,297,533

BIOLOGICALLY ACTIVE ANIMAL EXTRACTS

Albert Szent-Györgyi, Andrew F. Hegyeli, and Jane A. McLaughlin, Woods Hole, Mass., assignors to the United States of America as represented by the Secretary of Health, Education and Welfare

No Drawing. Filed July 26, 1963, Ser. No. 299,450
2 Claims. (Cl. 167—78)

1. The process of obtaining a biologically active extract inhibiting cancer growth in animals which comprises extracting animal matter selected from the group consisting of muscle, blood vessels, glands and urine with a solvent selected from the group consisting of water, lower alkanols and acetone, separating insolubles, acidifying the resultant extract to a pH in the range of 1 to 4, extracting the acidified solution with chloroform, recovering the chloroform-soluble fraction, dissolving said chloroform-soluble fraction in a lower alkanol, subjecting the alkanol solution to chromatographic fractionation and recovering the active extract from the moving elutant portion of said fractionation.

3,297,534

METHOD FOR HYPERIMMUNIZING HOGS AGAINST HOG CHOLERA AND SERUM PRODUCT

Robert M. Scott, Sioux Falls, S. Dak., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 26, 1963, Ser. No. 276,098
2 Claims. (Cl. 167—80)

1. A process for preparing an anti-hog cholera product which comprises the steps of securing spleen tissue from a pig sick with hog cholera, preparing a fine suspension of said tissue in aqueous saline solution in the proportions of from 5 to 10 parts of said solution per part of said tissue, separating the resulting aqueous extract from suspended solid matter, filtering said extract with the final step of filtration consisting of passage of the extract through a sterile bacteriological filter, injecting a hyperimmunizing dose of said filtered extract intravenously into a hog cholera-immune hog and subsequently withdrawing blood from said hog.

3,297,535

SHELLAC TABLET COATING COMPOSITIONS AND METHODS OF PREPARATION

John Allen Butler, Leonardo, N.J., and William Valentine, Nanuet, N.Y., assignors to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,882
20 Claims. (Cl. 167—82)

1. A composition comprising a homogeneous mixture of from about 5.0% to about 40.0% by weight of shellac, from about 0.1% to about 2.0% by weight of a wetting agent, from about 2.0% to about 50.0% by weight of an opacifying agent, from about 0.5% to about 5.0% by weight of plasticizing agent, and from about 35.0% to about 70.0% by weight of an inert organic solvent in which both the said shellac and said plasticizing agent are soluble.

3,297,536

METHOD OF TREATING SKIN AND REDUCING PORE SIZE

Robert R. Baron, Presidential Apartments, Philadelphia, Pa. 19131

No Drawing. Filed Sept. 15, 1964, Ser. No. 396,709
5 Claims. (Cl. 167—90)

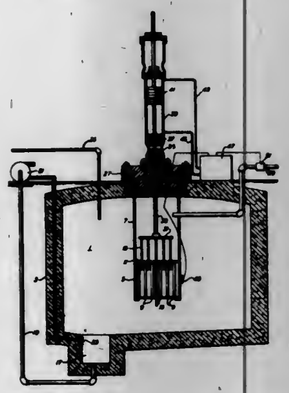
1. A method of conditioning the skin and retaining diminished skin pore size which comprises spraying the skin with an aerosol mixture consisting essentially of an anhydrous denatured lower alkyl alcohol and a propellant, said propellant consisting essentially of dichlorodifluoromethane and trichlorofluoromethane wherein the trichlorofluoromethane is present in a proportion of no more than 52% by weight of the mixture, the propellant constituting at least 90% by weight of the composition.

3,297,537

CRUDE PETROLEUM TRANSMISSION SYSTEM

Manley L. Natland, Rolling Hills, Calif., assignor to Richfield Oil Corporation, Los Angeles, Calif., a corporation of Delaware

Original application May 5, 1958, Ser. No. 733,151. Divided and this application Sept. 23, 1963, Ser. No. 310,839
5 Claims. (Cl. 176—22)



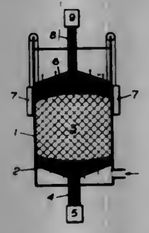
1. In a crude petroleum long distance transmission system, the combination comprising, an inlet transmission line, an outlet transmission line, a neutronic reactor having a crude petroleum receiving tank serving as a shield for the reactor, said tank having an inlet and an outlet connected respectively to said inlet transmission line and said outlet transmission line for the flow of crude petroleum through said reactor, means including said crude petroleum for effecting a controlled self-sustained thermal neutronic reaction in said reactor, said reaction means including spaced apart fissionable elements to heat said crude petroleum while serving both as a coolant and moderator for the reactor, said inlet transmission line being a part of a long distance transmission line and extending from a first remote location and delivering crude petroleum therefrom to said tank, said outlet transmission line being part of said long distance transmission line and extending to a second remote location different from said first remote location and conveying said crude petroleum to said second location from said reactor tank after said crude petroleum flows from said inlet transmission line, through said reactor to cool and moderate said reactor and then into said outlet transmission line wherein the crude petroleum is then in a condition heated by said reactor to a sufficiently high temperature to facilitate movement of said crude petroleum along said outlet transmission line.

3,297,538

NUCLEAR REACTORS

Hans Grümm, Hermann Jauk, and Norbert Schwarz, Vienna, Austria, assignors to Osterreichische Studiengesellschaft fur Atomenergie Ges.m.b.H., Vienna, Austria

Filed July 30, 1963, Ser. No. 298,667
Claims priority, application Austria, Aug. 4, 1962, A 6,309/62
14 Claims. (Cl. 176—27)



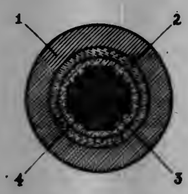
1. A nuclear reactor comprising wall means defining a reactor chamber fission zone having heated particles including nuclear fuel therein, said wall means including a gas inlet end wall with at least one opening for the inflow of gas therethrough and an outlet end wall with a cover in contact with the particles having an opening for the discharge of gas therethrough, means for circulating a cooling gas through the opening of said gas inlet end wall and through the particles and for discharging the gas through the opening of the opposite outlet end wall, said wall means including means holding down the surface of said particles at the location of cooling gas discharge flow with a steady holding down force to prevent the lifting of the particles by the working gas flow.

3,297,539

NUCLEAR REACTOR, ESPECIALLY DESIGNED FOR EXPERIMENTAL PURPOSES WITH FAST NEUTRONS

Karl-Heinz Beckurts, Danzigerstrasse 20, Karlsruhe, Germany; Wolf Häfele, Pfauenstrasse 24, Karlsruhe-Ruppurr, Germany; and Karl Ott, Litzenhardtstrasse 114, Karlsruhe, Germany

Filed July 9, 1963, Ser. No. 293,784
Claims priority, application Germany, July 13, 1962, K 47,225
7 Claims. (Cl. 176—41)



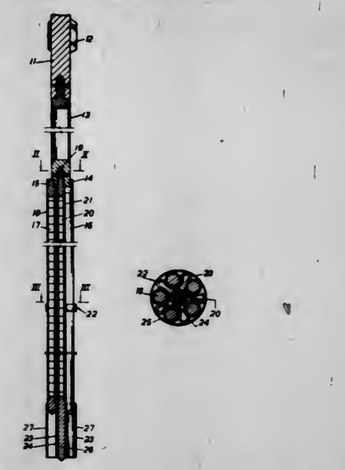
1. A composite core for a nuclear reactor, which comprises: (a) an inner fast core containing fissionable material, said fast core being subcritical by itself; (b) a layer of material semi-permeable to the passage of neutrons therethrough, said semi-permeable layer surrounding the exterior of said fast core; (c) a graphite reflector surrounding the exterior of said semi-permeable layer; and, (d) an annular thermal core surrounding the exterior of said graphite reflector, said thermal core containing fissionable material and a moderator material, said thermal core being subcritical by itself and cooperating with said subcritical fast core to form a critical composite reactor core which generates a fast neutron flux and wherein the temperature of the fast core is limited by the shut-off properties of the annular thermal core.

3,297,540

NUCLEAR REACTOR FUEL ELEMENT ASSEMBLIES

Ronald Peter Williams, Frodsham, near Warrington, and David John Ashcroft, Horwich, Bolton, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Aug. 26, 1963, Ser. No. 304,341
Claims priority, application Great Britain, Sept. 5, 1962, 34,103/62
5 Claims. (Cl. 176—44)



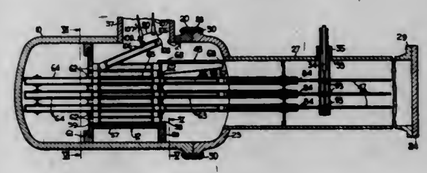
1. A nuclear reactor having a core of the kind which is cooled by fluid moderator and of which the fuel content is in rod-shaped fuel element spaced apart from one another for pervasion by the fluid moderator, characterized by unfuelled rods containing burnable poison which are arranged in the core on axes parallel to the fuel elements to place every element in equal proximity to the burnable poison rods, but to only one poison rod in each case, the burnable poison rods being assembled together with the fuel elements into unitary structures.

3,297,541

NUCLEAR REACTOR CORE STRUCTURE

James J. Dickson, Silver Spring, Md., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

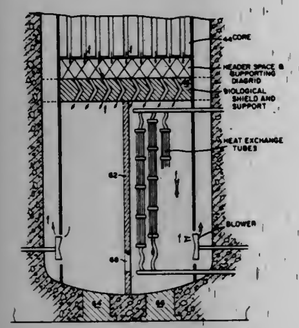
Original application Jan. 5, 1961, Ser. No. 80,774, now Patent No. 3,208,914, dated Sept. 28, 1965. Divided and this application Sept. 15, 1964, Ser. No. 400,971
5 Claims. (Cl. 176—50)



1. A core structure for a nuclear reactor comprising, a support having an elongated base portion and a pair of parallel, relatively spaced plate members extending transversely of said base portion and each having coolant circulating apertures extending therethrough from one side of said plate member to the other, an array of elongated fuel element assemblies having coolant passages longitudinally therethrough stacked on said base portion between and in transversely extending relation to said plate members such that the coolant passages through said fuel element assemblies will coincide with the apertures

through said plate members; a cover member extending along the side of said array opposite to said base portion, and thrust transmitting means releasably secured against said cover means to clamp said array against said base portion.

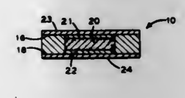
3,297,542
INTEGRAL NUCLEAR REACTOR-HEAT EXCHANGER POWER PLANT
Didier Costes, Paris, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Original application Apr. 4, 1963, Ser. No. 270,675, now Patent No. 3,280,905, dated Oct. 25, 1966. Divided and this application Aug. 24, 1965, Ser. No. 482,189
Claims priority, application France, Apr. 13, 1962, 894,486
3 Claims. (Cl. 176—59)



1. A nuclear reactor having a pressure vessel, a reactor core in said pressure vessel, a heat exchanger in said pressure vessel for heat exchange between the reactor coolant fluid and a second fluid, a biological shield in said pressure vessel separating said core and heat exchanger and defining with said vessel a chamber for said heat exchanger, and a plurality of passages in said biological shield for the circulation of said coolant fluid between said reactor core and said heat exchanger, wherein said heat exchanger comprises an internal circuit in said chamber for said second fluid, said internal circuit comprising a plurality of substantially identical elongated tubular units, the length and cross sectional dimensions of said units being small as compared to the length and cross sectional dimensions of said chamber, dismountable fluid-tight coupling means for removably assembling said units in end to end relationship, a plurality of parallel adjacent tubular rows each formed by a plurality of said units in end to end relationship, collector means, means for removably connecting each of said rows in parallel relationship to said collector means, the length of said rows and the length of said chamber being so proportioned that a space free of said units and having a length at least equal to that of one of said units is provided between one end of each of said rows and the adjacent wall of said vessel.

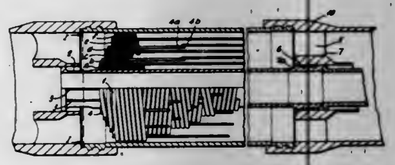
3,297,543
PLATE-TYPE NUCLEAR FUEL ELEMENT
Nicholas C. Jessen and William F. Heer, Lynchburg, Va., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed July 7, 1964, Ser. No. 380,851
6 Claims. (Cl. 176—67)

1. A plate-type fuel element comprising:
(A) a frame member having a pair of oppositely disposed faces and an aperture in at least one of said faces,
(B) a core of fissile material disposed within said aperture and recessed from said face containing the aperture, the edges of said core being in substantial contact with the sides of said aperture, and



(C) a core cover plate superimposed upon said core and disposed within and filling said aperture.

3,297,544
NUCLEAR FUEL BEARING BODIES
Alan Thomas Hooper, Weymouth, and Reginald John Symes, Blandford, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Mar. 1, 1965, Ser. No. 436,199
Claims priority, application Great Britain, Feb. 28, 1964, 8,522/64
10 Claims. (Cl. 176—83)



1. A nuclear fuel element comprising a plurality of superimposed layers of nuclear fuel material supported about a common axis, each layer being in the form of convolutions of nuclear fuel material, the convolutions of each layer being wound as a multistart helix.

9. A body containing nuclear fuel supported in a manner such that the fuel presents a heat exchange surface with respect to coolant past over the body, the body comprising a plurality of superimposed layers of nuclear fuel material, each of said layers forming convolutions of nuclear fuel material, spacers between said layers, the fuel material in each of said layers comprising a plurality of elongated flexible rods of clad fuel material wound as a multistart helix, the number of rods corresponding at least to the number of starts in said multistart helix.

3,297,545
PREPARATION AND RECOVERY OF HYDROGEN
James E. Zajic and Dean A. McGee, Oklahoma City, Okla., assignors to Kerr-McGee Oil Industries, Inc., a corporation of Delaware
No Drawing. Filed Aug. 21, 1964, Ser. No. 391,298
14 Claims. (Cl. 195—28)

1. A process for preparing elemental hydrogen comprising intimately contacting a gaseous mixture including a normally gaseous hydrocarbon and elemental oxygen with an aqueous medium, the aqueous medium being within a system closed to the outside atmosphere, the aqueous medium containing an enzyme found in the microorganism *Pseudomonas methanica* variety hydrogenosis capable of oxidizing the gaseous hydrocarbon in the presence of the elemental oxygen and producing elemental hydrogen therefrom, the gaseous hydrocarbon being subjected to the action of the enzyme in the aqueous medium until elemental hydrogen is produced and released into the gaseous mixture, and recovering elemental hydrogen thus produced from the gaseous mixture.

3,297,546
PREPARATION OF 6-AMINOPENICILLANIC ACID
David A. Johnson, Fayetteville, and Glenn A. Hardcastle, Jr., Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 9, 1963, Ser. No. 329,218
11 Claims. (Cl. 195—36)

1. A process for the production of penicillin amidase which comprises the steps of:
(1) adding to a penicillin amidase-containing fermentation broth both a quaternary ammonium salt and a metal compound having a divalent metallic cation to cause the adsorption of water-soluble penicillin amidase on the water-insoluble solids present in said broth;
(2) separating said solids having penicillin amidase adsorbed thereon;
(3) mixing said solids with water whereby penicillin amidase is transferred from said solids to solution in said water;
(4) separating the aqueous solution of penicillin amidase thereby produced from said solids;
(5) adding to said aqueous solution a solid adsorbing agent incapable of adsorbing penicillin amidase; and
(6) removing said solid adsorbent from said aqueous solution to provide a purified aqueous solution of penicillin amidase.

3,297,547
METHOD OF MANUFACTURING AMYLOLYTIC ENZYMES
Eiiiro Matsutani, Kitamura, Itami-shi, Hyogo-ken, Michiho Sato, Sumiyoshi-ku, Osaka-shi, and Fumio Hattori, Toyonaka-shi, Osaka-fu, Japan, assignors to Matsutani Chemical & Company, Limited, Hyogo-ken, Japan
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,537
5 Claims. (Cl. 195—66)

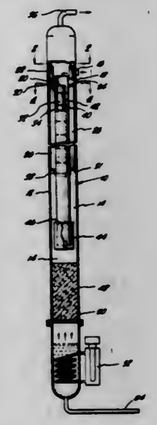
1. In a method of producing an amylolytic enzyme by culturing a microorganism selected from the group consisting of Endomyces sp. IFO 0111, *Endomycopsis fibuliger*, *Endomyces hordei*, *Endomycopsis lindneri* and *Endomycopsis javanensis* in a culture therefor the step of incorporating in the medium used for said culture, in the order of from 0.1 to 15 weight percent of at least one species selected from the group consisting of higher fatty acids, higher fatty acid esters and natural oils and fats as an additional ingredient.

3,297,548
PREPARATION OF ACID PHYTASE
James H. Ware, Lake Bluff, and Tsuong R. Shieh, Chicago, Ill., assignors to International Minerals & Chemical Corporation, a corporation of New York
No Drawing. Filed July 28, 1964, Ser. No. 385,774
14 Claims. (Cl. 195—66)

1. In the process of producing acid phytase wherein an acid phytase-producing microorganism is aerobically cultured in a medium containing a carbon source, a nitrogen source and inorganic salts, the improvement of maintaining an available orthophosphate content in the medium in the range of about 0.0001% to about 0.005% by weight determined as phosphorus whereby production of acid phytase is enhanced.

3,297,549
APPARATUS FOR TREATING MULTI-COMPONENT LIQUIDS
Raymond James Hull, Orange, Calif., assignor to Gas Processors, Inc., Brea, Calif., a corporation of California
Filed May 14, 1964, Ser. No. 367,302
3 Claims. (Cl. 196—99)

1. Apparatus for treating a multi-component liquid comprising:
(a) an elongate vertical shell closed at its longitudinal ends to form an enclosure;
(b) a tubular downcomer disposed coaxially within the shell to form a first annular space between the shell and the downcomer;
(c) means disposed within the downcomer to form a second annular space between said means and the downcomer,
(i) the second annular space extending over a substantial vertical length of the downcomer;
(d) a liquid feed conduit communicating with the enclosure above the downcomer;
(e) means for directing liquid feed from the conduit into the second annular space;
(f) means within the second annular space to distribute downflowing liquid feed within the downcomer;

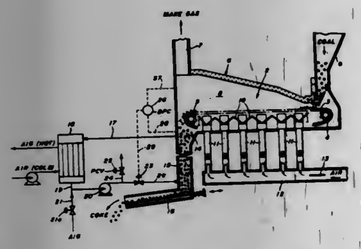


(g) packing below the downcomer for distributing liquid flowing downwardly out of the downcomer and toward the bottom of the enclosure;
(h) heating means for heating liquid in the bottom of the enclosure to vaporize components of the liquid;
(i) means for directing the vaporized components to pass through the packing;
(j) means for directing the vaporized components from the packing to the first annular space to enable heat exchange and fractionation between downwardly flowing liquid feed and the vaporized components; and
(k) a gas outlet near the top of the enclosure for removing vaporized components.

3,297,550
METHOD OF AND APPARATUS FOR THE MANUFACTURE OF COKE
Leonard W. Alberts, Bethel Borough, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,586
8 Claims. (Cl. 201—27)

1. The process of preparing coke from coal which comprises moving it continuously through a closed environment, admitting air to said environment and burning only a part of the volatiles in the environment to sustain the coking operation while consuming all of the oxygen from the air so admitted, transferring incompletely coked fuel from said closed environment to a finishing section having a receiving end and a discharge end, withdrawing make-gas from said closed environment, recycling gas from the receiving end of the finishing section and returning it only to the finishing section at a location remote from the receiving end for cooling the coke, introducing

air into the recycled gases in an amount to complete the coking of the fuel but insufficient to substantially burn the coke, and regulating the flow of recycled gases and air so that the pressure in the receiving end of the finishing



section is slightly negative with respect to the pressure in said closed environment to provide a pressure barrier against flow of gases from the finishing section into said closed environment.

3,297,551

DETERMINATION OF OXYGEN IN FLUIDS

Charles Benjamin Alcock, Pittsburgh, Pa., assignor to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed Jan. 4, 1962, Ser. No. 164,406
Claims priority, application Great Britain, Jan. 9, 1961. 848/61
4 Claims. (Cl. 204—1)

1. A method of determining the oxygen content of a liquid consisting essentially of at least one metal selected from the group consisting of alkali metals and lead, which method comprises measuring the E.M.F. across an electrolytic cell whereof one electrode comprises the said liquid metal, the other electrode is an oxygen reference electrode comprising an intimate mixture of a metal and its lowest stable oxide at the temperature of measurement, and the electrolyte is a solid anionic conductor having negligible electronic conductivity at the temperature of measurement and being selected from the group consisting of thoria, zirconia, and solid solutions thereof with oxides selected from the group consisting of alkaline earth metal oxides and rare earth metal oxides.

3,297,552

METHOD OF MAKING A TITANIUM PIECE HAVING GOOD ANTI-WEAR, ANTI-GALLING, ANTI-SEIZURE AND ANTI-FRICTION PROPERTIES

Henry Gisser and Arthur M. Shapiro, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

Original application Feb. 25, 1963, Ser. No. 260,925. Divided and this application Aug. 25, 1964, Ser. No. 393,006
4 Claims. (Cl. 204—37)

1. A method for producing a machinable titanium piece having on its surface a thin layer of a noble metal selected from the group consisting of gold and silver and between said layer and titanium base a thicker alloy concentration gradient of titanium and said noble metal, said gradient having a hardness exceeding the hardness of said titanium base over a major portion thereof, said method comprising the steps of:

electroplating said piece with said noble metal,

gradually and strongly heating the electroplated piece in vacuo from room temperature,

holding the electroplated piece in vacuo in its strongly heated state, and

allowing the piece to cool gradually in vacuo.

3,297,553

ELECTROLYTIC PRODUCTION OF TUNGSTEN AND MOLYBDENUM

Harvey L. Slatin, New York, N.Y., assignor to Timax Associates, New York, N.Y., a partnership of New York

No Drawing. Filed May 28, 1963, Ser. No. 283,697
6 Claims. (Cl. 204—64)

2. A continuous process for the electrolytic production of a refractory metal of the group tungsten and molybdenum comprising providing a molten electrolyte composed of the group of alkaline earth metal halides and at least one oxide of the group of alkaline earth metal oxides in substantial amount in said electrolyte, adding an oxide ore of said refractory metal including an oxide of the group of alkaline earth metals to maintain the desired amount of alkaline metal oxide in the electrolyte, electrolyzing the said molten electrolyte between an anode and cathode for depositing said refractory metal in pure, ductile and large crystalline form on a cathode immersed in the electrolyte and adding chlorine to convert to alkaline earth metal chloride the oxide of the alkaline earth metal released by the deposition of the refractory metal, thereby maintaining the electrolyte at a high recovery efficiency.

3,297,554

ELECTROLYTIC PRODUCTION OF TUNGSTEN AND MOLYBDENUM

Harvey L. Slatin, New York, N.Y., assignor to Timax Associates, New York, N.Y., a partnership of New York

No Drawing. Original application May 28, 1963, Ser. No. 283,697. Divided and this application June 23, 1966, Ser. No. 567,029
3 Claims. (Cl. 204—64)

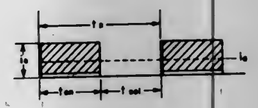
1. A process for the electrorefining of an impure refractory metal of the group tungsten and molybdenum comprising providing a fused electrolyte solvent containing sodium chloride and potassium chloride, providing a crude refractory metal of the group tungsten and molybdenum as anode and an inert cathode immersed in said electrolyte, bubbling chlorine gas through said eletrolyte so as to contact said crude refractory metal and thereby solubilizing said refractory metal as a chloride, electrolyzing said fused electrolyte thereby electrorefining said impure refractory metal.

3,297,555

ETCHING OF TANTALUM AND COLUMBIUM FOILS

Carlos F. Rerat, Hamburg, Pa., assignor to Kawecki Chemical Company, Boyertown, Pa., a corporation of Pennsylvania

Filed July 24, 1964, Ser. No. 384,836
3 Claims. (Cl. 204—141)



1. In the method of etching tantalum and columbium foil wherein the foil is immersed in a predominantly alcoholic electrolytic etching medium including at least one inorganic halide and a pulsating duty-cycle current having an "off" period between each pulse wherein substantially no current flows is passed to the surface of the foil to effect the desired etching thereof, the improvement which comprises adjusting the average current of the duty cycle to effect the desired amount of etching, and adjusting the duty ratio and frequency of the pulsating current to a value such that the "off" portion of the total cycle period is at least equal to the time required for the product of the etching current to be dissolved by the etching medium.

3,297,556

MANUFACTURE OF 2-CHLOROPYRIDINE USING PHOTOLYTIC LIGHT

Max M. Boudakian, Hamden, and Joel A. Zaslowsky, Woodbridge, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Nov. 28, 1962, Ser. No. 240,711
8 Claims. (Cl. 204—158)

1. The process for preparing 2-chloropyridine by reacting pyridine with chlorine, the improvement which comprises carrying out the reaction in the presence of photolytic light.

3,297,557

ELECTROCOATING PROCESS EMPLOYING A WATER SOLUBLE RESIN AND AN OIL SOLUBLE RESIN

Olin W. Huggard, Rocky River, Ohio, assignor, by mesne assignments, to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 16, 1963, Ser. No. 281,027
12 Claims. (Cl. 204—181)

1. A method of coating a body capable of carrying an electrical current with a uniform weather-resistant coating comprising immersing said body in an aqueous emulsion comprising a continuous aqueous phase having dispersed therein a salt of a base with the heat-reaction product of aliphatic alpha,beta-ethylenically unsaturated carboxylic acid with polyester of unsaturated fatty acid and aliphatic polyhydric alcohol, said heat-reaction product having an acid number of at least 40 and an oil soluble phase stably dispersed in said aqueous phase, said oil soluble phase comprising resinous polyol at least partially esterified with monobasic carboxylic acid providing easy flowability and compatibility with said heat-reaction product in the film deposited, said heat-reaction product and said resinous polyol ester being present in said emulsion in a weight ratio of from 10/90 to 90/10, passing a unidirectional electrical current through said aqueous emulsion and through said body as anode to deposit a uniform water-insoluble film thereupon, and baking said film to cure the same and provide a weather-resistant coating.

3,297,558

FLUID CONTROL APPARATUS

Warren K. Hillquist, Boston, Mass., assignor to Instrumentation Laboratories Inc., a corporation of Massachusetts

Filed Mar. 12, 1965, Ser. No. 439,206
9 Claims. (Cl. 204—195)

1. Control apparatus for use with a structure defining a through passage, said through passage including a chamber for holding a liquid sample to be analyzed, a pressure source, and

a conduit connecting the through passage of said structure to said pressure source, comprising

a holder receiving said through passage defining structure,

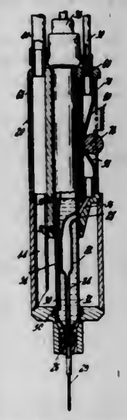
a channel in said holder for receiving a flexible tubular portion of said conduit,

a guide surface on said holder extending parallel to said channel,

and a roller disposed over said channel for movement in a direction controlled by said guide surface,

said roller cooperating with said guide surface to compress said tubular portion and block flow therethrough, said guide surface maintaining the blocking action in said tubular portion as said roller is moved along said guide surface,

and an operator element for lifting said roller away from said tubular portion to reduce the compressing action of said roller on said tubular portion and permit flow through said tubular portion under the influence of said pressure source.

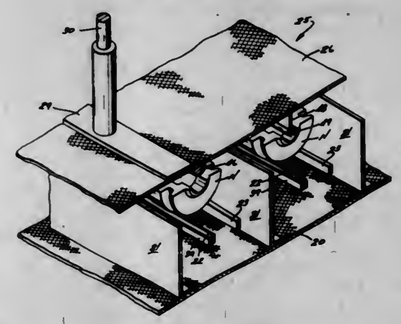


3,297,559

CONDUCTIVE MOLD RACK FOR ELECTRO-CLEANING MOLD PARTS

Tom Jay Farrow, Toledo, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio

Filed June 21, 1963, Ser. No. 289,479
6 Claims. (Cl. 204—242)



1. Apparatus for electrochemical cleaning of mold parts comprising in combination, a generally rectangular tank adapted to contain an electrolytic caustic solution, a pair of electrical contacts carried by said tank at opposed sides thereof, said contacts being formed of inverted "V" blocks of conductive material insulated from the tank, a rack for supporting mold parts for immersion in said tank, said rack comprising a horizontal member of a length to span the distance between said contacts, said member carrying complementary contacts with inverted V-shaped bottom surfaces adapted to rest on said inverted V-shaped contacts carried by the tank, a pair of vertically extending, spaced apart members connected to said horizontal member, a rectangular frame having its opposite sides connected to the lower ends of said spaced apart members, a wire screen fixed to and spanning the width of said rectangular frame, a plurality of spaced vertical walls connected to said frame and extending the full width thereof, a plurality of pairs of rails insulatingly mounted on said frame with a pair of rails positioned in the space between each of said walls and extending parallel thereto, a flat, open weave, wire member of

substantially the same size as the rectangular frame, means for adjustably mounting said wire member in spaced, overlying parallel relationship to said frame, conductive means connecting said rails together and to one of said complementary contacts whereby mold parts placed on said rails will be of one polarity and conductive means connecting the rest of the rack to said other complementary contact.

3,297,560

APPARATUS FOR ALKALI CHLORIDE ELECTROLYSIS HAVING A CORROSION ASSISTANT ANODE

Hans-Walter Schleicher, Chivasso, Turin, Italy, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed Aug. 17, 1962, Ser. No. 217,706
2 Claims. (Cl. 204—250)



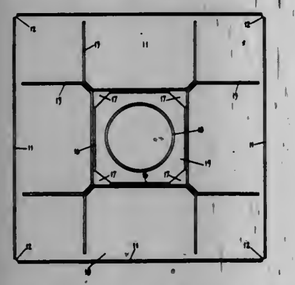
1. In an electrolytic cell including an anode and a cathode the improvement wherein said anode comprises a unit of parallel elongated rods of copper clad with a thin tube of a metal selected from the group consisting of titanium, tantalum and their alloys, said rods being in electrical communication with one another and defining parallel sections adjacent each other between about 0.1 and 10 millimeters apart, the parallel sections being flattened to a thickness of about 5 millimeters and having rows of weld spots of a metal selected from the group consisting of the platinum metals and their alloys on their underside.

3,297,561

ANODE AND SUPPORTING STRUCTURE THEREFOR

Geoffrey Granville Harrison and Donald Henry Prince, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed May 8, 1962, Ser. No. 193,668
Claims priority, application Great Britain, May 8, 1961, 16,592/61
11 Claims. (Cl. 204—286)



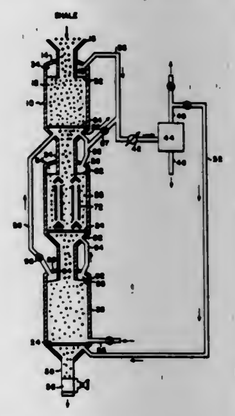
1. An anode structure for the production of chlorine by electrolysis of brine, comprising an operative anode surface of a platinum metal upon mesh consisting essentially of titanium, a pillar having an imperforate lower end for suspending said mesh in the cell and conducting electrolysing current to the mesh, the end of the pillar adjacent to the mesh being spaced from the mesh so that chlorine liberated by electrolysis in the vicinity of the pillar end is not trapped but can pass through the mesh and make its way past the pillar to exit from the cell by way of the space between the mesh and the pillar end and means for supporting and spacing said pillar from said mesh and for carrying current from said pillar to said mesh, said supporting and spacing means having openings therein for the escape of said liberated chlorine gas.

3,297,562

RETORTING BITUMINOUS SOLIDS

Royce E. Biddick, Minneapolis, Minn., and Charles E. Jahnig, Rumson, and Charles W. Tyson, Summit, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 6, 1964, Ser. No. 350,020
10 Claims. (Cl. 208—11)



1. A process for recovering oil from oil bearing shale solids which comprises preheating the shale solids in a preheating zone, passing the thus preheated solids as a downwardly moving compact solids column into and through a retorting zone wherein the solids are retorted by countercurrent contact with upwardly flowing hot gases, providing at least one stationary, substantially vertical, by-pass channel within the downwardly moving shale bed in said retorting zone, passing at least a portion of the upwardly flowing hot gases and only hot gases without any substantial amount of solids upwardly through said by-pass channel from a lower region to a higher region within said retorting zone to bypass a section of said downwardly moving shale bed in said retorting zone to supply heat to an upper portion of said retorting zone and into the downwardly moving shale solids bed therein, and removing retorted oil vapors and hot gases overhead from said retorting zone.

3,297,563

TREATMENT OF HEAVY OILS IN TWO STAGES OF HYDROTREATING

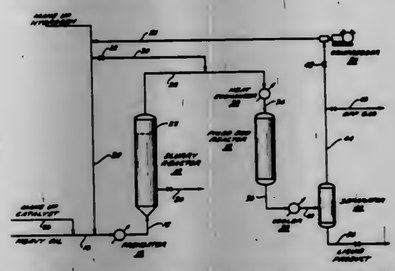
Thomas F. Doumani, Whittier, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Aug. 17, 1964, Ser. No. 390,060
14 Claims. (Cl. 208—59)

1. A two-stage process for upgrading heavy mineral oil stocks which comprises:

(a) contacting a heavy mineral oil stock comprising a substantial proportion of material boiling above about 1,000° F. in liquid phase with powdered catalyst in a slurry, said catalyst being selected from the class consisting of the Group VI–B and Group VIII metals and their oxides and sulfides, at elevated temperatures and pressures while passing hydrogen through the slurry;

(b) withdrawing a liquid-free vaporized product comprising hydrogen and partially refined lower boiling materials from the slurry; and



(c) without intervening fractionation, contacting said liquid-free, vaporized product in vapor phase and at elevated temperatures and pressures, with a bed of macropellet hydrofining catalyst comprising a Group VI–B and/or Group VIII metal or compounds thereof supported on 1/32–1/2" pellets of an adsorbent oxide carrier.

3,297,564

HYDROCRACKING CATALYST AND PROCESS WITH THE USE OF A CATALYST COMPOSITE FROM THE IRON GROUP ADMIXED WITH PLATINUM OR RHODIUM ON A SILICEOUS CRACKING BASE

Reese A. Peck, Fishkill, William F. Franz, Hopewell Junction, and Robert M. Suggitt, Fishkill, N.Y., and Leon W. Cook, Sarasota, Fla., and Donald A. Messing, Glenham, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,078
15 Claims. (Cl. 208—111)

14. A process for hydrocracking a hydrocarbon charge which comprises contacting it in the presence of hydrogen under hydrocracking conditions with a hydrocracking catalyst composite comprising a hydrogenating catalyst supported on an active siliceous cracking catalyst, said hydrogenating catalyst consisting essentially of about 3–15 percent by weight based on the total weight of said hydrocracking catalyst composite of a first hydrogenating component selected from the group consisting of oxides and sulfides of iron group metals and mixtures thereof and about 0.125–0.5 percent by weight based on the total weight of the said hydrocracking catalyst composite of a second hydrogenating component selected from the group consisting of platinum and rhodium metals, their oxides and sulfides and mixtures thereof.

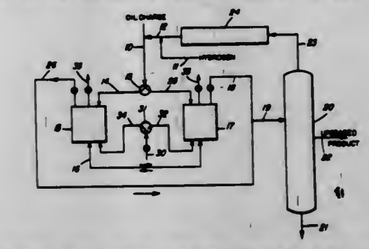
3,297,565

METHOD FOR UPGRADING HYDROCARBON OILS

William E. Garwood, Haddonfield, and Joseph N. Miale, Trenton, N.J., and Paul B. Weisz, Media, Pa., assignors to Mobil Oil Corporation, a corporation of New York

Filed Aug. 19, 1964, Ser. No. 390,550
23 Claims. (Cl. 208—217)

18. A continuous cyclic process for removing nitrogen, sulfur and oxygen from a hydrocarbon oil containing the same which comprises contacting said oil with hydrogen at a temperature between about 400 and 1000° F. in a primary contact zone containing a crystalline molecular sieve material having uniform pore openings of between about 4 and about 15 Angstroms in diameter and having encased within its crystalline structure between about 1 and about 60 weight percent of a non-volatile treating agent selected from the group consisting of gallium, boron, germanium, tin, antimony, bismuth and their oxides, said non-volatile treating agents being converted to a lower boiling compound of said treating agents which is released from said molecular sieve material, passing the effluent stream from said primary contact zone to a secondary contact zone containing a crystalline molecular sieve material having uniform pore openings of between about 4 and about 15 Angstroms in diameter initially free of treating agent and maintained under conditions capable of adsorbing said lower boiling compound, whereby the lower boiling compound of the treating agent in said effluent stream from said primary zone is adsorbed on the molecular sieve material in said secondary contact zone upon passage therethrough, maintaining the aforesaid contacting conditions until the treating agent contained in the molecular sieve materials of said primary contact zone and its lower boiling product in said secondary contact zone respectively reach a predetermined minimum and maximum content, thereafter regenerating the molecular sieve material in said secondary contact zone to convert the lower boiling compound of the treating agent to a non-volatile treating agent, thereafter reversing the flow of the hydrocarbon oil charge and hydrogen and the conditions of temperature initially present in said primary zone and said secondary zone and repeating the aforesaid cyclic operation to afford a continuous yield of upgraded hydrocarbon oil product.

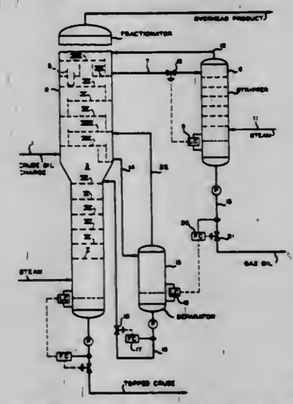


3,297,566

GAS OIL REFLUX CONTROLLER

Golden A. Moyer and John T. Cabbage, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

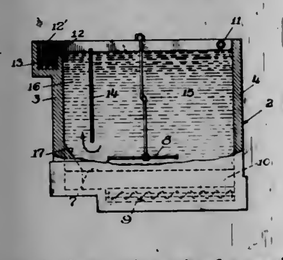
Filed Oct. 1, 1964, Ser. No. 400,831
5 Claims. (Cl. 208—355)



1. In a fractionation process wherein a first side stream is drawn off at a variable rate for a product and liquid is maintained on fractionation trays between the locus of said product removal and the locus of feed entry into a fractionator, the locus of said product removal being above the locus of said feed entry, the improvement which

comprises removing a second stream from a fractionator tray in said locus of feed entry, passing at least a portion of said second stream to a separator wherein vapors are separated from liquid, maintaining a liquid level in said separator, passing liquid in said separator at a fixed rate from said separator back into said fractionator, and controlling the rate at which said first side stream is drawn off responsive to the liquid level in said separator to maintain a maximum amount of product withdrawal through said first side stream while maintaining a controlled amount of liquid in the fractionator between the locus of feed entry and the locus of product removal.

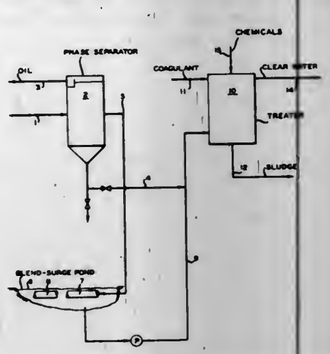
3,297,567
METHOD AND APPARATUS FOR TREATING SEWAGE
John A. Tapleshay, Sandy Springs, Ga., assignor to FMC Corporation, a corporation of Delaware
Filed June 21, 1962, Ser. No. 204,140
4 Claims. (Cl. 210—14)



1. A method of removing grit of a particular particle size from liquid sewage in a tank, said sewage containing relatively light organic matter, heavier but relatively light particles of grit, and relatively heavy particles of grit, said method comprising the steps of positioning a baffle in said tank parallel to one wall of said tank to divide it into a first section having an inlet and a second section having an outlet, whereby sewage entering said first section must flow under said baffle and upwardly in said second section to reach said outlet, forcing air into the sewage in said first section at a plurality of points along a line normal to said baffle to move said sewage in a circulatory path within said first section about a horizontal axis normal to said baffle and to cause said heavy grit to settle out of said sewage to the floor of said first section, moving said heavy grit along the floor of said first section to a disposal trough, flowing sewage, from which said heavy grit has settled, from said first section under said baffle and then upwardly in said second section and controlling the upflow velocity of said sewage in said second section by regulating the spacing of said baffle from the parallel wall of said tank to keep the upflow velocity of sewage in said second section from exceeding the subsidence velocity in said second section of grit of the particular particle size.

3,297,568
METHOD AND APPARATUS FOR PURIFYING INDUSTRIAL WASTE WATERS CONTAINING OIL AND SOLIDS
Martin E. McMahon, New Delhi, India, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,816
5 Claims. (Cl. 210—51)

1. A method for purifying industrial waste waters containing oil and solids comprising passing said waste waters to a separator, separating a liquid phase from a solid phase, passing said liquid phase to a surge zone which contains a large quantity of impure liquid, blending said impure liquid in said surge zone with said liquid phase to produce a substantially homogeneous mixture of liquids, removing a portion of said homogenized liquid from said surge zone and admixing the same with said solids



phase, passing said mixture to a separation and treating zone, and separating a substantially pure liquids phase from a solids phase.

3,297,569
METHOD AND COMPOSITION FOR FREEING STUCK DRILL PIPE
James L. Lummus, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed Dec. 10, 1963, Ser. No. 329,403
8 Claims. (Cl. 252—8.5)

1. A method for treating an aqueous base drilling fluid having a continuous aqueous phase and containing barite to decrease sticking of the drill pipe to the well wall comprising mixing into said drilling fluid a copolymer selected from the group consisting of a water-soluble vinyl-maleic copolymer containing from about 1 to about 1.5 times as many vinyl radicals as maleic radicals and being polymerized to a degree such that a 0.4 percent by weight aqueous solution has a viscosity of between about 1 and about 3 centipoises at 25° C. and a water-soluble acrylic acid-acrylamide copolymer having an acrylic acid to acrylamide molar ratio of between about 30 to 70 and about 70 to 30 and being polymerized to such a degree that a 1 percent by weight aqueous solution has a viscosity of from about 2,000 to about 20,000 centipoises at 20° C., the concentration of said copolymer being between about 0.01 and about 0.1 pound per barrel of said drilling fluid, mixing oil into said drilling fluid, and then mixing into said drilling fluid a complex amine sulfonate prepared from about 4 parts of a half ammonium half isopropylamine salt of the sulfosuccinic acid ester of the oleic acid amide of isopropanol amine and about 1 part of the isopropylamine salt of dodecyl benzene sulfonic acid, the concentration of said sulfonate being from about .2 to about 25 pounds per barrel of drilling fluid.

3,297,570
YARN TREATING COMPOSITIONS
Charles Clayton White and Roscoe Fulmer Neighbors, both of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 28, 1964, Ser. No. 371,120
8 Claims. (Cl. 252—8.8)

1. A textile yarn lubricating and antistatic composition comprising as its essential lubricating and antistatic component the product formed by the interaction of 45–65 parts by weight of an equimolar mixture of mono- and dilauryl acid phosphates and 35–55 parts by weight of dimethylaminoethoxyethanol.

3,297,571
LUBRICANT COMPOSITION AND ARTICLES AND PROCESS OF PREPARING AND USING THE SAME
Laszlo J. Bonis, Brookline, Mass., assignor to Ilikon Corporation, Natick, Mass., a corporation of Delaware
No Drawing. Filed Sept. 14, 1962, Ser. No. 223,821
1 Claim. (Cl. 252—12)

A solid coherent metal material which is self-lubricating in an oxidizing atmosphere at temperatures in excess of 1000° F., said material being a hot-pressed and sintered admixture of a major amount of powdered nickel alloy having a particle size of 325 mesh or less and a quantity of particulate calcium fluoride, the average particle size of said calcium fluoride being 400 mesh or less, said calcium fluoride accounting for between 3 and 35 weight percent of the total admixture.

3,297,572
GRAPHITE LUBRICATING COMPOSITION OF INCREASED LOAD CARRYING CAPACITY
Arthur J. Haltner, Strafford-Wayne, Pa., and William G. Luetzel, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
No Drawing. Filed Sept. 1, 1964, Ser. No. 393,752
3 Claims. (Cl. 252—29)

1. A dry lubricant composition comprising a mixture of graphite with at least one additive chosen from the group consisting of PbO_2, Pb_3O_4, MnO_2 and FeS_2, said additive being present in a concentration in the range of from a small amount to about 30 percent by weight, said small amount being effective for substantially increasing the load bearing capacity of the graphite.

3,297,573
LUBRICANTS CONTAINING GROUP IVB METAL PHOSPHATES
George M. Hain, New Brunswick, and Anthony J. Revukas, Cranford, N.J., assignors to Cities Service Oil Company, a corporation of Delaware
No Drawing. Filed Apr. 7, 1964, Ser. No. 358,113
16 Claims. (Cl. 252—325)

1. A lubricating composition comprising a major quantity of a lubricant base and minor quantity sufficient to inhibit squawk of a metal [di(hydrocarbyl) orthophosphate] wherein the metal is a Group IVB metal of the periodic table and each hydrocarbyl group contains from about 2 to about 30 carbon atoms.

3,297,574
LUBRICATING COMPOSITIONS CONTAINING EP AGENTS
Alexander C. B. MacPhail, Little Sutton, Francis T. Barcroft, Upton-by-Chester, and Charles B. Milne, Little Sutton, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 20, 1964, Ser. No. 338,388
Claims priority, application Great Britain, Feb. 21, 1963, 7,013/63
7 Claims. (Cl. 252—46.7)

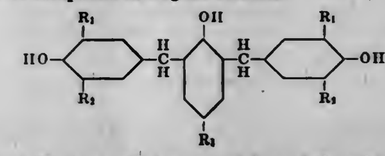
1. A synthetic lubricating oil comprising
(1) a major amount of an aliphatic carboxylic acid ester oil base,
(2) about 0.5% to about 10% by weight of a chlorinated polyaryl hydrocarbon having the formula

$$\left(\begin{matrix}Ar\text{—}Ar\\ \downarrow \quad \downarrow \\ Cl_x \quad Cl_y\end{matrix}\right)_z$$

where Ar is selected from the group consisting of mono- and polynuclear aromatics, x and y are integers of from 1 to 8, and z is an integer of from 1 to 10, and
(3) about 0.5% to about 10% by weight of a triaryl ester of phosphorothionic acid, each aryl group having 6 to 10 carbon atoms.

3,297,575
NOVEL TRINUCLEAR PHENOLS AND COMPOSITIONS STABILIZED THEREWITH
Calvin J. Worrel, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 27, 1961, Ser. No. 119,798
18 Claims. (Cl. 252—52)

1. A compound having the formula:



wherein R_3 is an alkyl group of from 1–8 carbon atoms and R_1 and R_2 are each individually selected alpha-branched alkyl groups of from 3–12 carbon atoms.

10. Organic material normally tending to undergo oxidative deterioration containing a small antioxidant quantity, up to 5 percent, of the compound of claim 1.

13. Organic material normally tending to undergo oxidative deterioration containing a small antioxidant quantity, up to 5 percent of α^2,α^6-bis(3,5-di-tert-butyl-4-hydroxyphenyl)mesitol.

15. The composition of claim 13 wherein said organic material is gasoline.

3,297,576
METHOD OF MAKING MEMORY CORE
Gerrit Antonie Herman van Driel, Cornelis Jacobus Esveldt, Petrus Johannes Flinsenberg, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 6, 1963, Ser. No. 328,503
Claims priority, application Netherlands, Dec. 13, 1962, 286,714
1 Claim. (Cl. 252—62.5)

A method of manufacturing an annular magnet core having an outer diameter not exceeding 0.6 mm., an inner diameter of at least half the outer diameter, a maximum switching time of 0.25 μsec, and a value of the quotient

$$\frac{uV1}{dVz} > 3$$

with a disturbance ratio of 0.61 comprising the steps forming a finely-divided mixture of about 4 to 6 mol percent of CuO, 38 to 44 mol percent of Fe_2O_3, and 50 to 58 mol percent of MnO, heating said mixture at a temperature of about 750° C. to presinter the same, finely-dividing the presintered mixture, forming said presintered mixture into a paste, inspissating the paste to a mass having a weight of 1.1 to 1.2 times the weight of the presintered mixture, removing particles from said inspissated paste having a size exceeding $\frac{1}{10}$ the outer diameter of the core, drying and compressing the particles in said paste into an annular core having a density of 2.3 to 3.0 gms./cm.^{3}, heating the compressed core in an atmosphere containing at least as much oxygen as air and on a substrate of a high-melting-point metal at a temperature of about 1040° C. to 1120° C. for about 1.5 to 10 minutes, cooling the so-heated core to a temperature which is at least 70° C. below the said temperature at which the core is heated in about 30 minutes, and quenching the thus-cooled core by contact with air at room temperature.

3,297,577
CHEMICAL DEICER
Norman W. Standish, Cleveland, and Walter R. Tsuri, Chesterland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 12, 1963, Ser. No. 329,966
8 Claims. (Cl. 252—70)

1. A deicer composition substantially free of chloride

ions comprising an intimate mixture of from 10 to 45% by weight of urea, from 90 to 55% by weight of ammonium nitrate and from 0.001 to about 10 parts by weight per 100 parts by weight of combined urea and ammonium nitrate of a corrosion inhibitor for surfaces containing cadmium selected from the group consisting of ammonium and alkali metal sulfides, sodium dithionate, potassium sulfite, sodium bisulfite, thiourea, thioacetamide, dithiobiuret, alkali metal and ammonium carbonates and alkali metal and ammonum bicarbonates.

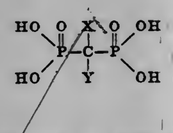
3,297,578

BLEACHING, STERILIZING, DISINFECTING, AND DETERGING COMPOSITIONS

Marvin M. Crutchfield and Riyad R. Irani, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 20, 1965, Ser. No. 481,426
17 Claims. (Cl. 252—99)

1. An improved composition consistting essentially of a stable mixture of a chlorine-releasing agent and a sequestering agent selected from the group consisting of the compounds having the formula:



wherein X is selected from the group consisting of hydrogen and lower alkyl groups and Y is selected from the group consisting of hydrogen, hydroxyl and lower alkyl groups, said lower alkyl groups containing from 1 to 4 carbon atoms, and their water soluble salts selected from the group consisting of alkali metal salts, ammonium salts and amine salts selected from the group consisting of aliphatic amines and hydroxy-substituted aliphatic amines having a molecular weight below about 300 and containing not more than 2 amine groups, said chlorine-releasing agent and said sequestering agent being present in proportions of between about 1:50 to about 5,000:1 on a percent available chlorine to weight of sequestering agent basis.

3,297,579

PROCESS FOR PREPARING A DETERGENT COMPOSITION CONTAINING SODIUM ALKANESULFONATE AND SOAP

James K. Weil, North Wales, Alexander J. Stirton, Philadelphia, Frank D. Smith, Huntington Valley, and Raymond G. Bistline, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Jan. 10, 1963, Ser. No. 250,716, now Patent No. 3,228,980, dated Jan. 11, 1966. Divided and this application June 19, 1964, Ser. No. 381,942
11 Claims. (Cl. 252—121)

1. A process for the preparation of a detergent composition containing as the essential active ingredients a sodium alkanesulfonate and a soap, said alkanesulfonate being present in about a 2.4:1 to 2.8:1 weight ratio with respect to said soap, comprising combining the disodium salt of an α-sulfocarboxylic acid having the general formula

R $CH_2CH(SO_3Na)CO_2Na$

wherein R is selected from the group of straight carbon chain alkyl radicals having 11, 13, and 15 carbon atoms, respectively, and, based on said salt, about a 2:1 to 2.5:1 weight ratio of sodium hydroxide to give an alkaline mixture, stirring said mixture and heating said mixture to fusion temperature under a nitrogen atmosphere until the reaction is substantially complete, cooling the reaction mixture to below 100° C., neutralizing excess alkali in the reaction mixture with an aqueous mineral acid selected from the group consisting of sulfuric acid, hydrochloric acid, phosphoric acid, and polyphosphoric acid, and drying the neutralized reaction mixture to give a dry detergent composition containing a sodium alkanesulfonate and sodium soap of the general formulas

R $CH_2CH_2SO_3Na$

and R CO_2Na, respectively, wherein R is selected from the group of straight carbon chain alkyl radicals having 11, 13 and 15 carbon atoms, respectively.

3,297,580

NEUTRAL METAL CLEANING COMPOSITIONS CONTAINING HYDRAZINE AND A POLYCARBOXYLAMINO ACID

Edgar C. Pitzer, Scotia, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed June 17, 1964, Ser. No. 375,985
10 Claims. (Cl. 252—142)

1. A substantially neutral metal cleaning composition consisting essentially of an aqueous solution of hydrazine and a polycarboxylamino acid having 3 to 5 carboxyl groups in proportions yielding a solution having a pH between 6.5 to 9.5 and wherein the concentration of hydrazine is from 0.1 molar to 0.5 molar.

3,297,581

PAINT STRIPPER COMPOSITION

Henry A. Goldsmith, Torrance, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,841
19 Claims. (Cl. 252—153)

1. A coating remover composition substantially noncorrosive to aluminum, which comprises by weight from 30% to 80% of a chlorinated hydrocarbon liquid solvent, from about 1.5% to about 20% of a material selected from the group consisting of ammonia and amines selected from monomethyl amine, monoethyl amine, diethyl amine, triethyl amine, isopropyl amine, ethylene diamine, propylene diamine, trimethyl amine and morpholine and about 2% to about 25% of an alkali metal phenolate activator for said solvent selected from the group consisting of the sodium and potassium salts of a phenol selected from the group consisting of alkyl and aryl phenols containing from one to about nine carbon atoms in the substituent groups, and a minor effective proportion between 5% and about 50% of a salt of lithium and a phenol as defined above, based on the total alkali neutralization equivalent.

3,297,582

TRICHLOROMONOFLUOROMETHANE-CONTAINING COMPOSITIONS

Peter Pawlyk, Wyncote, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application June 10, 1963, Ser. No. 286,479. Divided and this application Oct. 18, 1965, Ser. No. 508,410
6 Claims. (Cl. 252—188.3)

1. A composition of matter comprising trichloromonofluoromethane, from 0.2 to 2.0% by weight of 1-methoxy-4-propenylbenzene based on the weight of the trichloromonofluoromethane and a poly(hydroxyalkyl)polyamine containing from four to five hydroxyl groups.

3,297,583

METHOD OF RAPID DISSOLUTION

Wolfgang Dierichs and Werner Sammet, both of Duesseldorf-Holthausen, Germany, assignors to Henkel & Cie. G.m.b.H., Duesseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Feb. 18, 1964, Ser. No. 345,576
Claims priority, application Germany, Apr. 6, 1963, H 48,778
8 Claims. (Cl. 252—363.5)

1. A process for the rapid, lump-free dissolution of a water-soluble macromolecular substance having a plurality of hydroxyl groups selected from the group consisting of cellulose substances, starch substances, plant extracts and polyvinyl alcohol which substances have been pretreated in the dry state with 0.005 to 5% of an aldehyde selected from the group consisting of lower alkyl aldehydes and lower alkyl dialdehydes in the presence of a weak acid which comprises dispersing the said pretreated macromolecular substance having a plurality of hydroxy groups in water and immediately thereafter adding a sufficient amount of an alkaline acting substance thereto to adjust the pH value to 7 to 10 whereby the said macromolecular substance rapidly dissolves in the water.

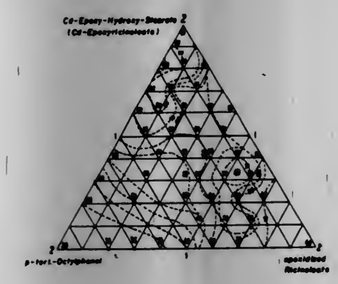
7. A composition rapidly soluble in water consisting essentially of a water-soluble macromolecular substance having a plurality of hydroxyl groups selected from the group consisting of cellulose substances, starch substances, plant extracts and polyvinyl alcohol which substances have been pretreated in the dry state with 0.005 to 5% of an aldehyde selected from the group consisting of lower alkyl aldehydes and lower alkyl dialdehydes in the presence of a weak acid and alkaline substances selected from the group consisting of alkaline earth metal carbonates and sulfates obtain a pH of 7 to 10 when the composition is added to water.

3,297,584

LIQUID STABILIZERS FOR VINYL CHLORIDE RESINS COMPRISING METAL SALTS OF EPOXIDIZED FATTY ACIDS

Alfred Szczepanek, Duren-Rolsdorf, and Günter Koenen, Duren, Germany, assignors to Firma Chemische Fabrik Hoesch K.-G., a corporation

Filed Dec. 5, 1961, Ser. No. 157,110
Claims priority, application Germany, Dec. 9, 1960, C 22,930
4 Claims. (Cl. 252—400)



1. Liquid stabilizers for polymeric and copolymeric vinyl chloride comprising a solution containing 40 to 60 wt. percent of at least one member selected from the group consisting of barium, zinc, and cadmium soaps of epoxy stearic acid, diepoxy stearic acid, and hydroxy epoxy stearic acid in an organic solvent capable of simultaneously serving as a plasticizer and/or stabilizer for said polymeric vinyl chloride selected from the group consisting of alkyl monohydric phenols, esters of phthalic acid with short-chain aliphatic alcohols, substantially neutral esters of phosphorous acid (H_3PO_3), epoxidized castor oil, and esters of ricinoleic acid with aliphatic long chain alcohols prepared by heating a mixture of said soap group member and said organic solvent group member at a temperature of from 80 to 140° C.

3,297,585

VISUAL INDICATING SOLUTION

John J. Hayden, Hoosick Falls, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,829
1 Claim. (Cl. 252—408)

A visual indicating solution for producing a detectable color upon contact with water and which is stable on storage consisting essentially of about 40–50 parts of a fluorescent, relatively water and alcohol soluble basic dye dissolved in 100 parts of a mixture of glacial acetic acid, ethanol, glycerine and propionic acid, said solution having a specific gravity at 15° C. of 1.020–1.030.

3,297,586

VANADIUM COMPLEXES AND POLYMERIZATION CATALYST PREPARED THEREFROM

Edward W. Duck and Philip M. Duinker, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 29, 1964, Ser. No. 422,035
Claims priority, application Netherlands, Mar. 20, 1961, 262,576
9 Claims. (Cl. 252—431)

1. A hydrocarbon-soluble, water-insoluble complex reaction product resulting from reacting in aqueous medium a vanadyl salt and a water-soluble salt of an aromatic carboxylic acid substituted on the same aromatic ring with at least one carboxyl group, at least one alkyl group of from 1 to 12 carbon atoms, and at least one group —XH wherein X is selected from the group consisting of sulfur and oxygen.

7. A polymerization catalyst comprising

(a) an organo-metallic reducing compound of a metal from Groups 1, 2, 3 and 4*b* of the Periodic Table, and

(b) a vanadium complex according to claim 1.

3,297,587

PROCESS FOR THE PREPARATION OF CYANOPYRIDINES

Bernhard Scherhag, Leverkusen, Sigurd Hartung, Cologne-Mauenheim, Arnold Hausweiler, Cologne-Flittard, and Herbert Grünewald, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,951
Claims priority, application Germany Sept. 1, 1962, F 37,726
7 Claims. (Cl. 252—432)

1. A catalyst for producing cyanopyridines from alkylated pyridines with oxygen and ammonia consisting of a mixture of

(a) a phosphoric acid in an amount at least about 5% by weight based on the mixture, calculated as P_2O_5,

(b) a compound selected from the group consisting of boric acid, titanium dioxyhydrate and zirconium dioxide, and mixtures thereof, and

(c) a compound of a heavy metal selected from the group consisting of copper, iron, cobalt, nickel, bismuth, antimony, vanadium, niobium, cerium, chromium, molybdenum and tungsten and mixtures thereof,

said mixture having been solidified by heating.

3,297,588

CATALYST COMPRISING A METALLIC COMPONENT SUPPORTED ON AN ALUMINA BASE

William L. Kehl, Indiana Township, Allegheny County, and Meredith M. Stewart, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,951
22 Claims. (Cl. 252—432)

1. A catalyst comprising a metallic component supported upon an alumina anhydride whose precursor is a crystalline alumina hydrate having between 1.2 and 2.6 moles of water of hydration per mole of alumina, said precursor hydrate having a distinctive crystalline structure so that said precursor hydrate is identifiable by X-ray diffraction analysis, and said precursor hydrate upon dehydration producing said alumina anhydride without dehydrating via the boehmite state.

3,297,589

HYDROREFINING OF PETROLEUM CRUDE OIL AND CATALYST THEREFOR

William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,341
9 Claims. (Cl. 252—439)

1. A method of preparing a hydrorefining catalyst which comprises impregnating a refractory inorganic oxide with a decomposable vanadium compound, treating the impregnated inorganic oxide with a sulfurous compound selected from the group consisting of sulfur monochloride, sulfur dichloride and mixtures thereof, and calcining the resulting inorganic oxide-vanadium trichloride composite.

3,297,590

PYROPHORIC LEAD COMPOSITION AND METHOD OF MAKING IT

Sidney Toby, New Brunswick, and Joseph Charles, Jersey City, N.J., assignors to Research Corporation, New York, N.Y., a non-profit corporation of New York

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,160
3 Claims. (Cl. 252—447)

1. A method of making pyrophoric lead compositions which comprises heating lead citrate to about 250° C. while evacuating gaseous products of decomposition and thereafter heating the solid residue to a temperature from about 350° to about 500° C.

3. A pyrophoric lead composition consisting of a finely divided solid decomposition product of lead citrate containing metallic lead and carbon in a ratio of from about 4 to 1 to about 5 to 1 by weight and having a high rate of absorption of oxygen in a volume ratio of at least 100 to 1.

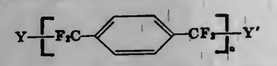
3,297,591

PROCESS FOR THE PREPARATION OF α-PERFLUORO-p-XYLYLENE POLYMERS

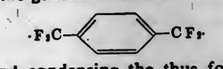
Sui-Wu Chow, Bridgewater Township, Somerset County, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 9, 1964, Ser. No. 381,528
6 Claims. (Cl. 260—2)

1. A process for the preparation of α-perfluoro-p-xylylene polymers which comprises pyrolyzing a compound having the general formula



wherein n is an integer from 1 to 2 inclusive, Y is a halogen having a lower bond strength than that of fluorine, and Y' is a member selected from the group consisting of hydrogen and halogens having a lower bond strength than that of fluorine to form reactive intermediary diradical species having the general structure



and cooling and condensing the thus formed diradicals to a temperature of below about 200° C. to form an α-perfluoro-p-xylylene polymer.

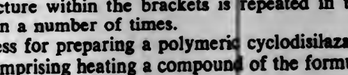
3,297,592

HIGH TEMPERATURE RESISTANT POLYMERIC CYCLODISILAZANES

Walter Fink, Zurich, Switzerland, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

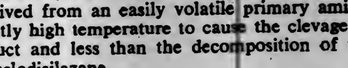
No Drawing. Filed Oct. 14, 1964, Ser. No. 403,915
Claims priority, application Switzerland, Oct. 15, 1963, 12,731/63; Sept. 30, 1964, 12,735/64
11 Claims. (Cl. 260—2)

1. A polymeric cyclodisilazane of the formula



wherein R_1 and R_2 are hydrocarbyl groups having not more than 24 carbon atoms; a is an integer from 0 to 1, and p represents the degree of polymerization indicating that the structure within the brackets is repeated in the polymer chain a number of times.

3. A process for preparing a polymeric cyclodisilazane of claim 1 comprising heating a compound of the formula



wherein a, R^1, R^2 and R^3 are as defined in claim 1, Y is the hydrogen atom, and Z is a secondary amino group which is derived from an easily volatile primary amine, at a sufficiently high temperature to cause the clevage of YZ by-product and less than the decomposition of the polymeric cyclodisilazane.

3,297,593

CATION EXCHANGE RESIN FROM AN ALKYLBENZENE

Carl B. Linn, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 20, 1963, Ser. No. 281,772
9 Claims. (Cl. 260—2.1)

1. A process for the production of a cation exchange resin which comprises condensing formaldehyde with an alkyl benzene hydrocarbon containing from 1 to 2 nuclear alkyl radicals, each alkyl group containing from 1 to 2 carbon atoms per alkyl group at condensation reaction conditions which form a resinous condensation product of high molecular weight and of hydrocarbon composition and thereafter sulfonating said condensation product at sulfonating reaction conditions sufficient to introduce at least one sulfo radical for every 3 nuclear aryl monomer units in said resinous product.

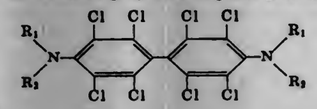
3,297,594

NOVEL RIGID AND SELF-EXTINGUISHING POLYURETHANE FOAMS AND PROCESS FOR PREPARATION OF SAME

Laszlo Szobel, Grenoble, and Ludovic Parvi, Pont-de-Claix, France, assignors to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a corporation of France

No Drawing. Filed July 10, 1963, Ser. No. 294,152
Claims priority, application France, July 13, 1962, 904,024
7 Claims. (Cl. 260—2.5)

1. A flame-retardant rigid cellular foam formed from reacting an organic polyisocyanate and a polyester resin produced by reacting at least one dicarboxylic acid and at least one chlorinated polyol having the general formula:



in which

R_1 is selected from the group consisting of a saturated aliphatic radical, an unsaturated aliphatic radical, a cyclic radical, a heterocyclic radical, each of said radicals having at least one hydroxyl function;

R_2 is selected from the group consisting of a hydrogen atom and a radical identical to that of R_1;

said chlorinated polyol being present in said foam in an amount such that the resulting polyurethane contains at least 30% chlorine; said polyisocyanate being present in an amount such that the ratio of the isocyanate groups to hydroxyl groups of the polyester is 0.3:1 to 1.3:1.

3,297,595

SEMI-PERMEABLE MEMBRANE AND PRODUCTION THEREOF

Morris Mindick, Chicago, and Harold I. Petzelt, Oak Lawn, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

Continuation of application Ser. No. 755,571, Aug. 18, 1958. This application June 30, 1964, Ser. No. 381,287
7 Claims. (Cl. 260—2.5)

1. In a method for producing a semi-permeable membrane of enhanced porosity wherein a homogeneous molecular dispersion of a water insoluble acid and alkali resistant thermoplastic film-forming polymer and a water soluble linear organic polar polymer having a minimum average molecular weight of about 5000 are dissolved in a solvent, the resultant solution is formed in a thin layer and solvent is removed from the layer by evaporation to produce a membrane in the form of a film having a water holding capacity of less than 45% on a wet basis, the improvement which comprises treating said membrane which may contain up to 30% of said solvent with additional solvent for said water insoluble acid and alkali resistant thermoplastic film forming polymer and said water soluble linear organic polar polymer mixed with a member from the group consisting of methanol and water until a swollen layer having a water holding capacity of at least 45% on a wet basis and having a maximum resistance of 10 ohms per square centimeter measured in 0.15 N KCl is obtained.

3,297,596

POLYURETHANES CONTAINING ADDUCTS OF HEXAHALOCYCLOPENTADIENE

Francis M. Kujawa, Tonawanda, N.Y., and Michael Worsley, Edmonton, Alberta, Canada, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,716
17 Claims. (Cl. 260—2.5)

1. A fire-resistant polyurethane product of components comprising an organic polyisocyanate and a resinous reaction product, said resinous reaction product having an acid number of less than 20, and being the reaction product of components comprising a monomeric 1,2-epoxide and a resinous polyester having an acid number in the range from 20 to about 90 and selected from the group consisting of (1) the resinous polyester of components comprising (a) an adduct of hexahalocyclopentadiene and a polycarboxylic compound containing aliphatic carbon-to-carbon unsaturation and (b) a polyhydric alcohol containing at least three hydroxyl groups, (2) the resinous polyester of components comprising (a) an adduct of hexahalocyclopentadiene and a polyhydric alcohol containing aliphatic carbon-to-carbon unsaturation, (b) a polyhydric alcohol containing at least three hydroxyl groups and (c) a dicarboxylic compound, (3) the resinous polyester of components comprising (a) an adduct of hexahalocyclopentadiene and a polyhydric alcohol containing aliphatic carbon-to-carbon unsaturation and (b) a polycarboxylic compound containing at least three carboxyl groups, and (4) mixtures thereof, wherein the halo-substituent is selected from the group consisting of fluorine, chlorine, bromine, and mixtures thereof, and wherein the carboxylic compounds are selected from the group consisting of a carboxylic acid, a carboxylic acid anhydride, and mixtures thereof; said resinous reaction product of said acid number of less than 20, by virtue of its monoepoxide component, having a viscosity as measured in Gardner seconds at 120 degrees centigrade that is lower than the viscosity as measured in Gardner seconds at 120 degrees centigrade of the corresponding resinous polyester that is unmodified by a monoepoxide component, but which has the same carboxylic and polyhydric alcohol components employed in the same ratio and has the same acid number of less than 20.

13. An isocyanato-terminated resinous product of components comprising an organic polyisocyanate and a hydroxyl-terminated resinous reaction product, said resinous reaction product having an acid number of less than 20, and being the reaction product of components comprising a monomeric 1,2-epoxide and a resinous polyester having an acid number in the range from 20 to about 90 and selected from the group consisting of (1) the resinous polyester of components comprising (a) an adduct of hexahalocyclopentadiene and a polycarboxylic compound containing aliphatic carbon-to-carbon unsaturation and (b) a polyhydric alcohol containing at least three hydroxyl groups, (2) the resinous polyester of components comprising (a) an adduct of hexahalocyclopentadiene and a polyhydric alcohol containing aliphatic carbon-to-carbon unsaturation, (b) a polyhydric alcohol containing at least three hydroxyl groups and (c) a dicarboxylic compound, (3) the resinous polyester of components comprising (a) an adduct of hexahalocyclopentadiene and a polyhydric alcohol containing aliphatic carbon-to-carbon unsaturation and (b) a polycarboxylic compound containing at least three carboxyl groups, and (4) mixtures thereof, wherein the halo-substituent is selected from the group consisting of fluorine, chlorine, bromine, and mixtures thereof, and wherein the carboxylic compounds are selected from the group consisting of a carboxylic acid, a carboxylic acid anhydride, and mixtures thereof; said resinous reaction product of said acid number of less than 20, by virtue of its monoepoxide component, having a viscosity as measured in Gardner seconds at 120 degrees centigrade that is lower than the viscosity as measured in Gardner seconds at 120 degrees centigrade of the corresponding resinous polyester that is unmodified by a monoepoxide component, but which has the same carboxylic and polyhydric alcohol components employed in the same ratio and has the same acid number of less than 20; wherein said polyisocyanate is present in an amount sufficient to provide at least about 200 percent of isocyanato groups with respect to the total number of hydroxyl and carboxyl groups in the hydroxyl-terminated resinous product.

3,297,597

PRODUCTION OF RIGID POLYURETHANE FOAM

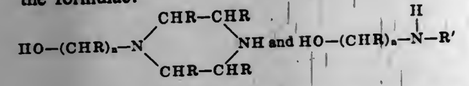
Gayle D. Edwards, Port Arthur, Doris M. Rice, Austin, and Robert L. Soulen, Georgetown, Tex., assignors to Jefferson Chemical Company Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed May 23, 1966, Ser. No. 551,892
14 Claims. (Cl. 260—2.5)

1. A method for preparing a rigid polyurethane foam which comprises reacting an organic polyisocyanate with

a polyol component comprising from about 30 to 100 wt. percent of a nitrogen-containing polyol having a hydroxyl number of from about 250 to about 900 and a nitrogen content of from about 1 to about 15 wt. percent and, correspondingly, from about 70 to 0 wt. percent of a second polyol, said nitrogen-containing polyol having been prepared by a method which comprises the steps of:

(1) mixing a phenol and an alkanolamine selected from the group consisting of alkanolamines having the formulae:



wherein R is selected from the group consisting of hydrogen and C_1–C_4 alkyl, R′ is selected from the group consisting of hydrogen, C_1–C_4 alkyl and $-(CHR)_n-OH$ and n is a positive integer having a value of two to five;

(2) thereafter adding formaldehyde to the mixture at a temperature below the temperature of Novolak formation;

(3) heating the resulting mixture at a temperature within the range of from about 50° to 150° C. for a period of time sufficient to reduce the formaldehyde content to no more than about 1%;

(4) stripping the water from the reaction product; and

(5) adding on alkylene oxide selected from the group consisting of ethylene oxide, propylene oxide, butylene oxide, styrene oxide, glycidol and mixtures thereof to said stripped reaction product at a temperature within the range of about 30° to about 200° C.

2. A product prepared by the method of claim 1.

3,297,598
RUBBER COMPOSITION

George S. Mills, Boonton, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed June 5, 1963, Ser. No. 285,607

5 Claims. (Cl. 260—3)

1. A rubber composition consisting essentially of 100 parts of rubber selected from the group consisting of natural Hevea rubber, copolymers of a major proportion of butadiene and a minor proportion of styrene, copolymers of a major proportion of isobutylene and a minor proportion of a conjugated diene, terpolymers of ethylene and propylene with a minor proportion of a non-conjugated diene, 1,4-polybutadiene and 1,4-polyisoprene; 40 to 100 parts of a hydrated silica reinforcing filler having a particle size not greater than 1 micron and a degree of hydration that is not less than that represented by 0.02 gram of moisture per 100 square meters of surface area; and 1 to 10 parts of an epoxy resin selected from the group consisting of condensation products of epichlorhydrin and a diphenol, epoxidized polyolefines, and condensation products of epichlorhydrin and a polyhydric alcohol.

3,297,599
FRICTION COMPOSITION FOR HIGH ENERGY SERVICE

Franklin W. Eschen, Martinsville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 24, 1965, Ser. No. 458,394

13 Claims. (Cl. 260—3)

1. A friction composition characterized by its stability over extended pressure and temperature conditions for the manufacture of high energy service friction elements, said composition consisting essentially of the combination, in percent by weight of the total of: approximately 12 to 30% of thermosetting resin binder, approximately 1 to 5% of graphite, approximately 12 to 40% of powdered copper alloy selected from the group consisting of brass powder, bronze powder, and mixtures thereof, approximately 10 to 25% of calcium aluminate cement, approximately 10 to 40% of asbestos fibers, 0 to approximately 12% of barytes, 0 to approximately 10% of organic friction particles, 0 to approximately 10% of mica particles, and 0 to approximately 15% of at least one metal oxide selected from the group consisting of zinc oxide, ferric oxide, chromium oxide, and stannous oxide.

3,297,600
TREATMENT OF RESIN COAGULATE WITH RUBBER LATEX TO REMOVE RESINOUS FINES

Richard R. Blair, Marietta, Ohio, and Charles A. Padgitt, Parkersburg, W. Va., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed May 25, 1962, Ser. No. 197,582

5 Claims. (Cl. 260—4)

1. The process of treating thermoplastic resins, below their second order transition temperature, to reduce fines therein, comprising the steps of:

combining a dilute coagulant solution and latex of said resin selected from the group consisting of butadiene-styrene resin latices, acrylonitrile-butadiene-styrene resin latices, styrene-acrylonitrile resin latices, polystyrene resin latices, polyvinyl halide resin latices, polyacrylic acid resin latices, and mixtures thereof to thereby coagulate the resin therein;

treating said coagulated resin by adding thereto a dilute rubber latex material, said rubber latex material being above its second order transition temperature, said rubber latex selected from the group consisting of butadiene-styrene rubber latices, polyisobutylene rubber latices, isoprene-butadiene rubber latices, butadiene-acrylonitrile rubber latices, natural rubber latices, polybutadiene rubber latices, polyurethane rubber latices, and mixtures thereof;

said dilute rubber latex being added in sufficient amount to provide a dry rubber to dry resin ratio of from 1/8 part to 2 parts by weight rubber to 100 parts by weight resin;

coagulating said rubber latex in said coagulant solution;

separating the coagulated treated resin from its aqueous solution; and

washing the treated resin with water and drying said resin to thereby provide a resinous material substantially free of fines.

3,297,601
SUBSTANTIALLY DRY JOINT COMPOUND COMPRISING CALCIUM SULFATE, POLYVINYL ACETATE AND STARCH

Earl Maynard and Mitchell P. Ptasienski, Elk Grove Village, Ill., assignors to United States Gypsum Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 13, 1963, Ser. No. 301,897

16 Claims. (Cl. 260—17.4)

1. A substantially dry composition adapted for use in finishing joints between wallboards when mixed with water comprising a mixture of calcium sulfate hemihydrate in an amount from about 45 to 90% by weight, set control additives for said calcium sulfate hemihydrate, dry finely divided polyvinyl acetate, a dry plasticizer for said polyvinyl acetate.

2. A composition according to claim 1, wherein a portion of the polyvinyl acetate is replaced with partially converted pregelled starch, the amount of said starch being not more than the amount of polyvinyl acetate present in the composition.

3,297,602
PROCESS OF PREPARING SPINNABLE POLYVINYL CHLORIDE LATEX/CELLULOSE XANTHATE COMPOSITIONS

John G. Davoud, Pottstown, Pa., assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Mar. 11, 1963, Ser. No. 264,255

5 Claims. (Cl. 260—17)

1. The process of preparing a spinnable composition of viscose with polyvinyl chloride particles dispersed therein in which process comprises intimately mixing polyvinyl chloride latex with a sodium hydroxide solution of aged cellulose xanthate, filtering the mixture to remove large particles and then deaerating.

3,297,603
DRYING OIL COMPOSITION AND A PROCESS FOR IMPROVING PARTICLE BOARD

Gerald Duane Mase, Homewood, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,170

4 Claims. (Cl. 260—17.3)

1. In the process of manufacturing particle board comprising wood particles and urea-formaldehyde binder wherein wood particles are first coated with the urea-formaldehyde binder composition, and the coated particles then consolidated and bonded together by compression at elevated pressures and temperatures, the improvement consisting of the step of applying to the urea-formaldehyde coated wood particles prior to compression thereof about 1–15 weight percent, based on the dry weight of the wood particles, of a drying oil composition consisting essentially of (A) about 10–60 weight percent of a hydrocarbon drying oil having an iodine number between about 120 and 350; (B) about 10–75 weight percent of a vegetable drying oil; (C) about 5–50 weight percent of a petroleum oil solvent boiling below about 750° F. and having at least 50 weight percent thereof boiling at a temperature above about 350° F.; and (D) from about 0.1 to about 10 percent of a metal drier.

3,297,604
OXIDIZED GALACTOSE CONTAINING REACTION PRODUCTS

Felix J. Germino, Yorktown Heights, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,587

15 Claims. (Cl. 260—17.4)

2. The reaction product of (A) a carbohydrate having a galactose configuration at the C_4 position and oxidized to form a carbonyl group at the C_3 position and (B) a compound selected from the group consisting of carbohydrates, proteins, polyhydroxy polymers, polyamino polymers, tobacco and paper.

15. The method of making carbonyl reactive carbohydrates characterized by having the galactose configuration at the C_4 position which comprises dissolving said carbohydrate in an aqueous solution at a pH between about 4.5 and 7.5, reacting said solution in the presence of oxygen with the aid of the enzyme galactose oxidase, and separating the reaction product.

3,297,605
WATER DISPERSIBLE CONDENSATION PRODUCTS OF A DRYING OIL GLYCERIDE ESTER AND A POLYETHYLENE GLYCOL

Herbert M. Schroeder, Williamsville, and Joseph A. Pawlak, Buffalo, N.Y., assignors, by mesne assignments, to Textron Inc., a corporation of Rhode Island

No Drawing. Filed Jan. 10, 1961, Ser. No. 81,700

16 Claims. (Cl. 260—22)

1. A liquid, water-dispersible composition of matter having a viscosity of up to about 100 poises which is a condensate of a mixture consisting essentially of about 75 to 90% of a drying oil glyceride ester, said ester being of an acid consisting essentially of an olefinically unsaturated fatty acid of 18 carbon atoms, said glyceride ester being selected from the group consisting of (A) heat-polymerized glyceride esters and (B) glyceride esters modified with about 5 to 20% of a member selected from the group consisting of (1) a polyhydric alkanol of 3 to 6 carbon atoms and having 3 to 6 hydroxyl groups and a dicarboxylic acid of 4 to 8 carbon atoms, said polyhydric alkanol and dicarboxylic acid each being present in an amount of about 25 to 75% based on their combination and (2) diolefins of 4 to 8 carbon atoms; and about 10 to 25% of a polyethylene glycol having a molecular weight of about 400 to 2000.

3,297,606
POLYMERIC REACTION PRODUCTS DERIVED FROM POLYHALOPOLYHYDRODIMETHANONAPHTHALENE DICARBOXYLIC ACIDS OR ANHYDRIDES THEREOF

Morris Dunkel, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,567

7 Claims. (Cl. 260—22)

1. An alkyd resin consisting essentially of the reaction product of a saturated aliphatic polyol, a fatty acid or fatty acid oil, and a polyhalopolyhydrodimethanonaphthalenedicarboxylic acid or anhydride thereof.

3,297,607
RUBBERY POLYBUTADIENE PEPTIZED WITH C_5-C_{10} MONOCARBOXYLIC ACIDS

Rudolf A. Behrens, Sparta, N.J., assignor to Texas-U.S. Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 217,294, Aug. 16, 1962. This application Oct. 1, 1965, Ser. No. 492,260

12 Claims. (Cl. 260—23.7)

1. A composition comprising solution polymerized polybutadiene rubber peptized with between 0.5 and 10 parts per 100 parts by weight of said rubber of a monofunctional monocarboxylic acid selected from the group consisting of benzoic acid and acids having the formula RCOOH wherein R is an alkyl group having 5 to 9 carbon atoms.

3,297,608
METHOD FOR CURING EPOXY RESINS UNDER WATER

Allen Noshay, East Brunswick, and George J. Barenholtz, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 31, 1963, Ser. No. 284,387

4 Claims. (Cl. 260—23.7)

1. A method for curing condensation products of epichlorohydrin and p,p′-isopropylidenediphenol which comprises adding 5 to 160 parts by weight of the adduct prepared by condensing (A) 100 parts by weight of an oxidized liquid polymer of a C_4 to C_8 conjugated diolefin, said polymer being chosen from the group consisting of liquid air blown polymers and liquid epoxidized polymers containing from 8 to 20 weight percent oxygen with (B) a curing aid chosen from the group consisting of

(a) a C_2 to C_{12} aliphatic amine containing 2 to 6 amine groups per molecule, and

(b) the condensation product of (a) with dimerized C_8 to C_{24} unsaturated carboxylic acid and

(c) the condensation product of (a) with trimerized C_8 to C_{24} unsaturated carboxylic acid and

said adduct having a molecular weight within the range of 500 and 1500 and a viscosity of 50 to 1000 poises at 25° C. to 100 parts by weight of said condensation product and allowing the mixture to stand under water for several hours at room temperature.

3,297,609

EMULSIFIABLE AMORPHOUS POLYPROPYLENE COMPOSITIONS AND PAPER IMPREGNATED THEREWITH

Hugh J. Hagemeyer, Jr., and Raymond L. Etter, Jr., Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 19, 1963, Ser. No. 266,165
27 Claims. (Cl. 260—28.5)

1. A new composition for coating paper to improve the appearance, printing receptivity and other physical properties of paper comprising a stable dispersion in liquid of a particulate material capable of improving the physical properties of paper and a binder material, the improvement comprising a binder material, prepared by the oxidation of a blend of amorphous polypropylene having a viscosity measured at 150° C. of from 1,000 to about 200,000 cps. and a wax material selected from the group consisting of polyethylene, hydrogenated polyethylene, polyethylene-isopropanol, polyethylene-isobutanol, and mixtures thereof and wherein said blend has been oxidized to an acid number of at least 4.

13. An emulsifiable composition of matter comprising the product of the oxidation of a blend of amorphous polypropylene having a viscosity measured at 150° C. of from about 1,000 to about 200,000 cps., and wax material having a viscosity of from about 100 to about 20,000 cps. at 125° C. and selected from the group consisting of polyethylene, hydrogenated polyethylene, polyethylene-isopropanol and polyethylene-isobutanol, and mixtures threreof, said blend having an acid number of at least 4.

3,297,610

COATING AND LAMINATING COMPOSITIONS CONSISTING OF A BLEND OF PARAFFIN, ISOPARAFFIN AND MICROCRYSTALLINE WAXES WITH ETHYLENE-VINYL ACETATE COPOLYMER

Hallard C. Moyer, Homewood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 24, 1963, Ser. No. 290,152
9 Claims. (Cl. 260—28.5)

1. A wax composition suitable as a coating and bonding material consisting essentially of about 85–99% of a wax blend and about 1 to 15% of an ethylene-vinyl acetate copolymer having a polymerized vinyl acetate content of about 20–30% and a melt index of about 1 to 500, said wax blend consisting essentially of about 40 to 55% paraffinic petroleum wax having a melting point of about 137–145° F., a refractive index at 80° C. of about 1.4285 to 1.4320, a needle penetration at 77° F. of about 7 to 11, and a viscosity of about 39 to 42 SSU at 210° F.; about 10 to 25% of an isoparaffinic petroleum wax having a melting point of about 112–122° F., a refractive index at 80° C. of about 1.4390 to 1.4420, a needle penetration at 77° F. of about 50 to 75, and a viscosity of about 44 to 50 SSU at 210° F.; about 10 to 30% of a microcrystalline petroleum wax having a congealing point of about 110–135° F., a refractive index at 80° C. of about 1.4500 to 1.4540, a needle penetration at 77° F. of about 60 to 140, and a viscosity of about 80 to 100 SSU at 210° F.; and about 5 to about 20% of a microcrystalline petroleum wax having a congealing point of about 150–165° F., a refractive index at 80° C. of about 1.4470 to 1.4510, a needle penetration at 77° F. of about 15 to 27 and a viscosity of about 75 to 90 SSU at 210° F.; said wax blend consisting essentially of about 50 to 70% of said paraffinic petroleum wax and said isoparaffinic petroleum wax, and about 30 to 50% of said microcrystalline waxes.

3,297,611

CURING FURFURYL-ALCOHOL-MODIFIED UREA FORMALDEHYDE CONDENSATES

Henry A. Hill, Watertown, Mass., assignor to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed June 5, 1964, Ser. No. 373,074
8 Claims. (Cl. 260—29.4)

1. In an aqueous composition including furfuryl-alcohol-modified urea formaldehyde condensate as the resin and an acidic curing catalyst therefor in amount to establish the pH below 7, the improvement comprising an admixed retarder of curing at low temperatures, the retarder comprising the combination of a water soluble nitrite and hexamethylenetetramine, the proportion on a dry basis, for 100 parts of said condensate, being approximately .2 to 4.5 parts of said nitrite and .08 to 1.3 parts of said hexamethylenetetramine.

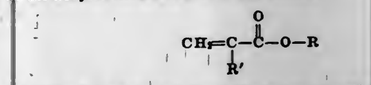
3,297,612

METHOD FOR STABILIZING LATEXES OF ACRYLIC POLYMERS

Walter J. Lee and Milton S. Wing, Lake Jackson, and Horace S. Henderson, Freeport, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 17, 1961, Ser. No. 132,022
3 Claims. (Cl. 260—29.6)

1. A method for stabilizing aqueous latexes of a polymer selected from the group consisting of a homopolymer of an acrylic monomer of the formula



wherein R is selected from the group consisting of hydrogen, alkyl having from 1 to 18 carbon atoms, hydroxyalkyl having from 1 to about 4 carbon atoms and phenyl, and R′ is selected from the group consisting of hydrogen, methyl, and ethyl, and copolymers thereof with a monoethylenically unsaturated monomer, said method comprising passing through said latex superheated steam at a temperature of from about 140° to about 180° C. while maintaining said latex at a temperature of about 100° C. until the amount of non-polymerized organic materials in said latex has been reduced to less than 0.02 percent by weight as measured by gas-liquid chromatography at from 150° to 200° C. using polyethyleneglycol of 6000 molecular weight adsorbed on diatomaceous earth as the sorbent.

3,297,613

VINYLIDENE CHLORIDE-ACRYLATE-AMIDE INTERPOLYMER

Dale S. Gibbs, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,110
4 Claims. (Cl. 260—29.6)

1. A process for making a solid, free-flowing vinylidene chloride interpolymer which is easily redispersed in water to a latex form in the absence of wetting agents, which process consists of:

(I) simultaneously and continuously adding and polymerizing, in an aqueous medium containing catalytic amounts of a substantially non-ionic free-radical catalyst, (1) at least about 50 weight percent vinylidene chloride, (2) between about 1 and 45 weight percent of at least one substantially water-insoluble monoethylenically unsaturated comonomer, selected from the group consisting of alkyl acrylates and alkyl alkanoates having alkyl groups containing from 1 to about 8 carbon atoms and (3) between about 3 and 25 weight percent of a substantially water-insoluble polymerizable ethylenically unsaturated carboxylic acid amide, the total weight of the polymerizable constituents being 100 percent, and

(II) separating said interpolymer from said aqueous medium.

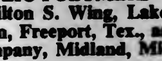
3,297,614

STYRENE-ACRYLATE-UNSATURATED ACID CO-POLYMER PIGMENTED PAPER COATINGS

Robert J. Pueschner, St. Louis, and Harold A. Walters, Beaverton, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 2, 1962, Ser. No. 235,127
12 Claims. (Cl. 260—29.6)

1. A pigmentary composition for coating paper comprising an adhesive and a finely divided pigment in an aqueous medium, the pigment having at least 50 percent by weight of clay therein, there being for 100 parts by weight of the pigment from about 5 to about 30 parts by weight of pigment-binding adhesive of which from about 1 to about 30 parts, dry basis, are the latex copolymer of (a) from about 5 to about 48 percent by weight of an alkenyl aromatic monomer having the formula



in which R is selected from the group consisting of H— and —CH_3 and Ar is selected from the group consisting of aromatic hydrocarbon radicals and halogenated aromatic hydrocarbon radicals having at least one halogen attached to the aromatic nucleus, the said halogen having an atomic number ffom 17 to 35, (b) from about 50 to about 93 percent by weight of at least one ester selected from the class consisting of the alkyl esters of acrylic acid and the alkyl esters of methacrylic acid in which the alkyl moiety of the ester has from 6 to 12 carbon atoms and (c) from about 2 to about 5 percent of at least one α,β-ethylenically unsaturated carboxylic acid having from 3 to 5 atoms.

3,297,615

PIGMENT BINDER OF ACRYLATE-ACRYLONITRILE-METHACRYLIC ACID FOR PAPER COATINGS

Charles Frazier, Old Greenwich, Conn., and Daniel Dickerson Ritson, Yonkers, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Oct. 1, 1963, Ser. No. 313,067
7 Claims. (Cl. 260—29.6)

1. A fluid aqueous ammoniated pigment coating composition for waterlaid cellulose webs, which consists essentially of a uniform suspension of a hydrophilic inorganic mineral pigment as coating component in a latex of a hydrophobic organic substantially 75–95:4–24:1–3 percent by weight ethyl acrylate:acrylonitrile:methacrylic acid copolymer as adhesive component therefor, and sufficient ammonium hydroxide to give said composition a pH of at least 9, the weight of said pigment being 5 to 20 times the weight of said polymer.

3,297,616

SELF-CURING SILICATE AND ACRYLATE COATINGS

John R. Fisher, Jr., Oakmont, and Woodrow E. Kemp, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,496
2 Claims. (Cl. 260—29.6)

1. A pigmented silicate coating composition for treating a metal surface with a protective coating capable of self-curing in air under ambient conditions to form insoluble silicates comprising an admixture of two components, one of said components (A) comprising:

(1) 10–30 parts by weight of an alkali metal silicate solution having a maximum ratio of alkali metal oxide to silica of 1:2; and

(2) 4–15 parts by weight of an emulsion of an interpolymer comprising an alkyl acrylate-alkyl methacrylate capable of providing a rapid drying insoluble surface film to protect the silicates for a time sufficient to permit exposure of the silicates to the air atmosphere to form insoluble silicates; and

the other component (B) being comprised of:

(1) 15–30 parts by weight of colored pigments;

(2) 10–20 parts by weight of filler pigments;

(3) 2–6 parts by weight of salts of metal which react with said silicates to form insoluble metal silicate compounds;

said components (A) and (B) being admixed together just prior to application and having added thereto sufficient water to adjust the viscosity for the mode of application, said parts being given as parts by weight of the total composition.

3,297,617

COATING SLURRY CONTAINING AGGREGATE AND AQUEOUS EMULSION OF PETROLEUM-DERIVED HYDROCARBON RESIN

Joseph Regenstein, Jr., Chicago, and John C. Tapas, Glenview, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,842
5 Claims. (Cl. 260—29.6)

2. A coating slurry for sealing and coloring pavements, consisting essentially of:

(1) from about 140 to about 190 parts by weight of aggregate selected from the group consisting of sand, slag, crushed gravel and mixtures thereof, whose particles are less than about 10 mesh size;

(2) from about 1 to about 20 parts by weight of a solid alkaline material selected from the group consisting of Portland cement, hydrated lime, limestone dust and mixtures thereof, whose particles are less than about 200 mesh size;

(3) from about 2 to about 10 parts by weight light stable pigment whose particles are less than about 200 mesh size;

(4) from about 2 to about 25 parts by weight water; and

(5) from about 10 to about 40 parts by weight aqueous emulsion consisting essentially of:

(a) from about 45 to about 70 parts by weight of a mixture comprising from about 1 to about 10 percent by weight hydrocarbon rubber; from about 30 to about 70 percent by weight substantially completely polymerized aromatic, thermoplastic petroleum-derived hydrocarbon resin, having a softening point range of from about 220° to about 300° F., a mixed aniline point of from about 20° to about 60° C., an iodine number of from about 40 to about 160, an acid number of from 0 to about 4, and a molecular weight of from about 600 to about 1700 as determined by cryoscopic means; and from about 30 to about 70 percent by weight oil selected from the group consisting of aromatic oil having a viscosity of from about 120 to about 300 S.S.U. at 210° F. and an aniline point of from about 20° to about 60° C., naphthenic oil consisting essentially of a mixture of viscous alicyclic hydrocarbons having a viscosity of from about 40 to about 200 S.S.U. at 210° F. and an aniline point of from about 50 to about 150° C., and mixtures thereof;

(b) from about 2 to about 10 parts by weight emulsifier for the rubber, resin and oil mixture, said emulsifier selected from the group consisting of cationic, anionic, and nonionic emulsifiers and anionic-nonionic emulsifier pairs; and

(c) from about 20 to about 50 parts by weight water.

3,297,618
STABLE AQUEOUS EMULSIONS OF ETHYLENE-VINYL CHLORIDE MALEATE COPOLYMERS

Dietrich Glabisch, Leverkusen, and Herbert Bartl, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,016
Claims priority, application Germany, Jan. 12, 1963, F 38,761
4 Claims. (Cl. 260—29.6)

1. The process for preparing stable aqueous emulsions of ethylene copolymers, said process consisting essentially of copolymerizing ethylene, 50–70 percent by weight of vinyl chloride and 2–10 percent by weight of a salt of a semi-ester of (1) maleic acid and (2) an aliphatic monohydric alcohol containing up to 6 carbon atoms in an aqueous medium adjusted to a pH between 4 and 8 at elevated pressure in the presence of a water-soluble free radical forming substance.

3,297,619
ANTIOXIDANT EMULSIONS PREPARED FROM TWO-PHASE SYSTEMS

John W. Bluhm, Vienna, and James R. Tucker, Parkersburg, W. Va., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 5, 1964, Ser. No. 373,034
8 Claims. (Cl. 260—29.6)

1. In the compounding of a carboxylic SBR latex, the step of adding to said latex an antioxidant emulsion comprised of:

an organic phase containing up to 50 percent of the total weight of the antioxidant emulsion, which phase contains 10 to 40 parts by weight of an antioxidant dissolved in from 2 to 35 parts by weight of an organic solvent,

a water phase which contains 2 to 10 parts by weight of a 5 percent solution of polyacrylate selected from the group consisting of sodium, ammonium, and potassium polyacrylate, and

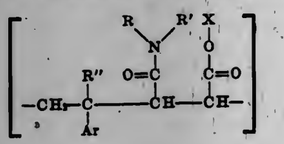
86 to 15 parts by weight of water, said parts by weight referring to the total weight of the antioxidant emulsion.

3,297,620
EMULSION LATEX CONTAINING PARTIAL AMIDE OF STYRENE-MALEIC ANHYDRIDE COPOLYMER AS EMULSIFIER

George J. Anderson, Wilbraham, and Charles R. Williams, Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

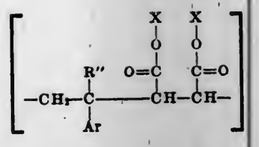
No Drawing. Filed July 20, 1964, Ser. No. 383,916
12 Claims. (Cl. 260—29.6)

1. An emulsion polymerized latex containing as the sole emulsifier 10–40 weight percent of a polymer based on the total weight of emulsion solids thereof, wherein the polymer has a molecular weight of 1000–20,000 and is a salt of a partial amide of a copolymer of maleic anhydride and a vinylidene aromatic compound and which polymer has in its structure recurring groups of the formulae:



I

and



II

with the groups of Formula I constituting 20–100% of the total of the groups of Formulae I and II and wherein R and R' are independently selected from the group consisting of hydrogen and an organic radical of 1–20 carbon atoms, R'' is selected from the group consisting of hydrogen, an alkyl radical of 1–5 carbon atoms, a halogen and a nitrile, and mixtures thereof, Ar is an aromatic radical of 1–2 benzene rings, and X is selected from the group consisting of ammonium, substituted ammonium and alkali metal ions.

3,297,621
TWO STEP POLYMERIZATION OF TETRAPOLYMER

David D. Taft, Minneapolis, Minn., assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,376
25 Claims. (Cl. 260—29.6)

1. A method of producing an interpolymeric latex composition comprising in a first step emulsion polymerizing a mixture of the following components: 120 parts by weight ethyl acrylate, 11 parts by weight glycidyl acrylate, 25 parts by weight styrene and 6 parts by weight methacrylic acid; in a subsequent second step emulsion polymerizing the products of the first step with the following additional components: 3 parts by weight glycidyl acrylate, 35 parts by weight styrene and 4 parts by weight methacrylic acid; and thereafter heat treating the emulsion for about two hours at about 185°–195° F.

3,297,622
BINDER COMPOSITION OF EPOXY, WATER GLASS, AND DIENE RUBBER

George J. Grosner, Milford, and Edward V. Huda, Stratford, Conn., assignors to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,059
15 Claims. (Cl. 260—29.7)

1. A plastic, organic-inorganic binder composition comprising a synthetic ambient temperature curable liquid organic epoxy resin, ambient temperature curing agent for said resin, aqueous sodium silicate solution, and plasticizer for said composition.

3,297,623
GRAFT OF POLYDIENE WITH ACRYLATE AND METHYLOL ACRYLAMIDE

Karl-Heinrich Knapp, Leverkusen, Gustav Sinn, Bergisch Neukirchen, and Karl Dinges and Karl-Heinz Ott, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

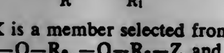
No Drawing. Filed Feb. 12, 1963, Ser. No. 257,833
Claims priority, application Germany, Feb. 14, 1962, F 36,029
7 Claims. (Cl. 260—29.7)

1. A coagulation-stable aqueous copolymer dispersion comprising water and 10–60% of a dispersed graft copolymer of

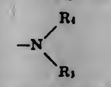
(a) 1–50% of a polymer of aliphatic conjugated diolefine having 4–6 carbon atoms,

(b) 98.8–30% of acrylic acid ester with 1–8 carbon atoms in the alkyl group and

(c) .2–20% of acryl amide methylol derivative of the formula



wherein X is a member selected from the group consisting of —O—R_2, —O—R_3—Z, and



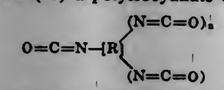
wherein R is a member selected from the group consisting of hydrogen and methyl; R_1 is a member selected from the group consisting of hydrogen and alkyl of 1–8 carbon atoms; R_2 is a member selected from the group consisting of a saturated aliphatic hydrocarbon containing 1–10 carbon atoms, and unsaturated aliphatic hydrocarbon of 1–10 carbon atoms; R_3 is a divalent saturated aliphatic hydrocarbon radical of 1–3 carbon atoms; Z is a member selected from the group consisting of —COOH, —OSO_3H, the corresponding sodium, potassium and ammonium salts, —SO_3H, the corresponding sodium, potassium and ammonium salts, halogen, —CN and —$(CH_2CH_2O)_nH$, wherein n is 1–20; R_4 and R_5 individually are members selected from the group consisting of alkyl of 1–8 carbon atoms, cycloalkyl, and —R_3—Z, and R_4 together with R_5 and the adjacent nitrogen atom are members selected from the group consisting of piperidino and morpholino, the above graft copolymer being admixed with about 0.1–15% of a non-ionic emulsifier, calculated on the total amount of polymer.

3,297,624
ELASTOMERIC COMPOSITIONS OF OIL AND URETHANE-LINKED RESINS

Bruce W. Hotten, Orinda, Calif., assignor to Chevron Research Company, a corporation of Delaware

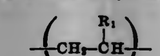
No Drawing. Filed May 10, 1965, Ser. No. 454,641
6 Claims. (Cl. 260—33.6)

1. A coating composition consisting essentially of a hydrocarbon lubricating oil base having an aromatic ring content of from about 15 to 75% by weight and from 20 to 80% by weight of a cross-linked polymer formed by reacting in situ (X) a polyisocyanate of the formula:

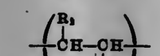


wherein R is a non-benzenoid radical of 36 to 54 carbon atoms and n is a cardinal number 0 to 1, with (Y) a polymer consisting essentially of randomly distributed monomer units characterized by the formulae:

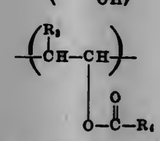
(A)



(B)



(C)



wherein R_1, R_2 and R_3 are selected from the group consisting of hydrogen and alkyl radicals of 1 to 2 carbon atoms, R_4 is selected from the group consisting of hydrogen and alkyl radicals of 1 to 11 carbon atoms, (A) is present in the polymer in the amount of 80 to 95 mol percent, (B) in the amount of 0.1 to 5 mol percent and (C) in the amount of from 5 to 20 mol percent.

3,297,625
PAVING COMPOSITION COMPRISING AGGREGATE AND A BINDER CONTAINING A PETROLEUM RESIN, A HYDROCARBON RUBBER, AND AN OIL

Joseph Regenstein, Jr., Chicago, and John C. Tapas, Glenview, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,600
4 Claims. (Cl. 260—33.6)

1. A paving material comprising from about 85 to about 98 parts by weight of mineral road paving aggregate material up to about one-half inch in diameter, and from about 2 to about 10 parts by weight of a binder composition therefor, said binder composition comprising from about 1 to about 10 parts by weight of a hydrocarbon rubber; from about 30 to about 60 parts by weight substantially completely polymerized, aromatic, thermoplastic, petroleum-derived hydrocarbon resin having a softening point range of from about 220° to about 300° F., a mixed aniline point of from about 20 to about 60° C., an iodine number of from about 70 to about 160, an acid number of from 0 to about 4 and a molecular weight of from about 600 to about 1400 as determined by cryoscopic means; and from about 40 to about 60 parts by weight viscous oil selected from the group consisting of aromatic oil having a viscosity of from about 200 to about 300 S.S.U. at 210° F. and an aniline point of from about 20 to about 60° C., naphthenic oil consisting essentially of a mixture of viscous cycloparaffinic compounds having a viscosity of from about 50 to about 200 S.S.U. at 210° F. and an aniline point of from about 50 to about 150° C., and mixtures thereof, and said binder composition having a penetration of at least about 65 and a viscosity of between about 250 and 350 Saybolt seconds furol at 275° F.

3,297,626
SULFUR-CURABLE COMPOSITIONS CONTAINING POLY-UNSATURATED COMPOUNDS AS CURING PROMOTERS

John Frederick Smith, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 15, 1962, Ser. No. 238,002
14 Claims. (Cl. 260—41.5)

1. A process for preparing a sulfur-cured, filler-loaded elastomeric composition which comprises mixing (I) a normally solid elastomeric copolymer selected from the group consisting of (a) a copolymer of at least one α-monoolefin of the formula R—C=CH_2 where R is selected from the group consisting of hydrogen and C_1–C_{16} alkyl radicals and at least one non-conjugated hydrocarbon diene of from 5 to 22 carbon atoms, said copolymer having up to about 2 gram-moles of carbon-to-carbon double bonds per kilogram, and (b) a copolymer of an isoolefin and a conjugated diene, said isoolefin and diene having from 4 to 14 carbon atoms, and said copolymer having an iodine number of from 1 to about 50; (II) about 20 to 300 parts of a filler compound per 100 parts of copolymer; (III) a monomeric curing promoter compound selected from the group consisting of di-allyl esters of unsaturated dicarboxylic acids and N-allyl substituted amides, said promoter compound having at least 3 sulfur-reactable carbon-to-carbon double bonds per molecule and being present in an amount to give about 0.05 to 1.9 gram-moles of carbon-carbon double bonds in the promoter for every gram-mole of carbon-carbon double bonds in said copolymer; and (IV) a sulfur-curing system in amounts containing about 0.2 to 3.5 parts of sulfur per 100 parts by weight of said copolymer to react with

said copolymer and up to 40% additional sulfur to react with said promoter; and heating the mixture to effect a cure.

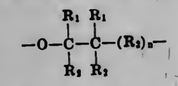
3,297,627

THERMOSTABILIZED COPOLYMERS OF TRIOXANE AND PROCESS FOR PREPARING THEM USING AN IMIDAZOLIDONE-2 STABILIZER

Hans Dieter Hermann, Edgar Fischer, and Günther Roos, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,823
Claims priority, application Germany, Apr. 28, 1962, F 36,667
8 Claims. (Cl. 260—45.8)

1. A thermally stabilized copolymer of trioxane having repeating units consisting essentially of —OCH_2— groups interspersed with oxyalkylene groups of the formula



in which R_1 and R_2 are hydrogen or lower alkyl, R_3 is methylene, lower alkyl-substituted methylene or lower alkyl-substituted oxymethylene and n is an integer from zero to two, said copolymer being in intimate admixture with from about 0.01 to 10% by weight of imidazolidone-2, an imidazolidone-2 substituted on the nitrogen atom by alkyl of 1 to 18 carbon atoms, phenyl, aminophenyl or alkylphenyl in which the alkyl group contains 1 to 18 carbon atoms, or a combination of said imidazolidones as stabilizer.

5. A thermally stabilized copolymer of trioxane as defined in claim 1 containing, in addition, a known polyoxymethylene stabilizing agent selected from the group consisting of phenol, substituted phenols having a pK at 25° C. of greater than 6.0 for every stage of dissociation of said substituted phenol, monomeric secondary aromatic amines and monomeric tertiary aromatic amines.

3,297,628

STABILIZATION OF RUBBER WITH DICYCLOHEXYLDIAMINODIPHENYL ETHER

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,789
5 Claims. (Cl. 260—45.9)

1. Diene hydrocarbon rubber normally subject to oxidative deterioration containing, as an inhibitor against said deterioration, a stabilizing concentration of dicyclohexyldiaminodiphenyl ether.

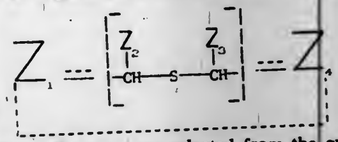
3,297,629

POLYVINYL CHLORIDE RESIN COMPOSITIONS HAVING INCREASED RESISTANCE TO HEAT DETERIORATION

Otto S. Kauder, Jamaica, N.Y., assignor to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of New York

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,634
17 Claims. (Cl. 260—45.75)

1. A rigid polyvinyl chloride resin composition having increased resistance to deterioration when heated at 375° F. comprising (a) a rigid polyvinyl chloride resin, (b) an organotin compound having organic radicals linked to tin only through carbon and oxygen, at least two organic radicals being linked through carbon, and at least one organic radical being linked through oxygen to a carboxyl group of an unsaturated dicarboxylic acid ester of an alcohol having from one to two hydroxyl groups, said organotin compound being present in a stabilizing amount, and (c) an organic sulfide characterized by the formula



in which the Z groups are selected from the group consisting of hydrogen and organic groups containing from one to about thirty carbon atoms, selected from the group consisting of alkyl, alkenyl, cycloalkyl, arylkyl, alkylarylalkyl, oxygenated such groups, and such groups containing oxy- and thio-carboxylic acid, acid salt, oxy- and thio-carboxylic acid ester, hydroxyl, amido, nitrile, oxy- and thio-ether, carbonyl and halogen groups, the Z groups being linked to the nucleus of the molecule through atoms other than aromatic and carbonyl carbon atoms, said organic sulfide being present in an amount to enhance the stabilizing effect of the organotin compound.

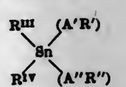
3,297,630

STABILIZED POLYSULFIDE POLYMER BASED COMPOSITIONS CONTAINING ORGANO-METALLIC TIN COMPOUNDS

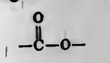
Joseph J. Giordano, Trenton, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,327
13 Claims. (Cl. 260—45.75)

1. A curable polymer based sealant composition comprising liquid mercaptan terminated polysulfide polymer, curing agent for said polysulfide polymer and, as an ultraviolet light stabilizer, at least one compound having the structure



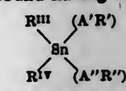
in which R^{III} and R^{IV} are lower alkyl groups having about 2 to 6 carbon atoms, R' and R'' are selected from the group consisting of alkyl and alkenyl groups having about 1 to 20 carbon atoms and A' and A'' are selected from the group consisting of —O— and



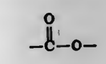
groups.

10. A process which comprises applying to a construction element substrate a curable sealant composition and curing said sealant composition thereon so as to adhesively bond said sealant composition to said substrate, said sealant composition comprising, in weight ratio,

(a) 100 parts by weight of liquid mercaptan terminated polysulfide polymer,
(b) about 3 to 15 parts by weight of curing agent for said polysulfide polymer, and
(c) about 0.5 to 5 parts by weight of at least one stabilizer compound having the structure



in which R^{III} and R^{IV} are lower alkyl groups having 2 to 6 carbon atoms, R' and R'' are selected from the group consisting of alkyl and alkenyl groups having about 1 to 20 carbon atoms and A' and A'' are selected from the group consisting of —O— and



groups.

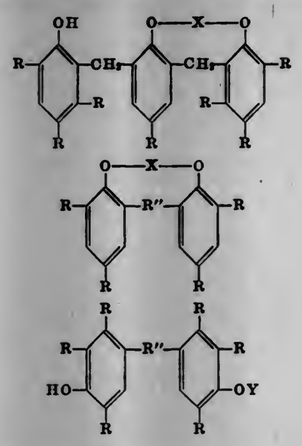
3,297,631

NOVEL PHENOLIC PHOSPHORUS STABILIZERS FOR POLYOLEFINS

Delos E. Bown, Baytown, Tex., and Robert I. McDougall, Newark, N.J., assignors to Esso Research and Engineering Company

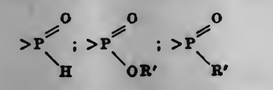
No Drawing. Filed Oct. 24, 1965, Ser. No. 505,056
22 Claims. (Cl. 260—45.95)

17. A composition containing a solid polyolefin of an alpha olefin having 2 to 8 carbon atoms in the molecule and a compound selected from the group consisting of:

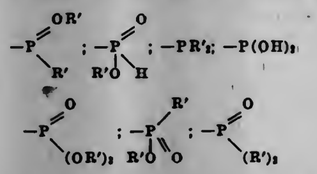


Where:

X is selected from the following: >P—OR'; >P—R';



and Y is selected from the following: —$P(OR')_2$;



R is hydrogen, an alkyl group having 1 to 16 carbon atoms, or an aryl group, or a combination thereof;
R' is an alkyl group having 1 to 16 carbon atoms or an aryl group; and
R'' is an alkylidene having 1 to 16 carbon atoms or an aryl-substituted alkylidene.

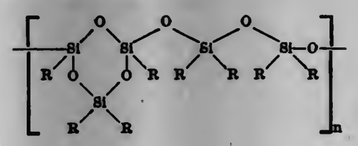
3,297,632

CYCLIC SILOXANE-CONTAINING POLYMERS

Tse C. Wu, Waterford, N.Y., assignor to General Electric Company, a corporation of New York

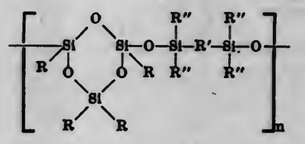
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,153
4 Claims. (Cl. 260—46.5)

1. A polymeric material consisting essentially of recurring units of the formula:



where R is a monovalent hydrocarbon radical and n has a value of from about 5 to about 50, inclusive.

2. A polymeric material consisting essentially of recurring units of the formula:



where R is a monovalent hydrocarbon radical, R' is a divalent arylene radical, R'' is a member selected from the class consisting of methyl and phenyl radicals and n has a value of from about 5 to about 50, inclusive.

3,297,633

PREPARATION OF POLYESTERS WITH LOW MELT VISCOSITY FROM A MIXTURE OF BISPHENOL ISOMERS

Raymond R. Hindersinn, Lewiston, N.Y., and André Jan Conix, Hove-Antwerp, Belgium; said Hindersinn assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York, and said Conix assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed July 25, 1962, Ser. No. 212,457
5 Claims. (Cl. 260—47)

1. A linear, high molecular weight polyester of an aromatic dicarboxylic acid and a mixture of isomers of bis-(hydroxyphenyl)-methane containing at least twenty-five weight percent 2,4'-bis(hydroxyphenyl)-methane, 4,4'-bis(hydroxyphenyl)-methane in a maximum proportion of seventy weight percent, and 2,2'-bis(hydroxyphenyl)-methane in a maximum proportion of seventy-five weight percent.

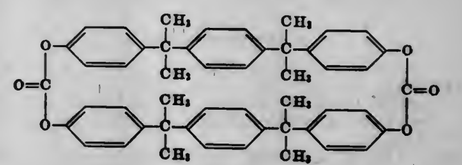
3,297,634

CYCLIC DICARBONATE

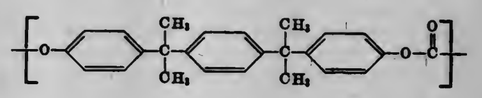
Bryce C. Oxenrider, Florham Park, and Ralph M. Hotterly, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,098
15 Claims. (Cl. 260—47)

1. Cyclo-bis-4,4'-(α,α'-diphenyl-α,α,α',α' - tetramethylxylylyl)dicarbonate of the formula:



10. A process for the preparation of a ploycarbonate resin consisting essentially of recurring units of the formula:



which comprises heating cyclo-bis-4,4'-(α,α'-diphenyl-α,α,α',α'-tetramethylxylylyl)dicarbonate at a temperature of about 325° to 375° C.

3,297,635

PROCESS FOR CURING POLYEPOXIDES AND RESULTING PRODUCTS

Elliot Bergman and William De Acetis, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 31, 1963, Ser. No. 284,365
14 Claims. (Cl. 260—47)

1. A process for curing and resinifying a polyepoxide having more than one vic-epoxy group which comprises mixing and reacting the polyepoxide with a heterocyclic compound substituted in from 3 to 5 different places on the heterocyclic ring with a —SH radical or a —RSH radical wherein R is an aliphatic hydrocarbon radical containing from 1 to 6 carbon atoms, the heteroatom in the heterocyclic ring being a member of the group consisting of oxygen, sulfur and nitrogen.

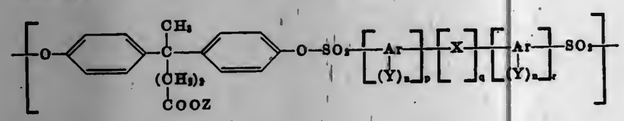
3,297,636

THERMOPLASTIC LINEAR POLYSULFONATES FROM DI(HYDROXYPHENYL) VALERIC ACID

André Jan Conix, Wilrijk-Antwerp, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Feb. 9, 1962, Ser. No. 172,078
Claims priority, application Belgium, Feb. 10, 1961, 40,441, Patent 600,053
5 Claims. (Cl. 260—49)

1. A high molecular weight thermoplastic linear polysulfonate containing recurring units of the following formula:



wherein:

Ar is a member of the group consisting of a phenylene group and a naphthylene group,
Z is a member of the group consisting of a hydrogen atom and an alkali metal atom,
X is a member of the group consisting of an alkylene group, an oxygen atom, and a sulfone group,
Y is a member of the group consisting of a halogen atom and a lower alkyl group,
n is an integer from 0 to the number of replaceable hydrogen atoms of Ar,
p is 1,
q is 0 or 1, and
r is 0 or 1.

3,297,637

METHOD OF RACEMIZING OPTICALLY ACTIVE AMINO ACIDS USING INSOLUBLE RESINS HAVING ORTHO-DISUBSTITUTED BENZENE NUCLEI

Shiro Akabori, Ashiya-shi, Hyogo-ken, Yoshiharu Izumi, Kobe-shi, Hyogo-ken, Koji Toi, Suita-shi, Osaka-fu, and Ko Ohno, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Jan. 15, 1963, Ser. No. 251,494
Claims priority, application Japan, Jan. 18, 1962, 37/979, 37/980, 37/981; Jan. 31, 1962, 37/2,811
8 Claims. (Cl. 260—53)

5. A method of racemizing an optically active alpha-amino acid which comprises contacting an aqueous solution of said amino acid containing cupric ions and having a pH value higher than 8 and a temperature higher than 20° C. with a resinous polymer insoluble in said solution and having repeating groups consisting of ortho-disubstituted benzene nuclei, one of the substituents of each benzene nucleus being a formyl radical, and the other substituent being a phenolic hydroxyl radical.

8. A resinous polymer insoluble in water and having repeating groups of ortho-disubstituted benzene nuclei, one of the substituents of each benzene nucleus being a formyl radical, and the other substituent being phenolic hydroxyl.

3,297,638

COMPOSITION CONSISTING OF AN ADMIXTURE OF A PHENOL-ALDEHYDE RESIN, AN ALKYL PHENOL - ETHYLENE OXIDE CONDENSATE AND A POLYOXYPROPYLENE-ETHYLENE OXIDE REACTION PRODUCT

Raymond D. Beaulieu, North Wilbraham, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 30, 1963, Ser. No. 277,040
5 Claims. (Cl. 260—59)

1. A resin composition consisting of in admixture 90–99.9 weight percent of a phenol-aldehyde resin and 10–0.1 weight percent of a combination of nonionic surface active agents wherein the combination consists of 30–65 weight percent of an alkyl phenol-ethylene oxide condensate having an alkyl group of 8–12 carbon atoms and 70–35 weight percent of the condensation reaction product of a polyoxypropylene base and ethylene oxide wherein the condensation product contains up to 60 weight percent of ethylene oxide and at least 40 weight percent of a polyoxypropylene base.

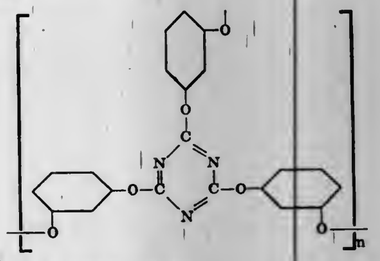
3,297,639

POLYETHERS OF TRIAZINE AND POLYHYDRIC AROMATIC COMPOUNDS

Lewellyn G. Picklesimer, 6842 Winthrop Drive, and Thomas F. Saunders, 31 Meehan Drive, both of Dayton, Ohio 45431

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,479
5 Claims. (Cl. 260—61)

1. The composition of matter polymerization product having a melting point of at least 400° C. from reacting resorcinol with cyanuric chloride and having the structure:



where *n* is a positive integer.

5. The process for synthesizing by interfacial condensation a polymeric ether by reacting (1) an aqueous solution of an alkali and a polyhydric aromatic compound selected from the grop consisting of resorcinol, hydroquinone and dihydroxybiphenyl and (2) an organic solution of a solvent selected from the group consisting of benzene, chlorobenzene, chloroform and dibutylphthalate and a triazine compound selected from the group consisting of cyanuric chloride and phenyldichlorotriazine, and thereafter isolating from the interface the polymeric ether.

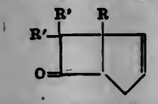
3,297,640

POLYSULFONES OF BICYCLO(3.2.0)HEPT-2-EN-6-ONE AND DERIVATIVES

John R. Caldwell and Edward H. Hill, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 15, 1963, Ser. No. 280,745
14 Claims. (Cl. 260—63)

1. A polysulfone resin prepared by reacting sulfur dioxide and a component consisting of at least one compound represented by the following general formula:



wherein R is a member selected from the group consisting of a hydrogen atom and a methyl radical, and R′ is a member selected from the group consisting of a hydrogen atom and an alkyl group containing from 1–4 carbon atoms, and wherein the total molar amount of said component is essentially equal to the molar amount of said sulfur dioxide.

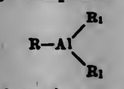
3,297,641

PROCESS FOR CROSS-LINKING POLYETHYLENE

Frank X. Werber, Rockville, and Razmic S. Gregorian, Silver Spring, Md., and William R. Johnson, Jr., Richmond, Va., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Jan. 17, 1964, Ser. No. 338,311
6 Claims. (Cl. 260—66)

1. The process of cross-linking normally solid polyethylene by blending same in an inert oxygen-free atmosphere at a temperature above its softening point with 0.00015 to 0.1 mole per 100 grams of said polyethylene of an aluminum alkyl compound of the formula



in which R is chosen from the group consisting of isobutyl and ethyl radicals and R_1 is a member of the group consisting of hydrogen, isobutyl, and ethyl radicals, in the presence of 0.00015 to 1.0 mole per 100 grams of said polyethylene of a difunctional additive chosen from the group consisting of sulfur, dibutylmaleate, 2,4-pentane dione and azobenzene.

3,297,642

PROCESS OF PRODUCING HIGH MOLECULAR WEIGHT POLYOXYMETHYLENE

Hermann Richtzenhain, Cologne-Suelz, Paul Janssen, Cologne, and Wilhelm Vogt, Cologne-Suelz, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany

No Drawing. Filed Nov. 14, 1962, Ser. No. 237,737
Claims priority, application Germany, Nov. 14, 1961, D 37,451
7 Claims. (Cl. 260—67)

1. The process which comprises polymerizing trioxane in the presence of a solution of sulfur trioxide-boron trifluoride etherate mixture at a temperature in the range of about 20° to about 110° C. to a high molecular weight polyoxymethylene.

3,297,643

POLYMERIC RESIN OF DIISOCYANATE AND PENTAERYTHRITOL-ACROLEIN CONDENSATE

John Gagliani, Wilmington, Del., assignor to Delaware Chemicals, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,858
10 Claims. (Cl. 260—67)

1. A polymeric resin comprising a polycondensate of pentaerythritol, an alpha-beta unsaturated aldehyde selected from the class consisting of acrolein, methacrolein and croton aldehyde, and an organic diisocyanate selected from the class consisting of toluene diisocyanate, polymethylene diisocyanate, polyphenyl diisocyanate, 3,3-dimethyl-4,4-biphenylene diisocyanate, and 3,3-dimethoxy-4,4-biphenylene diisocyanate, the mol ratio of said pentaerythritol component to said aldehyde component being between 1.4:2.0 and 1.7:2.0, and the weight ratio of said diisocyanate component to said pentaerythritol and aldehyde component being between 0.10:1.0 to 0.65:1.0.

3,297,644

POLYMERIZATION OF GASEOUS, MONOMERIC FORMALDEHYDE

Kuno Wagner, Leverkusen, Kurt Klinkmann, Monheim, and Hermann Wolz, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed June 5, 1963, Ser. No. 285,569
Claims priority, application Germany, June 19, 1962, F 37,107
6 Claims. (Cl. 260—67)

1. In the process of producing high molecular weight polyoxymethylene by feeding a stream of gaseous formaldehyde into contact with catalyst-containing liquid polymerization reaction medium at a temperature of 0–90° C. and recovering resulting high molecular weight polyoxymethylene, the improvement which comprises forming a feed stream at a temperature of from about 70 to 160° C. and containing gaseous formaldehyde and a reaction inert organic solvent in a weight ratio of formaldehyde to organic solvent of from about 1:0.7 to about 1:2, the phase of said organic solvent in said feed stream being selected from the group consisting of aerosol, gas and mixtures thereof and said organic solvent being soluble in said liquid polymerization reaction medium and introducing said feed stream into said liquid polymerization reaction medum at said temperature of from about 70 to about 160° C.

3,297,645

POLYMERIZATION OF TRIOXANE

Donald B. Miller, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,768
12 Claims. (Cl. 260—67)

1. A process which comprises polymerizing trioxane in the presence of silicon tetrafluoride to produce polyoxymethylene under substantially anhydrous conditions.

3,297,646

PROCESS FOR THE PRODUCTION OF HIGH MOLECULAR WEIGHT POLYOXYMETHYLENE

Julius Bernasconi, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

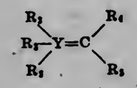
No Drawing. Filed Oct. 9, 1964, Ser. No. 402,929
Claims priority, application Germany, Oct. 18, 1963, C 31,174
1 Claim. (Cl. 260—67)

Process for the polymerization of formaldehyde which comprises introducing monomeric, water-free formaldehyde into an agitated solution of a catalytic compound selected from the group consisting of compounds of the formula

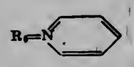


in which R_1 stands for a member selected from the group consisting of the cyclopentadienyl group, the monomethyl-, monoethyl- and monophenyl-cyclopentadiene groups, the

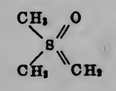
indenyl group and the fluorenyl group, X stands for a member selected from the group consisting of phosphorus and nitrogen, and R_2 stands for a member selected from the group consisting of alkyl groups containing up to 18 carbon atoms and of the phenyl group, structures of the formula



in which R_3 stands for a phenyl group, Y stands for phosphorus, R_4 stands for a member selected from the group consisting of hydrogen, chlorine and bromine, and R_5 stands for a member selected from the group consisting of hydrogen, chlorine and bromine and alkyl groups containing up to 4 carbon atoms, and structures of the formula



in which R_6 stands for a member selected from the group consisting of cyclopentadienyl, indenyl and fluorenyl groups and the structures of the formula



in a liquid organic solvent which is inert to both formaldehyde and the catalyst.

3,297,647

PRODUCT AND PROCESS FOR THE MANUFACTURE OF LINEAR TERPOLYMERS OF ACETALS

Claus Schott and Hans Dieter Hermann, Hofheim (Taunus), and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,186
Claims priority, application Germany, Apr. 28, 1962, F 36,664
12 Claims. (Cl. 260—73)

1. A process for the manufacture of linear terpolymers, which comprises polymerizing 40 to 99.8% by weight, calculated on the whole monomer mixture, of trioxane, 59.9 to 0.1% by weight, calculated on the whole monomer mixture, of a formal of an unsaturated dihydric alcohol with 4 to 8 carbon atoms and 0.1 to 59.9% by weight, calculated on the whole monomer mixture, of at least one cyclic ether selected from the group consisting of ethylene oxide, propylene oxide, phenoxypropene oxide, epichlorhydrin and bis-chloromethyl-oxetane, in admixture with 0.0001 to 1% by weight, calculated on the whole monomer mixture, of a cationic catalyst at a temperature within the range of −50° C. and +100° C.

5. Linear terpolymer having a C=C double bond in the principal valence chain and consisting of recurring units of 40 to 99.8% by weight, calculated on the whole monomer mixture, of trioxane, 59.9 to 0.1% by weight, calculated on the whole monomer mixture, of a formal of an unsaturated dihydric alcohol with 4 to 8 carbon atoms, and 0.1 to 59.9% by weight, calculated on the whole monomer mixture, of at least one cyclic ether, selected from the group consisting of ethylene oxide, propylene oxide, phenoxypropene oxide, epichlorhydrin and bis-chloromethyloxetane.

3,297,648

PROCESS FOR THE CHLOROMETHYLATION OF AROMATIC COMPOUNDS OF HIGH MOLECULAR WEIGHT

Herbert Corte, Opladen, and Otto Netz, Cologne-Ehrenfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 24, 1964, Ser. No. 413,604
Claims priority, application Germany, Dec. 27, 1963, F 41,641
8 Claims. (Cl. 260—73)

1. In the process for chloromethylating polymers of aromatic vinyl compounds by reacting said polymers with a chloromethylating agent in the presence of a Friedel-Crafts catalyst, the improvement which comprises chloromethylating said polymers with the reaction product of sulphuryl chloride and methylal at a temperature of 20 to 100° C. in the presence of the Friedel-Crafts catalyst and recovering the chloromethylated polymer, said reaction product of sulphuryl chloride and methylal being prepared at a temperature below 50° C. by reacting 1 mol of sulphuryl chloride with from 1 to 3 mols of methylal.

3,297,649

PROCESS FOR CURING POLYURETHANES

Frederick George Kirschner, Bristol, R.I., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 13, 1962, Ser. No. 237,350
7 Claims. (Cl. 260—75)

1. A process for producing a polyurethane characterized by improved resistance to discolorization by sunlight, said process comprising reacting with a curing agent a polyurethane prepolymer prepared by reacting a polymer containing terminal hydroxyl groups and having a melting point not greater than about 100° C. with at least one aromatic polyisocyanate, the polyisocyanate providing an excess of isocyanato groups over the terminal hydroxyl groups of the polymer so that the prepolymer contains free isocyanato groups, said curing agent containing

(a) a primary curing agent selected from the group consisting of water and an organic diamine having two primary amino groups, and

(b) an aliphatic thiol selected from the group consisting of difunctional and trifunctional thiols,

whereby the resulting polymer contains from about 10 to about 40 thiocarbamate linkages per 100 combined urethane and urea linkages.

3,297,650

POLYETHYLENE TEREPHTHALATE PRODUCTION

Gabor Halmi, Frankfurt am Main, Germany, and Ram Advani, Bombay, India, assignors to Hans J. Zimmer Verfahrenstechnik, Frankfurt am Main, Germany

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,044
Claims priority, application Germany, Mar. 23, 1962 Z 9,325
5 Claims. (Cl. 260—75)

1. In the process for the production of spinnable polyester polymers, which polyester polymers are produced by the transesterification of a dimethyl terephthalate with an ethylene glycol and the subsequent polycondensation of the transesterification product; the improvement which comprises catalyzing such polymer production with the salt of a metal selected from the group consisting of calcium, barium, cadmium, cobalt, lead, manganese, tin, zinc, and chromium, and a material selected from the group consisting of hydroxybenzophenone carboxylic acids and hydroxyacetophenone carboxylic acids.

3,297,651

PROCESS FOR THE PRODUCTION OF SPINNABLE POLYESTERS

Gabor Halmi, Frankfurt am Main, Germany, and Ram Advani, Bombay, India, assignors to Hans J. Zimmer Verfahrenstechnik, Frankfurt am Main, Germany

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,056
Claims priority, application Germany, Mar. 23, 1962, Z 9,324
1 Claim. (Cl. 260—75)

In the process for the production of spinnable polyethylene terephthalate by the transesterification of dimethyl terephthalate with ethylene glycol and the polycondensation of the resulting bis(hydroxyethyl)-terephthalate; the improvement which comprises catalyzing said process with an organo-tin compound selected from the group consisting of dibutyl tin-di-(methyl terephthalate); dibutyl tin-di-(ethyl maleate); and dibutyl tin-di-(methyl adipate).

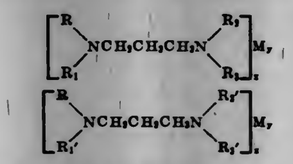
3,297,652

METHOD OF SUPPRESSING ELECTROSTATIC CHARGES IN SYNTHETIC RESINS AND FIBERS

Shinichi Tomiyama, 136 2-chome, Onigoe-machi, Ichikawa-shi, Chiba-ken, Japan; Hideo Marumo, 65—11 Nishikubo, Musashino-shi, Tokyo-to, Japan; and Makoto Takai, 3204—51 Asahigaoka-cho, Chiba-shi, Chiba-ken, Japan

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,532
10 Claims. (Cl. 260—75)

1. A synthetic resin composition wherein electrostatic charges are suppressed comprising in addition to the synthetic resin, between 0.05 and 5% by weight of a substance represented by one of the two following Formulas I and II:



(I)

(II)

wherein R represents an alkyl radical containing 8 to 22 carbon atoms; R_1, R_2 and R_3 are each selected from the group consisting of H and CH_2CH_2COO, at least one of R_1, R_2, and R_3 being CH_2CH_2COO; R_1', R_2', and R_3' are each selected from the group consisting of H,

$$CH_2CH_2COO$$

and $CH_2CH(CH_3)COO$, at least one of R_1', R_2' and R_3' being $CH_2CH(CH_3)COO$; and M represents a metal selected from the group consisting of Mg, Ca, Cd, Sn, Ba, Pb, Al, Fe, Co, Ni, Zn, Cu and Mn; and x and y are integers determined by the valence and number of metal atoms, there being hydrogen atoms attached to any COO group not connected to an M atom, said resin being selected from the group consisting of polyethylene, polyvinyl chloride, polymethacrylates, polyamides, polyethylene glycol terephthalate, polypropylene, polystyrene and copolymers of vinyl chloride and vinyl acetate.

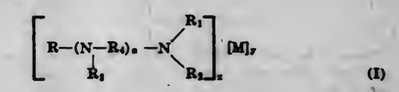
3,297,653

METHOD OF SUPPRESSING ELECTROSTATIC CHARGES IN SYNTHETIC RESINS AND FIBERS

Shinichi Tomiyama, 136 2-chome, Onigoe-machi, Ichikawa-shi, Chiba-ken, Japan; Hideo Marumo, 65—11 Nishikubo, Musashino-shi, Tokyo-to, Japan; and Makoto Takai, 3204—51 Asahigaoka-cho, Chiba-shi, Chiba-ken, Japan

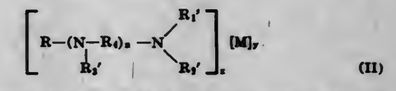
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,534
8 Claims. (Cl. 260—75)

1. A synthetic resin article in which the tendency to accumulate electrostatic charges has been suppressed by the incorporation therein of between 0.05 and 5.0% by weight of a substance having one of the following structural formulas:



(I)

and



(II)

wherein

R represents an alkyl radical with between 8 and 22 carbon atoms;

R_4 represents an alkylene radical selected from the group consisting of $—CH_2CH_2—$ and

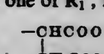
$$—CH_2CH_2CH_2—$$

R_1, R_2 and R_3 are each selected from the group consisting of H, alkyl radical containing 1 to 5 carbon atoms, hydroxyalkyl radical, alkylaryl radical, and $—CH_2COO$, at least one of R_1, R_2 and R_3 being $—CH_2COO$;

R_1', R_2', R_3' are each selected from the group consisting of H, alkyl radical containing 1 to 5 carbon atoms, hydroxyalkyl radical, alkylaryl radical and



of which at least one of R_1', R_2' and R_3' is



M is a metal selected from the group consisting of Mg, Ca, Cd, Sn, Ba, Pb, Al, Fe, Co, Ni, Zn, Cu, Mn;

x and y are integers determined by the valence and the number of metal atoms present, there being a hydrogen atom connected to the terminal oxygen of an $—CH_2COO$ group not connected directly to a metal atom; and

n is an integer of from 0 to 3;

said resin being selected from the group consisting of polyethylene, polyvinyl chloride, polymethacrylates, polyamides, polyethylene glycol terephthalate, polypropylene, polystyrene and copolymers of vinyl chloride and vinyl acetate.

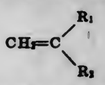
3,297,654

MOULDABLE COPOLYMERS OF MALEIC ANHYDRIDE, ISOBUTYLENE AND A THIRD COMONOMER

Dennis Arthur Barr, Welwyn, and John Brewster Rose, St. Albans, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

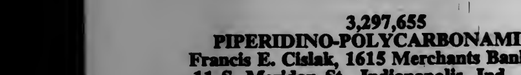
No Drawing. Filed Mar. 29, 1963, Ser. No. 269,193
Claims priority, application Great Britain, Apr. 13, 1962, 14,353/62, June 14, 1962, 22,970/62
8 Claims. (Cl. 260—78)

1. An injection moldable copolymer of maleic anhydride, isobutylene and about 1% molar to about 25% molar of a third comonomer selected from the group consisting of (i) alkenes having a chain of not more than six carbon atoms and having the structure



where R_1 and R_2 are both alkyl groups, at least one of which contains more than one carbon atom, (ii) cyclic anhydrides, imides and N-substituted imides of ethylenically unsaturated dicarboxylic acids containing not

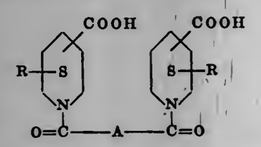
more than 6 carbon atoms, other than maleic anhydride, (iii) dialkyl fumarates of the structure



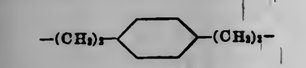
where n is one or four, (iv) ethyl acrylate and (v) propylene; said copolymer containing at least 25% molar of maleic anhydride, at least 25% molar of isobutylene and not more than 6% molar of propylene, and wherein the melt viscosity of the copolymer is below 10^8 poises, measured at 250° C. under a constant shear stress of 10^7 dynes/cm.^{2}, whereby the copolymer may be fabricated at temperatures as low as 230° C. or less on standard equipment.

3,297,655
PIPERIDINO-POLYCARBONAMIDES
Francis E. Cislak, 1615 Merchants Bank Bldg., 11 S. Meridian St., Indianapolis, Ind. 46204
No Drawing. Filed May 10, 1965, Ser. No. 454,639
6 Claims. (Cl. 260—78)

1. Piperidino-polycarbonamides of a bis-carboxypiperidide having the formula

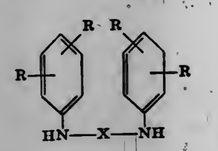


wherein R represents a member of the class consisting of hydrogen and lower alkyl and A represents a member of the class consisting of alkylene, alkenylene, and arylene; and a diamine of the formula $H_2N—B—NH_2$ wherein B represents a member of the class consisting of the radical $—(CH_2)_n$ wherein n is a small whole number from 2 to 8, the phenylene radical, and the radical



3,297,656
POLYAMIDES FROM N,N'-DIPHENYLDIAMINES
John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,906
8 Claims. (Cl. 260—78)

1. A highly polymeric linear polyamide melting above about 150° C. and having an inherent viscosity of at least 0.4, being a polyamide of (1) at least one bifunctional dicarboxylic acid constituent comprising at least about 40 mole percent terephthalic acid and selected from the group consisting of mononuclear aromatic acids having from 8 to 20 carbon atoms and having their carboxyl radicals attached to a benzene ring, straight chain aliphatic acids having from 2 to 10 carbon atoms in a straight chain, symmetrical branched chain aliphatic acids having from 5 to 8 carbon atoms, and alicyclic acids having from 8 to 30 carbon atoms, and (2) at least one bifunctional diamine constituent of which at least 50 mole percent is a N,N'-diaryl diamine having the following formula:

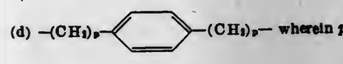


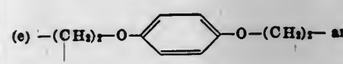
wherein each R represents a member selected from the group consisting of a hydrogen atom, an alkyl radical having from 1 to 4 carbon atoms, and a chlorine atom, said R substituents being attached to any available nuclear carbon atoms of the benzene rings; and wherein X is a bivalent organic radical having up to 4 oxygen atoms and represents a member selected from the group consisting of:

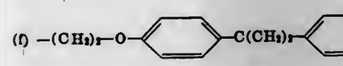
(a) $—(CH_2)_n—$ wherein n is from 2 to 6

(b) $—(CH_2)_m—O—(CH_2)_m—$ wherein m is from 2 to 3

(c) $—(CH_2)_2—O—(CH_2)_2—O—(CH_2)_2—$

(d)  wherein p is from 1 to 2

(e)  and

(f) 

3,297,657
STYRENE-MALEIC ANHYDRIDE COPOLYMERIZATION PROCESS
Michael H. Gray and Hay F. Sparks, Jr., Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Mar. 8, 1963, Ser. No. 263,773
10 Claims. (Cl. 260—78.5)

1. A method for limiting the viscosity rise of the reaction mass in the reaction of styrene and maleic anhydride to produce a styrene-maleic anhydride copolymer in an organic solvent system in which the reaction product is swellable which comprises achieving a mixing of the mixture during polymerization by subjecting the reaction mixture to tumbling bodies induced grinding action, thereby substantially reducing viscosity rise due to swelling of the copolymer.

3,297,658
FLAME RESISTANT POLYMER COMPOSITIONS
Lieng-Huang Lee, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Original application Sept. 5, 1962, Ser. No. 262,314. Divided and this application June 25, 1965, Ser. No. 467,139
2 Claims. (Cl. 260—78.5)

1. A non-flammable thermoplastic polymeric composition consisting essentially of an essentially linear interpolmer prepared by the interpolymerization by free radical means of about 60 parts styrene, about 28 parts of acrylonitrile and about 12 parts of di(2-bromoethyl) itaconate.

2. A non-flammable thermoplastic polymeric composition consisting essentially of an essentially linear interpolymer prepared by the interpolymerization by free radical means of about 30 parts styrene, about 58 parts methyl methacrylate and about 12 parts of di(2-bromoethyl) itaconate.

3,297,659
PROCESS FOR CROSS-LINKING UNSATURATED HYDROCARBON POLYMERS
David S. Breslow and Arnold F. Marcantonio, Wilmington, Del., assignors to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Oct. 15, 1962, Ser. No. 230,699
2 Claims. (Cl. 260—79.3)

1. The process of cross-linking an unsaturated hydrocarbon polymer which comprises heating said polymer at a temperature of from about 90° C. to about 300° C. in admixture with 4,4'-diazidodiphenylsulfone.

3,297,660
CURING MERCAPTAN MODIFIED CHLOROPRENE POLYMERS USING MERCAPTAN SUBSTITUTED CARBOXYLIC ACIDS
Richard O. Becker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 22, 1962, Ser. No. 196,602
8 Claims. (Cl. 260—79.5)

1. A curable composition comprising a mercaptan-modified chloroprene polymer, zinc oxide, magnesium oxide, a vulcanization accelerator and from about 0.2 to 3.0 parts by weight per 100 parts by weight of said polymer of a carboxylic acid selected from the group consisting of mercaptoacetic acid and 3-mercaptopropionic acid, with the proviso that the vulcanization accelerator be selected from the group consisting of salicylic acid, the di-o-tolylguanidine salt of dicatechol borate, trialkylthioureas in which the alkyl radicals contain from one to two carbon atoms, and cyclic thioureas of the structure



wherein R is selected from the group consisting of an aliphatic hydrocarbon radical and a cycloaliphatic hydrocarbon radical which contains from 2 to 24 carbon atoms and is selected so that the thiourea ring contains from 3 to 5 carbon atoms and R' is selected from the group consisting of hydrogen and a methyl radical.

3,297,661
CROSS-LINKING HYDROCARBON POLYMERS WITH POLYAZIDES IN THE PRESENCE OF SULFUR
David S. Breslow and Arnold F. Marcantonio, Wilmington, Del., assignors to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,432
10 Claims. (Cl. 260—79.5)

1. The process of modifying a hydrocarbon polymer which comprises heating said polymer in a closed system in admixture with a composition consisting essentially of a small amount of sulfur and an aromatic polyazide having the formula $R(N_3)_x$ where R is an aromatic radical, inert to the modification reaction, selected from the group consisting of arylene and alkarylene radicals and x is an integer from 2 to 3, said sulfur and aromatic polyazide being present in the composition in a weight ratio of sulfur to aromatic polyazide of less than 1.

3,297,662
METHOD OF PREPARING HARD RUBBER CRUMB
Walter O. Farrell, 9830 Deerfield Circle, Indianapolis, Ind. 46360, and Louis S. Verde, 1149 California Road, Eastchester, Tuckahoe, N.Y. 10709
No Drawing. Filed Aug. 16, 1965, Ser. No. 480,197
2 Claims. (Cl. 260—79.5)

1. The method of making hard rubber particles which comprises suspending in water sulfur-vulcanizable elastomer crumb particles having a diameter greater than 0.003 inch, but less than 3/16 inch, and having from 0–10 parts of combined sulfur per 100 parts of elastomer crumb, with sufficient sulfur to cure completely the said elastomer crumb, heating and agitating said aqueous suspension under super-atmospheric pressure until said elastomer crumb is substantially completely cured.

3,297,663
VINYLPHOSPHONIC ACID POLYMERS AND PROCESS FOR MAKING THEM
Willy Herbst, Hofheim, Taunus, Germany, Fritz Walter Artur Rochlitz, deceased, late of Bad Soden, Taunus, Germany, by Franz Rochlitz and Anneliese Rochlitz, née Paetsch, both of Stuttgart-Degerloch, Germany, heir and heiress, and Herbert Vlcsek, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Oct. 22, 1964, Ser. No. 405,870
Claims priority, application Germany, Nov. 11, 1959, F 29,824
7 Claims. (Cl. 260—80)

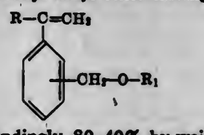
1. The method of making a phosphorus-containing polymer which comprises polymerizing a phosphorus-containing monomer selected from the group consisting of vinyl phosphonic acid, its monoammonium, monoamine, and monoalkali metal salts, and mixtures thereof, at a temperature of from 10° C. to 150° C. in the presence of a free radical polymerization catalyst, said monomer being dissolved in an unpolymerizable organic liquid selected from the group consisting of ethyl acetate, butyl acetate, propyl butyrate, acetic acid, formic acid, and acetic anhydride, said organic liquid being a non-solvent for the polymer produced.

3,297,664
CALCIUM SALTS OF LIGHTLY CROSS-LINKED ETHYLENICALLY UNSATURATED CARBOXYLIC ACIDS AND DIETHYLENICALLY UNSATURATED ALIPHATICS
John J. Miskel, East Orange, and Walter Schlesinger, Westfield, N.J., assignors to White Laboratories, Inc., Kenilworth, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 6, 1962, Ser. No. 215,242
2 Claims. (Cl. 260—80.3)

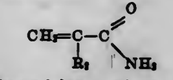
1. A cross-linked swellable resin, said resin consisting essentially of a polymer of an ethylenically unsaturated carboxylic acid cross-linked with about 0.01 to 2.0 percent by weight of a cross-linking agent, wherein the monomer of the said carboxylic acid is of the type capable of both homopolymerization and copolymerization, and wherein the cross-linking agent is a di-terminally ethylenically unsaturated aliphatic compound having more than five carbons in the chain, and wherein the cross-linking agent is soluble in the monomer of the said carboxylic acid reacted with a stoichiometric quantity of calcium ion.

3,297,665
NOVEL COPOLYMERS OF VINYLBENZYL ALKYL ETHERS AND ACRYLAMIDES
John G. Abramo, Rochester, N.Y., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed May 11, 1964, Ser. No. 366,603
1 Claim. (Cl. 260—80.3)

A flexible synthetic copolymer of (A) 20–60% by weight of a vinylbenzyl alkyl ether having the structure:



with (B) correspondingly, 80–40% by weight of an acrylamide having the structure:



prepared by copolymerizing a mixture of the vinylbenzyl alkyl ether and the acrylamide, in proportions sufficient to attain the above polymeric proportions, in the presence of a free radical catalyst, the total of (A) and (B) being

100% by weight; wherein in the above structural formulae, R and R_2 are independently selected from the class consisting of hydrogen and methyl and R_1 is a 1–12 carbon atom alkyl.

3,297,666

VINYLIDENE CHLORIDE ALKYL ACRYLATE/ACRYLONITRILE TERPOLYMERS AND PROCESS FOR PREPARING THE SAME

William G. MacPherson, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,738
9 Claims. (Cl. 260—80.5)

1. A terpolymer suitable as a heat sealable coating for flexible webs consisting of from 70 to 85 percent by weight vinylidene chloride, from 14 to 29 percent by weight of an alkyl ester of an acid selected from the group consisting of acrylic acid and methacrylic acid wherein the alkyl ester contains from about 12 to 18 carbon atoms and from 1 to 3 percent by weight acrylonitrile.

3. A flexible web coated with a continuous, adherent, heat-sealable coating of a terpolymer consisting of from 70 to 85 percent vinylidene chloride, from 14 to 29 percent by weight of an alkyl ester of an acid selected from the group consisting of acrylic acid and methacrylic acid wherein the alkyl ester contains from about 12 to 18 carbon atoms and 1 to 3 percent by weight acrylonitrile.

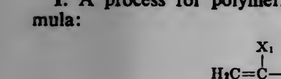
3,297,667

PRODUCTION OF CIS-1,4-POLYDIENES BY POLYMERIZATION OF 1,3-DIENES

Werner C. von Dohlen and Thomas P. Wilson, Charleston, and Edward G. Caflisch, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,875
15 Claims. (Cl. 260—82.1)

1. A process for polymerizing 1,3-dienes of the formula:



wherein X_1 and X_2 are independently selected from the group consisting of hydrogen and alkyl of 1 to about 10 carbon atoms, to produce polydienes having a high proportion of cis-1,4-structure, which process comprises contacting said 1,3-dienes with a catalyst composition selected from the group consisting of (1) the reaction product of (a) a metal chelato halide selected from the group consisting of compounds of the formulae ML_2X and MLX_2, and mixtures thereof, and (b) a member selected from the group consisting of aluminum trialkyls and alkylaluminum hydrides having from 1 to about 15 carbon atoms in each alkyl group thereof, and (2) the reaction product of (a) a soluble metal chelate of the formula ML_3, (b) an alkylaluminum halide having from 1 to about 15 carbon atoms in each alkyl group thereof, and (c) a member selected from the group consisting of aluminum trialkyls and alkylaluminum hydrides having from 1 to about 15 carbon atoms in each alkyl group thereof; wherein M is a trivalent Group III–B metal ion having an atomic number of from 21 to 71, L is a chelating bidentate organic ligand containing up to about 20 carbon atoms and having functional groups which are separated by up to 5 carbon atoms and which are selected from the class consisting of tertiary nitrogen, formyl, carbonyl, oxy, alkoxy, alkoxycarbonyl, amino, alkimino and hydroxyl, and X is a halide ion; the molar ratio of said halide ion to said Group III–B metal ion in said catalyst composition being from about 0.1:1 to about 10:1, and the molar ratio of aluminum to said Group III–B metal ion in said catalyst composition being from about 1:1 to about 400:1.

3,297,668

PROCESS FOR THE PRECIPITATION OF HIGHLY POLYMERIZED HYDROCARBONS FROM EMULSIONS THEREOF CONTAINING CATION-ACTIVE EMULSIFYING AGENTS

Gerhard Berg and Günther Maass, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,407
Claims priority, application Germany, Mar. 17, 1962, C 26,515
3 Claims. (Cl. 260—85.1)

1. Process for the precipitation of a polymer selected from the group consisting of polybutadiene and butadiene-styrene copolymers from an aqueous emulsion thereof containing a quaternary ammonium salt selected from the group consisting of tetradecyl-pyridinium bromide, alkyl-trimethyl-ammonium bromide, lauryl-dimethyl-benzyl-ammonium bromide and lauryl-trimethyl-ammonium methyl-sulfate as cation active emulsifying agent which comprises precipitating the polymer from the emulsion by mixing it with an aqueous alkali metal silicate solution, the amount of SiO_2 supplied to the reaction mixture being within the range from 25% to 500% of the equivalent amount of the cation active emulsifier present.

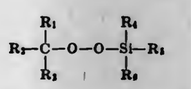
3,297,669

POLYMERIZATION PROCESS USING A CATALYST OF AN ORGANOPEROXYSILANE

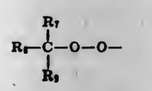
Alva F. Harris, Wilbraham, Mass., and George A. Mortimer, La Marque, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 24, 1964, Ser. No. 385,061
17 Claims. (Cl. 260—880)

1. A mass polymerization process which comprises (1) dissolving in a polymerizable material comprising at least a major proportion of a monovinyl aromatic monomer of the group consisting of a monovinyl aromatic hydrocarbon, an ar-halo monovinyl aromatic hydrocarbon, and mixtures thereof a catalytic amount of an organoperoxysilane having a half-life of about 220–30,000 hours in benzene at 100° C., said organoperoxysilane corresponding to the formula:



wherein R_1, R_2, and R_3 are independently selected from the group consisting of alkyl, cycloalkyl, aryl, and aralkyl radicals and R_4, R_5 and R_6 are independently selected from the group consisting of alkyl, cycloalkyl, aryl and aralkyl radicals and a radical corresponding to the formula:



wherein R_7, R_8 and R_9 are independently selected from the group consisting of alkyl, cycloalkyl, aryl and aralkyl radicals, (2) heating the polymerizable material at 75–125° C. until 15–45% conversion to polymer is obtained, the temperature being so regulated as to be in the 75–95° C. range when this conversion is obtained, (3) gradually raising the reaction temperature to 180–200° C. over a period of about 3–7 hours, and (4) maintaining the reaction temperature at 180–200° C. for about 0.5–5 hours.

3,297,670

PROCESS FOR REMOVAL OF SILVER NITRATE FROM SILVER NITRATE CONTAINING ACRYLONITRILE POLYMERS

Raymond J. Ehrig, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed July 16, 1964, Ser. No. 383,253
5 Claims. (Cl. 260—88.7)

1. A process for the removal of silver nitrate in silver nitrate-containing polyacrylonitrile resulting from the silver nitrate catalyzed polymerization of acrylonitrile which comprises dissolving the said silver nitrate-containing polyacrylonitrile in dimethyl sulfoxide, and then precipitating the polyacrylonitrile by adding to the resultant mixture a liquid which is a non-solvent for polyacrylonitrile and which is a solvent for silver nitrate, and recovering the thus purified polyacrylonitrile.

3,297,671

STEREOSPECIFIC POLYMERIZATION OF VINYL ETHERS

Giulio Natta, Giorgio Mazzanti, and Gino Dall'Asta, Milan, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

No Drawing. Filed July 31, 1961, Ser. No. 127,860
Claims priority, application Italy, Aug. 3, 1960, 13,837/60
11 Claims. (Cl. 260—91.1)

1. A process for the stereospecific polymerization of a vinyl ether of the general formula

$$CH_2{=}CH{-}O{-}R$$

in which R is an alkyl radical consisting of carrying out the polymerization in contact with cationic catalysts consisting essentially of solid solutions of aluminum trichloride and a chloride having the formula $MeCl_3$, in which Me is selected from the group consisting of titanium and vanadium.

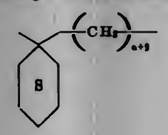
3,297,672

POLYMERIZATION OF ALLYL CYCLOHEXANE WITH A FRIEDEL-CRAFTS CATALYST

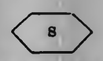
Arthur Donald Ketley, Olney, and Raymond J. Ehrig, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,207
15 Claims. (Cl. 260—93.1)

1. A solid glassy type polymer having predominantly the following recurring structural unit

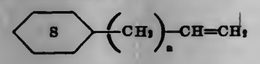


where

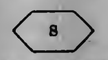


is a cyclohexyl group and *n* is an integer from 0 to 3 inclusive.

5. A polymerization process which comprises subjecting an olefin of the formula:



where



is a cyclohexyl group and *n* is an integer from 0 to 3 inclusive, to the action of a Friedel-Crafts catalyst and a co-catalyst selected from the group consisting of a proton donor source and a carbonium ion source at a temperature in the range minus 30 to minus 150° C.

3,297,673

PRODUCTION OF TERPENE RESINS

Henry G. Sellers, Jr., and Henry E. McLaughlin, Pensacola, Fla., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Oct. 3, 1963, Ser. No. 313,416
11 Claims. (Cl. 260—93.3)

1. The process of producing polyterpene resins comprising the steps of polymerizing a terpene in a solvent medium in the presence of metal halide polymerization catalyst, said solvent medium comprising a relatively lower boiling aromatic hydrocarbon solvent and a relatively higher boiling aliphatic hydrocarbon solvent, removing substantially all of the aromatic hydrocarbon solvent from the polymer solution by distillation, and thereafter recovering the terpene polymer.

11. The process of producing dipentene polymer resins comprising gradually adding dipentene to a solvent medium containing aluminum chloride catalyst while maintaining the temperature in the range of 30°–55° C., thereby polymerizing the dipentene, said solvent medium constituting from 60% to 100% by weight of the dipentene and including toluene in an amount in the range 25% to 50% by weight of the dipentene with the remainder of the solvent medium being petroleum naphtha, heating the resulting polymer solution to a temperature in the range of 110°–200° C. in the presence of lime and acid activated clay and distilling off substantially all of the toluene, filtering the solution, and removing the naphtha from the filtrate and thereby recovering dipentene polymer.

3,297,674

MODIFYING POLYMERS

David S. Breslow and Arnold F. Marcantonio, Wilmington, Del., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Apr. 1, 1964, Ser. No. 356,630
The portion of the term of the patent subsequent to Sept. 7, 1982, has been disclaimed
8 Claims. (Cl. 260—93.7)

1. The process of modifying a higher α-olefin polymer which comprises heating said polymer with an agent consisting essentially of an aromatic polyazide selected from the group consisting of m-phenylene diazide, 2,4,6-triazidobenzene, 4,4'-diphenyl diazide, 4,4'-diphenylmethane diazide, 4,4' - diazidodiphenylsulfone, 2,2' - dinitro-4,4'-diazidodiphenyl, 2,7-diazidonaphthalene and 2,6-diazidoanthraquinone.

4. The process of claim 1 wherein the higher α-olefin polymer is polypropylene.

5. The process of claim 1 wherein the higher α-olefin polymer is polyisobutylene.

3,297,675

HALOGENATED POLYETHYLENE

Robert Fuhrmann, Morris Plains, Fred W. Koff, Clifton, and David Jerolamon, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,952
12 Claims. (Cl. 260—94.9)

1. A process for the bromo-chlorination of chlorinated polyethylene comprising interacting chlorinated polyethylene, a water soluble bromide of a metal selected from the group consisting of alkali metals and alkaline earth metals and chlorine in an aqueous medium whereby said chlorinated polyethylene is both brominated and further chlorinated.

10. A process for the bromo-chlorination of linear, amorphous, chlorinated polyethylene having intrinsic viscosity as determined in o-dichlorobenzene at 100° C. in the range from about 0.2 to about 5 dl./gm.; having glass transition temperature not exceeding 20° C.; and having chlorine content about 20–45%; said process com-

prising adding a bromide of a metal selected from the group consisting of sodium, potassium, and lithium, to an aqueous suspension of said linear, amorphous, chlorinated polyethylene and introducing chlorine into said bromide-containing aqueous suspension whereby said chlorinated polyethylene is both brominated and further chlorinated to bromine content in the range from 0.2% to 10% by weight and chlorine content not above 48% by weight.

3,297,676
RECOVERY OF LIGNOSULFONATES

Friedrich E. Brauns, Bellingham, Wash., assignor to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,994
14 Claims. (Cl. 260—124)

1. A process for the separation of a lignosulfonate from a lignosulfonate-containing solution which comprises contacting the lignosulfonate-containing solution at a pH not greater than 6 with chitin to combine the lignosulfonate with the chitin.

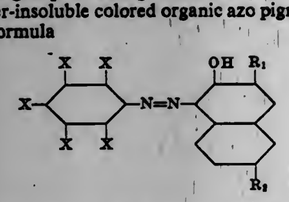
3,297,677
AZIRIDINYL AZO PIGMENTS

Roy A. Pizzarello, Mount Vernon, N.Y., and Alfred F. Schneid and John J. De Lucia, New Milford, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,090
6 Claims. (Cl. 260—152)

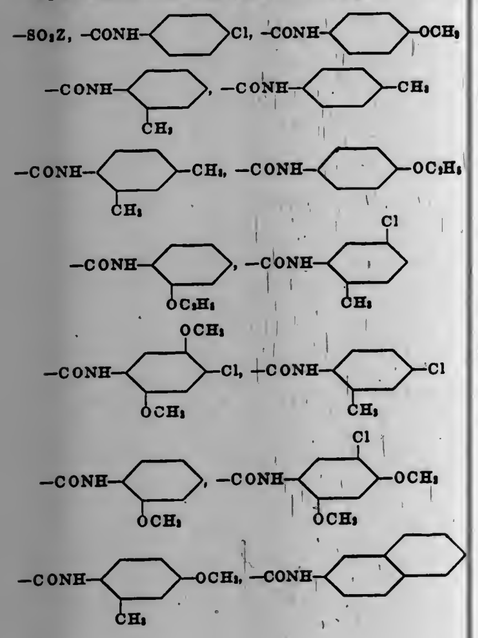
1. A water-insoluble colored organic azo pigment selected from the group consisting of

(A) a water-insoluble colored organic azo pigment having the formula



where

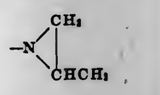
R_1 is selected from the group consisting of —COZ,



(B) a water-insoluble colored organic azo pigment having the formula

R_1 is selected from the group consisting of —NHCOZ, —NHCOCH$_2$CH$_2$Z, —SO$_2$Z and —COZ;

R_2 is selected from the group consisting of R_1, NO_2, and H; and Z is

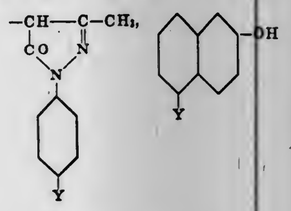


(C) a water-insoluble colored organic azo pigment having the formula

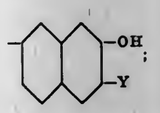


where

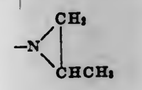
X is selected from the group consisting of Cl, OCH_3, CH_3, NO_2, and H; and R is a member selected from the group consisting of

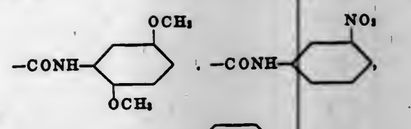


and



Y is selected from the group consisting of —SO$_2$Z, —NHCOCH$_2$CH$_2$Z, —NHCOZ, and —COZ; and Z is

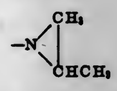




and

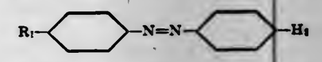


R_2 is selected from the group consisting of —H and —SO$_2$Z; X is selected from the group consisting of —H, —CH_3, —OCH_3, —Cl, —NO_2, and —COZ; and Z is



the number of propylenimine groups present being one to two;

(B) a water-insoluble colored organic azo pigment having the formula



R_1 is selected from the group consisting of —NHCOZ, —NHCOCH$_2$CH$_2$Z, —SO$_2$Z and —COZ;

R_2 is selected from the group consisting of R_1, NO_2, and H; and Z is

(C) a water-insoluble colored organic azo pigment having the formula

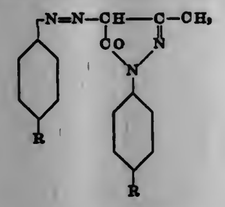
where

X is selected from the group consisting of Cl, OCH_3, CH_3, NO_2, and H; and R is a member selected from the group consisting of

and

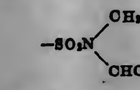
Y is selected from the group consisting of —SO$_2$Z, —NHCOCH$_2$CH$_2$Z, —NHCOZ, and —COZ; and Z is

(D) a water-insoluble colored organic azo pigment having the formula



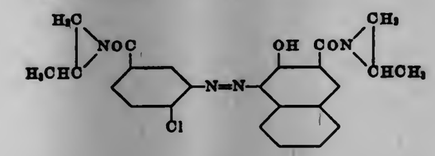
where

R is selected from the group consisting of H and



the number of propylenimine groups present being one to two; and

(E) a water-insoluble colored organic azo pigment having the formula

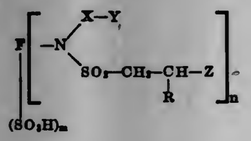


3,297,678
WATER-SOLUBLE AZO DYESTUFFS

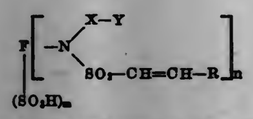
Rudolf Kühne, Fritz Meininger, and Lothar Hörnig, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 25, 1963, Ser. No. 318,794
Claims priority, application Germany, Oct. 26, 1962, F 38,152
6 Claims. (Cl. 260—163)

1. A compound of the group consisting of compounds of the formulae



and



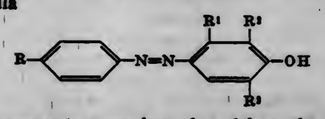
wherein F represents a monoazo or disazo dyestuff molecule containing at least one benzene ring and a naphthol or pyrazolone group, the reactive group shown within the brackets being connected directly to a benzene ring, R represents a member of the group consisting of a hydrogen atom and an alkyl group having 1 to 5 carbon atoms, X represents a member of the group consisting of an alkylene group having 1 to 4 carbon atoms and an alkylene group having 1 to 4 carbon atoms substituted by a lower alkyl group, Y represents a member of the group consisting of a cyano group, a carbomethoxy group, a carboxylic acid group and chlorine, Z represents a member of the group consisting of —O—SO$_3$H, —OOCCH$_3$ and chlorine, *n* stands for one of the integers 1 and 2 and *m* stands for one of the integers 1 to 4.

3,297,679
PRODUCTION OF AZO DYES

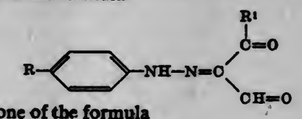
Dieter Leuchs, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 15, 1963, Ser. No. 302,445
7 Claims. (Cl. 260—206)

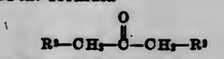
1. A process for the production of azo compounds of the formula



where R represents a member selected from the class consisting of hydrogen, halogen, alkyl of 1 to 4 carbon atoms, alkoxy of 1 to 4 carbon atoms, nitro, sulfonic acid and phenylazo, and R^1, R^2 and R^3 are members selected from the class consisting of hydrogen, alkyl of 1 to 4 carbon atoms and phenyl, which process comprises: condensing a hydrazone of the formula



with a ketone of the formula



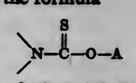
where R^1, R^2, R^3 and R have the same meanings as above, in an aqueous or organic solution at a temperature from about 0° to 150° C. in the presence of a basic condensing agent selected from the class consisting of alkali metal hydroxides, alkaline earth metal hydroxides, alkali metal alcohoaltes, alkali metal carbonates and tertiary aliphatic amines.

3,297,680
HALOALKENYL DISUBSTITUTED THIONOCARBAMATES

Philip C. Hamm, Webster Groves, Mo., and John J. D'Amico, Charleston, W. Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 26, 1962, Ser. No. 226,437
8 Claims. (Cl. 260—239)

2. A compound of the formula



where A is halogen substituted 2-alkenyl containing less than five carbon atoms and having all the halogen attached to unsaturated carbon and the valences on the nitrogen are satisfied by a member of the class consisting of lower alkyl, lower 2-alkenyl, lower alkoxy substituted lower alkyl, lower alkenoxy substituted lower alkyl, cyano substituted lower alkyl, cyclohexyl, cyclohexenyl, monochloroallyl, phenoxy substituted lower alkyl and radicals which the the nitrogen are a member of the group consisting of 4-phenylpiperazinyl, morpholinyl, 2,6-dimethylmorpholinyl, pyrrolidinyl, piperidinyl, 2-methylpiperidinyl, 5-ethyl-2-methylpiperidinyl, 5-ethyl-3-methyl-piperidinyl, 2,4,6-trimethylpiperidinyl and 1-hexamethylenimine.

3,297,681
CRYSTALLIZATION OF FINE HMX

Sam B. Wright and Albert Donald Evans, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

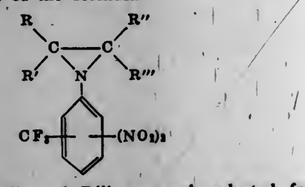
No Drawing. Filed Feb. 26, 1964, Ser. No. 347,376
4 Claims. (Cl. 260—239)

1. A process for preparation of β-HMX which comprises preparing a solution of crude HMX, cooling the solution to 20 to 35° C., seeding the solution with fine β-HMX of a surface area of about 8,000 to 13,000 cm.^{2}

per gram, precipitating HMX from the solution in beta-polymorphic form by rapidly adding to the solution a diluent which is substantially non-solvent for HMX, heating the mixture sufficiently to volatilize the solvent medium, cooling to about 30 to 40° C., filtering, and collecting β-HMX crystals the majority of which are of a size such that they pass USSS Sieve No. 325, said crystals having a moisture content of less than about 25%.

3,297,682
TRIFLUOROMETHYLDINITROPHENYL-AZIRIDINES
Stephen J. Kuhn, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Michigan
No Drawing. Filed Dec. 4, 1964, Ser. No. 416,157
4 Claims. (Cl. 260—239)

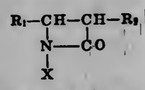
1. A compound of the formula



wherein R, R', R'', and R''' are each selected from the group consisting of hydrogen, methyl, and ethyl.

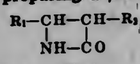
3,297,683
PROCESS FOR PREPARING β-LACTAMS
Hans Biener, Kelkheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Apr. 6, 1965, Ser. No. 446,114
Claims priority, application Germany, Apr. 8, 1964, F 42,553
8 Claims. (Cl. 260—239)

1. A process for preparing a β-lactam derivative of the formula



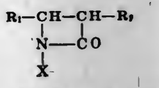
in which R_1 and R_2 are alkyl or cycloalkylalkyl of up to 8 carbon atoms or non-conjugated alkenyl of up to 8 carbon atoms, or R_1 and R_2 together represent a divalent alkylene or non-conjugated alkenylene of up to ten carbon atoms forming a ring with the α- and β-carbon atoms of the lactam ring, and X represents SO_2Cl or hydrogen, which comprises reacting N-carbonyl sulfamidic chloride with an olefin of the formula $R_1—CH=CH—R_2$, in which R_1 and R_2 have the meanings defined above, at a temperature between 10 and 180° C. and in the presence of an inert solvent selected from the group consisting of acetonitrile, nitromethane and liquid sulfur dioxide.

4. A process for preparing a β-lactam of the formula



in which R_1 and R_2 are alkyl or cycloalkylalkyl of up to 8 carbon atoms or non-conjugated alkenyl of up to 8 carbon atoms, or R_1 and R_2 together represent a divalent alkylene or non-conjugated alkenylene of up to ten carbon atoms forming a ring with the α- and β-carbon atoms of the lactam ring, which comprises reacting N-carbonyl sulfamidic chloride with an olefin of the formula $R_1—CH=CH—R_2$, in which R_1 and R_2 have the meanings defined above, at a temperature between 10 and 180° C. and in the presence of an inert solvent selected from the group consisting of acetonitrile, nitromethane and liquid sulfur dioxide, isolating the β-lactam-N-sulfochloride thus obtained and treating said sulfochloride with an aqueous medium at a pH between 2 and 9.

7. A process for preparing a β-lactam derivative of the formula



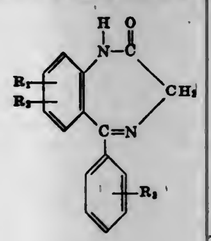
in which R_1 and R_2 are alkyl or cycloalkylalkyl of up to 8 carbon atoms or non-conjugated alkenyl of up to 8 carbon atoms, or R_1 and R_2 together represent a divalent alkylene or non-conjugated alkenylene of up to ten carbon atoms forming a ring with the α- and β-carbon atoms of the lactam ring, and X represents SO_2Cl or hydrogen, which comprises reacting N-carbonyl sulfamidic chloride with an olefin of the formula $R_1—CH=CH—R_2$, in which R_1 and R_2 have the meanings defined above, at a temperature between 10 and 180° C., the molar ratio of olefin to sulfamidic chloride being 1.2 to 15:1.

3,297,684
PHOTOCHEMICAL PROCESS FOR THE PREPARATION OF LACTAMS
Yoshikazu Ito, Mizuho-ku, Nagoya, Kunio Shiji, Niwa-gun, Aichi-ken, Saihei Nomura, Mizuho-ku, Nagoya, Ryo Endo, Minami-ku, Nagoya, Akio Ikeyama, Nishi-kasugai-gun, Aichi-ken, and Fumino Nishikawa, Minami-ku, Nagoya, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Jan. 21, 1964, Ser. No. 340,855
Claims priority, application Japan, Jan. 24, 1963, 38/3,429
1 Claim. (Cl. 260—239.3)

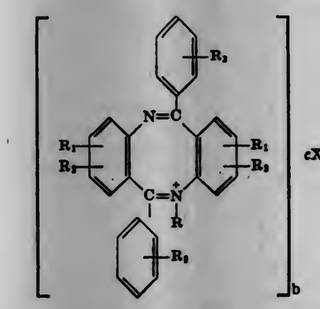
In the manufacturing process of lactam which comprises producing a cycloalkanone oxime hydrochloride by photoreacting a cycloalkane with a gas mixture of nitrosyl chloride and hydrogen chloride and manufacturing the corresponding lactam by the Beckmann's rearrangement reaction of said cycloalkanone oxime hydrochloride in the presence of sulfuric acid catalyst, the improvement comprising a method for removing sulfurous acid from the by-product hydrogen chloride containing sulfurous acid generated in the Beckmann's rearrangement reaction which consists in absorbing the by-product hydrogen chloride generated in said reaction into dilute hydrochloric acid to form concentrated hydrochloric acid before said by-product is recirculated to the aforesaid photosynthesis process, bringing said concentrated hydrochloric acid into contact with a gas mixture of nitrosyl chloride and hydrogen chloride and then heating the same to generate hydrogen chloride.

3,297,685
PROCESS FOR THE PREPARATION OF 2-OXO BENZODIAZEPINES
Joseph Hellerbach, Basel, Switzerland, and Werner Metlesics, Clifton, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 9, 1965, Ser. No. 478,429
4 Claims. (Cl. 260—239.3)

1. A process for preparing a compound of the formula

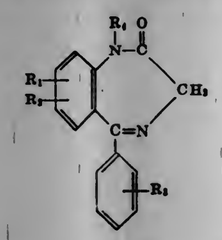


wherein R_1, R_2 and R_3 are each independently selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro, trifluoromethyl, cyano, lower alkylthio, lower alkylsulfinyl and lower alkylsulfonyl which comprises reacting a compound of the formula

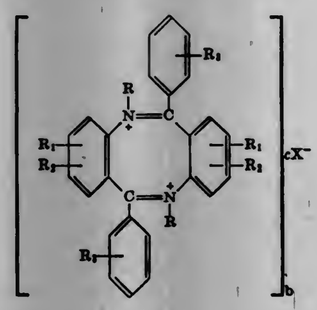


wherein R_1, R_2 and R_3 are each independently selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro, trifluoromethyl, cyano, lower alkylthio, lower alkylsulfinyl and lower alkylsulfonyl; R is lower alkyl or benzyl; X is an organic or inorganic anion and *b* and *c* are positive members such that the positive charge of *b* moles of cation is neutralized by *c* moles of anion with an amino acid ester.

3. A process for preparing a compound of the formula



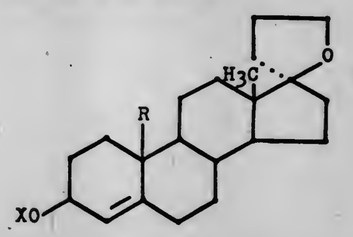
where R_1, R_2 and R_3 are each independently selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro, trifluoromethyl, cyano, lower alkylthio, lower alkylsulfinyl and lower alkylsulfonyl and R_4 is lower alkyl or benzyl which comprises reacting a compound of the formula



wherein R_1, R_2 and R_3 are each independently selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro, trifluoromethyl, cyano, lower alkylthio, lower alkylsulfinyl and lower alkylsulfonyl; R is lower alkyl or benzyl; X is an organic or inorganic anion and *b* and *c* are positive members such that the positive charge of *b* moles of cation is neutralized by *c* moles of anion with an amino acid ester.

3,297,686
4',5'-DIHYDROSPIRO[ESTR/ANDROST-4-ENE-17,2'(3'H)-FURAN]-3β-OLS AND ESTERS THEREOF
Edward A. Brown, Wilmette, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Oct. 19, 1964, Ser. No. 404,966
5 Claims. (Cl. 260—239.55)

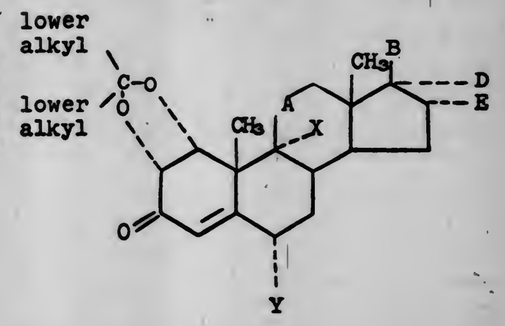
1. A compound of the formula



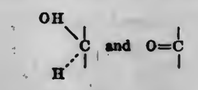
wherein X is selected from the group consisting of hydrogen and lower alkanoyl radicals and R is selected from the group consisting of hydrogen and the methyl radical.

3,297,687
METHOD OF PREPARING 1,2-DISUBSTITUTED STEROIDS AND PRODUCTS RESULTING THEREFROM
Louis Israel Feldman, Spring Valley, Chester Eric Holmlund, Pearl River, and Karl Jolivette Sax, West Nyack, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Nov. 23, 1964, Ser. No. 413,324
10 Claims. (Cl. 260—239.55)

1. A compound of the formula:



wherein A is selected from the group consisting of



B is selected from the group consisting of hydroxy, acetyl and hydroxyacetyl; D is selected from the group consisting of hydrogen, lower alkyl and lower alkynyl; E is hydrogen and D and E taken together represent a lower alkylidenedioxy group, X and Y are selected from the group consisting of hydrogen and fluorine.

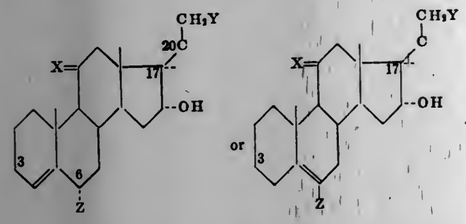
3,297,688

17α - ACYL - 16α - HYDROXYPREGNENE DERIVATIVES AND PROCESS FOR PREPARING THEM

Werner Fritsch, Neuenhain, Taunus, and Ulrich Stache, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,834
Claims priority, application Germany, Dec. 14, 1963, F 41,547; Sept. 17, 1964, F 43,994
15 Claims. (Cl. 260—239.55)

9. A compound of the formula



wherein X represents two hydrogens, a hydrogen and a hydroxy group, or a keto oxygen; Y is hydrogen or hydroxy; Z is hydrogen or methyl; the 3-carbon atom is substituted by a keto oxygen, an alkylene-dioxy group, or β-hydroxy; the 17-carbon atom is α-substituted by —CN or —COR', R' being an alkyl of 1 to 3 carbon atoms; and the 20-carbon atom is substituted by a keto oxygen or an alkylene-dioxy group.

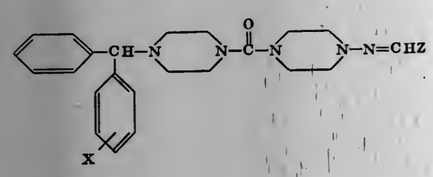
3,297,689

1-ARYLIDENEAMINO - 4 - (4 - BENZHYDRYL-1-PIPERAZINYLCARBONYL) PIPERAZINES AND INTERMEDIATE THEREFOR

John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 5, 1965, Ser. No. 423,582
5 Claims. (Cl. 260—240)

1. A compound of the formula



wherein X is selected from the group consisting of hydrogen and halogen and Z is selected from the group consisting of phenyl, tolyl, halophenyl, hydroxyphenyl, methoxyphenyl, methylenedioxyphenyl, and pyridyl.

5. 1 - benzhydryl - 4 - (4 - amino - 1 - piperazinylcarbonyl)piperazine.

3,297,690

SUBSTITUTED TRIAZINE SALT

Hugh T. Harrison, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,337
3 Claims. (Cl. 260—242)

1. Monosalt of 2,4-diamino-6-phenyl-s-triazine and a number selected from the group consisting of hexafluoroarsenic acid and hexafluorophosphoric acid.

3,297,691

YELLOW PIGMENT

George Harrison, Jr., Wayne, N.J., Charles A. Kumins, Chappaqua, and Edmund N. Harvey, Jr., Scarsdale, N.Y., and George A. Weber, Wyckoff, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Mar. 24, 1965, Ser. No. 442,546
1 Claim. (Cl. 260—242)

A yellow to brown colorant consisting essentially of the reaction product of 2 moles of 2,4-diamino-6-phenyl-s-triazine, 3 moles of copper acetate, and 2 moles of 2-hydroxy-1-naphthaldehyde, formed by heating these materials at reflux temperature until the separated and dried colorant has a chemical composition of about 20.77 parts of copper, 2.95 parts of hydrogen, 15.57 parts of nitrogen, 53.33 parts of carbon, and 7.38 parts of oxygen.

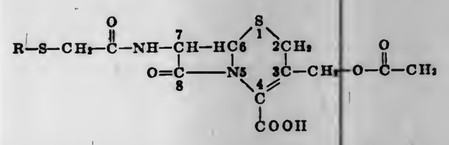
3,297,692

7-ALKYLMERCAPTOACETAMIDOCEPHALOSPORANIC ACID

Edwin H. Flynn, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,760
5 Claims. (Cl. 260—243)

1. An antibiotic substance having the formula:



wherein R is C_4–C_6 n-alkyl or C_4–C_6 isoalkyl; and the salts thereof with pharmaceutically acceptable cations.

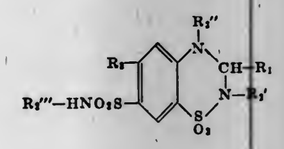
3,297,693

DIHYDRO-BENZOTHIADIAZINE-1,1-DIOXIDES

George de Stevens and Lincoln Harvey Werner, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 29, 1963, Ser. No. 284,007
The portion of the term of the patent subsequent to Dec. 29, 1981, has been disclaimed
11 Claims. (Cl. 260—243)

1. A member of the group consisting of 3,4-dihydro-2-H-[1,2,4]-benzothiadiazine-1,1-dioxides of the formula:



in which R_1 represents a member of the group consisting of hydroxy-lower alkyl, lower alkanoyloxy-lower alkyl, lower alkoxy-carbonyloxy-lower alkyl, benzyloxy-carbonyloxy-lower alkyl, carboxy-lower alkanoyloxy-lower alkyl, monocyclic carbocyclic aryl-lower alkanoyloxy-lower alkyl, lower alkoxy-lower alkyl, lower alkenyloxy-lower alkyl, monocyclic carbocyclic aryloxy-lower alkyl and monocyclic carbocyclic aryl-lower alkoxy-lower alkyl, each of the radicals R_2', R_2'' and R_2''' represents a member of the group consisting of hydrogen and lower alkyl, and R_3 stands for a member of the group consisting of lower alkyl, halogeno-lower alkyl and halogen, and alkali metal salts thereof.

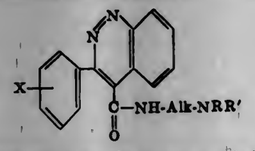
3,297,694

DIALKYLAMINOALKYLAMINO AMIDES OF 3-PHENYLCINNOLINE-4-CARBOXYLIC ACIDS

Harman S. Lowrie, Glenview, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 13, 1964, Ser. No. 382,377
6 Claims. (Cl. 260—247.2)

1. A compound of the formula



wherein X is selected from the group consisting of hydrogen, methoxy, and chlorine; Alk is lower alkylene separating the nitrogens attached thereto by at least 2 carbon atoms; and —NRR' is selected from the group consisting of di(lower alkyl)amino, 1-pyrrolidinyl, piperidino, morpholino, and 4-methyl-1-piperazinyl.

5. N - (2 - morpholinoethyl) - 3 - phenylcinnoline-4-carboxamide.

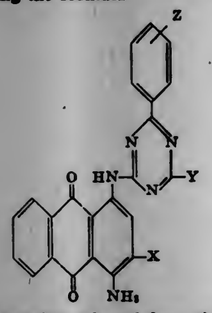
3,297,695

ANTHRAQUINONE DYES AND THEIR PRODUCTION

Hans Weidinger and Gerhard Wellenreuther, Limburgerhof, Pfalz, and Reinhold Krallmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,715
Claims priority, application Germany, Mar. 5, 1964, B 75,728
5 Claims. (Cl. 260—247.5)

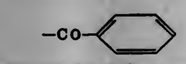
1. A dye having the formula



wherein X is a member selected from the group consisting of $—COCH_3$, $—COOCH_3$, $—COC_2H_5$,

$—CO—CH_2—CH_2—OCH_3$
$—CO—NH—CH_2—CH_2—OH$
$—CO—NH—CH_2—CH_2—CH_2—OCH_3$
$—CO—N(CH_2—CH_2—OH)_2$

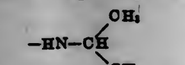
and



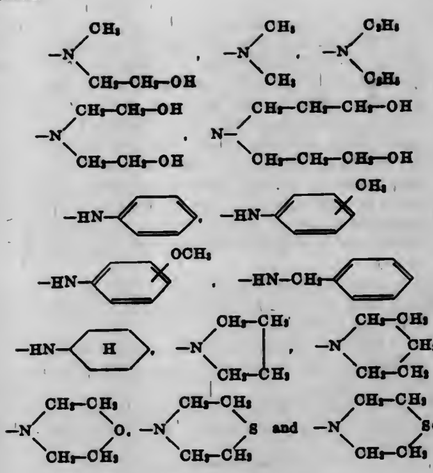
Z is a member selected from the group consisting of hydrogen, halogen, methyl, ethyl, methoxyl, carbomethyl, dimethylsulfonamido and di-(hydroxyethyl)-sulfonamido and Y is a member selected from the group consisting of

$—NH_2$, $—HN—CH_3$, $—HN—C_2H_5$,

$—HN—CH_2—CH_2—CH_3$



$—HN—(CH_2)_3—OCH_3$, $—HN—(CH_2)_3—OC_2H_5$, $—HN—CH_2—CH_2—OH$, $—HN—CH_2—CH_2—CH_2—OH$



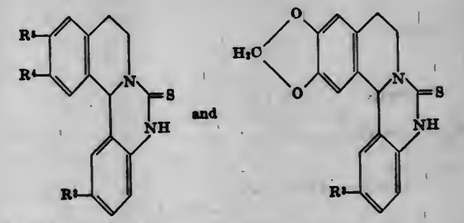
3,297,696

6 - AMINO - 8,9 - DIHYDRO-13bH-ISOQUINOLO-[2,1-c] QUINAZOLINES AND INTERMEDIATES THEREFOR

Hans Ott, Convent Station, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Filed May 28, 1965, Ser. No. 459,920
32 Claims. (Cl. 260—247.5)

1. A compound of one of the formulae

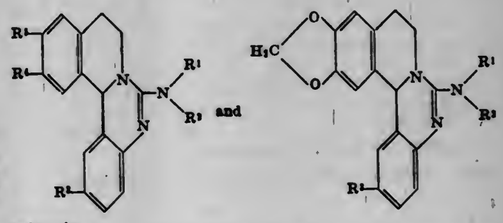


wherein

R^3 is a member selected from the group consisting of a hydrogen atom, a halogen atom, nitro and trifluoromethyl; and

each of R^4 and R^5 is, independently, a member selected from the group consisting of a hydrogen atom and methoxy.

9. A pharmaceutically acceptable compound of one of the formulae



wherein

R^1 is a member selected from the group consisting of a hydrogen atom, lower alkyl, lower cycloalkyl, lower hydroxyalkyl, lower alkoxy lower alkyl, lower alkylamino lower alkyl having at least 2 carbon atoms in the alkylene bridge, lower dialkylamino lower alkyl, having a least 2 carbon atoms in the alkylene bridge, phenyl-(lower) alkyl, and $—(CH_2)_{n-1}—Z$;

Z is a heterocyclic radical containing from 5 to 6 ring members at least one of which is a nitrogen atom and at most one additional of which is a hetero atom selected from the group consisting of oxygen, nitrogen and sulfur, a ring member of the heterocyclic radical selected from the group consisting of a carbon atom and a nitrogen atom being bonded directly to the bridge $-(CH_2)_{n-1}-$ when n is one of the integers 3 and 4, and the nitrogen atom of $-N(R^1)R^2$ being bonded directly to an R^1 carbon atom selected from the group consisting of a carbon atom of said bridge and a ring carbon atom of said heterocyclic radical; and

n is a positive whole number of at most 4;

R^2 is a member selected from the group consisting of a hydrogen atom and lower alkyl;

R^3 is a member selected from the group consisting of a hydrogen atom, a halogen atom, nitro and trifluoromethyl; and

each of R^4 and R^5 is, independently, a member selected from the group consisting of a hydrogen atom and methoxy.

3,297,697

CYANURIC ACID PRODUCTION

John B. Reynolds, Pryor, John T. Minor, Ponca City, and Louis E. Craig, Pryor, Okla., assignors, by mesne assignments, to Nipak, Inc., Dallas, Tex., a corporation of Texas

Filed June 20, 1963, Ser. No. 289,210
13 Claims. (Cl. 260—248)

1. In a process for producing cyanuric acid by heating urea in a solvent therefor at a temperature effective to convert the urea to cyanuric acid, the improvement therein which comprises maintaining a ratio of at least 4 ml. of solvent per gram of urea throughout the heating period.

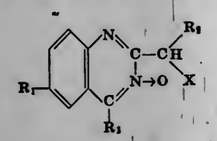
3,297,698

PROCESS FOR THE PREPARATION OF QUINAZOLINE 3-OXIDES

Werner Metlesics, Clifton, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

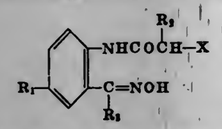
No Drawing. Filed May 20, 1964, Ser. No. 369,020
4 Claims. (Cl. 260—256.4)

1. A process for the preparation of a compound of the formula



wherein X is selected from the group consisting of chlorine, bromine and iodine. R_1 is selected from the group consisting of hydrogen, halogen, trifluoromethyl, cyano, lower alkyl, lower alkoxy and nitro; R_2 is selected from the group consisting of hydrogen, lower alkyl and halogen; R_3 is selected from the group consisting of hydrogen, lower alkyl, a C_5–C_6 cycloalkyl group, phenyl, halophenyl, nitrophenyl, trifluoromethylphenyl and pyridyl,

which comprises treating a compound of the formula



Wherein X, R_1, R_2 and R_3 are as above

with an aprotic Lewis acid.

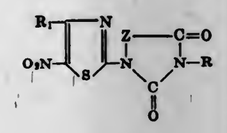
3,297,699

5-NITROTHIAZOLYL-DIOXO-DIAZACYCLO-ALKANES

Paul Schmidt, Therwil, Max Wilhelm, Allschwil, and Kurt Eichenberger and Ernst Sury, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 20, 1965, Ser. No. 449,606
Claims priority, application Switzerland, Apr. 24, 1964, 5,396/64; Mar. 3, 1965, 2,950/65; Mar. 31, 1965, 4,424/65
24 Claims. (Cl. 260—256.5)

1. A compound of the formula



in which R_1 stands for a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, lower alkyl-phenyl, lower alkoxy-phenyl, halogenophenyl, trifluoromethylphenyl and nitrophenyl, Z stands for a member selected from the group consisting of lower alkylene separating the carbonyl group from the nitrogen atom by at most 4 carbon atoms and lower alkylene separating the carbonyl group from the nitrogen atom by at most 4 carbon atoms and substituted by at least one member selected from the group consisting of lower alkyl, phenyl, lower alkylphenyl, lower alkoxyphenyl, halogenophenyl, trifluoromethylphenyl, nitrophenyl, phenyl-lower alkyl, lower alkyl-phenyl-lower alkyl, lower alkoxy-phenyl-lower alkyl, halogeno-phenyl-lower alkyl, trifluoromethyl-phenyl-lower alkyl and nitrophenyl-lower alkyl, R represents a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, hydroxy-lower alkyl, phenyl-lower alkyl, lower alkyl-phenyl-lower alkyl, lower alkoxy-phenyl-lower alkyl, halogeno-phenyl-lower alkyl, trifluoromethyl-phenyl-lower alkyl and nitrophenyl-lower alkyl.

15. 1-[5-nitrothiazolyl-(2)] - 2,4 - dioxo-hexahydropyrimidine.

22. N-[5-nitrothiazolyl-(2)]-N'-(chloracetyl)-urea.

3,297,700

COMBINATION PROCESS FOR PRODUCING PIPERAZINE AND N-AMINOETHYLPIPERAZINE

Herbert G. Muhlbauer and Myrl Lichtenwalter, Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

Filed Jan. 16, 1964, Ser. No. 338,201
3 Claims. (Cl. 260—268)

3. In a method which comprises the steps of bringing a monoethanolamine into contact with a hydrogenation catalyst in a primary reaction zone in the presence of hydrogen and from about two to about ten mols of ammonia per mol of amine feedstock under conditions of temperature and pressure sufficient to cyclize at least a portion of said feedstock to form piperazine, whereby a reaction product is formed comprising an amine mixture, the improvement which comprises:

(A) Separating said reaction product in a first separation zone into at least a piperazine product fraction and a second substantially piperazine-free distillate feedstock fraction boiling within the range of about 180° to about 250° C. and comprising N-aminoethylpiperazine,

(B) Separately bringing said second feedstock into contact with a hydrogenation catalyst in a second reaction zone under conversion conditions less severe than those employed in said primary reaction zone to convert the second feedstock into a second reaction product comprising piperazine and N-aminoethylpiperazine,

(C) Separating said second reaction product in a second separation zone into a crude piperazine fraction and a product N-aminoethylpiperazine distillate fraction boiling within the range of about 180° to about 250° C. consisting essentially of N-aminoethylpiperazine,

(D) Recycling said crude piperazine fraction to said first separation zone, and

(E) Recovering said product N-aminoethylpiperazine distillate fraction,

(F) Said conversion conditions in said primary reaction zone including a temperature within the range of about 200° to about 300° C., a pressure within the range of about 65 to about 225 atmospheres, including a hydrogen partial pressure of at least ten atmospheres and a contact time corresponding to a feed rate of about 0.4 to about 0.8 pound of said amine feedstock per hour per pound of hydrogenation catalyst,

(G) Said less severe conversion conditions in said second reaction zone including a temperature within the range of from about 180° to about 220° C. and a contact time corresponding to a feed rate of about 0.8 to about 1.6 pounds of said second feedstock per hour per pound of catalyst,

(H) Said hydrogenation catalyst consisting of copper, nickel and chromium oxide having the composition, calculated in mol percent on an oxide-free basis, of 60% to 85% nickel, 14% to 37% copper and 1% to 5% chromium.

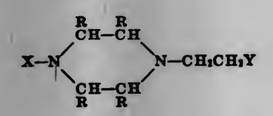
3,297,701

SYNTHESIS OF DIAZABICYCLO-(2,2,2)-OCTANE AND DERIVATIVES

Walter H. Brader, Jr., and Richard L. Rowton, Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed May 28, 1964, Ser. No. 371,098
19 Claims. (Cl. 260—268)

1. A method which comprises the steps of contacting a feed compound with a metal phosphate selected from the group consisting of aluminum phosphate, calcium phosphate and iron phosphate at a temperature within the range of about 250° to about 550° C. to form a reaction mixture comprising a diazabicyclo-(2.2.2)-octane corresponding to the feed compound, said feed compound having the formula:



wherein:

R is selected from the group consisting of hydrogen, alkyl groups containing 1 to 12 carbon atoms, and cyclohexyl groups containing 6 to 12 carbon atoms;

Y is selected from the group consisting of —OH and $—NH_2$; and

X is selected from the group consisting of H and $—CH_2CH_2Y$.

3,297,702

REDUCTION OF LINEAR-TRANS-QUINACRIDONEQUINONE

Willy Braun, Heidelberg, Wilhelm Ruppel, Mannheim, and Rolf Mecke, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am (Rhine), Germany

No Drawing. Original application Apr. 4, 1961, Ser. No. 100,496, now Patent No. 3,147,263, dated Sept. 1, 1964. Divided and this application July 9, 1964, Ser. No. 381,534
Claims priority, application Germany, Apr. 8, 1960, B 57,403; Oct. 22, 1960, B 59,826; Nov. 10, 1960, B 60,034
4 Claims. (Cl. 260—279)

1. A process for reduction of linear-trans-quinacridonequinone which comprises reducing said linear-trans-quinacridonequinone at a temperature above 0° C. in a concentrated, aqueous, minteral acid solution, said acid selected from the group consisting of sulfuric acid, hydrochloric acid and phosphoric acid, containing a finely divided metal selected from the group consisting of zinc, iron, and aluminum, thereby producing a member selected from the group consisting of linear-trans-quinacridone and linear-trans-dihydroquinacridone.

3,297,703

N-OLEOYL-4-(3-ACETOXYPROPYL)PIPERIDINE

Evald L. Skau, Robert R. Mod, and Frank C. Magne, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Feb. 5, 1964, Ser. No. 354,190, now Patent No. 3,222,203, dated Dec. 7, 1965. Divided and this application June 1, 1964, Ser. No. 396,450
1 Claim. (Cl. 260—294.3)

N-oleoyl-4-(3-acetoxypropyl)piperidine.

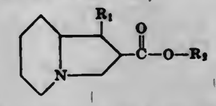
3,297,704

OCTAHYDRO-3-OXO INDOLIZINE CARBOXYLATES

Richard Joseph Mohrbacher, Fort Washington, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed July 1, 1965, Ser. No. 468,994
5 Claims. (Cl. 260—294.3)

1. A member selected from the group consisting of a compound of the formula



wherein R_1 is a member selected from the group consisting of hydrogen and phenyl; R_2 is a member selected from the group consisting of diloweralkylaminoloweralkyl and 1-methyl-4-piperidyl; and the nontoxic acid addition salts thereof.

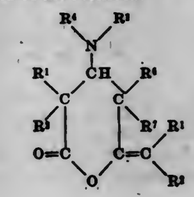
3,297,705

3-AMINO TETRAHYDRO-2H-PYRAN-2-ONES

James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,020
16 Claims. (Cl. 260—294.3)

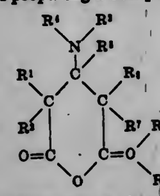
1. A compound of the formula:



wherein R^1, R^2, R^3, R^4, R^6 and R^7, taken singly, are C_1–C_8 alkyl; R^1 and R^3, taken collectively, and R^6 and R^7, taken collectively, are lower alkylene which form a 5 to 6 membered saturated carbocyclic ring with the carbon atom to which they are attached; and R^3 and R^4, taken collectively, with the nitrogen atom to which they are attached form a pyrrolidinyl, piperidino or morpholino ring.

8. A compound according to claim 1, 6-isopropylidene-3,3,5,5 - tetramethyl - 4-piperidinotetrahydro-2H-pyran-2-one.

10. A method of preparing a compound of the formula:



which comprises contacting a ketene of the formula, $R^1R^2C{=}C{=}O$, with an enamine of the formula,

$$R^3R^4N{-}C(R^5){=}CR^6R^7,$$

in an aprotic dipolar solvent having a dipole moment greater than 2.0 Debye units; wherein R^1 and R^2 are selected from the group consisting of (a) hydrogen (b) C_1–C_8 alkyl and (c) joined lower alkylene groups which form a 5 to 6 membered saturated carbocyclic ring with the carbon atom to which they are attached, and when one of R^1 or R^2 is hydrogen the other is C_1–C_8 alkyl; R_3 and R^4, taken singly, are C_1–C_8 alkyl and, taken collectively with the nitrogen atom to which they are attached, form a pyrrolidinyl, piperdino or morpholino ring; R^5 is hydrogen or C_1–C_8 alkyl; and R^6 and R^7 are selected from the same group as R^1 and R^2.

3,297,706
METHOD OF PRODUCING SUBSTANTIALLY COLORLESS AND ODORLESS 5(α-HYDROXY-α - 2 - PYRIDYLBENZYL) - 7 - (α-2-PYRIDYLBENZYLIDENE) - 5 - NORBORNYLENE-2,3-DISCARBOXIMIDE

Thomas R. Hopkins, Overland Park, Paul D. Strickler, Shawnee Mission, and Lee V. Phillips, Overland Park, Kans., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed July 6, 1964, Ser. No. 380,669
2 Claims. (Cl. 260—295)

1. In a process for manufacturing substantially pure colorless and odorless 5-(α-hydroxy-α-2-pyridylbenzyl)-7-(α-2-pyridylbenzylidene)-5-norbornylene-2,3 - dicarboximide comprising the steps:

(a) reacting 2-benzoylpyridine with cyclopentadiene under an inert atmosphere in the presence of a solution of an alkali metal hydroxide selected from the group consisting of sodium hydroxide and potassium hydroxide in a lower alkanol to yield a product of reaction of two mols of 2-benzoylpyridine per mol of cyclopentadiene consisting essentially of 2-(α-hydroxy-α-2-pyridylbenzyl)-6-phenyl-6 - (2 - pyridyl) fulvene, and

(b) reacting maleimide with the product of step (a) in an inert liquid reaction medium under an inert atmosphere to yield a solid product consisting essentially of isomeric forms of 5-(α-hydroxy-α-2-pyridylbenzyl)-7-(α-2-pyridylbenzylidene) - 5 - norbornene-2,3-dicarboximide, the improvement consisting of

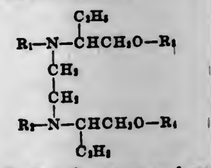
(c) purifying the solid product of step (b) by dissolving said product in dilute aqueous acid, removing insoluble impurities and inert liquid reaction medium from the resulting solution and precipitating the solid product by neutralizing the solution with a basic substance which is a stronger base than the product and which forms a water-soluble neutralization product.

3,297,707
PYRIDYL ESTERS OF 2,2'-(ETHYLENEDIIMINO)-DI-1-BUTANOLS AND NON-TOXIC ACID ADDITION SALTS THEREOF

Raymond George Wilkinson, Montvale, and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Jan. 23, 1962, Ser. No. 168,241, now Patent No. 3,176,040, dated Mar. 30, 1965. Divided and this application Feb. 12, 1965, Ser. No. 432,389
Claims priority, application Great Britain, Feb. 7, 1961, 4,517, Patent 961,317
4 Claims. (Cl. 260—295)

1. A member of the class consisting of symmetrical ethylenediamines of the formula:



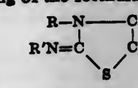
wherein R_1 and R_2 are the same and are selected from the group consisting of methyl and ethyl, and R_3 and R_4 are the same and are pyridylcarbonyl, and the non-toxic acid-addition salts thereof.

3,297,708
METHOD OF PREPARING THIAZOLIDINES

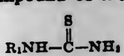
Murray Garber, Trenton, and Bernard Miller, Plainsboro, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,549
5 Claims. (Cl. 260—306.7)

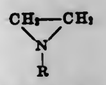
1. A process of preparing thiazolidines selected from the group consisting of the formula:



and acid salts thereof wherein R and R' are members selected from the group consisting of hydrogen, alkyl, lower alkenyl, mononuclear aryl, mononuclear aryl (lower) alkyl, and lower alkyl mononuclear aryl comprising; treating a compound of the formula:



wherein R_1 is as defined above, with a compound of the formula:



wherein R is as defined above, in acid solution at a temperature within the range of about 0° C. to about 100° C. and recovering said compounds therefrom.

3,297,709
CERTAIN SUBSTITUTED TETRAZOLE DERIVATIVES

Martin A. Davis, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 19, 1965, Ser. No. 508,818
6 Claims. (Cl. 260—308)

1. A member selected from the group consisting of 1-(2-diethylaminoethyl) - 5 - (10,11-dihydro-5H-dibenzo

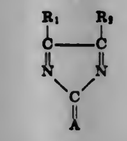
[a,d]-cyclohepten-5-yl)-1H-tetrazole and the pharmaceutically acceptable acid addition salts thereof.

3,297,710
OXOARYLIDENE-IMIDAZOLES

Ernest Frank Silversmith, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,637
9 Claims. (Cl. 260—309)

1. An oxo-arylideneimidazole having the formula



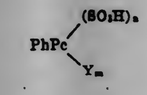
said radicals A and R_1 are interchangeable to give the corresponding oxo-arylideneimidazole; A is X-oxo (XH) arylidene of from 6 to 14 nuclear carbon atoms, said X designating a position in the arylidene such that the oxo atom is conjugated with said imidazole group; R_1 and R_2 are taken from the group consisting of hydrogen, alkyl of up to 18 carbon atoms and aryl radicals of up to 18 carbon atoms; at least one hydrogen of said imidazole may be replaced by a substituent having a Hammett sigma value of from —1.0 to 1.0.

3,297,711
WATER-SOLUBLE PHTHALOCYANINE DYESTUFFS AND PROCESS FOR PREPARING THEM

Hermann Remy, West Warwick, R.I., assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 17, 1964, Ser. No. 360,780
Claims priority, application Germany, Apr. 27, 1963, F 39,602
3 Claims. (Cl. 260—314.5)

1. Water-soluble phthalocyanine-dyestuffs of the formula



wherein PhPc is a metal tetraphenyl phthalocyanine, Y represents a member selected from the group consisting of $—SO_2—CH_2—CH_2—OSO_3H$ and $—SO_2—CH{=}CH_2$, m represents a number of 1 to 7 and n likewise a number of 1 to 7, the sum of m and n being at most 8.

3,297,712
PRODUCTION OF METAL-FREE PHTHALOCYANINES

Herbert Mueller, Frankenthal, Pfalz, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 22, 1964, Ser. No. 369,615
Claims priority, application Germany, June 1, 1963, B 72,151
4 Claims. (Cl. 260—314.5)

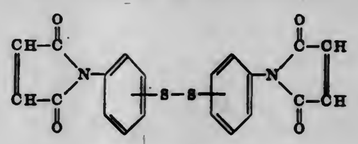
1. A process for the production of metal-free phthalocyanines which comprises heating an aromatic dinitrile selected from the group consisting of phthalodinitrile, chlorophthalodinitrile, phenylphthalodinitrile, naphthalene-ortho-dinitrile and anthracene-ortho-dinitrile in the presence of hydrogen under a pressure of 50 to 400 atmospheres gage at temperatures of from 100° to 500° C.

3,297,713
DITHIOBIS(N-PHENYLMALEIMIDES)

Elbert C. Ladd, Passaic, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 30, 1962, Ser. No. 183,754
3 Claims. (Cl. 260—326.3)

1. Symmetrical dithiobis(N-phenylmaleimide) having the formula:



3,297,714
IMIDES OF 1,2,3,4 - CYCLOPENTANETETRACARBOXYLIC ACID AND THE MONOANHYDRIDE THEREOF

Ross Van Volkenburgh, Baton Rouge, La., assignor to Copolymer Rubber & Chemical Corporation, a corporation of Louisiana

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,571
17 Claims. (Cl. 260—326.3)

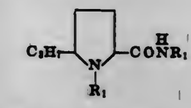
3. A substance selected from the group consisting of the unsubstituted monoimide of 1,2,3,4-cyclopentanetetracarboxylic acid, the unsubstituted monoimide of the monoanhydride of 1,2,3,4-cyclopentanetetracarboxylic acid, the N-alkyl, N-haloalkyl, N-cycloalkyl, N-monocarbocylic aryl, N-halo and N-metal monoimides of 1,2,3,4-cyclopentanetetracarboxylic acid, the N-alkyl, N-haloalkyl, N-cycloalkyl, N-monocarbocylic aryl, N-halo and N-metal monoimides of the monoanhydride of 1,2,3,4-cyclopentanetetracarboxylic acid, the unsubstituted diimide of 1,2,3,4-cyclopentanetetracarboxylic acid and the N,N'-dialkyl, N,N'-dihaloalkyl, N,N'-dicycloalkyl, N,N'-dimonocarbocyclic aryl, N-alkyl, N'-monocarbocyclic aryl, N,N'-dihalo and N,N'-dimetal diimides of 1,2,3,4-cyclopentanetetracarboxylic acid, wherein the foregoing alkyl groups, haloalkyl groups and cycloalkyl groups have 1 through 20 carbon atoms and the monocarbocyclic aryl groups have 6 through 20 carbon atoms.

3,297,715
5-PROPYL-HYGRIC ACID DERIVATIVES AND INTERMEDIATES

Ross R. Herr, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 15, 1964, Ser. No. 375,333
3 Claims. (Cl. 260—326.3)

2. A compound of the formula



wherein R_1 is an alkyl group containing from 1 to 8 carbon atoms, inclusive.

3,297,716
MIXTURE OF 4-PROPYL-HYGRIC ACID AMIDES

Barney J. Magerlein, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 15, 1964, Ser. No. 375,335
1 Claim. (Cl. 260—326.3)

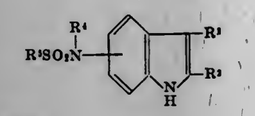
A biracemic mixture containing trans-4-propyl-L-hygramide, trans-4-propyl-D-hygramide, cis-4-propyl-L-hygramide and cis-4-propyl-D-hygramide.

3,297,717
SULFONAMIDO INDOLE DERIVATIVES

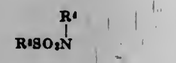
William A. Gould and Aubrey A. Larsen, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,836
8 Claims. (Cl. 260—326.12)

1. A compound having the formula



wherein the group



is located in any of the 4, 5, 6, or 7-positions of the indole ring, and

R^2 and R^3 are hydrogen atoms or lower alkyl groups of up to 4 carbon atoms;

R^4 is hydrogen or lower alkyl of up to about 4 carbon atoms;

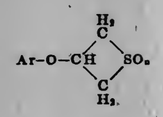
R_5 is lower alkyl, alkenyl, cycloalkyl, or cycloalkenyl having up to 6 carbon atoms, phenyl, or naphthyl, substituted phenyl, or substituted naphthyl wherein said substituent is lower alkyl, alkenyl, cycloalkyl, or cycloalkenyl of up to 6 carbon atoms, halogen, lower alkoxy of up to 6 carbon atoms, or benzyloxy.

3,297,718
OXIDE DERIVATIVES OF 3-ARYLOXYTHIETANES

Manfred Sander, Frankfurt am Main, Germany, assignor, by mesne assignments, to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,803
7 Claims. (Cl. 260—327)

1. A compound of the following formula:



wherein, when n is 1, Ar is a phenyl radical containing from 0 to 2 substituents selected from the group consisting of a hydroxy group, a nitro group, and a halogen; and when n is 2, Ar is a phenyl radical containing from 1 to 2 substituents selected from the group consisting of a hydroxy group, a nitro group, and a halogen.

3,297,719
3-HYDROXYMETHYL-3-HYDROXYOXETANE

Gilbert H. Berezin, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,411
1 Claim. (Cl. 260—333)

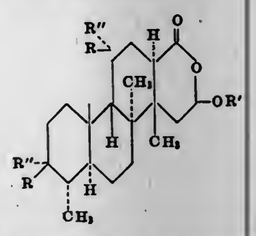
3-hydroxymethyl-3-hydroxyoxetane.

3,297,720
SYNTHESIS OF STEROIDS

Gerald W. Krakower, Elizabeth, and Patrick A. Diassi, Westfield, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 16, 1964, Ser. No. 397,015
3 Claims. (Cl. 260—343.2)

1. A compound of the formula



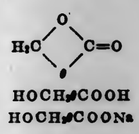
wherein R is hydrogen; R″ is acyloxy wherein the acyl radical is of a hydrocarbon carboxylic acid of less than twelve carbon atoms; and together R and R″ is oxo (O=); and R′ is acyl, wherein the acyl radical is of a hydrocarbon carboxylic acid of less than twelve carbon atoms.

3,297,721
BORON-CONTAINING COMPOUNDS

Daniel Grafstein, Morristown, and Harry F. Smith, Wayne, N.J., assignors to Thiokol Chemical Corporation, Trenton, N.J., a corporation of Delaware

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,943
7 Claims. (Cl. 260—343.6)

1. A compound selected from the group of compounds having the formulas



wherein θ in each formula represents $—C_2B_{10}H_{10}—$.

3,297,722
PREPARATION OF DICHLOROMALEIC ANHYDRIDE AND THE CATALYST USED THEREIN

Erwin A. Hoess, Wharton, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 6, 1963, Ser. No. 263,113
8 Claims. (Cl. 260—346.8)

1. An improved method for preparing dichloromaleic anyhdride which comprises chlorinating maleic anhydride in the presence of a catalyst resulting from prereacting at least 2 parts by weight of dichloromaleic anhydride with each part of anhydrous ferric chloride if desired in the presence of either maleic anhydride or chlorine but not in the presence of both, at a temperature between the temperature at which the dichloromaleic anhydride is molten and 225° C.

3,297,723
5-PHENYL-5 LOWER ALKYL PENTANE-1,2,3,4 TETRACARBOXYLIC ACIDS AND ANHYDRIDES

Charles M. Selwitz, Monroeville, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,109
6 Claims. (Cl. 260—347.3)

1. 5-phenyl-5-lower alkyl pentane-1,2,3,4-tetracarboxylic acid dianhydride.

3,297,724
DIEPOXIDES

Richard L. McConnell and Harry W. Coover, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 7, 1961, Ser. No. 93,867
5 Claims. (Cl. 260—348)

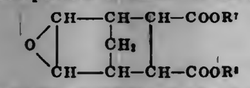
1. As a new composition of matter, 1,4-bis(2,3-epoxypropoxymethyl)cyclohexane.

3,297,725
EPOXYENDOALKYLENEHEXAHYDROPHTHALATE ESTERS

Wolfgang Gündel, Dusseldorf-Oberkassel, and Gerhard Dieckelmann, Dusseldorf-Holthausen, Germany, assignors to Dehydag, Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed May 2, 1958, Ser. No. 732,460
Claims priority, application Germany, Feb. 22, 1954, D 17,100
4 Claims. (Cl. 260—348)

1. A new composition of matter of the formula



in which R^7 and R^8 are alkyl radicals of six to eighteen carbon atoms.

3,297,726
AROMATIC HINDERED ISOCYANATES

Wilfried Zecher and Hans Holtschmidt, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 29, 1963, Ser. No. 284,020
Claims priority, application Germany, May 30, 1962, F 36,942
1 Claim. (Cl. 260—395)

An aromatic isocyanate having phenolic hydroxyl groups, said phenolic hydroxyl groups being hindered in each ortho position thereto by a member selected from the group consisting of a secondary alkyl, tertiary alkyl, cycloalkyl, aryl, carbalkoxy, dialkyl carboxamido, halogen, and the cyano group.

3,297,727
PURIFICATION OF ORGANIC ACIDS AND ANHYDRIDES

John H. McCracken, Pitcairn, and Johann G. D. Schulz and Arthur C. Whitaker, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 7, 1963, Ser. No. 314,511
10 Claims. (Cl. 260—346.4)

1. A process which comprises oxidizing 1,1-bis(3,4-dimethylphenyl)ethane to obtain benzophenone 3,4,3′,4′-tetracarboxylic acid, converting said tetracarboxylic acid to benzophenone 3,4,3′,4′-tetracarboxylicdianhydride and thereafter contacting said dianhydride with a ketone having the following structural formula:



wherein R and R_1 are selected from alkyl groups having from one to 10 carbon atoms, to purify the same.

3,297,728
PROCESS FOR THE PREPARATION OF DIFLUORO-STEROIDS

Fred Kagan and David G. Martin, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 7, 1965, Ser. No. 446,427
19 Claims. (Cl. 260—397.2)

1. In the process of reacting a ketosteroid with sulfur tetrafluoride in the presence of a Lewis acid and an inert solvent whereby oxygen is replaced by two fluorine atoms to obtain the corresponding gem-difluoro steroid, the improvement which comprises carrying out the reaction with said Lewis acid present in the proportion of at least 3 moles per mole of ketosteroid for each keto group in the latter to be fluorinated.

11. The process which comprises fluorinating cholestane-3-one with sulfur tetraflouride in the presence of hydrogen fluoride at a temperature within the range of about 0° C. to about 30° C., said sulfur tetrafluoride being present within the range of 13 moles to 100 moles per mole of starting steroid and said hydrogen fluoride being present within the range of 3 moles to 30 moles per mole of starting steroid, to obtain 3,3-difluorocholestane.

3,297,729
PREPARATION OF 17α-ESTERS OF 17α-HYDROXY-3-KETO-Δ⁴-PREGNENES

Franco Mancini and Roberto Sciaky, Milan, Italy, assignors to Societa Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed Mar. 30, 1965, Ser. No. 444,072
Claims priority, application Italy, Apr. 3, 1964, 7,173/64
5 Claims. (Cl. 260—397.4)

1. A process for the preparation of 17α-esters of 17α-hydroxy-3-keto-Δ⁴-pregnenes with an aliphatic organic acid having from 2 to 8 carbon atoms, which comprises reacting a 17α-hydroxy-3-keto-Δ-pregnene with an acylating complex consisting of a compound selected from the group consisting of phosphorus pentachloride and antimony pentachloride and of an acyl chloride derived from above-mentioned organic acids, dissolved in a solvent of the group of lower nitroparaffins, at a temperature between —30° C. and room temperature for a period between 30 minutes and some hours, isolating and purifying 17α-acyloxy-3-keto-Δ⁴-pregnene so obtained.

3,297,730
POLYAMIDES OF POLYMERIC FAT ACIDS

Eugene M. Fischer, St. Paul, and Frances M. Linn, Minneapolis, Minn, assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Original application Mar. 1, 1962, Ser. No. 176,800, now Patent No. 3,256,304, dated June 14, 1966. Divided and this application Nov. 17, 1965, Ser. No. 508,365
8 Claims. (Cl. 260—404.5)

1. A polyamide resin product of a clay polymerized and hydrogenated monocarboxylic aliphatic acid having a hydrocarbon chain of 8 to 24 carbon atoms and having a photometric color not less than 90% and a polyamine having the formula $H_2NR(NHR)_xNH_2$ where R is selected from the group consisting of aliphatic and aromatic hydrocarbon radicals and x is an integer from 0 to 6.

3,297,731
METHOD OF PELLETIZING AND EXTRACTING OILS FROM OLEAGINOUS COMMINUTED MATTER

Douglas Hale, Creve Coeur, George T. Lanz, Kirkwood, and Henry T. James, Warson Woods, Mo., assignors to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri

Filed May 6, 1963, Ser. No. 278,314
1 Claim. (Cl. 260—412.8)

The method of extracting the fat content from comminuted fish particles comprising moistening the comminuted particles with steam until the moisture content thereof is approximately 14%, pelletizing the moistened particles to form pellets, heating the pellets and then cooling and drying them to a moisture content of about 9–11%, spraying hexane at a temperature of about 130 F.

on the pellets, separating the hexane and the pellets, and heating the pellets so separated to a temperature of approximately 180° F.

3,297,732

PROCESS FOR PREPARING ORGANOTIN HALIDES

Clarence K. Banks, Westfield, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 25, 1963, Ser. No. 297,684
24 Claims. (Cl. 260—429.7)

1. The process for preparing a compound R_eSnX_f which comprises reacting in the presence of a cross-alkylation catalyst R_aSnX_b with R_cSnX_c wherein *a*, *b*, *c*, *d*, and *f* are integers; the sum of *a* and *b*, *c* and *d*, and *e* and *f* is each equal to 4: *c* is equal to at least to *a* plus 2; *a* is an integer from 0 to 2; *e* is an integer from 1 to 3; X is halogen; and R is hydrocarbon selected from the group consisting of alkyl, aralkyl, cycloalkyl, aryl, and alkaryl; and withdrawing as product from the reaction mixture the compound R_eSnX_f.

21. The process which comprises reacting in the presence of a cross-alkylation catalyst one mole of SnX_4 with three moles of R_4Sn to produce a reaction mixture containing R_3SnX wherein R is hydrocarbon selected from the group consisting of alkyl, aralkyl, cycloalkyl, aryl, and alkaryl, and X is halide; separating said reaction mixture from said catalyst; causticizing said reaction mixture thereby forming $R_3SnOSnR_3$, and recovering said $R_3SnOSnR_3$ from said reaction mixture.

3,297,733

AMINE DITHIOCARBAMATE TRANSITION METAL COMPOUNDS AND PROCESS OF PREPARATION

Walter A. Kornicker, Zurich, Switzerland, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 5, 1962, Ser. No. 164,599
Claims priority, application Switzerland, Jan. 11, 1961, 317/61
8 Claims. (Cl. 260—429)

8. A dithiocarbamate of the formula

$$(RR'NCS)_a(RR'N)_bMCl_e$$
$$\parallel$$
$$S$$

wherein R and R′ are alkyl radicals having not more than 8 carbon atoms, M is selected from the class consisting of titanium, vanadium and oxides thereof, *a* is an integer from 1 to *v*, and *b* and *e* are integers from 0 to *v*–1, provided *a*+*b*+*e* equals the effective valence *v* of M, and further provided that when M is the metal per se *b* is an integer from 1 to *v*–1.

3,297,734

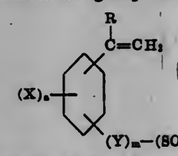
PURIFICATION OF SULFONATED MONOMERS

Ardy Armen, Williamsburg, and John H. Hennes, Newport News, Va., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 4, 1963, Ser. No. 321,293
18 Claims. (Cl. 260—429.9)

1. The method for purifying a polymerizable ethylenically unsaturated sulfonated monomer of the structural formula selected from the group consisting of

(I)



wherein R is selected from the group consisting of hydrogen, and methyl; X is individually selected from the group consisting of hydrogen, chlorine, bromine, and alkyl radicals containing from 1 to 8 carbon atoms; Y is selected from the group consisting of bivalent and trivalent hydrocarbon radicals containing 1 to 4 carbon atoms; A is selected from the group consisting of hydrogen, alkali metals, alkaline earths (Ca, Ba, Sr) or the transition metals (Zn, Cu, Ni, Co, Fe, Mn, Cr, V, Ti), and alkyl radicals containing 1 to 5 carbon atoms; *a* is an integer from 1 to 4; *m* has a numerical value in whole units of 0 to 1; *n* is an integer from 1 to 2;

(II) $CH_2=CZ—(Y)_m—(SO_3A)_n$

wherein Z is selected from the group consisting of hydrogen, chlorine, bromine, carboxyl radicals, aryl radicals containing from 6 to about 12 carbon atoms, and alkyl radicals containing from 1 to 8 carbon atoms, and Y, A, *m* and *n* are as defined above for monomer (I);

(III) $CH_2=CR—CO—Q—Y—(SO_3A)_n$

wherein Q is selected from the group consisting of divalent sulfur (—S—), oxygen (—O—) and amide nitrogen (—NR—); and R, Y, A, and *n* are as defined above for monomer (I) comprising

(a) mixing with an aqueous solution of said monomer a zirconium compound capable of forming in said solution the $ZrOOH^+$ ion, said solution after mixing with said zirconium compound having a pH less than about 3.0; then,

(b) mixing with said solution a base dispersible in said solution and inert to said monomer to raise the pH of said solution to at least about 3.5; and,

(c) subsequently separating the insoluble phase from said solution and recovering said solution containing said sulfonated monomer.

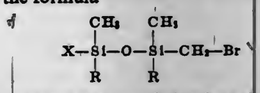
3,297,735

PROCESS FOR THE PRODUCTION OF ETHERS OF HYDROXYMETHYL POLYMETHYL SILOXANES

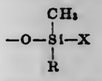
Walter Simmler, Cologne-Mulheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 12, 1964, Ser. No. 351,559
Claims priority, application Germany, May 24, 1960, F 31,298
7 Claims. (Cl. 260—448.2)

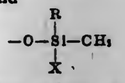
1. A process for preparing an ether of a hydroxymethyl polymethyl siloxane which comprises reacting together an aliphatic compound selected from the group consisting of monohydric alcohols, polyhydric alcohols, ether alcohols, ester alcohols and esters of aliphatic hydroxycarboxylic acids with a bromine-substituted methyl polysiloxane of the formula



wherein X represents a member selected from the group consisting of methyl, Br—CH_2— and



and R represents a member selected from the group consisting of methyl and



wherein X and R are defined as hereinabove and a tertiary nitrogen base selected from the group consisting of triethylamine, benzyl dimethylamine, hexamethylenetetramine, and pyridine, at a temperature above 50° C. using for each gram atom of bromine at least one gram equivalent of said hydroxyl compound and at least one gram equivalent of said tertiary nitrogen base.

3,297,736

PRODUCTION OF TRIMETHYL ADIPIC DINITRILE

Karl Schmitt, Herne, Josef Disteldorf, Wanne-Eickel, and Johannes Reiffer, Essen-Heisingen, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany

No Drawing. Filed Feb. 10, 1964, Ser. No. 343,458
Claims priority, application Germany, Feb. 11, 1963, Sch 32,753
6 Claims. (Cl. 260—465.2)

1. Process for production of α,α,γ- and α,γ,γ-trimethyl adipic acid dinitrile which comprises:

(a) treating a cyclohexane derivative selected from the group consisting of trimethyl cyclohexanol, trimethyl cyclohexanone and mixtures thereof with nitric acid to oxidize the cyclohexane derivative and form α,α,γ- and α,γ,γ-trimethyl adipic acid as an oil, said oil containing nitrous gases formed during the nitric acid oxidation, and as by-products of the oxidation, short chain dicarboxylic acids,

(b) freeing said oil of nitrous gases formed during the nitric acid oxidation,

(c) contacting said oil while still containing by-product short chain dicarboxylic acids with ammonia at a temperature and for a time sufficient to form the trimethyl adipic dinitrile from the trimethyl adipic acid present in the oil.

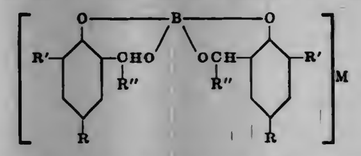
3,297,737

DISUBSTITUTED ORTHOPHENYL BORATES

Friedrich J. Weck, Trona, Calif., assignor to American Potash & Chemical Corporation, a corporation of Delaware

No Drawing. Original application June 21, 1961, Ser. No. 118,526. Divided and this application Nov. 5, 1965, Ser. No. 529,164
3 Claims. (Cl. 260—462)

1. Complex borate compounds having the formula



wherein R and R′ are selected from the group consisting of alkyl having from 2 to 22 carbon atoms and aryl having from 6 to 22 carbon atoms, the sum of the carbon atoms of R and R′ being from 8 to 24, and R″ is selected from the group consisting of hydrogen, alkyl having from 1 to 7 carbon atoms and aryl having from 6 to 10 carbon atoms, and wherein M is selected from the group consisting of alkali metal and ammonium ions.

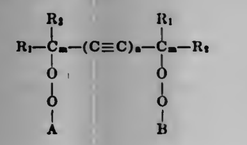
3,297,738

CARBONATO DERIVATIVES OF ACETYLENIC HYDROPEROXIDES

Orville L. Magell, Kenmore, N.Y., and James B. Harrison, Elyria, Ohio, assignors to Wallace & Tiernan, Inc., Buffalo, N.Y., a corporation of Delaware

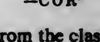
No Drawing. Filed Apr. 29, 1965, Ser. No. 452,006
The portion of the term of the patent subsequent to Oct. 26, 1982, has been disclaimed
14 Claims. (Cl. 260—463)

1. Compounds of the class:



where *n* is an integer having the value 1 to 2; the straight chain hydrocarbon backbone is selected from the class consisting of $—(C\equiv C)_n—$, and

R_1 and R_2 are selected from the class consisting of aliphatic, cyclohexyl, aromatic, and R_1 and R_2 joined together to form, with C_m, an alicyclic ring; A is an alkoxycarbonyl group,



where R″ is selected from the class consisting of aliphatic, cyclohexyl, and aromatic; and B is selected from the class consisting of A and R′, where R′ is selected from the class consisting of hydrogen, aliphatic, cyclohexyl, and aralkyl and *m* is an identifying symbol.

3,297,739

HEXACYANOBENZENE

Kurt Wallenfels and Klaus Friedrich, Freiburg im Breisgau, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,114
Claims priority, application Germany, June 21, 1963, F 40,030
1 Claim. (Cl. 260—465)

Hexacyanobenzene.

3,297,740

PROCESS FOR THE PRODUCTION OF TRIMETHYL ADIPIC ACID DINITRILE

Karl Schmitt, Herne, Josef Disteldorf, Wanne-Eickel, and Johannes Reiffer, Essen-Heisingen, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany

Filed Feb. 10, 1964, Ser. No. 343,807
Claims priority, application Germany, Feb. 11, 1963, Sch 32,752
9 Claims. (Cl. 260—465.2)

1. Process for production of 2,2,4- or 2,4,4-trimethyl adipic dinitrile or a mixture thereof by reaction of corresponding trimethyl adipic acid and ammonia which comprises effecting the reaction in distillation apparatus including a fractionating section and a reboiler for supplying vapor to the fractionating section by contacting trimethyl adipic acid with ammonia in a lower portion of the apparatus at a temperature and for a time sufficient to form said dinitrile from the adipic acid, low boiling organic by-products, and a high boiling reaction residue, collecting portions of the said materials in the reboiler in liquid phase, heating material in the reboiler to provide vapor for fractionation, fractionating said vapor in the fractionating section to form a fraction rich in the dinitrile at an intermediate point in the column, withdrawing dinitrile from the column at said intermediate point, and condensing low boiling organic by-products and utilizing resulting condensate as reflux for the column.

3,297,741

PROCESS FOR THE PURIFICATION OF TRIMETHYL ADIPIC DINITRILE

Karl Schmitt, Herne, Josef Disteldorf, Wanne-Eickel, and Johannes Reiffer, Essen-Heisingen, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany

Filed Feb. 10, 1964, Ser. No. 343,808
Claims priority, application Germany, Feb. 11, 1963, Sch 32,750, Sch 32,751
13 Claims. (Cl. 260—465.2)

1. Process for the purification of crude 2,2,4- and 2,4,4-trimethyl adipic dinitrile containing as impurity

α,α,γ- and α,γ,γ,-trimethyl adipic acid imide which comprises contacting the crude dinitrile with aqueous ammonia in a proportion to provide an organic phase and an aqueous phase at low temperature, said contacting being at a contacting temperature and for a time sufficient for reaction of the imide with the aqueous ammonia to form a reaction product which is present in the aqueous phase upon providing the crude dinitrile and aqueous ammonia at said low temperature.

3,297,742

METHOD FOR REACTING HYDROGEN CYANIDE WITH OLEFINS

George Clarke Monroe, Jr., Orange, and George Nelson Hammer, Beaumont, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,177
8 Claims. (Cl. 260—465.3)

1. A process for the manufacture of aliphatic nitriles which comprises passing a mixture of hydrogen cyanide and a lower aliphatic olefin over a catalyst consisting essentially of nickel cyanide at a temperature in the range between about 250° C. and 400° C. and thereafter recovering an aliphatic nitrile formed by the addition of hydrogen cyanide to the double bond of the said olefin from the reaction product.

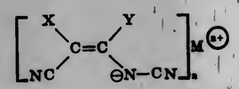
3,297,743

POLYCYANOVINYLCYANAMIDES AND THEIR PREPARATION

Elwood P. Blanchard, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 2, 1964, Ser. No. 415,466
26 Claims. (Cl. 260—465.5)

1. Compounds of the formula



wherein:

X is selected from the group consisting of hydrogen, cyano, halogen, alkoxy of up to 18 carbons and monohydroxyalkoxy of up to 18 carbons;

Y is selected from the group consisting of hydrogen, cyano, halogen, alkoxy of up to 18 carbons, monohydroxyalkoxy of up to 18 carbons and alkylthio of 2–18 carbons;

M is selected from the group consisting of hydrogen, a metal, ammonium and substituted ammonium in which any substituent is selected from the group consisting of alkyl of up to 18 carbons and phenyl, and sulfonium, phosphonium, arsonium, stibonium and substituted sulfonium, phosphonium, arsonium and stibonium in which any substituent is selected from the group consisting of lower alkyl and phenyl; and

⊕ is the valence of the cation while *n* is the number of anions present in the molecule.

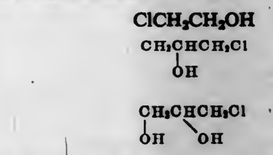
3,297,744

PROCESS FOR THE MANUFACTURE OF β-CYANOETHYL-CHLOROALKYL ETHERS

Klaus Artz, Muttenz, and Paul Rhyner, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Apr. 30, 1964, Ser. No. 364,026
Claims priority, application Switzerland, May 21, 1963, 6,376/63
6 Claims. (Cl. 260—465.6)

1. A process for the manufacture of β-cyanoethyl chloroalkyl ethers, which comprises reacting a chloroalcohol of the formulae



with acrylonitrile at a temperature of at most 40° C. in the presence of a solid alkali metal hydroxide, the amount of alkali metal hydroxide used per mol of the chloroalcohol being at least 0.05 mol.

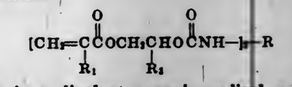
3,297,745

ETHYLENICALLY UNSATURATED DI- AND TETRA-URETHANE MONOMERS

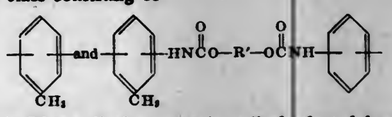
Frank Fekete, Monroeville, Patrick J. Keenan, Pittsburgh, and William J. Plant, Monroeville, Pa., assignors to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 5, 1962, Ser. No. 185,785
18 Claims. (Cl. 260—471)

1. A polymerizable divinyl diurethane monomer having the formula



wherein R is a divalent organic radical selected from the class consisting of



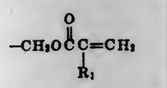
wherein R′ is a divalent organic radical selected from the class consisting of alkylene radicals, arylene radicals, polyalkylene ether radicals and alkarylene radicals;

R_1 is selected from the class consisting of —H and —CH_3;

R_3 is selected from the class consisting of

—H; —CH_2Cl; —$(CH_2)_nCH_3$; —$CH_2OCH_2CH_3$;

and



and *n* is an integer from zero to ten.

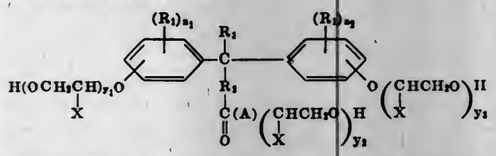
3,297,746

POLYALKOXYLATED AND POLYARYLOXYLATED DERIVATIVES OF DI(HYDROXYAROMATIC)ALKANOIC ACIDS

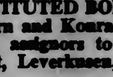
Norman A. Jacobson and Edward A. Wilder, Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,936
5 Claims. (Cl. 260—473)

1. A compound selected from the group consisting of those having the formula:



wherein: R_1 is selected from the group consisting of a hydrogen atom and a lower alkyl radical containing up to five carbon atoms, n_1 and n_2 are each whole numbers from 1 to 2, X is selected from the class consisting of a hydrogen atom, lower alkyl radicals containing up to three carbon atoms, aryl radicals, and alkaryl radicals containing up to nine carbon atoms, y_1, y_2, and y_3 are each integers with a value of at least one, the sum of the integers being from about three to about 55, R_2 is an alkylene radical containing at least two carbon atoms and A represents a radical selected from the group consisting of —O— and



wherein R_3 is selected from the group consisting of a hydrogen atom and an alkyl radical containing up to 18 carbon atoms.

3,297,747

SALTS OF NITROFORM WITH HYDRAZINES

James R. Thornton, Tamaqua, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,662
3 Claims. (Cl. 260—501)

1. A salt of nitroform and a member of the group consisting of hydrazine, 2,4-dinitrophenylhydrazine, phenylhydrazine, p-bromophenylhydrazine, 1-methyl-1-phenylhydrazine, p-nitrophenylhydrazine, 1,1-diphenylhydrazine, 1-benzyl-1-phenylhydrazine, 1-naphthylhydrazine, methylhydrazine, ethylhydrazine, 2,5-dichlorophenylhydrazine, 2,4,6-trichlorophenylhydrazine, 1,1-dimethylhydrazine, 2,4,6-trinitrophenylhydrazine.

3,297,748

ALKYLBENZENE SULFONATE COLOR AND ODOR INHIBITION

John B. Wilkes, Albany, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed June 13, 1963, Ser. No. 287,489
2 Claims. (Cl. 260—505)

1. In a process for producing a branched-chain monoalkylbenzene sulfonate detergent at a temperature in the range from about 50 to 150° F. by sulfonating with oleum a branched-chain monoalkylbenzene hydrocarbon having from 9 to 18 carbon atoms in its alkyl chain, the improvement which comprises sulfonating said alkylbenzene in the presence of from 0.5 to 6.0 weight percent each, based upon the weight of the branched-chain alkylbenzene, of acetic acid and of a lower alkylbenzene represented by the formula:

$$C_6H_5—CR_1R_2H$$

wherein R_1 and R_2 is methyl, ethyl, or propyl and thereby producing branched-chain monoalkylbenzene sulfonates having improved color and odor characteristics.

3,297,749

PROCESS FOR THE PRODUCTION OF SUBSTITUTED BORAZOLES

Elmar-Manfred Horn and Konrad Lang, both of Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 24, 1962, Ser. No. 189,705
Claims priority, application Germany, Apr. 29, 1961, F 33,818
5 Claims. (Cl. 260—551)

1. A process of preparing N,N′,N″-tricyclohexyl-B,B′,B″-trihydrogen borazole which comprises heating a mixture of triethylamine borane and cyclohexylamine under anhydrous conditions, a molar ratio of 1:1, to a temperature of about 120° C. at which 2 mols of hydrogen are split off per mol of amine and recovering the N,N′,N″ - tricyclohexyl - B,B′,B″ - trihydrogenborazole thereby obtained from the reaction mixture.

3,297,750

PROCESS FOR THE PRODUCTION OF N,N′,N″-TRIORGANO-SUBSTITUTED BORAZOLES

Elmar-Manfred Horn, Aachen, and Konrad Lang, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 12, 1963, Ser. No. 308,331
Claims priority, application Germany, Aug. 24, 1961, F 34,767; Sept. 15, 1962, F 37,815
3 Claims. (Cl. 260—551)

1. N,N′,N″-tri-(o-chloro-benzyl) - B,B′,B″-trihydridoborazole.

3,297,751

PROCESS FOR THE PRODUCTION OF CYCLIC PHOSPHONITRILES

Kazimiera J. L. Paciorek and Reinhold H. Kratzer, Costa Mesa, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed June 4, 1965, Ser. No. 461, 516
7 Claims. (Cl. 260—551)

1. The process for preparing cyclic polymeric phosphonitriles which comprises: admixing and reacting in a solvent at a temperature of from about —15° C. to 150° C., a halophosphine having the formula R_2PX, and a silyl azide having the formula R_3SiN_3, for a period of time sufficient to produce a cyclic phosphonitrile polymer having the formula:

$$[R_2P{=}N]_n$$

wherein each R is a hydrocarbon group selected from the class consisting of lower alkyl groups containing from 1 to 5 carbon atoms, phenyl, and lower alkyl substituted phenyl groups containing from 7 to 10 carbon atoms, and X is a halogen selected from the group consisting of chlorine and bromine *n* is an integer selected from the group consisting of 3 and 4, and recovering said phosphonitrile polymer.

3,297,752

ALKYLATION OF UREA

Thomas F. Rutledge, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 30, 1965, Ser. No. 468,556
14 Claims. (Cl. 260—553)

1. The process of preparing N-t-alkyl urea which comprises reacting a mono-olefin, containing a tertiary olefinic carbon atom with urea contained in a mixture of urea, sulfuric acid, and an inert diluent selected from the group consisting of cyclohexane, dichloromethane, and mixtures thereof, said mixture containing between about 1.5 to about 2.5 mols of sulfuric acid per mol of urea and said sulfuric acid having a concentration of from about 90 to about 96 weight percent.

3,297,753

SEPARATION OF ALKYL UREAS

Thomas F. Rutledge, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 30, 1965, Ser. No. 468,624
10 Claims. (Cl. 260—553)

10. A process for separating and recovering N-t-butyl urea and N,N′-di-t-butyl urea from the reaction mixture resulting from the alkylation reaction between a stoichiometric excess of isobutylene and urea in the presence of sulfuric acid and an organic diluent which comprises:

(1) diluting the reaction mixture with water in an amount not more than about 100 ml. of water per mol of sulfuric acid charged;

(2) decanting from the diluted mixture the water-insoluble liquid layer containing unreacted tertiary olefin and oligomers thereof;

(3) adding to the aqueous layer an inorganic base selected from the group consisting of ammonia, sodium hydroxide, and sodium carbonate until the pH is at least 9 while stirring vigorously and maintaining the temperature between about 20° C. and about 35° C.;

(4) cooling the neutralized aqueous layer to about 20° C.; filtering, and washing the solid filter cake comprising N-t-butyl urea and N,N'-di-t-butyl urea with cold water;

(5) adding ethyl alcohol to the solid filter cake and heating the resulting mixture to about 70° C. under reflux;

(6) adding water while maintaining the temperature at about 70° C. and the pH of at least 9;

(7) heating to about 77° C. for about 15 minutes and filtering while hot;

(8) washing the filter cake of N,N'-di-t-butyl urea with a hot mixture of alcohol and water; and

(9) separating the N-t-butyl urea from the filtrate by repeated concentrating, cooling and filtering.

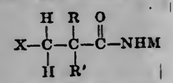
3,297,754

N-METAL SALTS OF α,α-DISUBSTITUTED β-HALO PROPIONIC ACID AMIDE AND PREPARATION THEREOF

Adriaan Bantjes, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 9, 1963, Ser. No. 271,598
5 Claims. (Cl. 260—561)

3. Compounds of the formula



wherein X is selected from the class consisting of Cl and Br; M is selected from the group of alkali and alkaline earth metals and R and R' which can be the same are selected from the group consisting of chloromethyl, phenyl, alkyl and cycloalkyl of up to six carbon atoms and together with —C— to which they are attached may form an alicyclic ring of up to six carbon atoms.

3,297,755

2-CHLORO-5-TRIFLUOROMETHYLBENZOPHENONE COMPOUNDS

Leo Henryk Sternbach, Upper Montclair, N.J., and Gabriel Saucy, Riehen, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 18, 1961, Ser. No. 103,727
Claims priority, application Switzerland, Dec. 2, 1960, 13,490/60, 13,492/60, 13,493/60, 13,494/60, 13,495/60
2 Claims. (Cl. 260—566)

1. 2-chloro - 5 - trifluoromethylbenzophenone imine hydrohalide.

2. 2-chloro-5-trifluoromethylbenzophenone.

3,297,756

CYCLONONATETRAENIDE SALTS AND PROCESS OF PREPARING

Richard E. Benson, Wilmington, and Eugene A. La Lancette, Hockessin, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 19, 1963, Ser. No. 296,386
7 Claims. (Cl. 260—567.6)

1. A salt of the formula

$$M^{\oplus}C_9H_9^{\ominus}$$

in which $C_9H_9^{\ominus}$ is the cyclononatetraenide ion and M is one equivalent of a cation selected from the class consisting of a metal, ammonium, sulfonium, arsonium, phosphonium, stibonium, bismuthonium, selenonium, and telluronium, any substituents, other than hydrogen, on the onium cations being members of the class consisting of alkyl of up to 20 carbon atoms and phenyl.

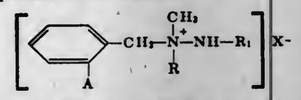
3,297,757

ALKYL ARALKYL HYDRAZONIUM SALTS

James M. Sprague, Gwynedd Valley, and Edward J. Cragoe, Jr., Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 3, 1961, Ser. No. 79,952
17 Claims. (Cl. 260—569)

1. Compounds of the formula



in which A is selected from the group consisting of halogen, lower alkyl, nitro and trifluoromethyl, R is selected from the group consisting of lower alkyl, R_1 is selected from the group consisting of hydrogen and lower alkyl and X^- is an anion selected from the group consisting of sulfates, nitrates, alkanoates, alkylsulfonates, benzylsulfonates and toluenesulfonates.

3,297,758

2,2',5-TRICHLORO-4,4'-METHYLENEDIANILINE

Guenther Kurt Hoeschele, Foulk Woods, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,256
1 Claim. (Cl. 260—570)

2,2',5-trichloro-4,4'-methylenedianiline.

3,297,759

CONTINUOUS PROCESS FOR PRODUCING MIXTURES OF METHYLENE-BRIDGED POLYPHENYL POLYAMINES

John N. Curtiss, Baytown, and Clarence N. Forsvall, Jr., Pasadena, Tex., and Karl W. Rausch, Jr., Hamden, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Jan. 13, 1964, Ser. No. 337,475
9 Claims. (Cl. 260—570)

1. A continuous process for producing a mixture of methylene-bridged polyphenyl polyamines which comprises the steps, (1) continuously passing aniline and aqueous formaldehyde solution in an aniline-formaldehyde molecular ratio about 4:1 to about 4:2.5 into a first mixing zone maintained in the range 40° to 100° C. (2) continuously passing the stream emerging from said first mixing zone into a second mixing zone maintained in the range about 70° to about 100° C., and there continuously mixing said stream with at least enough hydrochloric acid to provide an HCl-aniline molecular ratio about 1:4 based on the amount of aniline initially present in the stream, (3) maintaining the stream emerging from said second mixing zone in the range 50° to 100° C. until a substantial amount of a mixture of methylene-bridged polyphenyl polyamines has formed, and (4) recovering said mixture of methylene-bridged polyphenyl polyamines.

3,297,760

PARA AMINO-N-ETHYL-N-BETA-HYDROXYETHYL-META TOLUIDINE MONO-NITRATE AND DI-NITRATE AND METHODS OF PRODUCING SAME

Frederick Von Hessert, West Orange, N.J., and Ignaz Binzer, New York, N.Y., assignors to Fairmount Chemical Co., Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed May 14, 1962, Ser. No. 194,654
7 Claims. (Cl. 260—573)

1. As a compound, para amino-N-ethyl-N-beta-hydroxy-ethyl-meta toluidine nitrate.

3,297,761

SALTS OF NUCLEAR CYCLOALKYL AROMATIC AMINES

Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,107
5 Claims. (Cl. 260—579)

1. A mineral acid salt of a cyclooctyl aromatic amine selected from the group consisting of cyclooctylphenyl amine and cyclooctylnaphthyl amine.

3,297,762

SEPARATING AMMONIA FROM TRIMETHYLAMINE

Erich Haarer and Reinhold Plass, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,316
Claims priority, application Germany, Sept. 12, 1962, B 68,811
7 Claims. (Cl. 260—583)

1. A process for separating the individual components from a mixture consisting essentially of 15 to 85% by weight of ammonia and of 80 to 12% by weight of trimethylamine which comprises (a) cooling the mixture to −55° to −85° C. and (b) adding 0.5 to 6% by weight of water to the mixture and separating at said temperature the resulting two layers from each other.

3,297,763

DERIVATIVES OF DIBENZOCYCLOHEPTENONES AND PROCESSES THEREFOR

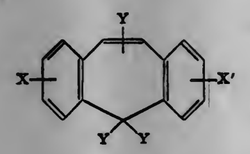
Harry L. Slates, Florham Park, and Norman L. Wendler, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,831
13 Claims. (Cl. 260—590)

1. A process for preparing 10-halo substituted and 11-halo substituted 5H-dibenzo[a,d]cyclohepten-5-ones from a phosphorus pentahalide addition complex of a 5H-dibenzo[a,d]cycloheptene-5-one which is unsubstituted at the 10 and 11-positions thereof, and wherein the halogen of the phosphorus pentahalide has an atomic weight of at least 35 and no greater than 80 which comprises subjecting the latter to a pressure no greater than about 300 mm., and thereafter hydrolyzing the resulting product.

7. A process for preparing 5,5,10-trihalo and 5,5,11-trihalo substituted 5H-dibenzo[a,d]cycloheptenes from a phosphorus pentahalide addition complex of a 5H-dibenzo [a,d]cyclohepten-5-one which is unsubstituted at the 10 and 11-positions thereof, and wherein the halogen of the phosphorus pentahalide has an atomic weight of at least 35 and no greater than 80 which comprises subjecting the latter to a temperature of from about room temperature to about 160° C. and a pressure of from about 0.01 mm. to about 300 mm.

10. A compound of the formula



wherein X and X' are selected from the group consisting of lower alkyl, lower alkoxy, lower alkenyl, halogen, haloloweralkoxy, cyano, loweralkoxycarbonyl, loweralkylmercapto, loweralkylsulfonyl, haloloweralkylsulfonyl, diloweralkoxysulfamoyl and phenyl; and Y is a halogen having an atomic weight of at least 35 and no greater than 80.

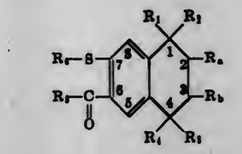
3,297,764

ALKYLMERCAPTO SUBSTITUTED ACYLATED POLYALKYLTETRAHYDRONAPHTHALENES AND PROCESS FOR PREPARING SAME

Robert Luskin, Haworth, and Joseph Levy, Paramus, N.J., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

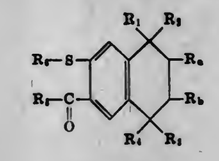
No Drawing. Filed June 22, 1964, Ser. No. 377,051
12 Claims. (Cl. 260—592)

1. A compound having the following structural formula:

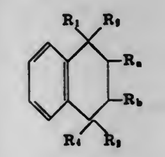


in which R_1, R_2, R_3, R_4, R_5 and R_6 are alkyl radicals selected from the group consisting of methyl and ethyl; and R_a and R_b are selected from the group consisting of hydrogen, methyl and ethyl.

7. Process for the preparation of a compound having the following structural formula:



in which R_1, R_2, R_3, R_4, R_5 and R_6 are alkyl radicals selected from the group consisting of methyl and ethyl; and R_a and R_b are selected from the group consisting of hydrogen, methyl and ethyl; which comprises: (A) reacting a dialkyldisulfide selected from the group consisting of dimethyldisulfide and diethyldisulfide in the presence of a Friedel-Crafts catalyst with a polyalkyltetrahydronaphthalene having the following structural formula:



in which R_1, R_2, R_3 and R_4 are alkyl radicals selected from the group consisting of methyl and ethyl; and R_a and R_b are selected from the group consisting of hydrogen, methyl and ethyl; (B) reacting the alkylmercapto substituted polyalkyltetrahydronaphthalene thus obtained with an acyl halide selected from the group consisting of acetyl halide and propionyl halide in the presence of a Friedel-Crafts catalyst; and (C) recovering the desired compound.

3,297,765

CYCLOBUTANEDITHIONES

Robert D. Lipscomb, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 7, 1963, Ser. No. 314,508
5 Claims. (Cl. 260—607)

1. A cyclobutane bearing two exocyclic sulfur atoms doubly bonded to nuclear carbons in the 1,3 positions of the cyclobutane ring.

3,297,766

SEMI-CONTINUOUS PROCESS FOR PREPARING 4,4'-SULFONYLDIPHENOL

Kenneth B. Bradley, Midland, Mich., and Lennis E. Record, Bridgeville, Pa., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 28, 1964, Ser. No. 371,078
2 Claims. (Cl. 260—607)

1. In a process wherein 4,4'-sulfonyldiphenol is prepared by reacting by contacting sulfuric acid with phenol at about 180 to about 188° C., the improvement of: cooling the reaction mixture to from about 55 to about 75° C.; separating the thus formed crystalline 4,4'-sulfonyldiphenol from the reaction mixture; returning the liquor resulting from the separation to the reaction zone; adding to said liquor additional quantities of sulfuric acid and phenol equivalent to the product removed; and repeating the process.

3,297,767

UNSATURATED ETHER

Theodor Leidig and Götz Wustmann, Holzminden, Germany, assignors to Haarmann & Reimer G.m.b.H., Holzminden, Germany, a corporation of Germany

No Drawing. Filed June 11, 1963, Ser. No. 286,953
Claims priority, application Germany, June 12, 1962, H 46,047
1 Claim. (Cl. 260—614)

Compound of the formula:

$$CH_3—(CH_2)_5—CH=CH—CH_2—O—CH_2—CH=CH—(CH_2)_5—CH_3$$

3,297,768

SEPARATION OF MIXTURES WHICH CONTAIN A NON-VOLATILE COMPLEX CATALYST

Hubert Kindler, Ludwigshafen (Rhine), and Hans Georg Trieschmann, Hambach, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,918
Claims priority, application Germany, Feb. 18, 1959, B 52,153
3 Claims. (Cl. 260—632)

1. In a process for the production of alcohols wherein an olefin and carbon monoxide are passed into a reaction mixture containing water and containing a non-volatile complex catalyst formed by mixing an iron carbonyl, water, and an amine, in which process undesirable by-products are continuously formed, the improvement which comprises: stopping the flow of olefin into the reaction mixture as soon as the level of said undesirable by-products reaches a point between about 3 and 15% by weight, conducting a stream of carbon monoxide through said reaction mixture at a temperature of between 70° and 130° C. and at a pressure between atmospheric pressure and 40 atmospheres, whereby said complex catalyst is decomposed into iron carbonyl and an amine and whereby said iron carbonyl is carried out of said reaction mixture along with said carbon monoxide gas; and condensing iron carbonyl from the effluent gas.

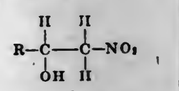
3,297,769

PREPARATION OF 1-NITROPARAFFINS FROM 1-NITROOLEFINS BY CATALYTIC HYDROGENATION

Conrad Michalski, Media, and Giovanni A. Bonetti, Wynnewood, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,868
9 Claims. (Cl. 260—644)

1. A method for preparing a 1-nitroparaffin which comprises catalytically hydrogenating a charge stock selected from the group consisting of a 1-nitroolefin and a mixture of a 1-nitroolefin with a nitroalcohol, said nitroolefin having the formula $R—CH=CH—NO_2$ and said nitroalcohol having the formula



wherein R is an alkyl radical containing from 1 to 24 carbon atoms in the presence of a palladium on charcoal hydrogenation catalyst and a solvent selected from the group consisting of dioxane, tetrahydrofuran and ethyl acetate, said hydrogenation being carried out in the temperature in the range of from 20° C. to 80° C. under a pressure in the range of from about 25 p.s.i.g. to 80 p.s.i.g. of hydrogen and thereafter separating and recovering the 1-nitroparaffin.

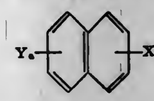
3,297,770

PRODUCTION OF HALOGENONAPHTHALENES

William Cummings, Marford, Wales, assignor to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Aug. 29, 1963, Ser. No. 305,517
Claims priority, application Great Britain, Sept. 7, 1962, 34,286/62
5 Claims. (Cl. 260—650)

1. A process for preparing a compound of the formula,



wherein a is an integer from 0 to 3, n is an integer from 1 to 3, X is halogen, and Y is selected from the group consisting of halogen, nitro, lower alkyl and lower alkoxy, which comprises contacting, at a temperature of from about 30° C. to about 150° C., a naphthalene sulfonyl halide of the formula,



with a sulfuryl halide of the formula

$$SO_2Z_2$$

wherein *a*, *n*, X and Y have the same meaning as above, and wherein Z represents the same halogen as X, in the presence of a material selected from the group consisting of peroxides and hydroperoxides, the amount of sulfuryl halide employed per mol of naphthalene sulfonyl halide being up to 0.3 mol per sulfonyl halide group.

3,297,771

TRICHLOROMETHYLATION OF CHLORO-SUBSTITUTED BENZENES

John R. Leebrick, Roselle Park, and Hugh E. Ramsden, Scotch Plains, N.J., assignors, by mesne assignments, to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 13, 1959, Ser. No. 786,458
7 Claims. (Cl. 260—651)

1. A process which comprises reacting carbon tetrachloride with a member selected from the class consisting of 1,2,4-, 1,3,5-, 1,2,3,4-, and 1,2,3,5-chloro substituted benzenes in the presence of a catalyst selected from the class consisting of aluminum chloride and aluminum bromide to produce a product wherein a nuclear hydrogen atom of the substituted benzene reactant is replaced by a trichloromethyl radical.

3,297,772

ALKYLATION PROCESS

Byron W. Turnquest, Chicago, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,155
4 Claims. (Cl. 260—658)

1. An alkylation process which comprises reacting a mixture consisting essentially of an alkyl monohalide of at least 2 carbon atoms and an alkylatable mono-olefin hydrocarbon of 2 to 12 carbon atoms at a temperature ranging from about −30 to 50° C. in the presence of a catalytic amount of tri(lower alkyl) aluminum.

3,297,773

MANUFACTURE OF AROMATIC HYDROCARBONS

Lubertus Bakker, University Heights, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed June 29, 1964, Ser. No. 378,976
12 Claims. (Cl. 260—673.5)

1. The salt of a metal selected from the group consisting of platinum, palladium and iridium and silicotungstic acid, said acid having the formula $SiO_2 \cdot xWO_3 \cdot yH_2O$, wherein x is an integer of from 1 to 24 and y is an integer of from 2 to 30, and wherein the molar ratio of said metal to WO_3 is from 1:1 to 10:1.

9. A process for preparing aromatic hydrocarbons comprising contacting a hydrocarbon feed containing hydrogen and an appreciable amount of paraffinic hydrocarbons having from six to twelve carbon atoms with at least one catalyst defined in claim 1 at a temperature of from about 750 to 1200° F. and at a pressure of from about 50 to 500 p.s.i.g.

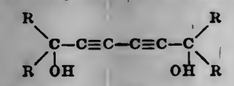
3,297,774

PREPARATION OF DIACETYLENE FROM DIACETYLENIC GLYCOL

Robert J. Tedeschi, Whitehouse Station, and Arthur E. Brown, Summit, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 30, 1964, Ser. No. 364,021
4 Claims. (Cl. 260—678)

1. A method of preparing diacetylene which comprises treating a compound of the formula



wherein each R is a lower alkyl radical, with a catalyst selected from the group consisting of sodium hydroxide and potassium hydroxide, in an aromatic hydrocarbon which is liquid at 0° C. and has a boiling point above 100° C.

3,297,775

PRODUCTION OF ISOPRENE

Louis J. Croce, East Brunswick, Laimonis Bajars, Princeton, and Maigonis Gabliks, Highland Park, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed Sept. 18, 1962, Ser. No. 224,543
11 Claims. (Cl. 260—680)

1. A process for the preparation of isoprene which comprises contacting at a temperature of between about 500° C. and 850° C. a mixture consisting essentially of 2-methylpentene-1 and chlorine atoms in the gaseous phase with a catalyst comprising a material selected from the group consisting of chromium, manganese, iron, cobalt and nickel; compounds of chromium, manganese, iron, cobalt, and nickel; and mixtures thereof in amount to provide greater than about 150 square feet of catalyst surface per cubic foot of reaction zone containing catalyst, the partial pressure of the said 2-methylpentene-1 being not greater than one-quarter of the total pressure when the total pressure is one atmosphere or greater, and being less than one-quarter atmosphere when the total pressure is less than one atmosphere, the ratio of said chlorine atoms to said 2-methylpentene-1 being greater than 0.05 gram atom of chlorine per gram mol of 2-methylpentene-1.

3,297,776

PROCESS FOR THE REMOVAL OF ACETYLENIC HYDROCARBONS FROM HYDROCARBON MIXTURES CONTAINING DIOLEFINES

Manfred Reich, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Kreis Recklinghausen, Germany, a corporation of Germany

No Drawing. Filed Sept. 27, 1963, Ser. No. 311,971
Claims priority, application Germany, Oct. 10, 1962, C 28,141
2 Claims. (Cl. 260—681.5)

1. A mixed catalyst composition consisting essentially of copper chromite and containing from 5 to 50% by weight of metallic copper, from 1 to 50% by weight of chromium and from 0.1 to 50% by weight of a compound selected from the group consisting of oxides and hydroxides of the elements of groups I*a* and II*a* of the Periodic System of Mendeléeff.

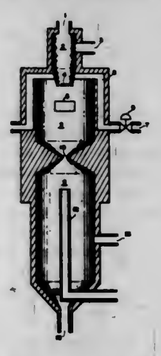
2. A process for the reduction of the acetylenic hydrocarbon content of a hydrocarbon mixture containing it and a diolefine by selective hydrogenation in the gas phase which comprises passing the hydrocarbon mixture in the form of a gas and a quantity of hydrogen which is at least molecularly equivalent to said acetylenic hydrocarbon content at a temperature within the range from 30 to 250° C. and at a pressure within the range from 0.2 to 30 atmospheres over and in contact with the catalyst composition defined in claim 1.

3,297,777

OXIDATIVE DEHYDROGENATION PROCESS

Roy L. Grantom, Alvin, Tex., and Leo J. Spillane, Chesterfield, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed Jan. 2, 1964, Ser. No. 335,080
16 Claims. (Cl. 260—683.3)



1. A process for the non-catalytic partial combustion of low-molecular weight paraffinic hydrocarbons to produce polymerizable mono-olefin hydrocarbons, the process comprising introducing a feed consisting essentially of paraffinic hydrocarbons of 3 to 5 carbon atoms per molecule concurrently with an oxygen-containing gas in a mole ratio of hydrocarbon to oxygen of 0.4:1 to 2:1 into a reaction unit comprised of two chambers connected by a constricted passageway, with the first chamber being a reaction chamber, and constructed in such manner that the length to diameter ratio of the chamber is 0.5:1 to 15:1, and the second chamber being an expansion chamber, with the

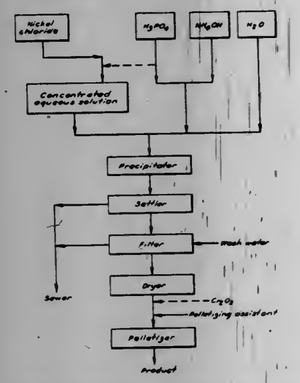
hydrocarbon feed input rate to the reaction chamber at 500 to 1000 gaseous volumes of feed per minute per volume of reaction space within the reaction chamber, the temperature within the reaction chamber being in a range of about 1000 to 1500° F., the reactor chamber pressure being in a range of about 20 to 120 p.s.i.a. and the pressure ratio between the reaction chamber and the expansion chamber being maintained within a range of approximately 1.2:1 to 10:1, and with the chamber flow velocity being at approximately 10 to 500 feet per second and the residence time of the reactants in the reaction chamber being in a range of about 0.005 to 0.5 second, thereafter passing the high temperature, high velocity gaseous products through the constricted passageway into the expansion chamber, thereby effecting rapid cooling through the adiabatic expansion of the gaseous products exiting the constricted passageway and causing deceleration of the gaseous products in order that they might be more readily collected.

3,297,778

METHOD FOR ISOMERIZING α-ALKENES TO β-ALKENES WITH NICKEL PHOSPHATE CATALYST

Charles R. Noddings, Midland, and Ronald G. Gates, Breckenridge, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,903
2 Claims. (Cl. 260—683.2)



1. The method which comprises isomerizing α-olefinic hydrocarbons having at least 4 carbon atoms to their corresponding β-isomers which comprises passing the hydrocarbon at a temperature between 100° and 300° C. in contact with a catalyst composed of a metal phosphate material consisting essentially of phosphate radicals chemically combined with nickel, which metal phosphate material is preparable by mixing a solution of soluble salt of nickel with a solution of a soluble ortho-phosphate and precipitating said metal phosphate material from the mixture at a pH of between about 6 to 9.

3,297,779

PROPYLENE DIMERIZATION USING A SILICA-ALUMINA CATALYST

Rex E. Lidov, Great Neck, N.Y., assignor to Halcon International, Inc., a corporation of Delaware

Filed Mar. 29, 1963, Ser. No. 269,055
4 Claims. (Cl. 260—683.15)

1. A process for the selective preparation of propylene dimer which comprises contacting a feed containing propylene as sole reactant in the vapor phase at a temperature in the range of approximately 550 to 1000° F., at superatmospheric pressure with a catalyst consisting essentially of silica-alumina, which catalyst was prepared by contact with aqueous sodium carbonate solution and washing until the washings were neutral, at an hourly space velocity in the range of 550 to 3300.

3,297,780

COMPOSITION HAVING HIGH TEAR RESISTANCE COMPRISING RUBBER, POLYOL AND GELATIN

Hendrik J. J. Janssen, Akron, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio

No Drawing. Filed Feb. 1, 1962, Ser. No. 170,518
4 Claims. (Cl. 260—747)

2. A rubber composition for use in the formation of vulcanized flexible, stretchable rubber sheets of high tear resistance comprising:

(A) natural crepe rubber,

(B) a polyol selected from the group consisting of ethylene glycol and glycerol uniformly dispersed in the composition as minute discrete droplets in an amount of about 15 to 30 parts per 100 parts of crepe rubber,

(C) about 1 to 10 parts of gelatin per 100 parts of rubber, and

(D) about 0.1 to 5 parts of a soap of ammonia and a fatty acid per 100 parts of crepe rubber.

3,297,781

POLYEPOXIDES HAVING AT LEAST TWO 2,3-EPOXY-2-METHYL PROPOXY GROUPS ATTACHED TO DIFFERENT CARBON ATOMS

Charles W. McGary, Jr., and Charles T. Patrick, Jr., South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 19, 1962, Ser. No. 203,458
17 Claims. (Cl. 260—830)

1. A curable composition comprising a polyepoxide having at least two 2,3-epoxy-2-methylpropoxy groups attached to different carbon atoms and a curing amount of an active organic hardener.

3,297,782

COATING COMPOSITION OF POLYOXYALKYLENE ETHER OF A 2-ALKYLIDENE DIPHENOL ESTERIFIED WITH FUMARIC OR MALEIC ACID, AND A POLYGLYCIDYL ETHER OF A DIHYDRIC PHENOL

Edward Barkis, Philadelphia, Pa., and William I. Tinz, New Castle, Del., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 3, 1964, Ser. No. 349,132
7 Claims. (Cl. 260—835)

1. A coating composition comprising a solvent solution of a mixture of (1) a major proportion of a curable polyester resin having a melting point of at least 90° C. up to about 120° C. comprising the esterification product of a polyoxyalkylene ether of a 2-alkylidene diphenol wherein the alkylene radical contains from 2 to 3 carbon atoms and the alkylidene radical has from 3 to 4 carbon atoms with an acid from the group consisting of fumaric and maleic, and (2) at least 10% based on the weight of the mixture of a curable, liquid bisphenol-epichlorohydrin resin.

3,297,783

VINYL HALIDE RESIN PLASTICIZED WITH A LINEAR COPOLYMER OF A DIEPOXIDE WITH A 1,2-ALKYLENE OXIDE

Frederick E. Bailey, Jr., Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 16, 1962, Ser. No. 238,261
15 Claims. (Cl. 260—836)

1. A plasticized composition comprising a vinyl halide resin and a plasticizing amount of a solid, high molecular weight, linear copolymer having pendant vic-epoxy groups, said copolymer comprising, in copolymerized form, a lower 1,2-alkylene oxide and a diepoxide monomer having an internal and a terminal vic-epoxy group, the copolymerization being effected through the more reactive vic-epoxy group of said monomer.

3,297,784

ALPHA OLEFIN POLYMER MODIFIED THERMOPLASTIC POLYHYDROXYETHER COMPOSITIONS

Robert H. Saedeker, New Brunswick, N.J., and George H. Potter, St. Albans, and Clyde J. Whitworth, Jr., and Nathan L. Zatty, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 17, 1964, Ser. No. 419,204
15 Claims. (Cl. 260—837)

1. Thermoplastic polyhydroxyether compositions having enhanced notched Izod impact strength, improved critical thickness, and stress-crack resistance comprising:

(a) thermoplastic polyhydroxyether having the general formula:

$$\text{-D—O—E—O-}_n$$

wherein D is the radical residuum of a dihydric polynuclear phenol in which the hydroxyl groups are attached to different nuclei, E is a radical residuum of an epoxide and n is an integer which represents the degree of polymerization and is at least 30; and

(b) from about 0.1 to about 10 parts of alpha-olefin polymer by weight per hundred parts of thermoplastic polyhydroxyether.

3,297,785

MELAMINE-ALDEHYDE RESIN MODIFIED POLYESTER REACTION PRODUCTS

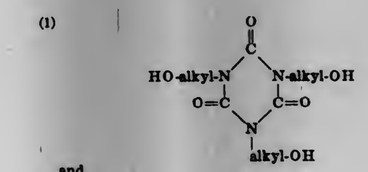
Norman J. George and Alexander Kitun, St. Louis, Mo., assignors to P. D. George Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,320
22 Claims. (Cl. 260—850)

1. A melamine-aldehyde resin modified polyester reaction product derived from

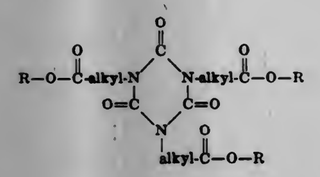
(I) a polyfunctional derivative of an isocyanuric acid selected from the group consisting of

(1)



and

(2)



where R is hydrogen or the hydrocarbon-containing moiety of an alcohol,

(II) a member of the group consisting of (1) polycarboxylic acids and esters thereof, (2) glycols, (3) polyols and (4) mixtures thereof, and

(III) a melamine-aldehyde resin.

3,297,786

METHOD OF GRAFT POLYMERIZING ONTO HYDROPHOBIC SUBSTRATES

Carl Horowitz, Brooklyn, N.Y., assignor to Yardney International Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 22, 1963, Ser. No. 296,487
2 Claims. (Cl. 260—857)

1. A composition of matter useful in rendering hydrophobic polymeric materials wettable, comprising an aqueous solution at a pH less than about 3 of acrylic acid and maleic anhydride in which has been incorporated

$$Ce(SO_4)_2 \cdot H_2SO_4$$

2. A process for dyeing nylon polyamides while rendering them wettable with a high degree of residual wettability after repeated washing, comprising the steps of treating the polyamide with an aqueous solution of between substantially 0.5 and 40% by weight of acrylic acid and between 0.5 and 40% by weight of maleic anhydride in the presence of 0.01 to 5% by weight of a ceric compounds having the structural formula

$$H_2[Ce(SO_4)_2]$$

in solution, based on the weight of said solution, at a pH below substantially 3 for a period between substantially 1 and 60 minutes until between substantially 0.1 and 2.5%, by weight of the polyamide, of acrylic acid is graft polymerized thereon; admixing a dye with said solution; and washing the polyamide so treated.

3,297,787

COPOLYMERS OF UNSATURATED DICARBOXYLIC ACID ANHYDRIDES AND VINYL COMPOUNDS

Louis C. Rubens, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 26, 1963, Ser. No. 275,916
14 Claims. (Cl. 260—859)

1. A reactive copolymer consisting essentially of a backbone copolymer of an α,β-unsaturated dicarboxylic acid anhydride and an alkenyl aromatic monomer wherein said backbone copolymer contains from about 1 to about 25 weight percent of said anhydride randomly distributed therein and from about 0.1 to about 1.0 mole of a vinyl amine monomer per mole of anhydride reacted therewith through an amide linkage with the reactive vinyl groups of said amine monomer pendant therefrom.

5. A reactive copolymer according to claim 1 dissolved in an alkenyl aromatic compound, the solution containing from 5 to 70 weight percent of the copolymer.

3,297,788

COLOR MODIFICATION OF COBALT-CONTAINING CURED POLYESTER RESINS

Alan Dun, Lower Templestowe, Victoria, and David Brian Fox, South Yarra, Victoria, Australia, assignors to Monsanto Chemicals (Australia) Limited, Footscray, Victoria, Australia, a company of Victoria

No Drawing. Filed Sept. 9, 1964, Ser. No. 395,327
14 Claims. (Cl. 260—863)

1. The method of modifying the color characteristics which develop in polyester resins formed by the cobalt-accelerator curing of polycondensation-copolymerizable monomeric mixtures, said method comprising the curing of such a polycondensation-copolymerizable monomeric mixture in the presence of a curing-accelerator amount of a cobalt-accelerator curing component selected from the

class consisting of (A) a cobalt salt in association with a compound selected from a class consisting of (i) alkyl substituted 2,2'-bipyridines in which said alkyl substituents are essentially in the 6- and 6'-positions, (ii) aryl substituted 2,2'-bipyridines in which said aryl substituents are essentially in the 6- and 6'-positions, (iii) alkyl and aryl substituted 2,2'-bipyridines in which said substituents are essentially in the 6- and 6'-positions, and (iv) mixtures of the above substituted 2,2'-bipyridines; (B) a cobalt complex resulting from the reaction of a cobalt salt with a complexing compound selected from the class consisting of substituted 2,2'-bipyridines and mixtures thereof as specified in (i), (ii), (iii) and (iv) above; and (C) a mixture of a cobalt salt and a cobalt complex specified in (B) above; said polyester resin being the polymeric polycondensation reaction product of unsaturated dicarboxylic acids and polyols and said polycondensation-copolymerizable monomeric mixture being a mixture of an ethylenically unsaturated monomer and an unsaturated polyester which is the polymeric polycondensation reaction product of an unsaturated dicarboxylic acid and a polyol.

3,297,789

HALF ESTERS OF ARYL DIALKANOLAMINES AS PROMOTERS FOR UNSATURATED POLYESTER RESINS

Frank Fekete, 4403 McKenzie Drive, Monroeville, Pa. 15146, and Patrick J. Keenan, 15 Markham Road, Princeton, N.J. 08540

No Drawing. Filed Oct. 8, 1965, Ser. No. 494,265
9 Claims. (Cl. 260—864)

1. A polymerizable composition including (A) polymerizable polyester of glycol and dicarboxylic acid wherein at least a portion of the dicarboxylic acid possesses alpha-beta ethylenic unsaturation; (B) monomeric cross-linking reagent having at least one terminal ethylenic group; (C) a small activating amount of a half-ester formed from (a) dicarboxylic acid anhydride selected from the class consisting of the anhydrides of maleic, phthalic, tetrachlorophthalic, endomethylene tetrahydrophthalic and hexachloroendomethylene tetrahydrophthalic acids, and (b) an aryl dialkanolamine; said composition being polymerizable upon the addition of a peroxy initiator in a small but effective amount.

3,297,790

PROCESS AND COMPOSITION FOR CURING SELECTED THIOCARBOXYLIC ACID FLUORIDE POLYMERS AND THE CURED POLYMERS

Donald S. Acker, Augusta County, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 2, 1965, Ser. No. 445,232
17 Claims. (Cl. 260—874)

1. The process of curing a polymer of a hydrogen-free thiocarboxylic acid fluoride of the group consisting of thiocarbonyl fluoride, thiocarbonyl chloride fluoride, trifluorothioacetyl fluoride, chlorodifluorothioacetyl fluoride, dichlorofluorothioacetyl fluoride, pentafluorothiopropionyl fluoride, and pentafluorothio-3-butenoyl fluoride which comprises reacting the same with 0.5 to 25% by weight, based on the weight of the polymer, of a free-radical acceptor selected from the group consisting of N-substituted maleimides, N,N'-substituted bismaleimides, bisacrylamides and cyclic trisacrylamides in the presence of a free-radical generator, said polymer being of the class consisting of the homopolymers of said acid fluorides, the copolymers of at least two of said acid fluorides, and the copolymers of the same with at least one ethylenically unsaturated hydrogen-free monomer containing at least 50% of thiocarboxylic acid fluoride moiety.

3,297,791

BLENDS OF VINYL CHLORIDE RESIN WITH A GRAFT OF BUTADIENE, ACRYLONITRILE AND DIVINYL BENZENE ONTO POLYVINYL CHLORIDE

John Michael Heaps, Colchester, Essex, England, assignor to B. X. Plastics Limited, London, England

No Drawing. Filed July 22, 1963, Ser. No. 296,444
Claims priority, application Great Britain, July 25, 1962, 28,660/62
5 Claims. (Cl. 260—876)

1. A polymer blend consisting essentially of (1) a vinyl chloride polymer selected from the group consisting of polyvinyl chloride, chlorinated polyvinyl chloride and vinyl chloride copolymers obtained from a monomer mixture containing at least 80% by weight of vinyl chloride and at least one copolymerizable monomer, and at most an equal weight of (2) a graft copolymer comprising a polyvinyl chloride trunk polymer to which has been grafted a monomer mixture comprising butadiene, acrylonitrile and divinyl benzene, the divinyl benzene constituting from 0.5 to 5.0% of the total weight of the monomer mixture.

3,297,792

BLENDS OF (1) GRAFT COPOLYMER OF VINYL CHLORIDE ONTO CHLORINATED POLYOLEFIN, (2) DIENE-NITRILE RUBBER AND (3) ETHYLENE-VINYL ACETATE COPOLYMER

Antony William M. Coaker, Wilbraham, Oscar P. Cohen, Longmeadow, and John W. Ryan, Northampton, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 4, 1964, Ser. No. 349,489
12 Claims. (Cl. 260—876)

1. A composition of matter comprising: (1) 40–90 parts by weight of a graft blend prepared by polymerizing 60–98% by weight of monomeric material with 2–40% by weight of a chlorinated polymer of an alpha-monoolefin of about 2 to 3 carbon atoms; said monomeric material comprising 80–100% by weight of vinyl chloride and 20–0% by weight of other ethylenically unsaturated monomers copolymerizable therewith, (2) 5–50 parts by weight of a rubberlike copolymer of acrylonitrile and a conjugated diene having an acrylonitrile content of between about 20–50 percent by weight and (3) 5–40 parts by weight of an ethylene-vinyl acetate copolymer.

3,297,793

CONTINUOUS PROCESS FOR PRODUCING BLOCK COPOLYMERS OF DIENES AND VINYL AROMATIC COMPOUNDS

Robert E. Dollinger, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 21, 1962, Ser. No. 246,598
10 Claims. (Cl. 260—879)

1. A continuous process for preparing a block copolymer of a conjugated diene and a vinyl-substituted aromatic hydrocarbon, which process comprises, in combination, the steps of: continuously charging to a prereaction zone the following materials (1) a first monomer selected from the group consisting of 1,3-butadiene, isoprene, and piperlylene, and the monovinyl-substituted aromatic hydrocarbons, (2) an organolithium polymerization initiator, (3) a first stream of a hydrocarbon diluent selected from the group consisting of paraffinic, cycloparaffinic, and aromatic hydrocarbons, said materials (1), (2), and (3) being introduced at relatively cold temperature, and (4) a second stream of said hydrocarbon diluent at a relatively hot temperature greater than the temperature of said materials (1), (2) and (3), maintaining the contents of said prereaction zone under turbulent mixing conditions and under sufficient pressure to maintain said contents substantially completely in the liquid phase, and maintaining the temperature in said prereaction zone within the range of from 220 to 350° F. when said first monomer is one of said diene compounds and within the range of from 180 to 250° F. when said first monomer is one of said aromatic compounds by controlling the temperature of said second stream of hydrocarbon diluent; continuously withdrawing from said prereaction zone an effluent containing initiator, polymer, and diluent; continuously passing said effluent into a reaction zone; continuously introducing into said reaction zone a stream of a second monomer selected from the above group of monomers but which is a dissimilar type of compound from said first monomer; maintaining the contents of said reaction zone under turbulent mixing conditions and under sufficient pressure to maintain said contents substantially completely in the liquid phase; and maintaining the temperature in said reaction zone within the range of from 180 to 250° F. when said second monomer is one of said aromatic compounds and within the range of from 220 to 350° F. when said second monomer is one of said diene compounds by controlling the temperature of said stream of second monomer; and continuously recovering from said reaction zone a reaction mixture containing said block copolymer; the total amount of said aromatic compound monomer used in said process being within the range of from 10 to 50 parts by weight per 100 parts by weight of total monomers to be polymerized.

3,297,794

POLYMER PRODUCT COMPRISING METHACRYLIC ESTER AND α-METHYLSTYRENE, AND PROCESSES OF PRODUCING SAME

Kiyokazu Imai, Kurashiki-shi, Japan, and Yutaka Sakurada, Menlo Park, Calif., assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan

No Drawing. Filed Apr. 19, 1963, Ser. No. 277,663
Claims priority, application Japan, Apr. 27, 1962, 37/17,063
4 Claims. (Cl. 260—885)

3. A method of producing a polymer composition characterized by high heat-resistance and at least substantial transparency which polymer composition consists essentially of a major proportion of a mixture of methacrylic ester polymer selected from the group consisting of polymethacrylate, polyethylmethacrylate, polypropylmethacrylate and polycyclohexylmethacrylate having at least about 5% by weight of poly-α-methylstyrene, which comprises polymerizing a major proportion of a mixture of methacrylic ester monomer selected from the group consisting of methylmethacrylate, ethylmethacrylate, propylmethacrylate and cyclobexyl-methacrylate having at least about 5% by weight of poly-α-methylstyrene dissolved therein in the presence of the free radical polymerization catalyst selected from the group consisting of azonitrile and peroxide catalysts.

3,297,795

STABILIZATION OF MONOOLEFIN POLYMERS WITH CARBODIIMIDES

Julius Peter, Odenthal, Bezirk Cologne, and Wolfram Neumann, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 23, 1963, Ser. No. 296,934
Claims priority, application Germany, July 26, 1962, F 37,426
10 Claims. (Cl. 260—897)

1. A stabilized monoolefin polymer composition containing as stabilizer a member selected from the group consisting of N,N'-disubstituted carbodiimide, each of said substituents being selected from the group consisting of aliphatic hydrocarbon, aromatic hydrocarbon, chlorophenyl, bromophenyl and alkoxyphenyl and polycarbodiimides of aromatic hydrocarbon diisocyanates.

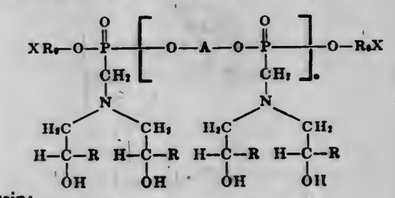
3,297,796

HYDROXYALKYL-AMINOMETHYL PHOSPHONATES

John C. Smith, Houston, Brad H. Miles and Leonard Levine, Lake Jackson, and Wayne E. Presley, Freeport, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 27, 1963, Ser. No. 312,010
12 Claims. (Cl. 260—928)

1. A compound of the formula



wherein:

(a) *n* represents an integer from 1 to 3,

(b) each X is a member independently selected from the group consisting of the hydrogen atom, a hydroxyl group and a halogen,

(c) each R_6 is a member independently selected from the group consisting of an alkylene group of from 2 to 8 carbon atoms, a phenylene group and a polyoxyalkylene group of from 4 to 8 carbon atoms and from 1 to 3 oxygen atoms,

(d) each R is independently selected from the group consisting of the hydrogen atom and a lower alkyl group, and

(e) A is a divalent group of the formula

$$-(C_mH_{2m}O)_{k-1}C_mH_{2m}-$$

wherein *k* is a positive integer of from 1 to 6 and *m* is a positive integer of from 2 to 4.

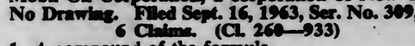
3,297,797

SYMMETRICAL 5,5-DIALKYL ESTERS OF DIALKYL THIOPYROPHOSPHORUS ACIDS

Thomas Mason Melton, Richmond, Va., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 16, 1963, Ser. No. 309,316
6 Claims. (Cl. 260—933)

1. A compound of the formula



wherein R and R' are alkyls of from 1 to 4 carbon atoms and X is a member of the group consisting of oxygen and sulfur.

3,297,798

ALPHA-(CHLOROMETHYLENE) BENZYL PHOSPHATE

Donald D. Phillips, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 5, 1963, Ser. No. 270,799
1 Claim. (Cl. 260—957)

Dimethyl 2,4-dibromo-alpha-(chloromethylene)benzyl phosphate.

3,297,799

PROCESS FOR FORMING LEAD PELLETS

Clarence Jacklin, Downers Grove, and Peter L. Gross, Riverside, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

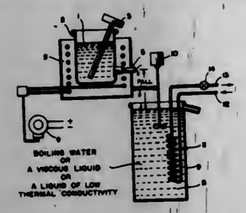
Filed Aug. 19, 1965, Ser. No. 483,017
3 Claims. (Cl. 264—14)

1. A process for preparing lead pellets which comprises: dripping molten lead from a dispensing means into a quench liquid arranged beneath said dispensing means, the distance between said dispensing means and the sur-

face of said quench liquid being from about 1 to 6 inches, said quenching liquid being selected from the group consisting of boiling water, polyalkylene glycols having a viscosity of from about 500 to about 5,000 Saybolt seconds, Carbitols having the formula

$$R—(OCH_2CH_2)_nOR_1$$

wherein R and R_1 are members selected from the group



consisting of alkyls having 1 to 6 carbon atoms and benzyl and wherein *n* is a whole number from 1 to 6, and hydroxy ethers having the formula

$$RO(—CH_2CH_2O—)_xH$$

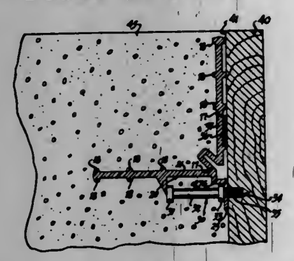
where R is selected from the group consisting of a lower alkyl radical having from 1 to 4 carbon atoms and a phenyl radical, and *x* is a whole number from 1 to 2.

3,297,800

METHOD OF SECURING A WATERSTOP BETWEEN CONCRETE PANELS

Stephen D. Bradley, Grosse Pointe Farms, Mich., assignor to Macoid Industries, Inc., Detroit, Mich., a corporation of Michigan

Original application Apr. 24, 1961, Ser. No. 104,914, now Patent No. 3,114,219, dated Dec. 17, 1963. Divided and this application Apr. 3, 1963, Ser. No. 270,415
2 Claims. (Cl. 264—34)



1. In a method of making a waterstop joint between abutting sequentially poured concrete sections the steps of: erecting a first form enclosure including a partition at the joint surface, securing an elastomeric waterstop to the partition in aligned relation solely by a single row of retaining means, orienting the waterstop generally in the form of an angle with one flange projecting away from the partition into the first form enclosure and the other flange extending in one direction adjacent the internal surface of the partition, laterally supporting said projecting one flange intermediate the internal surface of the partition and the distal edge of the projecting one flange solely by use of said single row of retaining means, pouring the first section of concrete within the first form enclosure while generally retaining said flanges in their recited orientations, removing the forms after the concrete has sufficiently set and erecting a second form enclosure with the partition-defined surface of the first concrete section forming part of the second form enclosure, deflecting the other flange so as to project into the second form enclosure, laterally supporting said other flange in its deflected orientation intermediate the partition-defined surface of the first concrete section and the distal edge of the other flange by use of said retaining means, and pouring the second section of concrete within the second form enclosure while generally retaining the other flange in its deflected orientation.

3,297,801

MANUFACTURE OF INSULATING FIREBRICK

Howard Edwin Konrad, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,096
5 Claims. (Cl. 264—44)

2. The method of producing lightweight insulating firebrick products consisting essentially of the steps of:

(a) preparing a dry blend of lightweight insulating firebrick constituents comprising clay, gypsum plaster and sawdust;

(b) admixing the dry blend with water forming the same into a flowable, castable plastic mass and inciting hydration of the gypsum plaster;

(c) casting the wetted plastic mass into shaped slabs sized to approximate multiples of the dimensions of the desired insulating products, and upon substantial hydration of the gypsum;

(d) drying and firing the wet shaped slabs by subjecting the same in an atmosphere consisting essentially of an oxidizing atmosphere to uninterrupted and uniformly progressing increased ambient temperature conditions culminating at firing temperatures, the said drying and firing comprising transporting the shaped slabs while wet into and through a tunnel kiln wherein the initial ambient temperatures at the tunnel charging end are maintained at at least approximately 1000° F. and the ambient temperatures thereafter increase uniformly and progressively until attaining firing temperatures of about 2350° F. to approximately 2500° F., the transportation of the shaped slabs through the tunnel being at a substantially uniform rate providing the attainment of the area of firing temperatures over a period of about 2 to about 12 hours with said period of heating varying proportionately with the temperatures and a dwell period at firing temperatures of approximately 2 to approximately 6 hours; and

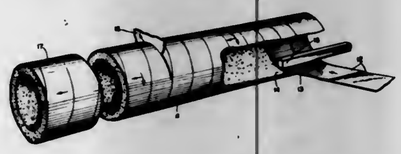
(e) cutting and trimming the fired slabs into insulating products.

3,297,802

METHOD AND APPARATUS FOR FORMING A COMPOSITE HOLLOW CYLINDER OF FOAMED PLASTIC

William R. Powers, Penns Grove, N.J., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 4, 1963, Ser. No. 306,431
5 Claims. (Cl. 264—47)



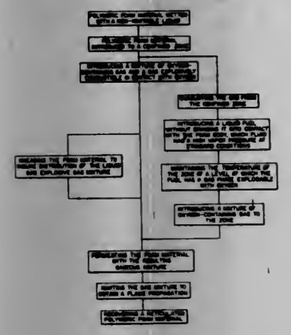
1. A method of forming tubing which comprises introducing sheets of flexible tube forming material into a forming cage having a substantially unobstructed central region, rotating the sheets about the interior of the forming cage at a velocity sufficient to generate centrifugal force for holding said sheets against the interior of the cage, and simultaneously advancing the tube thus formed through and out of said cage.

3,297,803

METHOD FOR EXPLOSION RETICULATION USING A NON-INFLAMMABLE LIQUID

Fred W. Meisel, Jr., Media, and Edgar Allan Blair, Swarthmore, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 27, 1964, Ser. No. 340,487
15 Claims. (Cl. 264—84)



1. A process for removing diaphanous membranes from organic, polymeric foams capable of being permeated with an explodable mixture of fuel gas and oxygen comprising the steps of:

(a) applying a dispersed noninflammable fluid to the internal and external surfaces of said foam body;

(b) introducing said explodable fuel-oxygen mixture into said foam body;

(c) creating an explosive flame propagation in the foam material; and

(d) recovering the product.

3,297,804

METHOD OF FILLING HARD CAPSULES WITH GRANULES BY THE OPEN-MOUTH-DOWN PUNCHING METHOD

Nobumasa Iwamoto, Fuse, Akihide Nakano, Kishiwada, and Yoshitatsu Imanishi, Osaka, Japan, assignors to Ono Pharmaceutical Co., Ltd., Osaka, Japan

No Drawing. Filed May 19, 1964, Ser. No. 368,740
2 Claims. (Cl. 264—118)

1. In the method of packing capsules with a mixture of at least two different types of granules by the open-mouth-down punching method of capsule packing, the improvement according to which the granules are preliminarily first evenly coated with a motlen material selected from the group consisting of wax, tristearin and glycerin, thereby rendering the granules tacky, and then homogeneously admixed with each other, and the resultant mixture thereafter packed into capsules by the aforesaid method.

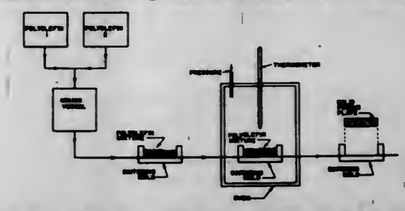
3,297,805

PROCESS FOR THE MANUFACTURE OF SOLID POROUS ARTICLES FROM POLYOLEFINS

Walter Rottig, Oberhausen-Sterkrade-Nord, and Otto Liethen, Duisburg-Hamborn, Germany, assignors to Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany

Filed Feb. 25, 1963, Ser. No. 260,892
Claims priority, application Germany, Mar. 23, 1960, R 27,625; June 11, 1960, R 28,137
4 Claims. (Cl. 264—126)

1. A process for the manufacture of solid porous articles having open cells from polyolefins which comprises mixing a first polyolefin with at least one other polyolefin, said polyolefins being selected from the group consisting of polyethylene, polypropylene, copolymers and mixtures thereof, and polybutylene, said first polyolefin differing from said other polyolefin by at least 5 to 10° C. in softening range and by at least 50,000 in molecular weight, as determined viscosimetrically; and sintering the mixture in a mold at pressures ranging from atmospheric



to 3 kg./cm.², at temperatures of 130 to 200° C., for 30 to 600 minutes; times, pressures and temperatures depending upon the thickness and the material of said molds and upon the thickness of the layer in which said mixture is present in said mold.

3,297,806

METHOD OF PROTECTING UNSTABLE MATERIALS

Orlando A. Battista, Drexel Hill, and Edwin G. Fleck, Jr., Wallingford, Pa., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,089
3 Claims. (Cl. 264—129)

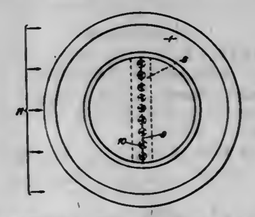
1. A method of protecting unstable organic substances from the atmosphere which comprises mixing a liquid comprising the unstable substance with cellulose crystallite aggregates to sorb the unstable substance on the cellulose crystallite aggregates, slidingly pressing and shaping the resulting mixture to form self-sustaining, spherically shaped, free-flowing cores, dry-appearing cores, mixing the cores with a liquid containing an organic film-forming material to sorb the film-forming material on the cellulose crystallite aggregates and to form free-flowing, coated, stable, dry appearing granules.

3,297,807

PROCESS FOR THE MANUFACTURE OF SPONTANEOUSLY CRIMPING COMPOSITE FILAMENTS

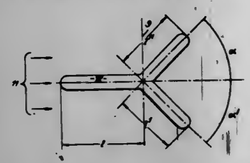
Walter G. Settele, Seeburg-Lucern, Switzerland, assignor to Societe de la Viscose Suisse, Emmenbrucke, Switzerland, a Swiss body corporate

Filed June 25, 1965, Ser. No. 467,013
Claims priority, application Switzerland, Aug. 5, 1964, 10,246/64
3 Claims. (Cl. 264—171)



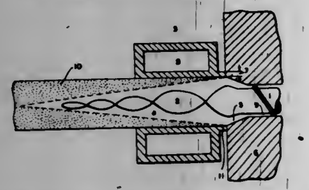
1. In a process for the production of a spontaneously crimping filament, which comprises simultaneously melt-spinning two different mutually adherent fibre-forming polymers through a spinning orifice, one of the polymers being a polyamide and the other a different polymer selected from the group consisting of polyamides and polyesters, so as to produce a composite filament having the two polymers arranged side by side along the length of the filament and adherent to each other, and thereafter stretching the filament at a temperature below but at most

60° C. below the melting point of the lower viscosity component and in which cooling air is blown on to the composite filament, the improvement which comprises spinning the component of lower viscosity through one slot of a



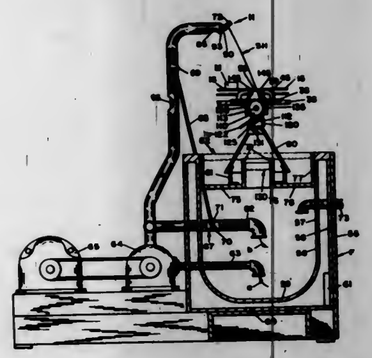
three-armed substantially Y-shaped spinning orifice and the component of higher viscosity through the other two slots thereof and blowing the cooling air from the direction in which said one slot is directed so as to produce trilobal composite filaments.

3,297,808
PROCESS FOR THE CONTINUOUS PRODUCTION OF RODS OR OTHER SECTIONS FROM THERMOPLASTICS
Richard Pflueger, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany
Filed Jan. 24, 1964, Ser. No: 340,086
Claims priority, application Germany, June 7, 1963, B 72,207
1 Claim. (Cl. 264—176)



In a process for the continuous molding of elongated shapes using thermoplastics selected from the group consisting of polyamides having recurring —CONH-groups in the chain, polyethylene, polypropylene, polyformaldehyde and polymers of trioxane by passing the molten thermoplastic through a cooled molding apparatus and allowing said thermoplastic to progressively solidfy in said molding apparatus by heat transfer through the wall of said molding apparatus the improvement which comprises stirring the molten cone forming in the interior of the externally solidified shaped article.

3,297,809
METHOD OF ENCLOSING AN ARTICLE WITH A LIQUID FILM
Marvin E. Wallis, 1643 Woodland Drive, San Luis Obispo, Calif. 93401
Original application Dec. 14, 1961, Ser. No. 159,355, now Patent No. 3,178,866, dated Apr. 20, 1965. Divided and this application Dec. 13, 1962, Ser. No. 244,312
6 Claims. (Cl. 264—238)

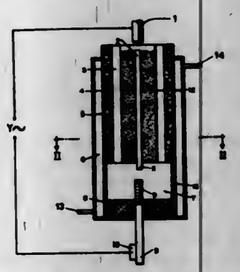


1: The method of coating an article including the following steps:
(a) continuously extruding molten highly viscous thermoplastic material to form a film of substantial width,
(b) exerting a tension force on the film being extruded at the extremities of said width and therebetween to cause said film normally to be disposed in a plane,
(c) passing said article through said plane in contact with a portion of the width of the film lying within said extremities to deposit material on and around the article, said material in the film tending to wrap around the article and follow its trailing edges as it departs from said plane and then breaking away from the article to resume a path along said plane.

ELECTRICAL

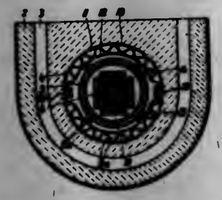
3,297,810
APPARATUS FOR THE PRODUCTION OF ABRASIVE CARBIDES
Eugenio Lubatti, Novara, Italy, assignor to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy
Filed Nov. 29, 1963, Ser. No. 326,857
Claims priority, application Italy, Dec. 4, 1962, 23,869/62
14 Claims. (Cl. 13—9)

1. An electric arc furnace for the production of carbides comprising a cylindrical metallic casing having a bottom wall; a layer of electrically insulating refractory material supported in said casing on said bottom wall; a block of electrically conductive material superposed on said insulating material; a hollow tube of carbon-like material supported endwise on said block, said tube defining with said block a furnace reaction chamber adapted to be filled with a carbide-forming charge; an arc-guide electrode of electrically conductive material electrically connected to said block and extending upwardly therefrom in said furnace reaction chamber and coaxial with said hollow tube, said electrode being completely covered



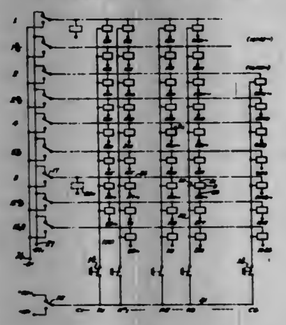
by the charge when the latter fills said reaction chamber, and a second electrode disposed outside said casing and spaced from said arc-guide electrode.

3,297,811
COOLING SYSTEM
Walter Kugler, Remscheid, Germany, assignor to Allgemeine Elektricitats-Gesellschaft and Deutsche Edelstahlwerke Aktiengesellschaft, Berlin-Grunewald, Germany and Krefeld, Germany, respectively
Filed Jan. 20, 1964, Ser. No. 338,940
Claims priority, application Germany, Jan. 18, 1963 A 42,105
11 Claims. (Cl. 13—29)



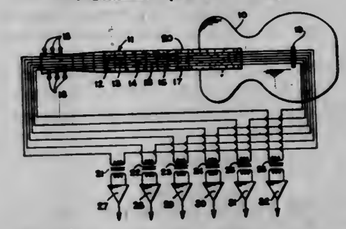
1. In a trough-type induction furnace having a lining provided with an opening, within which opening there is arranged an induction coil which itself is spaced from the wall of the opening thereby to form an interspace between the induction coil and the wall of the opening, a convection cooling system adapted for use with a gaseous coolant, said sooling system comprising, in combination: means forming an auxiliary cooling surface and dividing said interspace between the induction coil and the wall of the opening; means forming a main cooling surface spaced from said auxiliary cooling surface and arranged against the wall of the opening; means forming a third cooling surface arranged between said main and auxiliary cooling surfaces for dividing the space between said main and auxiliary cooling surfaces into coolant channeling of reduced cross section; and means for permitting a gaseous coolant to flow over said cooling surfaces so as to cool the same by convection.

3,297,812
GATED FUNCTION SWITCHES IN ELECTRIC ORGAN
Floyd A. Cordry, Granada Hills, Calif., assignor by mesne assignments, to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware
Filed June 21, 1963, Ser. No. 289,695
2 Claims. (Cl. 84—1.01)



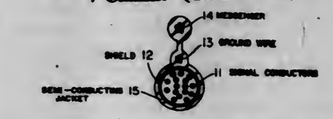
1. In an electric organ the combination of:
a plurality of single contact key switches
a keyboard having a plurality of keys for actuating respectively said key switches
a plurality of function switches selectively operable to determine the pitch of the tone to be emitted upon actuation of a given key
a plurality of tone sources selectively actuable in response to said key switches to cause selected tones to be sounded
a plurality of gates having output terminals connected to actuate said tone sources
each of said gates having a first control terminal and a second control terminal, and characterized in that both control terminals of a given gate must be placed at preselected potential ranges in order for an actuating output potential to appear at the output terminal of the gate
circuit means for connecting one control terminal of a plurality of said gates to each one of said function switches
circuit means for connecting the other control terminal of a plurality of said gates to each one of said key switches, and
circuit means for connecting tones from said tone sources to an electro acoustic transducer.

3,297,813
ELECTRICAL INSTRUMENT IN WHICH STRING SERVES AS ITS OWN TRANSDUCER
Jack C. Cookerly, 7655 Atoll Ave., North Hollywood, Calif. 90028, and George R. Hall, 13613 Huston St., Sherman Oaks, Calif. 91403
Filed Dec. 13, 1962, Ser. No. 244,376
4 Claims. (Cl. 84—1.16)



1. In a musical instrument including a body and a plurality of strings stretched across a portion of said body, means for providing a plurality of individual magnetic fields in a given direction transverse to said strings; and electrical pickup means for said strings for converting current induced in each string as a consequence of vibrational movement in its associated magnetic field into an electrical signal of magnitude and frequency constituting functions of the magnitude and frequency of vibration of said string, said means for providing a plurality of magnetic fields comprising a flat elongated rectangular member of magnetic material made up of elongated portions in the form of strips magnetized so that opposite sides constitute north and south poles, said strips being positioned and extending beneath said strings and being of a length greater than fifty percent of the length of said strings.

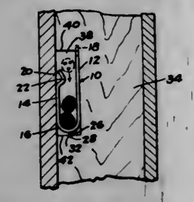
3,297,814
SEMI-CONDUCTING SHEATH SELF-SUPPORTING CABLE
Robert McClean and Roger Joseph Lemieux, Dollard des Ormeaux, Quebec, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Nov. 2, 1964, Ser. No. 408,079
7 Claims. (Cl. 174—41)



1. In an electric cable comprising an information conductor the improvement which comprises an electrical conductor adjacent the information conductor, a semiconducting jacket having a resistivity of up to 10 ohm cms. surrounding the information conductor and the electrical

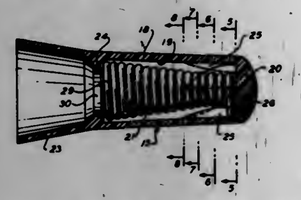
conductor, said jacket being in continuous electrical contact with the electrical conductor and providing a resistive current path surrounding the information conductor and being connected to said electrical conductor along the length of said information conductor.

3,297,815
WIRE CLIP TO ENGAGE RECESS IN STUD
Henry Drettmann, Grosse Pointe, Mich., assignor to Active Tool & Manufacturing Co., Detroit, Mich., a corporation of Michigan
Filed Sept. 3, 1964, Ser. No. 394,175
13 Claims. (Cl. 174—48)



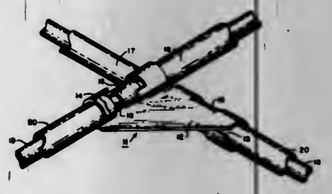
1. A clip adapted to be mounted in a slot mortised in a wood stud for retaining wires comprising a U-shaped strap, one leg of which is longer than the other, the longer leg of the strap having prong means at its free end adapted to penetrate into one end of the mortised slot in a stud and the bight portion of the U having a tab struck outwardly therefrom for engaging the opposite end of the slot.

3,297,816
CONNECTOR FOR ELECTRICAL CONDUCTORS
William T. Waddington, Rahway, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed July 22, 1964, Ser. No. 384,464
4 Claims. (Cl. 174—87)



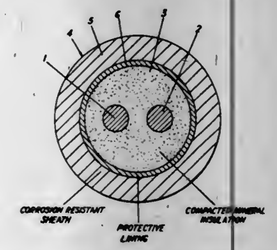
1. A connector for electrical conductors, comprising an insulated cap member having a body portion open at one end and closed at the other end and a skirt portion depending from the said one end of the body portion and opening outwardly therefrom and an open neck portion intermediate the body and skirt portions, the opening of said neck portion being of smaller diameter than the diameter of the adjacent end of the body portion, a coil spring member proportioned for forced insertion through the open neck portion and into the body portion said spring member being disposed in said body portion, said spring member having a convolution at one end of a diameter greater than that of the opening of the neck portion so that on insertion of said spring member into the body portion of the connector forcefully through the neck portion, the latter will preclude accidental movement of the spring member out of the body member, said body member having a plurality of circumferentially arranged vanes interiorly thereof at the end remote from the neck portion of the connector, said vanes being spaced from each other circumferentially to define slots therebetween parallel to the longitudinal axis of the connector, the other end of the spring being directed at an angle to the longitudinal axis of the spring and in selective engagement with one of said slots, to thereby register the spring with the slot, said vanes being generally triangular in cross-section and having an inner face generally parallel to the longitudinal axis of the connector and forming a ramp for guiding the other end of said spring into the adjacent slot, said connector being adapted to be turned on conductors inserted therein to interlock the conductors with the connector.

3,297,817
ELECTRICAL CONDUCTORS ANGULARLY JOINED WITH SHEET METAL CONNECTOR HAVING STRUCK OUT TABS
Irvin E. Stier, Neptune City, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 3, 1964, Ser. No. 415,839
3 Claims. (Cl. 174—87)



1. An electrical connector in combination with a pair of electrical cables comprising first and second cables, each said cable comprising an electrical conductor surrounded by two outer covers of insulation spaced from each other to provide a short exposed portion of said conductor, and a sheet metal electrical connector comprising a flat body portion with a pair of curled arms extending from adjacent edges thereof, a tab portion struck out of the interior portion of each said arm and depending therefrom, said cables being mounted perpendicular to each other and spaced on opposite sides of the plane including said body portion with a different one of said arms curled around and tightly embracing said insulation on opposed sides of said exposed portion and with said tab portions extending into said exposed portion and into electrical contact with said conductors.

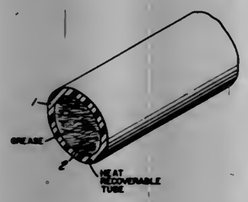
3,297,818
MINERAL INSULATED ELECTRIC CABLES
James Alexander McCleery, Aughton, near Ormskirk, England, assignor to British Insulated Callender's Cables Limited, London, England
Filed May 7, 1965, Ser. No. 454,021
Claims priority, application Great Britain, Dec. 31, 1964, 53,018/64
14 Claims. (Cl. 174—106)



1. A mineral insulated cable having at least one conductor separated from a metallic sheath by compacted mineral insulation in which the sheath is of a metal which

at high temperatures promotes conductor embrittlement and is lined with a metal selected from the group consisting of mild steel and an alloy containing as essential ingredients: not less than 72% of nickel, 14–17% of chromium, and 6–10% of iron.

3,297,819
HEAT UNSTABLE COVERING
Judson Douglas Wetmore, San Diego, Calif., assignor to Raychem Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 10, 1964, Ser. No. 388,643
22 Claims. (Cl. 174—127)



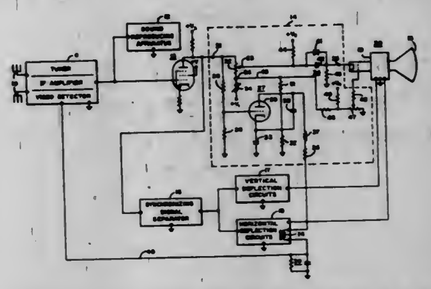
1. An article, closed in cross section, comprising a material which has been dimensionally changed from an original heat stable form to an independently dimensionally heat unstable material capable of moving in the direction of its original form upon the application of heat alone, and a substantially noncrystalline material having a viscosity of not more than about 10^{13} centipose at 25° C. and positioned on the surface of said material within the direction of dimensional change of said dimensionally heat unstable material.

3,297,820
ELECTRIC FENCE INSULATOR DEVICE
Melvin E. Kew, R.R. 1, Box 111, and John P. Kew, R.R. 1, Box 132, both of Sheffield, Iowa 50475
Filed May 3, 1965, Ser. No. 452,686
4 Claims. (Cl. 174—163)



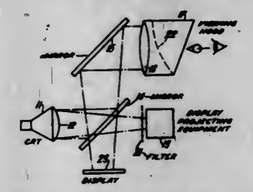
3. In an insulator means,
a bracket comprised of first and second jaw members, said first and second jaw members being separable and movable parts connected by a fastener which draws them together,
said fastener having an insulative head portion adapted to detachably receive a wire member,
said first and second jaw members having registering openings formed therein respectively which are adapted to receive a rod member extending therethrough at times said registered openings being aligned with each other along an axis which lies perpendicular to the axis of said fastener,
said fastener being adapted to secure said first and second jaw members together on the rod to prevent movement of said bracket with respect to the rod when the rod is received by said registering openings.

3,297,821
CONTRAST CONTROL APPARATUS FOR CONTROLLING THE VIDEO SIGNAL OF A TELEVISION RECEIVER
Bernard D. Loughlin, Huntington, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed July 2, 1963, Ser. No. 292,246
5 Claims. (Cl. 178—7.5)



1. Apparatus for controlling the video signal of a television receiver having an image-reproducing device comprising:
first means for supplying a video signal having a level intended to correspond to black in the reproduced image;
second means for supplying an adjustable reference potential;
contrast control means for adjusting the amplitude of said video signal, having a first terminal coupled to said first means, a second terminal coupled to said second means, and a third terminal adjustably coupled to said first and second terminals and coupled to said image-reproducing device;
and automatic control means coupled to said first and second terminals for stabilizing black level in the video signal supplied to said first terminal at the potential supplied to said second terminal for causing the video signal black level translated, via said third terminal, to said image-reproducing device to be stabilized at said second terminal potential independently of adjustments in the contrast of said translated signal.

3,297,822
NAVIGATION SYSTEM WITH OPTICAL MEANS FOR PROVIDING A SUPERIMPOSED COMPOSITE IMAGE OF A CATHODE RAY TUBE DISPLAY AND A FURTHER MAP DISPLAY
James Muir Braid, Edinburgh, Scotland, assignor to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed June 20, 1963, Ser. No. 289,311
Claims priority, application Great Britain, June 29, 1962, 24,966/62
7 Claims. (Cl. 178—7.85)



1. A navigation system including a cathode-ray tube arranged to provide on its screen a radar map display of the terrain being traversed, means for providing a further map display of the terrain, and an optical system including means disposed for projecting said further dis-

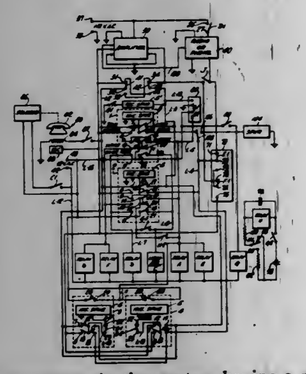
play onto said screen so that the two displays are there superimposed in register with one another to provide a composite display, a lens system for providing an observer with an image at or near infinity of the composite display, and a semi-transparent mirror disposed across the optical path from said further display to said screen so as to reflect the composite display towards said lens system.

3,297,823
SAFETY SCREENS FOR TELEVISION SETS
Julius Neubauer, Hamburg-Lemsahl, Germany, assignor to Heinrich Friedrich Schroeder, Hamburg, Germany
Filed Mar. 21, 1963, Ser. No. 267,046
Claims priority, application Germany, Jan. 31, 1961, N 19,514; July 19, 1962, N 21,870
10 Claims. (Cl. 178—7.82)



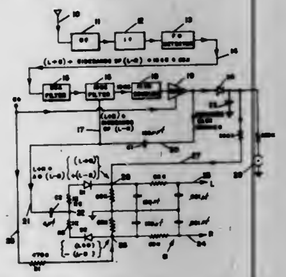
1. In a television receiver, in combination, a cathode ray tube having a picture face and a peripheral face adjacent to such picture face; an independent transparent safety screen of flexible synthetic plastic sheet material, said independent transparent safety screen of flexible plastic sheet material being superimposed upon and following closely the outlines of said picture face without being attached thereto and having a section surrounding said peripheral face; and mounting means surrounding and engaging said peripheral face of said tube whereby to clampingly press said section of said independent transparent safety screen against said peripheral face and firmly mount said screen on said tube.

3,297,824
REMOTE STATION INTERCOMMUNICATION SYSTEM
Karel Montor, Colonia, N.J., assignor of fifteen percent to Albert C. Nolte, Jr., New York, N.Y.
Filed Apr. 15, 1963, Ser. No. 272,909
7 Claims. (Cl. 179—2)



1. An intercommunication system having a plurality of stations, each of said stations including microphone-loudspeaker means, at least one telephone normally separate from said intercommunication systems, microphone means disposed in audible relationship with said telephone for picking up ringing signal of said telephone, and an amplifier common to all of said stations, said microphone means being permanently connected to the input of said amplifier means, each of said stations including means for selectively interconnecting said telephone and the microphone-loudspeaker of that station with the input and output terminals of the said amplifier, whereby a station may be placed in communicative relationship with said telephone.

3,297,825
MONAURAL TO STEREO AUTOMATIC SWITCHING SYSTEM FOR AN FM MULTIPLEX STEREO RADIO RECEIVER
Sava W. Jacobson, 17340 Gresham, Northridge, Calif. 91324
Filed Mar. 12, 1964, Ser. No. 351,317
4 Claims. (Cl. 179—15)

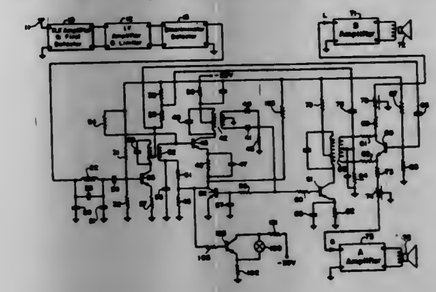


1. A monaural to stereo automatic switching system for an FM multiplex stereo radio receiver having a B+ power source when energized and having first and second side band detector diodes connected in opposite directions between a stereo carrier frequency input junction and left and right signal output lines respectively, comprising: a high resistance having one end connected to said B+ power source and its other end connected to said diodes to provide a forward bias on said diodes of sufficient magnitude that the same electrically appear as substantially short circuits in the absence of a stereo carrier frequency at said input junction whereby said diodes are effectively no longer part of the FM multiplex stereo detector circuit until such time as a stereo carrier frequency signal appears at said junction, said carrier frequency signal overcoming said forward bias to cause said diodes to perform their demodulating function in a normal manner to provide stereo signals to said left and right output lines; and a rectifier means having its input connected to receive said carrier frequency signal and its output connected to said diodes to provide a D.C. reverse bias derived from and in response to said carrier frequency signal on said diodes of sufficient magnitude to insure, in combination with said carrier frequency signal at said junction, positive cancelling out of the forward bias on said diodes so that said diodes perform their demodulating function in a normal manner when said carrier signal is present even in fringe areas.

3,297,826
PILOT-TONE CHAIN FOR FM STEREO RECEIVER
Fleming Dias, Chicago, and Jouke N. Rypkema, Villa Park, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 398,948
3 Claims. (Cl. 179—15)

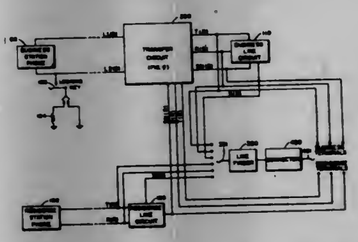
1. In a frequency modulation receiver for utilizing a stereophonic signal which includes a pilot tone of a predetermined frequency, a pilot-tone chain comprising:
a transistorized detector system responsive to said pilot tone for demodulating said stereophonic signal;

a control circuit in said detector system for developing a control potential of one value in the presence of said pilot tone and of a different value in the absence of said tone;
a multi-branch indicator network having one branch including a pilot indicator which is de-energized in the absence of said pilot tone and having another branch in parallel with said one branch and conducting the major portion of the current of said network in the absence of said pilot tone, the impedance of said one branch being proportioned relative to that of the other so that the total current drain in said network is approximately the same with said indicator energized as with it de-energized;



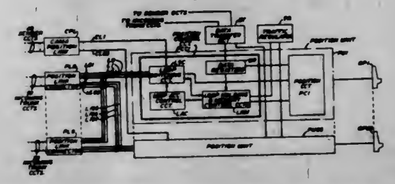
actuating means in said indicator network responsive to a supplied control potential of said one value for energizing said pilot indicator;
and means for utilizing the control potential developed in said control circuit for operating said actuating means.

3,297,827
TRANSFER CIRCUIT
Frank A. Breit and Thomas E. Ellis, Rochester, N.Y., assignors, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Aug. 26, 1963, Ser. No. 304,333
7 Claims. (Cl. 179—18)



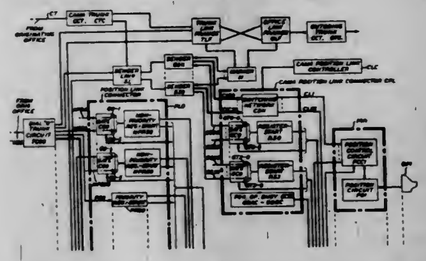
1. In an electromechanical telephone system, a central office, a plurality of subscribers' lines including first and second subscribers' lines connected to said central office, switching circuits controlled by a calling one of said lines including said first and second lines for selectively signaling any one or said other lines and for completing a communication connection between said calling line and said other line, a transfer circuit coupled to said first and second lines and said switching circuits, first and second stations coupled to said first and second lines, respectively, at the ends thereof remote from said central office, control means at said first station for extending a marking signal to said transfer circuit, said transfer circuit including means for extending any signal directed to said first line to both said first and second lines and for restricting any signal directed to said second line from being extended to said first line while said marking signal is extended to said transfer circuit.

3,297,828
OPERATOR POSITION CONTROL EQUIPMENT FOR SERVING CALLS ON AN OVERLAP BASIS
John Baumfalk, Allenhurst, N.J., Thomas P. McGuinness, Bronx, N.Y., and Robert C. Nance, Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 23, 1963, Ser. No. 318,407
16 Claims. (Cl. 179—27)



1. In combination, first, intermediate and last communication channels, an operator position, connector means responsive to the receipt of a service request on any one of said channels for connecting said one channel to said position, applying means responsive to the receipt of a signal from said position for applying a hold condition to said one channel, means operated by said applying means for temporarily transferring the connection of said position from said held channel to another of said channels having a service request thereon, and means automatically activated after said request on said other channel has been served for releasing said transferring means to reconnect said held channel to said position.

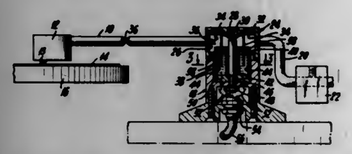
3,297,829
PRIORITY AND NONPRIORITY SERVICE REGULATING EQUIPMENT
Charles E. Germanton, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 23, 1963, Ser. No. 318,427
21 Claims. (Cl. 179—27)



1. In combination, a plurality of operator positions for serving telephone calls, groups of calling circuits, each of said calling circuits having means for selectively requesting non-priority and priority connections to said positions, a plurality of position connectors each being individually connected to a predetermined number of said groups of circuits and being responsive to the receipt of non-priority and priority requests from said circuits for connecting said requesting circuits to the available ones of said positions, means for supplying signals to said connectors to signify the actual availability of said positions to serve said calls, and means responsive to a priority request from any one of said circuits for selectively altering said signals to effect the connection of said one circuit

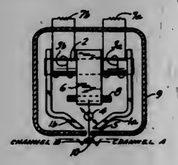
through said connected connector to an available one of said positions on a priority basis with respect to said circuits requesting non-priority connections.

3,297,830
PHONOGRAPHIC ARM AND MOUNTING MEANS
James T. Baloghy, Commack, N.Y.
(580 Willis Ave., Williston Park, N.Y. 11596)
Filed Oct. 1, 1962, Ser. No. 227,133
3 Claims. (Cl. 179—100.4)



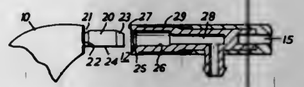
1. In a base for mounting a phonograph arm, an electrically insulated member, a pivot pin vertically projecting above said member, and adapted to engage bearing means in said arm to pivot said arm on said pin, a plurality of arcuately shaped recesses in said member, a plurality of electrodes, each being connected to the output circuit of a pick-up head mounted on said arm, said electrodes being electrically insulated one from the other and disposed from said arm in depending equally spaced relation, and said electrodes being adapted to be positioned in the respective recesses in said member, a conductor connected to each respective recess, and electrically conducting liquid means disposed in each recess to electrically connect the electrode with the conductor as said arm pivots on the pivot pin and the depending electrodes move in said arcuate recesses.

3,297,831
MAGNETIC STEREOPHONIC PHONOGRAPH PICKUP
Walter O. Stanton, Laurel Hill Road, Laurel Hollow, Long Island, N.Y. 11948
Filed Feb. 6, 1964, Ser. No. 342,885
14 Claims. (Cl. 179—100.41)



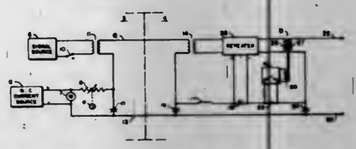
1. A stereophonic phonograph pickup of the magnetic type comprising: a supporting structure; means made of magnetic material supported on said supporting structure and providing a magnetic circuit and including core means and a pair of pole pieces connected to respectively opposite end portions of the core means; a pair of current generating means including a pair of coils mounted on said core means in spaced relationship; a moving system including a record engaging stylus and means including a magnetic member for supporting the stylus and mounted in equally spaced relationship between the pole pieces for oscillatory movement so that a pole of the magnetic member can move in paths towards and away from the respective pole pieces; a magnetic compensator made of magnetic material extending from said core means intermediate said coils towards said magnetic member of the moving system providing a magnetic path of low reluctance between the core means and the magnetic member; and a phase compensator in the form of a coil of non-magnetic material disposed around the magnetic compensator.

3,297,832
HEARING AIDS
Bernard James Brown, Flackwell Heath, England, assignor to Bernatone Limited, Buckinghamshire, England, a British company
Filed July 26, 1963, Ser. No. 297,783
Claims priority, application Great Britain, June 26, 1963, 25,457/63
13 Claims. (Cl. 179—107)



1. A connector, to be used with hearing aids, to join two parts of a sound carrying tube between a housing containing a sound reproducer and an earpiece, comprising,
a first tube,
a second tube, which is sized to be pushed inside said first tube,
a first coupling member, attached to one of said tubes and a second coupling member, attached to the other of said tubes, said coupling members being of the snap acting type and serving when assembled to hold said tubes firmly but releasably together in sound tight relationship.

3,297,833
REPEATER FAULT LOCATION
Merle G. Hooten, Oceanport, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 21, 1963, Ser. No. 317,847
8 Claims. (Cl. 179—175.31)

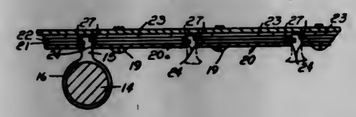


1. The method of locating a faulty repeater in a transmission line which includes a plurality of unattended repeaters and in which the direct current for operating all of said repeaters is sent over said line from a constant current source together with an alternating current signal and in which each operative repeater is arranged to short out a fault location resistor of R ohms in series with said line, comprising the steps of removing said signal from the input of said line, noting the terminal voltage of said constant current source, reapplying said signal to the input of said line, inserting a resistor in series with said line of sufficient resistance to reestablish said previously noted terminal voltage and dividing the resistance of said resistor by R to obtain the number of operative repeaters on said transmission line.

3,297,834
MULTIPLE SWITCH ASSEMBLY WITH IMPROVED INTERLOCK TRACK MECHANISM
Frank C. Wallace, Coeur d'Alene, Idaho, assignor to Pendar, Inc., Coeur d'Alene, Idaho, a corporation of Idaho
Filed Feb. 28, 1966, Ser. No. 530,692
6 Claims. (Cl. 200—5)

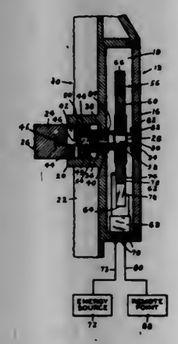
1. A track mechanism for a plurality of switches located in a longitudinal row on a supporting housing, each switch including a reciprocable plunger movable relative to the housing along axes parallel to one another between an outer released position and an inner depressed position, each switch being further provided with a radially

extending arm mounted thereon for conjoint movement with the plunger thereof, comprising:
guide means on said housing individually engageable with said arms to prevent rotational movement of said arms about the respective axes of the switch plungers;
first locking means mounted on said housing for longitudinal motion relative thereto in a direction transverse to the direction of movement of said arms, said first locking means being provided with a plurality of slots formed therein respectively receiving the arms of said switches, one side edge of each slot having formed therein an inwardly facing shoulder;



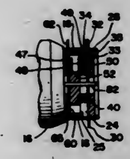
second locking means mounted on said housing for motion relative thereto transversely to the direction of movement of said arms, said second locking means having formed therein a plurality of slots respectively receiving said arms of said switches, each slot having one side thereof formed with an inwardly facing shoulder directed longitudinally opposite to the shoulders of said first locking means;
and biasing means operatively connected to said first and second locking means to urge said locking means to positions wherein the shoulders formed on the slots thereof intersect the reciprocable path of said arms as defined by said guide means.

3,297,835
MOVING PICTURE CAMERA SWITCH WITH IMPROVED ROTARY CONTACT DISC STRUCTURE
Jesse L. Colodner, Pearl River, N.Y., assignor to International Camera Corporation, New York, N.Y., a corporation of New York
Filed Mar. 12, 1965, Ser. No. 439,357
12 Claims. (Cl. 200—11)



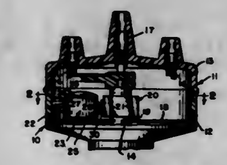
1. In a moving picture camera having a camera drive shaft therein, a means for providing pulses comprising a housing means, a rotatable shaft rotatably mounted within said housing means and adjustable spring loaded slotted shaft arrangement connected to said camera drive shaft and said rotatable shaft for coupling said camera drive shaft to said rotatable shaft, a pulse generating means mounted on said rotatable shaft, current conveying means in communication with said pulse generating means, and current extracting means in communication with said pulse generating means for removing said pulses to a remote point.

3,297,836
ELECTRICAL SWITCH
Thomas J. O'Malley, Brookfield, Ill., assignor to Grayhill, Inc., La Grange, Ill., a corporation of Illinois
Filed Feb. 24, 1966, Ser. No. 529,817
12 Claims. (Cl. 200—11)



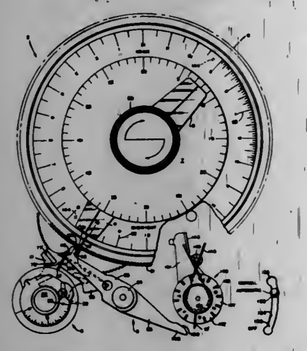
1. A switch structure including in combination, a switch housing including a hollow cylindrical shell insulator with first and second open ends, a cover plate and a contact panel, said cover plate engaging said first end of said shell insulator and said contact panel engaging said second end thereof, a plurality of terminals secured to said contact panel and circumferentially disposed thereon, each of said terminals having a flat portion connected to said contact panel and radially extending beyond the periphery of said housing and a raised portion extending into said housing and having a contact surface, an insulating web member including an annular portion having a plurality of radially extending spaced fingers, said insulating member being positioned on said contact panel with said fingers thereof positioned between said raised terminal portions and extending into said housing to electrically insulate each of said terminals from the adjacent terminals, and rotor means having contact means engaging said raised portions of said terminals, said rotor means being adapted to be rotated for moving said contact means from one of said terminals to an adjacent terminal.

3,297,837
UNIVERSAL IGNITION CONTACT SET
Orrin H. Thomas, P.O. Box 498, Mann Hill Road, Tioga, Pa. 16946
Filed Feb. 4, 1965, Ser. No. 430,270
6 Claims. (Cl. 200—30)



1. As a new article of manufacture, a timer comprising a body having a base plate and having a rotor shaft extending through said base plate and including a casing providing a support, a bar slidably supported by said casing, resilient means biasing said bar toward a first position, an adjustable securing element connected to said casing and having a contact thereon selectively engaging a contact that is carried by the bar, a tip on an end of said bar engaging a cam mounted on said rotor shaft, and a magnetic holding means mounted on the lower portion of said casing engaging said base plate and maintaining said casing in a fixed, preselected position relative to said cam.

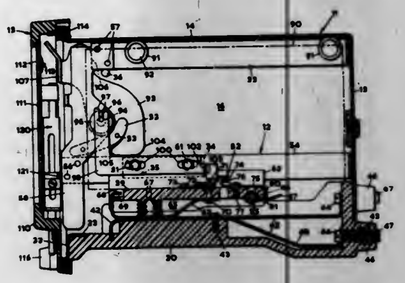
3,297,838
PROGRAM TIMER
Roger D. Rulseh, Two Rivers, Wis., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Apr. 13, 1964, Ser. No. 359,045
18 Claims. (Cl. 200—38)



1. A timer comprising:
switch means operated during at least part of a short preselected time interval of a predetermined time period;
actuator means operating said switch means when said actuator means is conditioned for operation;
first driven means conditioning for operation said actuator means during said short preselected time interval;
second driven means controlling operation of said actuator means when conditioned for operation to accurately control operation of said switch means during the short preselected time interval; and
means connected to said first and second driven means driving said second driven means along its full course of travel during said short preselected time interval, and periodically indexing said first driven means a distance of travel equal in time to the short preselected time interval and thereby driving the first driven means along its full course of travel during the predetermined time period.

3,297,839
ELECTRICAL PROTECTIVE DEVICES
Gordon Albert Fradley and Malcolm Whitehouse, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Feb. 10, 1966, Ser. No. 526,429
Claims priority, application Great Britain, Feb. 10, 1965, 5,788/65
9 Claims. (Cl. 200—50)

1. Electrical apparatus comprising,
a casing,
a cradle mounted for movement within the casing,
locking means selectively operable to lock and unlock the cradle, the locking means including
a catch and
a latch cooperating therewith, the latch being movable in one direction from a normal position of rest to unlock the cradle and permit withdrawal thereof from a predetermined location in the casing,
mounting means for mounting the locking means in a manner such that said catch is arranged to engage said latch upon the cradle advancing towards said location and move said latch in said one direction whereby, upon said cradle returning to said location, said latch is permitted to assume its rest position and lock the cradle within the casing,
an actuating device secured to said latch,
a link mounted for movement on said cradle and in direct engagement with said actuating device, and
a switch engagable by said link, said actuating device being effective to displace the link in one direction,



to open the switch, and in the opposite direction, to close the switch, in response to movement of said latch away from and towards its said rest position, respectively.

3,297,840
FLASHLIGHT LOCK-OFF SWITCH
Donald C. Gray, St. Albans, Vt., and William H. Doring, Old Greenwich, Conn., assignors to Union Carbide Corporation, a corporation of New York
Filed June 18, 1965, Ser. No. 465,111
8 Claims. (Cl. 200—60)



1. A switch for a flashlight having a casing provided with an opening therein, comprising a switch slide slidably mounted on the outside of said casing between an on and off position, a resilient conductive contact strip mounted on the switch slide but residing on the inside of said casing and being movable with said switch slide and guided by said opening, a switch button free floating and being biased against shoulders forming an opening in said switch slide by means of said contact strip, said switch button being biased by the engagement of a portion of said contact strip with said switch button; said contact strip comprising a detent tab adjacent to said portion of said contact strip which is in engagement with said switch button and said detent tab being engageable with cooperable detent receiving means within said casing whereby pressing said switch button downwardly releases said detent tab from said cooperable detent receiving means and permits said switch slide to be movable to an on position wherein said contact strip is longitudinally moved to engage a cooperative contact member.

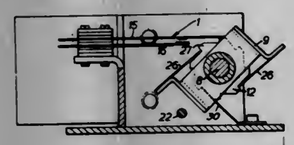
3,297,841
ELECTRIC TENSION SWITCH ASSEMBLY
William C. Campbell, Levittown, Pa. (% Carlson's Alinement Service, 2nd St. and Roosevelt Blvd., Philadelphia, Pa. 19120)
Original application Feb. 19, 1963, Ser. No. 259,673. Divided and this application Apr. 8, 1965, Ser. No. 446,492
4 Claims. (Cl. 200—61.58)

1. A seat belt switch comprising a tension switch including a pair of molded parts, one of said molded parts having a recess therein adapted to cooperate with the other of said molded parts recess to form a switch cavity, an armature adapted for reciprocal movement in said switch cavity, said armature having an enlarged arrow-shaped head portion, a first electrically conducting strip secured about the face of said arrow-shaped head portion, second and third electrically conducting strips extending from the walls of said switch cavity cooperating with said arrow-shaped head portion to a point outside of said molded parts, said second and third electrically conducting strips being electrically insulated and spaced



one from another, compression spring biasing means mounted behind said arrow-shaped head portion to bias said first conducting strip into electrical contact with said second and third conducting strips, a connector for transmitting tension in a seat belt to said tension switch, said connector including a flexible linkage connected to said armature, a web connector for fixing said linkage to a belt at a position beyond said linkage, a tension spring connecting said linkage to said web connector, said tension spring being heavier than said compression spring biasing means whereby said tension spring is operative only after the operation of said compression spring biasing means.

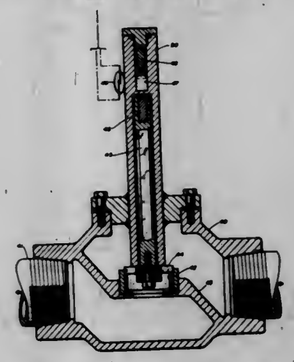
3,297,842
MOTOR CONTROL GEAR
Robert William Young and Henry Albert Hallett, Cheltenham, England, assignors to Sonomotive Engineers Limited, London, England, a British company
Filed July 14, 1964, Ser. No. 382,486
6 Claims. (Cl. 200—61.86)



1. Control gear for an internal combustion engine permanently coupled to a hydraulic load, comprising an engine ignition switch, an engine starter switch, a hydraulic off-loading valve, a manually operable control member urged to a rest position and movable therefrom to a switch operating position representing coincident "start" and "stop" positions, switch actuating means which on consecutive movements of said control member to said operating position act respectively to close and open said ignition switch and on alternate movements corresponding to closing of said ignition switch operate said starter switch, and valve actuating means which on movement of said control member from said rest to said operating position act to open said off-loading valve prior to operation of said ignition switch and to close said off-loading valve during return movement of said control member to said resting position.

ERRATUM
For Class 200—67 see:
Patent No. 3,297,156

3,297,843
FLOW-NO FLOW SWITCH
Maurice S. Hoss, Tulsa, Okla, assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 30, 1964, Ser. No. 414,775
1 Claim. (Cl. 200—81.9)



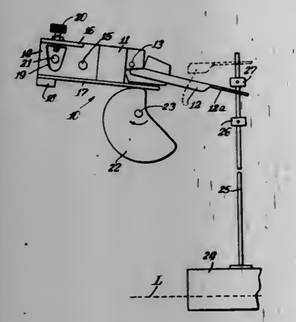
A fluid flow indicator including,
a conduit through which the flow of fluid is indicated,
a valve seat in the conduit through which the fluid flows,
a valve element adapted to cooperate with the valve seat as the fluid flows through the seat,
a housing connected to the conduit,
a first magnet within the housing and connected to the valve element so as to travel a fixed path as the valve element cooperates with the valve seat,
a liquid filled chamber integral with one end of the housing,
a second magnet arranged within the chamber so as to move linearly and sized to have a predetermined clearance with the internal walls of the housing whereby the linear movement is at a first rate through the liquid when the second magnet is repulsed by the first magnet and at a second rate through the liquid when the second magnet is moved by gravity,
a switch positioned adjacent the path traveled by the second magnet so as to be operated by the second magnet as the second magnet reaches a predetermined position in its path,
and a circuit actuated by the switch to indicate when fluid flows through the conduit.

3,297,844
PIVOTALLY MOUNTED SWITCH HAVING PIVOTALLY MOUNTED ACTUATING ARM OPERATED IN RESPONSE TO VARIATIONS IN LIQUID LEVELS
David C. Eisendrath, Chicago, Ill., assignor to Cory Corporation, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,307
6 Claims. (Cl. 200—84)

1. A control for providing a signal responsive to a variation in a liquid level, comprising:
a control switch having
an actuating arm pivotally mounted on said switch for operating said switch as a result of pivotal movement of said arm relative to said switch;
abutment means for pivotally moving said actuating arm in accordance with a variation in the liquid level;

means for pivotally mounting said switch and actuating arm as a unit; and

adjustable stop means for limiting the pivotal movement of said switch in opposite pivotal directions whereby said abutment means, as an incident of a preselected raising or lowering of the liquid level, pivots the switch and actuating arm as a unit to the



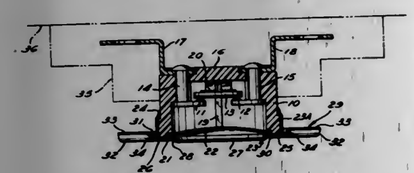
position wherein the adjustable stop means engages said unit to further pivoting of the switch, and further pivots said actuating arm relative to said switch upon further raising or lowering of the liquid level beyond said preselected level to cause said actuating arm to operate said switch selectively as the result of any one of a plurality of different amounts of movement of said abutment means.

3,297,845

FIRE-DETECTING THERMOSTAT

Charles S. Mertler, Mansfield, Ohio, assignor to Stevens Manufacturing Company, Inc., a corporation of Ohio

Filed Jan. 21, 1965, Ser. No. 426,987
2 Claims. (Cl. 200—138)



1. In combination with a rapid acting thermostat having an annular insulating housing, switch means in said housing, and a heat-sensitive snap-acting bimetallic disc extending across one end of the housing,

a heat collector of high heat conductivity metal comprising an annular side wall snugly receiving said end of the housing,

a generally flat end wall extending across the outside of said bimetallic disc in engaging heat-transmitting relationship therewith,

said end wall and said side wall being integral and completely enclosing the bimetallic disc in the housing to make the housing dust tight,

and an annular extension attached to said end wall and projecting substantially coplanar therewith laterally a substantial distance beyond said side wall throughout substantially the entire annular extent of said side wall, said annular extension having a plurality of convolutions in succession around its circumference which enhance its structural rigidity and provide increased surface area exposed on both sides to the ambient air.

3,297,846

FUSIBLE FIRE SENSING TAPE FORMED OF METAL PARTICLES DISPERSED IN A FLEXIBLE PLASTIC BINDER

Henry C. Peltier, 256 Harrison Ave., Lodi, N.J. 07644

Filed Sept. 22, 1964, Ser. No. 398,366
8 Claims. (Cl. 200—142)



1. A temperature sensing tape, for use in a heat detection system, comprising in combination:

(A) an elongated, dimensionally stable, electrically non-conductive, synthetic plastic sheet carrier of slight thickness;

(I) said carrier being composed to be destructible by heat in the temperature range of from about 175° F. to about 550° F.;

(B) superimposed on said carrier a slender, thin, flexible stripe of electrically conductive-low resistivity metallic material,

(I) said metallic material being composed of finely divided particles of a low resistance high-temperature-fusing metal dispersed in a solid flexible plastic binder;

(II) said binder being composed to be destructible by heat in the range of from about 175° F. to about 550° F.;

(III) said stripe being narrower than said carrier, and being adherent to an exposed face of said carrier, and extending continuously along the length of said carrier,

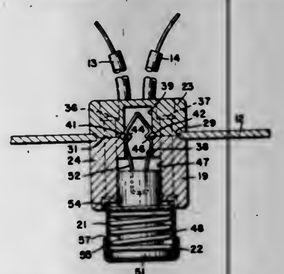
(C) whereby the indicated degree of heat applied externally to said tape acts upon said carrier so that it no longer properly supports said stripe, and acts on said stripe causing it to part so as to interrupt an electrical circuit.

3,297,847

THERMAL CUTOFF SWITCH

Anker J. Nielsen, Jr., Holden, Mass., and Lynn H. Morse, Venice, Fla., assignors to Omco, Inc., Worcester, Mass., a corporation of Massachusetts

Filed Feb. 2, 1966, Ser. No. 524,398
9 Claims. (Cl. 200—142)



1. A thermal cutoff switch, comprising

(a) a main body,

(b) a pair of spaced electrical contacts mounted on said body,

(c) a switch element removably inserted in said body,

(d) a resilient junction member mounted on said switch element for joining said contacts by being pressed between them,

(e) a heat-fusible means interconnecting said body and said switch element,

(f) spring means mounted on said body for biasing said switch element and resilient junction member away from said body and contacts when said heat-fusible means is melted, and

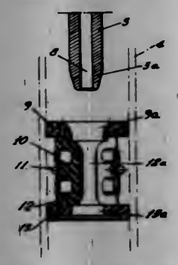
(g) means locking said spring means and said switch element together to prevent re-assembly of said switch element with said body once said heat-fusible means has melted.

3,297,848

OIL SWITCH HAVING ANTI-FLASH DEVICE FOR RESTRICTING ARC TYPE DISCHARGES UPON SWITCH OPENINGS

Pierre Picard, Argenteuil, and Imre Bokshorn, Gagny, France, assignors to Societe Anonyme COQ France, a corporation of France

Filed Apr. 27, 1964, Ser. No. 362,633
4 Claims. (Cl. 200—150)



1. An electrical oil circuit-breaking switch, comprising a generally tubular enclosure of an electrically insulating material containing an oil filling; a conductive rod axially shiftable within said enclosure; first contact means slidably engaging said rod and second contact means within said enclosure axially spaced from said first contact means and engageable by said rod upon shifting thereof between an open-circuit position and a closed-circuit position; and an anti-flash device within said enclosure between said first and second circuit means for restricting the development of an arc discharge between said second contact means and said rod upon withdrawal of said rod from said second contact means, said anti-flash device comprising a tubular cage generally coaxial with said rod, a plurality of electrically nonconductive sectoral elements received in said cage and radially shiftable therein, said elements defining in an innermost position thereof a peripherally closed tube having an axial aperture for said rod of a cross-sectional area smaller than that of said rod to restrict the area surrounding an established arc upon withdrawal of said rod through said device, thereby throttling the path of the arc and creating turbulence in said oil filling, spring means surrounding said elements for urging same inwardly but enabling resilient expansion of said elements radially outwardly by said rod upon insertion of said rod through said cage between said elements, and means on said cage spanning substantially the entire cross-section of said enclosure surrounding said rod for blocking the passage of a discharge past said device other than through said axial passage.

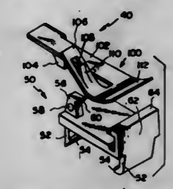
3,297,849

CONTACT ASSEMBLY FOR SWITCHING OPERATIONS

George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed July 15, 1964, Ser. No. 382,718
18 Claims. (Cl. 200—166)

1. A contact assembly comprising body means made of insulating material including means for fixedly mounting the same to a support structure, an integral wire receiving member extending from said switch body means including a transversely extending aperture for receiving an electrically conductive wire member, electrical contact means mounted on said body means and including first and second portions, said first portion having one end thereof adapted to be positioned in close proximity to an electrically conductive actuator, said second portion being resiliently spaced upwardly from said first portion and having an opening slightly larger than said wire receiving member for accepting the same, said second portion capable of being positioned beneath an electrically conductive wire member accepted by the wire receiving member



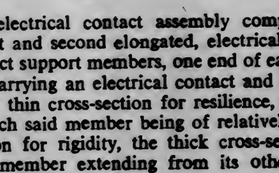
and being normally urged upwardly therefrom to enable marginal portions surrounding the opening thereof to grip and retain the electrically conductive wire member, and complementary assembly means of said body means and said contact means serving to secure said part together, said assembly means including means serving to impart a reactive force against said second portion in a direction substantially normal thereto for aiding in maintaining said electrical contact means and said body means in operative relationship.

3,297,850

ELECTRICAL CONTACT ASSEMBLY

Robert L. Peek, Jr., Smithtown, N.Y., and Theodore S. Sipos, Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Apr. 19, 1965, Ser. No. 448,984
15 Claims. (Cl. 200—166)



1. An electrical contact assembly comprising:

(a) first and second elongated, electrically conductive contact support members, one end of each said member carrying an electrical contact and being of relatively thin cross-section for resilience, the other end of each said member being of relatively thick cross-section for rigidity, the thick cross-section of each said member extending from its other end into a region intermediate its ends;

(b) and insulator;

(c) and support means supporting the insulator between the two said members in said intermediate region, whereby said members are insulated and separated from each other, and whereby the one end of said first member is substantially coextensive with the one end of said second member.

3,297,851

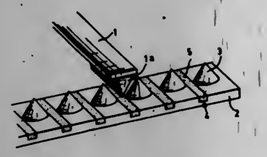
COMMUTATORS FOR MEASURING APPARATUS HAVING A LINEARLY MOVING NEEDLE

Reynold Jaquet, Hoelstein, Basel, Switzerland, assignor to Oris Watch Co. S.A., Hoelstein, Basel, Switzerland, a corporation of Switzerland

Filed June 25, 1965, Ser. No. 467,015
Claims priority, application Switzerland, June 25, 1964, 8,329/64
18 Claims. (Cl. 200—166)

1. Commutator apparatus comprising at least one row of spaced abutments having inclined side surfaces and defining spaces between said abutments, an arm movable

transversely and vertically of said row of abutments, a contact member carried by said arm in position to move along said row of abutments when said arm is moved transversely of said row, said contact member being further movable toward and away from said abutments between a free position in which it is clear of said abutments and an engaged position between two adjacent



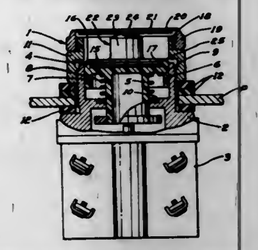
abutments, said contact member having inclined faces defining a dihedral angle and engageable with an underlying said abutment when said contact member is moved from said free position to said engaged position to position said contact member between two abutments and cooperating contact means engaged by said contact member when in said engaged position.

3,297,852
ELECTRIC SWITCH SEAL
Walter H. Moksu and Harry A. Corbett, both of Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,457
5 Claims. (Cl. 200—168)



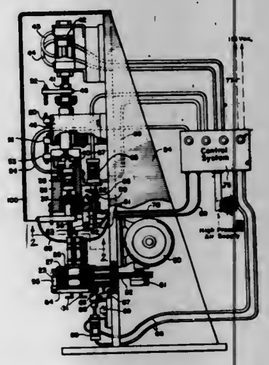
1. A thermally responsive electric switch having a seal with an elongated leakage path comprising thermally responsive electric switching means disposed in a tubular casing having an open end through which at least one electrically conductive terminal member extends, electrically insulating resin material closing said open end, an elongated electrically insulating sleeve member having a first and second portion, said second portion having a larger cross-sectional area than said first portion, said casing telescopically received and closely fitting in said first portion, the open end of said casing located intermediate the ends of said second portion, said casing and said second portion defining therebetween an annular space, electrically insulating resin material located in said annular space between the switch casing and the said second portion of said sleeve member and extending beyond said open end of said casing thereby forming a tortuous, elongated leakage path to said switching means.

3,297,853
EMERGENCY BREAK-GLASS PUSHBUTTON
James P. Schmiedel and Richard C. Rothweiler, both of Wauwatosa, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Oct. 14, 1965, Ser. No. 496,054
10 Claims. (Cl. 200—168)



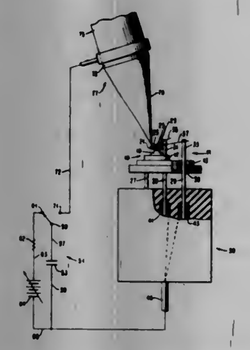
1. A pushbutton switch operator assemblage comprising a support,
a pushbutton operator mounted in the support for movement in opposite directions,
a return spring urging the operator in one of said directions from a depressed to an extended position,
a readily breakable rigid member,
means supporting the member and constraining the member from movement in at least one direction relative to said support,
resilient spacer means in compressed condition bearing against the member and the operator and having, when in said condition, greater strength than the return spring, and resiliently holding the operator in depressed position against the force of the return spring while urging said member in said one direction relative to the support.

3,297,854
ELECTRON GUN ASSEMBLING MACHINE
James L. Kraner, Harwood Heights, Ill., assignor to The Raytheon Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 10, 1964, Ser. No. 394,890
14 Claims. (Cl. 219—78)



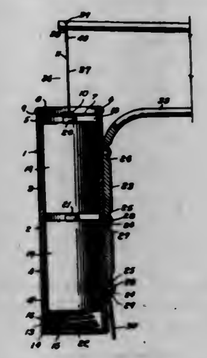
1. A machine for assembling electron gun components of a cathode-ray tube including a grid cylinder having a spacer at one end, a cathode cylinder extending centrally through and secured to an insulating spacer, and a conductive retaining ring having a diameter approximately equal to the internal diameter of said grid cylinder, said machine comprising:
a workholder for supporting said components in nested concentric relation with said cathode spacer resting against said grid spacer and said retaining ring resting against said cathode spacer;
a primary welding electrode movably supported above said workholder, having an external diameter approximately equal to the internal diameter of said grid cylinder and having a central recess with a diameter greater than that of said cathode cylinder;
means for lowering said primary electrode into a welding position with said cathode cylinder received within said recess and with said primary electrode bearing against said retaining ring to maintain said components under a predetermined clamping pressure;
a plurality of secondary electrodes angularly disposed about said workholder and individually movable from a rest position spaced from said workholder to a welding position in which said secondary electrode contacts said grid cylinder at a point adjacent said retaining ring;
means for displacing said secondary electrodes between their rest and welding positions;
and means for supplying current to said electrodes to weld said retaining ring to said grid cylinder while said components are retained under said clamping pressure.

3,297,855
METHOD OF BONDING
Ronald W. Bowers, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 26, 1964, Ser. No. 378,397
4 Claims. (Cl. 219—85)



3. In the fabrication of semiconductor devices, the method comprising:
providing a semiconductor device having a semiconductor wafer, an alloyed projection extending from the top of the wafer, a header on which the wafer is mounted at one side, and a lead wire extending higher than the wafer to form a lead post and through a glass bead in the other side of the header to below the header to form an external lead;
bonding a whisker wire to the lead post so that the free end of the wire overlays the alloyed projection on the wafer;
positioning the free end of the whisker wire into contact with the alloyed projection by using the pointed tip of a carbon rod so that the pointed tip is aligned with the alloyed projection; and
passing a capacitive discharge through the pointed tip of the carbon rod, the whisker wire, the lead post and external lead to melt momentarily the alloyed projection at the contact with the whisker wire so that the whisker wire is slightly embedded in the alloyed projection upon its solidification.

3,297,856
ELECTRICALLY HEATED TOOL FOR CUTTING PLASTICS
Melvin Gershon, % Wonder Products, Inc., Merchandise Mart Bldg., 2201 Grand Ave., Kansas City, Mo. 64108
Filed July 30, 1964, Ser. No. 386,361
3 Claims. (Cl. 219—233)

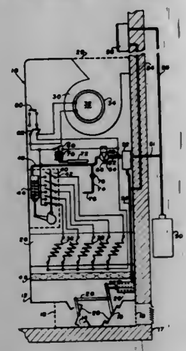


1. A tool of the character described, including
a hollow tubular member of nonconductive material providing a handle for said tool,
an electrically conductive cap fixed to and closing one end of the tubular member and having an electrically conductive loop portion projecting outwardly from near a center of said cap,
an electrically conductive cap removably secured to and closing the other end of the tubular member,
said tubular member providing a compartment for containing an electric current supply means having terminals of opposite polarity, with the terminal of one polarity adapted to electrically contact the fixed cap and the terminal of opposite polarity adapted to electrically contact the removable cap,
an electrically conductive frame of generally gooseneck shape having an arm with a terminal end spaced from the fixed cap to provide a gap therebetween and having a shank fixed along one side of the tubular member to maintain said gap,
said terminal end of the arm having a notch in alignment with said loop portion on the fixed cap,
a resistance wire spanning the gap and having one end electrically connected to said loop portion on the fixed cap and having an electrically conductive loop on the other end engaging in said notch to be held in tension by the gooseneck frame, and
switch means electrically connecting the shank with said removable cap to establish flow of an electric current through the resistance wire when the switch means is closed.

3,297,857
HEATING CONTROL SYSTEM
Robert G. Miner, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Nov. 15, 1963, Ser. No. 323,996
9 Claims. (Cl. 219—369)

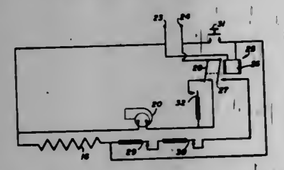
1. A heating system comprising an electric heater means; a variable pneumatic pressure supply means for supplying a variable pneumatic pressure; a pneumatic control means connected to receive pneumatic pressure from said variable pneumatic pressure supply means for energizing said electric heater means in response to an increase in pressure from said pneumatic pressure supply means and for de-energizing said electric heater means in response to a decrease in pressure from said pneumatic

pressure supply means; and a pneumatic fuse connected in fluid communication with said pneumatic control means and disposed in heat exchange relation with said



electric heater means for relieving the pressure from said pneumatic control means upon a predetermined excessive temperature condition.

3,297,858
WATERLESS URINAL
Ernest Bayne Blankenship, Irving, Tex. 75060
Original application Feb. 10, 1964, Ser. No. 343,820, now Patent No. 3,251,070. Divided and this application Oct. 8, 1965, Ser. No. 494,101
1 Claim. (Cl. 219—519)



In a waste disposal incinerator including an electric heater circuit having at least two contacts with a power source, a momentary switch in a circuit connecting said power source with said heater circuit, a double pole holding relay also conected with said power source, the circuit of the coil of said holding relay including said momentary switch, said relay having first and second contacts, at least one normally closed thermostat connected within said heater circuit on the side thereof including said momentary switch, said thermostat including means to be contacted by said first contact of said relay, a blower connected with said source of power through said second contact of said relay, a normally open thermostat connected with the side of said blower including said relay, and means connecting said normally open thermostats with said source of power when said normally open thermostat is in its closed position.

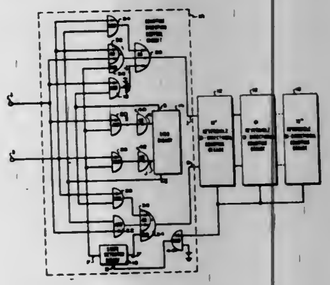
3,297,859
COUNTING DIRECTION CONTROL CIRCUIT FOR USE WITH REVERSIBLE COUNTERS
Ralph R. Reiser, San Jose, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed June 24, 1965, Ser. No. 466,727
6 Claims. (Cl. 235—92)

1. In counting apparatus for receiving input signals to be algebraically added to and subtracted from a count registered in a reversible counting means having a magnitude increase terminal and a magnitude decrease terminal, a counting direction control circuit for directing each of the input signals to the appropriate one of the magnitude increase and magnitude decrease terminals of the counting means, said control circuit comprising:

an input for receiving the input signals to be algebraically added to the count registered in the counting means, and another input for receiving the input signals to be algebracially subtracted from the count registered in the counting means;

a plurality of gates connecting each of said inputs to each of the magnitude increase and magnitude decrease terminals of the counting means;

sampling means responsive to operation of the reversible counting means in a preselected state for independently activating at least one of said gates without altering the state of the reversible counting means to apply the next input signal received at either of said inputs to the magnitude increase terminal of the reversible counting means;



a sign indicator connected for activating at least one other of said gates during operation of the counting means in another state to apply the next input signal received at one of said inputs to the appropriate one of the magnitude increase and magnitude decrease terminals of the counting means, said indicator having two operating conditions each of which is indicative of the registration of a count of different sign in the counting means and each of which is altered in response to a selected input signal applied to the indicator during operation of the counting means in the preselected state; and

gating means responsive to operation of the counting means in the preselected state for applying the next input signal to said indicator and responsive to operation of the counting means in said other state for preventing application of the next input signal to said indicator.

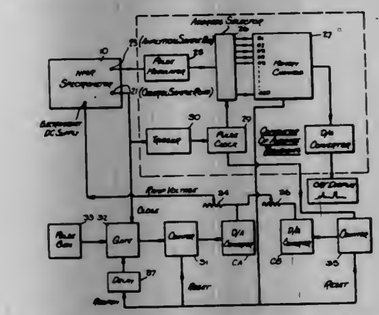
3,297,860
SPECTROSCOPIC COMPUTER
Gerhard Weiss, Northford, Conn., assignor to Technical Measurement Corporation, North Haven, Conn., a corporation of Delaware
Filed June 19, 1963, Ser. No. 289,064
9 Claims. (Cl. 235—151.35)

8. A spectroscopic computer system comprising:

(a) a spectrometer including electromagnetic means to subject a control sample and an analytical sample to a magnetic field whose intensity is swept throughout a prescribed range, means to derive from said control sample a reference pulse indicative of a known intensity and means to derive from said analytical sample an analog voltage pattern representative of its spectrum;

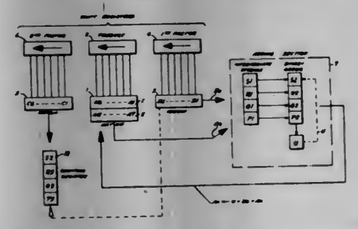
(b) a computer of average transients responsive to said spectrometer and comprising means to convert the input analog pattern into pulses having a repetition rate which varies in proportion to the amplitude of the pattern, selector means to feed said pulses into a series of memory channels, a pulse clock producing timing pulses to control said selector to effect sequential scanning thereof, to produce with repetitive actions an output analog pattern in which signal components in said system are emphasized relative to noise components; and

(c) a control circuit to coordinate the action of said spectrometer and computer comprising a pulse gen-



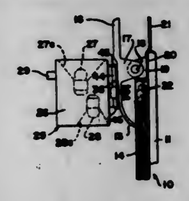
erator, a digital-to-analog converter responsive to the number of pulses produced by said generator to produce a ramp voltage which first rises from the starting point in said range to a level at which said reference pulse is produced and which is thereafter responsive to the number of pulses produced in said clock to cause said ramp voltage to rise until said range is fully swept, said sweep of said spectrometer being controlled by said ramp voltage.

3,297,861
DIGITAL MULTIPLICATION AND DIVISION ARRANGEMENT
Gerhard Wolf, Munich-Pasing, Germany, assignor to Kienzle Apparate G.m.b.H., Schwarzwald, Germany
Filed May 6, 1963, Ser. No. 278,159
Claims priority, application Germany, May 4, 1962, K 46,658
11 Claims. (Cl. 235—164)



1. In an electronic calculator, computer means including adder means for serially carrying out line-by-line multiplications and divisions of numbers, comprising, in combination, first factor storing means for storing one calculation factor; second factor storing means for storing a second calculation factor; totalizer storage means cooperating with said first and second factor storing means for carrying out multiplications and divisions, as the case may be, involving said one and said second factors, said totalizer storage means having a capacity for storing n bits of information and being composed of a first and a second partial totalizer storage means each having $n/2$ storage elements for storing calculation results, said first partial totalizer storage means being assigned to the lower significance orders of said numbers, and said second partial totalizer storage means being assigned to the relatively higher significance orders of said numbers; first driver means for driving said first factor storing means; second driver means for driving said second factor storing means; third driver means for driving said totalizer storage means and having $n/2$ driver elements; bistable control means cooperating with said third driver means and said totalizer storage means for maintaining operative connection between said third driver means and said first partial totalizer storage means until the capacity thereof is exhausted, and for establishing, when the same is exhausted, operative connected between said third driver means and said second partial totalizer storage means; and control means cooperating with one of said factor storing means and with said bistable control means for causing the latter, every time when during operation said one factor is completely read out from said one factor storing means, to re-establish said operative connection between said third driver means and said first partial totalizer storage means.

3,297,862
FLASHLIGHT ATTACHMENT FOR CLIPBOARDS
Louis Levy, 1 Lafayette Plaisance, Suite 2003, Detroit, Mich. 48207, and Roger L. Van Den Hout, 20555 Lasher Road, Apt. 20, Detroit, Mich. 48219
Filed Oct. 30, 1964, Ser. No. 407,690
3 Claims. (Cl. 240—6.4)

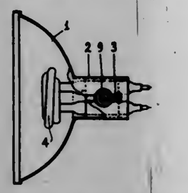


1. A flashlight attachment for clipboards having a flattened sheet material clip hingedly connected to a support board for clamping paper to said board, with the clip having an exposed outer face and a rear face facing toward the board, comprising a flat base plate adapted to be arranged upon the clip outer face and having side extensions integral with each side of the plate; a bar adapated to be arranged against the clip rear face; and mechanical fastening means for fastening the extensions to the ends of the bar for clamping the clip between the plate and bar; and struck out guides formed on the plate and extending outwardly therefrom and being shaped to slidably receive tracks formed upon a flashlight for thereby securing the flashlight to the plate; and said guides being parallel to the side edges of the plate; a stop flange bent outwardly from one end of the plate, and a narrow resilient locking flange formed integral with the opposite end of the plate, the locking flange being normally in the path of movement of the tracks into said guides, but being resiliently bendable out of the way of said tracks during the sliding of the flashlight tracks into locking engagement with the guides and being resiliently returnable into its normal position to block the removal of the tracks from the guides.

3,297,863
PROJECTOR FOR MOTOR VEHICLES
Francesco Robbiano, 19 Corso Chieti, Turin, Piedmont, Italy
Filed Aug. 17, 1964, Ser. No. 389,976
1 Claim. (Cl. 240—11.4)

A projector for a motor vehicle, said projector comprising a reflector having a curved body and a rearwardly extending cylindrical jacket enclosing a central opening of the reflector body and constituting a lamp socket; a lamp having a spiral discharge tube portion located within said reflector body, two parallel bulbs integral with opposed

ends of said spiral discharge tube and extending through said jacket, electrodes within said bulbs, and conductors connected with said electrodes and extending out of said bulbs; a filling enclosing said bulbs, a cylindrical ring-holder enclosing said filling and fitting within said jacket,



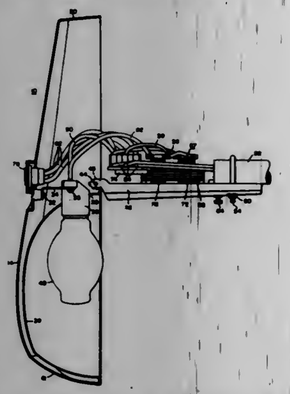
said jacket having a longitudinal opening and said ring-holder having an opening aligned with a portion of the first-mentioned opening, and a fixing screw extending through said openings for adjusting the location of the lamp relatively to the reflector.

3,297,864

LUMINAIRE

Walter M. Waldbauer, North Olmsted, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 2, 1964, Ser. No. 379,984
5 Claims. (Cl. 240—25)



1. A luminaire comprising a dish shaped housing having a first portion and a second portion, a reflector positioned in said first portion, a closure member mating with said second portion to provide an enclosure, means pivotally connecting said housing to said closure member intermediate said first and second portions, electrical components mounted on said closure member and positioned in said enclosure, and means connected to said closure member for mounting said luminaire.

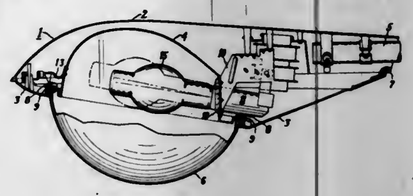
3,297,865

LUMINAIRE LATCHING DEVICE

Samuel L. Baldwin, Flat Rock, N.C., assignor to General Electric Company, a corporation of New York

Filed July 7, 1964, Ser. No. 380,827
7 Claims. (Cl. 240—147)

1. A luminaire comprising, in combination, a housing having an opening, a reflector in said housing facing said opening, said reflector being detachably supported at one side by said housing, and co-acting latch means on said housing and said reflector at another side of said reflector for positioning and retaining said reflector in predetermined fixed relation to said housing upon assembly of said reflector into said housing, said latch means comprising a rigid arm member projecting from one of said reflector and said housing and latch positioning means fixed to the other of said reflector and said housing having a seating portion with spaced flanges diverging therefrom



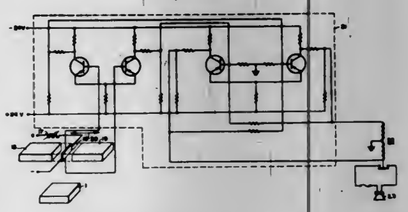
for receiving said arm member and positioning said arm member and said latch positioning means in predetermined fixed relation relative to each other, said latch means including detent means for readily detachably holding said arm member and said latch positioning means in seated relation with one another.

3,297,866

MAGNETICALLY TRANSMITTING CONTROL SIGNALS TO VEHICLES

Hans-Joachim Lippmann and Friedrich Kuhrt, both of Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Sept. 15, 1961, Ser. No. 138,361
Claims priority, application Germany, Sept. 16, 1960, S 70,384
3 Claims. (Cl. 246—63)



1. A system for magnetically transmitting control signals to a travelling vehicle having a given travel path, comprising at least two transmitters spaced from each other along said path and each comprising a permanent magnet, a receiver on said vehicle having a Hall-voltage generator controllable as to magnitude and polarity of its output voltage by the magnetic fields of said respective transmitter magnets when said receiver passes through proximity thereto, said two magnets being substantially symmetrical but having mutually opposed magnetic orientation relative to said Hall-voltage generator so that said Hall-voltage generator is subjected to opposingly acting field effects at said two transmitters respectively, each of said magnets being positioned with one of its poles facing said receiver and closer to said receiver than its other pole when the receiver is closest to said magnet, each of said magnets being of the same flat configuration with flat pole faces, and said receiver having a bistable trigger circuit connected to receive the output voltage of said Hall-voltage generator to be controlled thereby so that the first response to one of said transmitters issues a signal on the vehicle and the response to the second transmitter clears the signal irrespective of the vehicle speed and travel direction.

3,297,867

VEHICLE STOPPING CONTROL SYSTEM

Robert E. Archibald, Greece, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed May 27, 1964, Ser. No. 370,734
7 Claims. (Cl. 246—122)



1. In a system for controlling a vehicle to stop with a first predetermined point on said vehicle adjacent a predetermined wayside point, the combination of,

(a) first signal producing means effective to provide a first signal proportional to the known distance existing between said first predetermined vehicle point and a second predetermined point located on said vehicle forward of said first predetermined point in the direction of vehicle travel,

(b) second signal producing means rendered effective upon passage of said second predetermined vehicle point at said wayside point to thereafter provide a second signal proportional to the distance that said second point has travelled past said wayside point,

(c) means responsive to said first and second signals effective to produce a third signal indicative of the difference between said first and second signals, and

(d) control means responsible to said third signal effective to initiate a stopping of said vehicle when said third signal decreases below a predetermined value.

3,297,868

RAILWAY CROSSING SIGNAL SYSTEMS

Norman Ridley Shaw, 717 66th Ave. SW., Calgary, Alberta, Canada

Filed Jan. 21, 1963, Ser. No. 252,855
2 Claims. (Cl. 246—125)



1. In railway crossing signal systems a multi-channel radio transmitter on a locomotive and a single channel radio receiver set at each crossing said receivers being tuned to each receive only one of the several tones or frequencies which can be selectively transmitted said receivers being arranged in a definite progressive order with regard to the tone of each receiver so that the operator at the locomotive can activate the receiver at the next up-coming crossing without activating the next several receivers which are tuned to receive only in the other tones.

3,297,869

SPECIMEN HEATING DEVICE FOR AN ELECTRON MICROSCOPE SPECIMEN HOLDER MADE OF A SINGLE PIECE OF MATERIAL

Susumu Ozasa, Hachioji-shi, and Tsutomu Komoda, Musashino-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Feb. 5, 1964, Ser. No. 342,607
Claims priority, application Japan, Feb. 13, 1963, 38/5,939
1 Claim. (Cl. 250—49.5)



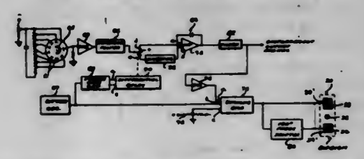
A specimen heating device for electron microscopes consisting essentially of a specimen moving stage; a hollow specimen holder mounted on and moving through the center of said stage coaxially and symmetrically with the optical axis of the electron microscope, said holder being of a single kind of material and devoid of intermediate joints; a cap at the lower end of said specimen holder adapted to hold a specimen; a heating coil provided about the lower part of said holder near said specimen, one end of said coil being grounded to said specimen holder; a first electrical insulator below the part of said specimen holder which contacts said moving stage; a slip ring fitted over said insulator, the other end of said coil being connected to said slip ring; a contact member, firmly contacting said slip ring, provided on said moving stage; a second electrical insulator being interposed between said contact member and said moving stage; means for applying a voltage across said moving stage and said contact member thus causing a current to flow through said heating coil by way of said stage, holder, slip ring and contact member; said specimen holder having a thin wall between said specimen and said moving stage to reduce heat dissipation due to thermal conduction.

3,297,870

FEEDBACK CONTROL SYSTEM FOR THE BIPRISM MEANS OF AN ELECTRON-OPTICS INTERFEROMETER

Robert A. Kiley, Alamogordo, New Mexico, and Seth A. Young, Yellow Springs, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

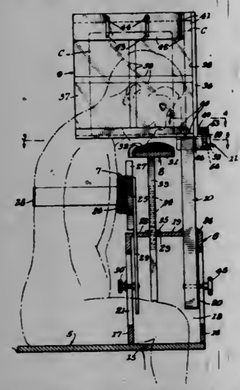
Filed June 12, 1964, Ser. No. 374,861
5 Claims. (Cl. 250—49.5)



1. An electron-optics interferometer feedback control system comprising: means for generating an electron beam, biprism means in the electron beam path and including two spaced electrically-conductive electrodes and a filament mounted in the space between the electrodes for producing an interference pattern, a detector disposed in the path of the electron beam interference pattern to produce an output signal, a summing amplifier, potentiometer means having a movable wiper arm connected to said biprism electrodes via said summing amplifier for effecting displacement of said electron beam from a predetermined position, oscillatory means having a sinusoidal output connected to said summing amplifier for disturbing the position of said interference pattern at a sinusoidal rate, and

feedback means connected between said detector and said summing amplifier for generating a corrective voltage whereby said electron beam is returned to said predetermined position in reaction to movement of said wiper arm.

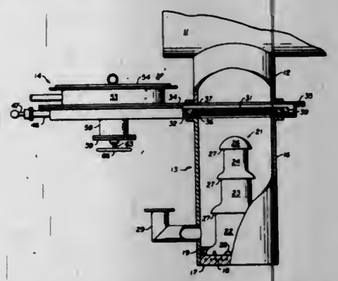
3,297,871
PNEUMOENCEPHLOGRAPHIC APPARATUS WITH MEANS FOR SUPPORTING AN ANESTHETIZED PATIENT IN A SEATED POSITION
Stanley E. Nathanson, 14555 Figueras Road, La Mirada, Calif. 90638
Filed Apr. 6, 1964, Ser. No. 357,679
6 Claims. (Cl. 250—50)



1. Pneumoencephlographic apparatus comprising:
(a) a support for an anesthetized patient in a seated position with the torso of the patient above the rearward portion of the support,
(b) adjustable means on the forward portion of said support and extending upwardly therefrom and provided with torso-encircling means to hold the torso of such patient immobile,
(c) a vertically adjustable support on said patient support for the patient's skull while so immobilized, and
(d) a frame mounted on the adjustable means for holding cassettes of X-ray photographic plates vertically in two transverse planes at the front and one side of said skull,
(e) the support comprising a board on which the patient is seated and provided with spaced front recesses for accommodating the legs of a patient seated on the board,
(f) the mentioned adjustable means including a standard affixed to the middle front portion of the board between said recesses and adapted to be straddled by the patient's legs, the mentioned torso-encircling means, the skull-supporting means, and the cassettes-holding frame, all extending upwardly from said standard.

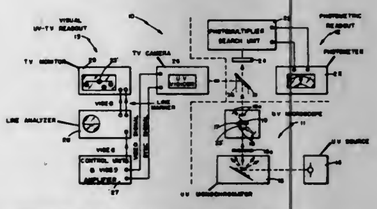
3,297,872
METHOD AND APPARATUS FOR MONITORING DIFFUSION PUMP BACK-STREAMING IN THE THROAT OF SAID PUMP
Patrick B. Kennedy, El Cerrito, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 22, 1964, Ser. No. 361,922
13 Claims. (Cl. 250—65)

12. Apparatus for monitoring the escape of pumping fluid vapor from a diffusion pump into a vessel being evacuated thereby, comprising:
(a) a flat plate having a surface area substantially equal to the cross-section area of the throat of said pump,
(b) a broad shallow housing secured between the throat of said pump and said vacuum vessel and extending outwardly at one side thereof, said housing having a large opening in the upper surface thereof for receiving said flat plate therein,
(c) a carriage slidably disposed in said housing and having a broad central opening for receiving said flat plate,
(d) means coupled to said carriage to selectively translate said carriage and said plate between a first position beneath said large opening in said housing and a second position within the throat of said pump,
(e) a closure plate disposed in said housing beneath said opening thereof and said carriage,
(f) externally operated means for selectively lifting



said closure plate towards said carriage and said opening of said housing, whereby in the first position of said carriage said closure plate may be moved from a lower position freely beneath said carriage to an upper position forcing said carriage against the upper surface of said housing to hermetically seal the region of said large opening in said housing from said pump,
(g) a removable top plate hermetically closing said large opening in said housing, and
(h) means communicating with the region of said housing adjacent said opening thereof for selectively controlling the pressure in said hermetically sealed region.

3,297,873
MICROSCOPE SYSTEM WITH MEANS FOR VIEWING THE ENTIRE IMAGE AND MEANS FOR MEASURING RADIATION FROM A SELECTED SEGMENT OF IMAGE
Hrair Philip Hovnanian, Winchester, and Timothy A. Brennan, Andover, Mass., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,320
10 Claims. (Cl. 250—71)



1. A microscope system comprising:
(a) a microscope including a focal plane, means for placing a specimen holder in the focal plane, means for illuminating the focal plane with radiation, and means for projecting radiation passing from said focal plane for forming an image of said focal plane;
(b) a mirror for receiving and reflecting said image, said mirror including an aperture through which

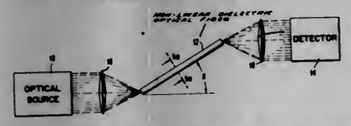
radiation from a selected portion of said focal plane passes;
(c) readout means for providing a quantitative readout of the radiation intensity passing through said aperture;
(d) means for visually displaying the reflected image of said focal plane, including an image of said aperture; and
(e) means for providing relative movement between said aperture and said focal plane whereby the former scans the latter.

6. A fluorescent microscope system for viewing specimens which convert invisible radiation to visible radiation, comprising;
(a) a microscope including a focal plane, means for placing a specimen holder in the focal plane, means for illuminating the focal plane with radiation, and means for projecting radiation passing through said focal plane for forming an image of said focal plane;
(b) a mirror for receiving and reflecting said image, said mirror including an aperture through which visible radiation from a selected portion of said focal plane passes;
(c) readout means for providing a quantitative readout of the visible radiation intensity passing through said aperture;
(d) means for visually displaying the reflected image of said focal plane including an image of said aperture; and
(e) scanning means for selecting successive portions of said focal plane from which visible light is in optical communication with said aperture.

3,297,874
SURFACE CONTAMINATION DETECTION USING A RADIOACTIVE LABELED COMPOUND
John Lynde Anderson, Orlando, Fla., assignor to Cleanometer Corporation, Wilmington, Del.
No Drawing. Filed Dec. 21, 1961, Ser. No. 161,246
14 Claims. (Cl. 250—106)

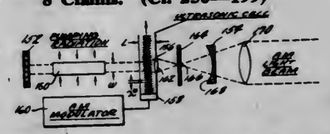
1. A process for detecting contamination on a surface which process comprises exposing the surface to be tested and any contamination thereon to a volatile radioactive labaled material; determining the rate of evaporation of said volatile radioactive material from the resultant exposed surface by measuring radioactive emissions using a radiation detector; and relating this rate of evaporation to the rate of evaporation obtained under control conditions in the absence of any contaminant.

3,297,875
OPTICAL TRAVELING WAVE PARAMETRIC DEVICES
Richard L. Garwin, Scarsdale, Wilton A. Hardy, Ossining, and Rolf W. Landauer, Briarcliff Manor, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1962, Ser. No. 205,951
11 Claims. (Cl. 250—199)



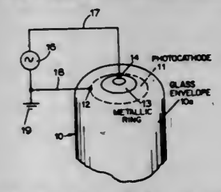
1. A traveling wave parametric system comprising
(a) an optical fiber having a core member and a cladding member, at least one of said members being made of a non-linear dielectric material,
(b) means for applying a first optical wave of a given frequency to said optical fiber, said fiber being capable of supporting said first optical wave of given frequency and a second optical wave of twice said given frequency, said first optical wave being applied to said fiber to produce said second wave of twice said given frequency therein and in a direction such that said first and second waves travel through said fiber at equal phase velocities, and
(c) means for detecting said second optical wave.

3,297,876
AMPLITUDE MODULATION FOR LASERS
Anthony J. De Maria, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 16, 1963, Ser. No. 273,514
8 Claims. (Cl. 250—199)



1. In a control system for lasers, means for generating a laser output including an active continuous wave laser element having end reflectors, at least one of said reflectors being spaced at a distance from said laser element, the space between said reflectors defining an optical cavity, a liquid ultrasonic cell positioned in said optical cavity between said laser element and said spaced reflector whereby the laser output passes through said cell, means for generating an amplitude modulated signal, and means for applying said signal to said cell to generate an amplitude modulated wave within said cell, said laser output being intensity modulated in accordance with said signal as said laser output passes through said cell.

3,297,877
CAPACITIVE COUPLING FOR A PHOTOCATHODE IN A POSITION INDICATING DEVICE
Irving R. Brenholdt, Montclair, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Nov. 27, 1963, Ser. No. 326,516
10 Claims. (Cl. 250—211)

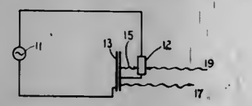


1. A position indicating device comprising photoemissive means adapted to receive the image of an object, voltage supply means capacitively coupled to said photoemissive means to induce a rotating voltage gradient upon said photoemissive means, collector means further associated with said photoemissive means to provide a voltage output caused by said rotating voltage gradient and the position of said object image on the photoemissive means, and indicating means adapted to receive said voltage output and provide an indication of the position of said object image.

3,297,878
PHOTOSENSITIVE BISTABLE ELEMENT FOR USE IN INFORMATION STORAGE
Egon E. Loebner, Princeton, N.J., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Filed Nov. 28, 1956, Ser. No. 624,862
6 Claims. (Cl. 250—213)

1. An opto-electronic bi-stable device comprising the combination of an electrically series coupled voltage

source, a light sensitive impedance means and an energizable light producing means, said light sensitive means and said light producing means being light coupled and having parameters providing a stable off condition and a

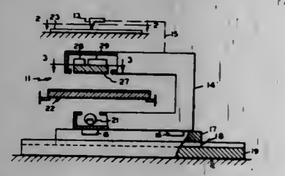


stable excited condition, signal actuated means coupled across said light producing means for lowering the voltage applied thereto to return said light producing means to the stable off condition from the excited condition.

3,297,879
OPTICAL ENCODER RESPONSIVE TO MOVEMENT IN TWO DIRECTIONS

Robert V. Meyer, Mechanicville, N.Y., assignor to W. & L. E. Gurley, Troy, N.Y., a corporation of New York

Filed Mar. 18, 1963, Ser. No. 265,701
5 Claims. (Cl. 250—237)

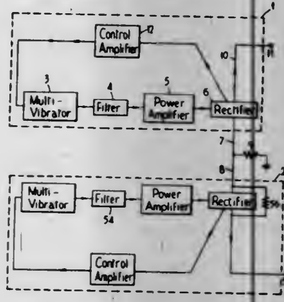


1. In combination
(a) a pair of members movable relatively to each other in parallel planes;
(b) a pulse-generating grid parallel with said planes and carried by one of said members, the grid comprising first and second crossed sets of spaced parallel bands having one light-affecting characteristic and defining two crossed sets of parallel columns of spaced areas having a different light-affecting characteristic, the bands in each set and the spaces between them being of equal width;
(c) first and second photocells carried by the other member and each having an active face;
(d) a light source carried by the other member for illuminating a portion of the grid, the portion so illuminated depending upon the relative positions of the two members;
(e) first means carried by the other member for forming on the active face of the first photocell an image of a first section of the illuminated portion of the grid, the margins of the first section being parallel with the bands in the first and second sets, respectively, and the section having a dimension parallel with the bands in the first set equal to an even multiple of the width of the bands in the second set and a dimension parallel with the bands in the second set equal to an odd multiple of the width of the bands in the first set;
(f) second means carried by the other member for forming on the active face of the second photocell an image of a second section of the illuminated portion of the grid having margins parallel with the bands in the first and second sets, respectively, the second section having a dimension parallel with the bands in the first set equal to an odd multiple of the width of the bands in the second set and a dimension parallel with the bands in the second set equal to an even multiple of the width of the bands in the first set,
(g) the light-affecting characteristics being so chosen that relative movement of the two members in directions parallel with the first and second sets of bands produces cyclic variations in the outputs of the second and first photocells, respectively.

3,297,880
ELECTRIC CIRCUITS FOR SUPPLYING A SUBSTANTIALLY CONSTANT CURRENT TO A LOAD

John Philip Clarke, Kenilworth, England, assignor to The General Electric Company Limited, London, England

Filed May 9, 1963, Ser. No. 279,142
Claims priority, application Great Britain, May 11, 1962, 18,231/62
5 Claims. (Cl. 307—58)

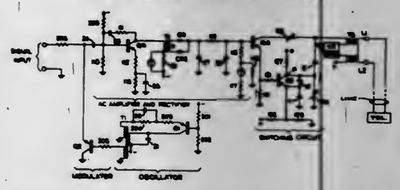


1. An electric circuit for supplying a substantially constant unidirectional current to a load, said circuit comprising
(I) an alternating current generator, the frequency of which is variable over a predetermined range,
(II) a passive network having a frequency response that varies linearly at least over said range of frequencies,
(III) a power amplifier,
(IV) means connecting the output of the generator to the input of said amplifier by way of said network,
(V) rectifier means to derive from the output signal of the amplifier, the unidirectional current which is to be passed to the load,
(VI) means to derive a unidirectional control voltage from said unidirectional current, and
(VII) means to supply the control voltage to said generator to control the frequency thereof.

3,297,881
FAST-ACTING CURRENT LEVEL SHIFTER

Wolfgang Schreder, Mountain View, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y.

Filed Oct. 22, 1963, Ser. No. 317,998
10 Claims. (Cl. 307—88.5)

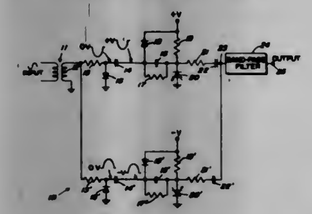


1. A circuit arrangement comprising a transmission line having an inherent impedance including at least some capacitive and inductive effects, a current control source having an output connected to said line to supply a current of a predetermined amplitude thereover, first control means operable to alter the output of said control source to change the amplitude of said current over said line from one level to another, with the time required for said amplitude change being delayed as a function of the impedance of said line, and second control means associated with said line and operable responsive to the said operation of said first control means for applying a compensating current to said line to reduce the said time required for said amplitude change.

3,297,882
LIMITER-COMPRESSOR CIRCUIT

Samuel L. Broadhead, Jr., Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Dec. 30, 1963, Ser. No. 334,535
6 Claims. (Cl. 307—88.5)



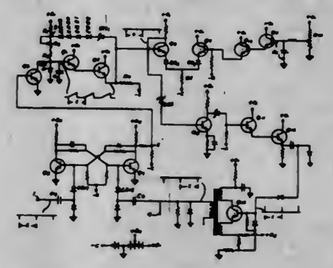
1. In a limiter-compressor circuit, signal input means; a D.C. return to a voltage potential reference; signal path means connected to said signal input means; a voltage variable capacitor; a first diode connected between the signal path means and the voltage potential reference, and with said first diode having a predetermined orientation; said signal path means including a first capacitor, and connection through said first capacitor to a common junction of a second diode, a second capacitor, and impedance means parallel to said second capacitor, and with said second diode connected to a voltage supply with the same orientation toward the voltage supply as the orientation of said first diode toward the voltage potential reference; impedance means connected between said voltage supply and a common junction of said second capacitor and said voltage variable capacitor; said voltage variable capacitor being connected between said voltage potential reference and said signal path means with opposite orientation from the orientation of said first diode relative to the signal path means; and signal path circuit means from said common junction of said second capacitor and said voltage variable capacitor to an output terminal for connection to utilizing equipment.

3,297,883
STABLE TRANSISTORIZED VARIABLE DELAY GENERATOR

Raymond M. Schuimeyer, Baltimore, and Colin D. Gardner, Glen Burnie, Md., assignors to the United States of America as represented by the Secretary of the Air Force

Filed Dec. 31, 1963, Ser. No. 334,955
1 Claim. (Cl. 307—88.5)

A temperature compensated transistorized delay generator with high duty cycle capability for receiving a series of trigger pulses and generating for each trigger pulse received an output pulse at a delay interval thereafter that is proportional to an applied control voltage and has a value ranging from near zero to a value very close to the pulse repetition interval of said trigger pulses, said generator comprising: first and second sources of direct current each having one terminal connected to a point of reference potential, the terminals so connected being of opposite polarity; a ramp circuit comprising a capacitor having one terminal connected to said point of reference potential, first and second resistors connected in series between the other terminal of said first source and the other terminal of said capacitor, a unity gain amplifier comprising first and second transistors, the base of the first transistor being connected to the said other terminal of said capacitor, the emitter of said first transistor being connected to the base of said second transistor, and the emitter of said second transistor being connected through a load impedance to the other terminal of said second source, and a connection between the emitter of said second transistor and the junction of said first and second resistors, said connection containing in series a zener diode and a plurality of diodes in forward conduction for temperature compensating said first and second transistors with respect to said ramp circuit; a voltage comparator circuit comprising third and fourth transistors having their emitters connected through a common resistor to the said other terminal of said second source, a



connection between the base of said third transistor and the emitter of said second transistor, means including fifth and sixth transistors for applying said control voltage between the base of said fourth transistor and the said other terminal of said second source, said fifth and sixth transistors being connected like said first and second transistors and serving to temperature compensate said first and second transistors with respect to said voltage comparator; a seventh transistor having its collector-emitter path connected in shunt to said capacitor; a bistable circuit coupled to said seventh transistor for controlling its conductivity, said seventh transistor being fully conductive in one of the stable states of said bistable circuit and nonconductive in the other stable state; means for applying said trigger pulses to said bistable circuit for switching it from its said one state to said other state; and means responsive to an output from said third transistor for switching said bistable circuit from said other state back to said one state.

3,297,884
ADVANCE PULSE GENERATOR EMPLOYING ADDITIONAL TRANSISTOR TO SENSE AND REMOVE EXCESS CHARGE ON COUPLING CAPACITOR DUE TO INPUT PULSE SKIPPING

John Lewis Edwin Baldwin, Croydon, and Derek John Parkyn, Sanderstead, England, assignors to Rank-Bush Murphy Limited, London, England, a British company

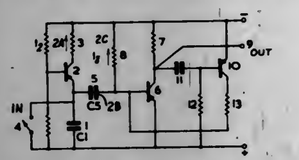
Filed Feb. 21, 1964, Ser. No. 346,456
Claims priority, application Great Britain, Feb. 28, 1963, 8,038/63
6 Claims. (Cl. 307—88.5)

1. An advance pulse generator comprising:
(a) a driving pulse generator for producing a train of driving pulses;
(b) a sawtooth generator connected to the driving pulse generator and arranged to produce a driven train of sawtooth pulses in response to the driving pulses with the tail of each sawtooth pulse substantially time coincident with the corresponding driving pulse;

(c) a coupling capacitor connected to the sawtooth generator and arranged to apply these sawtooth pulses to

(d) first voltage responsive means having an input connected to receive the sawtooth pulses from the coupling capacitor and to produce an output only when the voltage at the input exceeds a first predetermined level;

(e) second voltage responsive means having an input



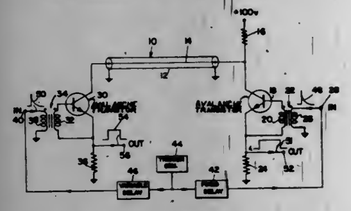
connected to receive a voltage representative of that voltage appearing across the coupling capacitor and arranged to provide a discharge path for the coupling capacitor when the input to the second voltage responsive means and thereby the voltage across the coupling capacitor exceeds a second predetermined voltage produced by the omission of a driving pulse from the driving pulse train, so as to reduce the period of malfunction of the advance pulse generator as a result of such pulse omission.

3,297,885

VARIABLE WIDTH PULSE GENERATOR EMPLOYING INDEPENDENTLY OPERATED SWITCHES FOR CONTROLLABLY DISCHARGING TRANSMISSION LINE

George J. Frye, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Mar. 6, 1964, Ser. No. 349,877
10 Claims. (Cl. 307—88.5)



1. A pulse generator, comprising:

a transmission line having a signal conductor and a ground conductor;

a pair of first and second electronic switch means connected to the opposite ends of said signal conductor;

means for applying a D.C. voltage to said signal conductor and for rendering said pair of switch means nonconducting to charge the capacitance of said transmission line; and

a first and second means for respectively and independently rendering said first and second switch means conducting to discharge said transmission line so that a single output pulse is produced at the output of at least one of said switch means only after both of said switch means are rendered conducting.

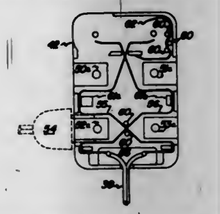
3,297,886

MULTI-RECEPTACLE ELECTRIC OUTLET AND MOUNTING MEANS

Eugene G. Danner, 91—22 71st Road, Forest Hills, N.Y. 11375

Filed Nov. 14, 1963, Ser. No. 323,699
5 Claims. (Cl. 307—112)

1. A multi-outlet electric extension for mounting on a tank or aquarium including a two prong electric plug adapted to be inserted into a wall or other electric outlet for providing electric power therefrom, a two part housing coupled face-to-face to provide a hollow interior in which are formed symmetrical channels, a plurality of pairs of spaced holes on opposite sides of said two part housing, each pair of spaced holes arranged to receive a two prong electric plug, a first bridged spring conductor seated in one of the symmetrical channels and arranged to make contact with one prong of a two prong electric plug which may be inserted into any pair of said spaced holes, means for electrically coupling one prong of the first mentioned two prong electric plug to said first bridged spring con-



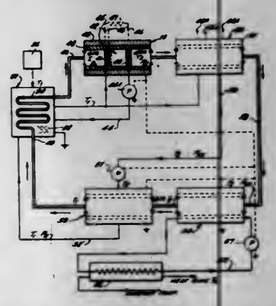
ductor, a second bridged spring conductor seated in the other of the symmetrical channels and arranged to make contact with the other prong of a two prong electric plug which may be inserted into any pair of said spaced holes, means for electrically coupling the other prong of said first mentioned two prong electric plug to said second bridged spring conductor, said first bridged spring conductor including switch means for electrically disconnecting said one prong of said two prong electric plug inserted into a certain pair of said spaced holes for providing a controlled electric outlet, hanger means extending from one part of said two part housing on part of said tank or aquarium.

3,297,887

HEAT ELECTRICAL POWER TRANSDUCER

Alvin M. Marks, 149—61 Powells Cove Blvd., Whitestone, N.Y. 11357

Filed June 3, 1963, Ser. No. 284,897
17 Claims. (Cl. 310—4)



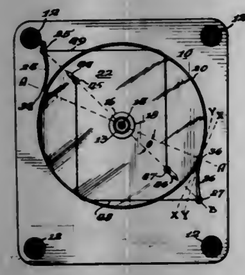
1. A single loop power transducer for converting heat and kinetic power to electrical power in an electrothermodynamic cycle of the Carnot type comprising a heat source, a first heat exchanger to receive heat from the heat source, a quantity of liquid under pressure in the first heat exchanger, a source of gas connected to the first heat exchanger and passing therethrough, pump means to force the gas through the first heat exchanger, a first aerosol forming and charging device connected to the liquid and gas in the first heat exchanger comprising the isothermal expansion stage of the cycle, a first collector electrode spaced from the aerosol forming and charging device to receive and extract the aerosol charge, means to collect and remove the liquid in the aerosol as it traverses the first collector electrode, means to return the liquid from the first collector electrode to the first heat exchanger, a second aerosol forming and charging device connected to the liquid in the first heat exchanger and the gas traversing the first collector electrode comprising the adiabatic expansion stage of the cycle, a second collector electrode spaced from the second aerosol forming and charging device to receive and extract the aerosol charge, means to collect and remove the liquid in the aerosol as it traverses the second collector electrode, means to direct the liquid from the second collector electrode to an adiabatic compressor to receive the liquid from the second collector electrode, an isothermal compressor to receive the gas traversing the second collector electrode, a second heat exchanger connected to the isothermal compressor, a source of liquid under pressure in the second heat exchanger, means to direct the gas coming from the isothermal compressor into the adibatic compressor and means to direct the gas and liquid from the adiabatic compressor back to the first heat exchanger.

3,297,888

ELECTROSTATIC MOTOR

Anthony Zwolski, 1848 W. 18th St., Chicago, Ill. 60608

Filed Sept. 23, 1963, Ser. No. 310,672
1 Claim. (Cl. 310—6)



An electrostatic motor comprising, in combination: an outer pair of separated conductive electrodes; a rotatable tubular dielectric armature between said electrodes; said armature having outer and inner coaxial surfaces of revolution; each outer electrode having a discharge portion closely adjacent the outer surface of said armature and spaced diametrically apart, and a face portion extending away from said discharge portion at a diverging angle with respect to the approaching armature surface; the angle of divergence being less than ninety degrees; whereby the armature surface approaching said electrode may be attracted electrostatically in a diagonally forward direction by the potential field around said diverging electrode surface; an inner companion electrode for each outer electrode; each inner companion electrode having a discharge portion closely adjacent the inner surface of said armature, said inner electrodes being spaced diametrically apart, and a face portion diverging from the approaching armature surface at an angle of not more than ninety degrees; each inner electrode being circumferentially offset from its outer companion by an angle less than ninety degrees; said discharge portions of companion electrodes being angularly displaced at an angle of less than ninety degrees, a potential source; connections from said source for delivering positive potential to one of said outer electrodes and negative potential to the other; and connections for delivering to each inner electrode potential opposite to that received by its companion outer electrode; said source being of sufficient potential to cause ionization along the discharge portions of all said electrodes.

3,297,889

CLOCK DRIVER

Sam Breakend, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army

Filed Jan. 15, 1964, Ser. No. 337,961
10 Claims. (Cl. 310—8.1)



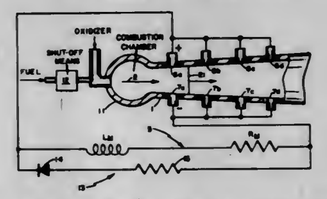
4. An electro-mechanical clock mechanism comprising electrostrictive means, a ratchet and pawl mechanism, means operably connecting said electrostrictive means to said ratchet and pawl mechanism, and means for causing said electrostrictive means to move.

3,297,890

METHOD OF AND APPARATUS FOR PRODUCING HIGH ENERGY ELECTRICAL IMPULSES

Thomas R. Brogan, Arlington, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Nov. 1, 1963, Ser. No. 320,817
17 Claims. (Cl. 310—11)



12. In apparatus for generating electrical impulses, the combination comprising:

(a) MHD generating means for generating electrical current having a predetermined direction, a unidirectional electromotive force being induced between a pair of opposed electrodes in a magnetic field by passing a hot electrically conductive gas between said electrodes;

(b) an inductor connected between said electrodes;

(c) unidirection conducting means connected to one end of said inductor and presenting a high impedance to current having said predetermined direction; and

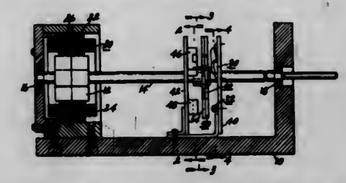
(d) means for periodically suddenly substantially reducing said electromotive force for a time that is short compared to one second.

3,297,891

BRUSHLESS DIRECT CURRENT MOTOR

David J. Foran, Jr., Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

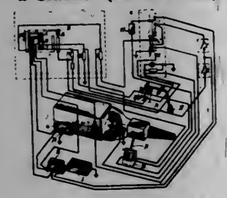
Filed June 3, 1964, Ser. No. 372,155
4 Claims. (Cl. 310—46)



1. A brushless direct current electric motor including, a frame, a four pole permanent magnet rotor having a shaft journalled in said frame, four pole wound stator

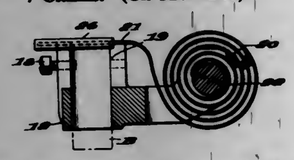
encircling said rotor, three magnetic reed switches connected between a source of direct current power and each phase of said wound stator, and permanent magnet means sequentially actuating said switch to produce a square wave rotating magnetic flux field in said stator so as to cause rotation of said rotor, said magnetic reed switches are mounted on a support located at right angles to the axis of said rotor shaft, wherein said magnet means comprises three permanent magnets mounted on a second plate axially spaced from said first plate, and slotted magnetic shielding means connected to said rotor shaft and disposed between said permanent magnets and said magnetic reed switches.

3,297,892
SYSTEM FOR CONTROL OF AUTOMATIC ELECTROMAGNETIC AUTOMOBILE CLUTCH
David Grigorjevich Poljak, Jury Ivanovich Egorov, and Nikolai Alexeevich Shereshev, all of Moscow, U.S.S.R., assignors to Moscowsky Zavod Malolitrazhnykh, Avtomobiles
Filed June 7, 1963, Ser. No. 286,267
1 Claim. (Cl. 310—95)



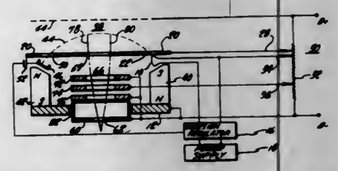
A system for the automatic control of an electromagnetic clutch for a vehicle having an engine, comprising a clutch field winding circuit, a supply switch therefor, an adjusting resistance in series with the clutch field winding, a generator provided with an armature, a shunt field winding and an armature winding, a three coil relay, one of the coils being connected across the generator armature winding, the second of the coils being connected across the generator shunt field winding and the third of the coils being connected in series with the generator armature winding whereby the relay is operative to short out the adjusting resistance from the clutch field winding circuit at a pre-set engine speed.

3,297,893
BRUSH MECHANISMS
George W. Litz, % Litz Co., Rte. 2, White Pine, Tenn. 37890
Filed Sept. 19, 1963, Ser. No. 310,041
7 Claims. (Cl. 310—246)



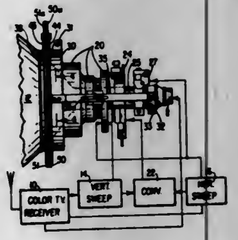
5. A brush mechanism for dynamoelectric machines comprising a holder, said holder having an elongated chamber adjacent one side thereof adapted to support two brushes therein, a pair of coil springs mounted on said holder, a first spindle rotatably mounted in said holder in spaced relation to said chamber, one of said pair of coil springs having its coiled end secured to said first spindle and having its other end overlying said chamber in position to engage a brush supported therein, a second spindle rotatably mounted in said holder in spaced relation to said chamber, the other of said pair of coil springs having its coiled end secured to said second spindle and having its other end overlying said chamber in position to engage a further brush in said chamber, said spindles being adapted to be rotated to vary the tension of said coil springs, means for locking said spindles against rotation, insulated studs on said holder adapted to be connected to said dynamoelectric machine, the end of each of said coil springs being provided with insulation, said insulation encasing completely the end of each of said coil springs in position to engage a brush to insulate each of said coil springs from said brushes to prevent current from flowing through said coil springs.

3,297,894
APPARATUS FOR IONIZING PARTICLES IN A MASS SPECTROMETER
Lawrence G. Hall, West Covina, and Patrick F. Howden, Los Angeles, Calif., assignors to SDS Data Systems, a corporation of California
Filed June 26, 1961, Ser. No. 119,676
7 Claims. (Cl. 313—63)



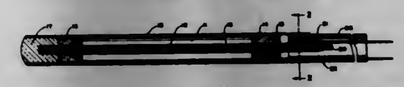
1. Apparatus for ionizing particles in an ionizing region comprising: an electron emission means remote from the ionizing region; electron collector means spaced from the electron emission means and remote from the ionizing region; means for developing a magnetic field having lines of flux extending along a curve intersecting the electron emission means and the electron collector means through the ionizing region; means for accelerating electrons from the electron emission means in the direction of said flux lines where they intersect the emission means, whereby electrons emitted by the electron emission means travel a curved path to the electron collector means thereby converting particles in the ionizing region into ions; and means for developing an electric field across the magnetic field to draw ions from the ionizing region.

3,297,895
DEFLECTION YOKE MOUNTING ASSEMBLY
Edward A. Sainers, Mount Prospect, and Thomas R. Steele, Lombard, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 15, 1964, Ser. No. 337,828
5 Claims. (Cl. 313—77)



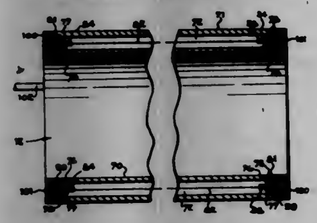
1. An assembly for a cathode ray tube having a funnel portion joined to a neck portion, including in combination, a deflection yoke for the cathode ray tube, a yoke mounting structure including first yoke support means comprising first clamping means adapted to be positioned adjacent the funnel of the tube and concentric with the neck thereof, cushion means secured with pressure sensitive adhesive to and between said first yoke support means and the funnel portion, said first clamping means having an opening to secure the forward portion of said yoke and to provide sliding movement of said yoke therein, said yoke mounting structure further including second yoke support means comprising second clamping means rearwardly of said yoke and secured to the neck of the cathode ray tube, so that said yoke may be moved in concentric relation to the neck of the tube in various positions toward and away from the funnel thereof and then clamped in fixed position.

3,297,896
MICRO-MINIATURE BETA GAMMA DETECTOR HAVING A HOLLOW TUBULAR CATHODE
Nicholas Anton, Brooklyn, N.Y., assignor to Eon Corporation, Brooklyn, N.Y., a corporation of New York
Filed Jan. 3, 1963, Ser. No. 249,296
4 Claims. (Cl. 313—93)



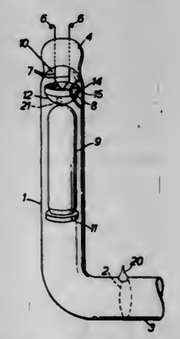
1. A radiation detector comprising a cylindrical shell formed of a conductive radiation permeable material, a perforated tubular conductive electrode positioned coaxially within said shell, a pair of insulating spacers fixed between and abutting both said electrode and said shell adjacent the ends thereof with said electrode passing through said spacers, sealing means to seal said shell to said electrode and to seal one end of said electrode with the opposite open end of said electrode extending through one of said spacers, sealing means to seal said opposite end of said electrode, a gaseous ionizing medium enclosed within said shell, a first insulated electrical lead connected to said opposite end of said electrode, a second insulated electrical lead connected to the inner surface of said shell adjacent said first electrical lead connection, and protective sheath means enclosing said electrical leads and fixedly attached to the inner surface of said shell adjacent said electrical lead attachments having a peripheral dimension less than the outer periphery of said shell.

3,297,897
LOW LEVEL GAS PROPORTIONAL COUNTER CONSTRUCTION
James E. Lewis and Bruce B. Graves, Louisville, Ky., assignors, by mesne assignments, to Radiochemistry, Inc., Louisville, Ky., a corporation of Delaware
Filed Mar. 21, 1963, Ser. No. 266,901
5 Claims. (Cl. 313—93)



2. An anti-coincidence counter comprising,
concentric first and second electrically conductive tubes of different diameters defining an annular counting chamber between them, the radial dimension of said chamber between said first and second tubes being designated by $2r$,
high voltage insulator means mounting a plurality of fine wire anodes in said chamber parallel to the axes of said tubes,
the radial spacing of each of said wires from the surface of each tube being substantially equal to r and the circumferential distance between each pair of wires being substantially equal to $2r$, and the circumferential distance between each member of said pair of wires being substantially equal to $2r$,
said high voltage insulator means comprising, a non-conductive ring at each end of said chamber and mounting means securing said wires to said ring, said mounting means including elastic means for holding said wires in tension in said chamber,
a shorting wire connecting the ends of said wires,
a conductive annular end cap outwardly of each ring and electrically connecting said tubes,
means holding each end cap between said tubes,
and external means for connecting a source of potential across said tubes and said wires.

3,297,898
MERCURY SUPPORT CUP FOR COLD CATHODE MERCURY VAPOUR TUBE
David Woods Dobbins, Birchhill, Addington, Surrey, England, assignor to Signcrafts Limited, London, England, a British company
Filed Jan. 20, 1964, Ser. No. 338,999
Claims priority, application Great Britain, Jan. 21, 1963, 2,460/63
5 Claims. (Cl. 313—174)

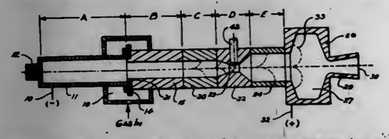


1. A cold cathode discharge tube, comprising: a display tube, a terminal tube fused to said display tube, wires extending through a pinch at the closed end of the terminal tube, an electrode mounted inside said terminal tube and supported by said wires, a re-entrant cup defining a mercury holding chamber and mounted on said wires between the electrode and the closed end of the tube, and a flange defining an entry to the cup and extending inwardly thereof from its outer wall which is spaced from the inner wall of the terminal tube by a narrow gap of sufficient width to allow a globule of mercury to pass therethrough towards the closed end of the tube when the terminal tube is tilted in one direction but sufficiently narrow to result in the mercury globule being deflected by the flange into the entry to the cup when the terminal tube is tilted in the reverse direction.

3,297,899
ELECTRIC ARC TORCHES HAVING A VARIABLY CONSTRICTING ELEMENT IN THE ARC PASSAGEWAY
Chapin A. Pratt, Hanover, and John W. Poole, Lebanon, N.H., assignors to Thermal Dynamics Corporation, a corporation of New Hampshire
Filed Jan. 24, 1964, Ser. No. 340,030
2 Claims. (Cl. 313—231)

1. An electric arc torch comprising a first electrode, a second electrode in the form of a nozzle defining an elongated arc passageway, means for establishing an arc be-

tween said electrodes, gas means for stabilizing said arc in said passageway, and a variably constricting element in



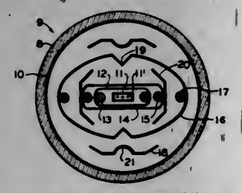
said nozzle positioned along said passageway to produce a distinct gas pressure drop across said element.

3,297,900

ELECTRON DISCHARGE DEVICE AND CIRCUIT

Mehmet Esin Ulug, Etobicoke, Ontario, Canada, assignor to Canadian General Electric Company, Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Apr. 3, 1963, Ser. No. 270,320
2 Claims. (Cl. 313—295)



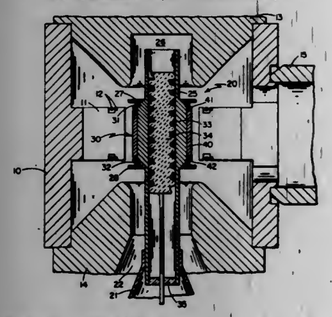
1. Electronic circuit means comprising an electron discharge device, said device comprising an evacuated envelope, said envelope enclosing a plurality of electrodes including: an electron-emissive cathode; a control grid, a screen grid, and a suppressor grid, said grids being closely wound with a constant pitch and spaced in succession from said cathode and from each other; an anode spaced from said suppressor grid on the side away from said cathode, said anode and said cathode defining therebetween at least one main path for electron emitted from said cathode, said path traversing said grids, and means to prevent electrons emitted by said cathode from returning to the region between the cathode and the control grid comprising an electron-deflecting deformation of the suppressor grid, said deformation comprising a generally V-shaped projecting portion directed toward said cathode and situated in said main path.

3,297,901

DISPENSER CATHODE FOR USE IN HIGH POWER MAGNETRON DEVICES

Kenneth A. Macdonald and Joseph A. Smith, Williamsport, Pa., assignors, by mesne assignments, to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware

Filed June 5, 1964, Ser. No. 372,804
16 Claims. (Cl. 313—346)



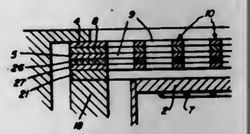
1. A cathode comprising
a first surface region of material capable of emitting secondary electrons and having a low rate of evaporation of emission enhancing material, and
a second surface region of material providing a source of primary electrons.

3,297,902

ELECTRON DISCHARGE DEVICE HAVING A LAMINATED AND FINELY RETICULATED GRID STRUCTURE THEREIN

James E. Beggs, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 22, 1965, Ser. No. 522,013
11 Claims. (Cl. 313—348)



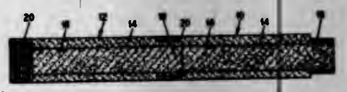
1. An electrode structure for an electron discharge device comprising a plurality of flat thin metal laminations each having finely reticulated patterns with at least substantial portions of said patterns being identical wherein said laminations are bonded together with identical portions in substantial registry, at least one lamination for disposition next to a heated cathode in said electron discharge device including a more finely reticulated pattern than the rest of said laminations and which is supported and cooled by the rest of said laminations.

3,297,903

THREADED JOINT FOR ARC CARBONS

Marvin R. Riek, Fostoria, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed Oct. 18, 1963, Ser. No. 317,340
7 Claims. (Cl. 313—355)



1. An arc carbon electrode adapted to be joined with another arc carbon electrode to form an assembly of electrodes suitable for use in an arc lamp, said electrode having a socket in one end, a plug on the other end which is shaped to fit in said socket, and mating threads disposed on said plug and in said socket, said threads having between 40 and 27 turns per linear inch and having at least the number of threads falling on the following lines in a graph showing the number of threads per linear inch against the diameter of said arc carbon electrode: a straight line connecting the points 40 threads per inch at a 7 millimeter diameter and 40 threads per inch at a 9 millimeter diameter, a smooth curve connecting the points 40 threads per inch at 9 millimeters, 36 threads per inch at 10 millimeters, 32 threads per inch at 11 millimeters, and 27 threads per inch at 13.6 millimeters, and a straight line connecting the points 27 threads per inch at 13.6 millimeters and 27 threads per inch at 35 millimeters.

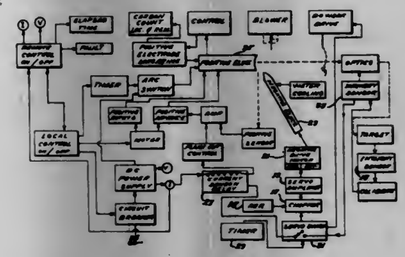
3,297,904

ARC LAMP INTENSITY CONTROL SYSTEM

Carl Lauxen, Haddonfield, N.J., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Nov. 19, 1963, Ser. No. 324,900
4 Claims. (Cl. 314—63)

1. Apparatus for controlling the output of light energy from an arc lamp having a pair of electrodes comprising, means for passing a current through the electrodes to form an arc therebetween, motor means operatively connected to each of said electrodes for moving said electrodes relative to one another to maintain a fixed distance therebetween, sensing means in the target area of said arc lamps for detecting the total light energy output therefrom and converting said total light energy to electrical energy, a Zener diode controlled voltage source for supplying a stable reference voltage, comparator means for comparing the electrical energy from said arc lamp with the stable reference voltage, the output of said comparator



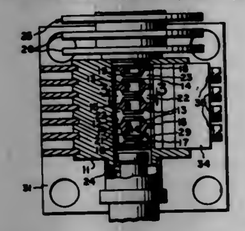
means being an error signal indicating the deviation from normal intensity of said arc lamp, and amplifying means for increasing the amplitude of the error signal from said comparator means, one of said motor means being directly coupled to one of said electrodes and responsive to the output of said amplifying means to advance and retract said electrode at a relatively faster rate when the light energy output as determined by said sensing means varies from normal, thereby varying the distance between the electrodes resulting in a corresponding variation in the light intensity and energy output of said arc lamp.

3,297,905

ELECTRON DISCHARGE DEVICE OF PARTICULAR MATERIALS FOR STABILIZING FREQUENCY AND REDUCING MAGNETIC FIELD PROBLEMS

Adolph J. Fiedor, Palo Alto, and Robert C. Rockwell, Menlo Park, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Feb. 6, 1963, Ser. No. 256,748
34 Claims. (Cl. 315—3.5)



1. An electron discharge device comprising:
(a) means for producing an electron beam, and
(b) conductor means adjacent said electron beam producing means for conducting radio frequency wave energy,
(1) said conductor means being made of an aggregate material comprising a porous metallic structure made of a material having a thermal coefficient of linear expansion less than that of iron with the pores of said porous structure being infiltrated with a second metal having a thermal conductivity greater than that of tungsten.

3,297,906

HIGH FREQUENCY ELECTRON DISCHARGE DEVICE OF THE TRAVELING WAVE TYPE HAVING AN INTERCONNECTED CELL SLOW WAVE CIRCUIT WITH IMPROVED SLOT COUPLING

Richard T. Schumacher, San Jose, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed May 29, 1963, Ser. No. 284,257
6 Claims. (Cl. 315—3.5)



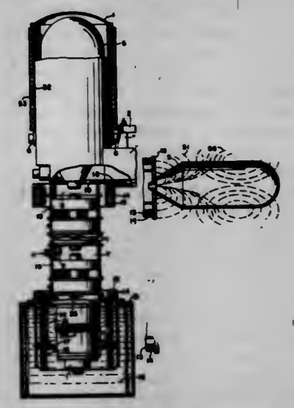
1. An electron beam discharge device including a slow wave structure for providing interaction between an electromagnetic wave being propagated thereby and a beam of electrons being projected along a predetermined axis, comprising, a series of interaction cavities positioned successively along said axis, said interaction cavities being defined by a pluralty of wall members disposed successively across said predetermined axis and having successively aligned apertures for passage of said electron beam therethrough, a plurality of said apertured wall members each having a slot subtending an arc of a circle about said axis, the width of said slot being less than one sixth of the length of said slot, said slots in successively disposed wall members subtending a portion of the same arc about said axis, and means for spacing successive wall members apart in the direction of and along said axis.

3,297,907

ELECTRON TUBE WITH COLLECTOR HAVING MAGNETIC FIELD ASSOCIATED THEREWITH, SAID FIELD CAUSING ELECTRON DISPERSION THROUGHOUT THE COLLECTOR

Albert D. La Rue and Robert S. Symons, Los Altos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

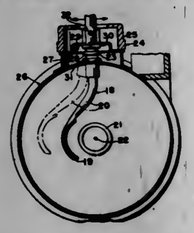
Filed June 13, 1963, Ser. No. 287,620
5 Claims. (Cl. 315—5.39)



1. An electron tube apparatus comprising, an electron gun for projecting over an elongated beam path a beam of electrons having an average beam power greater than 100 kilowatts, a collector assembly spaced from said gun at the terminal end of the beam and disposed to collect said beam, an interaction structure for supporting electromagnetic energy and so disposed that the electromagnetic fields of said interaction structure interact with

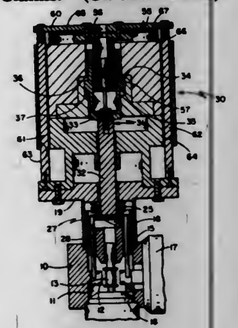
said beam, first means for generating a beam-focusing magnetic field for maintaining said beam in focus as it passes through said interaction structure, said beam-focusing means including a pair of apertured pole pieces axially spaced apart along the beam path and straddling said interaction structure for maintaining the beam-focusing magnetic field within the beam path, one of said pole pieces being disposed between the terminal end of said interaction structure and said collector assembly and being adapted to shield said collector assembly from the beam-focusing magnetic field but nevertheless permitting a leakage magnetic field to permeate said collector region, and a second magnetic field-generating means arranged to produce a static dispersing magnetic field in the region of said collector assembly which dispersing field is superimposed upon said leakage field in said collector assembly, said second magnetic field-generating means being such that the resultant magnetic field resulting from said superimposition has over a substantial part of the length of the collector assembly in the direction of the axis of said beam path a substantial radial component for dispersing the beam.

3,297,908
TUNING APPARATUS FOR KLYSTRONS
Oscar C. Lundstrom, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 6, 1964, Ser. No. 387,740
10 Claims. (Cl. 315—5.47)



3. A high frequency electron discharge device including beam forming and projecting means disposed at the upstream end portion of said device, electron beam collector means disposed at the downstream end portion of said device and electromagnetic interaction means including at least one resonant cavity disposed intermediate said beam forming and projecting means and said electron beam collector means along the longitudinal axis of said device, said aforementioned means serving to define a vacuum envelope for said device, said resonant cavity having a pair of spaced re-entrant drift tubes defining an interaction gap along the longitudinal axis of said device within said cavity, said resonant cavity having a capacitive tuner disposed therein, said capacitive tuner including a tuner member and a pendulum tuner shaft, said pendulum turner shaft extending through said vacuum envelope of said device whereby motion of said tuner may be induced by a tuner actuating mechanism external to said vacuum envelope, said tuner pendulum shaft being mounted for pendulum motion in a plane normal to the longitudinal axis of said device and about a pivotal axis such that the resonant frequency of said cavity resonator may be varied in accordance with the spacing between said tuner member and said gap, said device including flexible vacuum sealing means coupled between said pendulum tuner shaft and said resonant cavity, said pendulum tuner shaft being supported externally of the vacuum envelope of said device and undergoing pendulum motion in said plane normal to the longitudinal axis of the device both internally and externally of the vacuum envelope and said flexible vacuum sealing means, said pendulum tuner shaft being supported by rotatable support shaft means, said rotatable support shaft means being rotatably mounted on said device externally of the vacuum envelope and said flexible vacuum sealing means, said pivotable axis being spaced from and in parallel alignment with respect to the longitudinal axis of said device, said flexible means being a bellows coaxially disposed about and extending along a portion of the longitudinal extent of said pendulum tuner shaft, one end portion of said bellows being vacuum sealed to said pendulum tuner shaft and the other end portion of said bellows being vacuum sealed to said cavity.

3,297,909
THERMALLY STABLE STRUCTURE FOR TUNABLE MAGNETRON
Robert J. Foreman and John B. Horrigan, Williamsport, Pa., assignors, by mesne assignments, to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,478
5 Claims. (Cl. 315—39.61)



1. In a tunable resonant cavity device in which the frequency of the resonant cavity is varied by movement of a tuning member with respect to the body of the device and the position of the tuning member with respect to the body is sensed by a two-element position sensing device one element of which is fixedly mounted with respect to the body and the other element of which is fixedly mounted with respect to the tuning member, structure for mounting the one element on the body including

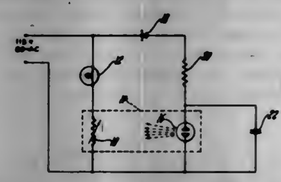
a supporting plate, means for mounting the one element on the supporting plate,

support rods of a material having a coefficient of thermal expansion which is low relative to that of the body of the device, one end of each of said rods being fixed to the body of the device and the other end of each of the rods being fixed to the supporting plate at the outer periphery thereof, and

a thin, flat diaphragm lying generally transverse to the support rods, and having its central portion fixed to the central portion of the supporting plate and its outer periphery fixed to a portion of the body of the device.

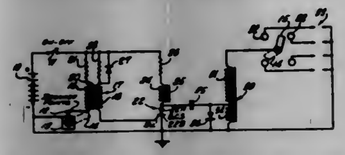
3,297,910
PERIODIC LIGHT FLASHER
Bernard J. Gershen, Edison, N.J., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,760
2 Claims. (Cl. 315—155)

1. A high voltage flasher operated from an A.C. source comprising a high power photocell connected in series with a lamp across said source, means for periodically illuminating said photocell to lower the resistance thereof and periodically energize said lamp, said means comprising a diode, a resistor, and a capacitor connected across said source and a neon lamp in shunt with said capacitor, said photocell and said neon tube being located in a light tight enclosure and in close proximity to each other, said



neon lamp having a predetermined ionizing potential, said capacitor being periodically charged to said ionizing potential thereby energizing said neon lamp to illuminate said photocell and cause energization of said lamp.

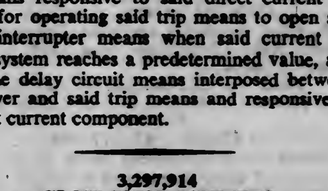
3,297,911
CAPACITIVE DISCHARGE IGNITION CIRCUIT USING A GATE CONTROLLED SEMICONDUCTOR SWITCH
Halsey P. Quinn, Morris Plains, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,638
6 Claims. (Cl. 315—214)



1. In an ignition system for internal combustion engines which includes a pair of breaker contacts connected in series with a source of direct current and controlled to open and close in synchronism with the movements of the engine's pistons; a primary winding of a first transformer connected in series with the breaker contacts and the source of direct current; an inductor having a winding on a ferromagnetic core; a semi-conductor gate controlled switch having an anode, a cathode, and a control electrode for controlling the resistance of the anode-cathode circuit; said anode-cathode and and said inductor winding connected in series and bridged across the source of direct current; a control circuit for said gate controlled switch connected between the positive terminal of the current source and the control electrode, said control circuit including a secondary winding on the first transformer and a first diode rectifier poled so as to block normal current flow from the current source; a storage circuit for storing a quantity of electricity generated by the inductor when the magnetic flux in its core collapses; said storage circuit including a storage capacitor and a second diode rectifier connected in series and bridged across the anode-cathode circuit of the gate; and an output transformer including a primary winding and a secondary winding, said primary winding connected across the second diode rectifier in the storage circuit and said secondary winding connected to a distributor.

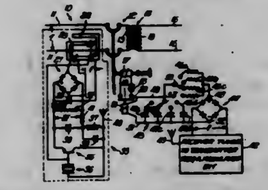
3,297,912
LIGHT SOURCE FOR PHOTOGRAPHIC PRINTER
William N. Schoppe, Chicago, Ill., assignor to The Nuarc Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 28, 1964, Ser. No. 340,762
11 Claims. (Cl. 315—238)

1. A point source of light for exposing sensitized photographic plates comprising an arc lamp including a generally tubular quartz envelope between eighteen and thirty-six inches in length coiled in the form of a helix, said envelope filled with an inert rare gas at a pressure less than atmospheric pressure, and an energization circuit for said lamp including a single winding peaking transformer and a capacitive reactance in series with said lamp, a trigger circuit including a first portion of said winding, a hold circuit including a second portion of said



winding, a power transformer having a primary winding connected to a A.C. voltage source and separate secondary windings for energizing said trigger circuit and said hold circuit, and means for disconnecting said trigger circuit from said lamp after ionization of the gas in said envelope.

3,297,913
HIGH VOLTAGE CIRCUIT BREAKER CONTROL SYSTEM EMPLOYING WAVE TRANSMISSION MODULATED BY CURRENT FLOW IN CIRCUIT WITH TIME DELAY FOR OPERATING CIRCUIT BREAKER
Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill. 60062
Filed Dec. 13, 1963, Ser. No. 330,339
17 Claims. (Cl. 317—36)



1. An electric power transmission system comprising:

(a) a power supply circuit and a load circuit,

(b) circuit interrupter means interconnecting said circuits and trip means therefor,

(c) means for deriving from said system an alternating current the magnitude of which corresponds to the magnitude of the current flow in said system,

(d) means including a wave transmitter modulated by said derived alternating current and a wave receiver therefor providing an output corresponding to said derived alternating current,

(e) means for deriving from said output of said wave receiver a current flow having a direct current component,

(f) means responsive to said direct current component for operating said trip means to open said circuit interrupter means when said current flow in said system reaches a predetermined value, and

(g) time delay circuit means interposed between said receiver and said trip means and responsive to said direct current component.

3,297,914
GLOW PLUG IGNITERS
John A. Saintsbury, St. Bruno, Quebec, Canada, assignor to United Aircraft of Canada Limited, Longueuil, Quebec, Canada
Filed May 28, 1964, Ser. No. 370,992
6 Claims. (Cl. 317—98)

1. An igniter for a gas turbine engine having a combustion chamber wall and a casing surrounding and spaced

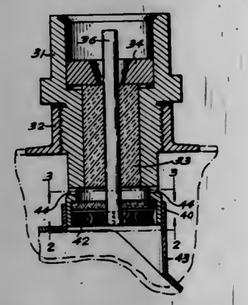
from said wall and in which fuel is required to be ignited rapidly at low temperatures without preheating the fuel, said igniter comprising:

a hollow generally cylindrical housing having an open end adapted for mounting in said combustion chamber wall so that the interior of the housing is in communication with said combustion chamber, and mounting means rearwardly spaced from said open end and adapted for sealing engagement with said casing,

a core of thermal and electrical insulating material extending within said housing short of said open end so as to leave an exposed cavity within said housing and said open end,

an igniting element of high temperature, electrically conducting material mounted within said cavity adjacent the open end thereof,

said igniting element being disposed generally in a radial plane and having a front surface facing towards



the interior of said combustion chamber and a parallel rear surface, and having one end electrically connected to said housing and its other end connected to an electric conductor extending through said core,

a support of heat resistant, electrically insulating material positioned within said cavity adjacent the rear surface of said igniting element so as partly to cover and support said rear surface,

said support being spaced from the floor of said cavity so as to provide a fuel collection space behind said support, a peripheral wall on said housing surrounding said cavity, said wall having a plurality of apertures allowing radial communication of said space with the space between said combustion chamber wall and said casing,

said support being shaped so as to expose part of the rear surface of said igniting element to the interior of said fuel collection space.

3,297,915

PROGRAMMING DEVICE

James A. Ward, Frankfurt am Main, Germany, assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed May 5, 1966, Ser. No. 547,844
Claims priority, application Germany, May 15, 1965, T 19,123
5 Claims. (Cl. 317—99)

1. A frame-like programming device for accommodating a plurality of diode frames and associated patch cords in electrically and electronically controlled office machines, comprising

(a) upper and base plate means,

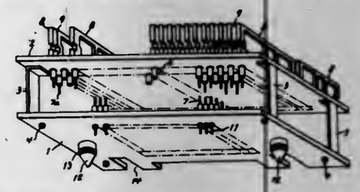
(b) contact means arranged in the form of a matrix on each plate means,

(c) means for interconnecting said plates in a spaced parallel relationship to form a frame-like structure,

(d) a plurality of small diode receiving frames associated with said upper plate and provided with mounting apertures,

(e) said contact means including inwardly extending portions on said upper and base plates and adapted to be selectively interconnected by patch cords,

(f) said contact means further including a plurality of pins extending outwardly from said base plate and adapted to establish connection to a plurality of female connectors of an associated power supply unit,



(g) guide means on said base plate for providing proper engagement between said outwardly extending pins and said female connectors,

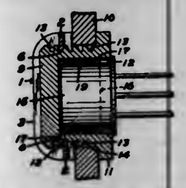
(h) said contact means still further including mean projecting outwardly from said upper plate for registering with a plurality of said mounting apertures on said small diode frames and adapted to engage therewith.

3,297,916

FASTENER AND HEAT CONDUCTOR INSTALLATION

Thomas B. Wright, Oakland, Calif., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Jan. 5, 1965, Ser. No. 423,421
6 Claims. (Cl. 317—100)



5. A component mounting installation comprising in combination an apertured supporting member, a heat sink seated in said aperture, said heat sink having a continuous internal wall defining a cavity therein, a fastener securing said sink to said member and means for securing a component associated with said heat sink, said means being in the form of a self-retaining spring seated in said cavity in said heat sink and having component engaging portions spaced from said internal wall defining said cavity and adapted to releasably retain a component in said heat sink.

3,297,917

CONTROL SYSTEM HAVING INFINITE IMPEDANCE AT A PRESELECTED OPERATING VOLTAGE

James M. Davis, Jr., Winston-Salem, N.C., and Robert E. Roy, Atlanta, Ga., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

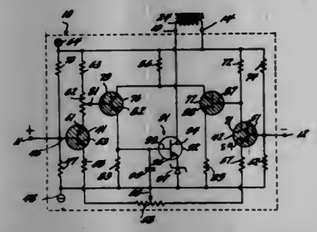
Filed Jan. 10, 1964, Ser. No. 337,098
3 Claims. (Cl. 317—148.5)

1. In a control system for sensing a variable output voltage of a tested circuit and for energizing a trigger circuit in response to a preselected level of variable output voltage of the tested circuit,

an amplifier circuit having input terminals for connection to a tested circuit and output terminals for connection to a trigger circuit, the amplifier comprising

a first and a second transistor connected in a differential amplifier arrangement, each transistor having its base connected to an input terminal of the amplifier and arranged for connection to a suitable biasing potential source, each transistor also having its collector arranged for connection to the biasing potential source,

a first potentiometer, connected between the emitters of the transistors and having its adjustable contact arranged for connection to the biasing



potential source, for establishing a preselecting potential difference across the input terminals, and

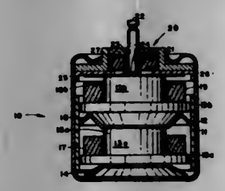
a second potentiometer, connected to the collector of the first transistor and arranged for connection to the biasing potential source, having its adjustable contact connected to the trigger circuit, for adjusting the amount of current to the first transistor to control a trigger circuit such that sufficient current flows to energize the trigger circuit upon the variable output voltage just exceeding the preselected potential difference.

3,297,918

ATMOSPHERE CONTROL WITHIN THE HERMETIC ENCLOSURE OF ELECTROLYTIC CAPACITOR ASSEMBLIES

James M. Booe, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Aug. 10, 1964, Ser. No. 388,537
15 Claims. (Cl. 317—230)



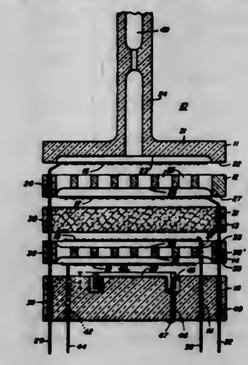
1. An electrolytic capacitor assembly comprising a capacitor cell having a head of one polarity and a bottom means of the other polarity, an enclosure having said capacitor cell positioned therein and with an opening at one end thereof, the other end of said enclosure being closed, compressed spring means disposed between said closed end of said enclosure and said bottom means of said capacitor cell for maintaining a compressive force on said capacitor cell, said enclosure comprising insulative means for electrically separating the terminals of said capacitor cell, a terminal insulatively and heremtically sealed in the opening of said enclosure and an electrical conductor connecting said head of said capacitor cell to said terminal of the enclosure, a non-liquifying desiccating means disposed within said enclosure for substantially eliminating moisture and gases therein, and terminal means on the external side of said enclosure electrically connected to said bottom means of the capacitor cell.

3,297,919

SOLION DEVICE HAVING HERMETICALLY SEALED EXTERIOR OF BOROSILICATE GLASS

William R. Grams, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 17, 1965, Ser. No. 512,838
8 Claims. (Cl. 317—231)



1. In an electrochemical device utilizing ions in a reversible redox system for the conduction of electric current, said device comprising in combination:

(a) a fused hermetically sealed borosilicate glass and envelope containing a redox system electrolyte,

(b) a plurality of disks of electrically non-conducting non-leachable material arranged in said envelope in aligned parallel relationship,

(c) a plurality of porous electrode means fixedly located in said envelope in electronic isolation from each other in contact with said electrolyte and made of metal selected from the group comprising platinum, palladium, iridium, ruthenium and rhodium and alloys thereof, and

(d) lead means electronically and electrolytically isolated from each other within said device for providing a separate electronic connection to each of said electrodes from outside said device,

(1) said envelope having a first inner flat surface at one end thereof substantially parallel to a second inner flat surface at the other end thereof and to the major surfaces of said disks, and

(2) said electrode means being arranged fixedly spaced from and electronically isolated from each other with surface area of at least one electrode being located between each set of adjacent opposed stacked disks and at least two of said electrodes having a substantially uniform spacing between the major surfaces thereof of between about 0.0005 and about 0.004 inch.

3,297,920

SEMICONDUCTOR DIODE WITH INTEGRATED MOUNTING AND SMALL AREA FUSED IMPURITY JUNCTION

Norbert Adams, Syracuse, Tapan Mukerjee, North Syracuse, and James M. Smith, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York

Filed Mar. 16, 1962, Ser. No. 180,164
5 Claims. (Cl. 317—234)

1. A semiconductor device comprising a planar insulating member having a pair of opposed sides, a pair of

planar semiconductor pellets of one and the opposite conductivity type, one of said pellets of one conductivity type having one face thereof securely bonded to one side of said member, the other of said pellets of opposite conductivity type having the other face thereof securely bonded to the other side of said member, an alloy dot



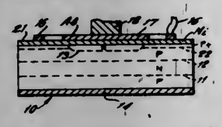
of activator material of opposite conductivty inducing type fused to a coplanar edge of said member and said pellets, the contact of said activator material to said one pellet forming a small area PN junction, and means for making electrical connection to the other sides of said pellets.

3,297,921

CONTROLLED RECTIFIER HAVING SHUNTED EMITTER FORMED BY A NICKEL LAYER UNDERNEATH AN ALUMINUM LAYER

Benjamin Topas, Santa Monica, and Harold Weinstein, Van Nuys, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Apr. 15, 1965, Ser. No. 448,398
3 Claims. (Cl. 317—234)



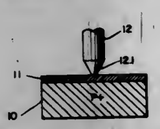
1. A controlled rectifier comprising a wafer of silicon having a first, second and third parallel spaced junctions therein; said third junction having the edges thereof terminating in a closed line on the upper surface of said wafer; the material above said third junction having N-type conductivity; the material surrounding and below said third junction having P-type conductivity; a nickel barrier layer extending over at least the surface of said wafer contained within said closed line and alloyed into said surface, an aluminum layer extending over the top of said nickel and extending across the edges of said third junction, and alloyed to said nickel-silicon alloy extending across said upper surface of said wafer.

3,297,922

SEMICONDUCTOR POINT CONTACT DEVICES

Arthur Uhlir, Jr., Weston, and John V. Jenkinson, Lexington, Mass., assignors to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts

Filed Nov. 2, 1961, Ser. No. 149,583
7 Claims. (Cl. 317—236)



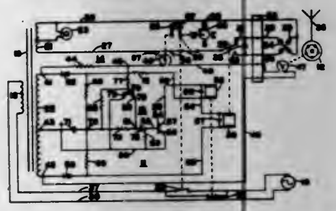
3. A point-contact type of semiconductor device comprising a body of semiconductor material, a point-contact type of electrode, and a layer of epitaxy semiconductor material on said body and forming a substantially abrupt junction therewith, said layer having a bulk resistivity which is greater than the bulk resistivity of said body and a thickness not greater than about 6.0 microns, said electrode being in point-contact with said layer.

3,297,923

COMBINATION SWITCH CONTROL FOR SERVO-CIRCUIT SYSTEMS

Emmor V. Schneider and Andrew F. Deming, Alliance, Ohio, assignors to Consolidated Electronics Industries Corporation, a corporation of Delaware

Filed Sept. 13, 1963, Ser. No. 308,836
10 Claims. (Cl. 318—18)



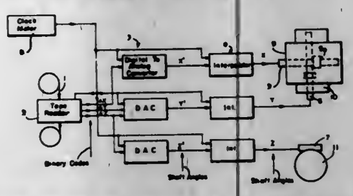
1. In an antenna rotator device having a motor to rotate an antenna to any one of a plurality of places, the improvement of a switching control system comprising, actuating control means operable to be set at any one of a plurality of positions, means to energize said motor, relay switching means having first alignment contact means normally closed to align said motor energizing means in a first condition for rotating said motor in a first direction and having second alignment contact means normally open and disposed to align said motor energizing means in a second condition for rotating said motor in a second direction, first means responsive to movement of said actuating control means in said first direction to preclude interruption of said normally closed first alignment contact means and thereby maintain said motor energizing means in said first condition, second means responsive to movement of said actuating control means in said second direction to provide interruption of said normally closed first alignment contact means and closure of said normally open second alignment contact means and thereby change said motor energizing means from said first condition to said second condition, disabling motor switch means having disabling contact means normally closed in series with said relay switching means, and means controlled by said actuating control means to momentarily open said disabling contact means of said motor switch means and thereby momentarily withhold energization of said motor to prevent a false motor start.

3,297,924

CONTINUOUS PATH NUMERICAL CONTROL SYSTEM WITH MECHANICAL INTERPOLATION

Lawrence J. Kamm, San Diego, Calif., assignor to Numerical Control Corporation, San Diego, Calif.

Continuation of application Ser. No. 123,396, July 10, 1961. This application Dec. 10, 1964, Ser. No. 419,277
10 Claims. (Cl. 318—18)



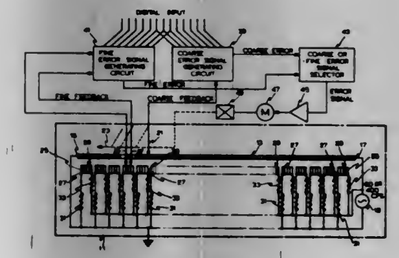
1. A continuous path numerical control system comprising in combination: data storage means; data storage sensing means associated with said data storage means for receiving data from said storage means and for providing data output, including: a driving element; at least one axially driven means; means for imparting axial movement to the axially driven means from said data sensing means, including: digital to analog converter means associated with and receiving the data output of said storage sensing means and converting said output to a mechanical displacement, said converter including: mechanically driven displacement means responsive to said output; a differential including a first driving element, a second driving element and a driven element therebetween, said first mentioned driving element being connected with the mechanical displacing means of the converter; an interpolator including: a flexible spline; a rotatable turrent; a plurality of displacement members rotated by the turret and associated with the spline for imparting flexing movement to the spline; a rotatable element driven by the driven element of the differential for imparting movement to the displacement members; means cooperating with the spline for sensing displacement of the spline; and servomechanism responsive to said spline sensing means for controlling the output of said axially driven means.

3,297,925

POSITION TRANSDUCER AND DIGITAL SERVO SYSTEM

Marvin Masel, West Englewood, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Sept. 24, 1963, Ser. No. 311,092
2 Claims. (Cl. 318—28)



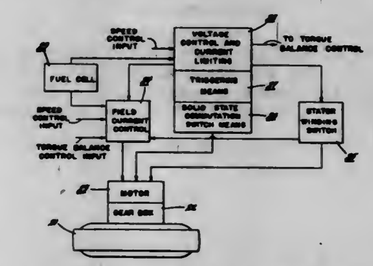
1. A position transducer comprising: an elongated first resistor disposed along a straight line; a brush making sliding electrical contact with said first resistor; a multiplicity of second resistors shorter than said first resistor and extending along a straight line parallel to said first straight line; a pair of second brushes positioned to make sliding electrical contact with said second resistors and fixed with respect to each other and said first brush to slide over said second resistors coming successively into contact therewith as said first brush slides along said first resistor; said second brushes being spaced apart by an amount equal to one-half the length of one of said second resistors plus the spacing between two adjacent ones of said second resistors; a first multiplicity of variable resistors each connected to a different one of said second resistors; a second multiplicity of variable resistors each connected to a different one of said second resistors; said variable resistors of said first multiplicity being connected to one side of said second resistors and said variable resistors of said second multiplicity being connected to the opposite side of said second resistors so that a multiplicity of series circuits is formed each comprising one of said second resistors, one variable resistor of said first multiplicity, and one variable resistor of said second multiplicity, and means to apply an A.C. voltage across said first resistor and across each of said series circuits.

3,297,926

VEHICLE PROPULSION AND CONTROL SYSTEM

Robert W. Campbell, Elbert M. Sawyer, Donald O. Ruff, Thomas E. Kirk, Lyle M. Ramey, and William D. Worrell, all of Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 19, 1961, Ser. No. 146,180
6 Claims. (Cl. 318—138)



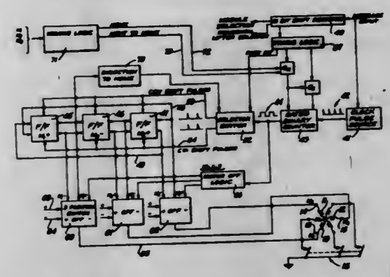
1. An electric motor comprising, first and second stationary windings each having a plurality of winding sections, a plurality of semiconductor switching devices, input terminals adapted to be connected with a source of direct current, means connecting said winding sections of said first and second windings with said semiconductor switching devices, means connecting said semiconductor switching devices with said input terminals, said semiconductor switching devices being adapted to provide a path for direct current between said input terminals and said windings, means for controlling the conduction of said semiconductor switching devices in accordance with rotor position and in a predetermined sequence as determined by rotor position, said sequence being such that a rotating magnetic field is produced in said first and second windings as said rotor rotates, and means for connecting said winding sections in series or in parallel to control motor speed.

3,297,927

CONTROLLER FOR DISPLAY BOARD

Thomas R. Blakeslee, Sherman Oaks, and Reaman Paul Nisquette, Palos Verdes Estates, Calif., assignors to Scantlin Electronics, Inc., Los Angeles, Calif., a corporation of Delaware

Filed Feb. 20, 1964, Ser. No. 346,229



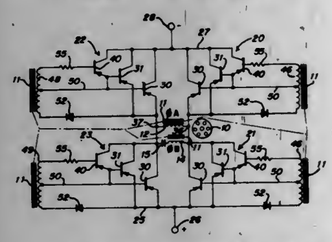
1. In an open loop controller for a stepping motor having a plurality of drive coils positioning a rotating member as a function of the excitation of the coils with the controller driving the rotating member in a selected direction to a selected position, the combination of:

a multistage reversible shift register with the output inverted to the input and having a stage corresponding to each drive coil;

means for selectively shifting said register a predeter-

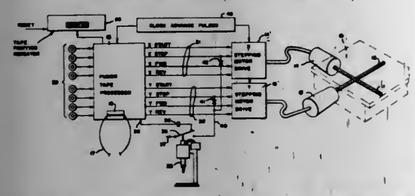
mined number of counts clockwise and counterclockwise in response to an input code;
a power switching unit for each drive coil and including means for selectively energizing the drive coil in opposing polarities from a power source; and
circuit means for coupling the output of a shift register stage to a corresponding power switching unit in controlling relation for energizing a drive coil as a function of the corresponding register stage condition.

3,297,928
ELECTRIC MOTORS INCLUDING PLURAL SETS OF WINDING SWITCHES
Florenz J. Von Delden, Glendale, Calif., assignor to The Lau Blower Company, Dayton, Ohio, a corporation of Ohio
Filed Dec. 21, 1964, Ser. No. 419,938
7 Claims. (Cl. 318—138)



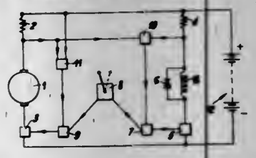
5. An induction motor for operation directly from a source of low voltage direct current power, comprising a stator winding having electrical connections at each end thereof, drive means for said stator winding including four controllable transistor switching circuits with two of said circuits being connected at each end of said stator winding forming circuit pairs with each circuit in said pair being arranged to conduct electricity through said stator winding in a different direction through a complementary circuit in the other circuit pair when said circuit pairs are connected across said source of direct current power, and control means for each of said transistor circuits for effecting conduction and cutoff thereof in timed relation in response to the flux saturation of the motor stator with complementary said circuits being controlled together including a separate control winding for each of said circuits responsive to flux reversals in the motor stator and connected to control the conduction and cutoff of the associated said transistor circuit.

3,297,929
TAPE PROGRAMMED MACHINE TOOL CONTROL SYSTEM
Leslie L. Gardner, Media, and John Paul Jones, Jr., Wynnewood, Pa., assignors to Navigation Computer Corporation, a corporation of Pennsylvania
Filed Dec. 27, 1965, Ser. No. 516,346
9 Claims. (Cl. 318—162)



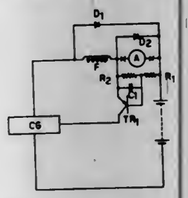
1. In an automatic machine tool control system having two stepping motors connected for incrementally positioning a workpiece in two dimensions, a source of periodic timing pulses, a multichannel digital tape processor for passing a tape record incrementally through a sequence of marker positions identified by a marker at start and stop positions generally encompassing a length of tape between the start and stop positions directly proportional to the length of movement of the workpiece, selective means responsive synchronously with said timing pulses for incrementally stepping each motor, means reading said start and stop positions on said tape with said processor while moving the tape incrementally one marker position at a time in synchronous response to said timing pulses only when and simultaneously as either motor is being stepped, means responsive to said start and stop marker signals read in different channels on the tape for respectively controlling the starting and stopping of each motor, and a program tape record providing a series of incremental steps between motor start and stop signals on separate tracks for individual control of each of said motors to thereby step said motors a metered distance to direct a change of position of the workpiece one increment for each marker position on the tape between said start and stop markers.

3,297,930
ELECTRIC MOTORS FOR EXAMPLE FOR DRIVING INDUSTRIAL TRUCKS
Ivan Salisbury Payne, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, England, a British company
Filed Mar. 25, 1964, Ser. No. 354,627
Claims priority, application Great Britain, Mar. 26, 1963, 11,889/63
7 Claims. (Cl. 318—269)



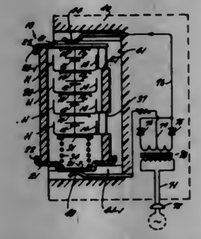
1. In a vehicle having a battery and a shunt wound traction motor supplied thereby control apparatus for the motor comprising a pulse generator with input connections from the battery and output connections to the motor shunt field windings, a regulator operable on the pulse-generator to vary the average current to the field windings, current supply connections from the battery to the motor armature, and means for detecting when the ratio of the armature current to the average field current exceeds a predetermined value and thereupon operable to cause the regulating device to increase the average field current.

3,297,931
PULSE OPERATED CONTROL FOR DIRECT CURRENT ELECTRIC MOTORS
David Gurwicz, Gateshead, England, assignor to Sevcon Engineering Limited, Gateshead, England
Filed Oct. 19, 1964, Ser. No. 404,865
Claims priority, application Great Britain, Nov. 22, 1963, 46,121/63
2 Claims. (Cl. 318—380)



1. A braking system for an electric motor with a field and an armature, in which the connections to one of these components are reversed during braking, comprising: a pulse control device acting to control the mean current passing through said motor; a diode connected across said armature so as to be non-conducting during driving periods; means for deriving a potential which is a predetermined fraction of the potential across said diode; and means for applying said derived potential to said pulse control device to limit the mean current passed by said device only during braking periods.

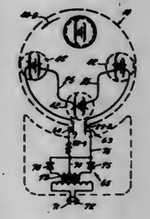
3,297,932
BATTERY DISPENSER-CHARGER DEVICES
Eugene F. Murphy, Yorktown Heights, N.Y., assignor to Sonotone Corporation, Elmsford, N.Y.
Filed Dec. 30, 1963, Ser. No. 334,158
5 Claims. (Cl. 320—2)



1. In a battery dispenser-charger device,
a holder tube defining a tubular space having a sequence of at least three cell locations for charging in a sequence a sequence of at least three cells and including a first charge location for holding the first cell and a last charge location for holding the last cell of a cell sequence in successive charging locations of said location sequence,
resilient advancing means for advancing the cells held in said charging sequence to successive charging locations in the direction toward said last charging location,
said tube having two charging terminals at the opposite ends of said tube whereby said advancing means holds a column of cells next to each other in series relation between said charging terminals for supplying series charging current from an external circuit,
said tube having one opening adjacent on charging terminal for removing a cell from said last charging location,
said tubular holder having an open tube end remote of said one charging terminal for inserting a cell into said first charging location,
the opposite charging terminal having a detachable connection to said opposite tube end for retaining the sequence of cells in said cell locations, after inserting a cell into said first charging location,
said opposite charging terminal carrying said resilient advancing means,
said advancing means including connector means for completing a charging connection from said opposite charging terminal to the nearest cell held in said tube.

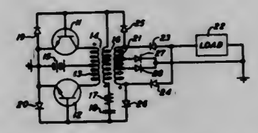
3,297,933
BATTERY DISPENSER-CHARGER DEVICES
Robert J. McCarthy, Goldens Bridge, N.Y., assignor to Sonotone Corporation, Elmsford, N.Y.
Filed Dec. 30, 1963, Ser. No. 334,162
9 Claims. (Cl. 320—2)

1. In a battery dispenser-charger device:
a holder having a substantially enclosed housing,
said housing of a size to be conveniently carried on the person of the user,
and hand held during the removal or insertion of batteries,
said housing having two extended opposite side walls defining between them an extended dispenser space with sequence of at least three peripherally displaced internal cell locations for locating therein a sequence of at least three rechargeable cells,
advancing means for advancing a sequence of at least three cells in one generally annular direction along said cell location sequence,
the sequence of cell locations defined by said walls including a sequence of at least two combined storage and charging locations, comprising a first location for a first battery cell and a last location for last battery cell advanced by said advancing member,
said holder having a pair of battery cell terminals at each of said charging locations, and internal connector means for serially connecting said battery cell terminals to charging terminals external of said housing,



said connector means including connector elements connecting one polarity terminal of a cell held in said first charging location to an opposite polarity terminal of the next cell of said sequence and also for connecting a similar opposite polarity terminal of a cell held in said last charging location to a similar one polarity terminal of a cell held in a preceding location of said charging location sequence for serially connecting the battery cells held in said charging locations to said external charging terminals,
said external charging terminals adapted to permit connection of said holder, with its internally located and stored battery cells, as a self-contained integral unit, to an external charging circuit,
said holder having peripheral opening means adjacent to a cell space of said advancing member for first removing therefrom the charged cell advanced thereto from said last charging location and for then replacing therein a discharged cell to be advanced to said first charging location.

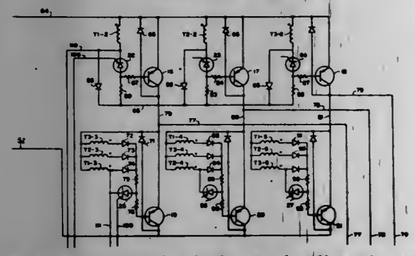
3,297,934
CURRENT FEEDBACK CONVERTER WITH AUTOMATIC OVERLOAD PROTECTION
Richard P. Massey, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 16, 1963, Ser. No. 309,348
5 Claims. (Cl. 321—2)



1. A converter with automatic overload protection which comprises an oscillator having both a positive voltage feedback path and a positive current feedback path,

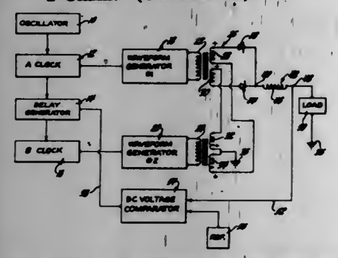
a load, a rectifier connected to supply current from said oscillator to said load, and means to disable said positive current feedback path whenever the current supplied to said load by said rectifier exceeds a predetermined value.

3,297,935
ELECTRONIC CIRCUITS
John H. Cutler, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Aug. 9, 1962, Ser. No. 215,909
5 Claims. (Cl. 321—18)



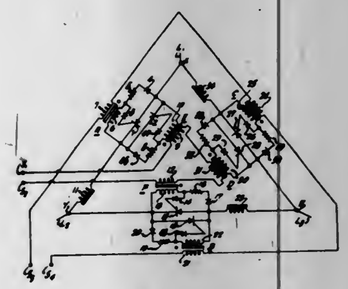
5. In a control circuit for a plurality of transistors each of which has two output electrodes and a control electrode, a source of power, a load, means connecting the output electrodes of each of said transistors in series with said source of power and said load, a source of biasing voltage adapted to provide a plurality of control signals separated in phase by a predetermined amount, each of said control signals comprising voltages of a first and second polarity alternating at a fixed rate to control switching of said transistors to a conducting or nonconducting state, respectively, controlled unidirectional current conducting means each serially applying one of said control signals between the control electrode and one of the output electrodes of one of said transistors and being adapted to selectively assume a low impedance state for current produced responsive to voltage of said first polarity, continuously conductive unidirectional current conducting means in parallel with each of said controlled unidirectional current conducting means providing a low impedance path for current produced responsive to voltage of said second polarity, and means interconnecting the continuously conductive unidirectional current conducting means associated with each of said transistors to supply the voltages of said second polarity from each of said control signals to the control electrodes of each of said transistors.

3,297,936
CONVERTER CIRCUIT EMPLOYING PULSE WIDTH MODULATION
David E. Ruch, Playa Del Rey, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 19, 1963, Ser. No. 274,103
1 Claim. (Cl. 321—18)



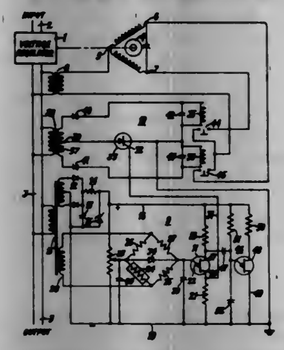
A converter circuit for supplying a regulated unidirectional voltage to a load comprising: a source of timing signals, first flip-flop means connected to receive the timing signals for producing a first bipolar rectangular voltage related in frequency to the timing signals, voltage controlled delay means, second flip-flop means connected through the delay means to receive the timing signals for producing a second bipolar rectangular voltage of the same frequency as the first bipolar voltage and comparable in amplitude thereto, transformer means for receiving and adding the first and second rectangular voltages, a load, full wave rectifier means connecting the transformer means to the load to provide said load with a undirectional output voltage pulse train of constant frequency and uniform pulse amplitude, feedback means including a voltage reference, comparator means for comparing the average value of the output voltage with the reference and producing a control voltage related to the difference therebetween, and means connecting the control voltage the voltage controlled delay means for varying the phase between the first and second rectangular voltages thereby to vary the width of the pulses in said train.

3,297,937
FREQUENCY CONVERTER UTILIZING MAGNETIC AMPLIFIERS AND SCR's
Augusto Benchimol, Rio de Janeiro, Brazil
Filed Feb. 13, 1963, Ser. No. 258,220
6 Claims. (Cl. 321—60)



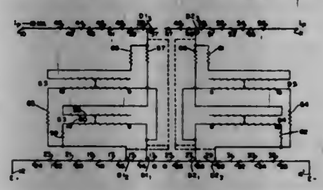
1. In a frequency converter, conversion means connected between a pair of power lines comprising:
an induction device having a secondary winding connected to a load and
a primary winding, said primary winding series connected to a pair of antiparallel connected controllable rectifiers each of which includes a gate electrode and anode and a cathode,
a pair of magnetic amplifiers each comprising a core, a control winding and a gate winding,
a first circuit shunt connected across each of said controllable rectifiers and including the gate winding of the associated magnetic amplifier, a limiting resistor and a rectifier,
a second circuit including a rectifier and connected between the gate electrode of each controllable rectifier and the electrical junction of the limiting resistor and gate winding of each magnetic amplifier, and
periodic excitation means connected to the control winding of each of said magnetic amplifiers for altering the magnetic state of the magnetic core of said magnetic amplifiers for firing said controllable rectifiers upon an increase of impedance of said gate winding.

3,297,938
VOLTAGE REGULATING SYSTEM
Tage P. Sylvan, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 29, 1963, Ser. No. 327,034
17 Claims. (Cl. 323—43.5)



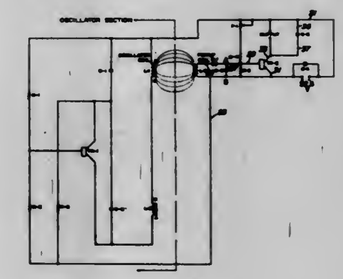
1. In combination, an alternating current circuit having a variable quantity to be maintained constant, a source of undirectional reference potential, a unijunction transistor having a base one connected to the negative polarity side of said source, a base two connected to the the positive polarity side of said source, and an emitter means for impressing an adjustable fraction of said reference potential as a dead band controlling bias between said emitter and said base one of said unijunction transistor such that the emitter is positive relative to base one and said fraction of said reference potential is insufficient to fire said unijunction transistor, means for serially inserting in circuit with said emitter and base one a periodic potential whose magnitude is proportional to the magnitude of deviation of said quantity from a predetermined normal value, whose polarity is additive with respect to said bias potential and whose phase is determined by the direction of said deviation from said predetermined normal value whereby when said deviation attains a predetermined magnitude said unijunction transistor will fire repetitively during intervals of one phase if said deviation is in one direction and during intervals of opposite phase if said deviation is in the opposite direction, and means responsive to the phase of said repetitive intervals of firing of said unijunction transistor for regulating said quantity.

3,297,939
DIRECT READING POTENTIOMETER
Thomas M. Dauphinee, Ottawa, Ontario, Canada, assignor to National Research Council, Ottawa, Ontario, Canada, a body corporate of Canada
Filed Jan. 13, 1964, Ser. No. 337,308
8 Claims. (Cl. 323—43.5)



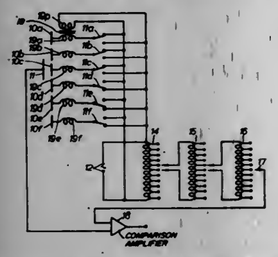
1. A potentiometer comprising in combination: first, second and third terminals; first and second tapped resistors each having the same resistance value between taps as the other, said second tapped resistor being connected at one end with said first terminal thence to be connected with a source of working current, the other end of said second tapped resistor having no electrical connection, and said first tapped resistor interconnecting said second and third terminals to have said terminals for connection in circuit with a source of potential to be measured, and said first tapped resistor having an end portion to be connected with the source of working current for placing said first tapped resistor in an electrically connected relation to the source of working current; first and second contacts for contacting a selected pair of taps of said first tapped resistor and said first and second contacts being spaced apart a predetermined number of taps of said first tapped resistor; a third contact for contacting a selected tap of said second tapped resistor; and a constant resistance voltage divider connected across said first and second contacts and connected to said third contact to cause the working current flowing in said third contact to be shared between said first and second contacts, and for retaining a constant resistance to said working current; said first, second and third contacts being mechanically ganged to maintain a substantially constant resistance between said first terminal of the potentiometer and said end portion of said first tapped resistor.

3,297,940
MEANS FOR REPRODUCING A PATTERN AS A D.C. OUTPUT
Robert J. Mulligan, Hamden, and Francis J. Schlosser, Jr., Milford, Conn., assignors to International Instruments, Incorporated, Orange, Conn., a corporation of Connecticut
Filed June 1, 1962, Ser. No. 199,368
2 Claims. (Cl. 323—51)



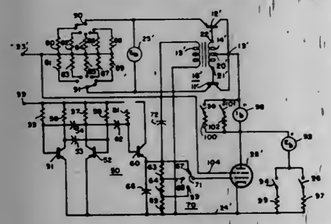
1. Means for reproducing a pattern as a D.C. output, comprising an oscillator circuit including an oscillator coil, a pick-up coil positioned adjacent to said oscillator coil and linked thereto by an electromagnetic field, an electric circuit for said pick-up coil and a power source therefor, an elongated electromagnetic energy shielding means composed of a material absorbent to electromagnetic energy, a rotary shaft and means for continuously rotating said shaft, a disc fixed on said rotary shaft for rotation therewith in the area between said oscillator and pick-up coils, and said elongated electromagnetic energy shielding means being of varying widths and being fixed on said disc in position forming a generally circular outline thereon and in position to rotate through the area between the coils when said shaft is rotated, whereby varying amounts of electromagnetic energy will be transferred from the oscillator coil to the pick-up coil dependent upon the part of the elongated electromagnetic energy shielding means passing through the area between the coils.

3,297,941
POSITION-SENSITIVE APPARATUS
Caleb Frederick Wolfendale, London, England, assignor to Sogenique (Electronics) Limited
Filed Jan. 21, 1964, Ser. No. 339,250
Claims priority, application Great Britain, Jan. 23, 1963, 2,834/63
6 Claims. (Cl. 323—93)



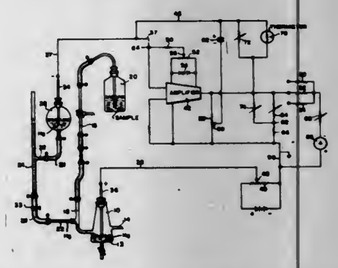
1. A position-responsive apparatus comprising:
a plurality of electrode elements arranged to form a line of electrode elements;
an interpolating electrode mounted for movement along said line of electrode elements;
at least first and second supply leads;
supply means for maintaining a potential difference between said first and second supply leads; and
a switch means for selectively connecting a first group of said electrode elements to said first supply lead and a second group of said electrode elements to said second supply lead, said first group being adjacent said second group, and for varying the distribution of electrode elements between said first and second groups,
whereby a voltage capacitively induced on said interpolating electrode is indicative of the position of said interpolating electrode along said line of electrode elements.

3,297,942
ELECTRON TUBE TRANSCONDUCTANCE TESTING CIRCUIT HAVING TRANSISTORIZED PLATE CURRENT SWITCHING MEANS
Joseph E. Clevenger, Jr., and Clifford M. Siegel, Charlottesville, Va., assignors to the United States of America as represented by the Secretary of the Army
Filed Feb. 6, 1963, Ser. No. 256,778
1 Claim. (Cl. 324—27)



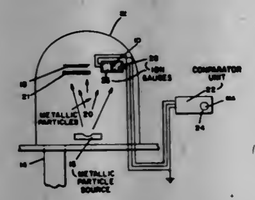
An electron tube transconductance testing circuit comprising: a direct current power supply having positive and negative terminals; first and second resistors connected to said positive terminal; a vacuum tube to be tested having plate, grid and cathode electrodes and means for heating said cathode electrode, said cathode being connected to said negative terminal; first and second transistors each having emitter, collector and base electrodes, the emitters of said first and second transistors being respectively connected to said first and second resistors and the collectors thereof being connected to said plate electrode; an ammeter connected between the emitters of said first and second transistors; a transformer having primary and secondary windings, said secondary having a centertap connected to said plate electrode; the ends of said secondary winding being respectively connected to the bases of said first and second transistors; generator means for generating a square wave voltage, the frequency of which is different from the fundamental and second harmonic of the power supplying said cathode heating means; an emitter follower transistor having at least a base electrode and an emitter electrode; a plurality of resistors connected in series between said emitter electrode of said emitter follower and said negative terminal; the base electrode of said emitter follower being coupled to said square wave generator; means coupling the emitter of said emitter follower to said primary winding; and a switch having a movable contact connected to said grid electrode and a plurality of fixed contacts connected to the junctions between said plurality of series connected resistors.

3,297,943
ELECTROMETRIC SYSTEM WITH AUTOMATIC TEMPERATURE COMPENSATING MEANS
Walter A. Morgan, Baytown, and Jean H. Karchmer, Houston, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Aug. 22, 1962, Ser. No. 218,681
1 Claim. (Cl. 324—31)



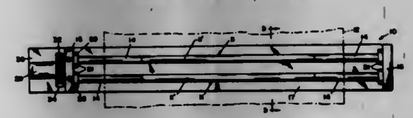
A polarograph system comprising: a polarographic cell having a first electrode and a second electrode spaced from said first electrode; a large gain amplifier having at least five terminals; a voltage adjusting potentiometer; an electrical conductor connected to said first electrode and to the first terminal of the large gain amplifier; an electrical conductor connected to said second electrode and to the wiper of said voltage adjusting potentiometer; an electrical conductor at ground potential connected to the second terminal of the large gain amplifier and to the voltage adjusting potentiometer; an output voltage line connected to the third terminal of the large gain amplifier; a voltage divider connected across the output voltage line and said electrical conductor connected to the second terminal of the large gain amplifier; a D.C. feed-back loop connected to the voltage divider and to the electrical conductor connected to said first electrode, said D.C. feed-back loop including a thermistor in parallel with a first adjustable resistor and a second adjustable resistor in series with said thermistor and said first adjustable resistor; a battery connected across the fourth terminal and the fifth terminal of the large gain amplifier; a bias potentiometer connected across said battery; a resistor connected to the wiper of said bias potentiometer and to the electrical conductor connected to said first electrode; an A.C. damping current potentiometer connected across the output voltage line of the large gain amplifier and the electrical conductor connected to the second terminal of the large gain amplifier; and a capacitor connected to the wiper of said A.C. damping current potentiometer and to the electrical conductor connected to said first electrode.

3,297,944
EVAPORATION RATE MONITOR USING TWO INTEGRATED ION GAUGES
Paul Nektaredes, Manhattan Beach, and Robert Y. Scapple, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 2, 1963, Ser. No. 249,044
2 Claims. (Cl. 324—33)



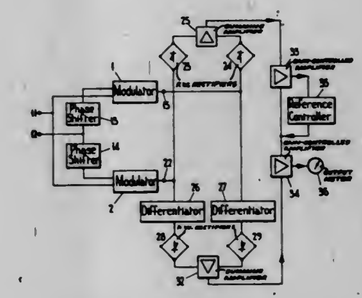
1. A device for monitoring the rate of vacuum deposition of a metallic film on a substrate positioned within an evacuated chamber containing a metallic particle source comprising:
an integrated sensing device including at one end a first ionization gauge and at the other end a second ionization gauge and intermediate said ends a plate separating said gauges, said first gauge having an opening oriented to admit into said gauge a portion of the residual gas remaining in said chamber and a portion of the particles produced by said metallic particle source and to produce therefrom a first electrical signal representative of the magnitude of said gas and said particles and said second gauge having an opening oriented to admit into said second gauge only a portion of the residual gas remaining in said chamber and to produce therefrom a second electrical signal representative only of the magnitude of said residual gas, and
a comparator circuit including a differential amplifier circuit coupled with said ionization gauges to receive said first and second electrical signals and to produce a third electrical signal representative of the difference of the magnitudes of said first and second electrical signals, said circut including an indicating means coupled to receive said third signal, said indicating means being calibrated to visually indicate as a function of the magnitude of said third signal the rate of deposition of a metallic film on said substrate.

3,297,945
DETECTOR ROLL AND ROLL ASSEMBLY FOR CONTACTING SIZED WEB MATERIAL FOR PREVENTING THE ACCUMULATION OF SIZE THEREON
Charles F. Strandberg, Jr., Greensboro, N.C., assignor to Strandberg Engineering Laboratories, Inc., Greensboro, N.C., a corporation of North Carolina
Filed July 22, 1963, Ser. No. 296,809
7 Claims. (Cl. 324—61)



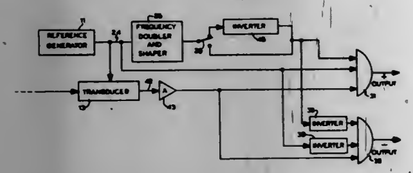
1. A roll for mechanically and electrically contacting a moving coating web, said roll being formed from electrically conductive material and having an intermediate portion and a pair of end portions of a smaller diameter than the intermediate portion, a pair of sleeves of plastic material which is more resistant to the adherence of the coating on said web than is the material of said roll provided on the respective end portions and having their outer surfaces flush with said intermediate portion, means at the ends of said roll journalling the same for rotation, and electrical contact means contacting said roll.

3,297,946
APPARATUS FOR DETERMINING THE FREQUENCY DIFFERENCE OF TWO SIGNALS BY COMPARISON OF DIFFERENTIATED AND UN-DIFFERENTIATED BEAT SIGNALS
David Langsford Clay, Coventry, England, assignor to The General Electric Company, Limited, London, England
Filed Dec. 17, 1963, Ser. No. 331,197
Claims priority, application Great Britain, Dec. 19, 1962, 47,922/62
5 Claims. (Cl. 324—82)



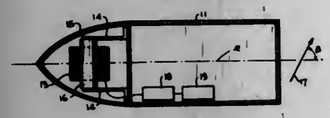
1. Apparatus for investigating the difference frequency of two oscillatory signals, comprising
(A) two input terminals to which the two oscillatory signals are respectively supplied,
(B) modulation means connected to both said terminals to supply two beat signals the frequencies of which are both equal to the difference frequency of the two oscillatory signals but which differ in phase by 90 degrees,
(C) first means connected to output terminals of said modulation means
(i) and including rectifying and summing means,
(ii) to produce from the beat signals a first unidirectional signal the instananeous magnitude of which is proportional to the arithmetic sum of the instantaneous magnitudes of the beat signals,
(D) second means also connected to said output terminals of said modulation means
(i) and including differentiating, rectifying and summing means,
(ii) to produce from the beat signals a second unidirectional signal the instantaneous magnitude of which is proportional to a factor times the arithmetic sum of the instantaneous magnitudes of the beat signals said factor being the angular frequency of the beat signals, and
(E) means conected to said first and second means to produce the ratio of the first and second unidirectional signals,
(i) said ratio representing said factor, from which the frequency of the beat signals may be determined.

3,297,947
APPARATUS FOR TWO SIGNAL POLARITY DETECTING USING ALTERNATE QUARTER-CYCLE SAMPLING TO ELIMINATE QUADRATURE ERROR
Hugh E. Riordan, Wyckoff, and Theodore A. Cohen, Metuchen, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 18, 1963, Ser. No. 331,495
10 Claims. (Cl. 324—83)



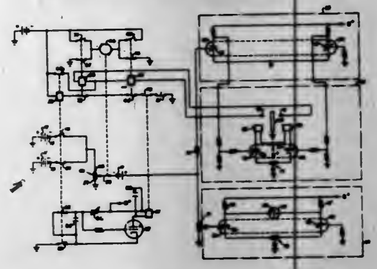
1. An A.C. polarity detector comprising a signal input, a reference input, frequency doubling means to generate an output signal at a frequency double the frequency of the signal applied to said reference input and being phased relative to the signal applied to said reference input so that said output signal is between polarities when the signal applied to said reference input changes polarity, coincident means having three inputs and adapted to detect the coincidence of a predetermined set of D.C. polarities applied to said three inputs, first circuit means electrically coupling said reference input to one input of said coincidence means, second circuit means electrically coupling said signal input to another input of said coincidence means, and third circuit means for applying the output signal of said frequency doubling means to the third input of said coincidence means.

3,297,948
SATELLITE SPIN MEASUREMENT
Hans W. Kohler, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed June 3, 1963, Ser. No. 285,154
5 Claims. (Cl. 324—70)



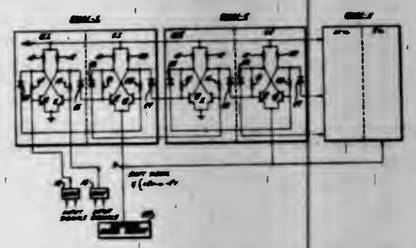
1. A system for measuring the rate of rotation of a body adapted to rotate while in free flight within the earth's magnetic field, said system comprising:
(a) said body,
(b) an exploring coil encompassing a fixed area mounted within said body, the orientation of said coil relative to the axis of rotation of said body being such that the amount of the earth's magnetic field in said fixed area varies as said body rotates, thereby generating an alternating-current signal in said coil,
(c) sensing means to sense the signal generated in said exploring coil,
(d) timing marker means connected to said sensing means to develop a timing marker signal each time said alternating current signal passes through zero, and
(e) measuring means connected to said timing marker means to measure the time interval between said timing marker signals.

3,297,949
SYSTEMS FOR ASCERTAINING THE RATIO OF ONE UNKNOWN VOLTAGE TO ANOTHER
Edward R. Doubek, Jr., Brookfield, and Gerald H. Klenke, Batavia, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 14, 1963, Ser. No. 265,199
5 Claims. (Cl. 324—140)



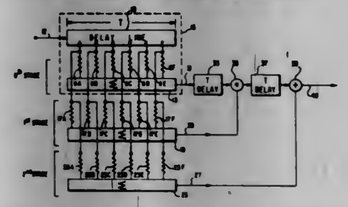
3. In a system for ascertaining the ratio of a first unknown voltage to a second unknown voltage:
a reference voltage;
a potentiometer having first and second stationary taps and a movable center tap;
means for sequentially connecting the unknown voltages across the first and second taps;
control means operating only when the first unknown voltage is connected to the potentiometer and responsive to a difference between the voltage on the center tap and the reference voltage for adjusting the center tap until the voltage on the center tap substantially equals the reference voltage; and
means for comparing the voltage on the adjusted center tap to the reference voltage while only the second unknown voltage is connected to the potentiometer to indicate the ratio of the unknown voltages.

3,297,950
SHIFT-REGISTER WITH INTERCOUPLING NETWORKS EFFECTING MOMENTARY CHANGE IN CONDUCTIVE CONDITION OF STORAGE-STAGES FOR RAPID SHIFTING
Edwin S. Lee III, West Covina, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 13, 1963, Ser. No. 330,440
10 Claims. (Cl. 328—37)



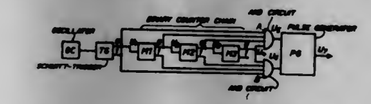
1. An electronic shift register comprising a plurality of shifting stages adapted to assume alternate conductive conditions for storing binary characters and normally connected in a decoupled cascade relationship to allow a binary character to be stored in each stage and shifted from stage to stage, and means coupled to each shifting stage for momentarily altering the normal conductive condition of each shifting stage for controlling the coupling between stages to cause each stage to substantially simultaneously assume the conductive condition of the adjacent stage upon the restoration of the normal conductive conditions of the shifting stages and thereby cause the binary characters to be sequentially shifted from stage to stage solely in response to the momentary change in conductive conditions of the shifting stages.

3,297,951
TRANSVERSAL FILTER HAVING A TAPPED AND AN UNTAPPED DELAY LINE OF EQUAL DELAY, CONCATENATED TO EFFECTIVELY PROVIDE SUB-DIVIDED DELAYS ALONG BOTH LINES
Herman L. Blasbalg, Baltimore, Md., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 20, 1963, Ser. No. 332,164
10 Claims. (Cl. 328—37)



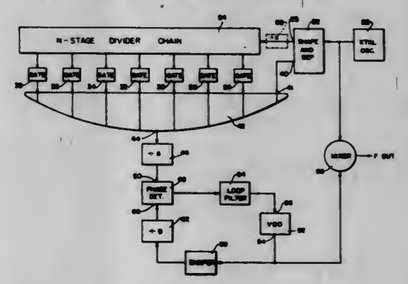
1. A large WT product signal device, comprising:
a matched filter, including a delay line and a first plurality of weighted resistors spaced along said delay line, said resistors having a voltage applied thereacross in response to a signal applied to said delay line and propagated therealong;
first summing means for summing the voltages developed across said first plurality of resistors for providing a first output signal of duration T;
at least one additional stage comprising a second plurality of weighted resistors connected in parallel with said first plurality of resistors, and a second summining means connected to said second plurality of resistors for providing a second output signal of duration T;
delay means for delaying each of said different output signals for a different duration nT where n is an integer ranging from zero to the number of stages, whereby the last stage receives a zero delay and the first stage receives a delay of nT; and
means for additively combining each of said delayed output signals to produce a composite output signal having a duration of nT.

3,297,952
CIRCUIT ARRANGEMENT FOR PRODUCING A PULSE TRAIN IN WHICH THE EDGES OF THE PULSES HAVE AN EXACTLY DEFINED TIME POSITION
Stig Leonart Thylander, Molndal, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed May 28, 1965, Ser. No. 459,831
Claims priority, application Sweden, June 12, 1964, 7,168/64
2 Claims. (Cl. 328—61)



1. A circuit arrangement for producing a train of pulse-shaped signals in which each pulse has a leading edge with an exactly defined time position and a trailing edge with an exactly defined time position, said circuit arrangement comprising: a trigger circuit having an input and two outputs activated alternatively in dependence on the polarity of a signal supplied to said input; an oscillator means for supplying an alternating potential to said input so as to activate said two outputs alternatingly to produce at each output oppositely phased pulses having the frequency of said alternating potential; a binary counting chain comprising a plurality of serially connected bistable stages, each of said stages having a first output activated in one of two possible states, a second output activated in the other of the two states and an input which when receiving a signal switches the stage from one bistable condition to another; means for connecting the input of the first bistable stage to one of the outputs of said trigger circuit and for connecting the input of the other stages to one of the outputs of the preceding stage; a pulse-generating circuit including first and second inputs for starting a pulse-shaped signal when receiving the leading edge of a pulse at said first input and terminating the pulse-shaped signal when receiving the leading edge of another pulse at said second input; a first AND-circuit having an output connected to said first input and a second AND-circuit having an output connected to said second input of said pulse-generating circuit, said first AND-circuit having an input connected to an output of said trigger circuit in order to obtain a pulse for starting said pulse-shaped signal and said second AND-circuit having an input connected to the same output of said trigger circuit for obtaining a pulse for terminating said pulse-shaped signal, said first AND-circuit having further inputs connected to outputs of the bistable stages in said binary counting chain selected so as to gate by their simultaneous activation a pulse from the output of said trigger circuit for starting said pulse-shaped signal and said second AND-circuit having further inputs connected to outputs of the bistable stages in said binary counting chain so as to gate by their simultaneous activation a pulse from said output of said trigger circuit for terminating said pulse-shaped signal, said output on the trigger circuit connected to said inputs of said AND-circuits being different from the output connected to the input of the first bistable stage of said binary counting chain.

3,297,953
FREQUENCY SYNTHESIZER
Evan T. Colton, Lynnfield, Mass., assignor to Gordon Engineering Corporation, Watertown, Mass., a corporation of Massachusetts
Filed Feb. 1, 1965, Ser. No. 429,247
8 Claims. (Cl. 331—18)



1. Frequency synthesizer apparatus comprising, in combination:
means adapted to have a periodic clock signal applied at the input thereof for producing an aperiodic pulse train having an average pulse rate which is the product of the frequency value of said periodic clock signal and an arbitrary numerical multiplier value;
a phase-locked loop comprising a voltage controlled

oscillator and phase detector means connected to the output of the pulse train producing means, said oscillator and phase detector means being connected to one another for providing from said phase detector means a voltage which is a function of the average time relation between the output frequency of said oscillator and said pulse train so as to control the frequency of the output of said oscillator; and

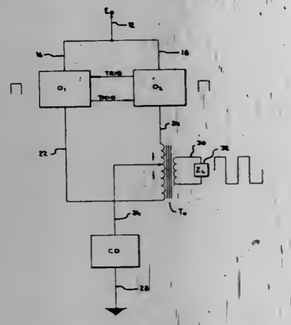
means for deriving a beat frequency between said clock signal and said oscillator output.

3,297,954

CONSTANT CURRENT PULSE GENERATOR

Lawrence Grebe Wiley, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Aug. 25, 1964, Ser. No. 391,933
3 Claims. (Cl. 331—52)



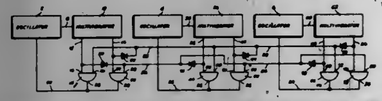
1. A pulse generator circuit of the type utilized to supply a load, said generator circuit including a pair of oscillators each having a regenerative action and connected to alternately produce a substantially square-wave pulse of a half cycle, as the output of each separate oscillator, a transformer having a primary winding tapped in the center thereof and a secondary winding connected to a load, the outputs of the oscillators being separately applied to different ends of said primary winding of said transformer to develop a series of square-wave pulses of opposite polarity in said secondary winding to drive said load, a ground for said circuit, means connected to the primary winding center tap and to said ground to hold the said square-wave pulse output of each of said oscillators at a constant current level drawn through the said primary winding when said oscillators are conducting whereby to provide a square-wave pulse output of constant current level to the said secondary winding and to said load.

3,297,955

PLURAL OSCILLATORS SYNCHRONIZED TO THE HIGHEST FREQUENCY

Philip D. Corey, Crozet, and Edward H. Dinger, Waynesboro, Va., assignors to General Electric Company, a corporation of New York

Filed Sept. 15, 1965, Ser. No. 487,558
15 Claims. (Cl. 331—55)



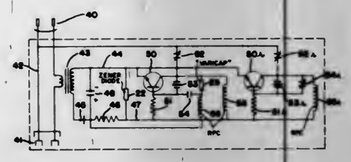
1. A circuit for synchronizing a plurality of oscillators comprising in combination a plurality of oscillators, gate circuit means for each of said oscillators, first means interconnecting each of said oscillators with its said gate circuit means for driving said gate circuit means in response to the oscillation of said oscillators, second means interconnecting said gate circuit means of said oscillators for causing a first driven gate circuit means to activate said gate circuit means of others of said plurality of oscillators, third means interconnecting each of said oscillators with output means of its said gate circuit means for causing said first driven gate circuit means to synchronize the oscillation of said plurality of oscillators.

3,297,956

CRYSTAL OSCILLATOR HAVING FREQUENCY PROPORTIONAL TO VARIATIONS OF AN ELECTRICAL LOAD

Ralph J. Thompson and Clement T. Loshing, both of Box 5000, Cleveland, Ohio 44102

Original application Apr. 17, 1961, Ser. No. 103,309, now Patent No. 3,135,573, dated June 2, 1964. Divided and this application Aug. 28, 1963, Ser. No. 309,913
5 Claims. (Cl. 331—177)



1. A transmitter for transmitting data from one point to another by means of an output signal having a frequency variation proportional to an electrical variation occurring at an electrical load with respect to which data is to be transmitted, comprising:

a pair of conductors having means at opposing ends for connecting said load across an alternating current voltage source;

a transformer having a primary winding and a secondary winding, said primary winding connected in series circuit with one of said conductors;

direct current voltage supply means having an input circuit and an output circuit, said input circuit connected across said secondary winding for developing direct current voltage;

a crystal controlled oscillator connected across the output circuit of said supply means and including a solid state device of variable capacitance for varying the oscillator output frequency, said device being responsive in capacitance to variations in electrical potentials applied thereto; and,

means coupled with at least one of said transformer windings and responsive to said electrical variations occurring at said electrical load for applying an electrical potential, varying in proportion to said electrical variations, to said device whereby the output signal of said oscillator will exhibit frequency variations proportional to said electrical variations.

3,297,957

GROOVED ACTIVE MEDIUM FOR LASER

Walter A. Merkl, Eatontown, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Apr. 30, 1963, Ser. No. 277,425
4 Claims. (Cl. 331—94.5)



1. A negative temperature medium for a laser, said negative medium comprising a cylindrical ruby rod having a plurality of parallel grooves encircling its cylindrical surface over substantially its entire length and oriented normal to its longitudinal axis; and wherein each of said grooves has a V-shaped cross-section with side walls forming an angle ranging from substantially 60° to substantially 90°.

3,297,958

SOLAR PUMPED LASER

Melvin Weiner, 54 Harvard Ave., Brookline, Mass. 02146

Filed Jan. 23, 1963, Ser. No. 253,466
1 Claim. (Cl. 331—94.5)



A solar powered optical maser consisting of

a paraboloidal reflector which collects and concentrates solar energy to within a linear half angle of approximately 30 degrees at its focal plane,

a prismoid of transparent dielectric material, with a tapering angle of approximately two degrees, whose larger base is at the focal plane of the paraboloidal reflector, and

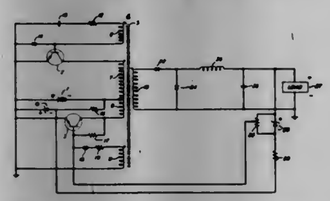
a wafer, of negative temperature material, with one face attached to the smaller base of the prismoid and the other face made to be reflecting, whose cross-section is an even sided polygon, whose pairs of directly opposite edges are parallel and reflecting with one edge of each pair transmitting a small percentage of the stimulated radiation, whose thickness is substantially less than the distance between parallel edges, and whose number of parallel edges determine the number of output beams and their beam widths.

3,297,959

POLARITY REVERSING, OUTPUT VOLTAGE CONTROLLED, ASYMMETRIC CONVERTER

Richard P. Massey, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 16 1963, Ser. No. 331,054
7 Claims. (Cl. 331—113)



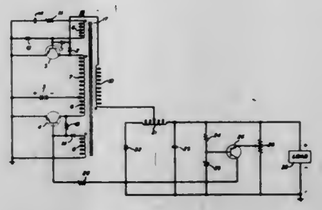
1. A regulated converter which comprises a source of direct voltage, a transformer having a primary winding and at least one secondary winding, a power transistor and a control transistor having their emitter-collector paths connected to conduct in alternation and pass current from said source through said primary winding in respectively opposite directions, a load, a half-wave rectifier connected to supply current to said load while said power transistor is conducting and isolate said transformer from said load while said control transistor is conducting, means to detect variations in load voltage, and means to vary the conducting impedance of the emitter-collector path of said control transistor under the control of detected load voltage variations, whereby the duty cycle of said power transistor is varied to correct therefor and the load voltage is maintained substantially constant.

3,297,960

INCREASED CURRENT CAPACITY TRANSISTOR CONVERTER

Richard P. Massey, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 16, 1963, Ser. No. 331,056
7 Claims. (Cl. 331—113)



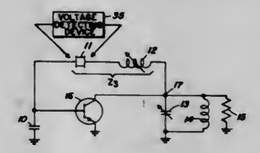
1. A converter which comprises a source of direct voltage, a transformer having a primary winding and at least one secondary winding, a load, a pair of transistors having their emitter-collector paths connected to conduct in alternation and pass current from said source through said primary winding in respectively opposite directions, at least one positive current feedback path which includes said secondary winding, said load, and the emitter-base path of one of said transistors, and at least one diode, poled in the direction of feedback current flow, connected between the collector electrode of said one transistor and said feedback path to divide the feedback current between the emitter-base and emitter-collector paths of said one transistor.

3,297,961

MEANS FOR TUNING CRYSTAL OSCILLATOR

Marvin E. Frerking, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Oct. 18, 1965, Ser. No. 497,370
6 Claims. (Cl. 331—116)



1. A tunable crystal oscillator comprising:

an electron valve comprising an electron emitter electrode, an electron collector electrode and an electron control electrode;

first capacitive impedance means connected across said collector and emitter electrodes;

second capacitive impedance means connected across said control and emitter electrodes;

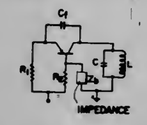
and the series combination of crystal means and variable inductive means connected across said collector and control electrodes;

said variable inductive means having a range of inductive reactance values, at and near the series resonant frequency of said crystal, including an inductive reactance equal to the total capacitive reactance of said first and second capacitive impedance means;

and means for tuning said variable inductive means;

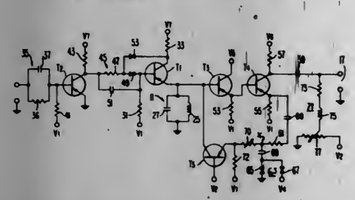
and means for measuring the potential across said crystal means.

3,297,962
TRANSISTOR OSCILLATOR
Noboru Kozuma, Nakano-ku, Tokyo-to, and Ken Fukawa Kitatama-gun, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Dec. 9, 1964, Ser. No. 417,066
Claims priority, application Japan, Dec. 12, 1963, 38/67,039; June 4, 1964, 39/31,601
3 Claims. (Cl. 331—117)



1. A transistor oscillator which comprises: a transistor having a base, a collector and an emitter; a resonant circuit connected between said collector and the ground; an element connected across said collector and emitter generating a feedback; means to impart bias voltage; and a reactance element inserted between the base of said transistor and ground having reactance of a characteristic which is opposite to that of the reactance produced between the collector and base of said transistor and of a value which is at the most approximately twice the value of said reactance produced between the collector and base of said transistor, whereby negative conductance, when the transistor is viewed from said resonant circuit, is made sufficiently great.

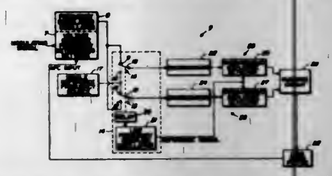
3,297,963
GATED TRANSISTOR SHOCK EXCITED SINUSOIDAL PULSE GENERATOR
Charles P. Halsted, Oreland, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 24, 1965, Ser. No. 434,897
8 Claims. (Cl. 331—117)



1. A gated pulse generating circuit comprising:
a parallel resonant tank circuit,
means for normally supplying current to said tank circuit,
pulse responsive means for periodically interrupting said supply of current to said tank circuit whereby the tank circuit is shock excited into oscillation,
output buffer means for extracting signals from said tank circuit, and
feedback means for supplying square waves of current to said tank circuit during oscillation.

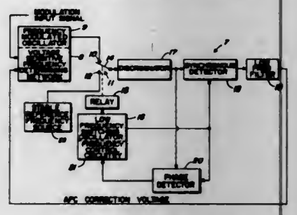
3,297,964
ERROR AVOIDANCE SYSTEM FOR SAMPLING TYPE AFC CIRCUIT
Alan R. Hamilton, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 9, 1963, Ser. No. 314,987
4 Claims. (Cl. 332—19)

1. A system for automatically controlling the carrier frequency of a high frequency oscillator, which carrier frequency is modulated by received modulating signals, and which oscillator includes a voltage sensitive frequency determining network establishing said carrier frequency, said system comprising: a reference source providing an output signal having a reference frequency equal to the desired carrier frequency to be maintained; a first demodulating channel; first switching means for alternately coupling said frequency modulated signal and said reference frequency to said first demodulating channel; a second demodulating channel; switching means for alternately coupling said frequency modulated signal and said reference frequency to said second demodulating channel, said second demodulating channel receiving said reference frequency when said first demodulating channel is receiving said modulated signal and said second demodulating channel receiving said modulated signal when said



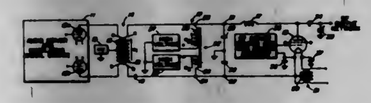
first demodulating channel is receiving said reference frequency; a switching oscillator for controlling said switching means for simultaneous operation at a predetermined switching frequency; means for receiving the outputs from said first and second demodulating channels and developing an AFC correction signal if said carrier frequency is not identical to said reference frequency, said AFC correction signal being free of any error due to continuous tones in said received modulating signals that are odd-harmonically related to said switching frequency; and means for coupling said AFC correction signal to the voltage sensitive frequency determining network of said high frequency oscillator to adjust the output frequency of said high frequency oscillator to that of said reference frequency.

3,297,965
FREQUENCY CONTROL SYSTEM HAVING PHASE CONTROLLED SAMPLING MEANS
George E. Chadima II, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 9, 1963, Ser. No. 315,030
6 Claims. (Cl. 332—19)



1. A system for automatically controlling the carrier frequency provided by a high frequency oscillator, which carrier frequency is modulated by received modulating signals, and which oscillator includes a voltage sensitive frequency determining network, said system comprising: a reference source providing an output signal having a reference frequency equal to the desired carrier frequency to be maintained; a demodulator; switching means for alternately coupling said modulated carrier frequency and said reference frequency to said demodulator, said switching means including a switching oscillator determining the switching frequency; means connected to receive the output from said demodulator and develop a correction voltage if said carrier frequency is not equal to said reference frequency and if said received modulating signals are such as to cause a continuous tone that is odd-harmonically related and shifted other than 90° with respect to the corresponding odd-harmonic of said switching frequency; means for coupling said developed correction voltage to the voltage sensitive frequency determining network of said high frequency oscillator to cause a shift in the carrier frequency; means including a phase detector for receiving said frequency modulated output signal after demodulation and said switching frequency, said phase detector producing an error voltage only if said continuous tone that is odd-harmonically related to said switching frequency occurs shifted other than 90° with respect to the corresponding odd-harmonic of said switching frequency; and means for coupling said error voltage from said phase detector to said switching oscillator to control the phase of the output signal therefrom.

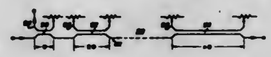
3,297,966
MODULATOR FOR GROUNDED SCREEN TETRODE R.F. POWER AMPLIFIER
Warren B. Bruene, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 12, 1964, Ser. No. 374,629
9 Claims. (Cl. 332—60)



1. In a modulation circuit for high level amplitude modulation of a multi-electrode grounded screen R.F. power amplifier tube: said tube having at least four electrodes including an output plate, a cathode, grid, and the ground screen; a modulation signal source; a modulation transformer receiving an audio input signal from said modulation signal source; said modulation transformer having two terminal signal output connective means for applying the modulation transformer output signal between the plate and cathode of said multi-element tube; a modulation reactor connected between output terminals of the modulation transformer; a D.-C. blocking capacitor between the modulation reactor and an output terminal of the modulation transformer; said modulation reactor having two coil windings, a first coil winding connected to the plate of said multi-element tube, and a second coil winding connected to the cathode of said multi-element tube; two high voltage supplies having a common connection to ground, with one of the supplies being a positive D.-C. voltage supply having a positive D.-C. terminal connection to said first coil winding and through the first coil winding to the plate of said multi-element tube, and the other high voltage supply being a negative D.-C. voltage supply having a negative D.-C. terminal connection to said second coil winding and through the second coil winding to the cathode of said multi-element tube R.F. driver signal means connected to the grid of said multi-element tube; and biasing circuit means connected between the cathode and grid of said tube.

3,297,967
MULTIELEMENT DIRECTIONAL COUPLER
James Keith Huston, Los Altos, Calif., assignor to Alfred Electronics, Palo Alto, Calif., a corporation of California
Filed Oct. 2, 1964, Ser. No. 401,144
14 Claims. (Cl. 333—10)

2. A directional coupler comprising:
a first wave energy translation path;
a second wave energy translation path;
a first coupling means for coupling said second to said first translation path, said first coupling means having an electrical length corresponding to one-quarter wavelength of the mean operating wavelength of the wave energy transmitted through said first translation path;
at least one further wave energy translation path; and
a further coupling means associated with each of said further translation paths for coupling such further



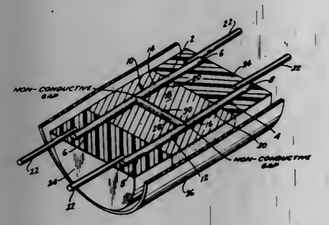
translation paths to said first translation path downstream from said first coupling means, said further coupling means having electrical lengths corresponding to $(n+1)$ one-quarter wavelength of the said mean operating wavelength where n is an odd integer, the coupling coefficient of each of said further coupling means being selected in accordance with the band width of the frequency transmitted through said first translation path.

3,297,968
PIEZOELECTRIC CERAMIC TRANSFORMER
Peter H. Fowler, Sudbury, Mass., assignor to Vibrasonics, Inc., Boston, Mass., a corporation of Massachusetts
Filed Mar. 28, 1962, Ser. No. 183,286
4 Claims. (Cl. 333—72)



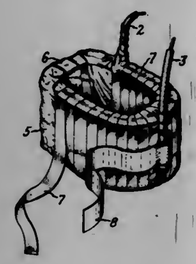
1. A reversible transformer for coupling a relatively high impedance circuit to a relatively low impedance circuit and for transferring energy in the form of electric waves of selected frequencies from one said circuit to the other comprising: a thin, axially polarized, discoid, piezoelectric, ceramic body having first and second parallel faces, said body also having substantially its entire piezoelectric resonance response in the radial mode; a pair of like, semicircular electrodes applied to said first face, said electrodes being spaced apart along a diametric strip of said first face and each of said electrodes covering substantially one-half of the remainder of said first face; additional electrode means opposing said pair of electrodes, said additional electrode means being applied to and covering substantially the entirety of said second face, the ratio of the impedance between one of said electrodes and said opposing electrode means to the impedance between the other of said electrodes and said opposing electrode means being approximately 1:1; first conducting means for electrically coupling either of said electrodes and said opposing electrode means to said relatively high impedance circuit; and second conducting means for electrically coupling the other of said electrodes and said opposing electrode means to said relatively low impedance circuit, the direction of coupling through said transformer being immaterial; said body having a diameter such that when said transformer is coupled between said circuits so as to resonate, said transformer passes electric waves of only said selected frequencies and matches said high impedance circuit to said low impedance circuit.

3,297,969
LOW PASS FILTER WHICH DISSIPATIVELY AND REACTIVELY ATTENUATES HIGH FREQUENCIES
William M. Kaufman, Westfield, and Aniello Di Giacomo, Orange, N.J., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Feb. 12, 1964, Ser. No. 344,462
8 Claims. (Cl. 333—79)



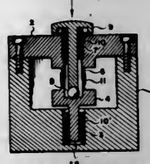
7. An attenuator comprising a pair of spaced substantially parallel feed-through wires, the ends of said wires being conductively exposed and opposed intermediate lengths of said wires having an insulating sheath thereabout, a mass of material of high magnetic permeability closely surrounding and spanning the space between said intermediate wire lengths, said mass having a passage therein extending between said intermediate wire lengths, and a highly conductive member in said passage and electrically connected to the exposed insulating sheaths on said intermediate wire lengths.

3,297,970
ELECTRICAL COIL AND METHOD OF MANUFACTURING
Howard T. Jones, Flat Rock, N.C., assignor to General Electric Company, a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,269
4 Claims. (Cl. 336—205)



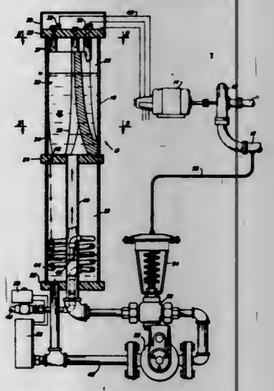
1. An insulated electrical device comprising, in combination, a wound coil of an elongated conductor having an insulating resin coating thereon, said coil being coated with an insulating varnish which permeates the interstices of the coil winding, a first insulating sheet material comprising a porous inorganic sheet impregnated with a thermosetting resin cured by heat and pressure and wrapped around the coil winding, and a second insulating sheet material comprising a shrinkable polymer material wrapped around said coil and overlying said first insulating sheet material, said second insulating sheet material being heat shrunk in situ and thereby compressing said first insulating sheet material to provide a fluid tight, dense insulating covering for said coil, the thus wrapped coil having a coating thereon of heat-cured insulating varnish.

3,297,971
LOAD CELL
Philip Gindes, West Covina, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Jan. 21, 1965, Ser. No. 426,862
2 Claims. (Cl. 338—5)



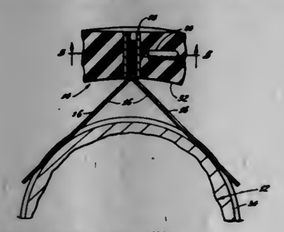
1. A load cell for measuring compression and tension loads by means of the elongation of a tensile member, the combination comprising a hollow body portion having cylindrical walls and an end section, an end cap attached to the end of said body portion opposite to said end section, an axial first bore in said end section, a hollow cylindrical column attached to the center of said end cap and extending into said hollow body portion in co-extensive alignment with said cylindrical walls and terminating adjacent said end section, said cylindrical column having a reduced center portion, a central and axial second bore extending through said end cap and into said hollow cylindrical column and terminating below said reduced center portion, strain gage means bonded onto and around the outside surface of said reduced center portion, means for applying a load to the bottom of the second mentioned bore, and means for retaining said column substantially on the central axis to thereby prevent radial deflection, whereby the reduced center portion is stretched proportional to the applied load.

3,297,972
LIQUID RHEOSTAT
Paul E. Hyde, Corvallis, Oreg., assignor to Flomatcher Co., Inc., Corvallis, Oreg., a corporation of Oregon
Original application Dec. 16, 1963, Ser. No. 330,865, now Patent No. 3,263,616, dated Aug. 2, 1966. Divided and this application Jan. 17, 1966, Ser. No. 520,953
5 Claims. (Cl. 338—86)



1. In a liquid rheostat:
(a) a housing, including an electrode chamber for holding an electrolyte,
(b) at least two electrodes mounted vertically in said chamber,
(c) means for connecting the electrodes to a source of electrical power to cause current flow therebetween through the electrolyte in the chamber,
each of said electrodes within said chamber having upper and lower end portions and an outer surface facing and directly opposed to a corresponding outer surface of each of the other electrodes within said chamber,
(d) the distance between said facing surfaces of all said electrodes increasing progressively and at an increasing rate from said upper end portions to said lower end portions,
(e) the distance between said facing surfaces, as viewed in any horizontal cross section through said chamber, being constant from one edge to the other edge thereof.

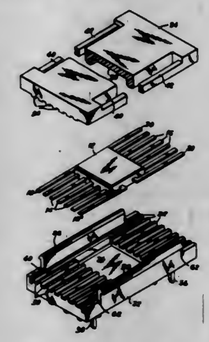
3,297,973
FLOATING-BRUSH CONTACT ASSEMBLY
George E. Wendell, Blacksburg, Va., assignor to Poly-Scientific Corporation, Blacksburg, Va.
Filed Aug. 30, 1963, Ser. No. 305,760
11 Claims. (Cl. 339—5)



6. In a rotary contact assembly,
a brush support,
a ring having a conductive surface mounted for relative rotational movement with respect to the brush support,
said brush support having means defining an elongated opening confronting the ring and containing an electrically conductive means permitting angular movement of the brush and making electrical contact with the brush for all angular positions thereof,
a resilient electrically conductive brush with one end thereof having a substantially straight portion, said brush being of smaller dimension than said opening and inserted loosely into said opening in the brush assembly and in electrical engagement with said conductive means,
said brush having a bend along its length, with said one end thereof on one side of the bend,
means for limiting the penetration of the brush into said opening,
a portion of the brush on the other side of the bend tangentially engaging the ring,
the respective size of said opening and said brush, and the location of said opening in the brush support relative to the surface of the ring being such that the brush is maintained in continuous contact with the conductive means in the brush support and with the ring solely by the opposing pressures on the brush exerted by the ring and the brush support,
whereby the brush is free to shift angular position in the brush support and maintain continuous alignment with the ring during relative rotational movement of the brush support and ring.

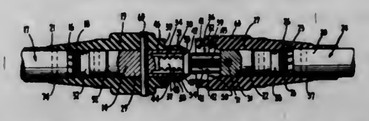
3,297,974
RECEPTACLE FOR INTEGRATED CIRCUIT MODULE
Robert B. Pittman, River Edge, N.J., assignor to Industrial Electronic Hardware Corporation, New York, N.Y., a corporation of New York
Filed Apr. 15, 1965, Ser. No. 448,483
15 Claims. (Cl. 339—17)

1. A receptacle for releasably mounting an integrated circuit module of the flat pack type on a printed circuit board, said module having collateral leads, said receptacle comprising a molded plastic bottom part, and a mating molded plastic top part, said parts being hollowed to receive the body of the module, one of said parts outside said hollow being longitudinally channeled to receive the leads of the module, short conductive elements secured through the bottom part in a direction which is transverse



to the flat faces of the module and to the printed circuit board, there being one such element for each channel, the upper end of said element projecting into the channel to engage a lead for electrical contact, the lower end of said element projecting from the bottom of the receptacle for electrical connection to a printed circuit line on the printed circuit board, and means detachably securing the top part to the bottom part with a module therebetween.

3,297,975
SLEEVED COUPLING FOR ELECTRICAL CABLES
Gary L. Pope, Lafayette, Calif., assignor to F. M. Anthony Co., Berkeley, Calif., a corporation of California
Filed Oct. 6, 1964, Ser. No. 401,847
8 Claims. (Cl. 339—60)

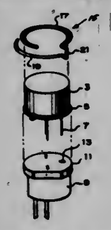


4. A male cable sleeve comprising an elongated substantially cylindrical male sleeve body of insulating material having a bore of substantially uniform diameter extending coaxially therethrough, said sleeve body having a gradually tapered peripheral trailing end, said sleeve body having a reduced diameter forwardly projecting portion with oppositely beveled surface portions merging at an intermediate ridge, said sleeve body having circumferentially spaced longitudinal ribs on a peripheral portion thereof rearwardly adjacent said projecting portion including a pair of diametrically opposed relatively enlarged ribs, said sleeve body having diametrically opposed aligned radial apertures extending through said enlarged ribs adapted to receive a pin of insulating material.

3,297,976
TRANSISTOR RETAINER
Cosmo J. Velardocchia, Stoneham, Mass., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed July 1, 1965, Ser. No. 469,370
1 Claim. (Cl. 339—75)

In combination, a transistor having a flanged rim, a transistor socket having a flanged rim, a short member disposed adjacent said transistor and said transistor socket,

said member being parallel to the axis of said transistor, first engaging means laterally extending from one end of said member and fitting substantially around the flanged rim of said transistor, second engaging means laterally extending from the other end of said member and fitting substantially around approximately half of the flanged rim of said socket, said first and second engaging means cooperating to clamp said transistor to said socket.



3,297,977
ELECTRICAL FIXTURE FOR PANEL MOUNTING
George H. Smith, Floral Park, N.Y., assignor to Leviton Manufacturing Co., Inc., Brooklyn, N.N.Y., a corporation of New York
Filed Apr. 17, 1964, Ser. No. 360,683
3 Claims. (Cl. 339—126)



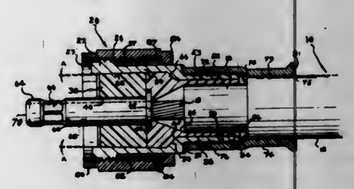
1. In an electrical fixture, the improvement which comprises:
(a) a supporting panel formed of sheet material;
(b) said panel having a notch-like opening formed in one edge thereof;
(c) an electrical wiring device mounted in said notch-like opening;
(d) said wiring device including a base and a portion extending upwardly from said base;
(e) said upwardly extending portion having grooves extending along opposite sides thereof adjacent the base;
(f) said grooves defining a portion of the wiring device dimensioned to fit into the notch-like opening in the panel with opposing walls of said grooves extending on opposite sides of portions of the panel defining the notch-like opening; and
(g) interengaging detent means on the panel and the base of the wiring device releasably holding the wiring device in assembled position in the panel.

3,297,978
CABLE CONNECTOR
Frank Benjamin Stark, Wormleysburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 18, 1964, Ser. No. 397,397
2 Claims. (Cl. 339—177)



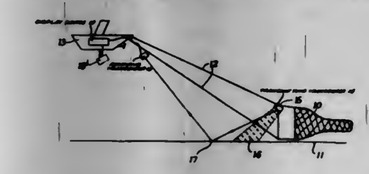
1. In a connector assembly for use with coaxial cable of the type having a center conductor surrounded by a dielectric sheath and an outer conductor, the combination comprising a pair of connector halves each comprised of an outer tubular member of conductive material having a bore extending therethrough, a dielectric insert fitted therein and a center contact member held in said insert, said center contact member including a bore to receive the cable center conductor, the forward portion of said halves being adapted for intermating and the rearward portion of said halves being adapted to be fitted beneath the outer conductor of the cable and terminated thereto by a ferrule applied over said outer conductor and over said rearward portion, the said rearward portions having an inner bore less in diameter than that of the bore of the said forward portions, each of said dielectric inserts being adapted to be inserted from the forward portion of each half into each half, each insert including a rearward portion of an outer diameter to be fitted into the rearward portion of the tubular member of each half, said rearward portion of said insert being solidly formed into a sleeve configuration having an outer diameter to engage the inner surface of the rearward portion of the tubular member and an inner diameter approximating the diameter of the dielectric sheath of the cable, each of said inserts having adjacent the said rearward portion a forward portion comprised of two halves hinged on one side and adapted to be folded together to form a configuration to fit within the forward portion of the tubular member of each half and be supported by the inner surface thereof, the said halves of the forward portion of the insert including receses adapted to receive a said center contact member and support said center contact member centrally within said tubular member and to captivate such member against axial displacement when the halves of said insert are folded together and said insert is inserted within a connector half tubular member, the said insert serving to support and guide the insertion of the coaxial cable dielectric sheath and center conductor within said tubular member and to guide the center conductor within the center contact member thereof.

3,297,979
CRIMPABLE COAXIAL CONNECTOR
Michael F. O'Keefe and Robert S. Stull, Mechanicsburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 5, 1965, Ser. No. 423,501
11 Claims. (Cl. 339—177)



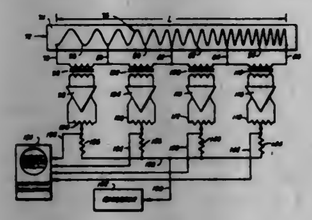
1. A coaxial connector comprising a metallic sleeve having a forward portion carrying a first dielectric insert and a rearward portion carrying a second dielectric insert, the first dielectric insert carrying a hollow conductive pin member having a flange disposed against an inner transverse surface of said first insert, the second insert including a relieved portion adapted to receive the volume of said flange, the sleeve including an inner surface tapering inwardly in the sleeve forward portion to lock said first insert and thereby said second insert and said pin member against withdrawal forces.

3,297,980
ECHO-SOUNDING APPARATUS FOR TRAWL FISHING
Roy William George Haslett, London, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company
Filed Dec. 3, 1963, Ser. No. 327,737
Claims priority, application Great Britain, Dec. 5, 1962, 45,991/62
4 Claims. (Cl. 340—3)



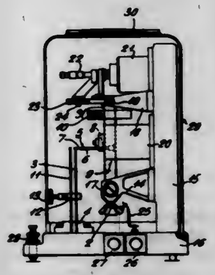
1. Fish detection echo sounding apparatus for use in trawl fishing including a transmitting device capable of generating a sounding beam of pulsed pressure wave energy, means attaching the transmitting device to the trawl adjacent the trawl mouth to direct the beam downwards and forwards in front of the trawl mouth, a receiving transducer for receiving echoes of the sounding beam from fish in front of the trawl mouth, means attaching the receiving transducer to the trawler to position the receiving transducer forward of said transmitting device in the direction of trawling, and a display device on the trawler connected to the receiving transducer to display the received echoes.

3,297,981
METHOD AND APPARATUS FOR CORRELATING AND NORMALIZING SIGNALS
George D. Harney, Douglas S. Sullivan, Milford R. Lee, and Jimmy R. Cole, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 325,072
6 Claims. (Cl. 340—15.5)



1. A device for determining the energy level of a plurality of different wave shapes within a signal magnetically recorded on an elongated record member having a longitudinally extending time scale, the device comprising:
an elongated strip insulating material; and
electrical conductor means mounted on said strip having the shape of a waveform desired to be detected and having a longitudinally extending time scale, said conductor means being divided into at least two sections representing different frequencies;
signal indicating means having a channel for each of said sections; and
a separate circuit connecting each of said sections to its respective channel of the indicating means;
whereby when the elongated record member is moved in close proximity to the electrical conductor means with the longitudinally extending time scale of the record member disposed generaly parallel to the longitudinally extending time scales of each of the sections, the electrical signal generated in each section of the conductor means will be indicative of the energy level of the corresponding wave shape within the adjacent portion of the recorded signal with respect to time.

3,297,982
HORIZONTAL SEISMOMETER
Allan David Beach, Tadley, Basingstoke, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Apr. 29, 1964, Ser. No. 363,386
Claims priority, application Great Britain, May 7, 1963, 17,953/63
6 Claims. (Cl. 340—17)

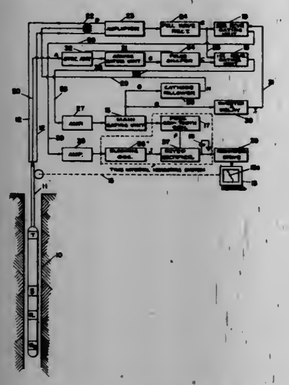


1. A seismometer comprising an inverted pendulum mounted on a flexural frictionless hinge means, said hinge means being characterized by the absence of relative surface contact movement at its connection to the said pendulum, wherein movement of the pendulum causes flexing of the said hinge means, said pendulum having an inertial mass, a leaf spring having one end rigidly clamped and the other end linked by a flexural frictionless link means to the inverted pendulum to apply a restoring force for returning the pendulum from a displacement position to its rest position, said link means being characterized by the absence of relative surface contact movement at its connection to the leaf spring and at its connection to the pendulum, wherein movement of the pendulum relative to the leaf spring causes flexing of the said link means, the said spring being of a sufficient length so that the mechanical properties of the spring are not changed by stresses produced by movement of the pendulum.

3,297,983
METHODS AND APPARATUS FOR ACOUSTIC WELL LOGGING
Gerald C. Summers, Dallas, Tex., assignor, by mesne assignments, to Mobil Oil Corporation, a corporation of New York
Continuation of application Ser. No. 575,541, Apr. 2, 1956. This application June 23, 1959, Ser. No. 822,389
34 Claims. (Cl. 340—18)

29. A downhole instrument for acoustical well logging comprising:
a receiver capable of receiving and converting an acoustical impulse into an alternating electrical signal;
a normally conducting amplifying circuit, said receiver being coupled to said amplifying circuit;
a trigger circuit, said trigger circuit being coupled to said amplifying circuit to effectively silence said amplifying circuit, said trigger circuit being actuated by a signal of predetermined polarity and magnitude, the polarity of said signal being chosen to actuate

said trigger circuit after the amplifying circuit has reproduced at least a half cycle of the electrical



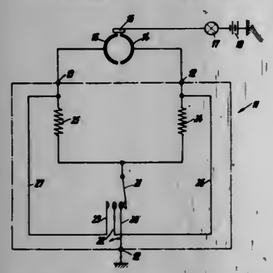
signal from the receiver and the magnitude being set slightly above the noise level of the downhole instrument.

3,297,984

TIRE PRESSURE INDICATING DEVICE

Otto Necker, Pfaffenweg 47, Stuttgart, Germany

Filed Mar. 31, 1964, Ser. No. 356,265
Claims priority, application Germany, Apr. 9, 1963, N 23,014/63
11 Claims. (Cl. 340—58)



1. A pressure sensing device, comprising a switching device;

said switching device comprising a pressure sensing structure displaceable to a number of preselected positions in response to variations in the pressure in an object;

an electrical contact actuating portion connected to said structure;

a brushing electrical contact;

an electrical contact element adapted for brushing engagement with said brushing contact; said element being comprised of a first and a second segment; each of said segments being electrically insulated from one another;

means for moving said element with respect to said brushing contact; said brushing electrical contact being in brushing engagement with said element, whereby movement of said element brings said brushing contact sequentially into engagement with each of said segments;

a first and a second electrical contact, which are, respectively, electrically connected with said first and second segments;

said actuating portion having a grounded electrical contact means;

said grounded contact means being positioned and adapted to electrically engage, selectively, one of said first and second contacts and both of them, depending upon the position of said pressure sensing structure;

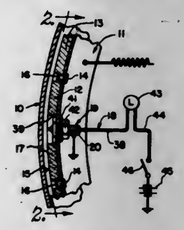
said brushing electrical contact being connectable to an indicator and a power supply.

3,297,985

BRAKE LINING WEAR INDICATING MEANS

John R. Trebonsky, 4525 Cracow Ave., Lyons, Ill. 60534, and Elmer J. Blazek, 26 61st St., Downers Grove, Ill. 60515

Filed Apr. 14, 1964, Ser. No. 359,583
13 Claims. (Cl. 340—69)



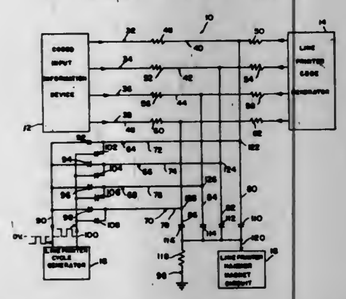
1. A brake lining wear indicating means comprising, a brake shoe; a brake lining of friction material fixedly secured to said brake shoe, said brake shoe being movable with respect to a brake drum to cause said lining to be moved into and out of frictional engagement with the brake drum; switch means carried by said brake shoe including a contact element and a relatively movable contact head, said switch means normally being open with said contact element and head spaced with respect to each other, said switch means closed when said contact element and head engage each other, said switch means closing only upon wear of said lining a predetermined amount, said switch means including biasing means yieldably urging said contact element and head relatively toward each other; and an electrical indicating circuit electrically connected to said switch means.

3,297,986

STROBED BINARY CODE COMPARATOR HAVING AN INTERROGATION CIRCUIT WHICH INCLUDES SELECTIVELY BIASED DIODE PAIRS

Richard F. Reardon, Detroit, Mich., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Jan. 20, 1964, Ser. No. 338,843
5 Claims. (Cl. 340—146.2)



1. A circuit for comparing a pair of electric signals comprising averaging means for developing an average signal representative of the averaged magnitude of the two signals, said averaging means including a voltage divider circuit having a conductor and two matched impedance

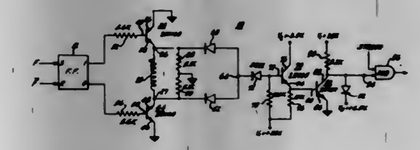
members in series therein, the signals to be compared being fed to the opposite ends of the conductor, interrogating means operably associated with the averaging means for interrogating said average signal to determine the magnitude thereof, said interrogating means comprising a separate conductor connected between the impedance members in the averaging means, a pair of oppositely polarized diodes connected in parallel with each other and in series in the last-mentioned conductor, means for biasing each of said diodes in a reverse direction and means for separately removing the bias from the diodes, and means responsive to the interrogating means for providing an output signal representative of the identity condition of the two electric signals as determined by the magnitude of the average signals.

3,297,987

COMPARATOR CIRCUIT FOR BINARY AND TERNARY SIGNALS

John M. Bailey, Jr., Fairport, N.Y., and Robert G. Moy, Haddonfield, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed June 24, 1964, Ser. No. 377,658
11 Claims. (Cl. 340—146.2)



2. A comparator for comparing binary signals with ternary signals stored in a memory, ternary signals of "1" and "0" values corresponding, respectively, to binary signals of "1" and "0" values whereas a ternary signal of a third value "*x*" corresponds to either one of said binary "1" and binary "0" signals, said memory including a sensor having first and second terminals for producing across said terminals a first sense signal of one phase when a ternary "1" signal is sensed, a second sense signal of an opposite phase when a ternary "0" signal is sensed, and a third sense signal of substantially zero amplitude when a ternary "*x*" signal is sensed, said comparator comprising in combination,

a unidirectional conducting device having first and second terminals,

first and second means for respectively coupling said first and second terminals of said sensor to the first terminal of said device,

switch means having a first and second operating positions for respectively coupling said first and second terminals of said sensor to said second terminal of said unidirectional conducting device,

means for switching said switch means to said first operating position for connecting said first terminal of said sensor to said second terminal of said device when a binary signal of one value is compared with said ternary signals so that a ternary sense signal of only one phase passes through said device, and

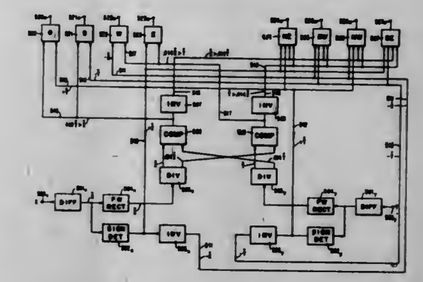
means for switching said switch means to said second operating position for connecting said second terminal of said sensor to said second terminal of said device when a binary signal of the other value is compared with said ternary signals so that a ternary sense signal of only said opposite phase passes through said device.

3,297,988

APPARATUS FOR RESOLVING SPACE CURVE SLOPES INTO ANGULAR SECTORS

Evon C. Greanias, Chappaqua, and Reial J. Norman, Mount Kisco, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 29, 1963, Ser. No. 305,464
8 Claims. (Cl. 340—146.3)



4. Apparatus for continuously apportioning the slopes of a two dimensional space curve into eight equal sectors of $\pi/4$ radians each, by processing first and second waveforms respectively manifesting the X and Y orthogognally disposed displacements with respect to time of the successive points on the curve, comprising:

(a) means for differentiating said first and second waveforms to obtain third and fourth waveforms respectively manifesting $\dot{X}$ and $\dot{Y}$, the true X and Y velocity components;

(b) means for inverting the polarity of said third and fourth waveforms to obtain fifth and sixth waveforms respectively manifesting $-\dot{X}$ and $-\dot{Y}$, the negative values of the true velocity components;

(c) means for processing said fifth waveform to obtain a seventh waveform manifesting $.414(-\dot{X})$, where .414 equals the tangent of the angle $\pi/8$;

(d) means for processing said fourth waveform to obtain an eighth waveform manifesting $.414\dot{Y}$;

(e) a first comparing device for comparing said eighth waveform with said third waveform and producing an output response, A, only when said eighth waveform is more positive than said third waveform;

(f) a second comparing device for comparing said fifth waveform with said eighth waveform and producing an output response, B, only when said fifth waveform is more positive than said eighth waveform;

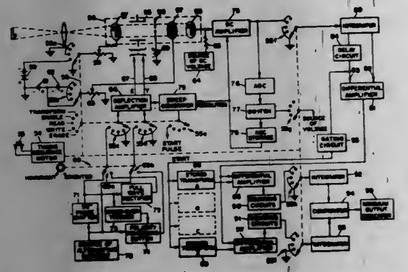
(g) a third comparing device for comparing said seventh waveform with said fourth waveform and producing an output response, C, only when said seventh waveform is more positive than said fourth waveform;

(h) a fourth comparing device for comparing said sixth waveform with said seventh waveform and producing an output response, D, only when said sixth waveform is more positive than said seventh waveform;

(i) an inverter connected to each of said comparing devices to produce an output response $\overline{A}$, $\overline{B}$, $\overline{C}$, and $\overline{D}$ when the respective comparing devices are not producing output responses;

(j) eight logical two-way AND gates combinatorially connected to said first, second, third, and fourth comparing devices and to each of said inverters and having the following connections, $A\overline{B}$, $C\overline{D}$, $\overline{A}B$, $\overline{C}D$, $\overline{C}B$, $\overline{A}D$, $C\overline{B}$, DA.

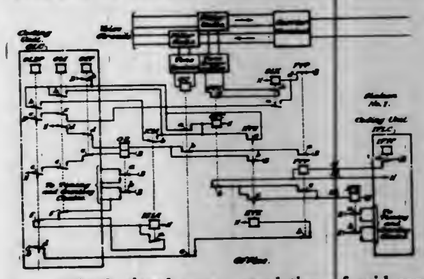
3,297,989
PROBABILITY TRANSFORM GENERATOR FOR IMAGE RECOGNITION
Blake K. Atchley, Irving, Tex., Charles L. Buddecke, Santa Ana, Calif., and George R. Tenery, Grand Prairie, Tex., assignors to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Mar. 23, 1964, Ser. No. 353,736
10 Claims. (Cl. 340—146.3)



1. An image recognition system comprising in combination an image storage tube having a photocathode, a storage mesh, and an anode, means for accelerating said current flow from said photocathode to said storage mesh at a first rate for a read function, means for charging said storage mesh to a first potential to prevent current flow from said photocathode to said anode while said current flow is accelerated at said first rate, means for projecting upon said photocathode an image that is to be recognized, said photocathode becoming emissive over the image area, means for accelerating said cathode current flow at a second rate for a write function, an area that corresponds to said image on said storage mesh in response to projection of said image during acceleration of said cathode current flow at said second rate accumulating a potential that differs from said first potential that is retained upon the remaining area of said storage mesh, said storage mesh transmitting current flow from said photocathode to said anode only through that area at said different potential while said cathode current is accelerated at said first rate, a current measurement circuit connected to said anode, means for normalizing the current flow that is applied from said anode to said current measurement circuit, means for nutating in an expanding radius over said storage mesh the cathode current while it is accelerated at said first rate until the rates of change of anode current for designated periods of nutation are distinctive of the shape of the image.

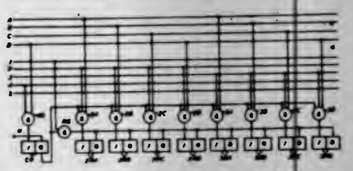
3,297,990
CARRIER CURRENT REMOTE CONTROL HAVING MEANS FOR COMPENSATING FOR CHANNEL DELAY
Homer L. Hathaway, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed July 26, 1963, Ser. No. 297,742
6 Claims. (Cl. 340—163)

1. In a remote control system including a control office and a plurality of stations connected by a communication channel, each location being provided with apparatus for transmitting and receiving code signals over said communication channel to and from other locations, each location being adapted to independently initiate such codes; transmission delay compensation apparatus comprising in combination;
(a) circuit means at each station having connections for delaying the transmission of an initiated code by said transmitting apparatus after the transmission of a preliminary signal,
(b) timing means at said office responsive to said preliminary signal for measuring a first predetermined timing period,
(c) a first circuit means at said office controlled by said timing means and also responsive to said preliminary signal for actuating said office apparatus when said first timing period has elapsed to transmit a first answer-back signal and to measure a second predetermined timing period,
(d) a second circuit means controlled by said office apparatus for actuating the transmission of a second



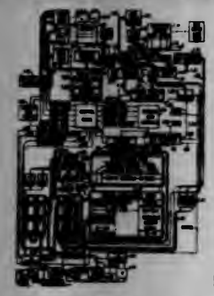
answer-back signal upon completion of said second timing period,
(e) said station circuit means being responsive to said first answer-back signal and having connections for driving the station apparatus to continue the transmission of the initiated code beyond said preliminary signal only if said first answer-back signal is received at that station,
(1) said station circuit means controlling the station apparatus to halt the code transmission at the end of a first portion thereof until said second answer-back signal is received.

3,297,991
SIGNAL INFORMATION STORING SYSTEMS
John William Pletts, Galleywood, Essex, England, assignor to The Marconi Company Limited
Filed Nov. 5, 1962, Ser. No. 235,313
Claims priority, application Great Britain, Dec. 11, 1961, 44,219/61
3 Claims. (Cl. 340—172.5)



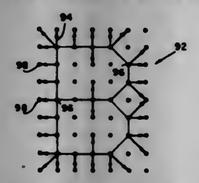
1. A system adapted to register and hold one or more combinations each of a plurality of simultaneously occurring bit-signals derived from a plurality of bit-signal sources and occurring in a predetermined sequence of combinations and to effect such registration and holding automatically when a bit-signal occurring in a predetermined circuit at a predetermined time which is later than the time or times of occurrence of the bit-signal combination or combinations to be registered and hold said system including at least one group of bistable storing units, one for each bit in a combination to be registered and held; means for registering in the units of said group a combination of bits occurring at a predetermined time in the sequence means for normally subsequently cancelling registration of a combination thus registered thus preparing said units to register the corresponding combination in the next sequence; means operable automatically on the occurrence of a signal of a predetermined nature in a predetermined circuit at a predetermined time later than the registration of a combination but before the cancellation of said registration for preventing said cancellation so that the combination previously registered is held; and means operable at any desired time for cancelling a registration of a combination thus held, said predetermined circuit being constituted by one of the bit-signal sources.

3,297,992
DATA PROCESSING AND ACCOUNTING SYSTEM
William L. McDonald, Peter J. De George, Joseph R. Stewart, and Ray H. Thurmond, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 28, 1962, Ser. No. 248,098
63 Claims. (Cl. 340—172.5)



1. A system for selecting and controlling the transfer of information into and from individual storage locations, or a group of storage locations beginning with a particular individual location, comprising:
storage means, said storage means having a first portion for storing numeric words and a second portion for storing alphanumeric words;
means for directly selecting a word location in said storage means for the transfer of information;
means for generating pulses according to a predetermined pattern;
and selection means, said means being responsive to control signals indicative of an alphanumeric transfer operation and of the beginning of the second portion of said storage means, and said means being further responsive to said generated patterns of pulses for selecting the alphanumeric word locations in said storage means in a sequential manner beginning with a specified location.

3,297,993
APPARATUS FOR GENERATING INFORMATION REGARDING THE SPATIAL DISTRIBUTION OF A FUNCTION
Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 19, 1963, Ser. No. 331,682
14 Claims. (Cl. 340—146.3)

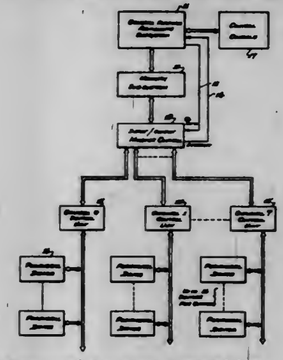


6. In apparatus for generating signals representative of the states of active and inactive x zones in a space, wherein the zones in the space are positioned in an orthogonal matrix as follows, with each zone x being designated by the letter P having two subscripts, the first subscript designating the horizontal row of the matrix in which the zone is located and the second subscript designating the vertical column of the matrix in which the zone is located:

$$\begin{matrix} x_{P_{0,0}} x_{P_{0,1}} \cdots x_{P_{0,n}} \\ x_{P_{1,0}} x_{P_{1,1}} \cdots x_{P_{1,n}} \\ \cdot \quad \cdot \quad \cdot \\ \cdot \quad \cdot \quad \cdot \\ x_{P_{m,0}} x_{P_{m,1}} \cdots x_{P_{m,n}} \end{matrix}$$

the combination of means for sensing the states of the zones, means for comparing the state of each zone $P_{i,j}$ with the states of surrounding zones, the comparing means including means for generating an output signal for each pair of compared zones only when the zone $P_{i,j}$ is sensed as active and the other zone is sensed as inactive.

3,297,994
DATA PROCESSING SYSTEM HAVING PROGRAMMABLE, MULTIPLE BUFFERS AND SIGNALLING AND DATA SELECTION CAPABILITIES
Walter Klein, Santa Ana, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed June 10, 1963, Ser. No. 286,647
13 Claims. (Cl. 340—172.5)

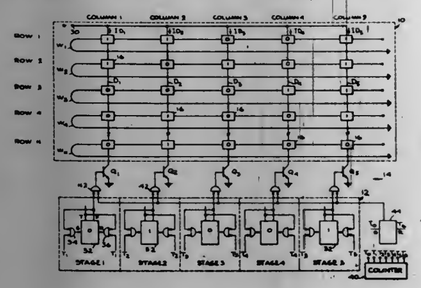


1. A data processing system comprising
a plurality of peripheral data transmitting and receiving devices;
a plurality of channel control units each having respective ones of said peripheral devices coupled thereto;
a memory subsystem having a plurality of cell groups unique to each of said channel control units, said cell groups providing encoded indirect start, end and current addresses for a plurality of memory buffer areas,
each cell containing an end address having an additional bit position whose binary value determines which buffer area is used following said end address,
means for providing an internal address generator including means responsive to the binary value of said predetermined bit position.

3,297,995
CONTENT ADDRESSABLE MEMORY
Ralph J. Koerner, Canoga Park, and Alfred D. Scarbrough, Northridge, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 269,009
23 Claims. (Cl. 340—172.5)

1. In combination with a first binary storage element of the type respectively responsive to changes in current in opposite first and second directions on a digit line

associated therewith for respectively providing pulses of opposite first and second going polarities on an output line associated therewith when said first binary storage element is in a first state and for respectively providing pulses of second and first going polarities when said first binary storage element is in a second state, apparatus for comparing the state of said first binary storage element



with the state of a second binary storage element, said apparatus comprising:

means responsive to a first state of said second binary storage element for changing the current in said digit line in a first direction;

means responsive to a second state of said second binary storage element for changing the current in said digit line in a second direction; and

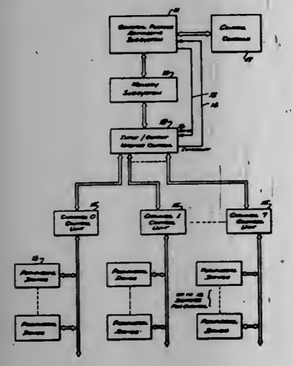
means for sensing said output line to determine the polarity of a pulse thereon.

3,297,996

DATA PROCESSING SYSTEM HAVING EXTERNAL SELECTION OF MULTIPLE BUFFERS

Robert J. Grady, Garden Grove, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed June 10, 1963, Ser. No. 286,764
5 Claims. (Cl. 340—172.5)



1. A data processing system comprising

a memory subsystem having a pluraliy of cell groups providing encoded indirect start, end and current addresses for a plurality of memory buffer areas,

peripheral data means providing discrete data groups having respective identification codes,

external address means responsive to said codes for addressing a respective one of said cell groups for each of said identification codes, and

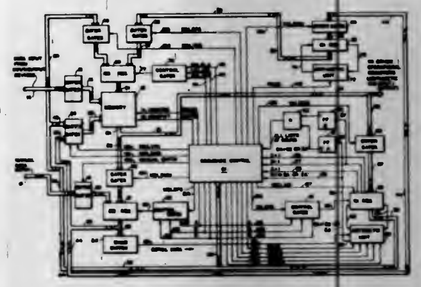
means for regulating the flow of data between said peripheral data means and the memory buffer designated by the addressed cell group.

3,297,997

LIST CONTROL

Robert J. Grady, Garden Grove, and Walter Klein, Santa Ana, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed June 10, 1963, Ser. No. 286,794
4 Claims. (Cl. 340—172.5)



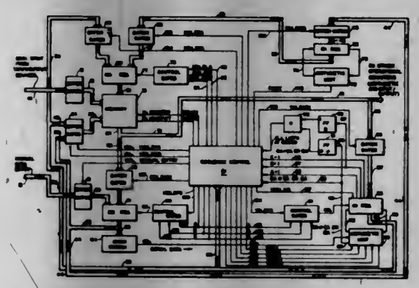
1. In a digital data processor including a memory having a program stored in addressable cells with address codes N, N+1, N+2, . . . X, X+Y, X+Z, . . . S, S+1, S+2 . . . where N, S, X, Y and Z are arbitrary integers, for storing data words, each word consisting of a group of digital signals representative of a command to be executed including the address (direct or indirect) of an operand, or an operand to be processed, a memory address register for receiving and storing a group of digital signals representing the address of a memory cell from which a data word is to be read, a program address register for storing a group of digital signal representing the address of the next command to be executed, an address modification register adapted to receive an address of an operand, and in conjunction with an arithmetic unit adding or subtracting a numerical value from said address, a sequence control unit for controlling the operation states called for by an instruction being executed and for obtaining the next command to be executed in sequence from the cell specified by the contents of said program address register, the improvement comprising a list control structure comprising three words stored in memory locations X, X+Y, and X+Z, the word in location X representing a current address which is the address of the operand to be operated upon, the word in location X+Y representing an end address specifying the address of the last operand of a list stored in the memory to be operated upon, and the word in location X+Z representing a start address specifying the address of the first operand of said list of operands to be operated upon, said start address being equal to said current address the first time the list control structure is referred to by a command of said stored program, said address modification register being adapted to receive an address from the memory under control of said sequence control unit when an indirect address mode command is transferred thereto from said memory for execution, said address being taken from a memory cell specified by the address portion of the indirect address mode command, apparatus for sensing the presence of a digit in a first predetermined digit position of the address which, if taken from location X, is the current address of a list control structure, comparing apparatus responsive to the presence of a digit in said first predetermined digit position for determining whether said current address is equal to said end address read from the memory cell X+Y, apparatus for simultaneously sensing the presence of a digit in a second predetermined digit position of said current address for internal sequence control purposes, and in response thereto for substituting said start address from the memory cell X+Z for the current address in said address modification register which start address in said register becomes the current address and for substituting said start address read from the memory cell X+Z for the end address otherwise read from location X+Y, in the comparison performed by said comparing apparatus, apparatus for storing back in said memory cell X the current address incremented or decremented by adding or subtracting a predetermined number, said current address also being retained unaltered in said address modification register as the operand address for the indirect address mode command to be executed regardless of whether the current address is equal to said end address and for setting a digit in said second predetermined digit position of the current address as it is incremented or decremented and restored if the current address is equal to said end address, all in response to said comparing apparatus, and apparatus for storing in said memory cell X the start address incremented or decremented by adding or subtracting said predetermined number in response to the aforesaid sensing of a digit in said second predetermined digit position instead of the current address incremented or decremented as aforesaid.

3,297,998

LIST CONTROL

Walter Klein, Santa Ana, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed June 10, 1963, Ser. No. 286,795
6 Claims. (Cl. 340—172.5)



1. In a digital data processor including a memory for storing a plurality of multi-bit data words including commands, operands and at least one list control word which comprises first, second and third address words which respectively contain the current address of an operand in a stored list of operands and a code portion, the end address of the last of said operands and the start address of the first of said operands, a memory address register connected with said memory for addressing data stored therein, buffer register means connected with said memory for providing buffer storage of data read from said memory and for returning said data read from said memory to appropriate locations in said memory, an address modification register connected with said memory for receiving one of said address words therefrom, said address modification register being connected to said memory and to said address register for supplying said one of said address words in an unaltered or altered state to said memory and to said address register means, arithmetic and comparison means connected with said buffer register means and with said address modification register for receiving data from said address modification register or said buffer register, for comparing the data received from these two registers and for supplying the data from either of these registers to the address modification register incremented or decremented by one, a program address register means connected with said memory address register and adapted to receive the address of a command stored in said memory and to supply said address of a command to said memory address register to address to said command, an arithmetic means coupled with said program address register means for incrementing by one the contents of the program address register means and returning the results thereto upon the occurrence of a signal from said control means each time a command is fetched from said memory, and control means connected with said memory, said registers and said arithmetic and comparison means for controlling the operation thereof, the improvement comprising

said data stored in said memory further including a program including at least three commands stored in adjacent memory locations, the intermediate of said commands directing advance to another program or to the third of said commands and the third of said commands directing an advance to the first of said commands,

predetermined codes in said first address word serving to indicate that a plurality of said list control words exists and that the current address of a first of said list control words indirectly addresses a second of said list control words,

second predetermined codes serving to indicate that the address word in which said second codes appear is a part of a list control word,

said first address word being transferred to said address modification register, said second or third address word being transferred to said buffer register, said arithmetic and comparison means incrementing or decrementing the contents of said address modification register and returning the result thereto and comparing the contents of said buffer register with the contents of said address modification register and providing an output signal when these contents are unequal,

storage means coupled with said address modification register and said arithmetic and comparison unit for receiving from said address modification register the status of the code portion and storing the status thereof, and storing said output signal from said arithmetic and comparison unit,

said storage means providing a predetermined output signal when predetermined codes are stored therein and when no output signal is received from said arithmetic and comparison means for controlling said control means to cause said arithmetic means to again increment the contents of said program address register means a second time to skip said intermediate command, whereby said first command is executed followed by said third command being executed, or to cause said control means not to provide a signal to said arithmetic means to increment said program address register a second time when said storage means provides said predetermined output signal whereby said intermediate command is not skipped, and

said control means serving to sense predetermined codes and to supply appropriate output signals to allow or not to allow the execution of said first command depending upon the status of said predetermined codes.

3,297,999

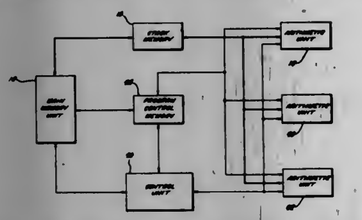
MULTI-PROGRAMMING COMPUTER

George T. Shimabukuro, Monterey Park, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 26, 1963, Ser. No. 304,423
18 Claims. (Cl. 340—172.5)

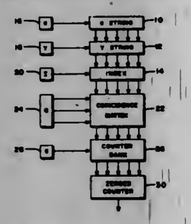
1. A multiprogramming computer comprising first storing means for storing instructions and operands in coded form relating to a plurality of separate programs, means for selecting and transferring instructions and operands out of the storage means in response to coded addresses, temporary storage means for storing a plurality of oper-

ands in addressable locations, second storing means for storing a plurality of program control words in coded form, each program control word having information related to the associated program as to the address of the next instruction in said first storing means, the address of the last operand placed in the temporary storage means, and the operation called for by the last instruction, an address register for storing the address of the next location in the temporary storage means available for receiving an operand, fetch control means responsive to a program control word from the program control word storing means for sensing the instruction addressed by the program control word, changing the address portion of the program control word to the address of the next in-



struction, and transferring the operator portion of the instruction to the program control word, and operand storage control means responsive to the instruction and the program control word including means for transferring an operand from the first storing means to the address in the temporary storage means identified by the address register, means for transferring the address of the last operand placed in the temporary storage means from the program control word and storing it together with the operand in the temporary storage means, means for replacing the last operand address portion of the program control word with the address of the immediate operand as derived from said register, and means for setting the register to the address of the next available location in the temporary storage means.

3,298,000
CHARACTER CORRELATION SYSTEM
Richard M. Sanders, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,339
39 Claims. (Cl. 340—172.5)

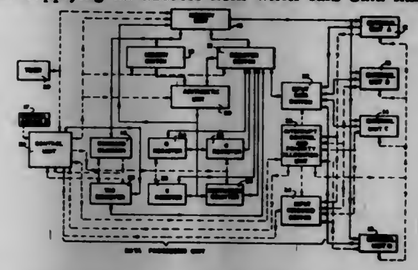


30. A counter bank comprising:
(a) a plurality of bistable magnetic thin film elements of the single preferred magnetic axis type which are arranged in a number J of columns each with a number N of elements;
(b) a number J of word windings with each *j*th word winding (where $1 \leq j \leq J$) being inductively coupled with every element of the respective *j*th column such that current flow therein applies a first magnetic field substantially transverse to the preferred magnetic axis of each coupled column element;
(c) a number N of drive windings with each *n*th drive winding (where $1 \leq n \leq N$) being inductively coupled with the respective *n*th element in each *j*th column such that current flow therein applies a second magnetic field substantially parallel to the preferred magnetic axis of each coupled *n*th element;
(d) a number J of sense windings, with each *j*th sense winding being inductively coupled with every element in the respective *j*th column such that either a first polarity EMF or a second opposite polarity EMF is respectively induced thereon by a reversal of flux parallel to the preferred magnetic axis in any one of its column coupled elements from a first polarized stable direction to a second oppositely polarized stable direction, or from said second stable direction to said first stable direction, respectively;
(e) a number J of control means with each *j*th control means being connected to the respective *j*th word winding and selectively actuable to a first state to apply current to generate said first magnetic field;
(f) generator means for applying to all of said N drive windings in a predetermined nonoverlapping sequence a like pair of time-separated current pulses each pulse of different polarity and each pulse producing a said second magnetic field of different polarity which has a magnitude sufficient only in the presence of a said first magnetic field to reverse oppositely polarized flux in any *n*th element coupled with the respective *n*th drive winding; and
(g) a number J of resetting means with each *j*th resetting means being connected to the respective *j*th sense winding for deactuating the respective *j*th control means to a second state in response to only that polarity EMF which can be induced by a reversal of element flux caused by the first of said pair of different polarity current pulses to be applied by said generator means to any *n*th drive winding.

39. A character correlation system comprising:
(a) a search memory field adapted to hold a string of characters at different spatially related locations thereof;
(b) first means for simultaneously interrogating all of said search memory field locations for the presence therein of any particular character;
(c) a second means operatively connected with said search memory locations and responsive to the interrogation thereof which can generate spatially related first signal indications each signifying that said particular character interrogated for is present in a particular different spatial search memory location;
(d) third means for generating spatially related reference signals whose total number and spatial relationship can be selectively varied; and
(e) fourth means for comparing said reference signals simultaneously with each of several different spatially shifted positions of said first signal indications, wherein spatially related second signal indications can be generated each identifying a particular different spatially shifted position of said first signal indications which permit coincidence therewith of said reference signals.

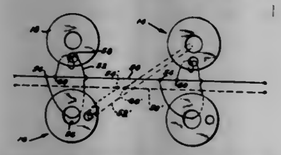
3,298,001
DATA PROCESSING UNIT FOR PROVIDING SELECTIVE MEMORY ADDRESSING BY EXTERNAL APPARATUS
John F. Couleur, Philip F. Gudenschwager, and William A. Shelly, all of Phoenix, Ariz., and David L. Bahrs, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 4, 1964, Ser. No. 364,599
9 Claims. (Cl. 340—172.5)

1. In a data processing system, the combination comprising: a data processing unit comprising a data storage member for storing a plurality of data items in a corresponding plurality of storage locations, a register for storing an address item identifying a corresponding one of said storage locations, and executing means, when enabled, for controlling said data processing unit to execute a plurality of different operations on data received by said system, each of said operations being executed in response to corresponding signals received by said means with respect to the storage location identified by the contents of said register; a data handling unit disposed externally to said data processing unit, said data handling unit supplying an address item when said data handling



unit must employ said data processing unit to effect the execution of an operation; said data processing unit further comprising means for transferring said address item to said register, means following transfer of the address item supplied by said data handling unit to said register for sensing the data item stored in the storage location identified by the contents of said register and for delivering address signals representing the data item sensed, means for transferring said address signals to said register and for delivering a control signal, and means responsive to said control signal for enabling said executing means.

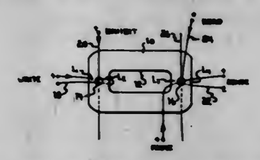
3,298,002
MAGNETIC CORE CIRCUIT ARRANGEMENT
Hewitt D. Crane, Palo Alto, Calif., and Edward C. Dowling, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 5, 1962, Ser. No. 228,557
7 Claims. (Cl. 340—174)



1. An improved magnetic core circuit comprising a plurality of magnetic cores arranged to shift information from one core to the next, one core being connected to transmit information to the next and so on, drive means for energizing said cores, and means for coupling one core to the next and so on, said means including a main heavy-gage conductor and auxiliary conductors each including at least a portion of fine wire threading an aperture of one core and an aperture of another core, the two ends of each said auxiliary conductor being connected to said main conductor to complete a coupling loop between cores.

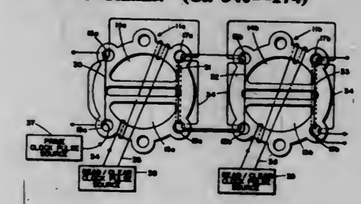
3,298,003
CORE DEVICE
John A. Swanson, Mountain View, Calif., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 14, 1962, Ser. No. 244,608
10 Claims. (Cl. 340—174)

1. A device for storing and manipulating intelligence in binary form including a core of saturable magnetic material capable of being driven into distinct stable states of magnetization defined by the sense of flux orientation in said core, intelligence input means linking the core including first means linking one part of said core in a sense to drive the core into a distinct stable state representative of a binary one with flux set in a first pattern in said core and second means linking a second part of said core to drive the core into a different stable state also representative of a binary one with flux set in a second pattern in said core, the simultaneous application of drive via said first and second means operating to drive the said first and second parts and the core into a stable state representative of a binary zero with flux oriented in a third pattern in said core; driving means linking a third part of the core including third means in an orientation



to drive the core to switch flux in said third part from the pattern set in said first and second patterns in said core to a fourth pattern of set flux and to leave flux oriented in said third pattern substantially unswitched and fourth means to switch flux from said fourth pattern back to said first or second patterns whereby to produce a switching of flux in said core representative of the particular stable state then existent and output means linking said third part of said core to respond to flux switched in said third part of said core to produce an output signal when said core is in said states having said fourth pattern of set flux to represent a binary one output and to produce substantially no output signal when said core is in a binary state having flux orientation in said third pattern.

3,298,004
MULTI-APERTURE CORE SHIFT REGISTER
Lawrence R. Smith, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Continuation of application Ser. No. 229,852, Oct. 11, 1962, which is a division of application Ser. No. 109,440, May 11, 1961, now Patent No. 3,217,300, dated Nov. 9, 1965. This application Aug. 24, 1964, Ser. No. 393,477
5 Claims. (Cl. 340—174)



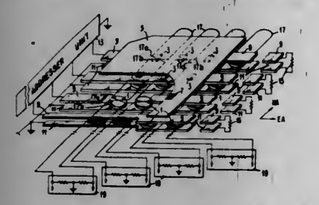
1. A magnetic device including in combination a core of magnetic material having relatively high flux retentivity, said core including two core sections with each said section having a major aperture therein defining a relatively long closed flux path, each of said sections having an input minor aperture therein and an output minor aperture therein with each of said minor apertures defining closed flux paths in said core that are shorter than said long flux paths, a blocking circuit including a winding portion linking each of said long flux paths and adapted when energized to establish continuous flux about the same, input circuit means including winding portions passing through said input apertures and linking the flux paths thereof in an opposed sense such that an input signal of one polarity will set flux about one of

said output apertures and an input signal of opposite polarity will set flux about the other of said output apertures, an output circuit including winding portions passing through said output apertures and linking the short flux paths thereof in an opposed sense, and a priming circuit including winding portions passing through each of said minor apertures and adapted to reverse flux locally about the same.

3,298,005
THICK FILM READ-ONLY MEMORY

Richard E. Matick, Peekskill, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 159,342, Dec. 14, 1961. This application Jan. 3, 1966, Ser. No. 518,257
30 Claims. (Cl. 340—174)

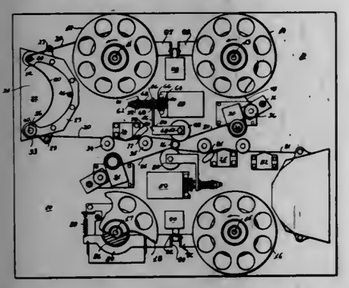


1. In a memory, a plurality of thick magnetic films having uniaxial anisotropic characteristics and wherein the inherent demagnetization force exceeds the inherent coercive force, means for storing binary information in said magnetic films, said storing means including means for saturating particular ones of said magnetic film to register a first binary quantity, a second binary quantity being defined by a magnetic film being in an unsaturated condition, and means for reading binary information from said memory.

3,298,006
TAPE TRANSCRIBER AND TRANSPORT MECHANISM THEREFOR

Veljko Milenkovic, Norridge, Harry T. Johnson, Glenview, and Carl Zaander, Clarendon Hills, Ill., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Dec. 19, 1962, Ser. No. 245,822
16 Claims. (Cl. 340—174.1)

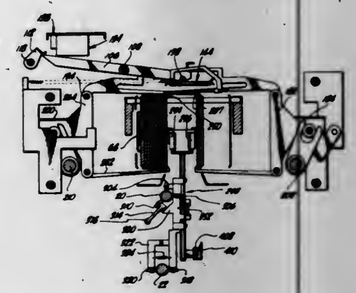


1. In a transcriber for transcribing information signals magnetically recorded on a master tape to a copy tape, the combination comprising a supply reel and a take-up reel for said master tape, a supply reel and a take-up reel for said copy tape, a continuously rotating capstan, a pinch roller for said master tape, a pinch roller for said copy tape, control means for selectively causing said pinch rollers to independently pinch their respective tapes between the nip of said respective pinch rollers and said capstan, drive means for each of said supply reels, and means responsive to said control means for controlling said supply reel drive means for selectively causing said master and copy tapes to be rewound upon said supply reels when said pinch rollers are disengaged from their respective tapes.

3,298,007
RANDOM ACCESS DEVICE FOR MAGNETIC CARD STORAGE

Duncan N. MacDonald, Arcadia, Shahbuddin A. Billawala, Pasadena, and Alpheus F. Stansell, West Covina, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Apr. 15, 1963, Ser. No. 273,027
14 Claims. (Cl. 340—174.1)

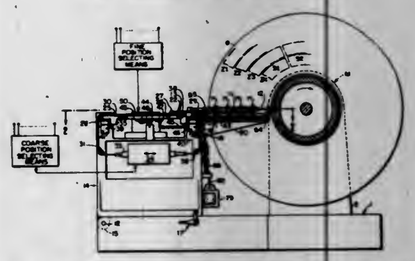


4. An information storage unit comprising a plurality of thin cards, means for supporting the cards in a stack, means responsive to an address signal for separating the stack into two parts between any selected adjacent cards, transducer means for sensing information stored on a card, means for passing the transducer means between the two parts of the separated stack to sense information stored on the selected adjacent cards, and means for returning the parts of the stack together after the transducer means passes between the two separated parts of the stack.

3,298,008
COARSE AND FINE HEAD POSITIONING APPARATUS FOR RANDOM ACCESS DISC MEMORY SYSTEM

Byron D. Smith, Edina, and Robert R. Reisinger, Mahtomedi, Minn., assignors to ANelex Corporation, Boston, Mass., a corporation of New Hampshire

Filed Apr. 17, 1963, Ser. No. 273,694
6 Claims. (Cl. 340—174.1)

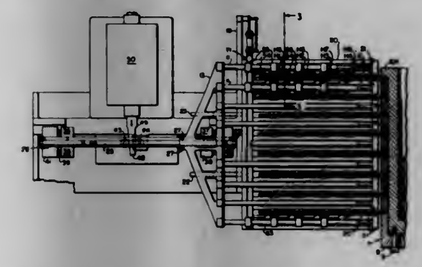


1. Apparatus for positioning a magnetic transducer head adjacent selected radially displaced tracks on a magnetic recording disc journaled on a support for rotation about a selected axis, comprising an arm on which the head is mounted, means slidably mounting the head on the support for motion in a path carrying the head radially across the surface of the disc over a predetermined distance, displacement summing means for moving the arm in response to the sum of two applied displacements, first digital positioning means having m actuated positions successively displaced by p units of length for applying a selected displacement in the range of 0 to $(m-1)p$ to the summing means, where $(m-1)p$ equals the predetermined distance, and second digital positioning means having n actuated positions successively displaced by p/a units of length for applying a selected displacement in the range of 0 to $(n-1)p/a$ to the summing means, where a is a number selected to make $(n-1)/a<1$.

3,298,009
HEAD MOUNTING AND POSITIONING APPARATUS FOR RANDOM ACCESS DISC MEMORY SYSTEMS

Eugene G. Domich, Rosemont, and Robert R. Reisinger, Mahtomedi, Minn., assignors to ANelex Corporation, Boston, Mass., a corporation of New Hampshire

Filed Apr. 17, 1963, Ser. No. 273,597
10 Claims. (Cl. 340—174.1)



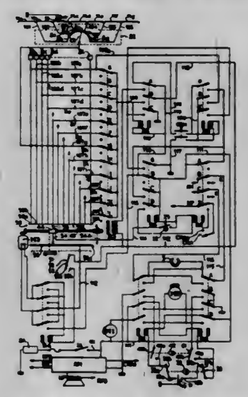
1. In combination with a pair of spaced parallel recording discs journalled on a support for rotation about a common central axis, an arm extending radially between said discs along a second axis parallel to the discs, means slidably mounting said arm on said support for radial movement between said discs, two transducer heads, spring means for resiliently mounting said heads on opposite sides of said arm in positions adjacent confronting recording surfaces of said discs, said spring means comprising depending portions extending normal to the second axis, a pair of retraction bars located on opposite sides of the depending portions, pivoted for rotation about axes parallel to said second axis, and rotatable between a first position engaging said depending portions to force said heads away from the surfaces of the discs and a second position disengaged from the depending portions, and linkage means interconnecting said retraction bars for selectively and simultaneously rotating them between their first and second portions.

3,298,010
WARNING AND SUPERVISING APPARATUS WITH VERBAL WARNINGS

Louis André Joseph Dubosq, 29 Rue de Clieu, Dieppe, Seine-Maritime, and René Georges Edouard Houssaye, Chemin de la Briqueterie, Saint-Nicolas-d'Aliermont, Seine-Maritime, France

Filed Sept. 23, 1963, Ser. No. 310,584
Claims priority, application France, Sept. 24, 1962, 910,247
15 Claims. (Cl. 340—221)

1. Apparatus for giving sound indications of the operational characteristics of a machine, said apparatus comprising, a first device for measuring a magnitude providing information concerning a parameter of normal non-defective operation of said machine, second detecting devices each responsive to a defective condition of operation of said machine, a sound emitting device comprising first recordings of spoken announcements concerning said magnitude and second recordings of spoken warnings each relating to the appearance of one of said operational defects, a first reproducing head cooperative with the first recordings, first control means associated with the first reproducing head to cause it to cooperate with and reproduce only one of said first recordings at a time in accordance with a signal from the first device, a second reproducing head cooperative with said second recordings, second control means associated with the second reproducing head to cause it to cooperate with and reproduce only one of said second recordings at a time in accordance with a signal from any one of the second devices, amplifying circuit means connecting the first and second reproducing heads to a speaker, the first device, the first control means, the first reproducing head and

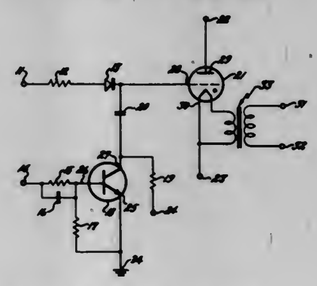


the amplifying circuit means being electrically interconnected and constituting a first channel, each of the second devices, the second control means, the second reproducing head and the amplifying circuit means being electrically interconnected and constituting a number of second channels corresponding to the number of second devices, the second devices having assigned thereto priority of importance over the first device, and selecting means interconnecting the first channel and second channels so as to be actuated upon operation of any one of the second devices and render the first device inoperative during operation of any one of the second devices.

3,298,011
DIGITAL INDICATOR SYSTEM WITH STORAGE

Stanley E. Lehnhardt, Dallas, Tex., assignor to the United States of America as represented by the Secretary of the Air Force

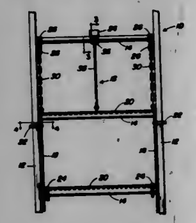
Filed Mar. 31, 1964, Ser. No. 356,341
3 Claims. (Cl. 340—248)



1. Visual signal apparatus comprising:
(a) an indicator tube having a grid;
(b) a capacitor connected to the grid of the indicator tube;
(c) means for charging the capacitor connected to one terminal of the capacitor;

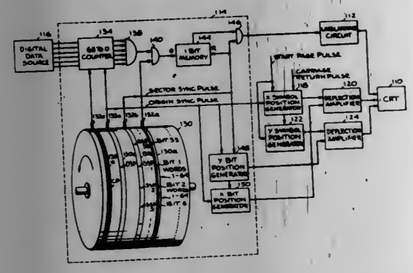
(d) a source of signal pulses connected to the capacitor charging means;
(e) switching means connected to the other terminal of the capacitor for enabling the capacitor charging means to charge the capacitor to the peak voltage of the signal pulses;
(f) and a source of sample pulses connected to the switching means for controlling the switching thereof whereby the capacitor is charged upon occurrence of a sample pulse coincident with a signal pulse igniting the indicator tube for a period greater than the signal pulse period and providing visual indication of the state of the signal pulse source.

3,298,012
LADDER WARNING DEVICE
Newton Weller, P.O. Box 131, West Des Moines, Iowa 50265
Filed Sept. 23, 1964, Ser. No. 398,681
8 Claims. (Cl. 340—272)



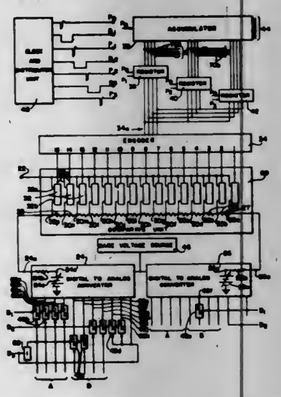
1. A warning device for a main ladder or the like having steps which a person can climb, said warning device comprising a signal ladder having cross-members positioned adjacent said main ladder with the top surfaces of said cross-members normally slightly above the top surfaces of the adjacent corresponding steps of the main ladder, resilient support means for said signal ladder which provides for limited vertical movement of said signal ladder while maintaining it in its normal position in the absence of any external force thereon, and signal means operable by movement of said signal ladder from its normal position.

3,298,013
SYMBOL DISPLAY APPARATUS
Robert A. Koster, Canoga Park, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,956
11 Claims. (Cl. 340—324)



10. Apparatus responsive to an input code identifying a symbol for displaying that symbol, said apparatus comprising:
a cathode ray tube including means for generating an electron beam;
deflection means for deflecting said beam to cause it to describe a matrix of display points;
a memory comprising a movable recording medium defining a plurality of sectors equal to the number of points in said matrix, each of said sectors including a plurailty of bit positions equal to the number of different symbols to be displayed;
means synchronized with said deflection means and responsive to said input code for sequentially reading a correspondingly positioned bit from each of said sectors; and
intensity control means responsive to said bits read from said memory for controlling the intensity of said beam.

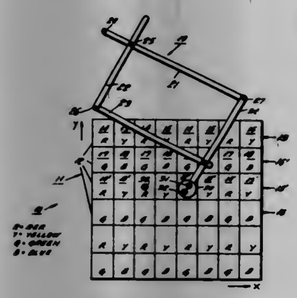
3,298,014
ANALOG TO DIGITAL CONVERTER
Barbera W. Stephenson, Belmont, Mass., assignor to Digital Equipment Corporation, Maynard, Mass.
Filed Nov. 1, 1963, Ser. No. 320,710
12 Claims. (Cl. 340—347)



7. Data processing apparatus for converting an input voltage to a corresponding digital representation by means of a succession of parallel comparisons in which said input voltage is simultaneously compared with an ordered series of reference voltages, said apparatus comprising, in combination,
(A) a plurality of comparators, each comparator being connected to compare said input voltage with a different reference voltage in an ordered series thereof,
(B) program means developing control signals for initiating each comparison between said input voltage and a series of said reference voltages,
(C) coding means connected with said comparators and developing, for each comparison, a digital signal corresponding to the number of reference voltages that are smaller than said input voltage,
(D) voltage producing means
(1) connected to receive said control signals and said digital signals determined in preceding comparisons, and
(2) developing in response thereto a new series of reference voltages for the next comparison,
(3) said voltage producing means
(a) developing each series of reference voltages with an increment between successive reference voltages no greater than the least significant digit of the digital signal to be developed with the next comparison,

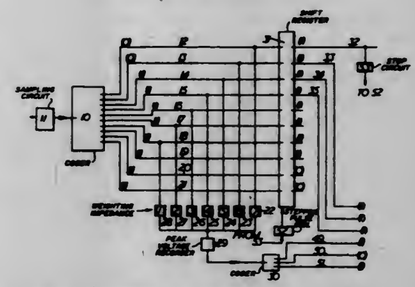
(b) developing, for the initial comparison, the smallest reference voltage equal to the smallest input voltage to be converted to digital notation plus 1.5 increments, and
(c) developing the smallest reference voltage for the next, second, comparison with a value less than the largest reference voltage that said analog voltage exceeded in said first comparison by a voltage of
(i) one-half the increment in the just comparison
(ii) minus one and one-half times the increment for the next comparison,
(iii) whereby the most significant digit in said digital signal from said coding means as a result of said second comparison has the same weight as the least significant digit developed in said first comparison, and
(E) output means
(1) connected with said coding means to receive said digital signals developed with said comparisons, and
(2) developing said digital representation by summing said digital signals determined in said first and second comparisons, thereby correcting errors in the least significant digit of the digital signals determined in said first comparison.

3,298,015
AUTOMATIC DATA PLOTTER
Stephen Herman, Queens, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,327
26 Claims. (Cl. 340—347)



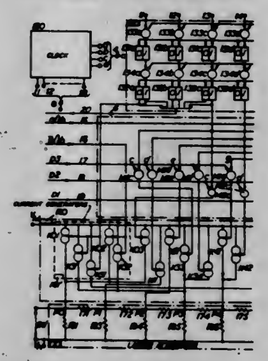
7. Data plotting means comprising a plotting surface having a plurality of subtsantially equal sized squares forming a checkerboard pattern; selected ones of said squares being formed of translucent material of at least two different colors; a light source positioned beneath said surface; detection means movable over said surface for generating first signals representative of the squares passing beneath said detection means; said detection means comprising first and second optical sensing assemblies positioned at spaced intervals a distance less than the width of each square; each of said assemblies comprising beam splitting means for splitting a beam into two directions; two light detection means each placed in one of the two split light paths; each of said light detection means being sensitive to a different color.

3,298,016
CODING EQUIPMENT
Alec Harley Reeves and Donald Robert Barber, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 17, 1964, Ser. No. 338,410
Claims priority, application Great Britain, Jan. 25, 1963, 3,250/63
12 Claims. (Cl. 340—347)



1. Coding equipment comprising:
a source of an analog quantity whose value can be represented by an n-digit code combination;
first means coupled to said source responsive to said analog quantity to generate a first plural digit code combination consisting of given ones of the m-most significant digits of said n-digit code combination and a second plural digit code combination representing the location of said m-most significant digits in said n-digit code combination, where m is less than n; and
second means coupled to said first means to provide said first and second plural digit code combinations as an x-digit code combination representative of the value of said analog quantity, where x is greater than m and less than n.

3,298,017
NON-LINEAR DECODER
Michel Louis Avignon, Neuilly, and Alain Yves Le Maout, Mont-Mesly-Cretell, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 29, 1964, Ser. No. 341,035
Claims priority, application France, Feb. 4, 1963, 923,632, Patent 1,357,668
9 Claims. (Cl. 340—347)



1. A nonlinear decoder, having a nonlinear characteristic including a plurality of straight line segments each having a different slope, for n digit code groups comprising
n bistable means to store the n digits of a code group;

decoder means coupled to selected ones of said bistable means to produce a first plurality of control signals;

a first plurality of current generators coupled to said decoder means and one of said selected ones of said bistable means responsive to the condition of selected ones of said first control signals and the condition of the digit stored in said one of said selected ones of said bistable means to activate the generation of current by said first generators;

logical switching means coupled to the remainder of said bistable means and said decoder means responsive to the condition of the digits stored in said remainder of said bistable means and the condition of the remainder of said first control signals to produce a second plurality of control signals;

a second plurality of current generators coupled to said switching means responsive to said second control signals to activate the generation of current thereby; and

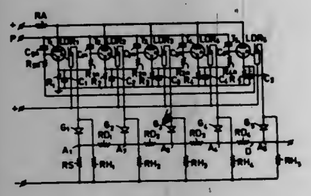
summing means coupled to said first and second plurality of current generators to add the amplitudes of the output of the activated ones of said first and second current generators to produce an analog voltage representing the decoded value of the code group stored in said bistable means.

3,298,018

DEVICE FOR CONVERTING A LIGHT SIGNAL CORRESPONDING TO A DIGIT PLACE INTO A VOLTAGE VALUE CORRESPONDING TO THE DIGIT VALUE

Daniël Johannes Gerardus Janssen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 3, 1964, Ser. No. 342,196
Claims priority, application Netherlands, Feb. 8, 1963, 288,712
11 Claims. (Cl. 340—347)



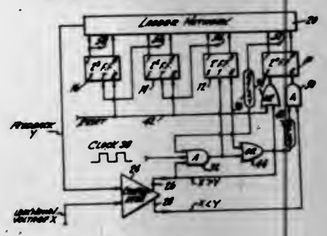
1. Apparatus for converting a source of light signals representing numerical values into electric signals corresponding to the digit values comprising, a source of voltage having a pair of output terminals, voltage attenuating means having a plurality of distributed taps, a plurality of photosensitive elements, one for each digit value, optically coupled to said light signal source, a plurality of unidirectional conducting elements, means connecting each photosensitive element in series circuit with a corresponding unidirectional conducting element between one terminal of said voltage source and a corresponding tap on said voltage attenuating means, each of said series circuits having a junction point common to said photosensitive element and to said unidirectional conducting element, a first resistor, means connecting said first resistor in series with the other terminal of said voltage source and a tap on said voltage attenuating means, a plurality of second resistors, and means connecting each of said second resistors to said other terminal of the voltage source and to corresponding ones of said junction points.

3,298,019

ANALOG TO DIGITAL CONVERTER

Edward J. Nossen, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 3, 1964, Ser. No. 357,180
10 Claims. (Cl. 340—347)



1. The combination comprising:

a digital number register including a plurality of bistable stages each for storing a binary digit of different order significance, each stage having a set state and a reset state;

all of the bistable stages, except the stage of lowest order significance, being connected as a binary up-counter;

a digital-to-analogue converter connected to receive the outputs of all of the register stages;

comparator means responsive to the output of the converter and to an analogue input signal for producing a first output when the analogue input signal is greater in magnitude than the output of the converter and for producing a second output when the converter output has a greater magnitude than the analogue input signal;

control means responsive to said first output for triggering said counter and for setting said bistable stage of lowest order significance; and

means responsive to said second output for resetting the bistable stage of lowest order significance.

3,298,020

ELECTRIC BELL WITH MOMENTUM ACTION STRIKER

Jack Malin, Beechhurst, N.Y., assignor, by mesne assignments, to Protective Alarm Devices Manufacturing Company, Inc., Kenilworth, N.J., a corporation of New York

Filed Sept. 30, 1964, Ser. No. 400,531
9 Claims. (Cl. 340—392)



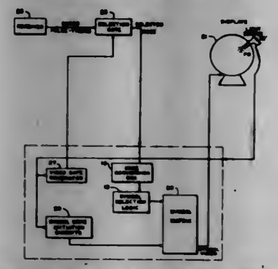
1. An electric bell comprising in combination, frame means; a gong carried by said frame means; a striker mounted on said frame means for movement in one predetermined direction to strike a preselected zone on said gong; electromagnetic operating means including pole piece means for said striker carried by said frame means and including a movable armature operatively associated with said striker and normally biased to a rest position; and a leaf spring secured at one end to extend along the surface of said armature facing said pole piece means and having a free end provided with an opening for movement of the striker therethrough, said free end, around the opening thus defined, thus straddling the striker, and abutment means on said striker between said armature and said spring, whereby; said leaf spring resiliently constrains said striker to move conjointly with said armature, and said armature, upon energization of said operating means, moving said striker in said one predetermined direction; the moving distance of the operating stroke of said armature moving said striker less than the distance to strike said gong; said striker, at the limit of the operating stroke of said armature and under the impetus imparted thereto during such operating stroke, deflecting the free end of said spring and continuing to move in said one predetermined direction to strike said gong; said spring, following striking of said gong by said striker, retracting said striker from said gong for movement, conjointly with said armature, to the rest position of said armature.

3,298,021

SYSTEM FOR THE MARKING OF RADAR ECHOES AND OTHER SIGNALS OF OBSERVED OBJECTS ON A RADAR SCREEN

Charles E. Jacobs, Silver Spring, Md., and Aage Teien, The Hague, Netherlands, assignors to the United States of America as represented by the Secretary of the Army

Filed Dec. 21, 1964, Ser. No. 420,232
Claims priority, application Netherlands, Dec. 24, 1963, 302,562
3 Claims. (Cl. 343—6)



2. A system for identifying radar targets on a display means associated with a radar set comprising, a hand-held light sensor adapted to be placed in juxtaposition to a particular luminous target on said radar display means, and a receiver adapted to receive coded transponder signals from a plurality of targets within the range of said radar set, a selection gate connected to the output of said receiver, means to open said selection gate in response to an output from said light sensor, a symbol matrix containing a plurality of symbols each corresponding to a different one of said coded transponder signals, means connected between the output of said selection gate and said symbol matrix for selecting the symbol corresponding to the coded transponder signal in the output of said selection gate, and further means connected to said light sensor and said symbol matrix for initiating the writing of the symbol corresponding to said coded transponder signal on said display means.

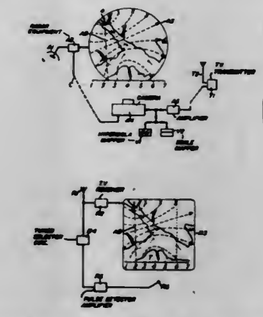
3,298,022

RADIO NAVIGATION AIDS

Norman Neville Parker Smith, Billericay, Essex, England, assignor to The Marconi Company Limited, London, England, a British company

Filed Mar. 29, 1965, Ser. No. 443,217
8 Claims. (Cl. 343—6)

1. A navigation aid comprising radar means for transmitting and receiving radar pulses including a scanning directional aerial adapted to scan a given area, display means responsive to said radar means for producing a plan position indication display, said display means including means for producing in said display an angular moving marker moving in synchronism with the scanning directional aerial, a television camera arranged to view said display, television transmission means located a predetermined distance from said aerial and responsive to said camera for broadcasting said display over said given area, and means for synchronizing said camera and said radar means whereby the transmitted television signals are in predetermined time relation to the transmitted radar pulses.

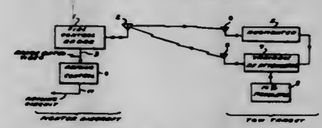


3,298,023

SAFETY SYSTEM FOR ARMAMENT TRAINING AND TESTING

Franklin H. Prestwood, Valparaiso, Fla., assignor to the United States of America as represented by the Secretary of the Air Force

Filed July 28, 1965, Ser. No. 475,611
4 Claims. (Cl. 343—6.5)



1. In an armament practice and testing arrangement in which a normally disarmed weapon is directed at a practice target by radar apparatus including a radar receiver having a video output and in which the practice target carries a radar augmenter, safety apparatus for preventing the arming of said weapon when directed by said radar apparatus toward any target other than said practice target, said safety apparatus comprising: means at said practice target for amplitude modulating the output of said augmenter at a predetermined low frequency; and frequency selective means located at said radar apparatus and receiving the video output therefrom for arming said weapon only after the continuous presence for a prescribed minimum time interval of an amplitude modulation of said video output at said low frequency.

3,298,024

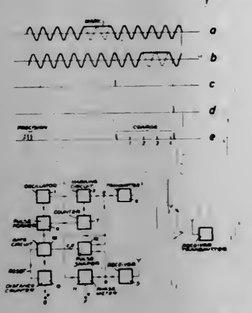
METHOD AND DEVICE FOR DISTANCE MEASURING WITH THE AID OF ELECTRIC WAVES

Manfred Böhm, Bietigheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 29, 1965, Ser. No. 451,918
Claims priority, application Germany, June 13, 1964, St 22,255
5 Claims. (Cl. 343—12)

1. A system for precise distance measuring comprising means to generate sine wave signals, means to transmit said signals, means to receive said signals reflected from an object, means to generate marking indices to gate said

sine wave signals at the beginning of said transmission and the reception of said reflected signals, means to measure the phase difference between said transmitted signals and said reflected signals to determine a fine distance measurement and means to count the cycles of said signals during said gate to determine the coarse distance measurement, the sum of said fine and coarse measurement constituting a precise measurement of the distance between said transmitter and said object.

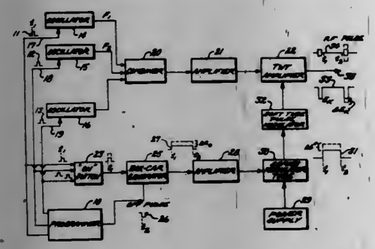


3,298,025

PULSE TO PULSE POWER CONTROL SYSTEM

Harry J. Fumea, Jr., Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Air Force

Filed July 8, 1965, Ser. No. 470,655
2 Claims. (Cl. 343—17.1)



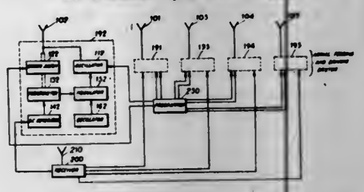
1. In a system for controlling the power output level of a travelling wave tube amplifier on a pulse to pulse basis where the frequency changes on every pulse comprising a multiplicity of gated oscillators, each of said oscillators having a different preselected frequency, means to generate at preselected times a separate gating pulse for each of said oscillators, only one of said pulses being operative at any one time, a travelling wave tube amplifier with the power output level therefrom being a function of the magnitude of voltage applied to the collector thereof, said travelling wave tube amplifier receiving the output signals from said gated oscillators, a soft tube modulator having the output thereof connected to said collector, a power supply connected to said modulator by way of a series regulator tube, a box-car generator having two input signals, the first being said operative gating pulse to actuate said box-car generator to provide an output pulse therefrom, and the second input signal being a pulse having a preselected delay to discharge said output pulse, said box-car generator output pulse having an amplitude equal to that of said first input pulse, and an amplifier interconnecting said series regulator tube and said box-car generator to provide a signal to said series regulator tube to control the output amplitude thereof.

3,298,026

MULTIPLE ROTATING BEAMS RADIO GUIDING SYSTEMS

Paul Fombonne, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Aug. 21, 1963, Ser. No. 303,556
Claims priority, application France, Aug. 23, 1962, 907,604/62
13 Claims. (Cl. 343—106)



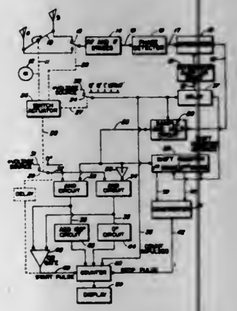
1. A transmitter comprising: n transmitting means, where n is an integer greater than one; a programmer having at least n outputs; each of said transmitting means comprising: a radiofrequency oscillator, aerial means coupled to said oscillator for radiating a rotating beam having a maximum radiation surface; means for controlling the rotation of said beam, said last mentioned means having an input coupled to one of said programmer n outputs, means for providing a signal which, in one of said transmitting means, is a constant and which, in any of the $(n-1)$ other transmitting means, is indicative of the angular position of said beam, means for modulating said beam with said signal; and a monitoring receiver for controlling the transmitted signals.

3,298,027

DIGITAL AUTOMATIC DIRECTION FINDING SYSTEM

Harris A. Stover, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Sept. 8, 1964, Ser. No. 394,973
9 Claims. (Cl. 343—117)



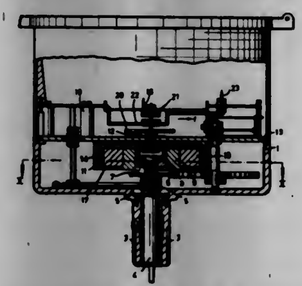
1. A digital automatic direction finding system comprising first and second receiving antennas displaced in space upon a mounting member, means for rotating said mounting member about an axis lying at the midpoint between said antennas, receiving means, first switching means responsive to the rotation of said mounting member to switch said first and second antennas alternately at a predetermined rate to the input of said receiving means, means for developing a train of first pulses of predetermined polarity at predetermined equal rotational increments of said antennas from a reference position thereof, means for developing a second train of pulses in time coincidence with the rotation of said antennas through the first one of said rotational increments subsequent to said reference position thereof; said receiving means comprising phase detection means, bit detection means, means responsive to the output of said phase detection means to develop a binary stream of information bits corresponding to the relative phase of the received signal as compared to the average phase thereof, a digital counter receiving said second train of pulses and said first train of pulses and counting successive ones of said first train of pulses upon a pulse of said second train being applied thereto, and counter stop logic means receiving said bit stream and developing a third pulse in time coincidence with the application thereto of two successive like binary bits, said third pulse being connected to said digital counter to stop the count sequence.

3,298,028

RECORDING SPEEDOMETER

Oscar Châtelain, La Chaux-de-Fonds, Switzerland, assignor to Zenith SA Fabriques des Montres, Le Locle, Switzerland

Filed Jan. 12, 1965, Ser. No. 424,927
Claims priority, application Switzerland, Jan. 22, 1964, 689/64
3 Claims. (Cl. 346—33)



1. In a recording speedometer for a vehicle having a variable ratio differential with a recording pen, an eddy current coupling adapted to control the displacement of said recording pen, said coupling comprising a bell of non-magnetic material kinematically connected to said pen and a permanent magnet located in said bell and adapted to be driven at a speed proportional to the vehicle speed, means for temporarily holding said pen at the position thereof corresponding to the vehicle speed when said differential is actuated, said means being constituted by a brake capable of acting upon said bell for angularly locking same.

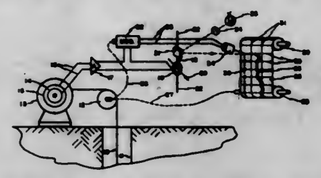
3,298,029

VISIBLE AND DIGITAL TRACE RECORDING

Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Oct. 25, 1963, Ser. No. 318,931
11 Claims. (Cl. 346—49)

1. A system for producing both a visible and a digitized data trace, for use in association with a conventional recorder producing at least one visible data trace extending along a chart in strip form, said system comprising means associated with said recorder for applying to said data trace a modulation character, besides its deflection, differentiating it from every other line and trace on said chart, means for scanning said chart and producing a response both to the position of said data trace and to said modulation character, motor means for moving said chart-scanning means, means utilizing the response of said chart-scanning means to both said trace and to said modulation character to actuate said motor means in a sense to cause said chart-scanning means to sense only said trace, and means connected to said motor means for producing a succession of digits representing corresponding successive amplitude values of said data trace.

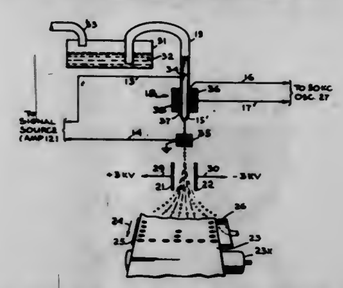


3,298,030

ELECTRICALLY OPERATED CHARACTER PRINTER

Arthur M. Lewis, Shaker Heights, and Arling Dix Brown, Jr., Cleveland Heights, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed July 12, 1965, Ser. No. 471,259
18 Claims. (Cl. 346—75)



10. An apparatus for recording a character on a recording medium as a function of a set of input signals related to said character comprising: a source of marking liquid; a recording medium having a surface which is sensitive to said liquid for producing a record as a function of the deposition of said liquid on said surface; drop forming means in communication with said source, and displaced from said recording medium for forming a sequence of uniform liquid drops at a predetermined rate, each drop being of substantially equal size and weight and uniformly spaced from one another; means for directing said drops in a selected path toward said surface of said recording medium; and deflection means for controlling the deposition of said drops on said surface to record said character thereon, said deflection means including means responsive to said set of input signals for deflecting some of said drops in said sequence unto said surface to produce said character and for deflecting other drops in said sequence away from said surface.

DESIGNS

JANUARY 10, 1967

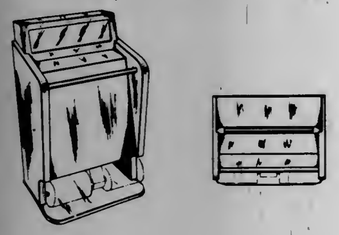
206,648
SAFETY HELMET
Daniel D. Webb, Birmingham, Mich., assignor to American Safety Equipment Corporation of Michigan, Southfield, Mich.
Filed Feb. 10, 1966, Ser. No. 1,007
Term of patent 14 years
(Cl. D3—13)



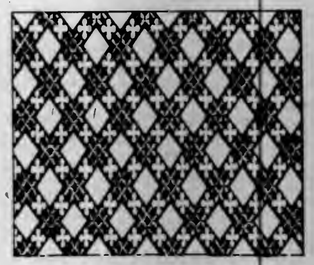
206,649
FRINGE
Juan J. R. Vinegla, Mula, Spain, assignor to Casa Vinegla, S.L. (Murcia), Spain, a Spanish corporation
Filed Nov. 22, 1965, Ser. No. 88,195
Claims priority, application Spain May 20, 1964
Term of patent 14 years
(Cl. D3—32)



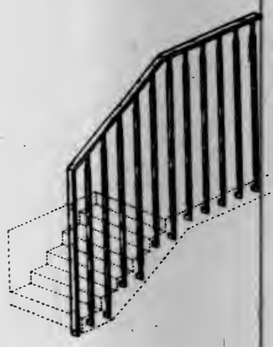
206,650
CABINET FOR A SHOE POLISHING MACHINE
William A. Beck, River Hills, and William F. Kruke, Cedarburg, Wis., assignors to Beck, Inc., Grafton, Wis., a corporation of Wisconsin
Filed Oct. 11, 1965, Ser. No. 87,416
Term of patent 14 years
(Cl. D9—2)



206,651
DECORATIVE GRILLEWORK
Robert Titus Bogan, Jr., 2031 Somerrell NE.
Albuquerque, N. Mex. 87112
Filed Oct. 11, 1965, Ser. No. 87,434
Term of patent 14 years
(Cl. D13—1)



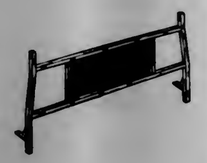
206,652
ORNAMENTAL RAILING
Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm
Filed July 28, 1965, Ser. No. 86,319
Term of patent 14 years
(Cl. D13—7)



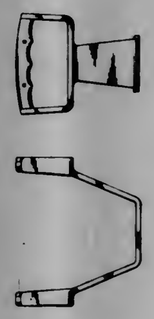
206,653
AUTOMOBILE WITH REARWARDLY OPENING ENCLOSED LUGGAGE CARRIER
Max L. Wymore, 3441 S. Ivy Way,
Denver, Colo. 80222
Filed Aug. 4, 1965, Ser. No. 86,436
Term of patent 14 years
(Cl. D14—3)



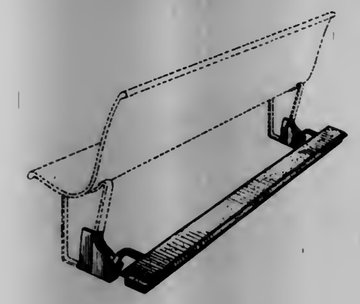
206,654
TRUCK REAR WINDOW GUARD
Wayne E. Smith, 312 S. Chestnut,
Lamoni, Iowa 50140
Filed Dec. 9, 1965, Ser. No. 130
Term of patent 14 years
(Cl. D14—6)



206,655
STEERING HANDLE FOR VEHICLES
Richard A. Bickford, 611 Pierce Road,
Menlo Park, Calif. 94025
Filed Feb. 1, 1966, Ser. No. 823
Term of patent 14 years
(Cl. D14—6)



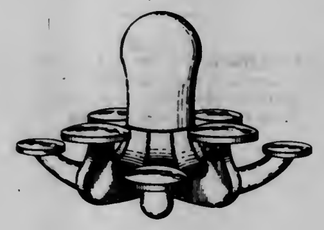
206,656
CHURCH PEW
Joseph Palma, Jr., O N. 487 Willow Road,
Wheaton, Ill. 60187
Filed June 1, 1965, Ser. No. 85,518
Term of patent 14 years
(Cl. D15—8)



206,657
COMBINED FOLDABLE CHAIR AND OTTOMAN
Samuel Vranesh, 2601 Darwin St.,
Sacramento, Calif. 95821
Filed Sept. 27, 1965, Ser. No. 87,161
Term of patent 14 years
(Cl. D15—8)



206,658
MULTIPLE SEATING UNIT
Phillip K. Raiford, Memphis, Tenn., assignor to Shoe House, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Oct. 21, 1965, Ser. No. 87,715
Term of patent 14 years
(Cl. D15—8)



206,659
HANGER FOR A CHRISTMAS TREE ORNAMENT OR SIMILAR ARTICLE
Jack Barabeau, Newton, Mass.
(451 D St., Boston, Mass. 02210)
Filed Jan. 10, 1966, Ser. No. 552
Term of patent 14 years
(Cl. D17—12)



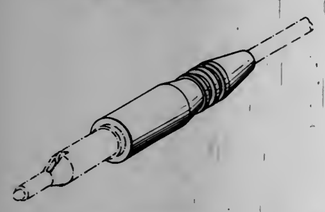
206,660
HANGER FOR CHRISTMAS TREE ORNAMENTS OR SIMILAR ARTICLE
Jack Burnbaum, Newton, Mass.
(451 D St., Boston, Mass. 02210)
Filed Jan. 28, 1966, Ser. No. 817
Term of patent 14 years
(Cl. D17—12)



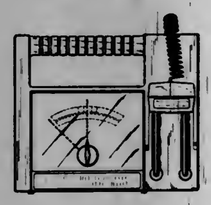
206,661
HANGER FOR A CHRISTMAS TREE ORNAMENT OR SIMILAR ARTICLE
Jack Burnbaum, Newton, Mass.
(451 D St., Boston, Mass. 02210)
Filed Mar. 2, 1966, Ser. No. 1,241
Term of patent 14 years
(Cl. D17—12)



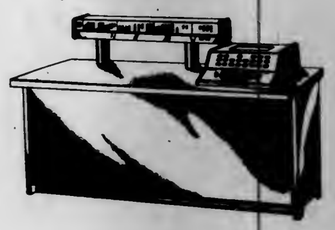
206,662
MOLDED SHROUD FOR PLUG CONNECTOR
Kenneth Norman Karol, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 15, 1965, Ser. No. 87,514
Term of patent 14 years
(Cl. D26—1)



206,663
ELECTRICAL MEASURING INSTRUMENT
Edward J. Stropkay, Chagrin Falls, Ohio, assignor to The Hickok Electrical Instruments Co., Cleveland, Ohio
Filed Nov. 29, 1965, Ser. No. 88,254
Term of patent 14 years
(Cl. D26—1)



206,664
CONTROL CONSOLE FOR A DATA PROCESSING MACHINE
Charles T. Inatomi, Culver City, and Jackson R. Iblings, North Hollywood, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Nov. 26, 1965, Ser. No. 83,233
Term of patent 14 years
(Cl. D26—5)



206,665
HEARING AID
William M. Sanzone, Minneapolis, Minn., assignor to The Telex Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 25, 1966, Ser. No. 2,425
Term of patent 14 years
(Cl. D26—14)



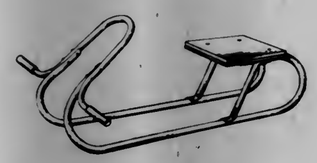
206,666
MAGNETIC TAPE SOUND RECORDING AND REPRODUCING MACHINE
Gerhard Dietrich, Furth, Bavaria, Germany, assignor to Max Grundig Furth, Germany
Filed Oct. 15, 1965, Ser. No. 87,494
Claims priority, application Germany May 28, 1965
Term of patent 14 years
(Cl. D26—14)



206,667
TURNSTILE
Louis J. Bakanowsky, Arlington, Mass., and Mark Harrison, Providence, R.I., assignors to Massachusetts Bay Transportation Authority, Boston, Mass., a public corporation of Massachusetts
Filed Nov. 9, 1965, Ser. No. 88,050
Term of patent 14 years
(Cl. D28—1)



206,668
SLED
Glenn G. Stoddard, Oak Creek, Wis., assignor to Toledo Guild Products, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 6, 1965, Ser. No. 98
Term of patent 14 years
(Cl. D34—15)



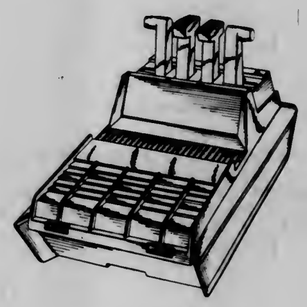
206,669
TOY FOLDING STOCK BURP GUN
Mahlon Edward Hirsch, Fairview, Pa., assignor to Louis Marx & Co., Inc., a corporation of New York
Filed Feb. 8, 1966, Ser. No. 963
Term of patent 14 years
(Cl. D34—15)



206,670
TOY MACHINE PISTOL
Mahlon E. Hirsch, Fairview, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Feb. 11, 1966, Ser. No. 1,013
Term of patent 14 years
(Cl. D34—15)



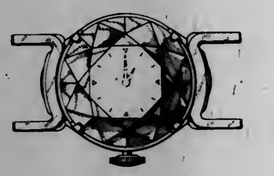
206,671
REMOTE CONTROL FOR A TOY VEHICLE
Felix Gilbert, New York, N.Y., assignor to De Lux Reading Corporation, a corporation of New Jersey
Filed Mar. 31, 1966, Ser. No. 1,707
Term of patent 7 years
(Cl. D34—15)



206,672
RETURN TOP
George H. Fullerton, 1058 Keen Ave., Largo, Fla. 33540
Filed June 2, 1964, Ser. No. 80,244
Term of patent 14 years
(Cl. D34—15)



206,673
WATCH
Henry A. Federman, New York, N.Y., assignor to The Pan American Barter Co., Inc., New York, N.Y., a corporation of New York
Original design application July 6, 1964, Ser. No. 80,713, now Patent No. 204,010, dated Mar. 8, 1966. Divided and this application Sept. 14, 1965, Ser. No. 87,246
Term of patent 14 years
(Cl. D42—8)



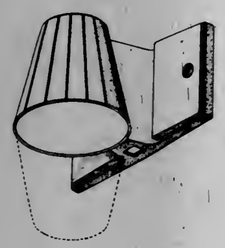
206,674
CORN POPPER
John S. Hughes, East Rochester, and Douglas R. Cleminshaw, Syracuse, N.Y., assignors to Robeson Cutlery Co., Inc., Perry, N.Y., a corporation of New York
Filed Nov. 8, 1965, Ser. No. 88,035
Term of patent 14 years
(Cl. D44—1)



206,675
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Karl C. Augenstein, Cranston, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Mar. 28, 1966, Ser. No. 1,651
Term of patent 14 years
(Cl. D45—4)



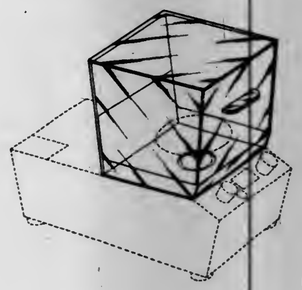
206,676
HOODED WALL BRACKET
David K. Walz, Doraville, Ga., assignor to Lithonia Lighting, Inc., Conyers, Ga., a corporation of Georgia
Filed Oct. 1, 1965, Ser. No. 87,275
Term of patent 14 years
(Cl. D48—4)



206,677
DRYING RACK
Walter E. Gunn, 1217 29th St., Des Moines, Iowa 50311
Filed Sept. 1, 1965, Ser. No. 84,793
Term of patent 7 years
(Cl. D49—1)



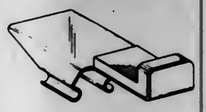
206,678
SHIELD FOR AN ELECTRONIC BALANCE
Kenneth Leroy Beller, 1613 W. Flora St., Santa Ana, Calif. 92704
Filed Feb. 1, 1966, Ser. No. 836
Term of patent 14 years
(Cl. D52—10)



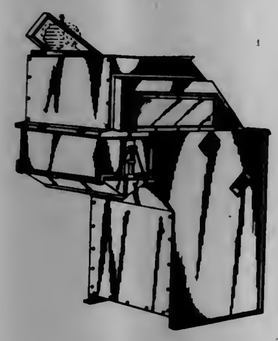
206,679
EXPANSION PLIERS OR SIMILAR ARTICLE
Thomas C. Fleaner, Centerville, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Oct. 6, 1965, Ser. No. 87,337
Term of patent 7 years
(Cl. D54—13)



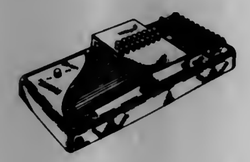
206,680
CLIP FOR REMOVING EXPLOSIVELY OPERATED WEDGE TYPE ELECTRICAL CONNECTORS
Carl Raymond Hedberg, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 20, 1965, Ser. No. 87,655
Term of patent 14 years
(Cl. D54—13)



206,681
FIBER PROCESSING CABINET
Cecil S. Wise, Dallas, N.C. (% Fiber Controls Corp., P.O. Box 1358, Gastonia, N.C. 28052)
Filed Mar. 3, 1966, Ser. No. 1,276
Term of patent 14 years
(Cl. D55—1)



206,682
BUTTON ZITHER
Clair Omar Musser, 12997 Blakwood Drive, Studio City, Calif. 91604
Filed July 6, 1965, Ser. No. 86,038
Term of patent 14 years
(Cl. D56—1)



206,683
MUSICAL INSTRUMENT
Bengt O. I. Brodin, Vastra Frolunda, Sweden, assignor to Joh. Mustad AB, Gothenburg, Sweden, a corporation of Sweden
Filed Aug. 13, 1965, Ser. No. 86,566
Claims priority, application Sweden Feb. 15, 1965
Term of patent 14 years
(Cl. D56—2)



206,684
WRIST TELESCOPE
Michael Bevilacqua, 2027 E. Pinehurst, Glendora, Calif. 91740
Filed Oct. 21, 1965, Ser. No. 87,685
Term of patent 14 years
(Cl. D57—1)



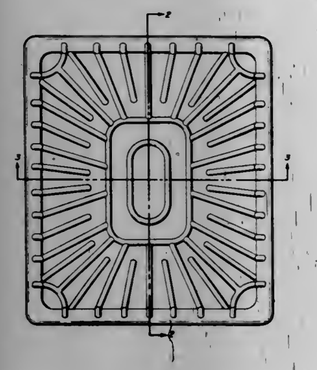
206,685
SPECTACLE FRAME
Harry Weissman, Great Neck, N.Y. (% Paramount Optical Mfg. Corp., 60—06 39th Ave., Woodside, N.Y. 11377)
Filed Nov. 26, 1965, Ser. No. 88,227
Term of patent 7 years
(Cl. D57—1)



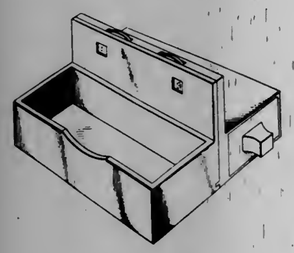
206,686
BOTTLE
Richard L. Platte, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich.
Filed Sept. 13, 1963, Ser. No. 76,573
Term of patent 14 years
(Cl. D58—6)



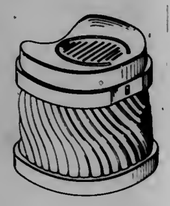
206,687
FOOD PACKAGING TRAY
Robert G. Peace, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 1, 1966, Ser. No. 828
Term of patent 3½ years
(Cl. D58—12.6)



206,688
STORAGE BOX FOR RAZOR BLADES AND COUNTER THEREFOR
Andrew Balint, 1572 3rd Ave., New York, N.Y. 10028
Filed Sept. 1, 1965, Ser. No. 86,790
Term of patent 14 years
(Cl. D58—13)



206,689
DISPENSER CAP FOR A PRESSURIZED CAN
Joseph Charles Pizzurro, Scarsdale, N.Y., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 198
Term of patent 14 years
(Cl. D58—26)



206,690
DISPENSER CAP FOR A PRESSURIZED CAN
Joseph Charles Pizzurro, Scarsdale, N.Y., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 199
Term of patent 14 years
(Cl. D58—26)



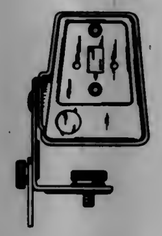
206,691
DISPENSER CAP FOR A PRESSURIZED CAN
Joseph Charles Pizzurro, Scarsdale, N.Y., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 200
Term of patent 14 years
(Cl. D58—26)



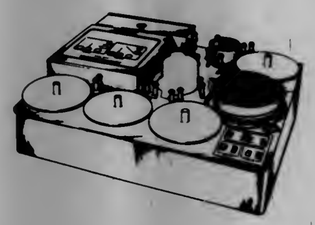
206,692
DISPENSER CAP FOR A PRESSURIZED CAN
Joseph Charles Pizzurro, Scarsdale, N.Y., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 201
Term of patent 14 years
(Cl. D58—26)



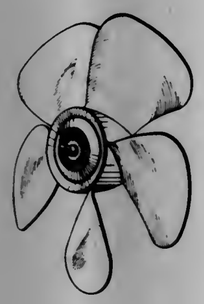
206,693
COMBINED LIGHT SUPPORT AND FILTER ACTUATING ACCESSORY BRACKET FOR A PHOTOGRAPHIC CAMERA
Jack A. Robinson, Chicago, Ill., assignor to Acme-Lite Manufacturing Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 27, 1965, Ser. No. 86,752
Term of patent 14 years
(Cl. D61—1)



206,694
PRINTER-PROCESSOR FOR PHOTOGRAPHIC FILM
Donald F. Blazek, Bensonville, Ill., assignor to Chicago Aerial Industries, Inc., a corporation of Delaware
Filed Nov. 30, 1965, Ser. No. 88,260
Term of patent 14 years
(Cl. D61—1)



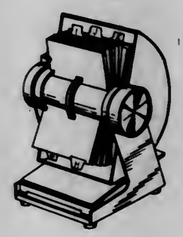
206,695
COMBINED FAN BLADE AND HUB OR SIMILAR ARTICLE
George S. Dickinson, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Filed Apr. 12, 1966, Ser. No. 1,859
Term of patent 14 years
(Cl. D62—4)



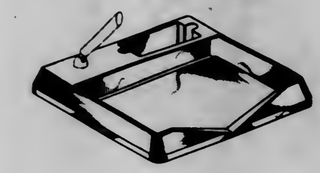
206,696
DATA APPLICATOR OR THE LIKE
Frank V. Parenti and George R. Spalony, Dayton, and Ronald H. Lutz, Englewood, Ohio, assignors to The Standard Register Company, Dayton, Ohio, a corporation of Ohio
Filed Aug. 30, 1965, Ser. No. 86,759
Term of patent 14 years
(Cl. D64—11)



206,697
ROTARY FILE
Roy Erickson, Deerfield, and Robert L. Kuenzel, Wilmette, Ill., assignors to Dial-A-Card, Inc., Northfield, Ill., a corporation of Illinois
Filed Sept. 8, 1965, Ser. No. 86,907
Term of patent 14 years
(Cl. D74—1)



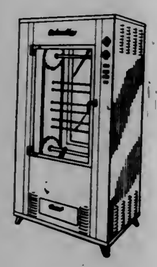
206,698
COMBINED DESK TRAY AND PEN HOLDER
Roy O. Edwards, 8041 Taylor Ave., Huntington Beach, Calif. 92646
Filed May 25, 1965, Ser. No. 85,450
Term of patent 14 years
(Cl. D74—9)



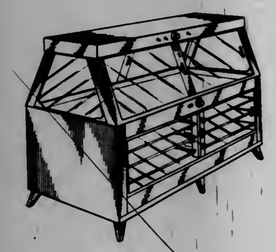
206,699
DISPLAY RACK FOR GOLF CLUBS AND THE LIKE
Harry L. Douglas, 2991 Sunnynook Drive, Los Angeles, Calif. 90039
Filed May 13, 1966, Ser. No. 2,283
Term of patent 14 years
(Cl. D80—10)



206,700
OVEN
Robert G. Wilson, 643 E. Faris Road, Greenville, S.C. 29605
Filed Aug. 3, 1964, Ser No. 81,145
Term of patent 14 years
(Cl. D81—10)



206,701
FOOD DISPLAY WARMER
Robert G. Wilson, 643 E. Faris Road, Greenville, S.C. 29605
Filed Sept. 7, 1965, Ser. No. 86,891
Term of patent 14 years
(Cl. D81—10)



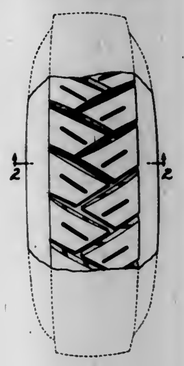
206,702
CARRYING CASE FOR PHOTOGRAPHIC CAMERA AND ACCESSORIES OR SIMILAR ARTICLE
James M. Conner, Glendale, and Henry Dreyfuss, South Pasadena, Calif., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 86,832
Term of patent 14 years
(Cl. D87—5)



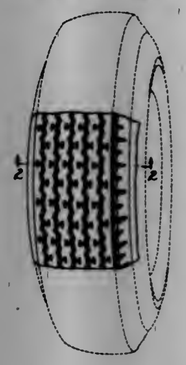
206,703
TIRE
Raymond P. Hawkinson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 25, 1966, Ser. No. 1,993
Term of patent 14 years
(Cl. D90—20)



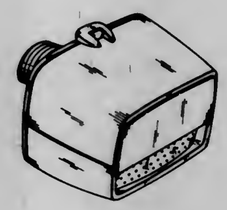
206,704
TIRE
Raymond P. Hawkinson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed May 9, 1966, Ser. No. 2,217
Term of patent 14 years
(Cl. D90—20)



206,705
TIRE
Raymond P. Hawkinson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed May 9, 1966, Ser. No. 2,231
Term of patent 14 years
(Cl. D90—20)



206,706
SHOWER HEAD
Howard A. Anderson, Pittsburgh, and Wesley E. Lerdon, Gibsonia, Pa., assignors to Calgon Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 18, 1965, Ser. No. 86,632
Term of patent 14 years
(Cl. D91—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF JANUARY, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bendix Corp., The: *See*—
Stanton, George E. Re. 26,137.
Boyajian, Setrak K. Envelopes and the like with remoistenable adhesive comprising polyvinyl alcohol. Re. 26,142, 1–10–67, Cl. 117—44.
Edwards High Vacuum International Ltd.: *See*—
Gabor, Dennis. Re. 26,138.
Gabor, Dennis, to Edwards High Vacuum International Ltd. Ionic vacuum pumps. Re. 26,138, 1–10–67, Cl. 313—7.
Hickman, John S., to Inlands Steel Products Co. Side lap vapor vent. Re. 26,141, 1–10–67, Cl. 52—534.
Inlands Steel Products Co.: *See*—
Hickman, John S. Re. 26,141.
Roberts, Charles L. Mouthpiece for double reed musical instruments. Re. 26,139, 1–10–67, Cl. 84—383.
Rossnan, Michael. Apparatus for removing meat from crabs. Re. 26,136, 1–10–67, Cl. 17—2.
Schoenike, John. Collapsible ice shelter. Re. 26,140, 1–10–67, Cl. 135—4.
Stanton, George E., to The Bendix Corp. Safety device for aircraft wheels. Re. 26,137, 1–10–67, Cl. 301—5.

LIST OF DESIGN PATENTEES

AMP Inc.: *See*—
Hedberg, Carl R. 206,680.
Karol, Kenneth N. 206,662.
Acme-Lite Mfg. Co., Inc.: *See*—
Robinson, Jack A. 206,693.
American Safety Equipment Corp.: *See*—
Webb, Daniel D. 206,648.
Anderson, Howard A., and W. E. Lerdon, to Calgon Corp. Shower head. 206,706, 1–10–67, Cl. D91—3.
Augenstein, Karl C., to Textron Inc. Expansible link chain for a bracelet or similar article. 206,675, 1–10–67, Cl. D45—4.
Bakanowsky, Louis J., and M. Harrison, to Massachusetts Bay Transportation Authority. Turnstile. 206,667, 1–10–67, Cl. D28—1.
Balint, Andrew. Storage box for razor blades and counter therefor. 206,688, 1–10–67, Cl. D58—13.
Beck, Inc.: *See*—
Beck, William A., and Kruke. 206,650.
Beck, William A., and W. F. Kruke, to Beck, Inc. Cabinet for a shoe polishing machine. 206,650, 1–10–67, Cl. D9—2.
Beller, Kenneth L. Shield for an electronic balance. 206,678, 1–10–67, Cl. D52—10.
Bevilacqua, Michael. Wrist telescope. 206,684, 1–10–67, Cl. D57—1.
Bickford, Richard A. Steering handle for vehicles. 206,655, 1–10–67, Cl. D14—6.
Blazek, Donald F., to Chicago Aerial Industries, Inc. Printer-processor for photographic film. 206,694, 1–10–67, Cl. D61—1.
Blum, Louis, and W. J. Horgan, Jr., to Blumcraft of Pittsburgh. Railing. 206,652, 1–10–67, Cl. D13—7.
Blumcraft of Pittsburgh: *See*—
Blum, Louis, and Horgan. 206,652.
Bogan, Robert T., Jr. Decorative grillework. 206,651, 1–10–67, Cl. D13—1.
Brodin, Bengt O. I., to Joh. Mustad AB. Musical instrument. 206,683, 1–10–67, Cl. D56—2.
Burnbaum, Jack. Hanger for a Christmas tree ornament or similar article. 206,659, 1–10–67, Cl. D17—12.
Burnbaum, Jack. Hanger for Christmas tree ornaments or similar article. 206,660, 1–10–67, Cl. D17—12.
Burnbaum, Jack. Hanger for a Christmas tree ornament or similar article. 206,661, 1–10–67, Cl. D17—12.
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Casa Vinegla, S.L.: *See*—
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Chicago Aerial Industries, Inc.: *See*—
Blazek, Donald F. 206,694.
Cleminshaw, Douglas R.: *See*—
Hughes, John S., and Cleminshaw. 206,674.
Conner, James M., and H. Dreyfuss, to Polaroid Corp. Carrying case for photographic camera and accessories or similar article. 206,702, 1–10–67, Cl. D87—5.
De Lux Reading Corp.: *See*—
Gilbert, Felix. 206,671.
Dial-A-Card, Inc.: *See*—
Erickson, Roy, and Kuensel. 206,697.
Dickinson, George S., to General Electric Co. Combined fan blade and hub or similar article. 206,695, 1–10–67, Cl. D62—4.
Dietrich, Gerhard, to Max Grundig Fuerth. Magnetic tape sound recording and reproducing machine. 206,666, 1–10–67, Cl. D26—14.
Douglas, Harry L. Display rack for golf clubs and the like. 206,699, 1–10–67, Cl. D80—10.
Dreyfuss, Henry: *See*—
Conner, James M., and Dreyfuss. 206,702.
Eastman Kodak Co.: *See*—
Peace, Robert G. 206,687.
Edwards, Roy O. Combined desk tray and pen holder. 206,698, 1–10–67, Cl. D74—9.
Erickson, Roy, and R. L. Kuensel, to Dial-A-Card, Inc. Rotary file. 206,697, 1–10–67, Cl. D74—1.
Federman, Henry A., to The Pan American Barter Co., Inc. Watch. 206,673, 1–10–67, Cl. D42—8.
Flenner, Thomas C., to The National Cash Register Co. Expansion pliers or similar article. 206,679, 1–10–67, Cl. D54—13.
Fullerton, George H. Return top. 206,672, 1–10–67, Cl. D34—15.
General Electric Co.: *See*—
Dickinson, George S. 206,695.
Gilbert, Felix, to De Lux Reading Corp. Remote control for a toy vehicle. 206,671, 1–10–67, Cl. D34—15.
Gunn, Walter E. Drying rack. 206,677, 1–10–67, Cl. D49—1.
Harrison, Mark: *See*—
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Hawkinson, Paul E., Co.: *See*—
Hawkinson, Raymond P. 206,703.
Hawkinson, Raymond P. 206,704.
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Hawkinson, Raymond P., to Paul E. Hawkinson Co. Tire. 206,703, 1–10–67, Cl. D90—20.
Hawkinson, Raymond P., to Paul E. Hawkinson Co. Tire. 206,704, 1–10–67, Cl. D90—20.
Hawkinson, Raymond P., to Paul E. Hawkinson Co. Tire. 206,705, 1–10–67, Cl. D90—20.
Hedberg, Carl R., to AMP Inc. Clip for removing explosively operated wedge type electrical connectors. 206,680, 1–10–67, Cl. D54—13.
Hickok Electrical Instruments Co., The: *See*—
Stropkay, Edward J. 206,663.
Hirsch, Mahlon E., to Louis Marx & Co., Inc. Toy folding stock burp gun. 206,669, 1–10–67, Cl. D34—15.
Hirsch, Mahlon E., to Louis Marx & Co., Inc. Toy machine pistol. 206,670, 1–10–67, Cl. D34—15.
Hoover Ball and Bearing Co.: *See*—
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Horgan, William J., Jr.: *See*—
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Hughes, John S., and D. R. Cleminshaw, to Robeson Cutlery Co., Inc. Corn popper. 206,674, 1–10–67, Cl. D44—1.
Iblings, Jackson R.: *See*—
Inatomi, Charles T., and Iblings. 206,664.
Inatomi, Charles T., and J. R. Iblings, to The National Cash Register Co. Control console for a data processing machine. 206,664, 1–10–67, Cl. D26—5.
Joh. Mustad AB.: *See*—
Brodin, Bengt O. I. 206,683.
Karol, Kenneth N., to AMP Inc. Molded shroud for plug connector. 206,662, 1–10–67, Cl. D26—1.
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Kuenzel, Robert L.: *See*—
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Max Grundig Fuerth: *See*—
Dietrich, Gerhard. 206,666.
Musser, Clair O. Button slither. 206,682, 1–10–67, Cl. D56—1.
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Palma, Joseph, Jr. Church pew. 206,656, 1–10–67, Cl. D15—8.
Pan American Barter Co., Inc., The: *See*—
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Parenti, Frank V., G. H. Spaleny, and R. H. Lutz, to The Standard Register Co. Data applicator or the like. 206,696, 1–10–67, Cl. D64—11.
Peace, Robert G., to Eastman Kodak Co. Food packaging tray. 206,687, 1–10–67, Cl. D58—12.6.
Pizzurro, Joseph C., to Precision Valve Corp. Dispenser cap for a pressurized can. 206,689, 1–10–67, Cl. D58—26.

Pizzurro, Joseph C., to Precision Valve Corp. Dispenser cap for a pressurized can. 206,690, 1–10–67, Cl. D58—26.
Pizzurro, Joseph C., to Precision Valve Corp. Dispenser cap for a pressurized can. 206,691, 1–10–67, Cl. D58—26.
Pizzurro, Joseph C., to Precision Valve Corp. Dispenser cap for a pressurized can. 206,692, 1–10–67, Cl. D58—26.
Platte, Richard L., to Hoover Ball and Bearing Co. Bottle. 206,686, 1–10–67, Cl. D58—6.
Polaroid Corp.: *See*—
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Pizzurro, Joseph C. 206,689.
Pizzurro, Joseph C. 206,690.
Pizzurro, Joseph C. 206,691.
Pizzurro, Joseph C. 206,692.
Raiford, Phillip K., to Shoe House, Inc. Multiple seating unit. 206,658, 1–10–67, Cl. D15—8.
Robeson Cutlery Co., Inc.: *See*—.
Hughes, John S., and Cleminshaw. 206,674.
Robinson, Jack A., to Acme-Lite Mfg. Co., Inc. Combined light support and filter actuating accessory bracket for a photographic camera. 206,693, 1–10–67, Cl. D61—1.
Sanzone, William M., to The Telex Corp. Hearing aid. 206,665, 1–10–67, Cl. D26—14.
Shoe House, Inc.: *See*—
Raiford, Phillip K. 206,658.
Smith, Wayne E. Truck rear window guard. 206,654, 1–10–67, Cl. D14—6.
Spaleny, George R.: *See*—
Parenti, Frank V., Spaleny, and Lutz. 206,696.
Standard Register Co., The: *See*—
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Stropkay, Edward J., to The Hickok Electrical Instruments Co. Electrical measuring instrument. 206,663, 1–10–67, Cl. D26—1.
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Vinegla, Juan J. R., to Case Vinegla, S.L. Fringe. 206,649, 1–10–67, Cl. D3—32.
Vranesh, Samuel. Combined foldable chair and ottoman. 206,657, 1–10–67, Cl. D15—8.
Walz, David K., to Lithonia Lighting, Inc. Hooded wall bracket. 206,676, 1–10–67, Cl. D48—4.
Webb, Daniel D., to American Safety Equipment Corp. Safety helmet. 206,648, 1–10–67, Cl. D3—13.
Weissman, Harry. Spectacle frame. 206,685, 1–10–67, Cl. D57—1.
Wilson, Robert G. Oven. 206,700, 1–10–67, Cl. D81—10.
Wilson, Robert G. Food display warmer. 206,701, 1–10–67, Cl. 81—10.
Wise, Cecil S. Fiber processing cabinet. 206,681, 1–10–67, Cl. D55—1.
Wymore, Max L. Automobile with rearwardly opening enclosed luggage carrier. 206,653, 1–10–67, Cl. D14—3.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF JANUARY, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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Anderson, Clifford E. 3,297,299.
Quast, Ray G. 3,296,687.
AEL Development and Research Division, Inc.: *See*—
Pirouten, Miroslav J. 3,297,155.
AMP Inc.: *See*—
Crane, Hewitt D., and Dowling. 3,298,002.
Hedberg, Carl R., and Wahl. 3,296,792.
O'Keefe, Michael F., and Stull. 3,297,979.
Stark, Frank B. 3,297,976.
Swanson, John A. 3,298,003.
Wiley, Lawrence G. 3,297,954.
Abe, Zenmon, and T. Suzki, to Hitachi, Ltd. Electric thermometer. 3,296,866, 1–10–66, Cl. 73—362.
Abex Corp.: *See*—
Kendall, Fred E., and Nitz. 3,297,439.
Abramo, John G., to Monsanto Co. Novel copolymers of vinylbenzyl alkyl ethers and acrylamides. 3,297,665, 1–10–67, Cl. 260—80.3.
Aburto, Carlos M. Wallet comprising combination billfold and coin carrier. 3,297,069, 1–10–67, Cl. 150—35.
Acker, Donald S., to E. I. du Pont de Nemours and Co. Process and composition for curing selected thiocarboxylic acid fluoride polymers and the cured polymers. 3,297,790, 1–10–67, Cl. 260—874.
Active Tool & Mfg. Co.: *See*—
Drettmann, Henry. 3,297,815.
Adams, John W., and E. F. Wickens, to Ingersoll-Rand Co. Rock drill reamer. 3,297,099, 1–10–67, Cl. 175—96.
Adams, Robert E., to Gifford-Wood, Inc. Continuous flow counter-current liquid and solids contact apparatus. 3,297,043, 1–10–67, Cl. 134—60.
Adams, Robert E., to Gifford-Wood, Inc. Mixing apparatus. 3,297,309, 1–10–67, Cl. 259—115.
Adamski, Joseph, to Dura Corp. Convertible top mechanism. 3,297,357, 1–10–67, Cl. 296—117.
Adamson, James M., to Cable Belt Ltd. Bunker conveyors. 3,297,204, 1–10–67, Cl. 222—55.
Adolphi, Heinrich: *See*—
Dickhaeuser, Heiner, Pohlemann, Stummeyer, Adolphi, and Winderl. 3,297,520.
Advani, Ram: *See*—
Halmi, Gabor, and Advani. 3,297,650.
Halmi, Gabor, and Advani. 3,297,651.
Aerospace Corp., The: *See*—
Feuerstein, Seymour. 3,296,809.
Affiliated Hospital Products, Inc.: *See*—
Foley, Kenneth C. 3,297,023.
Agfa Aktiengesellschaft: *See*—
Engelsmann, Dieter, and Brath. 3,296,947.
Aiken, William R. Envelope for cathode ray tubes. 3,297,188, 1–10–67, Cl. 220—2.1.
Aiken, Winthrop J. Clip for sheets and the like. 3,296,668, 1–10–67, Cl. 24—72.5.
Air Logistics Corp.: *See*—
Schirtzinger, Joseph F. 3,296,994.
Air Products and Chemicals, Inc.: *See*—
McEvoy, James E. 3,297,483.
Air Reduction Co., Inc.: *See*—
Tedeschi, Robert J., and Brown. 3,297,774.
Webster, Robert C., and Benson. 3,297,454.
Aizawa, Masami. Fishing-net hauling apparatus. 3,297,303, 1–10–67, Cl. 254—138.
Ajinomoto Co., Inc.: *See*—
Akabori, Shiro, Izumi, Toi, and Ohno. 3,297,637.
Akabori, Shiro, Y. Izumi, K. Toi, and K. Ohno, to Ajinomoto Co., Inc. Method of racemizing optically active amino acids using insoluble resins having ortho-di-substituted benzene nuclei. 3,297,637, 1–10–67, Cl. 260—53.
Aktiebolaget Bofors: *See*—
Christiansson, Carl M. 3,296,931.
Jacobson, Gunnar. 3,296,929.
Olsson, Olof, and Nedeby. 3,296,927.
Aktiebolaget Karlstads Mekaniska Werkstad: *See*—
Hedberg, Olof J. G. 3,297,263.
Aktiebolaget Scania-Vabis: *See*—
Karlsson, Folke E. 3,296,895.
Aktiebolaget Svenska Flaktfabriken: *See*—
Dock, Nils. 3,296,778.
Larsen, Kurt R., and Brekell. 3,296,713.
Alarm Devices Mfg. Co., Inc.: *See*—
Malin, Jack. 3,298,020.
Alberts, Leonard W., to Blaw Know Co. Method of and apparatus for the manufacture of coke. 3,297,550, 1–10–67, Cl. 201—27.
Alcock, Charles B., to United Kingdom Atomic Energy Authority. Determination of oxygen in fluids. 3,297,551, 1–10–67, Cl. 204—1.
Alderman, Orba O., to Melpar, Inc. Temperature compensation of tuning forks. 3,296,918, 1–10–67, Cl. 84—457.
Alfred Electronics: *See*—
Hunton, James K. 3,297,967.
Allen, Lloyd R., and R. A. Stauffer, to National Research Corp. Intermetallic method of forming superconductors. 3,296,684, 1–10–67, Cl. 29—155.5.
Allen, Lloyd R., to National Research Corp. Dispersion strengthened ultra-fine wires. 3,297,415, 1–10–67, Cl. 29—191.6.
Allen, Richard C., to Continental Can Co., Inc. Dispensing container having a rotary flow controller. 3,297,214, 1–10–67, Cl. 222—548.
Allgemeine Elektricitats-Gesellschaft: *See*—
Kugler, Walter. 3,297,811.
Allied Chemical Corp.: *See*—
Fuhrmann, Robert, Koff, and Jerolamon. 3,297,675.
Lau, Philip T. S., and Grillot. 3,297,521.
Oxenrider, Bryce C., and Hetterly. 3,297,634.
Allis-Chalmers Mfg. Co.: *See*—
Dickson, James J. 3,297,541.
Stevenson, Calvin L. 3,297,429.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
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Waloen, Age, and Tuneblom. 3,297,115.
Alt, Ernst, B. Buchner, G. Reges, and A. Horak, to Auto Union G.m.b.H. Lubrication system for internal-combustion engines. 3,297,008, 1–10–67, Cl. 123—127.
Amchem Products, Inc.: *See*—
Harrison, George C. 3,297,494.
American Air Filter Co., Inc.: *See*—
Revell, Alan E. 3,296,780.
American Cyanamid Co.: *See*—
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Feldman, Louis I., Holmlund, and Sax. 3,297,687.
Frazier, Charles, and Ritson. 3,297,615.
Garber, Murray, and Miller. 3,297,708.
Haacke, Gottfried C. 3,297,403.
Langford, Earl E., and Atwood. 3,296,711.
Schmitt, Edward E., and Polistina. 3,297,033.
Wilkinson, Raymond G., and Shepherd. 3,297,707.
American Cystoscope Makers, Inc.: *See*—
Wallace, Frederick J. 3,297,022.
American Drill Bushing Co.: *See*—
Andrews, Gary E., and Palmer. 3,297,293.
American Filtrona Corp.: *See*—
Sproull, Reavis C., Berger, and Lynch. 3,297,041.
American Flange & Mfg. Co., Inc.: *See*—
Greck, Eugene. 3,297,130.
American Home Products Corp.: *See*—
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American Hospital Supply Corp.: *See*—
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American Machine & Foundry Co.: *See*—
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Gamberini, Goffredo. 3,297,040.
Germino, Felix J. 3,297,604.
Milenkovic, Veljko, Johnson, and Zaander. 3,298,006.
Phillpps, Virgil J. 3,297,808.
Rulseh, Roger D. 3,297,838.
American Machinery Corp.: *See*—
McLearn, Herbert M. 3,297,248.
American Metal Products: *See*—
Barstow, Laurence E. 3,297,376.
American Optical Co.: *See*—
Goldberg, Herbert. 3,296,922.
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American Potash & Chemical Corp.: *See*—
Paciorek, Kazimiera J. L., and Kratzer. 3,297,751.
American Radiator & Standard Sanitary Corp.: *See*—
Nunemaker, Lester M. 3,297,081.
Ripple, William M. 3,297,132.
American Tractor Equipment Corp.: *See*—
Wooldridge, Darrel M. 3,297,096.
American Type Founders Co., Inc.: *See*—
Sausele, George J. H. 3,296,948.
Ametek, Inc.: *See*—
Lornitzo, Frank C. 3,296,839.
Ampex Corp.: *See*—
Rumple, Wiburn L. 3,297,266.
Amsted Industries Inc.: *See*—
Fenzan, William R. 3,296,665.
Anarel, Inc.: *See*—
Di Benedetto, Salvatore P. 3,297,320.
Andelin, John P., to B-D Laboratories Inc. Cap for culture tubes. 3,297,184, 1–10–67, Cl. 215—41.
Anderson, Clifford E., to ACF Industries Inc. Valve operator. 3,296,890, 1–10–67, Cl. 74—608.
Anderson, Clifford E., to ACF Industries Inc. Gate valve seat skirt. 3,297,299, 1–10–67, Cl. 251—327.
Anderson, George J., and C. R. Williams, to Monsanto Co. Emulsion latex containing partial amide of styrene-maleic anhydride copolymer as emulsifier. 3,297,620, 1–10–67, Cl. 260—29.6.
Anderson, Harold H.: *See*—
Arkless, George F., and Anderson. 3,296,972.
Anderson, John L., to Cleanometer Corp. Surface for contamination detection by using a radioactive labeled compound. 3,297,874, 1–10–67, Cl. 250—106.
Andreasson, Bror E. Device for pressing in air into inflatable objects, e.g., air mattresses. 3,297,241, 1–10–67, Cl. 230—160.

Andrews, Boley A., L. D. Gore, and J. F. Ptacek, to The Vendo Co. Automatic cafeteria counter. 3,297,373, 1–10–67, Cl. 312—97.

Andrews, Charles C. Conveyor structure. 3,297,148, 1–10–67, Cl. 198—233.

Andrews, Fred P.: *See*—
Reed, Stanley F., and Andrews. 3,297,341.

Andrews, Gary E., and J. A. Palmer, to American Drill Bushing Co. Fastening device. 3,297,293, 1–10–67, Cl. 248—361.

Andrews, Julian N., and H. C. Gersbacher, to United Aircraft Products, Inc. Dual feed of transversely disposed tubes. 3,297,200, 1–10–67, Cl. 221—175.

Anelex Corp.: *See*—
Domich, Eugene G., and Reisinger. 3,298,009.

Animal Behavior Enterprises, Inc.: *See*—
Evans, Grant. 3,297,324.

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Anley, Peter J.: *See*—
Palsh, Harold P. S., Dagwell, and Anley. 3,296,973.

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Anthony, F. M., Co.: *See*—
Pope, Gary L. 3,297,975.

Anton, Nicholas, to Eon Corp. Micro-miniature beta gamma detector having a hollow tubular cathode. 3,297,896, 1–10–67, Cl. 313—93.

Antonik, Alan S. Adhesive bandage having container of medicament carried by removable protector strip. 3,297,032, 1–10–67, Cl. 128—268.

Aparicio Hermanos & Cia, S.A.: *See*—
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Archer-Daniels-Midland Co.: *See*—
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Archibald, Robert E., to General Signal Corp. Vehicle stopping control system. 3,297,867, 1–10–67, Cl. 246—122.

Argus Chemical Corp.: *See*—
Kauder, Otto S. 3,297,629.

Arkless, George F., and H. H. Anderson, to G. & J. Weir Ltd. Fluid operated multi-stage machine. 3,296,972, 1–10–67, Cl. 103—103.

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Fekete, Lancelot A. 3,296,807.
Littmann, Martin F., and Harris. 3,297,434.

Armen, Ardy, and J. H. Hennes, to The Dow Chemical Co. Purification of sulfonated monomers. 3,297,734, 1–10–67, Cl. 260—429.9.

Armour and Co.: *See*—
Vels, Arthur, and Cohen. 3,297,459.

Aronson, David: *See*—
Rohrs, Marvin K., and Aronson. 3,296,824.

Artaud, Maurice H., R. L. Laurent, and W. E. Roberts, to The Magnavox Co. File selector. 3,297,379, 1–10–67, Cl. 312—223.

Artz, Klaus, and P. Rhyner, to Ciba Ltd. Process for the manufacture of β-cyanoethyl-chloroalkyl ethers. 3,297,744, 1–10–67, Cl. 260—465.6.

Ashcroft, David J.: *See*—
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Astley, Harold T., and A. I. Webber-Jones, to Lockspike Ltd. Railway rail and fastening arrangement. 3,297,253, 1–10–67, Cl. 238—349.

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Fortman, William K. 3,297,255.

Atebley, Blake K., C. L. Buddecke, and G. R. Tenery, to Ling-Temco-Vought, Inc. Probability transform generator for image recognition. 3,297,989, 1–10–67, Cl. 340—146.3.

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Atlantic Refining Co., The: *See*—
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Atlas Chemical Industries, Inc.: *See*—
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Rutledge, Thomas F. 3,297,753.
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Langford, Earl E., and Atwood. 3,296,711.

Auerbach, William A., and A. Kurimky, to Automatic Canteen Co. of America. Barrel lock. 3,296,842, 1–10–67, Cl. 70—82.

Auergesellschaft G.m.b.H.: *See*—
Schumann, Helmut F. 3,296,781.

Ausherman, William S. Concave for threshing cylinders. 3,297,037, 1–10–67, Cl. 130—27.

Australian Railway Equipment Supply Co. Proprietary Ltd.: *See*—
Yard, William J. 3,296,978.

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Auerbach, William A., and Kurimky. 3,296,842.

"Automatic" Sprinkler Corp. of America: *See*—
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Rider, Harry N. 3,297,050.

Avco Corp.: *See*—
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Hovnanian, Hrair P., and Brennan. 3,297,873.

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Barkis, Edward, and Tinz. 3,297,782.

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Haarer, Erich, and Plass. 3,297,762.
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Bagnasco, Gino, to Serge Elevator Co., Inc. Generator starter used in an elevator motor drive. 3,297,110, 1–10–67, Cl. 187—29.

Bailey, Frederick E., Jr., to Union Carbide Corp. Vinyl halide resin plasticized with a linear copolymer of a diepoxide with a 1,2-alkylene oxide. 3,297,783, 1–10–67, Cl. 260—836.

Bailey, John M., Jr., and R. G. Moy, to Radio Corp. of America. Comparator circuit for binary and ternary signals. 3,297,987, 1–10–67, Cl. 340—146.2.

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Koppel, Harold H., and Werme. 3,296,868.

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Baker, Joseph S., and C. G. Lindeman, to The Procter & Gamble Co. Packaged preleavened dough containing sodium acid pyrophosphate, and sodium and potassium bicarbonate. 3,297,449, 1–10–67, Cl. 99—90.

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Temple, Hiram E. 3,297,176.

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Balaguer, Rodolfo R., to Patent Holding Corp. Dry cell battery having a plurality of carbon electrodes spaced around the periphery and in contact with the container. 3,297,488, 1–10–67, Cl. 136—107.

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Baldwin, Samuel L., to General Electric Co. Luminaire latching device. 3,297,865, 1–10–67, Cl. 240—147.

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Baloghy James T. Phonographic arm and mounting means. 3,297,830, 1–10–67, Cl. 179—100.4.

Banks, Clarence K., to M & T Chemicals Inc. Process for preparing organotin halides. 3,297,732, 1–10–67, Cl. 260—429.7.

Bantjes, Adriaan, to E. I. du Pont de Nemours and Co. α,α-Disubstituted β-halo propionic acid amide and preparation thereof. 3,297,754, 1–10–67, Cl. 260—561.

Barbaras, Glen D., H. E. Cupery, and D. J. Loder, to E. I. du Pont de Nemours and Co. Herbicidal composition. 3,297,425, 1–10–67, Cl. 71—2.6.

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Barker, John S., to British Cellophane Ltd. Wrapping of cylindrical rolls. 3,296,772, 1–10–67, Cl. 53—380.

Barkis, Edward, and W. I. Tinz, to Avisun Corp. Coating composition of polyoxyalkyline ether of a 2-alkylidine diphenal esterified with fumaric or maleic acid, and a polyglycidylether of a dihydric. 3,297,782, 1–10–67, Cl. 260—835.

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Barr, Dennis A., J. B. Rose, to Imperial Chemical Industries Ltd. Mouldable copolymers of maleic anhydride, isobutylene and a third comonomer. 3,297,654, 1–10–67, Cl. 260—78.

Barr, Robert S. Method and apparatus for separating continuous multi-part stock forms. 3,297,342, 1–10–67, Cl. 282—11.5.

Barron, Maurice. Welded mesh reinforcement and method of using same. 3,296,690, 1–10–67, Cl. 29—426.

Barry, Leonard D. Transfer device. 3,297,182, 1–10–67, Cl. 214—317.

Barsch, Hermann, to Haas Vakuum-Technik G.m.b.H. Rotary dried. 3,296,709, 1–10–67, Cl. 34—82.

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Bauman, Robert R. Window mounted air conditioning unit. 3,296,820, 1–10–67, Cl. 62—262.

Baumfalk, John, T. P. McGuinness, and R. C. Nance, to Bell Telephone Laboratories, Inc. Operator position control equipment for serving calls on an overlap basis. 3,297,828, 1–10–67, Cl. 179—27.

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Beard, Ralph L., and J. F. Hester, to Hanes Corp. Garment construction. 3,296,627, 1–10–67, Cl. 2—113.

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Beche, Hans. Fluid-operated press. 3,296,853, 1–10–67, Cl. 72—453.

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Beckurts, Karl-Heinz, W. Häfele, and K. Ott. Nuclear reactor, especially designed for experimental purposes with fast neutrons. 3,297,539, 1–10–67, Cl. 176—41.

Beggs, James E., to General Electric Co. Electron discharge device having a laminated and finely reticulated grid structure therein. 3,297,902, 1–10–67, Cl. 313—348.

Behnke, Howard N., to Collins Machinery Corp. Pipe rotating device. 3,296,900, 1–10–67, Cl. 81—72.

Behrens, Rudolf A., to Texas-U.S. Chemical Co. Rubbery polybutadiene peptized with C_8–C_{20} monocarboxylic acids. 3,297,607, 1–10–67, Cl. 260—23.7.

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Benford, James R., and H. E. Rosenberger, to Bausch & Lomb Inc. Unitary vertical illumination device for detachable mounting in microscope frame. 3,297,391, 1–10–67, Cl. 350—91.

Bennett, Wallis R., to The Dow Chemical Co. Method of preparing $MgSO_4 \cdot 3H_2O$ crystals. 3,297,418, 1–10–67, Cl. 23—301.

Benson, Bernard S. Pencil or pen with a moving point. 3,297,003, 1–10–67, Cl. 120—45.6.

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Benson, Richard E., and E. A. La Lancette, to E. I. du Pont de Nemours and Co. Cyclononatetraenide salts and process of preparing. 3,297,756, 1–10–67, Cl. 260—567.6.

Beresin, Gilbert H., to E. I. du Pont de Nemours and Co. 3-hydroxymethyl-3-hydroxyoxetane. 3,297,719, 1–10–67, Cl. 260—633.

Berg, Gerhard, and G. Maass, to Chemische Werke Huls Aktiengesellschaft. Process for the precipitation of highly polymerized hydrocarbons from emulsions thereof containing cation-active emulsifying agents. 3,297,668, 1–10–67, Cl. 260—85.1.

Berger, Richard M.: *See*—
Sproull, Reavis C., Berger, and Lynch. 3,297,041.

Bergman, Elliot, and W. De Acetis, to Shell Oil Co. Process for curing polyepoxides and resulting products. 3,297,635, 1–10–67, Cl. 260—47.

Bergstrand, Ralph B., to Pullman Inc. Container hold down bracket arrangement. 3,296,981, 1–10–67, Cl. 105—366.

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Bernsmann, Julius, to Chemische Werke Huls Aktiengesellschaft. Process for the production of high molecular weight polyoxymethylene. 3,297,646, 1–10–67, Cl. 260—67.

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Bien, Alfred A., to Chrysler Corp. Fastener arrangement, method of securing a seat belt with the fastener arrangement, and the joint produced thereby. 3,296,691, 1–10–67, Cl. 29—434.

Biener, Hans, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing β-lactams. 3,297,683, 1–10–67, Cl. 260—239.

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Billi, Giorgio. Annular ring control of feed stations for circular knitting machines. 3,296,836, 1–10–67, Cl. 66—138.

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Bisovi, Dan D. Buffing wheel. 3,296,646, 1–10–67, Cl. 15—230.16.

Bjorn-Henriksen, Preben, and P. C. Hansen. Apparatus for injecting brine into meat products. 3,296,953, 1–10–67, Cl. 99—256.

Black, Sheppard A., and J. D. Heide, to United States Rubber Co. Intermediate article. 3,297,073, 1–10–67, Cl. 152—362.

Blackshear, Perry L., Jr., and F. D. Dorman, to The Regents of the University of Minnesota. Heat sensing probe and process. 3,296,865, 1–10–67, Cl. 73—359.

Blair, Edgar A.: *See*—
Meisel, Fred W., Jr., and Blair. 3,297,803.

Blair, Richard R., and C. A. Padgitt, to Borg-Warner Corp. Treatment of resin coagulate with rubber latex to remove resinous fines. 3,297,600, 1–10–67, Cl. 260—4.

Blanchard, Elwood P., Jr., to E. I. du Pont de Nemours and Co. Polycyanovinylcyanamides and their preparation. 3,297,743, 1–10–67, Cl. 260—465.5.

Blankenship, Ernest B. Waterless urinal. 3,297,858, 1–10–67, Cl. 219—519.

Blasbalg, Herman L., to International Business Machines Corp. Transversal filter having a tapped and an untapped delay line of equal delay, concatenated to effectively provide sub-divided delays along both lines. 3,297,951, 1–10–67, Cl. 328—37.

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Blazek, Elmer J.: *See*—
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Blazek, Henry, to Sperry Rand Corp., Ford Instrument Co. Division. Synchronous rotating pendulum accelerometer. 3,296,871, 1–10–67, Cl. 73—517.

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Bloomquist, Evert V. and Gerald E. 3,297,068.

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Bluhm, John W., and J. R. Tucker, to Borg-Warner Corp. Antioxidant emulsions prepared from two-phase systems. 3,297,619, 1–10–67, Cl. 260—29.6.

Blum, Heinz, and H.-J. Edler, to Hooker Chemical Corp. Process for providing an improved phosphate insulating coating on ferrous magnetic material. 3,297,493, 1–10–67, Cl. 148—6.15.

Blumenshine, Hugh M., to Lear Siegler, Inc. Combination cooling and sealed fuel combustion heating means. 3,297,079, 1–10–67, Cl. 165—27.

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Bonis, Lassio J., to Ilikon Corp. Lubricant composition and articles and process of preparing and using the same. 3,297,571, 1–10–67 Cl. 252—12.

Booe, James M., to P. R. Mallory & Co., Inc. Atmosphere control within the hermetic enclosure of electrolytic capacitor assemblies. 3,297,918, 1–10–67, Cl. 317—230.

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Borden Co., The: *See*—
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Blair, Richard E., and Padgitt. 3,297,600.
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Bounds, Billy E., and L. F. Matthies, to Thiokol Chemical Corp. Incendiary device. 3,296,967, 1–10–67, Cl. 102—6.

Bounds, William E. Camera. 3,296,949, 1–10–67, Cl. 95—11.

Bourne, Joseph R.: *See*—
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Bosman, Leendert, to Lips N.V. Copper base alloys containing manganese and aluminium. 3,297,437, 1–10–67, Cl. 75—157.5.

Bown, Delos E., and R. I. McDougall, to Esso Research and Engineering Co. Novel phenolic phosphorus stabilizers for polyolefins. 3,297,631, 1–10–67, Cl. 260—45.95.

Bowers, Ronald W., to International Business Machines Corp. Method of bonding. 3,297,855, 1–10–67, Cl. 219—85.

Bowling, Joseph E., Jr., and G. W. Powell. Particle throwing apparatus. 3,296,746, 1–10–67, Cl. 51—9.

Boylen, Clarence B., to Russell Hosiery Mills, Inc. Method and means for turning tubular articles at a circular knitting machine. 3,296,838, 1–10–67, Cl. 66—149.

Brader, Allen C. Storing and dispensing apparatus. 3,297,372, 1–10–67, Cl. 312—45.

Brader, Walter H., Jr., and R. L. Rowton, to Jefferson Chemical Co., Inc. Synthesis of diazabicyclo-(2,2,2)-octane and derivatives. 3,297,701, 1–10–67, Cl. 260—268.

Bradley, Elihu F., R. I. Jaffee, D. N. Williams, and E. S. Bartlett, to United Aircraft Corp. High temperature strength columbium base alloys. 3,297,438, 1–10–67, Cl. 75—174.

Bradley, Kenneth H., and L. E. Record, to The Dow Chemical Co. Semi-continuous process for preparing 4,4'-sulfonyldiphenol. 3,297,766, 1–10–67, Cl. 260—607.

Bradley, Stephen D., to Macoid Industries, Inc. Method of decuring a waterstop between concrete panels. 3,297,800, 1–10–67, Cl. 264—34.

Braid, James M., to Ferranti, Ltd. Navigation system with optical means for providing a superimposed composite image of a cathode ray tube display and a further map display. 3,297,822, 1–10–67, Cl. 178—7.85.

Bransten, Robert J., to M. J. B. Co. Can body. 3,297,225, 1–10–67, Cl. 229—3.5.

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Braun, Willy, W. Ruppel, and R. Mecke, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Reduction of linear-transquinacridonequinone. 3,297,702, 1–10–67, Cl. 260—279.

Brauns, Friedrech E., to Georgia-Pacific Corp. Recovery of lignosulfonates. 3,297,676, 1–10–67, Cl. 260—124.

Bray, Henry F. Suppository applicator. 3,297,031, 1–10–67, Cl. 128—264.

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Breslow, David S., and A. F. Marcantonio, to Hercules Inc. Process for cross-linking unsaturated hydrocarbon polymers. 3,297,659, 1–10–67, Cl. 260—79.3.

Breslow, David S., and A. F. Marcantonio, to Hercules Inc. Cross-linking hydrocarbon polymers with polyazides in the presence of sulfur. 3,297,661, 1–10–67, Cl. 260—79.5.

Breslow, David S., and A. F. Marcantonio, to Hercules Inc. Modifying polymers. 3,297,674, 1–10–67, Cl. 260—94.8.

Breuer, Heins. Wire-bending machine. 3,296,851, 1–10–67, Cl. 72—383.

Brickl, David E.: *See*—
Licht, Lazar, Brickl, and Indergard. 3,297,221.

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Brinkman, David C., and M. M. Robbins, to The Dow Chemical Co. Inhalator device. 3,297,029, 1–10–67, Cl. 128—188.

Bristol-Myers Co.: *See*—
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British Cellophane Ltd.: *See*—
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British Nylon Spinners Ltd.: *See*—
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Broadhead, Samuel L., Jr., to Collins Radio Co. Limiter-compressor circuit. 3,297,882, 1–10–67, Cl. 307—88.5.

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Brouillette, Albert J., to Heywood-Wakefield Co. Automatic seat borer. 3,297,066, 1–10–67, Cl. 144—110.

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Brown, Bernard J., to Bernatone Ltd. Hearing aids. 3,297,832, 1–10–67, Cl. 179—107.

Brown, Gaylord W., D. J. Rise, and R. T. Johnson, to Brown Machine Co. of Michigan. Method and apparatus for assembling and joining thermoplastic container sections by friction welding. 3,297,504, 1–10–67, Cl. 156—73.

Brown, John S., to United States of America, Army. Variable V-block and clamping device or assembly. 3,297,314, 1–10–67, Cl. 269—243.

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Brunswick Corp.: *See*—
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Brush, James A. Table. 3,296,983, 1–10–67, Cl. 108—90.

Bruzustowski, Jerzy M.: *See*—
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Bucciconc, Dario, to Bucciconi Engineering Co., Inc. Magnetic rail-type conveyor. 3,297,136, 1–10–67, Cl. 198—41.

Bucciconi Engineering Co., Inc.: *See*—
Bucciconc, Dario. 3,297,136.

Buchanan, John W.: *See*—
McLane, Jack S. 3,296,911.

Buchner, Bernhard: *See*—
Alt, Ernst, Buchner, Reges, and Horak. 3,297,008.

Buck, James G.: *See*—
Rarey, Kenneth W., Kennedy, and Buck. 3,296,963.

Budd Co., The: *See*—
Dean, Albert G. 3,296,766.
Freholm, Omar E. 3,297,117.

Buddecke, Charles L.: *See*—
Atchley, Blake K., Buddecke, and Tenery. 3,297,989.

Bueker, Robert A., to National Research and Chemical Co. Flexible control for a roller transport system. 3,297,223, 1–10–67, Cl. 226—183.

Buell Engineering Co., Inc.: *See*—
Vandenhoeck, Jean-Paul. 3,297,369.

Buff, Fred, M. French, and W. N. Pollock, to General Foam Corp. Manufacture of expanded cellular products. 3,296,658, 1–10–67, Cl. 18—4.

Buice, Sam D. Easily assembled steel structure. 3,297,384, 1–10–67, Cl. 312—263.

Bukovac, Martin J., to Michigan State University. Method of widening crotch angles of fruit trees. 3,297,426, 1–10–67, Cl. 71—2.6.

Bulbenko, George F., to Thiokol Chemical Corp. Sealant composition and process. 3,297,473, 1–10–67, Cl. 117—72.

Bullard Co., The: *See*—
Bullard, Edward P., III. 3,296,904.

Bullard, Edward P., III, to The Bullard Co. Tool block. 3,296,904, 1–10–67, Cl. 82—36.

Bullock, Ellis W., to The Fly Ash Arrestor Corp. Cooling system for shafts and the like. 3,297,239, 1–10–67, Cl. 230—128.

Bultemann, Hans-Joachim. Method for determining the specific surface of nonuniformly shaped substances. 3,296,869, 1–10–67, Cl. 73—432.

Bundus, Robert H.: *See*—
Eggen, Ingmar B., and Bundus. 3,297,451.

Bundy, Robert W., and T. M. Sheets, to E. I. du Pont de Nemours and Co. Method and apparatus for producing nonwoven webs. 3,296,678, 1–10–67, Cl. 28—1.

Bunker-Ramo Corp., The: *See*—
Koerner, Ralph J., and Scarbrough. 3,297,995.
Koster, Robert A. 3,298,013.

Buntpapierfabrik A.G.: *See*—
Gobel, Johannes. 3,296,723.

Burgess, Robin H., and V. Griffiths, to Imperial Chemical Industries Ltd. Insulated copper articles contacting isotactic polypropylene containing a thiodialkanoic acid diester and a polynuclear phenolic antioxidant. 3,297,479, 1–10–67, Cl. 117—232.

Burnett, Lauren W. Rope fastening device. 3,296,670, 1–10–67, Cl. 24—131.

Burroughs Corp.: *See*—
Halsted, Charles P. 3,297,963.
Lee, Edwin S., III. 3,297,950.
MacDonald, Duncan N., Billawala, and Stansell. 3,298,007.
Shimabukuro, George T. 3,297,999.

Burt, Donald E., to Keyes Fibre Co. Dispensing apparatus for stacked articles provided with means to strip the end article from the stack. 3,297,201, 1–10–67, Cl. 221—221.

Bush, George W., to Philadelphia Handle Co., Inc. Collapsible self-returning handle with hideaway linkage. 3,297,120, 1–10–67, Cl. 190—58.

Buxton, Herbert D. System of precooling produce on trucks. 3,296,818, 1–10–67, Cl. 62—259.

Bynagte, Peter W.: *See*—
Vidjak, Frank V., and Bynagte. 3,296,655.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Fombonne, Paul. 3,298,026.

Cabbage, John T.: *See*—
Moyer, Golden A., and Cabbage. 3,297,566.

Cable Belt Ltd.: *See*—
Adamson, James M. 3,297,204.

Cadotte, John E., to Wood Conversion Co. Manufacture of mineral fiberboard. 3,297,517, 1–10–67, Cl. 162—145.

Cagno, Luigi, to Hamilton Float & Trowel Ltd. Trowelling blade assemblies. 3,296,946, 1–10–67, Cl. 94—45.

Caflisch, Edward: *See*—
Von Dohlen, Werner G., Wilson, and Caflisch. 3,297,667.

Caldwell, Bobbie G.: *See*—
Schaper, Earl L., Caldwell, and Macalusa. 3,297,194.

Caldwell, John R., and E. H. Hill, to Eastman Kodak Co. Polysulfones of bicyclo/3.2.0/hept-2EN-one and derivatives. 3,297,640, 1–10–67, Cl. 260—63.

Caldwell, John R., to Eastman Kodak Co. Polyamides from N,N'-diphenyldiamines. 3,297,656, 1–10–67, Cl. 260—78.

California Institute Research Foundation: *See*—
Duwes, Pol E. 3,297,436.

Camloc Fastener Corp.: *See*—
Griffiths, Edward G., Johnson, and Delilth. 3,297,348.

Campbell, Donald H.: *See*—
Vullo, William J., and Campbell. 3,297,495.

Campbell, Robert W., E. M. Sawyer, D. O. Ruff, T. E. Kirk, L. M. Ramey, and W. D. Worrell, to General Motors Corp. Vehicle propulsion and control system. 3,297,926, 1–10–67, Cl. 318—138.

Campbell, William C. Electric tension switch assembly. 3,297,841, 1–10–67, Cl. 200—61.58.

Canadian General Electric Co., Ltd.: *See*—
Ulug, Mehmet E. 3,297,900.

Cannon, Dennis H., R. J. Hollis, and M. C. Potts, to Dowty Mining Equipment Ltd. Conveyor anchoring and advancing apparatus. 3,297,140, 1–10–67, Cl. 198—88.

Cansler, Carl: *See*—
Krans, Berthold. 3,297,453.

Carborundum Co., The: *See*—
Anthes, Lester B. 3,297,158.

Cardoza, James. Collapsible tube holder. 3,297,288, 1–10–67, Cl. 248—106.

Carle Instruments, Inc.: *See*—
McKinney, Carlton B. 3,297,053.

Carlson, Andrew C., deceased (by E. L. Carlson, executrix). Lifting grapple with scissors tongs for handling concrete drainage rings. 3,297,353, 1–10–67, Cl. 294—81.

Carlson, Erna L.: *See*—
Carlson, Andrew C. 3,297,353.

Carr, Elmer H.: *See*—
Tranel, Lester J., and Carr. 3,297,082.

Carrasse, Jean M. P., to Societe Generale de Constructions Electriques et Mechaniques (Alsthom). Thermal insulators. 3,297,189, 1–10–67, Cl. 220—15.

Carrier Corp.: *See*—
Eisberg, Keith V., and Bourne. 3,297,813.

Carswell, Samuel A.: *See*—
Smith, John P., Carswell, Samuelson, and Rainbird. 3,297,329.

Carter, Shirley J. Tungsten carbide brazing. 3,297,693, 1–10–67, Cl. 29—473.1.

Carthage Machine Co., Inc.: *See*—
Zalchkowsky, Andrew. 3,297,067.

Cassel, Norman S.: *See*—
Reif, Robert B., Cassel, and Smith. 3,296,965.

Cassidy, Patrick J., and M. L. Quammen, to United States of America, Army. Binocular carrying case. 3,297,218, 1–10–67, Cl. 224—26.

Caterpillar Tractor Co.: *See*—
Jass, John E., and Sullivan. 3,296,715.
Peterson, Robert A. 3,296,885.

Capps, Randolph P., to Multi-Zoner, Inc. Heating and cooling temperature control for a plurality of zones. 3,297,250, 1–10–67, Cl. 236—1.

Cee-Bee Chemical Co., Inc.: *See*—
Parker, Roy M. 3,297,258.

Celleco Aktiebolaget: *See*—
Skardal, Karl A. 3,297,262.

Central Research Laboratories, Inc.: *See*—
Haaker, Lester W., Jelatis, and Jennrich. 3,297,172.

Central Specialties Co.: *See*—
Schaefer, Edward E. 3,297,160.

Chabak, Eugene J.: *See*—
Firestone, Stanley, and Chabak. 3,297,418.

Chadima, George E., II, to Collins Radio Co. Frequency control system having phase controlled sampling means. 3,297,965, 1–10–67, Cl. 332—19.

Chang, Winston H., and R. G. Frank, to United States of America, United States Air Force. Heat treatment of columbium and molybdenum base alloys. 3,297,496, 1–10–67, Cl. 148—11.5.

Charles, Joseph: *See*—
Toby, Sidney, and Charles. 3,297,590.

Charvat, Fedia R., to Union Carbide Corp. Basic refractory bricks. 3,297,457, 1–10–67, Cl. 106—59.

Chase, Merwyn L., to Eastman Kodak Co. Crimping apparatus and process. 3,296,677, 1–10–67, Cl. 28—1.

Châtelain, Oscar, to Zenith SA Fabriques des Montres. Recording speedometer. 3,298,028, 1–10–67, Cl. 346—33.

Chemische Werke Huls Aktiengesellschaft: *See*—
Berg, Gerhard, and Maase. 3,297,666.
Bernsmann, Julius. 3,297,646.
Reich, Manfred. 3,297,776.

Chereau, Madeleine. Merry-go-round. 3,297,319, 1–10–67, Cl. 272—36.

Chevron Research Co.: *See*—
Hotten, Bruce W. 3,297,624.
Wilkes, John B. 3,297,748.

Chicurel, Ricardo. Gyrating pump. 3,296,975, 1–10–67, Cl. 103—143.

Chisholm, Douglas S., to The Dow Chemical Co. Structural panels and structures therefrom. 3,296,755, 1–10–67, Cl. 52—81.

Chodsky, Sergey V., and J. Genaci, to Guard Chemical Co., Inc. Water-soluble, normally solid organic mercury composition and novel organic mercury addition compounds. 3,297,524, 1–10–67, Cl. 167—42.

Chow, Sui-Wu, to Union Carbide Corp. Process for the preparation of e-perfluoro-p-xylene polymers. 3,297,591, 1–10–67, Cl. 260—2.

Chrisp, Joseph D., to E. I. du Pont de Nemours and Co. Explosive composition containing coated metallic fuel. 3,297,502, 1–10–67, Cl. 149—6.

Christiansson, Carl M., to Aktiebolaget Bofors. Device for controlling a hydraulically or pneumatically driven cartridge ramming mechanism of an automatic gun. 3,296,931, 1–10–67, Cl. 89—47.

Chrysler Corp.: *See*—
Blen, Alfred A. 3,296,691.
Otis, Charles L., and Osak. 3,297,469.

Chubb, Philip A. Treatment of sand and other industrial minerals. 3,297,402, 1–10–67, Cly. 23—182.

Church, James W., and G. F. Pearce, to Wallaceburg Brass Ltd. Single handle mixing faucet. 3,297,051, 1–10–67, Cl. 137—625.17.

Ciba Ltd.: *See*—
Arts, Klaus, and Rhyner. 3,297,744.
Gaeumann, Ernst, and Vischer. 3,297,526.
De Stevens, George, and Werner. 3,297,693.
Schmidt, Paul, Wilhelm, Eichenberge, and Sury. 3,297,699.

Ciccone, Thomas Q.: *See*—
Shulman, Robert S., and Ciccone. 3,296,968.

Cincinnati Milling Machine Co.: *See*—
Uhtenwoldt, Herbert R. 3,296,896.

Cialak, Francis E. Piperidino-polycarbonamides. 3,297,655, 1–10–67, Cl. 260—78.

Cities Service Oil Co.: *See*—
Hain, George M., and Revukas. 3,297,573.
Ryer, Jack, and Kerschner. 3,297,421.

Claas, Christian: *See*—
Schmidbauer, Hans, and Claas. 3,296,700.

Clark, Charles J. Flushing mechanism for dry tank with built in overflow passage. 3,296,629, 1–10–67, Cl. 4—19.

Clark, Charles J. Dry toilet tank flushing mechanism. 3,296,630, 1–10–67, Cl. 4—19.

Clark Equipment Co.: *See*—
Erdman, William C., and Zeller. 3,297,114.

Clarke, John P., to The General Electric Co. Electric circuits for supplying a substantially constant current to a load. 3,297,880, 1–10–67, Cl. 307—58.

Clapper, Genung L., to International Business Machines Corp. Apparatus for generating information regarding the spatial distribution of a function. 3,297,993, 1–10–67, Cl. 340—146.3.

Clay, David L., to The General Electric Co. Apparatus for determining the frequency difference of two signals by comparison of differentiated and undifferentiated beat signals. 3,297,946, 1–10–67, Cl. 324—82.

Cleanometer Corp.: *See*—
Anderson, John L. 3,297,874.

Cleveland Trencher Co., The: *See*—
Penote, Vincent S., and Rear. 3,296,719.
Rear, Melvin K. 3,296,718.

Cleveland Twist Drill Co., The: *See*—
Seabeck, Howard C. 3,296,861.

Clevenger, Joseph E., Jr., and C. M. Siegel, to United States of America, Army. Electron tube transconductance testing circuit having transistorized plate current switching means. 3,297,942, 1–10–67, Cl. 324—27.

Clevite Corp.: *See*—
Kelly, Fred C. 3,296,934.
Lewis, Arthur M., and Brown. 3,298,030.

Cliffs Dow Chemical Co.: *See*—
Klink, John D., and Goos. 3,297,420.

Cloudy, Westley R., to Lewis Refrigeration Co. Food freezer and accelerated freezing process. 3,296,812, 1–10–67, Cl. 62—68.

Cloyd, Harold S., to Nosco Plastics, Inc. 3,297,190, 1–10–67, Cl. 220—21.

Coaker, Antony W. M., O. P. Cohen, and J. W. Ryan, to Monsanto Co. Blends of (1) graft copolymer of vinyl chloride onto chlorinated polyolefin, (2) diene-nitrile rubber and (3) ethylene-vinyl acetate copolymer. 3,297,792, 1–10–67, Cl. 260—876.

Coate, William C. E., to The Lodge & Shipley Co. Magazine for a machine tool. 3,296,903, 1–10–67, Cl. 82—34.

Cobb, Phara L., Jr., and J. B. Stevens, to Eastman Kodak Co. Apparatus for forming rods from continuous filament tow. 3,297,512, 1–10–67, Cl. 156—433.

Cockerell, Christopher S., to Hovercraft Development Ltd. Air cushion vehicles having attitude-correcting skirts. 3,297,102, 1–10–67, Cl. 180—7.

Coe Mfg. Co., The: *See*—
Hudak, Edward G., and Browning. 3,296,909.

Cofer, Daniel B., G. C. Ward, and D. D. Proctor, to Southwire Co. Apparatus for producing a shaped metal product. 3,296,682, 1–10–67, Cl. 29—33.

Coffman, Alfred C. Rain-controlled lawn sprinkler. 3,297,254, 1–10–67, Cl. 239—63.

Cohen, Jerome: *See*—
Veis, Arthur, and Cohen. 3,297,459.

Cohen, Oscar P.: *See*—
Coaker, Antony W. M., Cohen, and Ryan. 3,297,792.

Cohen, Theodore A.: *See*—
Riordan, Hugh E., and Cohen. 3,297,947.

Cole, Jimmy R.: *See*—
Harney, George D., Sullivan, Lee, and Cole. 3,297,981.

Collett, John A: *See*—
Pickett, Llewellyn E., and Collett. 3,296,631.

Collins, Arline J. Reversible garments. 3,296,028, 1–10–67, Cl. 2—211.

Collins, Edward C.: *See*—
James, Howell N., and Collins. 3,296,878.

Collins Machinery Corp.: *See*—
Behnke, Howard N. 3,296,900.

Collins Radio Co.: *See*—
Broadhead, Samuel L., Jr. 3,297,882.
Bruene, Warren B. 3,297,966.
Chadima, George E., II. 3,297,965.
Frerking, Marvin E. 3,297,961.
Hamilton, Alan R. 3,297,964.
Stover, Harris A. 3,298,027.

Colodner, Jesse L., to International Camera Corp. Moving picture camera switch with improved rotary contact disc structure. 3,297,835, 1–10–67, Cl. 200—11.

Colortran Industries, Inc.: *See*—
Sargent, William. 3,297,337.

Colton, Evan T., to Gordon Engineering Corp. Frequency synthesizer. 3,297,953, 1–10–67, Cl. 331—18.

Combustion Engineering, Inc.: *See*—
Hoss, Maurice S. 3,297,843.

Commissariat a l'Energie Atomique: *See*—
Costes, Didier. 3,297,542.
Doury, Andre, Grave, and Vertut. 3,296,858.

Conco Engineering Works, Inc.: *See*—
Pfister, Leo F. 3,297,251.

Conix, André J.: *See*—
Hindersinn, Raymond R., and Conix. 3,297,633.

Conix, André J., to Gervaert Photo-Producten N.V. Thermoplastic linear polysulfonates from di(hydroyphenyl) valeric acid. 3,297,636, 1–10–67, Cl. 260—49.

Connell, Richard A., and L. V. Gregor, to International Business Machines Corp. Method for producing organic plasma and for depositing polymer film. 3,297,465, 1–10–67, Cl. 117—38.

Corte, Herbert, and O. Netz, to Farbenfabriken Bayer Aktiengesellschaft. Process for the chloromethylation of aromatic compounds of high molecular weight. 3,297,648, 1–10–67, Cl. 260—73.

Consolidated Electronics Industries Corp.: *See*—
Schneider, Emmor V., and Deming. 3,297,923.

Constructiewerkhuizen Gibbos P.V.B.A.: *See*—
Gilbos, Georges E. 3,297,264.
Gilbos, Georges E. 3,297,346.

Continental Can Co., Inc.: *See*—
Allen, Richard C. 3,297,214.
Elias, Robert T. 3,296,856.
Gamble, Burton L. 3,296,999.
Rarey, Kenneth W., Kennedy, and Buck. 3,296,963.

Continental Oil Co.: *See*—
Harney, George D., Sullivan, Lee, and Cole. 3,297,981.
Miller, Donald B. 3,297,645.
Miller, William J. 3,296,996.
Van der Linde, Harold E. 3,296,995.

Contratto, Robert J., to St. Regis Paper Co. Carton divider construction. 3,297,228, 1–10–67, Cl. 229—27.

Control Data Corp.: *See*—
Reardon, Richard F. 3,297,986.

Cook, Leon W.: *See*—
Peck, Reese A., Franz, Suggitt, Cook, and Messing. 3,297,564.

Cookerly, Jack C., and G. R. Hall. Electrical instrument in which string serves as its own transducer. 3,297,813, 1–10–67, Cl. 84—1.16.

Coontz, John. Bulldozer. 3,296,721, 1–10–67, Cl. 37—144.

Coover, Harry W., Jr.: *See*—
McConnell, Richard L., and Coover. 3,297,724.

Copolymer Rubber & Chemical Corp.: *See*—
Van Volkenburgh, Ross. 3,297,714.

Coppal, Claude P.: *See*—
Gogarty, William E., Tosch, and Coppal. 3,297,084.

Corbett, Harry A.: *See*—
Moksu, Walter H., and Corbett. 3,297,852.

Cordry, Floyd A., to Warwick Electronics Inc. Gated function switches in electric organ. 3,297,812, 1–10–67, Cl. 84—1.01.

Corella, Arthur P., and W. S. Schneider, to V. R. Wayne. Valved mixing container or package. 3,297,152, 1–10–67, Cl. 206—47.

Corey, Philip D., and E. H. Dinger, to General Electric Co. Plural oscillators synchronized to the highest frequency. 3,297,955, 1–10–67, Cl. 331—55.

Cornelius Co., The: *See*—
Cornelius, Richard T. 3,297,196.

Cornelius, Richard T., to The Cornelius Co. Bottle carrier. 3,297,196, 1–10–67, Cl. 220—102.

Corning Glass Works: *See*—
Eaton, James J. 3,297,505.

Cortona, Alessandro, and R. Falconieri, to Ing. C. Olivetti & C., S.p.A. Adding machine for systems not having uniform decimal denominations. 3,297,246, 1–10–67, Cl. 235—60.

Corwin, Len A.: *See*—
Corwin, Roy E. and L. A., and Hanawalt. 3,297,326.

Corwin, Roy E. and L. A., and C. K. Hanawalt, to Grandad's Ranch, Inc. Moving target system for shooting practice. 3,297,326, 1–10–67, Cl. 273—105.2.

Cory Corp.: *See*—
Eisendrath, David C. 3,297,844.

Costes, Didier, to Commissariat a l'Energie Atomique. Integral nuclear reactor-heat exchanger power plant. 3,297,542, 1–10–67 Cl. 176—59.

Cotter, James L., to Hastings Aluminum Products, Inc. Eavestrough and hanger assemblies. 3,296,749, 1–10–67, Cl. 52—11.

Couleur, John F., P. F. Gudenschwager, and W. A. Shelly, to General Electric Co. Data processing unit for providing selective memory addressing by external apparatus. 3,298,001, 1–10–67, Cl. 340—172.5.

Coutts, Adam, and M. R. Hanson. Convertible car seat and bed for a child. 3,297,358, 1–10–67, Cl. 297—118.

Coxe, Charles D.: *See*—
McDonald, Allen S., Spooner, and Coxe. 3,296,695.

Cragoe, Edward J., Jr.: *See*—
Sprague, James M., and Cragoe. 3,297,737.

Craig, Louis E.: *See*—
Reynolds, John B., Minor, and Craig. 3,297,697.

Crane, Hewitt D., and E. C. Dowling, to AMP Inc. Magnetic core circuit arrangement. 3,298,002, 1–10–67, Cl. 340—174.

Cranskens, Georg, and W. Salger, to Lumopriat Zindler K.G. Photocopying apparatus. 3,296,951, 1–10–67, Cl. 95—89.

Crawford, Marvin S., ½ to D. R. Long. Masonry cutter. 3,297,015, 1–10–67, Cl. 125—23.

Creative Packaging, Inc.: *See*—
Wright, Thomas H., Jr. 3,297,198.

Crews, Sim H., to Large Mine Shaft Drillers, Inc. Dual drill stem method and apparatus. 3,297,100, 1–10–67, Cl. 175—195.

Croce, Louis J., L. Bajars, and M. Gabliks, to Petro-Tex Chemical Corp. Production of isoprene. 3,297,775, 1–10–67, Cl. 260—680.

Crowther, Albert F., and E. H. P. Young, to Imperial Chemical Industries Ltd. Antidepressant compositions and methods of using same. 3,297,530, 1–10–67, Cl. 167—65.

Crucible Steel Co. of America: *See*—
Guernsey, John B. 3,296,846.

Crutcher-Rolfs-Cummings, Inc.: *See*—
Talley, Dolen E. 3,296,748.

Crutchfield, Marvin M., and R. R. Irani, to Monsanto Co. Bleaching, sterilizing, disinfecting, and deterging compositions. 3,297,578, 1–10–67, Cl. 252—99.

Cumming, James C., to Rockwell-Standard Corp. Load controlled brake proportioning system. 3,297,368, 1–10–67, Cl. 303—22.

Cummings, William, to Monsanto Chemicals Ltd. Production of halogenonaphthalenes. 3,297,770, 1–10–67, Cl. 260—650.

Cunningham, Francis V. Kite. 3,297,282, 1–10–67, Cl. 244—153.

Cupery, Harold E.: *See*—
Barbaras, Glen D., Cupery, and Loder. 3,297,425.

Curl, Donald S., to A. Lipson, and B. Smith. Combination metal door and door frame unit. 3,296,743, 1–10–67, Cl. 49—382.

Curl, Donald S., to A. Lipson, and B. Smith. Devices for removably locking panels in framing. 3,296,763, 1–10–67, Cl. 52—475.

Curlett, John, to Gurries Mfg. Co. Automatic control system for construction vehicles. 3,296,722, 1–10–67, Cl. 37—144.

Currier, James W., to International Minerals & Chemical Corp. Method and apparatus for solution mining. 3,297,362, 1–10–67, Cl. 299—5.

Curtiss, John N., C. N. Forsvall, Jr., and K. W. Rausch, Jr., to The Upjohn Co. Continuous process for producing mixtures of methylene-bridged polyphenyl polyamines. 3,297,759, 1–10–67, Cl. 260—570.

Cusic, John W., and P. Yonan, to G. D. Searle & Co. 1-arylideneamino - 4 - (4 - benzhydryl - 1 - piperazinylcarbonyl) piperazines and intermediate therefor. 3,297,689, 1–10–67, Cl. 260—240.

Cutler, John H., to General Electric Co. Electronic circuits. 3,297,935, 1–10–67, Cl. 321—18.

Cvacho, Daniel S., C. L. Wilson, and C. T. Payne, Jr., to Reynolds Metals Co. Method and apparatus for making a container or the like on a fluid covered and/or vibrated mandrel. 3,296,945, 1–10–67, Cl. 93—80.

Cyba, Henryk A., to Universal Oil Products Co. Stabilization of rubber with dicyclohexyldiaminodiphenyl ether. 3,297,628, 1–10–67, Cl. 260—45.9.

Czech, Maximilian: *See*—
Frensch, Heinz, Goebel, Czech, and Hartel. 3,297,523.

Czorny, Vasil P., W. H. Ring, K. A. Pannier, Jr., and J. L. Sorenson, to Sorenson Research Corp. Catheter placement unit with removable cannulated needle. 3,297,803, 1–10–67, Cl. 128—214.2.

Dagwell, Harold L.: *See*—
Paish, Harold P. S., Dagwell, and Anley. 3,296,973.

Daimler-Benz Aktiengesellschaft: *See*—
Lamm, Heinz. 3,297,005.

Dale, Clarence R. Rotating gas drilling head. 3,297,091, 1–10–67, Cl. 166—84.

Dall'asta, Gino: *See*—
Natta, Giulio, Mazzanti, and Dall'asta. 3,297,671.

Daman, Ernest L., J. J. Vail, J. Blizard, and H. Phillips, to United States Atomic Energy Commission. Vapor-liquid separator. 3,296,779, 1–10–67, Cl. 55—337.

D'Amato, Anthony S.: *See*—
Gattenby, Miles N., Jr., D'Amato, Golner, and Feinstein. 3,297,155.

D'Amico, John J.: *See*—
Hamm, Philip C., and D'Amico. 3,297,680.

Dana Corp.: *See*—
Wagner, Robert W. 3,296,889.

Danemark, Marius, R. Rochat, C. Steiner, and W. Zwerner, to Sei-Rex Corp. Electroplating installation. 3,297,380, 1–10–67, Cl. 312—228.

Danner, Eugene G. Multi-receptacle electric outlet and mounting means. 3,297,886, 1–10–67, Cl. 307—112.

Dardarian, Sahag, to The Bendix Corp. Off axis adapter for use with a sun sensor device. 3,297,395, 1–10–67, Cl. 350—285.

Daufoss ved ing. M. Clausen: *See*—
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Davis, Martin A., to American Home Products Corp. Certain substituted tetrazole derivatives. 3,297,709, 1–10–67, Cl. 260—308.

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Horowitz, Carl, to Yardney International Corp. Method of graft polymerising onto hydrophobic substrates. 3,297,-786, 1–10–67, Cl. 260—857.
Horrigan, John B.: *See*—
Foreman, Robert J., and Horrigan. 3,297,909.
Hoss, Maurice S., to Combustion Engineering, Inc. Flow-no flow switch. 3,297,843, 1–10–67, Cl. 200—81.9.
Hotten, Bruce W., to Chevron Research Co. Elastomeric compositions of oil and urethane-linked resins. 3,297,624, 1–10–67, Cl. 260—33.6.
Houdaille Industries Inc.: *See*—
Schott, Arthur K. 3,297,178.
Houssaye, René G. E.: *See*—
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Cockerell, Christopher S. 3,297,102.
Howden, Patrick F.: *See*—
Hall, Lawrence G., and Howden. 3,297,894.
Howell, Raymond P., G. F. Swenck, and N. A. Hamm, to Reynolds Metals Co. Snap locking fixtures for interior decorating. 3,297,075, 1–10–67, Cl. 160—19.
Howmet Corp.: *See*—
Llrones, Nick G. 3,296,666.
Hoy, Austin, and Co. Ltd.: *See*—
Proctor, Sidney E. 3,297,865.
Hoynanian, Hrair P., and T. A. Brennan, to Avco Corp. Microscope system with means for viewing the entire image and means for measuring radiation from a selected segment of image. 3,297,873, 1–10–67, Cl. 250—71.
Huda, Edward V.: *See*—
Grosner, George J., and Huda. 3,297,622.
Hudak, Edward G., and R. A. Browning, Jr., to The Coe Mfg. Co. Rotary knife clipper. 3,296,909, 1–10–67, Cl. 83—305.
Huggard, Olin W., to Mobil Oil Corp. Electrocoating process employing a water soluble resin and an oil soluble resin. 3,297,557, 1–10–67, Cl. 204—181.
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Larrison, John E., and Bender. 3,297,852.
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Hughes, Richard L.: *See*—
Thomas, Orrin H. 3,297,837.

Huitt, Jimmie L., B. B. McGlothlin, and J. L. Pekarek, to Gulf Research & Development Co. Process for preventing the coning of an undesirable fluid into a production well. 3,297,088, 1–10–67, Cl. 166—33.

Hull, Raymond J., to Gas Processors, Inc. Apparatus for treating multi-component liquids. 3,297,549, 1–10–67, Cl. 196—99.

Humbert, Kingsley E., Jr., to Wix Corp. Filter apparatus. 3,297,160, 1–10–67, Cl. 210—94.

Hunton, James K., to Alfred Electronics. Multi element directional coupler. 3,297,967, 1–10–67, Cl. 333—10.

Hutchins, Marlyn R., to Andrew P. Simon, d.b.a. Pak Distributing Co. Security structure for a coin meter. 3,297,123, 1–10–67, Cl. 194—97.

Hutchinson, Richard E., to Field Enterprises Educational Corp. Combination bookend and bookrack and carton therefor. 3,297,164, 1–10–67, Cl. 211—42.

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Hydrel A.G.: *See*—
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Imai, Kiyokazu, and Y. Sakurada, to Kurashiki Rayon Co., Ltd. Polymer product comprising methacrylic ester and α-methylstyrene, and processes of producing same. 3,297,794, 1–10–67, Cl. 260—885.

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Iwamoto, Nobumasa, Nakano, and Imanishi. 3,297,804.

Imhof, Augustin. Safety valve. 3,297,048, 1–10–67, Cl. 137—512.

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Burgess, Robin H., and Griffiths. 3,297,479.
Crowther, Albert F., and Young. 3,297,530.
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Industrial Electronics Hardware Corp.: *See*—
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Ingersoll-Rand Co.: *See*—
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Law, John P. 3,297,199.
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Inta-Roto Machine Co., Inc., The: *See*—
Haskin, Lawrence H., Jr., and Kesler. 3,296,910.
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International Business Machines Corp.: *See*—
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Bowers, Ronald W. 3,297,855.
Clapper, Genung L. 3,297,993.
Connell, Richard A., and Gregor. 3,297,465.
Garwin, Richard L., Hardy, and Landauer. 3,297,875.
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Licht, Lazar, Brickl, and Indergard. 3,297,221.
Matick, Richard E. 3,298,005.
McDonald, William L., De George, Stewart, and Thurmond. 3,297,992.
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International Camera Corp.: *See*—
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International Instruments, Inc.: *See*—
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International Minerals & Chemical Corp.: *See*—
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Ware, James H., and Shieh. 3,297,548.

International Nickel Co., Inc., The: *See*—
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International Rectifier Corp.: *See*—
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International Standard Electric Corp.: *See*—
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International Telephone and Telegraph Corp.: *See*—
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Iosso, Carl P.: *See*—
Hickerson, Frederick R., and Iosso. 3,297,256.

Ippolito, James. Constant tension reeling mechanism. 3,297,273, 1–10–67, Cl. 242—75.5.

Irani, Riyad R.: *See*—
Crutchfield, Marvin M., and Irani. 3,297,578.

Ito, Yoshikazu, K. Shiji, S. Nomura, E. Endo, A. Ikeyama, and F. Nishikawa, to Toyo Rayon Kabushiki Kaisha. Photochemical process for the preparation of lactams. 3,297,684, 1–10–67, Cl. 260—239.3.

Iwamoto, Nobumasa, A. Nakano, and Y. Imanishi, to Ono Pharmaceutical Co., Ltd. Method of filling hard capsules with granules by the open-mouth-down punching method. 3,297,804, 1–10–67, Cl. 264—118.

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JFTJ Corp.: *See*—
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Jacobin, Leo, and W. C. M. Gielen, to International Standard Electric Corp. Device for setting the angular position of a first object with respect to a second. 3,296,875, 1–10–67, Cl. 74—89.15.

Jacobson, Gunnar, to Aktiebolaget Bofors. Missiles. 3,296,929, 1–10–67, Cl. 89—1.806.

Jacobson, Norman A., and E. A. Wilder, to S. C. Johnson & Son, Inc. Polyalkoxylated and polyaryloxylated derivatives of di(hydroxyaromatic)alkanoic acids. 3,297,746, 1–10–67, Cl. 260—473.

Jacobson, Sava W. Monaural to stereo automatic switching system for an FM multiplex stereo radio receiver. 3,297,825, 1–10–67, Cl. 179—15.

Jacuzzi Bros., Inc.: *See*—
Jacuzzi, Candido. 3,297,025.

Jaffee, Robert I.: *See*—
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Jacklin, Clarence, and P. L. Gross, to Nalco Chemical Co. Process for forming lead pellets. 3,297,799, 1–10–67, Cl. 264—14.

Jackson, Clark E., and S. G. Thornbury, to Purex Corp., Ltd. Combination vacuum sweeper and liquid vaporizer. 3,296,777, 1–10–67, Cl. 55—216.

Jackson, Byron, Inc.: *See*—
Taylor, Raymond G., Jr. 3,296,944.

Jacobs, Charles E., and A. Teien, to United States of America, Army. System for the marking of radar echoes and other signals of observed objects on a radar screen. 3,298,021, 1–10–67, Cl. 343—6.

Jacuzzi, Candido, to Jacuzzi Bros., Inc. Hydrotherapy tub. 3,297,025, 1–10–67, Cl. 128—66.

Jahnig, Charles E.: *See*—
Biddick, Royce E., Jahnig, and Tyson. 3,297,562.

Jahns, Hans, to H. Krantz. Multi-stage circulators. 3,297,307, 1–10–67, Cl. 259—97.

Jahp, Clifford J., to The Meyercord Co. Dry strip decalcomania or transfer and method of use. 3,297,508, 1–10–67, Cl. 156—249.

James, Cullen E.: *See*—
Neuschotz, Robert, and James. 3,297,071.

James, Henry T.: *See*—
Hale, Douglas, Lanz, and James. 3,297,731.

James, Howell N., and E. C. Collins, to International Harvester Co. Variable speed drive sheave. 3,296,878, 1–10–67, Cl. 74—230.17.

Janitsch, Anthony D., and M. Suykens, to Stephens-Adamson Mfg. Co. of Canada Ltd. Conveyor apparatus. 3,297,141, 1–10–67, Cl. 198—94.

Janssen, Daniel J. G., to North American Philips Co., Inc. Device for converting a light signal corresponding to a digit place into a voltage value corresponding to the digit value. 3,298,018, 1–10–67, Cl. 340—347.

Janssen, Hendrik J. J., to The General Tire & Rubber Co. Composition having high tear resistance comprising rubber, polyol and gelatin. 3,297,780, 1–10–67, Cl. 260—747.

Janssen, Paul: *See*—
Richtzenhain, Hermann, Janssen, and Vogt. 3,297,642.

Jass, John E., and R. J. Sullivan, to Caterpillar Tractor Co. Self-loading scraper. 3,296,715, 1–10–67, Cl. 37—8.

Jaquet, Reynold, to Oris Watch Co., S.A. Commutators for measuring apparatus having a linerly moving needle. 3,297,851, 1–10–67, Cl. 200—166.

Jaquith, Howard R.: *See*—
Beach, Richard G., Eksten, Jaquith, and Norton. 3,297,045.

Jarnbirger Aktiebolag: *See*—
Kallaes, Ellis. 3,296,933.

Jauk, Hermann: *See*—
Grümm, Hans, Jauk, and Schwarz. 3,297,538.

Jedso Industries Inc.: *See*—
Djedda, Fouad H. 3,296,735.

Jeffers, Carl H. Anti-pickpocket device. 3,297,070, 1–10–67, Cl. 150—47.

Jefferson Chemical Co., Inc.: *See*—
Brader, Walter H., Jr., and Rowton. 3,297,701.
Edwards, Gayle D., Rice, and Soulen. 3,297,597.
Muhlbauer, Herbert G., and Lichtenwalter. 3,297,700.

Jeffrey Gallon Mfg. Co.: *See*—
Munger, Fay E., and McCloskey. 3,297,146.

Jeitner, Franz: *See*—
Sperk, Edgar, Vohler, Jeitner, and Gierth. 3,297,405.

Jelatis, Demetrius G.: *See*—
Haaker, Lester W., and Jelatis, and Jennrich. 3,297,172.

Jenkinson, John V.: *See*—
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Jenks, Wilbur R. Sled ski. 3,297,334, 1–10–67, Cl. 280—12.

Jennrich, Carleton E.: *See*—
Haaker, Lester W., Jelatis, and Jennrich. 3,297,172.

Jensen, Gunnar B., and A. D. Winther. Fish egg sorting. 3,297,157, 1–10–67, Cl. 209—73.

Jerolamon, David: *See*—
Fuhrmann, Robert, Koff, and Jerolamon. 3,297,675.

Jessen, Nicholas C., and W. F. Heer, to The Babcock & Wilcox Co. Plate-type nuclear fuel element. 3,297,543, 1–10–67, Cl. 176—67.

Jet-Stream Industries: *See*—
Warner, Robert. 3,297,382.

Jobson, Robert W., to E. I. du Pont de Nemours and Co. Fluid nozzle. 3,296,679, 1–10–67, Cl. 28—1.

Johansson, Sven A. S., to Sunds Verkstader Aktiebolag. Means for reducing pressure in packing boxes of pumps. 3,296,974, 1–10–67, Cl. 103—126.

Johns-Manville Corp.: *See*—
Eschen, Franklin W. 3,297,599.
Konrad, Howard E. 3,297,801.

Johnson, B. L.: *See*—
Wiegel, Louis A. 3,296,738.
Wiegel, Louis A. 3,296,739.

Johnson, Clarence R. Fish lure. 3,296,734, 1–10–67, Cl. 43—42.09.

Johnson, David A., and G. A. Hardcastle, Jr., to Bristol-Myers Co. Preparation of 6-aminopenicillanic acid. 3,297,546, 1–10–67, Cl. 195—36.

Johnson, Harry T.: *See*—
Milenkovic, Veljko, Johnson, and Zaander. 3,298,006.

Johnson Gage Co., The: *See*—
Johnson, Paul W. 3,296,705.

Johnson, Gaylen D. Cutting device. 3,296,915, 1–10–67, Cl. 83—564.

Johnson, Norman S.: *See*—
Griffiths, Edward G., Johnson, and Dellith. 3,297,348.

Johnson, Paul W., to The Johnson Gage Co. Gage with axially movable operating means. 3,296,705, 1–10–67, Cl. 33—174.

Johnson, Philip C., to F & F Koenigbromer Co. Hydraulic lift with rotation lock for beauty chair. 3,296,935, 1–10–67, Cl. 91—41.

Johnson, Robert T.: *See*—
Brown, Gaylord, Rise, and Johnson. 3,297,504.

Johnson, S. C., & Son, Inc.: *See*—
Jacobson, Norman A., and Wilder. 3,297,746.

Johnson, William R., Jr.: *See*—
Werber, Frank X., Gregorian, and Johnson. 3,297,641.

Johnson, Xa D., and G. C. Hilfinger, to R. C. Fisher and G. C. Hilfinger. Composite door for cabinets and the like. 3,296,745, 1–10–67, Cl. 49—501.

Jones, Alan R., to International Equipment Co. Centrifugation method. 3,297,532, 1–10–67, Cl. 167—74.

Jones, Cecil D.: *See*—
Thom, Wensel W. 3,296,762.

Jorgensen, David F. Paint shield. 3,297,000, 1–10–67, Cl. 118—504.

Kabushiki Kaisha Hitachi Seisakusho: *See*—
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Osasa, Susumu, and Komoda. 3,297,869.

Kabushiki Kaisha Tokyo Gurafikku Dezainazu: *See*—
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Kaczeus, Steve L., to Huyck Corp. Apparatus for measuring the tension of flexible materials. 3,296,857, 1–10–67, Cl. 73—159.

Kagan, Fred, and D. G. Martin, to The Upjohn Co. Process for the preparation of difluoro-steroids. 3,297,728, 1–10–67, Cl. 260—397.2.

Kaiser Steel Corp.: *See*—
Daughters, Harold H. 3,296,689.

Kaiser, William H. Tool holder for bits and the like. 3,296,683, 1–10–67, Cl. 29—96.

Kallaes, Ellis, to Jarnbirger Aktiebolag. Tool for external machining of workpieces. 3,296,953, 1–10–67, Cl. 90—15.

Komaki, Toshiaki: *See*—
Matsuda, Osaharu, Kusai, Tsukamoto, and Komaki. 3,297,480.

Kamar Products Inc.: *See*—
Kapilow, Marvin. 3,296,926.

Kamla, Merlin. Perforating device for deflating cans. 3,296,696, 1–10–67, Cl. 30—16.

Kamm, Lawrence J., to Numerical Control Corp. Continuous path numerical control system with mechanical interpolation. 3,297,924, 1–10–67, Cl. 318—18.

Kane, William P., to E. I. du Pont de Nemours and Co. Production of non-blocking adherent film and foil. 3,297,476, 1–10–67, Cl. 117—132.

Kansig, Werner, to General Electric Co. Solid state electronic device and method. 3,296,825, 1–10–67, Cl. 62—514.

Kapilow, Marvin, to Kamar Products Inc. Motion picture film editor. 3,296,926, 1–10–67, Cl. 88—28.

Kaplan, Ruth. Walking and talking doll. 3,296,736, 1–10–67, Cl. 46—118.

Kauder, Otto S., to Argus Chemical Corp. Polyvinyl chloride resin compositions having increased resistance to heat deterioration. 3,297,629, 1–10–67, Cl. 260—45.75.

Karchmer, Jean H.: *See*—
Morgan, Walter A., and Karchmer. 3,297,943.

Karlsson, Folke E., to Aktiebolaget Scania-Vabis. Supplementary gear set insertable between a main gear set and a transmission connected to the driven road wheels of a motor vehicle. 3,296,895, 1–10–67, Cl. 74—781.

Karp, Norman. Apparatus for handling coins. 3,297,242, 1–10–67, Cl. 232—1.

Kasten, Walter, to The Bendix Corp. Water discharge device for a fuel filter water separator. 3,297,161, 1–10–67, Cl. 210—114.

Kastl, Uwe: *See*—
Silberkuhl, Wilhelm J., Kastl, and Haeussler. 3,296,754.

Katz, Sherwin D.: *See*—
Rezabek, Vernon E., and Katz. 3,296,716.

Kaufman, John H., to National Engineering Co. Apparatus for feeding and transporting materials. 3,297,366, 1–10–67, Cl. 302—17.

Kanfman, William M., and A. Di Giacomo, to General Instrument Corp. Low pass filter which dissipatively and reactively attenuates high frequencies. 3,297,969, 1–10–67, Cl. 333—79.

Kawaguchi, Shinichi, to Riccar Sewing Machine Co., Ltd. Control device for changing the range of starting point and swing amplitude of a needle in a zigzag sewing machine. 3,296,987, 1–10–67, Cl. 112—158.

Kawecki Chemical Co.: *See*—
Rerat, Carlos F. 3,297,555.

Kealy, Wellesley A., R. Smart, and E. Duncombe, to United Kingdom Atomic Energy Authority. Measurement of temperature and pressure. 3,296,864, 1–10–67, Cl. 73—339.

Keck, Siegfried, to Maschinenfabrik Carl Mers K.G. Thread cutting device. 3,296,837, 1–10–67, Cl. 66—140.

Keenan, John G., and J. Palfreyman, to Rolls-Royce Ltd. Gas turbine vertical lift engine. 3,296,804, 1–10–67, Cl. 60—269.

Keenan, Patrick J.: *See*—
Fekete, Frank, Keenan, and Plant. 3,297,745.
Fekete, Frank, and Keenan. 3,297,789.

Kehl, William L., and M. M. Stewart, to Gulf Research & Development Co. Catalyst comprising a metallic component supported on an alumina base. 3,297,583, 1–10–67, Cl. 252—432.

Kelly, Fred C., to Clevite Corp. Boring machine for semi-cylindrical bearings. 3,296,934, 1–10–67, Cl. 90—26.

Kelly, Joseph J., Jr.: *See*—
Van Skyhawk, Norman J., and Kelly. 3,297,116.

Kemp, Trent H.: *See*—
Kersey, John L., Jr. and F. N., and Kemp. 3,297,179.

Kemp, Woodrow E.: *See*—
Fisher, John R., Jr., and Kemp. 3,297,616.

Kendall, Fred E., and J. Nitz, to Abex Corp. Simultaneous sinter bond and nitride for powdered material and backing assembly. 3,297,439, 1–10–67, Cl. 75—208.

Kennecott Copper Corp.: *See*—
Michaelson, Stanley D., and Eilers. 3,297,144.

Kennedy, John B., Jr.: *See*—
Barey, Kenneth W., Kennedy, and Buck. 3,296,963.

Kennedy, Patrick B., to United States of America, Atomic Energy Commission. Method and apparatus for monitoring diffusion pump back-streaming in the throat of said pump. 3,297,872, 1–10–67, Cl. 250—65.

Kerchner, Helen E.: *See*—
Locke, Bernard W., and Kerchner. 3,297,001.

Kerschner, Paul M.: *See*—
Ryer, Jack, and Kerschner. 3,297,421.

Kersey, John L., Jr., F. N., and T. H. Kemp, to "Automatic" Sprinkler Corp. of America. Car dump assemblies. 3,297,179, 1–10–67, Cl. 214—64.2.

Kerma Corp.: *See*—
McCready, Ross B., and Forster. 3,297,170.

Kerr-McGee Oil Industries, Inc.: *See*—
Zajic, James E., and McGee. 3,297,545.

Kersey, Frank N.: *See*—
Kersey, John L., Jr., F. N., and Kemp. 3,297,179.

Kesler, George W.: *See*—
Haskin, Lawrence H., Jr., and Kesler. 3,296,910.

Ketley, Arthur D., and R. J. Ehrig, to W. R. Grace & Co. Polymerization of allyl cyclohexane with a Friedel-Crafts catalyst. 3,297,672, 1–10–67, Cl. 260—93.1.

Keyes Fibre Co.: *See*—
Burt, Donald E. 3,297,201.

Kew, John P.: *See*—
Kew, Melvin E., and J. P. 3,297,820.

Kew, Melvin E., and J. P. Electric fence insulator device. 3,297,820, 1–10–67, Cl. 174—163.

Kienzle Apparatue G.m.b.H.: *See*—
Wolf, Gerhard. 3,297,861.

Kikuchi, Mitsuo: *See*—
Sakomura, Toshio, Kikuchi, and Simizu. 3,297,401.

Kiley, Robert A., and S. A. Young, to United States of America, Air Force. Feedback control system for the bisprism means of an electron-optics interferometer. 3,297,870, 1–10–67, Cl. 250—49.5.

Killaly, John S. Compressive stripping unit and indexing type nibbling punch for turret punch presses and the like. 3,296,905, 1–10–67, Cl. 83—140.

Kindler, Hubert, and H. G. Trieschmann, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Separation of mixtures which contain a non-volatile complex catalyst. 3,297,768, 1–10–67, Cl. 260—632.

King, Douglas T., and M. L. Miller, to The Wilcolator Co. Self-clearing timer control circuits for cooking and the like. 3,297,252, 1–10–67, Cl. 236—46.

Kinnamon, George C., to Borg-Warner Corp. Pressure loaded pump. 3,296,977, 1–10–67, Cl. 103—126.

Kintish, Irving L.: *See*—
Hoffman, Paul O., and Kintish. 3,297,503.

Kirk Norbert A. Inertially actuated signal devices. 3,296,998. 1–10–67, Cl. 116—28.

Kirk, Thomas E.: *See*—
Campbell, Robert D., Sawyer, Ruff, Kirk, Ramey, and Worrell. 3,3,297,926.

Kirkland, Kenneth D. Toy rubber band projecting gun. 3,297,012. 1–10–67, Cl. 124—18.

Kirkpatrick, Alven D. Printing blanket edging and anchoring means. 3,296,673, 1–10–67, Cl. 24—265.

Kirschner, Frederick G., to Rohm & Haas Co. Process for curing polyurethanes. 3,297,649, 1–10–67, Cl. 260—75.

Kisovec, Adrian V., to The Boeing Co. Aircraft propelling assembly. 3,297,094, 1–10–67, Cl. 170—160.11.

Kitun, Alexander: *See*—
George, Norman J., and Kitun. 3,297,785.

Klaviter, Robert A., and R. D. Williams, to International Harvester Co. Hydraulic self levelling device for a front mounted bucket type material loader. 3,297,183, 1–10–67, Cl. 214—140.

Klein, Norman E.: *See*—
Ingham, Robert M., Jr., Klein, and Putnam. 3,296,664.

Klein, Walter, to Beckman Instruments, Inc. Data processing system having programmable, multiple buffers and signalling and data selection capabilities. 3,297,994, 1–10–67, Cl. 340—172.5.

Klein, Walter: *See*—
Grady, Robert J., and Klein. 3,297,997.

Klein, Walter, to Beckman Instruments, Inc. List control. 3,297,998, 1–10–67, Cl. 340—172.5.

Klenke, Gerald H.: *See*—
Doubek, Edward R., Jr., and Klenke. 3,297,949.

K-Line Corp.: *See*—
Shallenberg, Robert L. 3,296,914.

Klink, John D., and A. W. Goos, to Cliffs Dow Chemical Co. Charcoal fire kindler. 3,297,420, 1–10–67, Cl. 44—34.

Klinkmann, Kurt: *See*—
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Magnetic Instruments Co.: *See*—
Levine, Robert J. 3,296,863.

Magnus, Finn H. Casting rig. 3,296,732, 1–10–67, Cl. 43—23.

Maid-Rite Novelty Corp.: *See*—
Edelman, Irving. 3,296,907.

Malik, Marvin J., to General Motors Corp. Heat energized refrigerator. 3,296,808, 1–10–67, Cl. 62—6.

Malin, Jack, to Alarm Devices Mfg. Co., Inc. Electric bell with momentum action striker. 3,298,020, 1–10–67, Cl. 340—392.

Malinin, Theodore. Microtome including freezing attachments. 3,296,821, 1–10–67, Cl. 62—320.

Mallory, P. R., & Co., Inc.: *See*—
Booe, James M. 3,297,918.

Mancini, Franco, and R. Sciaky, to Societa Farmaceutici Italia. Preparation of 17α-esters of 17α-hydroxy-3-keto-Δ⁴-pregnenes. 3,297,729, 1–10–67, Cl. 260—397.4.

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Marathon Oil Co.: *See*—
Gogarty, William B., Tosch, and Coppel. 3,297,084.
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Breslow, David S., and Marcantonio. 3,297,659.
Breslow, David S., and Marcantonio. 3,297,661.
Breslow, David S., and Marcantonio. 3,297,674.

Marconi Co. Ltd., The: *See*—
Pletts, John W. 3,297,991.
Smith, Norman N. P. 3,298,022.

Mark, Alexander H., J. Necas, and J. M. Brusustowski, to Massey-Ferguson Ltd. Threshing and separating mechanism. 3,296,782, 1–10–67, Cl. 56—21.

Marks, Alvin M. Heat electrical power transducer. 3,297,887, 1–10–67, Cl. 310—4.

Markwitz, Berhard. Buoyancy ring. 3,296,636, 1–10–67, Cl. 9—340.

Maroth, Arthur M. Radial roller anti-friction transmission. 3,296,880, 1–10–67, Cl. 74—424.8.

Marshall, John W. Rotary pumps and engines. 3,297,006, 1–10–67, Cl. 123—13.

Marshall, Walton H., Jr. Process for production of hydrogen. 3,297,408, 1–10–67, Cl. 23—212.

Martel, Richard A., to General Precision, Inc. Method of lubricating vitreous fibres. 3,297,470, 1–10–67, Cl. 117—54.

Martin, David G.: *See*—
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Martin, James C., to Eastman Kodak Co. 3-amino tetrahydro-2h-pyran-2-ones. 3,297,705, 1–10–67, Cl. 260—294.3.

Marumo, Hideo: *See*—
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Tomiyama, Shinichi, Marumo, and Takai. 3,297,653.

Maschinenfabrik Carl Mers K.G.: *See*—
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Maschinenfabrik Stromag G.m.b.H.: *See*—
Stübner, Karl, and Rüggen. 3,296,828.

Maschner, Norman S., and D. W. Seidler, to The Dow Chemical Co. Composite laminate film and method of making same. 3,297,518, 1–10–67, Cl. 161—184.

Mase, Gerald D., to Standard Oil Co. Drying oil composition and a process for improving particle board. 3,297,603, 1–10–67, Cl. 260—17.3.

Masel, Marvin, to General Precision, Inc. Position transducer and digital servo system. 3,297,925, 1–10–67, Cl. 318—28.

Massey-Ferguson Ltd.: *See*—
Mark, Alexander H., Necas, and Brusustowski. 3,296,782.

Massey, Richard P., to Bell Telephone Laboratories, Inc. Current feedback converter with automatic overload protection. 3,297,934, 1–10–67, Cl. 321—2.

Massey, Richard P., to Bell Telephone Laboratories, Inc. Polarity reversing, output voltage controlled, asymmetric converter. 3,297,959, 1–10–67, Cl. 331—113.

Massey, Richard P., to Bell Telephone Laboratories, Inc. Increased current capacity transistor converter. 3,297,960, 1–10–67, Cl. 331—113.

Mathiesen, Erik. Apparatus for detecting estrus in animals. 3,297,020, 1–10–67, Cl. 128—2.

Matick, Richard E., to International Business Machines Corp. Thick film read-only memory. 3,298,005, 1–10–67, Cl. 340—174.

Matsuda, Osaharu, K. Kusai, M. Tsukamoto, and T. Komaki, to Nagase & Co., Ltd. Method for preparing starch having improved amylase adsorptive capacity. 3,297,480, 1–10–67, Cl. 127—71.

Matsushita Electric Industrial Co., Ltd.: *See*—
Yamamoto, Koso. 3,296,925.

Matsutani Chemical & Co. Ltd.: *See*—
Matsutani, Eijiro, Sato, and Hattori. 3,297,547.

Matsutani, Eijiro, M. Sato, and F. Hattori, to Matsutani Chemical & Co. Ltd. Method of manufacturing amylolytic enzymes. 3,297,547, 1–10–67, Cl. 195—66.

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Williams, Allan E., Dyson, and Matthies. 3,296,801.
Bounds, Billy E., and Matthies. 3,296,967.

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Englund, Gosta R., and Mattsson. 3,296,961.

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Maurin, Paul. Double-twisting device for textile yarns. 3,296,787, 1–10–67, Cl. 57—58.81.

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Maxon, Harry R., Jr., and R. H. Yeo, to Maxon Premix Burner Co., Inc. Air heating gas burner. 3,297,259, 1–10–67, Cl. 239—397.5.

Maxon Premix Burner Co., Inc.: *See*—
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May, Susan: *See*—
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Mayhew, John T., to National Steel Corp. Method for heat treating steel strip. 3,297,499, 1–10–67, Cl. 148—156.

Maynard, Earl, and M. P. Ptasienski, to United States Gypsum Co. Substantially dry joint compound comprising calcium sulfate, polyvinyl acetate and starch. 3,297,601, 1–10–67, Cl. 260—17.4.

Mazdiyasni, Khodabakhsh S., C. T. Lynch, and J. J. Krochmal, to United States of America, Air Force. Method for making high purity fine particle oxides. 3,297,414, 1–10–67, Cl. 23—345.

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McCarthy, Robert J., to Sonotone Corp. Battery dispenser-charger devices. 3,297,933, 1–10–67, Cl. 320—2.

McCarthy, William E., to General Motors Corp. Constant velocity universal joint. 3,296,833, 1–10–67, Cl. 64—21.

McClean, Robert, and R. J. Lemieux, to Northern Electric Co. Ltd. Semi-conducting sheath self-supporting cable. 3,297,814, 1–10–67, Cl. 174—41.

McCleery, James A., to British Insulated Callender's Cables Ltd. Mineral insulated electric cables. 3,297,818, 1–10–67, Cl. 174—106.

McCloskey, Joseph L.: *See*—
Munger, Fay E., and McCloskey. 3,297,146.

McCombie, Alan K., to The Molins Organisation Ltd. Apparatus for feeding cigarettes from cigarette-making machines to packing machines. 3,297,138, 1–10–67, Cl. 198—84.

McCombie, John W., and L. Thornton, to The Molins Organisation Ltd. Conveyors for packing machines. 3,297,137, 1–10–67, Cl. 198—76.

McConnell, Richard L., and H. W. Coover, Jr., to Eastman Kodak Co. Diepoxides. 3,297,724, 1–10–67, Cl. 260—348.

McCracken, John H., J. G. D. Schuls, and A. C. Whitaker, to Gulf Research & Development Co. Purification of organic acids and anhydrides. 3,297,727, 1–10–67, Cl. 260—346.4.

McCready, Ross B., and K. W. Forster, to Kerma Corp. Furnace charger crane. 3,297,170, 1–10–67, Cl. 212—14.

McDermott, Henry J., to FMC Corp. Strand conveyor provided with fluent drive means. 3,297,222, 1–10–67, Cl. 226—97.

McDonald, Allen S., S. O. Spooner, and C. D. Coxe, to Handy & Harman. Production of plural-phase alloys. 3,296,695, 1–10–67, Cl. 29—528.

McDonald, William L., P. J. De George, J. R. Stewart, and R. H. Thurmond, to International Business Machines Corp. Data processing and accounting system. 3,297,992, 1–10–67, Cl. 340—172.5.

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McGary, Charles W., Jr., and C. T. Patrick, Jr., to Union Carbide Corp. Polyepoxides having at least two 2,3-epoxy-2-methyl propoxy groups attached to different carbon atoms. 3,297,781, 1–10–67, Cl. 260—830.

McGee, Dean A.: *See*—
Zajic, James E., and McGee. 3,297,545.

McGee, Joseph S., G. J. Miron, and M. E. A. Pitt, to Modenco Ltd. Prefabricated service building. 3,296,753, 1–10–67, Cl. 52—73.

McGinnis, David E.: *See*—
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McGivern, Robert F., to Bausch & Lomb Inc. Photogrammetric stereo map plotters. 3,296,699, 1–10–67, Cl. 33—1.

McGlothlin, Bruce B.: *See*—
Hiatt, Jimmie L., McGlothlin, and Pekarek. 3,297,088.

McGraw-Edison Co.: *See*—
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McGrew, Elwood F. Electric toilet paper dispenser. 3,297,269, 1–10–67, Cl. 242—55.53.

McGuinness, Thomas P.: *See*—
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McGuire, John C. Furniture transverse butt joint. 3,297,063, 1–10–67, Cl. 144—318.

McKinney, Carlton B., to Carle Instruments, Inc. Selector valve. 3,297,053, 1–10–67, Cl. 137—625.46.

McLane, Jack S.: ½ to J. W. Buchanan. Severing apparatus. 3,296,911, 1–10–67, Cl. 83—408.

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McLaughlin, Jane A.: *See*—
Szent-Györgyi, Albert, Hegyeli, and McLaughlin. 3,297,538.

McLean, Robert E. Fishing lure. 3,296,733, 1–10–67, Cl. 43—42.06.

McLearn, Herbert M., to American Machinery Corp. Fruit counter with improved conveyor and cammed switch operator. 3,297,248, 1–10–67, Cl. 235—98.

McLaughlin, William T., and J. R. Weinert, to United States Steel Corp. Concrete pipe having a liner of an epoxy resin-coal composition. 3,297,056, 1–10–67, Cl. 138—145.

McMahon, Martin E., to Phillips Petroleum Co. Method and apparatus for purifying industrial waste waters containing oil and solids. 3,297,568, 1–10–67, Cl. 210—51.

McNeil Laboratories, Inc.: *See*—
Mohrbacher, Richard J. 3,297,704.

McPherson, Arthur W. Tooth for cutting hard material such as blacktop. 3,297,364, 1–10–67, Cl. 299—36.

McVeigh, Patricia A., to Eastman Kodak Co. Stabilization of synergistically sensitized photographic systems. 3,297,447, 1–10–67, Cl. 96—109.

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Medical Electroscience, Inc.: *See*—
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Sagerer, Johann. 3,296,720.

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Meisel, Fred W., Jr., and E. A. Blair, to Scott Paper Co. Method for explosion reticulation using a noninflammable liquid. 3,297,803, 1–10–67, Cl. 264—84.

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Pool, Stuart D., Meitl, and Reynolds. 3,297,125.

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Melton, Thomas M., to Mobil Oil Corp. Symmetrical S,S-dialkyl esters of dialkyl thiopyrophosphorus acids. 3,297,797, 1–10–67, Cl. 260—933.

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Mercury Metal Products, Inc.: *See*—
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Merkl, Walter A., to United States of America, Army. Grooved active medium for laser. 3,297,957, 1–10–67, Cl. 331—94.5.

Mertler, Charles S., to Stevens Mfg. Co., Inc. Fire-detecting thermostat. 3,297,845, 1–10–67, Cl. 200—138.

Meshulam, Avram M. Hose clamp. 3,296,674, 1–10–67, Cl. 24—274.

Messing, Donald A.: *See*—
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Metadier, Paul, and A. Voisin, to Laboratoires Paul Metadier Societe Anonyme. Stable perfusable composition for the treatment of tuberculosis. 3,297,526, 1–10–67, Cl. 167—65.

Metadier, Paul, and A. Voisin, to Laboratoires Paul Metadier Societe Anonyme. Stable perfusable composition for the treatment of ruberculosis. 3,297,528, 1–10–67, Cl. 167—65.

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Schleicher, Hans-Walter. 3,297,560.

Metlesics, Werner: *See*—
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Metlesics, Werner, and L. H. Sternbach, to Hoffmann-La Roche Inc. Process for the preparation of quinazoline 3-oxides. 3,297,698, 1–10–67, Cl. 260—256.4.

Metsler, Charles L., and H. A. Holswarth, to Paper Mate Mfg. Co. Multi-aspect display device. 3,297,167, 1–10–67, Cl. 211—69.

Meyer, Robert V., to W. and L. E. Gurley. Optical encoder responsive to movement in two directions. 3,297,879, 1–10–67, Cl. 250—237.

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Michaelson, Stanley D., and K. F. Ellers, to Kennecott Copper Corp. Endless belt conveyor and belt therefor. 3,297,144, 1–10–67, Cl. 198—181.

Michalski, Conrad, and G. A. Bonetti, to Atlantic Richfield Co. Preparation of 1-nitroparaffins from 1-nitroolefins by catalytic hydrogenation. 3,297,769, 1–10–67, Cl. 260—644.

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Middlestadt, William F. Collapsible joint forming structure. 3,297,294, 1–10–67, Cl. 249—9.

Midtlyng, Carl R., to Riley Stoker Corp. Supercritical pressure recirculating boiler. 3,297,004, 1–10–67, Cl. 122—406.

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Milenkovic, Veljko, H. T. Johnson, and C. Zaander, to American Machine & Foundry Co. Tape transcriber and transport mechanism therefor. 3,298,006, 1–10–67, Cl. 340—174.1.

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Miles, John R., to General Electric Co. Lenticulated collimating condensing system. 3,296,923, 1–10–67, Cl. 88—24.

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Miller, Donald B., to Continental Oil Co. Polymerization of trioxane. 3,297,645, 1–10–67, Cl. 260—67.

Miller, James W., to The Bendix Corp. Universal joint. 3,296,831, 1–10–67, Cl. 64—17.

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King, Douglas T., and Miller. 3,297,252.

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Mills, George S., to United States Rubber Co. Rubber composition. 3,297,598, 1–10–67, Cl. 260—3.

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Minor, John T.: *See*—
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Miron, George J.: *See*—
McGee, Joseph S., Miron, and Pitt. 3,296,753.

Miskel, John J., and W. Schlesinger, to White Laboratories, Inc. Calcium salts of lightly cross-linked ethylenically unsaturated carboxylic acids and diethylenically unsaturated aliphatics. 3,297,664, 1–10–67, Cl. 260—80.3.

Misuno, Yukio, nd S. Tanaka, to Prince Jidosha Kogyo Kabushiki-Kaisha. Device for grasping and guiding travelling ends of wefts. 3,297,057, 1–10–67, Cl. 139—291.

Moan, Richard D., to Ford Motor Co. Multiple speed ratio power transmission mechanism with balanced inertia shifts. 3,296,894, 1–10–67, Cl. 74—751.

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Modenco Ltd.: *See*—
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Moekle, Charles D. Method for making linked products. 3,296,657, 1–10–67, Cl. 17—45.
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Mohr, Albert, Jr. 3,297,432.
Mohrbacher, Richard J., to McNeil Laboratories, Inc. Octahydro-3-oxo indolizine carboxylates. 3,297,704, 1–10–67, Cl. 260—294.3.
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Moller, Waldemar, to Bodenseewerk Perkin-Elmer & Co. G.m.b.H. Automatic pilot. 3,296,873, 1–10–67, Cl. 74—5.34.
Monpetit, Louis, to Gemoter S.A. Engine starting device. 3,297,007, 1–10–67, Cl. 123—46.
Monroe, George C., Jr., and G. N. Hammer, to E. I. du Pont de Nemours and Co. Method for reacting hydrogen cyanide with olefins. 3,297,742, 1–10–67, Cl. 260—465.3.
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Dun, Alan, and Fox. 3,297,788.
Monsanto Co.: *See*—
Abramo, John G. 3,297,665.
Anderson, George J., and Williams. 3,297,620.
Beaulieu, Raymond D. 3,297,638.
Coaker, Antony W. M., Cohen, and Ryan. 3,297,792.
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Dil, Dale E. 3,297,424.
Fink, Walter. 3,297,592.
Grantom, Roy L., and Spillane. 3,297,777.
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Harris, Alva F., and Mortimer. 3,297,669.
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Montor, Karel, 15% to Albert C. Nolte, Jr. Remote station intercommunication system. 3,297,824, 1–10–67, Cl. 179—2.
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Moore, Glenn E., and W. D. Boone, to Dover Corp. Fluid delivery means. 3,297,064, 1–10–67, Cl. 141—383.
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Green, Milton, and Moore. 3,297,441.
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Moreo, Robert E., to Stowe-Woodward, Inc. Device for determining finger-hole positions in a bowling ball. 3,296,706, 1–10–67, Cl. 33—174.
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Moshe, Hadari. Hydraulically operated tools. 3,296,796, 1–10–67, Cl. 60—52.
Moskovitz, Milton A. Self-locking and adjustable screw device. 3,297,049, 1–10–67, Cl. 137—540.
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Motorola, Inc.: *See*—
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Mountanos, Demetrios K. Apparatus for deriving useful energy from sea waves. 3,297,300, 1–10–67, Cl. 253—8.
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Schweitzer, Eugen. 3,296,888.
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Bailey, John M., Jr., and Moy. 3,297,987.
Moyer, Golden A., and J. T. Cabbage, to Phillips Petroleum Co. Gas oil reflux controller. 3,297,566, 1–10–67, Cl. 208—355.
Moyer, Hallard C., to Sinclair Research, Inc. Coating and laminating compositions consisting of blend of paraffin, isoparaffin and microcrystalline waxes with ethylene-vinyl acetate copolymer. 3,297,610, 1–10–67, Cl. 260—28.5.
Mueller, Arthur C.: *See*—
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Mueller Co.: *See*—
Mueller, Frank H., and Smith. 3,296,861.
Smith, John J., and Luckenbill. 3,296,860.
Mueller, Frank H., and J. J. Smith, to Mueller Co. By-pass type meter setting. 3,296,861, 1–10–67, Cl. 73—201.
Mueller, Herbert, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of metal-free phthalocyanines. 3,297,712, 1–10–67, Cl. 260—314.5.
Mueller, James H., and C. M. Pascale, to Thiokol Chemical Corp. Time delay initiator. 3,296,969, 1–10–67, Cl. 102—82.
Muhlbauer, Herbert G., and M. Lichtenwalter, to Jefferson Chemical Co., Inc. Combination process for producing piperazine and N-aminoethylpiperazine. 3,297,700, 1–10–67, Cl. 260—268.
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Munger, Fay E., and J. L. McCloskey, to Jeffrey Galion Mfg. Co. Pan conveyor. 3,297,146, 1–10–67, Cl. 198—204.
Murdoch, Colin D., to S. May. Automobile safety device. 3,297,361, 1–10–67, Cl. 297—379.
Murphy, Alfred M., C. M. Filak, and T. P. Long, to Reynolds Metals Co. Method and apparatus for extruding tubular members from solid billets or the like. 3,296,848, 1–10–67, Cl. 72—265.
Murphy, Eugene F., to Sonotone Corp. Battery dispenser-charger devices. 3,297,932, 1–10–67, Cl. 320—2.
Murphy, Raymond E. Pilot light burner. 3,297,074, 1–10–67, Cl. 158—115.
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Nathanson, Stanley E. Pneumoencephlographic apparatus with means for supporting an anesthetized patient in a seated position. 3,297,871, 1–10–67, Cl. 250—50.
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Nielsen, Floyd B., to United States of America, Air Force. Laser initiated rocket type igniter. 3,296,795, 1–10–67, Cl. 60—39.82.
Nielsen, Helmar T., and K. A. Hansen, to Daufoss ved ing. M Clausen. Packed stem valves. 3,297,054, 1–10–67, Cl. 137—637.4.
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Nossen, Edward J., to Radio Corp. of America. Analog to digital converter. 3,298,019, 1–10–67, Cl. 340—347.
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Pahl, John G. and E. F. Switch arm bending and punching machine. 3,296,849, 1–10–67, Cl. 72—294.
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Petrie, James A., and T. Steele, to Rolls-Royce Ltd. Bladed rotor for use in a fluid flow machine. 3,297,301, 1–10–67, Cl. 253—39.15.

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Pfleuger, Richard, to Badische Anilin & Soda-Fabrik Aktiengesellschaft. Process for the continuous production of rods or other sections from thermoplastics. 3,297,808, 1–10–67, Cl. 264—176.

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Philippsen, Hans, and T. Muller, to Goetzewerke Friedrich Goetze Aktiengesellschaft. Method of and apparatus for honing piston rings. 3,296,747, 1–10–67, Cl. 51—73.

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Phillips, Donald D., to Shell Oil Co. Alpha-(chloromethylene) benzyl phosphate. 3,297,798, 1–10–67, Cl. 260—957.

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Phoenix Electronics Components, Inc.: *See*—
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Picard, Pierre, and I. Bokshorn, to Societe Anonyme CO France. Oil switch having anti-flash device for restricting arc type discharges upon switch openings. 3,297,848, 1–10–67, Cl. 200—150.

Pickett, Llewellyn E., and J. A. Collett, to Palleon Electronics Ltd. Flushing actuator for a toilet bowl tank. 3,296,631, 1–10–67, Cl. 4—249.

Picklesimer, Lewellyn G., and T. F. Saunders. Polyethers of triazine and polyhydric aromatic compounds. 3,297,639, 1–10–67, Cl. 260—61.

Piroutek, Miroslav J., to AEL Development and Research Division, Inc. High speed system for spacing and timing the delivery of moving articles. 3,297,135, 1–10–67, Cl. 198—34.

Pitt, Margaret E. A.: *See*—
McGee, Joseph S., Miron, and Pitt. 3,296,753.

Pittman, Robert B., to Industrial Electronics Hardware Corp. Receptacle for integrated circuit module. 3,297,974, 1–10–67, Cl. 339—17.

Pitzer, Edgar C., to United States of America, United States Atomic Energy Commission. Neutral metal cleaning compositions containing hydrazine and a polycarboxylamino acid. 3,297,580, 1–10–67, Cl. 252—142.

Pizzarello, Roy A., A. F. Schneid, and J. J. De Lucia, to Interchemical Corp. Aziridinyl azo pigments. 3,297,677, 1–10–67, Cl. 260—152.

Plant, William J.: *See*—
Fekete, Frank, Keenan, and Plant. 3,297,745.

Plass, Reinhold: *See*—
Haarer, Erich, and Plass. 3,297,762.

Plastic Contact Lens Co., The: *See*—
Wesley, Newton K. 3,297,396.

Plastic Textile Accessories Ltd.: *See*—
Mercer, Frank B. 3,297,509.

Pletts, John W., to The Marconi Co. Ltd. Signal information storing systems. 3,297,991, 1–10–67, Cl. 340—172.5.

Plummer, Dexter R., to Rank Precision Industries Ltd. trading as The Rank Organization Rank Taylor Hobson Division. Control devices. 3,296,883, 1–10–67, Cl. 74—472.

Plykon Corp., The: *See*—
Elder, George H., Jr. 3,296,669.

Plymale, Charles E., to Owens-Illinois Glass Co. Plastic bottle finish. 3,297,185, 1–10–67, Cl. 215—43.

Pneumatic Applications Co., The: *See*—
Elmore, Duane R. 3,297,274.

Pneumatic Scale Corp., Ltd.: *See*—
Sterling, Walter S. 3,297,133.

Pneumo Dynamics Corp.: *See*—
Heints, Richard P. 3,297,261.

Poeschl, Rudolf and W. Tensile band. 3,297,514, 1–10–67, Cl. 161—76.

Poeschl, Wilhelm: *See*—
Poeschl, Rudolf and W. 3,297,514.

Pohlemann, Heins: *See*—
Dickhaeuser, Heiner, Pohlemann, Stummeyer, Adolphi, and Winderl. 3,297,520.

Polaroid Corp.: *See*—
Green, Milton, and Moore. 3,297,441.

Polistina, Rocco A.: *See*—
Schmitt, Edward E., and Polistina. 3,297,033.

Poljak, David G., J. I. Egorov, and N. A. Shereshev, to Moscowsky Zavod Maloltrashnykh Avtomobilei. System for control of automatic electromagnetic automobile clutch. 3,297,892, 1–10–67, Cl. 310—95.

Pollock, Warren N.: *See*—
Buff, Fred, French, and Pollock. 3,296,658.

Polster, Harry D., to The Perkin-Elmer Corp. Alignment autocollimator. 3,296,921, 1–10–67, Cl. 88—14.

Poly-Scientific Corp.: *See*—
Wendell, George E. 3,297,973.

Pomeroy, Chester M., and J. W. Way, to E. I. du Pont de Nemours and Co. Fuel cell. 3,297,487, 1–10–67, Cl. 136—86.

Pool, Stuart D., H. G. Meitl, and J. F. Reynolds, to International Harvester Co. Static fruit conveyor. 3,297,125, 1–10–67, Cl. 198—1.

Poole, John W.: *See*—
Pratt, Chapin A., and Poole. 3,297,899.

Pope, Gary L., to F. M. Anthony Co. Sleeved coupling for electrical cables. 3,297,975, 1–10–67, Cl. 339—60.

Portanova, Albert J. Grommet placing tool. 3,296,899, 1–10–67, Cl. 81—3.

Porter, David H.: *See*—
Kuhnes, Val D., and Porter. 3,297,321.

Porter, James M.: *See*—
Novak, Robert P., and Porter. 3,296,823.

Porter, Laurence W.: *See*—
Gilman, Warren B., Goff, Porter, and Freeman. 3,297,472.

Possis Machine Corp.: *See*—
Bluem, Gary R. 3,297,229.

Potter, George H.: *See*—
Snedeker, Robert H., Potter, Whitworth, and Zutty. 3,297,784.

Potts, Michael C.: *See*—
Cannon, Dennis H., Hollis, and Potts. 3,297,140.

Powell, George W.: *See*—
Bowling, Joseph E., Jr., and Powell. 3,296,746.

Powers Regulator Co., The: *See*—
Thorburn, David H. 3,297,044.

Powers, William R., to Scott Paper Co. Method and apparatus for forming a composite hollow cylinder of foamed plastic. 3,297,802, 1–10–67, Cl. 264—47.

Prager, George J., to Beloit Eastern Corp. Wrapper feed for roll wrapper. 3,296,906, 1–10–67, Cl. 83—175.

Pratt, Chapin A., and J. W. Poole, to Dynamics Corp. Electric arc torches having a variably constricting element in the arc passageway. 3,297,899, 1–10–67, Cl. 313—231.

Presley, Wayne E.: *See*—
Smith, John C., Miles, Levine, and Presley. 3,297,796.

Prestwood, Franklin H., to United States of America, Air Force. Safety system for armament training and testing. 3,298,023, 1–10–67, Cl. 343—6.5.

Price, Arthur: *See*—
Wing, James C., and Price. 3,297,452.

Prince, Donald H.: *See*—
Harrison, Geoffrey G., and Prince. 3,297,561.

Prince Jidosha Kogyo Kabushiki-Kaisha: *See*—
Mizuno, Yukio, and Tanaka. 3,297,057.

Prislan, Georges, to Societe dite: Glaces de Boussois. Drawing chamber for the continuous manufacturing of sheet glass. 3,297,423, 1–10–67, Cl. 65—204.

Procter & Gamble Co., The: *See*—
Baker, Joseph S., and Lindeman. 3,297,449.

Proctor, Dale D.: *See*—
Cofer, Daniel B., Ward, and Proctor. 3,296,682.

Proctor, Sidney E., to Austin Hoy and Co. Ltd. Coal cutter picks and pick boxes therefor. 3,297,365, 1–10–67, Cl. 299—92.

Protection, Inc.: *See*—
Gough, Edward W. 3,296,819.

Prutton, Daniel H. Form-rolling machine. 3,296,845, 1–10–67, Cl. 72—100.

Pryce, Vaughn K. Detachable handles. 3,297,349, 1–10–67, Cl. 294—2.

Pryor, Joseph E., to Athens Plow Co. Wheeled tandem disc harrow. 3,297,097, 1–10–67, Cl. 172—595.

Ptacek, James F.: *See*—
Andrews, Boley A., Gore, and Ptacek. 3,297,373.

Ptasienski, Mitchell P.: *See*—
Maynard, Earl, and Ptasienski. 3,297,601.

Pueschner, Robert J., and H. A. Walters, to The Dow Chemical Co. Styrene-acrylate-unsaturated acid copolymer pigmented paper coatings. 3,297,614, 1–10–67, Cl. 260—29.6.

Pullman Inc.: *See*—
Bergstrand, Ralph B. 3,296,981.

Pungitore, Vincent F. Aerosol device. 3,297,209, 1–10–67, Cl. 222—132.

Purex Corp.: *See*—
Goldsmith, Henry A. 3,297,581.

Purex Corp., Ltd.: *See*—
Jackson, Clark E., and Thornbury. 3,296,777.
Newman, Kenneth W. 3,297,481.

Purolator Prodnets, Inc.: *See*—
Mouwen, Herman C. 3,297,162.

Putnam, Richard V.: *See*—
Ingham, Robert M., Jr., Klein, and Putnam. 3,296,664.

Putschky, Ernst: *See*—
Eckerle, Otto, Weinzierl, and Putschky. 3,297,236.

Quammen, Milton L.: *See*—
Cassidy, Patrick J., and Quammen. 3,297,218.

Quast, Ray G., to ACF Industries, Inc. Valve servicing machine. 3,296,687, 1–10–67, Cl. 29—213.

Quinlan, Frank B., to United States of America, Atomic Energy Commission. Cold-working lubrication. 3,296,844, 1–10–67, Cl. 72—42.

Quinn, Halsey P., to Tung-Sol Electric Inc. Capacitive discharge ignition circuit using a gate controlled semiconductor switch. 3,297,911, 1–10–67, Cl. 315—214.

Quinn, Thomas M.: *See*—
Barkis, Edward, and Quinn. 3,297,477.

Quittner, Leonard. Fireplace canopies. 3,297,018, 1–10–67, Cl. 126—142.

Radek, John R., to Ready Metal Mfg. Co. Rug display rack. 3,297,165, 1–10–67, Cl. 211—46.

Radek, John R., to Ready Metal Mfg. Co. Merchandise display cabinet. 3,297,374, 1–10–67, Cl. 312—108.

Radford, David L., to McGraw-Edison Co. Apparatus and method for high temperature curing of fabrics. 3,297,216, 1–10–67, Cl. 223—73.

Radio Corp. of America: *See*—
Bailey, John M., Jr., and Moy. 3,297,987.
Nossen, Edward J. 3,298,019.

Radiochemistry, Inc.: *See*—
Lewis, James E., and Graves. 3,297,897.

Rainbird, Herbert A.: *See*—
Smith, John P., Carswell, Samuelson, and Rainbird. 3,297,329.

Raley, Garland E., to Ethyl Corp. Annular die. 3,296,662, 1–10–67, Cl. 18—14.

Ralston Purina Co.: *See*—
Hale, Douglas, Lanz, and James. 3,297,731.

Rambosek, George M., to Minnesota Mining and Mfg. Co. water dispersible glycidyl ether of poly(bisphenol A) ether of polyethylene glycol. 3,297,519, 1–10–67, Cl. 162—164.

Ramey, Lyle M.: *See*—
Campbell, Robert D., Sawyer, Ruff, Kirk, Ramey, and Worrell. 3,297,926.

Ramsden, Hugh E.: *See*—
Leebrick, John R., and Ramsden. 3,297,771.

Rank-Bush Murphy Ltd.: *See*—
Baldwin, John L. E., and Parkyn. 3,297,884.

Rank Organization, The, Rank Taylor Hobson Division: *See*—
Plummer, Dexter R. 3,296,883.

Rank Precision Industries Ltd.: *See*—
Plummer, Dexter R. 3,296,883.

Ransom, Donald J., E. Simon, and M. Levine, to Lockheed Aircraft Corp. Control of hydrogen embrittlement. 3,297,416, 1–10–67, Cl. 29—193.

Rapata, George M., to Illinois Tool Works Inc. Contact assembly for switching operations. 3,297,849, 1–10–67, Cl. 200—166.

Rarey, Kenneth W., J. B. Kennedy, Jr., and J. G. Buck, to Continental Can Co., Inc. Electrostatic screen printing of particles made of highly insulating materials. 3,296,963, 1–10–67, Cl. 101—114.

Rau, Eric, R. Phillips, and J. P. Hamilton, to FMC Corp. Phosphate gel compositions. 3,297,460, 1–10–67, Cl. 106—177.

Rauland Corp., The: *See*—
Fiore, Joseph P. 3,296,850.
Kraner, James L. 3,297,854.

Rausch, Karl W., Jr.: *See*—
Curtiss, John N., Forsvall, and Rausch. 3,297,759.

Rawson, Emanuel, to Grand Sheet Metal Products Co. Corner construction for metal cabinets. 3,296,991, 1–10–67, Cl. 113—116.

Raybestos-Manhattan, Inc.: *See*—
Grosner, George J., and Huda. 3,297,622.

Raychem Corp.: *See*—
Wetmore, Judson D. 3,297,819.

Ready Metal Mfg. Co.: *See*—
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Radek, John R. 3,297,374.

Rear, Melvin K., to The Cleveland Trencher Co. Excavating machine. 3,296,718, 1–10–67, Cl. 37—91.

Rear, Melvin K.: *See*—
Penote, Vincent S., and Rear. 3,296,719.

Reardon, Richard F., to Control Data Corp. Strobed binary code comparator having an interrogation circuit which includes selectively biased diode pairs. 3,297,986, 1–10–67, Cl. 340—146.2.

Record, Lennis E.: *See*—
Bradley, Kenneth B., and Record. 3,297,766.

Reed, Stanley F., and F. P. Andrews. Book protector. 3,297,341, 1–10–67. Cl. 281—34.

Reeves, Alec H., and D. R. Barber, to International Standard Electric Corp. Coding equipment. 3,298,016, 1–10–67, Cl. 340—347.

Reeves, Blanche E. Display cabinet. 3,297,375, 1–10–67, Cl. 312—117.

Regenstein, Joseph, Jr., and J. C. Tapas, to Velsicol Chemical Corp. Laminated products and a process for the production thereof. 3,297,515, 1–10–67, Cl. 161—250.

Regenstein, Joseph, Jr., and J. C. Tapas, to Velsicol Chemical Corp. Coating slurry containing aggregate and aqueous emulsion of petroleum-derived hydrocarbon resin. 3,297,617, 1–10–67, Cl. 260—29.6.

Regenstein, Joseph, Jr., and J. C. Tapas, to Velsicol Chemical Corp. Paving composition comprising aggregate and a binder containing a petroleum resin, a hydrocarbon rubber, and an oil. 3,297,625, 1–10–67, Cl. 260—33.6.

Reges, Gunter: *See*—
Alt, Ernst, Buchner, Reges, and Morak. 3,297,008.

Reich, Manfred, to Chemische Werke Huls Aktiengesellschaft. Process for the removal of acetylenic hydrocarbons from hydrocarbon mixtures containing diolefines. 3,297,776, 1–10–67, Cl. 260—681.5.

Reif, Robert B., N. S. Cassel, and D. Smith, to Interchemical Corp. Method of electrostatic powder gravure printing and apparatus therefor. 3,296,965, 1–10–67, Cl. 101—170.

Reiffer, Johannes: *See*—
Schmitt, Karl, Disteldorf, and Reiffer. 3,297,736.
Schmitt, Karl, Disteldorf, and Reiffer. 3,297,740.
Schmitt, Karl, Disteldorf, and Reiffer. 3,297,741.

Reinhart, Theodore J., Jr. Laminated rotary structures. 3,296,886, 1–10–67, Cl. 74—572.

Reiser, Ralph R., to Hewlett-Packard Co. Counting direction control circuit for use with reversible counters. 3,297,859, 1–10–67, Cl. 235—92.

Reisinger, Robert R.: *See*—
Domich, Eugene G., and Reisinger. 3,298,009.
Smith, Byron D., and Reisinger. 3,298,008.

Reisman, Arnold, to International Business Machines Corp. Process for epitaxial growth of semiconductor single crystals. 3,297,501, 1–10–67, Cl. 148—175.

Reiterer, Ferdinand, to Whitin Machine Works. Arrangement for guiding the web at the discharge side of the doffer in carding machines. 3,296,663, 1–10–67, Cl. 19—106.

Reliever, Inc.: *See*—
Bemb, Richard F. 3,297,286.

Remy, Hermann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-soluble phthalocyanine dyestuffs and process for preparing them. 3,297,711, 1–10–67, Cl. 260—314.5.

Rendessy, William L., 15% to Phoenix Electronics Components, Inc. Trailer hitch. 3,297,340, 1–10–67, Cl. 280—432.

Renfroe, J. C., & Sons, Inc.: *See*—
Renfroe, Raymond L. 3,297,354.

Renfroe, Raymond L., to J. C. Renfroe & Sons, Inc. Lifting clamp. 3,297,354, 1–10–67, Cl. 294—104.

Rerat, Carlos F., to Kawecki Chemical Co. Etching of tantalum and columbium foils. 3,297,556, 1–10–67, Cl. 204—141.

Research Corp.: *See*—
Toby, Sidney, and Charles. 3,297,590.

Revell, Alan E., to American Air Filter Co., Inc. Filter media loading arrangement for roll-type air filter. 3,296,780, 1–10–67, Cl. 55—354.

Revukas, Anthony J.: *See*—
Hain, George M., and Revukas. 3,297,573.

Rexall Drug and Chemical Co.: *See*—
Swett, James B. 3,297,192.
Swett, James B. 3,297,208.

Reynolds, John B., J. T. Minor, and L. E. Craig, to Nipak, Inc. Cyanuric acid production. 3,297,697, 1–10–67, Cl. 260—240.

Reynolds, John F.: *See*—
Pool, Stuart D., Meitl, and Reynolds. 3,297,125.

Reynolds Metals Co.: *See*—
Cvacho, Daniel S., Wilson, and Payne. 3,296,945.
Gettig, Allen D. 3,296,847.
Howell, Raymond P., Swenck, and Hamm. 3,297,075.
Murphy, Alfred M., Filak, and Long. 3,296,848.

Rezabek, Vernon E., and S. D. Katz, to International Harvester Co. Hydraulic circuit for actuating elevator lift and ejection mechanism for self loading scraper. 3,296,716, 1–10–67, Cl. 37—8.

Rhodes, Harold E. Portable, folding barbecue grill. 3,297,016, 1–10–67, Cl. 126—25.

Rhyner, Paul: *See*—
Artz, Klaus, and Rhyner. 3,297,744.

Riccar Sewing Machine Co., Ltd.: *See*—
Kawaguchi, Shinichi. 3,296,987.

Rice Barton Corp.: *See*—
Krikorian, Garo. 3,296,710.

Rice, Doris M.: *See*—
Edwards, Gayle D., Rice, and Soulen. 3,297,597.

Richard, Paul P., and J. L. J. Pellat-Finet. System for proportionally supercharging power units. 3,296,791, 1–10–67, Cl. 60—19.

Richardson, Jacob E. Wire splicer. 3,297,060, 1–10–67, Cl. 140—122.

Richfield Oil Corp.: *See*—
Natland, Manley L. 3,297,537.

Richter, Sidney B., to Velsico Chemical Corp. Synergistic herbicidal composition and method. 3,297,427, 1–10–67, Cl. 71—2.6.

Richter, Sidney B., and A. A. Levin, to Velsicol Chemical Corp. Herbicidal composition and method. 3,297,428, 1–10–67, Cl. 71—2.6.

Richtzenhain, Hermann, P. Janssen, and W. Vogt, to Dynamit Nobel Aktiengesellschaft. Process of producing high molecular weight polyoxymethylene. 3,297,642, 1–10–67, Cl. 260—67.

Rider, Harry N., to Automatic Sprinkler Corp. of America. Indicator post valve. 3,297,050, 1–10–67, Cl. 137—556.

Ridgway, John A., Jr., to Standard Oil Co. Cellarized metal and method of producing same. 3,297,431, 1–10–67, Cl. 75—20.

Rieger, Jack. Portable collapsible combination crib and play pen. 3,296,633, 1–10–67, Cl. 5—99.

Riek, Marvin R., to Union Carbide Corp. Threaded joint for arc carbons. 3,297,903, 1–10–67, Cl. 313—355.

Ring, Wallace H.: *See*—
Czorny, Vasil P., Ring, Pannier, and Sorenson. 3,297,030.

Rioran, Hugh E., and T. A. Cohen, to General Precision Inc. Apparatus for two signal polarity detecting using alternate quarter-cycle sampling to eliminate quadrature error. 3,297,947, 1–10–67, Cl. 324—83.

Ripple, William M., to American Radiator & Standard Sanitary Corp. Orientation device. 3,297,132, 1–10–67, Cl. 198—33.

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Brown, Gaylord W., Rise, and Johnson. 3,297,504.

Ritson, Daniel D.: *See*—
Frazier, Charles, and Ritson. 3,297,615.

Robbiano, Francesco. Projector for motor vehicles. 3,297,863, 1–10–67, Cl. 240—11.4.

Robbins, Michael M.: *See*—
Brinkman, David C., and Robbins. 3,297,629.

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Roberts, William E.: *See*—
Artaud, Maurice H., Laurent, Roberts. 3,297,379.

Robertson, H. H., Co.: *See*—
Fekete, Frank, Keenan, and Plant. 3,297,745.

Robinson, Fred M. Massaging machine having suction means and oppositely rotating rollers. 3,297,024, 1–10–67, Cl. 128—38.

Robinson, Harold B. Pick-up truck with removable living quarters. 3,297,355, 1–10–67, Cl. 296—23.

Robinson, Peter M., to Dunlop Rubber Co. Belting. 3,297,513, 1–10–67, Cl. 161—57.

Robinson, Phillip E., to Eaton Mfg. Co. Rotary valve. 3,297,052, 1–10–67, Cl. 137—625.21.

Rocha, John G., to United States of America, Army. Clutch-lock for externally powered firearm feeding mechanism. 3,296,930, 1–10–67, Cl. 89—33.

Rochat, Rene: *See*—
Danemark, Marius, Rochat, Steiner, and Zwerner. 3,297,380.

Rochling'sche Eisen-und Stahlwerke G.m.b.H.: *See*—
Sperner, Franz. 3,297,430.

Rochlitz, Anneliese: *See*—
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Rochlitz, Franz: *See*—
Herbst, Willy, and Rochlitz. 3,297,663.

Rochlitz, Fritz W.: *See*—
Herbst, Willy, and Rochlitz. 3,297,663.

Rochte, Jerry E., to Beckman Instruments, Inc. Logic control system. 3,296,941, 1–10–67, Cl. 91—404.

Rockwell, Robert G.: *See*—
Fiedor, Adolph J., and Rockwell. 3,297,905.

Rockwell-Standard Corp.: *See*—
Cumming, James C. 3,297,368.

Rogers, John B., and J. K. Nagel. Combination door bumper and holder. 3,297,347, 1–10–67, Cl. 292—74.

Rohe, Frederick W., and C. S. Phelan, said Phelan assor., to said Rohe. Mechanical sandwich panel spacer with improved torque resistant anchorage. 3,296,765, 1–10–67, Cl. 52—617.

Rohm & Haas Co.: *See*—
Kirschner, Frederick G. 3,297,649.

Rohrs, Marvin K., and D. Aronson, to Worthington Corp. Multiple pump system for absorption apparatus. 3,296,824, 1–10–67, Cl. 62—487.

Rolls-Royce Ltd.: *See*—
Davies, David O., Anley, and Briggs. 3,296,793.
Keenan, John G., and Palfreyman. 3,296,804.
Petrie, James A., and Steel. 3,297,301.
Wilde, Geoffrey L., and Taylor. 3,297,279.

Roos, Gunther: *See*—
Hermann, Hans D., Fischer, and Roos. 3,297,627.
Keenan, John G., Palfreyman, and Holliday. 3,296,800.

Rose, Boyd W., and H. J. Mumma, to FMC Corp. Egg washer. 3,296,641, 1–10–67, Cl. 15—3.13.

Rose, John B.: *See*—
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Rosenberger, Harold E.: *See*—
Benford, James R., and Rosenberger. 3,297,391.

Roser, George H. Pressurized washing and rinsing apparatus. 3,297,257, 1–10–67, Cl. 239—310.

Rosman, Irwin E., to United States of America, Air Force. Apparatus with a thermally actuated seal. 3,296,943, 1–10–67, Cl. 92—111.

Rothweiler, Richard C.: *See*—
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Rotting, Walter, and O. Liethen, to Ruhrchemie Aktiengesellschaft. Process for the manufacture of solid porous articles from polyolefins. 3,297,805, 1–10–67, Cl. 264—126.

Rowton, Richard L.: *See*—
Brader, Walter H., Jr., and Rowton. 3,297,701.

Roy, Robert E.: *See*—
Davis, James M., Jr., and Roy. 3,297,917.

Rubens, Louis C., to The Dow Chemical Co. Copolymers of unsaturated dicarboxylic acid anhydrides and vinyl compounds. 3,297,787, 1–10–67, Cl. 260—859.

Ruch, David E., to General Motors Corp. Converter circuit employing pulse width modulation. 3,297,936, 1–10–67, Cl. 321—18.

Ruff, Donald O.: *See*—
Campbell, Robert D., Sawyer, Ruff, Kirk, Ramey, and Worrell. 3,297,926.

Rüggen, Werner: *See*—
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Rotting, Walter, and Liethen. 3,297,805.

Ruiseh, Roger D., to American Machine & Foundry Co. Program timer. 3,297,838, 1–10–67, Cl. 200—38.

Rumple, Wiburn L., to Ampex Corp. Speed control system. 3,297,266, 1–10–67, Cl. 242—55.12.

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Rusch, Willy, to Willy Rusch, KG. Device for mouth to mouth respiration. 3,297,027, 1–10–67, Cl. 128—29.

Rusch, Willy, KG: *See*—
Rusch, Willy. 3,297,027.

Rusnak, Thomas L. Head rest. 3,296,634, 1–10–67, Cl. 5—338.

Russell Hosiery Mills, Inc.: *See*—
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Rustad, Stanley C.: *See*—
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Rutledge, Thomas F., to Atlas Chemical Industries, Inc. Alkylation of ureas. 3,297,752, 1–10–67, Cl. 260—553.

Rutledge, Thomas F., to Atlas Chemical Industries, Inc. Separation of alkyl ureas. 3,297,753, 1–10–67, Cl. 260—553.

Ryan, John W.: *See*—
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Rypkema, Jouke N.: *See*—
Dias, Fleming, and Rypkema. 3,297,826.

S.D.S. Data Systems: *See*—
Hall, Lawrence G., and Howden. 3,297,894.

Sachnik, Norman H., to Texsteam Corp. Throttling valves and erosion-resistant seats therefor. 3,297,298, 1–10–67, Cl. 251—316.

Sachs, Hans W. Gripper drying tunnels. 3,296,712, 1–10–67, Cl. 34—155.

Sackett, A. J., & Sons Co.: *See*—
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Sackett, Walter J., Sr., to A. J. Sackett & Sons Co. Self-cleaning pulley system. 3,297,147, 1–10–67, Cl. 198—230.

Sagerer, Johann, to F. X. Meiller Fabrzeug- und Maschinenfabrik K.G. Grab shovel for tractive vehicles. 3,296,720, 1–10–67, Cl. 37—117.5.

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Sakomura, Teshio, M. Kikuchi, and H. Shimizu, to Toyo Soda Mfg. Co., Ltd., and Japan Organo Co., Ltd. Process for refining phosphoric acid preparations. 3,297,401, 1–10–67, Cl. 23—165.

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Scheppe, William N., to The Nuarc Co. Light source for photographic printer. 3,297,912, 1–10–67, Cl. 315—238.

Scherhag, Bernhard, S. Hartung, A. Hausweiler, and H. Grünewald, to Farbenfabriken Bayer Aktiengesellschaft. Process for the preparation of cyanopyridines. 3,297,587, 1–10–67, Cl. 252—432.

Schirtsinger, Joseph F., to Air Logistics Corp. Structure for transport of materials through water. 3,296,994, 1–10–67, Cl. 114—74.

Schleicher, Hans-Walter, to Metallgesellschaft Aktiengesellschaft. Apparatus for alkali chloride electrolysis having a corrosion resistant anode 3,297,560, 1–10–67, Cl. 204—250.

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Schmidbauer, Hans, and C. Claas. Engraving machine. 3,296,700, 1–10–67, Cl. 33—24.

Schmidt, Paul, M. Wilhelm, K. Eichenberge, and E. Sury, to Ciba Corp. 5-nitrothiazolyl-dioxo-diazacycloalkanes. 3,297,699, 1–10–67, Cl. 260—256.5.

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Schmitt, Edward E., and R. A. Polistina, to American Cyanamid Co. Surgical sutures. 3,297,033, 1–10–67, Cl. 128—335.5.

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Schmitt, Karl, J. Disteldorf, and J. Reiffer, to Scholven-Chemie Aktiengesellschaft. Process for the production of trimethyl adipic acid dinitrile. 3,297,740, 1–10–67, Cl. 260—465.2.

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Macura, Karl, Schmitz, and Siggel. 3,297,468.

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Schott, Arthur K., to Houdaille Industries Inc. Workpiece positioning mechanism for a machine tool. 3,297,173, 1–10–67, Cl. 214—1.3.

Schott, Claus, H. D. Hermann, and E. Fischer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Product and process for the manufacture of linear terpolymers of acetals. 3,297,647, 1–10–67, Cl. 260—73.

Schreder, Wolfgang, to International Telephone and Telegraph Corp. Fast-acting current level shifter. 3,297,881, 1–10–67, Cl. 307—88.5.

Schroeder, Heinrich F.: *See*—
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Schroeder, Herbert M., and J. A. Pawlak, to Textron Inc. Water dispersible condensation products of a drying oil glyceride ester and a polyethylene glycol. 3,297,605, 1–10–67, Cl. 260—22.

Schulmeyer, Raumond M., and C. D. Gardener, to United States of America, Air Force. Stable transistorized variable delay generator. 3,297,883, 1–10–67, Cl. 307—88.5.

Schulz, Johann G. D.: *See*—
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Schumacher, Richard T., to Varian Associates. High frequency electron discharge device of the traveling wave type having an interconnected cell slow wave circuit with improved slot coupling. 3,297,906, 1–10–67, Cl. 315—3.5.

Schumann, Helmut F., to Auergesellschaft G.m.b.H. Filter. 3,296,781, 1–10–67, Cl. 55—497.

Schwaar, Edouard, to Societe Suisse Pour l'Industrie Horlogere S.A. Hands setting mechanism for an electric timepiece. 3,296,790, 1–10–67, Cl. 58—85.5.

Schwartzman, Gilbert. Sealed applicator. 3,296,649, 1–10–67, Cl. 15—566.

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Schweitzer, Edmund O., Jr. High voltage circuit breaker control system employing wave transmission modulated by current flow in circuit with time delay for operating circuit breaker. 3,297,913, 1–10–67, Cl. 317—36.

Schweitzer, Eugen, to Movit Industrieanstalt. Apparatus for step-driving. 3,296,888, 1–10–67, Cl. 74—574.

Schwedt, Robert C., and E. A. Atwill, to Golding Wave Clip Co., Inc. Combination ski pole and ski lock. 3,297,333, 1–10–67, Cl. 280—11.37.

Schwerdtfeger, Wilbur E., to International Harvester Co. Diverter for conveyor. 3,297,145, 1–10–67, Cl. 198—185.

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Scott, Robert M., to The Dow Chemical Co. Method for hyperimmunizing hogs against hog cholera and serum product. 3,297,534, 1–10–67, Cl. 167—80.

Scragg, Ernest P. R., W. Parker, and H. W. Lee, to Ernest Scragg & Sons Ltd. Textile apparatus. 3,296,789, 1–10–67, Cl. 57—77.45.

Scragg, Ernest, & Sons Ltd.: *See*—
Scragg, Ernest P. R., Parker, and Lee. 3,296,789.

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Brown, Edward A. 3,297,686.
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Lowrie, Harman S. 3,297,694.

Sedore, Erneat C. Snow blower. 3,296,717, 1–10–67, Cl. 37—43.

Segur, Asa B. Apparatus for use in removing meat from poultry wings. 3,296,653, 1–10–67, Cl. 17—11.

Segur, Asa B. Apparatus for removing meat from poultry wings. 3,296,654, 1–10–67, Cl. 17—11.

Seidermann, Jacques, to Societe Anonyme d.b.a. Universal joint. 3,296,835, 1–10–67, Cl. 64—21.

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Self, James L. Processing of shrimp and the like. 3,296,656, 1–10–67, Cl. 17—45.

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Selnes, Norman W. Accessory bag and ski boot tree. 3,297,219, 1–10–67, Cl. 224—45.

Selwitz, Charles M., to Gulf Research & Development Co. 5-phenyl-5 lower alkyl pentane-1,2,3,4 tetracarboxylic acids and anhydrides. 3,297,723, 1–10–67, Cl. 260—347.3.

Serge Elevator Co., Inc.: *See*—
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Sewell, Cyrus G. Check writer. 3,296,959, 1–10–67, Cl. 101—80.

Shaffer, Jack T., and W. A. Eskridge, to Sperry Rand Corp. Power transmission. 3,296,893, 1–10–67, Cl. 74—750.

Shallenberg, Robert L., to K-Line Corp. High speed cut off saw. 3,296,914, 1–10–67, Cl. 83—488.

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Sherman, Irving R. Bypass core ducted fan with inner and outer peripheral bearings. 3,297,237, 1–10–67, Cl. 230—116.

Sherman, Irving R. Bypass core ducted fan with outer peripheral bearing. 3,297,238, 1–10–67, Cl. 230—116.

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Shields, Julian W., to Union Carbide Corp. Method for spreading viscous masses. 3,297,474, 1–10–67, Cl. 117—104.

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Shore, Melvin. Apparatus for cleaning windows. 3,296,645, 1–10–67, Cl. 15—220.

Shulman, Robert S. (deceased); by J. S. Biberman, administratrix, and T. Q. Ciccone, to United States of America, Navy. Remote ignition line. 3,296,968, 1–10–67, Cl. 102—27.

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Macura, Karl, Schmitz, and Siggel. 3,297,468.

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Simjian, Luther G. Method for reinforcing sewn material. 3,296,990, 1–10–67, Cl. 112—262.

Simmler, Walter, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of ethers of hydroxymethyl polymethyl siloxanes. 3,297,735, 1–10–67, Cl. 260—448.2.

Simmons, Roy P. Gutter screen attachment. 3,297,285, 1–10–67, Cl. 248—48.1.

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Skau, Evald L., R. R. Mod, and F. C. Magne, to United States of America, Agriculture. N-oleoyl-4-(3 acetoxypropyl) piperidine. 3,297,703, 1–10–67, Cl. 260—294.3.

Skufca, Francisco. Transporter truck for industrial establishments. 3,297,276, 1–10–67, Cl. 242—131.

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Slatin, Harvey L., to Timax Associates. Electrolytic production of tungsten and molybdenum. 3,297,554, 1–10–67, Cl. 204—64.

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Smith, John C., B. H. Miles, L. Levine, and W. E. Presley, to The Dow Chemical Co. Hydroxyalkyl-aminomethyl phosphonates. 3,297,796, 1–10–67, Cl. 260—928.

Smith, John F., to E. I. du Pont de Nemours and Co. Sulfur-curable compositions containing polyunsaturated compounds as curing promoters. 3,297,626, 1–10–67, Cl. 260—41.5.

Smith, John J., and L. F. Luckenbill, to Mueller Co. Simplified meter setting including rigid meter bar. 3,296,860, 1–10–67, Cl. 73—201.

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Smith, Richard A., and F. Wojnar, to H. J. Heinz Co. Method for continuous cooking and sterilization of liquids and suspensions. 3,297,448, 1–10–67, Cl. 99—211.

Smith, S., & Sons (England) Ltd.: *See*—
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Snedeker, Robert H., G. H. Potter, C. J. Whitworth, Jr., and N. L. Zutty, to Union Carbide Corp. Alpha olefin polymer modified thermoplastic polyhydroxyether compositions. 3,297,784, 1–10–67, Cl. 260—837.

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Spain, Horace H., to Esso Production Research Co. Sand consolidation with resin-forming liquids. 3,297,087, 1–10–67, Cl. 166—33.

Spain, Horace H., to Esso Production Research Co. Sand consolidation. 3,297,089, 1–10–67, Cl. 166—33.

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Tomiyama, Shinichi, H. Marumo, and M. Takai. Method of suppressing electrostatic charges in synthetic resins and fibers. 3,297,653, 1-10-67, Cl. 260—75.
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Wing, Milton S.: *See*—
Lee, Walter J., Wing, and Henderson. 3,297,612.
Winther, Arden D.: *See*—
Jensen, Gunnar B., and Winther. 3,297,157.
Wismar Packaging Corp.: *See*—
Palson, Richard C. J. 3,297,151.
Wiss, J., and Sons Co.: *See*—
Hedstrom, Lars. 3,296,697.
Wix Corp.: *See*—
Humbert, Kingsley E., Jr. 3,297,160.
Wohlmeyer, Josef. Apparatus for boring a hole in rock. 3,297,101, 1–10–67, Cl. 175—415.
Wojnar, Francis: *See*—
Smith, Richard A., and Wojnar. 3,297,448.
Wolf, Gerhard, to Kienzle Apparate G.m.b.H. Digital multiplication and division arrangement. 3,297,861, 1–10–67, Cl. 235—164.

Wolf, Jesse D., to Universal Drafting Systems, Inc. Mitering drafting machine for the development of isometric views. 3,296,701, 1–10–67, Cl. 33—77.

Wolfendale, Caleb F., to Sogenique (Electronics) Ltd. Position-sensitive apparatus. 3,297,941, 1–10–67, Cl. 323—93.

Wolz, Hermann: *See*—
Wagner, Kuno, Klinkmann, and Wolz. 3,297,644.

Wood Conversion Co.: *See*—
Cadotte, John E. 3,297,517.

Wood, Morris E., to Bronson Specialties, Inc. Spinning reel. 3,296,731, 1–10–67, Cl. 43—20.

Woodcock, Richard F., and G. A. Granitsas, to American Optical Co. Infrared image transmitting fiber devices. 3,297,388, 1–10–67, Cl. 350—1.

Woodling, George V. Compartment-carrier having reinforced handle partition junctures. 3,297,197, 1–10–67, Cl. 220—113.

Woodward, Fred E.: *See*—
Elman, Stanley H., Woodward, and Sullivan. 3,297,098.

Woolridge, Darrel M., to American Tractor Equipment Corp. Compaction, cutter, crusher unit. 3,297,096, 1–10–67, Cl. 172—464.

Worrel, Calvin J., to Ethyl Corp. Novel trinuclear phenols and compositions stabilized therewith. 3,297,575, 1–10–67, Cl. 252—52.

Worrell, William D.: *See*—
Campbell, Robert W., Sawyer, Ruff, Kirk, Ramey, and Worrell. 3,297,926.

Worsley, Michael: *See*—
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Wright, Janine. Outer garment and brassiere. 3,297,035, 1–10–67, Cl. 128—455.

Wright, Sam B., and A. D. Evans, to Eastman Kodak Co. Crystallization of fine HMX. 3,297,681, 1–10–67, Cl. 260—239.

Wright, Thomas B., to United-Carr Inc. Fastener and heat conductor installation. 3,297,916, 1–10–67, Cl. 317—100.

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Wu, Tse C., to General Electric Co. Cyclic siloxane-containing polymers. 3,297,632, 1–10–67, Cl. 260—46.5.

Wustmann, Gotz: *See*—
Leidig, Theodor, and Wustmann. 3,297,767.

Wyatt, William K., to Turbo Machine Co. Apparatus for processing a twisted bulky yarn. 3,296,786, 1–10–67, Cl. 57—34.

Wyczalek, Floyd A., to General Motors Corp. Vibration generator. 3,296,874, 1–10–67, Cl. 74—87.

Yamagiwa, Juji, to Fukuske Kabushiki Kaisha. Zigzag sewing machine. 3,296,988, 1–10–67, Cl. 112—158.

Yamamoto, Koso, to Matsushita Electric Industrial Co., Ltd. Picture projecting and sound record reproducing magazines. 3,296,925, 1–10–67, Cl. 88—28.

Yants, Robert C.: *See*—
Pannill, James K., Jr., and Yants. 3,297,506.

Yard, William J., to Australian Railway Equipment Supply Co. Proprietary Ltd., and Trak-Chief Mfg. Proprietary Ltd. Railroad sleeper extractor. 3,296,978, 1–10–67, Cl. 104—9.

Yardney International Corp.: *See*—
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Yeo, Robert H.: *See*—
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Cusic, John W., and Yonan. 3,297,689.

Young, Edwin H. P.: *See*—
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Young, James H.: *See*—
Elliott, Ralph B., and Young. 3,297,404.

Young, Robert W., and H. A. Haliett, to Sonomotive Engineers Ltd. Motor control gear. 3,297,842, 1–10–67, Cl. 200—61.86.

Young, Seth A.: *See*—
Kiley, Robert A., and Young. 3,297,870.

Youngman, Carl A., to The Atlantic Refining Co. Apparatus for separating gases from liquids. 3,296,776, 1–10–67, Cl. 55—165.

Zaander, Carl: *See*—
Milenkovic, Veljko, Johnson, and Zaander. 3,298,006.

Zaichkowsky, Andrew, to Carthage Machine Co., Inc. Cutting apparatus for chippers. 3,297,067, 1–10–67, Cl. 144—176.

Zajic, James E., and D. A. McGee, to Kerr-McGee Oil Industries, Inc. Preparation and recovery of hydrogen. 3,297,545, 1–10–67, Cl. 195—28.

Zajkowski, Walter J. Adjustable gauging device. 3,296,704, 1–10–67, Cl. 33—158.

Zaleski, Joseph D. Roof snow guard. 3,296,750, 1–10–67, Cl. 52—24.

Zang, Joseph A. Continuous mixing and developing machine. 3,296,982, 1–10–67, Cl. 107—30.

Zaslowsky, Joel A.: *See*—
Boudakian, Max M., and Zaslowsky. 3,297,556.

Zecher, Wilfried, and H. Holtschmidt. Aromatic hindered isocyanates. 3,297,726, 1–10–67, Cl. 260—295.

Zeiter, Wayne D. Silage handling apparatus. 3,297,177, 1–10–67, Cl. 214—17.

Zeller, Burton S.: *See*—
Erdman, William C., and Zeller. 3,297,114.

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Dias, Fleming, and Rypkema. 3,297,826.

Zenith SA Fabriques des Montres: *See*—
Châtelain, Oscar. 3,298,028.

Zenner, Walter J. Apparatus for fabricating door assemblies. 3,297,065, 1–10–67, Cl. 144—27.

Ziegler, George F., to Bausch & Lomb Inc. Oil immersion type microscope objective. 3,297,393, 1–10–67, Cl. 350—179.

Zimmer, Hans J., Verfahrenstechnik: *See*—
Halmi, Gabor, and Advani. 3,297,650.
Halmi, Gabor, and Advani. 3,297,651.

Zimmer, Jon W., to United States of America, Army. Carbon electrode with polytetrafluoroethylene on one side and platinum on the other side, fuel cell with same and electrodepositing method of preparing same. 3,297,482, 1–10–67, Cl. 136—86.

Zinuik, Michael A., to Atomic Power Development Associates, Inc. Fluid level measuring apparatus. 3,296,862, 1–10–67, Cl. 73—290.

Zuercher, John: *See*—
Ernest, John M., and Zuercher. 3,297,322.

Zwolski, Anthony. Electrostatic motor. 3,297,888, 1–10–67, Cl. 310—6.

CLASSIFICATION OF PATENTS

ISSUED JANUARY 10, 1967

NOTE.—First number, class; second number, subclass; third number, patent number

2– 87	3,296,626	29–473.1	3,296,693	55–337	3,296,779	73–290	3,296,862	91–266	3,296,938	117– 47	3,297,468
113	3,296,627	520	3,296,694	354	3,296,780	304	3,296,863	375	3,296,939	49	3,297,469
211	3,296,628	528	3,296,695	497	3,296,781	339	3,296,864		3,296,940	54	3,297,470
4– 19	3,296,629	30– 16	3,296,696	56– 21	3,296,782	359	3,296,865	404	3,296,941	62.1	3,297,471
	3,296,630	248	3,296,697	311	3,296,783	362	3,296,866	409	3,296,942	62.2	3,297,472
249	3,296,631	32– 28	3,296,698	57– 18	3,296,784	401	3,296,867	92–111	3,296,943	72	3,297,473
5– 13	3,296,632	33– 1	3,296,699	34	3,296,785	407	3,296,868	180	3,296,944	104	3,297,474
99	3,296,633	24	3,296,700		3,296,786	432	3,296,869	93– 80	3,296,945	106	3,297,475
338	3,296,634	77	3,296,701	58.81:	3,296,787	504	3,296,870	94– 45	3,296,946	132	3,297,476
348	3,296,635	95	3,296,702	58.83:	3,296,788	517	3,296,871	95– 1	3,296,947	138.8	3,297,477
8–115.6	3,297,399	126.7	3,296,703	77.45:	3,296,789	74– 5.34:	3,296,872	4.5	3,296,948	232	3,297,478
9–340	3,296,636	158	3,296,704	58– 85.5	3,296,790		3,296,873	11	3,296,949		3,297,479
12–115.6	3,296,637	174	3,296,705	60– 19	3,296,791	87	3,296,874	53	3,296,950	118– 2	3,296,999
13– 9	3,297,810		3,296,706	26.1	3,296,792	89.15:	3,296,875	89	3,296,951	504	3,297,000
29	3,297,811	178	3,296,707	39.08:	3,296,793	100	3,296,876	96– 29	3,297,441	119– 17	3,297,001
14– 16	3,296,638	207	3,296,708	39.47:	3,296,794	102	3,296,877	35.1	3,297,440	120– 42.04:	3,297,002
27	3,296,639	34– 82	3,296,709	39.82:	3,296,795	230.17:	3,296,878	36.2	3,297,442	45.6	3,297,003
77	3,296,640	95	3,296,710	52	3,296,796	339	3,296,879	91	3,297,443	122–406	3,297,004
15– 3.13:	3,296,641	109	3,296,711		3,296,797	424.8	3,296,880	94	3,297,444	123– 8	3,297,005
185	3,296,642	158	3,296,712	54.6	3,296,798	440	3,296,881	95	3,297,445	13	3,297,006
201	3,296,643	205	3,296,713	231	3,296,799	471	3,296,882	107	3,297,446	46	3,297,007
206	3,296,644	35– 20	3,296,714	244	3,296,800	472	3,296,883	109	3,297,447	127	3,297,008
220	3,296,645	37– 8	3,296,715	253	3,296,801		3,296,884	98–119	3,296,952	148	3,297,009
230.16:	3,296,646		3,296,716	256	3,296,802	478	3,296,885	99– 90	3,297,449	179	3,297,010
250.04:	3,296,647	43	3,296,717	259	3,296,803	572	3,296,886	100	3,297,450	198	3,297,011
323	3,296,648	91	3,296,718	269	3,296,804	574	3,296,887	116	3,297,451	124– 18	3,297,012
566	3,296,649	97	3,296,719	61– .5	3,296,805		3,296,888	135	3,297,452	30	3,297,013
16– 18	3,296,650	117.5	3,296,720	62– 3	3,296,806	606	3,296,889	146	3,297,453	125– 21	3,297,014
87.4	3,296,651	144	3,296,721	5	3,296,807	608	3,296,890	193	3,297,454	23	3,297,015
197	3,296,652		3,296,722	6	3,296,808	677	3,296,891	201	3,297,455	126– 25	3,297,016
17– 2	Re.26,136	40– 2	3,296,723	55	3,296,809	722	3,296,892	211	3,297,448		3,297,017
11	3,296,653	10	3,296,724	55.5	3,296,810	750	3,296,893	256	3,296,953	142	3,297,018
	3,296,654		3,296,725	58	3,296,811	751	3,296,894	404	3,296,954	247	3,297,019
32	3,296,655	28	3,296,726	63	3,296,812	781	3,296,895	421	3,296,955	127– 71	3,297,480
45	3,296,656	79	3,296,727	101	3,296,813	75– 1	3,297,429	439	3,296,956	128– 2	3,297,020
	3,296,657	42– 1	3,296,728	112	3,296,814	12	3,297,430	444	3,296,957		3,297,021
18– 4	3,296,658	59	3,296,729	118	3,296,815	20	3,297,431	101– 31	3,296,958	6	3,297,022
12	3,296,659	43– 17.2	3,296,730	210	3,296,816	41	3,297,432	80	3,296,959	33	3,297,023
	3,296,660	20	3,296,731	225	3,296,817	109	3,297,433	93	3,296,960	38	3,297,024
14	3,296,661	23	3,296,732	259	3,296,818	124	3,297,434		3,296,961	66	3,297,025
	3,296,662	42.06:	3,296,733		3,296,819	134	3,297,436	95	3,296,962	133	3,297,026
19–106	3,296,663	42.09:	3,296,734	262	3,296,820	142	3,297,435	114	3,296,963	145.5	3,297,027
288	3,296,664	44– 6	3,297,419	320	3,296,821	157.5	3,297,437	147	3,296,964	157	3,297,028
22– 75	3,296,665	34	3,297,420	341	3,296,822	174	3,297,438	170	3,296,965	188	3,297,029
196	3,296,666	52	3,297,421	476	3,296,823	208	3,297,439	269	3,296,966	214.2	3,297,030
23– 2	3,297,400	46– 11	3,296,735	487	3,296,824	77– 25	3,296,896	102– 6	3,296,967	264	3,297,031
165	3,297,401	118	3,296,736	514	3,296,825	58	3,296,897	27	3,296,968	268	3,297,032
182	3,297,402	157	3,296,737	64– 1	3,296,826		3,296,898	82	3,296,969	335.5	3,297,033
204	3,297,403	47– 2	3,296,738	11	3,296,827	81– 3	3,296,899	103– 38	3,296,970	390	3,297,034
207	3,297,404		3,296,739		3,296,828	72	3,296,900	102	3,296,971	455	3,297,035
209.1	3,297,405	49– 87	3,296,740	15	3,296,829	82– 2	3,296,901	103	3,296,972	505	3,297,036
	3,297,406	131	3,296,741		3,296,832	20	3,296,902	113	3,296,973	130– 27	3,297,037
	3,297,407	319	3,296,742	17	3,296,830	34	3,296,903	126	3,296,974	131– 10.5	3,297,038
212	3,297,408	382	3,296,743		3,296,831	36	3,296,904		3,296,977	17	3,297,039
225	3,297,409	409	3,296,744	21	3,296,833	83–140	3,296,905	143	3,296,975	84	3,297,040
269	3,297,410	501	3,296,745		3,296,834	175	3,296,906	173	3,296,976	266	3,297,041
284	3,297,411	51– 9	3,296,746		3,296,835	215	3,296,907	104– 9	3,296,978	132– 40	3,297,042
285	3,297,412	73	3,296,747	65– 54	3,297,422	303	3,296,908	172	3,296,979	134– 22	3,297,481
301	3,297,413	180	3,296,748	204	3,297,423	305	3,296,909	105–248	3,296,980	60	3,297,043
345	3,297,414	52– 11	3,296,749	66–138	3,296,836	328	3,296,910	366	3,296,981	135– 4	Re.26,140
24– 68	3,296,667	24	3,296,750	140	3,296,837	408	3,296,911	106– 3	3,297,456	136– 86	3,297,482
72.5	3,296,668	38	3,296,751	149	3,296,838	461	3,296,912	59	3,297,457		3,297,483
121	3,296,669	70	3,296,752	68– 24	3,296,839	467	3,296,913	66	3,297,458		3,297,484
131	3,296,670	73	3,296,753	134	3,296,840	488	3,296,914	161	3,297,459		3,297,485
156	3,296,671	80	3,296,754	150	3,296,841	564	3,296,915	177	3,297,460		3,297,486
193	3,296,672	81	3,296,755	70– 82	3,296,842	84– 1	3,296,916	107– 30	3,296,982		3,297,487
265	3,296,673	93	3,296,756	71– 2.5	3,297,424	1.01:	3,297,812	108– 90	3,296,983	107	3,297,488
274	3,296,674	111	3,296,757	2.6	3,297,425	1.16:	3,297,813	110– 1	3,296,984	120	3,297,489
25– 41	3,296,675	227	3,296,758		3,297,426	174	3,296,917	111– 7	3,296,985	122	3,297,490
26– 51.3	3,296,676	236	3,296,759		3,297,427	383	Re.26,139	112– 2	3,296,986	204	3,297,491
28– 1	3,296,677	277	3,296,760		3,297,428	457	3,296,918	158	3,296,987	208	3,297,492
	3,296,678	278	3,296,761	72– 28	3,296,843	85– 73	3,296,919		3,296,988	137– 82	3,297,044
	3,296,679	395	3,296,762	42	3,296,844	88– 1	3,296,920	256	3,296,989	85	3,297,045
	3,296,680	475	3,296,763	100	3,296,845	14	3,296,921	262	3,296,990	119	3,297,046
72	3,296,681	534	Re.26,141	200	3,296,846		3,296,922	113–116	3,296,991	220	3,297,047
29– 33	3,296,682	584	3,296,764	254	3,296,847	24	3,296,923	114– 61	3,296,992	512	3,297,048
96	3,296,683	617	3,296,765	265	3,296,848	26	3,296,924	69	3,296,993	540	3,297,049
155.5	3,296,684	625	3,296,766	294	3,296,849	28	3,296,925	74	3,296,994	556	3,297,050
	3,296,685	634	3,296,767	351	3,296,850		3,296,926	235	3,296,995	625.17:	3,297,051
157.3	3,296,686	53– 74	3,296,768	383	3,296,851	89– 1.701	3,296,928		3,296,996	625.21:	3,297,052
191.6	3,297,415	76	3,296,769	398	3,296,852	1.8	3,296,927	115– .5	3,296,997	625.46:	3,297,053
195	3,297,416	182	3,296,770	453	3,296,853	1.806	3,296,929	116– 28	3,296,998	637.4	3,297,054
199	3,297,417	373	3,296,771	73–118	3,296,854	33	3,296,930	117– 4	3,297,461	138–122	3,297,055
	3,297,418	380	3,296,772	141	3,296,855	47	3,296,931	33.3	3,297,462	145	3,297,056
213	3,296,687	55– 27	3,296,773	150	3,296,856	90– 15	3,296,932	34	3,297,463	139–291	3,297,057
272	3,296,688	92	3,296,774	159	3,296,857		3,296,933		3,297,464	371	3,297,058
407	3,296,689	98	3,296,775	170	3,296,858	26	3,296,934	38	3,297,465	140– 3	3,297,059
426	3,296,690	165	3,296,776	201	3,296,859	91– 41	3,296,935	44	Re.26,142	122	3,297,060
434	3,296,691	216	3,296,777		3,296,860	49	3,296,936	47	3,297,466	141– 9	3,297,061
472.9	3,296,692	296	3,296,778		3,296,861	205	3,296,937		3,297,467	130	3,297,062

141–383	3,297,064	179– 2	3,297,824	206– 59	3,297,155	234– 5	3,297,245	254–138	3,297,303	260–239.55:	3,297,686
144– 27	3,297,065	15	3,297,825	208– 11	3,297,562	235– 60	3,297,246	259– 2	3,297,304		3,297,687
110	3,297,066		3,297,826	59	3,297,563	70	3,297,247	4	3,297,305		3,297,688
176	3,297,067	18	3,297,827	111	3,297,564	92	3,297,859	8	3,297,306	240	3,297,689
318	3,297,063	27	3,297,828	217	3,297,565	98	3,297,248	97	3,297,307	242	3,297,690
146–117	3,297,068		3,297,829	355	3,297,566	114	3,297,249		3,297,308		3,297,691
148– 6.15:	3,297,493	100.4	3,297,830	209– 73	3,297,157	151.35:	3,297,860	115	3,297,309	243	3,297,692
	3,297,494	100.41:	3,297,831	172.5	3,297,158	164	3,297,861	260– 2	3,297,591		3,297,693
6.17:	3,297,495	107	3,297,832	319	3,297,159	236– 1	3,297,250		3,297,592	247.2	3,297,694
11.5	3,297,496	175.31:	3,297,833	210– 14	3,297,567	45	3,297,251	2.2	3,297,593	247.5	3,297,695
	3,297,498	180– 7	3,297,102	51	3,297,568	46	3,297,252	2.5	3,297,594		3,297,696
32.5	3,297,497	77	3,297,103	94	3,297,160	238–349	3,297,253		3,297,595	248	3,297,697
156	3,297,499	82.1	3,297,104	114	3,297,161	239– 63	3,297,254		3,297,596	256.4	3,297,698
174	3,297,500	182– 46	3,297,105	132	3,297,162	102	3,297,255		3,297,597	256.5	3,297,699
175	3,297,501	184– 7.	3,297,106	331	3,297,163	265.19:	3,297,256	3	3,297,598	268	3,297,700
149– 6	3,297,502	186– 1	3,297,107	211– 42	3,297,164	310	3,297,257		3,297,599		3,297,701
39	3,297,503		3,297,108	46	3,297,165	361	3,297,258	4	3,297,600	279	3,297,702
150– 35	3,297,069	187– 29	3,297,109	60	3,297,166	397.5	3,297,259	17	3,297,602	294.3	3,297,703
47	3,297,070		3,297,110	69	3,297,167	533	3,297,260	17.3	3,297,603		3,297,704
151– 22	3,297,071	188– 32	3,297,111	89	3,297,168	534	3,297,261	17.4	3,297,604		3,297,705
41.73:	3,297,072	75	3,297,112	94	3,297,169	240– 6.4	3,297,862		3,297,605	295	3,297,706
152–362	3,297,073	78	3,297,113	212– 14	3,297,170	11.4	3,297,863	22	3,297,606		3,297,707
156– 73	3,297,504	90	3,297,114	214– 1	3,297,171	25	3,297,864		3,297,607	306.7	3,297,708
89	3,297,505	170	3,297,115		3,297,172	147	3,297,865	23.7	3,297,608	308	3,297,709
152	3,297,506	196	3,297,116	1.3	3,297,173	241– 90	3,297,262		3,297,609	309	3,297,710
240	3,297,507	234	3,297,117	6	3,297,174	281	3,297,263	28.5	3,297,610	314.5	3,297,711
249	3,297,508	190– 1	3,297,118	10.5	3,297,175	242– 35.6	3,297,264		3,297,611	326.12:	3,297,712
271	3,297,509	8	3,297,119	16.4	3,297,176	55.12:	3,297,266	29.4	3,297,612	326.3	3,297,717
357	3,297,510	58	3,297,120	17	3,297,177	55.13:	3,297,267	29.6	3,297,613		3,297,713
420	3,297,511	192– 26	3,297,121	38	3,297,178	55.14:	3,297,268		3,297,614		3,297,714
433	3,297,512	111	3,297,122	64.2	3,297,179	55.2	3,297,265		3,297,615		3,297,715
158–115	3,297,074	194– 97	3,297,123	83.3	3,297,180	55.53:	3,297,269		3,297,616		3,297,716
160– 19	3,297,075	195– 28	3,297,545	152	3,297,181	56.9	3,297,270		3,297,617	327	3,297,718
161	3,297,076	36	3,297,546	317	3,297,182	58	3,297,271		3,297,618	333	3,297,719
231	3,297,077	66	3,297,547	771	3,297,183	74.2	3,297,272		3,297,619	343.2	3,297,720
331	3,297,078		3,297,548	215– 41	3,297,184	75.45:	3,297,274		3,297,620	343.6	3,297,721
161– 57	3,297,513	196– 99	3,297,549	43	3,297,185	75.5	3,297,273		3,297,621	346.4	3,297,727
76	3,297,514	197– 19	3,297,124		3,297,187	84.45:	3,297,275			346.8	3,297,722
184	3,297,518	198– 1	3,297,125	100	3,297,186	131	3,297,276	29.7	3,297,622	347.3	3,297,723
250	3,297,515		3,297,126	219– 78	3,297,854	243– 34	3,297,277		3,297,623	348	3,297,724
162– 3	3,297,516	16	3,297,127	85	3,297,855	244– 23	3,297,278	33.6	3,297,624		3,297,725
145	3,297,517	22	3,297,128	233	3,297,856	54	3,297,279		3,297,625	395	3,297,726
164	3,297,519	32	3,297,129	369	3,297,857	105	3,297,280	41.5	3,297,626	397.2	3,297,728
165– 27	3,297,079	33	3,297,130	519	3,297,858	136	3,297,281	45.75:	3,297,629	397.4	3,297,729
77	3,297,080		3,297,131	220– 2.1	3,297,188	153	3,297,282		3,297,630	404.5	3,297,730
159	3,297,081		3,297,132	15	3,297,189	246– 63	3,297,866	45.8	3,297,627	412.8	3,297,731
170	3,297,082		3,297,133	21	3,297,190	122	3,297,867	45.85:	3,297,631	429	3,297,733
166– 1	3,297,083		3,297,134		3,297,191	125	3,297,868	45.9	3,297,628	429.7	3,297,732
9	3,297,084	34	3,297,135	31	3,297,192	248– 4	3,297,283	46.5	3,297,632	429.9	3,297,734
	3,297,085	41	3,297,136	60	3,297,193	18	3,297,284	47	3,297,633	448.2	3,297,735
33	3,297,086	76	3,297,137	72	3,297,194	48.1	3,297,285		3,297,634	462	3,297,737
	3,297,087	84	3,297,138	94	3,297,195	74	3,297,286		3,297,635	463	3,297,738
	3,297,088	85	3,297,139	102	3,297,196	101	3,297,287	49	3,297,636	465	3,297,739
	3,297,089	88	3,297,140	113	3,297,197	108	3,297,288	53	3,297,637	465.2	3,297,736
38	3,297,090	94	3,297,141	221– 5	3,297,198	152	3,297,289	59	3,297,638		3,297,740
84	3,297,091	117	3,297,142	93	3,297,199	223	3,297,290	61	3,297,639		3,297,741
207	3,297,092	128	3,297,143	175	3,297,200	278	3,297,291	63	3,297,640	465.3	3,297,742
167– 22	3,297,520	181	3,297,144	221	3,297,201	354	3,297,292	66	3,297,641	465.5	3,297,743
30	3,297,521	185	3,297,145	232	3,297,202	361	3,297,293	67	3,297,642	465.6	3,297,744
33	3,297,522	204	3,297,146	222– 44	3,297,203	249– 9	3,297,294		3,297,643	471	3,297,745
38	3,297,523	230	3,297,147	55	3,297,204	66	3,297,295		3,297,644	473	3,297,746
42	3,297,524	233	3,297,148	102	3,297,205	197	3,297,296		3,297,645	501	3,297,747
58	3,297,525	199– 18	3,297,149	105	3,297,206	250– 49.5	3,297,869		3,297,646	505	3,297,748
65	3,297,526	200– 5	3,297,834	107	3,297,207		3,297,870	73	3,297,647	551	3,297,749
	3,297,527	11	3,297,835	111	3,297,208	50	3,297,871		3,297,648		3,297,750
	3,297,528		3,297,836	132	3,297,209	65	3,297,872	75	3,297,649		3,297,751
	3,297,529	30	3,297,837	146	3,297,210	71	3,297,873		3,297,650	553	3,297,752
	3,297,530	38	3,297,838	479	3,297,211	106	3,297,874		3,297,651		3,297,753
68	3,297,531	50	3,297,839	521	3,297,212	199	3,297,875		3,297,652	561	3,297,754
74	3,297,532	60	3,297,840	542	3,297,213		3,297,876		3,297,653	566	3,297,755
78	3,297,533	61.58:	3,297,841	548	3,297,214	211	3,297,877	78	3,297,654	567.6	3,297,756
80	3,297,534	61.86:	3,297,842	223– 28	3,297,215	213	3,297,878		3,297,655	569	3,297,757
82	3,297,535	67	3,297,156	73	3,297,216	237	3,297,879		3,297,656	570	3,297,758
90	3,297,536	81.9	3,297,843	224– 5	3,297,217	251– 30	3,297,297	78.5	3,297,657		3,297,759
169– 4	3,297,093	84	3,297,844	26	3,297,218	316	3,297,298		3,297,658	573	3,297,760
170–160.11:	3,297,094	138	3,297,845	45	3,297,219	327	3,297,299	79.3	3,297,659	579	3,297,761
172– 39	3,297,095	142	3,297,846		3,297,220	252– 8.5	3,297,569	79.5	3,297,660	583	3,297,762
464	3,297,096		3,297,847	226– 97	3,297,221	8.8	3,297,570		3,297,661	590	3,297,763
595	3,297,097	150	3,297,848		3,297,222	12	3,297,571		3,297,662	592	3,297,764
174– 41	3,297,814	166	3,297,849	183	3,297,223	29	3,297,572	80	3,297,663	607	3,297,765
48	3,297,815		3,297,850	227– 10	3,297,224	32.5	3,297,573	80.3	3,297,664		3,297,766
87	3,297,816		3,297,851	229– 3.5	3,297,225	46.7	3,297,574		3,297,665	614	3,297,767
	3,297,817	168	3,297,852	14	3,297,226	52	3,297,575	80.5	3,297,666	632	3,297,768
106	3,297,818		3,297,853	17	3,297,227	62.5	3,297,576	82.1	3,297,667	644	3,297,769
127	3,297,819	201– 27	3,297,550	27	3,297,228	70	3,297,577	85.1	3,297,668	650	3,297,770
163	3,297,820	204– 1	3,297,551	37	3,297,229	99	3,297,578	88.7	3,297,670	651	3,297,771
175– 69	3,297,098	37	3,297,552	38	3,297,230	121	3,297,579	91.1	3,297,671	658	3,297,772
96	3,297,099	64	3,297,553	53	3,297,231	142	3,297,580	93.1	3,297,672	673.5	3,297,773
195	3,297,100		3,297,554		3,297,232	153	3,297,581	93.3	3,297,673	678	3,297,774
415	3,297,101	141	3,297,555		3,297,233	188.3	3,297,582	93.7	3,297,674	680	3,297,775
176– 22	3,297,537	158	3,297,556	62.5	3,297,234	363.5	3,297,583	94.9	3,297,675	681.5	3,297,776
27	3,297,538	181	3,297,557	85	3,297,235	400	3,297,584	124	3,297,676	683.15:	3,297,779
41	3,297,539	195	3,297,558	230– 17	3,297,236	408	3,297,585	152	3,297,677	683.2	3,297,778
44	3,297,540	242	3,297,559	116	3,297,237	431	3,297,586	163	3,297,678	683.3	3,297,777
50	3,297,541	250	3,297,560		3,297,238	432	3,297,587	206	3,297,679	747	3,297,780
59	3,297,542	286	3,297,561	128	3,297,239		3,297,588	239	3,297,680	830	3,297,781
67	3,297,543	206– 45.14:	3,297,150	145	3,297,240	439	3,297,589		3,297,681	835	3,297,782
83	3,297,544	45.23:	3,297,151	160	3,297,241	447	3,297,590		3,297,682	836	3,297,783
178– 7.5	3,297,821	47	3,297,152	232– 1	3,297,242	253– 8	3,297,300		3,297,683	837	3,297,784
7.82:	3,297,823	52	3,297,153	233– 26	3,297,243	39.15:	3,297,301	239.3	3,297,684	850	3,297,785
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260–859	3,297,787	277– 30	3,297,331	307– 88.5	3,297,884	315–155	3,297,910	331– 52	3,297,954	340–172.5	3,297,998
863	3,297,788	280– 11.13:	3,297,332		3,297,885	214	3,297,911	55	3,297,955		3,297,999
864	3,297,789	11.37:	3,297,333	112	3,297,886	238	3,297,912	94.5	3,297,957		3,298,000
874	3,297,790	12	3,297,334	308– 73	3,297,371	317– 36	3,297,913		3,297,958		3,298,001
876	3,297,791	16	3,297,335	310– 4	3,297,887	98	3,297,914	113	3,297,959	174	3,298,002
	3,297,792	43.21:	3,297,336	6	3,297,888	99	3,297,915		3,297,960		3,298,003
879	3,297,793	91	3,297,337	8.1	3,297,889	100	3,297,916	116	3,297,961		3,298,004
880	3,297,669	104.5	3,297,338	11	3,297,890	148.5	3,297,917	117	3,297,962		3,298,005
885	3,297,794		3,297,339	46	3,297,891	230	3,297,918		3,297,963	174.1	3,298,006
897	3,297,795	432	3,297,340	95	3,297,892	231	3,297,919	177	3,297,956		3,298,007
928	3,297,796	281– 34	3,297,341	246	3,297,893	234	3,297,920	332– 19	3,297,964		3,298,008
933	3,297,797	282– 11.5	3,297,342	312– 45	3,297,372		3,297,921		3,297,965		3,298,009
957	3,297,798	285– 37	3,297,343	97	3,297,373	236	3,297,922	60	3,297,966	221	3,298,010
263– 19	3,297,310	141	3,297,344	108	3,297,374	318– 18	3,297,923	333– 10	3,297,967	248	3,298,011
264– 14	3,297,799	287–189.36:	3,297,345	117	3,297,375		3,297,924	72	3,297,968	272	3,298,012
34	3,297,800	289– 18	3,297,346	219	3,297,376	28	3,297,925	79	3,297,969	324	3,298,013
44	3,297,801	292– 74	3,297,347		3,297,377	138	3,297,926	336–205	3,297,970	347	3,298,014
47	3,297,802	113	3,297,348	223	3,297,378		3,297,927	338– 5	3,297,971		3,298,015
84	3,297,803	294– 2	3,297,349		3,297,379		3,297,928	86	3,297,972		3,298,016
118	3,297,804	33	3,297,350	228	3,297,380	162	3,297,929	339– 5	3,297,973		3,298,017
126	3,297,805		3,297,351	234.1	3,297,381	269	3,297,930	17	3,297,974		3,298,018
129	3,297,806	65.5	3,297,352	238	3,297,382	380	3,297,931	60	3,297,975		3,298,019
171	3,297,807	81	3,297,353	257	3,297,383	320– 2	3,297,932	75	3,297,976	392	3,298,020
176	3,297,808	104	3,297,354	263	3,297,384		3,297,933	126	3,297,977	343– 6	3,298,021
238	3,297,809	296– 23	3,297,355	270	3,297,385	321– 2	3,297,934	177	3,297,978		3,298,022
266– 34	3,297,311	95	3,297,356		3,297,386	18	3,297,935		3,297,979	6.5	3,298,023
267– 34	3,297,312	117	3,297,357	290	3,297,387		3,297,936	340– 3	3,297,980	12	3,298,024
269– 71	3,297,313	297–118	3,297,358	313– 7	RE.26,138	60	3,297,937	15.5	3,297,981	17.1	3,298,025
243	3,297,314	162	3,297,359	63	3,297,894	323– 43.5	3,297,938	17	3,297,982	106	3,298,026
270– 86	3,297,315	300	3,297,360	77	3,297,895		3,297,939	18	3,297,983	117	3,298,027
271– 27	3,297,316	379	3,297,361	93	3,297,896	51	3,297,940	58	3,297,984	346– 33	3,298,028
64	3,297,317	299– 5	3,297,362		3,297,897	93	3,297,941	69	3,297,985	49	3,298,029
68	3,297,318	34	3,297,363	174	3,297,898	324– 27	3,297,942	146.2	3,297,986	75	3,298,030
272– 36	3,297,319	36	3,297,364	231	3,297,899	31	3,297,943		3,297,987	350– 1	3,297,388
57	3,297,320	92	3,297,365	295	3,297,900	33	3,297,944	146.3	3,297,988	10	3,297,389
273– 26	3,297,321	301– 5	RE.26,137	346	3,297,901	61	3,297,945		3,297,989	55	3,297,390
43	3,297,322	302– 17	3,297,366	348	3,297,902	70	3,297,948		3,297,993	91	3,297,391
86	3,297,323	36	3,297,369	355	3,297,903	82	3,297,946	163	3,297,990	178	3,297,392
101	3,297,324	42	3,297,367	314– 63	3,297,904	83	3,297,947	172.5	3,297,991	179	3,297,393
	3,297,325	59	3,297,370	315– 3.5	3,297,905	140	3,297,949		3,297,992	215	3,297,394
105.2	3,297,326	303– 22	3,297,368		3,297,906	328– 37	3,297,950		3,297,994	285	3,297,395
274– 10	3,297,327	307– 58	3,297,880	5.39:	3,297,907		3,297,951		3,297,995	351–160	3,297,396
15	3,297,328	88.5	3,297,881	5.47:	3,297,908	61	3,297,952		3,297,996	352–172	3,297,397
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D 9– 2	206,650		206,660		206,670		206,680		206,690	D81– 10	206,700
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7	206,652	D26– 1	206,662		206,672	DS6– 1	206,682		206,692	D87– 5	206,702
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6	206,654	5	206,664	D44– 1	206,674	DS7– 1	206,684		206,694		206,704
	206,655	14	206,665	D45– 4	206,675		206,685	D62– 4	206,695		206,705
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

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Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 354,287 (CHEVRON), Standard Oil Company of California, Cleaning solvents for general, household, professional, and commercial cleaning; **Reg. No. 364,683**, same, Lubricating oils, flushing oils; **Reg. No. 406,343** (CHEVRON DESIGN), same, Polishes for furniture, floors, and automobiles; **Reg. No. 416,133** (CHEVRON), same, Motor fuels for use in internal combustion engines; **Reg. No. 416,135** (CHEVRON AND DESIGN), same; **Reg. No. 431,051**, same, Parasiticides—namely, insecticides, germicides and fungicides, disinfectants, etc.; **Reg. No. 431,637**, same, Cleaning compounds for general, household, professional, and commercial cleaning; **Reg. No. 434,976**, same, Pocket lighter fluids; **Reg. No. 521,796** (CHEVRON), same, Insecticides; **Reg. No. 521,956** (CHEVRON AND DESIGN), same, Chemicals used to prevent the freezing of moisture in storage tanks and the fuel system of heating units and internal combustion engines; **Reg. No. 533,796** (CHEVRON SHIELD SERVICE STATION IDENTIFICATION SIGN), same, Services rendered at applicant's automotive service stations generally, etc.; **Reg. No. 575,408** (CHEVRON AND DESIGN), same, Publications issued and distributed from time to time; **Reg. No. 582,314**, same, Starting fuel for compression-ignited engines containing volatile organic compounds which are readily ignitable by compression at low temperatures; **Reg. No. 630,368**, same, Manually actuated devices for injecting volatile and auto-igniting chemical compounds into internal combustion engines to facilitate the starting of such engines at low temperatures; **Reg. No. 630,745**, same, Kerosene, fuel oil, furnace oil, diesel fuel, distillate useful as a solvent and for heating, and internal combustion engine fuel purposes, etc.; **Reg. No. 635,744**, same, Petroleum base oils used as solvents or diluents for wood preservative and mosquito and other pest-control formulations; **Reg. No. 640,311** (CHEVRON DESIGN), same, Garden hose sprayers for applications of insecticides, fungicides, germicides, etc.; **Reg. No. 640,519**, same, Small boxes for holding invoices, metal containers for chemical compounds of high volatility, and fiberboard cartons; **Reg. No. 640,522**, same, Floor waxes; **Reg. No. 640,575**, same, Asphalt mastic roof surfacing or underlayment compositions; **Reg. No. 640,661**, same, Embossing and printing machines and auxiliary devices for introducing a priming fuel, other than the normal running engine fuel, into internal combustion engines; **Reg. No. 640,883**, same, Chemicals and chemical intermediates for general use in the industrial arts, etc.; **Reg. No. 640,933**, same, Chemical preparation for veterinary use as an antiseptic and germicide; **Reg. No. 641,234**, same, Chemicals used to prevent the freezing of moisture in storage tanks and fuel systems of heating units and internal combustion engines, etc.; **Reg. No. 641,243**, same, Fertilizers, soil conditioners, soil amendments, soil correctives, etc.; **Reg. No. 641,258**, same, Bituminous construction and surfacing composition—namely, asphalt, asphaltic binders, asphaltic emulsions, etc.; **Reg. No. 641,270**, same, Petroleum waxes and petrolatums, kerosenes, fuel and heating oils, etc.; **Reg. No. 641,295**, same, Waterproofing and protective

CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	27,353
Date of oldest new application	Dec. 3, 1965
Date of oldest amended application (filing date)	Feb. 3, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	12-3-65	8-24-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-12-66	2-3-64
Renewals (All Classes)	11-8-66	----------
Sec. 12(c) Publications (All Classes)	11-10-66	----------

Applications filed during the month of November—2,166

Registrations Issued ---------- 402—No. 821,775 to No. 822,176
Renewals Issued ---------- 51

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coatings for concrete, steel, wood, plaster, etc.; **Reg. No. 641,421**, same, Periodic publications distributed from time to time; **Reg. No. 641,536**, same, Cleaning compounds for general, household, professional, industrial, and commercial cleaning; **Reg. No. 642,226**, same, Chemical preparations and compounds used in the manufacture of lubricating oil additives, chemical preparations and compounds for use as additives in burner fuel, gasoline, etc.; **Reg. No. 642,451**, same, Detergents; **Reg. No. 642,817**, same, Rust-preventing and filter coating petroleum compounds applied as films on metal and other surfaces; **Reg. No. 643,520**, same, Veterinary preparation for use in the control of screw worms and fleece worms; **Reg. No. 656,269**, same, Small boxes for holding invoices, metal containers for chemical compounds of high volatility, and fiberboard cartons; **Reg. No. 656,274**, same, Floor waxes; **Reg. No. 656,275**, same, Adhesive binders used in the manufacture of paper and fiberboard products; **Reg. No. 656,296**, same, Chemicals and chemical intermediates for general use in the industrial arts, etc.; **Reg. No. 656,298**, same, Fertilizers, soil conditioners, soil amendments, soil correctives, etc.; **Reg. No. 656,306**, same, Asphalt mastic roof surfacing or underlayment compositions, bituminous construction and surfacing compositions, etc.; **Reg. No. 656,314**, same, Petroleum waxes and petrolatums, kerosenes, fuel and heating oils, etc.; **Reg. No. 656,326**, same, Waterproofing and protective coatings for concrete, steel, wood, plaster, etc.; **Reg. No. 656,357**, same, Veterinary preparation for use in the control of screw worms and fleece worms, chemical preparation for veterinary use as an antiseptic and germicide; **Reg. No. 656,418**, same, Garden hose sprayers for applications of insecticides, fungicides, germicides, etc,; **Reg. No. 656,423**, same, Instrument for measuring odor in gas; **Reg. No. 656,477**, same, Periodic publications distributed from time to time; **Reg. No. 656,592**, same, Cleaning compounds for general, household, professional, industrial, and commercial cleaning and detergents; **Reg. No. 656,650** (CHEVRON), same, Floor waxes; **Reg. No. 658,429**, same, Ink oils for use as carrying agent for pigment and wax used in the manufacture of inks and carbon paper; **Reg. No. 658,620**, same, Cleaning compounds for general, household, professional, industrial and commercial cleaning, flushing oils and detergents; **Reg. No. 658,682**, same, Petroleum waxes, white oils, and petrolatums, motor fuels, lubricating oils and greases, etc.; **Reg. No. 659,689**, same, Insecticides, herbicides, fungicides, sanitizers, wood preservatives, etc.; **Reg. No. 660,010**, same, Rust preventing and filter coating petroleum compounds applied as films on metal and other surfaces, wax for coating containers for dairy products, etc.; **Reg. No. 661,819**, same, Bituminous construction and surfacing composition—namely, asphalt, mastic roof surfacing and underlayment compositions; **Reg. No. 687,775**, same, Asphaltic construction and surfacing compositions; **Reg. No. 695,148**, same, Fertilizers; **Reg. No. 701,175**, same, Chemicals and chemical intermediates for general use in the industrial arts and in agriculture, etc.; **Reg. No. 727,348**, same, Musical programs designed especially for schools rendered through the medium of radio and the providing of brochures explanatory of the musical programs; **Reg. No. 736,207**, same, Synthetic resins; **Reg. No. 766,900**, same, Chemical intermediates for general use in the industrial arts and in agriculture, etc.; **Reg. No. 769,388**, same, Plastic pipe; **Reg. No. 769,390** (CHEVRON DESIGN), same; **Reg. No. 769,391**, same; **Reg. No. 783,859**, same, Lighter fluid; **Reg. No. 784,286** (CHEVRON), same, Thinners and solvents for paints, lacquers, enamels, and varnishes; **Reg. No. 802,600**, same, Patching putty; **Reg. No. 802,761** (CHEVRON DESIGN), same, Fuel filters and replacement cartridges therefor, filed Mar. 23, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–503–CC, *Standard Oil Company of California* v. *Chevron Home Builders, Inc.* Judgment in favor of plaintiff; defendant enjoined Aug. 31, 1966.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 206,704. Devine's Remedies, Inc., Chicago, Ill. Filed Nov. 23, 1964.

DEVINE'S

Class 18—Medicines and Pharmaceutical Preparations

For Ointment for the Treatment of Tired Feet, Preparations for the Treatment of Corns, Nasal Inhalant, Rubbing Oil, Preparations for Protection Against Athlete's Foot, Preparations for Treatment of Callouses; Medicated Body Rubbing Cream, Medicated Skin Cream, and Nasal Inhalant Jelly.

First use June 1, 1930.

Class 44—Dental, Medical, and Surgical Appliances

For Corn Plasters, Moleskin, Abrading Erasers for Use on Corns and Callouses; and Nasal Inhaler for Vaporizing Inhalants.

First use 1932.

Class 52—Detergents and Soaps

For Foot and Body Bath Soap Preparation and Soap.

First use 1940.

SN 221,918. Fabri-Kal Corporation, Kalamazoo, Mich. Filed June 24, 1965.

PET SET

Class 2—Receptacles

For Feeding Dishes.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Animal Equipment—Namely, Beds.

First use May 17, 1965.

SN 230,669. Linificio & Canapificio Nazionale S.p.A., Milan, Italy. Filed Oct. 20, 1965.

L&CN

Priority claimed under Sec. 44(d) on Italian application filed Sept. 3, 1965; Reg. No. 173,692, dated Dec. 6, 1965.

Class 7—Cordage

For Rope and String.

Class 43—Thread and Yarn

For Yarn and Threads.

SN 234,340. Walter Fleisher Company, Inc., Los Angeles, Calif. Filed Dec. 10, 1965.

SELANDIA

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Stainless Steel Hollow Ware—Namely, Trays, Bowls, and Cups.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stainless Steel Flatware—Namely, Knives, Forks, and Spoons.

First use December 1963.

SN 239,688. Super Valu Stores, Inc., Hopkins, Minn. Filed Feb. 28, 1966.

SUPER VALU

Owner of Reg. Nos. 802,267 and 797,910.

Class 14—Metals and Metal Castings and Forgings

For Aluminum Foil.

Class 37—Paper and Stationery

For Paper Towels; Bathroom Tissue.

Class 52—Detergents and Soaps

For Liquid Detergents.

First use Jan. 20, 1966.

SN 240,566. Jacques Heim, Societe Anonyme, Paris, France. Filed Mar. 10, 1966.

SHANDOAH

Owner of French Reg. No. 534,968, dated July 9, 1965 (Seine); Natl. Inst. No. 256,218.

Class 51—Cosmetics and Toilet Preparations

For Perfumes, Rouge, Face Powders, Toilet Waters, Cologne Waters, Beauty Creams and Lotions, Lipsticks, Nail Lacquers, Hair Lotions, Lotions for the Beard, Bath Salts, Talcum Powder, and Dentifrices.

Class 52—Detergents and Soaps

For Toilet Soaps, and Hair Shampoos.

SN 244,286. Premier Malt Products, Inc., Milwaukee, Wis. Filed Apr. 26, 1966.

PREMIERZYME

Class 6—Chemicals and Chemical Compositions

For Enzymes for Industrial Purposes.

Class 46—Foods and Ingredients of Foods

For Enzymes Used as Ingredients in Food Manufacturing.

First use Jan. 25, 1966.

SN 248,386. On the Left Bank, Inc., Potomac, Md. Filed June 20, 1966.

WHIMSIQUE

Class 22—Games, Toys, and Sporting Goods

For Children's Toys—Namely, Play Blocks, Dolls, Doll Houses, Toy Clocks, Train Sets, Animal Toys, Toy Chests, Balls, Musical Pull Toys, Swings, Pool Tables, Tricycles, Wagons, Push-Pull Toys, Model and Building Sets, Soldiers, Music Boxes, Road Car Racing Sets; and Equipment and Apparatus Sold as a Unit for Playing Parlor Games.

Class 39—Clothing

For Women's and Men's Dress and Casual Wear—Namely, Shirts, Slacks, Trousers, Socks, Coats, Jackets, Footwear, Beachwear, Neckwear, Swimwear, Sweaters, Vests, Rainwear and Headwear.

First use Apr. 7, 1966.

SN 248,649. Viobin Corporation, Monticello, Ill. Filed June 22, 1966.

VIOBIN

Owner of Reg. No. 321,225.

Class 18—Medicines and Pharmaceutical Preparations

For Enzyme Preparations for Use as Debridement Agents, and the Treatment of Diseases, and for Preventing the Formation of Tartar.

First use March 1950.

Class 46—Foods and Ingredients of Foods

For Nutritional Supplements—Namely, Cereal Grain Germ Products, Meat Flour, and Fish Flour.

First use Dec. 2, 1933.

SN 252,051. John H. Breck, Inc., Springfield, Mass. Filed Aug. 10, 1966.

DANCING HAIR

The word "Hair" is disclaimed apart from the mark as shown.

Class 51—Cosmetics and Toilet Preparations

For Hair Conditioner and Wave Set.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use July 27, 1966.

SN 256,179. The Procter & Gamble Company, Cincinnati, Ohio. Filed Oct. 11, 1966.

REJOICE

Class 51—Cosmetics and Toilet Preparations

For Skin Cleansing Cream.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use May 24, 1966.

SN 256,496. San Francisco Fish Farms, Inc., Menlo Park, Calif. Filed Oct. 17, 1966.



The drawing is lined for the color red, but no claim is made to color.

Class 1—Raw or Partly Prepared Materials

For Salt Mix for Holding and Hatching Brine Shrimp.

First use Oct. 7, 1966.

Class 46—Foods and Ingredients of Foods

For Tropical Fish Food—Namely, Live and Frosen Brine Shrimp and Brine Shrimp Eggs.

First use Apr. 20, 1966.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 212,862. Colored Lawn Stone, Inc., Phoenix, Ariz. Filed Feb. 26, 1965.

LEISURE LAWNS

Applicant disclaims the word "Lawns" apart from the mark as shown.

For Gravel, Stone, Sand, or Combinations Thereof, Graded by Size, Coated With Colored Plastic or Paint, Which by Reason of Their Size and Color Are Susceptible To Use as a Surface Cover for Yards in Residential, Industrial, and Commercial Areas.

First use Nov. 1, 1964.

SN 220,639. Cook Paint & Varnish Company, Kansas City, Mo. Filed June 8, 1965.

COOK'S

CORO-FOAM

For Synthetic Raw Materials Used in a Two-Component Liquid Chemical System Which, When Mixed During Application, Produces a Rigid Polyurethane Foam.

First use Apr. 23, 1965.

SN 225,424. Imperial Chemical Industries Limited, Millbank, London, England. Filed Aug. 10, 1965.

DALTOFLEX

Owner of British Reg. No. 791,005, dated May 15, 1959.

For Polyurethane Rubbers.

SN 234,554. Fields Plastics & Chemicals, Inc., New York, N.Y. Filed Dec. 14, 1965.

MIRALON

Owner of Reg. No. 766,446.

For Flexible Plastic Sheeting or Film (in the General Nature of an Improvement, Equivalent or Substitute for Leather of Varying Colors and Designs) Both Unsupported or Unlaminated, and Also Supported or Laminated to Backings of Cloth or Fabric Made With Woven or Unwoven, Natural or Synthetic Fiber, or a Combination of Both, or With Saturated Paper, for Use as Outerwear, Rainproof and Rain-Resistant Garments, Upholstery for Furniture, Automobiles, and Other Vehicles; Wall Covering, and Pocketbooks and Handbags; on Luggage, Table Tops, Footwear, and for Other Industrial Uses.

First use Jan. 1, 1956.

SN 242,720. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Apr. 5, 1966.

TYVEK

For Synthetic Resin Material in Tow-Like Form.

First use Jan. 14, 1966.

SN 243,170. Rum River Charcoal Co., Cody, Wyo. Filed Apr. 11, 1966.

PAUL BUNYAN

The mark is the name of a legendary and mythical giant of superhuman strength attributed to the logging industry.

For Barbecue Briquets.

First use May 3, 1962.

SN 245,948. Polymers, Inc., Middlebury, Vt. Filed May 18, 1966.

NYLE MID

Owner of Reg. Nos. 654,594 and 790,533.

For Artificial Filaments and Bristles.

First use Apr. 18, 1966.

SN 245,999. Tomco Genetic Giant, Inc., Belmond, Iowa. Filed May 18, 1966.

CROWN JEWELS

For Farm Seeds.

First use May 11, 1965.

SN 255,395. Nypel of Delaware, Inc., Wilmington, Del. Filed Sept. 29, 1966.

NYPELUBE

Owner of Reg. No. 684,971.

For Nylon in Suitable Forms for Molding.

First use May 31, 1966.

Class 2—Receptacles

SN 220,944. Japan Air Lines Company, Ltd., Tokyo, Japan. Filed June 11, 1965.

ECONOPAK

Applicant disclaims the word "Pak" apart from the mark as shown.

For Triple-Wall, Corrugated Fiberboard Boxes for Use as Containers for Overseas Air Freight Shipments.

First use Apr. 1, 1965; in commerce Apr. 1, 1965.

SN 226,644. Wilbert James, New York, N.Y. Filed Aug. 27, 1965.

ONIONMASTER

For Fumeproof, Transparent Plastic Bags for Peeling, Slicing, Shredding, and Preparing Onions Inside Thereof.

First use Aug. 10, 1965.

SN 227,738. American Bag & Paper Corporation, Philadelphia, Pa. Filed Sept. 14, 1965.

INPAKIT

For Paper Bags.
First use August 1965.

SN 230,182. Nosco Plastics, Incorporated, Erie, Pa. Filed Oct. 14, 1965.

HARVEST-TAINER

For Plastic Open Top Containers for Harvesting Fruit and Vegetables, and for Handling Fresh and Frozen Foods.
First use March 1964.

SN 234,090. Union Manufacturing Company, New Britain, Conn. Filed Dec. 6, 1965.

UNO-VAC

For Vacuum Bottles.
First use Oct. 1, 1965.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 218,938. Richard E. Ackerson, Arvada, Colo. Filed May 17, 1965.

BOSS REIN

Applicant disclaims the word "Rein" apart from the mark as shown.
For Electronic Animal Training Rein for Training Animals To Respond to Vocal Commands.
First use in or about June 1963.

SN 241,633. Bri-Son Company, Inc., Studio City, Calif. Filed Mar. 23, 1966.

BRI SON

Owner of Reg. No. 751,878.
For Men's and Women's Wallets, Brief Cases, Attaché Cases, Checkbook Cases, Key Cases, Toilet Kits, and Luggage.
First use August 1957.

Class 4 — Abrasives and Polishing Materials

SN 236,517. S. C. Johnson & Son, Inc., Racine, Wis. Filed Jan. 14, 1966.

SPRING & FALL

For Wax With Cleaning Properties for Use on Wood, Cork, Linoleum, Rubber, Terrazzo, Furniture, Paneled Walls, and Woodwork.
First use on or about Nov. 16, 1965.

Class 5 — Adhesives

SN 231,458. Morton International, Inc., Chicago, Ill. Filed Oct. 28, 1965.



For Adhesives—Namely, Primers for Improving Adhesion of Inks, Films and Coatings to Flexible or Rigid Surfaces; Adhesives for Laminating Films, Sheets, Foils and Coatings; Adhesives Comprised of Natural and Synthetic Elastomers and Resins, Plastisols and Organosols.
First use on or about Sept. 30, 1965.

Class 6 — Chemicals and Chemical Compositions

SN 207,671. TKO Chemical Company, St. Joseph, Mo. Filed Dec. 7, 1964.

ORBIT BATH

The word "Bath" is disclaimed apart from the mark as shown.
For Washing Solution for Processing Photographic Prints and Film, for Use by Commercial Photographic Film Processors.
First use on or about Sept. 23, 1964.

SN 207,672. TKO Chemical Company, St. Joseph, Mo. Filed Dec. 7, 1964.

ORBIT BATH

The word "Bath" is disclaimed apart from the mark as shown.
For Washing Solution for Processing Photographic Prints and Film, for Use by Commercial Photographic Film Processors.
First use on or about Sept. 23, 1964.

SN 231,177. Moser Paper Company, Chicago, Ill. Filed Oct. 22, 1965.

TOP O GEL

Applicant, without waiver of common law rights, hereby disclaims the component "Gel" apart from the mark as shown.
For Autopsy Preparation Used by Undertakers in Embalming Bodies Previously Subjected to Autopsy.
First use January 1964.

SN 236,217. Allied Research Products, Inc. (Barrett Chemical Products Division), Baltimore, Md. Filed Jan. 12, 1966.

SNSR

For Stress Reducer for Electroplating Solutions.
First use Nov. 17, 1954.

SN 236,218. Allied Research Products, Inc. (Barrett Chemical Products Division), Baltimore, Md. Filed Jan. 12, 1966.

SNAP

For Anti-Pit Agent for Electroplating Solutions.
First use Nov. 17, 1954.

SN 236,219. Allied Research Products, Inc. (Barrett Chemical Products Division), Baltimore, Md. Filed Jan. 12, 1966.

SNAC

For Acid Compound for Electroplating Solutions.
First use Nov. 17, 1954.

SN 236,221. Allied Research Products, Inc. (Barrett Chemical Products Division), Baltimore, Md. Filed Jan. 12, 1966.

SNH

For Electroplating Solutions.
First use Nov. 17, 1954.

SN 236,222. Allied Research Products, Inc. (Barrett Chemical Products Division), Baltimore, Md. Filed Jan. 12, 1966.

SNB

For Electroplating Solutions.
First use Nov. 17, 1954.

SN 236,328. National Chemsearch Corporation, Irving, Tex. Filed Jan. 11, 1966.

HEPTA-THION

For Liquid Insecticide.
First use May 1, 1962.

SN 236,871. Allied Research Products, Inc. (Barrett Chemical Products Division), Baltimore, Md. Filed Jan. 20, 1966.

SN

For Electroplating Solutions.
First use Nov. 17, 1954.

SN 237,911. Allied Research Products, Inc. (Barrett Chemical Products Division), Baltimore, Md. Filed Feb. 3, 1966.

SNAP-L

For Anti-Pit Agent for Electroplating Solutions.
First use March 1965.

SN 243,150. Marlyn Chemical Company, Inc., Lakeview, Ohio. Filed Apr. 11, 1966.



For Powdered Fabric Softener.
First use May 21, 1956.

SN 247,716. National Lead Company, New York, N.Y. Filed June 9, 1966.

23A

For Pigment for Flame-Retardant Coatings.
First use June 9, 1960.

SN 248,049. Montecatini, Società Generale per l'Industria Mineraria e Chimica, Milan, Italy. Filed June 14, 1966.

RETILOX

Owner of Italian Reg. No. 161,478, dated Dec. 28, 1962.
For Industrial Chemicals for the Vulcanization of Satured and Unsatured Rubbers.

SN 248,055. Schwartz Chemical Co., Inc., Long Island City, N.Y. Filed June 14, 1966.

REZ-N-DYE

For Dyes—Namely, Cold-Dip Plastic Dyes, Hot-Mix Powder Dyes, Concentrates, and Thinners for Such Dyes.
First use March 1943.

SN 248,076. William S. Zierler, Inc., New York, N.Y. Filed June 14, 1966.

SECURE

For Aerosol Spray for Stockings To Keep Them From Running.
First use May 4, 1966.

SN 248,220. Eastman Kodak Company, Rochester, N.Y. Filed June 16, 1966.

KODAFLEX

For Plasticizers.
First use Aug. 24, 1965.

SN 248,415. Clarence Boord & Sons, Inc., Leon, Iowa. Filed June 20, 1966.

SEEK

For Chemical Dust for the Control of Insects and Plant Diseases.
First use Apr. 13, 1966.

SN 248,435. Frank D. Davis Company, Los Angeles, Calif. Filed June 20, 1966.

CO-MO-BLAK

For Aqueous Carbon Black Dispersions Used for Coloring Concrete and Mortar.
First use October 1965.

SN 248,437. Frank D. Davis Company, Los Angeles, Calif. Filed June 20, 1966.

OMNISPERSE

For Pigment Dispersion Used in Protective Coatings.
First use August 1964.

SN 254,947. Stauffer Chemical Company, New York, N.Y. Filed Sept. 22, 1966.

LITE

For Soda Ash.
First use at least as early as Mar. 26, 1965.

Class 7—Cordage

SN 232,636. Tanganyika Sisal Spinning Company, Dar es Salaam, Tanzania. Filed Oct. 29, 1965.

TASCO

For Baler, Binder and Roto Baler Twine.
First use Aug. 23, 1965; in commerce Aug. 23, 1965.

SN 233,301. American Farm Bureau Service Company, Chicago, Ill. Filed Nov. 26, 1965.

SAFEMARK

Owner of Reg. Nos. 808,411, 808,488, and 808,512.
For Cordage.
First use Nov. 9, 1965.

SN 233,315. Big Bear, Inc., St. Cloud, Minn. Filed Nov. 26, 1965.

HARVEST SUPREME

Owner of Reg. Nos. 645,976, 704,629, and others.
For Baler Twine.
First use Dec. 28, 1964.

SN 233,713. Indian Head Mills, Inc., New York, N.Y. Filed Dec. 1, 1965.



WHALE

For Seine Twine.
First use July 24, 1964.

SN 237,927. Berwick Textile Products Co., Inc., d.b.a. Berwick, New York, N.Y. Filed Feb. 3, 1966.

BONNIE TIE

No claim is made to the word "Tie" apart from the mark as shown.
For Ribbon.
First use June 1962.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 241,734. Atlas Chemical Industries, Inc., Wilmington, Del. Filed Mar. 24, 1966.

GHOSTMASTER

For Electric Blasting Caps.
First use Jan. 5, 1966.

SN 241,895. B. E. Hodgdon, Inc., Shawnee Mission, Kans. Filed Mar. 25, 1966.

4831

For Rifle Powder.
First use on or about Apr. 15, 1952.

Class 10—Fertilizers

SN 216,074. General Packaging & Chemical Corp., Union City, Calif. Filed Apr. 8, 1965.

GREENEX

For Liquid Iron and Zinc Fertilizer Composition.
First use Jan. 15, 1965.

SN 233,187. Moyer Chemical Company, San Jose, Calif. Filed Nov. 23, 1965.

MICRO NUTRO

For Foliar Nutrient for Plants.
First use May 10, 1962.

SN 241,435. Conservation Industries, Inc., Santa Cruz, Calif. Filed Mar. 21, 1966.

DEEP GREEN

For Organic Soil Conditioners.
First use February 1965.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 224,964. H. K. Porter Company, Inc., Pittsburgh, Pa. Filed Aug. 4, 1965.

PORTER TUBE

The word "Tube" is disclaimed apart from the mark as shown. Owner of Reg. No. 655,459.
For Copper Tube for Heating, Air Conditioning, Refrigeration, and Instrument Use.
First use July 7, 1965.

SN 231,543. Continental Oil Company, Ponca City, Okla. Filed Oct. 24, 1965.

V-WELL

For Plastic Pipe.
First use Sept. 27, 1963.

SN 232,366. Teklon Corporation, Gardena, Calif. Filed Nov. 8, 1965.

TEK-LOK

Owner of Reg. No. 811,983.
For Externally and Internally Threaded Self-Locking Fasteners.
First use Oct. 14, 1965.

SN 235,355. Swingline, Inc., Long Island City, N.Y. Filed Dec. 27, 1965.

NO. 888

Owner of Reg. No. 787,034.
For Staples.
First use June 26, 1964.

SN 241,796. Northland Aluminum Products, Inc., Minneapolis, Minn. Filed Mar. 24, 1966.

Bundt

For Cake Pans.
First use 1951.

SN 243,438. The Gates Rubber Company, Denver, Colo. Filed Apr. 14, 1966.

SPEED MATE

For Couplings.
First use Jan. 25, 1966.

SN 244,940. M & J Valve Company, Houston, Tex. Filed May 4, 1966.

AMPLITORQUE

For Valve Equipment Including Valve Actuators of the Manual and/or Power Variety.
First use Jan. 11, 1966.

Class 14—Metals and Metal Castings and Forgings

SN 239,077. Phoenix Steel Corporation, Claymont, Del. Filed Feb. 17, 1966.

ECONO-CLAD

For As-Rolled Steel Plate, Comprising a Stainless Steel Alloy Bonded to a Carbon or Low Alloy Steel Base, for Use in Material Handling Equipment and the Like.
First use Jan. 14, 1966.

SN 239,448. The S.D. Syndicate Limited, London, England. Filed Feb. 23, 1966.

SD

The mark consists of the letters "SD."
For Process Engraving Sheets Made of Zinc and of Copper.
First use February 1926; in commerce 1931.

Class 15—Oils and Greases

SN 214,314. Aid Stores, Inc., Woodside, N.Y. Filed Mar. 17, 1965.

AID

For Motor Oils, Transmission Fluid, High Pressure Lubricants, and Cup Greases.
First use January 1954.

SN 229,970. Fleet Wholesale Supply Co., Inc., Brainerd, Minn. Filed Oct. 12, 1965.

FARM RATED

No registration rights are claimed for the word "Farm" apart from the mark as shown.
For Lubricating Oils and Greases in General and Particularly as Used in Connection With Farm Vehicles and Machinery.
First use Aug. 2, 1965.

SN 230,201. The Standard Oil Company, Cleveland, Ohio. Filed Oct. 14, 1965.

MULTRON

For Motor Oil.
First use Sept. 24, 1965.

SN 240,577. Horace B. Brose, d.b.a. Heide Babe Products, Tampa, Fla. Filed Mar. 10, 1966.

BR LIFE LONG SE

Owner of Reg. No. 783,458.
For Graphite Preparation To Be Added to Apparatus Containing water, as in an Engine Cooling System, for Purposes of Lubrication, Rust Prevention, and Leak Stoppage, at All Points Throughout the Apparatus.
First use Feb. 1, 1966.

SN 243,837. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. Filed Apr. 20, 1966.

LIQUID-LITE

For Candle Oil.
First use Feb. 20, 1966.

Class 16—Protective and Decorative Coatings

SN 193,860. A. Sanderson & Co., Ltd., Hull, England, assignee of De Jersey & Co. AG. Zug, San Francisco, Calif. Filed May 20, 1964.

KURUST

For Anti-Corrosive Coatings—Namely, Paint Primers.
First use Oct. 15, 1962.

SN 242,354. Foseco International Limited, Birmingham, England. Filed Mar. 31, 1966.

ANISCOL

Owner of British Reg. No. 876,559, dated Mar. 5, 1965.
For Chemical Products for Use in the Metallurgical Industry—Namely, Paints for Application to Ferrous Materials To Minimize Scaling at Elevated Temperatures.
First use Jan. 21, 1966; in commerce Jan. 21, 1966.

Class 17—Tobacco Products

SN 228,471. P. Lorillard Company, New York, N.Y. Filed Sept. 23, 1965.

SCOTCH CUT

For Cigarettes.
First use Aug. 4, 1965.

SN 238,118. Service d'Exploitation Industrielle des Tabacs et Allumettes, Baltimore, Md. Filed Feb. 4, 1966.

NARVAL

Owner of French Reg. No. 500,908, dated Dec. 14, 1961 (Seine); Natl. Inst. No. 175,697.
For Pipe Tobacco.

SN 238,119. Service d'Exploitation Industrielle des Tabacs et Allumettes, Baltimore, Md. Filed Feb. 4, 1966.

narval

Owner of French Reg. No. 500,908, dated Dec. 14, 1961 (Seine); Natl. Inst. No. 175,697.
For Pipe Tobacco.

Class 18—Medicines and Pharmaceutical Preparations

SN 225,857. Aqualana Corporation of America, Clifton, N.J. Filed Aug. 17, 1965.

X-WAX

For Preparation for Removing Cerumen From Ear.
First use June 18, 1965.

SN 231,301. Southwestern Drug Corporation, d.b.a. Tru-Lab Products, Dallas, Tex. Filed Oct. 22, 1965.

NEO-DERM

For Antiseptic Lotion for Combatting Dry Skin and Treating Skin Irritations.
First use Aug. 25, 1964.

SN 234,637. Gold Medal Candy Corporation, Brooklyn, N.Y. Filed Dec. 15, 1965.

COCILANA COUGH-NIPS

No claim is made to the words "Cocilana" or "Cough" apart from the mark as shown. Owner of Reg. No. 581,226.
For Cough Bon Bons, Cough Confections, and Cough Syrups.
First use Mar. 1, 1935.

SN 239,634. Levine and Associates, Los Angeles, Calif. Filed Feb. 25, 1966.

STYP-ROLL

For Externally-Applied Blood Coagulant.
First use Sept. 25, 1965.

SN 242,890. Andréa Dúmon, Incorporated, d.b.a. Andrea Dumon Laboratories, Chicago, Ill. Filed Apr. 7, 1966.

Andréa Dúmon

The name Andréa Dúmon is fanciful.
For Contact Lens Wetting Solution.
First use Feb. 18, 1966.

SN 244,997. Vincent I. Mason, d.b.a. New England Aquarium Supply, Newtonville, Mass. Filed May 5, 1966.

NOX-ICK

For Preparation for the Treatment of Diseases of Tropical Fish.
First use July 13, 1962.

SN 246,653. Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany. Filed May 26, 1966.

ILDAMEN

Owner of German Reg. No. 756,451, dated Apr. 1, 1961.
For Medicament for Coronary Therapy.

SN 246,836. International Minerals & Chemical Corporation, Skokie, Ill. Filed May 31, 1966.

DYNA-K

Owner of Reg. Nos. 616,094 and 804,540.
For Potassium Supplement for Livestock and Poultry Feed.
First use Mar. 23, 1966.

SN 246,872. Betan Company, Inc., Knoxville, Tenn. Filed May 31, 1966.

FEBRON

For Antianemia Tablets.
First use at least as early as January 1949.

SN 247,298. Abbott Laboratories, North Chicago, Ill. Filed June 6, 1966.

NK-BLEN

Owner of Reg. Nos. 727,907, 746,138, and others.
For Veterinary Vaccine for Newcastle Disease.
First use July 1963.

SN 247,769. Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. Filed June 10, 1966.

EMPRAFED

For Medicines and Pharmaceutical Preparations—Namely, Analgesic and Decongestant Preparations, Pain Relieving Preparations, and Preparations for the Relief of Sinus Congestion.
First use May 23, 1966.

SN 247,967. Brunswig Drug Company, El Segundo, Calif. Filed June 13, 1966.

OWLiVER

For Multiple Vitamin Preparation.
First use Mar. 12, 1965.

SN 248,197. The Dow Chemical Company, Midland, Mich. Filed June 16, 1966.

RULEX

For Livestock Remedy—Namely, Preparation for the Control and Destruction of Parasites in and on Animals.
First use May 20, 1966.

SN 248,935. The William A. Webster Co., Memphis, Tenn. Filed June 24, 1966.

NEOPAP

For Suppositories Containing Analgesic for Symptomatic Control of Minor Aches and Pains and for Fever Reduction.
First use June 8, 1966.

SN 249,258. Sterling Drug Inc., New York, N.Y. Filed June 29, 1966.

WINDYNE

Owner of Reg. No. 737,786.
For Analgesic Preparation.
First use May 20, 1966.

SN 251,765. American Home Products Corporation, New York, N.Y. Filed Aug. 5, 1966.

CUTOID

For Anti-Inflammatory Agent in Topical Dosage Form.
First use July 28, 1966.

SN 256,032. American Home Products Corporation, New York, N.Y. Filed Oct. 10, 1966.

PEN-VEE

Owner of Nos. 632,541 and 643,509.
For Antibiotic Preparation.
First use May 18, 1955.

SN 256,180. Fidelity Pharmaceuticals, Inc., Philadelphia, Pa. Filed Oct. 11, 1966.

FI-CID

For Analgesic Preparation.
First use Sept. 15, 1966.

SN 256,183. American Home Products Corporation, New York, N.Y. Filed Oct. 11, 1966.

MITA-PAIN

For Analgesic Tablets.
First use Sept. 16, 1966.

SN 256,700. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Oct. 19, 1966.

PRISTEEN

For Feminine Hygiene Deodorant.
First use Apr. 19, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 226,107. Westinghouse Electric Corporation, East Pittsburgh, Pa. Filed Aug. 19, 1965.

PULSE SYN

For Electric Motor Control for Use With Synchronous Brushless Motors.
First use on or about Mar. 9, 1965.

SN 228,603. Appleton Electric Company, Chicago, Ill. Filed Sept. 27, 1965.

APPLETON "U-LINE"

Owner of Reg. Nos. 623,834, 670,768, and others.
For Electrical Plugs and Receptacles.
First use June 23, 1965.

SN 238,290. Price Battery Corporation, Hamburg, Pa. Filed Feb. 7, 1966.

DEEP POWER

The word "Power" is disclaimed apart from the mark as shown.
For Storage Batteries.
First use Jan. 20, 1966.

SN 238,450. Reynolds Electrical & Engineering Co., Inc., Santa Fe, N. Mex. Filed Feb. 9, 1966.

AZTEC

The drawing is lined for the colors red and gold, but no claim is made to color as an integral portion of the trademark.
For Radiant Electric Desk Heaters.
First use December 1963.

SN 239,097. World-Wide Volkswagen Corp., Orangeburg, N.Y. Filed Feb. 17, 1966.

SAPPHIRE III

Owner of Reg. No. 702,499.
For Car Radios.
First use Oct. 26, 1965.

SN 239,098. World-Wide Volkswagen Corp., Orangeburg, N.Y. Filed Feb. 17, 1966.

SAPPHIRE IV

Owner of Reg. No. 702,499.
For Car Radios.
First use Jan. 7, 1966.

SN 247,758. Lighting Corporation of America, Philadelphia, Pa. Filed June 10, 1966.

TOWN AND COUNTRY

For Electric Lighting Fixtures.
First use Aug. 27, 1965.

Class 22—Games, Toys, and Sporting Goods

SN 253,100. De Luxe Reading Corporation, Elizabeth, N.J. Filed Aug. 25, 1966.

JOHNNY SERVICE

Applicant disclaims the word "Service" apart from the mark as shown. Owner of Reg. No. 796,699.
For Toys—Namely, Cars, Trucks, Garages, Gas Pumps, and Car Washes.
First use July 25, 1966.

SN 253,946. Buddy L Corporation, East Moline, Ill. Filed Sept. 7, 1966.

Buddy L

Owner of Reg. Nos. 615,274 and 665,344.
For Toys, Particularly Toy Vehicles and Related Accessories.
First use at least as early as May 31, 1960; at least as early as Dec. 31, 1921, in a different form.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 216,948. Dyna-Nuclear Corporation, Atlantic Highlands, N.J. Filed Apr. 20, 1965.

DYNA⚡TROL

For Automotive and Engine parts—namely, Blow-By Valves, Emission Valves, Smog-Prevention and Inhibiting Valves, and an Automotive Engine Replacement Parts Kit Comprising Blow-By Valves, Emission Valves, Smog-Prevention and Inhibiting Valves, and Gauges for Determining the Correct Type and Size of Replacement Valve.
First use on or about Oct. 9, 1964.

SN 228,148. John H. Graham & Co., Inc., New York, N.Y. Filed Sept. 20, 1965.

Witherby
FLARE WRENCH

No claim is made to the word "Wrench" apart from the mark as shown.
For Adjustable Angle Wrench and Linemen Pliers.
First use Sept. 14, 1964.

SN 231,312. Tubular Textile Machinery Corporation, Woodside, N.Y. Filed Oct. 22, 1965.

SPREAD-O-MATIC

For Spreaders for Feeding Open Width Knit Goods as Part of a Manufacturing Operation.
First use on or about July 15, 1965.

SN 234,051. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Dec. 6, 1965.

SCOTCH-LANE

Owner of Reg. No. 778,600.
For Machine for Applying Striping Tape to a Flat Surface, such as Pavements and Parking Lots.
First use Apr. 8, 1964.

SN 235,191. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Dec. 23, 1965.

BREWSTER ROSE

Applicant disclaims the word "Rose" apart from the mark as shown.
For Stainless Steel Knives, Forks, and Spoons.
First use Nov. 16, 1965.

SN 236,305. Transmission Corporation of America, Stone Park, Ill. Filed Jan. 12, 1966.

TRANS

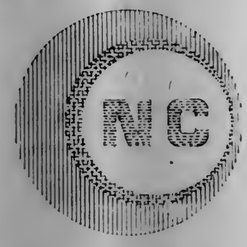
The drawing is lined for the color red.
For Automotive Transmission and Parts Thereof.
First use Nov. 2, 1965.

SN 238,912. Amchem Products, Inc., Ambler, Pa. Filed Feb. 16, 1966.

METER-MISER

For Apparatus for Spraying Herbicides and/or Agricultural Chemicals.
First use Jan. 25, 1965.

SN 239,215. Borg-Warner Corporation, Chicago, Ill. Filed Feb. 21, 1966.



The drawing is lined for the colors red, yellow, and gray, but no claim is made to color.
For Adjustable Speed Drives and Parts Thereof for Replacement and Repair.
First use on or prior to Jan. 11, 1966.

SN 239,491. Brother International Corporation, New York, N.Y. Filed Feb. 24, 1966.

MAJESTIC

For Typewriters.
First use May 14, 1965.

SN 244,353. Portable Elevator Manufacturing Company, Bloomington, Ill. Filed Apr. 26, 1966.

DOLLY-HO

For Implement Dollies.
First use Apr. 18, 1966.

SN 244,622. S & S Machinery Co., Brooklyn, N.Y. Filed Apr. 29, 1966.

VULCAN

For Presses, Lathes, Milling Machines, and Radial Drills.
First use October 1959.

SN 255,264. Milbar Corporation, Cleveland, Ohio. Filed Sept. 28, 1966.

MILBAR

For Mechanical Hand Tools—Namely, Pliers, Wrenches, Drivers, and Battery Terminal Cleaning Tools.
First use Mar. 30, 1958.

SN 256,702. Trufast Corporation, New York, N.Y. Filed Oct. 19, 1966.

TRUFAST

For Monogram Applicating Machine.
First use on or about July 18, 1966.

Class 24—Laundry Appliances and Machines

SN 239,816. Southern Mills, Inc., Atlanta, Ga. Filed Feb. 28, 1966.

WONDERLOC

For Clamp Pad Sets for Drycleaners' Steam-Air Finishing Machines.
First use on or about Jan. 26, 1966.

Class 25—Locks and Safes

SN 256,333. National Hardware Company, Inc., Ozone Park, N.Y. Filed Oct. 18, 1966.

ECONOLINE

For Lock Sets.
First use Sept. 29, 1966.

Class 26—Measuring and Scientific Appliances

SN 225,810. Plastic Reel & Core Company, Incorporated, Weehawken, N.J. Filed Aug. 16, 1965.

PLIO-MAGIC

For Photographic Accessories—Namely, Reels, Cans, Film Rollers, and Shipping Cases for Film Processers.
First use Apr. 4, 1961.

SN 230,003. Realist Inc., Menomonee Falls, Wis. Filed Oct. 12, 1965.

INSTA-VUE

For Combined Slide File Box and Transparency Viewer.
First use Aug. 16, 1965.

SN 237,409. Peerless Equipment Co., Inc., Joplin, Mo. Filed Jan. 26, 1966.

FEEDOSTAT

For Automatic, Dry Material, Auger Type Flow Control Meter.
First use Feb. 1, 1965.

SN 237,832. General Semiconductors, Inc., Tempe, Ariz. Filed Feb. 2, 1966.

GSI

For Voltage Reference Modules, Zener Diodes, and Reference Diodes.
First use Aug. 15, 1965 on zener diodes.

SN 237,916. Anelex Corporation, Boston, Mass. Filed Feb. 3, 1966.

BILINE

For Data Processing Equipment.
First use Apr. 15, 1964.

SN 238,729. Federal Scientific Corporation, New York, N.Y. Filed Feb. 14, 1966.

UBIQUITOUS

For Spectrum Analyzer/Computer, Spectrum Density Analyzer/Computer, Fourier Transform Analyzer/Computer, Fourier Spectrum Analyzer/Computer, Pattern Recognition/Detection Analyzer/Computer, Signature Recognition/Detection Analyzer/Computer, Signal Classification Analyzer/Computer, Auto-correlation Analyzer/Computer, Cross-Correlation Analyzer/Computer, Cross Spectral Density Analyzer/Computer, Probability Density Analyzer/Computer, Histogram Analyzer/Computer, Statistical Analyzer/Computer, Signal Averaging Analyzer/Computer, Cepstrum Analyzer/Computer, Iterated Spectrum Analyzer/Computer, Vibration Signal Analyzer/Computer, Shock Signal Analyzer/Computer, Sonar Signal Analyzer/Computer, Passive Signal Analyzer/Computer, Active Signal Analyzer/Computer, Noise Signal Analyzer/Computer, Doppler Signal Analyzer/Computer, Scintillation Signal Analyzer/Computer.
First use Dec. 20, 1965.

Class 28 — Jewelry and Precious-Metal Ware

SN 241,303. Arts Industries, Inc., Williston, N. Dak. Filed Mar. 18, 1966.

RAP-A-RON

For Jewelry.
First use Dec. 10, 1965.

Class 31 — Filters and Refrigerators

SN 229,753. CHD Pool Equipment, Inc., South El Monte, Calif. Filed Oct. 11, 1965.

SPIRA MITE

For Swimming Pool Filters.
First use Aug. 29, 1960.

Class 32 — Furniture and Upholstery

SN 239,071. P. J. Nee Company, Rockville, Md. Filed Feb. 17, 1966.

YOUNG IDEAS

For Bedroom, Dining Room, Living Room, and Occasional Furniture.
First use Oct. 1, 1965.

SN 242,100. Art Furniture Manufacturing Company, Inc., Macon, Ga. Filed Mar. 29, 1966.

Artline

For End, Commode, Lamp, Cocktail, Picture Window, Bunching, Step, Book drum, Column, Console, Cobbler's Bench, Dough Box, and Cigarette Tables; Mirrors, Desks, Chests, and Dry Sink Furniture-Pieces.
First use on or about June 30, 1950.

SN 244,140. Rose-Derry Company, Newton, Mass. Filed Apr. 22, 1966.

FEED-N-PLAY

For Table Chairs for Infants.
First use Jan. 3, 1966.

SN 244,496. International Foam Corporation, Chicago, Ill. Filed Apr. 28, 1966.

STRATO-FLOATER

For Mattresses.
First use Mar. 24, 1966.

SN 244,561. Bedding Manufacturers Associates, Inc., Philadelphia, Pa. Filed Apr. 29, 1966.

MEDI-REST

For Mattresses.
First use March 1959.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 183,738. Combustion Engineering, Inc., Windsor, Conn. Filed Dec. 30, 1963.

CONTROLLED CIRCULATION

For Hot Water Heaters, Vapor Generators, and Heat Exchangers With the Heating Fluid Being in the Gas Phase and the Fluid To Be Heated Being in Either the Liquid or the Gas Phase.
First use November 1952.

SN 229,322. Wilson Research Corp., Erie, Pa. Filed Oct. 4, 1965.

ACRYCEL

For Acrylic Plastic Louvers.
First use June 23, 1965.

SN 239,814. Sound Equipment Corporation of California, d.b.a. Kwikheat Manufacturing Company, Santa Fe Springs, Calif. Filed Feb. 28, 1966.

KWIKHEAT

For Electric Soldering Irons and Accessories Therefor.
First use December 1937.

SN 252,967. Roberts-Gordon Appliance Corp., Buffalo, N.Y. Filed Aug. 23, 1966.

GORDON-RAY

For Gas Fired Infra-Red Heating Apparatus.
First use Sept. 21, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 232,545. The B. F. Goodrich Company, Akron, Ohio. Filed Nov. 12, 1965.

SPEEDLINER

Owner of Reg. No. 383,515.
For Pneumatic Tires.
First use Oct. 18, 1965.

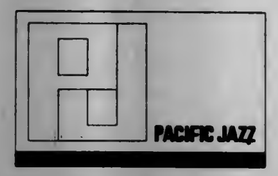
Class 36 — Musical Instruments and Supplies

SN 220,547. Chas. Pfriemer, Inc., Easton, Pa. Filed June 7, 1965.



For Piano Parts, Specifically Piano Hammers and Piano Hammer Felts.
First use November 1964.

SN 228,051. Liberty Records, Inc., Los Angeles, Calif. Filed Sept. 17, 1965.



Applicant disclaims the term "Pacific Jazz" apart from the mark as shown.
For Phonograph Records and Albums Thereof.
First use August 1965.

Class 37 — Paper and Stationery

SN 244,974. Hammermill Paper Company, Erie, Pa. Filed May 5, 1966.

HULLA-BALOO

For Notebook Covers.
First use Mar. 11, 1966.

Class 38 — Prints and Publications

SN 228,651. Cutter Laboratories, Inc., Berkeley, Calif. Filed Sept. 27, 1965.

SELECT-O-TAB

Owner of Reg. No. 668,712.
For Printed Index Cards.
First use Apr. 1, 1957.

SN 229,503. Creative Visuals of Dallas, Inc., Dallas, Tex. Filed Oct. 7, 1965.



For Projection Transparencies Used in Instruction.
First use October 1963.

SN 237,418. Alpha Film Productions, Incorporated, Chicago, Ill. Filed Jan. 27, 1966.



For Audio Visual Aids for Education—Namely, Film Strips, Recordings, and Study Manuals.
First use Mar. 1, 1965.

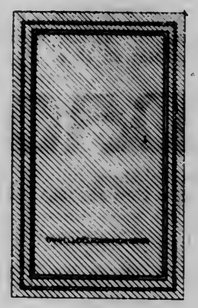
SN 237,523. Walt Disney Productions, Burbank, Calif. Filed Feb. 2, 1966.

WALT DISNEY

PRESENTS

The word "Presents" is disclaimed apart from the mark as shown. Walt Disney is the name of a living individual whose consent is of record. Owner of Reg. No. 664,435.
For Series of Motion Picture Films.
First use prior to the year 1935.

SN 250,432. The Olympia Press, Paris, France. Filed July 18, 1966.



The mark is lined for the color green. The word "Series" is disclaimed apart from the mark as shown.
For Books.
First use during the year 1955; in commerce during the year 1955.

SN 251,098. Institute for Scientific Information, Inc., Philadelphia, Pa. Filed July 27, 1966.

INDEX CHEMICUS

For Index Published Bi-Weekly on New Chemical Compounds.
First use March 1960.

SN 253,256. Institute for Scientific Information, Inc., Philadelphia, Pa. Filed Aug. 29, 1966.

C.C.

For Periodical Listing Recently Published Articles on Scientific and/or Medical Subjects.
First use Aug. 16, 1966.

Class 39—Clothing

SN 228,960. Vanity Fair Mills, Inc., Reading, Pa. Filed Sept. 29, 1965.

POWER MIST

For Textile Fabrics Made Up Into Finished Apparel—Namely, Foundation Garments.
First use Sept. 10, 1965.

SN 234,424. J. Marie Hornsby, d.b.a. J. Marie Hornsby's Originals, Gulfport, Miss. Filed Dec. 13, 1965.

J. Marie Hornsby's ORIGINALS

The word "Originals" is disclaimed apart from the mark as shown.
For Infants' Garments—Namely, Two Piece Ensembles for Infants Consisting of a Top Portion, Which Is a Slip Over Long Sleeve Gownette/Dressette and a Bottom Portion, Which Is a Slip-On Elastic-Drawn-Waist Leg Covering.
First use December 1956.

SN 241,665. Johnson, Stevens and Shinkle Shoe Company, St. Louis, Mo. Filed Mar. 23, 1966.

DAO

For Women's and Girls' Shoes.
First use on or about Nov. 15, 1965; on or about Sept. 1, 1965 as to "DAO."

SN 246,111. Top Form-Yolande, Inc., New York, N.Y. Filed May 19, 1966.

mini-FLIP!

For Ladies' Slips.
First use May 4, 1966.

SN 246,716. Peter Pan Foundations, Inc., New York, N.Y. Filed May 26, 1966.

SWEET N'LOW

For Brassiere.
First use Mar. 15, 1945.

Class 40—Fancy Goods, Furnishings, and Notions

SN 209,687. Earl A. Fast, Long Beach, Calif. Filed Jan. 11, 1965.

FASTAC

For Button Kit for Replacement Buttons and Necktie Fasteners.
First use Oct. 12, 1964.

SN 219,667. The British Needle Company Limited, Redditch, England. Filed May 25, 1965.

EMBASSY

Owner of British Reg. No. 412,811, dated Feb. 23, 1921.
For Hand Sewing Needles.
First use November 1952; in commerce November 1952; June 1923 in a different form.

SN 233,383. Patti Products Corporation, Mount Vernon, N.Y. Filed Nov. 26, 1965.

SOMETHING NICE

For Scented Hair Accessory Products—Namely, Bobby Pins, Combs, Nets, and Rollers.
First use Nov. 6, 1965.

SN 234,472. Shy Beauty Products, Inc., Los Angeles, Calif. Filed Dec. 13, 1965.

Shylash.

For Artificial Eyelashes.
First use at or about Oct. 31, 1965.

SN 236,861. F. W. Woolworth Co., New York, N.Y. Filed Jan. 19, 1966.

YOUR SYMBOL OF QUALITY
Primstyle

The words "Your Symbol of Quality" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 665,430 and 792,968.
For Hair Pieces.
First use Oct. 1, 1965.

SN 242,041. Original Toy Corporation, Brooklyn, N.Y. Filed Mar. 28, 1966.

SEE AND SEW

The word "Sew" is disclaimed apart from the mark as shown.
For Embroidery Kit Containing Preprinted Fabric, Floss, Mounting Board, Hoops, Needle, and Picture Frame.
First use Mar. 7, 1966.

SN 242,640. Novelty Cord & Tassel Co., Inc., Brooklyn, N.Y. Filed Apr. 4, 1966.

ALURA HOME PRODUCTS

The term "Home Products" is disclaimed.
For Window Shade Pulls and Buttons.
First use Dec. 20, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 223,155. Pande, Cameron & Co. of New York, Inc., New York, N.Y., assignee of Pande, Cameron & Company, New York, N.Y. Filed July 12, 1965.

BENGALI

For Rugs.
First use 1957.

SN 235,025. Thomas Wilson & Co. Inc., New York, N.Y. Filed Dec. 21, 1965.

CUSHLON

For Cushion Backed Ribbon in the Piece.
First use Nov. 10, 1965.

SN 241,153. Rubin Levine & Company, Inc., New York, N.Y. Filed Mar. 16, 1966.

RIPPLEINE

For Fabrics in the Piece for Making Women's Wearing Apparel, Such as Dresses and the Like.
First use Jan. 4, 1966.

SN 241,961. Asten-Hill Mfg. Company, East Falls, Philadelphia, Pa. Filed Mar. 28, 1966.

COTMESH

Owner of Reg. No. 782,915.
For Dryer Felts in the Piece.
First use Mar. 25, 1966.

SN 245,050. The Aerfab Corp., New York, N.Y. Filed May 6, 1966.

AERFAB

For Cotton and Polyester Fabrics.
First use Sept. 4, 1964.

SN 245,872. Wiener Laces, Inc., New York, N.Y. Filed May 17, 1966.

TEXSTRAW

For Fabrics Made of Synthetic Fiber for Various Uses, Such as Material for Making Handbags, Luggage, Outer Wear Clothing, Shoes, Millinery Items, Upholstered and Covered Furniture, etc.
First use Nov. 15, 1965.

SN 246,764. Fair-Tex Mills, Inc., New York, N.Y. Filed May 27, 1966.

SMOKEY FLEECE

The word "Fleece" is disclaimed apart from the mark as shown.
For Knitted Fabrics for Making Dresses, Jackets, Boys' and Men's Shirts and Women's Blouses, and the Like.
First use Apr. 27, 1966.

SN 246,906. Howse, Mead & Sons, Inc., New York, N.Y. Filed May 31, 1966.

TOP SECRET

For Woolen Piece Goods.
First use Mar. 15, 1966.

SN 248,195. Klopman Mills, Inc., Rockleigh, N.J. Filed June 16, 1966.

DUPREME

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use May 10, 1966.

SN 248,196. Klopman Mills, Inc., Rockleigh, N.J. Filed June 16, 1966.

FLOUNCE

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use May 10, 1966.

SN 248,217. Dan River Mills, Incorporated, Danville, Va. Filed June 16, 1966.

DANSAN

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use May 10, 1966.

SN 248,218. Dan River Mills, Incorporated, Danville, Va. Filed June 16, 1966.

DANSANT

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use May 6, 1966.

SN 248,418. Buck Creek Industries, Inc., Columbiana, Ala. Filed June 20, 1966.

BCI BROADCLOTH

For Carpets.
First use June 6, 1966.

SN 248,697. Henry Glass & Co., New York, N.Y. Filed June 22, 1966.

Peter Pan

Owner of Reg. Nos. 119,693, 500,206, and others.
For Textile Fabrics in the Piece of Cotton, Wool, Silk, and Synthetic Fibres or Blends of Natural Fibres and Synthetic Fibres or Combinations Thereof.
First use April 1921.

SN 248,731. Originit Fabrics, Inc., New York, N.Y. Filed June 22, 1966.



POLYPOO

For Textile Fabric Piece Goods for Making Coats, Suits, Dresses, and Decorative Goods.
First use in or before April 1966.

Class 43 — Thread and Yarn

SN 245,143. American Enka Corporation, Enka, N.C. Filed May 9, 1966.

FLARON

For Synthetic Yarns.
First use Apr. 7, 1966.

SN 247,075. Spinnerin Yarn Co., Inc., South Hackensack, N.J. Filed June 1, 1966.

NORDIA

For Yarns of Natural and Synthetic Fibers for Hand Knitting.
First use May 23, 1966.

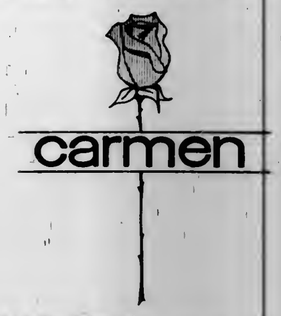
SN 248,183. Union Carbide Corporation, New York, N.Y. Filed June 15, 1966.

THORNEL

For Graphite Yarn.
First use on or about May 13, 1966.

Class 44 — Dental, Medical, and Surgical Appliances

SN 225,536. Arne Bybjerg Pedersen, d.b.a. Carmen Curlers, Kalundborg, Denmark. Filed Aug. 12, 1965.



The drawing is lined for red.
For Electrical Apparatus for Heating Hair Curlers, Permanent Waving Machines, and Parts and Accessories for These Goods.
First use October 1963; in commerce Jan. 20, 1965.

SN 238,611. Leon L. Cohen, d.b.a. Jeneric Gold Co., Great Neck, N.Y. Filed Feb. 11, 1966.

Jeneric

Applicant disclaims the prescription "℞" symbol apart from the mark as shown.
For Dental Gold.
First use on or before Feb. 10, 1966.

SN 239,241. Deseret Pharmaceutical Company, Inc., Salt Lake City, Utah. Filed Feb. 21, 1966.

ANGIOCATH/SY

Owner of Reg. No. 775,062.
For Indwelling Catheter and Syringe Sets.
First use Jan. 27, 1966.

SN 244,120. Johnson & Johnson, New Brunswick, N.J. Filed Apr. 22, 1966.

PRIVATE DUTY

For Underpads and Sponges for Patient Care and Sanitary Purposes.
First use Mar. 18, 1966.

SN 244,310. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1966.

,ST. MORITZ

For Electrically Operated Hair Dryers.
First use on or about Aug. 6, 1964.

SN 244,311. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1966.

SORRENTO

For Electrically Operated Hair Dryers.
First use on or about Aug. 5, 1964.

SN 246,788. Howmet Corporation, New York, N.Y. Filed May 27, 1966.

DUO-DRIV

For Screws Used in Orthopedic Surgery.
First use Mar. 30, 1966.

SN 248,903. E & M Instrument Company, Inc., Houston, Tex. Filed June 24, 1966.

PHYSIOGRAPH

Owner of Reg. No. 721,085.
For Physician's Measuring Instrument Adapted To Be Connected to a Human or Animal Near or Adjacent the Instrument by Electrodes or Appropriate Transducers To Record Pulse, Respiration, Blood Pressure, Electrocardiogram, Galvanic Skin Response, Heart Rate, and Other Recordable Data in Relation to the Subject.
First use Sept. 27, 1957.

SN 257,129. D. Kaltman & Co., Inc., New York, N.Y. Filed Oct. 25, 1966.

CONTRA-W

For Intrauterine Contraceptive Devices.
First use Oct. 5, 1966.

SN 257,130. D. Kaltman & Co., Inc., New York, N.Y. Filed Oct. 25, 1966.

CONTRA-M

For Intrauterine Contraceptive Devices.
First use Oct. 5, 1966.

SN 257,131. D. Kaltman & Co., Inc., New York, N.Y. Filed Oct. 25, 1966.

CONTRASEP

For Intrauterine Contraceptive Devices.
First use Oct. 5, 1966.

SN 257,132. D. Kaltman & Co., Inc., New York, N.Y. Filed Oct. 25, 1966.

CONTRALOOP

For Intrauterine Contraceptive Devices.
First use Oct. 5, 1966.

SN 257,133. D. Kaltman & Co., Inc., New York, N.Y. Filed Oct. 25, 1966.

CONTRAGON

For Intrauterine Contraceptive Devices.
First use Oct. 5, 1966.

SN 257,135. D. Kaltman & Co., Inc., New York, N.Y. Filed Oct. 25, 1966.

CONTRARING

For Intrauterine Contraceptive Devices.
First use Oct. 5, 1966.

Class 45 — Soft Drinks and Carbonated Waters

SN 225,304. Mister Lemon King and Allied Products Co., Corona, N.Y. Filed Aug. 9, 1965.

Mister Lemon King

The word "Lemon" is disclaimed apart from the mark as shown.
For Lemon Powder for Making "Ade" Type Beverages and for Making Creamy Heads on Alcoholic Beverages.
First use July 1, 1965.

SN 233,600. Karolos Fix, S.A., Athens, Greece. Filed Nov. 30, 1965.



The representation of the bottle cap apart from the mark as shown is disclaimed. The words "Tam Tam" mean "a type of drum, used in the East Indies and Western Africa."
Owner of Greek Reg. No. 35,958, dated Oct. 29, 1964.
For Soft Drinks.

SN 243,990. Holland House Brands, Inc., Woodside, N.Y. Filed Apr. 21, 1966.

SIP'N SLIM

For Non-Alcoholic Cocktail Mix.
First use Mar. 14, 1966.

SN 254,426. The Jel Sert Company, Bellwood, Ill. Filed Sept. 14, 1966.



The drawing is lined for blue. Owner of Reg. No. 223,900.
For Maltless Powder for Making Non-Alcoholic Soft Drinks.
First use June 17, 1964.

Class 46—Foods and Ingredients of Foods

SN 176,859. Chivers-Hartley Limited, London, England, assignee of Connaught Food Products Limited, London, England. Filed Sept. 11, 1963.

Chivers
Olde English
Marmalade

Applicant disclaims any exclusive right in the word "Marmalade" apart from the mark as shown. Owner of U.S. Reg. No. 557,856.
For Marmalade.
First use 1915; in commerce 1915.

SN 218,630. Fairmont Foods Company, Omaha, Nebr. Filed May 12, 1965.

Beetles

For Crackers Not of a Confectionery Nature.
First use Apr. 19, 1965.

SN 218,631. Fairmont Foods Company, Omaha, Nebr. Filed May 12, 1965.

Snails

For Crackers and Cookies.
First use Apr. 19, 1965.

SN 234,171. Peter Hand Foundation, Inc., Waukegan, Ill., by change of name from Blatchford Calf Meal Company, Waukegan, Ill. Filed Dec. 8, 1965.

GOOD TO THE LAST DROP

For Livestock Feeds for Both Mixing and Feeding Unmixed.
First use approximately 1801.

SN 234,461. R.G.B. Laboratories, Inc., Kansas City, Mo. Filed Dec. 13, 1965.

Cater-S flavor

Applicant disclaims the word "Flavor" except as used in combination with the rest of the mark, and applicant waives none of its common law rights therein. Owner of Reg. No. 730,183.
For Synthetic Butter Flavor Used in Food Processing Applications.
First use Nov. 15, 1965.

SN 234,462. R.G.B. Laboratories, Inc., Kansas City, Mo. Filed Dec. 13, 1965.

Cater topping

Applicant disclaims the word "Topping" except as used in combination with the rest of the mark, and applicant waives none of its common law rights therein. Owner of Reg. No. 730,183.
For Cream Replacement Product for Use in Producing a Whipped Topping.
First use Nov. 15, 1965.

SN 234,463. R.G.B. Laboratories, Inc., Kansas City, Mo. Filed Dec. 13, 1965.

Catertop

Owner of Reg. No. 730,183.
For Cream Replacement Product for Use in Producing a Whipped Topping.
First use Nov. 15, 1965.

SN 234,464. R.G.B. Laboratories, Inc., Kansas City, Mo. Filed Dec. 13, 1965.

Cater-S

Owner of Reg. No. 730,183.
For Food Replacement Product Having the Characteristics and Used in Place of Sour Cream.
First use Nov. 15, 1965.

SN 234,465. R.G.B. Laboratories, Inc., Kansas City, Mo. Filed Dec. 13, 1965.

Caterwhip

Owner of Reg. No. 730,183.
For Cream Replacement Product Similar to Fresh Dairy Whipping Cream Being Similar in Consistency, Flavor, Whipping Character and Use.
First use Nov. 15, 1965.

SN 234,857. Wheat Enterprises, Inc., Circle, Mont. Filed Dec. 17, 1965.

WHEANUTS

For Expanded Wheat Product for Snack Purposes Which Has Been Germinated and Treated With Cooking Oils.
First use December 1961.

SN 236,539. Cache Valley Dairy Association, Smithfield, Utah. Filed Jan. 10, 1966.

ROCKY MOUNTAIN

For Butter, Cheddar Cheese, Swiss Cheese, Monterey Jack Cheese, and Whey Powder.
First use Feb. 15, 1951.

SN 237,067. Robert Alameda, Salinas, Calif. Filed Jan. 24, 1966.

CARROLETS

For Frozen Carrots.
First use Nov. 17, 1965.

SN 239,623. Heggblade-Marguleas Co., d.b.a. Co-River Citrus Company, San Francisco, Calif. Filed Feb. 25, 1966.

LBS. DOWN

For Fresh Citrus Fruits.
First use Nov. 15, 1964.

SN 244,604. McGarry Nut Products Co., Chicago, Ill. Filed Apr. 29, 1966.

BRIT-L-NUT

For Peanut Brittle.
First use Sept. 1, 1924.

SN 247,999. Welch's Nut & Candy Co., d.b.a. Terrybrooke Nut & Candy Co., Chicago, Ill. Filed June 14, 1966.

LOVE

For Food Snack Consisting of Peanuts, Corn Syrup, Salt, and Calcium Silicate.
First use May 10, 1965.

SN 249,818. Wolf Brand Products, Corsicana, Tex. Filed July 7, 1966.

WOLF BRAND

No claim is made to the word "Brand" apart from the mark as shown. Owner of Reg. No. 733,879.
For Canned Chili Made of Beef.
First use Oct. 1, 1923.

SN 251,107. Continental Grain Company, New York, N.Y. Filed July 27, 1966.

CONTINENTAL GRAIN

The drawing is lined for the colors red and gold. Exclusive right to the use of the word "Grain" is disclaimed apart from the mark as shown.
For Wheat, Corn, Rye, Oats, Barley, Sorghum, Flax, Rice, and Soybeans.
First use June 17, 1966, on rice; at least as early as 1926 as to the mark "Continental."

SN 251,121. Continental Grain Company, New York, N.Y. Filed July 27, 1966.

CONTINENTAL GRAIN

Exclusive right to the use of the word "Grain" is disclaimed apart from the mark as shown. The drawing is lined for gray, but no claim is made to color as an essential feature of the mark.
For Wheat, Corn, Rye, Oats, Barley, Sorghum, Flax, Rice, and Soybeans.
First use June 17, 1966, on rice; at least as early as 1926 as to the mark "Continental."

SN 251,579. Allied Mills, Inc., Chicago, Ill. Filed Aug. 3, 1966.

GRAND PRIZE

For Fresh Dressed Frying Chickens.
First use 1954.

SN 254,425. The Jel Sert Company, Bellwood, Ill. Filed Sept. 14, 1966.

Jel Sert

The drawing is lined for blue. Owner of Reg. No. 223,900.
For Instant Mix in Powder Form for Making Flavored Frozen Confections.
First use June 17, 1964.

SN 256,036. King Kullen Grocery Co., Inc., Westbury, N.Y. Filed Oct. 10, 1966.



Owner of Reg. Nos. 195,504, 765,211, and others.
For Canned Mushrooms, Canned Baked Beans With Pork, Canned Pineapple Juice, Canned Sauerkraut, Tea-Bags, and Chocolate Bon-Bons.
First use Dec. 27, 1965, on canned mushrooms.

Class 49—Distilled Alcoholic Liquors

SN 215,166. Barton Distilling Company, Chicago, Ill. Filed Mar. 29, 1965.



For Bourbon Whiskey.
First use Sept. 18, 1964.

SN 233,374. National Distillers and Chemical Corporation, d.b.a. National Distillers Products Co., New York, N.Y. Filed Nov. 26, 1965.

ROYAL MARINE

For Whiskey.
First use Oct. 13, 1965.

SN 237,635. John E. McPherson & Sons Limited, Edinburgh, Scotland. Filed Dec. 6, 1965.



The wording shown on the drawing is "Touch Not the Cat Bot a Glove."
For Scotch Whisky.
First use in or about the year 1863; in commerce Apr. 3, 1886.

SN 241,083. T. W. Samuels Distillery, Inc., d.b.a. T. W. Samuels Distillery, Deatsville, Ky. Filed Mar. 15, 1966.

TALL TIMBER

For Bourbon Whiskey.
First use Mar. 2, 1966.

SN 243,319. John Gross & Co., Baltimore, Md. Filed Apr. 13, 1966.

BLACK RAM

For Gin.
First use Sept. 20, 1965.

SN 243,554. Esbeco Distilling Corporation, d.b.a. Blair House Import Co., Stamford, Conn. Filed Apr. 15, 1966.

OLD VELVET

For Whiskey.
First use October 1965.

SN 249,794. Puerto Rico Distillers, Inc., d.b.a. Compania Ron Llave, Arecibo, Puerto Rico. Filed July 7, 1966.

LA LLAVE DE LA ALEGRIA

The Spanish words "La Llave de la Alegria" may be translated as "key to joy" or "key to cheer." Owner of Reg. No. 780,029.
For Alcoholic Beverages—Namely, Rum.
First use at least as early as July 1, 1961.

Class 50—Merchandise Not Otherwise Classified

SN 223,485. American Allsafe Company, Inc., Buffalo, N.Y. Filed July 16, 1965.

CUSHIONGARD

For Self-Adhering, Cushioning Tape for Application to Industrial Items Which Are Worn on the Body.
First use May 20, 1965.

SN 242,338. Demma, Incorporated, Leroy, Ill. Filed Mar. 31, 1966.



For Hog Feeder Pens, Feeders and Accessories for Pens and Feeders.
First use July 15, 1965.

SN 243,951. W. H. Brady Co., Milkaukee, Wis. Filed Apr. 21, 1966.

QUICK-ALIGN

Owner of Reg. Nos. 551,498, 776,629, and others.
For Sign Making Materials Comprising Self-Sticking Letters, Numerals, and Ancillary Indicia Removably Mounted on Backing Cards, and Spacer Cards.
First use Feb. 7, 1966.

SN 244,721. Robert McMichael, Inc., New York, N.Y. Filed May 2, 1966.

VACATION PAK

Applicant disclaims the term "Pak" apart from the mark as shown, reserving, however, its common law rights therein.
For Gift Packages Containing an Assortment of Toilet Articles, Drugs and First Aid Supplies.
First use Dec. 1, 1965.

SN 245,216. Menda Company, City of Industry, Calif. Filed May 9, 1966.

"SCREWY LEWY"

For Plastic Pad Designed for Unloosening Lids and Caps, and Which May Be Used as a Sink Stopper.
First use Jan. 28, 1966.

SN 246,269. Clopay Corporation, Cincinnati, Ohio. Filed May 23, 1966.

FLAN'L GARD

No claim is made to the exclusive right to the use of the term "Flan'l" apart from the mark as shown.
For Adhesive Backed Decorative Sheet Material.
First use June 1965.

SN 249,110. Beacon Steel Products Co., Inc., Westminster, Md. Filed June 28, 1966.

BEACON

Owner of Reg. No. 421,655.
For Metal Brooders, Portable Metal Chick Fountains, Metal Poultry Feeders and Waterers, Metal Grit Boxes, Metal Nests, and Metal Adjustable Roof Saddles.
First use on or about Jan. 1, 1943.

SN 249,141. William S. Crombie, Jr., d.b.a. The Crombie Manufacturing Co., El Paso, Tex. Filed June 28, 1966.

DUNK-A-BUG

For Trap for Drowning Insects Consisting of a Vessel With Black Light Tube.
First use Nov. 4, 1965.

SN 255,681. Arnel-Plastron, Inc., New York, N.Y. Filed Oct. 4, 1966.

PLASTRON

Owner of Reg. Nos. 424,920 and 444,204.
For Plastic Scalloped Shelving for Kitchen Shelves, Clothes Closets, and the Like.
First use on or about Aug. 1, 1945.

Class 51—Cosmetics and Toilet Preparations

SN 207,472. Beecham Products Inc., Clifton, N.J. Filed Dec. 4, 1964.

VENTURE

For Men's Toiletries and Grooming Preparations—Namely, Hair Dressings.
First use Nov. 14, 1964.

SN 216,914. Yardley of London, Inc., Totowa, N.J. Filed Apr. 19, 1965.

Oh! de Paris

Applicant disclaims the word "Paris" apart from the mark as shown.
For Fragrance Products—Namely, Colognes, Perfumes, and Powders.
First use Apr. 6, 1965.

SN 216,915. Yardley of London, Inc., Totawa, N.J. Filed Apr. 19, 1965.

Oh! de Rome

Applicant disclaims the word "Rome" apart from the mark as shown.
For Fragrance Products—Namely, Colognes, Perfumes, and Powders.
First use Apr. 6, 1965.

SN 219,093. Yardley of London, Inc., Totowa, N.J. Filed May 17, 1965.

LIPLIGHTER

For Lipstick and Lip Gloss.
First use May 6, 1965.

SN 223,413. Hother Hellenberg A/S, Copenhagen, Denmark. Filed July 15, 1965.

NEW STAR NAIL

Applicant disclaims the words "New" and "Nail" apart from the mark as shown. Owner of Danish Reg. No. 3,401/1964, dated Oct. 31, 1964.
For Preparations for Producing Artificial Fingernails and Toenails.

SN 225,959. G. B. Kent & Sons, Ltd., London, England. Filed Aug. 18, 1965.

KENT OF LONDON

Applicant disclaims the word "London" apart from the mark as shown. Owner of U.S. Reg. No. 280,509.
For Men's Hair Grooming Preparation.
First use June 21, 1965; in commerce June 21, 1965.

SN 227,425. Kelly-Kehoe, Inc., New York, N.Y. Filed Sept. 8, 1965.



For Male and Female Cosmetics—Namely, Beauty and Make-Up Preparations Including Theatrical Make-Up, Cleansing Creams and Lotions, Mascara Remover Pads, Skin Care Preparations, Preparations for Applying and Removing Cosmetics, and Beauty and Make-Up Kits Consisting Essentially of the Afore-Mentioned Cosmetics.
First use on or about Feb. 4, 1963.

SN 229,848. Merchandising Corporation of America, Universal City, Calif. Filed Oct. 11, 1965.

MAN IN MOTION

For Men's After Shave Lotion and Cologne.
First use Aug. 11, 1965.

SN 229,942. Pierre Bohme, d.b.a. Simone Cochard Beauty Preparations, Montevideo, Uruguay. Filed Oct. 12, 1965.

Veronica BOHME

"Veronica Bohme" is the name of applicant's daughter, who is a minor, whose consent to use her name for trademark purposes is of record.
For Nail Polish, Lipsticks, Hair Tints, and Eye Make-Up.
First use Nov. 3, 1964; in commerce Sept. 24, 1965.

SN 230,807. Eversharp, Inc., Milford, Conn. Filed Oct. 21, 1965.

IN PLACE

For Hair Preparations, Particularly Hair Dressing.
First use Oct. 6, 1965.

SN 231,308. Southwestern Drug Corporation, d.b.a. Tru-Lab Products, Dallas, Tex. Filed Oct. 22, 1965.

TRU-CLEAN

For Skin Cleanser and Conditioner.
First use Aug. 25, 1964.

SN 232,427. Steiner Products Limited, London, England. Filed Nov. 9, 1965.

GLO-AHEAD

Owner of British Reg. No. 749,638, dated Jan. 4, 1956.
For Preparations for the Hair—Namely, Hair Colorisers.

SN 234,728. Helene Curtis Industries, Inc., Chicago, Ill. Filed Dec. 16, 1965.

FAST 'N LIGHT

For Creme Hair Lightener.
First use on or about Nov. 22, 1965.

SN 235,557. Emilio Pucci Perfumes International, Inc., New York, N.Y. Filed Dec. 30, 1965.

EMILIO PUCCI VIVARA

"Emilio Pucci" identifies a living individual whose consent is of record.
For Perfume and Cologne.
First use Nov. 12, 1965.

SN 235,720. Sea & Ski Corporation, Millbrae, Calif. Filed Jan. 3, 1966.

TAN & CLEAR

For Medicated Tanning Lotion.
First use Nov. 29, 1965.

SN 236,150. Royal Beauty Laboratories, Inc., New York, N.Y. Filed Jan. 10, 1966.

ROYAL

For Permanent Waving Lotion, Preparations for Tinting and Bleaching the Hair, Cream Rinses, Hair Spray, Hair Lotions, Hair Conditioners, Neutralizers and Dye Stain Removers.
First use Aug. 13, 1965.

SN 236,953. John D. Arias, d.b.a. Artz Laboratories, Matawan, N.J. Filed Jan. 21, 1966.

RESPITE

For Bath Salt.
First use Sept. 23, 1964.

SN 238,569. Riverton Laboratories Incorporated, d.b.a. Riverton Cosmetic Laboratories, Newark, N.J. Filed Feb. 10, 1966.

COIFFAIT

For Hair Spray.
First use September 1957.

SN 239,564. Yardley of London, Inc., Totowa, N.J. Filed Feb. 24, 1966.

ENGLISH LOOK

For Lipstick, Rouge, Face Powder, and Mascara.
First use Jan. 28, 1966.

SN 239,565. Yardley of London, Inc., Totowa, N.J. Filed Feb. 24, 1966.

TUCKABLES

For Perfumed Sachet.
First use Feb. 1, 1966.

SN 239,566. Yardley of London, Inc., Totowa, N.J. Filed Feb. 24, 1966.

LONDON DEW

For Skin Moisturizer and a Cleanser.
First use Feb. 1, 1966.

SN 241,112. Yardley of London, Inc., Totowa, N.J. Filed Mar. 15, 1966.

ENGLISH TOUCH

For Foundation Cream, Lipstick, Eye Shadow, After Shave Lotion, and Hair Tonic.
First use Feb. 24, 1966.

SN 241,641. Cosmetics Manufacturing Company, d.b.a. Cosmetco, Long Beach, Calif. Filed Mar. 23, 1966.

Imperial Silver

Applicant disclaims the word "Imperial," except as part of the mark as a whole. Owner of Reg. No. 771,246.
For Men's Cologne and After Shave Lotion.
First use Feb. 23, 1966.

SN 242,245. The House of Wrisley, Inc., Paris, Tenn. Filed Mar. 30, 1966.

LEMON TWIST

For Bath Oil, Cologne, and Hand and Body Lotion.
First use Feb. 28, 1964.

SN 242,544. Avon Products, Inc., New York, N.Y. Filed Apr. 4, 1966.

SWASHBUCKLER

For Hair Dress.
First use Mar. 24, 1966.

SN 242,545. Avon Products, Inc., New York, N.Y. Filed Apr. 4, 1966.

EMBLEM

For After Shave Lotion.
First use Mar. 24, 1966.

SN 246,360. The Procter & Gamble Company, Cincinnati, Ohio. Filed May 23, 1966.

TIMELY TOUCH

For Hair Coloring.
First use Mar. 14, 1966.

SN 246,446. Creative Perfumers & Flavorists, Inc., New York, N.Y. Filed May 24, 1966.

GOLDEN EARRINGS

For Perfume and Cologne.
First use Jan. 2, 1952.

SN 248,307. Clairol Incorporated, New York, N.Y. Filed June 17, 1966.

NICE 'N SUNNY

For Cosmetic and Toilet Preparations—Namely, Hair Tinting, Dyeing, and Coloring Preparations.
First use Mar. 25, 1966.

SN 248,678. Clairol Incorporated, New York, N.Y. Filed June 22, 1966.

SOFT 'N SUNNY

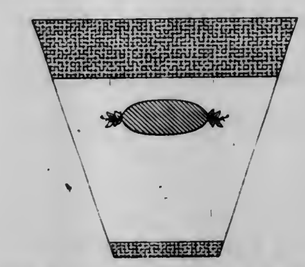
For Cosmetic and Toilet Preparations—Namely, a Hair Lightener.
First use Feb. 21, 1966.

SN 252,233. Brigitte Deutsch, d.b.a. Perfumes by Brigitte, Beverly Hills, Calif. Filed Aug. 12, 1966.

KONA KAI

For Cologne and Body Lotion.
First use Aug. 4, 1966.

SN 254,964. Adams National Industries (Pty.) Ltd., Durban, Natal, South Africa. Filed Sept. 23, 1966.



The drawing is lined for gold and green, however, no claim is made to color as a feature of the mark.
For Skin Lotion.
First use July 1, 1957; in commerce Feb. 11, 1963.

SN 256,189. The Andrew Jergens Company, Cincinnati, Ohio. Filed Oct. 11, 1966.

SECRET CHANGE

Owner of Reg. No. 748,183.
For Hair Coloring Preparation and Face Cream.
First use Mar. 26, 1962.

Class 52—Detergents and Soaps

SN 179,472. Solomon Musican, d.b.a. The Ta-Koff Co., Philadelphia, Pa. Filed Oct. 21, 1963.

TA-KOFF

For Aerosol Spray To Remove Grease Spots From Wall Paper.
First use June 14, 1963.

SN 223,120. Grace-Lee Products Inc., Minneapolis, Minn. Filed July 12, 1965.

3-DDD

For Sanitation Cleanser Having the Properties of a Disinfectant, a Detergent, and a Deodorant.
First use Apr. 11, 1961.

SN 233,031. C. L. Williamson, d.b.a. Northwest Sanitation Products, Fort Bragg, Calif. Filed Nov. 19, 1965.

BLU-BOY

For Toilet Bowl Cleaner, Freshener, and Deodorizer.
First use June 1, 1963.

SN 233,364. Lovida AG., Chur, Switzerland. Filed Nov. 26, 1965.

PAN-INSTANT

Owner of Swiss Reg. No. 201,514, dated Dec. 4, 1963.
For Hair Shampoo.

SN 234,606. G. B. Kent & Sons, Ltd., London, England. Filed Dec. 13, 1965.

KENT OF LONDON

Applicant disclaims the word "London" apart from the mark as shown. Owner of U.S. Reg. Nos. 280,509 and 362,203.
For Facial Soap and Hand Soap.
First use Sept. 20, 1965; in commerce Sept. 20, 1965.

SN 242,246. The House of Wrisley, Inc., Paris, Tenn. Filed Mar. 30, 1966.

LEMON TWIST

For Soap.
First use May 2, 1963.

SN 243,315. The Fuller Brush Company, East Hartford, Conn. Filed Apr. 13, 1966.

SPRAY 'N SPARKLE

For Cleaning Agent for Windows and Other Hard Surfaces.
First use October 1957.

SN 243,892. The Procter & Gamble Company, Cincinnati, Ohio. Filed Apr. 20, 1966.

TIMELY TOUCH

For Hair Shampoo.
First use Mar. 8, 1966.

SN 243,893. The Procter & Gamble Company, Cincinnati, Ohio. Filed Apr. 20, 1966.

CONFIDE

For Hair Shampoo.
First use Mar. 8, 1966.

SN 244,536. Swank, Inc., Attleboro, Mass. Filed Apr. 28, 1966.

Mystaire

For Aerosol Dispersible Spot and Stain Remover.
First use Apr. 13, 1966.

SN 244,827. Infinite Cleaning Corporation, Orlando, Fla. Filed May 3, 1966.

infinite

The solid color rectangle surrounding the word "Infinite" forms no part of the mark but merely represents background.
For General Purpose Detergent Cleaner Concentrate.
First use Apr. 21, 1966.

SN 250,805. Permatex Company, Inc., Brooklyn, N.Y. Filed July 22, 1966.

Owner of Reg. Nos. 93,418, 761,075, and others.
For Windshield Cleaner Concentrate, Tar Remover, Car Wash, Fabric Cleaner, Cooling System Cleaner and Conditioner, and Fast Flush for Cleaning Radiators.
First use April 1960 on tar remover.

SERVICE MARKS

Class 100 — Miscellaneous

SN 201,830. Equitable Leasing Corporation, Asheville, N.C. Filed Sept. 14, 1964.

ELC

For General Leasing Services Involving Purchasing and Leasing Items Such as Furniture, Office Furniture and Equipment, and Television Sets.
First use Nov. 1, 1958.

SN 221,667. Westminster Enterprises, Ltd., d.b.a. The Three Fountains Restaurant, St. Louis, Mo. Filed June 21, 1965.

THE THREE FOUNTAINS

For Restaurant Services.
First use on or about Dec. 20, 1960.

SN 233,935. Ocean Science and Engineering, Inc., Washington, D.C. Filed Dec. 3, 1965.



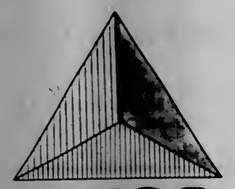
For Engineering Management Services Relating to Oceanic Technology, Such as: Conducting Studies and Surveys, Designing and Developing Oceanic Instruments and Machinery, Prospecting for Ocean Minerals and Engaging in Continuing Research on Behalf of Government and Industry.
First use July 1, 1963.

SN 235,988. Jack-In-The-Box, Inc., San Diego, Calif. Filed Jan. 7, 1966.



Owner of Reg. Nos. 722,379 and 722,380.
For Restaurant and Take-Out Food Services.
First use November 1962.

SN 241,011. Cities Service Oil Company, Tulsa, Okla. Filed Mar. 10, 1966.



The drawing is lined for three shades of red. Owner of Reg. Nos. 525,104, 798,036, and others.
For Furnishing of Travel Information and Maps.
First use May 1965.

Class 101 — Advertising and Business

SN 234,439. Lady Baltimore Office Services, Inc., Baltimore, Md. Filed Dec. 13, 1965.



Owner of Reg. No. 789,495.
For Secretarial and Clerical Services, Operators for Bookkeeping and Other Business Office Machines, and Employment Services Involving the Furnishing of Office Help to Industry, Government, and Small Businesses.
First use May 31, 1965.

SN 235,147. Williams Real Estate Co., Inc., New York, N.Y. Filed Dec. 16, 1965.



For Services in the Fields of Leasing, Selling, Appraising, and Mortgaging of Real Estate; Building Management; and Other Real Estate Transactions.
First use Oct. 29, 1965.

SN 242,057. Sherlock Homes, Ltd., Arlington, Va. Filed Mar. 28, 1966.



For Computerized Real Estate Listing Services.
First use Feb. 15, 1966.

Class 102 — Insurance and Financial

SN 238,678. Taxtronics, San Francisco, Calif. Filed Feb. 11, 1966.

TAXTRONICS

For Preparation of Income Tax Returns by Electronic Data Process.
First use Dec. 15, 1965.

SN 240,152. C.R.A. Corporation, Orange, N.J. Filed Mar. 4, 1966.

CRA

For Financing Purchases of Business Machines.
First use not later than in or about February 1957.

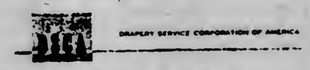
SN 241,674. National Association Plans, Inc., New York, N.Y. Filed Mar. 23, 1966.

COORDINATED-CARE

For Administration of Insurance Service—Namely, Liaison Services Between Individual Insured Members of Membership Groups and the Underwriter of the Insurance, Including General Supervision of Premium Payments and Claims.
First use September 1965.

Class 103 — Construction and Repair

SN 235,172. Drapery Service Corporation of America, Plainview, N.Y. Filed Dec. 23, 1965.



For Cleaning Services for Draperies, Slipcovers, Bedspreads, Dust Ruffles, Valances, and Festoons.
First use Jan. 8, 1964.

SN 236,306. Transmission Corporation of America, Stone Park, Ill. Filed Jan. 12, 1966.



The drawing is lined for the color red.
For Repairing and Reconstructing Automotive Transmission and Parts Thereof.
First use Nov. 2, 1965.

Class 104 — Communication

SN 236,040. American District Telegraph Company, New York, N.Y. Filed Jan. 10, 1966.



Owner of Reg. Nos. 700,676, 794,958, and others.
For Telephone Answering Service.
First use Sept. 23, 1965, in about February 1963 as to "ADT."

Class 105 — Transportation and Storage

SN 211,083. Melia Tours, Inc., New York, N.Y. Filed Feb. 1, 1965.

IBERIAN HOLIDAY

The term "Iberian" is disclaimed apart from the mark as shown.
For Preparation and Servicing of Package Tours Sold by Travel Agencies to the General Public.
First use Oct. 1, 1960.

SN 223,569. Nationwide Trailer Rental System, Inc., Wichita, Kans. Filed July 16, 1965.

NATIONWIDE

Owner of Reg. Nos. 678,655, 751,054, and others.
For Association Services—Namely, Promoting Interest of Trailer Rental Operators, Clearing House Operation Among Members, Preparation and Distribution of Advertising and Promotional Materials To Promote Members' Business.
First use Mar. 1, 1965.

SN 223,570. Nationwide Trailer Rental System, Inc., Wichita, Kans. Filed July 16, 1965.



Owner of Reg. Nos. 678,655, 751,054, and others.
For Association Services—Namely, Promoting Interest of Trailer Rental Operators, Clearing House Operation Among Members, Preparation and Distribution of Advertising and Promotional Materials To Promote Members' Business.
First use Mar. 1, 1965.

SN 240,091. Garber's Travel Service, Inc., Brookline, Mass. Filed Mar. 3, 1966.

INVITATION TRAVEL

The word "Travel" is disclaimed apart from the mark as shown.
For Travel Services and Arrangement, Sale and Operation of All-Expense Travel Tours, Including Air, Water and Ground Reservations and Food, Lodging, and Sightseeing.
First use Dec. 1, 1965.

Class 106 — Material Treatment

SN 241,368. Perf-O-Dent Company, Inc., Chicago, Ill. Filed Mar. 18, 1966.

PERF-O-DENT

For Preparing Photo Identification Cards.
First use on or about Jan. 9, 1959.

Class 107 — Education and Entertainment

SN 191,554. Bertram W. Hiles, d.b.a. Wimpey, Chicago, Ill. Filed Apr. 20, 1964.

WIMPEY

For Entertainment Services—Namely, Producing and Furnishing Clown Acts for Circuses and Similar Enterprises.
First use in or about 1941.

SN 234,780. The Television, Radio and Film Commission of the Methodist Church, Nashville, Tenn. Filed Dec. 16, 1965.

NIGHT CALL

For Services Rendered to Radio Station—Namely, Providing Radio Scripts and Materials Relating to a Call-In Program for Use Over Radio.
First use Mar. 8, 1964.

SN 234,782. The Television, Radio and Film Commission of the Methodist Church, Nashville, Tenn. Filed Dec. 16, 1965.

MAN WITH THE MIKE

For Services Rendered to Radio Stations—Namely, Providing Radio Scripts and Recorded Programs Concerning Public Issues for Use Over Radio.
First use Oct. 4, 1965.

SN 240,938. Metropolitan Baseball Club, Inc., Flushing, N.Y. Filed Mar. 14, 1966.



The drawing is lined for blue and orange.
For Baseball Exhibitions.
First use Mar. 10, 1962.

SN 241,134. The Five Smiths, Inc., Atlanta, Ga. Filed Mar. 16, 1966.

ATLANTA FALCONS

Applicant disclaims the word "Atlanta" apart from the mark as shown.
For Furnishing Entertainment Services in the Nature of Professional Football Exhibitions.
First use no later than Oct. 28, 1965.

SN 243,116. The Five Smiths, Inc., Atlanta, Ga. Filed Apr. 11, 1966.



Applicant disclaims the word "Atlanta" apart from the mark as shown.
For Furnishing Entertainment Services in the Nature of Professional Football Exhibitions.
First use no later than Oct. 28, 1965.

SN 250,117. The Teddy Bears, Jacksonville, Fla. Filed July 13, 1966.

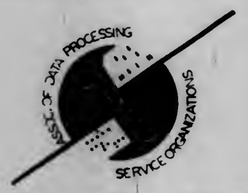
THE TEDDY BEARS

For Instrumental and Vocal Entertainment Services Rendered by a Band.
First use Jan. 18, 1965.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 244,457. Association of Data Processing Service Organizations, Inc., Abington, Pa. Filed Apr. 28, 1966.



The exclusive right to use "Asso. of Data Processing Service Organizations" is disclaimed apart from the mark as shown.
For Indicating Membership in Applicant.
First use during the year 1962.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

821,775. DEGUSSIT AND DESIGN. Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. MULTIPLE CLASS (Classes 1, 4, 12, 21, 23, 26, and 34). SN 204,457. Pub. 10–25–66. Filed 10–21–64.

821,776. PRO-PAFILM. Imperial Chemical Industries Limited. SN 232,839. Pub. 10–25–66. Filed 11–17–65.

821,777. ALPINE. Dairyland Seed Company, Inc. SN 237,437. Pub. 10–25–66. Filed 1–27–66.

821,778. ZETAFAX. The Dow Chemical Company. SN 239,132. Pub. 10–25–66. Filed 2–18–66.

821,779. SNOWEX. Polymers, Inc. SN 241,599. Pub. 10–25–66. Filed 3–22–66.

821,780. CONWED. Wood Conversion Company. SN 242,164. Pub. 10–25–66. Filed 3–29–66.

821,781. ASTRA-PLATE. Georgia Kaolin Company. SN 242,813. Pub. 10–25–66. Filed 4–6–66.

821,782. ASTRA-BRITE. Georgia Kaolin Company. SN 242,814. Pub. 10–25–66. Filed 4–6–66.

821,783. ASTRA-GLAZE. Georgia Kaolin Company. SN 242,815. Pub. 10–25–66. Filed 4–6–66.

821,784. SISA-LATOR. Clark Bros. Felt Co. SN 243,096. Pub. 10–25–66. Filed 4–11–66.

821,785. CLR. William H. Lewis, d.b.a. Circle L Ranch. SN 243,144. Pub. 10–25–66. Filed 4–11–66.

821,786. STAR GRILL. Rum River Charcoal Co. SN 243,171. Pub. 10–25–66. Filed 4–11–66.

821,787. WITCOGUM. Witco Chemical Company, Inc. SN 243,208. Pub. 10–25–66. Filed 4–11–66.

821,788. AMSCO-RES. Union Oil Company of California. SN 243,811. Pub. 10–25–66. Filed 4–19–66.

821,789. STORMY LEATHER. Wood & Hyde Leather Company, Inc. SN 244,048. Pub. 10–25–66. Filed 4–21–66.

821,790. CORIAN. E. I. du Pont de Nemours and Company. SN 251,856. Pub. 10–25–66. Filed 8–8–66.

821,791. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 251,858. Pub. 10–25–66. Filed 8–8–66.

Class 2 — Receptades

821,792. FRIGID-PAK. Union Camp Corporation, by change of name from Union Bag-Camp Paper Corporation. SN 217,965. Pub. 11–16–65. Filed 4–22–65.

821,793. TOTESTER. Phillips Petroleum Company. SN 223,575. Pub. 10–25–66. Filed 7–16–65.

821,794. PORTAPAK. Pakhuismeesteren N.V. SN 223,708. Pub. 10–25–66. Filed 7–19–65.

821,795. CYCLOPS. Cyclops Corporation. MULTIPLE CLASS (Classes 2, 12, 13, 14, and 23). SN 226,598. Pub. 10–25–66. Filed 8–27–65.

821,796. LADY-BAGS. Interstate Bag Company, Inc. SN 228,529. Pub. 10–25–66. Filed 9–24–65.

821,797. WIL-HOLD AND DESIGN. Wilson Manufacturing Corporation. SN 229,038. Pub. 10–25–66. Filed 9–30–65.

821,798. NOAH'S ARK. Sweetheart Plastics, Inc. SN 231,286. Pub. 10–25–66. Filed 10–22–65.

821,799. STASAFE AND DESIGN. Standard Safety Equipment Company. MULTIPLE CLASS (Classes 2, 34, 39, 44, and 50). SN 238,796. Pub. 10–25–66. Filed 2–14–66.

821,800. BOTTOMS-UP. Heidi Plastics Corp. SN 252,060. Pub. 10–25–66. Filed 8–10–66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

821,801. KEY-FLIP. Steere Enterprises, Inc. SN 245,522. Pub. 10–25–66. Filed 5–12–66.

Class 4 — Abrasives and Polishing Materials

821,775. (See Class 1 for this trademark.)

Class 6 — Chemicals and Chemical Compositions

821,802. EXEL. P & C Food Markets, Inc. SN 178,363. Pub. 10–5–65. Filed 10–4–63.

821,803. FIXETTE. Becton, Dickinson and Company. SN 204,229. Pub. 10–25–66. Filed 10–19–64.

821,804. HARSHAW AND DESIGN. The Harshaw Chemical Company. SN 217,541. Pub. 10–25–66. Filed 4–28–65.

821,805. DACONATE. Diamond Alkali Company. SN 219,972. Pub. 2–15–66. Filed 5–28–65.

821,806. ANTI-GERM 50. Chas. Pfizer & Co., Inc. SN 221,293. Pub. 10–25–66. Filed 6–16–65.

821,807. ALPURINE. Aldrich Chemical Company, Inc. SN 222,538. Pub. 10–25–66. Filed 7–2–65.

821,808. LADYSAVER. Jack Kimball Marshall, d.b.a. Kimball-Marshall Associates. SN 224,433. Pub. 10–25–66. Filed 7–28–65.

821,809. COTTOCLARIN. Bohme Fettchemie G.m.b.H. SN 225,270. Pub. 10–25–66. Filed 8–9–65.

821,810. POLYMON. Imperial Chemical Industries Limited. SN 225,423. Pub. 10–25–66. Filed 8–10–65.

821,811. WOODGLOVE. The Glidden Company. SN 226,909. Pub. 10–25–66. Filed 9–1–65.

821,812. DECIMATE. Hi-Yield Chemical Co. SN 227,801. Pub. 2–15–66. Filed 9–15–65.

821,813. ONYXIDE. Millmaster Onyx Corporation. SN 228,063. Pub. 10–25–66. Filed 9–17–65.

821,814. ORTHO AND DESIGN. Ortho Pharmaceutical Corporation. MULTIPLE CLASS (Classes 6 and 44). SN 232,583. Pub. 10–25–66. Filed 11–12–65.

821,815. POST-4. The Baker Castor Oil Company. SN 233,440. Pub. 10–25–66. Filed 11–29–65.

821,816. ORTHO DIAGNOSTICS AND DESIGN. Ortho Pharmaceutical Corporation. MULTIPLE CLASS (Classes 6 and 44). SN 233,941. Pub. 10–25–66. Filed 12–3–65.

821,817. VAPO-KIL. West Chemical Products, Inc. SN 234,379. Pub. 10–25–66. Filed 12–10–65.

821,818. MISCELLANEOUS DESIGN. Illinois Bronze Powder & Paint Co. SN 235,983. Pub. 10–25–66. Filed 1–7–66.

821,819. BADGER ETC. AND DESIGN. Badger Fire Extinguisher Company, Inc. MULTIPLE CLASS (Classes 6 and 23). SN 236,454. Pub. 10–25–66. Filed 1–14–66.

821,820. NURAD. NRA, Inc. SN 236,837. Pub. 10–25–66. Filed 1–19–66.

821,821. ACTIVATE. Thompson-Hayward Chemical Company. SN 238,582. Pub. 10–25–66. Filed 2–10–66.

821,822. CHAIR-LOC. The Chair-Loc Company. SN 239,496. Pub. 10–25–66. Filed 2–24–66.

821,823. RHAP-TROL. Hercules Incorporated, by change of name from Hercules Powder Company. SN 239,624. Pub. 9–20–66. Filed 2–25–66.

821,824. CERTA-FLOC. Seaboard Industries. SN 240,666. Pub. 10–25–66. Filed 3–10–66.

821,825. ARROWHEAD AND TRIANGLE IN RECTANGLE (DESIGN). Rohm and Haas Company. SN 240,790. Pub. 10–25–66. Filed 3–11–66.

821,826. ENZ-STAT. Chemical Service of Baltimore, Inc. SN 241,582. Pub. 10–25–66. Filed 3–22–66.

821,827. PHOTOSTRIP. Mallinckrodt Chemical Works. SN 242,904. Pub. 10–25–66. Filed 4–7–66.

821,828. VISTIK. Hercules Incorporated, by change of name from Hercules Powder Company. SN 242,982. Pub. 10–25–66. Filed 4–8–66.

821,829. MARINCO MAH. Merck & Co., Inc. SN 243,153. Pub. 10–25–66. Filed 4–11–66.

821,830. PELLETHANE. The Upjohn Company. SN 244,779. Pub. 10–25–66. Filed 5–2–66.

821,831. STALEMATE. Tabtrol Company, Inc. SN 244,857. Pub. 10–25–66. Filed 5–3–66.

821,832. FERRO PAK MPI AND DESIGN. The Cromwell Paper Company. SN 244,975. Pub. 10–25–66. Filed 5–5–66.

821,833. Q-TAC. Corn Products Company. SN 245,165. Pub. 10–25–66. Filed 5–9–66.

821,834. KATTLE KUMFORT. Westland Oil Company. SN 245,264. Pub. 10–25–66. Filed 5–9–66.

821,835. CONCENTROL. The Bird-Archer Company. SN 245,286. Pub. 10–25–66. Filed 5–10–66.

821,836. BACO. The Bird-Archer Company. SN 245,287. Pub. 10–25–66. Filed 5–10–66.

821,837. GRANUSIC. J. T. Baker Chemical Company. SN 245,879. Pub. 10–25–66. Filed 5–11–66.

821,838. CAL AND DESIGN. Chas. Pfizer & Co., Inc. SN 245,502. Pub. 10–25–66. Filed 5–12–66.

821,839. STERMINATE. Lehn & Fink Products Corporation. SN 245,597. Pub. 10–25–66. Filed 5–13–66.

821,840. MODOLOG. Mo och Domsjo Aktiebolag. SN 245,601. Pub. 10–25–66. Filed 5–13–66.

821,841. SAV-A-POND. The Procter & Gamble Company. SN 245,751. Pub. 10–25–66. Filed 5–16–66.

821,842. DIXIE. Holland-Suco Color Company. SN 245,826. Pub. 10–25–66. Filed 5–17–66.

821,843. FERMVERTASE. Fermco Laboratories, Inc. SN 246,165. Pub. 10–25–66. Filed 5–20–66.

821,844. TYSTAR. Morningstar-Paisley, Inc. SN 246,190. Pub. 10–25–66. Filed 5–20–66.

821,845. RELCACID. Sandos, Inc. SN 246,200. Pub. 10–25–66. Filed 5–20–66.

821,846. STRIKETHRU. Alvin Akira Tamura, d.b.a. Breakthru Instruments Co. SN 246,210. Pub. 10–25–66. Filed 5–20–66.

821,847. A LAKE MAID ETC. AND DESIGN. Hardy Salt Company. MULTIPLE CLASS (Classes 6 and 46). SN 246,223. Pub. 10–25–66. Filed 5–23–66.

821,848. MILSTAT. Atlas Chemical Industries, Inc. SN 246,247. Pub. 10–25–66. Filed 5–23–66.

821,849. SHADE. Joiner Positive Seals, Inc. SN 246,318. Pub. 10–25–66. Filed 5–23–66.

821,850. STAR-PRINT. Philip A. Hunt Chemical Corporation. SN 246,470. Pub. 10–25–66. Filed 5–24–66.

821,851. BUENO. Diamond Alkali Company. SN 251,035. Pub. 10–25–66. Filed 7–26–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

821,852. KREISLER. Jacques Kreisler Manufacturing Corporation. SN 230,161. Pub. 10–25–66. Filed 10–14–65.

821,853. BUSY RING AND DESIGN. Adolph R. Borrusch. SN 236,796. Pub. 10–25–66. Filed 1–19–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

821,854. LAWRENCE. The George Lawrence Co. SN 224,762. Pub. 10–25–66. Filed 8–2–65.

821,855. RETRIEVER. Big Bear, Inc. SN 233,314. Pub. 10–25–66. Filed 11–26–65.

821,856. BOOSTERMITE. Trojan Powder Company. SN 233,657. Pub. 10–25–66. Filed 11–30–65.

Class 10 — Fertilizers

821,857. HYDROCARE. Hydrocare Products Corporation. SN 240,388. Pub. 10–25–66. Filed 3–7–66.

821,858. ARROWHEAD AND TRIANGLE IN RECTANGLE (DESIGN). Rohm and Haas Company. SN 240,662. Pub. 10–25–66. Filed 3–10–66.

821,859. PLANTER'S GOLD. Oil-Dri Corporation of America. SN 242,040. Pub. 10–25–66. Filed 3–28–66.

Class 12 — Construction Materials

821,775. (See Class 1 for this trademark.)

821,795. (See Class 2 for this trademark.)

821,860. CHIPTEX. Readco Industries Inc. SN 231,939. Pub. 10–25–66. Filed 11–1–65.

821,861. PIONEER. General Refractories Company. SN 239,901. Pub. 10–25–66. Filed 3–1–66.

821,862. ECCOFLOAT. Emerson & Cuming, Inc. SN 239,982. Pub. 10–25–66. Filed 3–2–66.

821,863. GOLDEN-STUD. United States Plywood Corporation. SN 240,131. Pub. 10–25–66. Filed 3–3–66.

821,864. CHECK-FREE. International Paper Company. SN 240,306. Pub. 10–25–66. Filed 3–7–66.

821,865. STYRO-FAB. Styro Fabricators, Inc. SN 243,493. Pub. 10–25–66. Filed 4–14–66.

821,866. SIMPLANK Minnesota Mining and Manufacturing Company. SN 244,290. Pub. 10–25–66. Filed 4–26–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

821,795. (See Class 2 for this trademark.)

821,867. FIRE-SEAL. Hills-McCanna Company. SN 226,639. Pub. 10–25–66. Filed 8–27–65.

821,868. CRYOSEAL. Hills-McCanna Company. SN 227,583. Pub. 10–25–66. Filed 9–10–65.

821,869. PRESTO-FIT AND DESIGN. "Automatic" Sprinkler Corporation of America. SN 232,762. Pub. 10–25–66. Filed 11–16–65.

821,870. DOUGH BOY. The Independent Nail Corporation. SN 237,451. Pub. 10–25–66. Filed 1–27–66.

821,871. KLIP-STIX. Adhesive Tape Corporation, d.b.a. Klip-Stix. SN 238,032. Pub. 10–25–66. Filed 2–4–66.

821,872. SOUTHCO. South Chester Corporation. SN 243,722. Pub. 10–25–66. Filed 4–18–66.

821,873. SPRINGMIST. The Skinner Irrigation Company. SN 243,914. Pub. 10–25–66. Filed 4–20–66.

821,874. CABLE CORRAL. Armco Steel Corporation. SN 244,069. Pub. 10–25–66. Filed 4–22–66.

821,875. PANELOC. The Paneloc Corporation. SN 244,350. Pub. 10–25–66. Filed 4–26–66.

821,876. PERMA-MAT. Wallace-Murray Corporation. SN 244,372. Pub. 10–25–66. Filed 4–26–66.

821,877. INTER-PILOT. Mead Specialties Co., Inc. SN 244,420. Pub. 10–25–66. Filed 4–27–66.

Class 14—Metals and Metal Castings and Forgings

821,795. (See Class 2 for this trademark.)

821,878. MISCELLANEOUS DESIGN. Specialloy, Inc. SN 233,144. Pub. 10–25–66. Filed 11–22–65.

Class 15—Oils and Greases

821,879. KRYDA. Francesco Ferrerio di R. Dona. SN 189,998. Pub. 10–25–66. Filed 3–31–64.

821,880. MISCELLANEOUS DESIGN. Illinois Bronze Powder & Paint Co. SN 235,984. Pub. 10–25–66. Filed 1–7–66.

821,881. X-TEND. X-Tend Automotive Industries, Inc. SN 238,819. Pub. 10–25–66. Filed 2–14–66.

821,882. X-TEND AND DESIGN. X-Tend Automotive Industries, Inc. SN 238,820. Pub. 10–25–66. Filed 2–14–66.

821,883. AD-LUBE. Clipper Manufacturing Company, Inc. SN 238,928. Pub. 10–25–66. Filed 2–16–66.

Class 16—Protective and Decorative Coatings

821,884. COOK AND DESIGN. Cook Paint & Varnish Company. SN 242,568. Pub. 10–25–66. Filed 4–4–66.

Class 17—Tobacco Products

821,885. DARDANELLA. Wally Frank, Ltd. SN 228,358. Pub. 10–25–66. Filed 9–22–65.

821,886. DANNEMANN. Dannemann Comercio e Industria de Fumos Ltda. Dancoin. SN 228,996. Pub. 10–25–66. Filed 9–30–65.

Class 18—Medicines and Pharmaceutical Preparations

821,887. MIKROPLEX. Societe d'Etude des Catalyseurs. SN 170,347. Pub. 6–22–65. Filed 6–4–63.

821,888. TRIACTIN. The Norwich Pharmacal Company. SN 213,187. Pub. 1–4–66. Filed 3–1–65.

821,889. KLEERIT. Drug Guild Co-Operative, Inc. SN 217,871. Pub. 10–25–66. Filed 5–3–65.

821,890. CARE CREME. Leeds Pharmacal Corp. SN 218,124. Pub. 10–25–66. Filed 4–20–65.

821,891. NOBEPYROL. Aktiebolaget Bofors. SN 227,090. Pub. 10–25–66. Filed 5–28–65.

821,892. NASATEX. Pure Pharmacal Company. SN 226,783. Pub. 11–8–66. Filed 8–30–65.

821,893. MARK AND ARROW DESIGN. Leo Linden Laboratories, Inc. SN 229,018. Pub. 10–25–66. Filed 9–30–65.

821,894. P.D.Q. The Allen and MacDonald Corp. SN 229,623. Pub. 10–25–66. Filed 10–8–65.

821,895. VIVONAL. Burroughs Wellcome & Co. (U.S.A.) Inc. SN 230,030. Pub. 10–25–66. Filed 10–13–65.

821,896. KALMS. Johnson & Johnson. SN 232,697. Pub. 10–25–66. Filed 11–15–65.

821,897. ONE A DAY ETC. AND DESIGN. Miles Laboratories, Inc. SN 234,571. Pub. 10–25–66. Filed 12–14–65.

821,898. FERRO-TREET. Philips Rozane, Inc. SN 237,251. Pub. 10–25–66. Filed 1–25–66.

821,899. ISORENIN. Chemetron Corporation. SN 239,381. Pub. 10–25–66. Filed 2–23–66.

821,900. MR. GROOM. Research Packaging, Inc. SN 240,783. Pub. 10–25–66. Filed 3–11–66.

821,901. FIOGESIC. Sandoz, Inc. SN 240,791. Pub. 10–25–66. Filed 3–11–66.

821,902. WHIRLWIND. Warner-Lambert Pharmaceutical Company. SN 241,106. Pub. 10–25–66. Filed 3–15–66.

821,903. THERATEX. Pure Pharmacal Company. SN 241,181. Pub. 10–25–66. Filed 3–17–66.

821,904. FORMULA C–100X. American Cyanamid Company. SN 241,221. Pub. 10–25–66. Filed 3–17–66.

821,905. FLUAX. Merck & Co., Inc. SN 241,261. Pub. 10–25–66. Filed 3–17–66.

821,906. ORALOID. American Pharmaceutical Company. SN 241,301. Pub. 10–25–66. Filed 3–18–66.

821,907. ZINCREO. Dental Research Laboratories. SN 242,805. Pub. 10–25–66. Filed 4–6–66.

821,908. IP-CHUK. Odin Industries, Inc. SN 244,845. Pub. 10–25–66. Filed 5–3–66.

821,909. ESSENCE. Marpol Laboratories, Inc. SN 245,728. Pub. 10–25–66. Filed 5–16–66.

821,910. UNILUER. E. R. Squibb & Sons, Inc. SN 246,133. Pub. 10–25–66. Filed 5–20–66.

821,911. LEAF (DESIGN). International Minerals & Chemical Corporation. SN 247,993. Pub. 10–25–66. Filed 6–14–66.

821,912. CONCERN. American Home Products Corporation. SN 249,916. Pub. 10–25–66. Filed 7–8–66.

821,913. TENSIBAN. American Home Products Corporation. SN 251,089. Pub. 10–25–66. Filed 7–27–66.

821,914. CRANIUM. American Home Products Corporation. SN 251,090. Pub. 10–25–66. Filed 7–27–66.

821,915. CRANIUM-T. American Home Products Corporation. SN 251,106. Pub. 10–25–66. Filed 7–27–66.

Class 19—Vehicles

821,916. HAPPY TIMES AND DESIGN. Donald F. Sloat, d.b.a. Sloat Manufacturing Company. SN 236,928. Pub. 10–25–66. Filed 1–20–66.

821,917. WILLIAMSBURG. Liberty Coach Company, Inc. SN 237,003. Pub. 10–25–66. Filed 1–21–66.

821,918. POWER CADDY. Fore Motor Cart Company. SN 237,104. Pub. 10–25–66. Filed 1–24–66.

821,919. DEBORINE. Halmatic Limited. SN 237,114. Pub. 10–25–66. Filed 1–24–66.

Class 21—Electrical Apparatus, Machines, and Supplies

821,775. (See Class 1 for this trademark.)

821,920. MICRO. Sony Corporation of America. SN 168,365. Pub. 10–25–66. Filed 5–7–63.

821,921. RADAIR. Chester N. Steele, d.b.a. Radair. SN 220,035. Pub. 10–25–66. Filed 5–28–65.

821,922. RMC-MAGNACAPS. P. R. Mallory & Co. Inc. SN 220,775. Pub. 10–25–66. Filed 6–9–65.

821,923. VOICE OF MUSIC. V-M Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 230,590. Pub. 10–25–66. Filed 10–19–65.

821,924. HT AND DESIGN. Hudson Tool & Die Company, Inc. SN 232,129. Pub. 10–25–66. Filed 11–4–65.

821,925. AUDALERT. Edwards Company, Inc. SN 232,769. Pub. 10–25–66. Filed 11–16–65.

821,926. ROTOZIN. Yardney Electric Corporation. SN 232,801. Pub. 10–25–66. Filed 11–16–65.

Class 22—Games, Toys, and Sporting Goods

821,927. MISCELLANEOUS DESIGN. Pressman Toy Corp. SN 217,654. Pub. 10–25–66. Filed 4–29–65.

821,928. PLAY-N-SAVE. Masco Corporation (Mascon Toy Company Division). SN 219,033. Pub. 10–25–66. Filed 5–17–65.

821,929. TIP-IT. Ideal Toy Corporation. SN 223,419. Pub. 10–25–66. Filed 7–15–65.

821,930. MGP RACING AND DESIGN. J. Warren Hull and Associates. SN 223,556. Pub. 10–25–66. Filed 7–16–65.

821,931. HALLMARK AND DESIGN. Hallmark Cards, Incorporated. SN 232,810. Pub. 10–25–66. Filed 11–8–65.

821,932. JOHNNY SPEED. De Luxe Reading Corporation. SN 235,169. Pub. 10–25–66. Filed 12–23–65.

821,933. TRIPLE CROWN. Atlantic Products Corporation. SN 235,483. Pub. 10–25–66. Filed 12–29–65.

821,934. FAIR LADY. First Flight Company. SN 235,660. Pub. 10–25–66. Filed 1–3–66.

821,935. TRU-TRN. Tru-Trn Tackle Co., Inc. SN 235,872. Pub. 10–25–66. Filed 1–5–66.

821,936. STAR 9. Fisher Brothers. SN 235,909. Pub. 10–25–66. Filed 1–6–66.

821,937. PACKEEPSKI. Kleineider-Fulton Co. SN 235,992. Pub. 10–25–66 Filed 1–7–66.

821,938. PACKEEPSKI AND DESIGN. Kleineider-Fulton Co. SN 235,993. Pub. 10–26–66. Filed 1–7–66.

821,939. MAJOR M. Mattel, Inc. SN 236,118. Pub. 10–25–66. Filed 1–10–66.

821,940. CREEPLE PEEPLE. Mattel, Inc. SN 236,119. Pub. 10–25–66. Filed 1–10–66.

821,941. HOWLERR! Mattel, Inc. SN 236,500. Pub. 10–25–66. Filed 1–14–66.

821,942. GEMINI. North American Golf, Inc. SN 236,629. 10–25–66. Filed 1–17–66.

821,943. BLITZKRIEG. The Avalon Hill Company. SN 236,711. Pub. 10–25–66. Filed 1–18–66.

821,944. REFLEXE. California Tackle Co., Inc. SN 248,296. Pub. 10–25–66. Filed 6–17–66.

821,945. SEW-BIG. Louis Marx & Co., Inc. SN 249,922. Pub. 10–25–66. Filed 7–11–66.

821,946. BUFFIE. Mattel, Inc. SN 250,911. Pub. 10–25–66. Filed 7–25–66.

821,947. LASER-BLAZER. Mattel, Inc. SN 250,912. Pub. 10–25–66. Filed 7–25–66.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

821,775. (See Class 1 for this trademark.)

821,795. (See Class 2 for this trademark.)

821,819. (See Class 6 for this trademark.)

821,948. SANDPIPER. Machinery Incorporated, Maine. SN 228,472. Pub. 7–12–66. Filed 9–23–65.

821,949. LENOX. Lenox, Incorporated. MULTIPLE CLASS (Classes 23 and 50). SN 230,668. Pub. 10–25–66. Filed 10–20–65.

821,950. CEJ. AB C. E. Johansson. MULTIPLE CLASS (Classes 23 and 26). SN 232,264. Pub. 10–25–66. Filed 11–8–65.

821,951. PINLON. The Klinger Manufacturing Company, Ltd. SN 235,680. Pub. 10–25–66. Filed 1–3–66.

821,952. ELECTRO-LINE AND DESIGN. Pres-To-Line Corporation of America. SN 237,379. Pub. 10–25–66. Filed 1–26–66.

821,953. PACECUTTER PONY. Wheel Trueing Tool Company. SN 237,504 Pub. 10–25–66. Filed 1–27–66.

821,954. PACECUTTER COLT. Wheel Trueing Tool Company. SN 237,505. Pub. 10–25–66. Filed 1–27–66.

821,955. MILECUTTER. Wheel Trueing Tool Company. SN 237,506. Pub. 10–25–66. Filed 1–27–66.

821,956. SPLITCUTTER. Wheel Trueing Tool Company. SN 237,507. Pub. 10–25–66. Filed 1–27–66.

821,957. CENTURAMIC. The Cincinnati Milling Machine Co. SN 237,658. Pub. 10–25–66. Filed 2–1–66.

821,958. TRIUMPH 500 AND DESIGN. Triumph Machinery Company. SN 244,041. Pub. 10–25–66. Filed 4–21–66.

821,959. DORINA. Dorina Nahmaschinen Gesellschaft mit beschrankter Haftung. SN 244,090. Pub. 10–25–66. Filed 4–22–66.

Class 25—Locks and Safes

821,960. TOK. The Firm August Winkhaus. SN 233,484. Pub. 10–25–66. Filed 11–29–65.

821,961. THREE POINTED STAR IN RING (DESIGN). Daimler-Benz Aktiengesellschaft. SN 234,806. Pub. 10–25–66. Filed 12–17–65.

Class 26—Measuring and Scientific Appliances

821,775. (See Class 1 for this trademark.)

821,950. (See Class 23 for this trademark.)

821,962. ELMISKOT. Siemens & Halske Aktiengesellschaft. SN 217,566. Pub. 10–25–66. Filed 4–28–65.

821,963. FAST STEPPER. Lyndon V. Grover, d.b.a. Grover Photo Products. SN 219,562. Pub. 10–25–66. Filed 5–24–65.

821,964. AUTOCHROMATANK. Shandon Scientific Company Limited. SN 219,622. Pub. 10–25–66. Filed 5–24–65.

821,965. SURFER. Sea & Ski Corporation. SN 225,604. Pub. 10–25–66. Filed 8–12–65.

821,966. UNIPLANE. Avant Incorporated. SN 233,306. Pub. 10–25–66. Filed 11–26–65.

821,967. TESA. Technical Industries, Inc. SN 234,085. Pub. 10–25–66. Filed 12–6–65.

821,968. MARK I. Nuclear-Chicago Corporation. SN 234,457. Pub. 10–25–66. Filed 12–13–65.

821,969. DEADY AND DESIGN. Deady Chemical Company. SN 235,633. Pub. 10–25–66. Filed 1–3–66.

821,970. CORNEALASTIC. Mueller Welt Contact Lenses, Inc. SN 235,999. Pub. 10–25–66. Filed 1–7–66.

821,971. ASTROGOGGLE. The Electric Storage Battery Company. SN 236,246. Pub. 10–25–66. Filed 1–12–66.

821,972. OPTO-REST. John Erwin Kippax. SN 236,272. Pub. 10–25–66. Filed 1–12–66.

Class 27—Horological Instruments

821,973. HI-G. Hamilton Watch Company. SN 234,278. Pub. 10–25–66. Filed 12–9–65.

Class 28—Jewelry and Precious-Metal Ware

821,974. TOYOMOTO. Toyomoto (Australia) Proprietary Limited. SN 229,466. Pub. 10–25–66. Filed 10–6–65.

Class 29—Brooms, Brushes, and Dusters

821,975. CAPTIVATION. All-American Brush Mfg. Corp. SN 225,704. Pub. 10–25–66. Filed 8–16–65.

821,976. LADY ENCHANTRESS. All-American Brush Mfg. Corp. SN 225,705. Pub. 10–25–66. Filed 8–16–65.

821,977. MISS CHARMING. All-American Brush Mfg. Corp. SN 225,706. Pub. 10–25–66. Filed 8–16–65.

821,978. ALL-AMERICAN. All-American Brush Mfg. Corp. SN 225,707. Pub. 10–25–66. Filed 8–16–65.

Class 31 — Filters and Refrigerators

821,979. PERMAPLEAT. Commercial Filters Corporation. SN 246,020. Pub. 10–25–66. Filed 5–19–66.

Class 32 — Furniture and Upholstery

821,980. MALE FIGURE (DESIGN). Vogel-Peterson Co. SN 219,088. Pub. 10–25–66. Filed 5–17–65.

821,981. HEAT-PAK. Borg-Warner Corporation. SN 239,214. Pub. 10–25–66. Filed 2–21–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

821,775. (See Class 1 for this trademark.)

821,799. (See Class 2 for this trademark.)

821,982. FAMOUS CLEVELAND FLUXES AND DESIGN. Cleveland Flux Company. SN 216,138. Pub. 10–25–66. Filed 4–9–65.

821,983. SILVER MONITOR. Crane Co. SN 233,583. Pub. 10–25–66. Filed 11–30–65.

821,984. PERFECTION AND DESIGN. Hupp Corporation. SN 235,830. Pub. 10–25–66. Filed 1–5–66.

821,985. A AND DESIGN. American Farm Equipment Co. SN 239,696. Pub. 10–25–66. Filed 2–28–66.

821,986. VICTOR AND DESIGN. Victor Equipment Company. SN 240,134. Pub. 10–25–66. Filed 3–3–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

821,987. STOP-START. The Goodyear Tire & Rubber Company. SN 230,148. Pub. 10–25–66. Filed 10–14–65.

Class 36 — Musical Instruments and Supplies

821,923. (See Class 21 for this trademark.)

Class 38 — Prints and Publications

821,988. THE BLUE SHIELD AND DESIGN. National Association of Blue Shields Plans. SN 234,293. Pub. 10–25–66. Filed 12–9–65.

821,989. YOUR EDMUNDITE MISSIONS NEWS LETTER AND DESIGN. Fathers of St. Edmund, Southern Missions, Inc. SN 234,553. Pub. 10–25–66. Filed 12–14–65.

821,990. THE CONTROLLER. Financial Executives Institute. SN 236,739. Pub. 10–25–66. Filed 1–18–66.

821,991. SIMPLITAX. Granite Investments Company, d.b.a. Simplitax Publications. SN 237,511. Pub. 10–25–66. Filed 1–25–66.

821,992. GREEN LANTERN. National Periodical Publications, Inc. SN 238,100. Pub. 10–25–6. Filed 2–4–66.

Class 39 — Clothing

821,799. (See Class 2 for this trademark.)

821,993. TILBURY AND DESIGN. Bata Shoe Company. SN 220,447. Pub. 10–25–66. Filed 6–7–65.

821,994. SAN'S. San's Clothing Factory Ltd. SN 226,291. Pub. 10–25–66. Filed 8–23–65.

821,995. OXONIAN. Oxford Manufacturing Company, Inc. SN 231,935. Pub. 8–23–66. Filed 11–1–65.

821,996. SMOOTH-ON. Van Raalte Company, Inc. SN 235,444. Pub. 10–25–66. Filed 12–28–65.

821,997. FREE-LIFT. The Warner Brothers Company. SN 238,375. Pub. 10–25–66. Filed 2–8–66.

821,998. STAPE-L-MATED AND DESIGN. Wells Lamont Corporation. SN 239,422. Pub. 10–25–66. Filed 2–23–66.

821,999. LOVE MIST. The Lovable Company. SN 239,636. Pub. 10–25–66. Filed 2–25–66.

822,000. LOVE SEAT. The Lovable Company. SN 239,638. Pub. 10–25–66. Filed 2–25–66.

822,001. PLENTY OF NOTHING. The Lovable Company. SN 239,639. Pub. 10–25–66. Filed 2–25–66.

822,002. CHANGE-UP. The Lovable Company. SN 239,640. Pub. 10–25–66. Filed 2–25–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

822,003. HOPTWIST. Antigua Industries, Ltd. SN 237,795. Pub. 10–25–66. Filed 2–2–66.

Class 44 — Dental, Medical, and Surgical Appliances

821,799. (See Class 2 for this trademark.)

821,814. (See Class 6 for this trademark.)

821,816. (See Class 6 for this trademark.)

822,004. LIGHT ALARM. Health Guardian Corporation. SN 232,312. Pub. 10–25–66. Filed 11–8–65.

822,005. CONCERN. American Home Products Corporation. SN 251,105. Pub. 10–25–66. Filed 7–27–66.

822,006. CONFORM. The Akwell Corporation. SN 251,679. Pub. 10–25–66. Filed 8–4–66.

Class 45 — Soft Drinks and Carbonated Waters

822,007. INDIA EXPRESS. Pure Spring (Canada) Ltd. SN 215,004. Pub. 2–8–66. Filed 3–25–65.

822,008. THREE LEMON FACES (DESIGN). Di Giorgio Corporation, assignee of Treesweet Products Co. MULTIPLE CLASS (Classes 45 and 46). SN 223,845. Pub. 10–4–66. Filed 7–20–65.

822,009. BLINK AND DESIGN. Canada Dry Corporation. SN 232,385. Pub. 10–25–66. Filed 11–9–65.

Class 46 — Foods and Ingredients of Foods

821,847. (See Class 6 for this trademark.)

822,008. (See Class 45 for this trademark.)

822,010. ROBERTSON'S. Robertson's. SN 190,831. Pub. 10–25–66. Filed 4–10–64.

822,011. LOUIS SHERRY AND DESIGN. Louis Sherry, Inc., by change of name from Louis Sherry Preserves, Inc. SN 208,866. Pub. 10–11–66. Filed 12–17–64.

822,012. PENROSE. Cherry-Levis Food Products Corp. SN 214,511. Pub. 10–25–66. Filed 3–19–65.

822,013. LITTLE KING AND DESIGN. King Kullen Grocery Co., Inc. SN 215,617. Pub. 2–1–66. Filed 4–2–65.

822,014. LA CAMPAGNOLA. Benvenuto Sociedad Anonima Comercial e Industrial. SN 215,833. Pub. 10–25–66. Filed 4–6–65.

822,015. ANIMAL. Warner-Lambert Pharmaceutical Company. SN 217,584. Pub. 10–25–66. Filed 4–28–65.

822,016. MR. SNAX. James E. Walker, Jr., d.b.a. Mr. Snax. SN 218,821. Pub. 10–25–66. Filed. 5–13–65.

822,017. SAF-T-POPS. The Curtiss Candy Company. SN 220,361. Pub. 10–25–66. Filed 6–4–65.

822,018. "TRES PINOS" AND DESIGN. Comercial Puig Hermanos S.A. SN 221,021. Pub. 10–25–66. Filed 6–14–65.

822,019. METRECAL. Mead Johnson & Company. SN 221,072. Pub. 10–25–66. Filed 6–14–65.

822,020. METRECAL. Mead Johnson & Company. SN 221, 073. Pub. 10–25–66. Filed 6–14–65.

822,021. POLLY MEADOWS AND DESIGN. Rochester Dairy Cooperative. SN 222,621. Pub. 10–25–66. Filed 7–2–65.

822,022. FUND RAISING WITH GOOD TASTE. The Chunky Corporation, by merger with Surrey Candy Kitchens, Inc. SN 223,053. Pub. 10–4–66. Filed 7–9–65.

822,023. WONDER MAID AND DESIGN. Hol'N One Donut & Supply Co., Inc., d.b.a. Hol'N One Donut & Supply Co. SN 225,157. Pub. 10–25–66. Filed 8–6–65.

822,024. BOS'N BRAND AND DESIGN. Stavis Ipswich Clam Co., Inc. SN 226,696. Pub. 10–25–66. Filed 8–26–65.

822,025. CALAVO THE BRAND TO GO BUY AND DESIGN. Calavo Growers of California. SN 227,922. Pub. 10–25–66. Filed 9–16–65.

822,026. MAINE COURSE. Bancroft and Martin, Inc. SN 228,177. Pub. 10–25–66. Filed 9–20–65.

822,027. KELFLO. Kelco Company. SN 228,698. Pub. 10–25–66. Filed 9–27–65.

822,028. BIOST. Vitamin Products Company. SN 228,780. Pub. 10–25–66. Filed 9–27–65.

822,029. CERODYN. Vitamin Products Company. SN 228,785. Pub. 10–25–66. Filed 9–27–65.

822,030. SCRATCH. Roger A. Bigler, d.b.a. Rabco Products. SN 228,984. Pub. 10–25–66. Filed 9–30–65.

822,031. PURITAN. The Procter & Gamble Company. SN 229,126. Pub. 10–25–66. Filed 10–1–65.

822,032. TURNER'S TASTY TUMBLERS. Wesley Turner, d.b.a. Turner's Tasty Tumblers. SN 229,150. Pub. 10–25–66. Filed 10–1–65.

822,033. DELI CHEF. The Kroger Co. SN 229,433. Pub. 10–25–66. Filed 10–6–65.

822,034. CIMCO. City Mills Company. SN 230,235. Pub. 10–25–66. Filed 10–15–65.

822,035. TEA HOST. Holiday Inns of America, Inc. SN 230,246. Pub. 10–25–66. Filed 10–15–65.

822,036. MYOTROPHIN. Vitamin Products Company, d.b.a. Standard Process Laboratories. SN 230,322. Pub. 10–25–66. Filed 10–15–65.

822,037. OLD NEW ORLEANS AND DESIGN. Carver Foods Company, d.b.a. Tasso Plantation Foods. SN 230,610. Pub. 10–25–66. Filed 10–20–65.

822,038. OLIVE-TINI. J. Warren Bowman, Inc. SN 231,039. Pub. 10–25–66. Filed 10–22–65.

822,039. COFFEE HOST AND DESIGN. Holiday Inns of America, Inc., d.b.a. Coffee Host. SN 231,131. Pub. 10–25–66. Filed 10–22–65.

822,040. DR. FORBES. Signal Oil and Gas Company. SN 231,602. Pub. 10–25–66. Filed 10–24–65.

822,041. HEATH ALMOND BONTE AND DESIGN. L. S. Heath & Sons, Inc. SN 231,996. Pub. 10–25–66. Filed 11–2–65.

822,042. HY PRODUCTS HI-SI AND DESIGN. Shafer Formula Company, Inc. SN 232,159. Pub. 10–25–66. Filed 11–4–65.

822,043. ENO-RED. Vie-Del Company. SN 232,170. Pub. 10–25–66. Filed 11–4–65.

822,044. YONSON. Yonson Foods, Inc. SN 232,255. Pub. 10–25–66. Filed 11–5–65.

822,045. CASSIASYNTH. Florasynth Laboratories, Incorporated. SN 232,303. Pub. 10–25–66. Filed 11–8–65.

822,046. BREAKERS'. Breaker Confections, Inc. SN 234,506. Pub. 10–25–66. Filed 12–13–65.

822,047. CHIPMUNKS. Charles J. Webb Sons Co., Inc., d.b.a. Bowers Candies. SN 234,589. Pub. 10–25–66. Filed 12–14–65.

822,048. MIGHTY-2. Fairmont Foods Company. SN 234,891. Pub. 10–25–66. Filed 12–20–65.

822,049. AMFLEX. Food Industries Corporation. SN 235,038. Pub. 10–25–66. Filed 12–15–65.

822,050. ALFA-PET. Neumond, Inc. SN 235,118. Pub. 10–25–66. Filed 12–22–65.

822,051. MJB. M.J.B. Co. SN 235,206. Pub. 10–25–66. Filed 12–23–65.

822,052. MR. SUNSHINE. Wileman Bros. & Elliott, Inc. SN 235,371. Pub. 10–25–66. Filed 12–27–65.

822,053. GERA-FOODS. Gem Canning Company, d.b.a. Gem Canning Co. SN 236,185. Pub. 10–25–66. Filed 1–11–66.

822,054. WHIRLIBIRDS. Pierce Pre-Cooked Foods, Inc. SN 236,284. Pub. 10–25–66. Filed 1–12–66.

822,055. CROWN DESIGN. Hills Bros. Coffee, Inc. SN 237,123. Pub. 10–25–66. Filed 1–24–66.

822,056. CAROPHYLL. Hoffmann-La Roche Inc. SN 237,220. Pub. 10–25–66. Filed 1–25–66.

822,057. GOOD MEASURE. Mead Johnson & Company. SN 237,859. Pub. 10–25–66. Filed 2–2–66.

822,058. GOOD SHOW. Mead Johnson & Company. SN 238,256. Pub. 10–25–66. Filed 2–7–66.

822,059. LITHE. Mead Johnson & Company. SN 238,257. Pub. 10–25–66. Filed 2–7–66.

822,060. GOOD MEASURE. Mead Johnson & Company. SN 238,258. Pub. 10–25–66. Filed 2–7–66.

822,061. DIRECTORS AND DESIGN. Directors Inc., d.b.a. Directors. SN 240,695. Pub. 10–25–66. Filed 12–14–65.

822,062. ALFA-BIRD. Neumond, Inc. SN 246,194. Pub. 10–25–66. Filed 5–20–66.

822,063. ORACURE. General Foods Corporation. SN 248,654. Pub. 10–25–66. Filed 6–22–66.

822,064. VIT-ENAM. General Foods Corporation. SN 248,655. Pub. 10–25–66. Filed 6–22–66.

822,065. A-T-D. General Foods Corporation. SN 248,659. Pub. 10–25–66. Filed 6–22–66.

822,066. INTERNICAL. General Foods Corporation. SN 248,660. Pub. 10–25–66. Filed 6–22–66.

822,067. NUTRIDENT. General Foods Corporation. SN 248,663. Pub. 10–25–66. Filed 6–22–66.

822,068. CHICK-ALE. Doggy-Cola, Inc. SN 250,076. Pub. 10–25–66. Filed 7–12–66.

822,069. DOGGY-DAQUARI. Doggy-Cola, Inc. SN 250,077. Pub. 10–25–66. Filed 7–12–66.

822,070. KITTY-COLA. Doggy-Cola, Inc. SN 250,082. Pub. 10–25–66. Filed 7–12–66.

822,071. METRA-DOG. Doggy-Cola, Inc. SN 250,083. Pub. 10–25–66. Filed 7–12–66.

822,072. LAND O' THE SAND. Power Ranches, Inc. SN 250,914. Pub. 10–25–66. Filed 7–25–66.

822,073. RICH-PAK. Dalton Richardson. SN 251,038. Pub. 10–25–66. Filed 7–26–66.

822,074. SOMBREROS. General Mills, Inc. SN 251,852. Pub. 10–25–66. Filed 8–1–66.

822,075. MISCELLANEOUS DESIGN. Philip Morris Incorporated. SN 251,862. Pub. 10–25–66. Filed 8–8–66.

Class 47 — Wines

822,076. ALMONDORO. San Antonio Winery, Inc., d.b.a. San Antonio Winery. SN 237,748. Pub. 10–25–66. Filed 2–1–66.

Class 49 — Distilled Alcoholic Liquors

822,077. GLASGOW'S HLI AND DESIGN. William Grant & Sons, Limited, d.b.a. Gordon Ross & Co. SN 230,153. Pub. 10–25–66. Filed 10–14–65.

822,078. AIRLINER. E. Martinoni Company, d.b.a. Stewart & Co. SN 238,881. Pub. 10–25–66. Filed 2–15–66.

Class 50 — Merchandise Not Otherwise Classified

821,799. (See Class 2 for this trademark.)

821,949. (See Class 23 for this trademark.)

822,079. F AND DESIGN. E. H. & A. C. Friedrichs Co. SN 233,784. Pub. 10–25–66. Filed 12–2–65.

822,080. POLYCRAN. Le Bouchage Mecanique (L.B.M.) Societe Anonyme. SN 240,924. Pub. 10–25–66. Filed 3–14–66.

822,081. BEUTA-FIX. Hartford Textile Corporation. SN 243,444. Pub. 10–25–66. Filed 4–14–66.

822,082. PYRO. Pyro Plastics Corporation. SN 244,136. Pub. 10–25–66. Filed 4–22–66.

822,083. HUDSON BAY. Herter's Inc. SN 244,585. Pub. 10–25–66. Filed 4–29–66.

822,084. ARIST-O-PLATE. United States Radium Corporation. SN 251,039. Pub. 10–25–66. Filed 7–26–66.

Class 51 — Cosmetics and Toilet Preparations

822,085. COCREMA! Lorenzo de Mexico, Inc. SN 213,028. Pub. 5–10–66. Filed 3–1–65.

822,086. FEMME FAIRE. Iodent Chemical Company, d.b.a. Iodent Company. SN 222,487. Pub. 6–28–66. Filed 7–1–65.

822,087. POWER GROOM. Yardley of London, Inc. SN 225,841. Pub. 10–25–66. Filed 8–16–65.

822,088. SUN AND FISH (DESIGN). Climate Cosmetics Corp. SN 226,040. Pub. 10–25–66. Filed 8–19–65.

822,089. GAUCHO. Les Parfums de Dana, Inc. SN 227,689. Pub. 10–25–66. Filed 9–13–65.

822,090. LISA SCOTT. Scott Chemical Co., Inc. MULTIPLE CLASS (Classes 51 and 52). SN 233,638. Pub. 10–25–66. Filed 11–30–65.

822,091. SPECIAL AGENT. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 233,823. Pub. 8–9–66. Filed 12–2–65.

822,092. VANDALIA AND DESIGN. Snyder's Drug Stores, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 234,248. Pub. 10–25–66. Filed 12–8–65.

822,093. RVPAQUE. Paul B. Elder Company. SN 234,358. Pub. 10–25–66. Filed 12–10–65.

822,094. PRINCESSE D'ALBRET. Jean d'Albret. SN 238,178. Pub. 10–25–66. Filed 2–7–66.

822,095. BRIGHT & SHINY. The Procter & Gamble Company. SN 238,665. Pub. 10–25–66. Filed 2–11–66.

822,096. U.S. SECRET AGENT. World Wide Perfumes, Inc. SN 239,563. Pub. 8–9–66. Filed 2–24–66.

822,097. PERSUADE. Redken Laboratories, Inc. SN 240,115. Pub. 10–25–66. Filed 3–3–66.

822,098. MR. GROOM. Research Packaging, Inc. SN 240,784. Pub. 10–25–66. Filed 3–11–66.

822,099. YP AND DESIGN. Youngs Drug Products Corporation. SN 241,615. Pub. 10–25–66. Filed 3–22–66.

822,100. KEEP COOL. Carter-Wallace, Inc. SN 241,749. Pub. 10–25–66. Filed 3–24–66.

822,101. LATIN LEATHER. Diplomat Products, Inc., d.b.a. Davlyn Ltd. SN 248,314. Pub. 10–25–66. Filed 6–17–66.

822,102. A-T-D. General Foods Corporation. SN 248,656. Pub. 10–25–66. Filed 6–22–66.

822,103. ORACURE. General Foods Corporation. SN 248,657. Pub. 10–25–66. Filed 6–22–66.

822,104. INTERNICAL. General Foods Corporation. SN 248,658. Pub. 10–25–66. Filed 6–22–66.

822,105. NUTRIDENT. General Foods Corporation. SN 248,661. Pub. 10–25–66. Filed 6–22–66.

822,106. VIT-ENAM. General Foods Corporation. SN 248,662. Pub. 10–25–66. Filed 6–22–66.

822,107. HUNTRESS. Colonial Dames Company, Ltd. SN 249,612. Pub. 10–25–66. Filed 7–6–66.

822,108. BELONG. American Home Products Corporation. SN 249,918. Pub. 10–25–66. Filed 7–8–66.

822,109. CONCERN. American Home Products Corporation. SN 249,919. Pub. 10–25–66. Filed 7–8–66.

822,110. BELONG. American Home Products Corporation. SN 249,920. Pub. 10–25–66. Filed 7–8–66.

822,111. HIGH SIGN. The Procter & Gamble Company. MULTIPLE CLASS (Classes 51 and 52). SN 250,798. Pub. 10–25–66. Filed 7–22–66.

822,112. JUST FOR NOW. The Procter & Gamble Company. MULTIPLE CLASS (Classes 51 and 52). SN 250,799. Pub. 10–25–66. Filed 7–22–66.

822,113. COUGAR. Charmaceuticals, Inc. SN 250,810. Pub. 10–25–66. Filed 7–22–66.

822,114. CONCERN. American Home Products Corporation. SN 251,092. Pub. 10–25–66. Filed 7–27–66.

822,115. CONCERN. American Home Products Corporation. SN 251,103. Pub. 10–25–66. Filed 7–27–66.

822,116. SUPER DENT. Home Dental Aids Company, d.b.a. Home Dental Aids Co., Inc. SN 251,766. Pub. 10–25–66. Filed 8–5–66.

Class 52 — Detergents and Soaps

822,090. (See Class 51 for this trademark.)

822,092. (See Class 51 for this trademark.)

822,111. (See Class 51 for this trademark.)

822,112. (See Class 51 for this trademark.)

822,117. GLORY BE. Stanley Home Products, Inc. SN 226,173. Pub. 2–15–66. Filed 8–20–65.

822,118. SPOT SHOT. Sifers Chemicals, Inc. SN 237,752. Pub. 10–25–66. Filed 2–1–66.

822,119. CHARGE. Armour and Company. SN 238,996. Pub. 10–25–66. Filed 2–17–66.

822,120. MR. GROOM. Research Packaging, Inc. SN 240,785. Pub. 10–25–66. Filed 3–11–66.

822,121. ESPECIALLE. Helene Curtis Industries, Inc. SN 242,716. Pub. 10–25–66. Filed 4–5–66.

822,122. D BEST AND DESIGN. D-Best Chemical Products, Inc. SN 242,717. Pub. 10–25–66. Filed 4–5–66.

822,123. EMBRACE. Lever Brothers Company. SN 242,902. Pub. 10–25–66. Filed 4–7–66.

822,124. SURE COMFORT. Babson Bros. Co. SN 243,531. Pub. 10–25–66. Filed 4–15–66.

822,125. DRIVE. Lever Brothers Company. SN 246,696. Pub. 10–25–66. Filed 5–26–66.

822,126. MINIM. Babson Bros. Co. SN 250,210. Pub. 10–25–66. Filed 7–14–66.

822,127. AQUID. Diamond Alkali Company. SN 251,036. Pub. 10–25–66. Filed 7–26–66.

Service Marks

Class 100 — Miscellaneous

822,128. SUPPERM. Seligman & Latz, Inc. SN 218,141. Pub. 10–25–66. Filed 5–5–65.

822,129. S AND DESIGN. Commissary Corporation. SN 225,112. Pub. 10–25–66. Filed 8–6–65.

822,130. WIGWAM '70. Ving Smith, d.b.a. Ving Smith Interiors. SN 235,801. Pub. 10–25–66. Filed 1–4–66.

822,131. NURSETTE. Mead Johnson & Company. SN 235,844. Pub. 10–25–66. Filed 1–5–66.

822,132. KNOTT. Knott Hotels Corporation. SN 237,458. Pub. 10–25–66. Filed 1–27–66.

822,133. MISCELLANEOUS DESIGN. Camp, Dresser & McKee. SN 238,705. Pub. 10–25–66. Filed 2–14–66.

822,134. CDM AND DESIGN. Camp, Dresser & McKee. SN 238,706. Pub. 10–25–66. Filed 2–14–66.

822,135. K KNOTT HOTELS AND DESIGN. Knott Hotels Corporation. SN 238,908. Pub. 10–25–66. Filed 2–7–66.

Class 101 — Advertising and Business

822,136. PM AND DESIGN. Poster Products, Inc. SN 192,846. Pub. 10–25–66. Filed 5–6–64.

822,137. DIAPER DERBY. Palisades Pageants, Inc. SN 216,729. Pub. 10–25–66. Filed 4–16–65.

822,138. TYPOSITOR TYPOGRAPHY. Visual Graphics Corporation. SN 217,811. Pub. 10–25–66. Filed 4–30–65.

822,139. INDEPENDENT NEIGHBORHOOD STORES INS AND DESIGN. Independent Neighborhood Stores, Inc. SN 222,485. COLLECTIVE MARK. Pub. 10–25–66. Filed 7–1–65.

822,140. S & H TRAVEL AWARDS AND GLOBE DESIGN. S & H Travel Awards, Inc. SN 224,337. Pub. 10–25–66. Filed 7–27–65.

822,141. GOLDEN SAVINGS. Premium Service Corporation. SN 225,508. Pub. 10–25–66. Filed 8–11–65.

822,142. NATIONAL EMPLOYMENT IS OUR BUSINESS, SHERRY D'GEORGE AND DESIGN. Sherry d'George. SN 226,636. Pub. 10–25–66. Filed 8–27–65.

822,143. DIVIDENTICKET. Gladys C. Martin. SN 229,103. Pub. 10–25–66. Filed 10–1–65.

822,144. E. J. KORVETTE. E. J. Korvette, Inc. SN 234,208. Pub. 10–25–66. Filed 12–8–65.

822,145. PARIS CLUB. Maurice de Montagu. SN 237,676. Pub. 10–25–66. Filed 2–1–66.

822,146. SCOPE. Scope, Inc. SN 242,670. Pub. 10–25–66. Filed 4–4–66.

Class 102 — Insurance and Financial

822,147. 3RD MARKET AND DESIGN. Weeden & Co. SN 218,823. Pub. 10–25–66. Filed 5–13–65.

822,148. EDUCREDIT. Talman Federal Savings and Loan Association of Chicago. SN 223,747. Pub. 10–25–66. Filed 7–19–65.

822,149. GUARDIAN CHECK CASHING SERVICE. First National Bank of Arizona. SN 230,143. Pub. 10–25–66. Filed 10–14–65.

822,150. S AND DESIGN. Savings Associations Retirement Fund. SN 232,727. Pub. 10–25–66. Filed 11–15–65.

822,151. SINCE 1914 AND DESIGN. Beneficial Finance Co. SN 234,328. Pub. 10–25–66. Filed 12–10–65.

Class 103 — Construction and Repair

822,152. SEAL AND HEAL. Jules G. Sills, d.b.a. U.S. Seal and Heal Company. SN 194,670. Pub. 10–25–66. Filed 6–1–64.

Class 105 — Transportation and Storage

822,153. LAW MOTOR FREIGHT, INC. AND DESIGN. Law Motor Freight, Inc. SN 229,664. Pub. 10–25–66. Filed 10–8–65.

822,154. SEPA. Trans Caribbean Airways, Inc. SN 234,255. Pub. 10–25–66. Filed 12–8–65.

822,155. WRIGHT WAY. Wright Way Tours. SN 236,167. Pub. 10–25–66. Filed 1–10–66.

822,156. FOREMOST. Foremost Travel & Tours, Inc. SN 246,769. Pub. 10–25–66. Filed 5–27–66.

Class 107 — Education and Entertainment

822,157. ADT AND DESIGN. American District Telegraph Company. SN 207,078. Pub. 10–25–66. Filed 4–22–65.

822,158. PROJECT EQUALITY. National Catholic Conference for Interracial Justice. SN 229,541. Pub. 10–25–66. Filed 10–7–65.

822,159. SYNECTICS. Synectics, Inc. SN 234,371. Pub. 10–25–66. Filed 12–10–65.

Collective Membership Marks

Class 200

822,160. SOUTHERN FOOTBALL LEAGUE. Southern Professional Football League. SN 215,791. Pub. 10–25–66. Filed 4–5–65.

822,161. AMERICAN CHIROPRACTIC ASSOCIATION ACA ETC. AND DESIGN. American Chiropractic Association. SN 237,642. Pub. 10–25–66. Filed 2–1–66.

822,162. SHIKAR-SAFARI INTERNATIONAL AND DESIGN. Shikar-Safari Club. SN 246,427. Pub. 10–25–66. Filed 5–24–66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 4 — Abrasives and Polishing Materials

822,163. The Drackett Company, Cincinnati, Ohio, assignee of Bristol-Myers Company, New York, N.Y. SN 229,058. Filed P.R. 10–1–65; Am. S.R. 10–18–66.

MOISTURE-SHIELD FORMULA

For Furniture Polish.
First use July 23, 1965.

Class 5 — Adhesives

822,164. Century Industries, Inc., Chicago, Ill. SN 229,203. Filed P.R. 10–4–65; Am. S.R. 10–13–66.

EEE-ZEE MOUNT

For Plastic Foam and Foam Rubber Adhesive Tape for Mounting of Mirrors on Walls and Other Surfaces.
First use Sept. 1, 1964.

Class 12—Construction Materials

822,165. Potlatch Forests, Inc., Lewiston, Idaho. SN 230,072. Filed P.R. 10–13–65; Am. S.R. 11–3–66.

TRIPLE DEK

For Plywood Sheathing.
First use July 30, 1965.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

822,166. Sprayon Products, Inc., Bedford Heights, Ohio. SN 229,145. Filed P.R. 10–1–65; Am. S.R. 11–7–66.

FANSPRAY

For Valves for Dispensing Aerosol Products.
First use Mar. 12, 1965.

Class 17—Tobacco Products

822,167. Philip Morris Incorporated, New York, N.Y. SN 184,949. Filed P.R. 1–20–64; Am. S.R. 11–4–66.



Applicant disclaims the words "Super Kings" apart from the mark as shown. The drawing is lined for the colors red, blue, and gold, but no claim is made to color.
For Cigarettes.
First use Dec. 19, 1963.

822,168. Turmac Tobacco Company, N.V., Amsterdam-C, Netherlands. SN 240,367. Filed 3–7–66.



Applicant disclaims the words "Toasted" and "Cigarettes" apart from the mark as shown. Owner of Dutch Reg. No. 149,645, dated Oct. 16, 1963.
For Cigarettes, Cigars, and Smoking Tobacco.

Class 21—Electrical Apparatus, Machines, and Supplies

822,169. Swiveller Company, Inc., Nanuet, N.Y. SN 220,244. Filed P.R. 6–2–65; Am. S.R. 10–28–66.

NEW ANGLES IN OUTDOOR LIGHTING

For Lighting Fixtures and Components Thereof.
First use Nov. 11, 1964.

822,170. The Pyle-National Company, Chicago, Ill. SN 230,698. Filed P.R. 10–20–65; Am. S.R. 11–1–66.

FAN-FLARE

For Fluorescent Lighting Fixtures.
First use June 12, 1965.

Class 26—Measuring and Scientific Appliances

822,171. The Harry Alter Company, Inc., Chicago, Ill. SN 219,387. Filed P.R. 5–21–65; Am. S.R. 11–7–66.

SEE-E-Z

For Disposable Sun-Glasses or Eye Shields.
First use Apr. 2, 1965.

Class 31—Filters and Refrigerators

822,172. Jet Spray Cooler, Inc., Waltham, Mass. SN 229,251. Filed P.R. 10–4–65; Am. S.R. 11–7–66.

PEOPLE DRINK WHAT THEY SEE

For Refrigerated Beverage Dispensers.
First use Aug. 20, 1965.

Class 39—Clothing

822,173. Exquisite Form Industries, Inc., New York, N.Y. SN 216,950. Filed P.R. 4–20–65; Am. S.R. 11–4–66.

NO BACK

For Brassieres.
First use Apr. 12, 1965.

822,174. Washington Knitting Mills, Inc., Hoboken, N.J. SN 224,132. Filed P.R. 7–23–65; Am. S.R. 10–31–66.

WASHINGTON MAID

For Ladies Underwear.
First use July 10, 1957.

822,175. Texas Boot Manufacturing Company, Inc., Lebanon, Tenn. SN 246,239. Filed P.R. 5–23–66; Am. S.R. 10–18–66.

Class 46—Foods and Ingredients of Foods



Applicant disclaims right to exclusive use of "Brand Boots."
For Cowboy Boots.
First use during July 1952.

822,176. Sunshine Biscuits, Inc. (Delaware corporation), Long Island City, N.Y., assignee of Sunshine Biscuits, Inc. (New York corporation), d.b.a. Blue Bell Potato Chip Company, Long Island City, N.Y. SN 219,281. Filed P.R. 5–19–65; Am. S.R. 7–18–66.
For Salmon Flavored Potato Chips.



First use May 5, 1965.

TRADEMARK REGISTRATIONS RENEWED

56,497. DUCKINE AND DESIGN. Cl. 37. 10–2–06.
57,188. COMMODORE. Cl. 2. 11–6–06.
57,421. ATLAS. Cl. 9. 11–13–06.
58,998. CALIFORNIA FRUIT. Cl. 46. 12–25–06.
59,158. ANCHOR (DESIGN). Cl. 43. 1–1–07.
60,313. BEE (DESIGN). Cl. 22. 2–5–07.
60,314. 92. Cl. 22. 2–5–07.
61,489. WONDER-WEAR. Cl. 39. 3–26–07.
217,658. RADIOHM. Cl. 21. 9–7–26.
217,777. GOLD SHIELD AND DESIGN. Cl. 46. 9–7–26.
218,184. HAWK AND DESIGN. Cl. 39. 9–21–26.
219,827. SAMARIN. Cl. 45. 10–26–26.
220,651. ASPIR-PEP. Cl. 18. 11–16–26.
220,882. BARCO AND DESIGN. Cl. 2. 11–16–26.
220,982. SASE. Cl. 43. 11–23–26.
221,820. MAN (DESIGN). Cl. 6. 12–14–26.
221,822. JAN THE MILLER. Cl. 6. 12–14–26.
222,402. 3-STAR BRAND AND DESIGN. Cl. 6. 1–4–27.
223,998. KLEANBORE. Cl. 9. 2–15–27.
224,499. MISS AMERICA. Cl. 39. 3–1–27.
224,533. HENRI SELMER AND DESIGN. Cl. 36. 3–1–27.
226,748. MAMMY LOU. Cl. 46. 4–19–27.
226,819. SURE SHOT. Cl. 18. 4–19–27.
227,210. R & S CO. AND DESIGN. Cl. 21. 5–3–27.
423,062. INTERWOVEN. Cl. 39. 8–20–46.
423,239. PYRO-AID. Cl. 51. 8–27–46.
424,148. PEARMAK. Cl. 38. 9–24–46.
424,709. CAVALCADE. Cl. 51. 10–22–46.
425,491. BEAUTY ON PARADE. Cl. 51. 11–26–46.
425,543. GOLDEN WEST. Cl. 1. 11–26–46.
425,571. EMRALAWN. Cl. 1. 11–26–46.
425,723. RANGER MOUNTED ON A HORSE (DESIGN). Cl. 11. 12–3–46.
425,736. PREMIUM. Cl. 1. 12–3–46.
426,010. AMEROCO. Cl. 21. 12–10–46.
426,021. DRAGPEB. Cl. 23. 12–10–46.
426,256. FAST SET. Cl. 51. 12–24–46.
426,333. MILES. Cl. 18. 12–24–46.
426,698. FLAV-O-WARD. Cl. 46. 1–7–47.
426,699. KRAFEN. Cl. 46. 1–7–47.
426,701. KRALEX. Cl. 46. 1–7–47.
427,446. MOYNO. Cl. 23. 2–11–47.
427,475. COLGATE. Cl. 29. 2–11–47.
427,526. NORTHERN LIGHTS. Cl. 28. 2–11–47.
427,639. ESTAD. Cl. 14. 2–18–47.
427,880. VARLAR. Cl. 37. 2–25–47.
428,167. ARO. Cl. 23. 3–11–47.
428,211. FLYING TIGER AND DESIGN. Cl. 8. 3–11–47.
428,534. ROASTSAVER. Cl. 46. 3–25–47.
428,545. DENSITOL. Cl. 46. 3–25–47.
428,681. TONI. Cl. 51. 4–1–47.
429,151. RIVAL. Cl. 46. 4–22–47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Nov. 22, 1960

707,343. HANDLE-BAR. Cl. 2.
707,344. TOPFIX. Cl. 2.
707,345. OVIT. Cl. 2.
707,351. ROGERSLIDE. Cl. 3.
707,353. ROGERS AND DESIGN. Cl. 3.
707,354. RAND. Cl. 4.
707,355. MINIGRIND. Cl. 4.
707,359. NYL-O-TAPE. Cl. 5.
707,360. SILVERLAX. Cl. 5.
707,361. UNISEAL. Cl. 5.
707,364. PERMACHEM. Cl. 6.
707,368. ATCOROPE. Cl. 7.
707,370. LAFF-LIGHTERS. Cl. 8.
707,379. FLOT-AWN. Cl. 12.
707,380. UNIPAR. Cl. 12.
707,381. LIFA. Cl. 12.
707,382. THERMEX. Cl. 12.
707,398. MIRACOIL. Cl. 15.
707,401. GULFPRIDE SELECT. Cl. 15.
707,404. GRATIA CANDLES. Cl. 15.
707,405. ROSARY LIGHTS. Cl. 15.
707,413. TUFF GARD. Cl. 16.
707,425. KAURI. Cl. 17.
707,430. PERITONE. Cl. 18.
707,432. BON-VIE. Cl. 18.
707,435. LINKSMAN. Cl. 19.
707,436. REPRESENTATION OF A TRUCK. Cl. 19.
707,439. ANTELOPE. Cl. 19.
707,446. AMPHISONIC. Cl. 21.
707,449. CAPITAN. Cl. 21.
707,450. FOUR SEASONS. Cl. 21.
707,459. PRESS-LOK. Cl. 23.
707,466. SOC. Cl. 23.
707,469. NU-POWER. Cl. 23.
707,471. CRM ETC. AND DESIGN. Cl. 23.
707,473. EMULSIONIZER. Cl. 23.
707,477. GLIDE-AIRE. Cl. 23.
707,489. PLAZA. Cl. 24.
707,496. RAYACC. Cl. 26.
707,497. PUFF CAMERA. Cl. 26.
707,502. TESA. Cl. 26.
707,504. RECORDOTROL. Cl. 26.
707,511. FOCAMATIC. Cl. 26.
707,512. LABSTOCK. Cl. 26.
707,513. MEGACHROM. Cl. 26.
707,515. PANELLOGIC AND DESIGN. Cl. 26.
707,516. RECORD LIFE/SAVER. Cl. 26.

707,521. KALFAX. Cl. 26.
707,525. HYDRO-SET. Cl. 26.
707,526. SKIATRON. Cl. 26.
707,527. PERFECT MATE. Cl. 26.
707,552. STROF-O-MATIC. Cl. 31.
707,557. DESIGN OF CHEF CARICATURE. Cl. 34.
707,559. AUTO-ZONE. Cl. 34.
707,560. DKW-JUNIOR. Cl. 35.
707,566. VIXEN. Cl. 39.
707,569. MAGIC TOE. Cl. 39.
707,574. KA-TRINA. Cl. 39.
707,581. LIVELY-TOP. Cl. 39.
707,585. MAC' B. Cl. 39.
707,586. LUVLEE LADY. Cl. 39.
707,589. MR. MORT-ETTE. Cl. 39.
707,595. IMPERIAL HEATHER. Cl. 39.
707,597. LASTIC-NYLO. Cl. 39.
707,598. WEAVERS GOLD AND DESIGN. Cl. 39.
707,602. SKINNER-20-TWIST. Cl. 42.
707,603. BARONESS. Cl. 42.
707,604. WARMBEST. Cl. 42.
707,611. ADJUSTA-FIT. Cl. 42.
707,612. NUBBY-NYL. Cl. 42.
707,613. DELLA ROBBIA. Cl. 42.
707,615. WAX-EEZ. Cl. 44.
707,617. AUDIAC. Cl. 44.
707,624. MAVERICK. Cl. 46.
707,628. KLIK KLAK AND DESIGN. Cl. 50.
707,629. PENTA TENT AND DESIGN. Cl. 50.
707,630. PRO'S PAL. Cl. 50.
707,633. PORTA-PATIO. Cl. 50.
707,634. E.Z. WAY AND DESIGN. Cl. 51.
707,637. SUPER-10. Cl. 19.
707,638. BLACKSTONE. Cl. 21.
707,639. THE OLD FASHIONED GAS LIGHT AND DESIGN. Cl. 34.
707,640. WEATHERPROOFED. Cl. 35.
707,643. JIM AND DESIGN. Cl. 39.

Section 18

215,434. MYLES PREFERRED SALT AND DESIGN. Cl. 46. 7–20–26.
312,184. MAN ABOUT TOWN. Cl. 39. 11–22–60.
402,157. AMERICANA AND DESIGN. Cl. 39. 7–6–43.
745,150. TABLE TALK. Cl. 38. 11–27–62.
765,246. CLAIR TIMOTHY WITH GEOGRAPHICAL BACKGROUND. Cl. A. 2–18–64.
804,877. FRESH 'N-AIRE. Cl. 6. 3–1–66.
817,512. TUPPER TOYS. Cl. 50. 10–25–66.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

429,167. PROBOLOG. Cl. 26. Shell Development Company. 4–22–47. New Cert. Sec. 7(c) to Shell Oil Company, New York, N.Y.

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Hupp Corp., Cleveland, Ohio. 821,984, pub. 10–25–66. Cl. 34.
Hydrocare Products Corp., Northfield, Ill. 821,857, pub. 10–25–66. Cl. 10.
Ideal Toy Corp., Hollis, N.Y. 821,929, pub. 10–25–66. Cl. 22.
Igelstroem, John, Sign & Label Co., St. Louis, Mo., to Igelstroem-Oberlin, Inc., Massillon, Ohio. 56,497, ren. 1–10–67. Cl. 37.
Igelstroem-Oberlin, Inc.: *See*—
Igelstroem, John, Sign & Label Co.
Illinois Bronze Powder & Paint Co., Lake Zurich, Ill. 821,818, pub. 10–25–66. Cl. 6.
Illinois Bronze Powder & Paint Co., Lake Zurich, Ill. 821,880, pub. 10–25–66. Cl. 13.
Imperial Chemical Industries Ltd., Millbank, London, England. 821,776, pub. 10–25–66. Cl. 1.
Imperial Chemical Industries Ltd., Millbank, London, England. 821,810, pub. 10–25–66. Cl. 6.
Independent Nail Corp., The, Bridgewater, Mass. 821,870, pub. 10–25–66. Cl. 13.
Independent Neighborhood Stores, Inc., Waynesboro, Va. 822,139, pub. 10–25–66. Cl. 101.
Industrial Nucleonics Corp., Columbus, Ohio. 707,496, canc. Cl. 26.
International Minerals & Chemical Corp., Skokie, Ill. 821,911, pub. 10–25–66. Cl. 18.
International Paper Co., New York, N.Y. 821,864, pub. 10–25–66. Cl. 12.
International Silver Co., now by merger, The International Silver Co., Meriden, Conn. 427,526, ren. 1–10–67. Cl. 28.
International Silver Co., The: *See*—
International Silver Co.
Interstate Bag Co., Inc., Walden, N.Y. 821,796, pub. 10–25–66. Cl. 2.
Interwoven Stocking Co., New Brunswick, N.J., to Powerhouse, Inc., Tallahassee, Fla. 423,062, ren. 1–10–67. Cl. 39.
Iodent Chemical Co., d.b.a. Iodent Co., Detroit, Mich. 822,086, pub. 6–28–66. Cl. 51.
Iodent Co.: *See*—
Iodent Chemical Co.
Jet Spray Cooler, Inc., Waltham, Mass. 822,172. Cl. 31.
Johnson & Johnson, New Brunswick, N.J. 821,896, pub. 10–25–66. Cl. 18.
Joiner Positive Seals, Inc., Houston, Tex. 821,849, pub. 10–25–66. Cl. 6.
Jones Knitting Corp.: *See*—
Robischon & Peckham Co.
Kalvar Corp., New Orleans, La. 707,521, canc. Cl. 26.
Kelco Co., San Diego, Calif. 822,027, pub. 10–25–66. Cl. 46.
Kent, Roger, Inc., from Roger Kent, Inc., New York, N.Y. 312,184, ren. 1–10–67. Cl. 39.
Kentucky Clair Timothy Association, Bowling Green, Ky. 765,246, canc. Cl. A.
Kleineider-Fulton Co., Estes Park, Colo. 821,937, pub. 10–25–66. Cl. 22.
Kimball-Marshall Associates: *See*—
Marshall, Jack K.
King Kullen Grocery Co., Inc., Westbury, N.Y. 822,013, pub. 2–1–66. Cl. 46.
Kippax, John E., Bradenton, Fla. 821,972, pub. 10–25–66. Cl. 26.
Kleineider-Fulton Co., Estes Park, Colo. 821,938, pub. 10–25–66. Cl. 22.
Klik-Klak Coat Hangers Ltd., Torquay, Devon, England. 707,628, canc. Cl. 50.
Klinger Mfg. Co., Ltd., The, London, England. 821,951, pub. 10–25–66. Cl. 23.
Klip-Stix: *See*—
Adhesive Tape Corp.
Knott Hotels Corp., New York, N.Y. 822,132, pub. 10–25–66. Cl. 100.
Knott Hotels Corp., New York, N.Y. 822,135, pub. 10–25–66. Cl. 100.
Korvette, E. J., Inc., New York, N.Y. 822,144, pub. 10–25–66. Cl. 101.
Kraft Foods Co., to National Dairy Products Corp., Chicago, Ill. 426,698–9, ren. 1–10–67. Cl. 46.
Kraft Foods Co., to National Dairy Products Corp., Chicago, Ill. 426,701, ren. 1–10–67. Cl. 46.
Kreisler, Jacques, Mfg. Corp., North Bergen, N.J. 821,852, pub. 10–25–66. Cl. 8.
Kroger Co., The, Cincinnati, Ohio. 822,033, pub. 10–25–66. Cl. 46.
Laurence, E. F., & Co., Inc., Northboro, Mass. 707,404–5, canc. Cl. 15.
Law Motor Freight, Inc., Nashua, N.H. 822,153, pub. 10–25–66. Cl. 105.
Lawrence, George, Co., The, Portland, Oreg. 821,854, pub. 10–25–66. Cl. 9.
Lawson Co., The, Houston, Tex. 707,435, canc. Cl. 19.
Le Bouchage Mecanique (L. B. M.) Societe Anonyme, Neuilly-Sur-Seine, France. 822,080, pub. 10–25–66. Cl. 50.
Leeds Pharmacal Corp., Garfield, N.J. 821,890, pub. 10–25–66. Cl. 18.
Lehn & Fink Products Corp., New York, N.Y. 821,839, pub. 10–25–66. Cl. 6.
Lenox, Inc., Trenton, N.J. 821,949, pub. 10–25–66. Multiple Class (Classes 23 and 50).
Les Parfums de Dana, Inc., New York, N.Y. 822,089, pub. 10–25–66. Cl. 51.
Lever Bros. Co., New York, N.Y. 822,123, pub. 10–25–66. Cl. 52.
Lever Bros. Co., New York, N.Y. 822,125, pub. 10–25–66. Cl. 52.
Lewis, William H., d.b.a. Circle L Ranch, Greenwood, Ark. 821,785, pub. 10–25–66. Cl. 1.
Liberty Coach Co., Inc., Syracuse, Ind. 821,917, pub. 10–25–66. Cl. 19.
Linden, Leo, Laboratories, Inc., Culver City, Calif. 821,893, pub. 10–25–66. Cl. 18.
Lorenzo De Mexico, Inc., Chicago, Ill. 822,085, pub. 5–10–66. Cl. 51.
Lovable Co., The, Atlanta, Ga. 821,999–2,002, pub. 10–25–66. Cl. 39.
Lykens Hosiery Mills, Inc., Marion, N.C. 707,643, canc. Cl. 39.
M.J.B. Co., San Francisco, Calif. 822,051, pub. 10–25–66. Cl. 46.
Machinery Inc. Maine, Falmouth, Maine. 821,948, pub. 7–21–66. Cl. 23.
Mallinckrodt Chemical Works, St. Louis, Mo. 821,827, pub. 10–25–66. Cl. 6.
Mallory, P. R., & Co. Inc., Chicago, Ill. 821,922, pub. 10–25–66. Cl. 21.
Mammy Lou Candy Co.: *See*—
Gibbs, Malcolm G.
Manhattan Incense Works: *See*—
Brilles, Bell D.
Marpol Laboratories, Inc., New York, N.Y. 821,909, pub. 10–25–66. Cl. 18.
Marshall, Jack K., d.b.a. Kimball-Marshall Associates, Wheaton, Ill. 821,808, pub. 10–25–66. Cl. 6.
Martin, Gladys, Milwaukee, Wis. 822,143, pub. 10–25–66. Cl. 101.
Martinoni, E., Co., d.b.a. Stewart & Co., San Francisco, Calif. 822,078, pub. 10–25–66. Cl. 49.
Marubeni-Iida (America), Inc., New York, N.Y. 707,439, canc. Cl. 19.
Marx, Louis, & Co., Inc., New York, N.Y. 821,945, pub. 10–25–66. Cl. 22.
Masco Corp. (Mascon Toy Co. Division), Detroit, Mich. 821,928, pub. 10–25–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 821,939–41, pub. 10–25–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 821,946–7, pub. 10–25–66. Cl. 22.
Mead Johnson & Co., Evansville, Ind. 822,019–20, pub. 10–25–66. Cl. 46.
Mead Johnson & Co., Evansville, Ind. 822,057–60, pub. 10–25–66. Cl. 46.

Mead Johnson & Co., Evansville, Ind. 822,131, pub. 10–25–66. Cl. 100.
Mead Specialties Co., Inc., Chicago, Ill. 821,877, pub. 10–25–66. Cl. 13.
Merck & Co., Inc., Rahway, N.J. 821,829, pub. 10–25–66. Cl. 6.
Merck & Co. Inc., Rahway, N.J. 821,905, pub. 10–25–66. Cl. 18.
Meyers, Charles, & Co., St. Louis, Mo. 707,566, canc. Cl. 39.
Miles Laboratories, Inc.: *See*—
Dr. Miles Medical Co.
Miles Laboratories, Inc., Elkhart, Ind. 426,333, ren. 1–10–67. Cl. 18.
Miles Laboratories, Inc., Elkhart, Ind. 821,897, pub. 10–25–66. Cl. 18.
Miller Co., The, Dallas and Fort Worth, Tex., to The Williamson-Dickie Mfg. Co., Fort Worth, Tex. 218,184, ren. 1–10–67. Cl. 39.
Miller, O. A., Co.: *See*—
United Shoe Machinery Corp.
Millmaster Onyx Corp., New York, N.Y. 821,813, pub. 10–25–66. Cl. 6.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 821,866, pub. 10–25–66. Cl. 12.
Miracoil Products, Inc., Washington, D.C. 707,398, canc. Cl. 15.
Miss America Brassiere Co., Inc.: *See*—
Powell Corset Co.
Mr. Snax: *See*—
Walker, James E.
Mo Och Domsjo Aktiebolag, Ornskoldsvik, Sweden. 821,840, pub. 10–25–66. Cl. 6.
Moore, Benjamin, & Co., New York, N.Y. 707,413, canc. Cl. 16.
Morand, Donald A., d.b.a. East Side Tool and Die Works, to Estad Products, Inc., Portland, Oreg. 427,639, ren. 1–10–67. Cl. 14.
Morningstar-Paisley, Inc., New York, N.Y. 821,844, pub. 10–25–66. Cl. 6.
Morton International, Inc.: *See*—
Myles Salt Co., Ltd.
Morris, N. K., Mfg. Co.: *See*—
Morris, Nathan K.
Morris, Nathan K., d.b.a. N. K. Morris Mfg. Co., Neptune City, N.J. 707,615, canc. Cl. 44.
Morris, Philip, Inc., d.b.a. Clark Gum Co., New York, N.Y. 822,075, pub. 10–25–66. Cl. 46.
Morris, Philip, Inc., New York, N.Y. 822,167. Cl. 17.
Mueller Welt Contact Lenses, Inc., Chicago, Ill. 821,970, pub. 10–25–66. Cl. 26.
Munson, Whitney K., d.b.a. Ranger Products Co., Red Bank, N.J. 425,723, ren. 1–10–67. Cl. 11.
Murray Corp. of America, The, Syracuse, N.Y. 707,489, canc. Cl. 24.
Myles Salt Co., Ltd., New Orleans, La., from Morton International, Inc., Chicago, Ill. 215,434, canc. Cl. 46.
NRA, Inc., Long Island City, N.Y. 821,820, pub. 10–25–66. Cl. 6.
National Association of Blue Shield Plans, Chicago, Ill. 821,988, pub. 10–25–66. Cl. 38.
National Catholic Conference For Interracial Justice, Chicago, Ill. 822,158, pub. 10–25–66. Cl. 107.
National Dairy Products Corp.: *See*—
Kraft Foods Co.
National Periodical Publications, Inc., New York, N.Y. 821,992, pub. 10–25–66. Cl. 38.
Neumond, Inc., St. Louis, Mo. 822,050, pub. 10–25–66. Cl. 46.
Neumond, Inc., St. Louis, Mo. 822,062, pub. 10–25–66. Cl. 46.
New York Consolidated Card Co., The, New York, N.Y., to The United States Playing Card Co., Cincinnati, Ohio. 60,313–14, ren. 1–10–67. Cl. 22.
North American Golf, Inc., Beverly Hills, Calif. 821,942, pub. 10–25–66. Cl. 22.
Norton Co., Worcester, Mass. 707,355, canc. Cl. 4.
Norwich Pharmacal Co., The, Norwich, N.Y. 821,888, pub. 1–4–66. Cl. 18.
Novadel Process Corp., Buffalo, N.Y., to Wallace & Tiernan Inc., East Orange, N.J. 221,820, ren. 1–10–67. Cl. 6.
Novadel Process Corp., Buffalo, N.Y., to Wallace & Tiernan Inc., East Orange, N.J. 221,822, ren. 1–10–67. Cl. 6.
Nuclear-Chicago Corp., Des Plaines, Ill. 821,968, pub. 10–25–66. Cl. 26.
Odin Industries, Inc., Greensburg, Pa. 821,908, pub. 10–25–66. Cl. 18.
Odse, Walter, Montreal, Quebec, Canada. 707,516, canc. Cl. 26.
Ogden Utah Knitting Co., Ogden, Utah. 707,586, canc. Cl. 39.
Oil-Dri Corp. of America, Chicago, Ill. 821,859, pub. 10–25–66. Cl. 10.
Optique & Precision de Levallois, Levallois Perret, Seine, France. 707,511, canc. Cl. 26.
Ortho Pharmaceutical Corp., Raritan, N.J. 821,814, pub. 10–25–66. Multiple Class (Classes 6 and 44).
Ortho Pharmaceutical Corp., Raritan, N.J. 821,816, pub. 10–25–66. Multiple Class (Classes 6 and 44).
Owens-Illinois Glass Co., Toledo, Ohio. 707,381, canc. Cl. 12.
Oxford Mfg. Co., Inc., Atlanta, Ga. 821,995, pub. 8–23–66. Cl. 39.
P & C Food Markets, Inc., Syracuse, N.Y. 821,802, pub. 10–5–65. Cl. 6.
Pakhuismeesteren N.V., Rotterdam, Netherlands. 821,794, pub. 10–25–66. Cl. 2.
Palisades Pageants, Inc., Palisade, N.J. 822,137, pub. 10–25–66. Cl. 101.
Paneloc Corp., The, Unionville, Conn. 821,875, pub. 10–25–66. Cl. 13.
Pearson, E. J., & Sons, Ltd., Wembley, England. 424,148, ren. 1–10–67. Cl. 38.
Pennshire Shirt Corp., New York, N.Y. 707,598, canc. Cl. 39.
Peoples Drug Stores, Inc.: *See*—
Gibbs, Malcolm G.
Peritone Co.: *See*—
Stewart, Wendell B., Jr.
Permachem Corp., West Palm Beach, Fla. 707,364, canc. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 821,806, pub. 10–25–66. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 821,838, pub. 10–25–66. Cl. 6.
Philips Rozane, Inc., New York, N.Y. 821,898, pub. 10–25–66. Cl. 18.
Phillips Petroleum Co., Bartlesville, Okla. 821,793, pub. 10–25–66. Cl. 2.
Pierce Pre-Cooked Foods, Inc., Moorefield, W. Va. 822,054, pub. 10–25–66. Cl. 46.
Plastic Film Prducts Corp., Akron, Ohio. 707,432, canc. Cl. 18.
Polk Miller Products Corp., Richmond, Va. 226,819, ren. 1–10–67. Cl. 18.
Polymers, Inc., Middlebury, Vt. 821,779, pub. 10–25–66. Cl. 1.
Porter Chemical Co., The, Hagerstown, Md. 707,512, canc. Cl. 26.
Poster Products, Inc., Chicago, Ill. 822,136, pub. 10–25–66. Cl. 101.
Potlatch Forests, Inc., Lewiston, Idaho. 822,165. Cl. 12.
Powell Corset Co., to Miss America Brassiere Co., Inc., Chicago, Ill., 224,499, ren. 1–10–67. Cl. 39.
Power Ranches, Inc., Higley, Ariz. 822,070, pub. 10–25–66. Cl. 46.
Powerhouse, Inc.: *See*—
Interwoven Stocking Co.
Premium Service Corp., Minneapolis, Minn., 822,141, pub. 10–25–66. Cl. 101.
Pressman Toy Corp., New York, N.Y. 821,927, pub. 10–25–66. Cl. 22.
Pres-To-Line Corp. of America, New York, N.Y. 821,952, pub. 10–25–66. Cl. 23.
Procter & Gamble Co., Cincinnati, Ohio. 821,841, pub. 10–25–66. Cl. 6.
Procter & Gamble Co., The, Cincinnati, Ohio. 822,031, pub. 10–25–66. Cl. 46.
Procter & Gamble Co., The, Cincinnati, Ohio. 822,095, pub. 10–25–66. Cl. 51.
Procter & Gamble Co., The, Cincinnati, Ohio. 822,111–2, pub. 10–25–66. Multiple Class (Classes 51 and 52).
Pure Pharmacal Co., Houston, Tex. 821,892, pub. 11–8–66. Cl. 18.
Pure Pharmacal Co., Houston, Tex. 821,903, pub. 10–25–66. Cl. 18.
Pure Spring (Canada) Ltd., Ottawa, Ontario, Canada. 822,007, pub. 2–8–66. Cl. 45.
Pyle-National Co., The, Chicago, Ill. 822,170. Cl. 21.
Pyro Plastics Corp., Union, N.J. 822,082, pub. 10–25–66. Cl. 50.
REK Chemical Co., Inc., Chicago, Ill. 707,354, canc. Cl. 4.
Rabco Products: *See*—
Bigler, Roger A.
Radair: *See*—
Steel, Chester N.
Railton, B. A., Co., Chicago, Ill. 220,882, ren. 1–10–67. Cl. 2.
Ranger Products Co.: *See*—
Munson, Whitney K.
Readco Industries Inc., Reading, Mass. 821,860, pub. 10–25–66. Cl. 12.
Redken Laboratories, Inc., Van Nuys, Calif. 822,097, pub. 10–25–66. Cl. 51.
Remington Arms Co., Inc., Bridgeport, Conn. 223,998, ren. 1–10–67. Cl. 9.
Research Packaging, Inc., New York, N.Y. 821,900, pub. 10–25–66. Cl. 18.
Research Packaging, Inc., New York, N.Y. 822,098, pub. 10–25–66. Cl. 51.
Research Packaging, Inc., New York, N.Y. 822,120, pub. 10–25–66. Cl. 52.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 817,512, canc. Cl. 50.
Rexall Drug and Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 822,091, pub. 8–9–66. Cl. 51.
Rheem Mfg. Co., Chicago, Ill. 707,559, canc. Cl. 34.
Richardson, Dalton, Bakersfield, Calif. 822,073, pub. 10–25–66. Cl. 46.
Ritter Co., Rochester, N.Y. 707,617, canc. Cl. 44.
Rival Packing Co., to Associated Products, Inc., Chicago, Ill. 429,151, ren. 1–10–67. Cl. 46.
Robbins & Myers, Inc., Springfield, Ohio. 427,446, ren. 1–10–67. Cl. 23.
Robertson's, Marietta, Okla. 822,010, pub. 10–25–66. Cl. 46.
Robischon & Peckham Co., to Jones Knitting Corp., New York, N.Y. 61,489, ren. 1–10–67. Cl. 39.
Rochester Dairy Cooperative, Rochester, Minn. 822,021, pub. 10–25–66. Cl. 46.
Rogers, Inc., New York, N.Y. 707,351, canc. Cl. 3.
Rogers, Inc., New York, N.Y. 707,353, canc. Cl. 3.
Rohm and Haas Co., Philadelphia, Pa. 821,825, pub. 10–25–66. Cl. 6.
Rohm and Haas Co., Philadelphia, Pa. 821,858, pub. 10–25–66. Cl. 10.
Ross, Gordon, & Co.: *See*—
Grant, William, & Sons, Ltd.
Rum River Charcoal Co., Isanti, Minn. 821,786, pub. 10–25–66. Cl. 1.
Russell & Stoll Co., to Russell & Stoll Co., Inc., New York, N.Y. 227,210, ren. 1–10–67. Cl. 21.
Russell & Stoll Co., Inc.: *See*—
Russell & Stoll Co.

S & H Travel Awards, Inc., New York, N.Y. 822,140, pub. 10–25–66. Cl. 101.
St. James's Tobacco Co. of New Zealand Ltd., Auckland, New Zealand. 707,425, canc. Cl. 17.
San Antonio Winery: *See*—
San Antonio Winery, Inc.
San Antonio Winery, Inc., d.b.a. San Antonio Winery, Los Angeles, Calif. 822,076, pub. 10–25–66. Cl. 47.
Sandoz, Inc., Hanover, N.J. 821,845, pub. 10–25–66. Cl. 6.
Sandoz, Inc., Hanover, N.J. 821,901, pub. 10–25–66. Cl. 19.
San's Clothing Factory Ltd., Kowloon, Hong Kong. 821,994, pub. 10–25–66. Cl. 39.
Savings Associations Retirement Fund, New York, N.Y. 822,150, pub. 10–25–66. Cl. 102.
Schwabacher Bros. & Co., Inc., to Crescent Mfg. Co., Seattle, Wash. 217,777, ren. 1–10–67. Cl. 46.
Scope, Inc., Cambridge, Mass. 822,146, pub. 10–25–66. Cl. 101.
Scott Chemical Co., Inc., Paterson, N.J. 822,090, pub. 10–25–66. Multiple Class (Classes 51 and 52).
Sea & Ski Corp., Millbrae, Calif. 821,965, pub. 10–25–66. Cl. 26.
Seaboard Industries, Hawthorne, N.J. 821,824, pub. 10–25–66. Cl. 6.
Sears, Roebuck and Co., Chicago, Ill. 707,611–13, canc. Cl. 42.
Seco Dairies of Florida, Inc.: *See*—
Cole, Samuel P.
Seligman & Latz, Inc., New York, N.Y. 822,128, pub. 10–25–66. Cl. 100.
Selmer, H. & A., Inc.: *See*—
Selmer, Henri.
Selmer, Henri, Paris, France, to H. & A. Selmer, Inc., Elkhart, Ind. 224,533, ren. 1–10–67. Cl. 36.
Shafer Formula Co., Inc., Cleghorn, Iowa. 822,042, pub. 10–25–66. Cl. 46.
Shandon Scientific Co. Ltd., London, England. 821,964, pub. 10–25–66. Cl. 26.
Shell Development Co., to Shell Oil Co., New York, N.Y. 429,167, new cert. Cl. 26.
Shell Oil Co.: *See*—
Shell Development Co.
Shell Oil Co., Inc.
Shell Oil Co., Inc., to Shell Oil Co., New York, N.Y. 430,462, new cert. Cl. 6.
Shell Oil Co., Inc., to Shell Oil Co., New York, N.Y. 512,506, new cert. Cl. 4.
Sherry, Louis, Inc., to Louis Sherry Preserves, Inc., Long Island City, N.Y. 822,011, pub. 10–11–66. Cl. 46.
Sherry, Louis, Preserves: *See*—
Sherry, Louis, Inc.
Shikar-Safari Club, Midland, Tex. 822,162, pub. 10–25–66. Cl. 200.
Siemens & Halske Aktiengesellschaft, Munich, Germany. 821,962, pub. 10–25–66. Cl. 26.
Sifers Chemicals, Inc., Iola, Kans. 822,118, pub. 10–25–66. Cl. 52.
Signal Oil and Gas Co., Los Angeles, Calif. 822,040, pub. 10–25–66. Cl. 46.
Sills, Jules G., d.b.a. U.S. Seal and Heal Co., West Covina, Calif. 822,152, pub. 10–25–66. Cl. 103.
Simplitax Publications: *See*—
Granite Investments Co.
Sklatron Electronics & Television Corp., New York, N.Y. 707,526, canc. Cl. 26.
Skinner Irrigation Co., The, Troy, Ohio. 821,873, pub. 10–25–66. Cl. 13.
Skinner, William, & Sons, New York, N.Y. 707,602, canc. Cl. 42.
Sloat, Donald F., from Sloat Mfg. Co., Fort Worth, Tex. 821,916, pub. 10–25–66. Cl. 19.
Sloat Mfg. Co.: *See*—
Sloat, Donald F.
Slumberest Co., Georgetown, Ky. 707,603–4, canc. Cl. 42.
Smidth, F. L., & Co., to F. L. Smidth & Co., New York, N.Y. 426,021, ren. 1–10–67. Cl. 23.
Smith, Ving, d.b.a. Ving Smith Interiors, New Rochelle, N.Y. 822,130, pub. 10–25–66. Cl. 100.
Smith, Ving, Interiors: *See*—
Smith, Ving.
Snyder's Drug Stores, Inc., St. Paul, Minn. 822,092, pub. 10–25–66. Multiple Class (Classes 51 and 52).
Societe d'Etude des Catalyseurs, French Societe Civile, Paris, France. 821,887, pub. 6–22–65. Cl. 18.
Societe Ornanaise de Constructions Mecaniques (S.O.C.), Ornans (Doubs), France. 707,466, canc. Cl. 23.
Solidax Co., The, Hoosick Falls, N.Y. 707,360, canc. Cl. 5.
Sony Corp. of America, New York, N.Y. 821,920, pub. 10–25–66. Cl. 21.
South Chester Corp., Lester, Pa. 821,872, pub. 10–25–66. Cl. 13.
Southern Professional Football League, Huntsville, Ala. 822,160, pub. 10–25–66. Cl. 200.
Specialloy, Inc., Chicago, Ill. 821,878, pub. 10–25–66. Cl. 14.
Sprayon Products, Inc., Bedford Heights, Ohio. 822,166. Cl. 13.
Squibb, E. R., & Sons, Inc., New York, N.Y. 821,910, pub. 10–25–66. Cl. 18.
Srader Sportswear, Inc., Mount Pleasant, Tex. 707,574, canc. Cl. 39.
Standard Process Laboratories: *See*—
Vitamin Products Co.
Standard Safety Equipment Co., Palatine, Ill. 821,799, pub. 10–25–66. Multiple Class (Classes 2, 34, 39, 44, and 50).
Stanley Home Products, Inc., Westfield, Mass. 822,117, pub. 2–15–66. Cl. 52.
Stavis Ipswich Clam Co. Inc., Boston, Mass. 822,024, pub. 10–25–66. Cl. 46.
Steel, Chester N., from Radair, Fort Worth, Tex. 821,921, pub. 10–25–66. Cl. 21.
Steere Enterprises, Inc., Tallmadge, Ohio. 821,801, pub. 10–25–66. Cl. 3.
Stewart & Co.: *See*—
Martinoni, E., Co.
Stewart, Wendell B., Jr., d.b.a. Peritone Co., Bala Cynwyd, Pa. 707,430, canc. Cl. 18.
Styro Fabricators, Inc., Kansas City, Kans. 821,865, pub. 10–25–66. Cl. 12.
Sunshine Biscuits, Inc., Long Island City, N.Y., from Sunshine Biscuits, Inc., d.b.a. Blue Bell Potato Chip Co., Long Island City, N.Y. 822,176. Cl. 46.
Surrey Candy Kitchens, Inc.: *See*—
Chunky Corp.
Sweetheart Plastics, Inc., Wilmington, Mass. 821,798, pub. 10–25–66. Cl. 2.
Swiveller Co., Inc., Nanuet, N.Y. 822,169. Cl. 21.
Synectics, Inc., Cambridge, Mass. 822,159, pub. 10–25–66. Cl. 107.
Tabtrol Co., Inc., Baltimore, Md. 821,831, pub. 10–25–66. Cl. 6.
Talbott, Inc., New York, N.Y. 707,595, canc. Cl. 39.
Talman Federal Savings and Loan Association, Chicago, Ill. 822,148, pub. 10–25–66. Cl. 102.
Tamura, Alvin Akira, d.b.a. Breakthru Instruments Co., Chicago, Ill. 821,846, pub. 10–25–66. Cl. 6.
Tasso Plantation Foods: *See*—
Carver Foods Co.
Technical Industries: *See*—
Technical Industries, Inc.
Technical Industries, Inc., from Technical Industries, Fort Lauderdale, Fla. 707,502, canc. Cl. 26.
Technical Industries, Inc., Fort Lauderdale, Fla. 821,967, pub. 10–25–66. Cl. 26.
Texas Boot Mfg. Co., Inc., Lebanon, Tenn. 821,175. Cl. 39.
Thompson-Hayward Chemical Co., Kansas City, Kans. 821,821, pub. 10–25–66. Cl. 6.
Toni Co., The: *See*—
Toni, Inc.
Toni, Inc., assor. to Noma Inc., St. Paul, Minn., to The Gillette Co., d.b.a. The Toni Co., Boston, Mass. 428,681, ren. 1–10–67. Cl. 51.
Toyomoto (Australia) Proprietary Ltd., Victoria, Australia. 821,974, pub. 10–25–66. Cl. 28.
Trans Caribbean Airways, Inc., New York, N.Y. 822,154, pub. 10–25–66. Cl. 105.
Treesweet Products Co.: *See*—
Di Giorgio Corp.
Triumph Machinery Co., Hackettstown, N.J. 821,958, pub. 10–25–66. Cl. 23.
Trojan Powder Co., Allentown, Pa. 821,856, pub. 10–25–66. Cl. 9.
Tru-Trn Tackle Co., Inc., Montgomery, Ala. 821,935, pub. 10–25–66. Cl. 22.
Tupperware: *See*—
Rexall Drug and Chemical Co.
Turmac Tobacco Co., N.V., Amsterdam-C, Holland. 822,168. Cl. 17.
Turner, Wesley, d.b.a. Turner's Tasty Tumblers, Berkeley, Calif. 822,032, pub. 10–25–66. Cl. 46.
Turner's Tasty Tumblers: *See*—
Turner, Wesley.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 57,188, ren. 1–10–67. Cl. 2.
Union Bag-Camp Paper Corp., New York, N.Y. 707,361, canc. Cl. 5.
Union Bag-Camp Paper Corp.: *See*—
Union Camp Corp.
Union Camp Corp.: *See*—
Union Bag & Paper Co., The.
Union Camp Corp., from Union Bag-Camp Paper Corp., New York, N.Y. 821,792, pub. 11–16–65. Cl. 2.
Union Oil Co. of California, Los Angeles, Calif. 821,788, pub. 10–25–66. Cl. 1.
United Shoe Machinery Corp., d.b.a. O. A. Miller Co., Boston, Mass. 707,630, canc. Cl. 50.
United States Playing Card Co., The: *See*—
New York Consolidated Card Co., The
United States Plywood Corp., New York, N.Y. 821,863, pub. 10–25–66. Cl. 12.
United States Radium Corp., Morristown, N.J. 822,084, pub. 10–25–66. Cl. 50.
United States Rubber Co., New York, N.Y. 707,640, canc. Cl. 35.
U.S. Seal and Heal Co.: *See*—
Sills, Jules G.
United States Shoe Corp., The: *See*—
Eastern Footwear Corp.
United Wallpaper, Inc., Chicago, to De Soto Chemical Coatings, Inc., Des Plaines, Ill. 427,880, ren. 1–10–67. Cl. 37.
Upjohn Co., The, Kalamazoo, Mich. 821,830, pub. 1–25–66. Cl. 6.
V–M Corp., Benton Harbor, Mich. 821,923, pub. 10–25–66. Multiple Class (Classes 21 and 36).
Vanda Cosmetics Co.: *See*—
Rexall Drug and Chemical Co.
Van Raalte Co., Inc., New York, N.Y. 821,996, pub. 10–25–66. Cl. 39.
Victor Equipment Co., San Francisco, Calif. 821,986, pub. 10–25–66. Cl. 34.
Vie-Del Co., Fresno, Calif. 822,043, pub. 10–25–66. Cl. 46.
Villarreal, Elizabeth, Chicago, Ill. 423,239, ren. 1–10–67. Cl. 51.
Visual Graphics Corp., New York, N.Y. 822,138, pub. 10–25–66. Cl. 101.
Vitamin Products Co., Milwaukee, Wis. 822,028–9, pub. 10–25–66. Cl. 46.
Vitamin Products Co., d.b.a. Standard Process Laboratories, Milwaukee, Wis. 822,036, pub. 10–25–66. Cl. 46.
Vogel-Peterson Co., Elmhurst, Ill. 821,980, pub. 10–25–66. Cl. 32.

Walker, James E., d.b.a. Mr. Snax, Berwyn, Pa. 822,016, pub. 10–25–66. Cl. 46.
Wallace & Tiernan Inc.: *See*—
Novadel Process Corp.
Wallace-Murray Corp., New York, N.Y. 821,876, pub. 10–25–66. Cl. 13.
Warner Bros. Co., The, Bridgeport, Conn. 821,997, pub. 10–25–66. Cl. 39.
Warner-Lambert Pharmaceutical Co.: *See*—
American Chicle Co.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 821,902, pub. 10–25–66. Cl. 18.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 822,015, pub. 10–25–66. Cl. 46.
Washington Knitting Mills, Inc., Hoboken, N.J. 822,174. Cl. 39.
Webb, Charles J., Sons Co., Inc., d.b.a. Bowers Candies, Moorestown, N.J. 822,047, pub. 10–25–66. Cl. 46.
Weeden & Co., New York, N.Y. 822,147, pub. 10–25–66. Cl. 102.
Wells Lamont Corp., Chicago, Ill. 821,998, pub. 10–25–66. Cl. 39.
West Chemical Products, Inc., Long Island City, N.Y. 821,817, pub. 10–25–66. Cl. 6.
Westland Oil Co., Minot, N. Dak. 821,834, pub. 10–25–66. Cl. 6.
Wheel Trueing Tool Co., Detroit, Mich. 821,953–6, pub. 10–25–66. Cl. 23.
Wileman Bros. & Elliott, Inc., Cutler, Calif. 822,052, pub. 10–25–66. Cl. 46.
Williamson-Dickie Mfg. Co., The: *See*—
Miller Co., The.
Wilson Mfg. Corp., Sunbury, Pa. 821,797, pub. 10–25–66. Cl. 2.
Witco Chemical Co., Inc., New York, N.Y. 821,787, pub. 10–25–66. Cl. 1.
Wood Conversion Co., St. Paul, Minn. 821,780, pub. 10–25–66. Cl. 1.
Wood & Hyde Leather Co., Inc., Gloversville, N.Y. 821,789, pub. 10–25–66. Cl. 1.
World Wide Perfumes, Inc., Montgomery, Ala. 822,096, pub. 8–9–66. Cl. 51.
Wright Way Tours, Glendale, Calif. 822,155, pub. 10–25–66. Cl. 105.
X-Tend Automotive Industries, Inc., Los Angeles, Calif. 821,881–2, pub. 10–25–66. Cl. 15.
Yardney Electric Corp., New York, N.Y. 821,926, pub. 10–25–66. Cl. 21.
Yardley of London, Inc., Totowa, N.J. 822,087, pub. 10–25–66. Cl. 51.
Yonson Foods, Inc., Belmont, Calif. 822,044, pub. 10–25–66. Cl. 46.
Youngs Drug Products Corp., New York, N.Y. 822,099, pub. 10–25–66. Cl. 51.

U.S. GOVERNMENT PRINTING OFFICE: 0—1967

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
January 17, 1967 Volume 834 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1966

Examiner affirmed	160
Examiner affirmed in part	32
Examiner reversed	49
Total	241

Patent Subscription Service Now Available in Three Categories

The Clearinghouse for Federal Scientific and Technical Information recently announced the availability of 16 mm. microfilm of the complete specification and drawings of all newly issued U.S. patents in three categories—General and Mechanical, Electrical, and Chemical. These categories will contain the patents announced under the same headings in the OFFICIAL GAZETTE, U.S. PATENT OFFICE.

This new service will be furnished by subscription only and is available from the Clearinghouse beginning with Patent No. 3,258,779, dated July 5, 1966. The prices below include regular domestic postage. Foreign surface mail charges will be billed separately. Rates for domestic and foreign air mail will be quoted on request.

General and Mechanical	$600 per year
Electrical	300 per year
Chemical	300 per year

The subscription rate for all patents is $830 per year ($20 additional for foreign mailing, $90 additional for foreign air mail). Distribution of the microfilm in individual categories of all patents will be made within two weeks after the patents are published in the OFFICIAL GAZETTE. Orders with payment should be addressed to:

Clearinghouse (410.61)
U.S. Department of Commerce
Springfield, Virginia 22151

Hand Delivery of Duplicate Copy of Papers by Attorney

The Notice appearing in 833 O.G. 1 is hereby superseded. The practice set out in the above notice is extended as follows:

In further implementation of the Notice in 829 O.G. 1755 concerning discontinuation of the practice of hand delivery by attorneys or others of officially date-stamped papers, it is directed that prompt consideration and appropriate action be taken on the hand-delivered duplicate copy of such papers, which may include amendments, powers to inspect, requests for extension of time, etc.

The effect of such consideration and action should be communicated to applicant or his representative at the earliest practicable time to clarify the status of the case.

If requested, at the conclusion of an interview, it would be appropriate to indicate on the attorney's copy and the Office duplicate copy any agreement reached and to initial and date both copies.

Actual clerical entry of amendatory matter usually will require the presence in the file of the original paper; however, pending receipt of the original, examiner and clerical processing of the application should proceed, based on the duplicate copy, as far as practicable in the circumstances of each case.

RICHARD A. WAHL,
Assistant Commissioner.

Dec. 21, 1966.

Disclaimers

Re. No. 26,028.—*Francis H. Tennis,* Hartland, Wis. PILOT OPERATED CONTROL VALVE MECHANISM. Reissue patent dated May 17, 1966. Disclaimer filed Sept. 29, 1966, by the assignee, *Hydraulic Unit Specialties Company.*

Hereby enters this disclaimer as to claims 38, 39, 40 and 41 of said patent.

3,196,523.—*John F. Bell,* Wilmette, Ill. METHOD OF CONSTRUCTING A TUNING STRIP. Patent dated July 27, 1965. Disclaimer filed Oct. 19, 1966, by the assignee, *Zenith Radio Corporation;* the inventor assenting.

Hereby enter this disclaimer as to claims 1 and 2 of said patent.

Dedication

3,239,148.—*Samuel R. Etnyre,* Oregon, Ill. MATERIAL DISTRIBUTING MECHANISM. Patent dated Mar. 8, 1966. Dedication filed Sept. 13, 1966, by the assignee, *E. D. Etnyre & Co.*

Hereby dedicates to the public the entire term of said patent.

New Applications Received During November 1966

Patents	7043
Designs	372
Plant Patents	9
Reissues	21
Total	7445

Issue—January 17, 1967

Patents	1408	No. 3,298,031 to No. 3,299,438, incl.
Designs	40	No. 206,707 to No. 206,746, incl.
Plant Patents	1	No. 2,699
Total	1449	

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 21, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager	7-23-63	10-18-61
Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.		
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager	6-4-63	9-12-61
Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.		
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—M. STERMAN, Manager	8-20-63	9-22-61
Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.		
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager	7-11-63	2-12-62
Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.		
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager	7-1-63	10-23-61
Fertilisers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.		
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager	7-15-63	8-30-62
Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.		
SECURITY, GROUP 220—S. BOYD, Manager	5-5-63	4-25-62
Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.		
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager	3-4-63	6-27-61
Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.		
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager	5-15-63	8-23-61
Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.		
PHYSICS, GROUP 280—R. L. EVANS, Manager	7-31-63	10-26-62
Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.		
DESIGNS, GROUP 290—S. BOYD, Manager	8-2-65	8-12-65
Industrial Arts; Household, Personal and Fine Arts.		

Total number of pending applications (excluding Designs)	194,565
Total number of Design applications pending	4,290
Total number of applications awaiting action (excluding Designs)	142,127
Total number of Design applications awaiting action	2,504
Date of oldest new application awaiting action	March 4, 1963
Date of oldest amended application awaiting action	June 27, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during January 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 3,402,044 to 3,406,255, inclusive
Plant Patents ..... Numbers 911 to 918, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager	8-6-64	5-22-63
Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.		
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager	9-2-64	9-24-62
Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.		
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager	5-22-64	6-18-62
Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.		
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager	2-5-65	11-14-63
Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.		
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager	11-16-64	8-20-62
Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.		
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager	7-6-64	7-25-62
Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.		

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE HELENE CURTIS INDUSTRIES, INC.

No. 7620. Decided August 4, 1966

[53 CCPA —; 363 F.2d 936; 150 USPQ 668]

1. TRADEMARK—CONFUSING SIMILARITY—"ELEGANTÉ" FOR HAIR WAVING LOTION, "ELEGANCE" AND "ELEGANTE" FOR OTHER BEAUTY AIDS.

On the issue of confusing similarity between the mark "Eleganté" sought to be registered for hair waving lotion "suitable only for professional use in beauty parlors" and the registered marks "Elegance" and "Elegante" for other beauty aids, and with reference to the appellant's contention "that the competing goods and the channels of trade are sufficiently different to prevent a likelihood of confusion," *Held* that "Whether registrant will or will not alter its present sales patterns is purely a matter of conjecture, but admittedly an element to be weighed in matters of this nature"; and that "We do not give that factor controlling weight here, but in view of the competing marks and the obvious similarities in the goods involved, we think the Board on the facts here properly rejected the application."

APPEAL from the Patent Office. Serial No. 110,139.

AFFIRMED.

L. D. Konigsford (*Max Wall* of counsel) for appellant.

Clarence W. Moore (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

KIRKPATRICK, *J.*, delivered the opinion of the court.

Helene Curtis, Inc. seeks registration of "Eleganté" for use on "permanent waving lotion and neutralizer therefor, suitable only for professional use in beauty parlors." The Examiner rejected the application on prior registrations of "Elegance" and "Elegante," for use on "perfume, cologne, beauty dust, and cream sachet," issued to Avon Products, Inc.

While appellant concedes, and necessarily so, the similarity of the marks, it urges that the competing goods and the channels of trade are sufficiently different to prevent a likelihood of confusion.

In rejecting appellant's application the Trademark Trial and Appeal Board [1] stated:

> Considering therefore that applicant's waving lotion is not promoted to the general public and that the recipient of a permanent wave utilizing this lotion is not generally aware of the trademark thereon, the patrons of beauty parlors would not ordinarily be familiar with applicant's mark and therefore would not have an opportunity to encounter the marks here involved on the respective goods of applicant and registrant. Hence, there might not be any opportunity for confusion by members of the general public. The question of likelihood of confusion under section 2(d) of the statute is not, however, restricted to a determination as to whether or not only the general public is likely to be confused. We must consider other classes of purchasers, and in this case, the beauty parlor operators and beauty supplies distributors. * * * In this regard, even assuming that the registrant may not at the present time be marketing its goods through beauty shops, the registrations are not so restricted nor are the goods of such nature that the registrant could not alter its channels of trade and sell the goods to beauty shops directly or through beauty supplies distributors. If and when the registrant may decide to follow this cause of distribution, the goods of both parties would be known to the beauty parlor operators and distributors, and considering the substantial identity of the marks here involved, it is concluded that there is a reasonable likelihood that such purchasers would mistakenly assume that these goods originate with the same producer. The fact that applicant and registrant might use their house marks in connection with their product marks is of no moment herein. See: *Frances Denny* v. *Elizabeth Arden Sales Corporation*, 120 USPQ 480 (CCPA, 1959).

[1] 143 USPQ 456.

We have reviewed the record in light of appellant's allegations of error but find no reversible error in the proceedings below.

[1] Whether registrant will or will not alter its present sales patterns is purely a matter of conjecture, but admittedly an element to be weighed in matters of this nature. We do not give that factor controlling weight here, but in view of the competing marks and the obvious similarities in the goods involved, we think the Board on the facts here properly rejected the application.

AFFIRMED.

PLANT PATENTS

GRANTED JANUARY 17, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,699
CHRYSANTHEMUM PLANT
Edward H. Miller, Mount Vernon, Ohio, assignor to Orville O. Dunham, Niles, Mich.
Filed Nov. 18, 1965, Ser. No. 508,608
1 Claim. (Cl. Plt.—77)

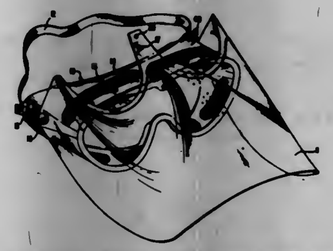
A new and distinct variety of chrysanthemum plant, substantially as herein disclosed, characterized as to novelty by the Primrose Yellow center to creamy white general tonality of its blooms from a distance, the earliness and large size of its blooms, and its short, compact, vigorous growth habit.

PATENTS

GRANTED JANUARY 17, 1967

GENERAL AND MECHANICAL

3,298,031
SAFETY FACE MASK
Harold Joseph Morgan, Waterford, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,654
9 Claims. (Cl. 2—9)



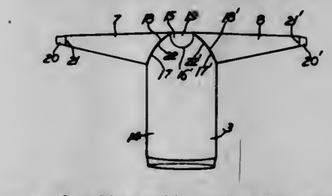
1. A protective face shield comprising an eye protecting portion and a lower face protecting portion, said eye protecting portion having a flexible plastic face-contacting component and a hard plastic lens component, said flexible component being adapted to bridge the nose of the wearer and to communicate tightly with all portions of the face forming the eye cavities in the head of the wearer, first means removable securing said lens component to said flexible component and said lens component being spaced from the eyes and face of the wearer by said flexible component, at least one outwardly protruding knob member centrally located near the upper edge of the lens component, and the upper edge of said lower face protecting portion following substantially the entire contour of the lower peripheral edge of said lens component except that an extended portion of the upper edge of said lower face protecting portion is provided with at least one passage allowing the insertion therethrough of said knob member of said lens component, to thereby index the lower portion relative to the eye portion, said lower face protecting portion being formed of a hard plastic material and second means removably and pivotally securing said face protecting portion to said eye protecting portion and spaced from the face of the wearer.

3,298,032
SNAP-ON LIFT FRONT LENS
Robert G. Sielisch, 1440 Irving Park Road, Chicago, Ill. 60613
Filed July 2, 1964, Ser. No. 379,883
9 Claims. (Cl. 2—13)



1. In combination in a flip-up, clip-on eyeglass lens device for use with a face-mounted frame, a support wire having securing means for attachment to said frame, a flip-up lens, spring metal retaining clip means substantially shorter in length than said lens removably secured to said lens and positively positioned longitudinally with respect thereto, said lens having recess means cut therein generally centrally thereof receiving the longitudinal ends of said clip means to thereby position said clip means generally centrally with respect to said lens, and means on said clip co-operating with said wire pivotally securing said clip to said wire in a fixed longitudinal position thereon.

3,298,033
PROCESS FOR MAKING A SHIRT FROM A TUBULAR FABRIC BLANK
Kohei Yamamura, 12 2-chome Kamezawa-cho, Tokyo, Japan
Filed July 19, 1965, Ser. No. 472,822
1 Claim. (Cl. 2—113)



A process of making a shirt having sleeves from a flatly folded tubular fabric blank comprising the following steps: cuttings said blank in two pieces transversely to define a V-curve at the mid-portion of said blank, the apex of which lies along the longitudinal center line of said folded tubular blank and of which the two constituent curved lines are of equal length and convexly opposed to each other, thereby forming a tubular body and sleeve blanks, said sleeve blank, thus cut, having one edge defined by ascending concavely intersecting lines and said body blank, thus cut, having one edge defined by descending convexly curved intersecting lines folding said body blank along said longitudinal center line to provide the front and rear portions of said shirt body, said portions thereby having mating arcuate upper edges, cutting a central portion from one of said thus formed upper edges to provide a concave neck opening, cutting said sleeve blank along two oblique lines extending from the non-intersecting ends of said ascending lines away from said intersection and toward said longitudinal center line thereby forming two tapered sleeve pieces, folding each of said tapered sleeve pieces along their respective longitudinal center lines and sewing the obliquely cut edges together to form sleeves having concavely curved inner end edges, tapering the concavely curved edges of said sleeves whereby the lengths of said concavely curved edges are reduced by approximately one-half the width of said concave body neck opening, sewing the concavely curved edges of said sleeves to the arcuate upper edges of said body so that the inner ends of said sleeves terminate at the neck opening of said body, and sewing cuffs to said sleeves to form said shirt.

3,298,034
ARTICLES OF WEARING APPAREL
Andrew Szegvari, 201 Castle Blvd., Akron, Ohio 44313
Filed May 23, 1962, Ser. No. 197,117
6 Claims. (Cl. 2—168)

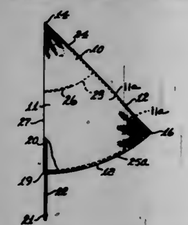
1. A flexible article of wearing apparel composed of at least two adjacent laminae of vulcanized elastomeric

film-forming materials each of substantial thickness, the film-forming constituent of the outer lamina being a cement-type elastomeric film former in a continuous phase in which pigment is uniformly dispersed in a very high state of microscopic homogeneity, and the film-forming constituent of an inner lamina being a discontinuous phase of coagulated latex particles.



4. The article of claim 1 which is a glove and the pigment is a reinforcing pigment present in sufficient quantity to provide a wear-resistant outer surface on the glove.

3,298,035
HAIR CURLER HEAD COVER
Cathie J. Gobins, Phoenix, Ariz., assignor to Fred Rhoades, Scottsdale, Ariz.
Filed July 26, 1965, Ser. No. 474,644
1 Claim. (Cl. 2—198)



A hair curler head cover comprising in combination:
(A) a quarter segment-shaped sheet of material having,
(B) a pair of radially disposed edges intersecting at right angles to each other and issuing from the center of intersection,
(C) an arcuate peripheral edge between the outer ends of said pair of radially disposed edges,
(D) a reinforcing quarter segment-shaped piece smaller than said quarter segment-shaped sheet of material secured along its edges to said center of intersection and along a portion of the length of each of said pair of radially disposed edges,
(E) a tie-back cord secured centrally of its length to the midpoint of said peripheral edge,
(F) said quarter segment-shaped sheet of material being centrally folded upon itself along a line defined between said center of intersection and said midpoint of said peripheral edge to form two folded-over segments with one end of said tie back cord therebetween and the other end exterior thereof,
(G) the arcuate peripheral edges of said two folded-over segments being stitched together throughout the lengths thereof,
(H) and a tightening ring frictionally secured about a portion of said quarter segment shaped sheet of material containing said reinforcing quarter segment piece.

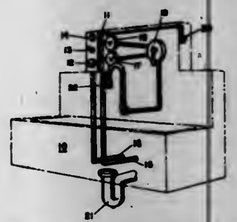
3,298,036
GARMENT RETAINER
William L. Chalfin, Brooklyn, N.Y., assignor to Regina Enterprises, Inc., New York, N.Y., a corporation of New York
Filed Aug. 3, 1964, Ser. No. 386,947
3 Claims. (Cl. 2—337)

1. A garment retainer comprising a stiffening member, two layers of plastic-coated cloth sandwiching said stiffening member, and a strip of highly slip resistant material having a length and width substantially identical to said cloth layers and secured to an outermost face of one of the said cloth layers, said stiffening member having a



width and length smaller than the slip resistant material and cloth layers to leave a peripheral flange through which the retainer may be sewn to the inside waistband of a lower garment to prevent waistband rollover and to prevent the pulling out of an upper garment.

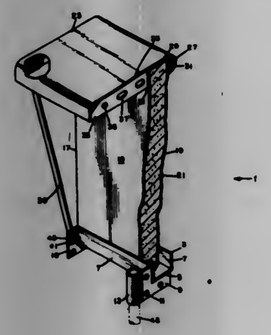
3,298,037
AUTOMATIC CONTROL FOR SCRUB SINK
John Randolph Luther, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed July 24, 1964, Ser. No. 384,843
1 Claim. (Cl. 4—166)



In combination, a sink and controlled water supply for cleaning the hands of hospital personnel comprising
a sink,
a shower head supported on said sink for dispensing water onto the hands of a person,
a source of hot and cold water,
a mixing valve connecting said hot and cold water to said shower head,
said mixing valve having means therein for limiting the temperature of water flowing to said shower head to a predetermined temperature,
a solenoid valve in said hot water line and a solenoid valve in said cold water line adapted to start and stop the flow of water through said valves to said mixing valve,
a timer,
said timer being connected to said solenoid valves,
said timer having means thereon for actuating said solenoid valves selectively for a short scrub period and means for actuating said solenoid valves selectively for a long scrub period,
and a warning light connected to said timer,
said warning light having means connected thereto to actuate said warning light at a predetermined time prior to the end of a washing period.

3,298,038
CONSTRUCTION MEMBERS FOR SWIMMING POOLS
Daniel J. O'Connell, Waterford, and Robert Q. Stockholm, Troy, N.Y., assignors to Trojan Pools, Inc., Troy, N.Y., a corporation of New York
Filed July 24, 1963, Ser. No. 297,324
8 Claims. (Cl. 4—172)

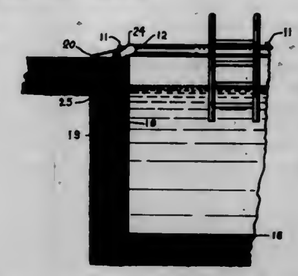
1. Construction members for construction and erection of the walls of a swimming pool comprising bottom corner channels, bottom channels, corner panels, panels, longitudinal panel joiners, corner copings, top copings, and back brace rods; said bottom corner channels and bottom channels having integral channel plates for securing same together, said channels having main webs and upstanding flanges to receive said corner panels and panels, respectively, forming by such assembly the walls of the said swimming pool, and said channel plates carrying drift-pin sleeves for utilization with drift pins for purposes of anchoring the channels to the ground in the formation of the skeletonal outline of the swimming pool; said panels having outside sheets sandwiching therebetween polystyrene type plastic bead boards, each outside sheet of each of said panels having an inturned flange at the top and bottom portion thereof with the lateral portions of each outside sheet formed as flanges with inwardly flared lip portions; in assembly of said panels to form the walls of the swimming pool the lateral portions of adjacently disposed sheets having their flanges in abutting relationship; said longitudinal panel joiners having inturned lip portions for disposition internally of



adjacent sheets and securing together of same by engagement of the inturned lip portions of said panel joiners with the inwardly flared lip portions of said outside sheet; said corner copings and top copings having main webs and depending leg flanges for emplacement on the panels and in abutting relationship with the inturned flanges at the top of said sheets, said copings having integral plates for securing same together, each of said integral plates having at least one slotted opening and a hole formed therein, said slotted openings permitting the copings to be aligned with the top portions of the copings level with one another by insertion of a tool, complemental to the slotted openings in cross sectional configuration, through the slotted openings; each of said back-brace rods having stud portions normal therewith, each of said stud portions being inserted through a hole formed in the channel plate of each channel and through said hole in each plate of each coping, said back-brace rods being secured to the channels and copings by nuts engaged with the stud portions thereby imparting strength and structural rigidity to the entire swimming pool as assembled.

3,298,039
SWIMMING POOL COPING
Joseph Schmerler, New York, N.Y., assignor to Major Pool Equipment Corp., South Kearny, N.J.
Filed Jan. 18, 1965, Ser. No. 426,316
4 Claims. (Cl. 4—172)

4. A swimming pool coping comprising:
(a) a body member;
(b) an externally convex inner end on the body member;
(c) an externally convex outer end on the body member;
(d) a top wall interconnecting the inner and outer ends of the body member;



(e) a means to receive the edge of a swimming pool liner on the bottom of the outer end of the body member.

3,298,040
ROUND DOUBLE BED OF THE TYPE CONVERTIBLE INTO A SINGLE OR DOUBLE COUCH
Karl Radel, 99 Sedanstrasse, Bremen, Germany
Filed June 3, 1965, Ser. No. 460,917
6 Claims. (Cl. 5—12)



1. In a double round bed convertible into a single or double couch, the combination comprising a first semicircular section and a second semicircular section, said first section having a larger diameter than said second section; a plurality of support legs situated about the underside of said first and second sections to support said convertible bed, the legs on said first section being longer than the legs on said second section; pivot means about which said first section is moved relative to said section to convert from a single couch to a double round bed, said pivot means being situated along a diameter of said first section and a diameter of said second section, said diameter of said first section overlying said diameter of said second section when said combination comprises a single couch, said diameter of said first section and said diameter of said second section being in the same vertical plane when said combination comprises a single couch, said diameter of said first section and said diameter of said second section being in mating, side-by-side relationship when said combination comprises a double round bed; and pads of different thicknesses to be placed over said first and second section when said combination comprises a double round bed so as to present a single horizontal plane.

3,298,041
SOFA BED
Walter Clark Rogers, Jr., High Point, N.C., assignor to General Steel Products, Inc., High Point, N.C., a corporation of North Carolina
Filed Sept. 1, 1964, Ser. No. 393,571
13 Claims. (Cl. 5—13)

1. In a sofa bed including a sofa portion having side frame members and a front board extending between the forward ends of said side frame members to form a closed storage space, and a foldable bed frame adapted to be wholly received within said storage space beneath the upper edge of said front board,

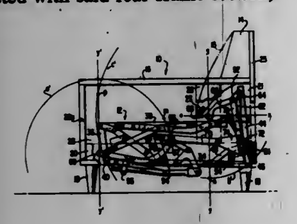
mechanism supporting a rear frame section of said foldable frame on at least one of said side frame members for movement from a retracted position within said storage space up and over the upper edge of said front board to an extended position projecting forwardly of the sofa portion including;

a support arm pivotally mounted at a first point on said side frame member and having its outer end rotatable about said first point from a retracted position within said storage space to an extended position above and forward of the upper edge of said front board,

a control lever pivotally mounted at a second point on said side frame member spaced rearwardly of said first point for rotation about said second point, in a direction opposite to the direction of rotation of said support arm about said first point, from a retracted position in which it projects rearwardly of said second point to an extended position in which it projects forwardly of said second point,

a pair of links each having one end pivotally connected to said control lever at spaced points near said one end thereof,

one of said pair of links having its other end pivotally connected with said rear frame section,



a drive lever fulcrumed intermediate its ends on said one link having one end pivotally connected with the other end of said other link of said pair of links,

said drive lever being pivotally connected with said support arm on the opposite side of said drive lever fulcrum from said one end of said drive lever,

and a connecting link pivotally connecting said drive lever with said rear frame section at a point spaced forwardly of said drive lever fulcrum,

said other link of said pair moving from a dead center position relative to said drive lever fulcrum when said control lever is in its retracted position and during the initial movement of said support arm from its retracted to extended position causing said rear frame section to rotate about said second point on said side frame member during said initial movement of said support arm to givot the forward end of the rear frame section above the front board,

further rotation of said control lever toward its extended position causing said other link to move off dead center with respect to said drive lever fulcrum, said pair of links thereafter projecting said drive lever and rear frame section forwardly of said sofa portion.

3,298,042
PATIENT HANDLING DEVICE
Harry A. Danielson, Monterey Park, Calif. (2021 N. Central, Phoenix, Ariz. 85004)
Filed Oct. 8, 1964, Ser. No. 402,397
2 Claims. (Cl. 5—83)

1. A vertically movable patient supporting device, including:

(a) a housing;

(b) first means for movably supporting said housing on a floor surface;

(c) a horizontal support disposed above said housing;

(d) power means, the major portion of which is in said housing for raising and lowering said support;

(e) a block mounted on said support;

(f) a horizontal shaft rotatably supported in said block and projecting therefrom;

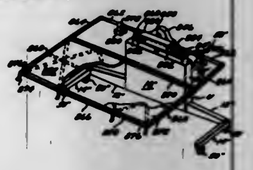
(g) a tubular member affixed to said shaft at substantially a right angle relative to said projecting end thereof;

(h) two longitudinally aligned tubes, the adjacent end portions of which are rotatably supported in said tubular member;

(i) two parallel legs that project from the ends of said tubes in the same direction;

(j) a hollow rectangular frame slidably mounted on said legs;

(k) a transfer sheet;

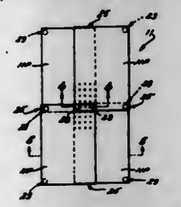


(l) means for removably attaching said sheet to said frame when said sheet is disposed within the confines thereof;

(m) stop means for preventing said tubes, legs, frame, and transfer sheet from pivoting downwardly relative to said tubular member below a position where said frame is substantially horizontally disposed; and

(n) holding means for removably maintaining said tubular member and shaft in a fixed position relative to said block, with said frame when said shaft and tubular member are so held being substantially horizontal, which frame and sheet are longitudinally movable on said legs when said stop means and holding means maintain said frame and sheet in a horizontal position, with said support, block, shaft, tubular member, tubes, legs, frame and sheet being vertically movable as a unit to a desired elevation when said power means are actuated.

3,298,043
CONTROLLABLY ADJUSTABLE AUTOMOBILE BED-PLATFORM
Albert F. Muller and Janice A. Muller, Baytown, Tex. (both of 7713 Dublin St., Camp Springs, Md. 20023)
Filed Oct. 26, 1964, Ser. No. 406,393
1 Claim. (Cl. 5—118)



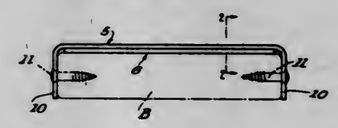
A controllably adjustable horizontal bed-platform for mounting in a rear seat interior body portion of a motor vehicle, comprising: horizontal platform means adjustable as to front-to-back length and as to side-to-side width into a plan view area configuration substantially entirely covering and coextensive with the available plan view area within the rear seat part of the interior body portion of an automobile whereby to cause said platform means to extend substantially completely in a front-to-rear direction from the rear edge of an upstanding back part of a front seat of the automobile to a front edge of an upstanding back part of a rear seat of the automobile and to extend in a side-to-side direction between inside surface portions of side wall parts of the automobile, said platform means being provided with a plurality of downwardly directed supporting leg means, each controllably adjustable as to the vertical height thereof and cooperable with underlying floor portions of the rear seat part of the interior body portion of the automobile for supporting said platform means thereover in a substantially horizontal position; and compressible pad means covering the upper surface of said platform means and downwardly curvedly overlapping the edges thereof whereby to effectively provide a combination protective covering and mattress means therefor and an effective peripheral space-filling edge gasket and locking means therefor; said horizontal platform means comprising four substantially rectangular partially overlapping horizontal platform panel members, each of rigid thin-sheet material, and including front-to-rear telescopic engaging means effectively telescopically interconnecting side edge portions of said panel members for relative front-to-rear adjustment thereof for correspondingly varying the over-all front-to-rear length of said platform means, and side-to-side telescopic engaging means effectively telescopically interconnecting front and rear, side-to-side directed, edge portions of said panel members for relative side-to-side adjustment thereof for correspondingly varying the over-all side-to-side width of said platform means; each telscopic engaging means comprising an outer curved substantially J-shaped channel member and a cooperating correspondingly curved substantially J-shaped inner channel member telescopically slidably mounted in said outer channel member for relative movement therealong; each of said four panel members having an inner substantially centrally positioned corner portion slidably mounted in a four-layer stacked relationship relative to the remaining three corner portions of the corresponding three other panel members; and locking fastener means and corresponding multiple alignment aperture means carried by the various slidably adjustable panel members for controllable relative interlocking and effective immobilization thereof in any selected adjusted position within the range of permissible adjustment steps thereof; each of said leg means comprising a pair of telescopically controllably extendably engaged members and multiple step locking means for relatively locking said engaged members in any of a plurality of different degrees of relative extension thereof, said multiple step locking means comprising a plurality of vertically spaced apertures carried by one of said telescopically engaged members and at least one aperture carried by the other one of said telescopically engaged members and insert locking means provided with biasing spring means normally biasing same into inserted locking relationship relative to any pair of aligned apertures.

3,298,044
INFLATABLE PILLOW
Norman H. Saltness and Mary H. Saltness, Falls Church, Va., assignors to Bil Incorporated, Falls Church, Va., a corporation of Virginia
Filed Sept. 14, 1964, Ser. No. 396,112
1 Claim. (Cl. 5—338)



An adjustable pillow comprising a pair of rectangular sheets of flexible, soft, extensible material of substantial thickness, joined to each other along at least three margins, an inflatable bladder contained between said pair of sheets comprising four rectangular superposed sheets of thin, flexible, inextensible, air-impervious material, the first and second of the thin sheets being joined to each other along all four margins, the third and fourth of the thin sheets being joined to each other along all four margins to form a pair of superposed air-tight inflatable bodies, the second and third sheets of the thin material being joined to each other along a narrow central area to prevent relative displacement of the inflatable bodies, and valve means for each of said bodies.

3,298,045
COVER FOR OUTDOOR SEATS
Paul G. Anderson, Ontario, Calif., assignor, by direct and mesne assignments, of seventy-five percent to Haak Mfg., Inc., Azusa, Calif., a corporation of California, and twenty-five percent to Byron Curry, Los Angeles, Calif.
Filed Oct. 12, 1964, Ser. No. 403,193
8 Claims. (Cl. 5—345)



1. A cover for an outdoor board to render the same resistant to moisture and mildew, a cover for the top and edge surfaces of said board, comprising:

(a) an elongated cushion layer of resilient material centrally disposed on the board and having a width less than that of the board so that the longitudinal edges of the layer are inwardly spaced from the corresponding longitudinal edges of the board,

(b) an elongated lay-up comprising at least one mat of fibre glass,

(c) means to bond said mat together comprising a polyester laminating resin selected from the group comprising phenolic maleic esters, melamine and urea-formaldehyde resins, alkyd resins of the type commonly used as ingredient of varnishes, enamels and lacquers, and epoxy resins,

(d) a surface coating layer of resin gel material covering all the outer surfaces and edges of the lay-up of the same,

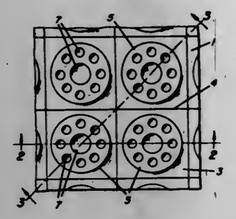
(e) the lay-up having a uniform thickness and a depth at least equal to the thickness of the cushion layer plus at least the thickness of the board, and

(f) the cushion layer and lay-up being centered with the corresponding longitudinal edges equally spaced on opposite sides, the lateral extensions of the lay-up constituting flexible flanges.

3,298,046
UPHOLSTERIES OF ELASTIC SPONGE MATERIAL
Armando Clementi and Giorgio Tangorra, Milan, Italy, assignors to Pirelli Sapsa S.p.A., Milan, Italy
Filed Nov. 30, 1964, Ser. No. 414,726
Claims priority, application Italy, Dec. 3, 1963, 24,818/63
14 Claims. (Cl. 5—345)

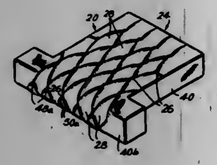
1. An upholstery for furniture or vehicles comprising a molded piece of elastic sponge material consisting of a continuous layer and uniformly tapered blocks, said blocks having a greater base and a smaller base with a cross section variable from the former to the latter, said greater bases being attached to and integral with said continuous layer, said greater base having a quadrangular configuration, said smaller base having a closed plane configuration, a lateral surface connecting the two bases and having a continuous and variable outwardly directed concave con-

formation, said concavity being noted in the sections defined by the lateral surface at lines of intersection with



planes passing through the axis of said block and said variability taking place between said sections.

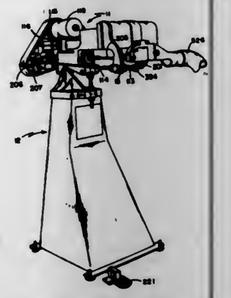
3,298,047
TUFTED UPHOLSTERY PANEL
Jack Feinerman, 715 Ocean Ave., New London, Conn. 06320
Filed Apr. 16, 1965, Ser. No. 448,673
3 Claims. (Cl. 5—356)



1. An upholstery panel comprising a block of resilient material formed with plural openings therethrough at predetermined locations throughout said block and an outer cover for said block, said cover having a front section and a rear section in face to face relation, and plural cover side wall sections including a front wall section connected between and about the peripheral edges of said front and rear sections forming an enclosure for said block, said front wall section having presewn pleats therein to provide a tufted appearance thereto and said cover front and rear sections having a similar tufted appearance formed by a first and a second group of cover areas providing a height variation throughout said respective cover sections, said first group of cover areas being coextensive with said plural openings in said block and extended from opposite directions into said openings into contacting positions with each other within said openings, said second group of cover areas being coextensive with the interposed portions of said block surrounding said openings and normally maintained apart by said interposed portions of said block to provide contrast with said first group of cover areas, and connecting means extended between said cover front and rear sections for joining said first group of cover areas of said cover front and rear sections to each other.

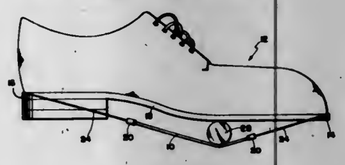
3,298,048
MACHINE FOR ROUGHENING THE MARGIN OF THE BOTTOM OF A SHOE
Mieczyslaw Dziki, Boston, and George Schultz, Newton, Mass., assignors to Industrial Shoe Machinery Corp., Roxbury, Mass., a corporation of Massachusetts
Filed Aug. 14, 1963, Ser. No. 302,144
14 Claims. (Cl. 12—17)

1. A machine comprising in combination: a horizontally movable tool; a fixed guide member spaced in front of said tool; a horizontally movable sensing member adjacent to said guide member and actuable by the edge of a work piece moving in contact with said guide member



towards said tool; and means causing said tool to move horizontally in response to the horizontal motion of said sensing member.

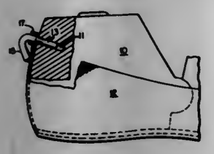
3,298,049
DEVICE FOR PRESERVING THE FORM OF A SHOE
John H. Coult, Watertown, Mass. (1 Leland Road, Natick, Mass. 01760)
Filed Oct. 21, 1965, Ser. No. 499,520
9 Claims. (Cl. 12—120.5)



1. A device for preserving the original form of a shoe having uppers and a sole with a heel end and a toe end, comprising:
resilient tensive means disposed adjacent the outside of the sole,
first securing means attached to one end of said tensive means for securing said tensive means in a tensed state to one end of the shoe,
second securing means attached to the other end of said tensive means for securing said tensive means in a tensed state to the other end of the shoe, said first and second securing means engaging the respective ends of the sole on the opposed side of the sole from said tensive means whereby force is applied to the ends of the shoe along lines of force oblique to the longitudinal axis of the sole such that respective components of the forces transverse to the sole axis create moments tending to straighten the sole and thereby preserve the original form of the uppers and the sole of the shoe, said first and second securing means being substantially identical and each comprising a transverse member and a strand connected thereto to form a loop of a length greater than the length of said member for engaging an end of the sole.

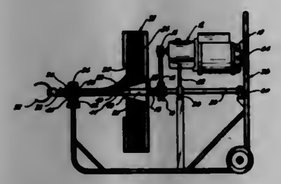
3,298,050
PEG FOR USE IN THE LASTING OF SHOES
Charles F. Batchelder, Milton, and Jerome A. Rubico, Boston, Mass., assignors to Batchelder Rubico, Inc., Boston, Mass., a corporation of Massachusetts
Filed Apr. 15, 1963, Ser. No. 273,056
4 Claims. (Cl. 12—141)

1. A last peg of resilient synthetic plastic material having a shank insertable at one end in a bore in the rear end of a last, a solid down-turned lobe dome-shaped in cross section into which said shank merges at its other end, said lobe being inclined inwardly at approximately 75° from the shank toward the last thereby spanning the top



edge of a folded upper and being in position to engage the upper in an area of uniform thickness beyond its folded edge and upon the rear surface of the last.

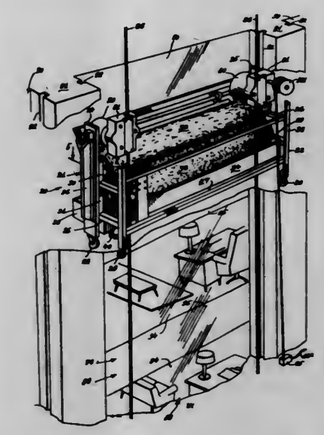
3,298,051
CONDUIT CLEANING APPARATUS
Troy L. Ratliff, 4502 W. Sunswept, Santa Ana, Calif. 92703
Filed Oct. 24, 1965, Ser. No. 504,741
6 Claims. (Cl. 15—104.3)



1. A rotary pipe cleaner comprising:
a supporting frame;
a swivel bearing mounted on said frame;
a rotatable drive shaft mounted on said frame in axial alignment with said swivel bearing;
a means for driving said drive shaft in a rotational movement;
a guide tube mounted in said swivel bearing;
a releasable connection between said swivel bearing and said guide tube to restrain said guide tube from axial movement through said bearing;
a reel adapted for carrying cable releasably and rotatably mounted between said guide tube and said drive shaft, said guide tube and said reel being rotatable independently of one another; and
a rotationally rigid coupling between said drive shaft and said reel, whereby said rotational movement of said drive shaft is imparted to said reel.

3,298,052
AUTOMATIC WINDOW WASHER AND DRYER FOR MODERN SKYSCRAPERS
Max G. Wolfe, 1290 6th Ave., Cedarhurst, Long Island, N.Y. 10019
Filed Mar. 5, 1965, Ser. No. 437,465
12 Claims. (Cl. 15—302)

1. In a window washing apparatus for modern skyscrapers, the combination of a frame, mechanism carried on said frame for washing windows, mechanism carried on said frame for drying windows and means carried on said frame for wiping said windows, the frame comprising a pair of vertical corner legs, a pair of vertical plates, a plurality of horizontal bars rigidly connected to said vertical legs and plates, a caster wheel on the lower end of each of said legs and plates, means on said frame for slidable movement along a building wall, a plurality of bearing block assemblies secured to each of said plates for supporting said window washing mechanism and said window drying mechanism, said window washing mechanism comprising a horizontal washer roller assembly, said washer roller assembly comprising a shaft supported at its opposite ends in one of said bearing block assemblies on each of said plates, a plurality of radially-extending bristles on said shaft, the lowermost ends of the lower of said bristles extending downwardly into a water tank mounted between said plates on said frame, said window drying mechanism comprising a horizontal drying roller



assembly, said drying roller assembly comprising a shaft supported at its opposite ends in another of said bearing block assemblies on each of said plates, a hollow cylinder having inwardly-extending spokes secured to a pair of central hubs being supported on said drying roller shaft, said cylinder having a plurality of openings through the cylindrical side thereof, a sleeve fitted over said cylinder, said sleeve being made from a water absorbing material, and means for blowing water vapor outwardly from within said hollow cylinder.

3,298,053
SCOURING PADS
Paul A. Plasse, Lexington, and William C. Johnson, Winchester, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 5, 1964, Ser. No. 409,198
5 Claims. (Cl. 15—506)



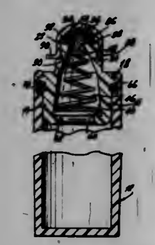
1. A scouring pad comprising (1) a layer of corrugated steel wool in which the corrugations are approximately perpendicular to the steel wool fibers, (2) a backing sheet of thermoplastic film deeply embossed over its non-peripheral area and thermally bonded to the surface fibers of one side of said layer of steel wool with the steel wool being substantially completely enbedded in said backing sheet at the periphery of said pad and at most only superficially bonded to said backing sheet in the non-peripheral areas thereof, and (3) a handle of unitary thermoplastic netting thermally bonded to said embossed backing sheet along at least one relatively narrow zone within which the steel wool fibers are substantially completely embedded in said backing sheet.

3,298,054
CLOSURE FOR NAIL POLISH CONTAINER OR THE LIKE
Maglena Humble, Dayton, Ohio, and James L. McDonald, 2314 Westport Drive, Dayton, Ohio 45406, assignors to James L. McDonald, Dayton, Ohio
Filed Oct. 26, 1964, Ser. No. 406,245
4 Claims. (Cl. 15—521)



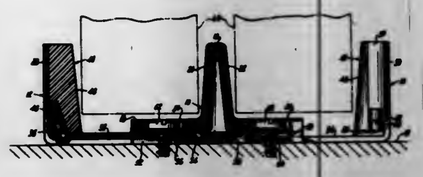
1. A closure for a container having a neck defining an opening, comprising a cap having means defining an opening centrally spaced therein, means for removably attaching and sealing the cap to said container, an applicator brush including an elongated stem slidably supported within said opening defined by said cap, said stem having an outer peripheral surface with a diameter substantially smaller than said opening within said neck and said brush having a length substantially greater than the height of said container to provide for extending said brush diagonally through said opening within said neck when said cap is removed to reach the inside periphery of the bottom of the container, and a combined seal and stem wiper including a resilient generally tubular portion supported and carried by said cap in axial alignment with said opening and projecting downwardly therefrom within said cap and terminating in a circumferential lip engaging said peripheral surface of said stem.

3,298,055
APPLICATOR INCLUDING MEANS FOR SEALING A DAUBER TO A CONTAINER
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Oct. 20, 1964, Ser. No. 405,190
7 Claims. (Cl. 15—566)



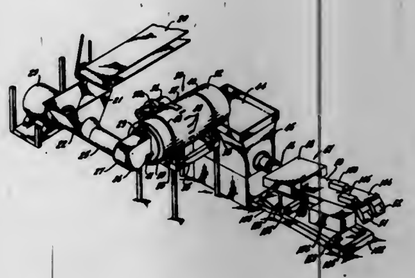
1. An applicator comprising a dauber assembly having a housing, said housing provided with a tapered bore therethrough forming a valve seat, a valve member movable with respect to said valve seat to control fluid flow through said bore, a container, said dauber assembly having an annular groove therein, said dauber assembly having a projecting portion extending into said container, said container including a lip and an upper portion of reduced thickness, a gasket disposed in said annular groove, said upper portion being secured to said housing with said lips engaging said gasket.

3,298,056
DOOR GUIDE
Joffre E. R. Hentzi, Kensington, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Feb. 26, 1965, Ser. No. 435,640
6 Claims. (Cl. 16—90)



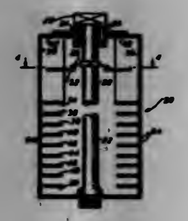
1. A door guide for bypassing doors comprising a pair of L-shaped outer guide members respectively having a wall and an elongated blade extending therefrom, the blade of each outer guide member extending toward the other outer guide member in lapping engagement with the blade thereof, a center guide member having a base overlying the lapping blades and a center post supported on the base, the base having a pair of apertures respectively positioned between the center post and opposite ends of the base, each blade having first and second aperture means registrable with the second and first aperture means of the other blade, respectively, in at least two positions and with one of the pair of apertures in the base to provide longitudinal adjustment of the blades relative to the center guide member and a vertically aligned opening at opposite sides of its center post, and a fastener received in each opening locking the outer guide members to one another in assembled adjusted relation to the center guide member.

3,298,057
APPARATUS FOR PROCESSING MEAT
Herbert C. Liebmann, Jr., Green Bay, Wis., assignor to Langlade Operating Company, Green Bay, Wis., a corporation of Wisconsin
Filed Dec. 28, 1964, Ser. No. 421,571
11 Claims. (Cl. 17—32)



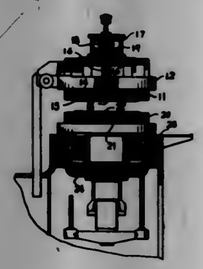
3. In apparatus for processing meat, including a grinder for extruding ground meat in an agglomerate condition, a cutting mechanism for cutting the ground meat extruded from the grinder into loaves of predetermined length comprising: a cutting blade; means for driving said cutting blade, said cutting blade drive means being effective when actuated to cause a cutting stroke of said cutting blade in a first direction or second direction transversely of the direction of extrusion of the ground meat; reversing means operative when said cutting blade has completed a cutting stroke in said first direction or said second direction to condition said cutting blade drive means to drive said cutting blade in the other direction when said cutting blade drive means is next actuated; and force-sensitive means for actuating said cutting blade driving means when contacted by the leading edge of the ground meat being extruded from said grinder such that the ground meat is cut into loaves of predetermined length.

3,298,058
APPARATUS FOR FORMING MELT DROPLETS
Robert N. Summerville, Cranford, N.J., assignor to The Lummus Company, New York, N.Y.
Filed Dec. 31, 1964, Ser. No. 422,837
11 Claims. (Cl. 18—2.6)



4. An apparatus for forming uniform melt droplets comprising a vessel; drive means for rotating said vessel; said vessel having an upright wall provided with spray openings therein; melt feed means for introducing melt into said vessel and a plurality of annular baffles being provided integral with said upright wall and spaced one from the other, said melt feed means including, a plate mounted in said vessel, said plate being rotated by said drive means, and melt feeders feeding liquid melt onto said plate.

3,298,059
PRESS MACHINE FOR MOLDING RECORDS
Hiromitsu Sakamoto, Katsushika-ku, Tokyo, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan
Filed June 4, 1965, Ser. No. 461,446
Claims priority, application Japan, June 11, 1964, 39/32,898
5 Claims. (Cl. 18—5.3)



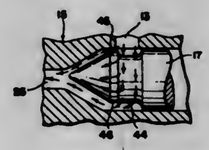
1. A press machine for molding records comprising an upper mold for pressing sound grooves in a raw material, an upper center pin carried by said upper mold, a lower mold corresponding to said upper mold, means to move said molds together to compress and mold a raw material placed therebetween, a lower center pin carried by said lower mold in alignment with said upper center pin so that the free ends of said pins contact at the time of the maximum compression of said raw material, and a raw material receiving hole provided through the center of at least one of said pins for receiving and discharging a part of the raw material of the record at the time of said compression.

3,298,060
METHODS AND APPARATUS FOR COMPACTING POWDERED METAL TO FORM STRIPS
Martin H. Michalak, 485 Main St., Westport, Conn. 06880
Filed June 7, 1963, Ser. No. 286,391
5 Claims. (Cl. 18—9)



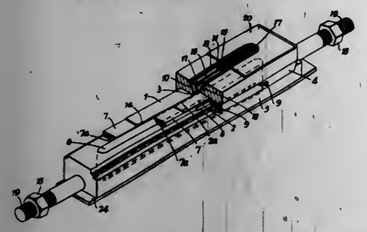
1. Apparatus for compacting powdered metal to form narrow strips or ribbons preparatory to sintering comprising a pair of shafts; a pair of coacting rolls mounted on said shafts, the peripheral surfaces of the rolls being spaced laterally to form a gap having a width depending on the thickness of the strip to be formed and the rolls each having a length equal to the width of the strip to be formed between them; means located at each side of said pair of rolls for applying opposing thrusts to the end faces of the rolls and the lateral edges of the metal powder and compacted strip as the metal powder approaches the gap between the cooperating rolls and passes through said gap, said means for applying thrusts to the ends of said pair of rolls comprising an endless belt engaging end faces of the rolls for closing the ends of the gaps between the rolls, and means for mounting the belt for traveling movement in a straight line in the same direction as the traveling movement of the compacted strip, said thrust applying means further comprising a rigid substantially unyielding pressure plate engaging the belt over an area thereof which is adjacent to the gap and for a substantial distance above the gap, means for supporting the pressure plates adjacent the end faces of the rolls, and means on the supporting means for pivotally supporting each pressure plate for movement toward and from the ends of the rolls.

3,298,061
EXTRUDER APPARATUS
Anthony W. Pomper, New Market, N.J., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 25, 1964, Ser. No. 347,284
3 Claims. (Cl. 18—12)



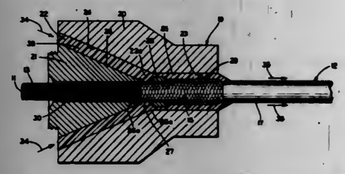
1. In a plastic extruding apparatus including a plastic accumulating chamber and a cylindrical ram therein for forcing out accumulated plastic, the ram having a cone shaped head, the head about prior to its conical taper and in the cylindrical section being circumferentially grooved and its conical face being partially relieved from about the cone apex point back to the groove.

3,298,062
EXTRUSION DIES
Peter James Nicholl, London, England, assignor to Brown and Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware
Filed May 4, 1965, Ser. No. 453,113
Claims priority, application Great Britain, May 7, 1964, 19,022/64
8 Claims. (Cl. 18—12)



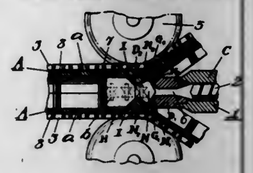
1. A die for the extrusion of plastic material comprising a die channel, means for supplying the material to said channel, and die slits formed by serrations at one edge of a thin metal sheet disposed in replaceable manner on one side of said die channel.

3,298,063
EXTRUSION DIE CONSTRUCTION
John H. French, Canton, Ohio, assignor to Merit Plastics, Inc., a corporation of Ohio
Filed Sept. 4, 1964, Ser. No. 394,497
3 Claims. (Cl. 18—13)



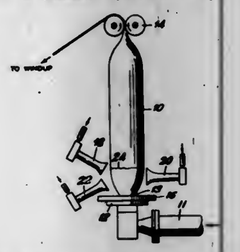
1. In the die construction for the continuous two-stage extrusion of plastic cover material upon and around a braided reinforcing sheath surrounding and partially embedded in an inner flexible plastic tube; the combination of an outer die member having inlet and outlet ends, the outer die member being formed with a central bore extending between the die ends having a cylindrical portion extending from the die outlet end and a conical portion extending from the die inlet end flaring inwardly and intersecting the cylindrical portion at a zone located intermediate the die ends; an inner die member having inlet and outlet ends, the inner die member being formed with a central cylindrical plastic tube feed bore extending between the die ends, the inner die member having a tubular wall extending from the die outlet end and a conical portion having a conical outer surface extending from the die inlet end flaring inwardly and intersecting the tubular wall at a zone located intermediate the die ends; the inner die member being telescoped concentrically within the outer died member, with the die member conical portions located in speed complementary concentric relation forming a conical main feed passage, and with the inner die tubular wall located in spaced complementary concentric relation to the outer die member cylindrical portion forming a secondary feed passage; the intersecting zones of the die members being located adjacent one another and forming a terminal for said main feed passage; there being primary feed passage means formed in the inner die member adjacent said inner die member intersecting zone communicating between the main feed passage terminal and the inner die member central bore; and diverter means extending into the secondary feed passage adjacent the primary feed passage means and the main feed passage terminal to divert flow from the main feed passage into the primary feed passage means and to restrict flow from the main feed passage into the secondary feed passage.

3,298,064
APPARATUS FOR MOLDING SYNTHETIC RESIN BODIES
Jun Taga, 5664 Ikuta Kawasaki, Kanagawa-Prefecture, Japan
Filed Jan. 23, 1963, Ser. No. 253,421
10 Claims. (Cl. 18—14)



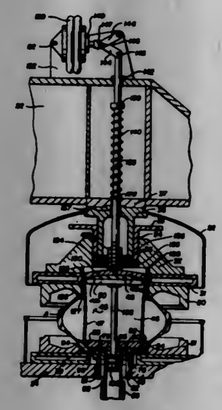
1. An apparatus for molding synthetic resin bodies comprising an inner mold member, a plurality of complementary split mold members adapted to be fitted together around said inner mold member and to define with said inner mold member a mold cavity, an extruder for extruding resin material in a plastic form connected to said inner mold member and arranged to discharge resin material in a plastic condition into said mold cavity, said mold cavity having means for preventing flow of the extruded material adjacent each end thereof, and means for moving said split mold members relative to said inner mold member to first bring said mold members into engagement around said inner mold member and to thereafter move said split mold members relative to said inner mold member to remove a molded body from the inner mold member.

3,298,065
APPARATUS FOR APPLYING ULTRASONIC VIBRATION TO THERMOPLASTIC POLYMERS DURING FORMING
James W. Pendleton, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
Original application Aug. 17, 1962, Ser. No. 217,604, now Patent No. 3,246,055, dated Apr. 12, 1966. Divided and this application Oct. 5, 1965, Ser. No. 493,194
1 Claim. (Cl. 18—14)



In apparatus for the production of blown seamless tubular film comprising a die having an annular orifice, means to extrude a molten thermoplastic through said orifice to form seamless tubing, means to continuously withdraw the tubing from the point of extrusion, means to maintain a substantially constant bubble of a gaseous medium in the section of the tubing extending between the point of extrusion and a point spaced therefrom, cooling means encircling the exterior surface of the section of the inflated tubing in the vicinity of the die, the improvement which comprises a vibrator capable of imparting ultrasonic vibrations above about 20 kilocycles per second to impart molecular agitation to the entire periphery of the inflated tubing, said vibrator being positioned in spaced relation about the tubing in the region wherein the tubing is in the formative plastic state.

3,298,066
TIRE PRESSES
Leslie E. Soderquist, Silver Lake, Ohio, assignor to McNeil Corporation, Akron, Ohio, a corporation of Ohio
Filed May 2, 1962, Ser. No. 191,821
5 Claims. (Cl. 18—17)



1. A press for full shaping and subsequent curing of a preformed tire band within separable upper and lower mold sections (20 and 21) having a permanent diaphragm shaping mechanism located axially of a lower mold section (21), comprising, means (110) for supporting a tire band on a vertical axis in front of and on substantially the same horizontal plane as said lower mold section, means (120) for picking up a tire band from said support means and positioning said band on said lower mold section in telescoped relation over said diaphragm, the upper body portion of said diaphragm projecting above said positioned band, cylindrical means (125) carried axially of an upper mold section (20) restraining said projecting diaphragm body portion, and plate means (130) movable coaxially of said cylindrical means for exerting a downward pressure on the projecting diaphragm during the full shaping and subsequent curing of said tire band when the press is closed.

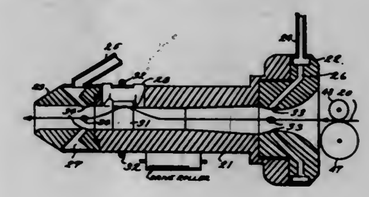
3,298,067
MOLD FOR FORMING DENTURES
Raymond L. Tencate, 4947 W. Walton, Chicago, Ill. 60651
Original application Feb. 1, 1962, Ser. No. 170,351, now Patent No. 3,217,067, dated Nov. 9, 1965. Divided and this application Apr. 14, 1965, Ser. No. 459,967
2 Claims. (Cl. 18—34.1)

1. A mold for use in casting dentures in a pressure flask comprising: upper and lower mold portions which are matingly engaged and held under compression in the flask during operation and which confine therebetween a mold cavity definitive of a denture to be cast therein; said lower mold portion comprising a rigid, relatively incompressible master cast having a rigid stable surface reproductive of the denture bearing surfaces of the patient's mouth, and a resist membrane in continuous contact with said rigid surface thereof; said upper mold portion comprising a yieldable, pressure transmitting member formed of elastically resilient, heat and moisture resistent material and having a yieldable shaped portion defining the outer surface of the denture to be cast and means for releasably holding one or more teeth with the root ends thereof extending into said cavity, whereby when said cavity is filled with self-curing denture forming material of



the type which characteristically expands and contracts while setting and curing, said upper and lower mold portions confine and maintain said material under compression and said shaped portion yieldably follows and maintains intimate contact with the said outer surface of the cast denture, in response to the expanding and contracting of said material, throughout the casting operation.

3,298,068
APPARATUS FOR TREATING SLIVERS OF WOOL OR OTHER FIBERS
Malcolm Chaikin, 26 Martin Road, Centennial Park, New South Wales, Australia, and Alexander D. Dircks, 18 Woolwich Road, Hunters Hill, New South Wales, Australia
Filed Mar. 23, 1965, Ser. No. 442,147
Claims priority, application Australia, Oct. 22, 1962, 23,434/62; Mar. 29, 1963, 28,975/63
5 Claims. (Cl. 19—66)



1. Apparatus for treating a sliver of textile fibers for stress relaxation or strain recovery, said apparatus including a supply for said sliver, a tubular heating member including a rotatable portion having a sliver inlet to receive sliver from said supply and a sliver discharge, means for rotating said rotatable portion, means for passing sliver through said tubular member as the latter is rotated, means for introducing steam into said tubular member as the sliver passes therethrough, means within said tubular member for controlling the tension on the sliver therewith, and means for collecting the steamed sliver after discharge from said member.

3,298,069
SAMPLER
Thomas R. Acre, Lower Burrell, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Jan. 8, 1965, Ser. No. 424,426
4 Claims. (Cl. 22—210)

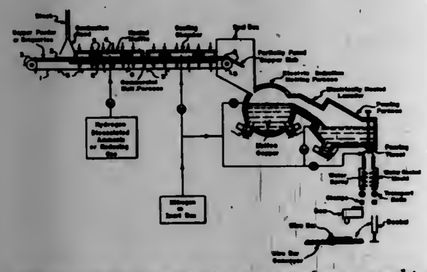
3. A device suitable for use in obtaining a metal sample without interrupting the blowing of a heat of steel in a basic converter comprising, a vertical longitudinally extending hollow member having a port contained therein disposed in communication with the hollow interior, a

chill plate secured to the bottom end thereof, and means disposed to be secured to the top of the hollow member



for facilitating the immersion of the sampler into the metallic bath, said port being disposed intermediate said chill plate and said facilitating means.

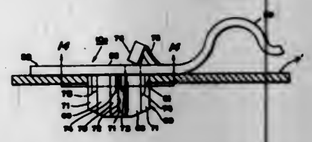
3,298,070
METHOD OF PRODUCING OXYGEN-FREE HIGH CONDUCTIVITY COPPER
William J. Yurko, Matawan, N.J., and Dennis K. Pickens, Darien, Conn., assignors to Chemetals Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,537
7 Claims. (Cl. 22—214)



1. The process of producing oxygen-free wrought copper which comprises heating copper powder in which the copper powder particles contain oxygen and volatile impurities at a temperature between about 1000° F. and 1900° F. in a reducing atmosphere for a sufficient length of time to remove substantially all of the oxygen and volatile impurities contained in the copper powder particles and also to cause adsorption of the reducing gas into the copper powder particles, melting the copper powder particles prior to any significant reduction of temperature in a protective atmosphere to prevent the contamination thereof with oxygen and while the copper powder particles still contain a substantial amount of adsorbed reducing gas to cause release of the adsorbed reducing gas from the copper powder particles while they are changing from the solid to the liquid state and subsequently casting the oxygen-free copper in a protective atmosphere to maintain the copper substantially free of oxygen.

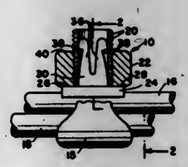
3,298,071
FASTENER LOCKING DEVICE
Laurence H. Flora, North Olmsted, Ohio, assignor to Tinnerman Products, Inc., a corporation of Ohio
Filed May 5, 1964, Ser. No. 364,994
13 Claims. (Cl. 24—73)

6. A rotary, fractional turn fastener made from polymeric materials for insertion through a polygonal opening in a support member, comprising, an elongated body adapted to be disposed adjacent one side of a support member, a shank depending downwardly from said body and adapted to be inserted through the opening in said support member, said shank including a plurality of integrally connected, vertically extending legs which together define a generally cruciform shape in cross section, each of said legs including a tapered, severable edge projecting outwardly therefrom and extending vertically from said body, said edges having a substantially reduced cross-sectional width as compared to the cross-sectional width of their respective legs, each of said edges having axially extending cut-out portions on opposed sides thereof ad-



jacent the juncture of said shank with said body, the transverse distance between oppositely disposed of said edges being greater than the maximum transverse dimension of the opening in said support member, and said edges being adapted to be progressively severed by the confronting marginal edges presented by the opening in said support member upon rotary, fractional turning of said fastener with respect to said support member.

3,298,072
BOLTED CONNECTOR
William T. Whalen, Norwalk, Conn., assignor to Burndy Corporation, a corporation of New York
Continuation of application Ser. No. 330,026, Dec. 12, 1963. This application June 10, 1965, Ser. No. 467,812
2 Claims. (Cl. 24—125)

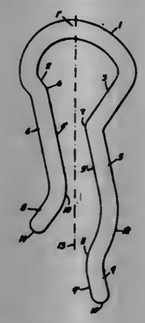


1. A U-bolt connector having a pressure bar, a nut, and a non-metallic retainer member movably coupling said pressure bar to said nut;
said retainer member comprising a substantially U-shaped unitary body portion of resilient material including a pair of integral resilient legs extending therefrom;
said pressure bar including a projecting portion having a discontinuity thereon for interlocking with said retainer member;
said retainer member including a cavity in said resilient body portion having a discontinuity therein for receiving and interlocking with said projecting portion of said pressure bar;
the said resilient legs of said retainer member each including a free end and an outwardly extending detent shoulder proximate said free end for interlocking with said nut.

3,298,073
GARMENT CLIP
Kurt W. Merfeld, Manhasset, N.Y., assignor to Kunreuther and Merfeld, New York, N.Y., a partnership
Filed May 18, 1965, Ser. No. 456,706
5 Claims. (Cl. 24—255)

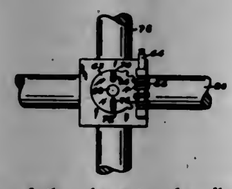
1. A clip of the character described comprising an asymmetrical loop, long and short substantially parallel

leg members integrally joining the loop in flat portions angularly disposed with respect to the leg members to



form between the same and the leg members gripper apexes, and said leg members terminating in flared lips.

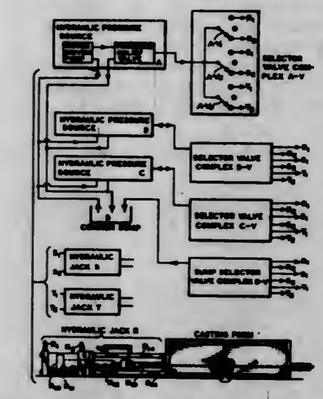
3,298,074
ROD CLAMP AND TOOL UTILIZING SAME
Abraham Kedem, 19 Recho Yaakov, Rehovot, Israel
Original application June 4, 1963, Ser. No. 285,382, now Patent No. 3,230,595, dated Jan. 25, 1966. Divided and this application Nov. 9, 1965, Ser. No. 529,614
3 Claims. (Cl. 24—257)



1. A device of the character described for gripping and releasing a rod-shaped member, comprising a coiled spring adapted to receive the rod-shaped member therein; said coiled spring being formed with an upstanding projection at each end thereof; and a locking device comprising a disc having radially aligned slots therein for receiving said upstanding projections; said disc being rotatable in a first direction to displace said projections relative to each other to cause said coil to wind and thereby to grip the rod-shaped member therein; said disc being rotatable in the opposite direction to displace said projections relative to each other to cause said coil to unwind and thereby to release the rod-shaped member.

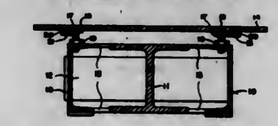
3,298,075
STRAND TENSIONING SYSTEM
Theodore W. Shoe, Troy, Ohio, assignor to The Flexicore Co., Inc., Dayton, Ohio, a corporation of New York
Filed Oct. 4, 1965, Ser. No. 492,482
6 Claims. (Cl. 25—118)

3. The combination of an elongated casting form for casting concrete slabs, steel reinforcing strands disposed in said form for longitudinal prestressing of said slabs and means for tensioning said strands, said means including at least one hydraulic jack, such jack having a double acting piston and piston rod with hydraulic fluid connections to each end of said piston for securing such double action, said piston having a piston rod extending from one side thereof, which piston rod reduces the effective area of said piston as compared to the full area of the other side of said piston, a plurality of sources of hydraulic fluid under separate, different, predetermined high pressures, a sink constituting a source of fluid at atmospheric pressure, means including fluid lines from said fluid sources for selectively connecting any two of such fluid sources on opposite sides of said piston, the differences in pressures being sufficiently great so that the piston rod side of said piston is subject to a total force which exceeds the force on the other side of said piston



when the piston rod side of said piston is subjected to a fluid pressure on the other side of said piston at a pressure which is below but nearest in value from all remaining available pressure sources, and means for coupling the piston rod to a strand to be tensioned, said piston, during strand tensioning tending to move away from said strand.

3,298,076
BOTTOM PLATES FOR MOULDS INTENDED FOR THE MANUFACTURE OF CELLULAR CONCRETE AND OTHER MATERIALS IN THE MANUFACTURE OF WHICH GREAT DIFFERENCES IN TEMPERATURE APPEAR BETWEEN THE CONTENT OF THE MOULDS AND THE SURROUNDING MEDIUM
Per-Erik Söderlund, Saltsjobaden, Sweden, assignor to Ytong International Aktiebolag, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 29, 1964, Ser. No. 341,034
Claims priority, application Sweden, Mar. 7, 1963, 2,481/63
9 Claims. (Cl. 25—1)



1. A mold bottom for molds used in the manufacture of materials in which substantial temperature differences occur between the contents of the mold and the surrounding medium, comprising a frame, a mold bottom plate on said frame, and means attaching said bottom plate to said frame to permit free extension of the bottom plate in the longitudinal direction upon expanding or contracting in accordance with temperature changes, said means comprising spacing means for maintaining an air gap between said bottom plate and said frame while permitting longitudinal extension of said bottom plate.

3,298,077
AUTOMATIC SEPARATOR
Joseph Russak, Brooklyn, N.Y.
(16 Albert Drive, Monsey, N.Y. 10952)
Filed Mar. 29, 1965, Ser. No. 443,391
11 Claims. (Cl. 28—17)

1. A machine for automatically separating knit fabric sections of a bolt wherein adjacent sections are joined edgewise by a cross-stitch that is unravelled by endwise

pull on the thread of the cross-stitch comprising:

(a) a vertical frame structure constituted by two pairs of longitudinally spaced upright supports,

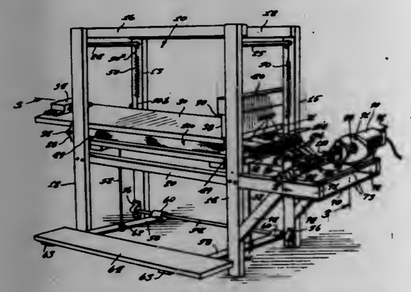
(b) means connecting said upright supports in spaced parallel relation,

(c) a movable platen positioned between said pairs of upright supports,

(d) means pivotally mounting said platen on one pair of said upright supports for swinging movement from an operative horizontal position to an inclined inoperative position,

(e) a fixed abutment carried by the other pair of said upright supports,

(f) lock means on said platen engageable with said fixed abutment for holding said platen in its horizontal position,



(g) a counterweight connected to said platen for moving the same to its inclined position on release of said lock means,

(h) a movable platform positioned between said pairs of upright supports beneath said platen,

(i) pressure exerting means supporting said platform on said upright supports and operative to move said platform towards said platen whereby to pressure clamp therebetween a bolt of joined knit fabric sections, and

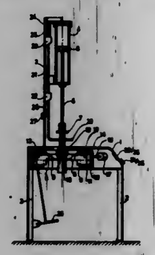
(j) rotating reel means mounted on said frame structure forwardly of said other pair of upright supports for connection thereto of the threads of said cross-stitches whereby on rotation of said reel means said threads will each be subjected to a pull to cause unravelling of the cross-stitches to effect separation of the knit fabric sections joined thereby.

3,298,078

DEVICE FOR REMOVING YARN RESTS FROM BOBBINS

Henri-Leopold Boer, Ghent, Belgium, assignor to M. Brouwer & Co., N.V., Hengelo, Netherlands, a limited-liability company of the Netherlands

Filed Jan. 6, 1965, Ser. No. 423,787
4 Claims. (Cl. 28—20)



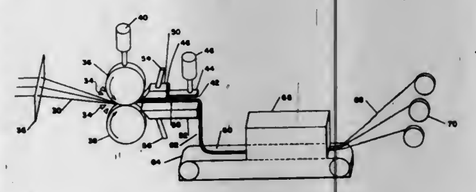
1. A device for stripping residual yarn from bobbins, comprising a frame, a mounting ring fixed on said frame, at least three pressure members guided in said mounting ring for radial movement relative thereto, said pressure members each carrying a claw for radial movement therewith in a plane common to the plane of movement of the claws carried by the other pressure members so that the claws can grip a bobbin under the residual yarn to be removed therefrom, each of said pressure members having a pin projecting therefrom perpendicular to said plane of movement, a cam ring turnable on said mounting ring and having a cam slot therein for each of said pressure members which receives said pin projecting from the related pressure member, each cam slot extending generally circumferentially in said cam ring and having its opposite ends at different distances from the outer periphery of the cam ring so that turning of the latter causes radial movements of said claws to selectively grip and release a bobbin positioned amid said claws, fluid-pressure operated means for turning said cam ring, and a pusher mounted on said frame above said claws and being movable perpendicular to said plane of movement of the claws so as to slidably displace a bobbin from between said claws while the latter grip the bobbin for stripping the residual yarn therefrom.

3,298,079

METHOD FOR PRODUCING A NOVEL CRIMPED YARN AND FABRIC

Albert H. Agett and William L. Aspy, Jr., both of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 24, 1965, Ser. No. 458,354
8 Claims. (Cl. 28—72)



1. A method for preparation of a high-bulk modacrylic yarn product which comprises spinning a modacrylic yarn of 2–24 d./f., drafting the yarn at a draft ratio of from about 2:1 to 8.5:1 by passing over a series of draft rolls arranged to draft the yarn in at least three stages the last of which is at a draft ratio of less than about 1.0, steam crimping the drafted yarn at a clapper-gate pressure of less than about 30 p.s.i.g. and a steam pressure of at least about 5 p.s.i.g., conducting the yarn in a substantially tensionless condition into a heat-setting zone and forming the yarn into a high-bulk staple modacrylic yarn.

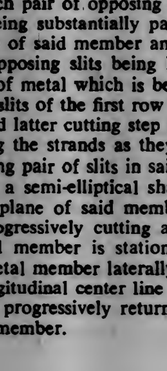
3,298,080

METHOD OF MAKING NEEDLED FABRIC STRUCTURE

Alexander M. Smith II, Elkin, N.C., assignor, by mesne assignments, to The Fiberwoven Corporation, Elkin, N.C., a corporation of North Carolina

Original application Oct. 4, 1961, Ser. No. 142,950, now Patent No. 3,206,351, dated Sept. 14, 1965. Divided and this application May 24, 1965, Ser. No. 470,950
6 Claims. (Cl. 28—72.2)

1. A method of producing a needled fabric comprising the steps of: forming a batt of loosely matted fibers from a plurality of superimposed layers of individual fibers, forcibly orienting fibers from one side of the batt toward the other side in a plurality of individual paths by increasing the number of fibers oriented from each layer in each path to progressively increase fiber entanglement as the path approaches the center of the batt, and forcibly orienting fibers from the other side of the batt toward the first side in a plurality of individual paths by increasing the number of fibers oriented from each layer



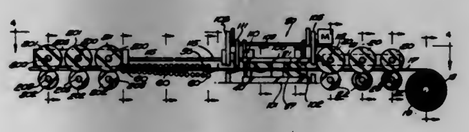
in each path to progressively increase fiber entanglement as the path approaches the center of the batt.

3,298,081

METHOD OF AND APPARATUS FOR COLD WORKING AND EXPANDING A METAL MEMBER SUCH AS A CHANNEL STUD

Robert Duval Terrell, Huntington, and Jack O. Abney, Vienna, W. Va., assignors to Penn Metal Company Inc., Boston, Mass., a corporation of Delaware

Filed Mar. 19, 1964, Ser. No. 353,083
12 Claims. (Cl. 29—6.2)



1. In a method of cold working and expanding an elongated metal member the steps of: cutting a first row of longitudinally spaced slits through said member substantially parallel to the longitudinal center line thereof, intermittently advancing said member and, when the member is stationary, simultaneously and progressively cutting slits in a second row and a third row of longitudinally spaced slits, each pair of opposing slits in said second and third rows being substantially parallel to the longitudinal center line of said member and the mid portions of said pair of opposing slits being located at opposite sides of the area of metal which is between the adjacent ends of a pair of slits of the first row of slits, and simultaneously with said latter cutting step progressively bending and elongating the strands as they are being cut between said opposing pair of slits in said second and third rows of slits into a semi-elliptical shape projecting outwardly from the plane of said member, thereby simultaneously and progressively cutting and elongating said strands while said member is stationary and thereafter expanding said metal member laterally in opposite directions from its longitudinal center line whereby said elongated strands are progressively returned substantially to the plane of said member.

3,298,082

METHOD OF MAKING SEMICONDUCTORS AND DIFFUSION THEREOF

Masami Tomono, Kokubunji-machi, Kitatama-gun, Tokyo-to, Hiroshi Ueda, Suginami-ku, Tokyo-to, Takeshi Takagi, Musashino-shi, and Kazunari Kobayashi, Ota-ku, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed May 14, 1963, Ser. No. 280,274
10 Claims. (Cl. 29—25.3)



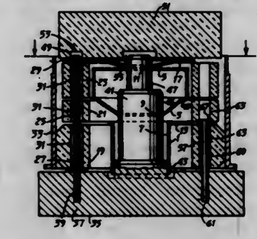
1. A method of fabricating semiconductor devices comprising steps of preparing a semiconductor body which contains two regions having one conductivity type and being arranged at mutually separated positions, and a thin layer of a different conductivity type from that of said two regions which is sandwiched between said two regions and forms a pn junction with said two regions; diffusing an impurity of said different conductivity type into the surface part where at least said thin layer and one of said two regions of said semiconductor body are exposed, thereby forming a diffused layer of said different conductivity type extending from said thin layer onto the surface part of at least one of said two regions; masking a portion imediately adjacent to said portion of the diffused layer which extends on at least a part of said thin layer and on one of said two regions; entirely etch-removing the exposed part of said diffused layer to form a diffused portion of said different conductivity type locally existing only on the surface part immediately adajcent to said thin layer between said two regions extending from said thin layer; and connecting at least one lead wire to said diffused layer.

3,298,083

METHOD OF MAKING ELECTRON GUN MOUNT

Thomas J. Kelly, West Orange, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Jan. 2, 1964, Ser. No. 335,337
5 Claims. (Cl. 29—25.16)



1. A method of making an electron gun mount comprising a plurality of axially aligned apertured electrodes having mounting portions alternating with insulating spacer numbers, comprising the steps of:

(a) assembling said electrode in axially aligned relation with said mounting portions alternating with said spacer members in a stack;

(b) extending a flanged metal member along said stack with the flange thereof engaging one end of the stack, said metal member having a thermal coefficient of expansion substantially higher than said insulating members;

(c) positioning a second metal flange in engagement with the other end of said stack;

(d) heating the assembly to a temperature of at least 800° C., to cause said metal member to expand thermally substantially more than said stack, and then attaching said second flange to said metal member

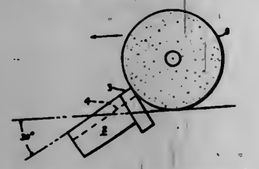
at said temperature while exerting pressure on said stack through said flanges.

3,298,084
FACE AND SIDE CUTTER
Johannes Looman, Friedrichshafen, Germany, assignor to Zahnradfabrik Friedrichshafen AG, Friedrichshafen, Germany
Filed Nov. 4, 1964, Ser. No. 408,825
Claims priority, application Germany, Nov. 15, 1963, Z 10,471
5 Claims. (Cl. 29—95)



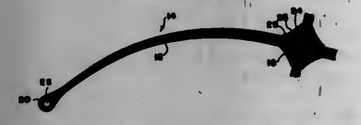
1. A method of sharpening a gear shaper cutter having a forward cutting edge disposed at a predetermined rake angle to a plane perpendicular to the rotational axis of the cutter, including the steps of: resurfacing the cutting edge by reducing the axial width of the cutter throughout; measuring the reduction in width of the cutter; and increasing the rake angle in accordance with said measured reduction in width so as to maintain a constant mesh angle for all gear tooth profiles generated by the cutter.

3,298,085
METHOD OF FORMING BUSHINGS
Robert L. Bleicher, Dayton, Ohio, assignor to Dayton Perforators, Inc., Dayton, Ohio, a corporation of Ohio
Original application Dec. 21, 1961, Ser. No. 161,191, now Patent No. 3,155,440, dated Nov. 3, 1964. Divided and this application Nov. 22, 1963, Ser. No. 325,550
9 Claims. (Cl. 29—149.5)



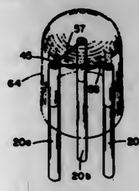
1. A method of forming a guide bushing including the steps of forming mating blanks and, with reference to each blank, cutting a depression in one surface thereof, setting a grinding wheel the peripheral surface of which has a uniformly arcuate cross-sectional contour so said peripheral grinding surface is established to operate in one plane inclined to the plane of said one surface, in line with the depression therein, and inducing relative straight line movement between said wheel and blank to effect an interengagement thereof and smooth uniform expansion of the depression to one end of said blank.

3,298,086
METHOD OF MAKING A FURNITURE PEDESTAL
George E. Gasser, Girard, Ohio, assignor to Gasser Chair Co., Inc., Youngstown, Ohio, a corporation of Ohio
Filed Dec. 29, 1964, Ser. No. 421,970
2 Claims. (Cl. 29—150)



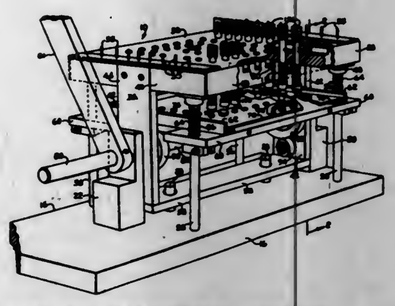
1. The method of making a furniture pedestal comprising the steps of extruding a tubular metal section, cutting off a discrete length of the extruded metal section to form a mast, longitudinally slotting the side wall of the mast at a plurality of circumferentially spaced points beginning at one end of the mast, extruding a slab-like second metal section having an enlargement along one of its side edges, transversely cutting off discrete short lengths of said second section to form the legs of the pedestal, and slideably assembling said legs to said mast by positioning said enlargements with in the mast while the adjacent webs of said legs are received within said slots.

3,298,087
METHOD FOR PRODUCING SEMICONDUCTOR DEVICES
Robert E. Hunt, Andover, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,160
6 Claims. (Cl. 29—155.5)



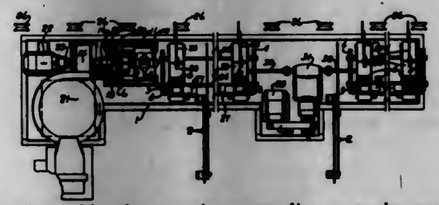
1. The method of producing a semiconductor device including the steps of
mounting a plurality of straight conductive leads in fixed position in a supporting chuck with the leads generally parallel to each other,
bonding the active elements of a semiconductor device at one end of one of said leads with the lead in ohmic contact with one of the electrodes of the active elements,
connecting contact wires between each of the other electrodes of the active elements and one end of different ones of said leads,
surrounding the active elements, the contact wires, and a portion of each of said leads including the one ends with a non-conductive liquid encapsulating material,
curing the liquid encapsulating material to a rigid mass having the active elements, contact wires, and portions of the leads embedded therein, and
separating said supporting chuck from said leads.

3,298,088
MAGNETIC CORE WIRING APPARATUS
Alan T. Dorn, Roslyn, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 10, 1964, Ser. No. 374,043
8 Claims. (Cl. 29—203)



1. Work processing apparatus comprising
a first apertured plate oriented horizontally and fixed in place,
the apertures in said plate being adapted to be provided with removable plugs according to a predetermined pattern,
a second apertured plate mounted for vertical movement above said first apertured plate,
a plurality of elongated workholders mounted in the apertures in said second apertured plate, said workholders thus being aligned with said apertures in said first plate,
and driving means coupled to said second apertured plate for driving it vertically up and down to bring said workholders into and out of operative relation with said first apertured plate and with a pattern of plugs which may be carried thereby, the plugs serving to limit the downward movement of selected workholders aligned therewith so that some workholders are driven downwardly to a greater extent than others, apparatus carried by said selected workholders thus being made accessible for processing.

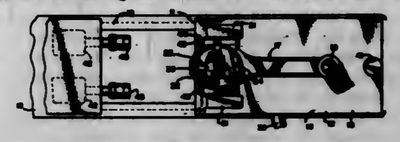
3,298,089
COUPLING SCREW-ON-MACHINE
Arthur H. Long, Columbiana, and Alexander Shashaty, Youngstown, Ohio, assignors to Wm. K. Stamets Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 268,375, Mar. 27, 1963. This application June 1, 1964, Ser. No. 371,853
16 Claims. (Cl. 29—240)



14. A machine for screwing a coupling on a pipe consisting of a non-rotary pipe chuck means and a continuously rotating coupling chuck means mounted in axial alignment to hold a complementary threaded pipe and a coupling to be secured together, a rotary clutch means including a selective rotary high speed clutch means and a rotary low speed clutch means for driving said continuously rotating coupling chuck means, a constant speed reversible motor connected to selectively operate said high speed clutch means when said motor is operating in one direction and said low speed clutch means when said motor is operating in the opposite direction, control means to selectively reverse said motor, power means to move said pipe chuck means and pipe axially while retaining the pipe from rotation to stab the pipe thread into the threaded coupling and carry it into clamping engagement with said continuously rotating coupling chuck means, and means responsive to further predetermined axial movement of said pipe chuck means to open said rotating coupling chuck means to release said coupling threaded on said pipe.

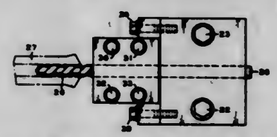
3,298,090
POWER FASTENER DEVICE
Jack E. Willson, Sayre, Pa., and John M. Stendle, Jr., Waverly, N.Y., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed June 22, 1965, Ser. No. 465,942
5 Claims. (Cl. 29—240)

1. In combination with a power driven, fastener-driving machine having a fastener-engaging element for engaging and turning a fastener, a fastener-loading device comprising:
a work holder for locating and holding a work piece adapted to be connected to a second work piece by a fastener positioned for engagement by said fastener-engaging element;
fastener-loading means disposed adjacent said work holder for applying a resilient force to said work piece opposing the tightening of said fastener; and
means for actuating said fastener-loading means into
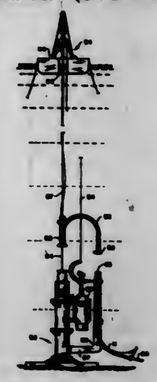


engagement with said work piece to apply a predetermined force to said work piece in a direction counter to the direction in which the fasteners are tightened.

3,298,091
METHOD OF CENTERING A TOOL IN A TOOL HOLDER
Carol K. Bowman, 107 Pryor Ave., Monett, Mo. 65708
Filed Mar. 5, 1964, Ser. No. 349,618
1 Claim. (Cl. 29—406)



The method of automatically centering a tool having a head and a base in a turret lathe tool holder, consisting of placing and holding the head of the tool centered in an appropriately sized collet in the lathe chuck spindle of said lathe, then tightening the collet in said spindle to fix firmly said tool exactly on center, next assembling the parts of the tool holder of said turret lathe around the base of the centered tool, then tightening said parts of the tool holder on said tool base while the parts are assembled around the tool base, then loosening the collet, and then removing the loosened collet from its position around the head of said tool and from the spindle of said lathe.

3,298,092
CONNECTION OF UNDERWATER FLOWLINES
James Ronald Dozier, Whittier, and Glenn D. Johnson, Downey, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of New York
Filed Mar. 23, 1964, Ser. No. 353,840
15 Claims. (Cl. 29—429)

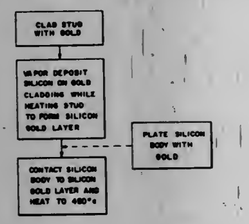


1. A method of remotely connecting a flowline having a major portion adapted to lie along the floor of a body

of water in fluid communication with an installation submerged in said body of water from a station located on the surface thereof, said method comprising:

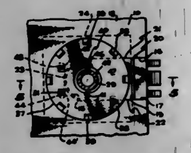
(a) providing the installation with an alignment element having an internal dimension slightly greater than the outside diameter of the flowline;
(b) extending a drawline through the alignment tube;
(c) securing one end of the drawline to the end of a flowline to be connected to the installation;
(d) applying tension to the other end of the drawline to pull the flowline to and through the alignment tube; and
(e) securing the end of the flowline extending through the alignment tube in fluid communication with the installation.

3,298,093
BONDING PROCESS
Jerrold Cohen, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,771
5 Claims. (Cl. 29—473.1)



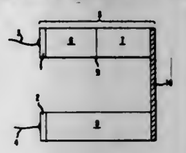
1. The process of bonding a metallic member to a silicon body comprising the steps of: plating a surface of said metallic member with gold, forming on said metallic member a molten alloy of silicon wth said gold thereon, and bonding said silicon body to said metallic member with said molten gold-silicon alloy.

3,298,094
METHOD FOR PREPARING A DOOR FACE TO RETAIN A UNIT LOCK IN POSITION
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and Roger J. Nolin, Monterey Park, Calif.; said Nolin assignor to said Russell
Filed Oct. 28, 1963, Ser. No. 319,282
2 Claims. (Cl. 29—428)



1. In a door and lock housing assembly of the kind wherein the door has a cutout slot from one edge extending through the door from face to face and wherein a lock housing extends into said cutout slot from said edge and is retained partially by an escutcheon plate located against a face of the door in position covering a selected area, a method for preparing a door for anchoring said housing against edgewise removal comprising forming at least one recess on one face thereof to receive a retaining means extending from a retaining plate at a location spaced from the cutout slot and at the same time falling within the area covered by the escutcheon plate, forming a retaining plate with a perimeter no larger than said escutcheon plate, forming a tab on said retaining plate and locating said tab into said recess when the lock housing is assembled on said door.

3,298,095
BONDING TELLURIDE-CONTAINING THERMOELECTRIC MODULES
William Thomas Hicks, Windsor Hills, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 325,037
12 Claims. (Cl. 29—472.7)



1. A process for bonding together thermoelectric materials wherein one of said materials is a telluride, which comprises pressing the thermoelectric materials together, and while maintaining mechanical pressure thereon, heating said materials to a temperature of from about 400° to about 700° C. in an environment which is inert except for the presence of 0.08 to 0.1 atmosphere of oxygen.

3,298,096
METHOD OF FORMING DISTORTION RESISTANT TUBULAR ELEMENTS
William R. Stuart, San Carlos, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California
Filed Dec. 30, 1963, Ser. No. 334,405
3 Claims. (Cl. 29—477)

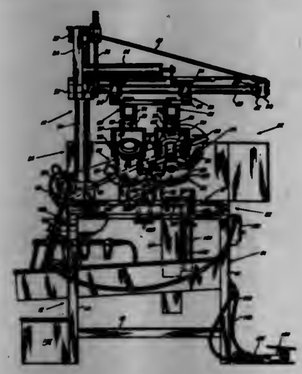


1. The method of making a hollow, cylindrical, hardened, distortion resistant, thin walled structure of Hastelloy B metal comprising the steps of forming a strip of Hastelloy B metal into a cylindrical configuration about a cylindrical mandrel made of 300 series stainless steel and securing the ends of said strip together, heating the assembly of said Hastelloy B metal cylinder and said 300 series stainless steel mandrel in a furnace in a reducing atmosphere at a temperature of about 850° C. for a period of about 30 minutes and then cooling said assembly.

3,298,097
SAWING MACHINE
Everett C. Gilbert, Steele, Mo., assignor to Beecee Manufacturing and Supply Company, Inc., Malden, Mo., a corporation of Missouri
Filed Apr. 18, 1966, Ser. No. 543,182
10 Claims. (Cl. 29—564)

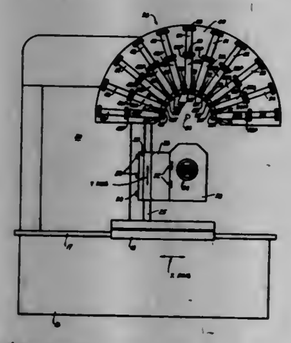
1. A sawing machine, comprising
a support table having a front and rear side,
a vertical post at the rear side of said table,
adjustable clamp means slidably and rotatably mounted on said post,
shaft means carried by said clamp means and extending therefrom horizontally toward and beyond the front side of said table,
a carriage slidable on said shaft means,

a pair of motor mounted rotary saw blades dependingly disposed relative to said carriage for movement therewith and arranged in tandem alignment relative to their direction of travel,
means to angularly adjust said saw blades relative to each other,
means on said table near said front side to receive material to be sawed,
clamp means on said table to releasably secure material to be sawed,
said saw blades being disposed so that the path of the following blade relative to movement toward said front side intersects the path of the leading blade,



separate electrically actuated pneumatic means for respectively operating said carriage and said clamp means,
a third rotary saw blade,
means supporting said third saw blade for vertical reciprocation relative to said table,
stop means on said table to limit the movement of said third saw towards said table,
means for actuating said third saw, and
electrically actuated pneumatic means for moving said third saw blade toward and away from said table.

3,298,098
MACHINE TOOL WITH TOOL CHANGER
William C. Gleisner, Jr., Milwaukee, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Nov. 23, 1964, Ser. No. 413,229
8 Claims. (Cl. 29—568)



1. In a machine tool;
a vertically upstanding supporting column;
a saddle slidably carried by said column for selective vertical movement;
a spindle head slidably carried by said saddle for selective horizontal movement;
a power driven tool spindle rotatably journaled in said spindle head for rotation about a horizontal axis and being adapted to carry a tool;
a stationary tool storage magazine carried by said column and presenting a plurality of spaced apart guideways disposed in predetermined relationship to the axis of said tool spindle;
a plurality of tool holders including at least three individual tool holders supported by said guideways for rectilinear extensible movements from a retracted tool storage position;
releasable tool securing means respectively provided at the inner ends of said tool supports with one of said securing means being empty to receive a tool carried by said tool spindle and the other of said securing means being respectively adapted to individually store tools to be selectively and individually transferred to said spindle for operation therewith in performing subsequent machining operations;
a plurality of hydraulic actuators respectively positioned in spaced relationship to corresponding ones of said tool holders and being respectively connected to retain said tool holders in retracted position relative to said spindle;
power drive means connected to move said saddle and said spindle head for moving said tool spindle to a tool change position in which said tool supports are disposed in radially retracted positions relative thereto; and,
control means connected to operate the hydraulic actuator associated with said holder having said empty tool securing means for effecting coordinate movement of said empty holder and said tool spindle for transferring a tool carried thereby to said empty tool securing means for movement therewith to radially retracted storage position, said control means being sequentially operative to operate a different preselected one of said hydraulic actuators and said power drive means to effect coordinate operation of said tool spindle and said holder associated therewith for transferring the tool therefrom to said spindle and returning the empty tool holder to radially retracted position.

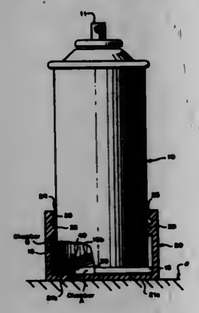
3,298,099
COMBINATION CAN PUNCH AND HANDLE
William J. Mitchell, 2010 Duthie Ave., Burnaby, British Columbia, Canada
Filed Jan. 21, 1965, Ser. No. 426,727
4 Claims. (Cl. 30—16)



1. A combined can punch and handle comprising a U-shaped strip of material forming a pair of spaced parallel legs and having an elongated pointed tongue depending from the base of one leg, said tongue being adapted to pierce the head of a can and to extend downwardly adjacent the interior surface of the side wall of the can, a pair of parallel elongated rib elements formed on said one leg extending parallel to and spaced apart on either side of the tongue and being adapted, when the tongue is inserted into the can, to press against the

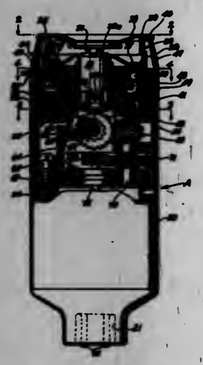
outer surface of the can's side wall, and abutment surfaces at the upper ends of the rib elements arranged to bear against the underside of the top bead of the can so as to grip the latter, thereby permitting the other leg of the U-shaped strip to serve as a handle.

3,298,100
PERFORATING DEVICE FOR DEFLATING A CAN
William B. Walker, 9 Fulmor Ave., Hatboro, Pa. 19040; Patrick J. Harkin, 206 Haws Ave., Norristown, Pa. 19401; and Joseph A. Cooke, Philadelphia, Pa. (3458 Brinkley Road, Washington, D.C. 20031)
Filed Mar. 9, 1965, Ser. No. 438,299
11 Claims. (Cl. 30—16)



1. A puncturing device comprising:
an elongated hollow member open at one end and comprising a solid continuous wall thereof,
closure means closing the other end of said hollow member,
puncturing means secured to said closure means and extending within the interior of said hollow member, and
a continuous lip portion on the interior wall of said hollow member and intermediate the ends thereof, said lip portion extending within the interior of said hollow member for use as a control surface.

3,298,101
COUNTER-ROTATING HEAD ELECTRIC RAZOR
Richard W. MacCarthy, 1162 Pome Ave., Sunnyvale, Calif. 94087
Filed Mar. 30, 1964, Ser. No. 355,659
5 Claims. (Cl. 30—43.5)



1. A rotary blade razor comprising
a housing
a blade having a generally circular sharpened peripheral slicing edge mounted for rotation on the housing and with a marginal portion of the axially outward side of the blade adjacent the slicing edge exposed exteriorly of the housing for sliding conforming contact with the skin of a user during a shaving operation,
a blade back up ring comprising a helical coil of wire formed into a ring mounted co-axially of the blade on the axially inward side thereof
a surface formed on each convolution of the coil, such surfaces defining a common annular surface facing a blade and conforming with an axially inward, marginal portion of the blade, each of the surfaces formed on the convolutions of the coil extending transversely across the slicing edge of the blade,
means lightly biasing the conforming surfaces of the coil into conforming engagement with a marginal portion of the axially inward side of the blade, across and
drive means for driving the back up ring rotatively relative to the blade.

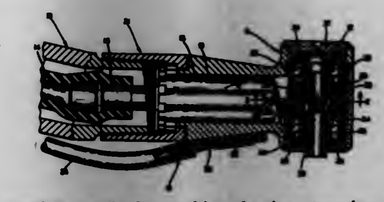
3,298,102
GRASS CLIPPER
Temple C. Patton, 105 Oxford Terrace, Westfield, N.J. 07090
Filed Oct. 7, 1964, Ser. No. 402,202
7 Claims. (Cl. 30—248)



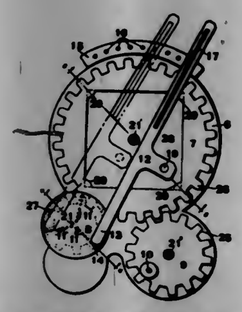
1. A cutting device, comprising a first bar having a blade extending at an angle therefrom, a second bar having a blade extending at an angle therefrom, said blades including respective cutting edges adapted to move past each other as a cutting means, pivot means for supporting said second bar intermediate its ends for clockwise and counter-clockwise pivotal movement with respect to said first bar from an initial position in which said first and second bar are in substantial alignment, and tension means cooperating with said first and second bar for biasing said first and second bar in said substantial alignment.

3,298,103
FLUID-DRIVEN DENTAL HANDPIECE CONSTRUCTION
John A. Maurer, Canton, Ohio, assignor to The Weber Dental Manufacturing Company, Canton, Ohio, a corporation of Ohio
Filed Jan. 3, 1958, Ser. No. 707,060
12 Claims. (Cl. 32—27)

1. Fluid-driven dental handpiece construction including an elongated handle member having an end portion, turbine casing means connected to said handle end portion, a turbine mounted in the turbine casing means, bearing means axially rotatably mounting the turbine in the turbine casing means, means for supplying fluid to the turbine, means for exhausting fluid from the turbine, means operably connected to the turbine and rotatable therewith for holding a dental burr, the turbine having turbine bucket means formed in a portion of said turbine receiving fluid from the means for supplying fluid to rotate said turbine, the turbine bucket means forming chambers confining fluid received from the means for supplying fluid, the bearing means being positioned axially adjacent said turbine portion, and the turbine having opening means formed generally axially therein from certain of the bucket means directly to the bearing means for transmitting a portion of the fluid received by said bucket means around and through said bearing means for cooling said bearing means.

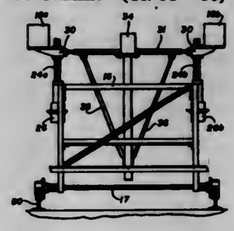


3,298,104
GEOMETRIC DESIGN INSTRUMENT
Dan Vernon Smith, 210—03 43rd St., Bayside, N.Y. 11361
Filed Oct. 23, 1965, Ser. No. 503,458
1 Claim. (Cl. 33—27)



A geometric scribing machine which comprises a base member; a rotatable table having gear teeth integral therewith along its periphery and pivoted to said base member, said rotatable table having a recess in a central portion thereof adapted to receive a rectangular sheet of paper; means for turning said table; a single pattern changing member pivoted to said base member and having gear teeth integral therewith which intermesh with the gear teeth on said rotatable table; said single pattern changing member having a plurality of radially spaced apertures along a plurality of discreet straight radial lines wherein all adjacent apertures along each radial line are spaced by a common distance and wherein the innermost aperture of each radial line is spaced differently from the center of rotation of said pattern changing member; a single elongated member having a pin-like protrusion at one end thereof which is placeable in a selected one of the apertures of said pattern changing member; means fixed to said base member for slidably and pivotably supporting the other end of said elongated member wherein said means for slidably and pivotably supporting the other end of said elongated member includes a plurality of guide portions extending upwardly from said base member and spaced from each other along a curve, said elongated member having a slot which is engageable with a selected one of said guide portions and wherein said rotatable table has a portion which extends into each of the four corners of said recess and spaced from the bottom wall of said recess to receive the four corners of said rectangular piece of paper; and a marking stylus carried by an intermediate portion of said elongated member which is contactable with said sheet of paper said writing stylus is carried on an arm extending transversely from the elongated member whereby the weight of said writing stylus provides contact pressure between said writing stylus and said sheet of paper; the spacing of all apertures being at different distances from the center of rotation of said pattern changing member, whereby the pin-like protrusion at the end of said elongated member can be positioned at distances from the center of rotation of said pattern changing member equal in number to the total number of apertures in said pattern changing member.

3,298,105
HIGH FREQUENCY SURVEYING DEVICE
John K. Stewart, 60 Ballantyne Terrace, Dorval, Quebec, Canada, and Helmuth R. E. Von Beckmann, 30 St. Francis Blvd., Chateauguay, Quebec, Canada
Filed Apr. 8, 1963, Ser. No. 294,783
Claims priority, application Canada, Feb. 8, 1963, 868,423
11 Claims. (Cl. 33—60)



1. Railway track surveying apparatus including at least one high frequency beam transmitter mounted for movement along a track and for transmitting a high frequency cone-like beam substantially longitudinally of the track, a pair of beam receivers, one for each rail of the track mounted for movement along the track in spaced relationship to the transmitter within the transmitted cone; shadow means for each receiver mounted for movement along the track and located intermediate the transmitter and receivers and substantially nearer to the receivers than to the transmitter; means for adjusting the vertical height of the receivers; gravity sensing means for controlling the means for adjusting the vertical height of one of the receivers whereby to maintain the receivers in cross level relative to the grade rail.

3,298,106
VENEER LATHE GAUGE
Delbert G. Duvall, Gold Beach, Oreg., assignor of fifty percent to Curtis R. Duvall, Gold Beach, Oreg.
Filed Jan. 28, 1965, Ser. No. 428,625
4 Claims. (Cl. 33—185)



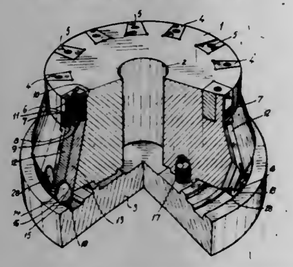
1. A veneer lathe gauge for adjusting the height of the pressure roller bar above the knife edge uniformly along the full length of the knife edge and roller bar of a veneer lathe comprising a longitudinal elongate base having a depending centering head at one end thereof, said centering head having two roller bar contact points thereon, a screw threaded through said longitudinal

base inwardly of the centering head, a flat head on said screw, said flat head being below said longitudinal base and adjacent said centering head whereby said two contact points of said centering head may be pressed against the roller bar and said flat head on said screw may be screwed a fixed distance down to adjust the relationship of said knife edge to said roller bar by adjusting said knife edge to rest against said flat head on said screw, a spirit level having a bubble and centering marks affixed to the upper surface of the longitudinal base at the end thereof opposite to said centering head whereby said knife edge may be raised or lowered against said flat head on said screw until said bubble is between the centering marks on said spirit level to thereby adjust said knife edge at a predetermined vertical distance from said roller bar, a thumb rest secured to the underside of said longitudinal base for holding the centering head firmly against the roller bar by pressing firmly against said thumb rest, said thumb rest having a notch facing away from the centering head, and a vertical ruler on said thumb rest adjacent the centering head and flat head on the screw.

3,298,107
ARRANGEMENT IN CUTTING BIT HOLDERS

Ernst Reidar Bergström, Johanneshov, Sweden, assignor to Stora Kopparbergs Bergslags Aktiebolag, Falun, Sweden, a company of Sweden

Filed June 8, 1965, Ser. No. 462,258
Claims priority, application Sweden, June 8, 1964, 6,960/64
8 Claims. (Cl. 33—185)



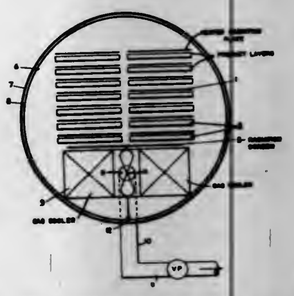
1. An arrangement for accurately positioning cutting bits in a bit holder for end face millers, comprising: a bit holder body and a matrix member attached to said body, said matrix member comprising a reference surface facing said bit holder, a pair of positioning members mounted within said body and slidably positionable relative to each other and relative to said body, each member in said pair of positioning members including a bit supporting surface, the bit supporting surface of each said positioning member and said matrix reference surface defining the boundaries of a bit receiving pocket, adjustment means to slidably position said positioning members relative to said body and to each other.

3,298,108
METHOD AND APPARATUS FOR FREEZING AND FREEZE-DRYING

Geert Seffinga, Ede, Netherlands, assignor to SEC N.V., Seffinga Engineering Company, Ede, Netherlands, a Dutch corporation

Filed July 29, 1964, Ser. No. 385,915
Claims priority, application Netherlands, Aug. 2, 1963, 296,143
10 Claims. (Cl. 34—5)

1. A method of freeze-drying which comprises freezing a freezable substance to be dried by forcibly circulating a cooling gas in contact successively with cooling surfaces and with said substance in a closed container, and after said substance is frozen subliming ice formed in it by heating it indirectly and under vacuum in said container and drawing away and condensing resulting



water vapor, said substance being maintained in place in the same container during both the freezing and the sublimation.

3,298,109
AZEOTROPIC DRYING PROCESS

Byron B. Bohrer, Rosemont, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

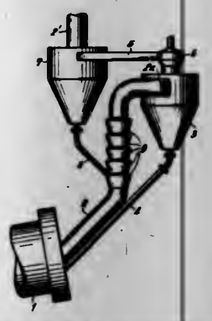
No Drawing. Filed Apr. 21, 1966, Ser. No. 544,106
7 Claims. (Cl. 34—5)

1. A process for azeotropically drying materials which comprises
(a) contacting said materials with a harmless and biologically degradable azeotropic agent which is miscible with water and which boils below about 103° C.,
(b) adjusting the pressure and temperature to levels at which an azeotropic mixture of water and the agent will boil,
(c) continuously boiling the resulting azeotropic mixture until the material is dehydrated, and
(d) recovering the essentially dehydrated material from the agent.

3,298,110
APPARATUS FOR THE PREHEATING OF RAW CEMENT MATERIAL

Rudolf Kus and Heinz Jäger, Bochum, Germany, assignors to Wedag Westfalia Dinnendahl Groppel Aktiengesellschaft, Bochum, Germany, a corporation of Germany

Filed Dec. 17, 1963, Ser. No. 331,250
Claims priority, application Germany, Dec. 20, 1962, W 33,571
7 Claims. (Cl. 34—57)

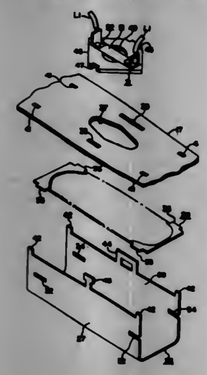


1. A preheating apparatus comprising upwardly extending hot gas duct means, a plurality of sequentially arranged interconnected cyclone separators, said duct means being connected to a first one of said separators, said duct means including a plurality of superimposed downwardly tapered eddy chambers, and discharge means connected to another of said separators and to said duct means for feeding material to be preheated into the lowermost of said eddy chambers.

3,298,111
HAIR DRYER HEATER ASSEMBLY

Bernard F. Parr, Madison Township, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 6, 1963, Ser. No. 307,120
4 Claims. (Cl. 34—99)



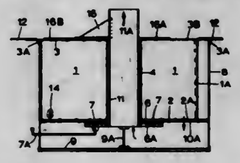
1. Hair dryer apparatus comprising;
air translating means,
a casing structure housing said means,
said structure defining an inlet port for entry of air to said casing and an outlet port for exhausting air from said casing,
wall structure defining a duct for directing flow of air from said air translating means to said outlet port,
a U-shaped cover member disposed in said duct and having a pair of opposed walls substantially parallel to said air flow,
one of said duct walls having a peripheral edge of each of said opposed cover walls disposed adjacent thereto,
a heater element disposed between said opposed walls,
said one duct wall having an opening therethrough between said peripheral edges of said cover walls and in juxtaposition to said heater element,
a thermostat having a base disposed on the outer surface of said one duct wall and a sensing element adjacent said opening,
each of said opposed cover walls having a tab projecting from the peripheral edge thereof and,
said one duct wall having a pair of slotted openings for receiving said tabs,
said tabs extending through said slotted openings in engagement with said thermostat base for retaining said peripheral edges of said cover walls adjacent the inner surface of said duct wall and said thermostat base adjacent the outer surface of said duct wall.

3,298,112
MEANS FOR PREPARING GAS-TREATED OBJECTS

Peter Granville Stokes, Slough, England, assignor to Westland Aircraft Limited, Somerset, England

Filed June 4, 1964, Ser. No. 372,627
Claims priority, application Great Britain, June 8, 1963, 22,933/63
10 Claims. (Cl. 34—217)

1. Apparatus for gas testing objects, said apparatus comprising: means forming a rotor symmetrically disposed about and rotatable about a vertical axis, said rotor being divided into a plurality of chambers by a series of radially extending vertical walls, a stationary cylindrical casing substantially surrounding said rotor and in which said rotor is rotatable, said stationary cylindrical casing having a vertical coaxial tube extending therethrough coaxially with the axis of said rotor and adapted for connection at its upper end to a suction source, means forming a common chamber at the bottom of said stationary cylindrical casing below said rotor, said tube communicating at its lower end with said common chamber, means enabling said rotor to be rotated successively through angles subtending a chamber of the rotor so as to have each rotor pass through successive stations around



the stationary cylindrical casing, valve means at one station operated by the rotation of said rotor for supplying a volume of treatment gas to each chamber while the chamber is at that station, means permitting loading and unloading of objects into and from the chambers at a loading and unloading station prior in rotational sequence to the station at which treatment gas is supplied to the chambers, and means for ventilating the chambers between the treatment gas supplying station and the loading and unloading station by selectively opening the chambers to a supply of purging gas and to said common chamber whereby the purging gas will be drawn through the rotor chambers into said common chamber and up said coaxial tube.

3,298,113
APPARATUS FOR DRYING ARTICLES

Bernard Friedman, 2730 Chew St., Allentown, Pa. 18104

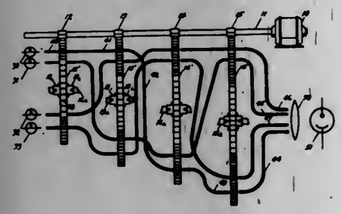
Filed Aug. 10, 1964, Ser. No. 388,509
12 Claims. (Cl. 34—219)



1. Apparatus for drying articles by means of a current of warm air, said apparatus comprising:
(a) a thermally insulated cabinet adapted to receive the articles to be dried,
(b) air blower means mounted in said cabinet, said air blower means having first and second air inlets and an air discharge, said second air inlet and said air discharge communicating with the interior of the cabinet,
(c) an air intake duct in said cabinet and communicating between said first air inlet and the outside atmosphere through an opening in a wall of the cabinet, said air intake duct thereby isolating said first air inlet from the interior of the cabinet,

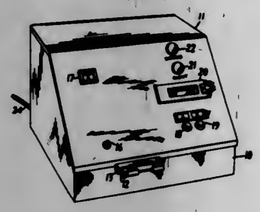
(d) heating means operatively interposed between said air blower means and the interior of said cabinet to heat air passing through said air blower means,
(e) vent means communicating between the interior of said cabinet and the outside atmosphere for the discharge of air from the interior of said cabinet,
(f) an electric motor operatively associated with said air blower means, said electric motor being mounted inside said air intake duct,
(g) all of the air entering the first air inlet of said air blower means passing through said air intake duct and cooling said electric motor.

3,298,114
KEY GENERATOR
Lynn W. Marsh, Jr., Marblehead, Mass. (300 Park Terrace Drive, Apt. 337, Melrose, Mass. 02176)
Filed Mar. 5, 1954, Ser. No. 414,521
3 Claims. (Cl. 35—4)



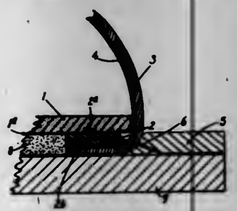
1. A key generator including a light source, a light sensitive device, a normally interrupted path for light from said source to said device, a plurality of discs having openings therein, said openings completing said path when said openings are in predetermined disc-to-disc relation, and means for rotating said discs simultaneously.

3,298,115
SMOKING TEST APPARATUS
William Lawrence Dunn, Jr., Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Aug. 19, 1964, Ser. No. 390,670
7 Claims. (Cl. 35—9)



1. Apparatus for presenting at least two types of articles for subjective sampling by a person who is required to make differential identification therebetween and for recording the identity selected by the person, said apparatus comprising:
a housing having a magazine supported therein for holding the articles to be presented in prearranged order;
presenting means supported in the housing and operable at the discretion of the person for presenting an article for sampling;
separate manually operable selector means mounted on said housing denoting each article type the person may identify;
recording mechanism supported in the housing comprising a separate recording means associated with each article type and operatively connected with the corresponding selector means, each recording means being operable to record the article type selected when said selector means are operated;
signal means having "correct" and "incorrect" output orientations supported in the housing and operatively connected with each said selector means for signalling the correctness of the person's selection; and
program means programmed with the true identities of the articles in the magazine and operable in stepwise sequence with each operation of said presenting means for orienting said signal means to signal a correct selection only when the corresponding selector means is operated.

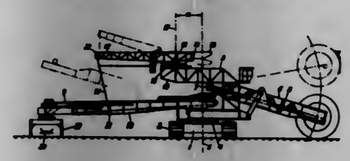
3,298,116
FOOTWEAR
Albert Edward Arthur Barker, Earls Barton, Northampton, England, assignor to A. Barker and Sons Limited, Northampton, England, a British company
Filed July 3, 1963, Ser. No. 292,623
7 Claims. (Cl. 36—17)



1. A method of producing a welted shoe comprising the steps of attaching to the underface of an insole an initially separate strip which extends around the marginal portion of at least the waist and the forepart of the said insole and is folded over inwardly to provide an initially free-flap-like sewing lip; lasting upper material over the insole and securing the lasted-over margin to the said sewing lip so that the tension exerted on the latter will lift the same away from the underface of the insole thereby to provide a channel capable of accommodating stitching; uniting the upper material, a welt and the insole with the upper material and welt having their undersurfaces in a common plane by inserting stitches of a horizontal chainstitch seam solely through the aforementioned channel, the upper material and the welt without the stitches passing through any part of the insole; securing the flap-like sewing lip down flat upon the already attached portion of the folded strip to seal in the chainstitching; incorporating bottom filling in the shallow space between the lasted-over margins of the upper; and sticking an outer sole onto the undersurfaces of the said lasted-over margins, the welt and the bottom filling.

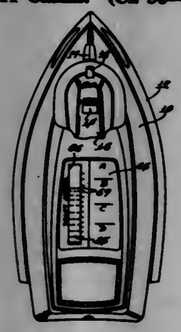
4. A welted shoe construction comprising: an insole; a folded strip attached to the underface of the insole and extending around the marginal portion of at least the waist and the forepart of said insole, said strip being folded flat so as to have the fold edge extend along and adjacent the margin of the insole with the two limbs formed by the fold extending inwardly therefrom, the upper limb being attached to the insole; upper material lasted-over the insole and extending under and secured to the lower limb of said folded strip; a welt having its undersurface lying in a common plane with the undersurface of the lasted-over upper material and being united with the upper material and the insole by horizontal stitches passing solely through the welt, the upper material and the fold of said folded strip without any stitches passing through said insole; bottom filling in the shallow space between the lasted-over margins of the upper material; and an outer sole adhered onto the undersurfaces of the said lasted-over margins, the welt, and the bottom filling.

3,298,117
TRANSLOADING DEVICE, ESPECIALLY BUCKET WHEEL TRANSLOADING DEVICE
Hans Pelzer, Krefeld, and Raimonds Sukurs, Rheinhausen, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschränkter Haftung, Essen, Germany
Filed Sept. 22, 1965, Ser. No. 489,281
Claims priority, application Germany, Sept. 26, 1964, B 78,687
6 Claims. (Cl. 37—190)



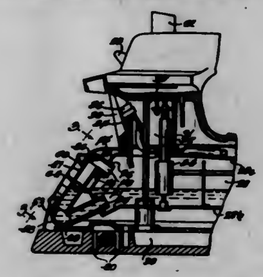
1. A transloading device, especially bucket wheel loader, which includes: a lower supporting structure, an upper supporting structure supported by and movable relative to said lower structure about a first vertical axis, a first boom supported by said upper structure so as to be movable therewith about said first vertical axis, a second boom having one end portion supported by said upper structure and being movable about said first vertical axis independently of said upper structure, the other end portion of said second boom forming the outer end portion thereof, said second boom also being pivotable about a first horizontal axis, a third boom arranged at a higher level than said second boom and supported by said upper structure while being turnable about a second vertical axis offset with regard to said first vertical axis in the direction toward said outer end portion of said second boom, said third boom also being pivotable about a second horizontal axis, and suspension means suspended from said third boom and connected to said second boom so as to cause the latter to turn about said first vertical axis in response to said third boom turning about said second vertical axis.

3,298,118
STEAM IRON WATER LEVEL GAUGE
Joseph L. Vlecell, La Grange, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 500,096
11 Claims. (Cl. 38—77)



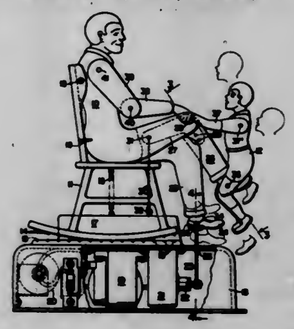
1. In a steam iron comprising a water tank defining an elongated opening framed by an upturned flange, an elongated loop-shaped gasket having a rectangular cross section disposed around said flange and secured thereto by a sealant to form a watertight connection, a cup-shaped elongated translucent dome overlying said gasket and being provided with an annular lip around its mouth, said dome lip being secured to said gasket by sealant to form a watertight connection therebetween, said gasket being sufficiently large to prevent said tank and dome from directly contacting each other to establish a thermal barrier therebetween.

3,298,119
ELECTRIC PRESSING IRON WATER LEVEL GAUGE
Joseph L. Vlecell, La Grange, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 500,095
12 Claims. (Cl. 38—77)



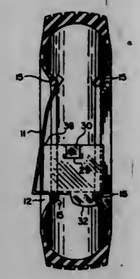
1. In a steam iron comprising a soleplate, an inverted cup-shaped shell having side walls secured to said soleplate, a water reservoir positioned with in said shell, said shell defining an opening in one of its side walls, a sight gauge operatively connected to said tank and positioned so that it is exposed to view through said shell opening whereby the quantity of water within said reservoir may be known when the iron is horizontally disposed in its ironing position.

3,298,120
ROCKING MECHANICAL TOYS
Lester M. Walden, 605 Cheyenne Blvd., Colorado Springs, Colo. 80906
Filed Nov. 8, 1965, Ser. No. 506,758
5 Claims. (Cl. 46—106.41)
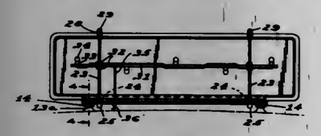


1. In a mechanical toy, in combination, a base, a miniature rocking chair on the base, an adult likeness secured to said chair, a pivoted foreleg on said adult likeness, a child figure pivotally joined to the foot portion of said foreleg, pivoted coupling means between the upper arms of the adult and the shoulders of the child, adjustably fixed friction joints between the upper arms and shoulder areas of the adult, driving means to rock the chair on the base and to simultaneously pivot the adult foreleg up and down.

3,298,121
TIRE DISPLAY AND ADVERTISING DEVICE
Ernest Leslie Wathen, 20695 Stratford Ave., Rocky River, Ohio 44116
Filed Nov. 19, 1964, Ser. No. 412,569
6 Claims. (Cl. 40—125)



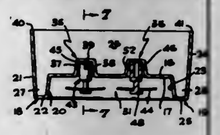
1. A display and advertising device for assembly in the opening of an unmounted vehicle tire and formed from a single sheet of relatively stiff bendable material comprising, as a unitary structure an intermediate display panel, a transverse top portion extending from a score line formed at the juncture of the portion and the panel, a supporting member extending from the panel along the score line forming the juncture of the supporting portion and the panel, means formed on the top portion and insertable within the tire opening to engage and overlie the inner surfaces of the adjacent bead and side wall of the tire, and means formed on the supporting portion and insertable in the tire opening to engage the inner adjacent surfaces of the opposite bead of the tire and the side wall of the tire contiguous with said last named means, said last named means engaging the inner surface of said display panel and exerting a force of compression thereagainst to flex the panel outwardly of the tire and thereby to sustain the panel in supported position on the tire.

3,298,122
CAR TOP SIGN
Erik L. Hansen, 14740 Charlevoix, Detroit, Mich. 48215
Filed Oct. 22, 1965, Ser. No. 502,181
10 Claims. (Cl. 40—129)



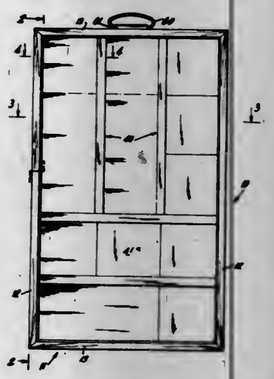
1. In a sign, the combination comprising a hollow plastic housing,
- said housing having side panels adapted to form the viewing portion of the sign,
- said housing including an elongated opening in the bottom thereof,
- an integral flange extending downwardly and surrounding said opening,
- a base,
- said base having upstanding flanges surrounding said flange on said housing,
- rods extending upwardly through said opening in the bottom of said housing,
- said housing having openings in the top thereof through which said rods extend,
- and means on said rods for holding said housing on said base,
- illuminating means mounted on said rods and supported within said housing by said rods,
- and means for supporting said base on a car top.

3,298,123
SIGN CHARACTER STRUCTURE
Lloyd C. Ownbey, 1313 Collingwood Place, Los Angeles, Calif. 90048
Filed Mar. 16, 1964, Ser. No. 352,236
6 Claims. (Cl. 40—138)



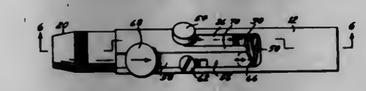
1. A sign character structure comprising a body of sheet plastic material forming the stroke of the character, said body comprising a central area, parallel ridges forming and determining side edges of the central area, at least one elongated shoulder extending throughout the length of the stroke and formed from the material of said character, said shoulder being spaced substantially uniformly from said ridges and being in conformance with the stroke of said character, and a separate strip conforming in length and configuration with said shoulder, said strip having a shoulder complementary to the shoulder on said character, means holding said shoulders in engagement, a series of linearly spaced pegs on said strip extending outwardly beyond the surface of said central portion and a reflector element being movable on the outer end of each peg.

3,298,124
DISPLAY DEVICES
Fred L. Jahn, Pittsfield, Mass., assignor to Eaton Paper Corporation, Pittsfield, Mass., a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 544,012
9 Claims. (Cl. 40—156)



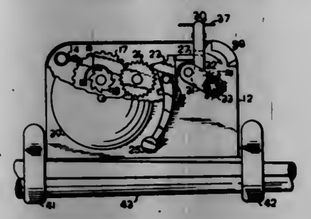
1. A display device comprising a rectangular backing member of greater length than width, and including an iron plate, a frame about the perimeter of said backing member extending forwardly beyond the front face of said backing member and a plurality of elongated magnetic members of substantially equal length, each removably mounted on and contacting the front side of said backing member throughout its length and held inside of said frame and against said backing member by magnetic attraction the length of each magnetic member being substantially equal to the width of said backing member and the length of said backing member being such that said magnetic members can be arranged on said backing member to divide the area of said backing member, inside said frame, into a plurality of substantially equal smaller areas, with at least one of said magnetic members being arranged at right angles to another magnetic member, with none crossing each other.

3,298,125
TEAR GAS GUN
Robert G. Adrian, 2915 Waldorf Ave., Camden, N.J. 08105, and Willison L. Lower, 2421 45th St., Pennsauken, N.J. 08110
Filed Sept. 20, 1965, Ser. No. 488,424
4 Claims. (Cl. 42—1)



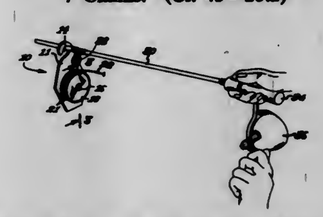
1. A tear gas gun comprising a barrel, a longitudinal bore within said barrel, a firing pin reciprocably mounted within said bore, means for mounting an explosive tear gas cartridge adjacent one end of said bore, resilient means for normally biasing said firing pin towards said cartridge mounting means, a J-shaped slot in a wall of said barrel, the longer leg of said slot extending along the longitudinal axis of said barrel, a cocking arm mounted on said firing pin and extending through said slot, a reciprocable slide mounted on said barrel, at least a portion of said slide being reciprocable over the shorter leg of said slot, said slide including a cam for engaging said cocking arm and moving it into said longer leg, and a handle on said slide.

3,298,126
ALARM FOR FISHING LINE
Edmund M. White, Lot 84, 1500 3rd St., Chula Vista, Calif. 92010, and Cecil T. Rhoades, 4961 Easy St., Riverside, Calif. 92505
Filed Nov. 27, 1964, Ser. No. 414,306
2 Claims. (Cl. 43—17)



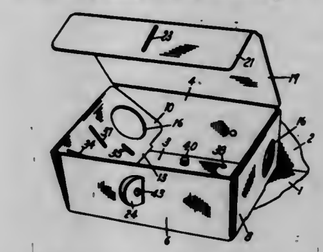
1. In a signal alarm for fishing lines, in combination, a water-resistant housing, spring clips on said housing for attaching said housing to a fishing pole, a coil spring within said housing, a key extending outside said housing for winding said coil spring, a gear train within said housing and powered by said coil spring, an alarm within said housing, an escapement device within said housing and driven by said gear train and having a hammer for striking said alarm, a lever arm pivoted within said housing and having a free end portion extending outside said housing, said lever arm having a stop element for blocking said escapement device, the free end of said lever arm having a fishing line gripping pincher clamp, said pincher clamp comprising a movable clamp arm spring-urged to clamp a fishing line in said pincher clamp, whereby when a fish pulls on the fishing line, said lever arm is rotated to move said stop element to unblock said escapement device to cause said hammer to sound the alarm, said housing having a fixed inclined cam surface on the exterior portion thereof and in the path of said movable clamp arm to disengage the fishing line from said pincher clamp when said lever arm moves through a predetermined distance by the fish pulling on the fishing line whereby the fishing line is automatically released and is free for landing the fish.

3,298,127
LINE DISPENSER
Berkley W. Bedell, Highways 9 and 71, Spirit Lake, Iowa 51360
Filed Sept. 18, 1964, Ser. No. 397,371
7 Claims. (Cl. 43—25.2)



1. A device for use in transferring a fishing line from a spool to the reel of a fishing rod having an eyelet and a predetermined diameter at a point beyond said eyelet, the device comprising:
- a backing plate having a rod receiving hook disposed on one end thereof, a shaft secured to said backing plate along the surface thereof and disposed normal to said surface, said hook defining an opening which is large with respect to said diameter of said fishing rod whereby said backing plate may be positioned on said fishing rod with the axis of said shaft substantially normal to the axis of said fishing rod, and
- a line retaining spool being disposed axially on said shaft, having a supply of line along the winding periphery thereof, and being rotatable about the axis of said shaft.

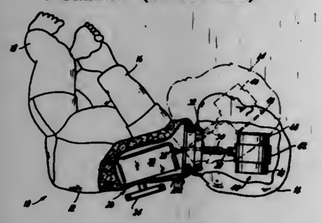
3,298,128
FOLDABLE FIBERBOARD RODENTICIDE FEEDING APPARATUS
John J. Dill, Delton, and Arthur J. Black, Kalamazoo, Mich., assignors to J. J. Dill Company, Kalamazoo, Mich.
Filed Mar. 18, 1965, Ser. No. 440,741
14 Claims. (Cl. 43—131)



12. A feeding apparatus of the class described comprising a body member of form-retaining stock cut and scored to provide a bottom, rear and front walls connected to the rear and front edges of the bottom, outer end wall members connected to the end edges of the bottom, inner end wall members connected to the upper edges of said outer end wall members, intermediate end wall members connected to the ends of said rear wall and to the ends of said front wall supportedly disposed in overlapping relation to each other between said outer and inner end wall members when the carton is erected, the overlapping end wall members having rodent openings therein which are in alignment when the end wall members are in erected position, a cover member connected to the upper edge of the rear wall, a first receptacle wall and trough member,

and a second receptacle wall member disposed above the trough portion of said first member with its lower edge in spaced relation to said trough portion thereof, said receptacle wall members having tongues on their ends supportedly engaged in slots in said inner and intermediate wall members and constituting means for retaining said wall members in erected position.

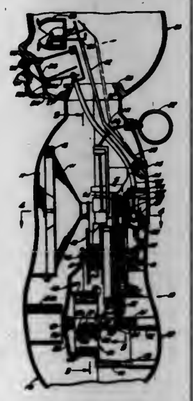
3,298,129
ANIMATED CRYING DOLL
Abraham M. Katz, Great Neck, N.Y., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Feb. 26, 1962, Ser. No. 175,431
5 Claims. (Cl. 46—118)



1. The combination of a crying mechanism with an animated doll including an elongated hollow body having a longitudinal axis and a neck opening at the upper end of said body, a head having a neck insert and a prescribed central axis therethrough and movably mounted on said body within said neck opening for movement in a complex motion including a starting position wherein the central axis of said head is generally in longitudinal alignment with the longitudinal axis of said body, and actuating means within said body for imparting said complex motion to said head, said actuating means including a drive shaft oriented at an angle to said longitudinal axis of said body and having an extension thereon offset at a predetermined angular relation to said drive shaft and projecting into said head and coupled thereto, said predetermined angular relation between said drive shaft and said extension being such as to orient said extension substantially parallel to the longitudinal axis of said body and to the central axis of said head in said starting position of the head, said crying mechanism being disposed within said head and operatively connected to said shaft extension for selectively emitting a crying sound in response to rotation of said drive shaft, said crying mechanism including a cylindrical housing and means for mounting said cylindrical housing on said shaft extension with its longitudinal axis normal thereto, a sounding means entirely enclosed within said cylindrical housing, and a freely slidable piston slidably mounted within said cylindrical housing and effective to selectively operate said sounding means to emit a sound in response to movement of said piston through an actuating stroke within said cylindrical housing, said actuating stroke occurring only when the doll is in a horizontal position enabling movement of said piston under the influence of gravity during rotation of said drive shaft.

3,298,130
ANIMATED SPEAKING FIGURE TOY
John W. Ryan, Bel-Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Original application Feb. 8, 1963, Ser. No. 257,123, now Patent No. 3,230,665, dated Jan. 25, 1966. Divided and this application Nov. 1, 1965, Ser. No. 505,782
5 Claims. (Cl. 46—118)

1. A toy figure, comprising:
a body;
a hollow head mounted on said body and defined by a resilient wall face portion actuable for changing expression, said face portion including a nose, a chin, and a mouth between said nose and chin positioned in a normal facial arrangement and having upper and lower lips relatively movable between a relatively closed mouth position and a relatively open mouth position;
actuating means mounted within said head and selectively operable for cyclically moving said lips between said positions, said actuating means including a first part connected to said upper lip and a second part connected to said lower lip, said actuating means moving said lips between said relatively closed and said relatively open positions when actuated;



drive means mounted in said body for actuating said actuating means; and
flexible motion transmitting means connecting at least one of said parts to said drive means, said motion transmitting means extending from said head to a position within said body and being flexible whereby to effectively move said lips even upon relative movement between said head and body, said motion transmitting means comprising an elongated flexible tube secured at one end to only one of said parts, and an elongated flexible wire-like element extending slidably through said tube and being secured at one end to only the other of said parts.

3,298,131
STICK PUPPETS
David E. Monahan, 156 Summit St., Upper Darby, Pa. 19023
Filed Apr. 2, 1965, Ser. No. 445,199
7 Claims. (Cl. 46—126)



1. A puppet comprising a torso made of a flexible resilient material consisting of an upper section and a lower section, arm and leg members connected to the upper and lower torso sections respectively, said arm and leg members being of a reduced cross section in one dimension at the elbow and knee respectively to define a hinge-like

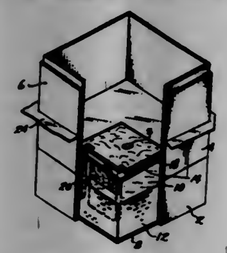
connecting point thereby permitting limited flexing movement of the arms and legs, said upper and lower torso members each including a generally circular plug, means connecting the upper and lower torso members in fixed, spaced apart relation including a connecting member having a vertically extending section parallel to and offset from the central axis of said plugs, and a control stick pivotally connected at one end to said vertical section of said connecting member.

3,298,132
HEARTBEAT SIMULATING MECHANISM FOR DOLLS
Charles A. Elwell, Los Angeles, Calif., assignor to The Toy Development Center, Inc., a corporation of Nevada
Original application Dec. 28, 1960, Ser. No. 79,004, now Patent No. 3,154,881, dated Nov. 3, 1964. Divided and this application Oct. 8, 1964, Ser. No. 440,652
1 Claim. (Cl. 46—192)



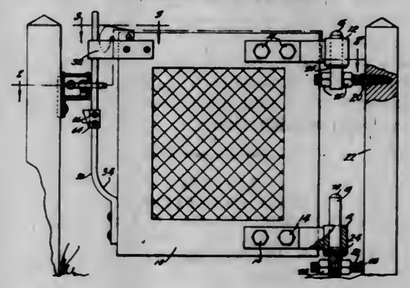
A mechanical heartbeat mechanism for a sounding toy comprising:
operative means adapted to produce a pattern of intermittent sound characterized by closely-spaced, dual beats separated by a different time interval than the interval between said dual beats, said operative means comprising rotary drive means, a vibratory element adapted to simulate a heart sound, and intermittent contact mechanism mutually connecting said vibratory element and drive means, said contact mechanism being characterized by a spaced recurrent sequence of contact points corresponding to said pattern of intermittent sound.

3,298,133
PLANT STARTING DEVICE
Milton A. Courtright, 19408 Des Moines Way, Seattle, Wash. 98148
Filed July 7, 1965, Ser. No. 470,146
9 Claims. (Cl. 47—1.2)



1. A plant starting device comprising an open-topped container for a liquid, a perforated plate which is removably supported on the container so as to extend across the interior of the same at a level in the upper section of the container below its top opening, a pad of moisture absorbent material which is removably supported on the plate below said opening, and which has a capillary wick depending therefrom into the lower section of the container below the plate, for immersion in the liquid, a thin, pliable transparent air-impermeable film stretched across the top opening of the container, to close the same, and a removable hold-down ring detachably engaged about the rim of the container with the film releasably clamped therebetween, said ring being open substantially across its top and bottom ends to enable the pad to be viewed through the transparent film, and of sufficient depth and open width from end to end to provide lateral support for a bed of planting earth on the pad.

3,298,134
GATE ASSEMBLY
Theodore A. Overby, 411 11th Ave. SE., Aberdeen, S. Dak. 57401
Filed Nov. 25, 1964, Ser. No. 413,814
4 Claims. (Cl. 49—394)



1. A gate latch and assembly comprising a gate hingedly mounted from one side thereof from a first gate post, a handle resiliently mounted on the free extreme outer edge of said gate and extending substantially parallel to the free edge of the gate, a pair of pivotally mounted latch arms mounting on a second gate post, said pivotally mounted latch arms being spatially disposed to each other, said arms being disposed to be engaged by the handle in closing of the gate, each of said latch arms having a rocker lug extending away from said pivot mounting in a generally opposite direction of said arm, the rocker lug having an end portion receiving an end loop of a spring extending between the rocker lugs, auxiliary lugs extending from the rocker lug, and stop means engaging said auxiliary lugs to limit the pivotal movement of said latch arms, said pair of latch arms being pivotally mounted on vertical axes for swinging in a horizontal plane, and stop means adjustably mounted on the handle under the portion where it engages the latch arms to secure the gate from being lifted when the handle is not displaced.

3,298,135
RIGHT OR LEFT HINGED DOOR AND DOOR FRAME ASSEMBLY
Robert C. Kinser, Asheville, N.C., assignor to Kinco Corporation, Asheville, N.C.
Filed Apr. 27, 1964, Ser. No. 362,805
5 Claims. (Cl. 49—380)



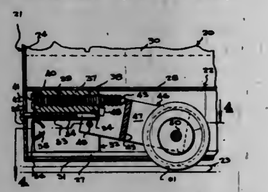
1. A door and door frame assembly comprising:
(a) a door frame having side and top frame members;
(b) a door positioned within said frame;

(c) at least two longitudinally spaced hinges on each side of said door, each hinge having a first part attached to said door and a second part attached to said frame, the parts having aligned tubular portions spaced away from the surface of said door, the tubular portions of the hinges on each side of said door being aligned, and removable hinge pins pivotally connecting said first and second parts;

(d) means in said side frame members longitudinally spaced a predetermined distance from said hinge parts for locating other second hinge parts so that the tubular portions thereof will be alinged with the tubular portions of said first-mentioned hinge parts; and

(e) means in the sides of said door, longitudinally spaced the same predetermined distance from said first parts of said hinges for locating other first hinge parts in position for cooperation with said other second hinge parts with the tubular portions all in alignment when said other second hinge parts are attached to said door frame.

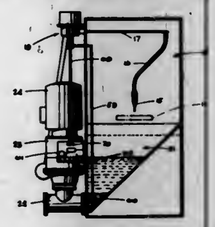
3,298,136
SNAP IN FITTING
Robert M. Saunders, 4405 E. 10th Ave., Hialeah, Fla. 33013
Filed Feb. 17, 1964, Ser. No. 345,484
4 Claims. (Cl. 49—425)



1. A snap roller assembly for a movable door comprising a bottom rail having a web portion and said bottom rail also having diametrically opposed slots in the side portions thereof, a bracket having diametrically opposed outwardly offset resilient tongues in its sides for engaging said slots, shoulders on said bottom rail adjacent the lower margin thereof, said bracket being positioned within said bottom rail and being supported between the web portion and shoulders, a housing pivotally connected to said bracket, means for adjusting said housing, and a roller journaled in said housing, said bracket being movable longitudinally within the bottom rail until the tongues snap into the slots in order to secure the bracket and roller housing in the bottom rail.

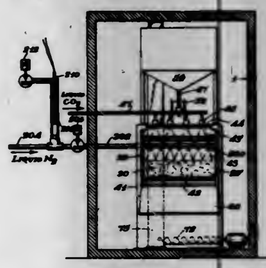
3,298,137
ABRADING MACHINE
Stewart Ives Ashworth, Outhill, near Studley, England, assignor to Abrasive Developments Limited, Solihull, England, a British company
Filed Sept. 2, 1964, Ser. No. 393,954
Claims priority, application Great Britain, Sept. 10, 1963, 35,611/63
10 Claims. (Cl. 51—8)

6. An abrading machine comprising a first abrading section; nozzle means in such section to direct a mixture of abrasive and liquid against an article to be abraded; a second section, washing means in the second section to wash an abraded article with liquid to remove abrasive and detritus remaining on the article after it has been abraded; a tank to collect liquid, abrasive and detritus from both of said sections; a centrifugal separator comprising a swirl chamber extending axially between opposed ends, an inlet to the swirl chamber adjacent to one of said ends and opening into the chamber tangentially, a primary outlet from the chamber adjacent the other of said ends, the outlet leaving the chamber tangentially, a tube extending axially within the chamber from said other end to adjacent said one end, a plurality of radially directed holes in the tube wall adjacent to said one end of the



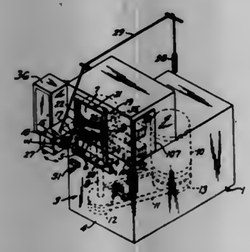
chamber, and a secondary outlet in communication with the tube at a location remote from said holes; a pump to draw liquid, abrasive and detritus from the tank and to deliver it to the inlet of the centrifugal separator; and a conduit connecting the nozzle means to the primary outlet of the separator.

3,298,138
APPARATUS FOR DEFLASHING MOLDED RESILIENT PIECES
William A. McCormick, Jr., Hagerstown, Md., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,837
10 Claims. (Cl. 51—13)



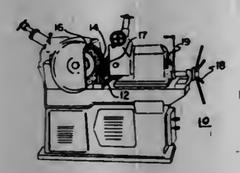
1. Apparatus for deflashing molded resilient pieces comprising a dehumidifying housing, means supported within the housing for simultaneously supporting and turning said molded pieces having flashing, a first freezing medium applicator means within said housing, a second freezing medium applicator within said housing, said applicators being adjacent said piece supporting and turning means for applying freezing medium to said pieces to lower the temperature of said molded pieces, abrasive blasting means supported within said housing adjacent said piece supporting and turning means for propelling abrasive against said cooled work pieces to remove the flashing therefrom, means adjacent the molded piece supporting and turning means for collecting the used abrasive and the removed flashing, means for separating the removed flashing from said used abrasive, means for conveying the separated used abrasive to a point for reuse by the blasting means, the first freezing medium applicator being a liquid carbon dioxide applicator, the second freezing medium applicator being a liquid nitrogen applicator, said liquid nitrogen applicator comprising a header nozzle leading off therefrom, a valve being in said header nozzle to control the feed of liquid nitrogen therethrough, a supply line for feeding liquid nitrogen to said header nozzle, a stand pipe connection connecting said supply line and said header nozzle, and liquid level control means for said stand pipe.

3,298,139
BUFFING MACHINE
John N. Stacy, Florham Park, N.J., assignor to Stacy-Gifford Co., Linden, N.J.
Filed Mar. 2, 1964, Ser. No. 348,365
22 Claims. (Cl. 51—95)



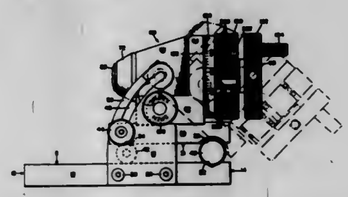
1. In a buffing machine, a frame, a shaft mounted to rotate in said frame and having a buffing wheel mounted thereon for rotation therewith, driving means for rotating the shaft, a stick of abrasive compound mounted on the frame for movement toward the periphery of the buffing wheel to engage it therewith, a rotatable chuck for mounting a workpiece so as to engage the latter with the periphery of the buffing wheel eccentrically of its axis to rotate the chuck and workpiece relative to the buffing wheel, means operated by the rotation of the chuck to move the workpiece relative to the buffing wheel, means operated by the movement of the chuck relative to the buffing wheel for feeding the stick of abrasive toward the buffing wheel at a predetermined rate, adjusting means for relatively moving the chuck and buffing wheel to insure engagement of the latter with the workpiece as the diameter of the wheel decreases due to wear, and means operated by the relative movement of the chuck and buffing wheel for varying the speed of the shaft to maintain the peripheral speed of the buffing wheel substantially constant at varying diameters.

3,298,140
TOOL FIXTURE
Paul J. Enyeart, Fort Wayne, Ind., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed May 20, 1964, Ser. No. 368,827
4 Claims. (Cl. 51—103)



2. A centerless grinder setup assembly comprising a centerless grinding machine of the type having a grinding wheel, a regulating wheel, and means for moving said wheels toward and away from each other to accurately adjust the spacing of said wheels; and a work rest clamped to said machine for supporting work material between said wheels, said rest including a work support base blade, spaced hardened pins projecting from the top of said base blade adjacent respective ends thereof, and an interchangeable top blade provided with holes aligned to receive said pins to provide for assembly of said top blade with said base blade, the height of said top blade being of a dimension determined by the diameter of work material ground by said machine.

3,298,141
COLLET INDEXING AND GRINDING FIXTURE
Walter F. Daubitz, Agawam, Mass., assignor to Oxford Precision, Inc., West Springfield, Mass.
Filed Sept. 4, 1963, Ser. No. 306,537
3 Claims. (Cl. 51—217)

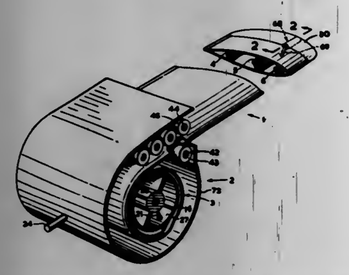


1. In an indexing fixture for a grinding machine, a base plate for mounting the fixture relative to the bed of the grinding machine, a sine subbase pivoted to said base plate, means for releasably locking said sine subbase in any one of a plurality of angular positions relative to said base plate, a housing fixed to said sine subbase and having a chuck collet extending longitudinally therethrough, a manipulatable annular dividing head sleeving said chuck collet and being rotatable relative to said housing, said dividing head carrying an annular rib on one face thereof, said rib being provided with a circular row of uniformly angularly spaced axial notches, a manipulation annular draw bar in threaded engagement with said chuck collet for clamping said chuck collet relative to a workpiece, a spring-loaded detent member slideably disposed in said housing, said detent member having a coaxial nose adapted for seating engagement within one of the notches of said dividing head under spring force, primary locking means in said housing for releasably locking the nose of said detent member in one of the notches of said dividing head, secondary locking means in said housing for releasably locking said dividing head against rotation relative to said housing, registering scales on said housing and said dividing head bearing graduations of indicia within the range from 0° to 360°, and a plurality of colored dots arranged on the outer peripheral surface of said dividing head in predetermined increments of spaced relationship to indicate a predetermined number of degrees on the scale on said dividing head.

3,298,142
REELABLE REVERSIBLY FLEXIBLE AND RIGID STRUCTURAL MEMBERS
Peter Isaac, 9 Crown Hill Place, Apt. 410, Toronto, Ontario, Canada
Filed Aug. 19, 1964, Ser. No. 391,831
24 Claims. (Cl. 52—2)

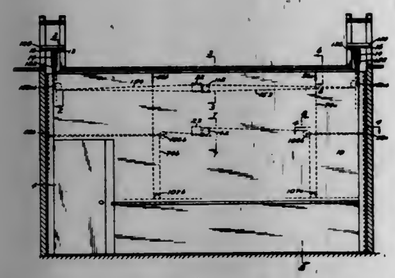
2. An inflatable structural member, which is flexible and reelable when deflated and rigid when inflated, at least including, in combination, two resilient elements which are predominantly flat and parallel to each other when said inflatable structural member is in a flexible state and dished outwardly from each other when said inflatable structural member is in a rigid state, element joining means, shape controlling means for defining the external shape of said inflatable structural member when inflated, said shape controlling means comprising at least one auxiliary inflatable member which is located between and attached to said resilient elements and oriented parallel to the longitudinal axis thereof, said auxiliary inflatable

member including two auxiliary resilient elements which are predominantly flat and parallel to each other when said inflatable structural member is deflated and dished from each other when inflated, sealing means for retaining fluid between said auxiliary resilient elements when said auxiliary inflatable member is inflated, inflating means for inflating and deflating said auxiliary inflatable member, said auxiliary inflatable member controlling the ex-



tent of dishing of said resilient elements from each other and thereby controlling the shape of said inflatable structural member, said inflatable structural member becoming rigid when inflated due to at least a portion of said resilient elements dishing outwardly from each other, said inflatable structural member restoring itself to a flexible state when it is deflated due to the action of said resilient elements.

3,298,143
MOVABLE WALL ARRANGEMENT
John B. Rogers, 2052 S. Fillmore, Denver, Colo. 80205; Jerome K. Nagel, 275 S. Milwaukee, Denver, Colo. 80209; and John C. Burrey, 6907 S. Madison Way, Littleton, Colo. 80120
Filed Jan. 16, 1964, Ser. No. 338,111
21 Claims. (Cl. 52—64)



1. A movable wall supported for travel between and along a pair of spaced parallel rails comprising:
- a pair of carriages mounted for rolling movement along the length of said rails;
- a wall having upper and lower portions positioned between said rails and attached to said carriages for rolling movement therewith along said rails, the lower portion of said wall being connected to the upper portion in such a manner to allow the lower portion to retract in an upward direction relative to said upper portion;
- a first drive means carried by said wall and being operatively connected to drive the carriages along the said rails; and,
- a second drive means carried by said wall for raising the lower portion of the wall prior to movement of said wall along the rails.

3,298,144
METHOD AND DEVICE FOR ADHESIVELY FASTENING AN EXPANSION BOLT IN A BORE OF A WALL
Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany
Filed Mar. 17, 1964, Ser. No. 352,488
Claims priority, application Germany, Mar. 20, 1963, F 39,290
12 Claims. (Cl. 52—98)



6. A device to adhesively fasten an expansion bolt formed with a central cavity and slits between said central cavity and the outer surface of the bolt in a bore of a wall comprising, in combination, sealing means for covering said slits in said expansion bolt; and a container of thin, tearable material filled with hardenable adhesive material and fixed to said sealing means projecting from one end thereof so that said sealing means and said container may be placed as one unit in a bore of a wall, whereby during driving of an expansion bolt in said bore said container will be torn and the adhesive material will fill any clearance between the expansion bolt and the inner surface of the bore and be partly pressed into the surrounding wall portion while penetration of any adhesive material into the interior of the expansion bolt will be prevented by said sealing means.

3,298,145
INVISIBLE MOLDING FASTENER
Frank Minervini, Woodstock, N.Y. 12498, and Theodore Fugel, West Shokan, N.Y. 12494
Filed Sept. 24, 1964, Ser. No. 399,035
5 Claims. (Cl. 52—127)



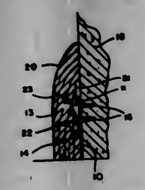
2. A turning attachment for a headed screw comprising a circular disc member having a central hole and a series of slots in annular formation around the hole, the shank of the screw extending through said hole, a washer around the shank between the head of the screw and the disc, a hub on said washer welded to the shank, spokes radiating from the periphery of the washer and extending through the slots in the disc, the outer ends of the spokes being bent for fastening the disc to the washer, and an elongated bearing member loosely mounted around the shank between the washer and disc, said bearing member carrying means for clamping the attachment to a split tubular member.

3,298,146
MULTILEVEL SUBSURFACE BUILDING CONSTRUCTION
Philip Retz, 1783 Lanier Place NW., Washington, D.C. 20009
Filed Oct. 26, 1964, Ser. No. 406,520
1 Claim. (Cl. 52—169)



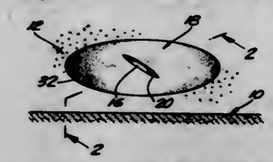
An improved multilevel subsurface building construction for polar regions containing ice and snow which comprises:
- (a) a foundation slab disposed in a subsurface cavity in an ice formation,
- (b) a first level consisting of a floor surface positioned at a fixed distance above said foundation slab and disposed parallel to said foundation slab,
- (c) a seond level disposed above said first level and parallel thereto so as to provide a useful living and storage space therebetween,
- (d) vertical walls extending between said first and second levels which form the side walls of the aforesaid living and storage space,
- (e) vertical walls extending upwardly from said second level and terminating adjacent the surrounding surface level of ice and snow,
- (f) the outer portions of said first and second levels extending outwardly of said vertical walls so as to form subsurface balconies that extend around substantially the entire exterior periphery of the building structure,
- (g) the vertical space between said balconies being free of the adjacent subsurface material,
- (h) whereby occupants of the building structure are enabled to walk around the exterior of the building at periodic intervals and remove any increment of ice which is pressing precariously close to the subsurface structure.

3,298,147
DETACHABLE BUILDING TRIM
Orwill F. Haberman, Milwaukee, Wis., assignor to Haberman Painting & Decorating Co., Milwaukee, Wis., a corporation of Wisconsin
Filed July 17, 1964, Ser. No. 383,467
2 Claims. (Cl. 52—287)



1. A detachable building trim assembly, comprising: an elongated trim board having a back face with a forwardly-extending horizontal recess formed therein, and having a second recess formed therein at an acute angle relative to said first mentioned recess; and a plurality of mounting clips formed of a resilient spring-like material secured in spaced relation on a wall, each of said clips having a forwardly-protruding shoulder disposed within said board horizontal recess, and said clip having a leg thereon projecting outwardly at an angle and disposed within said board acute angle recess, said recesses being so arranged that when said trim board is positioned with said angled clip leg inserted in said angled recess said board must be forcibly snapped onto said clip forwardly-protruding shoulder, the resilient nature of said clip permitting the necessary deflection of said angled leg and also providing spring tension to detachably retain said board in position thereon.

3,298,148
TIE-DOWN HOLES
Rufus F. Dickson, 525 Arbolado Drive, Fullerton, Calif. 92632
Filed May 20, 1964, Ser. No. 368,954
9 Claims. (Cl. 52—309)

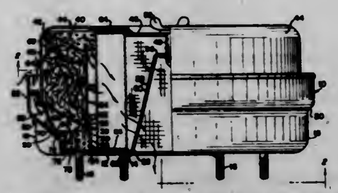


1. A mooring for an aircraft mooring area having a mooring cavity in the surface thereof, comprising:
- a metal anchor rigidly mounted within said cavity,
- a complaint, locally compressible filler within and bonded to the walls of said cavity,

said filler substantially completely filling said cavity and the upper surface of said filler being substantially flush with the surface of said mooring area, whereby debris is prevented from entering and collecting in said cavity, and

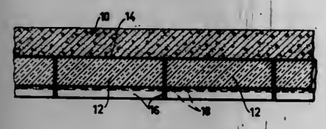
said filler having a recess in its upper surface through which said anchor is accessible and being locally compressible about said recess to expose said anchor for attachment to an aircraft tether line.

3,298,149
COMBINATION OIL BATH AND DRY AIR FILTER FOR INTERNAL COMBUSTION ENGINE
Harold R. Sobeck, Novelty, Ohio, assignor to Rockwell-Standard Corporation, a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,354
5 Claims. (Cl. 55—252)



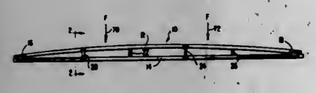
4. An air filter comprising a bottom cover having a bottom wall with a central air outlet passage, a top cover detachably secured to said bottom cover, the outer margins of said covers being spaced apart to provide an annular air inlet passage, means forming an annular oil chamber in said bottom cover adjacent the outer periphery thereof, means forming an annular vertical air passage extending upwardly from said oil chamber essentially to the top of said filter, an annular oil bath filter element extending radially across the full width of said vertical air passage, and an annular dry filter element positioned radially within said vertical air passage and said oil bath filter element and extending essentially from top to bottom of said filter between the upper end of said vertical air passage and said air outlet passage, the height of said dry filter element being essentially equal to the combined height of said oil chamber and said oil bath filter element.

3,298,150
WALL INSULATION STRUCTURES AND METHOD OF USING SAME
David Esbjörn Ahlquist, Bromma, Sweden, assignor to WMB International AB, Stockholm, Sweden, a corporation of Sweden
Filed Apr. 1, 1963, Ser. No. 269,613
Claims priority, application Sweden, Apr. 2, 1962, 3,667/62
4 Claims. (Cl. 52—506)



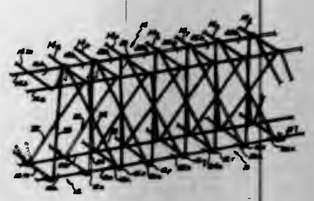
1. An insulation for walls and similar surfaces comprising a plurality of blocks of insulating material disposed in side-by-side relation, each of said blocks being contained in an envelope having a portion extending over and covering one face of the block and disposed against the wall, each block having a face disposed toward the room, the envelope also being provided with side panels covering the sides of the block, each side panel being of greater width than the side of the block over which it is disposed to thereby provide projecting flap portions on said envelope extending beyond the room-facing face of the block, said projecting portions being united together.

3,298,151
TRUSS WITH MULTI-TOOTH CONNECTOR
John C. Jureit, Miami, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed Sept. 16, 1964, Ser. No. 396,823
8 Claims. (Cl. 52—644)



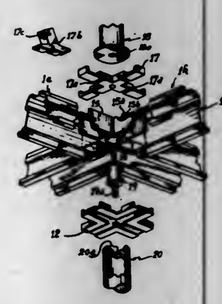
6. A bow string truss comprising a single element lower chord, a single element bowed upper chord joined to said lower chord at each end by at least one flat connector plate and spaced from said lower chord intermediate its ends, at least two intermediate connectors driven into each side of said chords at spaced points along the length of said truss, said intermediate connectors extending substantially perpendicular to said lower chord and being driven into alternate sides of said chords along the length of said truss, said intermediate connectors each comprising a pair of flat end plates of steel of a thickness substantially no greater than 20-gauge steel, joined by an integral web, said web being folded over to define at least one rectangular flange having parallel upper and lower edges extending in a perpendicular direction from the web between said chords, said upper and lower edges of said rectangular flange abutting said upper and lower chords respectively, and a plurality of nail-like punched out teeth extending from each connector end plate substantially perpendicular thereto and embedded in said chords, said teeth being shorter than the perpendicular extension of said rectangular flange, the intermediate connectors nearer the center of said chords being longer than the intermediate connectors nearer the ends of said chords to define a symmetrical bow in said upper chord.

3,298,152
INTERCONNECTED SPACED RETICULATED MEMBERS
James J. Lockshaw, 2882 W. Rome, Anaheim, Calif. 92804
Filed July 1, 1964, Ser. No. 380,987
4 Claims. (Cl. 52—650)



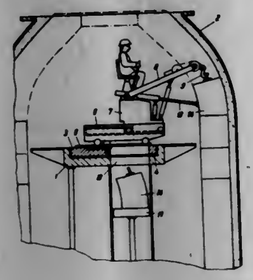
1. A structural member comprising in combination, a pair of spaced substantially parallel reticulated wall members each formed of a plurality of parallel and crossed elongated flexible glass fiber strands joined together at each juncture providing corners of apertures, said pair of wall members providing a plurality of pairs of aligned substantially identical spaced apertures each aperture having at least two pairs of opposed corners, the sole support for said wall members comprising a flexible elongated glass fiber support member extended from each corner of each aperture of one wall to the diagonally opposite corner of its aligned aperture of the other wall, said glass fiber strands and support members being impregnated and stiffened with a hardener to provide increased compressive strength for said fibers and to provide a strong juncture of said strands at the corners of said apertures.

3,298,153
SECTIONAL FLOOR FRAME CONSTRUCTION
Robert C. Rolland, 7 Place Stanislas, Cannes, France
Filed Feb. 25, 1964, Ser. No. 347,294
Claims priority, application Great Britain, Mar. 4, 1963, 8,623/63
6 Claims. (Cl. 52—663)



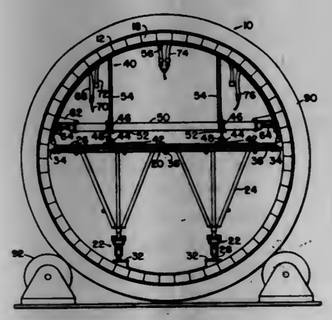
1. A sectional member for use in floor structure comprising two oppositely canted webs diverging in a downward direction, upper flange portions extending towards each other from the tops of said webs and integrally interconnected at the marginal edges, lower flange portions extending away from each other from the bottom of said webs, said upper and lower flange portions including integral extensions respectively in the form of an upright and an inverted L, and means intermediate the vertical extent of each said web for longitudinally supporting a related edge of a filling panel.

3,298,154
APPARATUS FOR LINING CONVERTERS
Hugo Behr and August Lipka, Essen, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany, a corporation of Germany
Filed Jan. 17, 1964, Ser. No. 338,487
Claims priority, application Germany, Jan. 23, 1963, B 70,434
4 Claims. (Cl. 52—749)



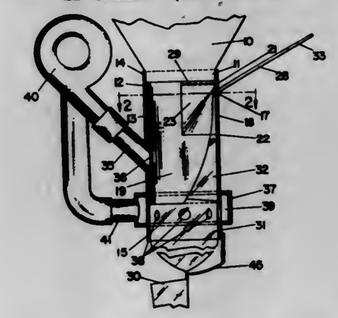
1. An apparatus for lining of converters and other metallurgical vessels and ovens with large size stones, comprising
a working stage adapted to be mounted inside of a converter,
a turntable inset within said working stage and turnably mounted thereon,
first rails carried on the top of said turnable,
at least one carriage supported by and rollable on said first rails, and
a lifting device mounted on said carriage and adapted to lift to and position stones in the wall of the converter.

3,298,155
APPARATUS FOR LINING KILNS
Donald R. Byfield, 5616 E. 27th, Kansas City, Mo. 64128, and George G. Reintjes, 9215 Dearborn, Overland Park, Kans. 66207
Filed Feb. 15, 1966, Ser. No. 527,529
6 Claims. (Cl. 52—749)



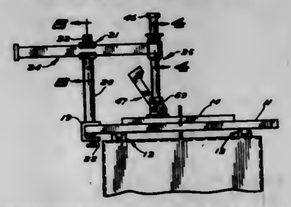
1. Apparatus for lining the interior face of the shell of a rotary kiln with brick comprising:
a rigid member spaced from the interior face of the kiln shell;
means for adjustably positioning said rigid member with respect to said face of the shell;
at least one flexible, expandable member overlying said rigid member and carried thereby;
an articulated frame overlying said flexible member, the liner brick resting upon said frame; and
means for expanding said member to exert a simultaneous, substantially equal pressure upon the liner brick and thereby cause the same to move into engagement with said interior face of the kiln shell.

3,298,156
METHOD AND APPARATUS FOR PACKAGING
Hershey Lerner, Cleveland Heights, Ohio, assignor to Automated Packaging Corporation, Hudson, Ohio
Filed Jan. 7, 1964, Ser. No. 336,251
12 Claims. (Cl. 53—29)



1. In a process fo filling one bag of a chain of bags each of which has an opening, the steps comprising:
(a) moving a flattened bag of the chain to a loading station;
(b) stopping movement of the bag and chain of bags when the said bag is positioned at the loading station;
(c) directing a flow of air toward the opening of the bag at the loading station to inflate the bag;
(d) stopping the flow of air in response to the opening of the bag while maintaining the bag in an open condition; and
(e) discharging a product into the bag while the bag is open and the flow of air is stopped.

3,298,157
HOLD-DOWN CLAMP ASSEMBLY
Louis Klein, 569 Sheppard Ave. W., Apt. 102, Downsview, Ontario, Canada
Filed Dec. 2, 1964, Ser. No. 415,397
12 Claims. (Cl. 53—93)



1. Hold-down means comprising a base mounting member, a work clamping assembly having a work contacting member at one end and a gripping block at the other end thereof, and an elongated pressure beam adjustably extending between said base mounting member and said work clamping assembly, said pressure beam being secured at one end to said base mounting member and to the gripping block at the other end thereof, said gripping block having a bore therein for receiving portions of said clamping assembly, the bore in said gripping block having a downwardly and outwardly flaring portion adjacent to one end thereof, said base mounting member comprising a post having a base clamp at one end and retaining means for slidably receiving said pressure beam at the other

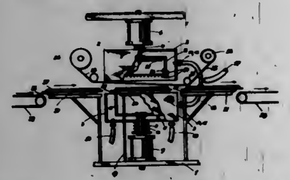
end thereof, said work clamping assembly being received within the bore of said gripping block and including a substantially upright spindle having a work contacting shoe at one end thereof, a bearing contact sleeve with an axial bore therein for receiving and enclosing said spindle and disposed as a mean between the inner surface of said bore and the outer surface of said spindle, and a plurality of bearing members being retained within the walls of said bearing contact sleeve, the cross-sectional dimension of the bearing members exceeding the difference between the outer diameter of the spindle and the minimum inner diameter of the outwardly flared portion of the bore formed in the gripping block.

3,298,158

APPARATUS FOR PRESERVING AND SEALING A SERVING TRAY OF THERMOPLASTIC MATERIAL CONTAINING FOOD PRODUCTS PARTICULARLY FROZEN FOODS

Max Schmidt, Ansbach, Middle Franconia, Germany, assignor to Bellmann & Co., Ansbach, Germany

Filed Dec. 17, 1963, Ser. No. 331,297
Claims priority, application Germany, Dec. 18, 1962, B 70,028
9 Claims. (Cl. 53—112)



1. An apparatus for preserving and sealing a serving tray of thermoplastic material containing frozen food with a cover sheet, comprising a vacuum bell jar, said bell jar including upper and lower parts, means operably connected to said upper and lower parts for effecting relative movement between said upper and lower parts for closing and opening said bell jar, respectively, means for supporting the tray and cover sheet within the closed bell jar, valve controlled conduit means communicating with the interior of said bell jar adapted to be connected with a source of suction for evacuating said bell jar, welding means within said upper part and cooperable with the tray and cover sheet for welding the cover sheet to the peripheral edge of the tray, said welding means including a frame mounted within the upper part, a first heating means carried by said frame for plasticizing the portion of the cover sheet located therebeneath, and a second heating means so located on said frame as to weld the cover sheet to the peripheral edge of the tray.

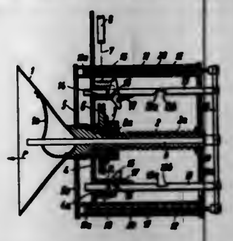
3,298,159

APPARATUS FOR WRAPPING A ROLL OF TEXTILE MATERIAL OR THE LIKE

Hans Colsmann, Langenberg, Rhineland, Germany, assignor to Colsmann & Kirschner, Essen-Kupferdreh, Germany

Filed July 20, 1964, Ser. No. 383,710
Claims priority, application Germany, July 19, 1963, C 30,482; Sept. 25, 1963, C 30,964
17 Claims. (Cl. 53—380)

1. Apparatus for folding an end portion of a tubular wrapper of paper or similar material around a roll of material against an end face of the roll beyond which the end portion of the wrapper projects comprising, in combination, support means; a funnel-shaped member mounted on said support means turnable about its axis and movable in axial direction and arranged in axial alignment with the roll adjacent the projecting end portion of the wrapper, said funnel-shaped member having a maximum diameter greater than that of the roll and facing the end portion of the wrapper with its inner surface; a plurality of engaging means fixedly carried by and projecting from the inner surface of said funnel-shaped member spirally



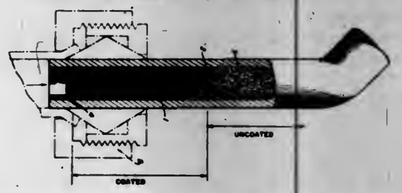
arranged with respect to the axis thereof; and means for rotating said funnel-shaped member about its axis and for moving the same in axial direction toward the end of the roll so that said engaging means engage the end portion of the tubular wrapper and fold the same in spiral form against the end face of the roll.

3,298,160

GAS-SOLID CHROMATOGRAPHY USING COLUMN COMPRISING $AgNO_3$-COATED ALUMINA

Richard L. Hoffmann, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture

Filed June 27, 1966, Ser. No. 561,658
2 Claims. (Cl. 55—67)



2. A process for removing hydrocarbon contaminants from inexpensive pressurized sources of oxygen and of inert carrier gas so as to permit their use in the flame ionization equipped gas-solid chromatography of volatile hydrocarbons, said process comprising passing the hydrocarbon contaminated gas through at least about 6 inches of light-protected granular alumina impregnated with not less than about 30 percent of solid $AgNO_3$ based on the dry weight of the alumina, the $AgNO_3$-impregnated alumina being held at a temperature of about 75° C., and directly conducting the emergent contaminant-free gas to a nonimpregnated alumina gas chromatography column.

ERRATUM

For Class 55—252 see:
Patent No. 3,298,149

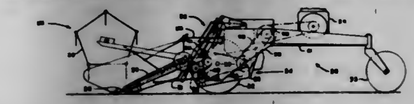
3,298,161

CONDITIONER ATTACHMENT

Lawrence M. Halls and Horace G. McCarty, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Aug. 17, 1964, Ser. No. 389,980
10 Claims. (Cl. 56—1)

1. In combination with a windrower having an engine driven mobile frame and a header unit carried by said frame at the front thereof and operable to mow a wide swath of crop material, consolidate the swath into a windrow and discharge the windrow rearwardly, a conditioner attachment comprising a pair of laterally spaced side frame members, means removably attaching said side frame members to said mobile frame rearwardly of said header unit and in the path of discharge of said windrow from the header unit, a first crop conditioner roll extending transversely between and having its ends fixedly journalled on said side frame members, a pair of arms respectively disposed adjacent said pair of side frame members and each having one end disposed generally above one of the respective ends of said first crop conditioner roll, a second crop conditioner roll extending transversely between and having its ends journalled respectively on said one ends of said pair of arms, pivot means mounting the other ends of said pair of arms on said side frame members for vertical swinging movement independently of each other whereby the ends of said second conditioner roll are free to move upwardly away from and downwardly back toward said first conditioner roll independently of each other, a first sprocket fixedly mounted on said first conditioner roll at one end thereof, a



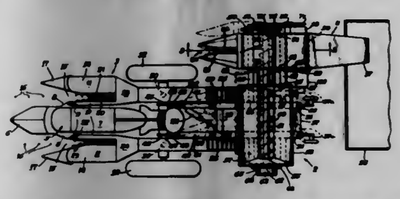
second sprocket fixedly mounted on said second conditioner roll and laterally spaced from said first sprocket, a pair of rigidly interconnected coaxial sprockets, journalled on said arm pivot means, one of said coaxial sprockets being disposed in the same plane as said first sprocket and the other of said coaxial sprockets being disposed in the same plane as said second sprocket, a drive sprocket journalled on one of said side frame members and disposed in the plane of said first sprocket and said one of said coaxial sprockets, an endless drive chain entrained around said drive sprocket, said first sprocket and said one of said pair of coaxial sprockets to drive said first sprocket and thereby said first conditioner roll in one direction and said one of said pair of coaxial sprockets in the opposite direction from said drive sprocket, a second endless chain entrained around said second sprocket and said other of said pair of coaxial sprockets to drive said second conditioner roll in said opposite direction, and means connecting said drive sprocket in driven relation to said engine.

3,298,162

FORAGE HARVESTER AND CORN PICKER

Robert E. Medd, Hollandale, Minn. 56045

Continuation of application Ser. No. 333,310, Dec. 26, 1963. This application Oct. 23, 1965, Ser. No. 511,272
15 Claims. (Cl. 56—16)



1. In a harvesting machine, the combination of corn harvester having a conveyor with a discharge end, an ambulatory support therefor, a forage harvester adjustably mounted to said ambulatory support for movement laterally with respect to said corn harvester for adjustment with respect to varying row widths, a trough carried from the support beneath said conveyor discharge end, an auger extending from the trough to said forage harvester, said forage harvester having a gathering head and a conveying housing extending rearwardly from said gathering head, and said auger having a discharge end delivering to said housing.

3,298,163

ROTARY ELECTRIC LAWN MOWER

Frederick O. Ottesen, Chicago, Charles A. Mattson, Oak Park, and Vello Launa, Lombard, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Original application Aug. 28, 1961, Ser. No. 134,511, now Patent No. 3,144,258, dated Aug. 11, 1964. Divided and this application Apr. 7, 1964, Ser. No. 362,549
14 Claims. (Cl. 56—25.4)



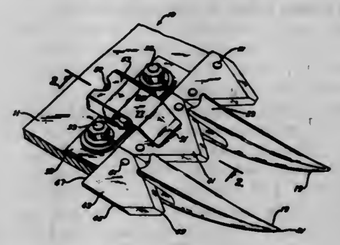
1. A lawn mower comprising a housing defining a cylindrical cutting chamber which is unobstructed and uncompartmented, a rotary cutting blade mounted for rotation about an axis coincident with the axis of said cylindrical chamber, a pair of discharge chutes extending horizontally from diametrically opposed sides of said housing, said chutes extending tangentially from the front and rear of said housing and being directed to discharge grass laterally of the lawn mower, a reversible handle pivotally connected to said housing and movable between forwardly and rearwardly inclined positions, four wheels supporting said housing, two of said wheels positioned forward of said blade axis and two positioned rearwardly of said blade axis, said wheels all being rotatably supported on said housing inwardly of the outer edge of said housing so trimming may be performed with either side of the mower.

3,298,164

HOLD DOWN ASSEMBLY FOR MOWING MACHINES

Elmer S. Salyards, Coal Valley, Ill. 61240

Filed June 10, 1964, Ser. No. 373,937
11 Claims. (Cl. 56—305)



1. In a mowing device,
an elongated supporting bar,
a plurality of guard teeth mouted thereon and having ledger plates secured thereto,
a reciprocating cutting bar detachably mounted on said supporting bar,

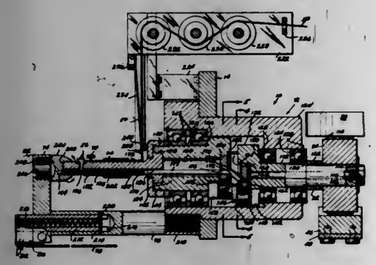
a plurality of sickle knives secured to said cutting bar and extending into said guard teeth and engaging said ledger plates,

a channel member detachably secured to said elongated supporting bar and having a base portion with two upwardly extending wall members,

an elongated finger member mounted on said channel member and having a forward end and a rearward end with a middle portion therebetween; said forward end frictionally engaging a portion of said sickle knives and said middle portion being held upwardly in pivotal engagement with a portion of said wall members by a downwardly compressible support means, said supporting means pivoting said forward end into frictional engagement with said sickle knives to hold said sickle knives in yieldable engagement with said ledger plates,

said middle portion an said support means being downwardly compressible to a position where said middle portion is disengaged from said portion of said wall member and said finger member is slidably removable from said channel member.

3,298,165
MACHINE FOR PROCESSING STRANDED MATERIAL
Donald R. Allan, Lakewood, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed May 11, 1964, Ser. No. 366,449
16 Claims. (Cl. 57—34)



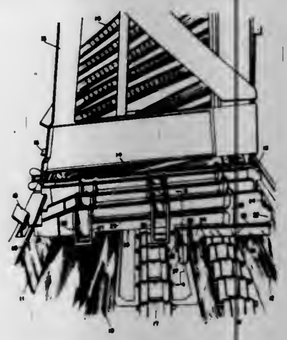
1. In a machine for automatically setting a curl in a strand of material and feeding the material to a discharge point, the combination comprising:

mandrel means having an upstream end and a downstream end and also having slot means extending along its periphery spaced from and parallel to its major axis;

rod means nested in said slot means said rod means including external threads having root portions, said slot means being so dimensioned that said rod means nests therein with said root portions lying tangent to a circle inscribed about said periphery of said mandrel means, said strand being adapted to be looped about said mandrel means with the individual loops thereof seated in said root portions; and

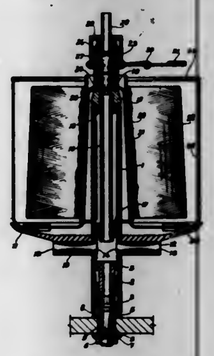
drive means connected to said mandrel means for simultaneously rotating said manrdel means about its major axis, said drive means including means connected to said rod means for maintaining said rod means in a given orientation relative to said machine, said mandrel means being rotated one revolution about its major axis while said rod means is revolved once about the major axis of said mandrel means, whereby said strand of material is fed continuously along said mandrel means while said individual loops are subjected to a frictional drag in a backward direction so that said loops will be stretched to form uniform curls in said strand.

3,298,166
BOBBIN GUIDING GRATE
Waldo H. Banks, Hopedale, and Herman Haagsma, Whitinsville, Mass., assignors to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Feb. 11, 1964, Ser. No. 344,050
3 Claims. (Cl. 57—53)



1. A bobbin guiding grate for a machine adapted to move along a spinning frame to don empty bobbins on a row of spindles carried by said spinning frame, said machine including a carriage, said carriage adapted to support a bobbin magazine, and a conveyor belt movable over said carriage and beneath said magazine and having sockets to receive the bobbins from said magazine for carrying and presenting them to a donning mechanism, said guiding grate including a plurality of spaced grid members extending transversely of said conveyor belt forming openings therebetween for guiding the bobbins from said magazine into the sockets of said conveyor belt, means associated with said grid members for supporting the reserve bobbins carried in said magazine, said means defining individual pivotable gate members suspended from each said grid members and adapted to be acted upon by the bobbins being carried by said conveyor belt.

3,298,167
TWO-FOR-ONE TWISTING SPINDLE
Johann Jacob Keyser, 16 Grabenallee, Aarau, Switzerland
Filed June 28, 1965, Ser. No. 467,270
Claims priority, application Germany, July 2, 1964, K 53,369
7 Claims. (Cl. 57—58.34)



1. A two-for-one twisting spindle, which includes: hollow spindle shank means, thread storage disc means fitted on said shank means and provided with passage means extending radially with regard to said shank means, and thread guiding conduit means fitted in said passage means and having the inner end portion thereof fitted in said shank means thereby holding and locating said disc means on said shank means.

3,298,168
APPARATUS FOR DRIVING A SPINNING FRAME FOR MAKING COVERED ELASTIC YARN
Norman Ernest Fitton, 52 Lapham St., Fall River, Mass. 02721
Filed Oct. 26, 1964, Ser. No. 406,466
5 Claims. (Cl. 57—104)



1. In a spinning frame having a centrally located driving cylinder oriented parallel to two separate sets of spindles, a take up bobbin spindle and a spool spindle constituting a pair of spindles, two pairs of spindles constituting a set of spindles, two sets of spindles provided with one set each on opposite sides of said driving cylinder, an endless tape wound in driving connection with said driving cylinder, to be driven by said driving cylinder and connected in driving relation with each pair of spindles in said two sets of spindles whereby all the take up bobbin spindles rotate in the same direction and all of the spool spindles rotate in an opposite direction.

3,298,169
METHOD FOR PROCESSING YARN
Marvin H. Comer, Burlington, N.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,186
15 Claims. (Cl. 57—157)



1. The method of producing multifilament thermoplastic yarn to produce a plurality of small closely spaced substantially uniform spring helical coils therein, the rotational direction of said coils periodically reversing along the length of the yarn to balance the overall torque of the yarn and provide a stretchable yarn suitable for single feed knitting of hosiery and the like, said method comprising the steps of:

(a) twisting each of the ends of multifilament yarn a number of turns of twist per inch to give the yarn a substantially round configuration in cross-section,

(b) joining the separate yarns together,

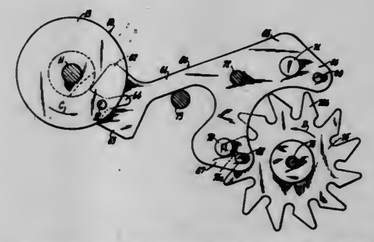
(c) false twisting the joined together yarns with a number of turns per inch substantially in the range of 126 to 60 of the false twist in one direction while heat-setting the yarns,

(d) subsequently false twisting the yarns a second time with a false twist means in the opposite direction while reducing the number of turns imparted by substantially one-third of the number of turns imparted in the first false twisting step and while heating the yarns in the second false twisting operation,

(e) separating the two yarns,

(f) taking up the separated yarns on separate bobbins.

3,298,170
DIAL TRAIN DRIVE
Heinz Meitinger and Josef Egger, Pforzheim, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Aug. 24, 1964, Ser. No. 401,747
2 Claims. (Cl. 58—28)



1. In a timekeeping instrument having a base plate, a dial train driving mechanism including an oscillatory timing wheel rotatably secured to the plate and having driving means, means to impulse the timing wheel so that it oscillates, a lever rotatably secured in the plate and oscillated between end positions by the timing wheel's, driving means, an index wheel having magnetizable teeth rotatably secured to the plate and driven by the lever's driving means, a magnet secured to the lever and positioned adjacent a tooth of the index wheel in an end position of the lever, and fixed means to bank said lever, wherein an end position of the lever said lever is pressed against the banking means and the magnet locks the index wheel.

3,298,171
APPARATUS FOR REMOTE CONTROL OF PENDULUM MOVEMENT MASTER CLOCKS
Vaclav Pfeffer, Prague, Frantisek Holecek, Kojovice, and Karel Gemperle, Dobrichovice, Czechoslovakia, assignors to Laboratorni Pristroje, narodni podnik, Prague, Czechoslovakia
Filed July 8, 1965, Ser. No. 470,415
Claims priority, application Czechoslovakia, July 11, 1964, 4,023/64
5 Claims. (Cl. 58—35)

1. In a master clock arrangement, in combination:

(a) a pendulum;

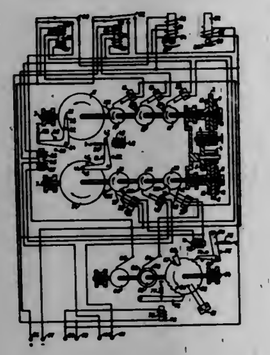
(b) electrically operated regulating means for varying the effective length of said pendulum including increments of mass, said regulating means being effective by adding said increments of mass to a portion of said pendulum remote from the center of gravity thereof and by withdrawing said increments;

(c) a source of electric operating power;

(d) a first signal source;

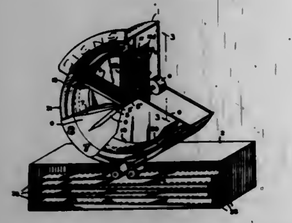
(e) a second signal source;

(f) control means operatively connected to said sources and to said regulating means for connecting said source of operating power to said regulating means for adding one of said increments to said pendulum in response to a first sequence of signals from said signal sources, for withdrawing one of said increments in response to a second sequence of said signals, and for remaining inactive in response to a third sequence of said signals,



(1) the signal from said first source preceding the signal from said second source in one of said sequences, the signal from said second source preceding the signal from said first source in another one of said sequences, and the signals from said signal sources being substantially simultaneous in yet another one of said sequences.

3,298,172
ILLUMINATED DISPLAY MEANS
Arthur I. Bodkins, 69 Locust St., Winthrop, Mass. 02152
Filed Dec. 31, 1964, Ser. No. 422,849
18 Claims. (Cl. 58—50)



1. A display clock comprising a casing having light transmitting face, at least one of an hour hand and a minute hand, means supporting said hands for rotation about a common axis over a surface of said face, means for rotating said hands about said axis with said hour hand making a complete revolution in an hour and said minute hand making a complete revolution in a minute, a cylindrical member of light transmitting material coaxial with said axis and positioned rearward of said face with one end of said cylinder terminating close to the inner surface of said face, an elongated endless light transmitting web having a plurality of successive segments of contrasting colors with said segments each having a length equal to the outer circumference of said cylindrical member and with a portion of said web looped about said cylindrical member, means for moving said web longitudinally about said cylindrical member in a clockwise direction as viewed from said face whereby said segments will successively encircle said cylindrical member, light generating means positioned outside of and substantially encircling said portion of said web whereby light may be transmitted through said portion and said cylindrical member, a pair of baffle means disposed within said cylindrical member and lying in planes passing through said axis, means for rotating one of said baffle means about said axis in synchronism with one of said hands, means supporting the other of said baffle means in a position coincident with twelve o'clock, and means for permitting the passage of one baffle means past the other as said one baffle means moves past twelve o'clock.

3,298,173
EXPANDABLE LINK
Herbert George Empson, 17165 Buena Vista Ave., Los Gatos, Calif. 95030
Filed Aug. 11, 1964, Ser. No. 388,896
3 Claims. (Cl. 59—78)



1. A shock absorbing link for use in tie-down means for securing cargo such as automobiles and the like during transit, comprising the combination of a resilient body member of elongated configuration, an endless chain having a plurality of metal links embedded in said body member, said chain being embedded in an extended condition in a direction corresponding substantially to the axial direction of the elongated configuration of said body member, said body member having opposed apertures in the long sides thereof for receiving attaching means of tie-down means used to secure various cargo during transit, spaced links of said chain being embedded in said body with said apertures passing therethrough so that said attaching means is adapted to be inserted through said spaced links whereby said chain is extended in a direction substantially perpendicular to said first direction under restraint of said resilient body when said body is absorbing shock to which said tie-down means is subjected so that said tie-down means is not torn from the machines secured thereby during transit.

3,298,174
CONTROL SYSTEM FOR INFINITELY VARIABLE AUTOMATIC TRANSMISSION
Ludwig T. Stoyke, West Islip, N.Y., and Kenneth W. Porter, Mercer Island, Wash., assignors to Fairchild Hiller Corporation, Hagerstown, Md., a corporation of Maryland
Filed June 11, 1965, Ser. No. 463,073
20 Claims. (Cl. 60—19)

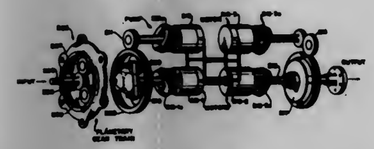
1. In a control system for an infinitely variable hydrostatic transmission of the type having pump and motor units with interconnecting fluid pressure and return conduits and an associated prime mover the combination comprising:

a speed governor driven by the prime mover at a speed substantially proportional to the prime mover speed for producing output signals representative of the prime mover speed, said governor including:

(a) a valve with output ports,

(b) a spool positionable in response to the prime mover speed to vary the pressure output sigput signals from the ports, and

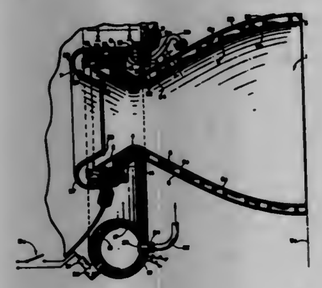
(c) means operating with said spool to produce a substantially linear relationship between the pressure output signals from the ports and the prime mover speed,



actuator means having means for connection to the pump and motor units to vary the fluid displacement thereof and thereby change the ratio of the transmission,

and amplifier valve means connected between said governor and said actuating means and responsive to the pressure signals at the governor output ports to change the ratio of the transmission.

3,298,175
METHOD AND DEVICE FOR COOLING
Charles P. Morse, Pacific Palisades, Calif., granted to National Aeronautics and Space Administration under provision of 42 U.S.C. 2457(d)
Continuation of application Ser. No. 864, Jan. 6, 1960. This application Aug. 5, 1963, Ser. No. 300,957
9 Claims. (Cl. 60—267)



1. The combination of a rocket nozzle and cooling system therefor, said rocket nozzle comprising a converging and diverging section joined to form a restricted throat portion therebetween;

a flame shield positioned adjacent said converging section; said cooling system comprising:

tank means adapted to retain a coolant therein;

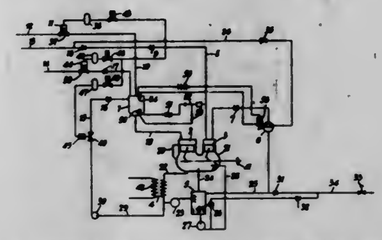
expulsion means adapted to expel said coolant from said tank;

a passage means operatively connected to said tank adapted to carry the coolant;

conduit means formed in predetermined positions on said flame shield and operatively connected to said passage means to receive the coolant therein; said conduit means operatively connected to a manifold means adjacent the outer surface of the rocket nozzle;

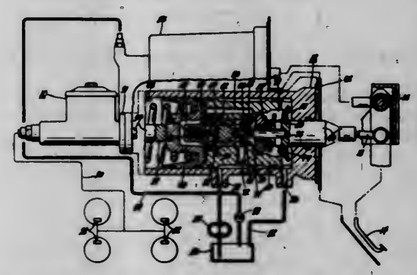
spray means operatively connected to said manifold and positioned adjacent the periphery of said rocket nozzle so as to spray predetermined patterns of the coolant thereon thereby cooling said rocket nozzle.

3,298,176
APPARATUS AND METHOD ADDING OXYGEN TO RE-CYCLE POWER PLANT EXHAUST GASES
George Howard Forsyth, Grange-over-Sands, John Cannon Braithwaite, Broughton-in-Furness, and Andrew Campbell Grant, Barrow-in-Furness, England, assignors to Vickers-Armstrongs (Engineers) Limited, London, England, a British company
Filed Mar. 4, 1965, Ser. No. 437,237
Claims priority, application Great Britain, Mar. 5, 1964, 9,448/64
16 Claims. (Cl. 60—39.02)



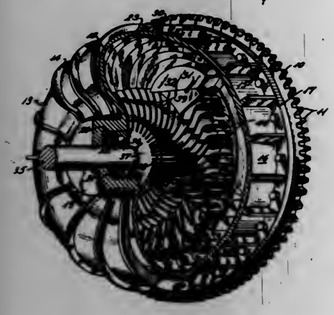
1. A method of operating a power plant, comprising burning fuel in a combustion chamber, supplying gases of combustion from said combustion chamber to an engine to drive the engine, recycling to the combustion chamber a part of the exhaust gases of the engine by means of a compressor, and mixing substantially pure oxygen with said part before said part reaches said combustion chamber.

3,298,177
HYDRAULIC POWER BRAKE BOOSTER HAVING EXCESS FORCE DAMPENING MEANS
George E. Kellogg, Miamisburg, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,199
2 Claims. (Cl. 60—54.5)



1. Hydraulic power brake booster mechanism for a hydraulic master cylinder adapted to supply fluid pressure to a vehicle braking system, said brake booster mechanism comprising a hydraulic pressure power source; power operable means having an output portion and operatively connected to said power source and adapted to intensify an applied force to said hydraulic master cylinder; and valve means including a spring loaded piston adapted to selectively route pressure from said power source to the hydraulic master cylinder in response to an applied force, said valve means including a piston slidable in a dashpot chamber, said chamber having a bore for controlling the transmission of force from said power source to the output portion of the power operable means, the pressure from said power source acting against the bias of a resilient member through means in the bore to dampen surges in pressure from the applied force thereby preventing overtravel of the valve means during operation thereof.

3,298,178
VARIABLE TORQUE CONVERTER
Morgan F. Reynolds, Rte. 1, Box 441-B, Leesburg, Fla. 32748
Filed July 16, 1965, Ser. No. 472,639
6 Claims. (Cl. 60—54)



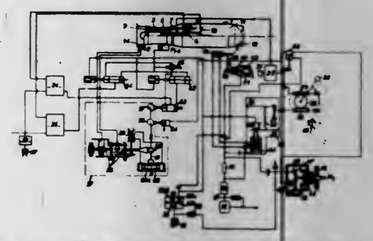
1. A variable torque converter for transmitting force from an automobile engine to the driving wheels comprising a main housing mounted on the flywheel of the engine, a drive shaft for driving said housing, an auxiliary housing within said main housing and cooperating therewith, a plurality of baffles fixed to said main and auxiliary housings, each of said baffles having a generally radially disposed recess, a driven shaft extending into said housings, a collar mounted on one end of said driven shaft, a plurality of flexible vanes fixed at one end to said collar and extending outwardly into the recesses of said baffles, the major portion of each vane being curved in one direction and having a recurved portion in the opposite direction at the free end thereof, whereby when fluid within said housings is circulated by said baffles it impinges on said vanes to rotate said driven shaft and said vanes will automatically flex under load to vary the drive ratio.

3,298,179
CONFINED PARALLEL RAIL PULSED PLASMA ACCELERATOR
Michel E. Maes, Bellevue, Wash., assignor to Rocket Research Corp., Seattle, Wash., a corporation of Washington
Filed Nov. 12, 1963, Ser. No. 322,862
21 Claims. (Cl. 60—202)



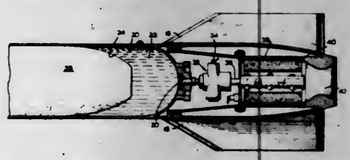
1. A pulsed plasma accelerator for generating propulsion thrust, comprising:
(a) a pair of spaced, elongate substantially parallel electrodes of substantially equal cross-sectional area;
(b) a high voltage power supply connected across said electrodes;
(c) an electrical energy storage capacitor connected across said electrodes;
(d) an insulative container surrounding said electrodes at the sides and at one end thereof, leaving the other end open, said electrodes being substantially coextensive with said container, with said container providing a plasma channeling chamber between said electrodes; and
(e) means for delivering and injecting a vaporizable and ionizable propellant into the closed end of said container.

3,298,180
SINGLE-CONTROL REGULATING SYSTEM FOR AFTERBURNING BY-PASS TURBOJETS
Alfred Trinkler and Albert Stieglitz, Dammarie-les-Lys, and Louis François Jumelle, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed June 1, 1964, Ser. No. 371,314
Claims priority, application France, June 4, 1963, 936,935
8 Claims. (Cl. 60—237)



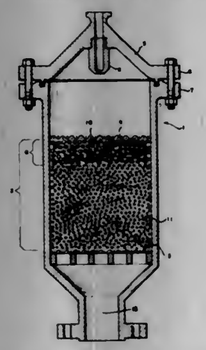
1. In a multiflow turbojet engine having high- and low-pressure compressors and turbines, main combustion and reheat burner means fed with fuel by feed means including main combustion throttle means and at least one reheat throttle means, respectively, an adjustable area nozzle, and adjusting means for the nozzle area; a combustion regulating system comprising: a single control lever for moving a first member to control the nozzle adjusting means, and a second member to control the main combustion throttle means; reheat control means for controlling each reheat throttle means as a function of an air pressure parameter correlated with the operation of the compressors; means providing a feed-back loop for the adjusting means of the nozzle area, comprising first modulating means responsive to the nozzle area and second modulating means responsive to combustion control parameters including the rotation speed of the low pressure compressor and turbine and the stagnation temperature at the inlet end of the low pressure compressor, to jointly modulate the pressure of a pressurized control fluid; means responsive to the modulated pressure of said fluid to apply a feed-back control force to the nozzle adjusting means; and means responsive to said modulated pressure to apply a correcting control force to at least one reheat throttle means.

3,298,181
REACTION PROPULSION DEVICE
Leonard Greiner, Richmond, Va., assignor to Texaco Experiment Incorporated, Richmond, Va., a corporation of Virginia
Filed Sept. 21, 1962, Ser. No. 225,965
8 Claims. (Cl. 60—251)



1. In a liquid-solid propellant reaction propulsion device including a combustion chamber having a reaction outlet, a solid propellant in the combustion chamber provided with an opening therethrough communicating with the reaction outlet, and means for directing a liquid propellant to the surface of the solid propellant exposed by the opening comprising a member rotatably mounted within the opening in the solid propellant, said member having a length along its axis of rotation substantially coextensive with the length of the opening in the solid propellant, liquid propellant inlet means at one end of the rotatably mounted member, and a plurality of liquid propellant outet openings spaced along the rotatable member and means for rotating said member to direct the said liquid propellant outlet openings about the surface of the solid propellant exposed by the opening therethrough.

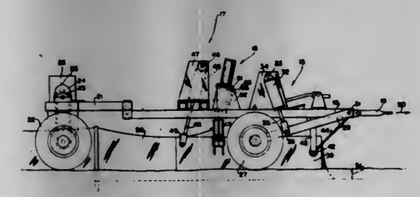
3,298,182
IGNITION MEANS FOR MONOPROPELLANT
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Donald H. Lee and David D. Evans
Filed June 24, 1964, Ser. No. 377,784
22 Claims. (Cl. 60—251)



6. A thrust-type rocket engine comprising a combustion chamber having first and second ends;
an injection nozzle for hydrazine connected at said first end of said chanmber and an exhaust means at the second end of said chamber;
a pair of spaced screens within said chamber and connected thereto;
a particulate catalyst bed disposed between said screens;
a solid coating of a strong oxidizer encapsulating a thin layer of particles of said catalyst bed, said thin layer being nearest that part of the bed which is proximate to said injection nozzle so that injection of hydrazine through said nozzle onto said coated catalyst causes an oxidation-reduction reaction.

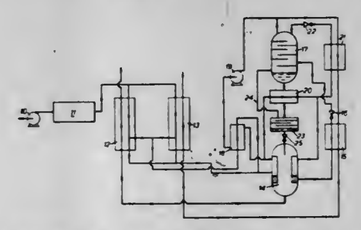
13. An ignition means comprising a particulate catalyst effective for decomposing hydrazine at elevated temperatures encapsulated with a solid coating of iodine pentoxide.

3,298,183
APPARATUS FOR ERECTING A FLUID BARRIER
Tobias H. Grether, Camarillo, Robert M. Ziegenmeyer, Sutter, and James Bermann, Oxnard, Calif., assignors to Consolidated Thermoplastics Company, Los Angeles, Calif., a corporation of California
Filed May 11, 1964, Ser. No. 366,467
6 Claims. (Cl. 61—72.1)



1. Apparatus for erecting barriers comprising:
(a) a wheeled vehicle movable along the earth in the path of the desired barrier;
(b) a plow mechanism mounted on the vehicle and engageable with the earth surface to dig a continuous trench therein along said path;
(c) a feed mechanism mounted on the vehicle to supply a vertically disposed continuous, flat, flexible sheet behind the plow mechanism, said sheet having an upper extremity and a lower extremity;
(d) a folding mechanism mounted on the vehicle behind the feed mechanism to fold the sheet in an L-shape with one leg of the L disposed vertically and the other leg of the L disposed horizontally;
(e) a guide mechanism mounted on the vehicle to deposit the horizontal leg into said trench; and,
(f) a driving mechanism mounted on the vehicle behind the feed mechanism to drive stakes vertically into the earth adjacent the vertical leg of the L-shaped sheet.

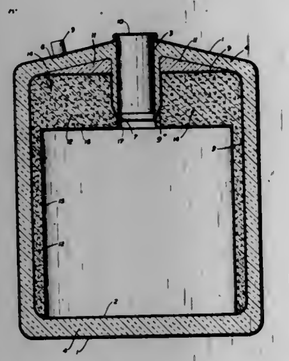
3,298,184
SEPARATION OF AIR
Kenneth Cecil Smith, Carshalton, Surrey, England, assignor to The British Oxygen Company Limited, London 6, England, a British company
Filed May 16, 1963, Ser. No. 280,868
Claims priority, application Great Britain, May 29, 1962, 20,693/62
2 Claims. (Cl. 62—13)



1. A process for the production from air of a gaseous product containing about 60 to 70% by volume of oxygen comprising the steps of subjecting compressed air, previously cooled to its saturation temperature and freed from carbon dioxide and water to a first stage rectification to produce a first liquid fraction enriched in oxygen and a first gaseous nitrogen fraction, subjecting said first liquid fraction enriched in oxygen to a second stage rectification to produce a second liquid fraction, further enriched but to an extent considerably less than that required in the final gaseous product, and a second gaseous nitrogen fraction, withdrawing the second liquid fraction from the second stage rectification zone and passing the entire second liquid fraction in heat exchange with at least a part of said first gaseous nitrogen fraction to partially vaporize said second liquid fraction and produce a third gaseous fraction having a higher oxygen content than air and a residual liquid fraction having an oxygen content equal to that required in the gaseous product, at least a part of said first gaseous nitrogen fraction itself being condensed to provide condensed nitrogen, using said condensed nitrogen to provide reflux liquid in both the first and the second stage rectification, recycling said third gaseous fraction to said second stage rectification, and vaporizing said residual liquid fraction to provide the required gaseous product by heat exchange with incoming air, cooling at least a part of said compressed air to saturation temperature and freeing at least a part of said compressed air from condensible impurities by heat exchange with outgoing gaseous products in switch exchangers, withdrawing compressed air as a side-stream from said switch exchangers and subsequently feeding the compressed air to a stage of said first stage rectification, preheating a minor part of the first gaseous nitrogen fraction by heat exchange with said air withdrawn as a side-

stream from said switch exchangers, said minor part being expanded in an expansion turbine and combined with said second gaseous nitrogen fraction, said air withdrawn as a side-stream from said switch exchanger leaving said heat exchange step being combined with the main stream of compressed cooled air leaving said switch exchangers.

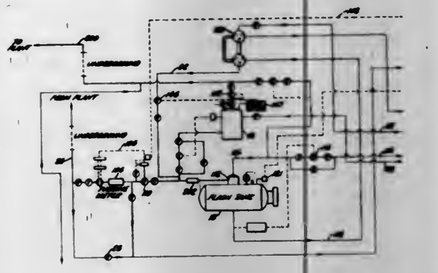
3,298,185
LOW TEMPERATURE STORAGE CONTAINER
John D. Loudon, Boulder, Colo., assignor to Cryogenic Engineering Company, Denver, Colo., a corporation of Colorado
Filed July 15, 1964, Ser. No. 382,919
8 Claims. (Cl. 62—48)



1. In a low temperature storage container including inner and outer members having an evacuated insulating space between, and having an upper access passage which terminates in the interior of the inner member leaving a vapor space between the inner terminus of said passage and the top inside surface of said inner member, and adapted to contain a a charge of a liquid refrigerant in said inner member, the improvement which comprises a first barrier pervious to liquid refrigerant arranged circumferentially of the storage area, a second barrier pervious to liquid refrigerant separating the storage area from said vapor space, liquid refrigerant absorbing media disposed externally of the circumferential barrier and other liquid refrigerant absorbing media above and supported as the second barrier disposed in contacting relation with the externally disposed media so that liquid refrigerant is transferred by capillary action.

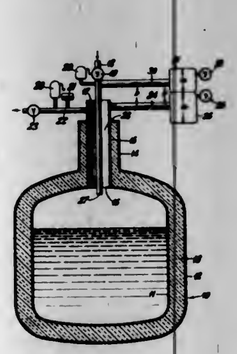
3,298,186
ATMOSPHERIC LPG STORAGE TANK AND PROCESS
Lloyd T. Hendrix, Santa Ana, Calif., assignor to Richfield Oil Corporation, Los Angeles, Calif., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,722
19 Claims. (Cl. 62—50)

1. In a method for maintaining a first volatile constituent in liquid solution in a second constituent of lesser volatility in a container, the steps comprising:
removing vapors of said constituents from said container,
compressing said vapors,
condensing said compressed vapors to a liquid stream comprising a solution of said constituents relatively high in said first constituent,
commingling said condensate with a second liquid stream comprising a solution of said constituents relatively low in said first constituent,
flashing said commingled streams,
collecting the flashed liquid and vapors in a vessel,



returning the liquid from said vessel to said container to increase the concentration of said first constituent in said liquid solution in said container, and
recycling the flashed vapors from said vessel to said vapors removed from said container.

3,298,187
CRYOGENIC LIQUID STORAGE APPARATUS
Austin J. Short, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 421,790, Dec. 29, 1964. This application Apr. 18, 1966, Ser. No. 549,112
9 Claims. (Cl. 62—50)



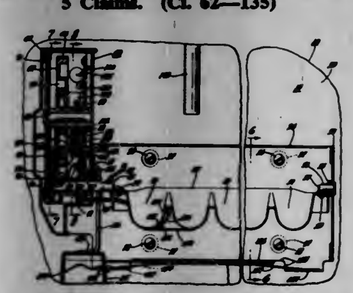
1. Cryogenic liquid storage apparatus comprising a double-walled container having an inner vessel and an outer casing with an evacuable thermal insulating space therebetween, and an outer vapor chamber portion of said container being gas-tightly connected to the outer casing; vapor conduit means extending through the outer casing and inner vessel walls with an inner end terminating in the upper portion of said inner vessel and an outer end terminating in the container outer vapor chamber portion; a thermal oscillation damper chamber outside said inner vessel of greater than 5 cubic centimeters volume and also having larger volume than said container outer vapor chamber portion; and vapor flow restricting conduit means having one end joined to said container outer vapor chamber portion and the other end joined to said damper chamber, said vapor flow restricting conduit means having a length-to-inner effective diameter ratio of at least 52 and effective diameter of at least $\frac{1}{16}$-inch, and said damper chamber having an internal transverse length of at least 2 times the inner effective diameter of the conduit.

3,298,188
METHOD AND APPARATUS FOR FREEZING FOOD PRODUCTS
Robert C. Webster, Madison, Wis., and John S. Hinn, Minneapolis, Minn., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 24, 1964, Ser. No. 362,226
10 Claims. (Cl. 62—63)



1. A method of freezing articles of food comprising the steps of directing cold vapor evolved from liquid nitrogen down an incline, conveying said articles upward along said incline in heat exchange relationship with said vapor so as to cool said articles, spraying liquid nitrogen upon said cooled articles in order to at least partially freeze said articles and vaporize the liquid nitrogen sprayed thereon, and utilizing vapor thus formed as the said cold vapor directed down said incline.

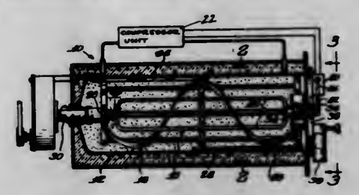
3,298,189
TWISTABLE ICE CUBE MAKER WITH THERMISTOR TEMPERATURE SENSOR
George W. Beck and Walter G. Kniffin, Dayton, Ohio, and Benny M. Hillberry, Ames, Iowa, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Oct. 23, 1962, Ser. No. 232,355, now Patent No. 3,217,508, dated Sept. 21, 1965. Divided and this application Mar. 18, 1965, Ser. No. 440,719
5 Claims. (Cl. 62—135)



2. An automatic liquid freezer including a mold having a plurality of liquid holding pockets located side by side, means for supplying liquid to said mold, means for freezing liquid in said mold, means for discharging frozen liquid from said mold, temperature responsive control means for said discharging means, said temperature responsive control means being located between two adjacent pockets of said mold in heat transfer relation with one of said pockets, and means for enclosing a space between said adjacent pockets and said temperature responsive control means.

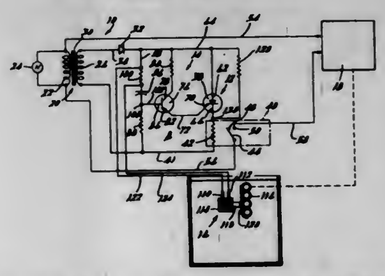
3,298,190
FREEZING CONDITION CONTROL
Charles B. Harker, Rockford, Ill., assignor to Tekni Craft, Incorporated, Rockton, Ill., a corporation of Illinois
Filed Oct. 7, 1965, Ser. No. 493,670
4 Claims. (Cl. 62—136)

1. A semi-frozen confection machine comprising:
a freezing chamber adapted to contain and freeze liquid confection material;
refrigeration means for cooling said freezing chamber;
a rotary beater in said freezing chamber adapted to rotatably stir the confection material;
a viscosity sensing member rotatably mounted in said freezing chamber spaced inside said beater independently of said beater,
said viscosity sensing member having radial extension means adapted to subject said member to torque by the rotational movement of the confection material in said freezing chamber against said extension means,



said viscosity sensing member having a torque transmitting shaft rotatably extending from said freezing chamber;
adjustable counter-torque means acting on said torque transmitting shaft to resist rotation of said member;
and switch means responsive to rotation of said torque transmitting shaft, said switch means controlling the operation of said refrigeration means.

3,298,191
SOLID STATE ICE BANK CONTROL
Lawrence A. Burke, Royal Oak, Mich., assignor to Temprite Products Corporation, Birmingham, Mich., a corporation of Michigan
Filed Sept. 13, 1965, Ser. No. 486,729
17 Claims. (Cl. 62—140)

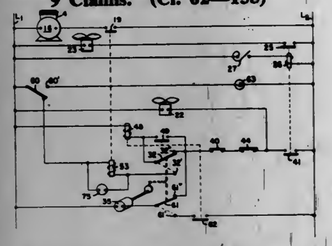


1. A control system for detecting the condition of a freezing media and controlling an apparatus adapted to control conditions of the freezing media, a pulsating direct current source of electrical energy and impedance means varying the magnitude of its impedance in accordance with predetermined freezing and nonfreezing conditions of the media comprising output controlling means, controller means connected in circuit with said output control elements and operatively connected with the apparatus for controlling the operation of the apparatus in response to an electrical condition of said controlling means, and condition responsive control circuit means coupled in controlling relation with said controlling means in response to the predetermined freezing and nonfreezing conditions of the media including condition sensing circuit means connected to the impedance means for producing a condition signal in response to variations of the impedance means, signal producing circuit means for producing a control signal in response to said condition signal, said signal producing means varying the conductive conditions of said controlling means in response to said controlling means, and reactive impedance means in circuit between said condition sensing circuit means and said signal producing circuit means for blocking direct current components of the pulsating source of electrical energy from said condition sensing circuit means.

3,298,192
CONTROL APPARATUS WITH TIMING MEANS FOR REFRIGERATION SYSTEMS

Robert D. Morgan, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed July 1, 1965, Ser. No. 468,837
9 Claims. (Cl. 62—158)

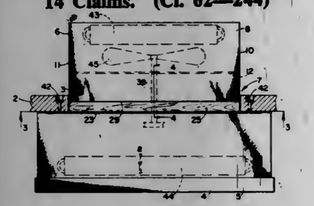


1. In a refrigeration system including a compressor, the combination of control means operable upon a demand to energize said compressor; condition sensing means operable upon the occurrence of a predetermined malfunction to deenergize said compressor; timing means for preventing reenergization of said compressor by said control means for a timed interval following each deenergization thereof; and means for counting the number of compressor deenergizations responding to a predetermined number of compressor deenergizations for said timed interval to render said control means inoperative.

3,298,193
REFRIGERATION UNIT

Clifford N. Johnsen, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin

Filed Jan. 17, 1966, Ser. No. 521,041
14 Claims. (Cl. 62—244)



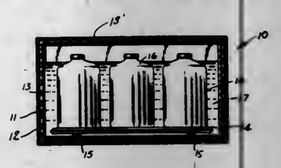
1. A refrigeration unit for refrigerating a vehicular enclosure comprising a condenser section having a wall; a refrigerant condenser disposed within said condenser section; an evaporator section disposed in juxtaposition with said wall; a refrigerant evaporator disposed in said evaporator section; a first elongated thermal isolator member extending generally parallel to said wall; a first elongated flange connected to said evaporator section and abutting along an elongated surface of said thermal isolator member facing toward said condenser section; and a second elongated flange connected to said condenser section and abutting along an elongated surface of said thermal isolator member facing away from said condenser section thereby connecting said condenser and evaporator sections in rigid thermally isolated relationship.

3,298,194
SELF-CONTAINED BEVERAGE COOLER

James H. Hutchinson, Rte. 3, Hart, Mich. 49420

Filed June 24, 1965, Ser. No. 466,544
2 Claims. (Cl. 62—294)

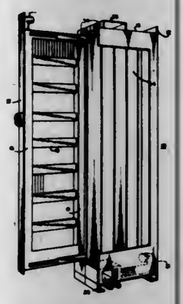
1. A self-contained beverage cooler comprising a plastic coated carton having a corrugated layer of material against water proof interior walls for insulation, and a coolant package supporting the beverage containers and providing refrigeration means for said cooler, said coolant container being raised against the bottom wall of said carton by support block means thus allowing said water within said carton which surrounds said bottles of beverages to also surround said coolant container, said coolant container is provided with a plurality of spaced apart parallel rows of openings, said openings allowing for the escape of gas and said coolant container is provided with divider walls on its interior to insure rigidity and strength to said cooler container.



3,298,195
MODULE COOLING SYSTEM

Nicholas M. Raskhodoff, Cheverly, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 15, 1965, Ser. No. 496,727
6 Claims. (Cl. 62—414)



1. A cooling system for supplying cooling air to electrical equipment housed in separate racks of a cabinet which comprises:

an air cooling means,

air supply and air return ducts in said cabinet leading from said air cooling means and extending across said cabinet containing said electrical equipment to be cooled,

a plurality of racks upon which said electrical equipment is assembled in individual modules,

each of said racks including oppositely disposed first and second vertically extending hollow end members and an upper and lower horizontal hollow member separated by a plurality of spaced horizontal hollow members connected with said first and second vertically extending hollow members,

said first vertically extending hollow end member providing an air supply to each of said plurality of spaced horizontal hollow members and to said lower horizontal hollow member,

said second vertical hollow end member providing a hot air return from said plurality of spaced horizontal members and from said upper horizontal hollow member,

each of said plurality of spaced horizontal hollow members including apertures in their upper and lower surfaces,

a divider within each of said spaced horizontal members separating each of said members into upper and lower air flow channels,

said lower horizontal hollow member and each of said upper flow channels of said plurality of spaced horizontal hollow members connecting with said first vertically extending member to supply air through said apertures in the upper surface thereof,

said upper horizontal hollow member and said lower air flow channel of each of said plurality of horizontal hollow members being connected with said second vertically extending end member to return air to said air cooling means,

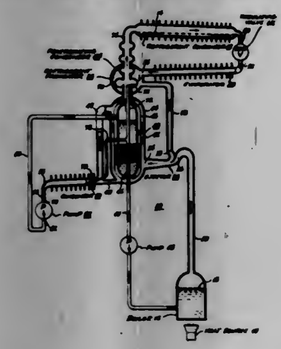
a bellows type hose connected between said air duct extending across said cabinet and each of said first vertically extending end members of each of said racks to supply cool air thereto,

whereby cool air is supplied through said first vertically extending end member to said plurality of horizontal hollow members, across the electrical equipment modules, out through the lower air flow channel of each of said plurality of horizontal members and the upper horizontal hollow member and out through said second vertically extending end member of each of said racks to the air cooling means through a return duct.

3,298,196
DYNAMIC PUMP TYPE REFRIGERATION SYSTEM

Ralph C. Schlichtig, 11212 3rd S., Seattle, Wash. 98168

Filed May 3, 1965, Ser. No. 452,648
7 Claims. (Cl. 62—500)

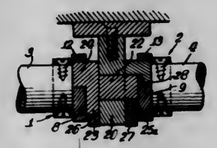


1. In a heat transfer system for using as working mediums a power fluid and a refrigerant, the combination comprising, pump means having power inlet means, refrigerant inlet means and discharge means; means for vaporizing the power fluid and for directing the vaporized power fluid to the power inlet means of said pump means; an evaporator for evaporating the refrigerant to a vapor and for effecting in cooperation with said pump means a flow of the refrigerant vapor to the refrigerant inlet means of said pump means so that a mixture of refrigerant vapor and vaporized power fluid is discharged from the discharge means of said pump means; first condenser means operatively associated with the discharge means of said pump means for receiving at least a part of the mixture of refrigerant vapor and vaporized power fluid discharged from the discharge means of said pump means and for effectively condensing such received mixture to thereby reduce the back pressure on the discharge means of said pump means; second condensing means; means operatively associated with said first condenser means and with said second condensing means for receiving a mixture of condensed power fluid and condensed refrigerant from said first condenser means and for separating condensed refrigerant of such received condensed mixture from condensed power fluid of such received condensed mixture by reevaporating condensed refrigerant of such received condensed mixture thus leaving a residue of condensed power fluid and for directing at least a part of the reevaporated condensed refrigerant to said second condensing means for condensing; and means for returning at least a part of the residue of condensed power fluid to said vaporizing means and for returning condensed refrigerant from said second condensing means to said evaporator.

3,298,197
READILY DISENGAGEABLE COUPLING

Leo Roth, 11950 S. 71st Ave., Palos Heights, Ill. 60463

Filed Sept. 29, 1964, Ser. No. 399,969
1 Claim. (Cl. 64—1)

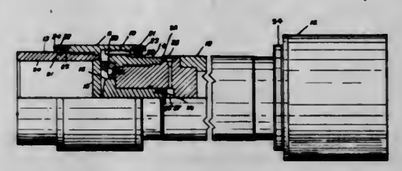


A readily disengageable coupling, comprising: a coupling shaft, a brace rotatably supporting the coupling shaft, semicircular engaging means at the ends of said shaft; rotatably mounted members in the form of rollers, two roller-connecting means provided with cylindrical portions encircling and retaining the ends of the rollers therein, complementary semicircular engaging means at the end of said cylindrical portions having smaller diameters than the cylindrical members to provide annular shoulders, said engaging means when engaged forming an annular outer surface; retaining means having an inner annular surface of the same diameter as the outer annular surface of the engaged engaging means to encircle the engaged engaging means to retain them in engaged operative position, said retaining means being prevented from sliding away from said brace out of their operative positions by the annular shoulders of the roller-connecting means while permitting free movement of said retaining means toward said brace onto said coupling shaft; and fingers pivotally mounted on opposite sides of the supporting brace for locking the retaining means in retaining position, said fingers pivoted to rotate normal to the rotating axis of the coupling to restrict the axial movement of the retaining means.

3,298,198
COUPLING WITH HYDRAULICALLY ACTUATED THRUST BUTTON

Joseph J. Winkler, Erie, Pa., assignor to Zurn Industries, Inc., Erie, Pa., a corporation of Pennsylvania

Filed Nov. 6, 1964, Ser. No. 409,509
7 Claims. (Cl. 64—9)

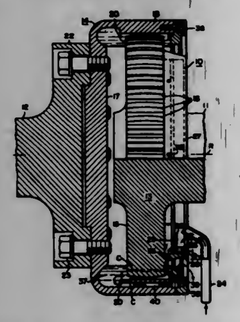


1. A coupling for joining together a pair of shafts in driving relationship comprising

a first coupling member adapted to be operatively connected to one of said shafts,

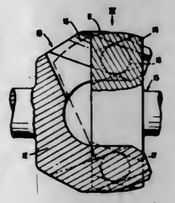
a second coupling member adapted to be connected to the other of said shafts and engaged in driving relationship with said first member,
said members being movable in an axial direction relative to one another,
pressure exerting means interposed between and adapted to force said members away from one another,
an abutment of one of said members adapted to be engaged with the other of said members thereby to limit the relative movement between said members,
said pressure means comprising a bore in said coupling adapted to receive hydraulic fluid under pressure,
one said coupling member being in engagement with said fluid in said chamber,
a source of hydraulic fluid connected to said chamber whereby said coupling members may be selectively forced into engagement with said abutment.

3,298,199
LIQUID COOLED COUPLING FOR A ROTATABLE SHAFT
Charles D. Grey, Sunnyvale, Calif., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1964, Ser. No. 412,058
4 Claims. (Cl. 64—9)



1. A coupling for connecting a rotatable driving shaft to a rotatable driven shaft, comprising
a male coupling member connectable to one of said shafts and having an annular array of radially outwardly directed splines,
a female coupling member encompassing said male coupling member and connectable to the other of said shafts,
said female coupling member having an annular array of radially inwardly directed splines disposed in engagement with said outwardly directed splines,
an annular cup provided on said male member and jointly rotatable therewith, said cup being partly defined by an annular wall portion,
nozzle means for directing liquid in radially outwardly direction into said cup,
said cup being concentric with the rotational axis of said male coupling member and disposed radially inwardly of said splines, whereby said cup is effective to disentrain and collect solids from said liquid by centrifuging action,
said cup being partly defined by a pair of radially extending wall portions,
one of said wall portions having an annular array of apertures for directing liquid through the splines by centrifugal action for cooling and lubrication purposes, and
means provided in the female coupling member for pumping the liquid from the splines by centrifugal action.

3,298,200
SLIDING JOINT
Werner E. Altmann, Stuttgart, Kurt Enke, Fellbach, Wurttemberg, and Alfred F. Rothweiler, Esslingen, Hegensberg, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Underturkheim, Germany
Filed Aug. 13, 1964, Ser. No. 389,295
Claims priority, application Germany, Aug. 16, 1963, D 42,254
10 Claims. (Cl. 64—21)



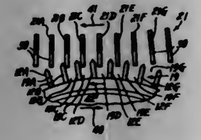
1. A sliding joint, especially for the axle drive of motor vehicles, in which the torque is transmitted by balls, comprising:
a first joint part including at least three approximately axially extending arm portions starting from a flange-like bottom thereof,
a second joint part having a hub portion and at least three approximately radially extending arm portions starting from said hub portion thereof in a star-like manner and engaging with the arm portions thereof between the arm portions of said first joint part,
mutually crossing track means being provided in the arm portions of the two joint parts,
and balls within said track means, said track means at least partly laterally surrounding said balls,
said joint, including said first joint part and said second joint part having a common joint axis,
and the common plane of two mutually crossing track means being disposed outside said joint axis.

3,298,201
UNIVERSAL JOINT
Jean Cadiou, Paris, France, assignor to Societe Anonyme André Citroen, Paris, France, a French Company
Filed July 28, 1964, Ser. No. 385,685
Claims priority, application France, Aug. 1, 1963, 3,079, Patent 1,371,990
3 Claims. (Cl. 64—21)



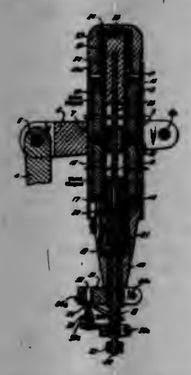
1. In a homokinetic universal joint comprising an outer element and an inner element having concentric spherical surfaces between which there is provided a guiding cage having apertures receiving balls which are thereby maintained in engagement with toric grooves provided in said surfaces of the inner and outer elements; said apertures of the cage including a first pair of diametrically opposed relatively large apertures at least one of which has a length as large as the axial thickness of said inner element to permit the assembly of the latter in said cage, a second pair of diametrically opposed relatively small apertures of sufficient length to permit the maximum desired angular displacement of said inner and outer elements during operation of the joint, and a third pair of diametrically opposed apertures of a length intermediate the lengths of said relatively large and relatively small apertures, respectively, each of said apertures of intermediate length being located between one of said relatively large apertures and one of said relatively small apertures and having its center offset in the direction toward the adjacent relatively small aperture with respect to a diametrical axis extending through the center of said surfaces of the inner and outer elements and which bisects the angle between diametrical axes extending through the centers of the adjacent relatively large and small apertures, the length of each of said apertures of intermediate length being sufficient to permit angular displacement of said outer and inner elements to the extent necessary for the insertion in said relatively small apertures of the respective balls.

3,298,202
KNITTING MACHINE AND METHOD OF KNITTING
Morris Philip, 2519 Grand Ave., Bronx, N.Y. 10468
Filed Sept. 18, 1962, Ser. No. 224,329
16 Claims. (Cl. 66—50)



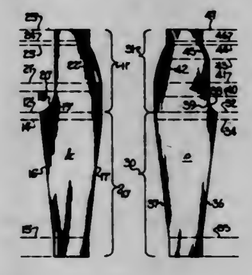
1. In a knitting machine, the combination of a pattern wheel mounted for rotation about its axis, said pattern wheel having circumferentially spaced apart teeth, the spaces between the teeth defining needle receiving slots, and a bank of needles cooperating with said wheel, the pitch of the teeth of the wheel which cooperate with the needles during a revolution of said wheel being less than the pitch of the said needles.

3,298,203
THREAD FEEDING ARRANGEMENT FOR KNITTING MACHINES
Richard Schmidt and Werner Jausch, Stuttgart-Vaihingen, and Richard Hall, Musberg, Germany, assignors to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany
Filed Jan. 28, 1963, Ser. No. 254,154
8 Claims. (Cl. 66—131)



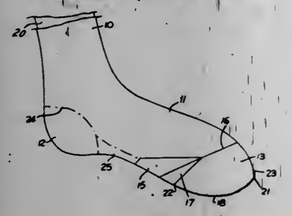
1. In a knitting machine, in combination, a feeding arrangement for feeding a thread to the knitting needles of the machine, comprising first operating means movable between a normal position for guiding a thread to the needles and an operative position for causing clamping of the thread; severing means for the thread disposed to engage the clamped thread for severing the same; second operating means including hook means turnable about an axis and reciprocable along said axis between an inoperative position and an operative position, and being disposed relative to said first operating means to catch a clamped thread during axial movement from said inoperative position to said operative position, and to draw the caught thread during turning movement to a position adapted to be engaged and knitted by the needles of the knitting machine; and control means for moving said first and second operating means in timed relation between said positions of the same.

3,298,204
FULL-FASHIONED KNITTED SLACKS
Frank V. Hoffecker, Charlotte, N.C., assignor to Huntley Knitting Mills, Inc., York, S.C., a corporation of North Carolina
Filed Feb. 23, 1965, Ser. No. 434,466
3 Claims. (Cl. 66—177)



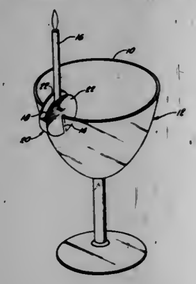
1. A pair of full-fashioned knitted slacks providing a conforming fit on the body of a wearer, said slacks comprising
(a) a pair of elongated knitted front panels having inner and outer selvages along opposite sides thereof,
(b) a pair of elongate knitted rear panels having inner and outer selvages along opposite sides thereof, each of said front and rear panels having integral leg, trunk, waistband and crotch shoulder portions and also having curved lines of fashioning marks spaced a predetermined distance inwardly from and extending parallel to the outer selvage of said trunk portion and the inner selvage of said crotch shoulder portion to provide a conforming fit of the slacks on the hips and in the crotch of the wearer, each of said rear panels having a curved line of fashioning marks spaced a predetermined distance inwardly from the inner selvage of the trunk portion thereof and extending parallel to the inner selvage for a predetermined distance downwardly from said waistband portion to provide a conforming fit of the slacks across the small of the back of the wearer,
(c) a pair of outer seams connecting the outer selvages of said front panels to the corresponding selvages of the rear panels,
(d) a pair of inner seams connecting the inner selvages of said leg portions of said front panels to the corresponding inner selvages of the leg portions of said rear panels,
(e) a front seam connecting the inner selvages of said waistband, trunk and crotch shoulder portions of said front panels, and
(f) a rear seam connecting the inner selvages of said waistband, trunk and crotch shoulder portions of said rear panels.

3,298,205
KNITTED FOOTWEAR
Bernard Thornton Reymes Reymes-Cole, 29 Station Road, Desford, England
Filed July 23, 1962, Ser. No. 211,757
Claims priority, application Great Britain, July 22, 1961, 26,641/61
5 Claims. (Cl. 66—185)



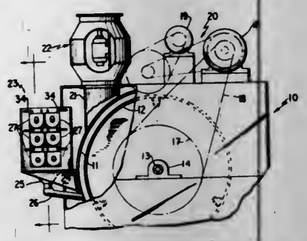
1. A method of producing an article of hose which comprises the steps of knitting a hose blank in tubular form with the part of the blank to form the toe end portion knitted rotationally at least partly from thermoplastic yarn, forming a modified fabric area which is to be under the foot immediately to the rear of a toe end join line, in which area the stitches are so formed as to shorten the fabric walewise relatively to fabric adjoining and outside said area, with the greatest degree of walewise shortening being on the centre line which is to be under the foot, and with the degree of shortening being progressively, reduced laterally therefrom, closing the toe end of the blank by a join line extending from the top to the bottom of the toe end portion up to the front end part of said shortened fabric area proximate said bottom centre line, shaping the toe end portion by drawing the closed end of the fabric onto a board and stretching it approximately to the shape of the board, and setting the fabric in the shape dictated by the board.

3,298,206
CANDLE SUPPORT DEVICE
Harold L. Hingston, 2293 Bronson Hill Drive, Hollywood, Calif. 90028
Filed Oct. 22, 1964, Ser. No. 405,676
8 Claims. (Cl. 67—23)



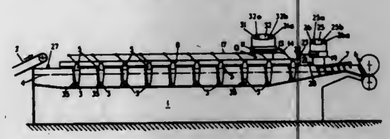
1. An apparatus for holding a candle on a structure having a rim, comprising:
a support body having its top portion curved and a groove extending circumferentially around said curved portion,
said body also having a slot to receive said rim, said slot extending upwardly from the bottom of said support body and being in a plane normal to the plane of said groove,
said groove being adapted for holding a candle therein at multiple different inclinations to said plane of said slot and in a substantially vertical position irrespective of the inclination of said rim.

3,298,207
LAUNDRY MACHINE
Thomas W. Bannon, Jr., East Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 3, 1964, Ser. No. 408,550
7 Claims. (Cl. 68—17)



1. In a washer-extractor, the combination comprising a stationary inperforate shell; a hollow cylindrical basket having a perforated peripheral wall mounted for rotation within said shell; means for supplying water to said shell; means for draining said shell; an auxiliary housing adjacent said shell, said auxiliary housing having a sump at its bottom and a duct leading from said sump to the interior of said shell; means within said auxiliary housing providing a plurality of elongated stacked compartments therein; removable channel-shaped container means within each of said compartments; separate flushing means for each container; and separate valve means for controlling the flushing of each of said containers.

3,298,208
WOOL SCOURING MACHINES
Maurice Thomas Bowe, Rochdale, England, assignor to Petrie & McNaught Limited, Rochdale, England, a British company
Filed Aug. 24, 1964, Ser. No. 391,484
Claims priority, application Great Britain, Aug. 28, 1963, 33,999/63
5 Claims. (Cl. 68—158)

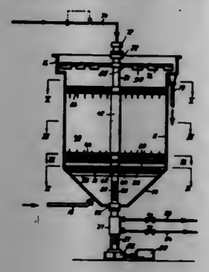


1. Means for moving loose fibrous material through liquors in a washing machine, comprising a plurality of paddle members carried by reciprocable carriers and means for holding the paddle members vertical during forward travel and horizontal during backward travel, the paddle members having perforated leading faces and back plates arranged to allow liquid to flow out during forward movement while preventing liquid from entering the paddle member, during its retraction.

3,298,209
WASHING CONTAINER
Oliver Armas Laakso, Glens Falls, N.Y., assignor to Aktiebolaget Kamyr, Karlstad, Sweden
Filed Dec. 21, 1964, Ser. No. 419,689
Claims priority, application Sweden, Dec. 23, 1963, 14,427/63
8 Claims. (Cl. 68—181)

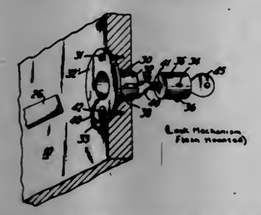
1. An apparatus for washing cellulosic pulp wherein cellulosic pulp is continuously supplied to one end of the apparatus, cellulosic pulp in a major portion of the apparatus is stationary while being washed, and washed cellulosic pulp is continuously discharged from the other end of said apparatus comprising: an upright cylindrical

container; means for supplying the pulp to one end of said container; means for discharging the pulp from the other end of the container; means for supplying washing liquid to said container; means for extracting treating liquid from the pulp; the middle portion of said container



being provided with a plurality of fixed compartments and means for successively opening and closing said compartments, whereby pulp may be caused to flow continuously through an open compartment while pulp in a closed compartment is subjected to washing and extraction of treating liquid.

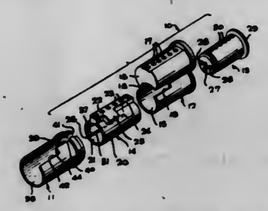
3,298,210
ELEVATOR SHAFT DOOR SAFETY MECHANISM
George L. Nyborg, Pelham Manor, N.Y., assignor to Elevator Specialties Corp., Bronx, N.Y., a corporation of New York
Filed Dec. 29, 1964, Ser. No. 421,904
4 Claims. (Cl. 70—91)



1. An elevator shaft door safety apparatus comprising in combination an elevator shaft door, a side of said door facing a shaft; a door latching linkage and latch disposed on the shaft side of said door for the opening and closing thereof; a member, comprising a tube, secured through a door aperture adjacent a portion of said linkage which permits release of said latch, said member including bolt retaining means; a cylindrical lock removably insertable in said tubular member; and a bolt operable by the mechanism of said lock and disposed thereon to engage said bolt retaining means when the lock face is substantially flush to the outside of the shaft door whereby disengagement of said bolt from said bolt retaining means permits said lock to be removed from said tubular member, thereby allowing access through said tubular member to said portion of said latching linkage in order to release said latch.

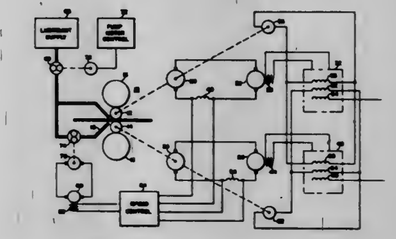
3,298,211
SLEEVE FOR KEY-ACTUATED MECHANISM
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and Paul Cirocco, Bellflower, Calif; said Cirocco assignor to said Russell
Filed Dec. 21, 1964, Ser. No. 419,761
3 Claims. (Cl. 70—369)

1. In a key-actuated mechanism for locks comprising a case having a recess therein, a longitudinally extending and radially outwardly projecting tumbler housing on the side of said case, and a substantially cylindrical key plug having a rotatable mounting in said recess and pin tumblers in said key plug in longitudinal alignment with pin tumblers in said tumbler housing, said tumbler housing having a pocket on the inside surface with a laterally facing opening, the combination of an interlocking cam sleeve including a cylindrical section between the key plug and the case whereby to provide a rotatable spacer therebetween, a longitudinally extending radially projecting tumbler housing on the side of said cylindrical section of



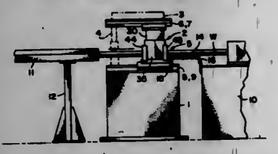
the cam sleeve, and a cam element on the exterior of said cylindrical section of the cam sleeve adapted to be extended into said lateral opening, said cylindrical section of the cam sleeve having opposite resilient side portions and a longitudinally extending slit separating said side portions, said slit extending throughout the length thereof opposite edges of said slit being spaced from each other a distance substantially less than the diameter of said pin tumblers in the tumbler housing.

3,298,212
ROLLING MILL CONTROL APPARATUS
John W. Cook, Monroeville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1963, Ser. No. 331,047
5 Claims. (Cl. 72—8)



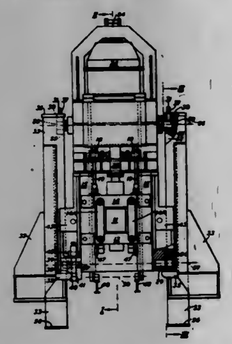
1. Control apparatus for a workpiece rolling mill having a pair of cooperating rolls, with said workpiece being positioned to pass between said pair of rolls, and including a first motor connected to drive a first of said rolls, a second motor connected to drive the second of said rolls, load balance control means operative with at least one of said rolls, first condition sensing means coupled to said first motor for providing a first control signal in accordance with a predetermined operating condition of the first motor, second condition sensing means coupled to said second motor for providing a second control signal in accordance with a predetermined operating condition of the second motor, with said load balance control means being responsive to each of said first and second control signals for varying the relative load between said workpiece and at least one of said rolls in accordance with a predetermined relationship between said first and second control signals, and speed control means responsive to the speed of at least one of said motors for providing a predetermined speed relationship between said motors.

3,298,213
TUBE CUT-OFF MECHANISM
Frank Szel, Cleveland, Ohio, assignor to The Yoder Company, Cleveland, Ohio, a corporation of Ohio
Filed July 17, 1964, Ser. No. 383,482
18 Claims. (Cl. 72—186)



1. A tube cut-off comprising a movable blade having a de-dimpler thereon, a tube gripping asembly adapted to grip the severed section of tube and urge the severed end face thereof against said blade on its return stroke, and means responsive to the cutting stroke of said blade first to cock said assembly and the cause the same to grip such tube.

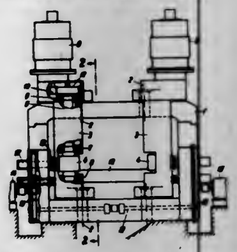
3,298,214
ROLLING MILLS
Dennis Stubbs, Sheffield, Colin Roy, Woodhouse, Harry Lawrence Fred Bond, Hathersage, and Neville Vollans, Greasborough, Rotherham, England, assignors to Davy and United Engineering Company Limited, Sheffield, England
Filed Oct. 1, 1963, Ser. No. 338,273
Claims priority, application Great Britain, Jan. 8, 1963, 838/63
8 Claims. (Cl. 72—235)



6. A rolling mill comprising a pair of rolls, housings in which the rolls are rotatably supported, a stand consisting of first and second main sections, having major axes which extend in planes substantially normal to one another, the housing being supported in cantilever manner on the first section, drive means for driving the rolls, means for supporting the drive means on the second section, a frame and means for supporting the stand on the frame for pivotal movement about axes which are movable in planes normal to themselves.

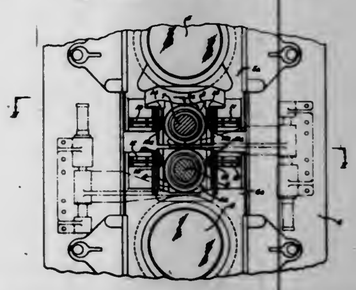
3,298,215
ROLLING MILL STAND
Willi Bonhoff, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschränkter Haftung, Essen, Germany, a corporation of Germany
Filed Nov. 27, 1963, Ser. No. 326,499
Claims priority, application Germany, Nov. 29, 1962, B 69,789
4 Claims. (Cl. 72—238)

1. A rolling mill stand comprising
a frame,
stand accessories mounted in said frame to swivel about a vertical axis, and
a roll secured in each of said stand accessories and swiveling with the latter about said vertical axis, said frame comprising a closed yoke,
pressure spindles operatively projecting laterally from said frame for engagement with said stand accessories, thereby transferring the rolling pressure from said stand accessories to said frame,



said frame being upwardly inclined in rolling direction and comprising an upper cross beam and a lower cross beam, and
said upper cross beam being disposed in a vertical projection in front of said rolls and said lower cross beam being disposed behind said rolls.

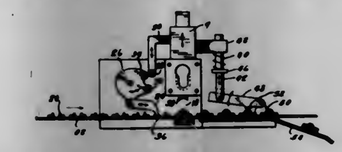
3,298,216
ROLLING MILL
William J. Korey, Greentree, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 324,937
9 Claims. (Cl. 72—239)



1. A rolling mill comprising a mill housing, an assembly comprising roll chocks carrying a roll mounted in the housing, driving means for driving the roll having a driving connection with the roll at one end thereof and means connected with the housing positioned to bear against said assembly at the end thereof at which the driving means are disposed and push said assembly generally axially of the roll away from the driving means to remove the roll from the housing for changing rolls.

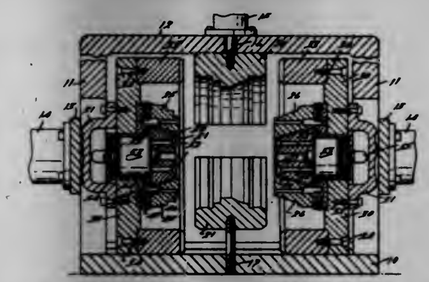
3,298,217
TERMINAL ATTACHING MACHINES
Louis A. Netta, North Brunswick, N.J., assignor to The Thomas & Betts Company, Incorporated, Elizabeth, N.J. a corporation of New Jersey
Filed Feb. 7, 1964, Ser. No. 343,373
5 Claims. (Cl. 72—326)

1. In a terminal attaching machine of the character described which includes a reciprocating terminal crimping ram, a strip of terminals to be crimped, a terminal crimping station, means for advancing a terminal to said station for each reciprocating cycle of said ram, the improvement which comprises means for severing a terminal from said strip of terminals, said severing means positioned adjacent to said terminal strip and substantially beyond the terminal crimping station, spring biased means mounted on said ram, said spring biased means coacting with said terminal severing means such that said ram and said spring



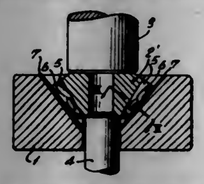
biased means mounted on said ram cause said terminal severing means to sever a terminal from said strip of terminals at a point substantially beyond said terminal crimping station.

3,298,218
METHOD AND APPARATUS FOR FORMING WHEEL RIMS AND THE LIKE
George E. Gollwitzer, Belle, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,286
6 Claims. (Cl. 72—355)



1. An apparatus for forming a rim from an annular blank including outer die means operable to confine the blank on the radially outer periphery thereof, a pair of oppositely movable rams movable axially into the blank, a pair of inner dies carried one on each of said rams, each of said inner dies comprising a plurality of die segments engageable with the radially inner periphery of a blank enclosed by said outer die means to form said rim upon the movement of said rams toward one another, and wedge means carried by each of said rams for radially expanding said die segments and means for actuating said wedge means upon the completion of the movement of said rams toward one another.

3,298,219
METHOD AND DEVICE FOR PRODUCING ACTIVE PROFILES ON BEVEL GEARS
Franz Schober, Munich-Pasing, Germany, assignor to Bayerisches Leichtmetallwerk K.G., Munich, Germany
Filed Feb. 28, 1964, Ser. No. 348,208
Claims priority, application Germany, Apr. 24, 1963, B 71,606
11 Claims. (Cl. 72—377)



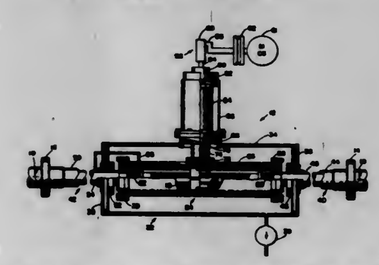
1. A method for producing active profiles on flanks of bevel gears in cold state thereof, comprising the steps of preforming a bevel gear, driving the preformed gear into a calibrating mold, exerting pressure on the entire gear axially thereof so as to displace by tolerance amounts some of the gear material in the region of the tooth flanks from the lower flank portions of the teeth and forming active profiles on said flanks without altering the working depth of the teeth of said gear, whereby active tooth profiles are formed thereon, and ejecting the treated gear from the mold.

3,298,220
THERMOCOUPLE FOR DTA
Robert L. Stone and George T. Burress, Austin, Tex., assignors, by mesne assignments, to Tracor, Inc., Austin, Tex., a corporation of Texas
Filed May 15, 1964, Ser. No. 367,692
24 Claims. (Cl. 73—15)



1. In apparatus for analyzing a sample by differential thermal analysis, a thermocouple suitable for accepting a sample holder thereon, said thermocouple comprising a loop of sufficient diameter and sufficient closure to accept a sample holder thereon, a junction in said loop, whereby said junction is closely associated with a sample holder when accepted thereon, and electrical lead means associated with said junction; and a sample holder shaped to hold a sample during analysis and shaped to sit on said loop and be supported thereby in close association with said junction during analysis.

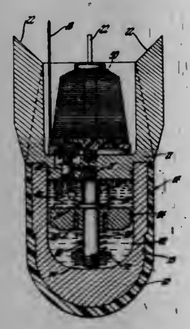
3,298,221
DENSITOMETER
Charles E. Miller and Robert B. Jacobs, Boulder, Colo., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 30, 1963, Ser. No. 334,672
4 Claims. (Cl. 73—32)



1. An electromechanical densitometer for measuring the density of a pressurized cryogenic fluid flowing in a pipe comprising:
a substantially rigid chamber,
a fluid conduit within said chamber for receiving the pressurized cryogenic fluid from the pipe,
a pair of spaced bellows, each having one end connected to said conduit and the opposite end connected to said chamber,
means for pressurizing said chamber to the pressure of the flowing cryogenic fluid to eliminate pressure sensitivity of said bellows,
a vacuum jacket surrounding said chamber for thermally insulating the same,
a pair of couplings secured to the pipe containing the cryogenic fluid at spaced points on opposite sides of said chamber,

a transfer line secured to each of said couplings extending into said vacuum jacket to said chamber, each of said transfer lines comprising,
an outer casing having one end rigidly secured to one of said couplings and the other end secured to said chamber, and
an inner casing having one end rigidly secured to said coupling and the other end secured to said chamber,
a mechanical oscillator for generating a sinusoidal motion,
means for connecting said oscillator to said conduit for vibrating the same in said chamber transversely in a single plane at a controlled amplitude and frequency,
a dynamometer for sensing the force exerted by the vibrating conduit and cryogenic fluid flowing therein and generating an electrical signal in phase with said vibrating conduit, said signal being proportional to the maximum force exerted by said conduit, and
means for monitoring said electrical signal.

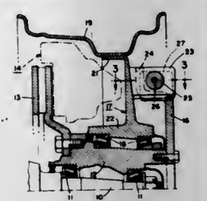
3,298,222
DEVICE FOR MEASURING SURFACE CHARACTERISTICS
Robert B. Costello, Santa Barbara, and Robert Malcolm Robertson, Goleta, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 20, 1963, Ser. No. 332,051
3 Claims. (Cl. 73—84)



2. Apparatus for measuring the load bearing characteristics of a substantially horizontal surface comprising hydrodynamically designed vehicle adapted for gravitational projection against the surface from a station located above the surface, a mass carried by the vehicle and mounted for displacement along a vertical axis of the vehicle, resilient means tending to resist displacement of the mass along the vertical axis and adapted to be connected across a source of potential, wiper means mounted on the mass and displaceable therewith along the resistive means to produce a voltage waveform corresponding to the time-displacement characteristic of the mass upon contact with the surface, and conductor means connected to the wiper means for transmitting the voltage waveform to the station for analysis thereof.

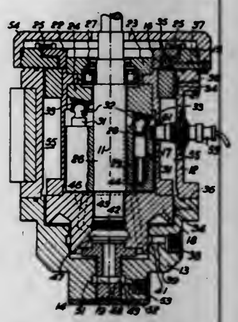
3,298,223
TORQUE SENSING WHEEL STRUCTURE
Daniel P. Dyer, Jr., Grosse Pointe Park, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 21, 1965, Ser. No. 426,882
7 Claims. (Cl. 73—128)

5. A torque sensing wheel device comprising, a rotatable hub mounted on an axle, a set of bearings mounted on said hub, a wheel disk member rotatably mounted on said bearings, a rim mounted on said wheel disk member adapted to support an inflated tire, a torsion lever connected to said hub at the outer end, said hub being adapted



to have a brake member affixed thereto at the inner end, and a transducer connected to said torsion lever intermediate the hub and said wheel disk member.

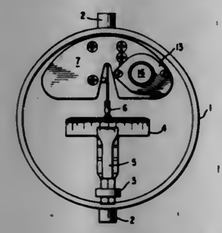
3,298,224
DYNAMOMETERS
Thomas Michael Birchall and Roger St. John Richards, both of Melton Mowbray, England, assignors to Production Engineering Research Association of Great Britain, Leicestershire, England, a British body corporate
Filed Apr. 27, 1964, Ser. No. 362,847
Claims priority, application Great Britain, Apr. 30, 1963, 17,022/63
13 Claims. (Cl. 73—134)



1. In a hydraulic dynamometer comprising a stationary housing, a hydraulic machine having an outer casing supported within said stationary housing, anti-friction bearings carrying said outer casing rotatably through at least a small angle in relation to said stationary housing, a torque-measuring linkage between said casing and stationary housing restraining rotation of said casing in relation to said housing, and connections between the hydraulic machine and external lines one serving as an inlet line and the other as an outlet line through ports or passages formed in said casing and housing such that said casing is freed from any substantial static rotational constraint except that imposed by the torque-measuring linkage, the improvement which consists in said hydraulic machine being a positive displacement machine capable of acting as a pump and as a motor from a low speed upwards.

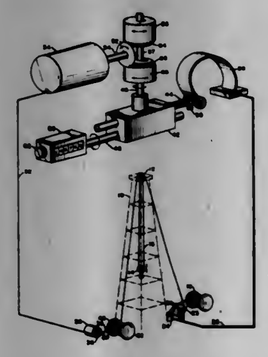
3,298,225
PROVING RINGS
Donald Z. Hartranft, York, Pa., assignor to Morehouse Instrument Company
Continuation of application Ser. No. 172,938, Feb. 13, 1962. This application Mar. 9, 1966, Ser. No. 533,771
3 Claims. (Cl. 73—141)

1. A proving ring adapted to be distorted by externally applied forces, means for indicating the extent of such distortion comprising a vibratable reed projecting radially inwardly from mounting means attached to an inner surface area of said ring, a contact member projecting radially inwardly from a diametrically opposite surface area on the inside of the ring, means for adjusting the length of said contact member, means for indicating the exact length of said contact member within its range of adjustment, and means for vibrating said reed comprising a coil supported by said ring with its axis at right angles to said reed, a plunger mounted for free movement axially of



said coil, a spring for holding the end of said plunger in contact with said reed, a battery carried by said ring, conductors connecting the poles of said battery to the opposite terminals of said coil, interrupter contact elements separately mounted from said reed in circuit with said conductors, and an armature attached to said plunger and separately mounted from said contact elements, said elements being opened and closed by the movement of the plunger.

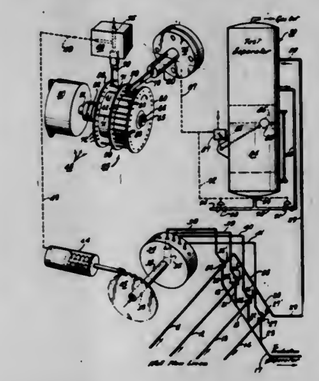
3,298,226
SYSTEM FOR RECORDING WORK DONE DURING ROTARY DRILLING OPERATIONS
Alexander B. Hildebrandt, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,396
7 Claims. (Cl. 73—151)



1. In an oilfield drilling unit including as working members a string of drill pipe which is rotated to advance a drill bit into the earth and a hoisting line by means of which said string of pipe is raised and lowered in the borehole, the improvement which comprises:
first means for measuring the force applied to one of said working members of said drilling unit and obtaining an output proportional to the force thus measured;
second means responsive to the movement of said working member for obtaining an output proportional to the movement of said working member;
integrating means for obtaining the summation of the product of a first input and a second input;

third means for applying the output of said first means to said integrating means as said first input;
fourth means for applying the output of said second means to said integrating means as said second input.

3,298,227
SEMI-AUTOMATIC WELL TESTING SYSTEM
Norman W. Hicks, Caracas, Venezuela, assignor to Texas Petroleum Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 26, 1963, Ser. No. 304,521
7 Claims. (Cl. 73—155)

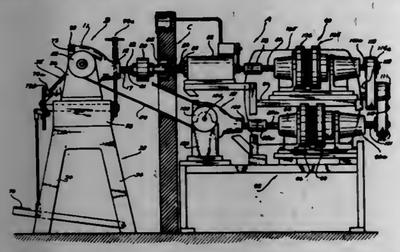


7. In combination, a signal transducer, a time wheel having two sections integrally attached to one another, a first plurality of pins located near the periphery of one section of the wheel, said signal transducer including an arm extending into the path of said pins for tripping said transducer periodically, a time drive input coupling for rotating said wheel, a clutch in said input coupling for permitting overriding rotation of said wheel, and cyclic drive means for providing override rotation of said wheel and comprising a second plurality of pins located near the periphery of said other section of the the wheel, said cyclic drive means also comprising a reciprocable member having a pawl thereon for engaging said last named pins.

3,298,228
DIFFERENTIAL TESTING MACHINE
George Oltean, Richard C. Mortensen, Paul J. Jessen, and Daniel Greenwald, all of Kenosha, Wis., assignors to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Dec. 26, 1963, Ser. No. 333,298
5 Claims. (Cl. 73—162)

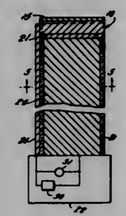
1. A machine for testing the differential assembly of an automotive vehicle in which such assembly includes: a differential housing, a pinion gear in the housing, a ring gear engaged with the pinion gear and having an axis of rotation transverse to the axis of rotation of the pinion gear, a carrier secure with the ring gear, differential idler gears carried by the carrier, differential axle gears engaged with the differential idler gears, said testing machine comprising:
a stand;
a fixture on the stand for holding the differential housing during testing;
simulative axle shafts carried on the fixture for rotative movement about an axis transverse to the axis of rotation of the pinion gear and for axial movement relative to the fixture;
a power unit;

a first drive train between the power unit and the pinion gear;
a second drive train between the power unit and the simulative axle shafts;
a slave unit interposed in the second drive train for converting the direction of rotation of the second drive train;
a first clutch and a first brake in the first drive train;



a second clutch and a second brake in the second drive train;
means for selectively engaging the sceond clutch to establish driving engagement between the power unit and the simulative axle shafts and means for engaging the first brake to impose a load on the simulative axle shafts and the gears of the differential assembly.

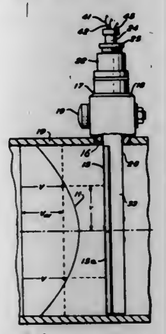
3,298,229
TEMPERATURE DETECTOR
Nicholas Klein, Haifa, Israel, assignor to Technion Research and Development Foundation, Ltd., Haifa, Israel
Filed May 29, 1964, Ser. No. 371,192
4 Claims. (Cl. 73—204)



1. A semiconductor detector comprising a wafer of semiconductor material having a junction therein; the upper surface of said wafer being exposed to the temperature of the external environment; a source of constant current connected in series with said junction for passing a constant forward current through said junction, and measuring means for measuring the forward voltage drop across said junction; said forward current through said junction heating said wafer to a temperature in excess of the temperature of the environment of said detector; the flow of fluid past said wafer cooling said wafer by an amount dependent upon the rate of flow of said fluid whereby said detector measures fluid velocity; said wafer having a hemispherical upper surface.

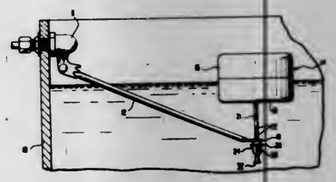
3,298,230
VANE TYPE FLOW METER
Emory Frank Stover, 1224 Lafayette Road, Gladwyne, Pa. 19035
Filed Oct. 28, 1963, Ser. No. 319,278
3 Claims. (Cl. 73—228)

1. A vane type flow meter for installation in a pipe comprising
a mounting member for disposition transversely in a pipe,
vane means diametrically disposed and extending substantially across the interior of the pipe and being diametrically elongated and exposed to the fluid flow in the pipe,
resilient hinge mounting means for said vane means connected to said mounting member and disposed at the center of the pipe, and



a force responsive take-off member connected to said hinge mounting means,
said vane means having a plurality of diametrically aligned vanes, and
said hinge mounting means including a hinge for each of said vanes.

3,298,231
FLOAT ASSEMBLY OR UNIT FOR LIQUID LEVEL CONTROL DEVICES
Frank T. Zukley, Sauk Village, Ill., assignor to Hamilton Humidity, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 15, 1964, Ser. No. 404,114
7 Claims. (Cl. 73—322.5)

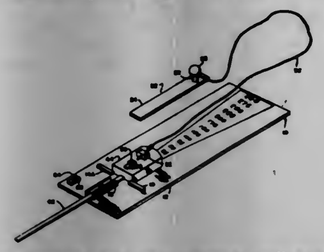


1. A float assembly comprising a hollow float body, a stem anchored to said float body and projecting exteriorly thereof, said stem having a plurality of longitudinally spaced recesses therein, a somewhat resilient tubular adjusting and retainer element movably mounted upon the stem and having at least one rounded end for free swiveling engagement with a valve control lever, said element having at least one cross slot in one end portion thereof forming resilient gripping arms on the element, and detent projections on the inner sides of said arms adapted for releasable interlocking engagement with said recesses.

3,298,232
GOLF PRACTICE GAME
Ralph J. Carboni, 327 Sharon Drive, New Orleans, La. 70124
Filed Nov. 13, 1963, Ser. No. 323,364
7 Claims. (Cl. 73—379)

1. A golf practice game comprising a tethered ball, a tether cord having a slow return elasticity connected to said ball at one end, means both to anchor and to permit rotational and longitudinal movement of said cord at the other end thereof, said anchor means comprising an

anchor block, an indicator block having substantial inertia integral with said anchor block, a base board underlying said integral anchor and indicator blocks so that said integral blocks frictionally rest thereon, said base board having indicia thereon for indicating the travel of said indicator block on said base board due to the force exerted by the flight of said tethered ball, a



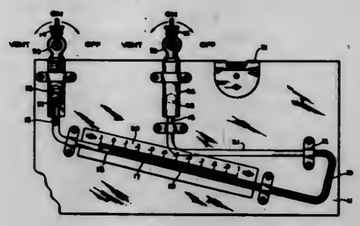
trailing bar integral with said integral indicator and anchor blocks and projecting from the rear of said integral blocks in a direction away from the intended flight of said tethered ball, and a channel guide mounted on said base board behind said indicator block, said channel guide supporting said trailing bar to permit longitudinal travel of said trailing bar in said channel guide.

3,298,233
PROBE TRANSDUCER
Herbert Cheiner, Reseda, and Russell R. Doubleday, Newhall, Calif., assignors to North American Aviation, Inc.
Filed Oct. 2, 1963, Ser. No. 313,276
2 Claims. (Cl. 73—398)



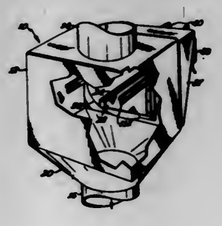
1. A unitary elongated transducer insertable in the wall of a chamber for measuring the pressure of fluid in the chamber comprising:
an elongated probe having an intermediate section with a cross-sectional area smaller than that of each end section,
a non-metallic erodable tip connected to one said probe end section, said tip adapted to be exposed to fluid in a chamber,
means adjacent to said tip adapted to seal said intermediate section from said fluid pressure,
an electrical connector attached to the other said probe end section, said electrical connector, tip, and probe having a common longitudinal axis,
a plurality of semiconductor strain gages disposed on said probe intermediate section, said strain gages having electrical leads passing through said electrical connector,
a Wheatstone bridge having voltage read out means, at least two of said strain gages being disposed in its arms,
means for supplying constant current through said electrical connector to said strain gages, and
means on said probe between said connector and said probe intermediate section for mounting the transducer in a port formed in the wall of the chamber, whereby fluid pressure exerted against said tip causes compressive strain in said strain gages and a voltage read out on said Wheatstone bridge to determine the fluid pressure.

3,298,234
MANOMETER
Siegmund I. Goldman, 1016 Braemer Drive, Winter Park, Fla. 32789
Filed July 9, 1964, Ser. No. 381,431
12 Claims. (Cl. 73—401)



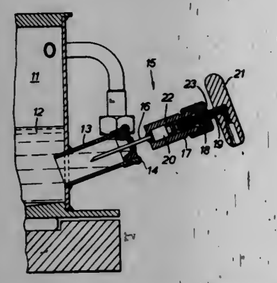
1. An improved inclined tube manometer needing no zeroing in normal use comprising a manometer passage configured to have an inclined portion interconnected with a horizontal portion, manometer fluid disposed in said passage to a sufficient depth so that fluid enters at least part of each of said portions, means for indicating adjacent an upper portion of said inclined portion a zero location, said zero location being the same height above a common datum plane as the height of said horizontal portion, at least one fitting on said manometer for the application of pressure against the fluid in said passage, thereby to cause the fluid in said inclined portion to move along said inclined portion, the amount of fluid in said horizontal portion changing in accordance with such movement.

3,298,235
AUTOMATIC SAMPLING DEVICE
Peter J. Platzer, Minnetonka, and Emil H. Anderson and Richard O. Selenski, Richfield, Minn., assignors to Dean Gamet Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota
Filed June 16, 1965, Ser. No. 464,304
14 Claims. (Cl. 73—422)



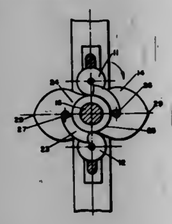
11. A sampling device comprising, a casing having an inlet and an outlet conduit therein, a sample chute slidably mounted on a wall of the casing and including a tubular outlet pipe at the base thereof, means including motor means mounted on the wall of the casing and connected to the sample chute for moving the sample chute in a horizontal and oscillating direction back and forth beneath the inlet conduit to the casing, and sealing means having an aperture therein adapted to fit around the tubular outlet pipe of the same chute and connected to said means including motor means driving the sample chute for moving the aperture and the sealing means corresponding with the movement of the sample chute to seal the casing.

3,298,236
SAMPLING DEVICE
William Llewelyn Thomas, Sunbury-on-Thames, Middlesex, England, assignor to The British Petroleum Company Limited, London, England, a corporation of Great Britain
Filed Apr. 1, 1964, Ser. No. 356,456
Claims priority, application Great Britain, Apr. 10, 1963, 14,329/63
3 Claims. (Cl. 73—425.6)



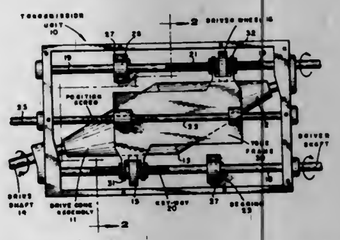
1. A sampling device capable of withdrawing samples of fluid from, or introducing samples of fluid into, apparatus operating under a high degree of vacuum or at a high pressure, comprising a hypodermic syringe including a barrel, a needle of hypodermic tubing operatively secured to said barrel, a piston positioned within and having a diameter approximately equal to the bore of said barrel, said piston having a groove around its periphery in a plane normal to its longitudinal axis and an O-ring located in said groove sealing with said barrel, and a threaded member fixed to said piston, the arrangement being such that rotation of said threaded member relative to said barrel causes longitudinal movement of said piston within said barrel.

3,298,237
SWITCH
Helmut Kindler and Georg Weber, Regensburg, Germany, assignors to Sachsenwerk Licht- und Kraft-Aktiengesellschaft, Munich, Germany
Filed Mar. 26, 1964, Ser. No. 354,940
Claims priority, application Germany, Apr. 9, 1963, S 84,615
18 Claims. (Cl. 74—97)



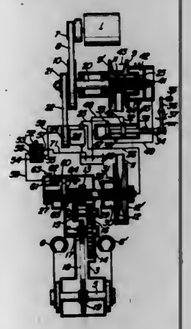
1. A spring drive for use with a switch having a rotatable shaft, said drive comprising, in combination: a cam member rotatably mounted on the shaft and having a cam surface which has a dead-center point; spring means; means for guiding said spring means to press the same into engagement with said cam surface; cocking means for rotating said cam member to compress said spring means until the same is in engagement with said dead-center point of said cam surface whereafter the now-compressed spring means exerts a torque on said cam member; means for positively connecting said cam member to the shaft after said spring means has engaged said dead-center point of said cam surface; said cam surface being configured that the force exerted by said spring means, immediately after the same has engaged said dead-center point of said cam surface, produces a maximum torque on said cam member and hence on the shaft to which said cam member is then positively connected via said connecting means.

3,298,238
PROPORTIONING TRANSMISSION
James D. Lea, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Feb. 18, 1965, Ser. No. 433,590
7 Claims. (Cl. 74—191)



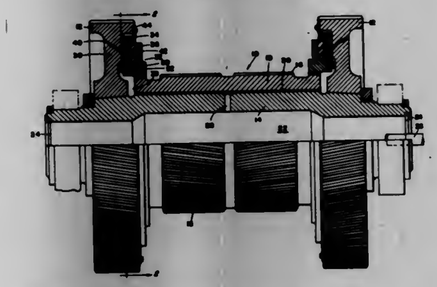
1. Transmission apparatus adapted to drive at least two output shafts at different speeds while retaining a constant speed sum comprising:
a first driven wheel mounted on one of said output shafts;
a second driven wheel mounted on another of said output shafts; and
first and second identical conical frustums mounted base-to-base on a common shaft in a manner such that the surfaces of the first and second cones are parallel to and in contact with said first and second wheels.

3,298,239
AGRICULTURAL TRACTORS CONTROLLED BY HYDRAULIC SYSTEMS
Katsuki Miyoshi, Suita-shi, Japan, assignor to Tadao Yamaoka, Ashiya-shi, Japan
Filed Nov. 4, 1964, Ser. No. 408,841
Claims priority, application Japan, June 5, 1964, 39/31,687
1 Claim. (Cl. 74—218)



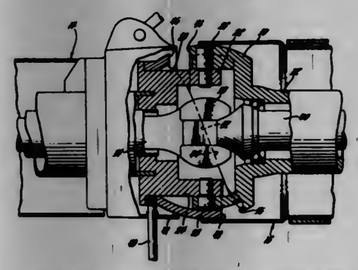
An agricultural tractor comprising belt-type stepless speed change means provided in the power transmission path from a motor to driving wheels, a hydraulic system operative to change the speed ratio of said stepless speed change means, gear means also provided in the power transmission path from the motor to the driving wheels, a hydraulic system operative to shift the gears in said gear means for effecting normal and reverse rotation of the driving wheels, a controller disposed in each of said hydraulic systems, and actuating means having a single lever for actuating both of said controllers.

3,298,240
FLOATING PINION FOR REDUCTION GEARS
Charles H. McDowell, Southampton, and Alexander M. Mark, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 28, 1964, Ser. No. 421,737
7 Claims. (Cl. 74—411)



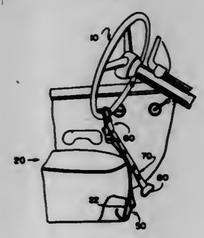
2. Vibration damper apparatus comprising,
(a) an inner shaft having a web extending radially therefrom providing a first gear and an outer annular shaft concentric with the inner shaft providing a second gear and having one end disposed adjacent said web,
(b) a coupling unit formed of a first metal ring and a second metal ring interconnected by central resilient means,
(c) said first metal ring being connected to said web and said second metal ring being connected to said one end of the outer annular shaft,
(d) said outer annular shaft having a greater inner diameter than the outer diameter of the inner shaft providing an annular space therebetween,
(e) said one end of the outer annular shaft and the coupling structure providing an end space with the inner shaft which is in communication with said annular space and
(f) means for supplying a viscous liquid to one of said spaces to provide a hydrodynamic film between the shafts during their rotation.

3,298,241
TILT STEERING WHEEL
William E. Rise, Grosse Pointe, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 426,746
9 Claims. (Cl. 74—493)



1. An adjustable steering assembly comprising a fixed lower column section and an upper column section, an upper steering shaft journaled in the upper column section, a lower steering shaft supported in the lower column section, means connecting said upper and lower shafts and permitting movement of the upper column section relative to the lower column section between two extreme positions, a cam rotatably supported on one of said column sections, a cam follower fixed to the other of said column sections, said cam engaging said cam follower whereby rotation of said cam causes said upper column to move to positions between said two extreme positions.

3,298,242
STEERING WHEEL LOCK
Hobart G. Smith, 3351 Midway St., Knoxville, Tenn. 37921
Filed Aug. 26, 1964, Ser. No. 392,146
13 Claims. (Cl. 74—495)



1. An apparatus for locking an automobile steering wheel for use when towing an automobile from the rear, which comprises:
(A) an anchor mounted to said automobile;
(B) a steering wheel clamp partially surrounding a segment of a steering wheel;
(C) a belt and buckle combination interconnecting said anchor and said steering clamp, one end of said belt being connected to said anchor, the remaining end of said belt extending through said buckle; said buckle being connected to said steering wheel clamp, said buckle comprising means to urge said anchor and said clamp toward each other and secure the steering wheel in locked position to prevent it from moving, when said remaining end of said belt is pulled away from said buckle.

3,298,243
CABLES AND LOAD BEARING SUPPORTS THEREFOR
Ulrich M. Geissler, 1401 SW. 5th Court, Freeport, N.Y. 11520, and Vincent Polo, 22 Parkway Drive, Baldwin, N.Y. 11510
Filed June 26, 1964, Ser. No. 378,322
10 Claims. (Cl. 74—501)



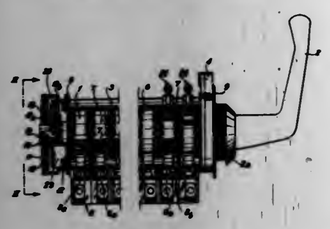
1. The combination of a cable and load bearing support comprising a plurality of carriers engaging each other to form a line, each of said carriers having a race defined in the peripheral surface thereof, a plurality of rollable members in the race of each of said carriers, said race of each of said carriers having portions thereof into which said rollable members move between load bearing and non-load bearing positions, and a movable cable connected with said carriers to move the same therewith.

3,298,244

RESILIENT RETURN DEVICE FOR ROTATABLE SHAFTS IN ELECTRIC SWITCHING EQUIPMENT AND THE LIKE

Roger C. Durand, Saint-Germain-en-Laye, and Jean G. La Fosse, Mareil-Marly, France, assignors to La Telemecanique Electrique, Nanterre, France, a company of France

Filed Dec. 15, 1964, Ser. No. 418,500
Claims priority, application France, Dec. 23, 1963, 958,233
12 Claims. (Cl. 74—504)



1. In rotary electric switching apparatus, a resilient return device for a switching shaft rotatable in opposite directions from a neutral position relative to a shaft-supporting frame, comprising:

a first and a second elements mounted for independent rotation around the shaft;

first cooperating stop means on the first element and the shaft engageable to limit rotation of the first element relative to the shaft in a first direction;

second cooperating stop means on the second element and the shaft engageable to limit rotation of the second element relative to the shaft in the opposite direction;

third coperating stop means on the first element and the frame engageable to limit rotation of the first element relative to the frame in said first direction;

fourth cooperating stop means on the second element and the frame engageable to limit rotation of the second element relative to the frame in said opposite direction; and

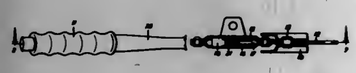
spring means interconnecting both elements so as to tend to rotate the first element in said first direction and rotate the second element in said second direction; whereby said elements will resiliently restrain said shaft in, and return the shaft to a prescribed neutral position relative to the frame.

3,298,245

DETENT-HELD OPERATING MEMBERS

Horace Arthur Cross, Newport, England, assignor to Girling Limited, Birmingham, England, a British company

Filed Nov. 21, 1963, Ser. No. 325,357
3 Claims. (Cl. 74—540)



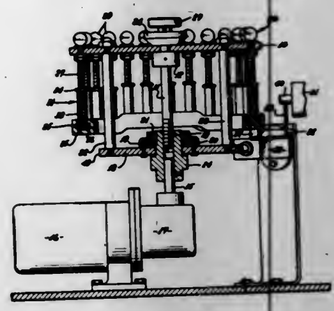
1. Brake applying mechanism for a vehicle brake comprising an applying lever movable to apply tension thereto and mounted on a stationary part, a fixed pawl on the stationary part, a bar slidably guided in the lever, ratchet teeth on the bar adapted to co-operate with said pawl to hold said lever in a brake applying position, and a manually operated release member operable to move said bar and release said ratchet teeth from the co-operation with said pawl.

3,298,246

MECHANICAL PROGRAMMING DEVICE

Kenneth C. Rubinwitch, Long Beach, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California

Filed Feb. 2, 1965, Ser. No. 429,776
10 Claims. (Cl. 74—568)



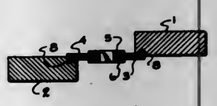
1. A mechanical programming device comprising a support, an extended flexible rubber member mounted in opposed relation to said support and having a cam surface, a follower engaging said surface, and dimensionally variable adjustment means terminally embedded in said rubber member and engaged with said support, said means being mounted and adjustable to flex said cam surface to different configurations by force transmissions along fixed lines of force to the embedded terminals of said means.

3,298,247

COUNTERBALANCING WEIGHT FOR BARBECUE SPITS

Oscar P. Juno, 221½ W. California St., Ontario, Calif. 91761

Filed July 6, 1965, Ser. No. 469,777
3 Claims. (Cl. 74—573)



1. In a counterbalancing weight unit for a barbecue spit; the combination comprising a pair of opposingly and adjustably mounted weight members, said weight members being rigidly joined to a pair of contacting discs, said contacting discs being frictionally retained by a centrally disposed hub having a central opening therethrough.

3,298,248

TORSIONAL IMPACT LIMITER

Richard M. Stevens, Winsted, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

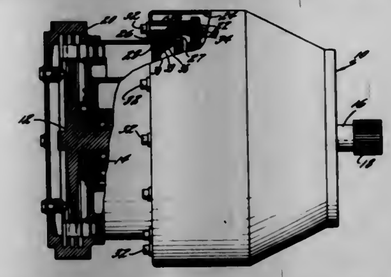
Filed Nov. 2, 1964, Ser. No. 408,307
8 Claims. (Cl. 74—609)

1. A protective device for rotating machinery having a rotating member which is susceptible to bursting comprising:

a housing supporting the rotating member;

normally stationary containment means surrounding the rotating member for containing, and absorbing energy from, a fragment dislodged from the rotating member; and

means for supporting and attaching said containment means to said housing, said means allowing angular movement between said containment means and said housing when the torque tending to rotate said containment means exceeds a predetermined limit;



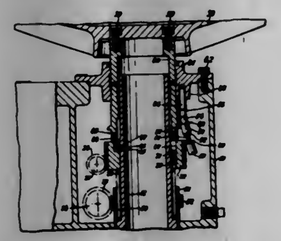
whereby the maximum torque transmitted to said housing upon bursting and impact of the rotating member against the containment means will be limited.

3,298,249

VALVE ACTUATORS

Peter Thomas Mence Nott, Bath, Somerset, England, assignor to Retork Engineering Company Limited, Bath, Somerset, England

Filed Jan. 22, 1965, Ser. No. 427,247
Claims priority, application Great Britain, Apr. 22, 1964, 16,684/64
8 Claims. (Cl. 74—625)



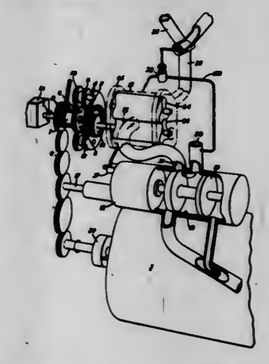
1. A valve actuator comprising a casing, an output shaft for actuating the valve, at least one driving member mounted on said output shaft, power valve operating means engaging said driving member for imparting a driving torque thereto, said power valve operating means comprising a wormwheel carried coaxial with and about said output shaft and axially movable between first and second positions relative to said output shaft, a shaft with a worm mounted thereon adapted to be driven by a motor, said wormwheel having an axial dimension such that said worm engages said wormwheel when said wormwheel is in its first and second positions, first resilient means for biasing said wormwheel toward its first position, a manual valve operating means axially movable between first and second positions relative to said output shaft and having a lower end contacting the upper end of said wormwheel, said lower end including means for engaging said driving member for applying a driving torque thereto, said wormwheel engaging said driving member when in its first position, said manual operating means being out of engagement with said driving means when in its first position, said manual operating means being adapted to move said wormwheel downward out of engagement with said driving member against the biasing action of said first resilient means when it moves from its first to its second position and engage said driving member when in its second position, and a retaining device comprising a second resilient means including a resilient member mounted on the casing of said actuator for engaging the upper surface of said wormwheel when said manual valve operating means is in its second position so as to hold said wormwheel in its second position against the bias of said first resilient means whereby said manual operating means may remain in its second position, said manual valve operating means adapted to be manually moved from its second position to its first position and including means for disengaging said resilient member from the upper surface of said wormwheel so as to allow said wormwheel to return to its first position and into engagement with said driving means when said manual valve operating means is so moved, said resilient member also being adapted to disengage the upper surface of said wormwheel allowing it to return to its first position into engagement with said driving means upon the operation of said wormwheel by said shaft adapted to be driven by a motor.

3,298,250

COMPOSITE MECHANICAL DRIVES

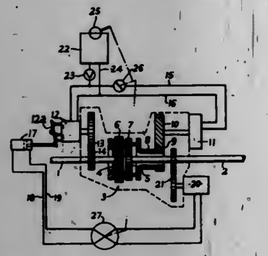
Norman Moss, London, and Peter Stanwell, Wanstead, England, assignors to Plessey U.K. Limited, a British company

Filed June 24, 1960, Ser. No. 38,671
Claims priority, application Great Britain, July 10, 1959, 23,756/59; Nov. 11, 1959, 38,324/59; Feb. 18, 1960, 5,762/60
23 Claims. (Cl. 74—675)



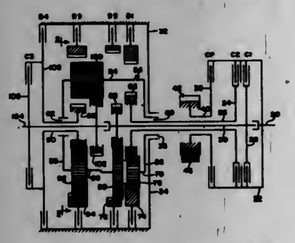
1. A constant-speed drive comprising an input shaft for connection to an engine operative in a forward direction subject to speed variations, an output shaft to be driven at a constant speed in a predetermined direction, a three-element differential gear set having two elements respectively operatively connected to the input shaft and output shaft, an auxiliary motor to which the third element of the differential gear set is operatively connected, said motor having at least one power-supply connection, control means associated with said power-supply connection, said control means being operatively connected to the output shaft and responsive to the speed of said output shaft to control the power supply to the motor so as to vary the speed of the motor according to the speed of the input shaft and cause the motor to be power-driven in one normal direction to supplement the speed of the output shaft when the speed of the input shaft is below a predetermined value, and to be driven in the reverse direction by reaction from the differential gear set to reduce the speed of the output shaft when the speed of the input shaft is above the predetermined value, automatic unidirectional locking means operatively connected to the output shaft to prevent the output shaft from rotating in the direction opposite to the said predetermined direction, and means for power-driving the auxiliary motor in the said reverse direction to drive the input shaft for starting such engine.

3,298,251
CONSTANT-SPEED DRIVES
Norman Moss, Ilford, England, assignor to Plessey U.K. Limited, a British company
Filed Dec. 23, 1963, Ser. No. 332,973
Claims priority, application Great Britain, Jan. 11, 1963, 1,344/63
7 Claims. (Cl. 74—687)



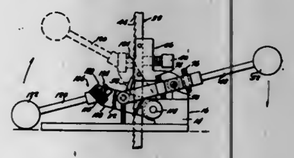
1. A constant-speed drive comprising an input shaft element for connection to a prime mover operable at a variable speed in a predetermined direction, a constant-speed shaft element for connection to a load required to be driven at a constant speed in a predetermined direction, a third element, a differential gear drive by which the three said elements are operatively connected, a constant-displacement hydraulic machine drivingly connected to said third element, a variable-displacement hydraulic machine drivingly connected to one of said shaft elements, a pair of hydraulic lines connecting said variable-displacement hydraulic machine in a closed hydraulic circuit with said constant-displacement hydraulic machine, governor means responsive to a speed error of the constant-speed element compared with the required constant speed and operative to so vary the displacement of said variable-displacement machine between a positive maximum and a negative maximum as to reduce such speed error, an independent hydraulic pressurising device having a low-pressure inlet and a high-pressure outlet, starter-selection means for connecting the inlet of said pressurising device to one and the outlet of said pressurising device to the other line of said pair of hydraulic lines and for at the same time preventing flow through the constant-displacement machine while causing flow from said source through the variable-displacement machine to drive the latter in the direction corresponding to rotation of the associated shaft element in its predetermined direction.

3,298,252
TRANSMISSION
Kenneth J. Harris, Raymond J. Meyer, and Donald L. Malm, Waterloo, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Jan. 17, 1964, Ser. No. 338,339
9 Claims. (Cl. 74—761)



7. A transmission, comprising: a drive shaft; first and second planetary gear sets arranged in series and including a common carrier; means for selectively driving the carrier from the drive shaft at any one of four forward speeds whereby the carrier serves as the input for the second gear set; an output shaft directly connected to the sun gear of the second planetary gear set; and means for selectively driving the output shaft sun gear from the carrier at any one of two forward speeds and one reverse speed.

3,298,253
SAW FILING AND SETTING DEVICE
Warren H. Kellogg, 109½ W. Filbert St., East Rochester, N.Y. 14445
Filed May 22, 1964, Ser. No. 369,364
12 Claims. (Cl. 76—63)



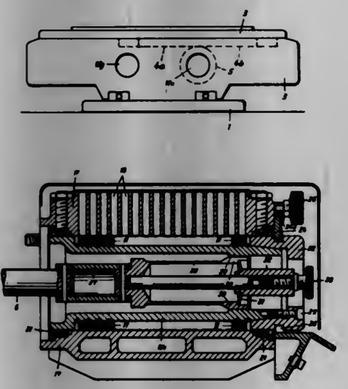
1. A device of the character described, comprising a horizontal base assembly comprising parallel spaced plates, a reclining U-shaped block having a cross member bridging the plates and legs extending above and fixed to said plates, an arm fixed to and rising from said cross member and having a horizontal portion spaced upwardly from said block, a vertical saw blade holder on and rising from said horizontal portion, said holder having a side remote from said block, said holder being formed with a vertical saw blade slot opening to said remote side and to the upper and lower ends of the holder, blade clamping means on the holder, a carriage pivoted on said block and positioned at the said remote side of the blade holder, said carriage being adapted to be moved upwardly from a retracted position toward said blade holder, and a saw tooth working member on the carriage.

3,298,254
GROOVING TOOL HOLDER
Angelo Vassallo, Silverwood, Mich. 48760
Filed Jan. 7, 1965, Ser. No. 423,964
4 Claims. (Cl. 77—58)



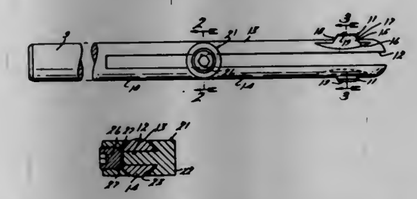
1. A grooving tool comprising a generally cylindrical body having an axially extending bore and a transversely extending slot intersecting said bore at one end of said body; said slot having opposed side walls terminating in a base wall; a rib projecting radially outwardly from the periphery of said body and having a radial tool supporting surface normal to said base wall and extending in prolongation of one of said side walls, said rib having an axial width less than the depth of said slot; a cutting tool having a width dimension corresponding to the width of said rib and overlying the supporting surface of said rib; a sleeve member received in said bore and in engagement with the radially inner end of said tool; a clamp member received in said bore and having a tool engaging arm overlying and engaging said tool; and means for securing said clamp member to said body with said tool clamped between said base wall and said arm.

3,298,255
DEVICE FOR AUTOMATICALLY ADJUSTING SLIDES OR TABLES OR THE LIKE
Hans Ernst Pfeiffer, Zurich, Switzerland, assignor to Rolma A.G., Zurich, Switzerland
Filed Aug. 28, 1964, Ser. No. 392,958
Claims priority, application Switzerland, Aug. 30, 1963, 10,792/63
4 Claims. (Cl. 77—64)



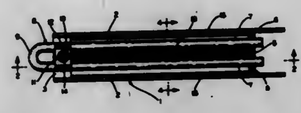
1. In a device for automatically controlling the movement of motor operated cross slides having an electric control switch in a motor control circuit comprising a support, rotatable drum means mounted in said support, means drivingly connecting one cross slide to the drum for rotation in said support, a series of split rings clampingly mounted on said drum to rotate therewith, cam projections on each of said rings to actuate the electric control switch during rotation of said drum, a series of guide openings in said support arranged in radial alignment with said rings, a pin selectively mounted in at least one of said openings with its inner end presented to said rings, whereby said drum means may be moved into registry with the split portion of one of said rings and forced inwardly to expand a selected ring and release its clamping action on said drum, said pin also arresting movement of the selected ring while the drum is moved to various positions.

3,298,256
DEBURRING TOOL
Stuart A. Cogsdill, Orchard Lake, Mich., assignor to Cogsdill Tool Products, Inc.
Filed Jan. 3, 1964, Ser. No. 335,469
5 Claims. (Cl. 77—73.5)



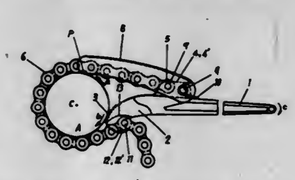
1. In a deburring tool, an elongated body having a slot extending inwardly from the cutting end to form two like spring tines on a driving shank portion, a tooth extending outwardly from at least one tine at the cutting end, and a fulcrum element having oppositely disposed dovetail slots and a central portion therebetween, said dovetail slots receiving the tines when the central portion is disposed in the slot therebetween.

3,298,257
WIRE CLAMPING HAND GRIP
James W. Goss, 410 South St. SW., Warren, Ohio 44483
Filed Aug. 27, 1965, Ser. No. 483,279
6 Claims. (Cl. 81—3)



1. A wire clamping hand grip comprising a hollow housing having two opposite side walls converging toward a third wall, bearing means near one end of said tubular housing, a spaced pair of rods pivotally mounted at one end in said bearing means and extending to the other end of the housing, tubular rollers mounted upon said rods, the interior diameters of said rollers being larger than the diameters of said rods, said rollers contacting the inner surfaces of said converging side walls, and spring means normally urging said rods toward said third wall so as to clamp between said rollers a wire located perpendicularly through said housing.

3,298,258
CHAIN PIPE WRENCH
Kenzo Miyamae, 539–6 Hishiya Higashi, Fuse, Japan
Filed Apr. 19, 1965, Ser. No. 449,235
3 Claims. (Cl. 81—68)



1. A chain pipe wrench for turning a pipe, comprising: a lever having a pipe binding head; said head having at least one toothed pipe engaging surface on its upper side and a pair of hooks situated laterally spaced on its underside; a roller chain pivotally fixedly attached at one end to said lever away from its head and having a length greater than the length of the path extending from the point of attachment around a pipe engaged in a region on said toothed surface to said hooks; said hooks spaced a distance exceeding the width of said chain, said chain having pins protruding transversely from its links to engage in said hooks; a retaining cap pivotally connected at its base-end to said lever; said cap extending from its base end to bear with its other end in sliding contact on a point of the pipe located at an arc greater than 0 and less than 180° from the region of engagement of the toothed surface, the arc measured about the pipe axis as vertex on the periphery of the pipe facing the pivot; and a spring connected between the lever and the cap, pressing the cap against the pipe.

3,298,259
HYDRAULIC WRENCH
Franklin L. Hoskin, 113 Benton, Columbia, Mo. 65201
Filed Mar. 16, 1965, Ser. No. 440,217
3 Claims. (Cl. 81—129)

1. A hydraulic wrench, comprising:
an elongated handle provided with an axial bore,
a neck portion with an integral fixed jaw integral with one end of said handle,
said fixed jaw including a channel shaped base with said channel disposed transversely of the longitudinal axis of said handle,

a fitting anchored in the channel of said base and including an extension removably connected to one end of said handle,
said fitting and said extension being provided with a continuous fluid passageway in flow communication with said bore,
a supply of oil in said bore,
a plunger rod reciprocally disposed in said bore intermediate said oil supply and the other end of said handle,
a movable jaw slidably disposed in said channel for movement toward and away from said fixed jaw,



a cylinder carried by said movable jaw and telescopically mounted on said fitting,
yielding means in one end of said channel in the path of movement of said cylinder,
movement of said plunger rod toward said neck portion acting to force oil through said fitting and against said cylinder whereby said cylinder moves against said yielding means with corresponding movement of said movable jaw toward said fixed jaw; and
movement of said plunger rod away from said neck portion permitting said yielding means to act on said cylinder and move said movable jaw away from said fixed jaw.

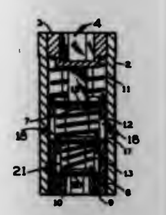
3,298,260
SHEET METAL TOOL
Lee M. Rothenberg, Jr., 174 Thornbury Road, Scarsdale, N.Y. 10583
Filed Oct. 12, 1965, Ser. No. 495,160
8 Claims. (Cl. 81—177)



1. In a gripping tool of stamped-out sheet metal construction, the improvement characterized by
(a) at least the jaw areas of said tool having corrugations formed therein,
(b) the corrugations being disposed at a large angle to the gripping faces of the jaws, and
(c) said corrugations having a pitch not substantially exceeding the face width of a nut or other element of a size adapted to be gripped by said tool jaws.

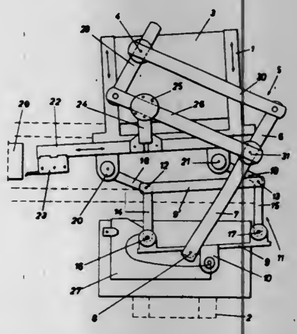
3,298,261
MULTI-SOCKET WRENCH
Ben H. Lynn, 18015 NE. 9th Place, North Miami Beach, Fla. 33162
Filed May 28, 1965, Ser. No. 459,626
2 Claims. (Cl. 81—185)

1. In a multi-socket wrench of the character described a primary outer socket of polygonal tubing of substantially uniform cross section and wall thickness with one end portion thereof adapted to engage over a first size said polygonal shaped bolt head or nut for rotating same,
a drive means secured in the opposite end portion of said primary socket for connecting same to a driving means for rotating said socket about the axis thereof,
an inner socket of said polygonal shape and substantially uniform wall thickness slidably retained within said primary socket in close proximity therewith with the outer end portion thereof adapted to engage over a second size polygonal bolt head or nut for rotating same,
a pin secured in the opposite end of said inner socket in transverse central relation thereto,



a retainer means integral with said drive means and extending within said outer socket for engaging said pin for holding the said outer end portion of said inner socket substantially coplanar with said end portion of said outer socket and permitting predetermined inward movement of said inner socket,
compression spring means biased between the inner side of said drive means and the inner end of said inner socket for normally urging the latter into said normal position.

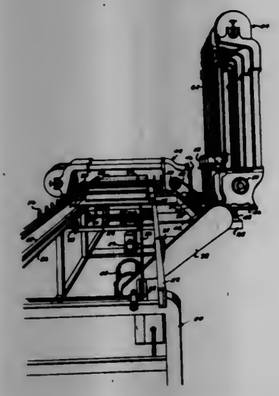
3,298,262
APPARATUS FOR ENGRAVING AND COPYING PARTICULARLY SUITABLE FOR CENTER LATHES
Giuseppe Serafino, 48 Strada Mongreno, Turin, Italy
Filed July 26, 1965, Ser. No. 474,635
Claims priority, application Italy, Dec. 30, 1964, 28,115/64
3 Claims. (Cl. 82—14)



1. Apparatus for engraving and copying and being particularly suitable for application to the transverse saddle of center lathes comprising, a first slide which moves along the transverse saddle of the lathe, an apron connected to said first slide, a first jointed parallelogram having one vertex pivotally connected to said apron and having an extended short side remote from said vertex, a tracing element, a bar supporting said tracing element and being pivotally connected at the end of said extended side, said bar comprising a long side of a second jointed parallelogram whose long sides are nearly parallel to the axis of the lathe, a pair of angle levers of equal length having their vertices pivotally connected to the respective

ends of the opposite long side of said second parallelogram, one arm of each lever comprising the short side of said second parallelogram and being pivotally connected at one end to a respective end of said bar comprising said long side of said first parallelogram, a tool-carrying slide which runs longitudinally along said first slide, the other end of each angle lever being pivotally connected to said tool-carrying slide, said first slide moving at right angles to and with said tool-carrying slide.

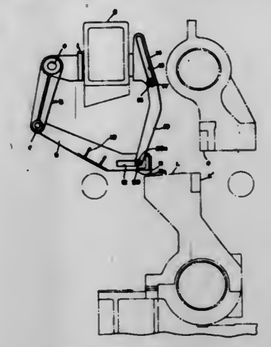
3,298,263
SLITTING METHOD AND APPARATUS
Paul V. Bigsby, Jr., and Bobby Stilwell, Hickory, N.C., assignors to Snyder Paper Corporation, Hickory, N.C., a corporation of North Carolina
Filed Apr. 13, 1965, Ser. No. 447,786
5 Claims. (Cl. 83—4)



1. A method of slitting into layers a block of relatively flexible elastomeric material having opposite surface portions lying in two parallel planes comprising the steps of movably supporting said block at one of said surface portions for movement along the plane thereof, and sequentially and concurrently slitting said block along at least two planes parallel to said surface portions while imposing at the other of said surface portions a frictional grip located with respect to said slitting of said block for guiding and holding said block in advance of each sequential slitting and simultaneously restraining said block against distortion during the terminal phase of each preceding slitting.

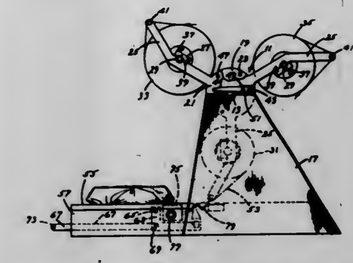
3,298,264
CROP PUSHER FOR SLAB SHEARS AND THE LIKE
Stanley Darwin Noll, Shaker Heights, and William F. Delfeld, Lyndhurst, Ohio, assignors to Production Experts, Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 5, 1964, Ser. No. 372,801
8 Claims. (Cl. 83—135)

1. In combination with the cross-beam of a crop shear having front and rear faces, a plate secured to the rear face of said cross-beam, bearing members extending from said plate, a shaft journalled in said bearing members, a pair of spaced arms secured to said shaft, a second shaft supported by said arms, a pusher member secured to said second shaft and adapted to push a crop end from the lower table or ledge of said shear, said pusher member comprising a pair of transversely-spaced arms, a beam member interconnecting said arms, and a pusher head interconnecting the forward ends of said arms, a pair of bracket members secured to the front face of said shear cross-beam, said bracket members having inclined slots therein, a third shaft having end portions extending through said slots, a pair of transversely-spaced links



supported by said third shaft, and a fourth shaft supported by said links and extending through the arms of said pusher member.

3,298,265
ARTICLE WRAPPING APPARATUS
Basil F. Millican, Atlanta, Ga., and Charles B. Rolleston, Memphis, Tenn., assignors to FMC Corporation, Philadelphia, Pa.
Filed Aug. 26, 1965, Ser. No. 482,677
5 Claims. (Cl. 83—171)

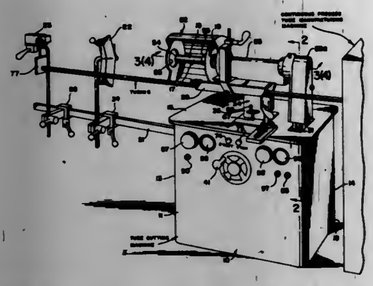


1. An article wrapping apparatus including a turret for carrying a plurality of rolls of wrapping material, an article wrapping platform onto which a length of wrapping material may be positioned after it is drawn from a roll of wrapping material, means supporting said turret for rotation about a generally horizontal axis to permit selective positioning of the rolls of wrapping material adjacent to said wrapping platform, means separate from said turret and located between said turret and platform for severing a length of wrapping material from a roll of wrapping material after it has been drawn over said wrapping platform, and means adjacent to said severing means for supporting in a generally suspended position the severed end portion of a roll of wrapping material whereby it may be easily gripped for unwinding from the roll during a subsequent wrapping operation.

3,298,266
TUBE CUTTING MACHINE
Michael Molnar, 3163 W. 138th St., Cleveland, Ohio 44120
Filed June 15, 1965, Ser. No. 464,003
19 Claims. (Cl. 83—311)

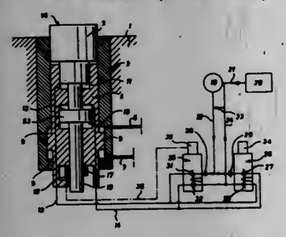
1. A tube cutting machine comprising a base, a motor, a cradle mounted on the base, a drive shaft mounted within the cradle, means for causing the motor to turn the drive shaft, a gimbal mounted on the drive shaft and

capable of being driven by the shaft, a cutting blade mounted on the gimbal, means for causing the cradle to move from a stationary, non-cutting position toward the axis of the tube, and return, and, means for causing



the gimbal to move parallel with respect to the axis of the drive shaft, in which the speeds of movement of the cradle from the stationary, non-cutting position to the tube, and return, are variable and independent of one another.

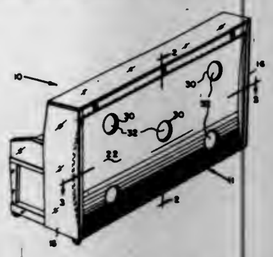
3,298,267
PUNCH PRESS HAVING MEANS TO CHANGE LENGTHS OF THE RAM
Heinrich Schmid, Glarnischstrasse, Rapperswil, Switzerland, and Alois Bernet, Rain 1995, Jona, Switzerland
Filed Apr. 7, 1965, Ser. No. 446,438
Claims priority, application Switzerland, Apr. 10, 1964, 4,761/64
8 Claims. (Cl. 83—530)



1. A press with a stationary frame and a hydraulically-operated press ram for carrying a matrix, a punch, or a press tool, the press ram being divided into at least two parts, which are adjustable for varying the length of the press ram, comprising first hydraulic means acting between the two parts of the press ram for hydraulically adjusting and hydraulically fixing them with respect to one another, second hydraulic means acting between one of said parts of the press ram and the stationary frame for moving the two parts of the press ram as a whole, and co-operating and adjustable abutment and switch means arranged on the two parts of the press ram, respectively, the switch means automatically controlling and maintaining the amount of a hydraulic medium in said first hydraulic means.

3,298,268
PIANO CONSTRUCTION HAVING A CURVED BACK
Herbert E. Thyen, Jasper, Ind., assignor to W. W. Kimball Company, Jasper, Ind., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 361,067
4 Claims. (Cl. 84—184)

1. A piano back construction comprising: a pair of spaced horizontally arranged top and bottom rail members of substantial cross section, a pair of vertically arranged spaced side members secured to the opposite ends of said upper and lower rail members and also of substantial cross section, said members making up a substantially rigid frame forming the frame of the piano back, sounding board means mounted on said frame on the side thereof toward the inside of the piano, arcuate groove means formed along the inner edges of said side members on the other side of the frame, a laminated arched support panel mounted on the said other side of said frame in spaced relation to said



sounding board with the convex side directed towards said sounding board and having its peripheral portions on said convex side in engagement with said top and bottom rail members and in engagement with said side members at the bottoms of said arcuate groove means, and means fixedly securing the peripheral portion of said panel to said frame.

3,298,269
SHOULDER SUPPORT FOR VIOLINS AND THE LIKE
William Walker White, 412 E. 7th Ave., Escondido, Calif. 92025
Filed Sept. 22, 1965, Ser. No. 489,244
1 Claim. (Cl. 84—278)

A shoulder support for violins and the like comprising a clamp having a pair of end members for being secured to an edge of a violin or the like, a chin rest mounted from one of the end members, a shoulder support mounted from the other of the end members, said support having a right arm pivotable from a hinge having its pin mounted transverse of the length of the clamp, a left arm pivotable from a pin at a point on the end of said hinge and said pin being disposed in a direction perpendicular of said hinge pin, the right arm and the left arm being integrally collapsible for storage in a violin case, the right and left arms are pivotable about one of the end members for facilitating stowage of the violin in a case, and the right arm and the left arm are foldable into a position substantially parallel to and generally in contact with an under surface of a violin.

3,298,270
FIXATION DEVICE COMPRISING A SCREW AND A RING
Pierre Launay, 134 Quai Louis Blériot, Paris, France
Filed Feb. 12, 1965, Ser. No. 432,156
Claims priority, application France, Jan. 17, 1962, 855,110
7 Claims. (Cl. 85—1)

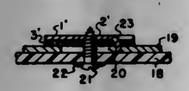
1. A sealing washer for use in combination with a screw member having a predetermined internal diameter and a predetermined external diameter, said washer being in the shape of a hollow annular conical frustrum,

the frustrum having an annular conical outside surface, and the said washer being of such a resiliency that it tends to maintain its shape, said washer having a central aperture formed by an aperture wall and having a short diameter and a long diameter, the said short diameter being less than the said screw external diameter, and the long diameter being substantially perpendicular to the short diameter and being greater than the said screw external diameter, wherein the said walls of the aperture, at least at the ends of the short diameter, form an acute angle with the said outside surface of the washer, said diameters of said washer being so proportioned that by urging the portions of the washer located at opposite ends of the said long diameter towards each other



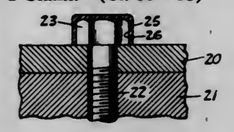
thereby deforming the entire washer and deforming the aperture, the said short diameter increases to become substantially equal to the said screw external diameter enabling mounting of said washer on said screw from an end thereof by a transitory motion, the resilience of the washer being such that upon release of the said portions of the washer adjacent opposite ends of the long diameter the washer will attempt to assume its original shape and thereby grip the screw when mounted thereon, the said acute angle engaging the thread of the screw and being resiliently urged toward the axis of the screw to act as a positive stop to prevent removal of the washer from the screw member by a force applied to the washer in a direction towards the said end of the screw.

3,298,271
FASTENER HAVING LAYER OF FOAMED RESIN WITH INDEXING MEANS PROJECTING THERETHROUGH
Carl E. Krueger, Delafield, Wis., assignor to General Electric Company, a corporation of New York
Filed Nov. 12, 1964, Ser. No. 410,599
1 Claim. (Cl. 85—32)



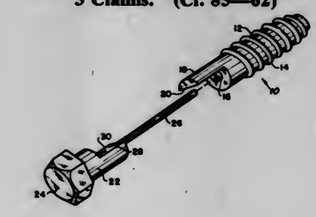
A fastener comprising:
(a) a rigid member having a pair of flat parallel faces with a hole extending therethrough adapted to threadedly receive an externally threaded element,
(b) a conformable layer formed of open cell foamed resin having two parallel faces, one of which is adhered at its interface in juxtaposed relationship with the rigid member,
(c) an adhesive coating on the face of the conformable layer that is remote from the interface with a thin backing liner adhered to but separable from said remote face, and
(d) a protuberance extending integrally from the rigid member at a point radially outwardly of said hole and extending at substantially a right angle to said rigid member through the conformable layer, said protuberance projecting from said remote face thereof to define an indexing means to be received in a slotted opening in a work piece to assume proper alignment of the fastener and the work piece.

3,298,272
PROTECTIVE AND DECORATIVE CAP FOR SCREW AND BOLT HEADS
Harold P. Henderson, 271 Northwood Drive, Tonawanda, N.Y. 14150
Filed Oct. 20, 1964, Ser. No. 405,180
1 Claim. (Cl. 85—53)



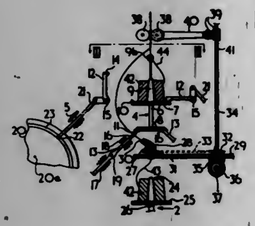
In a screw fastening in combination, a screw having a polygonal head and threaded shank portions and a part to be engaged by said screw, said part having a hole for receiving the screw shank, and a protective cover closely fitting said screw head comprising a cup-shaped thermoplastic member having an opening therein complementary to the shape of said screw head and an imperforate end wall enclosing the upper surface of said screw head, said cover extending downwardly substantially to the base of said screw head to define a cylindrical outer side wall, and a layer of a bonding agent between said opening of said cup-shaped member and said screw head for adhesively securing the protective cover to the screw head.

3,298,273
RELEASABLE FASTENER
Michael J. McKelvey, 1304 Berryman Ave., Bethel Park, Pa. 15102
Filed Mar. 17, 1965, Ser. No. 440,383
3 Claims. (Cl. 85—62)



1. A releasable fastener adapted to release upon being subjected to a predetermined longitudinal force comprising:
(a) a threaded portion having a coaxial cylindrical bore;
(b) a head portion having an extended cylindrical connecting portion adapted to be received within and extend completely through said threaded portion cylindrical bore and having an end portion deformable to lock said head portion to said threaded portion to thereby maintain assembly of said fastener;
(c) means on said head portion and said threaded portion to prevent relative rotation between said head portion and said threaded portion when said head portion and said threaded portion are locked to each other by said connecting portion said means including mating planar surfaces lying in planes parallel to the axis of said fastener and laterally offset therefrom;
(d) said connecting portion being so proportioned that said threaded portion is released longitudinally from said head portion when said fastener is subjected to a longitudinal force in excess of a predetermined force.

3,298,274
LACE-FABRIC MAKING MACHINES
John Oswald Wood, Two Gates, Tamworth, England, assignor to Dunlop Rubber Company Limited, London, England, a British company
Filed Jan. 18, 1965, Ser. No. 426,262
Claims priority, application Great Britain, Feb. 1, 1964, 4,364/64
7 Claims. (Cl. 87—24)



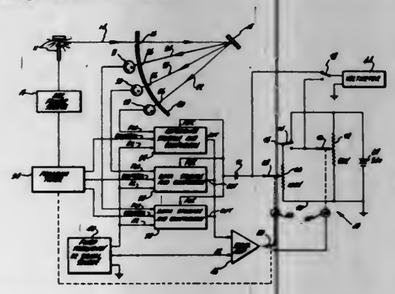
1. A lace-fabric making machine comprising first and second spaced-apart groups of mounting members for supporting a plurality of wound-packages of filamentary material, a plurality of releasable supporting means for each mounting member of the second group, each supporting means being movable between a position in engagement with its associated mounting member of the second group to hold said mounting member in a predetermined position relative to the members of the first group, and a position spaced-apart from said mounting member while at least one other supporting means is disposed in a position in engagement with said mounting member, taking-up means located in a position on one side of the second group of mounting members for taking-up lace made from filamentary material drawn from the packages supported by the mounting members, rotary means located on another side of the second group of mounting members for forming a balloon of filamentary material being unwound from each of the packages of the first group, each balloon encompassing at least two adjacent mounting members of the second group with adjacent balloons encompassing at least one common mounting member of the second group, and means for driving the rotary means, said rotary means being operable so that rotary motion of the filamentary material forming the balloons is such that the filamentary material of each balloon avoids filamentary material of the other balloons and the releasable supporting means having a sequence and timing of operation to allow ballooned material to pass between each releasable supporting means and its associated mounting member when the supporting means is disposed in its position spaced-apart from the mounting member.

3,298,275
COMPARISON SIGNAL CIRCUIT FOR MEASURING INTENSITY OF SPECTRAL LINES
Eliot Du Bois, Monrovia, Calif., and Howard B. Lovering, Bedford, Mass., assignors to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Continuation of application Ser. No. 246,566, Dec. 21, 1962. This application Apr. 19, 1965, Ser. No. 449,041
6 Claims. (Cl. 88—14)

1. In a spectrometer having means for generating radiation from a sample to be analyzed, means for dispersing the radiation into spectral lines characteristic of the sample composition, and transducing means for generating a data signal analogous to the intensity of a data spectral line and a reference signal analogous to the intensity of a reference spectral line; spectral intensity measurement apparatus comprising:

storage means connected to the transducing means for receiving and storing the data and reference signals;

signal-generating means including an adjustable potentiometer having a pair of input terminals, a fixed-voltage source, a variable-voltage source, and switching means connected to the input terminals, fixed-voltage source and variable source, the switching means having a first position for connecting the potentiometer across the fixed-voltage source whereby the potentiometer has an output of a variable reference-comparison signal as the potentiometer is adjusted, and having a second position for connecting the potentiometer across the variable-voltage source whereby the potentiometer has an output of a data-comparison signal as the voltage of the variable-voltage source is varied;



reference-comparison means connected to the storage means to receive the stored reference signal, and including a switch connected to the potentiometer whereby the reference-comparison means selectively receives the reference-comparison signal, the reference-comparison means having an output for indicating when the potentiometer has a specific setting which produces a reference-comparison signal bearing a predetermined relation to the stored reference signal;

data-comparison means connected to the storage means to receive the stored data signal, and including a switch connected to the potentiometer whereby the data-comparison means selectively receives the data-comparison signal, the data-comparison means having an output for indicating when the variable-voltage means has a setting which produces a data-comparison signal bearing a predetermined relation to the stored data signal while the potentiometer has the specific setting; and

measuring means connected to the variable-voltage means for measuring the variable voltage applied to the potentiometer whereby a measurement analogous to the ratio of the stored data and reference signals is obtained.

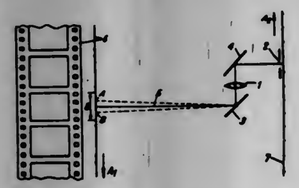
3,298,276
FILM PRINTING DEVICE FOR REDUCTION PRINTING
Harald Bender, Avon, Conn., assignor to Oxberry Corporation, Mamaroneck, N.Y., a corporation of New York
Filed Sept. 14, 1964, Ser. No. 396,297
Claims priority, application Switzerland, Sept. 16, 1963, 11,408
6 Claims. (Cl. 88—24)

1. Film printing apparatus for transfer of images from successive frames of a negative film to successive frames of an unexposed positive film with variations comprising,

(a) means to translate such negative film in one direction along a film path at predetermined linear speed transversely across a first gate opening backed by a fixed-position projecting light source, said gate opening having a longitudinal dimension extending substantially parallel to the transverse dimension of said negative film, and a transverse gate dimension extending substantially parallel to the longitudinal dimension of said negative film and in the direction of the path of translation of the latter;

(b) means reversely to translate such an unexposed positive film transversely across a second gate opening spaced from and optically opposed to the first gate opening at a predetermined linear speed bearing a certain predetermined relation to the first-mentioned linear speed, said second gate opening having its longitudinal dimension arranged substantially parallel to that of said first gate opening and substantially parallel to the transverse dimension of said positive film with its transverse dimension extending substantially parallel to the longitudinal dimension of said positive film and in the direction of the path of translation of the latter;

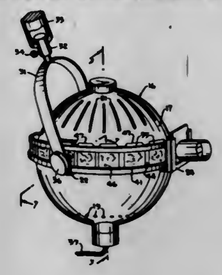
(c) means defining an optical beam transmitting path extending between the gate openings comprising as an optical element thereof a projecting objective lens, said film translating means effecting translations of said negative and positive films in opposite directions relative to said optical beam path and said gate openings; and



(d) means progressively to move an optical element of said means defining the optical beam path in paced relation to the translation of each frame of said negative film for progressive deviation of the path relative to the transverse dimension of one of the gate openings and in the direction of film travel transversely across this gate opening from the approach side of the latter toward the trailing side thereof whereby each forwardly-traveling, frame-borne image of said negative film is progressively printed in a frame area of said positive film, and to return reversely said optical element rapidly to its initial position substantial as the leading end of the next succeeding frame of said negative film is started transversely across the first gate opening from the approach side of the latter for repeat printing of this next succeeding negative film frame in the immediately following frame area of the positive film without space intervening these positive film frame areas to omit printing any space intervening the image bearing frames of said negative film.

3,298,277
GLOBULAR IMAGE PROJECTOR
Erwin Scharf, 630 9th Ave., New York, N.Y. 10036
Filed Nov. 7, 1963, Ser. No. 322,574
4 Claims. (Cl. 88—27)

1. In a projector, for use in projecting images, in combination, a hollow housing, adjustable external support means suspending said housing pivotably for movement of the housing throughout at least a portion of a full circle about two perpendicular pivot axes, a light source supported inside said housing, said housing having an opening passing light rays from said source along an optical axis, an annular carrier surrounding said housing and being rotatable substantially along the periphery of a circle about an axis of rotation and disposed adjacent said opening and adapted to hold images and to register in succession each image with said opening for image projection, holding means operable for journalling said carrier rotatably, and driving means operable for rotatably moving said carrier about said axis of rotation, said



support means including two aligned pivots oppositely secured with relation to said housing and disposed outside said annular carrier, the axis of said two aligned pivots substantially coinciding with a diameter of the circle of said carrier disposed at an angle to said optical axis.

3,298,278
STANDPIPE FOR UNDERWATER LAUNCHING SYSTEM
Edward J. Barakauskas, Saratoga, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 15, 1965, Ser. No. 448,547
1 Claim. (Cl. 89—1.8)



A standpipe device for a missile launching system comprising:

a tank for holding a quantity of water,

a discharge pipe connected to the bottom of said tank and having a portion thereof extending into said tank, said portion of said discharge pipe having a plurality of water injection holes therein located near the bottom of said tank,

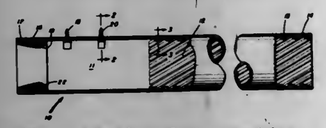
a gas generator having an exhaust nozzle extending into the top of said tank for applying gas to said tank,

a discharge nozzle attached to the end of said portion of said discharge pipe extending into said tank, said discharge nozzle being displaced from said exhaust nozzle a distance equal to about eight times the inner diameter of said discharge nozzle, and

baffle means for diverting a portion of said gas thereby applying pressure to said water while permitting a portion of said gas to pass directly through said discharge nozzle whereby a pressure differential is created between the inside of said discharge pipe and the inside of said tank for rapidly expelling water from said water tank through said water injection holes into said discharge pipe, said baffle

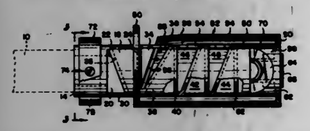
means including first and second cylinders, said first cylinder having one end attached to and closed by the top of said tank with said exhaust nozzle extending into said first cylinder and said second cylinder being concentrically mounted around said first cylinder and being opened at the top and partially closed at the bottom and having an aperture communicating with said discharge nozzle.

3,298,279
GLASS REINFORCED PLASTICS RECOILLESS RIFLE
Fredrick R. Barnet, Kensington, and Stanley P. Prosen, Lanham, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 8, 1965, Ser. No. 425,117
10 Claims. (Cl. 89—1.814)



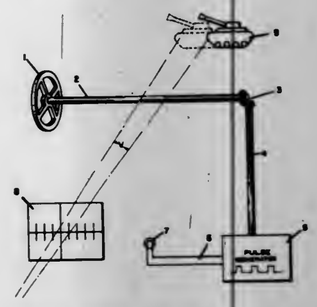
1. A recoilless rocket launcher comprising
an elongated cylindrical gun barrel having a smooth bore section and a rifled barrel section,
said smooth bore section being constructed of glass reinforced plastic material and having a pair of metallic electrically conductive pins mounted therein and extending through the wall of said smooth bore section,
a pair of arcuate electrically conductive strips in contact with said pins and positioned within said smooth bore section and extending a substantial distance over a circumference of said smooth bore section, the portion of said conductive strips in contact with said smooth bore section having a radius of curvature substantially equal to the radius of curvature of said smooth bore section,
an annular nozzle having an inwardly converging and diverging surface mounted on the inner peripheral surface of one end of said smooth bore section,
said nozzle having screw threads formed on the outer peripheral surface for engagement with screw threads formed in the inner peripheral surface of said one end of said barrel,
whereby a rocket-assist projectile may be inserted within the smooth bore section of said rocket launcher and the nozzle subsequently threaded into said one end of the barrel to load the rocket launcher.

3,298,280
GUN STABILIZER
Joseph L. Rahm, 7508 La Grange Road, Louisville, Ky. 40222
Filed Mar. 22, 1965, Ser. No. 441,720
7 Claims. (Cl. 89—14)



1. A stabilizer device for use with a weapon to reduce recoil and vertical climb comprising a cylindrical member having a central bore extending therethrough, first triangular slot means, a first cup member forward of said first slot means, second triangular slot means forward of said first cup member, a second cup member forward of said second slot means, a third triangular slot means forward of said second cup member, and a third cup member forward of said third slot means.

3,298,281
DEVICE FOR COMPUTING THE DISPLACEMENT OF THE LINE OF AIM FOR FIRE ARMS
Nils Edvard Haglund, Rotebro, Sweden, assignor to Forsvarets Fabriksstyrelse, Stockholm, Sweden
Filed July 20, 1964, Ser. No. 383,894
Claims priority, application Sweden, Sept. 25, 1963, 10,448/63
4 Claims. (Cl. 89—41)



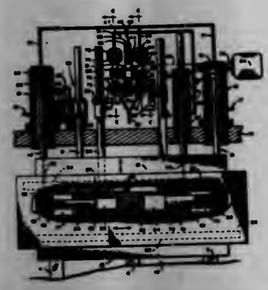
1. Range control means for a level trajectory fire weapon comprising an index plate with a reticule pattern through which the target is visible for observing the movement of a target while the weapon is stationary, a pulse generator for generating a continuous train of pulses, frequency control means for adjusting the frequency of reoccurrence of the pulses of said train of pulses, said frequency control means being connected to said range control means so that the time interval between two consequent pulses in said train of pulses is equal to the time of flight for a projectile from the weapon to the target, and indicator means for indicating each pulse in said train of pulses and for enabling the operator to observe the position of the target on said index plate at the occurrence of each pulse in said train of pulses.

3,298,282
BUFFER SYSTEMS FOR AUTOMATIC FIREARMS
Theodor Löffler, Mullheim, and Karl Harbrecht, Eisental, near Buhl, Germany, assignors to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Feb. 16, 1965, Ser. No. 432,972
Claims priority, application Germany, Feb. 22, 1964, R 37,279
3 Claims. (Cl. 89—198)



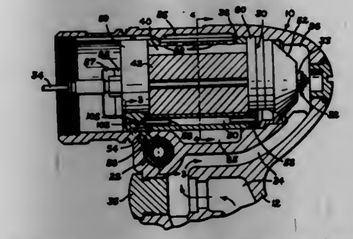
1. An automatic firearm comprising a casing, a breech carrier mounted in said casing and having a tube-like extension and a cylindrical recess, a guide tube secured at one end in the casing and extending through the cylindrical recess and into the tube-like extension, a piston head mounted to slide in the tube-like extension and secured at the other end in the guide tube, a supporting ring abutting on a shoulder at the junction of the cylindrical recess and the tube-like extension to support the guide tube at its other end, and a coil spring around the guide tube bearing at one end against the casing and the other end against the supporting ring, the guide tube forming simultaneously a piston rod for a pneumatic buffer with the tube-like extension and the piston head therein secured to the guide tube.

3,298,283
FLUID TRANSMISSION SYSTEM
Edward P. Bullard III, Fairfield, Conn., assignor to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut
Filed Nov. 23, 1964, Ser. No. 413,009
17 Claims. (Cl. 91—37)



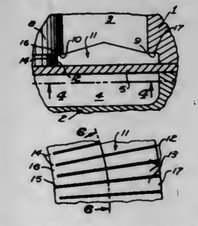
7. Apparatus comprising in combination, a base; a saddle mounted on said base for rectilinear movement therealong; a slide mounted on said saddle for movement along a path angularly related to the path of movement of said saddle; separate piston and cylinder means for said saddle and slide, said piston and cylinder means including differential effective area means; substantially rigid, non-flexible fluid duct means for continuously admitting constant pressure fluid to the piston and cylinder means of lesser effective area; rotatable template means mounted on said base having separate components the coordinates of which are proportional to the corresponding axis coordinates of said saddle and slide; separate servo valve means for said saddle and slide mounted on said base for movement toward and away from said template means; fluid duct means communicating with passages in said movable servo valve means, said fluid duct means being stationary, substantially rigid, non-flexible members; and substantially rigid, non-flexible fluid duct means connecting said servo valve means to the larger effective area means of said piston and cylinder means.

3,298,284
SERVO OPERATED REVERSING TOOL
Robert H. Alexander, Dayton, Ohio, assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 11, 1964, Ser. No. 395,824
8 Claims. (Cl. 91—58)



1. A fluid operated rotary power tool having a servo valve system for selectively reversing the direction of rotation, comprising a housing having a pressure fluid supply conduit formed therein, a rotary fluid motor mounted within said housing and including means defining main exhaust ports, said motor having an inlet port and a recompression exhaust port for right hand rotation and corresponding inlet and recompression exhaust ports for left hand rotation, a pair of valves mounted within said housing and connected for controlling the flow of fluid through said ports, each of said valves including a valve member arranged for closing said inlet port corresponding to one direction of rotation while simultaneously opening said recompression exhaust port corresponding to the opposite direction, bias means acting on each said valve member for urging said member to a closed position closing its related said inlet port and opening its related said recompression exhaust port, passage means for conducting pressure fluid to each said valve for over-powering said bias means to open its said inlet port for fluid communication with said supply conduit, and a push button reversing valve in fluid communication with said supply conduit and for bleeding pressure fluid from said supply conduit selectively to either of said valves for assisting said bias means and to prevent supply fluid from opening said inlet port and from closing said exhaust port.

3,298,285
REINFORCING MEANS FOR DIAPHRAGMS
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of William F. MacGlashan, Jr.
Filed May 22, 1964, Ser. No. 369,640
3 Claims. (Cl. 92—94)

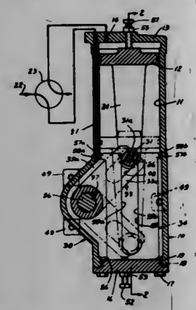


1. The combination with a diaphragm having an annular flexure portion of a reinforcing means comprising:
(a) a ring of radiating beam elements disposed in supporting relation to said annular flexure portion and separated, at least in part, by radial slits;
(b) a first supporting means encircling the radially outer extremities of said beam elements and forming a pivotal support therefor;
(c) and a second supporting means within the radially inner extremities of said beam elements and forming a second pivotal support therefor;
(d) one of said supporting means being displaceable relative to the other in response to a pressure differential across said diaphragm;
(e) and an elastomer connecting said beam elements to maintain said beam elements in spaced relation.

3,298,286
VALVE OPERATOR
Brody W. Tyler, Sulphur Springs, Tex., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Dec. 18, 1964, Ser. No. 419,369
12 Claims. (Cl. 92—140)

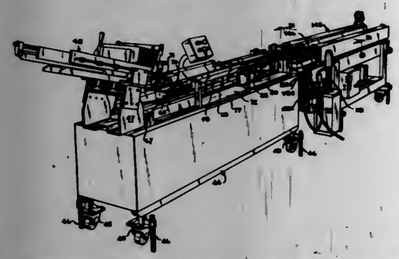
1. A valve operator comprising:
a housing,
means forming a cylindrical chamber at one end of said housing,
a piston slidably carried in said chamber,
an end plate mounted on said housing at the other end thereof,
a pair of spaced arms extending from said piston toward said other end,
a pair of rollers rotatably mounted between said arms,
a guide roller rotatably mounted between said arms,
a guide plate secured on said end plate to extend toward said one end of said housing,

means forming an elongated slot opening in the free end of said guide plate,
said guide roller being received in said slot,
lateral bearing surfaces on opposite edges of said guide plate at said free end thereof,
surfaces on said housing closely adjacent to said bearing surfaces to limit spreading of said guide plate,



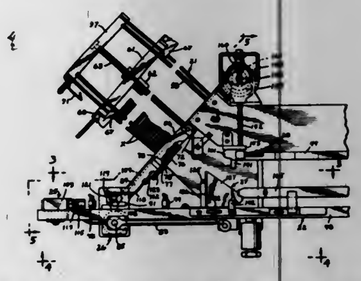
a pair of valve operating levers pivotally mounted in said housing,
means forming a slot in each of said levers to receive one of said pair of rollers, and
means for introducing pressure fluid selectively on opposite sides of said piston.

3,298,287
CARTONING MACHINE
Robert J. Peterson, Oshkosh, and Earl L. Coonrod, Neenah, Wis., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 25, 1964, Ser. No. 347,165
15 Claims. (Cl. 93—49)



9. In a cartoning machine having a conveyor for moving a carton shell at a predetermined speed on a straight line path along a horizontal plane, said shell having a leading, trailing, and bottom wall, and leading, trailing, and bottom end flaps hingedly connected along associated score lines to said leading, trailing and bottom walls respectively, said leading and trailing end flaps extending traversely of said straight line path, apparatus for closing the end of said shell, comprising: a frame; means fixedly mounted on said frame for swinging said leading end flap rearwardly about its associated score line to a position substantially parallel to the straight line path of said shell; trailing flap tucking means carried on said frame for movement in the same direction as said carton shell and in a line of travel parallel to the straight line path of said shell and at a greater speed than said shell for swinging said trailing end flap forwardly about its associated score line and tucking a portion of said trailing end flap inside of said leading end flap as the leading end flap is being swung to its position parallel to the straight line path of said shell; means for applying substantially vertically disposed strips of adhesive on said leading and trailing end flaps; and means for swinging said bottom end flap upwardly about its associated score line and into engagement with said strips of adhesive for adhering said bottom end flap to said leading and trailing end flaps.

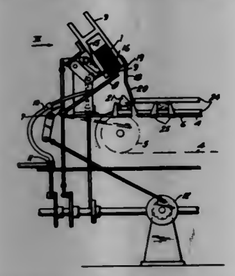
3,298,288
CARTON INFEED MECHANISM
Ralph F. Anderson, 332 Calvin Park Blvd., Rockford, Ill., and Leo Strombeck, Rockford, Ill.; said Strombeck assignor to said Anderson
Filed Jan. 31, 1964, Ser. No. 341,527
12 Claims. (Cl. 93—53)



4. In an apparatus for erecting flattened cartons of the type having a first end panel and a first side panel at one side of the flattened carton and a second side panel and a second end panel at the other side of the flattened carton, said panels including wall portions and end flaps at the ends of at least some of the wall portions, conveyor means including a lateral carton guide means and a transfer mechanism mounted for reciprocation lengthwise of said guide means to advance containers therealong in step fashion, a magazine for supporting a stack of flattened cartons with the carton at the end of the stack having said one side of the carton spaced from said lateral carton guide means, vacuum operated gripper means for gripping the face of a panel on the end carton, means operated in timed relation with the movement of said transfer mechanism for moving said gripper means from a first position engaging said first end panel on the end carton in the stack to a second position adjacent said guide means for pulling the first end panel laterally away from the stack and into engagement with said lateral carton guide means, means responsive to movement of the end carton from the stack into engagement with the guide means for opening the carton, a carton engaging member mounted on the transfer means and engageable with the opened carton for advancing the carton along the guide means, said carton engaging member having lower flap folding means thereon engageable with the lower trailing flap on the second side panel to fold the same upwardly and inwardly to at least partially close the lower end of the carton and to support the same when the vacuum operated gripper means is released.

3,298,289
APPARATUS FOR HANDLING CONTAINER BLANKS
Tibor Szabo, Karlsruhe, Baden, Germany, assignor to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Germany
Filed May 6, 1964, Ser. No. 365,387
Claims priority, application Germany, May 9, 1963, J 23,678
6 Claims. (Cl. 93—33)

1. In an apparatus for handling container blanks, in combination, guide means for guiding a stack of folded container blanks for generally downward movement; suction means for engaging the lowermost blank of the stack and withdrawing the lowermost blank from said guide means; releasable holding means located adjacent said guide means and operating in synchronism with said suction means for holding all except the lowermost blank in said guide means during withdrawal of said lowermost blank by said suction means; blade means movable first into and then out of said lowermost blank during downward displacement thereof by said suction means; elongated bar means having an inclination approaching gradually closer to said suction means as the latter displaces a blank downwardly for pressing against and thus unfolding and opening a blank as it is displaced downwardly by said suction means, said bar means having a lower portion which remains at a substantially unchanging distance from said suction means during continued downward displacement of an open blank thereby, so that said lower portion of said bar means maintains the blank open as its downward displacement by said suction means continues; conveyor means receiving the open blank from said suction means after the blank moves downwardly beyond said bar means, for conveying the thus-opened container blank to a location where the open container can be filled; spreading means located in the path of movement of an end of said blank as it moves beyond said bar means and is received by said conveyor means for spreading outwardly away from the end of a blank flaps which subsequently can be folded to close the end of the blank; and guide rail means engaged by the outwardly spread flaps as said blank is conveyed by said conveyor means to maintain said end of said blank open.

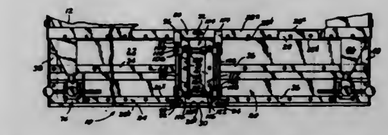


3,298,290
METHOD AND MEANS FOR ICE CONTROL
Eugene R. Du Fresne, Chicago, Ill., assignor to Renslow D. Sherer
Filed May 24, 1965, Ser. No. 465,232
4 Claims. (Cl. 94—4)



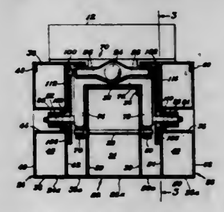
2. A method for preventing accumulation of ice and snow on streets, sidewalks, driveways and like surfaces, said method comprising the steps of providing a cellular body adapted to cover said surfaces, casting a chemical substance into the cavities formed by the cells of said body, said substance being characterized by the property of lowering the melting point of ice and snow when brought into contact therewith, solidifying said substance within said cavities and placing said cellular body onto said surface, said cavities being at least ¼ inch deep to prevent significant contact by persons or vehicles on said surface with said substances within the cavities and to prevent removal of said substances from the bottom thereof by water running over said surface and said cells having a horizontal dimension between about ⅛ inch and one inch, said substance being normally solid at room temperature and being liquid at elevated temperature, and wherein said casting and solidifying operations include the steps of forming said substance into a liquid by heating the substance, pouring the substance into said cavities, and cooling to room temperature to provide for solidifying of the substance within the cavities whereby said cellular body is adapted to prevent accumulation of ice and snow.

3,298,291
PAVER SCREED ASSEMBLY
Jack D. Layton, 5725 Turner Road, Salem, Oreg. 97302
Filed Dec. 28, 1965, Ser. No. 516,851
4 Claims. (Cl. 94—45)



1. In a paver including a hopper for holding paving material, an elongated screed assembly for leveling paving material by movement of the assembly transversely of its length over such material; said screed assembly comprising an elongated substantially horizontal screed frame with a degree of flexibility in that it may be flexed by bending it about a transverse axis whereby its ends tend to be swung toward each other and also may be twisted about its longitudinal axis whereby adjacent one of its longitudinal side margins one of its ends may be displaced downwardly relative to its opposite end, an elongated screed plate joined to the underside of said frame, a pair of tension and compression transmitting links elevated above the screed plate extending transversely of said screed plate and frame in a region intermediate the ends of the frame, said links being spaced from each other in a direction extending longitudinally of the frame, said links having one set of adjacent ends adjacent one longitudinal side margin of the plate and an opposite set of ends adjacent the opposite longitudinal side margin of the plate, means substantially rigid with the frame connecting said sets of ends of the links to said side margins of the plate, and a tension-compression transmitting device interconnecting each set of ends of the links, at least one of said devices being extensible and contractible.

3,298,292
COMPACTION VEHICLE
William H. Wylie, Oklahoma City, Okla., assignor to Wylie Manufacturing Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Nov. 26, 1963, Ser. No. 327,171
16 Claims. (Cl. 94—50)



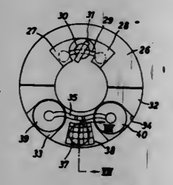
1. A continuous compaction roller comprising:
a center roller having a generally cylindrical compaction surface and opposite ends,
an outer roller having a generally cylindrical compaction surface disposed adjacent each of the opposite ends of the first roller such that the three rollers provide a substantially continuous compaction sur-

face, the outer rollers having inside diameters adjacent the ends of the center roller greater than the diameter of the compaction surface of the center roller and being open at the ends adjacent the center roller to provide an opening between the center roller and each of the outer rollers,

yoke means extending through the openings between the center roller and the outer rollers having depending portions extending downwardly along the opposite ends of the center roller, and

journal means on the depending portions of the yoke means rotatably connecting the opposite ends of the center roller and the outer rollers to the depending portions of the yoke means at points below the top of the center roller.

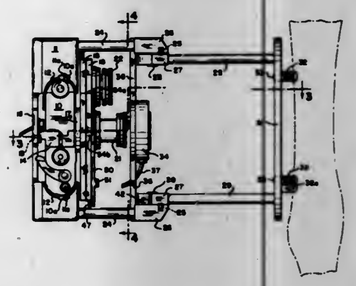
3,298,293
LIGHT METER ASSEMBLY FOR PHOTOGRAPHIC CAMERAS
Fritz Rümpelein, Munich, and Paul Kopf, Unterhaching, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Mar. 16, 1964, Ser. No. 351,911
Claims priority, application Germany, Mar. 15, 1963, A 42,610
2 Claims. (Cl. 95—10)



1. In a light meter assembly which is adapted to be mounted within the housing of a between-the-lens shutter for a lens having an optical axis, in combination, a pair of permanent magnets; a moving coil located between said pair of permanent magnets; a magnetic member carrying said magnets and forming a magnetic return path for the flux thereof, said magnetic member and said magnets being arranged along at least part of a circle which concentrically surrounds the optical axis; a photosensitive resistor carried by said magnetic member; holding means also carried by said magnetic member and formed with a notch which extends to an outer peripheral portion of said holding means; a source of current located in said notch and carried by said holding means; and an electrically conductive leaf spring carried by said holding means, electrically connected with said source of current, and pressing against the latter in a direction substantially parallel to the optical axis for maintaining said source of current in said notch of said holding means.

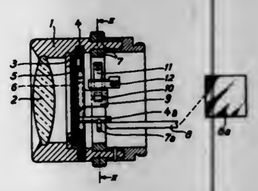
3,298,294
CAMERA APPARATUS ESPECIALLY ADAPTED FOR THE PHOTOGRAPHIC IDENTIFICATION OF HORSES
James J. Manning, 98 Elder Ave., Floral Park, Long Island, N.Y. 11001
Filed Oct. 27, 1964, Ser. No. 407,624
17 Claims. (Cl. 95—11)

1. Photographic apparatus for use in a system for the photographic identification of horses comprising a camera, a frame structure rigidly supporting said camera, said frame structure including a slide carriage, a close-up lens and a distance lens mounted on said carriage, said carriage being slidable with respect to the focal axis of said camera between terminal positions wherein each of said lenses is centered with respect to the focal axis of said camera, means for fixing said carriage in each of said terminal positions and for releasing said carriage for movement from one terminal position to the other, said frame structure further including spacer arms extending forwardly parallel to the focal axis, a masking plate connected to said spacer arms at a predetermined distance from the focal plane of the camera, means including said masking plate and defining at outer edge surfaces thereof



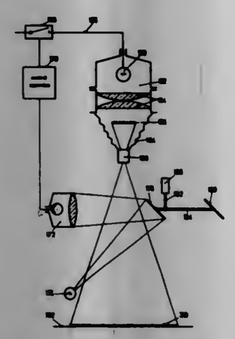
a plane set at the correct focal distance from the focal plane of the camera for close-up photography when using said close-up lens, means for moving said masking plate out of the effective field of view of the focal axis during distance photography and means in cooperation with said last mentioned means for moving the slide carriage into the terminal position thereof wherein the distance lens is aligned along the focal axis.

3,298,295
OBJECTIVE WITH RESILIENT DIAPHRAGM
Werner Schlapp, Asslar, Kreis Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany
Claims priority, application Germany, May 24, 1963, L 44,933
Filed Apr. 10, 1964, Ser. No. 358,701
8 Claims. (Cl. 95—64)



1. In combination, a lens mount and an objective lens mounted therein, diaphragm means comprising first ring means rotatably mounted in said mount and having an adjustable aperture therein, preselector ring means rotatably mounted in said mount and adapted for preselecting the desired aperture in said diaphragm means, spring means to rotate said first ring means to a position to effect adjustment of said aperture in accordance with a preselected aperture, and means to prevent variation of said aperture after said spring means rotate said first ring means to said position, said last named means comprising a leaf spring having one end mounted on said preselector ring means and having a second end, lug means mounted on said first ring means to rotate therewith and having an aperture therein, said second end being adapted to engage said lug means to reduce the rotational velocity of said first ring means as it approaches said position and further being adapted to engage the aperture in said lug means when said diaphragm means is fully rotated to said position.

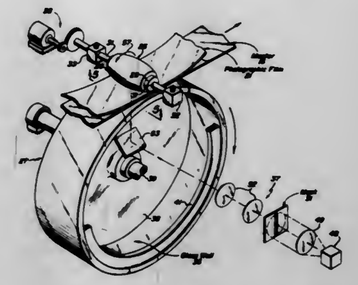
3,298,296
APPARATUS FOR AUTOMATICALLY CONTROLLING EXPOSURE IN PHOTOGRAPHIC PRINTING MACHINES
Hansjuerg Mey, Oberengstringen, Switzerland, assignor to Gretag Aktiengesellschaft, Regensdorf, Switzerland
Filed Mar. 13, 1964, Ser. No. 351,622
Claims priority, application Switzerland, Mar. 15, 1963, 3,284/63
20 Claims. (Cl. 95—73)



1. Apparatus for controlling the exposure in a photographic printing machine of the kind in which the duration of exposure is controllable by measurement of the light passed from the original to the copy, comprising a first light source for illuminating said original, an additional light source adapted to provide an intensity reference, a photosensitive element intended to receive light passed from said original and light from said additional light source, means for directing at least part of the printing light and the reference light alternately and for brief periods onto said photosensitive element, said photosensitive element being arranged to transform the light pulses into electrical signals, a thyratron-gate adapted to be fed with said electrical signals and arranged to split them into a picture pulse train and a reference pulse train, a comparator, a first channel for said picture pulse train, a second channel for said reference pulse train, each such channel leading from said thyratron-gate to the first and second input of said comparator respectively, said first channel including amplifier means in series, adapted to multiplicatively influence the amplitudes of said picture pulse train in such channel, means for adjusting the gain factor of said amplifier means to required correction values, an integrator in said first channel disposed adjacent to the first input of said comparator, and a switching-off device operatively connected to the output of said comparator for switching off said first light source when the signal amplitude of the first input of said comparator reaches the signal amplitude of the second input of said comparator.

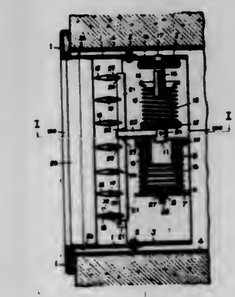
3,298,297
CONTINUOUS CONTACT PRINTER
Carl O. Carlson, Los Angeles, and Benjamin F. Scherr, Hawthorne, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed June 10, 1964, Ser. No. 374,120
5 Claims. (Cl. 95—77.5)

1. A photographic contact printer for contact printing high resolution images onto a photographic film from a master negative containing high resolution images, said printer comprising: a resilient roller having a larger diameter at the center than at the ends; a transparent member disposed for supporting the master negative so that the photographic film can be exposed by light rays transmitted through the master negative; means for rotating said resilient roller and for forcing said resilient roller against said transparent member so that, when the photographic film and master negative are disposed therebetween, said roller rolls over said photographic film



forcing the surface of the film directly under the roller into intimate contact with the master negative; and means for directing and focusing a light spot toward said resilient roller and through said transparent member, so as to expose only the portion of the film having intimate contact with the master negative.

3,298,298
GRILLE DEVICE IN AIR-CONDITIONING
Yoshiaki Iwata, 1278 Hatori, Fujisawa-shi, Kanagawa-ken, Japan
Filed Mar. 10, 1964, Ser. No. 350,786
2 Claims. (Cl. 98—40)

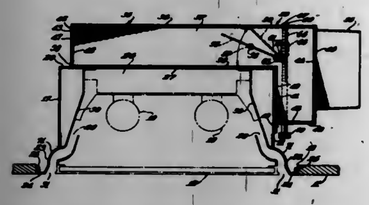


1. In an air-conditioning system in which treated air is discharged through a ductwork apparatus for automatically adjusting the direction of the discharged air upon change in the temperature of the air comprising a bellows having gas sealed therein and positioned in the ductwork, a lever extending laterally of said bellows, a plurality of equally spaced horizontal slats pivotally mounted in the ductwork, a second lever pivotally connected to said slats, a pair of rollers rotatably mounted on said second level, one end of said first lever slideably extending between said rollers providing a sliding and operative connection between said levers, means adjustably supporting said bellows at one end, a pair of caps connected to the opposite end of said first lever, said bellows having its other end seated in one of said caps and adjustable resilient means having an end seated in the other of said caps and tending to move said first lever opposite end in a direction opposite to the direction of expansion of said bellows.

3,298,299
SIDE ENTRY VALVE FOR AIR HANDLING TROFFERS

Edmund J. Little, Lombard, Ill., and George K. Raider, Schiller Park, Ill., assignors to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey

Filed July 13, 1964, Ser. No. 382,015
9 Claims. (Cl. 98—40)

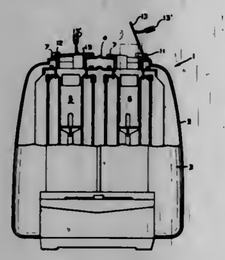


1. An air handling troffer comprising:
a troffer housing for a lighting fixture having upper wall means extending for the length of the fixture,
said upper wall means having a vertical opening formed therein through which a supply of air may be directed,
and means cooperating with said upper wall means and forming an inverted L-shaped plenum chamber therewith, having
a long leg overlying said upper wall means and a short leg disposed adjacent said troffer housing,
said short leg having a side opening therein through which air flows,
and a valve mechanism comprising a blade extending across the interior of said plenum chamber, thereby to form an adjustable throat between said short leg and said long leg for adjusting the flow of air through the troffer.

3,298,300
SAFETY TOP FOR TOASTERS

Wolfe Grebow, 8402 Carlson Lane, Baltimore, Md. 21207, and Stanley Ginsburg, 777 Washington Blvd., Baltimore, Md. 21230

Filed May 3, 1965, Ser. No. 452,545
1 Claim. (Cl. 99—337)

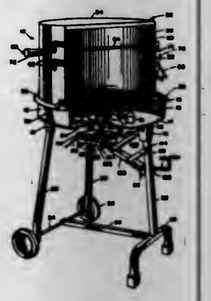


An electric toaster having bread receiving openings in the top thereof and internal heated coils in combination with removably mounted safety closures for each of said openings, each of said closures comprising a rectangular, open frame member having depending spring fingers mounted thereon which are adapted to frictionally and removably engage the walls of the bread receiving openings and a pivotally mounted plate mounted on the upper surface of said frame which when in an open position will permit the insertion of bread into the toaster and when in a closed position will prevent insertion of foreign articles such as a fork into the electrically heated coils of the toaster.

3,298,301
BARBECUE STAND WITH ROTARY GRIDIRON AND SPIT AND COMMON DRIVE THEREFOR

Jane U. Lowndes, 1607 Forest Ave., Wilmette, Ill. 60091

Filed June 8, 1964, Ser. No. 373,210
3 Claims. (Cl. 99—340)



1. In a portable outdoor barbecue stand for selective rotisserie and gridiron broiling, in combination, a framework including a shallow circular combustion bowl having an open upper rim and a bottom wall provided with a central opening, supporting legs for said bowl, and a semi-cylindrical hood having a curved side wall removably supported on the rim of the bowl, said side wall being provided with slots at diametrically opposed regions for reception therethrough of a horizontally disposed spit, a spit projecting through said slots and supported at its opposite ends therein, a gridiron-supporting drive shaft projecting vertically through said central opening in the bottom wall and slidable endwise therein, a gridiron supported on the upper end of said drive shaft above the bottom wall, a power unit for selectively driving said spit and gridiron and having a rotatable output drive collar provided with a non-circular end socket therein, the lower end of said drive shaft and one end of said spit being shaped conformably to said socket and being designed for selective reception therein in coupled relationship, interengaging means on the side wall of said hood and on said power unit for removably supporting the latter in the vicinity of one of said slots with the axis of the drive collar extending horizontally to receive the adjacent end of the spit, a rocker arm movably mounted on the framework for swinging movement in a vertical plane toward and away from said central opening, a tray on said rocker arm for loosely supporting said power unit under the influence of gravity and in a position wherein said drive collar is in vertical alignment with said opening for reception of the lower end of the drive shaft in said socket, and a crank arm having a threaded connection with the framework and engageable with said rocker arm for adjusting the position of the latter to vary the elevation of said tray and power unit, and consequently of said drive shaft and gridiron supported thereby.

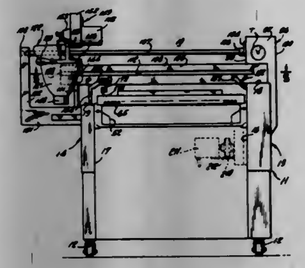
3,298,302
APPARATUS FOR PRODUCING FRIED COMESTIBLES

Edward W. Fries, Baltimore, Md., and Harold B. Kaufman, Jr., New York, Albert Spiel, Yonkers, and David H. Lipka, Flower Hill, N.Y., assignors to DCA Food Industries Inc., New York, N.Y.

Filed Apr. 28, 1965, Ser. No. 451,493
25 Claims. (Cl. 99—354)

2. A comestible cooking apparatus comprising a cooking vessel, means for advancing a plurality of longitudinally spaced comestibles an increment along a longitudinal path extending through said vessel for a predetermined

cycle, means for regularly periodically intermittently initating actuation of said advancing means for said cycle

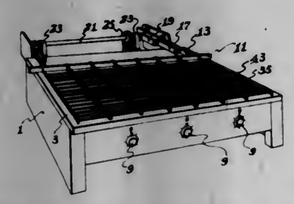


at a predetermined interval, and means for adjusting said interval independently of said advancing means.

3,298,303
FOOD HEATER

Leo R. Waller, 1229 N. Rosedale, Tulsa, Okla. 74127

Filed May 26, 1965, Ser. No. 459,058
6 Claims. (Cl. 99—423)



1. A frankfurter heater comprising a heatable substrate, an elongated bar, means for reciprocating the bar in a direction normal to its length, a plurality of racks elongated in the direction of reciprocation of the bar and resting slidably on the substrate and slidably interconnected with the bar for sliding movement relative to the bar lengthwise of the bar, the racks being disposed in a series parallel to the length of the bar, each rack providing a series of open-bottomed compartments disposed in a series parallel to the direction of reciprocation of the bar, each compartment being elongated in a direction parallel to the length of the bar, so that frankfurters placed in the compartment parallel to the length of the bar will contact the substrate and upon reciprocation of the bar and with it the racks the frankfurters will be caused to roll back and forth on the substrate, and so that the racks and frankfurters can be slid bodily as a group along and relative to the bar for the removal of an end rack from the advancing end of the group of racks and the addition of an end rack to the retreating end of the group of racks.

3,298,304
PAD-INKED HAND STAMP WITH STENCIL-ATTACHING MEANS

Carl E. Carlsen, 867 3rd Ave., New York, N.Y. 10022

Filed Feb. 17, 1964, Ser. No. 345,506
2 Claims. (Cl. 101—125)

1. A miniature hand stamp comprising an upper part bent upon itself to form a handle and having an opening therein, a bottom part having the shape of a semi-cylinder and being connectable to said upper part, said bottom part being formed at both ends with cut-aways, a plurality of projecting edges disposed on each side of said upper part, a pair of prongs at the top surface of the stamp, a resilient member having one end thereof secured underneath said upper part in a cantilever manner and having its other end extending toward said opening in said upper part, said other end of said resilient member being provided with and terminating in a relatively rigid member, said relatively rigid member extending upwardly through said opening in said upper

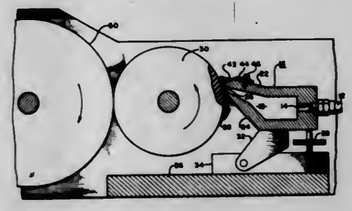


part, and a stencil having openings therein on each of its sides, the openings on one side being connectable to said pair of prongs at the top surface of said upper part, said openings on the other side of said stencil being connectable to said relatively rigid member thereby clamping said stencil to said upper part.

3,298,305
INKING MECHANISM HELD IN AN INDENTING RELATIONSHIP WITH THE FORM ROLL

Alonzo W. Noon, Los Altos, Calif., assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

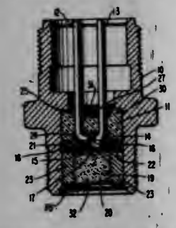
Continuation of application Ser. No. 172,348, Feb. 9, 1962, which is a continuation of application Ser. No. 106,271, Apr. 28, 1961. This application Sept. 8, 1965, Ser. No. 490,763
6 Claims. (Cl. 101—366)



1. In a printing press having a plate cylinder, inking mechanism for inking a printing plate on said plate cylinder comprising, a plate form roll having a resiliently yieldable peripheral portion providing an arcuate pheripheral surface defining an arcuate plane, said form roll being operable to run in engagement with a plate on said plate cylinder, means supporting said form roll to run in engagement with said plate, ink head means comprising a non-rotating film forming member having a film forming portion extending axially along said form roll, said roll approaching said film forming portion from one side thereof as said roll rotates, means for supplying ink in quantity to said roll at said one side of said film forming portion, said film forming portion having an edge portion which leads said film forming portion to engage and indent said resiliently yieldable portion of said form roll, and support means for supporting said film forming portion in a position with said edge portion disposed radially inwardly of said arcuate plane to form a significant indentation in said roll on the side of the location of the ink supply away from the approach side of said roll, said support means including means for adjusting and maintaining the position of said edge portion radially inwardly of said arcuate plane to adjust the depth of said indentation and said means for adjusting and maintaining the position of said edge portion

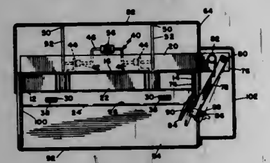
holding said edge portion against lifting by the film on said roll, and said film forming portion cooperating with the surface portion of said roll to define said indentation and form a thin uniform ink film on said roll as said roll rotates relative to said film forming member.

3,298,306
ELECTRO-EXPLOSIVE DEVICE
Rolland M. Purdy, Bainbridge, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed May 26, 1964, Ser. No. 370,227
20 Claims. (Cl. 102—28)



1. A squib comprising means forming a substantially sealed gas-filled chamber, said means including a thin frangible sheet closing one end of the chamber, and means confronting the gas in the chamber and forming a spark gap at the other end of said chamber, said sheet being rupturable by the thermal expansion of the gas in said chamber only upon a spark discharge of at least predetermined minimum intensity across the gap through said gas.

3,298,307
REMOTELY CONTROLLED HIGHWAY FLARE EJECTOR
Claude W. Hunt, 4076 Dalles Ave., San Diego, Calif. 92117
Filed Oct. 19, 1964, Ser. No. 404,803
1 Claim. (Cl. 102—37.4)



A remotely controlled highway flare ejector, comprising:

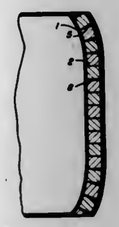
a magazine for holding a plurality of flares one above the other in a single stack and having a transverse opening to pass one flare at a time in a direction perpendicular to the length of the flare;

ejection means mounted on said magazine and including pusher means engageable with the flare adjacent said opening;

actuating means operatively connected to said ejection means; and

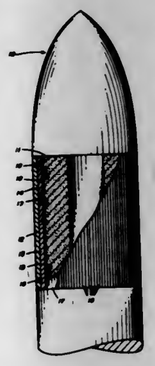
striker means comprising an arm pivotally mounted adjacent one end of said opening and having a striker element positioned to brush transversely across the igniter end of a flare ejected from the opening, said element being shiftably mounted on said arm to present successive new portions thereof against succeeding flares, said striker element including a disc rotatably mounted on an axis offset from the path of motion of an ejected flare, whereby the frictional contact of a flare imparts a rotation to the disc to bring a new area of the disc into striking position for each successive flare.

3,298,308
COMPOSITE CASING FOR FRAGMENTATION-TYPE EXPLOSIVE WEAPON AND METHOD OF FORMING SAME
Guy C. Throner, Jr., Glendora, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed July 22, 1963, Ser. No. 297,160
4 Claims. (Cl. 102—67)



3. A method of forming the outer casing of a fragmentation-type weapon comprising the steps of: forming a hollow rupturable sheath, positioning a plurality of presized slugs of hard material in juxtaposition on a length of adhesively coated tape, coating the outer surface of said sheath with a layer of adhesive, winding the tape around the adhesively coated outer surface of the sheath to adhesively dispose the pre-sized slugs against the adhesive layer coating the outer surface of the sheath for forming a layer of slugs covering the outer surface of the sheath, removing the tape from the slugs, and filling all voids between the slugs with a cementitious material.

3,298,309
CONTINUOUS ROD WARHEAD
Vasil Philipchuk, Dahlgren, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 15, 1965, Ser. No. 440,999
4 Claims. (Cl. 102—67)



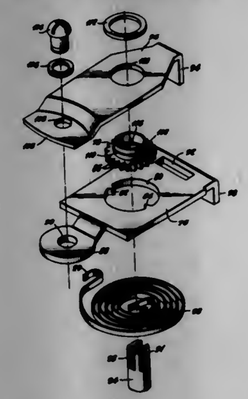
1. In a continuous rod warhead ordnance device comprising

an explosive charge, a plurality of rods substantially aligned with the longitudinal axis of the device, an annular filter disposed between the charge and the rods for partially shielding the rods from the hardening effect of the explosive detonation, the rods being disposed around the periphery of the warhead, the ends of each of the rods being rigidly connected, respectively, to the ends of an adjacent rod, the improvement which comprises

means concentrically disposed between said charge and said filter in the region of said rigid connections, said means comprising a pair of rings with one ring being in the region of each of said rigid connections, said means being so constructed as to provide a high degree of sound absorption;

whereby said means acts to additionally shield said rigid connections from the hardening effect of the explosive detonation by locally absorbing the shock wave generated by the detonation of said charge.

3,298,310
ESCAPEMENT MECHANISM FOR CLOCKWORK FUZES
Donald G. Collins, Deerfield, Mass., and John Selfner, Chicago, and Clarence W. Wandrey, Wheaton, Ill., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 14, 1964, Ser. No. 403,957
1 Claim. (Cl. 102—84)



A projectile fuze having a rotor of relatively heavy mass and a shaft with two ends extending therefrom; a plate surrounding said shaft and being substantially perpendicular to said shaft; an escape wheel concentrically mounted on said shaft on one end of said shaft, said mounting including a rectangular portion on one end of said shaft and a rectangular slot formed in said escape wheel, said escape wheel having a plurality of teeth, said teeth being contoured to approximate an involute curve; a substantially flat rectangularly shaped pallet member surrounding said escapement wheel, said pallet member having two ends, one of said ends connected to said plate to allow said pallet to pivot about said one end, the other of said ends being downwardly turned to increase the moment of inertia of said pallet about said one end, said pallet having two opposed pawls to mesh with said teeth of said escapement wheel, said pallet further having a slot formed adjacent said turned down end; a bracket connected to said plate at said pallet pivot point and being substantially parallel to said plate and said pallet, said bracket having a finger thereon to cooperate with said pallet slot to limit the pivotal amplitude of said pallet.

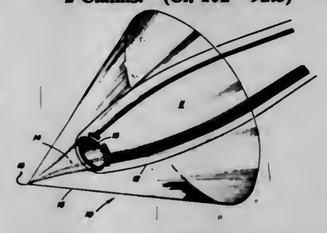
3,298,311
SMOKE FLARE
Robert T. Catlin, Trumbull, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,291
4 Claims. (Cl. 102—90)

1. A smoke flare comprising a shotshell body, a shotshell base attached to said body, at least one shotshell basewad positioned within said body adjacent said base, at least one smoke mix cylinder positioned within said



body remote from said base and a primed only rimfire blank cartridge case mounted in said base to ignite said smoke mix cylinder.

3,298,312
HIGH PRESSURE NOSE FOR A BODY IN FLIGHT
Kenneth W. Adams, Sunnyvale, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 14, 1965, Ser. No. 463,972
2 Claims. (Cl. 102—92.5)



1. A supersonic body in flight, such as a re-entry vehicle and the like, capable of moving through dense portions of the atmosphere at speeds in excess of the speed of sound without its skin heating above a temperature of approximately 400° F., the important comprising a body of revolution having a substantially flat leading edge perpendicular to the longitudinal axis of said body of revolution, an indentation means of predetermined shape formed within said flat surface centrally aligned about said longitudinal axis, said means functioning to create a high pressure zone within and forward of said indentation and substantially as a forward extension of said skin at said leading edge to a point of a single molecule, said point defining the stagnation point of said body at which air flow divides to go on either side of said body, thereby reducing aerodynamic heating and at which the shock wave leading edge commences, thereby reducing the effect of said shock wave on said body.

3,298,313
WAD COLUMN DEVICE
Ronald W. Comerford, 11905 Milan Ave., Cleveland, Ohio 44111
Filed Apr. 6, 1964, Ser. No. 357,495
5 Claims. (Cl. 102—95)

1. A wad column structure for use between a propellant charge and a shot charge in a cartridge case, said wad structure comprising:

(a) an obturating wall for confronting the propellant charge, said obturating wall having an annular outer surface for engaging interior surfaces of the cartridge case;

(b) a shot retaining wall in spaced, parallel relation to said obturating wall for confronting the shot charge, said shot retaining wall having an outer annular surface for engaging interior surfaces of the cartridge case;
(c) a support structure extending longitudinally between said obturating and shot retaining walls and maintaining said walls in spaced, parallel relation;
(d) said support structure comprising:
(i) a plurality of thin support walls defining planes extending longitudinally between said obturating and shot retaining walls and laterally intersecting said walls on imaginary chords of circles defined by the annular surfaces of said obturating and shot retaining walls,



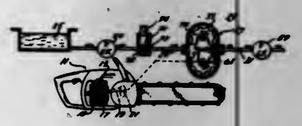
(ii) a first of said support walls extending longitudinally between said obturating and shot retaining walls and extending laterally to adjacent the annular surfaces on each end of imaginary chords located by the plane defined by said first wall,
(iii) additional support walls extending longitudinally between said obturating and shot retaining walls and transversely of said first wall from each side of said first wall to adjacent the annular surfaces on their respective sides of the first wall,
(iv) said additional walls being connected to said first wall; and
(e) said obturating wall, said shot retaining wall, and said support structure comprising an integrally molded structure.

3,298,314
FLUID MOVING DEVICE
John F. Kopczynski, 1671 Sweeney St., North Tonawanda, N.Y. 14120
Filed Jan. 29, 1965, Ser. No. 429,087
11 Claims. (Cl. 103—1)



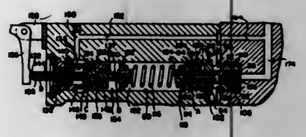
1. A liquid moving device comprising:
(a) an upstanding housing having a chamber with a closed lower end, with a spiral vane on the side wall of the chamber that extends progresesively from near the bottom of the chamber upwardly to near the top of the chamber, and also having an inlet connection for liquids to the lower part of the chamber and an outlet connection for the liquid from near the top of the chamber,
(b) a shaft mounted for rotation about its axis in one direction and having an eccentric connection to said housing and causing sidewise, cyclic bodily movements of the housing when the shaft rotates,
(c) said vane progressing upwardly in a direction that propels any liquid in contact with it upwardly when the shaft rotates in said one direction, and
(d) said housing being held against rotation with the shaft by said inlet and outlet connections.

3,298,315
SERIES CONNECTED PUMPING SYSTEM
Finn T. Irgens, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,230
6 Claims. (Cl. 103—5)



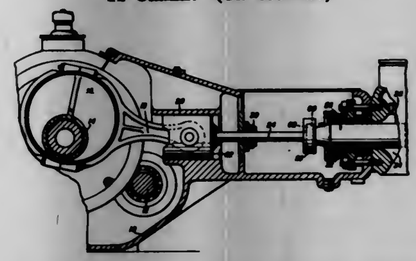
1. A rotary gear pump comprising a pump housing having inlet and outlet openings, a first gear, means mounting said first gear for rotation in said housing, a second gear, a third gear, means mounting said second and third gears in said housing for rotation in meshing engagement with said first gear, and means on said first, second, and third gears and on said housing affording periodic fluid pumping operation from said inlet to said outlet in response to gear rotation, and relatively free fluid passage between said inlet and said outlet between pumping operations.

3,298,316
REMOTE ADJUSTMENT FOR PRESSURE COMPENSATED PUMP SETTING
Tadeusz Budzich, 3344 Colwyn Road, Cleveland, Ohio 44120
Filed Apr. 6, 1964, Ser. No. 357,460
5 Claims. (Cl. 103—37)



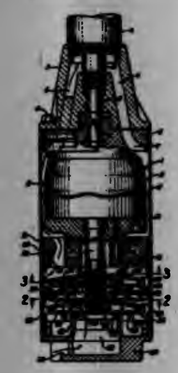
1. In a fluid pressure energy translating device having a pumping mechanism, flow changing means arranged to vary the capacity of said pumping mechanism, means biasing said flow changing means toward a position of maximum flow, fluid actuating means disposed to urge said flow changing means toward a position of minimum flow, pressure responsive control means operationally interconnected with said fluid actuating means to vary the capacity of said flow changing means to maintain a relatively constant control discharge pressure of the device, adjusting means to vary the controlled pressure level of said pressure responsive control means, means to actuate said adjusting means, and pressure balancing means interposed between said adjusting means and said means to actuate said adjusting means for balancing the reaction forces of said adjusting means and isolating said reaction forces from said adjusting means.

3,298,317
HIGH PRESSURE VARIABLE VOLUME PUMP
Josephus H. Griffin, Crowley, La., assignor of one-tenth to Eric B. Pousson, Acadia Parish, La.
Filed Apr. 7, 1964, Ser. No. 357,995
11 Claims. (Cl. 103—37)



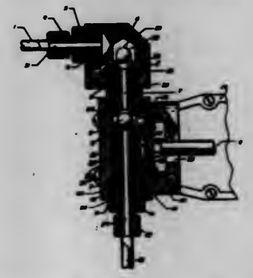
1. An adjustable variable capacity pump comprising a cylinder having a pump chamber therein, and a pump piston reciprocable in said chamber, fluid inlet and fluid outlet means communicating with said pump chamber, means for reciprocating said pump piston in said pump chamber, displacement varying means associated with said pump piston and varying the displacement of fluid from said pump chamber by said pump piston during the inward stroke of said pump piston into said pump chamber, said displacement varying means including a cylindrical outer body and a plunger relatively reciprocable therein, hydraulic means operatively engaging said plunger and body and yieldingly opposing relative movement of said body and plunger in a direction outwardly of said pump chamber, said hydraulic means including a chamber in said body, said plunger having a control piston reciprocating within said body chamber and dividing the latter into a pressure compartment and a storage compartment upon the inner and outer sides, respectively, of said control piston, said body including a passage communicating said pressure compartment into said storage compartment, a flow restricting means in said passage controlling flow therethrough.

3,298,318
SUBMERSIBLE MOTOR-PUMP CONSTRUCTION
Irving A. Johnson and Stephen Stasenko, Erie, Pa., assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Jan. 21, 1965, Ser. No. 426,722
3 Claims. (Cl. 103—108)



1. In a pump construction, a rotatable shaft, a series of impellers mounted on the shaft for rotation therewith, said impellers being freely movable on said shaft in an axial direction, a generally cylindrical housing disposed radially outward of the impellers and having a diffuser section extending radially inward between said impellers, and an end cap threadedly engaged with the outer end of said housing and having an annular portion spaced radially between the axis of said shaft and the housing and portion disposed to bear against an axially facing surface on the outermost impeller in said series to retain said impellers on said shaft, said cap having an inlet opening providing communication with the outermost impeller and liquid being moved by said outermost impeller through the diffuser section to the next impeller in the series.

3,298,319
PUMPING SYSTEM FOR SLURRY AND OTHER SOLUTIONS
Harry A. Savage, Miami, Fla., assignor of fifty percent to Donald W. Barlow, Miami, Fla.
Filed Oct. 26, 1964, Ser. No. 406,326
4 Claims. (Cl. 103—150)



1. A pumping system for slurry and other solutions having nonsoluble solids in suspension comprising a pump, means actuating said pump, said pump having a chamber and a duct communicating with said chamber, a valve housing having a vertically disposed chamber, a stand pipe mounted vertically in said valve chamber having a free end at the upper portion of said valve chamber, said stand pipe having a passageway adapted to be connected to a source of slurry, inlet valve means mounted at the free end of said stand pipe in said valve chamber for the control of slurry through said passageway whereby upon the cessation of operation of said pump, the solid materials in suspension will collect in said valve chamber below said inlet valve means, said duct communicating with substantially the lowermost portion of said valve chamber below said inlet valve means, whereby fluid discharged from said pump chamber through said duct will enter said valve chamber at said lowermost portion to compel the flow of fluid along said deposited solid materials and substantially the full length of said valve chamber to remove said solid materials from said valve chamber.

3,298,320
ATRAUMATIC FLUID PUMP
Allen Latham, Jr., Jamaica Plain, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed May 17, 1965, Ser. No. 456,411
9 Claims. (Cl. 103—152)

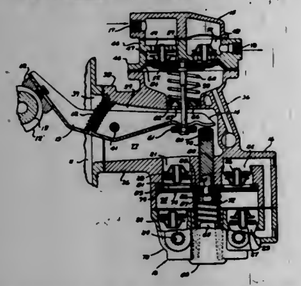
1. A pump suitable for pumping a liquid subject to infliction of trauma, comprising in combination
(a) a displacement fluid volume internal of said pump and having valve-controlled liquid discharge means;
(b) a fluid passage surrounding said displacement volume and separated therefrom by a contoured shoulder;
(c) a liquid intake conduit in fluid communication with said fluid passage and of a height such that liquid contained therein can develop a small predetermined hydrostatic head;

(d) a first substantially rigid diaphrgam member actuatable by fluid pressure and having a contoured portion engageable with said contoured shoulder thereby forming with said shoulder an inlet valve adapted to control the intake of liquid into said displacement volume;
(e) a second flexible diaphragm member actuatable by fluid pressure movable within said displacement volume and adapted to effect discharge of liquid from said pump;
(f) a foraminous member within said displacement volume adapted to limit the forward movement of said second diaphragm member; and



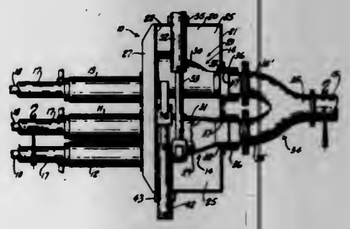
(g) fluid pressure driving means adapted to actuate said first diaphragm member to close said inlet valve and then to move said second diaphragm member to its forward position, said fluid pressure means being vented to the atmosphere after liquid discharge from said pump and in conjunction with said diaphragm members having an impedance which can be overcome by said hydrostatic head of said liquid in said liquid intake conduit whereby said inlet valve is opened if and only if said hydrostatic head is sufficient to overcome said impedance.

3,298,321
FUEL BOOSTER PUMP
Allan J. Reifel, Breckenridge, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 31, 1964, Ser. No. 422,585
6 Claims. (Cl. 103—153)



1. The combination in a composite fuel and vacuum pump adapted to cooperate with the crankcase of an oil lubricated internal combustion engine, said vacuum pump receiving lubricating oil from said crankcase and including;
(A) a cylinder,
(B) a piston reciprocably received in said cylinder,
(C) inlet and outlet valves communicated with the cylinder and being operable to regulate passage of fluid therethrough, the improvement therein of;
(D) a resilient seal member carried on said piston and having a contact face disposed contiguous with the cylinder wall for slidingly engaging the latter and forming a peripheral fluid tight joint therewith,
(E) said contact face including upper and lower edges,
(F) said resilient member being retained in said piston in a generally frusto-conical configuration to maintain said contact face in engagement with said cylinder wall during reciprocatory movement of the piston, whereby during said downward stroke, both upper and lower edges of said contact face are in sliding engagement with said cylinder wall and during said upward stroke said contact face will self-adjust to position only the upper edge thereof in engagement with the wall, said lower edge being spaced therefrom whereby, at the lower end of the downward stroke the position of said contact face with respect to said cylinder wall may adjust in response to movement of the piston on the upward stroke without permitting passage of lubricating oil between said cylinder wall and said contact face.

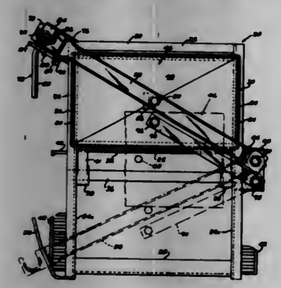
3,298,322
PUMP FOR SEMI-FLUID MATERIALS
Eugene L. Sherrod, Brookfield, Wis., assignor of one-half to Robert T. Sherrod, Milwaukee, Wis.
Filed Apr. 20, 1966, Ser. No. 543,746
12 Claims. (Cl. 103—170)



1. In a positive displacement pump of the type having a pair of pump cylinders open at one end to provide for induction of material to be pumped into the cylinders during the retraction strokes of their pistons and to provide for discharge of the material from the cylinders during the extension strokes of their pistons, and further having means to drive the pistons back and forth in their cylinders in opposite phase relationship:
(A) fixed wall means defining a feed chamber having
(1) spaced apart upright front and rear wall portions connected by bottom and side wall portions,
(2) an inlet which opens into its upper portion to admit to the feed chamber material to be pumped,
(3) a delivery port opening through said front wall portion, and
(4) a pair of cylinder ports opening through said rear wall portion, one for each pump cylinder and communicating with the open end thereof;
(B) a valve mounted in the feed chamber for rotary motion about an axis fixed with respect thereto and normal to said front and rear wall portions thereof, said valve extending substantially entirely across the space between the front and rear wall portions and having

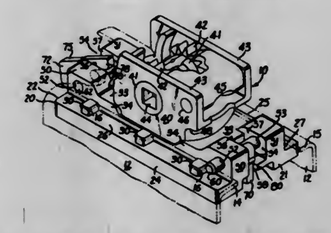
(1) a rear portion operable upon rotary movement of the valve from one operating position thereof to another to cover and close off first one and then the other of the cylinder ports from the interior of the valve chamer,
(2) means on the front of the valve to at all times close off the delivery port from the interior of the valve chamber, and
(3) passage means extending fore and aft through the valve and opening through said rear portion thereof, to communicate the delivery port with whichever cylinder port is covered by said rear portion of the valve; and
(C) mating curved surfaces on the underside of the valve and the bottom portion of the chamber,
said surfaces being concentric to the valve axis and being uniformly contiguous throughout an angle of substantial magnitude so as to preclude solids in the material contained in the valve chamber from becoming wedged between the underside of the valve and the bottom portion of the chamber or tending to build up on the valve or its chamber during rotary motion of the valve from one of its operating positions to another, and prevent the accumulation of material on any wall portion of the feed chamber or the valve that would tend to interfere with said motion of the valve.

3,298,323
HOPPER OUTLET CLOSURE STRUCTURE
Carl E. Becker, St. Louis, and Willard E. Kemp, Bridgeton, Mo., assignors to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed Mar. 24, 1964, Ser. No. 354,350
9 Claims. (Cl. 105—280)



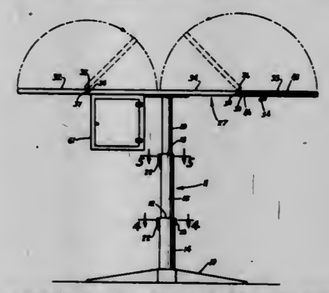
1. In combination, a hopper structure having a bottom discharge opening and a gate movable between open and closed positions relative to the discharge opening for regulating discharge of lading from the hopper structure, a generally rectangular skirt extending downwardly about said bottom discharge opening beneath the movable gate when in closed position, a generally rectangular bottom cover adapted to fit against the lower surface of said skirt and to form an enclosed space with the skirt and gate when the gate is in closed position, an arm carrying said cover for swinging movement in a generally horizontal plane beneath said skirt between a closed position adjacent the skirt to prevent the entrance of foreign matter into the enclosed area and an open position removed from the skirt to permit the discharge of lading, said arm having one end pivotally mounted adjacent one of the corners of said rectangular skirt and extending generally horizontally across the cover to a position adjacent an opposite corner of said skirt, and means adjacent said opposite corner of said skirt to releasably secure the opposite end of said arm to the skirt in the closed position of the cover, the opposite end of said arm adapted to be gripped manually for movement of the cover between open and closed positions.

3,298,324
LOCK MECHANISM FOR A LADING TIE-DOWN ANCHOR DEVICE
Phillip D. Schwiebert, Glencoe, Ill., assignor to MacLean-Fogg Lock Nut Company, Mundelein, Ill., a corporation of Delaware
Filed Mar. 14, 1966, Ser. No. 534,061
12 Claims. (Cl. 105—369)



1. In a tie-down anchor device of the type including a base movable within opposed retaining flanges of an open mooring channel to positions therealong and means on said base engageable with said flanges to secure said anchor device thereat, as desired, by a closing together of said base and flanges for an engagement therebetween, a quick releasable mechanism to lock said engagement, comprising: a lug affixed on said base at a position between said flanges, said lug projecting from said base with a portion thereof extending outward, during said engagement, beyond said flanges, said lug portion having therethrough a bore at an axis transverse to said flanges; and a bolt within said bore slidable alternately between a retracted disposition intermedite said flanges and an extended disposition overlying one of said flanges, said retracted disposition allowing separation of said base and flanges for a disengagement therebetween, and said extended disposition preventing separation thereof to lock said engagement therebetween.

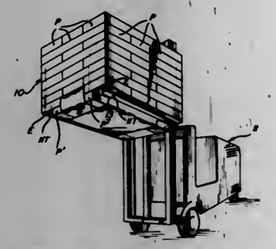
3,298,325
IRONING BOARD
Franklin D. Meath, St. Paul, and John L. Doyle, Minneapolis, Minn., assignors to DMD Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 22, 1965, Ser. No. 500,928
7 Claims. (Cl. 108—25)



1. A portable ironing table adapted to be stored in small areas comprising: a base; a vertical leg member secured to said base, said leg including at least one telescopic joint to provide selective vertical collapsing for said leg, said telescopic joint comprising a male telescopic joint member and a female telescopic joint member; means for selectively locking said telescopic joint to maintain the selected height adjustment of said leg; said means for

locking said telescopic joint comprising an elongated resilient member secured longitudinal to said female telescopic joint member by the end of said elongated resilient member most remote from the opening of said female telescopic joint member, said elongated resilient member including, a fulcrum member between the middle and the free end of said elongated resilient member said fulcrum member being adapted to bear upon said female telescopic joint member and a weight bearing pin secured to the free end of said elongated resilient member and directed towards said leg; said male telescopic joint member including a plurality of longitudinally spaced apart holes adapted to receive said weight bearing pin; said female telescopic joint member including a hole adapted to receive said weight bearing pin and disposed to be selectively aligned with one of the plurality of holes in said male telescopic joint member; means for preventing rotation of said male and female telescopic joint members relative one another; an elongated table member secured to the top of said leg, said table adapted to fold along at least one line transverse to said table member to reduce the length dimension of the portable ironing table for convenient storage; means for selectively changing the shape of said elongated table; means for locking said elongated table member in an open position; said means for selectively changing the shape of said elongated table member comprising: at least one table extension pivotally secured to said elongated table member about a vertical axis when said elongated table member is open; and, means for moving said auxiliary surface outward from the periphery of said elongated table member.

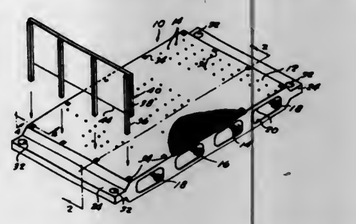
3,298,326
LOAD RETAINING FLEXIBLE SLING
John S. Addison and Robert P. Ryan, Racine, Wis., assignors to Signode Corporation, a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,425
14 Claims. (Cl. 108—51)



1. A load retaining flexible sling comprising a laminar array having a pair of outer flexible sheets adhered upon a flexible layer of filler material having a plurality of high tensile strength flexible straps extending lengthwise in side by side spaced relation therein, one of said sheets having a smooth load contacting surface to avoid imprinting of the load and having an exterior surface coating of adhesive, said sheets, said layer and said straps being flexible about lines transverse of the lengthwise direction of said straps.

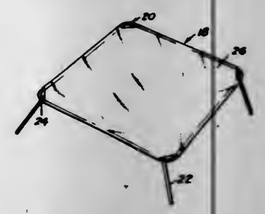
3,298,327
MATERIALS HANDLING PALLET
George S. Grimes, 1901 Tidewater Road, Anchorage, Alaska 99501
Filed June 25, 1965, Ser. No. 467,007
3 Claims. (Cl. 108—57)

1. A materials handling pallet comprising an elongated solid body having spaced side edges and an end edge extending between and connecting each of the complemental ends of said side edges together, said body having upper and lower faces which are flat and extending over the entire area defined by the side and end edges, there being a pluarlity of transversely-disposed bores arranged between and parallel to said end edges and opening out of said side edges, a rib extending along and projecting from each end edge, a grid embedded in said body and extending beneath and along and about said faces and



said ribs, said ribs being formed with openings adapted to receive hooks of lifting devices, said body being provided with a plurality of transversely-disposed rows of polygonal holes positioned between and parallel to said ribs adapted to removably-receive the lower end portions of polygonal posts of end panels to thereby form enclosures between the end panels when mounted in said holes.

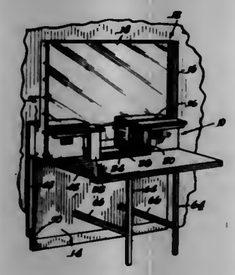
3,298,328
COLLAPSIBLE BEACH PICNIC TABLE
Marvin Hoodis, 223 Lenox Road, Brooklyn, N.Y. 11226
Filed Nov. 22, 1965, Ser. No. 509,019
4 Claims. (Cl. 108—129)



1. A foldable table structure comprising a continuous rod-like member having a rectangular shape with first and second pairs of opposed sides to define a frame, a flexible material attached to all sides of said frame to form a supporting surface thereon, there being openings in said supporting surface at the corners of said frame, a plurality of leg members with the upper ends thereof being pivotally connected to the inner faces of said first pair of opposed sides of the frame adjacent the ends thereof, said leg member pivot connections being so spaced from the ends of said first pair of sides that outward pivoting movement of said leg members is limited by the engagement of said leg members with the second pair of opposed sides of said frame.

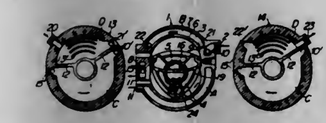
3,298,329
MODULAR TELLER UNIT
Bernard A. Carstens, Jr., Cedar Lake, Ind., and Robert L. Carstens, Oak Lawn, Ill. (both of 3312 S. Western Ave., Chicago, Ill. 60608)
Filed Sept. 23, 1964, Ser. No. 398,648
10 Claims. (Cl. 109—10)

1. A teller unit, comprising, in combination, a top having a pair of opposed slots, a vertical panel having a slot receiving the top and being positioned in one of the slots of the top and being secured to the top, a second vertical panel having a slot receiving said top and being positioned in the other of said slots of said top and being secured to said top, a bullet resistant steel plate mounted



below said top and adjacent to the vertical panels, a bullet resistant glass mounted above the top and between the vertical panels, and a bullet resistant transaction tray mounted below the bullet resistant glass.

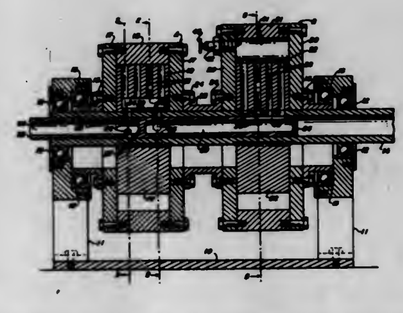
3,298,330
ROTARY PISTON ENGINE
Ryusuke Ito, Amagasaki-shi, Hiroshi Tado, Suita-shi, and Seizo Jinno, Nagahama-shi, Japan, assignors to Yanmar Diesel Engine Co., Ltd., Osaka, Japan
Filed Apr. 1, 1965, Ser. No. 444,706
Claims priority, application Japan, Apr. 22, 1964, 39/22,416
1 Claim. (Cl. 123—8)



A rotary piston engine comprising a center housing and a side housing positioned on each side of said center housing; said center housing comprising an inner wall and an outer wall together defining a substantially annular space therebetween, and a first pair of partition walls dividing said annular space into a first cooling water passage and a first lubricant passage; each of said side housings comprising a second pair of partition walls dividing each of said side housings into a second cooling water passage and a second lubricant passage; said first cooling water passage communicating with each of said second cooling water passages, and said first lubricant passage communicating with each of said second lubricant passages.

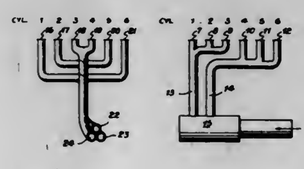
3,298,331
ROTARY HEAT ENGINE
James L. Butler, Box 134, Montara, Calif. 94037
Filed Apr. 15, 1965, Ser. No. 448,316
4 Claims. (Cl. 123—8)

1. In a rotary engine, a compressor unit and a power unit coupled together for simultaneous rotation in the same direction about a common axis, each unit comprising an outer rotor having a cylindrical chamber and a cylindrical inner rotor of less diameter than the chamber and tangentially engaging the inner cylindrical wall of such chamber constantly, each unit having a radial blade coupling the outer and inner rotors of each unit to cause the rotors of each unit to rotate in unison, the outer rotor of each unit having a socket movably holding the blade, and the inner rotor of each unit having a radial slot to receive movably a portion of such blade, the blade of the compressor unit extending across the space between the inner and outer rotors of such compressor unit to divide such space into intake and compression chambers, the blade of the power unit extending across the space between the inner and outer rotors of such power unit to divide such space into expansion and exhaust chambers, a hollow drive shaft keyed to the inner rotors of the compressor and power units and arranged eccentrically to the common axis of the compressor and power units, a fuel induction tube extending loosely inside the shaft and having separated inlet and outlet chambers, means to convey a fuel mixture from the inlet chamber of the fuel induction tube to the intake chamber of the compressor



unit, means to convey the fuel mixture from the compression chamber of the compressor unit to the outlet chamber of the fuel induction tube, a combustion chamber carried by the outer rotor of the power unit, the combustion chamber being arranged to communicate with the expansion chamber intermittently, means to supply the combustion chamber intermittently with a charge of the fuel mixture from the outlet chamber of the induction tube, means to fire each charge at predetermined positions of the rotors, and means to exhaust the gases of combustion from the exhaust chamber.

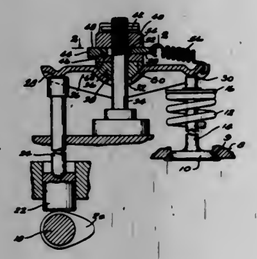
3,298,332
INTERNAL COMBUSTION ENGINE SUPERCHARGING
Ludwig Elsbett, Nurnberg, Germany, assignor to Maschinenfabrik Augsburg-Nurnberg AG, Nurnberg, Germany
Filed July 20, 1964, Ser. No. 383,886
Claims priority, application Germany, July 23, 1963, M 57,593
3 Claims. (Cl. 123—52)



1. In a four-cycle multi-cylinder internal combustion piston engine in which the mass effect of the intake air in one engine cylinder is increased by the overlapping of the intake air and exhaust gas changeover periods in the cylinder, the improvement comprising an air intake pipe common to each three cylinders having intake valve opening times separated by a crankshaft angle of 240°, and an exhaust gas pipe common to each two cylinders having exhaust valve opening times separated by a crankshaft angle of 360°, said overlapping of the intake air and exhaust gas changeover periods in each one of said two cylinders of said four cycle engine being such that the intake air is

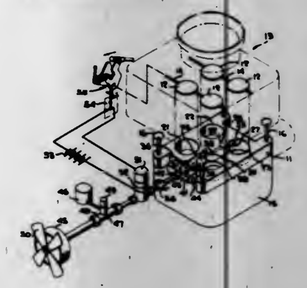
drawn through said one of said two cylinders and into said exhaust pipe, and the exhaust valve opening times for the said two cylinders being overlapping for forcing the air back into said one of said two cylinders by the exhaust gas pressure of the other cylinder, one of said each two cylinders being connected to one of said intake pipes and and the other of said each two cylinders being connected to another of said intake pipes.

3,298,333
VALVE ACTUATING MECHANISM WITH MECHANICAL MEANS FOR SELF-ADJUSTMENT
Stephen F. Briggs, P.O. Box 1617, and Joseph F. Nemechek, 940 5th St. S., both of Naples, Fla. 33940
Filed Jan. 14, 1965, Ser. No. 425,558
3 Claims. (Cl. 123—90)



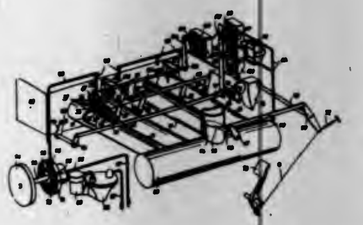
1. Valve gear mechanisms for controlling the unseating and seating of a valve having a stem and a valve seating spring, said mechanism comprising the combination with the valve stem and spring and a push rod having an actuator, of a rocker arm bearing on the push rod and the valve stem, a rocker arm post intervening between the push rod and the valve stem and on which the rocker arm is mounted for oscillation, bearing means movable axially on the post and having a downwardly convex surface for which the rocker arm has a complementary concave bearing surface held to the convex surface of the bearing means by the bias of the valve spring, an abutment fixed on the post above said bearing means, and means for the automatic self-adjustment of the over-all length of said mechanism both in a direction to increase the effective length thereof and to decrease the effective length thereof and comprising relatively movable members providing a pair of relatively movable wedge surfaces, one of said members being movable with respect to the post, and the other of said members being relatively fixed, both of said members being confined between the bearing means and the said abutment, a wedge biasing spring acting on the said member which is movable with respect to the post, the direction of bias exerted thereby on said member being such as to exert on said rocker arm a force in opposition to the bias of the valve spring on the rocker arm, the said wedging surfaces having an angle within narrow critical limits and so related to the coefficient of friction and to the bias of the valve spring and to the bias of the wedge biasing spring that displacement of the push rod by its actuator in a valve unseating direction is transmitted positively to effect predetermined unseating displacement of the valve, the entire seating movement of the valve subject to the bias of the valve spring being transmitted positively through said mechanism to the push rod, whereby the push rod positively controls valve seating movement, the self-adjustment occurring when said mechanism is relatively free of load consequent upon the seating of the valve, two tension springs being connected between the movable wedge member and the rocker arm to constitute the wedge biasing spring.

3,298,334
DEVICE FOR INJECTING AN ADDITIVE INTO THE OUTPUT OF A CARBURETOR
John A. Holman, 3720 Rawlins St., Dallas, Tex. 75219
Filed July 8, 1963, Ser. No. 293,348
6 Claims. (Cl. 123—119)



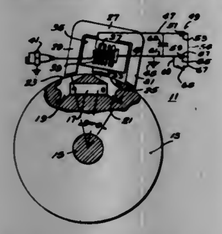
6. A device for improving performance of internal combustion engines of the type having carbureting means for producing a fuel-air mixture flow, comprising:
means for providing a stream of high velocity air;
a supply of liquid engine additive comprising a mixture of fine upper lubrication oil and a substantially greater amount of naphtha;
means for mixing said additive and said stream of air to produce a resultant fluid;
means for directing said fluid in a vortical flow pattern, said pattern being disposed so as to perpendicularly intersect said fuel-air mixture flow.

3,298,335
LOW-PRESSURE FUEL INJECTION METERING DEVICES FOR INTERNAL COMBUSTION ENGINES
Gaëten de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works
Filed Oct. 5, 1964, Ser. No. 401,352
Claims priority, application France, Oct. 14, 1963, 950,563, Patent 1,418,780
8 Claims. (Cl. 123—119)



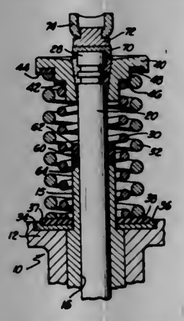
1. In a low-pressure fuel injection metering device for internal combustion engines having a feed pump supplying a centrifugal pump which delivers the fuel continuously through an injection system of adjustable passageway section which injects the fuel into the engine inlet tract at a point located downstream of an air regulating butterfly-valve and upstream of the cylinder valves, the improvement comprising control means for adjusting said passageway section, a three-dimensional cam cooperating with said control means for regulating same, the control for said butterfly-valve being operatively connected to said cam to control the rotation thereof, first responsive means responsive to fuel pressure applied to said injection systems, second responsive means responsive to the negative air pressure prevailing in the inlet tract downstream of said butterfly-valve, said first responsive means and said second responsive means adapted to control a relative translational motion between said cam and said first control means in response to changes in said fuel pressure and said negative air pressure.

3,298,336
ENGINE
Lucius D. Watkins, Hartland, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 402,997
20 Claims. (Cl. 123—148)



1. A magneto system comprising means comprising relatively rotatably mounted armature and magnet parts and an ignition coil wound on said armature part and including a primary winding and a secondary winding for producing two peak conditions of current flow in said primary winding during each full cycle of relative rotation between said magnet and armature parts, a spark plug electrically coupled to said secondary winding, a first and second circuit breaker electrically coupled to said primary winding, means for operating said first circuit breaker during the occurrence of one of said peak conditions of current flow to produce a spark at said plug, means for operating said second circuit breaker during the occurrence of the other of said peak conditions of current flow to produce a spark at said plug, and means for selectively rendering one of said circuit breaker operating means ineffective to produce a spark at said plug.

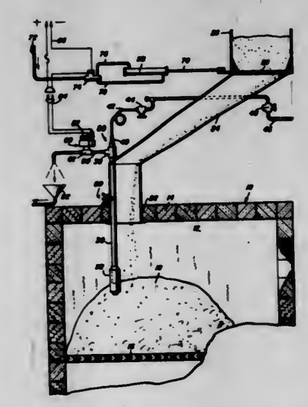
3,298,337
VALVE DAMPING ASSEMBLY
Marion Lee Thompson, 2734 Eastvale, Rolling Hills, Calif. 90274
Filed Nov. 17, 1964, Ser. No. 411,918
4 Claims. (Cl. 123—188)



1. In an internal combustion engine which includes a valve with a valve stem; an engine head having means defining a valve stem guide which reciprocably receives said valve stem; means engageable with said valve stem and operable to move said valve from a closed position to a predetermined open position; valve spring retaining means mounted on the valve stem; compression spring means interposed between the engine head and the valve spring retaining means for biasing the valve toward its closed position, the improvement of a valve damping assembly which comprises:
first seat means disposed on the engine head and made of thin, resilient material for cushioning the abutment thereon of said compression spring means without appreciably affecting the magnitude and character of said biasing; and
second seat means disposed on said valve spring retaining means and made of thin, resilient material for cushioning the abutment thereon of said compression spring means without appreciably affecting the magnitude and character of said biasing.

2. A valve damping assembly according to claim 1 and including resilient means disposed on the valve stem and interposed between the engine head and the valve spring retaining means for damping movement of the valve at its open position, said resilient means being of such length that it is engaged by the engine head and the valve spring retaining means when the valve reaches its open position.

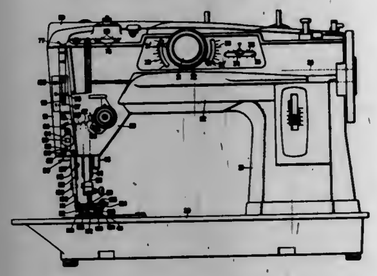
3,298,338
MEANS FOR REGULATING THE HEIGHT OF FUEL MOUNDS WITHIN A FURNACE
Joseph Avatis Clark, Sr., Rte. 1, Box 362, Sweet Home, Oreg. 73666
Filed May 6, 1964, Ser. No. 365,400
7 Claims. (Cl. 110—101)



1. A thermostatic control for an automatic furnace firing system comprising a probe adapted for insertion into the combination chamber of a furnace and for penetration of a mound of burning fuel therein adjacent a fuel feed inlet,
means for circulating a fluid medium through said probe thereby cooling the latter and heating said medium,
a thermostatic actuator in heat exchange relation with the heated medium,
means regulated by said thermostatic actuator controlling the feeding of fuel into said furnace through said fuel feed inlet,
said probe comprising an elongated tube having a sensing element at one end, a pipe within said tube having an end opening into said sensing element,
means supplying a fluid medium into the other end of said pipe,
means for discharging said heated fluid medium from said tube and conducting it to said theromstatic actuator, and

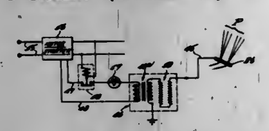
said sensing element comprising a bulb having a removable heat fusible closure element in its lower end.

3,298,339
BUTTONHOLING DEVICE FOR SEWING MACHINES
Ralph E. Johnson, Boonton, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed July 16, 1964, Ser. No. 383,125
15 Claims. (Cl. 112—73)



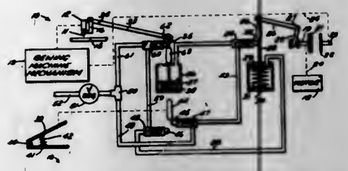
1. A work shifting mechanism for a sewing machine having a frame formed with a flat work supporting bed, and stitch forming instrumentalities and actuating mechanism therefor carried in said frame, said work shifting mechanism comprising, an elongate member disposed substantially perpendicular to said flat work supporting bed, means carried on said sewing machine frame and providing pivotal support for said member on mutually perpendicular axes parallel to said work supporting bed, drive means operated by said sewing machine actuating mechanism for imparting swinging movement to said member about said mutually perpendicular axes, and a work engaging foot secured to said member and adapted to overlie said working supporting bed.

3,298,340
ELECTROSTATIC CHARGE ELIMINATOR COMBINED WITH A TUFTING MACHINE
Glenn J. Ledford and Walter E. Mason, Clayton, Ga., assignors, by mesne assignments, to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Dec. 10, 1964, Ser. No. 417,353
3 Claims. (Cl. 112—79)



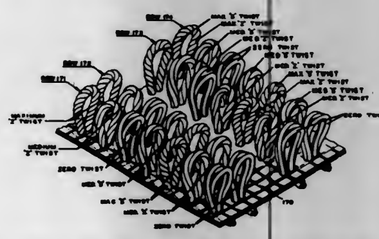
1. In apparatus for tufting pile fabrics and the like, the combination which comprises a needle bar, means for oscillating said needle bar, a series of needles mounted in the needle bar for carrying pile yarns through a backing fabric, means for advancing the backing fabric underneath said needles, a source of pile yarns, guide means through which the yarns are fed in contact with said guide means from the yarn source to the needles, an electrically insulated mounting for said guide means, a high voltage A.C. transformer electrically connected to said guide means to impart an electrical charge on the guide means to counteract an induced D.C. electrostatic charge in the area of the guide means, electrical connections for connecting said transformer to a power source, and relay means interconnected between the transformer and the power source to open the circuit to the transformer when the means for oscillating the needle bar is inoperative.

3,298,341
SEWING MACHINE CONTROL SYSTEM
George Bonis, Tampa, Fla., assignor to Sunstates Sportswear, Inc., Tampa, Fla., a corporation of Florida
Filed Oct. 5, 1964, Ser. No. 401,411
6 Claims. (Cl. 112—219)



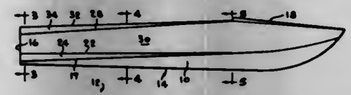
1. In a sewing machine including a needle, a mechanism for operating said needle, drive means for said mechanism, and a pressure foot operable from a released position to a normally resiliently biased fabric-holding position, an operator's control movable from a normal position through an intermediate position to an operating position, first fluid means connected to said control and to said pressure foot regulating the movement of said pressure foot to said fabric-holding position in response to movement of said control from said normal position to said intermediate position and for operating said pressure foot to said released position in response to movement of said control from said intermediate position toward said normal position, second fluid means connected to said operator's control and said drive means regulating the movement of said drive means in response to movement of said control to said operating position from a normally resiliently biased non-operating position and for deactivating said drive means in response to movement of said control from said operating position toward said intermediate position and fluid interlock means separate from said first and second fluid means connected to said second fluid means responsive to activation of said pressure foot regulating operation of the drive means whereby when said pressure foot is in the released position the drive means is held in an inoperative position.

3,298,342
PILE FABRIC WITH INTEGRALLY FORMED TWIST
Harry J. Smiley, Glasgow, Va., and Henry F. Nowicki, Norristown, Pa., assignors, by mesne assignments, to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Original application Feb. 8, 1963, Ser. No. 257,199. Divided and this application Aug. 13, 1964, Ser. No. 389,454
3 Claims. (Cl. 112—410)



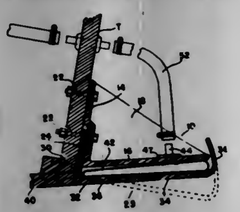
1. A tufted pile fabric comprising a preformed backing, a plurality of pile yarns inserted through and anchored in said backing to form longitudinally extending rows, each of said yarns being plied with substantially the same amount of twist transversely across the fabric, and the twist in each of said plied yarns varying longitudinally in the fabric from S to Z and separated by nodes of zero twist.

3,298,343
HULL SIDES FOR METAL BOAT
Paul B. Juhnke, Rte. 3, Box 86, Mukwonago, Wis. 53149
Filed Oct. 23, 1965, Ser. No. 503,523
6 Claims. (Cl. 114—56)



1. A side with top and bottom edges for a hull formed from a single sheet of aluminum having,
a first bend along a straight line spaced upwardly from said bottom edge creating an outer chine which defines with said bottom edge an inwardly and downwardly sloping bottom portion,
a second bend along a straight line spaced upwardly of said chine defining therewith a vertical side portion, and
a sloping side portion extending from said second bend toward said top edge and inclined upwardly and inwardly whereby said side has a half-round like section providing strength and rigidity.

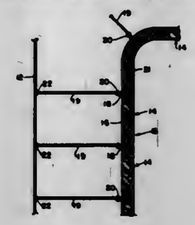
3,298,344
AUTOMATIC TRIM CORRECTION
Robert E. Yunker, 3635 Evanston N., Seattle, Wash. 98103, and John P. Southern, 910 Valley St., Seattle, Wash. 98109
Filed Sept. 20, 1965, Ser. No. 488,705
6 Claims. (Cl. 114—66.5)



1. In combination, a boat having a bottom; a pair of generally horizontal water reaction panels, one on each side of the center line of the boat, each water reaction panel being hinged along its forward edge to the boat substantially at the level of the undersurface of said bottom; a separate expansible chamber means for each water reaction panel, operable to swing the panel downwardly from an inactive position substantially even with or above the undersurface of said bottom to an active position wherein the panel slopes downwardly and rearwardly from the undersurface of said bottom; a source of fluid under pressure; supply conduit means leading from said source to each expansible chamber means, and including a separate conduit leading into each expansible chamber means; a normally closed solenoid valve in each inlet conduit; and electrical control means for said solenoid valves, including mercury switch means operable in response to boat roll beyond a predetermined position of lateral tilt to open the solenoid valve in the inlet conduit leading to the expansible chamber means on the low side of the boat.

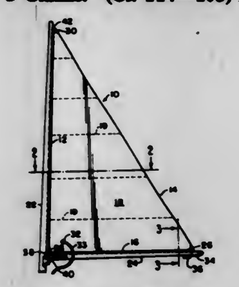
3,298,345
DOUBLE HULLED SHIP
Harold R. Pratt, Ridgewood, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,877
6 Claims. (Cl. 114—74)

1. A ship for transporting cargoes at cryogenic temperatures and atmospheric pressure comprising
(a) a conventionally formed steel outer hull,
(b) a plurality of contiguously arrayed inner hull plastic insulating panels defining a liquid-tight secondary barrier, and mounting means rigidly fixing said inner hull panels to said outer hull, said mounting means including,



(c) rigid mounting plates embedded in said hull panels and extending perpendicularly outwardly therefrom,
(d) rigid web plates welded to said outer hull and extending perpendicularly inwardly therefrom, and
(e) means joining said mounting plates and web plates, whereby said inner hull plastic insulating panels define an integral inner hull spaced inwardly and fixed in spaced relation from said outer hull contributing a substantial rigidifying effect to said outer hull.

3,298,346
SAIL CONSTRUCTION
Steven M. Cochran, Winchester, Mass.
(6847 Country Lane, Dearborn Heights, Mich. 48127)
Filed Apr. 22, 1965, Ser. No. 450,087
5 Claims. (Cl. 114—103)



1. An inflatable sail for sailing craft comprising, in combination, first and second sail segments of material which is substantially impermeable to fluids positioned adjacent to each other and secured to each other adjacent the edges thereof to form an air chamber having an airtight seal around the periphery thereof, a plurality of horizontally disposed transverse webs parallel to each other extending between said sail segments and secured thereto, said webs dividing said air chamber into segmented chambers, and means forming a gas valve secured to said sail and communicating with said air chamber whereby said sail may be inflated to form an aerodynamic cross-section throughout said sail, said webs maintaining said cross section in both light and heavy winds.

3,298,347
SUBMERSIBLE TOWING APPARATUS
Arthur F. Swain, Spring Valley, and Frank R. Abbott, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 21, 1965, Ser. No. 500,443
8 Claims. (Cl. 114—235)

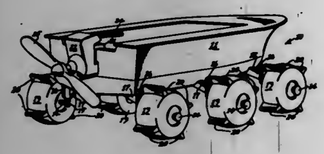
1. Underwater towing apparatus for use on submarines and the like comprising:
a reel disposed medially of the submarine,

a tow line wound on said reel,
means for paying out said tow line from said reel,
a flexible line-like transducing member carried by the tow line,
drogue means for tensioning the tow,
line means coupling said drogue and said transducer member,
a casing adapted to stowably receive the drogue, said casing being carried externally of the submarine on its rearward end, and
means for ejecting the stowed drogue from said casing, said ejector means including:
an elongate hollow tubular member having an enlarged piston-like rearward end slidably mounted in said drogue casing and bearing against said drogue,
support means for said tubular member,



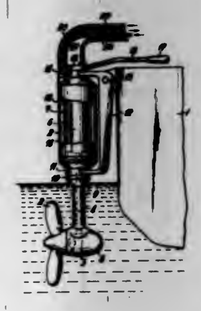
resilient means acting on the piston-like end of the tubular member for normally urging said member rearwardly of said casing,
said tubular member being hollow for receiving said coupling line means whereby when said tow line is paid out said transducing member and tow line pass through the tubular member and through said casing,
means for admitting the water medium into the casing forwardly of said piston-like end for permitting the water pressure to cooperate with said resilient means for moving said tubular member rearwardly of said drogue casing, and
means for limiting the rearward stroke distance of said tubular member, said means being disposed for arresting said member in a drogue-ejecting position at the rearward end of the casing.

3,298,348
MARINE VEHICLE WITH ROLLING BUOYANT SUPPORTS
Lee C. Sanders, P.O. Box 1344, Nashville, Tenn. 37212
Filed Apr. 28, 1965, Ser. No. 451,533
1 Claim. (Cl. 115—1)



A marine vehicle comprising:
(a) an elongated body for carrying passengers,
(b) a plurality of non-driven buoyant wheels,
(c) means mounting said wheels on opposite sides of said body for free rotatable movement in substantially vertical, longitudinal planes,
(d) said wheels being sufficiently buoyant in water to support said body above the surface of the water when the body is at rest or in motion,
(e) vanes fixed to the peripheral surface of and extending transversely of and radially from each of said wheels, said vanes being circumferentially spaced on said surface so that at least one vane is immersed in said water at any given time while said vehicle is supported on said water, so that said wheels rotate as said wheels move longitudinally through the water, and
(f) drive means fixed to said body and operative, independently of said non-driven wheels, to propel said body longitudinally.

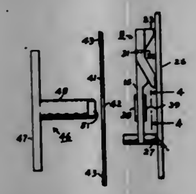
3,298,349
PROPULSION AND STEERING DEVICE FOR WATERCRAFTS
Friedrich Wilhelm Pleuger, Juthornstrasse 80, and Johann Schneider, Zitzewitzstrasse 10, both of Hamburg-Wandsbek, Germany
Filed June 15, 1965, Ser. No. 464,081
Claims priority, application Germany, July 7, 1964, P 34,643
4 Claims. (Cl. 115—18)



1. A propulsion and steering device for watercraft, comprising a propeller structure, a vertical driving shaft, a bevel gear, arranged between propeller and said shaft, an electric motor, having a squirrel cage rotor actuating on said driving shaft, a closed casing for said electric motor, filled with a liquid, a casing shell surrounding said motor casing and forming an annular channel together with it, means for the supply and removal of liquid to and from said annular channel, and elements for supporting said motor and propeller, said elements adapted to detachably fasten the aggregate to the vessel and to turn it around a horizontal and a vertical axle, wherein an electric current supply cable and a hose for supply of pure water are connected to the motor casing and a hose for supply of cooling water for the annular channel is connected to the external casing shell, and in which said electric current supply cable concentrically extends around the water hoses.

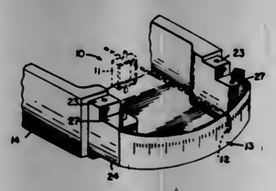
3,298,350
DIAL POINTER ASSEMBLY
Glenn R. Mundschenk, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 30, 1965, Ser. No. 517,557
4 Claims. (Cl. 116—124.1)

1. A dial pointer assembly comprising a pointer member provided with a rearwardly extending shaft, said shaft being provided with a flat shoulder on a side at the rear end thereof and also provided with a transverse notch at the other side thereof axially offset from said shoulder, and a pointer holder of resilient material and provided with a D-shaped opening having a flat side and shaped to receive the shoulder portion of the pointer shaft, said pointer holder also being provided with a slot therethrough parallel to the said flat side of the opening so that the sides of the opening can be forced apart, the thickness of said holder at said flat side of the opening being approximately the same as the width of said transverse notch in the pointer shaft, whereby said pointer



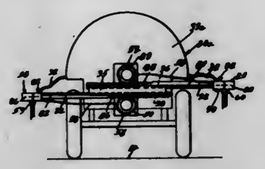
member can be attached to said holder member by inserting the shoulder end of the pointer member into the D opening, rotating the pointer member one-half turn to force apart the sides of the D opening, and pushing the pointer member until the flat side of the D opening snaps into the notch of the pointer shaft.

3,298,351
SCALE PLATE MOUNTING SYSTEM FOR EDGEWISE INSTRUMENT
Russell C. Koza, Lynnfield Center, Mass., assignor to General Electric Company, a corporation of New York
Filed July 1, 1964, Ser. No. 379,493
6 Claims. (Cl. 116—129)



1. An edgewise indicating device comprising:
(a) a moving system including a pointer and means for rotating said pointer about an axis to define a first arc of a first radius,
(b) means supporting said moving system having first and second angularly spaced, radially extending slots formed therein and terminated at a second radius which is less than said first radius, said radially extending slots each having a side wall extending radially from said axis, and
(c) a normally flat resilient scale plate including a planar surface portion being divided into first and second end portions and an intermediate scale-bearing portion each including said planar surface, said scale-bearing portion dimension between said end portions equaling the arcuate length described by said second radius between said first and second side walls in said supporting means, each of said end portions adjacent said scale-bearing portion being bent so that each end portion planar surface is oriented at an angle with respect to said scale-bearing portion planar surface, said normally flat scale-bearing portion assuming an arcuate shape when said first and second end portions are disposed in said first and second radially extending slots with said planar surfaces abutting said side walls, all of said points on said scale-bearing portion planar surface being substantially equidistant from said axis.

3,298,352
HIGH SPEED AUTOMATED PAINTING DEVICE
Richard J. Vrablik, P.O. Box 447, Cary, Ill. 60013
Filed Sept. 5, 1961, Ser. No. 135,832
1 Claim. (Cl. 118—4)



Apparatus for applying materials to highway traffic control lines, guard rails, and the like, comprising a vehicle carrying a supply of material to be applied, applicator means for applying the material, means supporting the applicator means for movement relative to the vehicle, servomotor means for moving the applicator means relative to the vehicle, and scanner means controlling the servomotor means to maintain the applicator means in a desired relation to traffic control lines, guard rails, or the like including a pair of proximately spaced light transmitting elements and a pair of proximately spaced light receiving elements, each of said light transmitting elements being arranged to direct light from a surface to one of the light receiving elements and one of the light receiving elements being responsive to reflected light intensity corresponding to a surface to be treated to actuate the servomotor means and the other of the light transmitting elements being responsive to light intensity different from the intensity of light reflected from the surface to be treated to actuate the servomotor means, a second pair of light transmitting elements in proximately spaced relation and a second pair of light receiving elements in proximately spaced relation adjacent the first mentioned pair of light receiving elements, said pairs of light transmitting elements being relatively widely spaced to direct light beams convergingly so that the inner light beams from the inner light transmitting elements of said pairs of light transmitting elements will contact the surface to be treated and the outer light beams of said outer light transmitting elements of said pairs of light transmitting elements will contact a surface adjacent the surface to be treated when the applicator means is properly centered relative to the surface to be treated.

3,298,353
MULTIPLE ORIFICE GLUE APPLICATOR
Harold W. Huffman, Hamilton, Ohio, assignor to The Hamilton Tool Company, Hamilton, Ohio, a corporation of Ohio
Filed Sept. 3, 1963, Ser. No. 306,224
21 Claims. (Cl. 118—411)



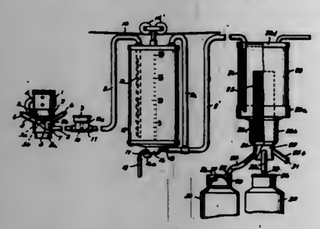
1. An applicator for applying fluid substance to a web moving continuously in one direction, comprising in combination, a body having a chamber for receiving fluid substance under pressure from a source of supply, said body

having a head formed with a throat through which a web moves, plural nozzle means carried by the body and head in communication with said chamber and positioned to simultaneously apply a stripe of fluid upon upper and lower faces of the web in its passage through said throat, said nozzles means for applying the fluid to the lower face of the web being upstream from the other nozzle with respect to the direction of travel of the work and means within the throat for maintaining the stripe applied to the lower side of the web free of contact with an underlying part of the body as the web moves through the throat.

3,298,354
SHELL FISH CULTURE
Garrow T. Geer, Jr., Southampton, N.Y. (% Farr Whitlock Dixon & Co., Inc., 80 Pine St., New York, N.Y. 10005)
No Drawing. Filed July 27, 1965, Ser. No. 475,258
14 Claims. (Cl. 119—4)

13. The method of enhancing the growth of the shells of bivalve mollusks which comprises introducing into a natural water field containing the bivalves a dust made from the shells of the bivalve mollusk.

3,298,355
VACUUM OPERATED MILKING MACHINE
Klaus-Jürgen Karnath, 22 Sonnenbergerstrasse, Wiesbaden, Germany; Günther Karnath, 92 Hertingerstrasse, Unna, Germany; and Kurt Karnath, 22 Sonnenbergerstrasse, Wiesbaden, Germany
Original application Oct. 7, 1963, Ser. No. 314,562, now Patent No. 3,242,903, dated Mar. 29, 1966. Divided and this application Aug. 16, 1965, Ser. No. 480,200
Claims priority, application Germany, Oct. 5, 1962, K 47,899; Nov. 2, 1962, K 48,122; Dec. 12, 1962, K 48,444, K 48,445
3 Claims. (Cl. 119—14.46)



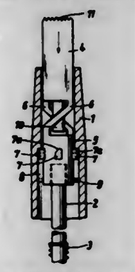
3. In a milking apparatus adapted to be connected to the udder of a cow, the combination of container means providing chamber means adapted to receive milk therein; and distributing means operatively connected to said chamber means and including a plurality of conduit means having respective first ends communicating with said chamber means in respective vertically spaced horizontal planes for sequentially distributing milk received therefrom to individual ones of a plurality of containers, said conduit means having respective second ends, and said distributing means further including cover means adapted to be placed on respective ones of said containers and each comprising a peripheral wall portion having an upper end adapted to engage the rim of a container and tapering in the direction away from said upper end, said peripheral wall portion being adapted to be substantially received in the respective container, and a center portion intermediate said wall portion and fluid-tightly connected thereto, said center portion being of concavo-convex configuration with the cavity facing the interior of the container, and said peripheral wall portion being formed with an aperture therethrough downwardly of said upper end, said second ends of said conduit means communicating with the respective apertures so that, when the cover means is positioned in place on a container, said conduit means communicates with the interior of the respective container but does not directly communicate with said cavity of the cover means.

3,298,356
GATE FOR POULTRY TROUGH
Gerald W. Sutton, Sidney, Ohio, assignor to Everyday Manufacturing Company, Sidney, Ohio, a corporation of Ohio
Filed Oct. 12, 1965, Ser. No. 495,058
4 Claims. (Cl. 119—74)



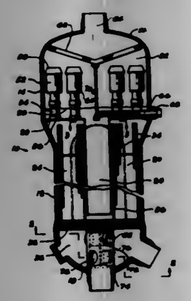
1. A liquid retaining trough for poultry and the like comprising:
an elongate trough having a liquid retaining cross-sectional configuration and an open top;
a liquid retaining gate generally complementarily shaped to the trough;
flexible means carried by the gate for deformably sealably engaging the interior of the trough for precluding liquid movement therethrough; and
means secured with the trough swingably mounting the gate on the trough about a horizontal axis from a first position out of the liquid retaining cross-sectional configuration to a second position where said body resides in the trough and the sealing means sealably engages the trough precluding liquid movement therethrough,
the length of the gate and the sealing means from the axis to the free end thereof being substantially greater than the distance from the axis to the trough for compressing the sealing means to wedge the gate in the trough and binding the gate against the mounting means, the construction of the mounting means, gate and sealing means holding the gate in the liquid retaining position.

3,298,357
BALL-POINT PENCIL
Helmut Bross, Altenberg uber Nurnberg, Germany, assignor to Jacob Ritter KG, Brensbach, Odenwald, Germany
Filed Nov. 19, 1964, Ser. No. 412,452
Claims priority, application Germany, Nov. 26, 1963, B 74,402
8 Claims. (Cl. 120—42.03)



1. A pencil having a barrel and a spring loaded writing part retractable in the barrel, a pressing pin carried in the barrel for actuating the writing part, a rotatable operating member for abutting the writing part, cammed retracting means comprising long and short notches in said barrel extending in axial direction of the barrel and cam surfaces extending between the barrel and the operating members, the cam surfaces being disposed on said operating member and adapted to engage alternately in said long notches and said short notches in response to movement of said pressing pin, in which a rotatable resilient intermediate member operationally interengages the pressing pin with the operating member.

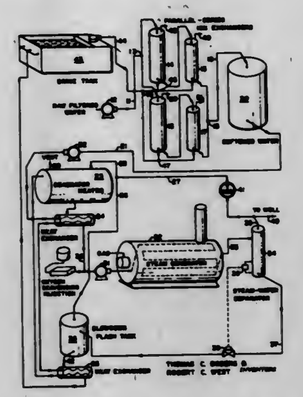
3,298,358
VERTICAL STEAM GENERATOR WITH A CENTRAL DOWNCOMER
John W. Alden, Jr., Chattanooga, Tenn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,298
16 Claims. (Cl. 122—34)



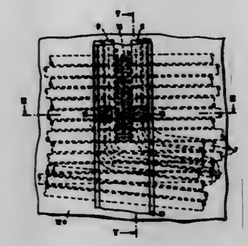
1. A vapor generator comprising a vertical elongated cylindrical vessel arranged to operate with an upper vapor space above a body of liquid therein; a vapor outlet from said vapor space; plate means coacting with the wall of said vessel to form an interior, vertically elongated downcomer reservoir and an annularly shaped vapor generation chamber exterior of said reservoir, said plate means extending downwardly to substantially the bottom of said vapor generation chamber but being spaced therefrom to establish fluid communication between said downcomer reservoir and said vapor generation chamber; means for supplying vaporizable liquid to said downcomer reservoir; at least three separate tube bundles each comprising a group of vertically elongated U-tubes arranged in rows lying in parallel planes, said tube bundles being located in circumferentially spaced positions about said plate means and substantially filling said vapor generation chamber; and heating fluid inlet and outlet means communicating with the tubes of said tube bundles for circulating heating fluid therethrough.

3,298,359
STEAM GENERATION SYSTEM AND METHOD OF GENERATING STEAM
Robert C. West and Thomas C. Boberg, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
Filed May 24, 1965, Ser. No. 458,020
10 Claims. (Cl. 122—379)

1. A process for the generation of steam from hard water comprising the steps of treating said water with a cationic exchange medium to produce softened water, deaerating said softened water, passing said softened deaerated water through a steam generation zone to produce a steam-water mixture, separating said mixture to produce high quality steam and water containing dissolved solids, concentrating said solution and contacting said cationic exchanger with the resulting concentrated solution, thereby regenerating at least a portion of said cationic exchange medium.



3,298,360
PRESSURE-FIRED ONCE-THROUGH BOILER
Rupprecht Michel, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Jan. 5, 1966, Ser. No. 528,680
Claims priority, application Germany, Nov. 2, 1961, S 76,506
9 Claims. (Cl. 122—510)



1. A once-through pressure-fired steam boiler comprising walls defining a firing chamber and including a sheet-metal enclosure, an evaporator system located on said walls within said chamber and comprising upwardly sloping evaporator tube portions and vertically arranged outlet tube portions located above and said vertical tube portion being interconnected to said sloping tube portions, said sloping tube portions extending about said firing chamber, horizontal girders located externally of said chamber walls and forming a unit together therewith, a carrier structure comprising structural steel columns extending vertically along said unit and having flanges directed outwardly relative to said chamber, first suspension means suspending said evaporator tube system from said columns and including means connected to said vertical tube portions, a radiation superheater tube system located on the wall of said chamber adjacent to said vertical tube portions, and second suspension means suspending said superheater tube system from said vertically arranged outlet tube portions, said carrier structure including third suspension means linked to the upper ends of said columns for suspending said columns and thus said evaporator system and said superheater tube system therewith from above.

ERRATA

For Class 123—8 see:
Patent No. 3,298,330
Patent No. 3,298,331

For Class 123—52 see:
Patent No. 3,298,332

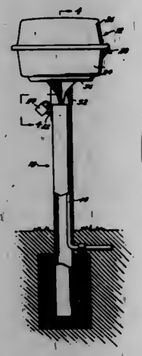
For Class 123—90 see:
Patent No. 3,298,333

For Class 123—119 see:
Patent No. 3,298,334
Patent No. 3,298,335

For Class 123—148 see:
Patent No. 3,298,336

For Class 123—188 see:
Patent No. 3,298,337

3,298,361
OUTDOOR COOKING APPARATUS
Robert A. Clark, Allentown, Pa., assignor to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed Sept. 23, 1965, Ser. No. 489,641
4 Claims. (Cl. 126—25)



1. A cooking apparatus including:
a hollow pedestal adapted to be permanently mounted and secured in position,
a cooking unit including a burner, connecting means for detachably mounting said cooking unit on said pedestal,
a fuel supply conduit disposed in said pedestal and leading to the burner,
a valve intermediate said conduit and said burner,
a handle for opening and closing said valve,
a tab carried by said handle and having an opening therein, and
a tab carried by said pedestal and having an opening therein,
said tabs being aligned with one another when the handle is in valve-closing position to receive a locking device and being out of alignment when the handle is in value-opening position.
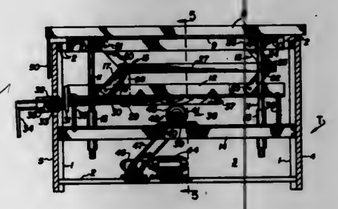
3,298,362
INSTRUMENT FOR USE IN PERFORMING A CONTROLLED VALSALVA MANEUVER
Maxwell W. Lippitt, Jr., Pasadena, Tex., and John H. Reed, Jr., Rochester, Minn., assignors to the United States of America, as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 10, 1963, Ser. No. 329,595
8 Claims. (Cl. 128—2.05)

1. In an instrument of the character described, a cylindrical tube having a bore extending therethrough and provided at one end with a mouthpiece whereby a person may blow through the mouthpiece into the tube;
a piston slidably mounted within the tube in substantially airtight relation with the inner wall of the tube and movable in response to air pressure communicated to the tube through the mouthpiece;
elastic means connecting the piston to said tube for yieldably holding the piston in a predetermined position within the tube, said elastic means being adapted to exert a tension force on the piston in counteraction to air pressure applied against the piston by a person exhaling through the mouthpiece into the tube to thereby limit the movement of the piston in accordance with the magnitude of the pressure, said



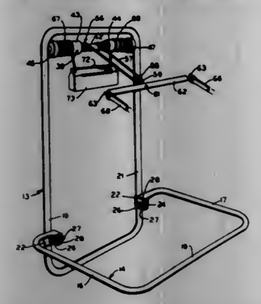
tube having an opening in the side wall thereof at a distance from the mouthpiece which is greater than the distance of said predetermined position of the piston in the tube from said mouthpiece, whereby air delivered through the mouthpiece at a pressure sufficient to force the piston beyond said opening will escape from the tube and a continuous supply of air above a predetermined pressure must be delivered through the mouthpiece to maintain the position of the piston beyond said opening; and
means for adjusting the magnitude of the tension force which is exerted by the elastic means on said piston in counteraction to a given magnitude of air pressure applied against the piston by a person exhaling through the mouthpiece.

3,298,363
PHYSIOTHERAPY APPARATUS WITH ADJUSTABLE BODY SUPPORTING MEMBERS
Chester A. Parkin, Saginaw, Mich., assignor to Parmac Corporation, a corporation of Michigan
Filed July 12, 1963, Ser. No. 294,616
11 Claims. (Cl. 128—33)



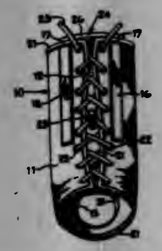
1. Physiotherapy apparatus comprising frame means; a plurality of independent support members together forming a patient-supporting surface; means mounting said support members on and between the ends of said frame means independently of one another for independent, substantially vertical reciprocation; driven operating means; adjustable actuating means interposed between each of said support members and said operating means and operable normally to reciprocate said members relative to said frame means in succession in a direction from one end of said frame means toward the other; adjusting means for adjusting the stroke of reciproaction of any selected number of said support members any selected distance between maximum and nil; and means for driving said operating means.

3,298,364
THERAPEUTIC TRACTION DEVICE
Jack C. Radford, 463 Wilde Ave., San Francisco, Calif. 94124
Filed Mar. 20, 1963, Ser. No. 266,653
5 Claims. (Cl. 128—75)



1. A therapeutic traction device comprising an upright support yoke, means engaging said support yoke for positioning said support yoke with respect to a bed, a differential drum having a central portion of one predetermined diameter and a pair of end portions of another predetermined different diameter, means for pivoting said differential drum in said support yoke for rotation with respect thereto, a spreader bar, means including a primary cable for connecting said spreader bar and said differential drum, means constituting connections between the two ends of said primary cable and one of said central portion or said end portions of said drum, means constituting a connection between the central portion of said primary cable and the central portion of said spreader bar, a weight, means including a secondary cable for connecting said weight and said differential drum, means constituting connections between the two ends of said secondary cable and the other of said end portions of said drum or said central portion, and means constituting a connection between the central portion of said secondary cable and said weight.

3,298,365
ANKLE BRACE
Hector E. Lewis, Cincinnati, Ohio, assignor to Surgical Appliance Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 23, 1963, Ser. No. 332,476
3 Claims. (Cl. 128—80)



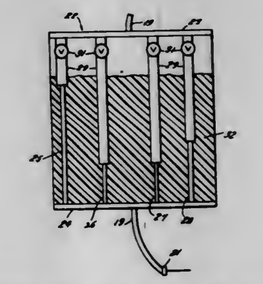
1. An ankle brace comprising a sleeve member for surrounding a wearer's ankle, said sleeve having a vertical slit formed in the front portion thereof, said sleeve further including an instep engaging band disposed for engagement with the bottom of the wearer's foot, said sleeve having a plurality of spaced eyelets formed on opposite sides of said slit, a lacing in engagement with said eyelets for drawing said sleeve portions together, a tongue member disposed beneath said lacing, a pocket formed in said tongue member, a rigid stay disposed in said pocket, said stay having an arcuate configuration corresponding to the contour of the wearer's ankle and upper foot when the foot is disposed in a horizontal plane, said tongue having two vertically spaced lacing receiving elements, whereby said lacing is effective to hold said tongue in position.

3,298,366
SURGICAL ABDOMINAL BINDER
Emory S. Moore, 2005 E. Ocean Blvd., Balboa, Calif. 92661, and Esther M. Still, 1640 Magnolia Ave., Long Beach, Calif. 90806
Filed Dec. 14, 1964, Ser. No. 417,918
4 Claims. (Cl. 128—157)



1. An abdominal binder for use after surgery comprising a fabric back panel adapted to be placed under a patient in supine position; a plurality of pairs of strips of cloth disposed in longitudinally parallel overlapping relation and attached at one strip end of each pair to opposite side edges of said back panel; each of said pairs of strips being adapted to encircle a patient's torso in longitudinal overlapping relation, and each strip except the first, extending from each side of said back panel, overlapping the margin of the preceding strip in sequence for the width of the binder; and releasable fastener means for fastening together said strip pairs disposed in opposed endwise relation.

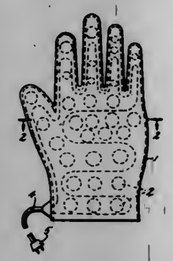
3,298,367
APPARATUS FOR ADMINISTERING PARENTERAL LIQUIDS
Richard I. Bergman, 165 Valley Road, Princeton, N.J. 08540
Filed Jan. 10, 1964, Ser. No. 336,949
2 Claims. (Cl. 128—214)



1. In an apparatus for administering parenteral liquids including a container holding the liquid to be administered, a drip tube communicating with said container through which said liquid flows by gravity feed, and an administering needle connected to said drip tube; the improvement comprising a capillary flow controller for regulating the flow of the liquid through said needle, the flow controller being connected to said drip tube sufficiently downstream from said container to provide a substantial hydrostatic head above the controller and comprising a first header connected to said drip tube; a second header connected to said needle; a plurality of capillary tubes connected in parallel between said first and second headers, each of said capillary tubes having

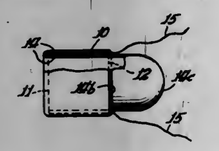
predetermined lengths and uniform internal cross-sections throughout their lengths sufficient to provide varying incremental flow rates of said liquid through the flow controller when operated individually or simultaneously, and on-off valve means for each said capillary tube facilitating the flow of the liquid through one or more of said capillary tubes simultaneously.

3,298,368
HEATED CREAM APPLICATOR GLOVES
Peter Charos, Maylen Drive, Hampton Bays, Long Island, N.Y. 11946
Filed Apr. 24, 1964, Ser. No. 362,287
5 Claims. (Cl. 128—260)



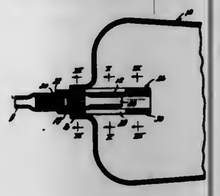
1. A hand cream applicator comprising a hand covering having an inner surface and an outer surface,
said hand covering defining a pocket adapted to receive snugly a hand therein,
and suction means on the inner surface of said covering for applying a suction to a hand received in said pocket,
said suction means comprising a plurality of spaced open cup-shaped depression in said covering which extend inwardly toward said outer surface from said inner surface,
whereby said inner surface is adapted to contact a hand inserted into said pocket and said plurality of depressions are adapted to create a suction effect on portions of the hand when the covering is flexed.

3,298,369
MENSTRUAL DEVICE
Jean Pirie, 1209 N. Astor St., Chicago, Ill. 60612
Filed June 13, 1963, Ser. No. 287,547
12 Claims. (Cl. 128—285)



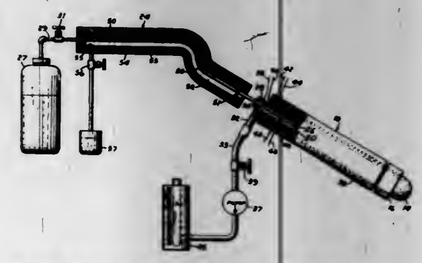
1. A menstrual device which comprises a generally tubular member, an opening in at least one end of said tubular member for passage of fluid into said tubular member, a portion of said tubular member being adapted to hold said tubular member in a vagina, said portion of said tubular member being radially adjustable toward and away from the axis thereof between a smaller diameter and a larger diameter, respectively, in response to longitudinal force, while in smaller diameter position said tubular member being insertable with said open end as the leading end through the orifice formed by a vaginal sphincter, said tubular member while in its larger diameter being of sufficient diameter to be retained against passage through the orifice of a vaginal sphincter, means normally applying a longitudinal force to said portion of said tubular member to urge said portion of said tubular member to its larger diameter position, said portion of said tubular member being adapted to move to its smaller diameter position by elongation thereof, and a flexible fluid-collecting membrane secured to said tubular member and disposed to collect fluid which enters said opening.

3,298,370
URINAL VALVE
David L. Beatty, 10712 E. 84th Terrace, Raytown, Mo. 64139
Filed Sept. 13, 1963, Ser. No. 308,746
6 Claims. (Cl. 128—295)



1. In combination with a urinal bag formed of resiliently pliable material having a rigid tubular nipple sealed in the neck portion thereof and adapted to admit urine therethrough to said bag, a check valve assembly for preventing reverse flow through said nipple, said check valve assembly comprising:
(a) a valve tube having one end thereof sealed about said nipple and extending into said bag, said valve tube being formed of resilient material and being normally collapsed on itself in the free end portion thereof, and
(b) a guard tube formed of resilient material and disposed coaxially with said valve tube and surrounding said valve tube, one end of said guard tube being sealed on said nipple, said guard tube extending from said nipple beyond the free end of said valve tube, and having a longitudinally elongated window formed therein, said window extending from said nipple to a point closely adjacent but spaced outwardly from the free end of said valve tube.

3,298,371
FREEZING PROBE FOR THE TREATMENT OF TISSUE, ESPECIALLY IN NEUROSURGERY
Arnold S. J. Lee, 2375 Hudson Terrace, Fort Lee, N.J. 07024
Continuation of application Ser. No. 212,702, July 26, 1962. This application Feb. 11, 1965, Ser. No. 436,710
3 Claims. (Cl. 128—303.1)



1. Apparatus for neurosurgery comprising
an elongated freezing probe having an external transverse diameter of approximately 0.09 inch and a thermally conductive freezing tip,

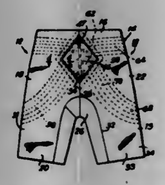
means including a temperature-responsive device embedded in the tip of said probe for measuring the tip temperature,
means for supplying liquid nitrogen to said probe for cooling the tip, and
means for minimizing gasification of the liquid nitrogen as it flows through said probe.

3,298,372
SURGICAL HYDROCEPHALUS SHUNT SLEEVE FOR PLACEMENT IN A VERTEBRA
Maurice Feinberg, 536 Clinton Road, Brookline, Mass. 02146
Filed Dec. 17, 1963, Ser. No. 331,278
3 Claims. (Cl. 128—350)



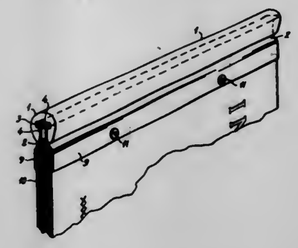
1. Apparatus for treating hydrocephalus comprising a thin-walled, cylindrical shell open at both ends for inserting into the marrow of a vertebra, said shell having relatively large inside and outside surface areas of comparable extent so as to define a relatively large chamber; a flange at one end of said shell; means on the exterior surface of said shell for frictionally engaging said vertebra when said shell is inserted thereinto, and a plurality of apertures in said shell, said apertures extending along a major portion of the length of said shell, and around a major portion of the circumference of said shell, so that fluid accumulating in said chamber can be rapidly released out through the other end of said shell and said apertures into several relatively large areas of marrow dispersed throughout the vertebra.

3,298,373
FEMININE FOUNDATION GARMENT ESPECIALLY FOR SEPARATELY SHAPING THE INDIVIDUAL BUTTOCKS OF A WEARER
Americo Marchisella, 18—15 27th Ave., Long Island City, N.Y. 11102
Filed Mar. 8, 1965, Ser. No. 437,763
11 Claims. (Cl. 128—523)



1. A feminine foundation garment especially for separately shaping the individual buttocks of a wearer, said garment including
(A) a torso circumscribing and constricting fabric sheath adapted to extend from below the buttocks to at least the waist of the wearer,
(B) twin opposed support bands affixed along their entire lengths each to a different right or left half of the sheath, and
(C) a front panel integral with the seath and adapted to be located over the abdomen of the wearer,
(I) said front panel being relatively inelastic in at least a circumferential direction,
(D) each of said bands being adapted to be located at a different adjacent flank and buttock of the wearer and each comprising
(I) upper and lower end portions secured to the panel,
(II) an upper reach portion running from the upper end portion diagonally downwardly and rearwardly on the sheath and adapted to span one flank of the wearer,
(III) a bight portion on the sheath running from the upper reach portion and adapted to pass between the buttocks and underneath a buttock of the wearer, and
(IV) a lower reach portion on the sheath running from the bight portion diagonally upwardly and forwardly to the lower end portion and adapted to span the said one flank of the wearer,
(V) said bands being in tension when the garment is on the wearer so as to lift and slightly separate the buttocks.

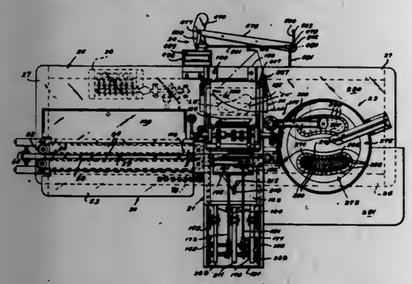
3,298,374
FILES FOR DOCUMENTS, PAMPHLETS AND THE LIKE
Carl Erik Grundell, Osmogatan 8, Enskede, Sweden
Filed Sept. 24, 1964, Ser. No. 398,961
Claims priority, application Sweden, Oct. 3, 1963, 10,838/63
6 Claims. (Cl. 129—1)



1. In a filing appliance the combination of
a folded member made of thin but relatively rigid sheet material, said folded member presenting an elongate attachment portion formed by mere folding of said sheet material along a number of parallel folding lines, and
a channel bar member of transparent material having a longitudinally extending groove therein for receiving said attachment portion of the folded member, said groove of the channel bar member extending along the full length thereof and having a T-shaped cross-section presenting sharp corners between the laterally extending shanks and the stem of the T, and T-shaped cross-section having a width between the outer ends of the shanks that is substantially greater than the thickness of the stem and a thickness of the shanks that is relatively small as compared with said stem thickness,

said attachment portion of the folded member taking the form of an open-ended thinwalled trough having a cross-section substantially conforming to inside contour of said T-shaped groove of the channel bar member and presenting a substantially flat bottom, the external width of which substantially corresponds to said width between the outer ends of said shanks of the T-shaped cross-section of said groove and substantially exceeds the stem thickness thereof, and externally concave side walls substantially accommodating themselves to the inner side wall contour of said T-shaped groove and both extending out through the longitudinal opening of said groove, said attachment portion of the folded member having external markings thereon visible through the bottom wall portion of said T-shaped groove of the channel bar member.

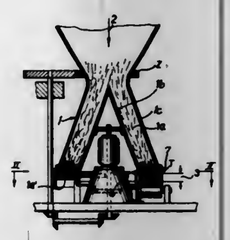
3,298,375
CIGAR MAKING MACHINE
Albert Louis Petri, Atherton, Calif., and Henry Lewin, Clarksville, Tenn., assignors, by mesne assignments, to Petri Cigar Company, Clarksville, Tenn., a corporation of Tennessee
Original application Mar. 13, 1959, Ser. No. 799,137, now Patent No. 3,105,497, dated Oct. 1, 1963. Divided and this application Oct. 30, 1962, Ser. No. 234,036
6 Claims. (Cl. 131—81)



2. In a cigar making machine for making Toscani cigars with filler tobacco having a moisture content up to about 45%, a knife movable between retracted and actuated positions for cutting a vertical stack of said filler tobacco, and spray means operable in the retracted position of said knife for providing an aqueous mist on at least a portion of the cutting surface of the knife.

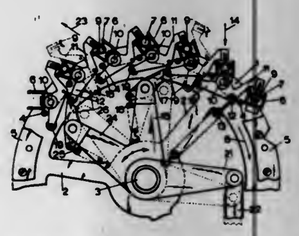
3,298,376
APPARATUS FOR PRODUCING A TOBACCO ROD
Horst Kochalski, Hamburg-Lohbrugge, Germany, assignor to Hauni Werke Koerber & Co. K.G., Hamburg-Bergedorf, Germany
Filed Aug. 30, 1963, Ser. No. 306,655
Claims priority, application Germany, July 11, 1958, H 33,783
6 Claims. (Cl. 131—84)

2. An apparatus for forming a continuous tobacco rod, comprising a pair of spaced annular walls arranged to rotate about a predetermined axis and defining an annular tobacco receiving space therebetween, said annular space having an inlet portion and an open annular outlet portion; means for feeding tobacco through said inlet portion and into said annular space whereby the tobacco forms an annular body which rotates with said annular walls and advances within said annular space toward said annular outlet portion; a cutter adjacent to said annular outlet portion and extending into the rotating body of tobacco so as to sever a continuous tobacco rod therefrom; wall means for closing said annular outlet portion along a substantial part thereof, the remaining part of said outlet portion completing said annular portion and forming a delivery opening for the continuous tobacco rod which is severed by said cutter; and transporting channel means for the tobacco rod having an intake portion being contiguous and registering with said



delivery opening, said transporting channel means comprising a plurality of walls one of which is constituted by a moving belt extending to said intake portion and complementing said wall means for continuously receiving the tobacco rod passing through said delivery opening.

3,298,377
APPARATUS FOR PRESSING CIGAR BUNCHES
Martinus Verbakel, Eindhoven, Netherlands, assignor to Arenco-P.M.B. n.v., Eindhoven, Netherlands, a company of the Netherlands
Filed Aug. 27, 1964, Ser. No. 392,554
Claims priority, application Netherlands, Aug. 28, 1963, 297,230
3 Claims. (Cl. 131—87)

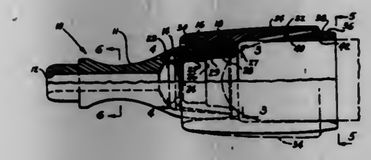


1. An apparatus for pressing cigar bunches, comprising a wheel mounted for stepwise rotation, inner moulds mounted at the periphery of said wheel, having each a pressing cavity for the cigar bunch to be pressed and being mounted with their longitudinal axes parallel to the axis of the wheel and at equal distances around the periphery of said wheel, outer moulds, each one of which cooperates with an individual inner mould and is mounted on the wheel for swinging about an axis extending parallel to the axis of the wheel, springs to force the outer moulds into the corresponding inner moulds, a station at which the inner moulds are loaded with cigar bunches to be pressed, a station at which the pressed cigar bunches are discharged from the inner moulds, and means adapted to swing the outer moulds out of the inner moulds against the force of said springs, when the inner moulds are at the loading station and at the discharging station, the angular position of each inner mould with respect to the wheel being such that the longitudinal plane bisecting the opening of the pressing cavity of each inner mould forms an acute angle with the radius of the wheel extending towards the longitudinal axis of said pressing cavity, and the plane containing the longitudinal axis of said cavity and directed at right angles to said longitudinal bisecting plane extends just inwardly of the next succeeding mould.

3,298,378
METHOD OF MAKING A TOBACCO PRODUCT
Chester U. Stevens, Stockbridge, Mass., William P. Schweitzer, Colt's Neck, N.J., and William A. Selke, Stockbridge, Mass., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
No Drawing. Filed Jan. 30, 1964, Ser. No. 341,443
1 Claim. (Cl. 131—140)

A process for making a tobacco product for use in a smokable article which comprises extracting the soluble material from natural tobacco to leave a fibrous remainder, forming the said remaining-fibers into a sheet by a paper making technique, impregnating the fibers thereof with a soluble titanyl salt selected from the group consisting of titanyl chlorides, sulphates, nitrates and acetates which is reacted with an alkaline neutralizing agent to occasion a titania impregnation thereof and finally incorporating the soluble extract into the sheet in substantially the same proportion as that present in the natural tobacco, the titania impregnation modifying the natural combustion characteristics of the fibers so that the percentage of tarry condensate produced by combustion thereof is reduced.

3,298,379
CIGAR OR CIGARETTE HOLDER WITH ADAPTOR
Michael Ambruch, 84 Coxeville, Beaver Meadows, Pa. 18216
Filed Feb. 3, 1965, Ser. No. 430,043
1 Claim. (Cl. 131—179)



In combination with a cigarette holder having a stem, a mouthpiece, and an open enlarged front end, a cigarette adaptor in said open end comprising a tubular body with a bore adapted to secure a cigarette, an outwardly extending flange, said body having axial interior and exterior grooves with apertures in communication with said grooves, said exterior grooves communicating with said front end and stem, a cigar holder with a tubular body secured to the exterior of said enlarged front end, said cigar holder having a groove communicating with said cigarette holder interior grooves, said cigar holder groove being angularly disposed with the cigar holder body and having its front end disposed radially outwardly of its other end and communicating with the atmosphere.

3,298,380
PROCESS FOR PURIFICATION OF TOBACCO SMOKE
Eldon E. Stahly, Pompano Beach, Fla., assignor to Oliver W. Burke, Jr., Fort Lauderdale, Fla.
No Drawing. Filed Dec. 14, 1962, Ser. No. 244,572
1 Claim. (Cl. 131—262)

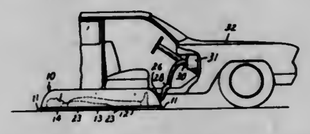
A process for the purification of tobacco smoke from a smoking article by the removal of volatile metal compounds therefrom, which comprises passing said smoke through a filter into the mouth of the user down stream therefrom, said filter comprising a ligand compound containing transition metal chelating groups, said compound being a cyanoamide.

3,298,381
MANICURE IMPLEMENT
Donald R. Adams, Los Angeles, Calif. (P.O. Box 865, Felton, Calif. 95018)
Filed Aug. 14, 1962, Ser. No. 216,923
3 Claims. (Cl. 132—76.4)



1. A manicure implement consisting essentially of a longitudinal base member of smooth material having a central portion having a concave top side and a convex underside, a first end portion and a second end portion, the cross-sections of all three said portions being essentially crescent shaped, said cross-section decreasing in size but having essentially similar shape from said second end portion to said first end portion, said central portion being overlaid with a layer of granular abrasive particles on the concave top side of said central portion extending to the lateral boundaries of said concave top side so as to terminate along an acute dihedral angle formed by the junction of said top side with said underside, the extremity of said end portions being rounded when viewed in a horizontal plane and also being rounded when viewed from the side, so as to present an essentially acute edge around the perimeter of each of said end portions.

3,298,382
TEMPORARY SHELTER FOR INJURED PERSONS
Ernest J. Larson, Jr., 4808 Dunberry Lane, Minneapolis, Minn. 55424
Filed Apr. 28, 1965, Ser. No. 451,528
1 Claim. (Cl. 135—14)

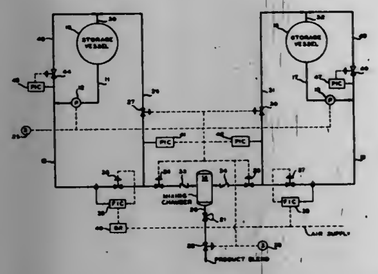


A temporary shelter for injured persons comprising:
(a) a flexible cover having a plurality of loops positioned around the lower edges thereof,
(b) a rigid collapsible frame composed of separate elongated parts separably interconnected adjacent the ends thereof and engaged in said loops of said cover for defining in combination with said cover a single, prostrate human body receiving opening thereunder,
(c) means for introducing warm air under pressure into said opening to at least partially inflate said flexible cover and to maintain an injured person thereunder at a comfortable temperature including
  (1) a flexible conduit having one end thereof in communication with said opening, and
  (2) means for attaching the other end of said conduit to an internal automobile heater providing warm air under pressure; and
(d) at least one opening through said cover adjacent said frame for the exhaust of air from said shelter.

3,298,383
FLUID BLENDING SYSTEM
Delbert J. Cooper, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 23, 1964, Ser. No. 353,770
8 Claims. (Cl. 137—3)

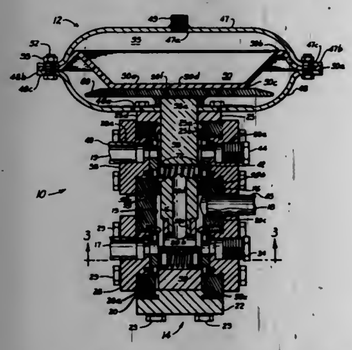
7. A process which comprises continuously passing a first fluid from a first storage zone through a first rate of flow control zone, passing said first fluid from said first control zone to a blending zone, continuously passing a second fluid from a second storage zone through a second rate of flow control zone, passing said second fluid from said

second control zone to said blending zone, passing a blended fluid mixture from said blending zone, simultaneously interrupting the flow of blended fluid mixture from said blended zone and the flow of said first and second fluids to said blending zone from said first and second rate of flow control zones, respectively, and thereafter passing said first fluid from said first rate of flow control zone to said first storage zone and said second



fluid from said second rate of flow control zone to said second storage zone, operating said first rate of flow control zone to maintain the flow of said first fluid from said first rate of flow control zone to said blending zone or said first storage zone substantially constant, and operating said second rate of flow control zone to maintain the flow of said second fluid from said second rate of flow control zone to said blending zone or said second storage zone substantially constant.

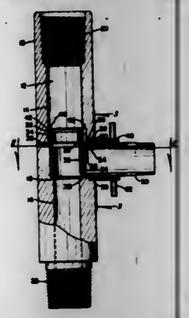
3,298,384
HYDRO-PNEUMATIC PRESSURE REGULATOR
Vivian H. Payne, P.O. Box 9363, Houston, Tex. 77014
Filed Jan. 24, 1964, Ser. No. 339,963
1 Claim. (Cl. 137—102)



A combination fluid pressure reducing and relief regulator valve operable to supply pressure fluid from a source to a pressure fluid receiver at a pressure related to a control pressure comprising:

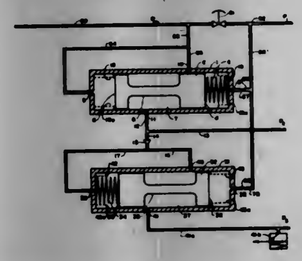
(a) a valve body having an internal passage and an open and closed end,
(b) an inlet port communicating with said passage adjacent said closed end, said inlet port communicating with the pressure fluid source,
(c) an outlet port communicating with said passage, said outlet port communicating with the pressure fluid receiver,
(d) a relief port communicating with said passage and communicating with a pressure fluid sump, said outlet port being mounted between said inlet and relief ports,
(e) a slide valve having two ends adapted to be slidably positioned in said passage, one of said ends adjacent said inlet port being exposed to pressure fluid in the passage and the other of said ends being positioned adjacent said open end of said open end of said valve body,
(f) seal means adapted to be positioned about the slide valve in said passage to prevent communication along said passage between said outlet and relief ports,
(g) duct means in said slide valve terminating in openings at each end thereof with said openings located to bypass said seal means,
(h) second seal means mounted in said slide valve adapted to be positioned relative to said inlet port to close said port,
(i) third seal means mounted in said slide valve adapted to be positioned in said duct means opening to prevent communication of pressure through said duct means except when said duct means opening is positioned by said slide valve to communicate with said relief port,
(j) pressure fluid responsive means mounted with said end of said slide valve adjacent said open end of said valve body and including:
  (1) a housing for containing pressure fluid,
  (2) one portion of said housing being formed of a yieldable material, said portion being much larger in area than the end of the slide valve,
  (3) movable means positioned adjacent the yieldable portion, said means having an area substantially equal to the area of the yieldable portion,
  (4) means on said movable means for sliding said slide valve in said internal passage against pressure fluid therein in response to pressure fluid within said housing, and
(k) a controllable pressure fluid source connected to said pressure fluid responsive means for varying the position of said slide valve to thereby vary the pressure of pressure fluid within said valve body.

3,298,385
CONSTANT CIRCULATING COUPLING DEVICE
John Gordon Jackson, Denver, Colo., and Eugene D. Spineto, Long Beach, Calif., assignors to Well Completions, Inc., Denver, Colo., a corporation of Colorado
Continuation of application Ser. No. 223,343, Sept. 13, 1962. This application Sept. 22, 1965, Ser. No. 495,752
1 Claim. (Cl. 137—112)



A circulating sub assembly for connecting two pipe sections and altering the course of fluid circulation therethrough, comprising: in combination, a cylindrical body member having an axial passageway therethrough with two sections of different diameters which form an internal shoulder at their junction, said passageway having an annular internal groove in its wall above said shoulder, said body member having a transverse opening leading into the large diameter section of said passageway and the passageway being flattened at the internal terminus of said opening to receive a gate valve; a snap ring in said annular groove; a cylindrical hollow base member seated concentrically in said passageway with its top rim against the bottom of said snap ring; at least one pin extending through the wall of said body member with its internal end in contact with said hollow base member to seat the base member axially with respect to said opening; sealing means between said base member and said passageway; and a flapper gate valve element hinged to the lower rim of said base member adjacent said internal terminus and adapted to swing from a position closing said opening to a position closing said passageway.

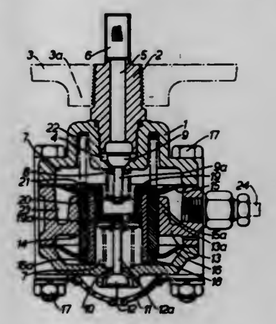
3,298,386
SYSTEM FOR ESTABLISHING A PLURALITY OF FLUID PRESSURE LEVELS
Robert M. Douglas, Dumont, N.J., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,157
5 Claims. (Cl. 137—115)



1. In combination, a first and second differential pressure regulating valve, each of said valves comprising an enclosed cylindrical chamber, a slidable spool valve therein, a fixed resilient force opposing one end of said spool and abutting on one end of said chamber in said first valve, a given resilient force opposing the opposite end of the spool in the second chamber with respect to the spool in the first chamber and abutting on said opposite end of said second chamber, a conduit in each of said chambers for providing a reference fluid pressure for actuation of said spool valves against at least the fixed resilient forces therein, said first valve being provided with an inlet and an outlet port, said inlet port being maintained in a normally closed position by the spool valve in association with the given resilient force, said second valve being provided with an inlet and an outlet port, said inlet port being maintained in a normally open position by the spool valve in association with the given resilient force and conduit connections between the outlet port of said first valve and the inlet port of said second valve.

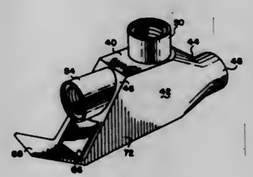
3,298,387
AUTOMATIC DRAIN VALVES FOR AIR RESERVOIRS
Wilbur M. Page, Lincoln, England, assignor to Clayton Dewandre Company Limited, Lincoln, England, a company of Great Britain
Filed Feb. 6, 1964, Ser. No. 342,978
Claims priority, application Great Britain, Feb. 11, 1963, 5,451/63
7 Claims. (Cl. 137—203)

1. A condensate drain valve for a compressed air reservoir comprising a housing, means defining a discharge chamber within said housing, an inlet drain passage for connecting said reservoir to said chamber having an inlet port in said housing opening into said chamber, an inlet valve for said inlet port, means in said housing defining an outlet port from said discharge chamber, an outlet valve for said outlet port, valve actuating means reciprocable on a slide guide mounting within said housing and being adapted for operable connection to oppositely sequentially actuate said valves during movement in opposite directions, means for moving said valve actuating means comprising flexible diaphragm means connected to said valve actuating means and mounted within the housing, said diaphragm means extending within said



housing to isolate said slide guide mounting of the valve actuating means from said discharge chamber so that said slide guide mounting means is protected from condensate drainage from said reservoir and means for introducing fluid under operating pressure into said housing to cause said diaphragm means to displace said valve actuating means in a given direction to effect sequential closing of said outlet valve and opening of said inlet valve, said valve actuating means effecting sequential closing of said inlet valve and opening of said outlet valve when said fluid pressure is released.

3,298,388
DRAINING SPRINKLER CONNECTORS
Rufus J. Purtell, Brownfield, Tex., assignor to The J. B. Knight Co., Inc., Brownfield, Tex., a corporation of Texas
Filed Jan. 3, 1966, Ser. No. 518,303
4 Claims. (Cl. 137—382)

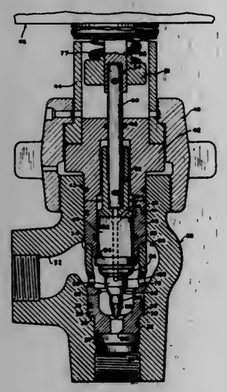


1. A draining connector comprising:
(a) a hollow body,
(b) a coupling on the hollow body adapted to connect it to a tube to supply water thereto,
(c) a second coupling on the hollow body at right angles to the first coupling adapted to connect a sprinkler thereto,
(d) the hollow body having an underside, said underside extending to the rear of the hollow body to form a foot therebehind,
(e) the rear portion of said foot being angled upward therefrom,
(f) the hollow body having a back surface thereto extending upward from the underside,

(g) the back surface having a hole therethrough near the bottom thereof, and

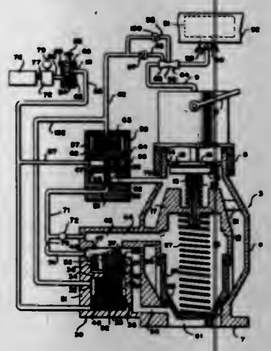
(h) resilient valve means extending through the hole for closing the hole responsive to pressure in the hollow body.

3,298,389
PRESSURE BALANCED VALVE
Mathew L. Freeman, Crown Point, Ind., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 7, 1964, Ser. No. 380,818
2 Claims. (Cl. 137—454.6)



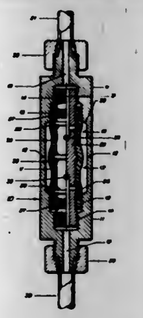
1. A valve construction comprising a body having inlet and outlet passages connected to a central cavity, a bore connecting said cavity to the exterior of said body, means providing a valve seat between said inlet and said outlet flow passages and a flow port between said valve seat and said outlet passage, said flow port being substantially smaller than said valve seat and there being a flow chamber between said valve seat and said flow port of substantially larger cross-section than the cross-section of said flow port, a valve closure member mounted for movement between open and closed positions within said valve body and having a seating surface adapted to sealingly engage said valve seat when said valve is closed, a throttle member rigid with said valve closure member and extending from one end of said closure member into said flow port and spaced from and in close clearance relation with said flow port when said valve is closed and being displaced out of said flow port when said valve is open, a power actuator connected to move said valve closure member between open and closed positions, fluid seals forming a sealed pressure chamber at the end of said valve closure member remote from said throttle member, passage means extending through said valve closure member, said passage means having an opening at one end in said pressure chamber and having an opening at its opposite end in the region of said closure member between said seating surface and said throttle member thereby connecting said pressure chamber to said flow chamber between said valve seat and said flow port in the valve closed position, the area of said valve seat and the area enclosed by said fluid seals being such that when said valve is closed said valve closure member is essentially balanced against movement toward and away from said closed position whereby said closure member may be moved by said actuator toward and away from said closed position rapidly, fluid passing through said passage means into and out of said pressure chamber to accelerate initial opening movement and final closing movement of said valve closure member.

3,298,390
HYDRANT VALVE UNIT
Paul A. de Graaf, Los Angeles, Calif., assignor to Parker Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 16, 1965, Ser. No. 448,635
16 Claims. (Cl. 137—459)



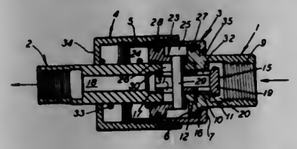
1. A valve assembly comprising a main valve having an inlet, an outlet, and a main valve element for controlling flow of liquid therebetween, said main valve having a chamber to which the main valve element is exposed, passage means having a small capacity portion and a large capacity portion for delivering fluid from the inlet to the chamber to urge the main valve element toward its closed position, a vent passage connected to said small capacity portion for venting fluid from said chamber, a small capacity pilot valve for opening and closing said vent passage, a large capacity pilot valve for opening and closing said large capacity portion and having a spring urging the same toward open position, and means for applying fluid pressure to said small capacity pilot valve for urging the same toward open position and to said large capacity pilot valve for urging the same toward closed position.

3,298,391
TWO WAY FLOW ANTI-SIPHON VALVE ASSEMBLY
Harry A. Savage, Miami, Fla., assignor of fifty percent to Donald W. Barlow, Miami, Fla.
Filed Mar. 22, 1965, Ser. No. 441,504
2 Claims. (Cl. 137—493)



1. A valve body for a two way flow anti-siphon valve assembly comprising a substantially cylindrical body member, threaded portions at each end of said body member, a knurled portion mounted on said body member adjacent each of said threaded portions, a peripheral ridge mounted on said valve body adjacent each of said knurled portions, substantially axially disposed fluid passageways extending from each end of said body member in a direction toward each other and terminating short of the midportion of said body member, a plurality of radially disposed ducts communicating with the inner ends of said fluid passageways and extending through the side wall of said body member, a peripherally disposed ridge extending about said valve body and positioned between said radially disposed ducts, and a resilient sleeve telescopically mounted on said valve body between said threaded portions, engaging said peripheral ridge portions and said knurled portion and enshrouding said ducts.

3,298,392
PRESSURE REGULATOR
Warren N. Wilcox, 16736 Foothill Blvd., San Leandro, Calif. 94578
Filed June 1, 1964, Ser. No. 371,558
2 Claims. (Cl. 137—505.25)



1. A pressure regulator comprising:

(a) an elongated central cylindrical member having a through central bore extending longitudinally thereof provided with an air inlet at one end for high pressure air and an air outlet at the opposite end for low pressure air;

(b) an outer wall having a cylindrical inner surface concentric with and spaced outwardly of said central member having opposite end portions in sealing engagement with the outer surface of said central member providing an annular air expansion chamber around and between said cylindrical inner member and said outer wall;

(c) an annular member concentric with said inner cylindrical member disposed within said expansion chamber in slidable sealing engagement with the outer surface of said inner cylindrical member and with said inner surface of said outer wall for reciprocable movement relative to said inner member;

(d) a port formed in said inner cylindrical member communicating between said through bore and said expansion chamber;

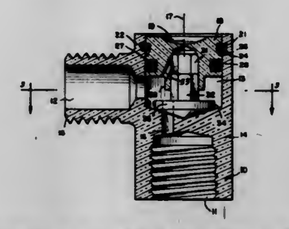
(e) a poppet valve having a head at one end concentric with and spaced within said bore and a hollow stem coaxial with said head extending axially of the latter within said bore in a direction away from said air inlet, said head being spaced from said port in direction toward said air inlet;

(f) a valve seat rigid with said inner cylindrical member disposed between said head and said port toward which said head is adapted to be moved under the influence of air from said inlet within said expansion chamber;

(g) means connecting said annular member with said poppet valve for movement of said poppet valve away from said valve seat upon movement of said annular member in a direction toward said inlet; and

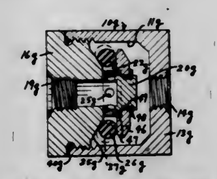
(h) yieldable means reacting between said outer member and said annular member for yieldably urging said annular member generally toward said inlet and against the air pressure within said chamber under predetermined yieldable pressure for holding said poppet valve spaced from said seat a distance only sufficient to maintain a discharge of air at said outlet at a pressure that is substantially equal to the resistance of said yieldable means when said inlet is connected with a source of air under a pressure that is higher than the force exerted by said yieldable means in opposition to the pressure of air in said expansion chamber.

3,298,393
CHECK VALVE HAVING THROTTLING PASSAGE
Kenneth C. Mosier, 3516 Springdale Ave., Dayton, Ohio 45419
Filed Nov. 15, 1963, Ser. No. 323,945
7 Claims. (Cl. 137—513.3)



1. A variable orifice fluid flow control valve comprising a body defining first and second ports and a valve seat between said ports, said valve seat having a conical face concentric about a major axis and a first through bore spaced radially from said axis, a valve member having a conical face for sealing engagement with said valve seat and a second through bore movable by rotation of the valve member into registry with said first through bore, said valve member being mounted in said body with freedom to reciprocate axially of said conical face thereof between substantially full open position when the flow through said ports is in one direction and a position in which said conical faces are in contact with each other when the flow is in the opposite direction, plug means rotatably sealed in said body, and means coupling the plug means to the valve member for rotation of said member.

3,298,394
CHECK VALVE
William J. Chorkey, 32331 Baintree, Farmington, Mich. 48024
Filed Mar. 29, 1963, Ser. No. 271,549
1 Claim. (Cl. 137—525)

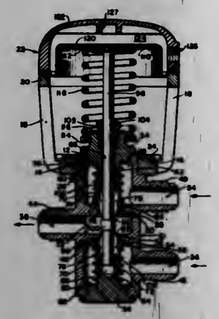


A valve comprising: a body having a chamber, said body being closed at one end with an outlet port therein, an end plate mounted in the other end of the body and having an inlet port therein, a reduced annular extension on the inner end of the end plate, a circular series of valve openings in the end plate adjacent the reduced inner end thereof, a disc detachably mounted on the inner reduced end of the end plate, a retainer clip ring mounted on the reduced end of the end plate and engaged with said disc for holding the disc in position, one side of the disc having a radial face perpendicular to the longitudinal axis of the body and facing an inclined face on the end plate to form a valve seat, a filter member surrounding the circular series of valve openings and an elastic O-ring engaged with said perpendicular and inclined faces to close said valve openings.

3,298,395
SEQUENCE VALVE

Jay L. Lewis, Knoxville, Tenn., assignor to Robertshaw Controls Company, a corporation of Delaware

Filed Nov. 16, 1962, Ser. No 238,220
6 Claims. (Cl. 137—607)



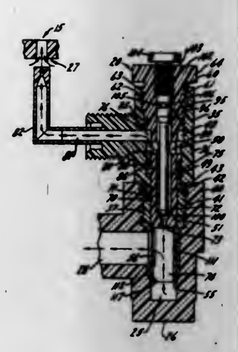
1. A sequence valve comprising first and second inlet means, outlet means, first and second valve means interconnecting, respectively, said inlet means with said outlet means, common actuating means for said valve means having a predetermined operating stroke, contact means on said actuating means, cooperating means on each of said valve means adapted to be engaged by said contact means, said contact means being so spaced with respect to each of said cooperating means as to be simultaneously disengaged from both of said cooperating means over a predetermined portion of said operating stroke of said actuating means to thereby form a dead zone in the operating sequence of said sequence valve, and biasing means for said valve means, whereby said valve means are maintained in a normally closed condition, said sequence valve further including a valve body containing said inlet, outlet and valve means, said valve body being open at both ends, first and second end caps in the ends of said valve body, inward coaxial extensions on said end caps, and bore means in said end caps for coaxially receiving a portion of said common actuating means; and wherein said first and second hollow valve poppets, respectively, are telescopically mounted with respect to said inward coaxial extensions on said first and second end caps, respectively, said poppets and said flow ports being coaxially disposed with respect to a portion of said common actuating means, and annular seating means on each of said valve poppets for closing said first and second flow ports in response to the position of said actuating means.

3,298,396
BACKWASH AND REGENERATION VALVE FOR WATER CONDITIONING SYSTEM

Edward G. Gressman and James E. Hiers, St. Paul, Minn., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey

Filed May 1, 1964, Ser. No. 364,121
11 Claims. (Cl. 137—637.4)

1. In a water conditioning system having a primary valve which controls service and regeneration and includes a brine draw water outlet port, a backwash water delivery passage, and a water supply passage, an auxiliary valve assembly for regulating the flow of water to brine draw and to backwash, comprising: a valve body adapted to be mounted in the outlet port, a major valve bore extending through said body and opening adjacent one end into the water supply passage, a valve core mounted in the other end of said major bore and rotatable therein, a minor valve bore extending through said valve core and separated into inlet bore means and outlet bore means by a valve port, said inlet bore means opening into the water supply passage, brine draw water outlet passage means extending radially through said valve core and said valve body from said outlet bore means, a valve member mounted in said outlet bore means for axial movement therein to open and close said valve port and vary the rate of water flow from the water supply passage to the brine draw, first aperture means extending radially

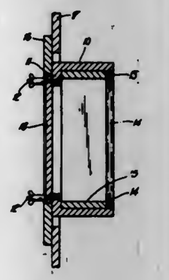


through said valve body in registry with the backwash water delivery passage, and second aperture means extending radially through said valve core to said inlet bore means in axial alignment with said first aperture means, the rotation of said valve core in said major valve bore varying the amount of registry of said first and second apertures to vary the rate of water flow from said inlet bore means to the backwash delivery passage.

3,298,397
FIRE ACCESS DOOR UNIT

James Hugh Green, Greenford, Middlesex, England, assignor to James Green Developments Limited, London, England, a British company

Filed Mar. 26, 1964, Ser. No. 354,872
7 Claims. (Cl. 138—92)

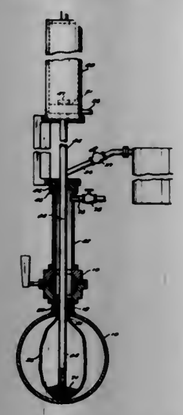


4. A fire access door unit for ducting, such unit comprising a tubular body defining an interior to said unit; first and second ends to said body; a readily frangible panel; releasable means to secure said readily frangible panel at said first end of said tubular body effective to close said first end, and to enable said panel to be removed from said unit without breaking said panel, a pivotable door formed of perforated material closing said second end of said body and openable by pressure in the interior of said unit and means preventing said panel from opening under pressure exterior of said unit.

3,298,398
PLUGGING APPARATUS FOR PIPE LINES

Joseph B. Smith, 5350 W. 130th St., Cleveland, Ohio 44125

Filed Feb. 7, 1964, Ser. No. 343,293
19 Claims. (Cl. 138—94)



8. An apparatus for plugging a pipe under pressure comprising means for cutting an opening having a diameter less than the diameter of said pipe through the side wall of said pipe while preventing loss of pressure from said pipe, a valve operable to close said opening, a pressure chamber connectable with said opening through said valve, means insertable through said pressure chamber for cleaning said pipe adjacent to said opening, a flexible bag, means for inserting said flexible bag through said pressure chamber and said opening into said pipe and producing a pressure within said bag at least equal to the pressure in said pipe, relief means operable to prevent pressure in said bag substantially greater than the pressure in said pipe, a mass of loose magnetic particles, means for inserting said loose magnetic particles through said opening into said bag, means external of said pipe operable to produce a magnetic field extending through said particles magnetically locking said particles as a rigid mass and pressing said bag into engagement with the wall of said pipe, means for removing said particles from said bag, and means for removing said bag from said pipe through said opening.

3,298,399
APPARATUS TO DETECT AND TEMPORARILY SEAL A LEAK IN A PIPELINE

Ernest A. Slade, Lower Allen Township, Cumberland County, Pa., assignor to Warren Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Oct. 27, 1964, Ser. No. 406,851
6 Claims. (Cl. 138—97)



6. A pipeline pig adapted to detect and temporarily seal a leak in a pipeline comprising
an axial rod,
a first cup rigidly mounted on and sealed to said rod and forming a sliding seal against the inside surface of the pipe,
an opening in said first cup,
a fluid turbine in communication with said opening in said first cup,
a rattler mounted on said rod and actuated by said turbine and adapted to strike the pipe when actuated,
a second cup rigidly mounted on and sealed to said rod behind said first cup and forming a sliding seal against the inside surface of the pipe,
an opening in said second cup,
a first spring-biased valve closing said opening in said second cup and permitting fluid exceeding a predetermined minimum pressure to discharge from space behind said second cup to space ahead of said second cup,
a third cup slidably mounted on said rod behind said second cup and forming a sliding seal against the inside surface of the pipe,
a radially expandable boot smaller in unexpanded diameter than the inside diameter of the pipe and connected to said second cup and to said third cup,
a compression spring between said second cup and said third cup tending to longitudinally extend said boot,
a large opening in said third cup permitting access of fluid behind said third cup to space inside said boot,
a restricted opening in said third cup permitting access of fluid from behind said third cup to space outside said boot,
a fourth cup rigidly mounted on and sealed to said rod behind said third cup and forming a sliding seal against the inside surface of the pipe,
an opening in said fourth cup,
a second spring-biased valve closing said opening in said fourth cup and permitting fluid exceeding a predetermined minimum pressure to discharge from space behind said fourth cup to space ahead of said fourth cup, and
a restricted opening bypassing said second valve.

3,298,400
FILLING CARRIER FOR SHUTTLELESS LOOMS

Maurice R. Flamand, Lonsdale, R.I., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine

Filed Oct. 29, 1964, Ser. No. 407,297
2 Claims. (Cl. 139—122)

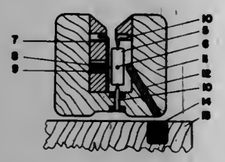


1. For a loom having reciprocable carriers by which filling from an outside source of supply is inserted within sheds formed by warp threads, a filling receiving carrier for receiving a loop of filling from a companion carrier adapted to insert that loop part way through a warp shed and for extending an end from said filling loop across the remainder of the shed, said filling receiving carrier comprising a hooked member and a combined trapping and tensioning member, said hooked member having a vertical forward surface, a lower horizontal surface extending rearwardly therefrom, a filling engaging hook formed as part of said vertical and lower surfaces, said trapping and tensioning member having an end in spring contact with said vertical forward surface, said hooked member including a curved leading edge with a cooperating means for positively guiding said filling between said vertical forward surface and said trapping and tensioning member, said curved leading edge extending in a direction perpendicular to said forward surface beyond the limits of said trapping and tensioning member.

3,298,401
THREAD CONTROLLER FOR TEXTILE MACHINES

Hansruedi Stutz, Zurich, Switzerland, assignor to A. G. Gebrueder Loepfe, Zurich, Switzerland, a corporation of Switzerland

Filed July 17, 1962, Ser. No. 210,356
Claims priority, application Switzerland, July 20, 1961, 8,554/61
11 Claims. (Cl. 139—371)

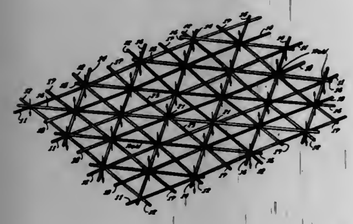


1. In a weaving machine having a thread-carrying shuttle, a thread controller comprising a rotary signalling member carried by the shuttle and adapted to engage and to be rotated by the moving thread emerging from said shuttle, the rotary signalling member comprising means for producing signals shaped depending upon the speed of rotation of said signalling member; signal receiving means including signal sensing means mounted on the weaving machine near the path of said shuttle, said signal sensing means receiving said shaped signals to produce therefrom alternating voltage the amount and frequency of which depend upon the speed of rotation of the rotary sensing member, and signal discriminating means coupled with said signal receiving means and operable to produce a control signal when at least one of the characteristic values of said voltage is below a set amount corresponding to a regular operation of said rotary signalling member.

3,298,402
METHOD FOR FABRICATING SPACE STRUCTURES

Jesse R. Hale, 14020 Budlong Ave., Gardena, Calif. 90247

Filed Feb. 15, 1965, Ser. No. 432,713
4 Claims. (Cl. 140—5)



1. A method for fabricating a space structure comprising the steps of

forming a flat web from wire, said web comprising a plurality of square meshes having diagonal members running between the corners thereof and forming an X and cross members running between the opposite sides thereof, said cross members being halfway between the sides of said meshes and forming a "+,"

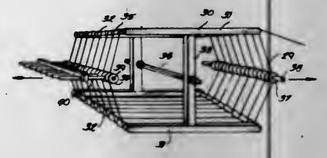
joining the wires of said web together at all points where four of said wires cross, and

forcing adjacent alternate apices formed at the wire juncture points in opposite directions to form a three dimensional pyramidal space structure.

3,298,403
WIRE MAT FORMING METHOD

William D. Allers, 105 W. Harris Ave., La Grange, Ill. 60525

Original application Apr. 15, 1963, Ser. No. 273,227. Divided and this application Nov. 24, 1965, Ser. No. 509,479
6 Claims. (Cl. 140—92.1)

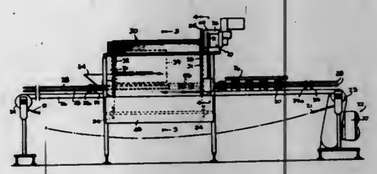


1. In a method of forming a mat for use in prestressing concrete members, the steps of extending a single strand of wire back and forth between spaced opposing series of pulleys, each pulley of one of said series being associated with an individual mounting, each of said mountings being independently rotatable, urging said series of pulleys apart while simultaneously holding the ends of said wire against longitudinal movement to tension uniformly the stretches of wire between said pulleys, and thereafter rotating said mountings to twist adjacent pairs of said stretches of wire together to form a mat of interconnected wire elements having twisted intermediate sections and untwisted single-strand end loops.

3,298,404
MACHINE AND METHOD FOR FILLING CONTAINERS TO A PREDETERMINED LEVEL

Bernard C. Eisenberg, Rockaway, N.J.
(% Solbern Mfg. Co., Box 567, Caldwell, N.J. 07006)

Filed July 12, 1963, Ser. No. 294,652
21 Claims. (Cl. 141—1)

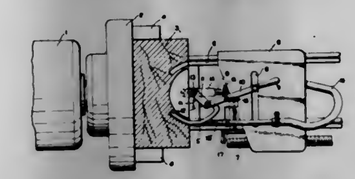


17. A method of filling a container with material to a predetermined level therein, the container having an open upper portion, comprising the steps of conveying the container along a predetermined path, delivering material through the open upper portion of the container to establish a level of material therein at least equal to said predetermined level, and swinging the container transversely to the path of the conveying of the container and about an axis extending below at least the upper portion of the container as said container is being conveyed with material therein, said swinging moving the container through a plurality of cycles of reciprocating motion with the open upper portion of the container facing upwardly throughout each of the cycles of reciprocating motion, at least a portion of the centrifugal acceleration applied to the container in response to the swinging of the container about said axis being directed toward the open upper portion of the container, whereby centrifugal force urges the material delivered to the container in excess of said predetermined level to be ejected from the container.

3,298,405
MANUFACTURE OF HOLLOW BODIES

Nils Oskar Tore Loof, Gullspang, Sweden

Filed Aug. 26, 1964, Ser. No. 392,089
7 Claims. (Cl. 142—1)



1. A machine for sequentially manufacturing a plurality of wooden bowls from a block of wood comprising:

(a) a base,

(b) a holding means mounted on said base for holding said block of wood and rotating it about a fixed axis of rotation,

(c) a first pivot means mounted on said base adjacent said axis of rotation,

(d) cutting tool means having one end pivotally connected to said first pivot means to pivot on a first pivot axis normal to said axis of rotation and the opposite end forming an arc defining a circle about said pivot axis and terminating in a sharpened cutter,

(e) carriage means slideably mounted on said base to slide toward and away from said holding means parallel to said axis of rotation and carrying an elongated guide perpendicular to said axis of rotation,

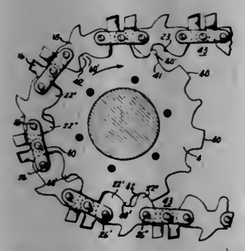
(f) a second pivot means slideably mounted on said guide to slide therealong and clamp in a selected position, and

(g) a connecting link means having one end pivotally connected to said second pivot means to pivot on a second pivot axis parallel to said first pivot axis and its opposite end pivotally connected to said cutting tool means, at a point intermediate the ends thereof, to pivot on a third pivot axis parallel to said first and second pivot axes.

3,298,406
CHAIN SAW CHAIN

Herbert V. Erickson, 1219 S. Fife, Tacoma, Wash. 98405

Filed May 15, 1964, Ser. No. 367,800
5 Claims. (Cl. 143—32)

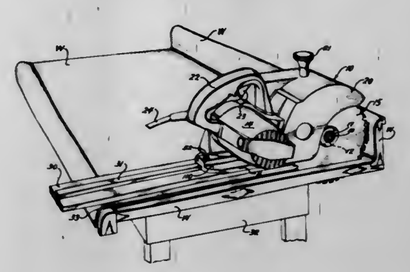


3. In a chain saw, the combination of a guide bar with a drive sprocket having drive teeth on the periphery thereof journaled on one end portion thereof, and an endless cutter chain which is engaged about the sprocket and guided in a closed prolate loop extending up and down the length of the bar, said chain being comprised of successively pivotally interconnected links which are alternately adapted as cutter and raker links for the saw, the raker links of which have pairs of drive teeth depending from the bodies thereof which are in substantially upright alignment with the pivot points in the links and individually operatively interposed in the recesses between successive drive teeth on the periphery of the sprocket, the sprocket teeth being interposed, in turn, alternately in (1) the recesses between the pairs of drive teeth on the raker links and (2) the recesses between adjacent drive teeth on adjacent raker links, opposite the bodies of the cutter links in the chain; the pitch interval between the drive teeth on each raker link being less than the pitch interval between adjacent drive teeth of adjacent raker links, and the drive teeth in corresponding positions on the raker links having arcuate faces on one side thereof which are swung from centers substantially coincident with the pivot points aligned therewith, with the sprocket recesses receiving said raker link drive teeth being correspondingly contoured to provide for surface to surface contact between the teeth and the recesses, between the points at which the chain is reeled onto and unreeled from the sprocket, and the remaining sprocket recesses being angularly enlarged in relation to the angular width of the remaining drive teeth of the raker links which are received therein so that the latter drive teeth and recesses can smoothly engage and disengage with and from one another at the points in which the chain is reeled onto and unreeled from the sprocket.

3,298,407
CLEAN CUT SAWS

Hugh A. Scott, 15472 Biltmore, Detroit, Mich. 48227

Filed July 30, 1964, Ser. No. 386,346
3 Claims. (Cl. 143—43)



1. Means for producing substantially chip free saw cuts through readily chipped work pieces such as brittle surfaced laminated counter top material or the like comprising, in combination with a rail including a central longitudinally disposed rail head thereon,

a power saw including a flat generally rectangular base with the saw blade thereof disposed parallel to and extending partially below said base,

said base having a central longitudinal guide groove therein disposed over said guide rail head, said guide groove being slightly deeper and somewhat wider than said guide rail head,

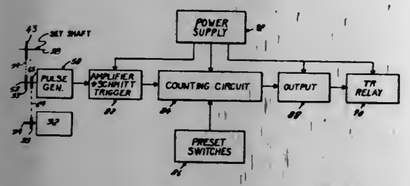
a pair of longitudinally spaced guide shoes in the bottom of said saw base disposesd centrally of said guide groove therein and formed to fit neatly over and slide along said guide rail head,

means mounting said forward guide shoe permitting limited turning thereof about an axis normal to said base,

means mounting said rear guide shoe permitting limited turning thereof about an axis normal to said base and limited lateral shifting thereof in respect to the said guide groove in said base, and

said means mounting said rear guide shoe including means securing the same in any selected position to which it may be turned and shifted.

3,298,408
CONTROL UNIT FOR ELECTRICAL SETWORKS FOR SAWMILL CARRIAGE
William W. Jordan, 15615 34th NE., Seattle, Wash. 98155
Filed June 22, 1964, Ser. No. 376,886
11 Claims. (Cl. 143—115)



10. A sawmill carriage comprising in combination:
(a) knees for advancing a log toward a sawline;
(b) a setshaft;
(c) a first means connecting the knees and the setshaft;
(d) a gear box;
(e) said gear box having an output shaft;
(f) a clutch in the gear box for controlling the output shaft;
(g) a second means connecting the output shaft and the gear box;
(h) a motor connecting with and driving the gear box;
(i) a pulse generator for emitting pulses;
(j) a counting circuit for counting pulses;
(k) said pulse generator connecting with and supplying pulses to the counting circuit;
(l) a circuit for controlling the clutch and having a first switch means and a second switch means;
(m) said second switch means being normally closed;
(n) a control circuit for controlling the first switch means;
(o) a fourth means for setting the counting circuit to an initial condition and for opening the second switch means;
(p) a fifth means for setting the counting circuit to a predetermined state so as to receive a predetermined number of pulses;
(q) said fifth means substantially simultaneously activating the counting circuit to receive pulses and activating the control circuit to close the first switch means;
(r) said counting circuit connecting with said control circuit;
(s) said counting circuit upon receiving said predetermined number of pulses activating said control circuit to open said first switch means to disengage the clutch and to stop the rotation of the output shaft of the gear box; and
(t) a sixth means making the pulse generator responsive to the setshaft so as to have the pulse generator emit pulses upon the rotation of the setshaft.

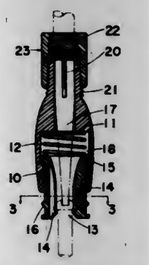
3,298,409
RETAINING MEMBER
Donald E. Elson, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed May 22, 1964, Ser. No. 369,421
12 Claims. (Cl. 143—159)

1. In a power-driven tool of the type having a hub, a bearing within the hub, an arbor journaled in the bearing, a tool element mounted on the arbor, a guard for the tool, and means mounting the guard on the hub, the improvement which comprises:
(a) a member mounted upon the hub for retaining the guard and its mounting means against axial movement off the hub;
(b) the hub having an opening formed therein; and
(c) said member having a portion received through said



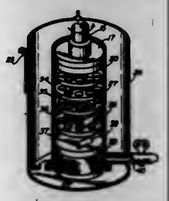
opening for simultaneously retaining the bearing within the hub.

3,298,410
SCREW HOLDER STRUCTURE FOR USE WITH SCREW DRIVERS
Noboru Morifuji, Osaka-shi, Japan, assignor to Morifuji Haguruma Seisakusho Co., Ltd., Osaka-shi, Japan, a corporation of Japan
Filed Jan. 28, 1965, Ser. No. 428,718
Claims priority, application Japan, Jan. 31, 1964, 39/6,610
9 Claims. (Cl. 145—52)



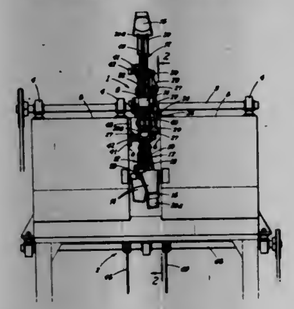
1. A screw holder for use with screw drivers comprising a cylindrical sleeve, means for mounting said sleeve on the shank of a screw driver at the blade end thereof, a resilient cylindrical screw retainer telescoped within the free end of said cylindrical sleeve and being axially slidable therein within a predetermined limit, and spring means to urge the screw retainer outwardly of the free end of said cylindrical sleeve whereby said screw retainer projects beyond the end of said shank to grip the head of a screw.

3,298,411
COMMINUTING APPARATUS
Theodore Rosett, Durham, N.C., assignor to Duke University, Durham, N.C., a corporation of North Carolina
Filed June 2, 1964, Ser. No. 371,987
12 Claims. (Cl. 146—68)



1. A comminuting apparatus comprising, in combination, a cylindrical receptacle having an inside friction surface closing one end; a plurality of perforated discs of a predetermined comminuting configuration loosely mounted within said receptacle opposite said surface and snugly fitting the inside wall thereof, said discs being arranged substantially perpendicular to and being free to rotate with respect to and around the central axis of said receptacle; and means adapted to rotate the outermost of said discs with respect to said surface while moving said outermost disc toward said surface whereby to force together and cause rotation at varying speeds in others of said discs and to effect comminution of any material placed so as to be forced between at least a pair of said discs during said rotation.

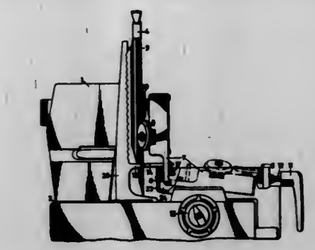
3,298,412
ONION TRIMMING MACHINE
Luverne R. Smida, Stockton, Calif., assignor to Wilcox Manufacturing Company, Stockton, Calif., a partnership
Filed July 20, 1964, Ser. No. 383,637
8 Claims. (Cl. 146—83)



1. An onion trimming machine comprising a horizontal shaft, an arm unit mounted on the shaft for rotation and extending substantially radially thereof, means to rotate the unit, onion gripping jaws on the outer end of the arm unit adapted to support an onion with its major axis substantially parallel to the shaft so that the roots and tops of the onion project from opposite ends of the jaws, spring means tending to hold the jaws open, and means including a spring acting in opposition to said spring means to hold the jaws closed for a predetermined arc of rotation of the shaft, and means to trim off said roots and tops of the gripped onion as the shaft and unit rotate and while the jaws are closed.

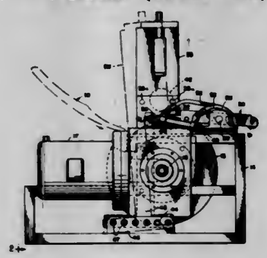
3,298,413
SLICING MACHINE HAVING KNIFE SHARPENING MEANS
Walter Engi, Zurich, Switzerland, assignor to Adolf Ditting, Zurich, Switzerland
Filed Aug. 7, 1964, Ser. No. 388,103
Claims priority, application Switzerland, Aug. 16, 1963, 10,162/63
6 Claims. (Cl. 146—102)

1. In a slicing machine for meat and sausage: supporting means, a motor-operable circular slicing knife carried by said supporting means, a carriage reciprocably supported by said supporting means and provided with recess means, said carriage being movable selectively toward and away from said slicing knife, grinding means for grinding said slicing knife, a supporting member rotatably supporting said grinding means, and pivot means pivotally connecting said supporting member to said carriage to permit tilting of said supporting member and the grinding means carried thereby from a lying position in which said supporting member is at least partially located in said recess means to a certain upright position in which



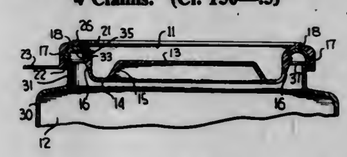
said grinding means is in a position to grind said slicing knife, and vice versa.

3,298,414
SKINNING APPARATUS
David R. Runnells, Jr., Grand Rapids, Mich., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,886
3 Claims. (Cl. 146—130)



1. In apparatus for skinning hog sides and the like, a frame, a drum rotatably mounted in said frame and having a longitudinal recess therein for receiving an end portion of said side to be skinned, means for clamping said side end portion within said recess, power means for rotating said drum, a knife supported on said frame for splitting the skin from said side, a pressure roller frame pivotally mounted on said first-mentioned frame and equipped with spring-urged rollers adapted to press said side toward said recesses, and power means for moving said roller frame rearwardly to widen the spacing between the rollers and the drum and for moving the roller frame forwardly to eject the skinned side.

3,298,415
CLOSURES FOR LARGE MOUTH CONTAINERS
Mindaugas Julius Klygis, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 7, 1964, Ser. No. 357,937
4 Claims. (Cl. 150—.5)



1. An assembly comprising a closure member formed of flexible material and a container formed of flexible material, said closure member comprising a central panel,

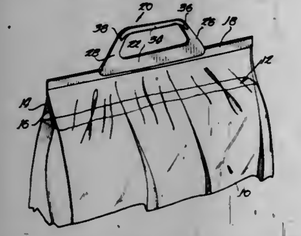
an inner wall, an outer wall spaced outwardly from said inner wall and connected thereto by a bight portion to define an annular cavity, an upwardly and outwardly facing shoulder formed on said inner wall and underlying said bight portion, locking rib means on said outer wall extending inwardly therefrom, said annular cavity being defined by an arcuate surface between said locking rib means and said shoulder, said arcuate surface being of a predetermined distance as measured therealong in an axial plane taken through said closure member, said container including an upper container portion which curves upwardly and inwardly and is provided with an upwardly tapered and inwardly facing flange, said flange having a terminal edge defining a filling opening for said container, said upper container portion merging with a neck portion having locking means thereon, the distance between said locking means and said terminal edge being substantially equal to said predetermined distance as measured therealong in an axial plane taken through said container, said flange being received within said annular cavity and being sufficiently flexible so as to conform to the contour of said bight portion, said terminal edge being in abutting seating relationship with said shoulder on said inner wall, and said locking rib means cooperating with the locking means on said neck portion such that said flange and said bight portion provide a seal between said container and said closure member.

3,298,416

CARRYING HANDLE AND CONTAINER

James M. Grady, Mount Prospect, Ill., assignor to Morton International, Inc., Chicago, Ill., a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 502,761
3 Claims. (Cl. 150—12)



1. An integrally-formed plastic carrying handle for attachment to a pliable plastic container comprising:

(A) an elongated securing web longitudinally slotted along one side thereof so as to provide internal longitudinal surfaces for attachment to said pliable plastic container;

(B) convergently-directioned support webs adjacent the extremities of said securing web and at the other longitudinal side thereof, said support webs increasing in width from normally-upper to normally-lower portions thereof and having stress-distributing profiles at the internal junctures with said securing web;

(C) an elongated hand-grip portion between the converging extremities of said support webs and connected thereto by stress-distributing profiles, said elongated hand-grip portion,

(1) being substantially parallel to and spaced from said elongated securing web,

(2) being thickened to increase resistance to transverse flexure under stress, and

(3) having a stress-distributing contour at the normally-downward-facing surface thereof;

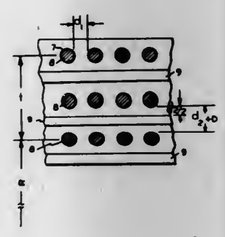
(D) thickened portions of said hand-grip portion extending at least into said support webs so as to reinforce the same; said handle being substantially symmetrical about the principal plane thereof.

3,298,417

PNEUMATIC TIRE

Robert Le Roy Keefe, Jr., Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 26, 1962, Ser. No. 247,229
1 Claim. (Cl. 152—330)



An improved pneumatic tire comprising a reinforced structure especially adapted for prolonged life under conditions of high flexing and distortion, said structure comprising an elastomeric composition, said composition essentially comprised of natural rubber, a plurality of layers of monofilaments of a synthetic polymeric composition, said polymeric composition comprised essentially of polyhexamethylene adipamide, said monofilaments forming a plurality of layers disposed within and completely surrounded by said elastomeric composition; and an adhesive composition for said elastomeric composition completely coating said monofilaments and intimately bonding together said monofilaments and said elastomeric composition; said adhesive composition comprising resorcinol, formaldehyde, and a latex, each component being present in substantial proportions; the monofilaments comprising at least about 5% of the total reinforced structure volume; said elastomeric composition having a stretching parameter (G) in the cured condition between about 40 and about 400 lbs./sq. in.; and being capable of withstanding a degree of shear strain (K) in the cured conditions, during repeated flexing in the range between about 0.5 and about 7.0 K being equal to

$$\frac{\sqrt{A\times B\times C}}{606}$$

wherein

A=breaking elongation in percent,
B=the de Mattia Flex in hours, and
C=tear strength in lbs./in.;

the maximum allowable shear strain in the elastomeric composition between the monofilaments of an individual layer being designated by k_1; the existing shear strain in service in the elastomeric composition between the layers of monofilaments being designated by k_2; k_1 being less than K_1 and k_2 being less than K_2, the ratio $n=k_2/k_1$ being about 0.3 and about 3; said monofilaments having a filament stretching modulus (E) of at least about 500,000 lbs./sq. in. and an average filament diameter (D) between about one and about 50 mils; said reinforcing element being capable of withstanding for over 100,000 cycles a change (R) in radius of curvature during flexing of between about 0.20 and about 12 inches, R being derived from the equation

$$\frac{1}{R}=\frac{1}{R_1}-\frac{1}{R_0}$$

wherein R_1 is the radius of curvature of the reinforcing element in a stressed condition encountered during service and R^0 is the radius of curvature of the reinforcing element in an unstressed condition; said reinforcing element also having an effective thickness (t) within the range

between about 40 and about 1000 mils, (t) being the center-to-center distance between the innermost and the outermost of monofilament layers having monofilaments oriented substantially perpendicular to a radius of curvature and an axis of bending encountered during use of the reinforcing element; and, for a given change in radius of curvature R which the reinforcing elements will undergo in service and a given diameter of monofilament, the individual monofilaments of each layer being separated by at least a distance (d_1) as derived by reading values of d_1/D from the curves of FIGURE 5 corresponding to values of $t/2R$ and K as determined from given values of t, R and K; and computing d_1 from d_1/D, D being given; the layers of filaments being separated by at least a distance (d_2), as derived from the curves of FIGURE 6 by reading the values of $\bar{c}$ corresponding to values of $\bar{a}$ and n as determined from values of G, E, and D and the computed value of d_1, and computing (d_2) from $\bar{c}$; wherein

$$\bar{c}=\frac{G}{E}\left(1+\frac{D}{d_1}\right)$$

$$n=\frac{K_2}{K_1}$$

$$\bar{a}=\frac{G}{E}\frac{D}{d_2}$$

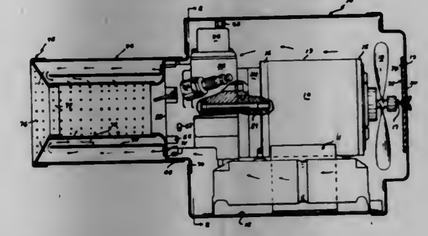
the value of $t/2R$ being between about 0.01 and 0.15.

3,298,418

OIL BURNER

Eugene C. Briggs, Dayton, Ohio, assignor to Master Consolidated Inc., Dayton, Ohio, a corporation of Ohio

Filed Apr. 8, 1964, Ser. No. 358,356
14 Claims. (Cl. 158—76)



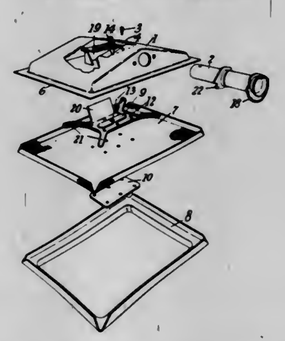
1. An oil burner unit consisting of a burner head and, connected integral therewith, a compressor and a drive motor in end to end relation, means defining a nozzle recess in said head and, in connection therewith, a fuel passage, a low pressure aspirating nozzle having a portion anchored in said head to form a flow passage thereabout in said nozzle recess and have one end thereof communicate with said fuel passage, means defining a further passage in said head communicating said compressor with said flow passage whereby on drive of said motor, air will flow under pressure to swirl in said recess about said nozzle, said nozzle having aspirating passages which open at one end to receive the swirling air and deliver it at a high velocity to the interior of said nozzle whereby to suck fuel from said fuel passage to exit therewith from said nozzle and flow regulator means interposed to normally block the flow of fuel through said fuel passage, said regulator means having two chambers and a diaphragm forming a wall therebetween, one of said chambers having an inlet and an outlet interposed in respect to said fuel passage, the other said chambers having a vent and means included in said one chamber operative to block the flow of fuel through said fuel passage except on the occurrence of a high velocity flow of air to and through said nozzle.

3,298,419

RADIATING OR INCANDESCENT BURNER

William Arthur Nicholson, London, England, assignor to Radiation Limited, London, England, a British company

Filed Mar. 30, 1964, Ser. No. 355,695
5 Claims. (Cl. 158—99)



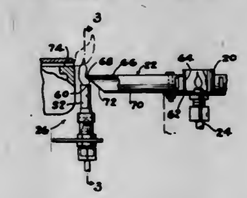
1. A radiating burner comprising means defining a mixing space having an outlet, a hood defining a distribution chamber for receiving combustible gas from the outlet of said mixing space and an outlet from said distribution chamber, a refractory diaphragm having inner and outer sides comprising at least two flat contacting layers of gas-porous gauze covering said distribution chamber outlet, a first plate disposed on the inner side of said diaphragm, a second plate disposed on the outer side of said diaphragm, means securing said plates together, said plates covering only the central portion of said diaphragm with the area of said second plate being at least as great as the areas of said first plate defined by the portion of said first plate in contact with said diaphragm thereby at least restricting the passage of gas through the central portion for producing a substantially uniform heating effect over a receiving area spaced from the diaphragm but extending generally parallel thereto, a combustible gas mixture diffuser, said diffuser including a deflector secured to said hood and terminating in spaced relation to said diaphragm, and an inclined plate secured to said diaphragm and overlapping said deflector in spaced relation thereto to provide for diffusion of the gas mixture entering said chamber.

3,298,420

PILOT FLASH TUBE IGNITION SYSTEM

Eugene J. Blanzy, Detroit, Mich., assignor to Lincoln Brass Works, Detroit, Mich., a corporation of Michigan

Filed Jan. 8, 1964, Ser. No. 336,470
4 Claims. (Cl. 158—115)



1. In a gas range having a main burner; a main pilot burner and associated flash tube; and an intermediate pilot-and-keep-warm burner in the form of a tube having one end communicating with a source of fuel gas under pressure, another end with an upwardly directed burner port in igniting relation to said main burner, and means providing a primary air inlet between said ends;

improved structure wherein said flash tube has an upper wall portion and lower wall portions,

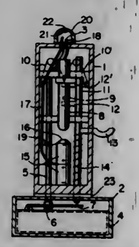
said upper wall portion having an end portion which is spaced vertically above said burner port,

said end portion extending over a portion only of said burner port,

the angle between the axis of said port and the direction of extent of said end portion, and the spacing between said port and end portion, being so related that fuel mixture issuing from said portion of said port is caused to impinge against said end portion at an abrupt angle and with a velocity adequate to turbulate and divert said mixture into said flash tube in sufficient quantity to support combustion,

said lower wall portions defining an opening below and spaced horizontally from said burner port into which air is entrained by the flow of the mixture diverted into said flash tube.

3,298,421
IGNITION SYSTEM FOR GAS BURNERS
Shigeru Tezuka and Kazuma Suzuki, Kokubunji-shi, Tokyo, Japan, assignors to Rion Company, Limited, Tokyo, Japan, a corporation of Japan
Filed July 26, 1965, Ser. No. 474,853
Claims priority, application Japan, Sept. 28, 1964, 39/75,949, 39/75,950
2 Claims. (Cl. 158—125)



1. An ignition system for a gas burner comprising a columnar piezoelectric element mounted in a case;

a hammer arranged on the axial line of said piezoelectric element so as to strike said piezoelectric element;

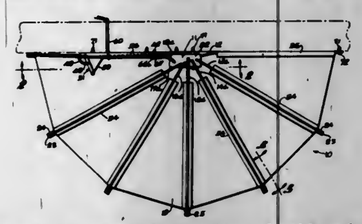
an operating rod to contribute to the forward and backward motions of said hammer, said rod being mounted in guides so as to reciprocate on an axis parallel to the axial line of the hammer and having means to reciprocate the rod including lost motion connecting means between the rod and the hammer; and

two spring members symmetrically engaged between both sides of said hammer and said case pivotally at inner-side ends thereof with said hammer and at outer-side ends thereof with said case, respectively, in such manner, that said hammer is provided with an overcenter skipping motion,

each of said spring members urging said hammer into one of two stable points at both sides of a dead center position, whereby said overcenter skipping motion is imparted to said hammer through an actuation of said operating rod and an impact force is given to said piezoelectric element.

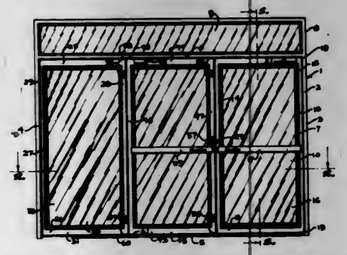
3,298,422
WIND ACTUATED COLLAPSIBLE AWNING
William B. Ruiz, 1001 SW. 2nd Ave., Apt. 7, Miami, Fla. 33130
Filed Nov. 2, 1964, Ser. No. 408,142
7 Claims. (Cl. 160—77)

1. A wind actuated collapsible awning comprising, in combination, a central support structure, a plurality of arcuate rib members each pivotally secured at one end to said central support structure and extending radially outwardly therefrom, a flexible hood member stretched in covering relation upon and between said rib members when in spaced fan-like, extended disposition to an arcuate extent of substantially 180 circular degrees relative to said central support structure whereat said awning will be in extended position, means removably securing said hood member to said ribs, means resiliently urging one of the end ribs of said plurality of rib members arcu-



ately in the direction of the other of said end ribs for bunching said ribs together at one side for withdrawing the awning, releasable means for latching said awning in said withdrawn position, releasable means for latching said awning in said extended position, and mechanism controlled by wind pressure exerted under said awning when in extended position operative to release said releasable means for latching said awning in said extended position to permit automatic withdrawal of said awning by said urging means.

3,298,423
FOLDING DOORS
Robert E. Carter, Shawnee, Kans. (939 W. 8th St., Kansas City, Mo. 64152)
Filed Feb. 1, 1965, Ser. No. 429,566
4 Claims. (Cl. 160—97)



1. A folding door assembly for alternate use by pedestrian traffic and traffic requiring a wider opening comprising:

(a) a door mounting frame defining an opening wider than required for pedestrian traffic, said frame including a threshold,

(b) a first door having a hinge mounted with respect to said frame for swinging movement of said first door into and out of said opening,

(c) a second door spaced from said first door and having an outer side bar, said second door having a hinge mounted with respect to said frame for swinging movement of said second door outer side bar into and out of said opening, means cooperating between said second door and said frame for selectively locking said second door in position extending in said opening,

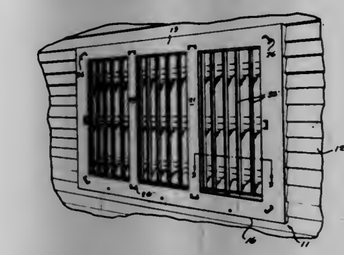
(d) a third door normally located between said first and second doors and mounted on said second door and movable from a position adjacent said first door to a position in overlapping parallel arrangement with said second door,

(e) whereby said second and third doors may be selectively folded together and pivoted on said second door hinge to displace said third door from an obstructing position in said opening,

(f) a horizontally and laterally extending slot in said threshold within the arc of movement of said second door outer side bar and exposing the floor therebeneath, and

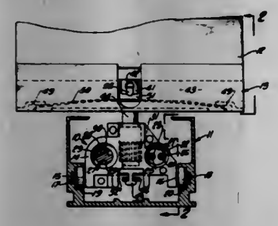
(g) a roller assembly mounted on said second door and having a door supporting roller in rolling engagement with the floor, said roller being movable into and out of said slot upon said swinging movement of said second door.

3,298,424
BUILDING CLOSURE CONSTRUCTION
Frederick P. Griffin, Box 1102, Salina, Kans. 67402
Filed Dec. 11, 1964, Ser. No. 417,637
14 Claims. (Cl. 160—113)



1. A sliding closure assembly comprising a stationary window frame, means on said frame defining a plurality of side-by-side window openings, a plurality of rigid superimposed closure sheet members slidably mounted on said frame adjacent and parallel to said window openings, said sheet members being formed with apertures substantially registrable with said window openings and each sheet member having the same number of apertures, said number being one less than the number of window openings, the side margins of the apertures being of sufficient width so that the window openings will be substantially covered thereby when the sheet members are moved laterally to staggered overlapping positions, and means to move said sheet members laterally toward and away from said staggered overlapping positions.

3,298,425
VERTICAL VENETIAN BLIND
Robert J. Cayton, Pacific Palisades, and Herbert La Mers, Los Angeles, Calif., assignors to Louverdrape, Inc., Santa Monica, Calif., a corporation of California
Filed Sept. 23, 1964, Ser. No. 398,713
8 Claims. (Cl. 160—176)



1. Apparatus for securely grasping one end of a louver of the type used as a window blind, comprising:

engageable means attached to said louver adjacent said end thereof; spring means

a louver receiver for receiving one end of a single louver and being movable therewith, said receiver having a channel formed therein for receiving said end of said louver and said engageable means, said receiver being provided with means for mounting said spring means;

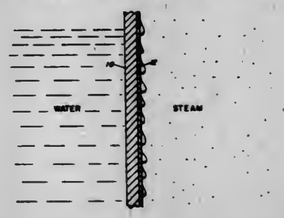
engaging means positioned within said channel for engaging said engageable means, said engaging means being coupled to said spring means and biased thereby to exert a force on said engageable means and retain said engageable means and said louver end within said channel.

3,298,426
WEBBING-STRIP FASTENERS
Hyman Kramer, 2764 E. 16th St., Brooklyn, N.Y. 11235
Filed Feb. 9, 1966, Ser. No. 526,186
5 Claims. (Cl. 160—404)



3. For use in securing webbing strips to the tubular frame members of tubular frame furniture and the like, a fastener comprising an elongated head part having length corresponding generally to the width of the webbing strip to be secured thereby and an integral prong-like leg part depending from the middle-length portion of said head part and terminating in a point facilitating its being assembled first to a webbing strip end portion and thence to the frame by being projected through an opening thereof, said leg part including locking barbs struck out from corresponding opposite areas of its side edge portions, said barbs being defined by upper edge lines which are spaced from the under side of the head part a distance slightly greater than the thickness of the wall of the tubular frame member and extend inwardly and at a right angle to the longitudinal center line of the leg part and by inner edge lines which converge towards one another at angles of approximately 30° from said center line, and said barbs being inclined out of the plane of said leg part and turned slightly towards one another so that when the prong is being projected through the opening in the frame member the barbs make only line contact with the edge of said opening against which they engage.

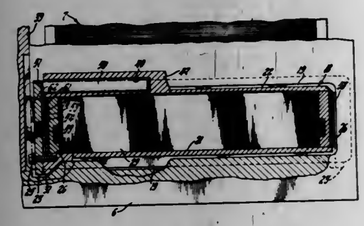
3,298,427
METHOD AND APPARATUS FOR DROPWISE CONDENSATION
Robert A. Erb, Valley Forge, Pa., assignor to the United States of America as represented by the Secretary of the Interior
Filed Dec. 24, 1964, Ser. No. 421,132
7 Claims. (Cl. 165—1)



5. In a heat transfer device comprising a cooling fluid zone, a water vapor zone having a temperature greater than that of said cooling fluid zone, and a heat conducting impermeable partition disposed between said zones,

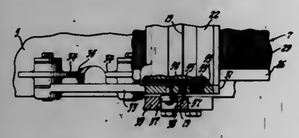
whereby mass transfer between said zones is prevented, said partition having a first surface in contact with said cooling fluid zone and a second surface in contact with said water vapor zone, the improvement comprising employing a platinum group metal as said second surface.

3,298,428
ROTARY REGENERATOR SEAL
William C. Bubniak, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,425
8 Claims. (Cl. 165—9)



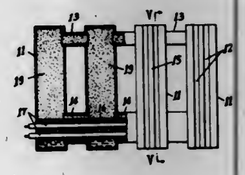
5. A primary seal for a rotary regenerator matrix having faces cooperating with the seal, one face distorting away from the seal and the other face distorting toward the seal when the matrix is heated, the seal comprising, in combination,
a stiff elastic first seal bar having a sealing face conforming to the said one face of the matrix when the bar and matrix are cold,
a rigid second seal bar having a sealing face conforming to the said other face of the matrix when the bar and matrix are hot, and
means responsive to differential thermal expansion of the seal bars for distorting the first seal bar to conform to the distorted condition of the said one face of the matrix when the matrix and bars are heated comprising arms rigid on the first seal bar and engaging the ends of the second seal bar
characterized by a second seal bar embodying sections of diverse material of different coefficients of thermal expansion disposed end-to-end between the said arms so that the effective coefficient of thermal expansion of the second seal bar is determined by the coefficients of thermal expansion and relative lengths of the sections.

3,298,429
ROTARY REGENERATOR SEAL
William C. Bubniak, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,426
2 Claims. (Cl. 165—9)



1. A rotary regenerator comprising, in combination,
a housing
a diaphragm dividing the interior of the housing into first and second chambers
an annular matrix rotatably supported in the housing and passing through the diaphragm
main seals mounted in the diaphragm sealing against the matrix where it passes through the diaphragm
each main seal comprising a primary seal movably mounted in the diaphragm and encircling the matrix and including
a substantially rigid frame
an end seal block displaceable in the frame, and
means biasing the end seal block against the matrix
and comprising a yieldable secondary seal between the primary seal and the diaphragm extending through the primary seal frame into the end seal block, thus bridging the gap between the end seal block and the diaphragm.

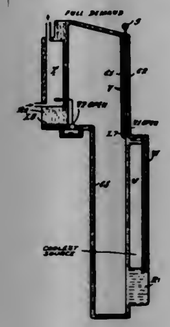
3,298,430
APPARATUS OF HEAT TREATMENT FOR SYNTHETIC YARNS
Nobuhisa Kodaira, 851 Kamirenjaku, Mitaka-shi, Tokyo-to, Japan
Filed Sept. 10, 1963, Ser. No. 308,007
Claims priority, application Japan, Oct. 19, 1962, 37/61,045, 37/61,046
3 Claims. (Cl. 165—105)



1. Apparatus for heat treatment of synthetic fiber yarn, comprising:
(A) a completely closed vessel;
(B) a liquid heat transfer medium partially filling the vessel;
(C) a heating element immersed in said liquid and adapted to convert part thereof to a vapor which fills the remainder of the vessel and cooperates with the liquid medium to maintain the vessel at a uniform temperature;
(D) and means carried by and heated from the vessel providing narrow channels through which yarn to be heated can be passed for heat processing at substantially uniform temperature all along the length of the channels.

3,298,431
HEAT TRANSFER SYSTEM
Eastman A. Weaver, Wellesley, Mass., assignor to Comstock & Wescott, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Jan. 11, 1965, Ser. No. 424,789
5 Claims. (Cl. 165—105)

1. A heat-transfer system comprising a heat sink, a variable heat source the temperature of which varies throughout a wide range, an endless conduit circuit in heat-transfer relation to the source and sink for transferring heat from the source to the sink, the circuit containing liquid vaporizable by the source and condensible by the sink, the circuit including a sink-portion for holding liquid in heat-transfer relation to the sink and a source-portion for holding a quantity of said liquid in heat-transfer relation to the source and a return-portion leading from the lower end of the source-portion, the sink being located above the source so that the condensed liquid may drain back to the source by gravity through said return portion of said circuit, a thermal valve in said return-portion of the circuit, means responsive to the temperature of the sink for substantially closing the valve when the temperature of the sink reaches a predetermined maximum, said sink-portion being large enough to contain substantially all of said quantity, whereby when the sink reaches said maximum substantially all of said quantity is transferred to the sink-portion thereby substantially stopping heat-transfer from source to sink, a by-pass around said valve and in the by-pass a check-valve which permits flow only from said source-portion to said sink-portion, and the system being sealed so that, when said thermal valve is closed, the vapor pressure in the source-portion produced by said source may force substantially all the liquid in the source-portion through the check-valve to the sink-portion.



3,298,432
RADIATORS
Stanislaus Przyborowski, 234 Allenhurst Road, Amherst, N.Y. 14226
Filed May 22, 1964, Ser. No. 369,478
2 Claims. (Cl. 165—153)



2. A radiator comprising spaced tanks, each having header portions, a core including a plurality of independent tubes having an elongated cross-section, said tubes being positioned between said headers and being grouped in rows at the front and back of the core with their narrow dimensions disposed transversely, and continuous fins of zig-zag formation consisting of crest portions and relatively planar folds, a plurality of slits formed in each of said folds, said slits being disposed relatively perpendicular to said crest portions and having portions offset relative to the planar folds, and corrugations of fine pitch formed in said fins in the marginal portions of the folds thereof disposed substantially parallel to each other and to said crest portions, and ribs formed in each slit portion of said folds, said ribs being disposed substantially parallel to said slit portions, said tubes being solder coated to permit bonding of the tubes to the fins upon application of heat.

3,298,433
PANEL STRUCTURE
Jerome H. Lemelson, 8B Garfield Park Apartments, Metuchen, N.J. 08840
Filed Apr. 30, 1963, Ser. No. 276,804
9 Claims. (Cl. 165—168)

5. A panel structure comprising a honeycomb panel member, defining a plurality of adjacent cells, a sheet of deformable material bonded to a first surface of said honeycomb member and closing off the cells thereof, supporting means for said panel, means for securing said panel to said support means in a curved or bowed condition, and a foamed plastic material filling the cells of said honeycomb member and extending outward from the other face thereof.



3,298,434
GASIFICATION OF COAL
Thomas T. Graham, 2431 Shakespeare, Houston, Tex. 70025
Filed May 27, 1964, Ser. No. 370,606
6 Claims. (Cl. 166—2)



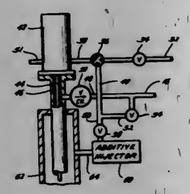
2. A method of recovering gases from a coal seam into which a well bore extends, said bore having a tubing therein extending down to at least the coal seam comprising,
injecting air into said coal,
igniting the coal,
thereafter injecting air and steam into the coal,
periodically opening said tubing at the surface to reflux the coal seam and remove from the well bore liquids which may have accumulated therein,
determining the temperature in the coal seam by determining the condition of the reflux fluids,
controlling the injection of steam and air as required by the condition of the reflux fluids to obtain selected temperature conditions in the well,
and recovering the gaseous products of combustion from said coal seam.

3,298,435
METHOD AND APPARATUS FOR PETROLEUM SECONDARY RECOVERY
Otto B. Schoenfeld, P.O. Box 12155, Houston, Tex. 77017, and Joseph S. Newbrough, San Diego, Calif.; said Newbrough assignor to said Schoenfeld
Continuation of application Ser. No. 2,707, Jan. 15, 1960. This application Mar. 23, 1964, Ser. No. 366,212
7 Claims. (Cl. 166—9)

1. Apparatus for permitting secondary recovery of hydrocarbon products from a formation, said apparatus comprising:
a source of fluids;
first conduit means connecting said source to a plurality of injection wells;
second conduit means branching from said first conduit means at points intermediate said source and said injection wells, and connecting each of said points to a production well, each of said production wells having tubing and casing therein;

said second conduit means being so connected to each of said production wells that at least a portion of fluids passing through said second conduit means may be permitted to activate hydraulic pumping means, said pumping means being associated with each of said production wells; and

combination water flooding and power transmission means for causing (1) a portion of the fluids from said source of fluids to, under pressure, pass through said first conduit means and into said injection wells, and (2) a further portion of said fluids from said source of fluids to, under pressure, pass through at least a portion of said first conduit means, then pass through said second means and activate said pumping means on said production wells.



4. A method for effecting secondary recovery from a producing formation comprising the steps of:

providing a source of water under pressure;

injecting said water into a conduit;

directing a portion of said water through said conduit and into an injection well and, by pressure, cause said portion to enter said formation; and

causing, by pressure, another portion of said water to pass through a portion of said conduit, be diverted therefrom and be injected into the pumping mechanism of a production well thereby activating said mechanism.

3,298,436

METHOD OF SECONDARY OIL RECOVERY USING SURFACTANTS FORMED IN SITU

William M. McCardell, Hinsdale, Ill., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 709,783, Jan. 20, 1958. This application Oct. 30, 1964, Ser. No. 407,855

7 Claims. (Cl. 166—9)

3. The method of recovering petroleum oil from natural reservoirs comprising injecting through an injection well and into the oil-containing formation, a solution of a first reactant in oil previously recovered from said reservoir, thereafter injecting into the reservoir an aqueous solution of a second reactant capable of reacting with said first reactant under reservoir conditions to form a surfactant; said aqueous solution displacing oil to a production well.

3,298,437

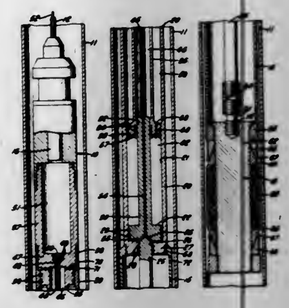
ACTUATOR DEVICE FOR WELL TOOL

Martin B. Conrad, Downey, Calif. (P.O. Box 568, Carpinteria, Calif. 93013)

Filed Aug. 19, 1964, Ser. No. 390,687

9 Claims. (Cl. 166—63)

1. An acuator device for a well tool, comprising in combination: a cylinder member having a bore and having upper and lower end walls defining a chamber within said bore, each end wall having an axial opening, a piston slidably mounted within said bore, a piston rod fixed to the piston and projecting slidably through the opening in the lower end wall, a post fixed to the piston and projecting slidably through the opening in the upper end wall, an axial sleeve fixed to the upper end wall forming a closed cavity within the cylinder member, ports in the end wall connecting said cavity to said chamber, the sleeve having interior space into which said post may project, port means venting said interior space to the



exterior of said actuator device, walls forming a pocket above the sleeve to receive a pressure-generating charge, and means forming a passage connecting said pocket to the chamber below the piston.

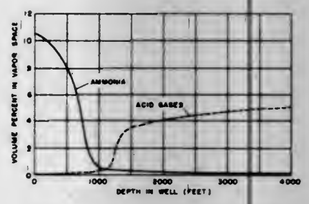
3,298,438

METHOD FOR PREVENTING CORROSION

Donald R. Anthony, Rado G. Loncaric, and Robert E. Fields, Dallas, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 20, 1961, Ser. No. 90,527

2 Claims. (Cl. 166—38)



1. A method of injecting liquefied normally gaseous corrosion inhibitor into the vapor space of the annulus of a well when the gases in said vapor space contain carbon dioxide which method comprises connecting an inhibitor injection system to an inlet to said vapor space, pumping a first amount of water-miscible liquid into said inhibitor injection system, said first amount of said water-miscible liquid being at least sufficient to remove water from said inhibitor injection system and said inlet, cooling a liquefied normally gaseous corrosion inhibitor to a temperature sufficient to prevent vaporization of said inhibitor in said injection system, said liquefied normally gaseous corrosion inhibitor characterized by the fact that said inhibitor will react with carbon dioxide and water to form a solid salt, pumping through said inhibitor injection system a predetermined amount of said inhibitor, said inhibitor contacting said first amount of water-miscible fluid in said injection system, and pumping through said inhibitor injection system thence to said inlet and to said vapor space a second amount of water-miscible liquid, said second amount contacting said inhibitor and being sufficient to displace said inhibitor from said inhibitor injection system and from said inlet into said vapor space.

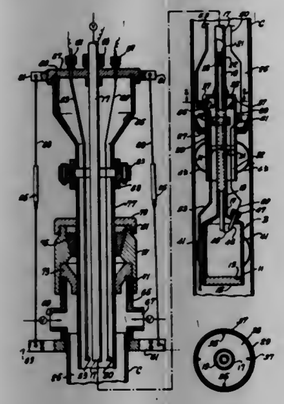
3,298,439

BOTTOM HOLE BURNER

Warren A. Rees, Jr., Corpus Christi, Tex., asssignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed July 29, 1964, Ser. No. 385,898

7 Claims. (Cl. 166—59)



1. A bottom hole burner for introducing heat into an oil well comprising, in combination, a combustion chamber;

a first conduit secured to the top of said combustion chamber and adapted to extend upwardly therefrom to the surface of the earth;

a second conduit within said first conduit opening into said combustion chamber and extending upwardly therefrom to a terminal position intermediate the ends of said first conduit;

means sealing the space between said first and second conduits adjacent said terminal position;

said first conduit having apertures through the wall thereof below the sealing means to permit the access of gas from outside said conduit into the space between said first and second conduits;

a sleeve surrounding said first conduit in annularly spaced relation thereto and extending from a position below said apertures downwardly to a position spaced above said combustion chamber;

a valve carried by said first conduit sealing the space between said first conduit and said sleeve adjacent the upper end of said sleeve, said valve being movable upwarly and downwardly into and out of sealing relationship with the top of said sleeve whereby gas flow from the space surrounding said first conduit into said sleeve can be controlled; and

an ignitor means positioned in said combustion chamber for igniting a combustible mixture therein.

3,298,440

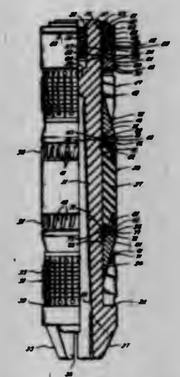
NON-RETRIEVABLE BRIDGE PLUG

James H. Current, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Oct. 11, 1965, Ser. No. 500,467

7 Claims. (Cl. 166—123)

1. In a packer having a packing element operatively mounted around a mandrel and adapted for expansion into sealing engagement with a wall of a well bore for packing off the annular space between said mandrel and wall, and a slip-expanding member movably mounted on said mandrel adjacent one end of said packing element and having an outer tapered surface converging toward said mandrel, the improvement comprising: a tubular slip member formed of a plurality of individual, elongated, spaced-apart, sectorial segments uniformly arranged around the periphery of said slip member, said segments having an inner surface complementarily shaped and adapted to coengage said tapered surface of said slip-expanding member and an outer wall-engaging surface; connecting means between adjacent segments operatively arranged and adapted to permit circumferential expansion of said slip member; and expansible means



around the periphery of said slip member for yieldably restraining the circumferential expansion of said slip member, said slip member being operatively disposed around said mandrel with said inner surface coengaged with the tapered surface of said slip-expanding member and responsive to longitudinal advancement of one of said members relative to the other to circumferentially expand said slip member and said restraining means whereby said segments are moved radially outwardly into anchoring engagement with the wall.

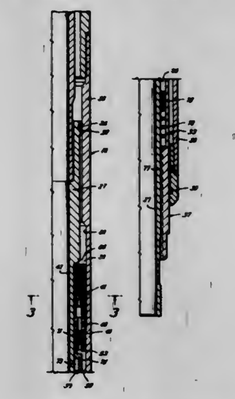
3,298,441

SAFETY SEAL PACKER

David E. Young, Bellaire, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Mar. 11, 1964, Ser. No. 351,025

9 Claims. (Cl. 166—179)



1. A device for controlling movement between telescoping members of a well tool comprising:

means forming a chamber between said telescoping members for receiving a fluid,

piston means formed on one of said members and slidably received in said chamber,

said piston means having a passageway formed therein for passing fluid from one part of said chamber to another through said piston,

valve means biased to close said passageway in the absence of relative movement between said members and responsive to an increase in fluid pressure in said passageway to open said passageway, and time delay means for impeding the reclosing of said passageway by said valve means in the absence of relative movement between said members.

3,298,442
SAFETY SEAL PACKER
James W. Kisling III, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Mar. 11, 1964, Ser. No. 350,977
9 Claims. (Cl. 166—196)



1. A device for controlling movement between telescoping members of a well tool comprising:

means forming a chamber between said telescoping members for receiving a fluid,

piston means formed on one of said members and slidably received in said chamber,

said piston means having a passageway formed therein for passing fluid from one part of said chamber to another through said piston,

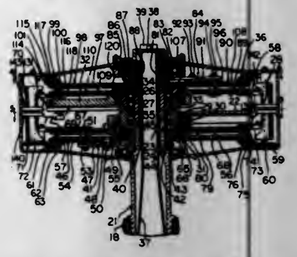
said piston means having a cylinder therein intersecting said passageway,

valve means movably positioned within said cylinder for opening and closing said passageway,

said valve means biased to close said passageway in the absence of relative movement between said members and responsive to an increase in fluid pressure in said passageway to open said passageway, and means for rendering said valve means slow to reclose said passageway.

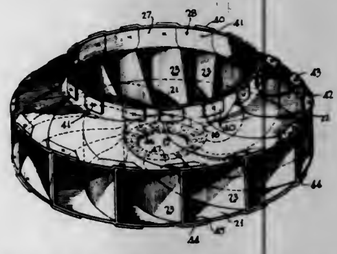
3,298,443
VIBRATION ABSORBING SYSTEM
John E. Burkam, Media, and Edward W. Glatfelter, Newtown Square, Pa., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,741
18 Claims. (Cl. 170—159)

1. In combination, a rotating hub, a plurality of members attached to said hub and extending radially therefrom, and a vibration absorber to substantially balance out vibrations created at said hub in one plane by said radial members, said vibration absorber including a first set of rotatably mounted weight means, a second set of rotatably mounted weight means, each of said sets of weight means including at least two equal weights, means connected to each of said weights of said first set of weight means to cause rotation of said first set of weight means in one direction at an angular velocity equal to a constant ratio of the angular velocity of said hub, means connected to each of said weights of said second set of weight means to cause rotation of said second set of weight means in a direction opposite



to the direction of rotation of said first set of weight means at an angular velocity equal to a constant ratio of the angular velocity of said hub, said axes of rotation of said weights being substantially perpendicular to said one plane, and means cooperating with each of said connected means to cause relative angular movement of one or more of said weights in response to a change in phase or amplitude of the vibrations created at said hub in said one plane by said radial members.

3,298,444
TURBINE IMPELLER ASSEMBLY
Charles H. Haas, Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 22, 1965, Ser. No. 489,221
5 Claims. (Cl. 170—168)



1. A sheet metal impeller assembly consisting of a plurality of identical press-formed sheet-metal channel-shaped blade units, each integral blade unit comprising: a top wall, a bottom wall, an integral side wall connecting the top and bottom walls and forming the impeller blade; and integral connecting means; said connecting means consisting of tab means on each blade unit joined with the next adjacent blade unit for securing said blade units together front-to-back in successive relationship to form the complete fluid containing enclosure with the connecting means located outside the fluid-flow zone.

3,298,445
TRACTOR WITH LIFTABLE REAR COULTER AND MOLDBOARD PLOW COMBINATION
William Fisk Mellen, Anaheim, Calif.
(P.O. Box 2032, Fullerton, Calif. 92633)
Filed Aug. 16, 1965, Ser. No. 479,760
5 Claims. (Cl. 172—166)

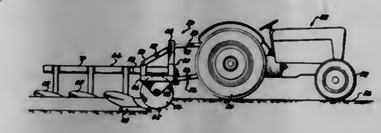
1. In a soil tillage tool movable between a lowered, soil-tilling position and a raised, inoperative position clear

of the ground by a lifting apparatus of a tractor having a longitudinal centerline, the combination of:

(a) a mounting frame;

(b) means for connecting said mounting frame to the lifting apparatus of the tractor for movement thereby between raised and lowered positions;

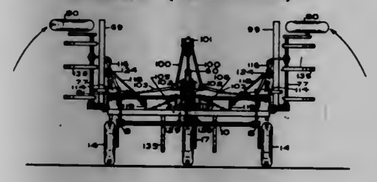
(c) coulter blades carried by said mounting frame and spaced apart transversely of the longitudinal center-



line of the tractor and positioned in soil-tilling engagement with the ground when said mounting frame is in its lowered position; and

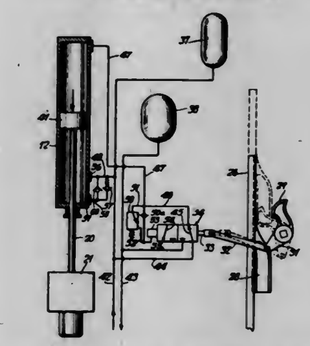
(d) a moldboard plow located behind said mounting frame and pivotally connected to said mounting frame for lateral pivotal movement relative thereto about an upright axis and positioned in soil-tilling engagement with the ground when said mounting frame is in its lowered position.

3,298,446
THREE SECTION DEEP TILLAGE CULTIVATOR
Peter Britanius Anderson, Box 40, Southey, Saskatchewan, Canada
Filed Dec. 30, 1964, Ser. No. 422,324
1 Claim. (Cl. 172—456)



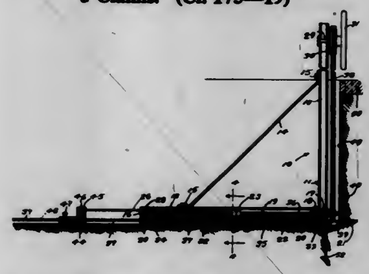
In an implement having a center section and a wing section hinged to each side of the center section; said center section having an axle shaft with radial arms fixed thereto and wheels mounted on axles and to which axles the radial arms are fixed; and said center section having a control shaft mounted to be turned axially and connected for turning the axle shaft axially and including hydraulic means anchored in the center section and connected for turning the control shaft by which the center section may be raised and lowered on its supporting wheels; mechanical means for simultaneously raising and lowering the outer ends of the wing sections; said mechanical means comprising axle shafts mounted to turn axially in the wing sections; radial arms fixed to the outer ends of the wing-section axle shafts; wheels mounted rotatable on axles and with the wing section axle shaft radial arms fixed to said latter axles; radial arms fixed to the inner ends of the wing section axle shafts; radial arms fixed to the outer ends of the control shaft; reach bars pivotally attached to the radial arms on the outer ends of the control shaft; means attaching the reach bars to the radial arms on the inner ends of the wing sections axle shafts; operable means for moving the wing sections between horizontal positions for work and vertical positions for road travel; said operable means including an upstanding arm fixed to the control shaft; a pair of link rods pivotally attached to the upstanding arm; linkage means connecting the free ends of the link rods to the wing sections for raising and lowering the wing sections by turning the control shaft; anchoring means connected to the link rods and anchored to the center section opposing the forwardly outward pull on the link rods in raising and lowering the wing sections; and the length of the reach bars adjustable relative to the length of the connections of the link rods to the wing sections by which initial movement of the control shaft when the implement wing sections are in position for work raises or lowers the center and wing sections for depth adjustment without any movement being imparted to the wing sections by the link rod connections therewith.

3,298,447
CONTROL OF VARIABLE-STROKE POWER HAMMERS
George J. Gendron, Oradell, N.J., assignor to Raymond International Inc., New York, N.Y., a corporation of New Jersey
Filed Apr. 15, 1964, Ser. No. 359,911
9 Claims. (Cl. 173—8)



1. In combination with a high speed reciprocating hydraulic power hammer having a cylinder and operating piston: a source for supplying liquid under pressure; valve means for controlling the admission of liquid from such source into the cylinder space for subjecting the piston to a pressure within a normal predetermined range for actuating the piston on its working stroke, said valve means being actuatable for thereafter controlling release of the liquid from said space upon the return stroke of the piston, such pressure in said space being subject to an abrupt increase causing a water hammer impulse upon stopping of the piston movement as the result of the striking of a heavy blow by the hammer; and means acting responsive to the kinetic energy of such impulse for causing such valve actuation and consequent release of the liquid from said space.

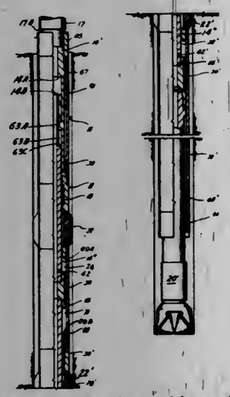
3,298,448
UNDERGROUND PASSAGE FORMING APPARATUS
Gustav Kull, Sacred Heart, Minn. 56285
Filed Oct. 9, 1964, Ser. No. 402,765
5 Claims. (Cl. 175—19)



1. An underground passage forming apparatus comprising a rigid frame including a bottom portion and an upright portion rising from said bottom portion, a lead

screw extending longitudinally through and journaled in said bottom portion, a member slidably and non-rotatably connected to said bottom portion and threadedly engaging said lead screw, a guide disposed beneath and secured to said bottom portion, an elongated passage forming member extending slidably through said guide, a clamp detachably secured to said passage forming member beyond one end of said bottom portion and one end of said guide, means rigidly connecting said clamp to said member, and manually actuated means supported by an upper part of said upright frame portion and connected to said lead screw for revolving the screw in either direction for moving the passage forming member in either direction in unison with said member and clamp for propelling the passage forming member through said guide and away from one end thereof.

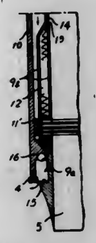
3,298,449
WELL BORE APPARATUS
William S. Bachman, Stanley C. Moore, Henry M. Rollins, and William R. Garrett, Midland, Tex., assignors to Driloo Oil Tools, Inc., a corporation of Texas
Continuation of application Ser. No. 720,284, Mar. 10, 1958. This application Oct. 24, 1963, Ser. No. 318,747
92 Claims. (Cl. 175—76)



34. An apparatus for forcing a bit against the bottom of a borehole comprising: an upper hollow shaft section; a lower hollow shaft section; a telescoping joint section connecting said upper shaft section and said lower shaft section in a longitudinally slidable and non-rotatable relationship; a housing member rotatably mounted around said upper shaft section and extending around said lower shaft section in a longitudinally slidable and rotatable relationship therewith; pushdown means positioned between said lower shaft section and said housing operable to exert a force on said lower shaft section longitudinally thereof in the direction of said bit and to exert the reaction thrust of such force on said housing member; means to transfer the force on said lower shaft section to said bit; anchor means attached to said outer housing and of a character to transfer the reaction thrust to the borehole wall.

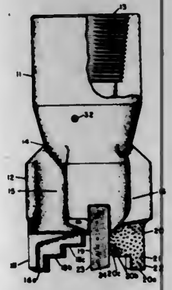
3,298,450
APPARATUS FOR COLLECTING SOIL SAMPLES
Hisamatsu Sato, 3 5-chome, Higashiyama-dori, Chikusa-ku, Nagoya, Japan
Filed Oct. 3, 1963, Ser. No. 313,540
Claims priority, application Japan, Oct. 10, 1962, 37/45,043; Mar. 19, 1963, 38/14,706
7 Claims. (Cl. 175—226)

1. An apparatus for collecting soil samples comprising a cylinder having an outer portion, and an inner portion mounted for limited slidable movement within said outer portion; soil cutting means located at one end of said inner portion and extending outwardly from the adjacent end of said outer portion; a wrapping bag loading chamber disposed on the inner wall of said cylinder and spaced from said end; a wrapping bag partially disposed in said chamber and extending across said cylinder in a plane perpendicular to the longitudinal axis thereof; a plurality of drill bits disposed on said adjacent end of said outer portion; and means disposed on said cylinder to seal said



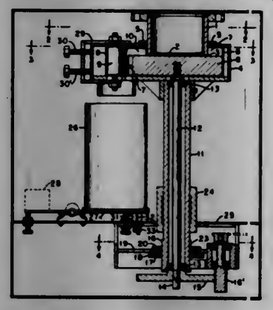
soil sample from the soil after the sample has entered said cylinder upon insertion of said cylinder into the soil, said sealing means comprising a ring rotatably mounted on said inner portion, a plurality of cutting blades pivotally mounted on said ring normally extending around the inner wall thereof, and adapted to be pivoted about one end in a plane perpendicular to the longitudinal axis of said cylinder to cut said sample and seal it from the soil upon rotation of said ring, and means to actuate said sealing means.

3,298,451
DRAG BIT
John E. Eckel and Everett H. Lock, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,671
5 Claims. (Cl. 175—393)



1. A rotary drag bit comprising:
a hollow bit body including an upper body section provided with means for connecting said body to the lower end of a rotary drill string and an enlarged lower body section containing circumferentially-spaced flow channels of streamlined cross section extending longitudinally in the outer surface thereof to permit the passage of drilling fluid upwardly from beneath said lower section into the space surrounding said upper section;
a plurality of elongated blades attached to and depending from said lower body section at intermediate positions between said flow channels, the outermost surface of said lower body section adjacent each blade extending circumferentially in front of said blade to a flow channel and behind said blade to a flow channel and each of said blades including a face extending laterally in a substantially radial direction from a point near the longitudinal axis of said lower body section to a point adjacent the outer surface of said lower body section; and
nozzles located in said lower body section between the faces of said blades and the adjacent flow channels near the periphery of said lower body section, each of said nozzles communicating with the interior of said body and being oriented to direct a stream of drilling fluid downwardly toward a point near the lower gage corner of a blade.

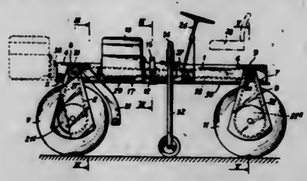
3,298,452
WEIGHT RESPONSIVE DISPENSER
Harry C. Francke, Oak Ridge, and Emanuel G. Laggis, Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 11, 1965, Ser. No. 463,410
2 Claims. (Cl. 177—120)



1. A powder dispenser comprising a vertical reactor shell having a lower open end for carrying out a powder producing reaction, a rotatable table positioned beneath, and in close proximity to, the lower end of the shell and projecting beyond the walls thereof for closing it as powder accumulates thereon, an idler roller positioned in spaced relation to the table, a belt of greater height than the table for coupling it to the idler roller, a scraper positioned above the exposed upper surface of the table for guiding the flow of powder therefrom, means for rotating the table to dispense powder from the reactor, a container positioned beneath the table to collect the powder, a balance for supporting the container and movable in response to a predetermined load therein, and switch means actuated by the balance for stopping the means for rotating the table.

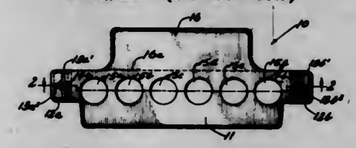
3,298,453
FRAME AND DRIVE ARRANGEMENT FOR AGRICULTURAL TRACTOR HAVING TWO WHEELS IN LINE
Emile Bobard, 17 Rue de Reon, Beaune, France
Filed Sept. 25, 1964, Ser. No. 399,137
Claims priority, application France, Sept. 27, 1963, 948,913
4 Claims. (Cl. 180—21)

1. In an agricultural tractor or the like of the kind having two steering and driving main wheels arranged in line, and an engine and gearing set for driving said main wheels; the combination of an elongated tubular chassis disposed entirely above said wheels and which is greater in height than in width, bearing supports projecting laterally from one side of said chassis adjacent the opposite ends thereof and carrying bearings which are laterally offset from said chassis at said one side thereof, depending struts mounted at said upper ends by said bearings for turning relative to said chassis about vertical axes concentric with said bearings and having means at the lower ends of said struts for rotatably mounting said main wheels thereon at the sides of said struts facing toward said chassis to dispose said chassis and said struts at opposite sides of a vertical medial plane of said wheels which



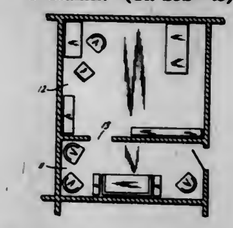
contains said vertical axes about which said struts are turnable, and mounting means for said engine and gearing set projecting laterally from said one side of the chassis between said bearing supports and supporting said set at said one side of the chassis between said main wheels so that the center of gravity of the tractor is substantially situated in said vertical medial plane of the main wheels.

3,298,454
BATTERY HOLD-DOWN DEVICE
Walter Ernest Anderson, Milwaukee, and Roy Erving Hennen, Mequon, Wis., and John T. Redmon, Detroit, Mich., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Jan. 19, 1965, Ser. No. 426,530
8 Claims. (Cl. 180—68.5)



1. In a battery hold-down device, the combination which comprises a main body portion adapted to engage the top of a battery, mounting extensions connected to opposite ends of the main body portion for cooperating with hold-down bolts on a battery support to secure the battery to the battery support, and a plurality of apertures formed in the main body portion and adapted to be aligned with battery filler ports and to receive battery filler caps so that the device is thereby aligned relative to the battery and the battery support.

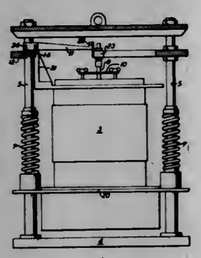
3,298,455
NOISE MASKING INSTALLATION
Michael J. Kodaras, Scarsdale, N.Y., and John F. Duda, Dumont, N.J., assignors to Elof Hansson, Inc., New York, N.Y., a corporation of New York
Filed Mar. 11, 1964, Ser. No. 351,128
3 Claims. (Cl. 181—.5)



1. An installation for masking undesired sounds in a chamber having two adjacent areas defined by an intervening wall having an opening, each of said areas having a ceiling, said installation comprising a plenum chamber

extending over one of said ceilings, said one ceiling defining the lower wall of said plenum chamber, said plenum chamber having an upper wall spaced from the lower wall, said lower wall having its outer surface exposed to the interior of the area associated with the plenum chamber and its inner surface exposed in said plenum chamber, said lower wall being of partially sound transparent material, a sound generator positioned in said plenum chamber and mechanically isolated from said lower wall, said sound generator comprising a sound projecting device and means to create a sound to be emitted by said sound generating device, said sound having a frequency spectrum that is between predetermined ranges which is substantially equal to the frequency range of the sounds to be masked, said sound projecting device being oriented to project the sound generated toward the upper wall of said plenum chamber, whereby the sound projected by the sound projecting device will diffuse through the entire plenum chamber affording substantially equal distribution of such sound against the inner surface of the lower wall of the plenum chamber, said lower wall permitting partial transmission therethrough of such sound, thereby masking the objectionable sounds.

3,298,456
ELECTROMECHANICAL VIBRATORS
Claude Picou, Paris, France, assignor of fifty percent each to Compagnie Generale de Geophysique and the Institut Francais du Petrole, des Carburants et Lubrifiants, Paris, France and Rueil-Malmaison, Seine et Oise, France, respectively
Filed June 29, 1964, Ser. No. 378,834
Claims priority, application France, July 16, 1963, 941,537
5 Claims. (Cl. 181—.5)



1. A seismic vibrator comprising a pedestal adapted to rest on the ground, a mass supported from the pedestal and adapted for containing a magnetic circuit, and a movable system supported from the mass and adapted for containing a coil cooperating with the magnetic circuit, a plurality of levers conected respectively with the pedestal, the mass and the movable system, and three blades associated with each lever and extending in three vertical planes, each blade having one end set in the associated lever, said three blades having other ends respectively set in said pedestal, mass and movable system, said three blades having a central transverse line lying in the same horizontal plane.

3,298,457
ACOUSTICAL BARRIER TREATMENT
Glenn E. Warnaka, Erie, Pa., assignor to Lord Corporation, a corporation of Pennsylvania
Filed Dec. 21, 1964, Ser. No. 419,654
6 Claims. (Cl. 181—33)

1. An acoustic barrier structure comprising a sheet metal base member having a surface subject to a field of intense acoustic vibration, a first layer of relatively stiff viscoelastic damping material adhered to said surface, said material having a Young's modulus of elasticity that is substantially less than that of the base member, a second layer of relatively soft compliant material adhered to the outer surface of the first layer, the material of the second layer having a modulus of elasticity that



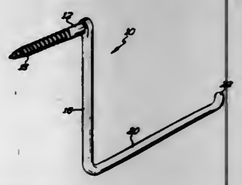
is substantially less than that of the damping material of the first layer and supporting therein particulate material of relatively high specific gravity.

3,298,458
EXHAUST PIPE SILENCERS WITH TELESCOPED GAS PASSAGE TUBES
Floyd E. Deremer, Livonia, Mich., assignor to Oldberg Manufacturing Company, Grand Haven, Mich., a corporation of Michigan
Filed Oct. 4, 1965, Ser. No. 492,528
16 Claims. (Cl. 181—54)



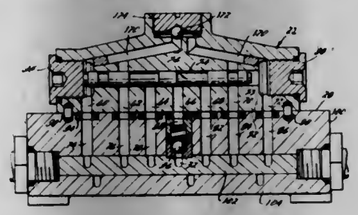
1. An exhaust gas conveying means for attachment directly to the exhaust manifold of a vehicle engine including, in combination, an outermost tubular means, a plurality of sound attenuating means in lengthwise spaced relation within the tubular means, each of said attenuating means including a tubular member within the tubular means, a first gas passage tube in the tubular member of lesser diameter than the tubular member providing a space therebetween, a second gas passage tube of lesser diameter than the first gas passage tube within the tubular member and disposed in aligned relation with the first gas passage tube, lengthwise spaced partition means between the tubular member and the gas passage tubes supporting said tubes, and a wall area of each of said tubes being perforated with small openings.

3,298,459
TREE CLIMBING APPARATUS
Arvid H. Bergsten, 759 W. Main St., Anoka, Minn. 55303
Filed Dec. 16, 1964, Ser. No. 418,815
5 Claims. (Cl. 182—92)



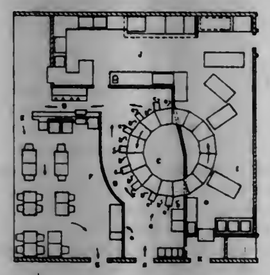
1. Apparatus for climbing comprising, in combination, a surface to be climbed, a plurality of removable step members connected in a staggered vertical relationship to the surface, each of the removable step members being characterized by the shaft portion having a screw thread formed thereon, a crank portion connected to the shaft portion and extending downwardly and normally thereto, and a step portion defined by bending the lower end of the crank portion and extending normal thereto and in a direction opposite to that of the shaft portion, the step portion forming a handle for the crank portion and serving as a step, the shaft portion being threaded into the surface such that the crank portion contacts the surface along its extent and aids in the support of the step member on the surface.

3,298,460
DIVISIONAL LUBRICANT FEEDER
Edward B. Porter, Bloomfield Hills, and Ralph F. Urso, Grosse Pointe, Mich., assignors to McCord Corporation, Detroit, Mich., a corporation of Maine
Filed Aug. 18, 1964, Ser. No. 390,405
7 Claims. (Cl. 184—7)



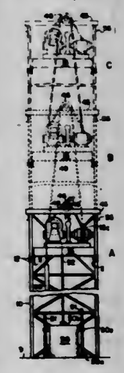
1. In a divisional lubricant feeder assembly having a group of interrelated sequential divider valves, an inlet manifold connected to said valves for supplying lubricant thereto, individual outlets from each of said valves, a system of fluid passages interconnecting said valves for automatic sequential and cyclical discharge of lubricant therefrom through said outlets in response to the continuous supply of lubricant under pressure thereto through said inlet manifold, said assembly comprising a series of at least three valve blocks, a base upon which said blocks are mounted, said base having therein: said manifold; the inlet terminal thereof; the terminals of said outlets from said valves and said system of passages except for portions thereof forming connections with said valves, each of said valve blocks having a divider valve therein, porting passages in said base and valve blocks and extending through the faying faces between said base and each of said valve blocks, certain of said porting passages interconnecting said valves with said manifold and the outlet terminals respectively, and others of said porting passages in said base and valve blocks forming that part of said system which interconnects said valves, high pressure sealing means between said base and valve blocks and around said porting passages therebetween, and removable means individually securing each of said blocks to said base.

3,298,461
PROCESS FOR DISPENSING MERCHANDISE AND FOODS
Walter A. Klaknid, 884 Old Orchard Road, Cincinnati, Ohio 45230
Filed Oct. 30, 1964, Ser. No. 407,733
1 Claim. (Cl. 186—1)



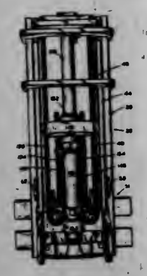
The process for the self-service of dished foods to individual customers concurrently comprising:
providing generally a circular counter and rotating the counter about a vertical axis, the counter having an annular peripheral area disposed in a horizontal plane;
providing a kitchen area enclosing one portion of the peripheral area of the rotating counter and placing the dished foods on said horizontal peripheral area;
providing a customer area having an entrance and a one-way customer passageway which is constricted and which includes a portion which is curved in an arc concentric with the axis of the rotating counter and spaced outwardly from the peripheral area thereof;
guiding the customers from the customer area and through said constricted passageway and about the peripheral area of the counter to a dining area, said constricted passageway providing a curved dispensing portion accessible to the peripheral area of the counter and disposed generally opposite to the kitchen area;
the direction of rotation of the counter being opposite to the direction of movement of the customers through said curved one-way constricted to prevent the customer in the constricted area from following the rotating peripheral area of the counter;
providing a plurality of spaced stationary tray rests on fixed barriers about the peripheral area of the rotating counter in said constricted passageway, said stationary tray rests delineating generally radial stalls;
utilizing said stalls to prevent customers from moving about and along the peripheral area of the counter, said stalls holding the customers captive while selecting dished foods from the peripheral area of the rotating counter.

3,298,462
TRACTION LIFT FOR SCAFFOLDING TOWERS
Ronald G. Morris, Beaver Falls, Pa., assignor to Beaver-Advance Corporation, Ellwood City, Pa., a corporation of Pennsylvania
Filed Jan. 17, 1966, Ser. No. 521,134
14 Claims. (Cl. 187—2)



1. Traction apparatus for mounting on an overhead lift platform to raise and lower an elevator and to raise and lower the lift platform which comprises, a drive motor, a gear reduction unit having a driven shaft operatively-connected to said motor for actuation thereby, a support shaft, means for carrying said support shaft, sleeve means rotatably-positioned on said support shaft and connected to said gear reduction unit for actuation thereby, said sleeve means having a sheave to carry cable reeving for raising and lowering the elevator, a winding drum operatively-associated with said sleeve means for rotation therewith on said support shaft, and said winding drum having means to secure one end of a winding cable thereto for raising the lift platform from one to a second stage of elevation.

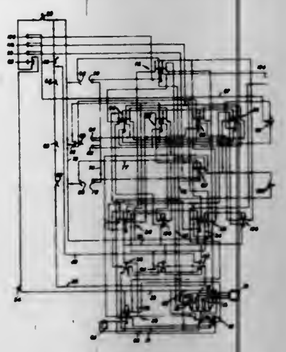
3,298,463
TRIPLE STAGE UPRIGHT FOR LIFT TRUCK
Richard F. McIntosh, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed May 18, 1964, Ser. No. 368,064
12 Claims. (Cl. 187—9)



3. A mast assembly for a lift truck comprising first, second and third upright sections, said second section being mounted for vertical movement on said first section, said third section being mounted for vertical movement on said second section, a load carriage mounted for vertical movement along said third section, a cylinder assembly mounted between said second and third sections, said assembly having a first hydraulic cylinder substantially the length of one of the upright sections connected to said second section, a second hydraulic cylinder slidable on the said first cylinder, connected to the third section and having a length substantially the length of one of the upright sections, a third hydraulic cylinder substantially one-half the length of one of the upright sections and slidable on the second cylinder and a fourth hydraulic cylinder secured to said second cylinder and slidable in relation to said third cylinder, said fourth cylinder and third upright section being immovable relative to each other, anchor means secured to said fourth cylinder, first sprocket means mounted at the upper end of the third cylinder and rotatable about an axis transverse of the truck, first chain means extending over said sprocket means and connected at one end to the load carriage, second sprocket means mounted at the lower end of said second upright section and rotatable about an axis longitudinal of the truck, and second chain means extending beneath said second sprocket means and connected at one end thereof to the upper end portion of the first upright section, the opposite ends of said first and second chain means being secured to said anchor means.

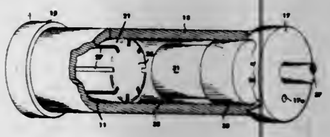
3,298,464
ELEVATOR CONTROL CIRCUIT
Robert D. Sturm, 1720 NE. 36th Ave., Portland, Oreg. 97212
Filed Sept. 9, 1963, Ser. No. 307,451
8 Claims. (Cl. 187—29)

1. An elevator control circuit comprising:
motor means for raising and lowering an elevator;
a first switch means connected to said motor means for lowering the elevator to a bottom position;
at least one pair of second switch means connected to said motor means for raising and lowering the elevator by a different one of said pair of second switch means to an intermediate position;
a third switch means connected to said motor means for raising the elevator to a top position;
a pair of control means each connected between a different one of said pair of second switch means and said motor means for controlling when said pair of second switch means can be operated to energize said motor means;
automatic actuating means for causing one of said control means to operate when the elevator is above said intermediate position and for causing the other of said control means to operate when the elevator is below said intermediate position; and



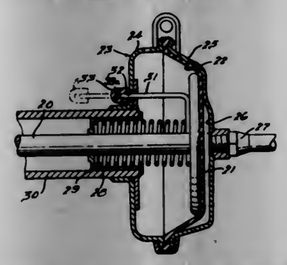
disenabling means connecting said first and third switch means through different ones of said pair of second switch means to said motor means, for preventing said first and third switch means from operating said motor means when said second switch means energize said motor means.

3,298,465
ENERGY ABSORBING ARRANGEMENT
Theodore G. Stastny, Baltimore, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland
Filed Oct. 22, 1964, Ser. No. 405,690
13 Claims. (Cl. 188—1)



9. An energy absorbing arrangement comprising:
a buffer element having a tubular portion connected to an end wall portion through a smooth curved bend,
a plurality of longitudinally extending slots formed in said tubular portion and spaced about the periphery of said tubular portion,
a piston mounted for sliding axial movement toward said buffer end wall and having an end-wall-engaging portion smaller in outer cross-section than the inner cross-section of said buffer element tubular portion for axial displacement of said buffer end wall and sequential segmental rolling of said slotted tubular portion in the direction of end wall movement,
axial stop means for stopping axial movement of said tubular portion relative thereto in the axial direction of motion of said piston toward said buffer end wall, and
an annular confining wall disposed about said slotted tubular portion of said buffer arrangement for preventing undesired outward buckling of the wall of said tubular portion during axial movement of said end wall and the concomitant sequential segmental inward roll bending of said tubular portion.

3,298,466
BRAKE WEAR INDICATOR
David T. Ayers, Jr., Birmingham, and William T. Birge, Plymouth, Mich., assignors to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Feb. 3, 1965, Ser. No. 430,003
5 Claims. (Cl. 188—1)



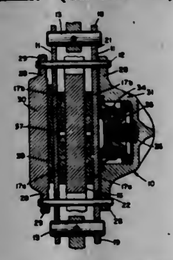
1. In a brake including brake shoes and operating means therefor comprising a diaphragm, spring means acting on said diaphragm to return the diaphragm to inoperative position, and a housing enclosing said diaphragm and spring means, that improvement which comprises, an extension on a coil of said spring extending through said housing to the exterior thereof to indicate the extent of the movement of said spring and diaphragm.

3,298,467
CASTER BRAKE
William L. Darnell, Long Beach, Calif., assignor to Darnell Corporation, Ltd., Downey, Calif., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,176
10 Claims. (Cl. 188—29)



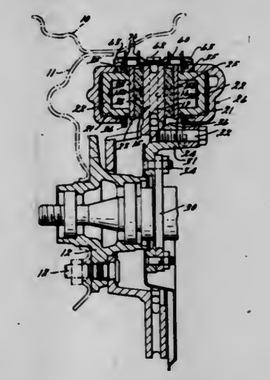
1. The combination of a caster including a wheel having a resiliently penetrable tire rotatable within a yoke having a top overlying the wheel, and a brake device comprising a one piece plate secured to and projecting outwardly from said top above the wheel, said plate having a pair of generally parallel splits separating the plate into transversely outer supporting portions and an intermediate tongue flexible downwardly into braking engagement with the wheel, and a lever pivotally mounted on said outer portions of the plate and operable to so flex the tongue.

3,298,468
CALIPER-TYPE DISK BRAKES
Edwin K. Buyze, St. Clair Shores, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 24, 1964, Ser. No. 420,867
5 Claims. (Cl. 188—73)



1. Disk brake comprising: an axially fixed rotatable disk and axially movable non-rotatable housing having limbs straddling said disk, a pair of elongated backing plates each axially located between a limb of said housing and a side of said disk, said backing plates each having end portions extending circumferentially outward from said housing, a friction pad member connected to each said backing plate between said end portions and axially located between a backing plate and a side of said disk, at least one fluid motor in a limb of said housing adapted to engage said friction pad members with said disk to transmit torque from said disk to said backing plates, an axially and rotationally fixed support including a pair of fixed thrust anchors located radially outward from and in axial alignment with said disk, apertures in said end portions of said backing plates, anchor pins fixedly connected to said thrust anchors extending axially through said apertures in said end portions of said backing plates and located circumferentially outward in said apertures to provide trailing restraint by said friction pad members on said disk, and means mounting said housing on said end portions of said backing plates for solely supporting said housing thereby, said housing and said means mounting said housing being free from torsional forces transmitted to said backing plates from said disk.

3,298,469
DISK BRAKE
Richard T. Robinette, St. Clair Shores, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,397
1 Claim. (Cl. 188—73)



In a disk brake for vehicle wheels having, a brake disk rotatable with the wheel, a yoke member straddling a portion of the periphery of said brake disk, brake shoes mounted on said yoke member, each brake shoe comprising a backing plate, and brake actuating pistons carried by said yoke member adapted to actuate said brake shoes, that improvement which comprises, a splash plate secured at its ends to said yoke member, transvesre ribs on said plate in sealing engagement with said backing plates, resilient spring members carried by said plate engaging said backing plates to prevent said brake shoes from rattling, said resilient spring members each being provided with a pair of spring arms engaging apertures in said splash plate to removably secure said resilient members thereto.

3,298,470
BRAKE MECHANISM AND SYSTEM
Robert C. Russell, Asheville, N.C., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Apr. 21, 1965, Ser. No. 449,739
2 Claims. (Cl. 188—106)

1. A dual motor system for a wedge-operated brake assembly including an axle carrying a flange, a wheel mounted for rotation on the axle and having a brake

drum secured thereto for rotation therewith, radially expanding friction type brake shoes mounted on the flange, and an operator member reciprocably movable and having a tapered portion operably disposed for wedging coaction between the extremities of the brake shoes,

said dual motor system comprising,

a housing fixed relative to the wheel axis,

said housing defining an annular cylinder surrounding the axle,

a head closing one end of said annular cylinder,

a first annular piston reciprocable within said annular cylinder,

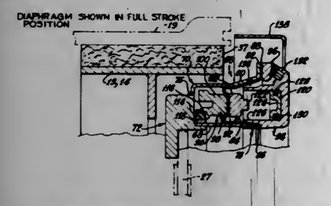
means operably coupling the operator member to said first annular piston,

first divider means dividing said annular cylinder into a first sub-chamber on one side of said first annular piston and a second sub-chamber on the other side of said first annular piston,

said first divider means comprising a rolling diaphragm coupled to said first piston and the cylinder wall,

a second piston reciprocable within said cylinder between said first piston and said head,

second divider means dividing said cylinder into a third sub-chamber between said second piston and said head,



service means for introducing pressurized fluid into the sub-chamber between said pistons during normal actuation of the brakes by a foot control to force said first piston away from said head and said second piston toward said head, said service means including,

a first fluid reservoir in communication with said sub-chamber between said pistons by means of a port in the cylinder wall between said rolling diaphragm and said head,

service valve means for controlling flow from said first reservoir to said sub-chamber,

said service valve means actuated by said foot control,

emergency means for alternately introducing pressurized fluid into said third sub-chamber to force both of said pistons away from said head to thereby move the operator member, said emergency means including,

a second fluid reservoir in communication with said third sub-chamber,

emergency valve means for controlling flow from said second reservoir to said third sub-chamber,

the distance between said port in said cylinder wall and said head being at least equal to the stroke of said second piston whereby free communication between said first and second reservoirs is prohibited during actuation of said emergency means.

3,298,471
VALVE FOR HYDRAULIC BRAKE HOLDING SYSTEM
Robert C. Evans, 623 Prospect St., Apt. 2, Flint, Mich. 48503
Filed Nov. 6, 1964, Ser. No. 409,452
1 Claim. (Cl. 188—152)

Brake holding means for a motor vehicle having a hydraulic brake system including a master brake cylinder and wheel brake cylinders arranged to receive hydraulic pressure from said master cylinder to apply wheel brakes, comprising, in combination,

a casing,

a cylindrical valve chamber in said casing,

an inlet passage to communicate said chamber with said master brake cylinder,

a valve seat concentrically disposed at one end of said chamber and forming the mouth of said inlet passage,

a conical valve member disposed within said chamber,

a resilient tip at the small end of said valve member and adapted to seat within said valve seal,

a circular flange surrounding the base of said valve member,

a cup-shaped gasket slideably arranged within said chamber and having a forwardly directed sidewall surrounding said flange,

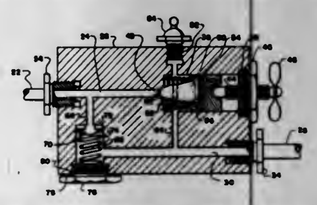
a cylindrical piston member slidably arranged within said chamber and abutting the rear of said gasket,

a threaded counterbore at the end of said chamber opposite said valve seat,

a threaded plug threadably engaged with said threaded counterbore, said plug having a threaded aperture extending axially therethrough,

a helical spring within said chamber and surrounding said conical valve member between said end in which said valve seat is disposed and said flange, and arranged to yieldingly urge said flange, valve member, tip, gasket and piston member axially rearward to unseat said tip from said valve seat,

a thumbscrew threadably engaged with said threaded aperture in said plug and adapted to be extended into said chamber to contact and move said piston



member forward against said gasket and to force said gasket, flange, valve member, and tip axially forward against pressure of said spring to seat said tip in said valve seat when said thumbscrew is rotated in one direction, and to permit said tip, piston member, flange, gasket, and valve member to be moved rearwardly by said spring to unseat said tip from said valve seat when said thumbscrew is rotated in an opposite direction,

an outlet passage to communicate said chamber with said wheel brake cylinders,

a bypass passage between said inlet and outlet passages,

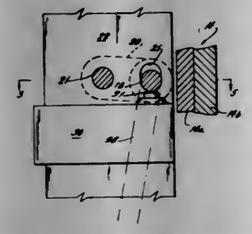
a spring-loaded, one-way check valve in said bypass passage to permit flow of hydraulic fluid from said inlet passage to said outlet passage and to bypass said main valve chamber and to prevent flow of hydraulic fluid through said bypass passage in a reverse direction,

the sloped sidewall of said conical valve member, together with exposed portions of said flange, gasket, and spring, presenting a substantial surface area within said chamber and normal to the axis of movement of said valve member to assist axial movement of said valve member, tip, gasket, and piston in a direction away from said valve seat and to unseat said tip from said valve seat in response to hydraulic pressure within said chamber when said thumbscrew is rotated in said opposite direction,

threaded bore extending through the wall of said casing and into said chamber to communicate said chamber with the external atmosphere,

and a threaded plug releasably sealing said threaded bore.

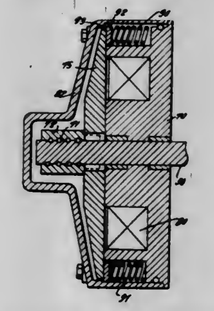
3,298,472
SELF-ADJUSTING LOAD RESPONSIVE BRAKE
Otto Jensen, Malvern, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 8, 1966, Ser. No. 541,182
2 Claims. (Cl. 188—171)



1. In a hoist system including a rotating shaft connected to hoist load means at one portion thereof and hoist motor means at the other end thereof; a load-sensitive brake comprising a rotatable brake drum connected to said shaft, a brake shoe movable into and out of brake engagement with said brake drum, a brake shoe support arm pivotally mounted at one end thereof, a load-responsive link pivotally connected at one end thereof to said brake shoe support arm and pivotally connected at the other end thereof to said brake shoe; stop means connected to said brake shoe support arm for limiting the rotation of said load-responsive link about its said pivotal connection to said brake shoe support arm, electrical circuit switch operating means positioned adjacent said stop means whereby said electrical circuit switch operating means is operated when said load-responsive link reaches said stop means, biasing means for normally biasing said brake shoe into engagement with said brake drum, electrically energizable brake release means connected to said brake shoe for moving said brake shoe out of engagement with said brake drum, electrical circuit means including switch means connected to said switch operating means for energizing said brake release means; said load-responsive link engaging said stop means and said electrical circuit switch operating means when the torque of said load means exceeds the opposing torque of said hoist motor means whereby said switch means prevents energization of said brake release means; said switch operating means being moved to a circuit energizing position only when said load-responsive link moves away from said stop means and releases said electrical circuit switch operating means.

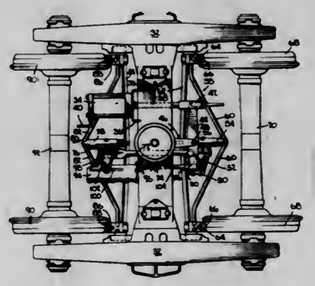
3,298,473
AUTOMATIC AIR GAP ADJUSTMENT FOR SPRING BRAKE
Otto Jensen, Malvern, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 8, 1966, Ser. No. 541,183
4 Claims. (Cl. 188—171)

1. An automatic air gap adjustment structure for a magnetically operated system; said system including a stationary magnet structure; an armature movable with respect to said stationary magnet structure responsive to energization of said magnet between a sealing position and an open position; the distance between said armature and said magnet structure in said open position defining an air gap; a shaft connected to a load to be moved by said armature; and connection means connecting said shaft to said armature; said connection means including a low friction threaded connection between said armature and said shaft whereby said armature is freely rotatable on said shaft; a rotation prevention means stationarily positioned with respect to said armature; said rotation prevention means engaging said armature for preventing rotation of said armature with respect to said shaft when



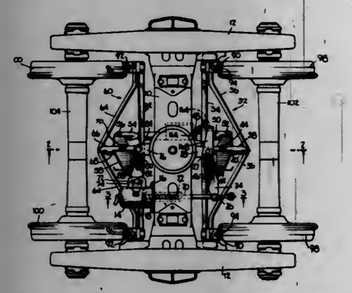
said armature is spaced a predetermined distance from said stationary magnet structure whereby said armature rotation on said shaft is responsive to energization of said magnet structure until said armature engages said rotation prevention means, and is thereafter attracted toward said magnet structure without rotation to move said load through said predetermined distance.

3,298,474
BRAKING SYSTEM
Charles F. Roselius, Bethpage, and Carmelo J. Nicastro, Flushing, N.Y., assignors, by mesne assignments, to Robert M. Holloway and Robert L. Ludington, Michigan City, Ind.
Filed July 24, 1964, Ser. No. 384,906
7 Claims. (Cl. 188—200)



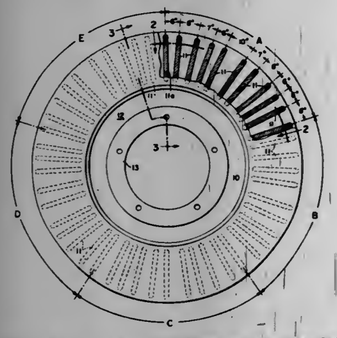
1. A brake mechanism for a railway car truck having a pair of wheels, said mechanism comprising a frame member, a fluid cylinder mounted on said frame member, a piston rod actuated by said fluid cylinder, a first lever pivotally mounted on said frame member having one end pivotally connected to said piston rod, a brake beam having portions which are frictionally engageable with said pair of wheels, a truck live lever pivotally connected to said brake beam and being moveable in response to movement of said first lever, lever means establishing a pivot point for said truck live lever, and a slack adjuster for eliminating the slack in the brake mechanism, said slack adjuster having an adjustable fulcrum member frictionally engageable by said lever means for providing an adjustable fulcrum point along the side of said lever means, and said slack adjuster having adjusting means for controlling the position of said fulcrum member, said adjusting means having a portion thereof engageable with said first lever.

3,298,475
BRAKE MECHANISM
Everard C. Mersereau, Westfield, N.J., and Robert M. Holloway, 408 Springfield Ave., and Robert L. Ludington, Stop 34, Duneland Beach, both of Michigan City, Ind. 46360; said Mersereau assignor to said Holloway and said Ludington
Filed Sept. 22, 1964, Ser. No. 398,247
7 Claims. (Cl. 188—200)



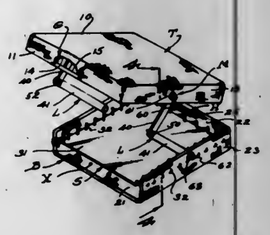
1. A brake mechanism for a railway car having a truck carrying a pair of wheels, said mechanism comprising a frame member, a fluid cylinder mounted on said frame member, a piston and piston rod actuated by said fluid cylinder, a first lever having one end pivotally mounted on said frame member and the other end thereof pivotally mounted on said piston rod, a brake beam having portions which are selectively brought into frictional engagement with said pair of wheels, a truck lever pivotally mounted on said brake beam, slack adjusting means, said slack adjusting means being extensible and retractable for eliminating the slack and controlling the travel of the brake mechanism, said slack adjusting means being lockable in a rigid condition when transmitting the full braking force to said brake beam, said truck lever slidably engaging said first lever and being directly pivotally connected to the slack adjusting means, and means responsive to movement of said brake beam for actuating said slack adjusting means.

3,298,476
DISC BRAKE ROTOR
John B. Day, Columbus, Ohio, assignor, by mesne assignments, to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 13, 1965, Ser. No. 479,377
8 Claims. (Cl. 188—218)



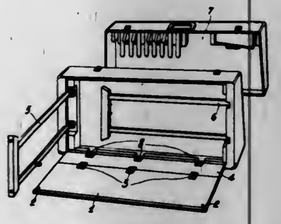
1. A disc brake rotor comprising a pair of axially spaced annular friction plates, and a plurality of circumferentially spaced blades interconnecting said friction plates, the circumferential spacing between said blades being randomized in series of three or more blades.

3,298,477
CONVERTIBLE CARRIER, HEAD REST AND SUN SHADE
Erasmo Martinez, Hawthorne, Calif. (5320 W. 10th St., Los Angeles, Calif. 90045)
Filed Feb. 9, 1966, Ser. No. 526,335
9 Claims. (Cl. 190—1)



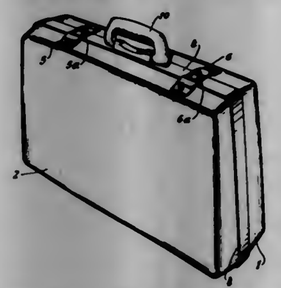
1. A convertible carrier, head rest and sun shade of the character referred to including, a bottom section with a flat normally horizontal bottom wall with front and rear ends, a vertical rear end wall and vertical side walls, a flexible head supporting sheet arranged within the confines of the bottom section, support means securing the sheet in spaced relationship above the bottom wall, a top section arranged in spaced relationship above the bottom section and including a normally substantially flat top wall with front and rear ends and depending substantially vertical front, rear and side walls and like means between the sections yieldingly supporting the top section on the bottom section for yielding vertical, pivotal and fore and aft movement relative to the bottom section, and releasable hinge means at the rear walls of the sections to releasably pivotally connect the sections together when said sections are arranged in juxtaposition.

3,298,478
CASING FOR PORTABLE APPARATUS, IN PARTICULAR FOR PORTABLE MUSICAL INSTRUMENTS
Paolo Settimio Soprani, Ancona Via Balnaibza 2, Ancona, Italy
Filed Dec. 2, 1964, Ser. No. 415,348
Claims priority, application Italy, Feb. 7, 1964, 103,632/64
2 Claims. (Cl. 190—11)



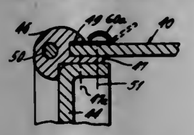
1. Container or casing suitable for the transportation of portable apparatus, and in particular for the transportation of portable musical instruments, said container having a panel hinged to a bottom peripheral edge thereof, said panel in one position forming the bottom of said container and being pivotable to an open position, supporting legs within said container and hinged thereto for movement into depending operative position after said panel has been pivoted to open position, said panel including means for fastening said panel to said supporting legs to lock said supporting legs in operative position and for alternatively locking said panel in said one position.

3,298,479
LUGGAGE
Henry Frederick Palmer, Epsom, Walter James Stoner, Haywards Heath, and Norman Feld, Ewell, England, assignors to Jay, Feld & Company Limited, London, England, a British company
Filed Feb. 17, 1966, Ser. No. 528,292
7 Claims. (Cl. 190—51)



1. An article of luggage having a body and a lid portion and a partition located intermediate the body and lid portions, said body and lid portion and partition being hinged together to move freely with respect to one another, said partition comprising a planar member, a peripheral channel on each surface of the planar member, an outer wall of each channel constituting an extension of the wall surfaces of the body and lid portions and means bridging each channel to allow hinges, a handle and fastening means to be mounted on the said outer wall and without substantial distortion of the article under load.

3,298,480
CARRYING BAG CONSTRUCTION
Michael Kish, Jr., Hightstown, N.J., assignor to Atlantic Products Corporation, Trenton, N.J., a corporation of New Jersey
Filed May 5, 1965, Ser. No. 453,296
4 Claims. (Cl. 190—54)



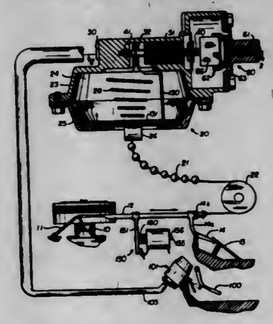
1. A carrying case comprising a generally tubular frame, carrying handle means connected to a central portion of said tubular frame, front and rear side panels of flexible material extending across the opposite ends of said tubular frame and first and second identical welt means connecting the periphery of said front and rear panels to the periphery of the said opposite ends of said rigid frame; each of said first and second welt means being identical in construction; each of said welts having first and second extending flanges, said first flanges of said first and second welts extending along the inner surfaces of said opposite ends of said frame; said second flanges extending over the outer surfaces of said opposing ends of said frame; and first stitch line means extending through one end of said frame, said first flange of said first welt, and the periphery of said first panel; and second stitch line means extending through the other end of said frame, said first flange of said second welt and the periphery of said rear panel; said second flanges of said first and second welts extending over the outer surface of said opposite end of said frame; said first and second stitch lines spaced from the ends of said second flanges of said first and second welts, respectively; and first and second laterally coiled plastic strips secured to said frame by said first and second stitch lines; one lateral side of said first and second strips captured beneath said second flanges of said first and second welts, respectively; the opposite lateral side of said first and second strips coiling over their respective first and second stitch line.

3,298,481
TORQUE RELEASE AND SHUT OFF DEVICE FOR ROTARY PNEUMATIC TOOLS
Raymond J. Schaedler and Roger C. Simmons, Utica, N.Y., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 843,704, Oct. 1, 1959. This application July 10, 1963, Ser. No. 295,286
43 Claims. (Cl. 192—.034)



1. In a rotary power tool including a pneumatically powered rotor, and a spindle, a two-part spring loaded clutch intermediately of the rotor and the spindle drivingly connecting the spindle with the rotor, means for moving one part of the clutch axially relative to the other upon the spindle realizing a predetermined torque load, and other means for responding to such axial movement of the said one part of the clutch to drive the latter clutch part clear of the other part and simultaneously with such action to interrupt pneumatic flow to the rotor.

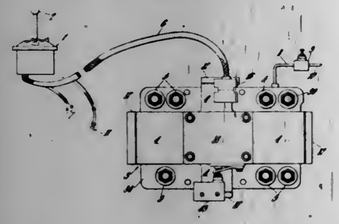
3,298,482
SPEED GOVERNOR
Robert S. Mueller, Oak Park, I. Macit Gurol, Farmington, and Martin W. Ultvugt, Battle Creek, Mich., assignors to Eaton Yale & Towne Inc., a corporation of Ohio
Filed May 6, 1965, Ser. No. 453,750
62 Claims. (Cl. 192—3)



58. A mechanism for effecting movement of a vehicle throttle member to control vehicle speed comprising an actuating member movable in one direction to effect

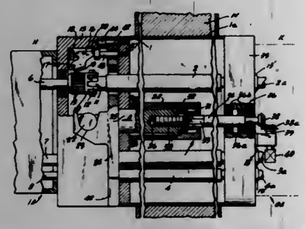
movement of the throttle member in a throttle opening direction, vacuum chamber means on one side of said actuating member, said actuating member being movable in said one direction upon creation of a vacuum of a predetermined degree in said vacuum chamber, a valve member movable to control the degree of vacuum in said vacuum chamber, a speed sensing member movable in response to a change in speed of the vehicle, and means for selectively locking said speed sensing member to said valve member so that said valve member moves in one direction when said member moves in a corresponding direction.

3,298,483
GEAR SHIFT MECHANISMS
William McKenzie Meek Morrison, Wolverhampton, England, assignor to Turner Manufacturing Co. Limited, Wolverhampton, England, a British company
Filed Apr. 15, 1965, Ser. No. 448,530
Claims priority, application Great Britain, Apr. 15, 1964, 15,542/64
11 Claims. (Cl. 192—3.5)



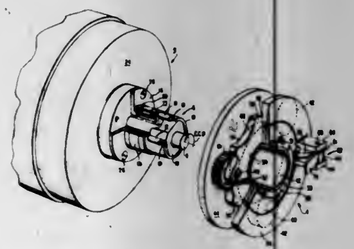
1. A gear control mechanism for cooperation with a shift bar or other operating member of a gearbox of an automotive vehicle, including a slave unit for attachment to the gearbox, and an operator's remote control unit, the slave unit having a selector member adapted to engage the operating member when the slave unit is attached to the gearbox, a first pair of opposed air cylinders for moving the selector member in two opposite directions, a second pair of opposed air cylinders for moving the selector member in two opposite directions perpendicular to the two first mentioned directions, a plurality of solenoid valves controlling the supply of air to the cylinders, and the control unit having a plurality of switches electrically connected to the solenoid valves whereby operation of the switches actuates the air cylinders.

3,298,484
BRAKE AND COUPLING APPARATUS
Hans Wälischmiller, am Fürstenhausle 8, Meersburg am Bodensee, Germany
Filed Aug. 19, 1964, Ser. No. 390,543
Claims priority, application Germany, Aug. 21, 1963, W 35,133
17 Claims. (Cl. 192—8)



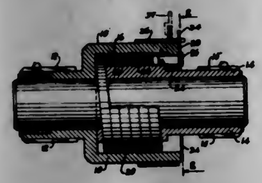
1. In an apparatus for transmitting motion from a first area to a second area, in combination, a wall situated between and separating said areas from each other; a first and a second control member respectively located in said first and second areas, said second control member comprising a carrier adjacent to said wall and a driven shaft rotatably supported by said carrier; motion transmitting means including a second shaft extending from said first control member through said wall and having an end portion coaxial with and adjacent to said driven shaft; reciprocating means including an actuating member located in said first area for moving said carrier and said driven shaft axially toward and away from said second shaft; coupling means comprising cooperating coupling elements provided on said shafts and arranged to establish a driving connection between the shafts in response to movement of said carrier toward said second shaft; and blocking means for normally holding said driven shaft against rotation with reference to said carrier and being operative to release said driven shaft in response to movement of said carrier toward said second shaft so that the driven shaft is released at the time it is coupled to said second shaft.

3,298,485
CLUTCH AND BRAKE MECHANISM WITH ENERGY STORING MEANS
Joseph E. Shepard, Los Gatos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 19, 1965, Ser. No. 449,065
11 Claims. (Cl. 192—12)



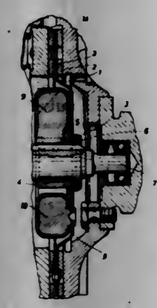
1. A braking mechanism for arresting the motion of a rotating member, said braking mechanism comprising:
a first means mounted for rotation;
clutch means selectively coupling said rotating member and said first means for imparting rotational motion to said first means, said clutch means being engaged when said rotating member rotates and disengaged when said rotating member is at rest;
second means mounted for rotation;
energy storing means mechanically linked to said first means and responsive to rotation of said first means for storing energy, said energy storing means occupying one position when storing energy and a different position when not storing energy; and
dual purpose means mounted on said second means and movable relative thereto between a first and second position, said dual purpose means also being coupled to said first means and said energy storing means for preventing relative motion between said energy storing means and said first means when said dual purpose means is in said first position and said energy storing means is in said one position, and for applying energy stored in said energy storing means to said first means in a braking torque mode to arrest the motion of said rotating member when said dual purpose means moves from said first position to said second position in response to movement of said energy storing means from said one position to said different position.

3,298,486
SPRING CLUTCH MECHANISM
John S. Perryman, Kinnelon, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,816
9 Claims. (Cl. 192—47)



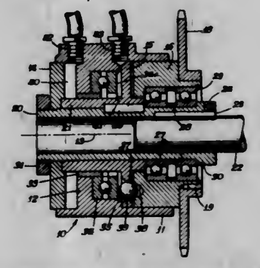
1. A spring clutch comprising an input member having a cylindrical surface thereon, an output member; helical spring means concentric with the cylindrical surface on the input member and out of contact with the said cylindrical surface; structure on the output member at one end of the spring means to prevent rotational movement of the said one end of the spring means in at least one direction relative to the output member; means for controlling operation of the clutch, rotatable with the input member and engageable with the other end of the spring means to cause the spring means to wind against the cylindrical surface on the input member upon rotation of the input member in said one direction and thereby drivably connect the input and output members through the spring means, one of the said means including a resilient portion effective for biasing a part of the said one means to a position wherein the clutch controlling means and spring means engage to drivably connect the input and output members, and effective to render the said part deflectable by camming action of the spring means and the control means to a position permitting the output member to rotate at a greater speed than the input member.

3,298,487
SHOCK ABSORBER AND PARTICULARLY FOR USE WITH CLUTCH
Hans-Joachim Tolksdorf, Opladen, and Hans Deuring, Burscheid, Cologne, Germany, assignors to Goetzewerke Friedrich Goetze Aktiengesellschaft, Dusseldorf, Germany
Filed May 18, 1965, Ser. No. 456,722
Claims priority, application Germany, June 5, 1964, G 40,765
7 Claims. (Cl. 192—52)



1. In a clutch arrangement for effecting driving connection between a pair of members; one of said members being an input member and the other of said members being an output member, a rotating member having a hub means fixed to rotate with said input member and axially slidable thereon, clutch disc means having clutch facing means thereon for operative engagement with said output member and also having a central portion, resilient sleeve means on said hub, said rotating member having resilient means thereon, and means operatively connecting said resilient means with said clutch disc means, said central portion of said clutch disc means radially and axially engaging said sleeve means and adapted for limited rotation thereon, said means operatively connecting said resilient means with said clutch disc means comprising; metal elements imbedded in said resilient means and having portions extending therefrom and secured to said clutch disc means.

3,298,488
TORQUE LIMITING CLUTCH
James A. McDonald, 5040 Harnew Road S., Oaklawn, Ill. 60453
Filed Sept. 29, 1964, Ser. No. 400,118
12 Claims. (Cl. 192—56)



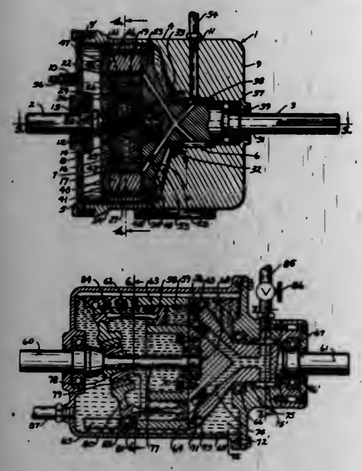
1. A clutch including: a housing defining a fluid chamber; an input member and an output member in said chamber, said members being coaxially positioned and mounted for rotation in said chamber, a first of said members having detent means and the second member having recesses to mate with and receive said detent means to rotatably engage the two members, provision being made for relative axial movement between the housing and one of said members, said one member defining a piston in said chamber; and separate fluid connections communicating with said chamber at opposite sides of said one member respectively.

3,298,489
HYDRAULIC VARIABLE TORQUE TRANSMITTER
Daniel Brand, 5207 S. Oxford Ave., Tulsa, Okla. 74135
Filed Feb. 23, 1965, Ser. No. 434,526
6 Claims. (Cl. 192—58)

1. A variable torque transmitter comprising:
(a) a housing having a fluid receiving first chamber and a fluid receiving second chamber, an inlet port and an outlet port respectively communicating through said housing with said chambers, input and output shafts rotatably mounted on said housing and respectively extending into said housing,
(b) a rotor member in said housing and rotatably fixed to one of said shafts for rotation therewith, a rotor case in said housing and rotatably fixed to the other of said shafts for rotation therewith, a seal cooperating between said housing and said rotor case and isolating said chambers from each other,
(c) pump means cooperating between said rotor member and rotor case for receiving fluid from said first chamber and applying pumping force thereto upon relative rotary motion between said rotor member and rotor case, means forming a passageway for

directing fluid from said pump means to said second chamber,

(d) flow line means extending between said inlet port and said outlet port, and a variable flow valve in



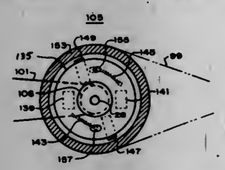
said line means to selectively restrict flow from said second chamber through said line means for controlling torque transferred betwen said input and output shafts.

3,298,490

CENTRIFUGALLY RELEASED CLUTCH

Walter T. Selsted, Woodside, and William I. Girdner, Portola Valley, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Original application Nov. 29, 1963, Ser. No. 326,811, now Patent No. 3,270,935, dated Sept. 6, 1966. Divided and this application Sept. 22, 1965, Ser. No. 489,363
1 Claim. (Cl. 192—104)



In a driving capstan for tape recording and reproducing apparatus, a clutch comprising:

a cup-shaped driving member and a driven member independently rotatable about a common axis;

a pair of annular rings pivotable about diametrically opposed pivots on said driven member;

a friction surface on each of said rings disposed to engage the inner cylindrical surface of said driving member;

each of said friction surfaces being disposed along an axis which passes through the pivot for an annular ring at a distance from such pivot which is shorter than the diameter of said inner cylindrical surface;

a spring for each O ring disposed between a point on one ring and the pivot of the other ring for urging said rings in directions to engage said friction surfaces with said inner cylindrical surface of the driving member;

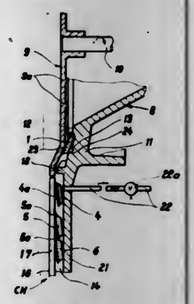
said rings being weighted to exert force against said springs in response to angular rotation of said driven member for urging the rings in directions to disengage said friction surfaces from said inner cylindrical surface of said driving member.

3,298,491

APPARATUS FOR ARRAYING AND FEEDING BOTTLE CAPS AND THE LIKE

Karl Quest and Albert Assmuth, Dortmund, Germany, assignors to Holstein & Kappert Maschinenfabrik Phoenix G.m.b.H., Dortmund, Germany

Filed Mar. 23, 1965, Ser. No. 442,012
12 Claims. (Cl. 193—43)



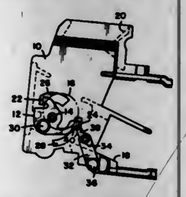
1. In an apparatus for manipulating caps for bottles and the like, particularly for arraying and feeding caps of the type having lifting flaps extending laterally from the open sides thereof, in combination, a chute defining a first channel being so narrow as to permit only passage of caps the lifting flaps of which extend in direction of said channel, said chute arranged to convey a single file of caps by gravity feed and having an upper end; a source of randomly distributed caps including an open-ended receptacle; an agitating member adjacent to the open end of and defining with said receptacle a passage wide enough to receive and to permit gravitational descent of caps whose open sides face in a predetermined direction; wall means arranged in a zone located beneath said passage and defining with said receptacle a second channel having an intake end communicating with said passage and a discharge end communicating with the upper end of said first channel so that the open side of each cap entering said second channel and advancing into said first channel faces in said predetermined direction; and turning means arranged adjacent to one of said channels for turning all those caps whose flap is not located at the trailing end of the cap into a position in which said flaps are located at the trailing end of each cap.

3,298,492

ANTI-TILT MEANS FOR COIN TESTING AND SELECTING APPARATUS

Clifford E. Duncan, St. Louis, Mo., assignor to Coin Acceptors Inc., St. Louis, Mo., a corporation of Missouri

Filed Jan. 5, 1966, Ser. No. 518,940
3 Claims. (Cl. 194—99)



1. In a coin-separating device:

(a) frame means defining an entrance passageway through which coins fall edgewise by gravitational force,

(b) a laterally extending and downwardly inclined runway over which coins of a predetermined denominational dimension are adapted to be displaced from the entrance passageway,

(c) cradle means pivotally mounted on the frame for rocking movement between normal and operated positions, the cradle means having a pair of arms extending into the entrance passageway and spaced one from the other by an amount slightly less than the diameter of coins adapted to be displaced from the entrance passageway to the runway,

(d) a latching lever pivotally mounted on the frame means for rocking movement between latching and unlatching position, the lever including an arm movable into and out of the path of one of the cradle arms,

(e) a counterweight carried by the lever tending to hold the lever arm out of the path of the said one cradle arm when the frame means is disposed in a predetermined upright operating position for the device, and

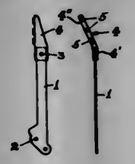
(f) the lever arm engaging the said one cradle arm to block the cradle means against rocking movement from normal to operated position when the frame means is tilted in a direction to increase the inclination of the runway.

3,298,493

TYPE LEVERS HAVING TYPE HEADS MOLDED THEREON

Edward Victor Byers, 16 Barrack Lane, The Park, Nottingham, England

Original application Feb. 21, 1961, Ser. No. 90,851, now Patent No. 3,232,576, dated Feb. 1, 1966. Divided and this application Oct. 4, 1965, Ser. No. 492,559
5 Claims. (Cl. 197—36)



1. A series of type-levers for a typewriter; each of said type-levers comprising a substantially identical straight type bar, a molded head on each said bar having a first portion and a second portion, and a set in each molded head between said first and second portions defining varying angular relationships between said first and second portions of different levers to correctly position characters when striking the platen of a typewriter according to the pivotal position of the type-lever in the type-lever segment of a typewriter.

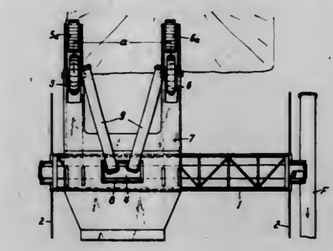
3,298,494

DEVICE FOR PICKING UP AND UNLOADING POURABLE MATERIAL

Dieter Pfeilschifter, Rheinberg, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany

Filed Oct. 19, 1965, Ser. No. 497,668
Claims priority, application Germany, Nov. 11, 1964, B 79,281
5 Claims. (Cl. 198—9)

1. A device for picking up and unloading pourable material from a pile of pourable material, which includes: girder means, first conveyor means extending in the longitudinal direction of said girder means and being supported by said girder means, carriage means supporting said girder means and operable to move said girder means with said conveyor means in a direction transverse to the longitudinal direction of said girder means toward and away from a pile of pourable material to be picked up, boom means supported by said girder means and movable thereon in the longitudinal direction of said girder means, said boom means extending substantially perpendicularly with regard to the longitudinal direction of said girder means, a plurality of pick-up means supported by



said boom means for picking up material from a pile of pourable material, said pick-up means being spaced from each other in the longitudinal direction of said girder means, and a plurality of additional conveyor means respectively having one end portion thereof arranged adjacent said pick-up means whereas the other end portions of said additional conveyor means converge toward each other and are arranged above said first conveyor means for conveying thereto material picked up by said pick-up means.

3,298,495

INCLINED MOVING WALKWAY ARRANGEMENT

Frank J. Acton, Glen Ellyn, Ill., assignor to Stephens-Adamson Mfg. Co., a corporation of Illinois

Continuation of application Ser. No. 243,049, Dec. 7, 1962. This application Mar. 4, 1966, Ser. No. 540,124
20 Claims. (Cl. 198—16)



1. Moving walkway apparatus for conveying passengers and their wheeled parcel carts between floor levels that are at different elevations, said apparatus comprising:

a conveyor including an endless member mounted to present an inclined transport surface that extends between said levels,

means for moving said member in a forward direction,

and means for magnetically coupling the individual carts to the transport surface for movement with said member, said coupling means comprising:

a magnetic component forming a part of said conveyor and extending longitudinally of said surface and substantially the length thereof,

and a magnetic component carried by the individual carts and positioned for magnetic attraction to said conveyor component when said cart component is brought into proximity with said conveyor component,

one of said components having the characteristics of a magnet of sufficient strength to cause the individual carts when moved onto said surface to remain fixed with respect to said surface against the action of gravity as the individual carts are conveyed by said surface.

3,298,496
SWINGING DISCHARGE CONVEYOR FOR STABLE-CLEANING APPARATUS

Georges Lacoste, St. Jean-Baptiste de Rouville, Elphège Petit, St. Valerien, Donatien Racicot, St. Paul d'Abbotsford, and Hector Vincent, St. Valerien, all of Quebec, Canada, assignors to La Cie Hydrolic Vincent Ltee, St. Valerien, Quebec, Canada

Filed Nov. 5, 1965, Ser. No. 506,536
Claims priority, application Canada, Nov. 21, 1964, 917,015
16 Claims. (Cl. 198—124)

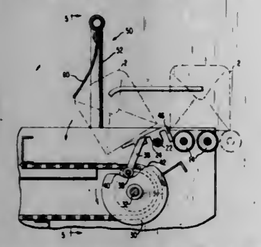


1. A discharge system for stable-cleaning apparatus comprising a first inclined beam stationarily mounted and protruding at the exterior of a stable, a second inclined swinging beam having one end pivoted to the free end of the first stationary beam, means supporting said swinging beam to form an extension of said stationary beam, but allowing swinging movement of said swinging beam, first and second trough sections carried by said stationary and swinging beams respectively and in communication with each other in the zone of pivoting of said swinging beam, a stable-cleaning conveyor chain provided with spaced scraper blades and forming a closed loop having an active run guided in said trough sections to discharge manure and the like at the outer end of said second trough section, a driving sprocket wheel mounted for rotation about an axis co-axial with the pivotal axis of said second beam, power means mounted on said first beam and connected to said driving sprocket wheel to rotate the same, the return run of said chain from the outer end of said second beam extending along said second beam and meshing with said driving sprocket wheel for about one-half turn, whereby said sprocket wheel pulls and moves said chain in its closed circuit, and means mounted on said second beam adjacent and forwardly of said driving sprocket wheel to guide the portion of the chain disengaging said sprocket wheel through about a half-turn forwardly of said sprocket wheel and to move said chain rearwardly alongside said first beam, said means guiding said chain along a spiral in said last-named half-turn, whereby the crossing portions of said chain are at different levels.

3,298,497
TRANSFER MECHANISM FOR CONVEYERS

Charles E. Burford, Maysville, Okla., assignor to The Burford Company, Maysville, Okla., a corporation of Oklahoma

Filed Dec. 21, 1964, Ser. No. 419,704
17 Claims. (Cl. 198—33)

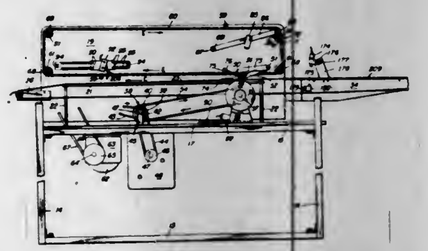


1. In conveying apparatus including a first delivery conveyer having a discharge end and a second receiving conveyer situated below and forwardly of the discharge end of the delivery conveyer; a transfer mechanism for transferring articles from the delivery conveyor to the receiving conveyer including a platform located between said conveyers, means mounting said platform for pivotal movement about an axis transverse with respect to movement of said conveyers between a horizontal position aligned with the discharge end of the delivery conveyer and a tilted position extending downwardly from the delivery conveyer to the receiving conveyer, and means for actuating said platform between said positions and yieldable restraining means engageable with articles as they are transferred from the platform to the receiving conveyer for guiding the articles into position on the receiving conveyer.

3,298,498
WORK PIECE INVERTER CONVEYOR

Robert E. Smith, Chicago, Robert L. Kosrow, Elk Grove Village, and John G. Attwood, Oak Park, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois

Filed June 4, 1965, Ser. No. 461,240
10 Claims. (Cl. 198—33)



1. Apparatus for automatically inverting alternate work pieces formed of flexible flat material, said apparatus having an input and a delivery end and comprising means for continuously conveying work pieces from the input end to said delivery end, first electrical circuit means for detecting the presence of each work piece in a predetermined zone, adjacent said conveying means and intermediate the ends of said apparatus, said first circuit means being also adapted to select every other workpiece detected, a mechanism controlled by said first circuit means for automatically inverting all selected work pieces, thereby dividing the operation of said apparatus into two phases, namely an inverting phase and a non-inverting phase, and additional electrical circuit means for detecting the presence of two superimposed work piece plies in a second predetermined zone, adjacent said conveying means and intermediate said apparatus input end and said first predetermined zone, said additional circuit means cooperating with said first electrical means for automatically repeating either of the inverting and non-inverting phases of operation according to whichever operational phase is about to begin whenever two superimposed work piece plies are detected in said second predetermined zone.

3,298,499
CONVEYING AND TRANSFER APPARATUS FOR EGGS

Earle B. Ellis, Mission, and Carl E. Chaney, Kansas City, Kans., assignors to Standard Brands, Incorporated, New York, N.Y., a corporation of Delaware

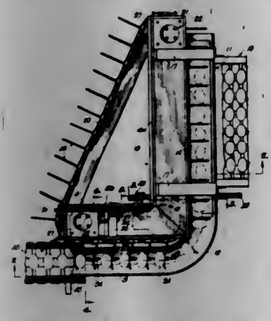
Filed Dec. 6, 1965, Ser. No. 511,686
5 Claims. (Cl. 198—102)

1. In apparatus for feeding egg-shaped articles successively to a receiving zone at timed intervals, the combination of

an elongate trough having a discharge end edge adjacent said zone, said trough having upwardly and downwardly portions, respectively, inclined toward said discharge end edge,

pusher elements arranged serially along said trough with portions thereof positioned within the trough to engage articles within the trough,

carrier means for said pusher elements operable to advance said elements in a defined path along said trough toward and past said discharge end edge,

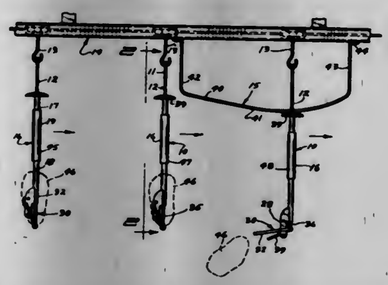


the vertical spacing between the path of said article engaging portions of said pusher elements and the bottom of said trough at said discharge end edge being such that an article descending by gravity along the downwardly inclined trough portion is prevented from passing beyond said end edge until the pusher element immediately in front of it has passed said end edge also.

3,298,500
POULTRY CONVEYING AND TRIPPING DEVICE

Melvin J. Jensen, Barron, Wis., assignor of fifty percent to Wallace H. Jerome, Barron, Wis.

Filed May 19, 1965, Ser. No. 469,016
5 Claims. (Cl. 198—177)

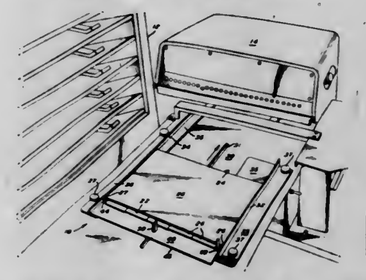


1. A poultry conveying and tripping device comprising, a central shaft adapted to be secured at the upper end thereof to a conveyor, a rocker shaft rotatably carried at the lower end of said central shaft having a prong normally inclining upwardly for receiving and supporting poultry when placed thereon, said rocker shaft also having a release lever having a predetermined angulation with respect to said prong and also inclining upwardly when said prong is inclined upwardly, a sleeve slidably positioned about said shaft, means fixedly attached to the lower end of said sleeve for underlying said release lever to retain said prong in its upwardly inclined position and thus support the poultry for conveying movement, means for normally maintaining said sleeve in a raised position relative said central shaft, and means for actuating said sleeve into a lower position to allow said release lever to assume a declining position and also to allow said prong to assume a declining position in order that the poultry carried on said prong will be gravitationally released.

3,298,501
ADAPTER FOR CONVEYING INDEXED SHEETS IN A STACK

John H. Loach, 2152 McKinley St., Philadelphia, Pa. 19149

Filed June 21, 1965, Ser. No. 465,553
17 Claims. (Cl. 198—221)



1. A conveyor-adapter for sheets in a stack with index tabs protruding from a front edge at spaced positions from the edge ends wherein said conveyor has a motion activator connected thereto, said adapter comprising: a plate for placement of said stack thereupon, said plate adapted for movement in a plane containing said plate; a pair of pegs affixed on said plate to extend normally therefrom a distance greater than the thickness of said stack, said pegs being spaced to receive all of said index tabs therebetween and to engage said stack proximate said edge ends; and means in the plate for adaptably connecting said plate to said activator means for movement therewith with said pegs against said stack, thereby conveying said stack in an assembled relationship.

3,298,502
DOUBLE END CONTACT LENS HOLDER AND MOISTENER

Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583

Filed Dec. 7, 1964, Ser. No. 416,351
8 Claims. (Cl. 206—5)



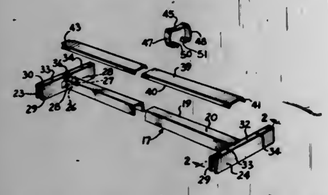
1. A contact lens holder comprising a fluid container having a neck portion, a retainer ring inserted in said neck portion, a flexible cover secured to said ring, said ring having an opening therein forming a valve seat, a valve assembly including a valve head movable with respect to said valve seat to control fluid flow through said opening, said valve assembly including spring means integrally formed with said valve head, said spring means urging said valve head against said valve seat and through said opening, a cap detachably secured to said neck por-

tion, and supporting means for a contact lens disposed in said cap, said cover being depressible to depress said valve head.

3,298,503
HANGER SUPPORT BAR FOR GARMENT PACKING CASE

Joe Field and Harry Field, both of 1127 W. Division, Chicago, Ill. 60622

Filed June 3, 1965, Ser. No. 461,017
8 Claims. (Cl. 206—7)

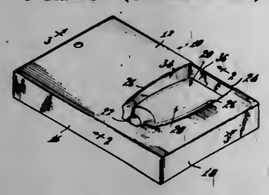


1. A hanger support bar for a garment packing case, said support bar comprising inverted U-shaped end brackets for supporting engagement with opposed walls of the packing case, each bracket having spaced legs joined by a bight, one of said brackets having a slot approximately in the region of the junction of the bight and one leg and opening toward the other bracket, a member spanning the space between the brackets and being rigidly secured to one leg of each and having a top for receiving and supporting the hook ends of garment hangers and with said top being below said slot, a retainer overlying the top of the member for disposition against the hook ends of the garment hangers, said retainer having at one end a tongue projecting through said slot to secure said one end of the retainer against upward retraction from said one bracket, and means for securing the retainer to the member remote from said one bracket and cooperating with said tongue and said one bracket to hold the retainer and member in assembled relationship.

3,298,504
DISPLAY CARTON

Frank L. Carter, Indian Orchard, Mass., assignor to Pioneer Packaging, Inc., Chicopee, Mass., a corporation of Massachusetts

Filed Dec. 21, 1964, Ser. No. 419,953
3 Claims. (Cl. 206—45.14)

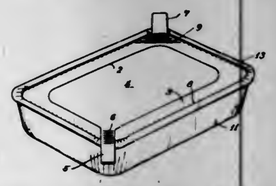


1. A display device comprising a carton having spaced parallel bottom and top panels and a series of wall panels encircling and joining said bottom and top panels, said top panel containing an elongate opening through it which is shorter than the panel, within which is adapted to be seated a blister cap designed to retain an article to be displayed, an inverted blister cap situated in said elongate opening, said blister cap having a flat marginal flange at its base in contact with the bottom panel, said blister cap being longer than said opening so that one end of the blister cap projects beyond one end of said opening beneath the top panel in which the opening is formed, a retaining flange hingedly connected to each of the side edges of said opening and to said other end thereof, said retaining flanges sloping downwardly and inwardly into the opening into engagement with the blister cap, said retaining flanges collectively forming a mat circumscribing the opening which conceals the interior of the carton, and said retaining flange at said other end containing a recess complementary to the transverse section of the blister cap at that end engaged with the blister cap which prevents upward or lateral displacement of the blister cap.

3,298,505
LAMINATED CLOSURE FOR FOOD TRAYS AND TRAYS CLOSED WITH SAME

Edward E. Stephenson, Richland, Mich., assignor, by mesne assignments, to Brown Company, a corporation of Delaware

Filed Feb. 12, 1965, Ser. No. 432,221
16 Claims. (Cl. 206—45.31)

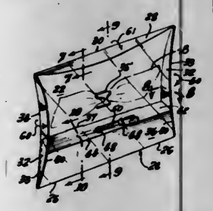


7. A closed container with contained product comprising a container body, a laminated closure member having a tab extending beyond the periphery thereof, and means securing said closure member to said container body, said closure member comprising a sheet-form member comprising a sheet-form member, a transparent film, and a thermoplastic adhesive having a melting point substantially lower than that of said film securing said film to said sheet-form member, said sheet-form member having a line of weakness defining a removable panel provided with a tab extending beyond the periphery thereof, whereby when said closure member is heated to a temperature sufficient to melt said adhesive, said removable panel tab may be grasped and said panel removed to expose a window provided by said transparent film, and whereby, said container may be opened by grasping said closure member tab and removing said closure member.

3,298,506
MERCHANDISE PACKAGES AND METHOD OF MANUFACTURE THEREOF

Kenneth Reiner, 7875 Telegraph Road, Pico Rivera, Calif. 90660, and Robert F. Hubbell, Pico Rivera, Calif.; said Hubbell assignor to said Reiner

Filed Mar. 13, 1964, Ser. No. 351,746
17 Claims. (Cl. 206—45.33)

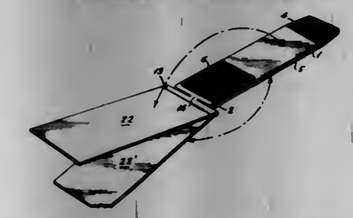


1. A package comprising, in combination, an inner receptacle and a tightly fitting outer cover completely enclosing said receptacle; the receptacle being of resilient sheet material and having a main body section of normally flat and generally rectangular planform, complementary side flaps at opposed side edges of said main body section and forming a part of the generally rectangular planform thereof, arcuate score marks in the material of said main body section serving to delineate said side flaps, each of said score marks being in the form of a curve extending along a regular arc from a point adjacent one corner of one side edge of the main body section inwardly a distance toward the longitudinal center of the body section and thence outwardly to a point adjacent the other corner of the same side edge; said flaps being held in complementary angularly elevated positions relative to the remainder of the main body section by said tightly fitting cover; said main body section being held in a position forming a curved surface defined by the curves of said arcuate score marks by said tightly fitting cover.

3,298,507
DISPOSABLE TOOTH CLEANER

Frank Miccichè, 83 Clover Ave., Floral Park, N.Y. 11001

Filed Aug. 30, 1965, Ser. No. 483,609
6 Claims. (Cl. 206—46)

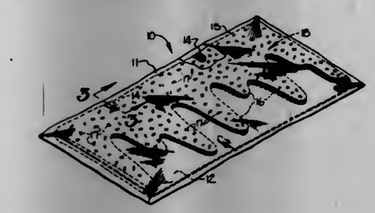


4. A unitary dental applicator and wrapper assembly comprising a sheath of flexible material having an open end for insertion of a finger of the user and sealed at the other end, an integral cover for said applicator consisting of two flat sheets of the sheath material overlying said applicator on the top and bottom thereof and connected thereto by a relatively narrow and short tab at the sealed end of said sheath, said sheets being sealed together at their outer edges to enclose said sheath.

3,298,508
DECORATIVE ITEM PACKAGE

Jacob C. Barnhardt, Sr., Charlotte, N.C., assignor to Barnhardt Manufacturing Co., Charlotte, N.C., a corporation of North Carolina

Filed May 25, 1965, Ser. No. 458,558
5 Claims. (Cl. 206—49)



1. A decorative item package wherein the item is exhibited substantially as in intended use and is protected from damage in handling comprising:

a folded elongate decorative item of deformable web material formed with a linear first side edge and an irregular opposite side edge defining a plurality of transversely elongate design portions with overlying design portions in congruency,

a relatively stiff insert having overall dimensions corresponding substantially to the folded item and being substantially superposed with said item with one side edge of said insert substantially aligned with said linear side edge of said item,

a flexible bag of transparent sheet material protectively enclosing said item and said insert, and

means securing said insert and said item together for preventing lateral displacement of said item relative to said insert and for preventing contact with the inner side extremities of said flexible bag to thereby prevent deformation of said item and particularly the design portions thereof.

3,298,509
LIPSTICK DEVICE

Eric G. Hultgren, Westport, Conn., assignor to United Tool & Plastics, Inc., Bridgeport, Conn., a corporation of Connecticut

Filed Dec. 4, 1964, Ser. No. 416,065
6 Claims. (Cl. 206—56)

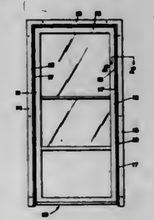


1. A lipstick device comprising a cylindrical inner member having a lipstick carrier slidably mounted therein, said inner member having at least one longitudinal slot in the sides thereof and said carrier having at least one pin projecting through said slot, a sleeve surrounding the inner member and mounted thereon for relative rotative movement, said sleeve having at least one helical groove therein for engaging the pin for moving the carrier along the inner member in response to said relative rotation of the sleeve and inner member, said longitudinal slot having lateral extensions adjacent each end into which the pin may be moved to hold the carrier against longitudinal movement at each end of the slot, and friction means on the carrier disposed below and longitudinally aligned with the pin thereon and engaging the inner surface of the inner member for preventing inadvertent movement of the pins on the carrier from said lateral extensions.

3,298,510
PRE-HUNG DOOR MOUNTING MEANS

Eugene L. Brand, Clinton, Ohio, assignor to Alsco, Inc., Akron, Ohio, a corporation of Delaware

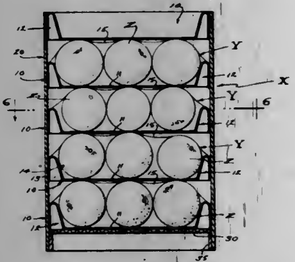
Filed Feb. 5, 1965, Ser. No. 430,654
2 Claims. (Cl. 206—60)



1. In a pre-hung door assembly having side and top frame members and side and top Z-bar members fixed to and spaced from said frame members, the improvement comprising severable fastening means extending in tension between a frame member and a Z-bar member and holding them together, and a removable spacer means retained between said frame and Z-bar members and lat-

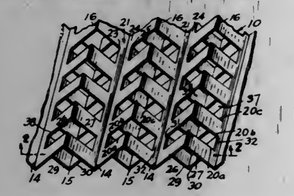
erally offset from the axis of said fastening means and extending across the width of the frame member, whereby said fastening means may be severed after the door is mounted by a relatively long longitudinal stroke of a severing tool extended from the door front straight in to the fastening means.

3,298,511
PACKAGING AND SHIPPING CONTAINER
Charles B. Schertz, Bakersfield, Calif.
(1316 Yorba Linda St., Kern City, Calif. 93309)
Filed Nov. 26, 1963, Ser. No. 326,023
6 Claims. (Cl. 206—65)



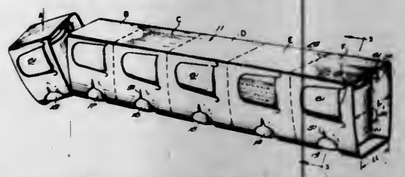
1. In combination, a multiplicity of like packages and each package comprising a tray having a peripheral flange formed of a double wall construction providing substantially vertically disposed and radially spaced outer and inner walls and with articles carried on the tray and confined thereto by said inner wall of said flange, said packages being arranged one over the other in columnar relationship, a vertically disposed support engaging shell comprising a sheet of material having columnar strength and bendable horizontally while remaining vertically rigid, adhesive securing means between said sheet and said vertically disposed outer walls of said flanges, said sheet being wrapped onto said prearranged packages and secured thereto by said adhesive means to the outer walls of said peripheral flanges, whereby said multiplicity of packages are enclosed and each is fixedly supported by said shell so as to relieve the columnar load of said prearranged relationship.

3,298,512
ARTICLE HOLDING SHEET AND PACKAGE
Samuel P. Crane, 1 Warwick Road, Great Neck, N.Y. 11023
Filed May 22, 1964, Ser. No. 369,375
17 Claims. (Cl. 206—65)



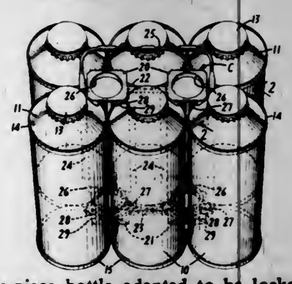
1. A slitted and accordion pleated sheet having lines of parallel folds therein and having a row of a multiplicity of slits extending across selected folds, the slits extending toward the adjacent other folds on each side of the selected fold, each line of said selected folds being discontinuous and broken into two alternating oppositely extending short folds reaching between adjacent slits in the row, one of said sets being creased in one direction and the other set being creased in the opposite direction.

3,298,513
PAPERBOARD PACKAGE
Robert J. Krooss, Mountain Lakes, and Richard F. Novak, High Bridge, N.J., assignors to Simautics, Inc., Hillside, N.J., a corporation of New Jersey
Filed July 8, 1965, Ser. No. 470,362
10 Claims. (Cl. 206—65)



1. A four-sided open end paperboard package securely overwrapping a plurality of adjacent containers and retaining a like plurality of printed inserts each in close relationship with a respective container comprising integral paperboard top, sidewall and bottom portion panels enclosing said containers, and integral hinged tabs formed in selected ones of said panels and holding each of said printed inserts along the inside surface of said package in at least partial contact with a respective container.

3,298,514
CHIMED BOTTLE
Gerald Erickson, Huntington, N.Y. (P.O. Box 687, Grand Central Post Office, 45th St. and Lexington Ave., New York, N.Y. 10017)
Filed Sept. 9, 1965, Ser. No. 486,106
8 Claims. (Cl. 206—65)

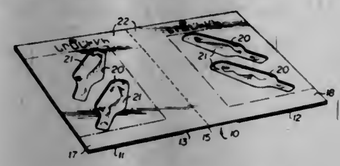


1. A one-piece bottle adapted to be locked in a one piece carrier having channels therein for receiving the upper and lower chimes of metal cans to interlock a group of the cans in a unitary package, said bottle comprising means defining a side wall around a liquid holding interior, a bottom wall formed integrally with the lower end of the side wall, a neck portion formed integrally with the upper end of the side wall and defining an opening, upstanding channel-insertable means formed integrally with the upper end of the side wall and spaced apart and outwardly of said opening so as to leave a space between said opening and said upstanding channel-insertable means, and a downwardly depending channel-insertable means formed integrally with the lower end of the side wall, the upstanding and downwardly depending channel-insertable means being engageable with the chime receiving channels of the can carrier.

3,298,515
PACKAGE
Ridley Watts, Jr., Cleveland, Ohio, assignor to The American Packaging Corporation, Cleveland, Ohio, a corporation of Ohio
Filed July 31, 1962, Ser. No. 213,804
10 Claims. (Cl. 206—78)

1. In combination, a package comprising:
(a) a card having first and second portions in back to back abutment with one another;

(b) said first portion having a wall defining an aperture therethrough;
(c) a flexible film of plastic bonded to the back of the first portion around the aperture;
(d) said plastic film including a pocket projecting through the aperture;
(e) a unit in said aperture and snugly retained within



the pocket and maintaining the pocket in a distended condition;
(f) a tear strip delineated by spaced weakened parts of one of the portions, each part extending from one edge of said one portion to the pocket;
(g) said portions being bonded together in areas other than said tear strip; and
(h) said plastic film being bonded to the tear strip.

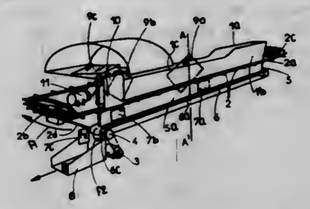
3,298,516
DISPLAY PACKAGE
Paul F. Leopold, Highland Park, Ill., assignor to Pendleton Tool Industries, Inc., Los Angeles, Calif.
Filed Sept. 21, 1965, Ser. No. 488,974
7 Claims. (Cl. 206—80)



7. A display package, comprising:
a socket wrench having a central opening therethrough;
a card of manually tearable material having a cut-out area larger than the socket wrench and in which the wrench is located exposed at opposite sides of the card;
a metal strip spanning the cutout area and passing through the socket wrench;
a fastener passing through the metal strip and at least a portion of the card at each of two positions on opposite sides of the cutout area to confine the socket wrench to the cutout area and prevent removal of the wrench from the strip without tearing the card.

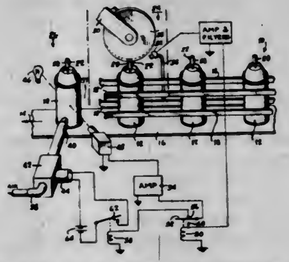
3,298,517
DEVICE FOR SEPARATING FLAT OBJECTS ACCORDING TO THEIR LINEAR DIMENSIONS
Jean-Paul Moricet, Sevres, France, assignor to Compagnie Generale d'Automatisme, Paris, France, a corporation of France
Filed Oct. 27, 1964, Ser. No. 406,745
Claims priority, application France, Nov. 12, 1963, 953,379
20 Claims. (Cl. 209—84)

1. An apparatus for sorting objects according to their dimensions, comprising:
a first vertically extending channel formed by two walls and open at both the top and the bottom,
a movable sieve arranged beneath the bottom opening of said channel and along its length, operable to let the small objects pass through and to carry the bigger objects from one end to the other end of said channel,



and means associated with said other end for gripping and vertically evacuating the objects carried by said sieve, said means comprising vertical conveyor means and means cooperating with said vertical conveyor means for applying said objects against the gripping surface of said conveyor means.

3,298,518
METHOD AND APPARATUS FOR TESTING AEROSOL SPRAY DEVICES
Dick E. Milholland, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Mar. 29, 1965, Ser. No. 443,219
9 Claims. (Cl. 209—111.9)



1. A method for testing the operativeness of aerosol spray devices, comprising the steps of conveying a series of such aerosol spray devices in succession along a given path, actuating each spray device during its passage through a given region of said path, monitoring the sound produced by each spray device during its passage through said given region and removing spray devices from said given path upon their failure to produce a sound commensurate with a given acceptable spray output during actuation.

3,298,519
CONCENTRATION OF MINERALS
Clinton A. Hollingsworth, Lakeland, Fla., assignor, by mesne assignments, to The Borden Company, a corporation of New Jersey
Filed Oct. 23, 1963, Ser. No. 318,393
8 Claims. (Cl. 209—165)

1. Fractionating flotation process for separating a mixture of relatively floatable and relatively non-floatable particulate material which comprises: establishing a vertical column of liquid at least about six feet in height; aerating the column of liquid; introducing the mixture of particles into said aerated column of liquid at least about two feet below the surface of the liquid column, there being no significant decrease in the horizontal cross-sectional area of the column of liquid from above the point at which the mixture of particulate material is introduced

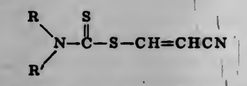
into the column of liquid to below the surface of the liquid column; introducing a substantial portion of the aerating air into the column below the point at which the mixture of particulate material is introduced thereinto; withdrawing a heavy fraction predominantly comprising relatively non-floatable particles of the feed material from the lower portion of the liquid column; removing a light fraction predominantly comprising relatively floatable particles of the feed material from the top of the aerated column; and controlling the rate of introduction of feed material and liquid into the liquid column and the removal of liquid and said heavy and light fractions from said column so that the net rate of upward flow of liquid in



the column is less than the average rate at which the relatively non-floatable particles sink in a stationary body of said liquid and the net rate of downward flow of liquid in the column is less than the average rate at which the relatively floatable particles and air bubbles rise toward the surface of an aerated stationary body of said liquid, whereby the concentration of the relatively floatable particles progressively decreases from a maximum at the top of the liquid column to a minimum adjacent the bottom of the column and the concentration of the relatively non-floatable particles progressively decreases from a maximum adjacent the bottom of the column to a minimum at the top of the column to effect separation of the mixture of particulate material by fractionating flotation.

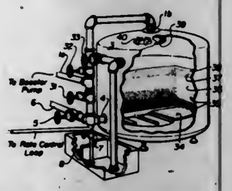
3,298,520
FLOTATION PROCESS WITH CYANOVINYL DITHIOCARBAMATES
Norbert M. Bikales, Livingston, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Original application Dec. 26, 1962, Ser. No. 247,271, now Patent No. 3,211,771, dated Oct. 12, 1965. Divided and this application Aug. 11, 1964, Ser. No. 388,921
3 Claims. (Cl. 209—166)

1. The process of beneficiating sulfide ores having copper values, which comprises subjecting the ore to froth-flotation in the presence of a flotation promoter of the general formula:



wherein R and R' are individually selected from the group consisting of alkyl of up to eighteen carbons, containing up to about three substituents selected from the group consisting of chloro, bromo, fluoro, nitro, cyano, lower alkoxy and amino; phenyl, naphthyl and diphenyl having up to about five substituents selected from the group consisting of chloro, bromo, fluoro, lower alkyl, cyano, amino, nitro and lower alkoxy; and benzyl and naphthyl-methyl having up to about three substituents selected from the group consisting of chloro, fluoro, bromo, lower alkyl, cyano, lower alkoxy, amino and nitro.

3,298,521
WATER FILTRATION BED AND METHOD OF PRODUCING SAME
Dan McKinlay, 24 California St., San Francisco, Calif. 94111
Filed Dec. 23, 1963, Ser. No. 332,459
10 Claims. (Cl. 210—75)

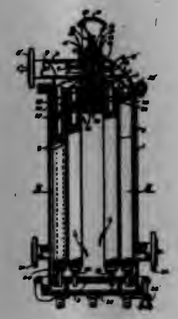


1. A method of applying diatomite to the horizontal sand bed of a sand pressure water filter to effect a filter aid therefore comprising the steps:
mixing a measured quantity of diatomite with water;
maintaining said diatomite in suspension in said water;
pumping said water containing said diatomite in suspension through said bed at the constant rate of one gallon, plus or minus six percent, per square foot of cross-sectional area of said bed per minute;
whereby said diatomite is deposited in a complete even layer over said bed and fills the voids in the surface of said bed.

7. A filter bed for a pressure water filter comprising:
a plate positioned close to the bottom of said filter;
a layer of coarse sand positioned on top of said plate;
a layer of fine sand positioned on top of said layer of coarse sand;
a layer of diatomite positioned on top of said layer of fine sand;
said layer of diatomite being continuous and homogeneous and completely filling the voids in the surface of said fine sand;
said layer of fine sand being completely covered by said diatomite so that no areas of the upper surface of said layer are directly exposed to the flow of water therethrough.

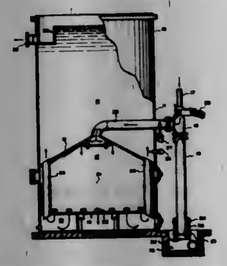
3,298,522
WATER REMOVAL EQUIPMENT FOR FUELS
Jacques Muller, La Garenne-Colombes, France, assignor to Rellumit, Inter, La Garenne-Colombes, France, a corporation of France
Filed May 27, 1964, Ser. No. 370,635
Claims priority, application France, June 7, 1963, 937,297
5 Claims. (Cl. 210—90)

1. Equipment of the character described for removing one fluid from another in small proportions, comprising a container having an inlet and an outlet, a plurality of absorbent elements in said container adapted to absorb the first of said fluids and permit passage of the second fluid, to said container outlet, a discharge chamber having an inlet for said second fluid and an outlet for said second fluid, a cylinder having a port in communication with the inlet to said discharge chamber, valve means slidably mounted in said cylinder and controlling said port, said valve means being hollow, a passageway between the outlet of said container and the interior of said hollow valve means, said valve means having a port movable into and out of alignment with the port of said cylinder to connect said ports, to provide communication between said container and said discharge chamber outlet through said hollow valve means, a bellows operatively connected to said valve means, said bellows being subjected to the pressure in said container and responsive to the increase of differential between the pressure in said container and said



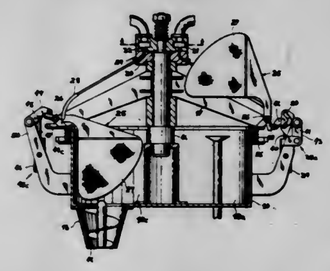
discharge chamber caused by the saturation of said absorbent elements to effect movement of said valve member and closure of said ports, and resilient means normally urging said valve means to open position.

3,298,523
GRAVITY FILTER AND BACKWASH CONTROL VALVE
William H. Johnson, Mountain View, Calif., assignor to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed May 14, 1964, Ser. No. 367,405
5 Claims. (Cl. 210—104)



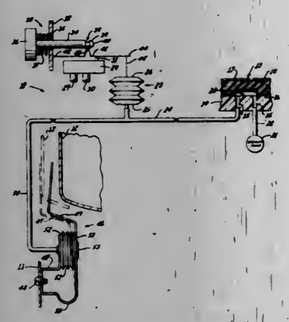
1. A gravity filter adapted to be cycled sequentially through filtering and backwashing phases comprising
a filter section;
an underdrain section below said filter section;
a backwash liquid storage section above said filter section;
an effluent withdrawal conduit in communication with said underdrain section;
a common backwash-influent conduit connected to the upper side of said filter section;
an influent conduit connected to an influent source at one end and to said common backwash-influent conduit at the other end;
a backwash discharge conduit connected to said common backwash-influent conduit at the juncture of said common conduit with said influent conduit and having a discharge end at the other end;
a three-way valve means at the juncture of said influent, discharge and common backwash-influent conduits for closing the influent conduit while opening the backwash discharge conduit when the filter is on a backwashing phase and for closing the backwash discharge conduit while opening the influent conduit when the filter is on a filtering phase;
pressure sensitive switch means in communication with said common backwash-influent conduit for sensing pressure build-up in said conduit;
liquid level sensitive switch means located in a lower portion of said backwash storage section at an elevation below said three-way valve means and above the discharge end of said discharge conduit; and,
actuator means operably connected to said valve to operate the valve responsive to the position of said pressure sensitive switch means and said liquid level sensitive switch means, said actuator means adapted to position the valve to a backwashing phase when the pressure sensitive switch means is actuated, and to reposition the valve to a filtering phase when the liquid level sensitive switch means is actuated.

3,298,524
ROTARY FILTER HAVING PIVOTING FILTER ELEMENTS
Guy Gaudfrin, 1 Rue Lord Byron, Paris, France
Filed July 15, 1964, Ser. No. 382,766
Claims priority, application France, July 16, 1963, 941,633
20 Claims. (Cl. 210—138)



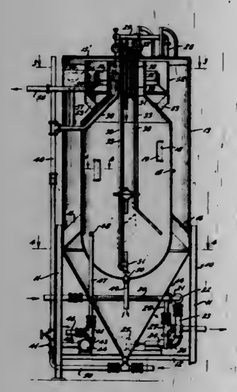
1. An apparatus for the drawing of fluids through a porous treatment medium, comprising a bowl-shaped vessel, partition means in said vessel dividing the interior thereof into a plurality of sectoral compartments including at least one compartment for holding a liquid to be treated, an annular mount surrounding said vessel, an array of carriers for said treatment medium having the shape of substantially flat vertical vanes pivotally supported on said mount at closely spaced locations about the periphery of said vessel, drive means for progressively rotating said mount with said carriers about said vessel, said carriers being individually swingable in substantially radial planes of said vessel between a first position of immersion in said vessel and a second position withdrawn from said vessel, control means for maintaining each carrier in said first position at least along said one compartment and for withdrawing each carrier into said second position at least in the region of said partition means, each of said carriers being provided with a chamber into which liquid from said vessel can enter by way of said treatment medium upon immersion in said one compartment, and fluid-circulation means communicating with the chamber of each carrier in at least certain positions thereof for removing the treated liquid therefrom.

3,298,525
WASHING MACHINE SYSTEM
Roy W. Houser, Orange, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,652
9 Claims. (Cl. 210—144)



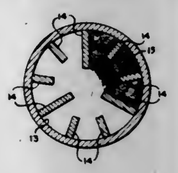
1. In a washing machine having a washing compartment, means for spinning said washing compartment and manually operated movable on-off means for operating said washing machine, the improvement comprising remotely controlled single actuator means for causing movement of said on-off means from its on position to its off position when said actuator means is actuated, remote control means for actuating said single actuator means, and sensing means operatively interconnected to said single actuator means and being responsive to the unbalanced condition of said spinning washing compartment to actuate said actuator means independently of said remote control means when said unbalanced condition exceeds a predetermined value.

3,298,526
WASTE TREATMENT PACKAGE PLANT
Joe M. Valdespino, Orlando, Fla., and Clifford B. Cox, Chicago, Ill., assignors to Pacific Flush Tank Company, Chicago, Ill.
Filed Jan. 26, 1965, Ser. No. 428,067
12 Claims. (Cl. 210—195)



1. A waste treatment package plant comprising a support frame, an outer generally cylindrical tank having a conical bottom portion mounted on said frame, an inner generally cylindrical tank having a reduced neck at one end located concentrically within said outer tank, means for introducing waste material into said inner tank, said inner tank having a plurality of slots providing communication between said inner and outer tanks, a perforated suction pipe located in the conical portion of said outer tank, a first pump means connected to said suction pipe for removing liquid and particulate waste material from said outer tank, a first discharge line connected to said first pump means and extending into said inner tank, a venturi type aspirator mounted on said first discharge line, an air line connected to said aspirator for entraining air in said liquid and particulate material, a suction weir mounted in the upper portion of said outer tank, a second pump means connected to said suction weir for removing floating particulate material from the upper portion of said outer tank, a second discharge line connected to said second pump means and extending into said inner tank, a torque nozzle mounted on said second discharge line, a ring baffle of a diameter less than the diameter of said inner tank mounted on said reduced neck, and an effluent line extending through said outer tank and said baffle for discharging relatively clear liquid from within said baffle.

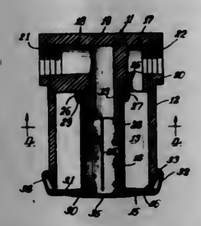
3,298,527
CHROMATOGRAPHIC FLOW COLUMN
John Lemon Wright, 51 Pratt Court, Alexandria, Va. 22310
Continuation of application Ser. No. 234,986, Nov. 2, 1962. This application May 17, 1965, Ser. No. 458,832
2 Claims. (Cl. 210—198)



2. A flow column adapted to receive a moving phase fluid and a sample component and comprising a metallic tubular member, said tubular member containing a granular packing material, a stationary phase material located on and coating the exterior surface of the packing material, means mounted within said tubular member to provide even heat distribution and uniform concentrations within the moving phase material and stationary phase material and to provide uniform flow resistance to the moving phase material, said means comprising fin members mounted on the inner wall of said tubular member at evenly spaced intervals and extending radially and longitudinally therethrough, said fin members being of uniform cross-sectional thickness and the radial dimension of certain of the fin members being greater than that of others.

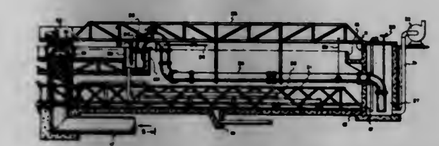
3,298,528
STRAINER
George E. Franck, Morton Grove, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed July 23, 1963, Ser. No. 296,984
7 Claims. (Cl. 210—444)

1. In a strainer provided with a body member having an outer annular seat, an outlet passage having a first end portion arranged for connection thereto to a fluid receiver and a second end portion opening through the area bounded by said seat, and an inlet passage having a first end portion arranged for connection thereto to a fluid supply and a second end portion opening outwardly through said body member and means on the body member defining a strainer chamber in communication with said second end portion of said passages and having an open portion spaced outwardly of said seat, structure comprising: a flexible closure selectively removably closing said open portion of the chamber means; and a tubular resiliently axially contractible strainer element having a



first end juxtaposed to said closure and an opposite, second end urged into sealed association with said seat by said closure when said closure is in place closing said open portion of the chamber means, said closure including means for gripping said strainer chamber means arranged to be disengaged from the chamber means as an incident of an urging of the closure inwardly to axially contract said strainer element.

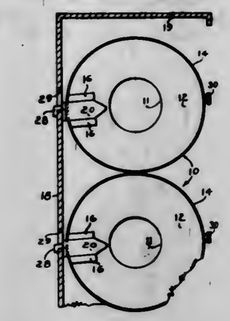
3,298,529
SLUDGE REMOVAL MEANS FOR SEDIMENTATION APPARATUS
Harold D. Longnecker, Burlingame, Calif., assignor to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,035
7 Claims. (Cl. 210—533)



1. Sedimentation apparatus comprising a tank adapted to hold a body of liquid having a predetermined normal liquid level and a settled sludge blanket and having a feed inlet, a clarified effluent outlet and sludge removal means; said sludge removal means comprising a first and a second sludge receiving compartment the bottoms of which are below said predetermined liquid level, a sludge conveying conduit extending downwardly from the lower portion of said first sludge receiving compartment to the level of settled sludge in said tank for conveying said sludge to said first sludge receiving compartment, means for withdrawing sludge from said second sludge receiving compartment, and port means providing communication between the lower portions of said first and second sludge receiving compartments said port means being adjustable to maintain a normal sludge level in said first sludge receiving compartment above said port.

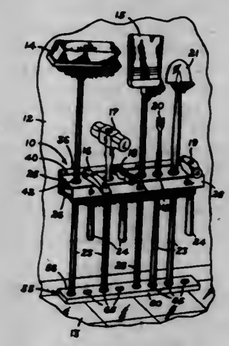
3,298,530
FILE FOR VERTICALLY MOUNTED TAPE REELS
Robert G. Clouthier, 421 Bullard St., Holden, Mass. 01520
Filed May 3, 1965, Ser. No. 452,813
11 Claims. (Cl. 211—40)

1. A tape reel file comprising a set of disk shaped supports for reeled tapes, each support having a slide aligned with a chord of the reeled tape, a reel supporting vertical wall having a plurality of laterally projecting arms forming slide-ways cooperatively engageable with the slides of



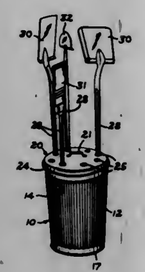
the tape supports which serve to support the tapes in substantially vertical positions and a close lateral spacing.

3,298,531
DEVICES FOR STORING TOOLS AND THE LIKE
Carl Wilcke, 200 W. Thruston Blvd., Dayton, Ohio 45419
Filed Apr. 11, 1966, Ser. No. 541,818
4 Claims. (Cl. 211—60)



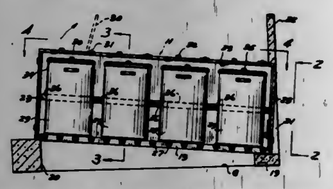
1. An improved holder adapted to be mounted on an upright surface for conveniently storing tools and other articles having handles, and further adapted to provide maximum strength and rigidity at minimum cost, said holder comprising a sheet of rigid material formed to define upper and lower elongated panels disposed in vertically spaced relationship and connected integrally along the forward longitudinal portions thereof, means defining a plurality of longitudinally spaced aligned openings in said upper and lower panels for receiving and positioning the handles of the articles, an upper longitudinal flange extending upwardly from the rear portion of said upper panel and formed integrally therewith, means on said upper flange for attaching said flange to the surface for positioning said upper panel substantially horizontally, a lower longitudinal flange extending downwardly from the rear portion of said lower panel and formed integrally therewith, a rear panel adapted to lie generally parallel to the surface, means connecting said rear panel to said upper flange in overlapping relationship along the length thereof to reinforce and add rigidity to said upper flange, and means for connecting said rear panel to said lower flange along the length thereof to provide a rigid box-like configuration for supporting articles having substantial weight on said upper panel.

3,298,532
DEVICE FOR STORING ARTICLES
Carl Wilcke, 200 W. Thruston Blvd., Dayton, Ohio 45419
Filed Apr. 11, 1966, Ser. No. 541,802
7 Claims. (Cl. 211—60)



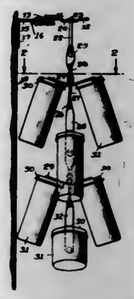
1. In a relatively large container commonly used for transporting or storing various materials and including a generally cylindrical side wall extending upwardly from a circular bottom wall, and having a removable lid including a peripheral flange surrounding the upper portion of said side wall, the improvement for adapting said container as a convenient portable storage device for a plurality of articles each having an elongated handle, comprising means defining a plurality of angularly spaced openings within an annular portion of said lid inwardly of said flange and each said opening being of sufficient size to receive a handle, and a member removably positioned within the lower portion of said container for receiving the end portion of each said handle and for retaining said end portion in general vertical alignment under said opening in said lid through which said handle is inserted to position said handle substantially vertically within said container so that the center of gravity of the article is positioned generally above said opening receiving said handle to prevent tipping of said container.

3,298,533
REFUSE CONTAINERS
Earl Safford, 1958 Lawrence, Detroit, Mich. 48206
Filed Apr. 27, 1966, Ser. No. 545,764
5 Claims. (Cl. 211—71)



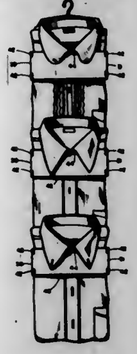
1. In combination a refuse receptacle comprising a hollow, elongated housing with an open bottom and with its longitudinal axis inclined upwardly from the horizontal at an acute angle;
said housing including side walls and apertured top and end walls;
a hinged door normally closing each end wall;
a series of parallel spaced transverse rollers at their opposite ends journalled in said side walls at the bottom of and within said housing and correspondingly inclined;
a series of aligned trashcans loosely positioned in a row within the housing movably mounted on said rollers;
and a series of spaced separate trap doors hingedly mounted upon and normally in registry with said top wall directly above said trashcans respectively.

3,298,534
DISPENSING RACK
Warren D. Tallman, Elmhurst, Ill. (3825 W. 31st St., Chicago, Ill. 60623)
Filed Feb. 1, 1965, Ser. No. 429,522
6 Claims. (Cl. 211—78)



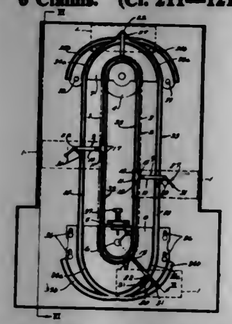
1. A dispensing rack comprising a rigid support member, a second support member rotatably secured to said rigid support member, a plurality of arms extending angularly from said second support member, and a container lid rigidly secured to each of said arms, each of said lids being engageable with a container.

3,298,535
GARMENT HOLDER
Bernard P. Ruettger, 15405 Delaware, Lakewood, Ohio 44107
Filed Apr. 26, 1965, Ser. No. 453,550
1 Claim. (Cl. 211—113)



A shirt holder for supporting a plurality of shirts comprising,
a flat piece of relatively stiff cardboardlike material formed generally into the shape of a rectangle and having a front and a back surface,
vertically spaced scallops formed in each side of said cardboard,
each two of said scallops that are adjacent each other having a projection therebetween,
said projections being spaced along each side of said piece of cardboard,
each said projection being disposed opposite a said projection on the opposite side of said piece of cardboard,
spaced paper sleeves,
each said paper sleeve being made of relatively thin paper material and comprising a relatively narrow strip of paper extending from a said projection on one side of said cardboard piece to a said projection on the opposite side of said cardboard piece,
said thin paper material extending across said cardboard piece on both the front and back surface therefore,
means fixing said paper sleeves to said projections,
said sleeves being spaced apart a distance approximately equal to the length of an average size folded shirt,
said cardboardlike piece having a width approximating an average sized shirt,
a flat piece of relatively stiff cardboardlike material each said sleeve being adapted to receive a shirt thereunder with the cuffs of the sleeves of the shirt thereabove exposed and the bottom end of each shirt partially supported behind the shoulder of the shirt below it.

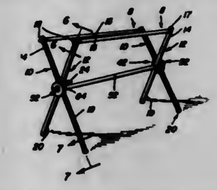
3,298,536
FILE WITH ENDLESS CARRIERS AND DOUBLE GUIDING TRACK
Georg Alfred Zippel, Altdorf, near Nurnberg, Germany
Filed Aug. 21, 1964, Ser. No. 391,234
Claims priority, application Germany, Aug. 23, 1963, Z 10,311; Mar. 4, 1964, Z 10,688
6 Claims. (Cl. 211—121)



1. File structure having carriers for file material mounted on two endless chains wherein trunnions are provided at each end of the carriers and connected to carrier arms and at least one trunnion is fastened through an angle bracket and two outer rollers for holding the carriers parallel with respect to each other in all positions around their orbit within the file structure and wherein there is an inner trackway and an outer trackway running parallel in the region of the straight-line portion of the chains and wherein the rollers of each angle bracket are constanting held and guided within said outer trackway, characterized in that:
there is provided a carrier arm on each end of said carriers, each of said carrier arms being provided with two lever arms of unequal length, the short arm thereof being provided with two inner rollers which are guided in said inner trackway and further characterized in that at least one of the two outer rollers is continuously engaged with the outer trackway, and further characterized in that portions of the outer trackway cross each other in the vertical plane extending midway between the straight-line portions of the chains, the spacing of said outer trackway being arranged with respect to the path of said chain so that said outer rollers are guided with their axes held in a substantially horizontal plane.

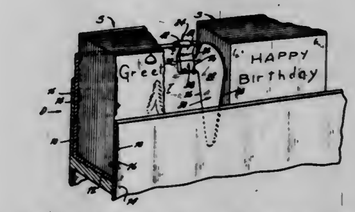
3,298,537
GARMENT RACK HINGE AND LEG ASSEMBLY
Silvio P. Di Marco, % World Display Fixture Co., 54 Franklin St., Brooklyn, N.Y. 11222
Filed June 16, 1965, Ser. No. 464,375
6 Claims. (Cl. 211—178)

1. A folding garment suspending and displaying support for use in a department store or similar establishment comprising: a portable stand-type rack embodying a pair of duplicate vertical leg frames each embodying a pair of legs having corresponding median portions adapted to cross each other, means for assembling and pivotally joining the crossed portions of said legs and permitting them to be spread apart into X-shaped self-standing relation or, alternatively, folded together into overlapping compact relation for manual handling and out-of-the-way storage, hanger rods mounted between oriented upper ends of the legs of the respective leg frames, a horizontal bracing and stabilizing rod located between and connecting the crossed portions of the legs



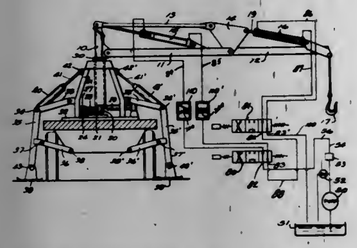
of said leg frames, the assembling and joining means for each pair of legs comprising a pair of hinging brackets having flat inward confronting faces opposed and movably abutting each other in shiftable relationship, the inward face of each bracket having a groove and a rigid laterally projecting stud constituting a stop pin, the respective pins projecting into their respectively oriented and coordinating grooves, and said grooves and their pins constituting and providing limit stops, each bracket having a central right angularly disposed hole extending therethrough and providing a bearing and both bearings being aligned, and said pivot means extending therethrough.

3,298,538
DISPLAY RACK DIVIDER
Daniel M. Ganz, Rockville Centre, and Harold J. Mahler, New York, N.Y., assignors to Darrol Company, Inc., New York, N.Y., a corporation of New York
Filed July 23, 1965, Ser. No. 475,325
4 Claims. (Cl. 211—184)



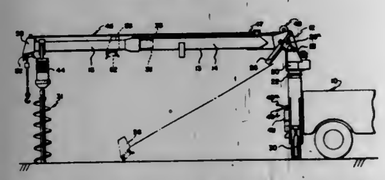
1. A rack divider for use with a display rack in the form of elongated troughs each having a bottom wall and opposed side walls with front and rear faces and said side walls being spaced-apart in substantially parallel relation from each other for receiving a series of side-by-side stacks which are made-up of flat elements, an upright divider formed from thermoplastic material and including a clip and divider body, said clip being of substantially U-shaped cross-section and having opposed body walls for mounting on said side walls of the display rack, said divider body being resiliently mounted at an angle to the normal plane of said body walls of said clip with said divider body extending in a plane transverse to said body walls, and said clip being integrally formed on said divider body with an elongated slot disposed between said clip and divider body such that said divider body is capable of being biased in an upright orientation against one side wall when said clip is mounted on another opposed spaced-apart side wall of a trough.

3,298,539
FOLDING BOOM ROTATABLE CRANES
Raul D. Sundstrom, Green Bay, Wis., assignor to Van-L, Ltd., Green Bay, Wis., a corporation of Wisconsin
Filed Jan. 11, 1965, Ser. No. 424,764
8 Claims. (Cl. 212—30)



1. In a boom comprising a first boom arm pivoted to a support, a second boom arm pivoted to said first boom arm, said second boom arm having a free end adapted to engage and lift a load first hydraulic motor means adapted to move said first boom arm vertically about its pivotal connection with said support, second hydraulic motor means adapted to move said second boom arm in a vertical plane about its pivotal connection with said first boom arm, and a pump, said motors being divided into first and second fluid containing chambers, said motors being so connected to said boom that the weight of a load tends to reduce the size of said first chambers and increase the size of said second chambers; the improvement comprising hydraulic control means including valves and conduits adapted to interconnect said hydraulic motor means in a series hydraulic circuit with said valves and said pump in at least one control position wherein either said first chambers or said second chambers are placed in communication with each other, whereby the pressures created in one motor by a load are used to balance pressures created in said other motor by a load.

3,298,540
EXTENSIBLE BOOM WITH LOAD COMPENSATING MEANS
James H. Holan, Rocky River, and Curtis W. Verrell, Fairview Park, Ohio, assignors to The Ohio Brass Company, Mansfield, Ohio, a corporation of Ohio
Filed Aug. 7, 1964, Ser. No. 388,217
11 Claims. (Cl. 212—55)



1. An extensible derrick comprising, a support, a boom pivotally mounted on said support for pivotal movement in a generally vertical plane, means for actuating said boom in said generally vertical plane, means pivotally mounting said boom on said support for swinging movement in a generally horizontal plane, said boom comprising an inner boom section and an outer boom section adapted for lengthwise movement relative to said inner boom section, reciprocal fluid powered means disposed interiorly of said boom sections and coacting between said boom sections for extending and retracting said outer boom section relative to said inner boom section for selectively varying the effective length of the boom, a winch mechanism mounted on said inner boom section adjacent the pivotal connection thereof to said support, cable means coacting with said winch mechanism and extending along the boom and downwardly therefrom for supporting a load thereon, compensating means coacting between said inner and outer boom sections and the cable means for automatically maintaining the cable means at a selected level with respect to the boom during extension and retraction of the boom, said cable means comprising two cable sections, one of which cable sections coacts with said winch mechanism and extends outwardly over the distal end of the outer boom section, said winch mechanism being operative to move said one cable section relative to said boom, the other of said cable sections being attached to said outer boom section adjacent the inner end of said outer boom section and being attached to said inner boom section adjacent the distal end of said inner boom section, said compensating means including a coacting pulley block having horizontally disposed pulleys thereon coupling the cable sections together, said other cable section being disposed interiorly of said inner boom section and extending exteriorly thereof into coacting relationship with said pulley block, said pulley block being adapted to move lengthwise across the top surface of said boom during extension and retraction of the boom, for maintaining the outer end of the first mentioned cable section at a substantially constant level with respect to the boom.

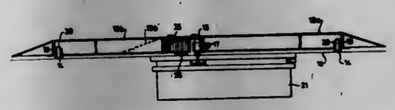
3,298,541
TRANSFER MECHANISM
James Alexon, 21605 Benjamin, St. Clair Shores, Mich. 48081
Filed Jan. 27, 1965, Ser. No. 428,434
7 Claims. (Cl. 214—1)



1. A transfer mechanism of the type described, comprising: a plate; a plurality of shafts journalled in said plate, the shafts being arranged with their center lines along a line path on said plate with their shafts extending normally to the plane of the plate; an arm fixed to and extending radially from each of the shafts, the arms being arranged in operative pairs consisting of two adjacent arms; means for urging each arm pair into a closed position wherein the ends of the arms tend to abut one another; rocker means connecting adjacent arms so as to transfer the motion of one of the shafts to all the other shafts, such motion being in such a direction as to move each arm pair against said means for urging; and fixed stop means adjacent said plate for limiting the motion of at least one arm against the urging means so as to maintain the rocker means in contact with one another independently of wear of the rocker means.

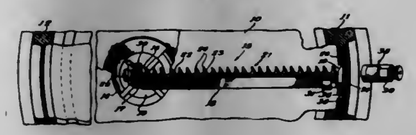
3,298,542
PROPULSION MEANS FOR A PLATFORM PARKING SYSTEM
Inge Alexander Plymoth, Caritasgatan 25, Malmo SV, Sweden
Filed Feb. 9, 1965, Ser. No. 431,298
8 Claims. (Cl. 214—16.1)

1. In a garage including a floor structure and at least two parallel rails supported by said floor structure and forming a track thereon, the combination comprising at least one parking platform having wheels supporting said platform on said rails and cooperating with the rails to guide the platform for movement along the rails, said platform being of a size large enough for parking at least one vehicle thereon, a housing let into said floor structure and defining a space open at top, a cover mounted on said housing and closing said space at the top thereof, said cover having the upper surface thereof substantially flush with the surface of said floor structure, an electric geared reversible motor unit mounted on the lower surface of said cover to be supported thereby in the space



defined by said housing and having an output shaft projecting upwardly from said cover on the upper side thereof, a pinion on said shaft, a rack mounted to said platform at the lower side thereof in parallel with said rails and engaging said pinion, and a rail section mounted on the upper surface of said cover, at each end registering with longitudinally spaced sections of one of said rails and having the upper surface flush with and joining the upper surface of said latter rail sections to form part of said track.

3,298,543
SILO UNLOADER WITH LOAD RESPONSIVE DRIVE CONTROL
Jonathan J. Laidig, Mishawaka, Ind., assignor to Laidig Silo Unloaders, Inc., a corporation of Delaware
Filed Dec. 10, 1964, Ser. No. 417,369
17 Claims. (Cl. 214—17)



1. In a silo having a floor with an axial opening and having an upright cylindrical wall, unloader means comprising: a radial sweep arm adjacent the floor; means mounting said arm for rotation about the axis of the silo; silage gathering and feeding means on said arm for loosening silage and moving it toward said opening; first drive means including a first motor for driving said gathering and feeding means; second drive means including a second motor from which said second drive means normally receives an effectively uniform flow of power, and said second drive means being constructed and arranged to apply a substantially constant driving force to the sweep arm and thus rotate the sweep arm about the silo with an effectively uniform forward motion to bring said gathering and feeding means into contact with silage stored in the silo; and means for controlling rotation of the sweep arm about the silo in response to changes in the torque load on the first motor, said controlling means including at least one control element which functions automatically and effectively instantaneously at a predetermined high level of load on the first motor resulting from the presence of an excessive quantity of silage in the gathering and feeding means to sharply reduce the driving force on the sweep arm and thereby change the rate of rotation of the sweep arm from a relatively high rate at which the gathering means is moved into engagement with the silage to a minimum rate at which gathering of silage is effectively terminated while permitting the feeding means to continue to operate and dispose of sufficient silage to reduce the torque load on the first motor below said high level so that normal rotation of the sweep arm may be resumed.

3,298,544
GRAIN ELEVATOR SPOUT HOLDER
Donald R. Pfaiser and Elmo C. Corder, Oberlin, Kans. 67749; said Pfaiser assignor to said Corder
Filed Feb. 3, 1965, Ser. No. 430,086
9 Claims. (Cl. 214—17)



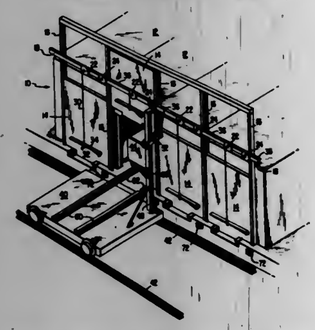
1. In a grain elevator spout holder, the combination with a storage silo having a substantially flexible gravity delivery spout extending from an uppermost outlet portion thereof, of a horizontally pivotal spout-supporting platform pivotally mounted on and for horizontal movement in close proximity to the silo and substantially below said upper outlet portion and adapted upon a certain horizontal pivoting thereof to extend horizontally outwardly from the silo and upon another horizontal pivoting thereof to extend in close proximity to the silo, pivot means carried by said silo for effecting said horizontal pivotal mounting of the platform, locking means carried by said platform pivot means for effectively locking it in any such horizontal pivotal positioning thereof on its pivot means, a vertically extending rockable yoke spout holding means pivotally mounted on and carried by said horizontal pivotal platform and adapted for rocking thereof on a horizontal axis on said platform and further adapted for vertically adjustably carrying of said spout thereby, means carried by said platform for effecting said pivotal mounting of said rockable yoke holding means thereon, operable ram-acting power means carried by and extending between each of said horizontal platform and said rockable yoke means for effecting a pivotal rocking of the yoke means on the horizontal platform and also for effecting a holding thereof in any rocking position thereof thereon, operable winch and pulley means carried by said yoke means for effecting a vertical adjustable positioning of the spout thereon and with relation thereto and also for effecting a releasable holding of any such vertical positioning thereof thereon, the portion of the flexible spout adjacent its delivery end being carried by said yoke means by a freely rotatable collar means carried by the yoke means for adapting said delivery end of the spout for free rotational positioning with relation to the longitudinal axis of the main portion of the spout, manually operable and releasable locking means carried by the yoke means and adapted to extend to the delivery end of the spout and to be removably secured thereto in any such rotational positioning of said delivery end of the spout for holding the delivery end in any such rotational positioning thereof, said delivery end of the spout being adapted to be flexed longitudinally thereof into an arc with relation to the longitudinal axis of the main portion of the spout, and pulley operable releasable and holding means carried by the delivery end of the spout at two points thereof for releasably holding any such arc adjustment positioning thereof with relation to the longitudinal axis of the main portion of the spout during use thereof.

3,298,545
SILO UNLOADER WALL GUIDE WHEEL MOUNTING
James R. Beebe, Celina, Ohio, and Elvind M. Rambo, Ogdensburg, Wis., assignors to Avco Corporation, Coldwater, Ohio, a corporation of Delaware
Filed June 17, 1965, Ser. No. 464,606
3 Claims. (Cl. 214—17)



2. In a silo unloader having a main frame suspended from the top of the silo, guide wheel mounting means disposed at the end of said frame, guide wheels supported on said means and journaled on vertically disposed bearings, means acting between said frame and said mounting means for tilting said mounting means on an axis radially of the silo to position said wheels for rotation in a horizontal plane, and means for securing said mounting means in the desired horizontal position.

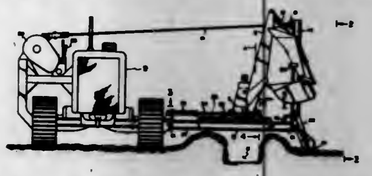
3,298,546
DOOR OPERATOR FOR A TUNNEL KILN CERAMIC PLANT
Robert E. Jones, 5 S. Oak Forest Drive, Asheville, N.C. 28803
Filed Sept. 1, 1964, Ser. No. 393,786
5 Claims. (Cl. 214—18)



1. In a ceramic plant having a plurality of tunnel kilns, dryers, and warming rooms in side-by-side relation, a transfer car operating in a pit in front of the kilns, dryers, and warming rooms for transferring kiln cars within the plant, and a vertically movable door on the end of each of the respective kilns, dryers, and warming rooms adjacent the pit, a door operating mechanism comprising an arm mounted on the transfer car and projecting laterally therefrom in the direction of the doors, hoist means carried by the transfer car for moving said arm along a vertical path adjacent each of said doors, and means on each of said doors projecting into said vertical path and movable therealong by said arm during movement thereof along said vertical path to operate the vertically movable doors individually when said transfer car is in position in front of the door.

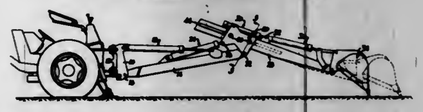
3,298,547
VERSATILE EARTH-MOVING EQUIPMENT
Edgar S. Williams, 4890 Wasatch St., Murray, Utah 84107
Filed July 6, 1965, Ser. No. 469,805
2 Claims. (Cl. 214—138)

1. Earth-moving equipment including, in combination, a tractor, boom means laterally extending from said tractor, and actuatable hoe means positioned upon said boom means and constructed for earth working at a region transversely spaced from said tractor, wherein said hoe means is oriented forwardly of said boom means and is constructed for downward and rearward engagement with earth therebeneath, said hoe means being pivotable about a vertical axis, and wherein said boom means is pivotally secured to said tractor for pivoting



about a horizontal axis parallel to the longitudinal axis of said tractor, said boom means including an upstanding member, means for securing said hoe means to said upstanding member when said hoe means is pivotally displaced therefor, said structure including hoist means for elevating said boom means with said upstanding member, and said hoe means upwardly and over said tractor.

3,298,548
EXTENSIBLE BACK HOE ASSEMBLY
Elton B. Long and Theodore J. Coleman, both of Burlington, Iowa, assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 29, 1965, Ser. No. 505,632
5 Claims. (Cl. 214—138)

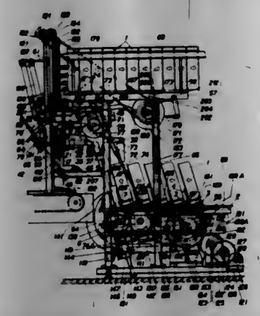


1. In a tractor mounted backhoe or the like having a boom mounted at one end upon a tractor and a dipper stick assembly mounted on the opposite end of said boom; the improvement wherein said dipper stick assembly comprises a hollow sleeve member having a passage therethrough pivotally mounted upon said other end of said boom, an elongate dipper stick member projecting longitudinally through said passage of said sleeve member, a plurality of coupling blocks each having a cylindrical portion at one side thereof and means defining a guiding groove in its opposite side extending radially of said cylindrical portion, a pair of elongate guide strips each complementary in transverse section to the guiding grooves in said blocks and adapted to be slidably received therein, one of said members having bores therethrough at opposite sides of said passage receiving said cylindrical portions of said blocks with the grooves of said blocks in facing relationship to the other of said members, and means fixedly mounting said guide strips on the other of said members with said strips slidably received in said guiding grooves to guide said dipper stick in longitudinal movement within said sleeve.

3,298,549
APPARATUS FOR AUTOMATICALLY CHARGING A CONTAINER WITH ROD-LIKE OBJECTS
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed July 6, 1965, Ser. No. 469,383
Claims priority, application Great Britain, Aug. 19, 1964, 33,818/64
6 Claims. (Cl. 214—307)

1. An apparatus for automatically replenishing a vertical hopper from magazines, comprising conveyor

means for feeding magazines in succession to a discharging position vertically above said hopper, releasable closure means for said magazines for supporting columns of cigarettes therein when said closure means are closed, said closure means comprising two separate plate components situated in a common horizontal plane, means for separating said plate components and thereby releasing said closure means so that said plate components simultaneously withdraw their support from opposite sides of the column of cigarettes in a particular magazine, whereby said column of cigarettes is unsupported over its entire width and is enabled to descend as a whole into said hopper whilst maintaining parallel horizontal relationship of the cigarettes, a magazine receptable for placing said particular magazine vertically above said hopper, said releasable closure means comprising a first plate component forming a temporary base plate carried by said magazine receptacle and a second plate component forming a shutter associated with said hopper, and a mechanism for operating said first and second plate components, said first and second plate components being initially ar-



ranged to cover different portions of the magazine width to support said column of cigarettes in said magazine at the bottom of said magazine over different portions of length of said cigarettes, said operating mechanism being arranged first to displace said first plate components to separate it from said second plate component by a distance such that said plate components assume symmetrical positions relative to said column of cigarettes supported thereby, whereafter said operating means further separate said first and second plate components in unison to complete the release of said column of cigarettes from said particular magazine, said operating mechanism comprising first means for displacing said first plate component, second means for displacing said second plate component, and connecting means between said first and second displacing means, said connecting means including a lost motion device for causing said second displacing means to be operated only when said first and second plate components occupy said symmetrical positions with respect to said column of cigarettes in said particular magazine.

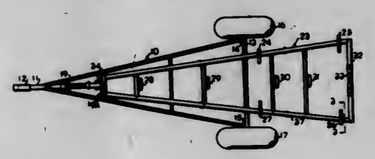
3,298,550
HAYSTACK TRANSPORTING DEVICE
Boyd D. Schiltz, Vayland, S. Dak., assignor to Daffin Corporation, Hopkins, Minn., a corporation of Delaware
Continuation of application Ser. No. 357,433, Apr. 6, 1964. This application May 25, 1966, Ser. No. 559,657
11 Claims. (Cl. 214—505)

1. A mobile machine for transporting haystacks and comprising:
(a) an elongated frame,
(b) drive means for imparting generally longitudinally directed movements to said machine relative to the ground,
(c) an elongated bed assembly extending longitudinally of said frame,
(d) means mounting said bed assembly on said frame for tilting movements between an inclined position, wherein the bed assembly is adapted for movement with said machine and under a haystack for loading and unloading of a haystack onto said bed assembly, and a horizontal load transporting position,
(e) said bed assembly including a plurality of laterally relatively widely spaced longitudinally extending support members each having a transversely relatively narrow top supporting surface,
(f) a plurality of endless conveyor chains each one



mounted for conveying movement on a different one of said support members to define upper and lower flights and with the upper flights each being supported on its respective supporting surface and adapted to carry hay onto and off of said bed assembly as the bed assembly is moved under a stack, and
(g) second drive means connected to said first drive means and operative to impart concerted movement to the upper flights of said conveyor chains in a direction opposite to the direction of the generally longitudinal movement imparted to said machine by said first drive means and also at a rate greater than said machine movement, whereby the haystack is moved as a unit onto the tilted bed.

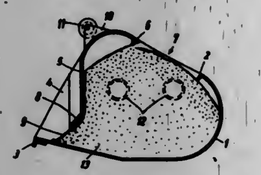
3,298,551
BOAT TRAILER
Warren H. Thompson, San Diego, Calif. (P.O. Box 59, Encinitas, Calif. 92024)
Filed Nov. 23, 1964, Ser. No. 413,124
1 Claim. (Cl. 214—506)



A boat trailer comprising:
in combination, a generally triangular frame having a ball socket type hitch at the forward end and a set of wheels;
an axle pivotally attached by clevis means at the rear end, said axle having another generally triangular frame secured above and connected to it by means of two sets of leaf type springs opposite each other to absorb shock, said upper triangular frame having a means of temporarily attaching its forward end to the lower frame, said lower frame having a winch and line means of drawing a boat on the upper frame for transporting, said upper triangular frame having a plurality of center rollers mounted on its cross braces and a system of rollers for bearing the sides of a boat; and
said system of boat side bearing rollers comprising a system of roller bearing brackets generally V shaped having the said rollers rotatably mounted by a horizontal shaft at each end and said roller bearing brackets pivotally mounted to a bracket below and off center of its center of gravity and having the normally dropping side supported by a singular leaf

type spring secured to the said roller brackets below and free to deflect downward for adjustment in aligned contact.

3,298,552
MATERIAL HOIST FOR BULK MATERIAL
Ernst Ewald Kühner, Kreuzstrasse 1, Bruchhausen, near Karlsruhe, Germany, and Ernst Wilhelm Sutter, Gartenstrasse 80, Sulzbach, near Ettlingen, Germany
Filed Nov. 18, 1963, Ser. No. 324,494
Claims priority, application Germany, Nov. 17, 1962, K 48,251
12 Claims. (Cl. 214—707)



1. In a material hoist for conveying bulk materials having a hoist skip adapted to carry bulk material, a hoistway selectively positioning said hoist skip, a hoist winch, a pull cable engaging said hoist winch, said hoist skip comprising, an upper feed opening, a substantially vertical front wall having an outwardly inclined surface, a bottom plate extending outwardly of said front wall, discharge means in said front wall and said bottom plate located to retain said bulk material when said hoist skip is in loading and transport positions and to release said bulk material when said hoist skip is inclined in a discharge position, means guiding said hoist skip on said hoistway, and attachment means on said hoist skip receiving said pull cable.

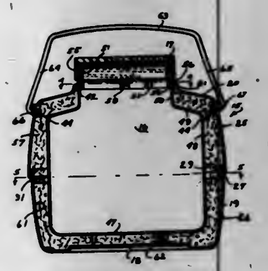
3,298,553
PARTIALLY DEVITRIFIED GLASS ARTICLE AND METHOD FOR MAKING THE SAME
Kenneth G. Lusher, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 9, 1961, Ser. No. 151,273
15 Claims. (Cl. 215—1)



1. An article having at least one crystalline zone containing a major portion of inorganic crystals in a minor portion of a glassy matrix, at least one glassy zone, and an intermediate zone between said glassy zone and said crystalline zone progressively increasing in crystalline content from the glassy zone to the crystalline zone, the three said zones being both integral and derived from said article, said crystalline zone having greater strength than the remainder of said article.

10. A method of forming an article having at least one crystalline zone containing a major portion of inorganic crystals in a minor portion of a glassy matrix, at least one glassy zone, and an intermediate zone between said glassy zone and said crystalline zone progressively increasing in crystalline content from the glassy zone to the crystalline zone, the three said zones being both integral and derived from said article, comprising the steps of melting a devitrifiable glass composition, forming the resulting glass into the desired shape, thereafter subjecting certain areas of said article to devitrifying temperature conditions for a time sufficient to form said crystalline and intermediate zones, the other areas of said article being shielded from said temperatures and then cooling the article.

3,298,554
INSULATED PICNIC JUG OR CONTAINER
Herbert M. Piker, Wyoming, Ohio, assignor to The Hamilton-Skotch Corporation, Hamilton, Ohio, a corporation of Ohio
Filed Sept. 11, 1963, Ser. No. 308,241
8 Claims. (Cl. 215—13)



6. In a jug of the class described the combination of an outer member including an upper portion and a lower portion, said upper portion including a top provided substantially centrally thereof with an opening, an inner container including a top with a sleeve upstanding therefrom and projecting through the upper portion top opening, co-operating means on said outer member upper portion top and said inner container sleeve for operatively connecting them to one another for suspending said inner container from said outer member upper portion, said upper portion having an inwardly radially projecting flange at its lower end with said flange of a given thickness and defining an opening of a given dimension, said outer member lower portion having formed downwardly of its upper edge a circumferential, inwardly, radially, projecting groove of a width no less than the thickness of the upper portion flange, said groove having a base to a dimension at least no greater than the dimension of the opening through the upper portion inwardly radially projecting flange, and with said upper portion inwardly radially projecting flange within the lower portion groove and having said flange free edge adjacent the groove base for securing said outer member upper and lower portions to one another for enclosing the inner container, said lower portion groove having formed therein an outwardly extending lug for a portion circumferentially thereof providing a key, and said upper portion inwardly radially projecting flange having formed therein for a portion circumferentially thereof a notch providing a keyway for the lower portion groove key co-operating with one another to prevent relative rotation movements between said outer member upper and lower portions.

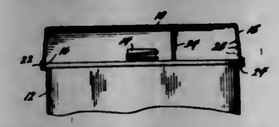
3,298,555
CROWN-CAP AND REMOVAL MEANS
Mikolaj O. Kondakow, 185 Clavet St., and James Wong, 14 Hodge St., both of Port Arthur, Ontario, Canada
Filed July 8, 1964, Ser. No. 381,077
3 Claims. (Cl. 215—39)

1. In combination, a crown-cap having an externally projecting, concentric, annular flange formed therein, and means for removing same from a bottle after being crimped thereonto, said cap being provided with a diametrical line of weakness, and apertured near one end of said line, said means comprising a steel wire anchored to said cap near the opposite end of said line of weakness, and spanning said cap parallel to said line adjacent the interior surface of said cap, said wire extending through said aperture and terminating in a finger-piece



on the exterior side of said cap in the form of a ring normally surrounding said flange, being held in position thereby, and a sealing liner covering said steel wire and said aperture.

3,298,556
MEASURING DEVICE
Merwin Frankel, Scarsdale, N.N.Y., assignor to Geigy Chemical Corporation, Greensburgh, N.Y., a corporation of Delaware
Filed Apr. 23, 1964, Ser. No. 362,142
8 Claims. (Cl. 220—23.83)



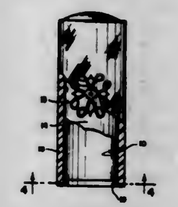
1. A merchandising package comprising a rectangular consumer container having body walls and top and bottom members which are connected to the body walls by integral upper and integral lower beads which are formed from the connected members and body walls; a measuring member which has the same general horizontal cross sectional shape as said container, and having a top connected to tapered body walls to form an inverted U-shaped cross section, the inside of which measuring member is divided into fractional spaces by at least one dividing wall, the lower extremities of the tapered body walls of said measuring member being formed into a locking rim comprising a groove into which the upper bead of the consumer container is adapted to fit, and a ridge which is adapted to slip over the upper bead of the consumer container and engage the body walls of the consumer container, the ridge portion of the locking rim being provided with drainage slits which allow the drainage of entrapped liquid from said locking rim.

3,298,557
INSTRUMENT CASING
Robert J. Ingham, Fairfield, Conn., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed July 18, 1963, Ser. No. 296,024
1 Claim. (Cl. 220—44)

A dial instrument comprising a cylindrical casing open at one end, said one end of the casing being provided with an inwardly turned annular surface facing generally outwardly of the said opening, a transparent cover generally circular in shape resting on said annular surface and closing said opening in the casing, a bezel mounted on said one end of the casing and comprising a generally cylindrical portion in closely fitting telescopic relation over said one end of the casing, said cylindrical portion of said bezel extending outwardly beyond said one end of the casing and spaced from the periphery of said transparent cover, the bezel further including a generally annular portion terminating said cylindrical portion of said bezel and extending radially inwardly of the casing in overlying relationship to and contacting said transparent cover normally to hold the same in contact with said annular surface, said annular portion of the bezel being provided with at least one raised portion spaced out of contact with said transparent cover to permit flexing of the underlying portion of the cover out of contact with said annular surface on said one end of the casing to provide venting of the casing in response to excessive fluid pressure within the casing.

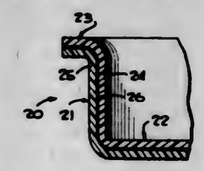


3,298,558
MOLDED LAMINATED ARTICLE
Richard J. Nichol, Mount Kisco, N.Y., assignor to Avon Products, Inc., a corporation of New York
Filed Jan. 30, 1963, Ser. No. 255,046
5 Claims. (Cl. 220—63)



1. A molded laminated article comprising an outer tubular casing, open at one end, of clear plastic material, an inner cylindrical sleeve bonded to said casing, said sleeve having a design upon the surface bonded to said casing and capable of being viewed through said casing.

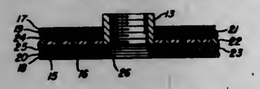
3,298,559
CONTAINERS COLD-FORMED FROM PLASTIC AND METAL LAMINATE
Randolph D. Lurie, Park Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 8, 1963, Ser. No. 314,658
8 Claims. (Cl. 220—63)



1. In a laminated container of the type including a container body terminating in an integral bottom wall, said container body being formed from at least two lami-

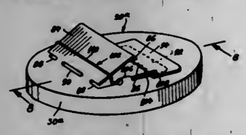
nated sheets of material, said container body being of a definite and stable shape and volume at room temperature and atmospheric pressure, a first of said sheets being adapted for the direct application of heat against a surface thereof and a second of said sheets being adapted to prevent the direct application of heat to the surface of the first of said sheets; the improvement comprising: constructing said first sheet from polymeric plastic material and said second sheet from relatively impermeable metallic material whereby the second sheet prevents the direct application of heat against a surface of the plastic material and a relative impermeability of the second sheet prevents oxygen permeation of the plastic material at temperatures in excess of the melting-temperature range of said plastic material, the plastic material having a predetermined melting-temperature range, said laminated container body maintaining its integrity and dimensional stability at temperatures substantially in excess of the melting-temperature range of the plastic material, the thickness of the first sheet is between the range of .002 to .02 inch and the thickness of the second sheet is between the range of .0003–.015 inch.

3,298,560
PIPING ATTACHMENT MEANS FOR PLASTIC VESSELS
Robert H. Anderson, Elmhurst, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed July 31, 1963, Ser. No. 298,998
5 Claims. (Cl. 220—83)



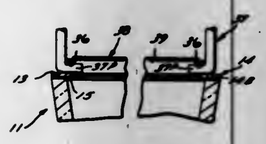
1. A thin-wall plastic vessel having embedded in a wall thereof the flange portion of a metallic flanged tubular body providing an opening communicating with the interior of said vessel, said embedded flange provided with multiple small openings, and the plastic of said wall extending within and through said small openings to secure said tubular body against both axial and rotational movement in said wall.

3,298,561
COMBINED PAINT CAN COVER AND BRUSH WIPER
Arthur E. McConnie, 52 Linden St., Passaic, N.J. 07055
Filed June 4, 1965, Ser. No. 461,403
2 Claims. (Cl. 220—90)



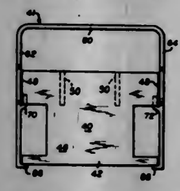
1. In combination with a paint can or the like having an open top with an inwardly extending rim and a continuous channel formed in the rim and defined by inner and outer walls, a removable closure plate for closing the open top having a downwardly extending continuous hollow flange seated in said continuous channel for sealing the top of the can, a removable lid or cover snapped over the closure plate, said lid or cover having a flat body with an outstruck portion, said outstruck portion having a flange on its free end edge, said flat body having a cutout portion forming an elongated opening left by the outstruck portion, a rectangular plate over the cut out portion, said plate having teeth on its long edge facing the outstruck portion, said outstruck portion and plate defining a slot to receive a paint brush when the closure plate is removed and the lid or cover is restored and spring means for urging the outstruck portion toward the rectangular plate.

3,298,562
TOP FASTENING RIM WITH CLOSURE AND HANDLE
Norman G. Weltzman, % Arnold Provisor, Attorney at Law, 16401 Knapp St., Sepulveda, Calif. 91343
Filed Mar. 22, 1965, Ser. No. 441,614
1 Claim. (Cl. 220—94)



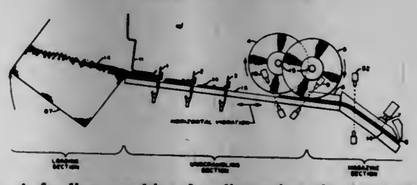
A substantially rectangular, as seen in top plan view, top retaining and fastening rim member for the corresponding substantially rectangular upper edge of a merchandise receptacle of a merchandise vending machine, said retaining and fastening rim member having a lower horizontally directed base portion adapted to contact the upper edge of the merchandise receptacle and having an inwardly offset upstanding inner vertical wall portion adapted to normally receive and mount thereover a permanent type substantially rectangular closure cover means when the merchandise vending machine is fully assembled, said inwardly offset upstanding inner vertical wall portion having opposite side parts provided with horizontally aligned apertures provided with, and rotatively mounting, a substantially rectangular bail and handle member which is shaped in exact correspondence with the shape of corresponding outside surface parts of said inner upstanding vertical wall portion between said horizontally aligned apertures rotatively mounting said bail and handle member and extending along parallel adjacent parts of said upstanding vertical wall portion and along a transversely directed interconnecting part of said vertical wall portion and thus, when folded-away onto the corresponding upper surface parts of said horizontally directed base portion of said retaining and fastening rim member, causing said handle member to lie immediately outside of said corresponding outside surface parts of said upstanding wall portion thereof and immediately inside of the corresponding parts of the permanent type closure cover means for the merchandise receptacle when mounted thereover, said bail and handle member being controllably rotatable from its horizontal folded-away position into an upstanding use position after removal of the permanent type closure cover means, thus providing a convenient carrying handle member for carrying the merchandise receptacle from one location to another and for facilitating removal and replacement thereof; and a temporary auxiliary resilient closure cap means for said top retaining and fastening rim member when the permanent type closure cover means has been removed therefrom, said auxiliary closure cap means being placed thereacross and in overlapped engagement with a pair of opposite side parts thereof and having an intermediate portion forcibly resiliently deflected below the level of said horizontally aligned apertures rotatably mounting said bail and handle member and having top parts of said auxiliary closure cap means resiliently forcibly engaged and retained by portions of said bail and handle member extending through said horizontally aligned apertures, providing a temporary closure cap for the merchandise receptacle when it is to be moved by said carrying handle member after the permanent type closure cover means has been removed from said retaining and fastening top rim member.

3,298,563
BOTTLE CARRIER
Irving L. Rabb, 250 Chestnut Hill Road, Norwalk, Conn. 06851
Filed Feb. 26, 1964, Ser. No. 347,403
4 Claims. (Cl. 220—110)



1. A container-carrier comprising a container section and a handle section; said container section having a base, two side sections connected to said base and being wider at the top than at the bottom thereof, and two end sections connecting said side sections at the tops thereof; said handle section having a horizontal portion connected at either end to one of two vertical supporting members, each of said supporting members having a first projecting surface for engaging one of said container end sections, and a second projecting surface for bearing said container base.

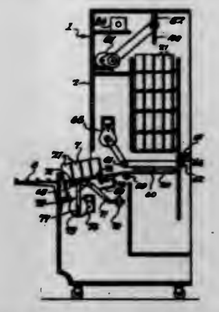
3,298,564
MACHINE FOR DISPENSING THIN ELONGATED OBJECTS
Seth J. Wheatley, Clinton, Tenn., and Harold K. McCaleb, Huntsville, Ala., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 27, 1964, Ser. No. 355,519
9 Claims. (Cl. 221—10)



1. A feeding machine for dispensing elongated objects comprising a supporting surface slanting downwardly for receiving long thin objects to be dispensed, means for vibrating the surface to cause the objects to travel down over it, oscillating means positioned on either side of the surface for engaging the ends of the objects and moving them into longitudinal alignment with the others, a series of rotating brushes positioned above an intermediate portion of the surface for engaging raised overlapping objects and sweeping them back up the surface to rearrange them, and feeding means below the brushes for dispensing objects passing under the brushes.

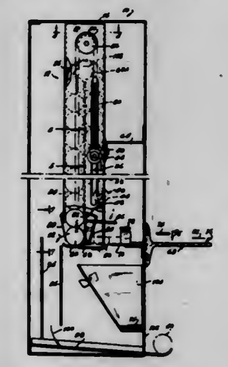
3,298,565
APPARATUS FOR DISPENSING ARTICLES FROM A STACK OF ARTICLE CARRYING UNITS
William W. Cease, Fredonia, N.Y., assignor to Cease Central, Inc., Dunkirk, N.Y.
Filed Dec. 4, 1963, Ser. No. 327,973
6 Claims. (Cl. 221—13)

1. Apparatus for supporting a stack of article carrying units and dispensing articles from individual units from the bottom of said stack, comprising means for engaging the lowermost unit of said stack and movable downwardly to present said lowermost unit at a dispensing level, means movable to engage the next superjacent unit and raise the remaining stack from said lowermost unit while the latter is supported at said dispensing level by said downwardly movable means, means operable to move articles horizontally from said lowermost unit to dispense the same, means operative to retract said first mentioned means to release said lowermost unit after said articles have been



moved therefrom, and timing means operable upon initiation of a dispensing cycle for operating said four means in sequentially timed relation.

3,298,566
ARTICLE DISPENSER HAVING EMPTY SUPPLY SOURCE RESPONSIVE MEANS
Harry Wartell, Brooklyn, N.Y., assignor to Harlee-George, Inc., Brooklyn, N.Y., a corporation of New York
Filed Mar. 26, 1965, Ser. No. 443,145
1 Claim. (Cl. 221—19)



An article vending device comprising a casing having means defining first and second chutes in vertical back to back relation for supporting the articles in stacked relation, said chutes being in communication at their upper ends, biased follower means operable in said first chute to move the articles stacked therein upwardly so that the uppermost article in said first chute moves to the top of said second chute as the lowermost article in the second chute is ejected from the bottom thereof, a support for the lowermost of the articles stacked in the second chute position for ejection, said second chute being open at its bottom, a reciprocable discharge element disposed in juxtaposition to said opening for ejecting the lowermost article through said opening, coin actuable means for reciprocating said discharge element and accepting a coin, means for preventing the reciprocation of said discharge element in the article ejecting direction after the last article in said stacks has been ejected therefrom, said means comprising a pivot rod mounted in opposing side walls of said second chute, an element mounted on said rod and a platform extending from said element in a direction normal thereto, said element being heavier than said platform whereby it forms an obstruction in the path

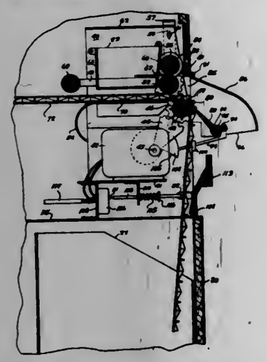
of movement of said discharge element in its normal position preventing said coin actuable means from being operated and accepting a coin, the presence of an article at the bottom of said second chute causing said element to be pivoted so that said platform is maintained out of the path of travel of the discharge element, thereby permitting the coin actuable means to be operated and to accept a coin.

3,298,567

ARTICLE DISPENSER PROVIDED WITH MEANS TO DISCHARGE ARTICLE FROM FLEXIBLE CELLULAR MAGAZINES

Clayton W. Hahn, 1516 Sunrise Rim Road, Boise, Idaho 83705

Filed Mar. 19, 1965, Ser. No. 441,133
10 Claims. (Cl. 221—74)



1. A dispensing device comprising a housing having a front wall provided with a dispensing opening, a belt support member rotatably mounted in said housing, a flexible belt member wound on said support member, a feed roller journaled in the housing adjacent said dispensing opening, means on the feed roller interlocking with the belt member to feed the belt member toward the opening responsive to rotation of the feed roller, means on the belt member defining successive compartments to supportingly receive blocks of food material, means to intermittently rotate said feed roller in steps, a flap member having a tapered end, means pivotally supporting said flap member forwardly adjacent said feed roller and with said tapered end overlying and in contact with the belt member, whereby to receive a block of food material at each step of rotation of the feed roller, and means rotating the flap member outwardly through a sufficient angle to discharge a block of food material thereon after each step of rotation of the feed roller.

3,298,568

BREAD DISPENSER

Walter Le Brocq, 330 W. Porter Ave., Fullerton, Calif. 92632

Filed Oct. 11, 1965, Ser. No. 494,769
1 Claim. (Cl. 221—155)



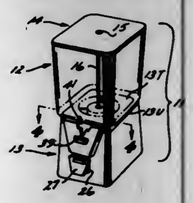
In a bread dispenser, a combination of a container and a dispensing mechanism, said container having refilling means at its upper end and said dispensing mechanism dispensing bread from the lower end of said container, said container comprising a transparent housing having a flat rear wall and a semi-circular front wall to receive a loaf of sliced bread there within, said dispensing mechanism comprising a slide and a tray secured on said slide closing the lower end of said housing, said slide extending through an opening in said rear wall, and a depending lug on said slide to abut said rear wall when said slide is moved to its extreme forward limit to prevent disengagement of said slide and housing, said container including a pair of legs on each side and beneath said housing, a brace extending transversely between said legs, said slide including a downward extending post and handle, said post being in abutment upon said brace to maintain said tray in an upward position to close the lower end of said housing when said container is in closed position, said handle providing means to pull said slide forwardly to dislodge said post from said brace and pivot said tray downwardly about said opening in said rear wall, said slide having a pusher mounted thereupon for pushing forwardly a lowermost slice of bread, said brace being relatively higher above a supporting surface on which said legs may be supported, and said brace being relatively narrow in width whereby said post may be immediately lowered upon a slight forward movement of said tray and lowered a greater distance downwardly than the distance moved forwardly by said tray.

3,298,569

NON-JAMMING AGITATING AND DISPENSING APPARATUS FOR A VENDING MACHINE

Norman G. Weitzman, % Arnold Provisor, 16401 Knapp Ave., Sepulveda, Calif. 91343

Filed Mar. 22, 1965, Ser. No. 441,669
7 Claims. (Cl. 221—203)



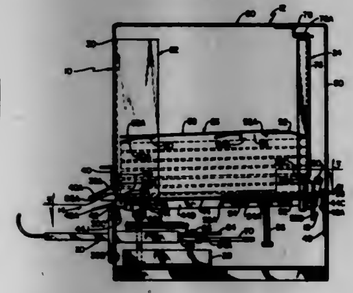
1. A non-jamming agitating and dispensing apparatus for merchandise articles carried within a merchandise receptacle of a merchandise vending machine, comprising: a housing having a downwardly directed recess provided with a substantially transverse bottom wall portion, said bottom wall portion including a dispensing aperture adapted to be in communication with a dispensing chute means of a conventional merchandise vending machine, said bottom wall portion being provided with an upwardly directed bearing means on the upper surface thereof; dispensing means located in said recess rotatably mounted on said bearing means, said dispensing means having a plurality of substantially vertically directed dispensing orifices therein circularly spaced from each other and provided with intervening non-apertured portions; driving means for rotating said dispensing means to bring said dispensing orifices into successive alignment with said dispensing aperture; a non-jamming merchandise agitator and collector in superimposed relationship with respect to said dispensing means and rotatably movable therewith as a unit, said agitator and collector having a plurality of vertically directed dispensing openings therein circularly spaced apart and provided with separating non-apertured portions, said plurality of vertically directed dispensing openings of said agitator and collector being in vertical communication with the corresponding vertically directed dispensing orifices of said underlying dispensing means and said plurality of separating portions of said agitator and collector being positioned in vertically overlying relationship with respect to the corresponding intervening portions of said underlying dispensing means, said separating portions of said agitator and collector comprising inclined wedge members each having a base portion at the bottom thereof a substantially vertically upstanding rear wall portion thereof and a substantially downwardly divergingly inclined front portion thereof extending downwardly and forwardly in the direction of rotation of said agitator and collector provided by driving operation of said driving means for rotating said dispensing means and said agitator and collector, said intervening portions of said dispensing means being horizontally stepped and each having a front upper portion adapted to immediately underlie the corresponding separating portion of said upper agitator and collector means and each having a lower portion positioned immediately behind said upstanding rear wall portion of said inclined wedge comprising said corresponding separating portion of said upper agitator and collector means and lying at a level substantially lower than said front upper stepped portion.

3,298,570

ARTICLE DISPENSING MACHINE WITH ADJUSTABLE MAGAZINE

John M. Skorey, 1111 E. Bayaud, Denver, Colo. 80223, and Loren E. Warner, 5454 Vale Drive, Denver, Colo. 80222

Filed Jan. 22, 1965, Ser. No. 427,443
4 Claims. (Cl. 221—242)



1. A dispensing device comprising a cabinet, an inclined support means mounted within said cabinet, an opening formed through one side of said cabinet in juxtaposition with the lower end of said inclined support means, a recessed portion disposed intermediate said opening and said lower end of said inclined support means, an article engaging means mounted for translatory movement along a portion of said support means, means for actuating said article engaging means, a vertically disposed, horizontally adjustable article guide means, said guide means including a vertically disposed portion extending outwardly through said opening, and a removable, vertically disposed article guide means mounted within said cabinet and having a vertically disposed recess formed therein.

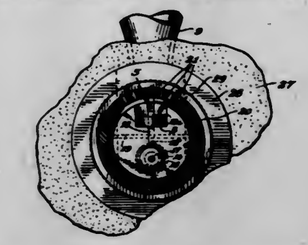
3,298,571

AUTOMATICALLY ACTUATED FLUID PRESSURE TRIGGERING AND DISCHARGE VALVE

Joseph F. Novak, 609 State St., Calumet City, Ill. 60409

Filed Feb. 14, 1963, Ser. No. 258,558
11 Claims. (Cl. 222—5)

1. A device of the character described comprising: a body having a substantially right angularly shaped chamber therein, a supporting wall adjacent one portion of said chamber, a pair of right angularly arranged motion transmitting means slidably received in said chamber with one of said means serving to actuate the other, a pair of biasing means respectively associated with said pair of motion transmitting means for urging the latter toward one another, a pivotly mounted trigger extending into said one portion of the chamber and engageable at times with said one motion transmitting means whereby to releasably lock the same against sliding movement, said trigger having a portion adapted for disposition in spaced relation to said wall for receiving a disintegrable element therebetween for releasably holding said trigger in said



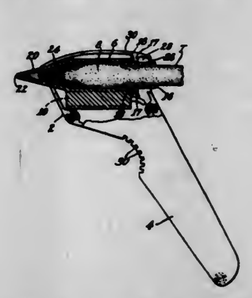
lock releasing position, means carried by said other motion transmitting means arranged in said chamber for puncturing a member when said other motion transmitting means is engaged and actuated by said one motion transmitting means, and means for manually screw retracting said one motion transmitting means against the force exerted by its spring urged ram to a position for locking engagement with said trigger, said other motion transmitting means with said puncturing means returnable by its spring means to its initial position when said one motion transmitting means is locked in said retracted position.

3,298,572

CEMENT DISPENSERS

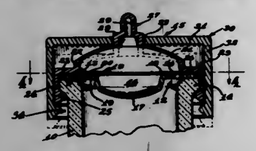
Albert E. Newton, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Apr. 9, 1965, Ser. No. 447,107
5 Claims. (Cl. 222—146)



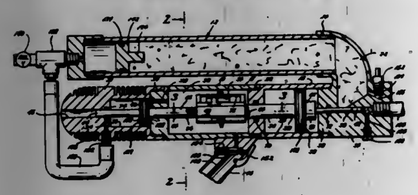
1. A device for dispensing molten thermoplastic material comprising a housing having a melting chamber and a discharge passage leading outwardly therefrom, and a tubular sleeve received in a portion of said housing remote from said discharge passage and adapted to guide a substantially uniform cross section supply body of solid thermoplastic material to said melting chamber, said sleeve having an internal surface providing a sliding fit for said supply body and being formed of heat resistant non-heat-conductive rubbery elastic material having sufficient flexibility to yield upon engagement with irregularities in the supply body and means for heating said melting chamber.

3,298,573
LIQUID DISPENSER HAVING A SUPPLY CONTAINER DELIVERING TO A RECEIVING CHAMBER
Ned J. Smalley, Toledo, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio
Filed Mar. 17, 1965, Ser. No. 440,358
4 Claims. (Cl. 222—207)



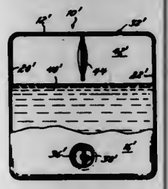
1. In a liquid dispenser, a reservoir comprising a marginally flanged basin, a dome-like diaphragm opposed to the basin and having a discharge nozzle communicating with the reservoir interior, the flange of the basin having apertures through which liquid may flow into and out of the reservoir, the flanged basin being formed of a relatively rigid plastic and the diaphragm being highly resilient and capable of axial flexing to thereby create liquid discharge pressure within the reservoir, the nozzle extending axially outward from the diaphragm and an axially movable finger-piece, encompassing the diaphragm and manually operable to flex said diaphragm.

3,298,574
GREASE GUN OR THE LIKE
Francis L. Anderson, Houston, Tex., assignor to William E. Hamm, Houston, Tex.
Filed June 6, 1966, Ser. No. 555,453
6 Claims. (Cl. 222—262)



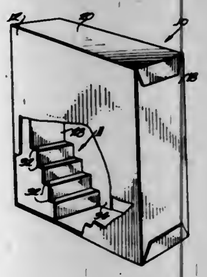
1. In apparatus for dispensing fluent material under pressure; a pressure barrel, means forming an actuating chamber and a valve chamber in the barrel, a supply cylinder for fluent material, means connecting the barrel and cylinder together at one end and formed with a discharge bore in communication with said one end of the cylinder, a plunger slidably extended into said bore for movement in one direction to close the bore against the inflow of material from the cylinder and to apply pressure to material in the bore and in the other direction to open the bore to such flow, a supply piston movably disposed in said cylinder, an actuating piston in the actuating chamber, passageway forming means connected to said actuating piston and slidably extended into said valve chamber and forming separate passageways in communication with the valve chamber and opening into said actuating chamber on opposite sides of said actuating piston, valve means in said valve chamber including a member movable to one position for coaction with said passageways in response to movement of the actuating piston in one direction to supply fluid from said valve chamber to said actuating chamber on one side of said actuating piston and to another position in response to movement of the actuating piston in the other direction for such coaction to supply fluid from the valve chamber to the actuating chamber on the other side of the actuating piston, means positioned for coaction with said valve member to allow an outflow of fluid through each of said passageways during the flow of fluid into the actuating chamber through the other of said passageways and means for supplying fluid from a source of fluid under pressure to said valve chamber.

3,298,575
DISPOSABLE DISPENSING CONTAINER
Norman Bernard Larsen, Collegeville, Pa., assignor to Matrix Laboratories, Inc., Collegeville, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1965, Ser. No. 449,212
4 Claims. (Cl. 222—399)



1. An article of manufacture comprising a lightweight non-corrosive container, means supported by and at least partially disposed within said container for introducing an inert oxygen-free gas into said container for pressurizing space above a liquid adapted to be disposed in the container, and a selectively operable discharge means supported by said container, whereby the pressure of an oxygen-free gas may assist in discharging a liquid from said container by way of said discharge means, and said means for introducing gas into said container including a semi-permeable envelope within said container, said envelope containing reactants with moisture to create a reversible reaction resulting in a gas capable of passing through the envelope.

3,298,576
CARTON HAVING AN INTEGRALLY FORMED MEASURING DEVICE THEREIN
Thomas J. Sellors, Chicago, Ill., assignor to The Finn Industries, Chicago, Ill., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 417,873
6 Claims. (Cl. 222—456)



1. A carton adapted to dispense a predetermined amount of the contents thereof, said carton being formed from a single blank of suitable sheet material which is cut and scored to provide side walls and end walls for said carton, a dispensing device integrally formed with said side walls and said end walls which comprises three walls, two of which are secured to opposite side walls of said carton, respectively, and arranged to secure the other one of said three walls in spaced relation to one of said end walls to provide a narrow discharge passage, said three walls being cut and scored so as to provide, when folded, a multi step-shaped proportioned space at the lower end thereof for holding a predetermined volume of material, said multi step-shaped proportioned end having a plurality of risers which extend progressively outwardly and having treads which are removed to provide openings into said proportioned space; and openable means formed in said carton, whereby the predetermined volume of material held within said space may be dispensed from said carton.

3,298,577
CONTAINER WITH POURING SPOUT
Walter K. Chlystun, 327 St. James Drive, Spartanburg, S.C. 29301
Filed Oct. 1, 1964, Ser. No. 400,662
1 Claim. (Cl. 222—529)



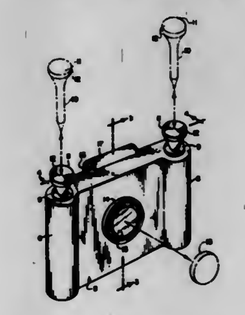
A walled receptacle suitable for packaging liquids wherein a substantial portion of the wall may be broken away and removed from a fixed part of the wall in one outward movement, comprising a receptacle wall having an opening therein through which the contents of the receptacle is emptied, a pull member fixed to said receptacle wall through a permanently secured flange about said opening for facilitating the breaking away of said portion in said outward movement, and a compressible spout means disposed interiorly of said walled receptacle and detachably secured at the top portion of said spout means in a liquid tight seal to said pull member, said compressible spout means being secured at its base portion to an annular housing member which is permanently secured to said walled receptacle by means of a second flange member disposed exteriorly of said annular housing member and secured to said wall at said opening, said pull member being detachably secured to the exterior of said wall by said permanently secured flange member with a weakened portion circumscribing at least a part of the pull member to facilitate breaking away the pull member, said pull member being contiguous with said wall with one end free to be grasped, whereby actuation of said pull member will decompress and expose said spout means with said pull member still detachably secured in a liquid tight seal to said spout means.

3,298,578
CLOTHES CARE APPARATUS
Rhea V. Shields, East Lansing, Mich. (1009 W. Adams, Macomb, Ill. 61455)
Filed Oct. 21, 1964, Ser. No. 405,560
3 Claims. (Cl. 223—67)

1. Clothes care apparatus comprising an enlarged vertically orientatable flexible bag, said bag being free of internal support structure and selectively inflatable and collapsible, said bag, when collapsed, being completely foldable, said bag being inflatable through the introduction of air under pressure, said introduced air constituting the sole internal means preventing said bag from collapsing, said bag, when inflated, generally conforming to the shape of and being receivable within a garment, means on said bag for selectively connecting said bag to a source of continuously flowing air for introduction of the air into said bag so as to inflate said bag, means for enabling a passage of the air from said bag over a substantial area thereof at a rate less than the rate of flow of air into the bag so as to permit a flow of air through said bag while maintaining the inflation thereof, and means for vertically suspending said apparatus from an overhead support, the means for enabling the passage of air from said bag consisting of a large number of small air passing perforations therein, said means for connecting said bag to a source of air including an enlarged opening through said bag, and a connector fixed within said opening and projecting therefrom for engagement with the discharge end of a conventional source of moving air, said connector including an internal passage therethrough so as to allow for a guided movement of the air into the bag, said means for vertically suspending said apparatus comprising a second enlarged opening in said bag, a hanger in supporting position in said bag, a hanging portion of said hanger projecting through said second opening for engagement with an overhead support, and means selectively sealing said second opening about said hanger so as to retain the hanger therein.

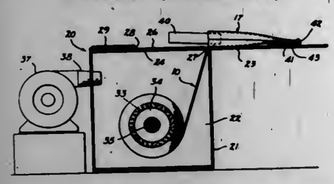


3,298,579
COMBINED TEE HOLDER AND BALL MARKER
Nervin P. Smith, 10600 SW. 72nd Court, Miami, Fla. 33156
Filed Mar. 25, 1966, Ser. No. 537,492
3 Claims. (Cl. 224—5)



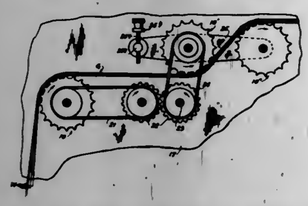
1. A supporting means for golf tees and a ball marker comprising an elongated molded housing, the ends of which are provided with cylindrical portions, having a cylindrical cavity therethrough, the cavity at its upper end being provided with inwardly extending ribs that support a yieldable rubber grommet that is apertured to frictionally support a pair of golf tees, the intermediate portion of the housing being provided with a magnetic ring and a disk carried by a cavity upon the forward side of the housing that is detachably supported by the magnet, the housing upon its rear side being provided with a metallic hook, having one end embedded into the housing and an outer end adapted to engage a belt portion of the golf player.

3,298,580
CONTAINER DELIVERY APPARATUS
Hershey Lerner, Cleveland Heights, Ohio, assignor to Automated Packaging Corporation
Original application Dec. 18, 1963, Ser. No. 331,493. Divided and this application Oct. 14, 1965, Ser. No. 495,799
2 Claims. (Cl. 225—106)



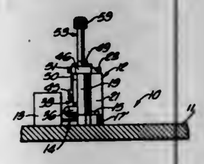
1. In combination a box, said box including inwardly folded side flaps at one end, one of said side flaps including an aperture, means sealing said side flaps together along adjacent edges so that said one end is substantially closed, said side flaps terminating short of one wall of said box to define an outlet opening, and an end flap hingedly connected to said one wall at said one end of said box, said end flap being movable between a first position in which it is folded in contact with said side flaps and a second position in which it projects outwardly of said box from said one wall to form a support, a projection mounted on said end flap and positioned to protrude through said aperture while said end flap is in said first position, an axle mounted within said box parallel to said folded side flaps and said one wall, axle supporting means adjacent to the two sides of said box that are perpendicular to said one wall, said two supports rotatably supporting said axle, a container strip disposed in said box, said strip being wound around said axle and having an end portion projection through said outlet opening, and a single opening in one wall of said box adapted to be closed by a pressurizing device.

3,298,581
METHOD AND APPARATUS FOR TURNING THE PATH OF CONTINUOUS WEBS COLLATED IN REGISTER
William F. Huck, 81 Greenway Terrace, Forest Hills, N.Y. 11375
Filed June 23, 1965, Ser. No. 466,341
17 Claims. (Cl. 226—2)



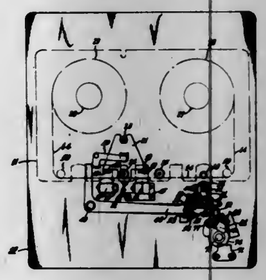
1. In a web processing machine including means for drawing a web group composed of a multiplicity of continuous patterned flexible webs superimposed in register continuously and under continuous tension through a path having an arcuate portion in which the individual webs tend to travel different distances, a rotary cylinder peripherally engaging the web group and defining and arcuate portion of said path, the periphery of said cylinder being defined by ridge elements spaced apart circumferentially and extending axially thereon and engaging the innermost web of the group, said elements presenting web-engaging crests sufficiently narrow to localize the pressure of the web group bearing against them so that the friction resulting between said webs will keep the webs from slipping longitudinally relative to one another in the regions of said crests, said periphery comprising between said elements axial recesses which are sufficiently wide and deep to permit inward bowing of portions of the inner webs of said web group between said regions.

3,298,582
FILM FEED CAMERA HAVING A DETENT MEANS
Donald B. Milliken, Altadena, Calif., granted to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457(d)
Filed May 14, 1963, Ser. No. 280,362
1 Claim. (Cl. 226—58)



In a camera, the combination comprising: a gate having a rectangular slot to guide motion picture film longitudinally therethrough; a pitman type shuttle having a tip to extend into each of a series of sprocket holes in said film to advance said film intermittently by a distance equal to that between adjacent sprocket holes; drive means to move said shuttle into and out of each successive sprocket hole, said gate slot having a recess in one wall thereof in longitudinal alignment with said sprocket holes, said recess being positioned to lie in registry with a sprocket hole when said film is stationary; a ball detent; guide means for said ball detent to hold it in alignment with said recess; and spring means to urge said ball detent into said recess, said ball detent being of a size sufficiently large to hold said film in frictional engagement with a side of said gate slot immediately surrounding said recess when a sprocket hole lies in registry therewith.

3,298,583
TAPE TRANSPORT THREADING MECHANISM HAVING MOVABLE PRESSURE ROLLER
Thomas C. Weathers and Harold Jensen, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,642
8 Claims. (Cl. 226—90)



1. In a tape tansport mechanism adapted to receive a pair of rotatable tape reeling devices with the tape being reelable between said devices including, a rotatable capstan, and a rotatable pressure roller, said capstan and pressure roller being disposed on opposite sides of said tape and being movable towards each other to engage and drive the tape therebetween, and away from each other to release the tape, the improvement comprising,

a plurality of tape guides having slots cut therein for guiding the movement of said tape, and
means for resiliently mounting the rotational axis of said pressure roller at an angle divergent from the rotational axis of said capstan; and
means for urging said pressure roller into engagement with said capstan to provide a downward sliding motion of a portion of said pressure roller along said capstan that captures and forces said tape into said tape guide slots.

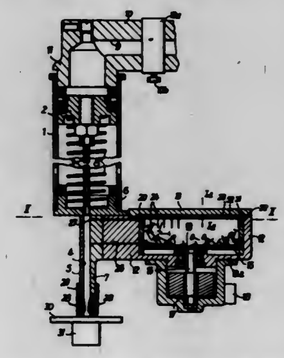
3,298,584
ROOF SHINGLE APPLYING MACHINE
Alfred V. Miller, R.R. 7, Box 244–A, Evansville, Ind. 47705; Alicia L. Miller, personal representative of said Alfred V. Miller, deceased
Filed Mar. 8, 1965, Ser. No. 437,850
8 Claims. (Cl. 227—48)



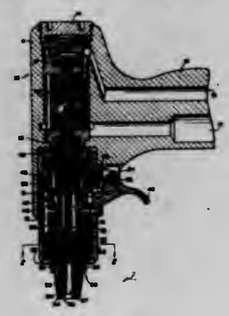
1. In a machine for applying composition roof shingles to a roof of the type having a frame, means rollingly supporting the frame on the roof, means on the frame for supporting a plurality of shingles to be applied, means supporting a shingle in position on the roof, that improvement comprising a nail dispensing mechanism on said frame for dispensing nails for the shingles and holding them in position, and hammering means carried by the frame for driving the nails through the shingle into the roof for securing the shingle in place, said hammering means including an elongated rod having a hammer head on one end thereof, means mounting the elongated rod for reciprocation on the frame, latch means releasably retaining the rod and hammer head in retracted position, and an elongated drive spring associated with the rod for spring biasing the rod and hammer head downwardly whereby release of the latch means will release the hammer head to drive a nail.

3,298,585
COMPRESSED AIR OPERABLE NAIL DRIVING DEVICE
Walter Möhrke, Wickede an der (Ruhr), and Heinz E. Bade, Garstedt, Germany, assignors to Joh. Friedrich Behrens, Ahrensburg, Germany
Continuation of application Ser. No. 204,532, June 22, 1962. This application Mar. 23, 1965, Ser. No. 442,127
Claims priority, application Germany, June 23, 1961, B 63,005
13 Claims. (Cl. 227—114)

1. A compressed air operable nail driving apparatus which comprises; a mouth piece with a discharge passage for receiving nails to be driven into work pieces, a nail driving member reciprocable in said passage for discharging nails supplied into said passage from the latter and driving the nails into work pieces, a cylindrical nail magazine for receiving the nails to be supplied to said discharge passage of said mouth piece, rotatable disc means rotatable in said magazine at one end thereof for receiving the nails in said magazine on one side of the disc means and agitating same so as to impart upon them a movement along a circular path and along the walls of said magazine in a direction away from the disc means, said magazine being provided with an end wall at the opposite end and with guiding means in axially spaced relationship with regard to said disc means for receiving and guiding the head ends only of nails agitated by said disc means, said guiding means comprising a radial surface at the opposite end spaced from said end wall sufficiently to form a radially inwardly facing groove to receive the heads of said nails, and conduit means leading in a substantially tangential direction from said groove of said guiding means to said discharge passage for establishing communication between said guiding means and said discharge passage in said mouth piece to convey nails from said guiding means to said passage and including means to support the nails in the oriented position in which they are received from said guiding means, said tangential direction being such that the nails are impelled along said conduit means by the energy of the said circular motion thereof in said magazine.



3,298,586
TOOL FOR MAKING SOLDERED WIRE WRAPPED TERMINAL CONNECTIONS
Edward L. Allen, Bradford, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 5, 1964, Ser. No. 401,587
15 Claims. (Cl. 228—2)

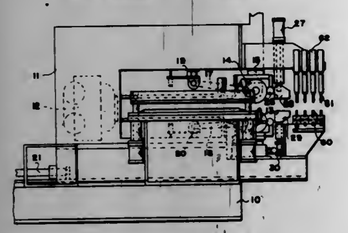


1. A power tool comprising:
(a) a casing and a motor disposed in the casing;
(b) means fixedly disposed in the casing and extending therethrough for transmitting heat for soldering;

(c) means movably disposed in the casing and operatively associated with the fixed means to provide heat for soldering by relative movement between the two means; and

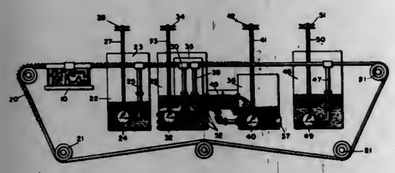
(d) the movable means being connected to the motor and moved thereby relative to the fixed means.

3,298,587
LAP SEAM WELDING MACHINE
Melvin M. Seeloff and Roy W. Pearson, Warren, Ohio, assignors to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed May 14, 1963, Ser. No. 280,209
16 Claims. (Cl. 228—5)



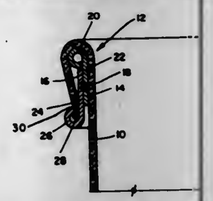
1. In apparatus for seam welding overlapped strip having a pair of spaced strip clamps and a sliding carriage mounting a pair of welding wheels movable between said clamps, the improvement comprising a pair of supports mounted on said carriage adjacent to and in following relation with said wheels during a welding traverse, a roller mounted on each of said supports at the forward end thereof for engaging opposite surfaces of the welded seam of the workpiece, and means mounted on said supports in predetermined positional relation to said rollers for trimming off excess strip material contained in the overlap of the strip and extending beyond the weld line, said roller mounted on each of said supports being operative to insure that the welded strip will be brought into precise vertical position with said trimming edge.

3,298,588
PRINTED CIRCUIT BOARD AND MACHINE FOR SOLDERING SAME
George J. Shomphe, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Jan. 23, 1964, Ser. No. 339,712
10 Claims. (Cl. 228—20)



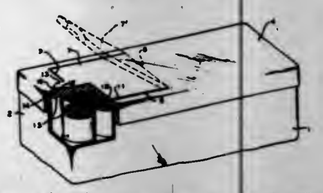
1. A spray soldering machine for soldering printed circuit boards comprising, in combination, containing means having liquid solder therein, means for spraying liquid solder disposed within said containing means, means operatively connecting said spray soldering means to said containing means, means for storing blast-off liquid, means for spraying blast-off liquid disposed within said containing means, means operatively connecting said blast-off liquid spraying means to said blast-off liquid storing means, and means for transporting circuit boards through said containing means for soldering and blast-off of excess solder.

3,298,589
ROVING CAN WITH REINFORCED TURNED FIBER TOP
William D. Angstadt, Norristown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 31, 1966, Ser. No. 539,170
6 Claims. (Cl. 229—5.5)



1. In a roving can and the like, having an open top end, reinforcement means for said open end, said reinforcement means comprising a circular band of bend-resisting material juxtaposed to the outer surface of the can in proximity to the open end thereof, said band including a top portion comprising a closed loop outwardly and downwardly rolled upon itself, a bottom loop on said band outwardly and upwardly rolled with respect to said band, the material of the can body being drawn above, rolled over said top portion, and drawn downwardly therebeyond with the free end of the material being inserted into the interior of said bottom loop and crimpedly retained therein.

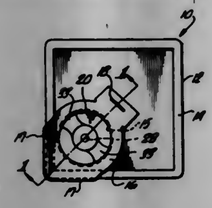
3,298,590
CIGARETTE BOX
Lew T. Gray, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 7, 1964, Ser. No. 358,027
2 Claims. (Cl. 229—7)



1. A flat oblong box for cigarettes or the like, comprising a body formed by two side wall panels and two edge wall panels; a bottom attached to the lower end of said body; a semi-rigid plastic cap attached to the upper end of said body; a recloseable, generally rectangular closure flap formed by a continuous cut line penetrating partly through the material of said cap and permanently integral at its back edge with said cap and pivotally hinged at said back edge thereto and initially integral at its other edges with said cap by reason of the web formed by unpenetrated material beneath said cut line, said web being readily and permanently ruptured when said flap is initially lifted upward, said flap having a tab projecting from the front edge of said flap and integral therewith, said cap having a complementary cut out portion to accommodate said tab when said flap is in its closed position.

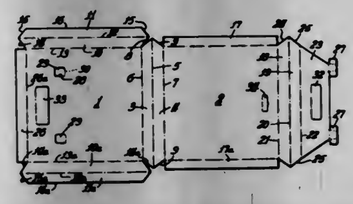
3,298,591
LIQUID CONTAINER
Max Cohen, Edward R. Elston, and Jack Rosenblum, Ontario, Calif., assignors to Inaco Enterprises, Inc., Ontario, Calif., a corporation of California
Filed Nov. 23, 1964, Ser. No. 413,077
16 Claims. (Cl. 229—7)

2. In a liquid container having an enclosed volume the combination comprising an aperture through a portion of the container communicating the enclosed volume with the exterior of the container, a sipping straw disposed in the enclosed volume and extending through the aperture to be exposed exteriorly of the container, the portion of the straw exteriorly of the container being substantially aligned with the portion of the straw within the enclosed volume, straw cover means defining a receptacle for said



exposed portion of the straw, and means for removably securing the straw cover means to the container circumferentially of the aperture so that the portion of the straw exposed exteriorly of the enclosed volume is sealed from the exterior of the container and for defining a frangible connection and seal between the container and the outer surface of the straw.

3,298,592
CARTON FOR CIRCULAR ARTICLES
Robert M. Hurley, Lexington, Mass., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,769
1 Claim. (Cl. 229—16)



In a collapsible multi-sided carton formed from a unitary blank of foldable paperboard, for holding an annular or multi-sided article, the combination of:

(a) a pair of front and rear side walls spaced from each other;

(b) end walls interconnecting said side walls at each side of the carton;

(c) each of said end walls being bellows-type, expandable and including a pair of relatively narrow elongated end wall panels hingedly connected to each other along the longitudinal center line of said end wall;

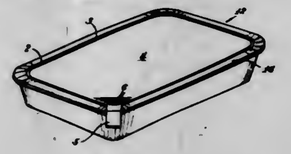
(d) one of said end walls having one panel hinged to a side edge of the rear side wall and having the other panel hinged to a closure flap which is detachably connectable to the front side wall;

(e) each of the other end walls having their panels hinged to the front and rear side walls respectively;

(f) each of said panels being trapezoidal in shape and having free end edges converging outwardly away from said hinge line;

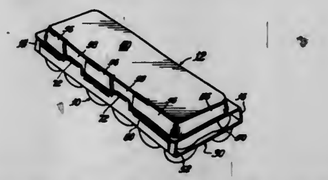
(g) each of said end wall panels having its end edges free from connection to the end edges of adjacent end wall panels, when the carton is in a flat collapsed condition, but having its end edges in substantial abutting contact with the end edges of adjacent end wall panels, when the carton is filled with a packaged article, to close the corners of the carton.

3,298,593
LAMINATED CLOSURE FOR FOOD TRAYS AND TRAYS CLOSED WITH SAME
Edward E. Stephenson, Richland, Mich., assignor, by mesne assignments, to Brown Company, a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,132
21 Claims. (Cl. 229—43)



10. A closed container with contained product comprising a container body, a laminated closure member, and means securing said closure member to said container body, said closure member comprising a sheet-form member, a transparent film, and a thermoplastic adhesive having a melting point substantially lower than that of said film securing said film to said sheet-form member, said sheet-form member having a line of weakness defining a removable panel whereby when said closure member is heated to a temperature sufficient to melt said adhesive said panel delaminates from said transparent film and may be removed to expose a window provided by said film.

3,298,594
EGG CARTON
Alexander G. Makowski, Berwyn, and Richard T. Walter, Norristown, Pa., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Aug. 11, 1965, Ser. No. 478,851
15 Claims. (Cl. 229—45)



1. A unitary egg carton having a tray and a reclosable hinged cover formed from moldable, plastic material comprising, in combination:

(a) a tray including:

(i) a plurality of contoured walls defining egg receiving pockets open at the top and arranged in two parallel rows;

(ii) said walls having adjacent edges interconnected by integrally formed partitions extending longitudinally and transversely of the tray;

(iii) a generally rectangular, relatively narrow, horizontal rim formed integrally with upper edges of said walls;

(iv) a plurality of cushioning posts formed integrally with the longitudinal and transverse partitions, at the junctures thereof between adjacent pockets, and extending above said tray rim;

(b) a pair of relatively narrow, elongated, vertically disposed, front and rear closure and hinge walls hinged at their lower edges to the front and rear edges, respectively, of said tray rim;

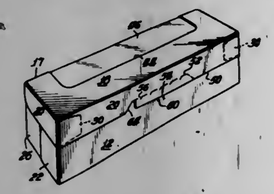
(c) a cover including:

(i) a flat top wall having opposed, vertical, front and rear walls and end walls sloping downwardly and outwardly therefrom to provide a hollow structure open at the bottom;

(ii) a generally rectangular, relatively narrow hor-

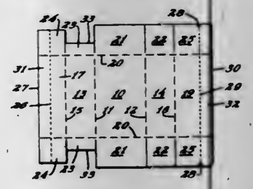
izontal rim formed integrally with lower edges of said cover vertical walls;
(d) said cover rim being hinged at its rear edge to an upper edge of said hinge wall;
(e) said cover front wall having longitudinally spaced, camming and locking portions offset laterally outwardly and inwardly from each other;
(f) said closure wall having longitudinally spaced camming and locking tabs projecting upwardly therefrom and offset laterally inwardly and outwardly from each other in alignment with outwardly and inwardly offset portions, respectively, of said cover front wall;
(g) said locking tabs having inwardly projecting shoulders presenting downwardly facing abutments engageable with front portions of said cover rim;
(h) said cover and tray rims having end portions spaced vertically from each other to define therebetween ventilating openings at opposite ends of the carton;
(i) said closure and hinge walls sloping upwardly and inwardly and having outwardly offset portions presenting generally flat, vertical, outer surfaces which extend for the major part of the length of said closure and hinge walls.

3,298,595
CARTON HAVING ECONOMICAL OPENING CONSTRUCTION
Peter Charles Collura, Waltham, Mass., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed July 23, 1965, Ser. No. 474,314
5 Claims. (Cl. 229—51)



1. A carton formed from a cut and scored blank of foldable paperboard, comprising:
(a) hingedly interconnected front, bottom and rear walls, and end closures hinged to the opposite ends of the walls forming a tray open at the top;
(b) a closure for the open top of the tray including a top wall hinged at its rear edge to the tray, and front and end panels hinged to the front and opposite end edges of the top wall and folded substantially normal thereto and held together forming a hood that overlaps the upper portion of the tray;
(c) separable locking means formed between overlapping portions of the tray and hood including a tear strip defined in the hood front panel by a weakened line of tear and bonded to the tray front wall;
(d) said bond between the tear strip and tray front wall being confined to an elongated pattern along the strip, wherein the tear strip can be readily separated from both the tray and the hood for opening the carton;
(e) the tear strip being spaced substantially equidistantly from the opposite ends of the hood front panel and being disposed immediately adjacent the free lower edge of the hood front panel to leave a gap in said panel at said free edge after removal of the tear strip;
(f) the hood front panel adjacent one end extremity of the tear strip being cut away to expose said end extremity of the tear strip for easy initial gripping thereof for opening the carton;
(g) the hood having no bonded connection to the tray other than at the tear strip.

3,298,596
EASY OPENING CARTONS
William M. Tolaas, St. Paul, Robert O. Ragan, Minneapolis, and Thomas G. Mairs, St. Paul, Minn., assignors to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Feb. 13, 1964, Ser. No. 344,620
2 Claims. (Cl. 229—51)



1. A carton including a series of panels including:
(a) a rear panel,
(b) side walls hingedly connected to opposite edges of said rear panel,
(c) closure flaps hingedly connected to said side walls,
(d) a front panel portion hingedly connected to each said side wall panel,
(e) said front panel portions being of a combined width exceeding the width of said rear panel and overlapping to form a double thickness area extending longitudinally of said front panel portions,
(f) end closure flaps hingedly connected to said rear panel and front panel portions,
(g) closure flaps connected to the front panel portions overlapping to provide inner front panel flaps and outer front panel flaps adhered together in the overlapped area,
(h) end closure flaps of the rear panel being folded into generally right angular relation to the rear panel and being of substantially the same cross-sectional shape as the carton to form an end closure,
(i) said inner front panel flaps being adhered in face contact with a portion of said rear wall closure flap,
(j) one of said side wall closure flaps adhered between, and in face contact with, a portion of said rear wall closure flap and said outer front panel flap,
(k) said one side wall closure flap having an end edge arranged to abut a side edge of a said front panel flap,
(l) weakened lines of separation extending parallel to the overlapped edges of said front panel portions and front panel flaps, said weakened lines extending substantially along the edges of the double thickness areas of said front panel portions and front panel flaps,
(m) the length of said side wall closure flap adhered between said rear wall closure flap and said outer front panel flap being substantially equal to the width of the rear panel less the width of said inner front panel flap.

3,298,597
PARENTERAL SOLUTION CONTAINER
David Bellamy, Jr., Glenview, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,528
3 Claims. (Cl. 229—55)

1. A plastic container for therapeutic substances comprising a bag-like member provided with a pharmaceutically acceptable, moisture vapor transmission resistant, pharmacologically inert layer composed of a polyhalohydrocarbon resin, and an outer thermoplastic strength providing



layer laminated to said inner layer, said inner layer completely enclosing the contents of said container, and said outer layer completely enclosing said inner layer.

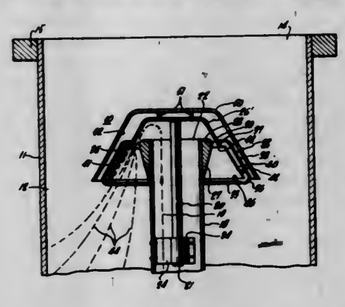
3,298,598
ENVELOPE CONSTRUCTION
Ramon H. Eberstadt, Fraccionamiento Los Alamos, Queretaro, Mexico (Providencia 523—2, Mexico City 12, Mexico)
Filed Feb. 17, 1965, Ser. No. 433,273
1 Claim. (Cl. 229—86)



In a blank for forming an envelope including a body portion rectangular in shape and a flap extending outwardly from each of the edges of said portion and adapted to be folded along such edges at fold lines so as to overlie said body portion, the improvement consisting in each of said flaps having a row of perforations extending from the contiguous fold line to the adjacent edge of the flap, said body portion being provided with rows of perforations which register with the rows of perforations on said flaps when said flaps are in the overlying position, adjacent flaps also being provided with rows of perforations similarly disposed and registering with the first mentioned perforations and said body portion perforations when said flaps are in overlying positions, the parts of said flaps and the part of said body portion on the side of said perforations when the envelope is formed providing a triangular tab at each corner for tearing away from the formed envelope, and a string underlying each fold line and having a portion adjacent each end and anchored in a tab when the envelope is formed, each string extending only to the opposite end of its contiguous fold line, whereby the envelope may be opened along any edge by removal of a tab at one end thereof, wherein each triangular tab is provided with a row of perforations extending perpendicularly from its base to its apex, between the adjacent ends of adjacent strings so that each tab may be separate to permit removal of either of said last mentioned adjacent strings without disturbing the other.

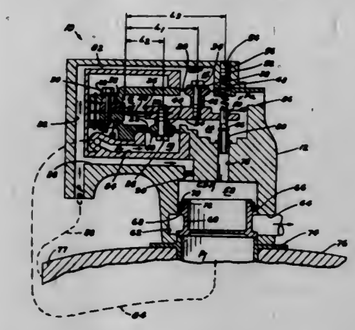
3,298,599
PUMP NOZZLE
Benjamin B. Dayton, Rochester, N.Y., assignor to Consolidated Vacuum Corporation, Rochester, N.Y., a corporation of New York
Filed June 22, 1964, Ser. No. 376,904
8 Claims. (Cl. 230—101)

1. A pumping fluid nozzle comprising a pumping fluid orifice, a wall structure guiding pumping fluid from said orifice and defining at least one recess for recirculating part of the pumping fluid flowing past said wall structure,



and means for supplying heat to said wall structure to inhibit condensation of pumping fluid in said recess.

3,298,600
PRESSURE REGULATOR
Paul F. Likavec, Detroit, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Mar. 25, 1964, Ser. No. 354,725
16 Claims. (Cl. 230—114)

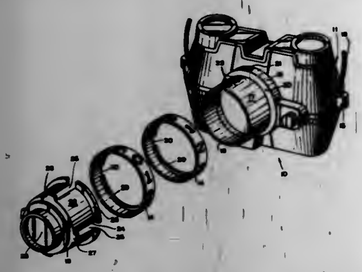


1. In a gas turbine engine compressor, a pressure regulator, comprising a computing section, a conduit communicating between said computing section and a stage of said compressor, a servo chamber, a conduit including a restriction therein communicating between the outlet of said compressor and said servo chamber, a servo valve for at times communicating between said servo chamber and said computing section, a lever pivotally mounted at its one end in said computing section and having said servo valve operatively connected intermediate the ends thereof, a piston forming a movable wall between said servo chamber and said stage of said compressor, means for pivoting said lever in response to changes in compressor discharge pressure and presure within said stage, and an opening to the atmosphere from said stage, said opening being controlled by movement of said piston therepast.

3,298,601
COMBINATION LOCKING BANK
Thomas E. Brown, Slatersville, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Aug. 17, 1965, Ser. No. 480,406
2 Claims. (Cl. 232—4)

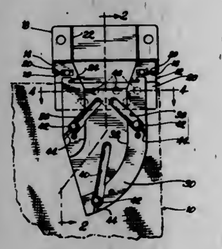
1. A combination locking device comprising a receptacle suitable for receipt of coins and the like and locking

closure means therefor, said receptacle including a cylindrical projection having an opening therethrough, said closure means comprising a closure cap and a plurality of locking rings supported thereby and positively retained thereon, said closure cap having an end wall and a cylindrical sidewall dependent therefrom, said sidewall being provided with a plurality of circumferentially spaced longitudinally directed slots dividing said sidewall into a plurality of sidewall segments integrally connected to said end wall at the top of said closure cap, said closure cap being in overlying telescoped relationship with said projection and freely laterally slidable therewith, said closure cap provided with separate ring retaining flanges outwardly projecting from the top and bottom of the sidewall thereof, said sidewall segments being inwardly deflectable at the



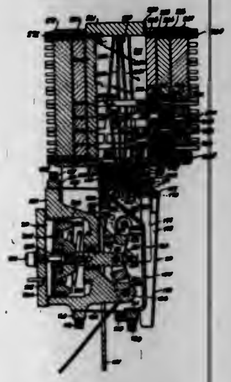
bottoms thereof thus permitting said rings to clear said bottom retaining means when said rings are initially positioned on said closure cap, said rings being in contact with said cap sidewall and independently rotatable in relationship therewith, said rings further abutting said retaining means so as to hold such against longitudinal movement in relation to the sidewall of said closure, said projection having ring locking means thereon for contacting said rings so as to prevent lateral movement of said rings relative to said projection, said rings having release means in a predetermined position thereon whereby said rings and said closure means may be slidably removed from said receptacle when said rings are in said predetermined position, and means on said receptacle separate from said aforementioned means for positioning said closure cap in nonrotatable relationship with said cylindrical projection.

3,298,602
COIN RECEPTACLE
Joseph M. Christensen, 359 W. Belden Ave., Chicago, Ill. 60614
Filed July 12, 1965, Ser. No. 471,129
8 Claims. (Cl. 232—62)



1. In a coin receiving construction wherein a coin channel and a coin slot at the upper end of the channel are provided for passing coins to a coin receptacle associated therewith, the improvement wherein said channel comprises an upper portion extending along a vertical line and a lower portion curving away from said vertical line, antipilfering means incorporated in said channel to prevent passage of coins out through said slot after they are inserted into said receptacle, said antipilfering means comprising the combination of at least three bores defined by said channel, two of said bores extending angularly upwardly from the side walls of said channel toward said plot, the third bore being defined beneath said two bores and extending upwardly, each of said bores passing beyond said side walls whereby one end of each bore is located on opposite sides of said side walls, said third bore defining a bottom end located near the end of said curved portion of the channel with the upper end of said third bore extending to a position at the lower end of the straight portion of the channel and at approximately the midpoint thereof, and balls forming stop means confined within each of said bores and freely movable along the lengths of the bores whereby inverting of the construction will result in blocking of said coin channel by said balls.

3,298,603
APPARATUS FOR TAPE RECORDING INFORMATION
Robert Z. Hague, Oradell, Howard H. Laucks, Oakland, and George J. Loos, Fort Lee, N.J., assignors to Moog, Inc., a corporation of New York
Filed Apr. 7, 1964, Ser. No. 357,962
12 Claims. (Cl. 234—114)



1. In apparatus for tape recording information including means providing a plurality of pneumatic signal conduits the respective pressures in which represent coded information, the combination therewith of tape punching means comprising support means for a tape, a plurality of punches one for each of said conduits, an individual back up rod for each of said punches, an individual bar for each of said rods and arranged at the remote end thereof and slidable transversely thereof and having a recess which is offset from said remote end when said bar is in a first position but which is adapted to receive said remote end when said bar is in a second position, and means for sliding said bar to said second position in response to pressure in the corresponding one of said conduits.

3,298,604
CALCULATING DEVICE
Theodore M. Arnold, 32718 Grand River Ave., Farmington, Mich. 48024
Filed July 19, 1965, Ser. No. 472,963
4 Claims. (Cl. 235—87)

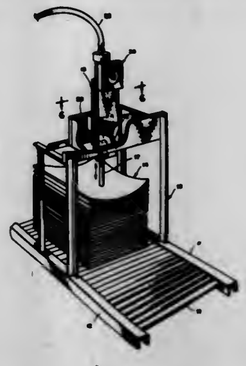
1. A calculating device for solving problems involving the elements of amount to be paid, monthly payment, interest rate and time, comprising an outer open ended tubular member having a longitudinally extending sight opening extending for at least the major part of the length of said member and an inner cylindrical member snugly slidable and rotatable in said tubular member, said outer member having a graduated longitudinal logarithmic scale of indicia thereon at one side of said sight opening designating a range of amounts to be paid, and having a second graduated longitudinal logarithmic scale of indicia thereon at the other side of said sight opening designating a range of monthly payments, said cylindrical member having a plurality of circumferentially spaced longitudinally extending graduated logarithmic scales of indicia thereon designating a selected range of time and each correlated with a selected rate of interest to provide spacing of indicia on each scale different from the spacing of indicia of other time designating scales, each time designating scale being



adapted to be positioned in register with said sight opening, all of said scales on both members having the low end thereof at the same end of the device, said inner member having a circumferential par index line adjacent one end thereof intersecting at least one of said time designating scales and having a circumferential decimal index line intersecting said time designating scales adjacent its opposite end, and spaced from said par index line a distance equal to one logarithmic cycle of one of the logarithmic scales of said outer member, one of said index lines and the time designating scale exposed at said sight opening guiding longitudinal positioning of said cylindrical member in said tubular member relative to a selected scale indicia on one of the scales on said tubular member, whereby an answer may be obtained by observing a selected point of the other scale on said tubular member which registers with a selected mark on said cylindrical member of the group consisting of said time designating scale and said index lines.

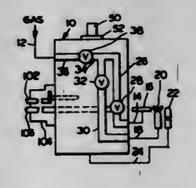
3,298,605
NEWSPAPER ACCOUNTING MECHANISM
Lynn O. Bucke, Chicago, and Le Roy K. Walsh, Arlington Heights, Ill., assignors to Field Enterprises, Inc., Chicago, Ill., a corporation of Delaware
Filed June 24, 1965, Ser. No. 466,791
3 Claims. (Cl. 235—98)

1. A device for indicating the number of folded newspapers, relative to a predetermined number, which are in a stack of newspapers, comprising: a frame, conveyor means on said frame for advancing a stack of folded newspapers, means on said frame above said conveyor for applying a predetermined pressure on the central top of said stack to compress said stack, and means responsive to said pressure-applying means for indicating the position of said pressure-applying means to report the



variance of the number of newspapers in said stack from a predetermined number.

3,298,606
THERMOSTATIC CONTROL DEVICE
Harold W. Rice, Fullerton, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,757
9 Claims. (Cl. 236—21)

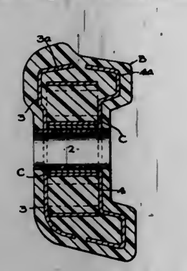


1. In a safety control device for controlling fuel flow to burner apparatus, the combination comprising valve means movable between open and closed positions, electromagnetic means including armature means adapted for movement between attracted and released positions corresponding to respective operative and inoperative conditions of the burner apparatus, latching means including a base plate biased into engagement with said valve means for movement therewith, lug means carried by said base plate, keeper means on said armature means engaged by said lug means to unite said valve means and said armature means for unitary movement, and means to release said latching means whereby said keeper means is released from said lug means and said valve means is movable independently of said armature means.

3,298,607
INSULATED RAIL JOINT
Emory L. Groff, Pompano Beach, Fla., assignor, by mesne assignments, to Poor & Company, Chicago, Ill., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,446
8 Claims. (Cl. 238—243)

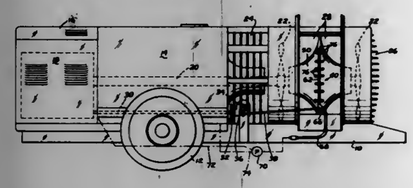
7. An insulated rail joint bar adapted to fit into the fishing portion of adjacent rail ends, comprising, a core having bolt holes, an inner plate having a middle area engaging the core and also having upper and lower flanges each having a portion inclined relative to said middle area to a degree substantially equal to the angle of the underside of the related rail heads, an outer plate

having a middle area engaging the outer face of the core and also having upper and lower flanges outwardly offset from the said outer face of the core and having a cross-sectional profile to provide ribs tending to resist



downward pressure on the bar, said inner and outer plates also having bolt holes to register with each other and the bolt holes in the core, and said core and flanges encapsulated with an insulating cover.

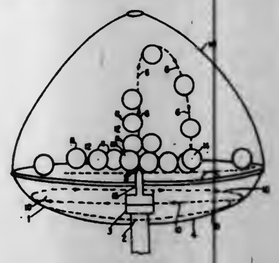
3,298,608
METHOD FOR SPRAYING
Dale E. Wolford, Ashland, Ohio, assignor to the F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio
Original application July 20, 1964, Ser. No. 383,605. Divided and this application Apr. 1, 1966, Ser. No. 539,423
6 Claims. (Cl. 239—8)



1. A method of applying treatment liquid to vegetation which comprises; generating an air blast, confining the air blast to a predetermined cross section and directing the thus confined air blast in a predetermined direction toward the vegetation to be treated, injecting treatment liquid into said air blast in the form of a spraying at spaced points distributed over the cross section of said air blast so the air blast carries the injected liquid to the vegetation, and cyclically changing the location of said points in said air blast to cause agitation of said vegetation to promote complete treatment thereof without change of direction of said air blast.

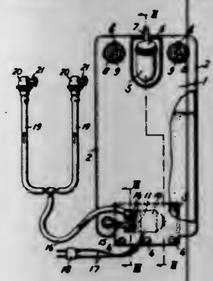
3,298,609
DEVICES FOR ENHANCING THE BEAUTY OF FOUNTAINS AND LIKE GARDEN DECORATIONS
Rabindranath K. Tiwari, % K. C. Tiwari & Sons, Tiwari Mahal, Nasik, India
Filed Sept. 17, 1964, Ser. No. 397,260
5 Claims. (Cl. 239—17)

1. A decorative fountain, comprising a bowl adapted to contain a body of liquid and to be filled thereby to a predetermined level, a plurality of decorative objects floatingly supported on the surface of said body of liquid; nozzle means provided in said bowl and having a first orifice means arranged in the region of said level to eject a first jet of liquid upwardly of said level, and a second orifice means arranged to eject a second jet of liquid into said body of liquid whereby to produce in the latter a current which carries objects floating on said body of



liquid within range of said first jet to be lifted thereby above said body of liquid.

3,298,610
CLEANING APPARATUS FOR THE FRONT WINDSHIELD GLASS OF MOTOR CARS
Koki Hirano, Fujisawa, Japan, assignor to Jidosha Denki Kogyo Kabushiki Kaishi, Yokohama, Japan, a corporation of Japan
Filed Jan. 25, 1965, Ser. No. 427,630
Claims priority, application Japan, Feb. 6, 1964, 39/7,761
7 Claims. (Cl. 239—284)

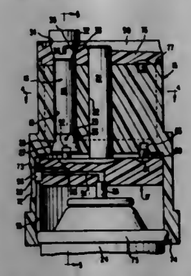


1. In apparatus for cleaning car windshields, a plastic outside bag containing a cleaning liquid, an inside comparatively small compartment within said outside bag, a pump having intake and output channels mounted within said compartment, a motor connected for driving said pump, intake means connected to the intake of said pump for sucking liquid from within said outside bag into the intake channel of said pump, output delivery means connected to the output channel of said pump, and nozzle means mounted adjacent said windshield and oriented for directing a stream of liquid upon said windshield, said output delivery means being connected to said nozzle means.

3,298,611
SPRAY HEAD WITH ROTATABLE SELECTOR
Leonard L. Marraffino, 1824 NW. 36th Court, Oakland Park, Fort Lauderdale, Fla. 33309, and Ralph J. Miolla, Jr., Fort Lauderdale, Fla.; said Miolla assignor to said Marraffino
Filed Apr. 5, 1965, Ser. No. 445,406
6 Claims. (Cl. 239—305)

1. A multi-compartmented spray head for use with an aerosol bomb containing a propellant comprising a housing having compartments for additive fluid and duct means from each compartment to separate outlet orifices in a cell in the bottom portion of said housing, a selector means rotatably mounted in said cell and having an inlet port in its outer surface, the orifices in said cell being aligned with the circle of revolution defined by rotation

of said inlet port, said inlet port being connected by a first additive duct to the bottom of said selector means, valve means mounted in said housing for vertical movement only between an up-seal position with the first additive duct at the bottom of the selector means and a down-



discharge position and having means for opening the aerosol bomb when in the down-discharge position and a propellant duct from said bomb to a discharge port means, said valve means having a second additive duct connecting said first additive duct to said discharge port means when in down-discharge position.

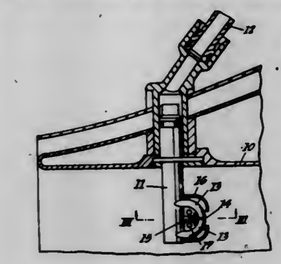
3,298,612
SNOW-MAKING UNIT
Robert L. Torrens, W.S.S. Star Rte., Liberty, N.Y. 12754
Filed Aug. 18, 1964, Ser. No. 390,301
2 Claims. (Cl. 239—402)



1. An improved artificial snow-making unit comprising
(a) an inner chamber having an outer surface and an inner surface and an end wall;
(b) a two pipe joinder junction secured to the end wall, one of the pipes receiving a stream of water and the other of the pipes receiving a stream of compressed air;
(c) a valve located in the pipe receiving the stream of water to vary the rate of flow according to humidity and temperature conditions;
(d) a dish with a centrally located dimple thereon secured to the inner surface of the inner chamber and having an outer circumference spaced therefrom, the dimple in axial alignment with the joinder junction;
(e) at least one pair of elliptical baffles angularly disposed to each other, and secured to and angularly disposed to the inner surface of the inner chamber;
(f) exit means secured to the inner chamber, comprising nozzle with means to vary the diameter of the nozzle opening according to the weather conditions, and
(g) a thermal jacket secured to the piping and nozzle and enclosing the piping, joinder junction, and nozzle section.

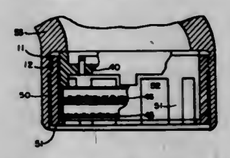
3,298,613
SPRAY NOZZLES
Sidney Connor Watkins, Burnley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Jan. 19, 1965, Ser. No. 426,550
7 Claims. (Cl. 239—421)

1. A spray nozzle comprising a pair of resilient tube means, one pair of ends of which are in communication with a cavity, to which liquid to be sprayed can be supplied under pressure, the opposite pair of ends of the tube means terminating in free ends adjacent to one another in substantially end-to-end spaced relationship defining a gap, a deflector disposed to extend across said gap and cooperating with said last-mentioned ends to define a discharge opening, so that liquid streams simultaneously supplied to said tube means impinge against one another



and are emitted through said opening, said discharge opening being elongated transversely to the direction of flow of liquid through said tube means, each of said tube means being bent intermediate its ends, so that the ends lie in different planes, and said tube means being resilient so that an increase in pressure, when the spray nozzle is in use, tends to straighten the tube means so as to enlarge the opening by separation of the adjacent free ends of the tube means.

3,298,614
MOLDED WATER AERATORS
Elie P. Aghnides, 745 5th Ave., New York, N.Y. 10021
Filed May 17, 1965, Ser. No. 470,282
11 Claims. (Cl. 239—428.5)

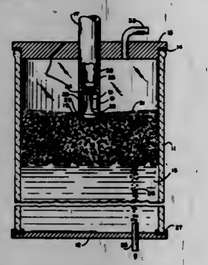


1. In a molded water aerator, a yieldable plastic body member having a thin cylindrical shell with integral external threads thereon of a diameter and size such that at least that part of the cylindrical shell having said integral threads is under substantial compression when the aerator is threaded into a metal faucet, a transverse jet-forming internal diaphragm in said body adjacent said external threads and having an outer diameter substantially equal to the inner diameter of said shell at the location of said diaphragm to provide thereby an inner support for said thin cylindrical shell when under compression from the faucet threads, screen means in said body member adjacent its downstream outlet, said body member being constructed to provide a channel for the supply of ambient air to said mixing chamber.

3,298,615
APPARATUS FOR BREAKING UP A FOAM
William H. Echols, Fort Foote Village, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 25, 1964, Ser. No. 399,417
4 Claims. (Cl. 239—514)

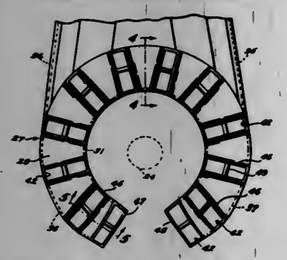
1. A nozzle through which air is forced for breaking up foam in a container containing a liquid from which foam is formed, which comprises:
a tubular member of uniform inside and outside dimensions,

said tubular member including an inlet and an outlet end,
said outlet having a beveled end with the slope of said beveled end sloping downwardly toward the outer circumference of said tubular member,
an inner plate supported in said tubular member between said inlet and said outlet normal to the axis of said tubular member,
said inner plate including a central axially aligned threaded aperture therethrough and a plurality of axially aligned air passages through said inner plate surrounding said central axially aligned aperture,
a cylindrical end plate,



a stem extending from said cylindrical end plate,
said stem including a threaded end and an arcuate end surface,
said arcuate end surface being connected with said end plate with the arc extending in the axial direction of said stem,
said threaded stem end screw-threaded into the central axially aligned aperture of said inner plate to provide an adjustable radial slit between said cylindrical end plate and said beveled end of said tubular member,
and means for connecting said inlet end of said nozzle to an air supply means.

3,298,616
FURNACE WALL MAINTENANCE NOZZLE
William T. Fleming and James P. McHugh, Cincinnati, Ohio, assignors to The Kirk & Blum Manufacturing Co., Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 17, 1964, Ser. No. 345,188
3 Claims. (Cl. 239—568)

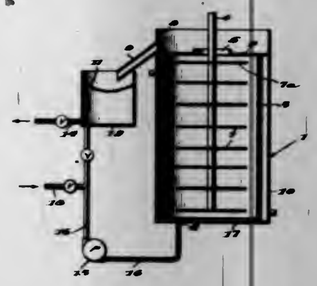


1. An air nozzle of the class described comprising a hollow, concavo-convex shaped header having a semi-circular front wall, a semi-circular rear wall spaced from the front wall, a semi-cylindrical inner wall joined at its side edges to the concaved edges of the front and rear walls, an air inlet conduit positioned centrally on the convex side of the header, a fabricated pipe section having a front wall connecting the conduit to the central convexed edge portion of the front wall, a rear pipe wall connecting the conduit to the central convexed edge portion of the rear wall, pipe side walls connecting the conduit to the outer convex edge portions of the front and rear walls, spaced apart end walls closing the confronting ends of the header, and a circular row of angularly spaced apart bosses projecting from the front wall of the header and each boss having a narrow air discharge orifice formed therethrough in communication with the interior of the header.

3,298,617
SELECTIVE SEPARATION OF HETEROGENEOUS PARTICLES
Edward G. Engel, Westfield, Ben W. Rowland, Hillside, and Andrew Torok, Parsippany, N.J., assignors to Georgia Kaolin Company, a corporation of New Jersey
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,822
2 Claims. (Cl. 241—20)

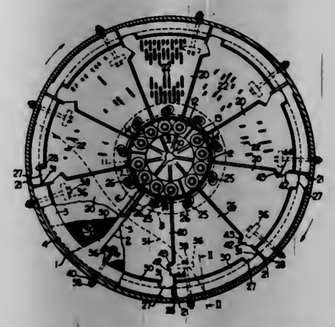
1. The method of separating finely divided heterogeneous particles of two different levels of hydrophobicity comprising the steps of making a flotation separation of the particles to provide a particle system rich in the more hydrophobic member of said heterogenous mixture and carrying a surface coating of flotation agents, mixing the resultant particles in water in the presence of the flotation agents carried thereon, grinding the mixture in a sand grinder to reduce the particle size of the solids and simultaneously agglomerate the particles of greater hydrophobicity while dispersing the particles of lesser hydrophobicity and separating the agglomerates from the resultant dispersion.

3,298,618
DISPERSING APPARATUS
Charles W. Talpey, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 317,010
3 Claims. (Cl. 241—46)



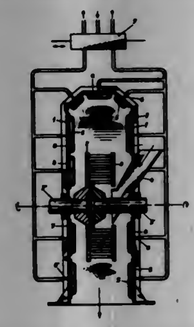
1. An apparatus for grinding and dispersing particulate solids in liquids which comprises a vertical cylindrical vessel having an inlet in the lower portion thereof, an annular suppression plate mounted on top of said vessel, the opening in said suppression plate being generally centered therein, a rotatable member extending through said opening and into said vessel generally along the cylindrical axis of said vessel, a plurality of impellers within said vessel attached to said rotatable member, the diameter of said impellers being a substantial portion of the diameter of said vessel and the uppermost impeller being spaced from about ¼ inch to about 1 inch from the lower surface of said suppression plate, said opening in said suppression plate being of a diameter which will permit a substantial flow of a dispersion of said solids in said liquids through said opening when said suppression plate and said rotatable member are in operational relationship and said diameter of said opening being a maximum of about 2 inches larger than the diameter of said rotatable member.

3,298,619
MULTIPLE COMPARTMENT GRINDING MILLS
George O. Verch, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 8, 1965, Ser. No. 437,746
8 Claims. (Cl. 241—179)



1. A segmental plate for combining with like members to define an annular wall within a cylindrical shell, said plate having oppositely facing surfaces of a configuration defining an arcuate edge subtended by a pair of radial edges converging toward each other in the direction radially inward of said arcuate edge, said configuration of said oppositely facing surfaces also defining in a first of said radial edges a notch having a flat wedge surface transverse thereto that slopes from said first radial edge progressively deeper into said plate at locations progressively more remote from said arcuate edge, and a wedge lug projecting from the second of said pair of radial edges and having a flat wedge surface transverse to said oppositely facing surfaces and said second of said radial edges, said lug flat wedge surface having a slope from said second edge projecting farther away therefrom at locations progressively more remote from said arcuate edge, said notch wedge surface and said lug wedge surface being spaced an equal distance from said arcuate edge and defining equal angles with the radial edge connected thereto.

3,298,620
CASING WITH PULSATING INTERNAL WALL FOR MILLS, MIXERS AND SIMILAR EQUIPMENT
Giovanni Maria Bertoli, Fagare, Treviso, Italy, assignor to Tecnopatent S.A., Balerna di Chiasso, Switzerland
Filed Mar. 24, 1964, Ser. No. 354,385
Claims priority, application Switzerland, Mar. 25, 1963, 3,777/63; Mar. 6, 1964, 2,873/64
20 Claims. (Cl. 241—285)



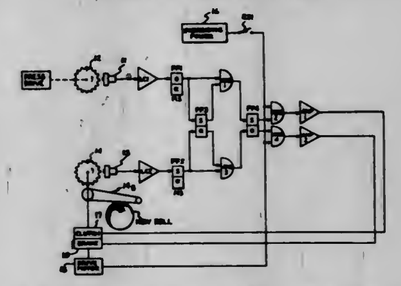
1. A stationary casing for disintegrators and the like, rotating working means contained in said casing, characterized in an elastically deformable lining made up of elastic material applied to the inner walls of said casing, said casing, preferably being so shaped as to constitute a substantially continuous and homogeneous lining on at least one definite zone of the inner surface of said casing itself, means adapted to deform said elastic lining being mounted adjacent to said casing in operative relation therewith and adapted to sever material accumulated on said lining.

3,298,621
FILAMENT WINDING APPARATUS
William D. McCoy, 15145 Leland Drive, Brookfield, Wis. 53005
Filed May 7, 1965, Ser. No. 454,069
5 Claims. (Cl. 242—18)



1. A winding apparatus comprising a drum, a plate disposed at an end of the drum, the surface of the plate adjacent the drum and the end surface of the drum providing a slot between the plate and the drum adapted to engage and retain a portion of a strand being delivered from a source of supply, means for removably securing the plate adjacent an end of the drum and means for guiding a portion of the strand being delivered from the source of supply into engaging contact with the slot provided by the surfaces of the plate and drum whereby the strand may be retained by the slot may be subsequently wound upon the drum.

3,298,622
SPEED CONTROL APPARATUS
Francis A. Raymond, Westmont, and Donald E. Bonasera, Bellwood, Ill., assignors to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Nov. 6, 1964, Ser. No. 409,450
5 Claims. (Cl. 242—58.1)



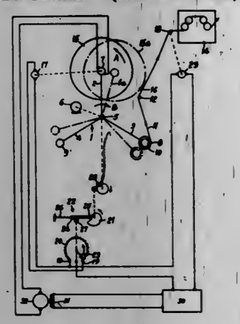
1. In apparatus for substantially matching the peripheral speed of a new roll of web material with the linear velocity of a running web being drawn from an expiring roll, the combination which comprises, a driving motor, a clutch interposed between the driving motor and the new roll for causing the new roll to be driven by the driving motor when energized, a brake associated with the new roll for braking the new roll when energized, means associated with the new roll for producing new roll timing pulses at a rate dependent upon the peripheral speed of the new roll, means associated with the running web for producing running web timing pulses at a rate dependent upon the linear velocity of the running web, means responsive to at least portions of two consecutive running web timing pulses occurring during the time inter-

val between the production of two consecutive new roll timing pulses for energizing the clutch and deenergizing the brake, and means responsive to at least portions of two consecutive new roll timing pulses occurring during the time interval between the production of two consecutive running web timing pulses for energizing the brake and deenergizing the clutch.

3,298,623
ROLLSTAND EQUIPMENT FOR UNWINDING AND REWINDING WEB MATERIAL

John William Lighton, Romford, Essex, and Leslie Frank Moate, Brentwood, Essex, England, assignors to Fuller Electric Limited, London, England, a British company

Filed Apr. 9, 1964, Ser. No. 358,484
Claims priority, application Great Britain, Apr. 10, 1963, 14,300/63
26 Claims. (Cl. 248—58.2)



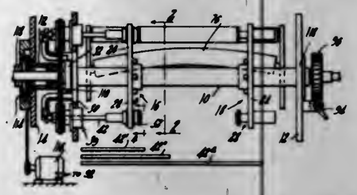
1. Rollstand equipment of the kind employed in the unwinding of reels of material in web form, said equipment comprising a rollstand having an axis, a plurality of reel supporting arms forming a unit and being mounted on said rollstand for rotation about the rollstand axis, means on each arm for supporting a reel for rotation about an axis substantially parallel to said rollstand axis, an electric motor for rotating a new reel of web material on one arm of the equipment, means for producing an electrical quantity proportional to the angular velocity of the new reel, means for rotating said unit from a reference position to a web-splicing position, means for deriving from said quantity and from the arc of travel of the new reel in moving from said reference position to said splicing position a first electrical reference quantity proportional to the peripheral velocity of the new reel, means for producing a second electrical reference quantity proportional to the linear velocity of web material being unwound from an expiring reel on another arm of the equipment, and means responsive to the two reference quantities for controlling the speed of said electric motor in order to adjust the peripheral velocity of said new reel to be substantially the same as the linear velocity of the web material being unwound from said expiring reel.

3,298,624
WINDER

Charles M. Schott, Jr., Gloucester, Mass., assignor to Gloucester Engineering Co., Inc., Gloucester, Mass., a corporation of Massachusetts

Filed July 10, 1964, Ser. No. 381,825
12 Claims. (Cl. 242—64)

1. In a winding device for use with winding cores of a predetermined diameter and variable length comprising a main support extending between two spaced apart pedestals, a pair of opposed supporting members mounted upon said main support, means associated with said supporting members to enable lengthwise adjustable movement of said supporting members relative to said main support to receive winding cores of variable length, core chuck means permanently secured during the winding operation to the ends of each of said supporting members, a winding core, said core chuck means aligned on a winding axis to receive said winding core, and means adapted to cause web to be wound on said core while supported by said core chuck means, the improvement wherein said pair of core chuck means and the corresponding parts of their supporting members, at least in one circumferential location, extend radially outwardly from the respective winding axis a distance less than the outer surface of said core, and said means for causing said web to be wound on said core including a lay-on device capable of applying pressure uniformly to a cylindrical core throughout the maximum effective width of the machine, said lay-on device adapted to press web into

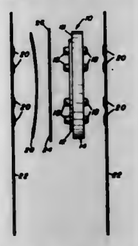


engagement with said core to improve the quality of the roll being formed thereon, said lay-on device mounted on lay-on support means to move outwardly as said roll increases in diameter, said lay-on device support means adapted to carry said lay-on device against said core at the location where said core chuck means and their support members extend outwardly less than said core from said winding axis, whereby ends of said lay-on device will lie beyond the supporting members when the supporting members are adjusted towards each other to accommodate a core of less length than the maximum length that can be accommodated by said winding device, whereby said lay-on device is adapted to lay web onto the core supported between said supporting members regardless of the adjusted distance between said supporting members and the length of the core received therebetween.

3,298,625
TAKE-UP REEL FOR MOTION-PICTURE PROJECTOR

David L. Babcock, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 15, 1965, Ser. No. 439,919
7 Claims. (Cl. 242—71.8)



6. In a take-up reel for perforated film the combination comprising:

rotatably driveable hub means having a peripheral film receiving portion;

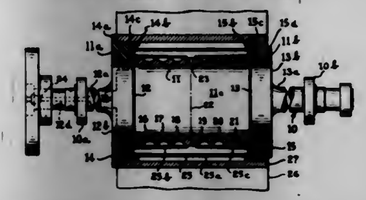
film engaging means coaxial with and rotatable with respect to said hub means, said film engaging means having teeth extending outwardly beyond the periphery of said hub means for engaging film perforations;

and means acting by pressure in an axial direction with respect to said hub means and film engaging means to provide controlled slippage therebetween upon initial engagement of film with said film engaging means.

3,298,626
EXPANSIBLE MANDREL

Richard H. Frick and Herbert H. Scholz, both of Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed July 12, 1965, Ser. No. 471,291
4 Claims. (Cl. 242—72)

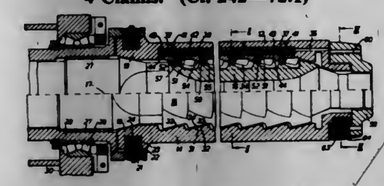


1. An expansible mandrel comprising a core having an outer surface which is cylindrical except for a series of circumferential grooves provided in said surface, a boot of tubular rubber-like material having a central portion and two flange portions which are doubled under and within said central portion from opposite ends of said central portion and each of which overlies at least one of said grooves, and means for supplying fluid under pressure into said boot so as to expand said boot radially outwardly whereby to grip a hollow core of a workpiece which latter core is disposed about the boot and to expand the boot inwardly so that said flange portions enter into said grooves and thereby provide fluid tight seals with respect to said first named core.

3,298,627
COILER MANDRELS

Clifford Sturdy, Chesterfield, and Ronald Jackman, Wales, Sheffield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England

Filed Feb. 12, 1965, Ser. No. 432,270
Claims priority, application Great Britain, Feb. 27, 1964, 8,111/64
4 Claims. (Cl. 242—72.1)

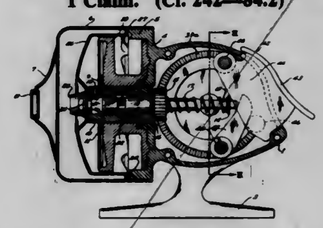


1. An expansible coiler mandrel comprising a plurality of radially movable segments carried on a shaft which is reciprocable along its axis relative to the segments, the inner surface of each segment being formed with a plurality of first wedges cooperating with corresponding wedges on the outer surface of the shaft such that movement of the shaft in one direction along its axis causes the segments to move radially outwardly, at least a first of the segments being provided with a slot and clamping means, for receiving and clamping the end of a strip to be wound on the mandrel, said clamping means received in an opening having a part formed in said shaft and a part formed in said first segment, a thrust member received in said opening, the clamping means including a radially movable jaw engaging through first resilient means with said thrust member, and received in that part of said opening formed in said first segment, mounted for radial sliding movement in the first segment, the inner surface of the thrust member being formed with a plurality of wedges, each having a greater wedge angle relative to the axis of the shaft than the first wedges, and cooperating with corresponding wedges on the outer surface of the shaft and received in that part of the opening formed in said shaft such that movement of the shaft in said one direction moves the thrust member radially outwardly through a greater distance than the first segment, said thrust member being arranged to move through a radial distance greater than the distance moved by the first segment by an amount at least equal to the thickness of the thickest strip to be clamped in the clamping means, and the clamping means includes second resilient means held in compression between the movable jaw and the first segment so as to urge the jaw inwardly relative to the segment.

3,298,628
CLOSED-FACE SPINNING REEL HAVING IMPROVED PUSH-BUTTON LINE RELEASE

Gerald D. Harrington and Henry G. Shakespeare, Kalamazoo, Mich., assignors to Shakespeare Company, Kalamazoo, Mich., a corporation of Michigan

Filed Oct. 22, 1963, Ser. No. 317,956
1 Claim. (Cl. 242—84.2)



In a spinning reel comprising a housing, a shaft mounted rotatably in said housing and being axially movable and spring-biased axially rearwardly, means for rotating said shaft, a normally stationary line spool coaxially mounted about said shaft, and line pickup means affixed to said shaft, the improvement which comprises: means for providing forward axial movement of said shaft comprising a push-button lever means pivotally mounted toward the top of said housing comprising an externally positioned push button and an internally positioned lever portion extending downwardly below the rear end of said shaft, a lever arm pivotally mounted at one end toward the bottom of said housing and having its other end directed upwardly for operatively engaging the rear end of said shaft, means on one of (a) said push-button lever means and (b) said lever arm for providing engagement with the other so arranged that said lever arm is engaged by said push-button lever means at a point intermediate the pivot point of said lever arm and its point of engagement with the end of said shaft, wherein the ratio of the distance from the pivot point of said lever arm to the point of engagement with said shaft to the distance from said pivot point to the point of engagement with said push-button lever means is in the range of about 1.1 to 1 to about 2 to 1, whereby forward axial movement of said shaft is provided by a smaller movement of said push button lever means.

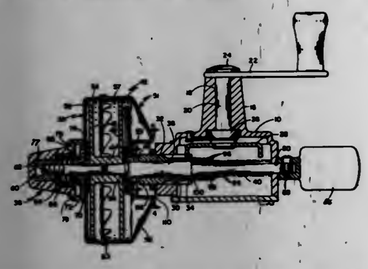
3,298,629
FISHING REEL

Edward F. Small, 188 Bay Shore Road, Hyannis, Mass. 02601

Filed May 27, 1964, Ser. No. 370,528
9 Claims. (Cl. 242—84.2)

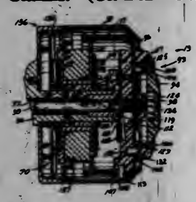
1. An open-face fishing reel comprising a support, a spindle mounted on said support for axial movement, a spool non-rotatably supported on the spindle, coaxial

means situated on the spindle at opposite ends of the spool including a flyer at the rear end of the spool rotatable on the spindle relative to the spool, said coaxial means being operable, by rotation of the flyer, to wind and retain the line on the spool, means for effecting rotation of the flyer, a manually operable lever operable to move



the spindle rearwardly relative to its support, and a latch operative to engage and hold the flyer at said rearward position, said lever being further operative to release the spindle, and means operative on further operation of the lever to return the spindle and the spool therewith to its forward position.

3,298,630
LINE WINDING MECHANISM FOR A SPINNING REEL
John K. Taggart, Perry Township, Marion County, Ind. (6801 S. Meridian St., Indianapolis, Ind. 46217)
Filed Sept. 20, 1963, Ser. No. 310,201
9 Claims. (Cl. 242—84.21)



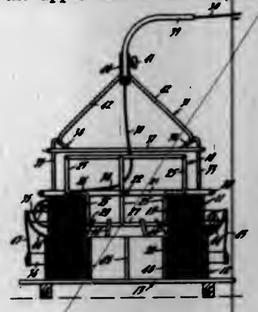
1. A spin-type reel including a spool, a spool support and a flier, said flier being relatively rotatable with respect to said spool and having a line-engaging pin radially movable with respect to said flier, comprising:

retracting means including manually actuable means mounted on the front end of the flier for moving said pin into an inoperative position; said retracting means comprising means defining a spiral camming surface engageable with a portion of said pin for retracting said pin upon preselected rotation of said retracting means relative to said flier and

escapement means including a first member on said retracting means and a second member connected to said spool support and defining an annular recess for releasably holding said pin in said inoperative position, means releasably engageable with said recess for automatically releasing said pin from said inoperative position upon relative rotation between the flier and the spool.

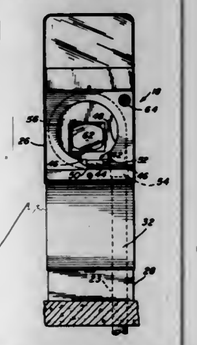
3,298,631
APPARATUS FOR PAYING OFF WIRE FROM REEL-LESS COILS
James H. Richardson, Jr., Yardley, Pa., assignor to CF & I Steel Corporation, a corporation of Colorado
Filed Mar. 25, 1965, Ser. No. 442,751
2 Claims. (Cl. 242—129)

1. A device for controlling the pay-off of wire from the exterior of a stationary reel-less supply coil having a tubular core member comprising a structure having a downwardly projecting central positioning portion insertable within and fitting the interior of the core member, means on the structure for engaging the upper surface of the core and coil to support the structure, a lower guide ring fixed to said structure and disposed above and adjacent the upper end of the coil, the diameter of



the ring being larger than the maximum diameter of the coil, a second guide ring fixed to the structure above and concentric with the lower ring, said second guide ring having a diameter corresponding approximately to the mid-diameter of the coil and disposed at an elevation above the coil corresponding approximately to the coil thickness, a directional wire guide, and means for supporting said guide centrally above the second guide ring.

3,298,632
DRIVE-IN BANKING SYSTEM
John F. Carson, Oak Lawn, Ill., assignor to Midwest Bank Builders, Inc., Evergreen Park, Ill., a corporation of Illinois
Filed Nov. 3, 1965, Ser. No. 506,243
4 Claims. (Cl. 243—19)



3. An apparatus for conveying articles, said apparatus comprising:

a first station;

a second station spaced from said first station;

a pneumatic conveyor tube means connecting said first and second stations, said tube means adapted for conveying a carrier through said tube means;

an outlet extending from said tube means at least at said first station, said outlet comprising:

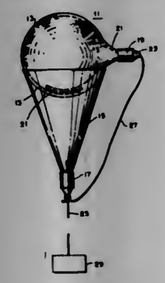
an open tubular-shaped section, said section having a vertical arcuate terminus extending for substantially 360° and terminating at a substantially horizontal position and contiguous to said tubular-shaped section whereby a carrier will be conveyed through said tube means and outlet and come to rest in a substantially horizontal position abutting said tubular-shaped section.

3,298,633.
SEPARABLE AIRCRAFT
Joseph Dastoli, 65 Yale Cleres Road, William Dehnel, 14 Vale Ave., and Leon J. Halepas, 412 W. Main St., all of Meriden, Conn. 06450
Continuation of application Ser. No. 386,910, Aug. 3, 1964. This application Sept. 10, 1965, Ser. No. 492,972
4 Claims. (Cl. 244—2)



1. A separable aircraft comprising a first long range high speed separately flyable unit having a plurality of long range power plants mounted thereon, and a second short range separately flyable unit releasably joined to said first unit, said units having complementary fuselage configurations extending substantially from the nose along a major portion of the length of said aircraft which when joined form a single unitary fuselage for said aircraft, said second unit including means tiltable through an angle of 90° for developing thrust both parallel and perpendicular to the longitudinal center line of said second unit.

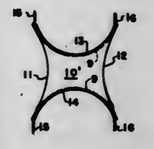
3,298,634
BALLOON
John Kantor, Clifton, and Moses Sharenow, Asbury Park, N.J., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Mar. 5, 1965, Ser. No. 437,614
2 Claims. (Cl. 244—31)



1. A high rise, rapid ascent balloon assembly comprising in combination a streamline balloon including a first spherical balloon having an appended conical tail section and a neck portion, and a second balloon of general spherical configuration entirely contained within said first spherical balloon except for the neck portion of said second balloon which extends outwardly of the neck portion of said first balloon to permit inflation of said second spherical balloon, and wherein said first spherical balloon and its appended tail section has an ultimate bursting elongation factor lesser than said second balloon whereby said first spherical balloon and its appended tail section will burst alone at a predetermined height to permit escape and the free rise of said second spherical balloon.

3,298,635
SELF-INFLATING WINGS
David T. Barish, 224 E. 38th St., New York, N.Y. 10016
Filed Mar. 3, 1964, Ser. No. 349,053
9 Claims. (Cl. 244—35)

1. A wing comprising a sheet of flexible material having a leading edge, a trailing edge and lateral sides, and catenary shaped lines continuously connected along said lateral sides, said lines extending therefrom and adapted



to support a load, said leading and trailing edges being free of catenary line support attached along substantially all of said leading and trailing edges.

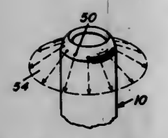
3,298,636
AIRFOIL
Eric Arnholdt, 6010 Seacliff Road, McLean, Va. 22101
Filed Jan. 15, 1965, Ser. No. 425,853
1 Claim. (Cl. 244—41)



An airfoil having conventional leading and trailing edges, the leading edge being defined by a fixed portion of said airfoil, and relatively-spaced suction and pressure surfaces extending between said edges, said pressure surface being substantially flat in a direction chordwise of the airfoil, said suction surface being of undulating conformation comprising relatively-spaced crests extending spanwise of the airfoil, with a valley between said crests, said crests being convexly curved in a chordwise direction and merging smoothly with said valley, said airfoil including means for causing a stream of fluid flowing across said undulations from the leading edge of the airfoil toward the trailing edge of the airfoil to pursue an undulating path conforming substantially to the undulating suction surface of the airfoil, said means being arranged to deliver an additional stream of fluid into and across the bottom of said valley tangentially to the curvature thereof and generally toward said trailing edge at a velocity greater than that of said stream of fluid flowing across the undulations, to thus create a reduced pressure in the valley for deflecting into said valley said stream of fluid flowing across the undulations, said means for delivering said additional stream of fluid consisting solely of a fluid passage extending through said airfoil substantially parallel to the direction of fluid flow relative to said airfoil, and formed with an enlarged mouth opening through said pressure surface and a restricted nozzle opening tangentially to said suction surface so as to direct said additional stream of fluid tangentially along said suction surface and into bottom of said valley, whereby a stream of high velocity fluid is supplied into said passage and through said nozzle.

3,298,637
ENGINE INLET PROTECTIVE SCREEN ARRANGEMENT
Shao-Tang Lee, 25 Chi-kuang St., Taichung, Taiwan, China
Original application June 15, 1964, Ser. No. 375,391. Divided and this application Sept. 22, 1965, Ser. No. 489,125
12 Claims. (Cl. 244—53)

1. For particular use as a jet engine adapted for vertical disposition in a VTOL aircraft, a jet engine comprising a forward intake end, a rear exhaust end, and means for



selectively forming a fluid barrier circumferentially about the intake end so as to exclude foreign matter therefrom.

3,298,638
AQUAFIELD
Plin Joseph Swanson, Los Angeles, Calif. (2316 Montana Ave., Santa Monica, Calif. 90403)
Filed Apr. 16, 1965, Ser. No. 448,770
1 Claim. (Cl. 244—114)



A landing area for aircraft comprising an open-top saucer-shape concrete tank enclosed by an outer cylindrical foundation wall, said tank having a floor starting at the top of said foundation wall with a portion slanting downward to a horizontal center portion, a layer of clay of substantial thickness disposed on the horizontal center portion, liquid disposed in said tank above the clay, a channel in said foundation wall and in said slanting portion of said floor and Fabridams controlling the flow of water through said channel.

3,298,639
GLIDING PARACHUTE
Helmut G. Heinrich, Eugene L. Haak, and Ronald J. Niccum, Minneapolis, Minn., and Edward A. Gimalouski, Manchester, Conn., assignors to Pioneer Parachute Company, Inc., Manchester, Conn., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 430,930
3 Claims. (Cl. 244—145)



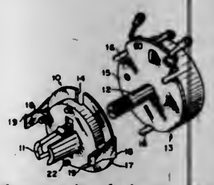
1. A parachute characterized by its ability to glide a horizontal distance after deployment which is at least equal to the altitude of deployment, comprising a canopy with a peak and a skirt and shroud lines extending downward from the skirt to at least one point for attachment of a load, the canopy having a front portion, side portions and a rear portion, the front portion being composed of a plurality of solid gores secured together throughout substantially the entire length thereof, to create a condition of attached air flow over the canopy when the parachute glides forwardly, the side portions of the canopy being provided with a plurality of rearwardly directed vent openings, and the rear portion of the canopy embodying a plurality of gores which are shorter than the gores in the side portions of the canopy and cooperate to present a permanently open rearwardly directed air discharge opening beneath the lower edges thereof through which air will be caused to flow rearwardly from the interior to the exterior of the canopy so as to exert a forwardly directed jet reaction force on the canopy.

3,298,640
PARACHUTE
Helmut G. Heinrich, Minneapolis, Minn., assignor to Pioneer Parachute Co., Inc., Manchester, Conn., a corporation of Delaware
Filed Aug. 19, 1964, Ser. No. 390,561
10 Claims. (Cl. 244—145)



1. A parachute having a seamless contoured canopy composed of knitted material wherein the strands of which the material is formed are looped in directions extending both radially and circumferentially of the canopy.

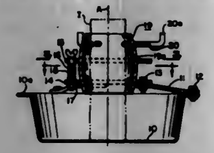
3,298,641
MOUNTING MEANS FOR VARIABLE RESISTOR
George O. Puerner, Frankfort, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Indiana
Filed Jan. 23, 1964, Ser. No. 339,648
5 Claims. (Cl. 248—27)



2. In combination, an insulative mounting means and a control means having a shaft, said mounting means for mounting said control means to a panel comprising: a molded frontispiece having resilient insulative sleeve means including a tapered bore, said shaft of said control means projecting through and engaging said tapered bore so as to form a journal, said sleeve being longitudinally split to provide a clutching effect on said shaft as said shaft is rotatably displaced, a plurality of means coupling said frontispiece to said control means, said frontispiece including a plurality of resilient insulative members having free ends, said free ends of said members adapted to penetrate and thereafter to interfit with apertures in said panel, said frontispiece including a plurality of spacer means for maintaining said control means in spaced relationship with said panel.

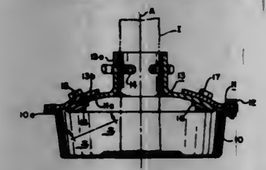
3,298,642
TREE STAND
Albert J. Taylor, 8288 Wilson Mills Road, Chesterland, Ohio 44026
Filed Apr. 8, 1965, Ser. No. 446,494
6 Claims. (Cl. 248—44)

1. A support for a tree or the like comprising a receptacle adapted to contain a nutrient, support means fixed with respect to the receptacle including a pair of rings so positioned that their openings are substantially vertically aligned, a sleeve adapted to receive therein a trunk of the tree, fastening means to secure the sleeve to said trunk, said sleeve having a convexly-curved outer surface extending substantially in a longitudinal direction and adapted to seat within the annuli of said rings, with a section of the sleeve of greatest diameter being disposed between the rings, the sleeve being effective to turn about and tilt



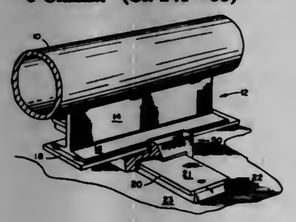
away from a central vertical axis passing through the substantially vertically aligned opening of the rings, and spring-loaded fastening means connecting the rings to urge them together thereby causing the rings frictionally to engage the outer convexly-curved surface of the sleeve and fix the position of the sleeve relative to the rings.

3,298,643
TREE STAND
Albert J. Taylor, 8288 Wilson Mills Road, Chesterland, Ohio 44026
Filed Apr. 8, 1965, Ser. No. 446,495
7 Claims. (Cl. 248—44)



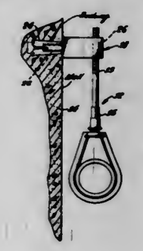
1. A support for a tree or the like comprising a base, attaching means fixed with respect to the base, a support member adapted to be secured to a tree, said attaching means and support member having overlapping curved surface portions effective to provide a relative sliding action therebetween, and means to secure the attaching means and support member together at a desired relative position of said overlapping surface portions.

3,298,644
MOVABLE BEARING SUPPORT
Philip C. Sherburne, East Providence, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,863
6 Claims. (Cl. 248—55)



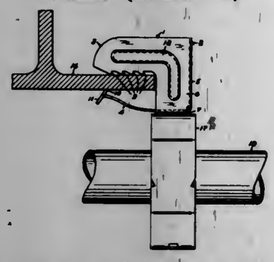
1. A support construction for a portion of a structural member subject to movement due to force imposed on said portion, said support construction comprising:
(a) an elongated member bearing plate joined to and beneath said structural member parallel to said structural member,
(I) having two ends and a smooth bearing surface facing away from said structural member,
(b) an elongated base bearing plate adapted to be joined to a support structure, said base bearing plate,
(I) being oriented at right angles to said member bearing plate,
(II) having two ends and a smooth bearing surface facing toward said structural member,
(c) a substantially saddle shaped member,
(I) including an upper slide channel slidingly containing said member bearing plate and,
(A) oriented to permit longitudinal movement of said member bearing plate,
(B) having side portions for preventing transverse movement of said member bearing plate,
(C) having a substantially uniform sheet composed essentially of polytetrafluoroethylene bonded to said upper slide channel and side portions,
(II) including a lower slide channel containing said base bearing plate,
(A) oriented at right angles to said upper slide channel to permit movement of said saddle shaped member along said base bearing plate,
(B) having side portions for preventing transverse movement of said saddle shaped member on said base bearing plate,
(C) having a substantially uniform sheet composed essentially of polytetrafluoroethylene bonded to said lower slide channel and side portions,
(d) said member bearing plate being of a length and location such that its two said ends are always outside said upper slide channel,
(e) said base bearing plate being of a length and location such that its two said ends are always outside said lower slide channel.

3,298,645
PIPE SUPPORT
Kenneth R. Morris, 10236 Old River School Road, Downey, Calif. 90241
Filed May 7, 1962, Ser. No. 192,934
3 Claims. (Cl. 248—71)



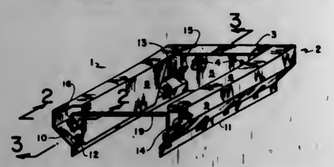
1. A pipe supporting assembly including: a support member having an elongated body portion in the form of a tubular-shaped anchor shell adapted to be supported in a concrete supporting structure on a horizontal axis, and a head portion formed integral with said body portion at one end thereof and having a threaded aperture therein extending transversely to the axis of said body portion to be vertically disposed; a threaded rod extending into said aperture in said head portion in threaded engagement therewith to extend vertically down from said head portion; and a ring-shaped pipe-supporting bracket pivotally mounted at the lower end of said threaded rod.

3,298,646
BEAM FLANGE CLAMP
Harold S. van Buren, Jr., Cambridge, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed June 10, 1966, Ser. No. 556,617
7 Claims. (Cl. 248—72)



1. A clamp adapted to engage a flanged member and to support at least one other part therefrom comprising a main body portion, a plurality of generally rigid arms extending laterally from the upper end of said body portion in spaced relationship to one another, said rigid arms having a plurality of flanged member engaging teeth extending in the general direction of the opposite end of said body portion, at least one relatively flexible spring arm extending laterally from the opposite end of said body portion and thence upwardly to a free end lying close to but spaced from said rigid arms, said spring arm having a plurality of flanged member engaging prongs disposed distally-proximate said teeth and co-operating with said teeth to form a jaw for bitingly gripping a flanged member inserted therebetween, and means on at least one of said body portion and said spring arm adapted to receive a fastener employed to secure a part to said clamp.

3,298,647
BAG HOLDER
Michael L. Shepard, Covington, Va., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed July 20, 1965, Ser. No. 473,377
5 Claims. (Cl. 248—101)



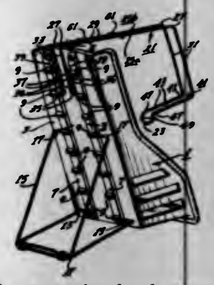
1. Apparatus of the type described comprising:
(a) A pair of frame members of generally channel-shaped cross section extending in spaced, substantially parallel relationship to each other,
(b) each of said frame members including a top wall portion and a pair of opposing side wall portions,
(c) said side wall portions converging toward each other away from said top wall portion for at least a portion of their extent to a point of minimum spacing therebetween,
(d) an elongated rod member disposed within each of said channel shaped frame members and extending longitudinally thereof,
(e) one end of each of said rod members extending outwardly of its corresponding channel shaped frame member,
(f) means providing a pivotal support for the opposite end of each of said rod members adjacent a corresponding end of each of said channel shaped frame members, and
(g) resilient means mounted on each of said rod members,
(h) the maximum cross-sectional dimension of said resilient means being greater than said minimum spacing.

3,298,648
BABY BOTTLE HOLDER
Russell J. Sepanski, 4034 S. Caulfield, Milwaukee, Wis. 53207
Filed Apr. 8, 1966, Ser. No. 541,262
3 Claims. (Cl. 248—103)



1. In a baby bottle holder the combination of a base, a post, said post being supported in upstanding position on said base, an arm extending horizontally, said arm being supported adjustably on said post, said arm having means selectively supporting a baby infant bottle or an amusement toy, said base comprising a relatively stiff lower member to provide a support means for said post and an upper member having pillow characteristics so to provide a soft cushion for a child placed there upon, said post comprising an elongated vertical member having a clip at its lower end, said clip being removably secured to an edge of said lower member of said base, said post having elongated slot means along its length, and said slot means providing adjustment means for supporting said arm.

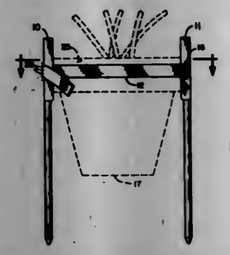
3,298,649
NURSING BOTTLE HOLDER
Mario Robert Paglee, 420 Edgemoor Drive, Moorestown, N.J. 08057
Filed Nov. 30, 1964, Ser. No. 414,620
8 Claims. (Cl. 248—103)



1. A holder for a nursing bottle comprising a pair of elongated, laterally spaced members each having an upper portion and front and hind portions depending from said upper portion, said hind portions each having means for mounting said holder on a support, and said front portions having bottle supporting parts extending rearwardly therefrom toward, but short of, said hind portions.

3,298,650
SUPPORT FOR CONTAINERS
Ellsworth Y. Mann, 5 Cypress Road, St. Paul, Minn. 92024
Filed Mar. 2, 1966, Ser. No. 531,152
6 Claims. (Cl. 248—154)

1. A support for a container comprising: a pair of pegs; a strip of flexible material fixedly attached at one end to one of the pegs, slidably linked with means on the other peg, and releasably attached at its other end to said one peg; the arrangement being such that the other peg



is movable along the strip to be positioned opposite said one peg with a container therebetween while the strip is tightened to snugly encircle and hold the container.

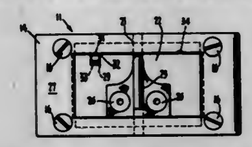
3,298,651
WALL HANGER
La Roy B. Passer, 107 Randall Ave., Port Jefferson, N.Y. 11777
Filed Mar. 7, 1966, Ser. No. 532,189
8 Claims. (Cl. 248—217)



1. A wall hanger for suspending an article from a wall said hanger being formed from a single piece of sheet metal and including a flat plate, a pair of pointed slender tines integral with the plate, each tine having a base joined to the plate, the bases of the tines being laterally spaced apart on the plate and located intermediate the ends of the plate, each tine projecting rearwardly from the plate with its base generally perpendicular to the plate and the tine having an uninterrupted sweeping arc of large radius, and the tip of each tine lying along a chord running from the tip to the base perpendicular to the plate, the tip of each tine forming an interior angle of slightly less than 90° to a plane perpendicular to the chord, the tines being laterally outwardly concave and downwardly concave whereby the tines are compoundly curved, and an upwardly facing hook integral with the plate and projecting forwardly therefrom, whereby when the hanger is fixed to a wall by the insertion of the tines into the interior of a wall as by thumb pressure the tines follow a curved path and assume a more arcuate curled configuration thereby resisting removal from the wall.

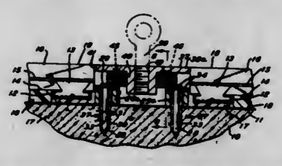
3,298,652
HOOK MOUNTING AND HOOK THEREON
Earl G. Burdick, 9435 C St., Oakland, Calif. 91761
Filed Mar. 17, 1965, Ser. No. 440,463
5 Claims. (Cl. 248—361)

1. A hook and a hook mounting for mounting said hook onto a wall surface comprising a frame structure adapted to be mounted to a wall surface about an aperture therethrough and with an upper surface of such structure being substantially parallel to the wall surface, a plate mounted to said frame structure for pivotal movement through said aperture about an axis substantially within the plane of a wall surface, a hook mounted to a



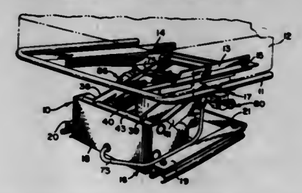
first surface of said plate, said plate being pivotal between positions in which said hook is exposed with respect to the wall surface and a position in which said hook is concealed with respect to the wall surface and a second surface of said plate opposite to said first surface lies flush with and is a continuation of said upper surface of said frame structure.

3,298,653
ANCHORING STRUCTURE FOR GYMNASIUM FLOORS
Ray E. Omholt, Berwyn, Pa., assignor to Powerlock Floors, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed June 22, 1965, Ser. No. 466,022
8 Claims. (Cl. 248—361)



1. Anchoring structure in combination with a flooring system having a concrete subfloor and superposed floor boards comprising an anchoring ring on said subfloor, members for securing said ring in position comprising a plurality of anchoring devices extending downwardly into the concrete subfloor, a floor plate in superposed relation to said ring, members for determining the elevation of said floor plate with respect to said anchoring ring, and bolts engaging said floor plate and extending downwardly into engagement with said anchoring ring.

3,298,654
VEHICLE SEAT SUPPORT
Edwin C. Dome, Lucas, Ohio, assignor to Artnell Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,703
3 Claims. (Cl. 248—400)



1. A vehicle seat support comprising a stationary base frame having a generally U-shaped base mamber, a movable frame vertically adjustable relative to said stationary base frame, said movable frame including a generally U-shaped frame member and side frame members rigidly secured thereto adapted to receive a seat frame forming part of said seat, said side frame members of said movable frame being laterally spaced to clear the exterior of said

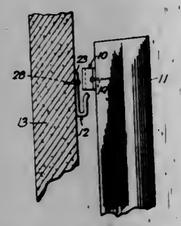
U-shaped base member when said movable frame is lowered to permit said side frame members to descend to a position below the top region of said U-shaped base member, a pair of upper connecting arms pivotally connected at opposite ends thereof to said U-shaped frame member of said movable frame and to said U-shaped base member, a pair of lower connecting arms disposed parallel to said upper arms and pivotally connected at opposite ends to said U-shaped base member and to said U-shaped frame member of said movable frame, resiliently expansible fluid spring means provided with an elastomeric housing, said spring means having an upper end mounted to said upper connecting arms and a lower end mounted to said stationary base frame, and valve means for controlling the fluid pressure within said fluid spring thereby to control the vertical adjustment of said movable frame.

3,298,655

PICTURE AND MIRROR HANGING HARDWARE

James M. Palm, Winnebago, Ill., assignor to Rockford Engineered Products Co., Rockford, Ill., a corporation of Illinois

Filed Oct. 24, 1965, Ser. No. 504,333
7 Claims. (Cl. 248—498)



1. Picture and mirror hanging hardware comprising a hook-shaped bracket part, and a generally U-shaped clip part, the hook-shaped bracket part being of appreciable length transversely in relation to its vertical dimension, and the clip part receiving the hook portion of said bracket part between the leg portions of the U, said clip part being also of appreciable length transversely in relation to its vertical dimension, and the two parts interengaged having elongated line contact on one another, one of said bracket and clip parts having longitudinally extending slots provided therein at opposite ends to receive brad, nail, or screw fastener means with latitude for lateral adjustment of the part with respect to the fasteners, the other of said bracket and clip parts having elongated slots provided therein at opposite ends in crosswise relation to the first mentioned slots adapted to receive brad, nail, or screw fastener means permitting adjustment of the last mentioned part relative to the fasteners in transverse relationship to the adjustment of the first mentioned part.

3,298,656

FOAM INSULATION FORMING FIXTURE

Thomas S. Zastrow, St. Paul, Minn., assignor to Remmele Engineering, Inc., St. Paul, Minn., a corporation of Minnesota

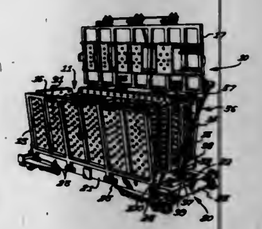
Filed Oct. 2, 1964, Ser. No. 401,107
12 Claims. (Cl. 249—152)

1. In apparatus for applying mechanical pressure to an article retained within external and internal walls defining a chamber during the frothing of a resin within said article, the article comprising a hollow structure having outer wall surfaces enclosing a core zone therebetween:

(a) an outer shell for said chamber adapted to receive said hollow core structure and having an inner wall disposed in abutting relationship to the outer wall surface of the hollow core structure of said article,

(b) means for blocking the walls of said outer shell in predetermined disposition, and

(c) internal blocking means forming internal walls within said chamber and having surfaces adapted to be disposed in abutting relationship to the inner surfaces of said hollow shell, said internal blocking means comprising a plurality of modular units, each having at least two laterally disposed pressure applying surfaces mounted for pivotal rotation between an expanded and contracted disposition, and a common drive means comprising an axially rotatable drive shaft having a drive surface disposed along the shank portion thereof, and mounted for rotation between first and second angularly spaced positions, and drive means integral with each of said modular units for moving said pressure applying surfaces between expanded and contracted disposition in response to rotation of said shaft, said modular units being adapted to be received in coupling relationship to said drive shaft only when said drive shaft is in a preselected one of said positions.

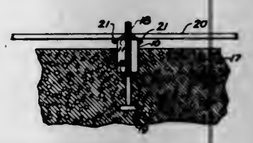


3,298,657

SPACING FORM FOR BOLTS AND THE LIKE EMBEDDED IN CONCRETE CONSTRUCTIONS

Joseph P. Dercoli, 394 Creed St., Struthers, Ohio 44471

Filed Nov. 27, 1964, Ser. No. 414,271
1 Claim. (Cl. 249—177)



The combination of an inverted bolt, the head of which is to be partially embedded in concrete, a spacing form on said bolt and a support member therefor, said spacing form consisting of a cylindrical hollow body member having apertured closed ends closely engaging said bolt inwardly from the ends thereof and fasteners attaching said cylindrical hollow body member to said support member in depending relation thereto.

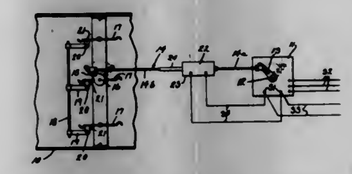
3,298,658

LENGTH-CHANGING MECHANISM FOR LINKAGE OF AN ACTUATED DEVICE

Harold W. Alyea, Waukesha, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed June 19, 1964, Ser. No. 376,386
4 Claims. (Cl. 251—11)

1. In combination, an electric motor-driven actuator, an electric circuit for said actuator, a movably-supported device to be actuated, means including connecting linkage between said actuator and device to be actuated for transmitting motion to the latter, and an electrically-operated length-varying member included in said linkage and wired



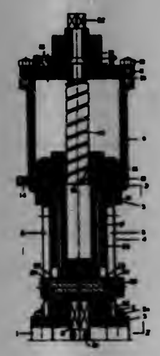
in the electric circuit for said actuator, said length-varying member including means responsive to failure in the electric circuit to said actuator for effecting a variance in the effective length of said linkage when said failure occurs.

3,298,659

FLUID POWER ACTUATED BUTTERFLY VALVE OR PLUG COCK

Douwe Janse Capedo, Prof. Bolklaan 13, Rotterdam, Netherlands

Filed Oct. 14, 1963, Ser. No. 316,046
Claims priority, application Netherlands, Dec. 21, 1962 287,127
2 Claims. (Cl. 251—14)



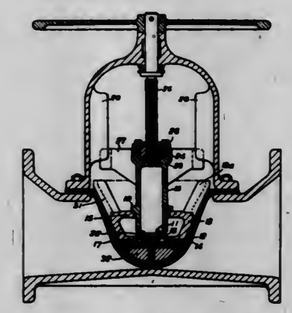
1. Means for actuating a butterfly valve comprising a valve body, a rotatable spindle for said valve, an axially movable actuating rod disposed in alignment with said rotatable spindle, a member fixedly connected to said valve body extending axially throughout its length having a slot, a cylindrical member surrounding said actuating rod mounted for movement only connected to said spindle so as to be restrained from rotation relative to said spindle having a slot having a substantially helical configuration with axial end portions concentric with said first named slot, one of said axial end portions locking said valve in closed position, said actuating rod having at least one radial projection cooperating with the edges of said two concentric slots, the helical configuration of said second named slot in said cylindrical member comprising two sections which are at an angle relative to each other, one of said sections which immediately follows the axial end portion which locks the valve in its closed position being at a smaller angle to the axis of said cylinder than the other of said helical sections, a threaded spindle mounted for rotary movement only is provided and said actuating rod is hollow and is internally threaded over part of its length to cooperate with said threaded spindle to enable the valve to be opened and closed manually.

3,298,660

DIAPHRAGM VALVE ACTUATOR CONSTRUCTION

Richard Hector Price and Charles Roy Jarrett, Cwmbran, England, assignors to Saunders Valve Company Limited, Cwmbran, England, a British company

Filed May 14, 1963, Ser. No. 280,769
Claims priority, application Great Britain, May 16, 1962, 18,905/62
3 Claims. (Cl. 251—331)



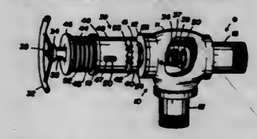
1. In a diaphragm valve having a casing with a bore therethrough and a lateral opening extending inward from a clamping surface on the casing against which the margin of the diaphragm is clamped, a seating formed in the casing, an actuator matching the diaphragm in the closed position of the valve, a stud with its head embedded in the center portion of the diaphragm and threaded shank projecting from the center portion of the diaphragm on the inside, a nut separate from but located with axial play in the actuator into which the threaded shank of the stud screws, and means to move the actuator between a position in which it directly presses the diaphragm against the seating to close the valve without the nut pressing the shank of the stud and a position in which it retracts the diaphragm to open the valve by engaging the nut, the improvement which comprises an actuator in two parts, one part with a flat inner surface to engage a flat inner surface of the center part of the diaphragm and another part which is tubular with its lower end near to the inside of the flat bottom of the first part, this part having notches at diametrically opposite zones, said nut comprising two arms projecting oppositely and radially, said arms passing loosely into said notches with the sides of the notches constituting abutment surfaces for said arms, thereby to prevent substantial relative rotation of the arms in relation to the actuator while providing axial lost motion between the nut and actuator, sufficient to prevent pressure being exerted on the stud shank when the valve is closed.

3,298,661

UNIDIRECTIONALLY SELF-LOCKING VALVE

Herbert H. Stam, P.O. Box 86, Watseka, Ill. 60970

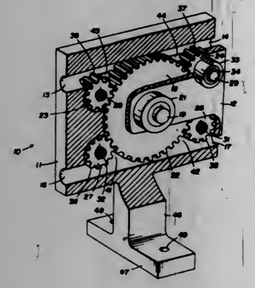
Filed Dec. 19, 1963, Ser. No. 331,670
10 Claims. (Cl. 251—104)



1. A unidirectional locking device, comprising: a first sleeve adapted to be connected to a housing and having one edge terminating in a series of teeth; a second sleeve adapted to be connected to a rotatable shaft; a third sleeve having one edge terminating in a series of teeth engageable with the teeth on said first sleeve so that when said teeth are engaged rotation of one sleeve relative to the

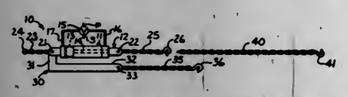
other is precluded in one direction, said third sleeve being larger in diameter than said second sleeve and being received thereover with said third sleeve being constrained to rotation with said second sleeve but longitudinally movable with respect thereto; and means for biasing said first and third sleeves toward engagement of said teeth.

3,298,662
HYDRAULIC DEVICE
Harry Frederick Heisler, 1001 Prospect Blvd., Waterloo, Iowa 50701
Filed May 28, 1964, Ser. No. 370,777
5 Claims. (Cl. 253—23)



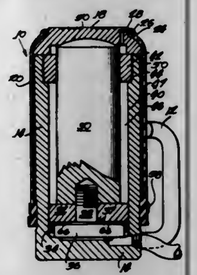
1. A hydraulic device comprising a housing, a main turbine gear supported by the housing, a first passage through the housing and in communication with the periphery of the turbine gear, a first pair of slinger gears about one third the diameter of the turbine gear rotatably supported by the housing and with their teeth in mesh with the turbine gear and mounted partially within the first passage on either side of the turbine gear, a second passage through the housing and in communication with the periphery of the turbine gear, a second pair of slinger gears about one third the diameter of the turbine gear rotatably supported by the housing and with their teeth in mesh with the turbine gear and mounted partially within the second passage on either side of the turbine gear.

3,298,663
FENCE STRETCHER
Dale H. Hextell, Rte. 1, Maple Park, Ill. 60151
Filed Nov. 30, 1965, Ser. No. 510,559
2 Claims. (Cl. 254—83)



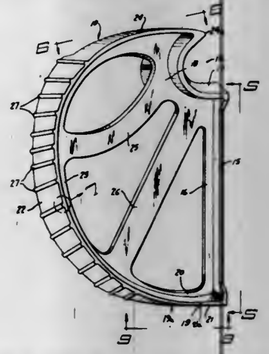
1. A fence stretcher for stretching a fence or the like having a run of chain with respect to a point of anchoring aligned therewith comprising, in combination, an actuator having a cylinder and ram providing first and second mechanical connections at the opposite ends of the actuator, means for connecting the first connection to the point of anchoring, means including a disengageable hook for connecting the second connection to the run of chain, means including a valve for applying pressure fluid to the actuator for contracting the same to pull on the chain when the valve is turned on, a stay bar anchored to the first connection and having a third connection at its end in the region of the second connection, means including a second disengageable hook for connecting the third connection to the run of chain so that when the valve is turned off the chain is sustainingly held by the second hook permitting the ram to be extended and the first hook to be rehooked at a successive position along the run of chain and so that upon repetition thereof the fence may be advanced a distance substantially exceeding the stroke of the ram.

3,298,664
SHIELDED JACK
John J. Dixon, Charlotte, N.C., assignor to Duff-Norton Company, Charlotte, N.C., a corporation of North Carolina
Filed Aug. 27, 1964, Ser. No. 392,547
12 Claims. (Cl. 254—93)



1. A no-load return shielded jack comprising a plunger, a housing for the plunger, said housing having a support base, power means for activating the plunger in one direction, a load support top plate engaging the plunger outer end, and an elastomeric sleeve exteriorly secured to the housing and at one end to the top plate, said sleeve having sufficient potential energy storage capacity to retract the plunger when deactivated, whereby the sleeve shields the plunger upon extension from the housing, and upon deactivation of the power the elasticity of the sleeve returns the plunger to its retracted position.

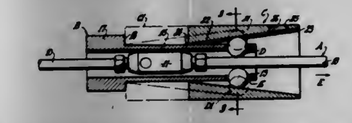
3,298,665
JACK
Kenneth A. Sieloff, Troy, Mich., assignor to Conlan-Sieloff Industries, Inc., Birmingham, Mich., a corporation of Michigan
Filed Apr. 8, 1965, Ser. No. 446,582
2 Claims. (Cl. 254—94)



1. A one-piece construction rotary jack for engagement with an axle of a vehicle, comprising:
(a) a support leg having a T-shaped cross section and comprising an outer elongated flange provided with an integral support brace;
(b) a semi-circular pivot support socket adapted to receive a vehicle axle and comprising a boundary flange which is an integral continuation of the flange on said support leg, and an arcuately curved integral support brace on the inner face of the pivot socket;

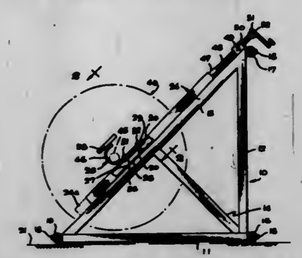
(c) one end portion of said socket adjacent the upper end of the flange on the support leg having a partially flat surface on which a vehicle axle rests when the jack is in a fully raised position;
(d) the lower end of said support leg flange being integrally connected to one end of a flange disposed perpendicularly thereto and which forms a part of a support foot that engages a supporting surface when the jack is in a fully raised position;
(e) said support foot further including an integral brace to provide a T-shaped cross section structure;
(f) said jack including an elevating means comprising an arcuately spiral shaped flange which extends from the other end of said support foot to the other end of the support socket;
(g) said arcuately spiral shaped flange being supported by an integral arcuately shaped brace which is also integral with the brace on the support socket and the support foot;
(h) the outer surface of said arcuately spiral shaped flange being provided with a plurality of evenly spaced apart, ground engaging teeth extending from said support foot to a point adjacent the support socket; and,
(i) the axle contacting surface of said support socket being disposed transverse to the vertical plane of rotation of the jack when the jack is operated to provide a vertical elevating movement to a vehicle axle when the elevating spiral shaped flange of the jack is rotated over a supporting surface to move the axle to a position vertically disposed over the support leg.

3,298,666
RECIPROCABLE CLUTCH MEANS FOR FEEDING SEWER TOOL DRIVE ROD
Charles J. Prange, Lima, Ohio, assignor to Flexible Sewer-tool Corporation, Lima, Ohio, a corporation of Ohio
Filed Sept. 24, 1965, Ser. No. 490,039
7 Claims. (Cl. 254—105)



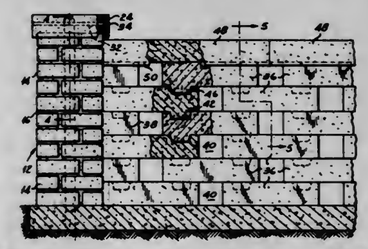
1. Apparatus for feeding sewer tool drive rod consisting of rod sections joined end-to-end by couplings, comprising, in combination: a barrel comprising a tubular body having an internal diameter such as to permit free passage of a drive rod coupling therethrough, said body having a forward end with a plurality of socket apertures providing a ball-retainer cage, and said barrel having an annular head of enlarged diameter at its rear end; an annular array of clutch balls caged in said socket apertures while movable radially inwardly into engagement with a drive rod extending through said barrel; an actuator collar encircling said barrel and said array of balls, said collar having a frusto-conical inner wall engageable against said balls with a wedging effect such as to move said balls radially inwardly into gripping engagement with said drive rod in response to a forward stroke imparted to said collar and to then impart forward feed to said drive rod in a continuation of said forward stroke, said collar having a mouth defined near the forward-end thereof, of a diameter such as to permit said balls to spread apart radially sufficiently to permit a coupling to pass through said array of balls, while retaining said balls in caged condition; and means for imparting reciprocating strokes of said collar axially of said barrel, said collar being engageable with said head at a rear limit of retracting movement, and thereby operable to transmit retracting movement to said barrel so as to reposition it.

3,298,667
REEL JACK
John M. Grantham, Canoga Park, Harry Irik, Santa Monica, and Frank L. O'Connell and Robert R. Pecheck, Los Angeles, Calif., assignors to Grantham & Oleson Electrical Contractors, Inc., Venice, Calif., a corporation of California
Filed Feb. 24, 1965, Ser. No. 434,799
3 Claims. (Cl. 254—100)



1. A reel jack for lifting and supporting a cable reel while the cable is unwound from the reel comprising:
a pair of frame members spaced apart by a distance greater than the length of said reel;
each of said frame sections having an upwardly inclined frame surface;
a movable member slidably supported on each of said inclined surfaces;
means located at the top of each frame member and connected with one of said movable members for moving said movable member along said inclined surface;
a shaft supporting member attached to each of said movable members for engaging opposite ends of a shaft inserted through said reel and for raising said reel upon operation of said moving means to permit unwinding of said cable, each of said shaft supporting members being adjustable along one of said movable members to place said shaft supporting members in engagement with the ends of said shaft prior to moving of said moving means to raise said reel;
each of said moving means comprising a hollow channel member having a portion supported by said inclined surface and containing an elongated slot; and
a plurality of guide pins projecting upwardly from said inclined surface into said slot for guiding the movement of said channel member along said inclined surface.

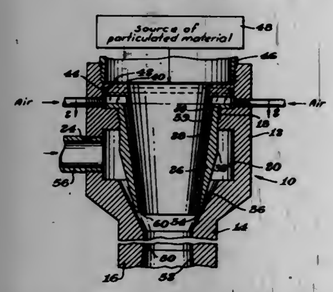
3,298,668
FENCES
Hans E. Schueren, 87 West End Ave., Pompton Plains, N.J. 07444
Filed Oct. 9, 1964, Ser. No. 402,795
2 Claims. (Cl. 256—19)



1. An ornamental block type fence comprising an upright post constructed from a plurality of courses of bonded bricks with the bricks of each course being arranged in a configuration to define an upright passage in said

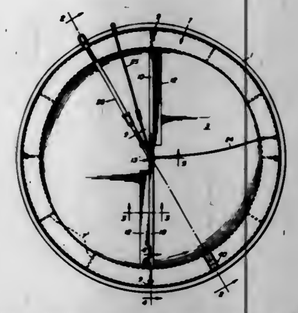
post, a plurality of superimposed courses of blocks extending laterally from said post, the blocks in each course being solid and spaced from each other with the spaces in adjacent courses being staggered to define an ornamental fence, means releasably retaining the overlapping portions of the solid blocks in locked relation, said means including a pair of depending solid projections on the bottom surface of each block, the top surface of each block having a pair of recesses therein with each recess including a continuous bottom surface, said projections and recesses having downwardly converging wall surfaces for wedging interfitting engagement, said projections and recesses together with the weight of the blocks constituting the sole means for retaining the blocks locked together, a plurality of cap slabs mounted on the uppermost course of blocks, each of said slabs having depending peripheral edge lips, said lips having downwardly diverging inner surfaces for retaining the slabs centered on the blocks, a base slab underlying said post and blocks, an anchor member anchored to said base slab and extending upwardly through the passage in the post, a cap stone on said post, and means anchoring the cap stone to said anchor member for retaining the post assembled in upright condition, said last named means including a vertical passage in the cap stone receiving the upper end of said anchor member, a transverse passage in the cap stone communicating with the vertical passage, and a locking member extending through the transverse passage and said anchor member for locking the cap stone to said anchor member, and cement plugs in each end of the transverse passage and in the upper end of the vertical passage for concealing said anchor and locking members.

3,298,669
EDUCTOR MIXING APPARATUS
Warren M. Zingg, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 23, 1964, Ser. No. 398,601
5 Claims. (Cl. 259—4)



1. Apparatus for mixing liquid and particulated material, comprising:
(A) a cup-shaped input part having an input end, an output end and side walls, a shoulder extending inwardly from said side walls intermediate of said ends, said output end having a bore therein,
(B) a Venturi mixing section having flared input and output and a constricted throat part, said Venturi mixing section having its input coupled to the output end of said input part,
(C) first and second frusto-conically shaped hollow elements, each of said frusto-conically shaped elements having side walls and an outwardly extending flange coupled to its base end, said second frusto-conically shaped element being telescoped within said first frusto-conically shaped element said frusto-conically shaped elements being disposed within said cup-shaped input part and extending into the flared input of said venturi mixing section, the flange of said first frusto-conically shaped element contacting said shoulder and the flange of said second frusto-conically shaped element contacting said flange of said first frusto-conically shaped element, the configuration of said side walls of the frusto-conically shaped elements being such that, when telescoped within one another, space exists between them along the entire length of the telescoped parts, said second frusto-conically shaped element extending further into said flared input than does the first frusto-conically shaped element,
(D) means for injecting liquid based pumpable material into said input part adjacent to said flared input of said Venturi mixing section, said first frusto-conically shaped element being spaced from said flared input part and said means for injecting liquid based pumpable material,
(E) means for injecting a gas between the side walls of said first and second frusto-conically shaped elements, and
(F) means for introducing particulated material through the hollow interior of said second frusto-conically shaped element.

3,298,670
ROTATING DIGESTIVE COVERS
Theodore R. Crom, 212 SE. 1st St., Gainesville, Fla. 32601
Filed Feb. 11, 1964, Ser. No. 344,096
30 Claims. (Cl. 259—5)

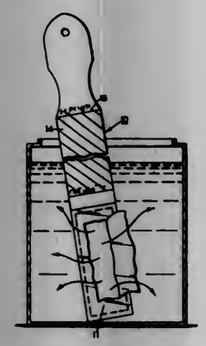


2. In combination with a digester tank, a floating tank cover, pipe means mounted on said cover for recirculating influent material, said floating tank cover adapted to be rotated whereby the influent material emitted from said pipe means agitates the scum which tends to form over substantially all areas of the surface of material within the tank.

3,298,671
COLORING AND MIXING PADDLE
Jewett Eugene Popma, 19110 SW. Kantara Way, Lake Oswego, Oreg. 97034, and Vincent J. Popma, 4415 SE. Ogden St., Portland, Oreg. 97206
Filed July 16, 1965, Ser. No. 472,648
2 Claims. (Cl. 259—114

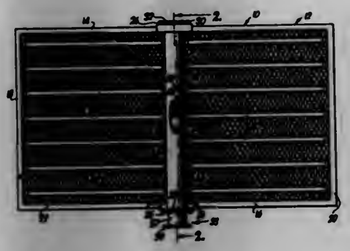
1. A pigment dispenser and mixer for use in coloring paint to a particular color, said dispenser and mixer comprising a flat, elongated, paddle-type main member having a length considerably greater than the height of the container for the paint, a sealed envelope of thin flexible waterproof material carrying a predetermined amount of pigment of a specified color, the width of said envelope not exceeding the width of said main member, said envelope secured to the face of said main member, an area on said face of said main member above said pigment envelope painted with the exact color which will

be produced by the mixing of said pigment with the particular quantity of paint intended to be colored, indicia on said main member designating the color in said area,



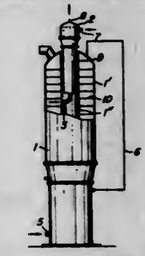
and seperate indicia on said main member specifying the exact quantity of paint for which the pigment carried on said main member is intended for use.

3,298,672
COOLING TOWER DISTRIBUTION MANIFOLD HAVING FILTER SCREEN THEREIN
Homer E. Fordyce, Kansas City, Mo., assignor to The Marley Company, Kansas City, Mo., a corporation of Delaware
Filed Dec. 7, 1964, Ser. No. 416,202
3 Claims. (Cl. 261—4)



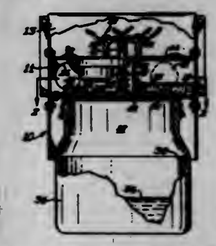
1. In a cooling tower having a casing adapted to contain a heat exchange unit, the combination with said casing of:
a tubular manifold provided with a fluid inlet and having a number of spaced, perforated, tubular headers in fluid communication therewith and extending outwardly therefrom, said manifold being adapted to receive a flow of coolant through said fluid inlet thereof and to direct said coolant into said headers;
means mounting said manifold on said casing with said headers positioned above a heat exchange unit when the latter is contained in said casing; and
means within said manifold for filtering impurities from said flow of coolant, said filtering means including a perforated tube within and extending longitudinally of said manifold, said tube being disposed across the path of flow of said coolant from said inlet to said headers and being defined by a pair of sections in end-to-end relationship, there being provided means releasably interconnecting proximal ends of said sections.

3,298,673
RECTIFICATION TOWERS
Yoshiji Muto, Ibaragi-ken, and Takenori Hyugaji and Toshio Mihara, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed May 8, 1964, Ser. No. 366,027
Claims priority, application Japan, May 9, 1963, 38/23,639
5 Claims. (Cl. 261—22)



1. A multilayer rectification column for separating air into oxygen, nitrogen, and argon which comprises a cylindrical casing composed of an upper and lower rectification zone, an inner cylindrical sleeve axially disposed in said cylindrical casing, the interior of said inner sleeve being hollow, a plurality of rectification plates mounted in multiple stages in the annular space formed by the cylindrical casing and the inner cylindrical sleeve, an argon-recovery column positioned inside the upper part of the hollow inner cylindrical sleeve, said argon-recovery column being thermally insulated from said sleeve by a heat-insulating material interposed therebetween, and means for communicating the lower portion of said argon-recovery column with the intermediate portion of the rectification zone where the argon concentration is high and the nitrogen content is low.

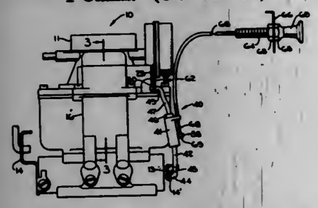
3,298,674
AIR TREATING APPARATUS
Lynn A. Gilbertson, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,285
8 Claims. (Cl. 261—30)



1. Air treating apparatus for use with a system including an air moving fan, the apparatus comprising: a housing having therein a first air inlet opening adapted for connection to the outlet side of the fan, a second air inlet opening adapted to supply ambient air to the apparatus, an air outlet opening adapted for connection to the inlet side of the fan, and a vaporizing chamber adapted to contain a quantity of vaporizable air treating material to be evaporated into a stream of air passed through the chamber; a first opening connecting said first inlet to said vaporizing chamber, a second opening connecting said second inlet to said vaporizing chamber, and a third opening connecting said vaporizing chamber to said outlet; valve means cooperable with said first, second, and third openings and movable through a plurality of positions with respect thereto to vary the effective areas of said

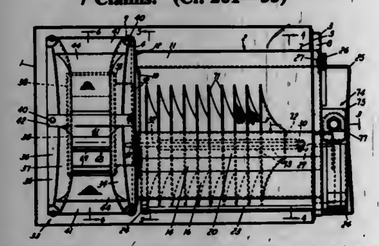
first, second and third openings to select the amount of air passed through said vaporizing chamber; and valve operating means connected in controlling relationship with said valve means and selectively operable to position said valve means to thereby determine the effectiveness of the treating apparatus, said valve means and said valve operating means being characterized in that they are operable to open said first opening only when said second opening is closed and are operable to open said second opening only when said first opening is closed.

3,298,675
ACCESSORY FOR CONTROLLING OPERATION OF CARBURETOR ACCELERATOR PUMP
George Miano, Alhambra, Calif., assignor, by mesne assignments, to Joseph Miano, Covina, Calif.
Filed Feb. 20, 1963, Ser. No. 259,807
1 Claim. (Cl. 261—34)



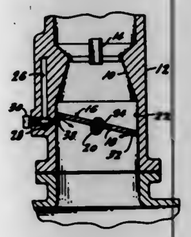
An accessory device adapted to be connected between a vehicle carburetor accelerator pump and the control linkage of the carburetor throttle valve and adjustable to activate and de-activate the accelerator pump at the driver's option and according to the need or lack of need for operating the accelerator pump, said device comprising a pair of concentrically-related axially-movable elements one of which is connectable to the accelerator pump and the other to the operating linkage for the carburetor throttle valve, and operator controlled means coupled between said pair of elements and operable by the vehicle driver while driving the vehicle to vary the effective length of the operating connection between throttle valve operating linkage and the accelerator pump and including means for holding said elements in a desired adjusted position, said operator controlled means comprising a Bowden wire assembly having a core wire encased in a flexible tubular housing anchored at one end to one of said elements and anchored at its other end to a fixed support adjacent the vehicle driver, said core wire having lost motion connection means with the other of said pair of elements and having an operating handle at its other end accessible to the vehicle driver.

3,298,676
AIR HUMIDIFIERS FOR FORCED AIR DUCTS
Robert J. Moore, Coopersville, Mich., assignor to Leigh Products, Inc., Coopersville, Mich.
Filed July 28, 1965, Ser. No. 475,503
7 Claims. (Cl. 261—35)



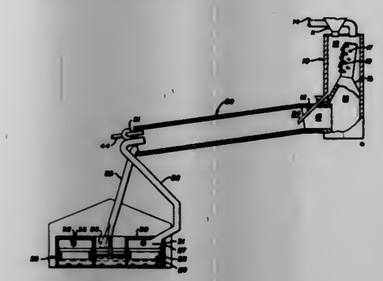
7. A humidifier for a forced air duct comprising:
an evaporator disk section having front and rear end members,
elongated connecting bars connected at their ends to said end members,
an elongated tank supported within said section with its top below the inwardly directed air flow from said bars,
a valve support on said front member,
a water supply conduit connected to said support,
a float valve assembly secured to said support and having a valve coacting with said conduit and a float positioned in said tank,
an evaporator shaft supported in longitudinally extending relation over said tank,
a plurality of evaporator elements having capillary water retaining openings and connected to said disk in spaced relation for rotation with the shaft with the lower portions of the elements extending into said tank,
an air turbine connected to said rear member and having a plurality of stator vanes disposed to receive and direct air from a plurality of directions 360° around said turbine to angularly radially inwardly of the turbine,
a rotor having a shaft rotatably supported centrally of said turbine and having rotor vanes connected thereto, and
a speed reduction gear train with a driving gear connected to said rotor shaft and a driven gear having a releasable driving connection to said evaporator shaft.

3,298,677
THROTTLE VALVE FOR INTERNAL COMBUSTION ENGINES
Rolland L. Anderson, Sylvania, Ohio, assignor to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 360,809
5 Claims. (Cl. 261—62)



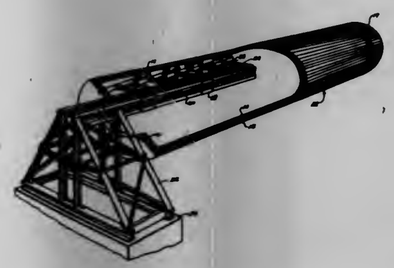
1. Fluid mixing means, comprising, in combination, a conduit having a passageway of predetermined cross section for conducting gases containing entrained droplets of liquid in a predetermined direction, a butterfly plate in said conduit rotatable about an axis passing through said passageway, said butterfly plate being rotatable in a given direction from a position substantially closing off said passageway to an open position extending generally lengthwise of said passageway, one portion of said plate on one side of said axis moving upstream while the other portion on the other side of said axis moving downstream as said valve is opened, the downstream edges of both of said portions having a plurality of spaced apart notches extending from said edges inwardly and terminating prior to reaching the center of said plate to provide air passages for communicating gases toward the center of said passageway to direct droplets of liquid leaving said plate toward the center of said passageway and provide mixing of the gases and droplets, and the upstream face of said other portion having a plurality of grooves therein communicating with the downstream edge thereof between said notches.

3,298,678
PRODUCTION OF BURNT LIME WITH A ROTARY KILN AND A ROTARY HEARTH
Warford A. Reaney, 264 W. Lincoln Ave., Delaware, Ohio 43015
Filed Sept. 22, 1964, Ser. No. 398,201
12 Claims. (Cl. 263—32)



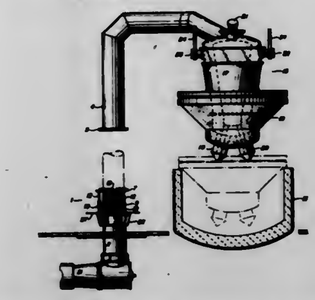
1. A process for calcining limestone which comprises the steps of
subjecting limestone particles, at a calcining temperature, to the action of a rotary kiln for a period of time sufficient to effect partial calcination, and
then subjecting the partially calcined limestone, at a calcining temperature, to the action of a rotary hearth for a period of time sufficient to effect complete calcination,
wherein the limestone particles are subjected to the action of the rotary kiln for a period of about one hour and attain a temperature of about 2000° F.

3,298,679
ROTARY KILN SCRAPER
Edgar H. Krautheim and Vaclav C. Veverka, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1964, Ser. No. 363,514
1 Claim. (Cl. 263—33)



In combination with a rotary kiln including a cylindrical metal shell with a refractory lining therein and having a feed end and a discharge end, a stationary, elongated scraper assembly disposed within the feed end of the kiln, said kiln being rotatable thereabout, said scraper assembly consisting of a truss support, said support having a plurality of equidistantly spaced rods transverse to and along the longitudinal axis thereof, an L-shaped scraper bar attached to each rod and disposed so that each bar is substantially parallel to an adjacent bar at an acute angle to the longitudinal axis of the kiln but disposed adjacent the refractory lining, and a rigid support frame adjacent the feed end of the kiln attached to the truss support anchored to an immovable object.

3,298,680
VACUUM DEGASSING APPARATUS
Richard Jablin, Bethlehem, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware
Filed June 2, 1964, Ser. No. 371,983
1 Claim. (Cl. 266—34)



Apparatus for the vacuum degassing of molten metals comprising
(a) a portable vacuum chamber,
(b) a vacuum pump,
(c) a first exhaust pipe member rigidly connected to said vacuum chamber, extending outwardly and downwardly from said vacuum chamber, and having its downstream end terminating in a horizontally disposed flange,
(d) a second exhaust pipe member rigidly connected to said vacuum pump, and having its upstream end terminating in spaced relationship to the downstream end of said first pipe member,
(e) a tubular sleeve member having its downstream end inside and in telescopic relation with the upstream end of said second exhaust pipe member and having its upstream end terminating in a horizontally disposed flange,
(f) a tubular bellows member surrounding said sleeve member and having its downstream end attached to said second exhaust pipe member and its upstream end attached to the exterior of said sleeve member and comprising an air-tight seal between said sleeve member and said second exhaust pipe member,
(g) a plurality of equally spaced fluid operated piston-cylinder jacks, means supporting said jacks in fixed relationship to said second exhaust pipe, said jacks surrounding and spaced outwardly from said belows member and supporting said flange of said tubular sleeve member,
(h) means connecting the cylinders of said jacks to a single source of fluid and a valve means for simultaneously introducing fluid below the pistons of each of said jacks raising said jacks in unison and urging said flange of said sleeve member parallel to and into air-tight relationship against said flange of said first exhaust pipe member immediately prior to degassing, said valve means adapted for locking said jacks in a fixed position during the vacuum degassing for resisting the axial compressive forces created in said first exhaust pipe member and said tubular sleeve member.

3,298,681
ROTATABLE ANGLE BLOCK TOOL
Sidney C. Youngblood, 2367 Leila Lane SE., Atlanta, Ga. 30315
Filed Feb. 20, 1964, Ser. No. 346,210
2 Claims. (Cl. 269—69)

1. A rotatable angle block tool comprising a normally horizontal substantially rectangular base having substan-

tially planar upper and undersides respectively, and a pair of opposed ends, a front wall fixedly-secured to said base adjacent the marginal edge of one of its said ends and projecting laterally from said upper side thereof, said front wall having opposed front and rear sides facing outwardly and rearwardly of said base and of which said front side is planar, an elongated substantially cylindrical housing having one of its ends integrally-connected with said front wall and its other end projecting laterally from said rear side of said front wall in spaced relation relative to said base, said housing and said front wall having an elongated continuous bore extending therethrough, an elongated substantially cylindrical shaft disposed for rotation in said bore, said shaft having a plurality of radially-extending openings formed therein, said housing being provided with an opening extending transversely therethrough intermediate the ends thereof, a pin insertable through said openings formed in said housing and said shaft and cooperating to comprise first means for holding said shaft against rotation, said housing being further provided with an elongated slot extending axially and inwardly from and at said other end of said housing, a boss projecting laterally away from said housing at opposed marginal sides of said slot, a bolt threaded into said bosses to draw the sides of said slot toward one another to fixedly-clamp adjacent portions of said shaft therebetween to form a second means for holding said shaft against rotation, said shaft having a pair of opposed ends, one of said ends of said shaft projecting beyond said front side of said base

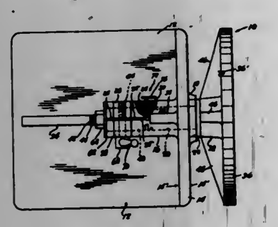
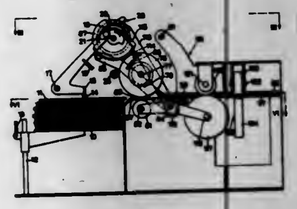


plate and its other end projecting beyond the other end of said housing, a substantially cylindrical face plate having an opposed pair of front and rear planar sides, said front planar side being perpendicular to the planar surface of the underside of said base, said face plate and said rear side thereof being integrally-connected with said one end of said shaft, a plurality of radially-spaced ribs formed integrally with said face plate and projecting laterally from said rear side thereof, each adjacent pair of ribs being disposed 45° away from each other, said face plate having a plurality of radially-spaced tapped openings formed therein extending inwardly from said front side and confronting said ribs, said face plate having a plurality of elongated transversely-extending slots formed therein, each of said slots, respectively, being disposed between each adjacent pair of ribs, each of said slots and an adjacent one of said ribs dividing said face plate into octants, said face plate having a plurality of tapped openings extending inwardly from its said front planar side and disposed within each of said octants, one of said openings, respectively, being disposed at the apex of each of said octants with the center point of each of said one openings falling on a first common circle, a plurality of said openings being disposed in a first series with the center points of said first series of openings being disposed on a second common circle having a radius greater than the radius of said first common circle, each of said center points of said first series of openings being equally-spaced from an adjacent one thereof, a plurality of said openings being disposed in a second series with the center points of said second series of openings being disposed on a third common circle having a radius greater than the radius of said second common circle, each of said center points of said second series of openings being equally-spaced from an adjacent one thereof, said first, second and third common circles being concentric with respect to one another, and each of said radially-spaced tapped openings confronting each of said ribs, respectively, having their respective center points disposed on concentric circles.

3,298,682
DOCUMENT ALIGNING AND FEEDING DEVICE
Giancarlo Gatti, Milan, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Sept. 30, 1964, Ser. No. 400,359
Claims priority, application Italy, Oct. 8, 1963, 20,865/63
7 Claims. (Cl. 271—4)



1. In a document aligning and feeding device having aligning means for urging the top document of a document stack in a predetermined direction against a stationary member to finely align said top document before being fed perpendicular to said direction, the combination comprising:

(a) taking up means for taking up a plurality of documents from the top of said stack and for urging same toward said aligning means,

(b) a pair of document separating rollers mutually contacting along a predetermined line and adapted to return all documents of said plurality but said top document to said stack,

(c) temporarily effective means for arresting said plurality of documents between said taking up means and said aligning means to preliminarily align same substantially on said line,

(d) and means for rendering ineffective said temporarily effective means after a predetermined time from the arresting instant of said plurality of documents, whereby only said top document so preliminarily aligned is urged toward said aligning means.

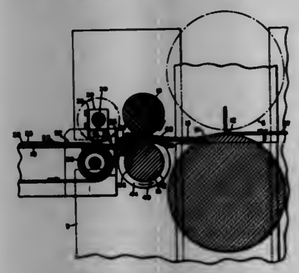
3,298,683
PAPER-JOGGING APPARATUS
William F. Stroud, McKellar, Ontario, Canada
Filed Nov. 25, 1964, Ser. No. 413,760
37 Claims. (Cl. 271—59)



1. In a jogging apparatus, rotary disc-like members comprising at least two such members undirectionally rotated about a common horizontal axis, said members having confronting planar surfaces spaced apart substantially the width of sheets to be jogged for receiving

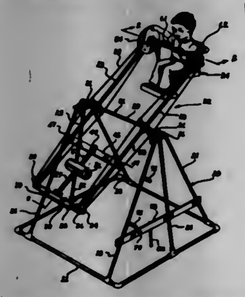
between them a continuity of consecutively fed sheets from a feeding source and acting to bring about a straightening effect thereof with an attendant delivery motion.

3,298,684
SHEET END STABILIZER AND METHOD OF USE
Charles P. Crampton, Hamilton, Ohio, assignor to The Hamilton Tool Company, Hamilton, Ohio, a corporation of Ohio
Filed Apr. 7, 1965, Ser. No. 446,302
20 Claims. (Cl. 271—69)



1. Apparatus for stacking upon a receiving surface a series of flexible sheets fed in linear succession from a source of supply, said apparatus comprising: driven means including the periphery of a rotary gripper roll for projecting said sheets in succession, with corresponding ends of successive sheets in leading position; a rotary knock-down device adjacent to the driven means aforesaid, to engage only the trailing end portions of the sheets projected by said driven means and flatten said end portions upon the receiving surface; and a sheet end stabilizer intermediate the driven means and the knock-down device, for guiding the leading ends of successive projected sheets tangentially from the gripper roll periphery.

3,298,685
COMPLETE CIRCLE SWING
James E. Williams, 6043 S. 7th St., Phoenix, Ariz. 85040
Filed Jan. 16, 1963, Ser. No. 251,939
3 Claims. (Cl. 272—33)



1. A swing of the character described comprising:

(a) a supporting frame,

(b) a swing frame,

(c) means for pivoting the swing frame intermediate its ends for 360° rotation in a vertical plane,

(d) a swing seat,

(e) a pivot suspending said swing seat from said swing frame near one end of said frame for 360° rotation with respect thereto, said swing seat being dimensioned to place the body of the child in a sitting position partly above and partly below said pivot, said seat including a slidable retaining bar aligned with the seat pivot and adapted to engage the support frame when moved longitudinally to release the child from the seat, whereby to lock the swing frame against rotation, and

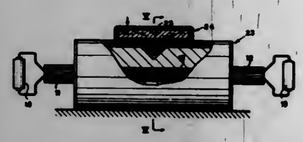
(f) a counter-balancing weight at the opposite end of said swing frame adapted to substantially exactly balance opposite ends of the swing frame, whereby pushing movement by the child against the swing frame will cause rotation thereof in one direction and pulling movement of the child against the swing frame will cause rotation in an opposite direction.

3,298,686
EXERCISE JUMP STICK
George B. Hansburg, Hansburg Acres, Walker Valley, N.Y. 12588
Filed Dec. 12, 1962, Ser. No. 244,189
1 Claim. (Cl. 272—57)



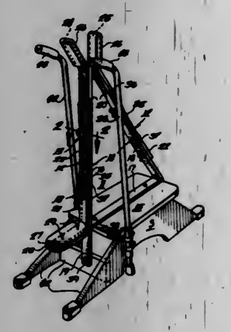
A Pogo stick comprising a pair of elongated tubular frame members formed of a relatively light structurally strong material extending substantially parallel to and spaced from each other for at least a portion of their length, a handle formed at one end of said members, a foot rest affixed to said members at a point remote from said handle, said foot rest comprising a pair of elongated juxtaposed plates extending transversely to said frame members and straddling the latter, means retaining said plates in secure engagement with said frame members, the respective ends of each pair of plates extending laterally outward from the frame members and defining foot supporting surfaces, opposed inner surfaces of said plates midway between said frame members having concave arcuate surfaces defining a guide portion, a second pair of elongated plates extending transversely between said frame members and straddling the latter between said foot rest and said handle, means retaining said second pair of plates in secure engagement with said frame members, opposed inner surfaces of said second pair of plates midway between said frame members having concave arcuate portions defining a second guide portion axially aligned with said first guide portion, each of said pairs of juxtaposed plates having a pair of strips of relatively friction free sheet material retained therebetween and lining the concave surfaces of said guide portions, a post extending slidably through each of the lines guide portions and a coil spring encompassing a portion of said post between said second pair of plates and a point remote therefrom rigid with said post, said spring reacting against said remote point and said second pair of plates, said post being formed with a sound producing element at the top thereof, and said frame members forming an abutment surface against which said sound producing element bears when said frame has moved a desired distance to actuate said sound producing element.

3,298,687
MANUALLY OPERATED THERAPEUTIC ROLLER AND EXERCISING DEVICE
William James Douglas, 43 Ave. George V, Paris, France
Filed Dec. 17, 1963, Ser. No. 331,222
Claims priority, application France, May 29, 1963, 936,372
5 Claims. (Cl. 272—60)



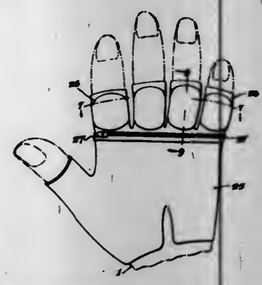
1. A versatile gymnastic apparatus comprising:
(a) a cylindrical roller having an axial passage extending therethrough;
(b) flexible material covering the rolling surface of said roller;
(c) a hollow shaft disposed within the axial passage of and supported by said roller for rotation of said shaft relative to said roller, said shaft extending from both ends of said roller to provide hand grips;
(d) a pair of sockets disposed one in each end of said shaft, each said socket having a longitudinal passage therethrough and carrying a pulley on the inner face thereof; and
(e) an extensible device disposed in part within said shaft, comprising two pulling handles and an elastic cord for each said pulling handle, each said cord having one end attached to its respective pulling handle and having its intermediate portion passing over the pulley of the socket at the other end of said shaft and having its other end secured to the socket adjacent its associated pulling handle.

3,298,688
FOOT AND HAND SPRING-RESISTANCE EXERCISING DEVICE
Walter Grzybowski, 7249 W. Olive, Chicago, Ill. 60631
Filed May 28, 1964, Ser. No. 370,855
13 Claims. (Cl. 272—83)



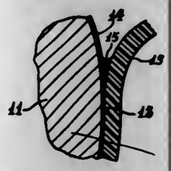
1. A physiotherapy exerciser device comprising, a frame-part, a longitudinally-slotted body-limb contact element formed with contact pad at one end, fastener means on the frame-part and extending through the slotted portion of the element and exerting a yielding frictional resistance to the reciprocation of the element on the frame-part, and spring means interposed between the frame-part and the element for normally biasing the contact element toward a retracted position on the frame-part.

3,298,689
FINGER ASSOCIATED WEIGHT MEANS FOR BOWLERS
Frank Santora, Wilmington, Del., assignor to Fundamental Research Incorporated, a corporation of Delaware
Filed Apr. 2, 1963, Ser. No. 270,089
4 Claims. (Cl. 273—54)



1. A game accessory comprising, in combination, a weight load and a weight holding means, said holding means being integral and when in use extending transversely on the hand in contact with at least two fingers in a section thereof which lies between the knuckle and the middle phalanx of said fingers and said weight load being supported by said holding means to lie on the dorsum side of the hand and the said holding means leaving the ends of the fingers uncovered, said holding means comprising at least two connected finger coverings each encasing one of said finger sections and each affording a weight holding means.

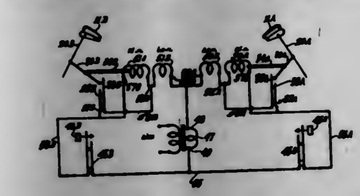
3,298,690
BOWLING PIN
Foster W. Berry, Muskegon, and Fred E. Satchell and Anton W. Rytina, Grand Haven, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed Jan. 29, 1964, Ser. No. 340,993
16 Claims. (Cl. 273—32)



8. A bowling pin of standard size and shape intended to be impacted by a bowling ball during a game of bowling, said pin comprising a hard core, a hard flexible outer cover over the core, and a fluid stress-absorbing adhesive layer between the core and cover and adhering the cover to the core.

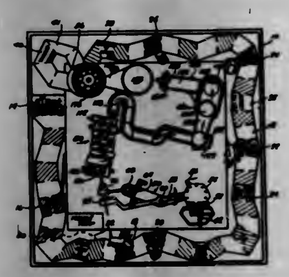
3,298,691
REPROJECTING BALL BUMPER
Harold O. Berninger and Herman L. Seiden, Chicago, Ill., assignors to Lion Manufacturing Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 14, 1963, Ser. No. 323,660
4 Claims. (Cl. 273—129)

1. A reprojecting type ball bumper including a movable bumper member adapted to be engaged by a ball and to be moved to strike a ball, electromagnetic means energizable to move said member and having an energizing winding including a low current section and a high current section, and switch means connecting in a power circuit with said winding and effective in a first condition to render said high current winding section effectve for energization to actuate the bumper member from a first condition to a second condition in ball-striking action, and means operable responsive to movement changing the bumper member from the first to the second condition to actuate said switch means to a second condition in which the low current section of said winding is conditioned for



low current operation, said movable bumper member being arranged and constructed to be held in the second condition by said winding energized in said low current condition, and means operative to restore said movable bumper member and switch means to said first condition when said winding is in a deenergized condition.

3,298,692
GAME WITH ACTION PRODUCING COMPONENTS
Marvin I. Glass and Gordon A. Barlow, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Aug. 24, 1962, Ser. No. 219,202
3 Claims. (Cl. 273—134)



1. A game comprising a game board including a track defining a plurality of stations and having a starting point, a plurality of game pieces for movement along said track from station to station in accordance with numbers selected by lot, a cage, a support for said cage adapted to maintain said cage at an elevated position above a particular one of said stations, and means adapted to be tripped and to initiate and perform a series of actions terminating in the dropping of said cage to cause said cage to enclose any game piece which may be on said particular station.

3,298,693
DIRECTION INDICATOR FOR GOLF CLUBS
William Eisenberg, 4228 Zenith Ave. S., Minneapolis, Minn. 55422
Filed Mar. 2, 1964, Ser. No. 348,628
4 Claims. (Cl. 273—163)

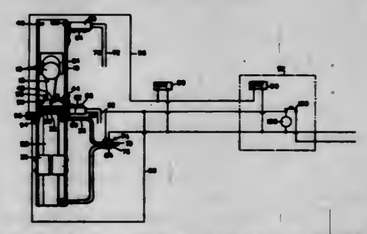
1. A practice golf device for attachment to a golf club having a shaft and a striking head, said device comprising,
(a) a pointer having a shank,
(b) a front arm and
(c) a rear arm,
(d) said arms extending across the shank of said pointer,
(e) means for attaching said arms to said pointer at different positions along the shank thereof,

(f) said arms being pivoted together adjacent the ends thereof and



(g) jaws at the pivotally connected ends of said arms adapted to clamp the device upon a club when the distance between the opposite ends of said arms is altered.

3,298,694
AUTOMATIC GOLF BALL TEEING DEVICE
Robert R. Turnau and Donald B. Poynter, Cincinnati, Ohio, assignors to Automated Golf Systems, Inc., Indian Hill, Ohio, a corporation of Ohio
Filed Nov. 26, 1963, Ser. No. 325,906
9 Claims. (Cl. 273—201)



1. Golf ball practice driving equipment comprising in combination: a multiplicity of tee units each including a tee, a carriage for the tee shiftable vertically below ground level to elevate and lower the tee to operative and inoperative positions above and below ground level, and means to poise a ball upon the tee with each movement of the tee from operative position, means responsive to a force applied to the tee by golf club impact to initiate a cycle of movement of the carriage and tee from the operative to the inoperative position and back to the operative position, a central station remote from the tee units and including a battery of counters, a second battery of counters located one at each tee unit, and means electrically associating each tee unit with the respective tee located counter and one of said remote station counters, said last named means being responsive to each successive movement of each said carriage to actuate the associated counters.

3,298,695
MANURE SPREADER
Warren H. Brackbill, Paradise, and Charles A. Smith, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,597
6 Claims. (Cl. 275—8)



1. Apparatus for removably attaching a fine material pan to a manure spreader or the like wherein said spreader has sides, a bottom and an open rear discharge end, said

sides having extensions projecting rearwardly beyond said bottom, rotary scattering mechanism journalled on said extensions for rotation relative thereto about a horizontal transverse axis, and wherein said pan has a leading end and a trailing end and is adapted to extend rearwardly from said spreader bottom in underlying relation to said rotary scattering mechanism, said attaching apparatus comprising a pivot member, an open socket member, means mounting one of said members on said pan adjacent the trailing end thereof, means mounting the other of said members on one of said spreader side extensions rearwardly of said scattering mechanism axis, said pivot member being movable into and out of engagement with said open socket member upon movement of said pan forwardly and rearwardly relative to said extensions, said pan being vertically swingable about said pivot member between a raised operative position and a lowered inoperative position when the pivot member is in engagement with said socket member, latch means operable when said pan is in raised position to connect said pan to said one of said side extensions forwardly of said open socket member and prevent both swinging movement of said pan relative to said pivot member and rearward movement of said pan relative to said side extensions, and manually operable means for releasing said latch means to free said pan for both vertical swinging movement downwardly to said inoperative position and rearward movement relative to said side extensions to disengage said pivot member from said socket member.

3,298,696
APPARATUS FOR SPREADING OR SOWING GRANULAR MATERIALS

Herbert Vissers, Nieuw Vennep, Netherlands, assignor to Landbouwwerktuigen- en Machinefabriek H. Vissers N.V., Nieuw Vennep, Netherlands, a company of Netherlands

Original application Aug. 3, 1964, Ser. No. 387,050. Divided and this application Apr. 12, 1966, Ser. No. 542,156
Claims priority, application Netherlands, Oct. 18, 1963, 299,423
3 Claims. (Cl. 275—15)

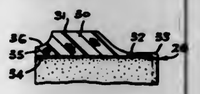


1. An improved ratchet drive mechanism for an apparatus for spreading or sowing granular material of the type having a trough-shaped storage hopper supported by a travelling frame, an outlet in the bottom of said hopper, a spreading member movable under said outlet, and a shaft with a conveying screw for feeding material to the hopper outlet, comprising a toothed ratchet wheel secured to said conveying screw shaft, an arm having one end rotatable on said shaft, a pawl pivoted on said arm in driving engagement with the teeth of the ratchet wheel, and driving means including a crank pin pivotally connected to one end of a driving rod, a fluid filled cylinder and piston interposed between the other end of said rod and said arm, one of said cylinder and piston being secured to said rod and the other being pivotally connected to said arm, and a flow channel communicating the cylinder spaces at both sides of the piston.

3,298,697
GASKET FOR CONCRETE CONDUITS

Burl B. Ohnstad, South Gate, Calif., assignor to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California

Filed Aug. 5, 1963, Ser. No. 299,755
4 Claims. (Cl. 277—11)

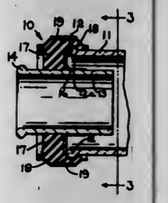


1. A gasket for use in providing a liquid-tight joint between the bell and spigot ends of adjoining concrete conduit sections, comprising an annular body of a plastics characterized by a closed-cell foam-type structure, said body having a substantially straight inner surface parallel to its axis, having a main portion of relatively thick cross-section with a substantially straight outer surface parallel to its axis, said body having a relatively long end section at one end of said main portion terminating in a bead, said body having a short end section at its other end of a thickness intermediate that of the relatively long end section and the main section.

3,298,698
PIPE COUPLING FOR JOINING PIPE SECTIONS OF VARYING SIZE

Harry F. Condon, Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Apr. 27, 1964, Ser. No. 362,615
10 Claims. (Cl. 277—101)

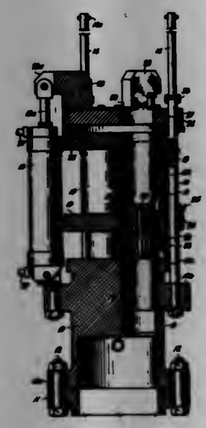


1. A coupling device adapted to connect two pipes of diverse size, the smaller being telescoped into the larger, said device comprising a sealing gasket of J-shaped cross-sectional configuration with a central flange portion extending in an outward direction perpendicular with respect to the longitudinal axis of the coupling device and terminating with a beveled end portion that extends in the radial direction and in the axial direction said end portion abutting and extending toward and radially beyond the end of said larger pipe, a tapered tubular portion attached to the radially extending flange portion with the end thereof terminating within the cavity formed by said larger pipe, an annular compression gasket of M-shaped cross-sectional configuration adapted to retain said sealing gasket within a half-section of its bore so that the central flange portion of said sealing gasket is in approximate radial alignment with the center of said compression gasket, the other half-section of said compression gasket extending radially inward so that it closely surrounds the smaller pipe, and means for joining said pipes in telescoped sealed relation including a tubular clamp the inside surface being complemental to the exterior of said compression gasket so that when a constricting force is applied to the exterior of said compression gasket the resulting radially inward force of the depressed control portion of the compression gasket will urge the radially extending portion of said sealing gasket into a sealing relationship with the exterior of said smaller pipe and the end of said larger pipe.

3,298,699
PRESSURE CONTROL DEVICE

Jesse Elmer Hall, Sr., Weatherford, Tex., assignor, by mesne assignments, to Trojan, Inc., Panama, Panama, a corporation of Panama

Filed Dec. 12, 1963, Ser. No. 330,151
3 Claims. (Cl. 277—103)



1. A pressure control device for well head pressures comprising

a body attached to the upper end of a well casing, said body having a plurality of holes therethrough parallel to its axis for the passage of production tubing,

compressible sealing elements seated in the holes of said body, having an inside diameter sized to permit the passage of the tubing couplings,

a vertically movable ram assembly with longitudinal passageways aligned with holes of the body and annular ram extensions at the lower ends of the passageways whose cross sections correspond substantially to those of the compressible sealing elements,

cylindrical telescoping members vertically movable in the assembly passageways, whereby the lower ends of said telescoping members and the annular ram extensions form plungers for compressing the sealing elements,

fluid pressure cylinders in a fluid pressure system attached at their lower ends to the body and at their upper ends to the ram assembly,

whereby the ram assembly is moved downwardly to compress the sealing elements against the tubing in pressure-tight relationship and fastening means between the body and ram assembly for holding them in said pressure-tight relationship.

3,298,700
HOLDER

George B. Vogeleer, Hopewell, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

Filed Nov. 27, 1963, Ser. No. 326,554
4 Claims. (Cl. 279—2)

1. A spider type holder for supporting hollow articles of generally cylindrical configuration which have one open and one closed end comprising:

(a) a body member which includes an intermediate polygonal portion and radially extending flanges at opposite ends thereof, said flanges having grooves in their peripheries;

(b) a plurality of separate spring arms extending at substantially equidistantly spaced intervals from the periphery of said body and providing two sets of spaced apart article supporting contact points radially and longitudinally displaced from said body member;

(c) the spring arms providing one set of contacts being longer than the spring arms providing the other set of contacts and having terminal portions serving to engage the closed end of said articles;

(d) fastening means detachably and separately fixing each of said spring arms to said body member;



(e) said fastening means comprising loops formed in the ends of said spring arms and screws extending through said loops into threaded engagement with the intermediate portion of the body member; and

(f) said spring arms extending through the grooves formed in the peripheries of said flanges, whereby said flanges substantially preclude rotation of said spring arms about said screws.

3,298,701
HAND DRILL

John Victor Borden, Ranson, W. Va. 25438

Original application Nov. 17, 1958, Ser. No. 774,345. Divided and this application Dec. 20, 1963, Ser. No. 388,969
2 Claims. (Cl. 279—102)



1. A bur extraction mechanism for use with a drill having an elongated straight handpiece housing, a fluid driven turbine axially positioned within the housing including a shaft having one end in alignment with an axial opening at one end of the housing, said shaft having an axial passage throughout its length and including means for frictionally receiving a bur at said one end, an elongated stem axially slidably mounted within said handpiece housing in alignment with said shaft and freely slidable in said passage for ejecting a bur, said stem including a transverse member movable in a longitudinal slot in said housing, and a ring shaped member encircling the exterior of the housing connected with said transverse member.

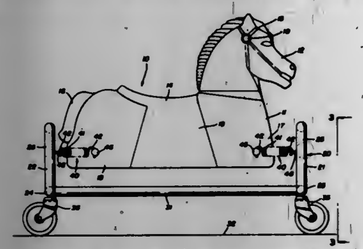
3,298,702
MOBILE EXERCISING AND AMUSEMENT DEVICE

Thomas P. Rademacher, Rte. 1, 135 River Styx Road, Medina, Ohio 44256

Filed Feb. 25, 1965, Ser. No. 435,120
2 Claims. (Cl. 280—1.22)

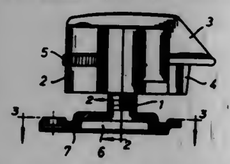
1. In a spring suspended toy to be ridden by a child the combination comprising, a body member, a frame, curvilinear end supports in said frame, a lower lateral member in each of said end supports, U-shaped uprights in said curvilinear end supports disposed in quadrature about said body member, a connecting strut spacing

and joining said curvilinear end supports, casters attached at the lateral extremity of said lower lateral members of said end supports to provide longitudinal and lateral sta-



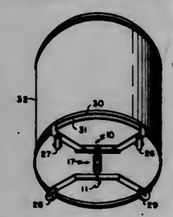
bility, and spring suspension means connecting said U-shaped uprights and said body member to resiliently mount said body member on said frame.

3,298,703
TOE IRON FOR SAFETY SKI BINDINGS
Hannes Marker, Alpspitzstrasse 37, Garmisch-Partenkirchen, Germany
Filed Apr. 6, 1965, Ser. No. 445,940
Claims priority, application Germany, Apr. 17, 1964, M 60,692
9 Claims. (Cl. 280—11.35)



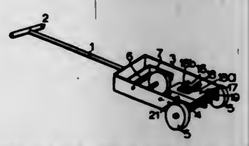
1. A toe iron for safety ski bindings comprising a baseplate movably mounted on a ski, a pivot pin mounted on said baseplate at right angles to said ski, a pivoted member pivotally mounted on said pivot pin, a detent mechanism for releasing the pivoted member for pivotal movement when torque acting on the pivoted member exceeds a predetermined amount, a mounting plate substantially enclosing the baseplate, said mounting plate being fixedly attached to said ski, said pivot pin projecting through an opening in said mounting plate, resilient means disposed between said mounting plate and said baseplate which allows limited movement of the latter relative to the transverse direction of the ski.

3,298,704
CLAMP-ON ADJUSTABLE DOLLY
Donald K. Dewers, 102 Dawn Drive, Aurora, Ind. 47001, and Robert S. Richards, 313 Whitewater Drive, Harrison, Ohio 45030
Filed Apr. 7, 1965, Ser. No. 446,166
3 Claims. (Cl. 280—35)



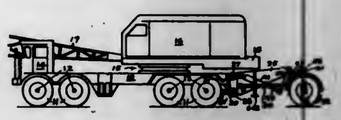
1. A clamp-on adjustable dolly for the convenient support and transportation of drums of the type including an annulus comprising: an identical pair of clamp members and a single intermediate tension device, normally secured to the clamp members but removable from the clamp members, for drawing the clamp members together, each clamp member comprising a body and a pair of wings diverging rigidly diagonally outwardly from the body, the wings having outer ends formed as upwardly extending hooks to engage said annulus, each clamp member further comprising casters individually journaled adjacent and radially inwardly of said ends, the pairs of ends of the clamp members being formed to span parallel chords of the drum, each pair of wings spanning a chord whereby tightening of the tension device causes the hooks to exert inwardly directed compression forces against said annulus at four spaced points.

3,298,705
WHEELED TROLLEYS
Rowland Alec Neaverson, 49 Westfield Road, Leicester, England, and Peter Anthony Neaverson, 88 Curzon Ave., Birstall, Leicester, England
Filed Mar. 27, 1964, Ser. No. 355,322
Claims priority, application Great Britain, Mar. 28, 1963, 12,384/63
3 Claims. (Cl. 280—46)



1. A jacking trolley comprising a body portion, at least one ground engaging wheel on the body portion at one end thereof, a handle fixed to the body portion to extend away from its opposite end, a carrier, means pivoting the carrier to the body portion about a transverse axis at a position between the ends of the body portion, two load engaging means mounted on the carrier and spaced apart along the latter, and each adapted for pivotal engagement with a load permitting relative turning movement between the trolley and the load about an upstanding pivotal axis, and means for locating the carrier in two alternative settings angularly displaced about its axis of pivoting, in which settings the respective load engaging means are adapted to engage and jack up a load with the ground engaging wheel serving as a fulcrum in each case and with the handle in an upwardly extending attitude in one case and a substantially horizontally extending attitude in the other case.

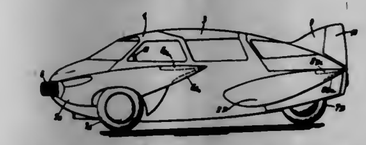
3,298,706
AXLE LOAD DISTRIBUTING DEVICES FOR USE WITH HEAVY MOTOR VEHICLES AND EQUIPMENT
Ralph G. Lyall, 5900 2nd Ave. S., Seattle, Wash. 98108
Continuation of application Ser. No. 204,478, June 22, 1962. This application May 24, 1965, Ser. No. 465,816
15 Claims. (Cl. 280—81)



1. An axle load distributing device for a motor vehicle which has a frame supported on wheel supported axles, comprising a cantilever positioned generally parallel with the motor vehicle frame and rigidly mounted to said frame as respects vertical movement thereto and pivotally connected with said frame as respects horizontal lateral swinging movement; at least one transverse load distributing axle carried by a ground engaging wheel; a torsional frame bar connecting said load distributing axle in spaced

relation to a forward end portion of said cantilever, the spaced relation equaling a plurality of times the diameter of the ground engaging wheel of said load distributing axle; and a pneumatic unit operatively disposed between said load distributing axle and said cantilever.

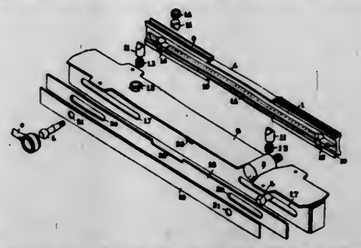
3,298,707
AUTOMOBILE BODY ARRANGEMENT EFFECTING THE BRAKING AND STEERING SYSTEMS
Jacques Jean-Marie Jules Gerin, 86 Ave. Victor Hugo, Dijon, France
Filed Jan. 22, 1965, Ser. No. 427,274
Claims priority, application France, Jan. 24, 1964, 961,548
4 Claims. (Cl. 280—87)



1. Automobile vehicle comprising in combination:
an elongated central body the maximum transverse section of which is located in the forward portion thereof and the longitudinal section of which is in the form of a thick wing having a positive lift in the forward direction of movement of the vehicle,
four wing portions having a negative lift in the forward direction of movement of the vehicle, arranged symmetrically two by two, tandem-wise, on the side faces of the said central body,
four upper flaps and four lower flaps arranged two by two on each side of the trailing edges of the said wing portion,
a braking system for the vehicle wheels,
a system for guiding the steering wheels of the vehicle,
control means for simultaneously opening the said upper and lower flaps, said means being actuated by the said wheel braking system,
means for differentially opening the said upper and lower flaps, the said means being actuated by the said system for guiding the vehicle steering wheels,
at least one vertical tail-unit situated at the rear of the vehicle and provided with a control surface actuated by the upper and lower flap differential control means,
and control means adapted to incline the vehicle sideways in relation to the horizontal, said means being actuated by the said upper and lower flap differential control means.

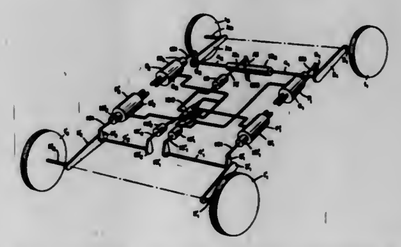
3,298,708
STEERING SYSTEMS OF AUTOMOBILE VEHICLES
Jean Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed Jan. 21, 1965, Ser. No. 426,781
Claims priority, application France, Jan. 23, 1964, 961,292, Patent 1,393,369
5 Claims. (Cl. 280—96)

1. A steering control system for automotive vehicles which comprises a steering wheel, a steering bar, a casing mounted transversely to the vehicle, the upper portion of said casing constituting a steering box, a rod slidably mounted in said casing, a rack formed along the upper edge of said rod, a pinion rigid with said steering bar and in constant meshing engagement with said rack in the upper portion of said casing, a pair of projecting ball joints secured at right angles to a same side of said rod and disposed symmetrically in relation to the longitudinal center line of the vehicle when said steering wheel is in the position corresponding to the straight-ahead drive, means for operatively connecting said ball joints with the steerable road wheels of the vehicle, a pair of elongated slot



of same length, slightly shorter than said rack, formed in said casing across said ball joints, and sealing plates covering laterally said casing on the side of said ball joints.

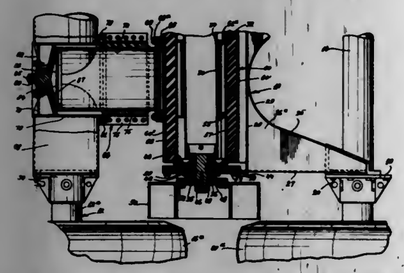
3,298,709
SUSPENSION EQUIPMENT FOR VEHICLES
Pierre Ernest Mercier, 1 Rte. de Saint Brice, Piscop by Saint Brice, France
Filed Feb. 4, 1964, Ser. No. 342,479
Claims priority, application France, Mar. 14, 1959, 789,394, Patent 1,222,016
3 Claims. (Cl. 280—104)



1. In a vehicular suspension system containing a liquid, a chassis, at least four wheel holders articulated to said chassis in pairs at opposite sides of said chassis, at least two control wheels and at least two controlled wheels, each one of said control wheels and each one of said controlled wheels being suspended from the free end of a corresponding one of said wheel holders and thereby supported by said wheel holders, a plurality of suspension members, each of said suspension members comprising a cylinder constituting a first major element of the device and a piston slidably mounted in the cylinder and thereby defining with the cylinder a mechanically adjustable space in the cylinder, said piston constituting a second major element of the device, said space being adapted to contain the liquid, one of said major elements being coupled to the chassis and the other of said major elements being coupled to one of said wheel holders, a plurality of buffer devices, each one of said buffer devices communicating with a corresponding one of said mechanically adjustable spaces and being adapted to control entry and exit of the liquid in the mechanically adjustable space, a source of the liquid under pressure, a tank, interconnection means communicating between the source and the tank and between the source and the mechanically adjustable spaces, said interconnection means including a differential corrector and a distributor, said distributor including means for transmitting to the differential corrector the sum of the pressures existing in the mechanically adjustable spaces associated with the wheels at one side of the chassis and for transmitting to the distributor in opposition to the preceding pressure sum the sum of the pressures existing in the mechanically adjustable spaces associated with the wheels at the other side of

the chassis, said last-mentioned means for transmitting including a single elastic diaphragm against opposed sides of which said pressure sums oppose each other, conduit means for releasing pressure from the mechanically adjustable spaces through the distributor and the differential corrector to the tank, and conduit means for transmitting pressure from the source of the liquid under pressure through the distributor and the differential corrector to the mechanically adjustable spaces, whereby the differential corrector draws off the liquid from one of the mechanically adjustable spaces associated with one of the wheels at one side of the chassis and adds it to the mechanically adjustable space associated with another wheel at the same side of the chassis to equalize the pressures in said two last-mentioned mechanically adjustable spaces.

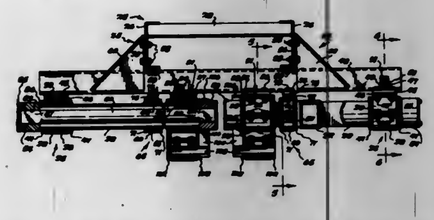
3,298,710
TANDEM AXLE TORSIONAL SUSPENSION SYSTEM FOR VEHICLES
Elwood H. Willetts, Douglaston, N.Y.
(102 S. Penataquit Ave., Bay Shore, N.Y. 11706)
Filed June 1, 1964, Ser. No. 371,669
5 Claims. (Cl. 280—104.5)



1. In a torque reactive tandem axle suspension bogie for a vehicle structure, including first and second concentric elastomer bushings stressed in torsional shear and bondedly interconnecting first and second external split sleeves around the bushings for transfer of stress in supporting the vehicle structure, a plurality of brackets for connecting the bogie to a vehicle structure, the first of said bonded shafts journalled at transversely opposite ends in said brackets, the second of said bonded shafts being hollow and encircling said first shaft and journalled in radially spaced relationship thereto, means connecting said first bushing split sleeve to said second shaft, flanges on opposite ends of said second shaft, a third elastomer bushing shaft extending forwardly at right angles and connected to the split sleeves of said second bushing, a hub attached forwardly of and to the split sleeve of said third bushing shaft, the forwardly extending ends of said third bushing shaft and said hub journalled in coaxial alignment, an axle secured across and at right angles to said hub, a suspension arm extending oppositely to said third bushing shaft and interconnecting the flanges of said second shaft to another axle, whereby the ends of said latter axle may move vertically while like ends of said other axle are restrained in vertical movement to parallelism with the body structure.

3,298,711
HEAVY DUTY VEHICLE SPRING SUSPENSION
Albert F. Hickman, 8009 N. State Road,
Eden, N.Y. 14057
Filed Sept. 3, 1965, Ser. No. 484,849
9 Claims. (Cl. 280—124)

1. A vehicle spring suspension adapted to be interposed between a vehicle frame and one end of a first stub axle on which a first wheel having a first rubber tire is journalled to rotate about a generally horizontal axis, comprising a first arm having one end fixed to said stub axle and extending generally in a horizontal direction radially alongside said wheel, a first horizontal cross shaft having a part intermediate its ends fixed to the other end of said first arm and extending generally parallel with the axis of said first wheel, a first bearing adapted to be secured to said vehicle frame and journalling the end of said first cross shaft which is outboard from said first arm with reference to the centerline of the vehicle, a second bearing adapted to be secured to said vehicle frame and journalling the end of said first cross shaft which is inboard from said first arm with reference to the centerline of the vehicle, a first torsion spring means, means fixing one end of said first torsion spring means to said first cross shaft to rotate therewith, a third bearing adapted to be secured to said vehicle frame and journalling the other end of said first torsion spring means, a second arm fixed to and projecting perpendicularly from said other end of said first torsion spring means, a second stub axle arranged generally parallel and in line with said first stub axle lengthwise of the line of movement of the vehicle, a second wheel having a second rubber tire journalled about a generally horizontal axis on said second stub

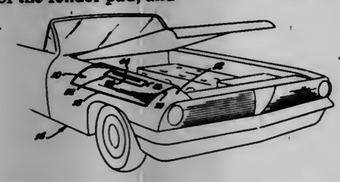


axle, a generally horizontal third arm having one end fixed to said second stub axle and extending generally in a horizontal direction radially alongside said second wheel, a second horizontal cross shaft having a part intermediate its ends fixed to the other end of said third arm and extending generally parallel with the axes of said wheels, a fourth bearing adapted to be secured to said vehicle frame and journalling the end of said second cross shaft which is outboard from said third arm with reference to the centerline of the vehicle, a fifth bearing adapted to be secured to said vehicle frame and journalling the end of said second cross shaft which is inboard with reference to the centerline of the vehicle, a second torsion spring means, means fixing one end of said second torsion spring means to said second cross shaft, a sixth bearing adapted to be secured to said vehicle frame and journalling the other end of said second torsion spring means, a fourth arm fixed to and projecting perpendicularly from said other end of said second torsion spring means toward said second arm, and means connecting the outboard ends of said second and fourth arms to provide load transfer from one of said wheels to the other through both of said torsion spring means.

3,298,712
AUTOMOBILE FENDER PAD
Isidor Greenstadt, 2236 S. Beverly Glen Boulevard,
Los Angeles, Calif. 90064
Filed Dec. 1, 1965, Ser. No. 511,583
5 Claims. (Cl. 280—150)

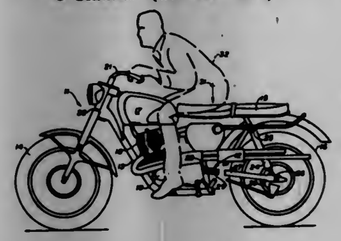
1. A fender pad including a tool enclosure, comprising:
a sheet of flexible material for draping over a vehicle surface to protect the vehicle surface,
a pocket having an opening and with the pocket attached to the sheet of flexible material at a position intermediate the perimeter of the sheet for enclosing tools and other articles within the pocket and with the pocket having an outer edge for retaining

tools and other articles on the fender pad during the use of the fender pad, and



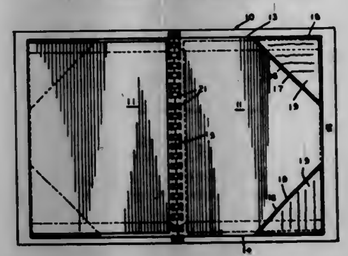
closure means attached to the pocket at the opening for sealing the pocket to form a tool enclosure.

3,298,713
EXTENSION ADAPTER AND METHOD FOR LENGTHENING THE WHEEL BASE OF A MOTORCYCLE
Joseph L. Plain, 511 Bernal St., Livermore, Calif. 94550
Filed Nov. 6, 1964, Ser. No. 409,511
8 Claims. (Cl. 280—284)



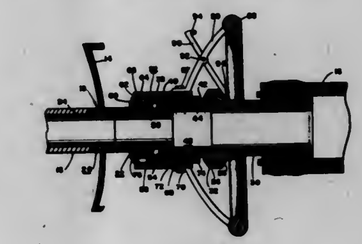
1. A wheel base extender for a motorcycle which has a frame, a front wheel, a rear wheel, and means for suspending the rear wheel from said frame including a forked arm having pivot connection means at its front end for attachment to said frame; said extender comprising a linking structure insertable between said frame and said forked arm for lengthening the wheel base of said motorcycle and having means at one end thereof for rigid connection to said motorcycle frame to provide a longitudinal rearward extension thereof, and means at the opposite end of said structure for pivotal connection to the front end of said arm.

3,298,714
INSERT PAGE WITH CONTAINED BOOKMARKS
Ernest V. Celmer, 913 W. Cullom Ave.,
Chicago, Ill. 60613
Filed July 16, 1965, Ser. No. 472,490
1 Claim. (Cl. 281—42)



A combination insert page with plural removable bookmarks, said insert page comprising a sheet of suitable thin material folded along its outer longitudinal edge and sealed at its upper and lower edges to form an enclosure, the inner longitudinal edge having means for mounting the insert page in a cover, said folded sheet being provided with a perforated border guide line at each of its outer, upper and lower corners along a line joining adjacent edges of said corners to form thereat a hypotenuse of a right triangle with the adjacent edges forming the sides of the triangle being of the thickness of the thin material to closely conform to a page of a book, each of said corners of the folded sheet being marked for severance along the border guide line with the perforations providing ready removal from the page to provide bookmarks at the opposite outer corners each in the form of a right triangle with the adjacent edges conforming to the outer corner of a page of a book and covering the opposite sides of said marked page at its upper free corner; the bookmark so formed adapted for use with the pages of books of varying dimensions and without adjustment to a page of any dimensions.

3,298,715
COUPLING HANDLING AND ACTUATING RING
Norman E. Stehle, Box 303, Forge Road,
Glen Mills, Pa. 19342
Filed Dec. 26, 1963, Ser. No. 333,768
1 Claim. (Cl. 285—18)



In a system for supplying compressed air from a ground based source to a jet aircraft to be started:
(a) a first conduit which extends from said aircraft;
(b) a first tubular coupling member secured at one end to the first conduit;
(c) a hose extending from the ground based source;
(d) a nipple secured at one end to the free end of said hose, the other end of the nipple being flanged outwardly;
(e) a second coupling member, one end of the second coupling member being flanged outwardly to engage and mate with the flanged end of the nipple, the other end of the second coupling member being adapted to receive the other end of the first coupling member;
(f) clamping means which encircles and secures the flanged ends of the nipple and the second coupling member in axial alignment;
(g) a ball detent which is disposed in a tapered aperture in the second coupling member and which engages an external peripheral groove in the first coupling member when the first coupling member is inserted into the second coupling member;
(h) a detent operator mounted for axial movement on the outer peripheral surface of the second coupling member;
(i) an abutment flange which extends outwardly from the second coupling member;
(j) a spring which is interposed between the abutment flange and the detent operator and which urges the detent operator toward a position away from alignment of the upper portion of the tapered aperture in the second coupling member and peripheral groove in the inner surface of the detent operator;
(k) a handling ring;

(l) an elongated strut element which is secured at one end to the handling ring and at its other end to the detent operator so as to space the ring from the second coupling member in a predetermined manner;

(m) an elongated lever which is secured intermediate its ends to an intermediate portion of the strut element, one end of the lever being disposed adjacent the hose end of the clamping means for engagement therewith and movement of the detent operator against the bias of the spring when the other end of the lever is operated.

3,298,716

LINED PIPE AND PIPE JOINTS AND METHOD OF LINING PIPE AND JOINING LINED PIPE

Joseph M. Taylor and John W. Turner, Houston, Tex., assignors to Taylor Tube Seal, Inc., Houston, Tex., a corporation of Texas

Filed Aug. 31, 1964, Ser. No. 394,384
5 Claims. (Cl. 285—55)



1. A lined pipe joint between two sections of metallic pipe, comprising

the end portions of said pipe sections being cylindrical and of substantially constant diameter,

a corrosion-resistant liner in each of said pipe sections and having an outer diameter smaller than the inner diameter of said pipe sections whereby said liners are easily inserted through said pipe sections,

each of said liners in said pipe sections having a flange portion extending radially outward over the ends of said pipe sections,

a corrosion-resistant ferrule having an outer diameter substantially larger than the inner diameter of the liner inserted into the end of each of said liners to expand the liner against the interior of said pipe section whereby the interior of said ferrule is in substantial alignment with the remainder of the interior of said liner,

each of said ferrules having a nose portion extending beyond the flange of said liner and defining a frusto-conical gasket sealing surface,

a cylindrical coupling for securing the ends of said pipe sections together, and

a resilient, corrosion-resistant gasket positioned in said coupling for engagement between said gasket sealing surfaces,

the ends of said pipe sections being adapted to tighten into said coupling whereby said gasket is compressed between said gasket sealing surfaces and is deformed into sealing engagement with the interior of said coupling and to fill the space between said ferrules to an inner diameter substantially the same as the inner diameter of said ferrules.

3,298,717

WATER SERVICE AND REPAIR SADDLE

Thomas F. Rothwell and Robert N. Paterson, both of Bradford, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Continuation of application Ser. No. 148,353, Oct. 30, 1961. This application Oct. 20, 1965, Ser. No. 507,601
2 Claims. (Cl. 285—197)



1. A service and repair saddle for frangible pipe such as asbestos cement pipe, said saddle comprising a saddle body having a cylindrical undersurface adapted to fit the cylindrical curvature of the pipe on which the saddle is to be mounted and a centrally upstanding collar providing an outlet connection and opening, said saddle body having portions with cylindrical outer surfaces on opposite sides of said collar, gasket means on said saddle body undersurface extending substantially to the periphery thereof and adapted to provide a seal around said outlet connection and a seat for said saddle body on the pipe, a pair of axially spaced sheet metal bands adapted to substantially fully encircle the pipe and passing over said cylindrical outer surfaces respectively of said saddle body on opposite sides of said collar, a single pair of lug members each having an elongated base portion with a concave undersurface adapted to fit the pipe, a nose portion, a convex outer face and a trailing edge, and a central ear portion projecting outwardly from said base portion and having a bolt opening, each of said bands having opposite end portions passing over the outer faces of said base portion of said lugs respectively and bent over the nose portion and back under the under face of said base portion, said bands being on opposite sides of said central ear portions, means securing the end portions of said bands to said lugs against tension on said bands and against movement longitudinally off of said base portions of said lugs, a single bolt means extending freely through said bolt openings of said ear portions and connecting said lugs centrally thereof, said bolt means being adapted to be tightened to tension said bands and thereby draw said saddle body toward the pipe and apply uniform pressure to said gasket to effect a seal and to mount said saddle stably on said pipe, said lugs being circumferentially spaced from said saddle body and said lugs being tiltable relative to said bolt means to apply tension uniformly to said bands and afford uniformly distributed pressure of said bands on said pipe to avoid rupture of said frangible pipe.

3,298,718

SEALING DEVICE

Siegfried Hansen, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

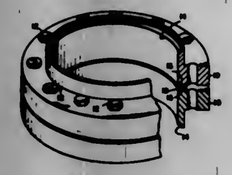
Filed Sept. 20, 1965, Ser. No. 488,338
2 Claims. (Cl. 285—336)

1. A flange seal having a mis-alignment compensating means comprising:

a first flange member having a first annular semicircular groove at a first distance from a center line and a plurality of bores at a second distance from said center line greater than said first distance;

a second flange member having a second annular semicircular groove at a third distance from said center line and a plurality of bores each spaced to be aligned with a different one of the bores in said first flange member;

a plurality of bolts extending through said bores to draw said first and second flange members together and to retain said grooves in substantially confronting relationship; and



an annular, rectangular, metal gasket positioned in said first and second grooves having a major axis substantially parallel with said center line and two edges in contact with said first groove, and two different edges in contact with said second groove, said gasket having its radially inner and outer wall surfaces substantially parallel to the center line substantially parallel with said center line as said bolts are tightened when said first and third distances are equal and to twist within said first and second grooves when said first and third distances are not equal to cause said wall surfaces to assume an acute angle with respect to the center line and to continuously retain the edges thereof in the contact with said grooves resulting in an uninterrupted seal, by each of the four corners of said gasket.

stop means cooperating with said flange members to limit the movement of said planar surfaces thereof toward each other to provide a predetermined spacing therebetween not to exceed about 0.010 inch;

carrier ring means made of relatively non-deformable metal, said ring means having a longitudinal dimension substantially greater than said predetermined spacing between said planar surfaces and positioned such as to overlie said space therebetween;

a continuous annular deformable metal gasket means carried on the inner diameter of the carrier ring means and positioned for extrusion within the space between said planar surfaces;

said gasket means being deformed when said predetermined spacing is established between said planar surfaces and said gasket means, before deformation, having a thickness measured along the longitudinal axis substantially greater than said predetermined spacing between said planar surfaces, and having a radial width approximately as great as its axial thickness;

said ring means having an inner diameter greater than the diameter of said cylindrical surfaces of said flange members by an amount which is a small fraction of said predetermined spacing between said planar surfaces such that upon movement of said flange members toward each other along the longitudinal axis compressing said gasket means between said planar surfaces, said gasket means is extruded radially between same and longitudinally between the inner diameter surface of the carrier ring and said cylindrical surfaces; and

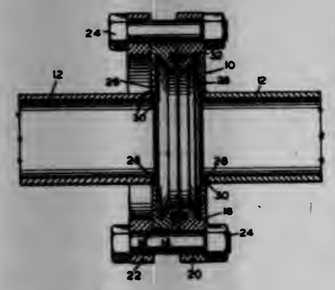
said gasket means, after deformation, having a width measured radially which is at least two times said predetermined spacing between said planar surfaces; and in which the compressive stress within the gasket means generated at said right angle corners exceeds the normal yield stress of the gasket material by many times.

3,298,719

ULTRA-HIGH VACUUM COUPLING AND GASKET SUBASSEMBLY THEREFOR

Daniel G. Bills and Keith A. Warren, both of Boulder, Colo., assignors to Granville-Phillips Company, Boulder, Colo., a corporation of Washington

Continuation of application Ser. No. 342,074, Feb. 3, 1964. This application May 9, 1966, Ser. No. 548,801
5 Claims. (Cl. 285—336)



1. In combination:

a pair of spaced flange members with a bore extending therethrough adapted for movement along a longitudinal axis toward each other;

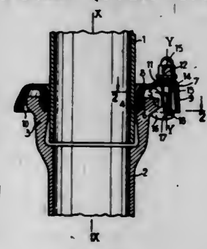
said flange members having sealing surfaces consisting of planar surfaces arranged in spaced face to face relationship and cylindrical surfaces having substantially the same diameters positioned radially outwardly of the wall defining said bore and being substantially parallel to the longitudinal axis, said cylindrical surfaces intersecting said planar surfaces to form substantially right angle corners therewith;

3,298,720

PIPE JOINT

Jean Eugène Driancourt, Pont-a-Mousson, France, assignor to Centre de Recherches de Pont-a-Mousson, Pont-a-Mousson, France, a French body corporate

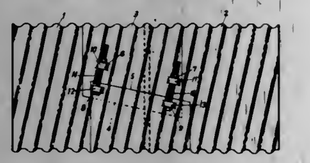
Filed Mar. 22, 1965, Ser. No. 441,457
Claims priority, application France, May 14, 1964, 974,477
1 Claim. (Cl. 285—374)



A joint for two coaxial pipe elements one of which has a male end and the other a socket provided with an outer flange, said joint comprising an annular cast counter-flange having an axis coinciding with the axis of said pipe elements and having a generally U-shaped radial section, bosses in spaced relation on the periphery of the counter-flange, apertures in said bosses, the apertures being in spaced relation on a circle centered on said axis of the counter-flange, and joint-assembling bolts extending through the apertures, the counter-flange having an outer branch which has part-cylindrical machined inner surfaces having identical radii which are substantially

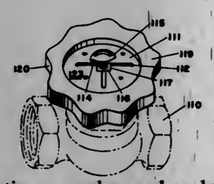
equal to the radius of said circle and centered on said axis of the counter-flange, each of the bolts comprising a flange-hooking head and two lateral projections which are in the vicinity of the head and located on each side of the head in a hooking nose portion of the head, said lateral projections having faces substantially contained in a common diametral plane of the bolt and facing outwardly of the axis of the counter-flange, said bolts bearing on said part cylindrical inner surface solely by said faces of said two lateral projections.

3,298,721
COUPLING BAND FOR JOINING CORRUGATED PIPES
Allen Dale Wiley, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Jan. 14, 1964, Ser. No. 337,587
13 Claims. (Cl. 285—419)



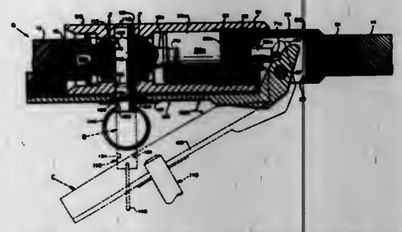
1. Means for joining sections of corrugated pipe in substantially abutting end to end relationship, said means comprising an open band member formed of at least one piece of metal corrugated generally in the direction of its length and curved longtiudinally to fit over the ends of abutting sections of corrugated pipe, the length of said member being sufficient to form a constricting band when positioned about the ends of said pipe, end portions of the outer surface of said band having cooperating sets of integral lugs struck upwardly from valleys of said corrugations therein, said lugs being adapted for the engagement of contracting fastening members.

3,298,722
HANDLE AND LOCKING MEANS
Paul M. Remaley, 169 W. 25th St., Erie, Pa. 16502
Filed Aug. 18, 1964, Ser. No. 390,310
6 Claims. (Cl. 287—53)



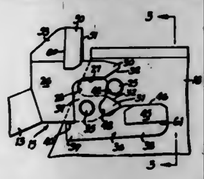
1. In combination, a valve and a handle therefor, said valve having a rotatable stem extending therefrom, a generally rectangular, outwardly tapering end portion on said valve stem,
said handle being generally disk shaped and having a generally rectangular opening therein being an intaglio of said tapered end portion and receiving said tapered end portion,
grooves in said handle on the side thereof remote from said valve,
said grooves radiating from the center of said handle,
said stem having a reduced size threaded end thereon,
a nut,
said nut being threadably received on said threaded end,
said nut having radially extending ribs thereon having the same spacing as said grooves,
said ribs having a rounded lower side whereby said ribs may be moved into and out of said grooves when said nut is tightened.

3,298,723
MECHANICAL COUPLING
Carl A. Damm, Upper Black Eddy, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 24, 1964, Ser. No. 377,778
7 Claims. (Cl. 287—119)



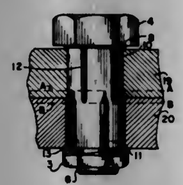
1. A mechanical device for coupling a plurality of elements and being releasable under load, comprising:
male and female connecting units, said female connecting unit being releasably connected with said male unit and having protruding therefrom an operating detent member movable relative thereto and operable for causing said female connecting unit to release said male connecting unit, and said male unit having an aperture extending transversely therethrough,
first means connected to said female connecting unit and to one of the elements to be coupled, second means connected to said male connecting unit and to the other of the elements to be coupled,
actuating means extending adjacent said male connecting unit, including a cam portion and pivotally connected to said first means for movement of said cam portion relative to and into engagement with said operating detent member, said actuating means being selectively movable from a latched position causing said cam portion to engage and operate said operating detent member,
and movable pin means yieldably attached to said actuating means so as to be movable relative thereto and positioned to extend through said aperture in said male unit for restraining said actuating means from movement from said latched position, said pin means being withdrawable from said male connecting unit to permit movement of said actuating means from said latched position.

3,298,724
QUICK DISCONNECT MECHANISMS
Theodore J. Coleman and John M. Maxwell, Burlington, Iowa, assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed May 20, 1964, Ser. No. 368,950
4 Claims. (Cl. 287—189.36)



4. In a prime mover-implement connection, an implement frame having a plurality of laterally projecting spaced attachment pins, a prime mover frame having a plurality of correspondingly spaced notches opening toward said pins, abutments on said prime mover frame adjacent each of said notches, respectively, swingable generally "L"-shaped locking levers pivotally mounted on said prime mover frame in spaced relation to said notches, respectively, and said levers having notches therein adapted to receive said pins, said levers each having a pin contacting surface normally aligned with the corresponding pin and an abutment cooperable with said frame abutment and normally spaced therefrom, relative implement-prime mover movement after initial pin-to-surface contact moving said locking levers pivotally relative to said prime mover frame to position said pins in said notches of said frame and in the notches of said levers repectively, and to juxtapose the abutments on said prime mover frame and said levers, respectively, and U-shaped locking saddles telescopically movable over said juxtaposed abutments to secure said frames in assembly with the cooperable frame notches and lever notches receiving said pins, so that said pins are substantially completely peripherally surrounded by said frame and said levers, respectively.

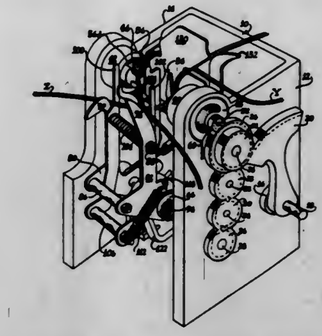
3,298,725
HIGH-STRENGTH FASTENER
John C. Boteler, 4120 Angus Drive, Fort Worth, Tex. 76116
Filed Oct. 1, 1964, Ser. No. 400,805
10 Claims. (Cl. 287—189.36)



1. A high-strength fastener assembly for insertion through substantially aligned apertures in structural members of a predetermined thickness, said assembly comprising a bolt, sleeve, and nut; said bolt including a driving head, a tapered shank portion, and a threaded nut receiving portion, said sleeve being constructed of high strength material and comprising an inner surface tapered complementally to said tapered shank portion and a substantially cylindrical outer surface, the length of said sleeve and said tapered portion closely approximating said predetermined thickness, said nut comprising a driving surface and internal threads cooperable with said threaded nut receiving portion whereby torque imparted to said driving head and said driving surface is effective to cam said sleeve and expand the same outwardly over said tapered shank portion and impart a uniform pre-stress to said structural members throughout said predetermined thickness surrounding said apertures.

3,298,726
KNOTTER
David O. Francis, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Feb. 25, 1965, Ser. No. 435,273
5 Claims. (Cl. 289—2)

1. Mechanism for uniting first and second strands comprising, rotary bills arranged to form a loop in each of said first and second strands entwined about the other of said strands, a carriage positioned adjacent said bills and arranged to engage said strands to disposed a predetermined span of each strand in a zone between said carriage and said bills, means for operating said carriage to withdraw said loops from said bills, said carriage serving cooperatively with said bills to provide a tail in each strand between said loop and the outer strand ends,



means operative to release said strands from said carriage after withdrawal of the loops from said bills, and guide means for engaging and controlling said strands after release thereof from said carriage.

3,298,727
APPARATUS FOR DISPENSING GRIT MATERIAL
Adhemar J. Picard, 13 Hope St., Acushnet, Mass. 02743
Filed Mar. 17, 1965, Ser. No. 440,560
8 Claims. (Cl. 291—3)

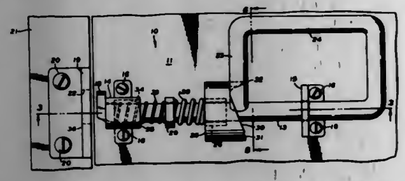


1. In an attachment for a land vehicle having traction drive members, apparatus for dispensing grit material, the apparatus including a reservoir for grit material mounted on the vehicle, a cylindrical housing extending from said reservoir, a horizontal screw conveyor within said cylindrical housing, a portion of said screw conveyor extending into said reservoir, power means connected to said screw conveyor for actuating the latter and moving the grit material longitudinally through said housing, a manifold issuing from the terminal of said housing remote from said reservoir for delivering grit material to the locus of the traction drive members, the screw conveyor extending within said cylindrical housing to a point proximate said manifold, discharge nozzles connected to the manifold terminals, gas pressure means in communication with said manifold adjacent said discharge nozzles for facilitating emission of the grit material, solenoid valves in spaced relation to the terminals of the manifold for controlling the pressure of the grit material emitted through the discharge nozzles, and means for actuating said solenoid valves.

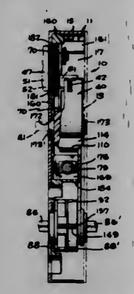
3,298,728
END GATE THROW LATCH MECHANISMS
Clyde V. Dye, 436 Wildwood Ave., Akron, Ohio 44320
Filed June 19, 1964, Ser. No. 376,532
6 Claims. (Cl. 292—62)

1. A latch mechanism comprising, an axially slidable and rotatable lock bolt, a handle to slide and rotate said lock bolt, a fastening means on one end of said lock bolt, a keeper selectively engaged by said fastening means, a semicylindrical cam body, said cam body floatingly mounted concentrically of said lock bolt and having a cam surface angularly oriented generally transversely of

the axis of said cam body, a cam follower fixedly mounted on said lock bolt and actuated by said handle, spring means biasing said cam surface toward said cam follower, actuation of said cam against said spring means moving said fastening means into and out of locking contact with said keeper.



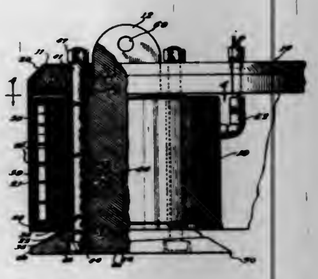
3,298,729
MORTISE LOCK LOW FRICTION CASE LINER
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and Roger J. Nolin, Monterey Park, Calif.; said Nolin assignor to said Russell
Filed Apr. 23, 1965, Ser. No. 450,450
5 Claims. (Cl. 292—337)



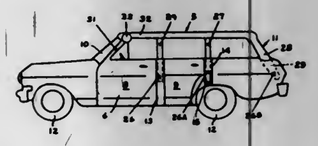
1. In a mortise lock comprising a case which includes an inside wall, an outside wall and a lock mechanism located between said walls including at least one reciprocatably mounted bolt assembly, at least one pivotally mounted member and at least one slidably mounted member, the combination of a liner for the case including a relatively thin sheet anchored in engagement with at least one of said walls, said liner having transverse arcuate portions comprising a bearing for said pivotally mounted member, an integrally formed block on the inside face of said liner having surfaces thereon comprising a slideway for said bolt assembly, said liner having guides for said slidably mounted member, said liner comprising a mounting base which holds the lock mechanism in assembled relationship when the other of said walls is not mounted on said case.

3,298,730
COIL LIFTER
Warren G. Soley, Greenfield, Wis., assignor to Indiana General Corporation, a corporation of Indiana
Filed May 7, 1965, Ser. No. 454,152
7 Claims. (Cl. 294—65.5)

2. An electromagnet having a body member, at least one positive magnetic pole piece and at least one negative magnetic pole piece carried by said body member, a coil for each pole piece connected in such a way as to provide adjacent pole pieces with opposite polarity, said coils being formed on a hollow sleeve and being encapsulated within a cylindrical housing, means for mounting said pole pieces on said body member, said means comprising cast one-piece core and pole shoe members, one of the core portions of said core and pole shoe members extending through the hollow sleeve of one of said coils and having the pole shoe portion of said core and pole shoe member transversely disposed relative to the axis of the core in overlapping relation with the underportion of the coil so as to support said coil, fastening means connected to said pole shoe portion and to said body member and extending through longitudinal slots formed in the sides of each of said core portions, each said pole shoe portion having a planar face portion with upwardly tapered side portions, and means connected to said core portions for lifting said electromagnet.

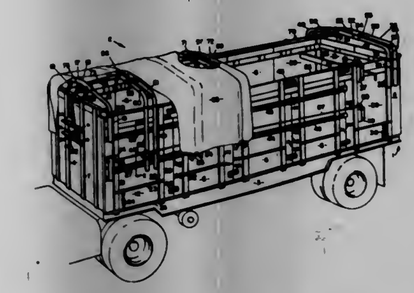


3,298,731
MULTI-PURPOSE VEHICLE
Vito Sangimino, 268 Bay 20 St., Brooklyn, N.Y. 11214
Filed July 12, 1965, Ser. No. 478,520
1 Claim. (Cl. 296—99)



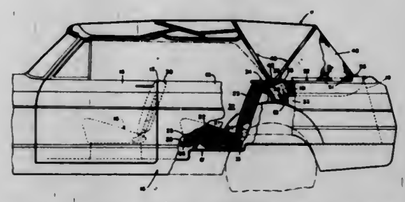
A readily convertible multipurpose automotive vehicle comprising a body having sections for passengers and cargo, a roof frame around the top of the body, a windshield assembly at the front of the vehicle body extending to the roof frame, a window assembly comprising posts with a windshield interposed and mounted therebetween at the rear of the vehicle body, vertically-extending tubular members on both sides of the body, depending posts vertically adjustable in said tubular members, said frame having members hinged to the upper ends of said posts and adapted to be hinged down onto the sides of said posts and withdrawable with said posts into said tubular members, a hollow casing mounted across the top of the windshield, said casing having an elongated transverse opening, an elongated roller device in said casing, a flexible cover of sheet material wound around said roller and secured at the end of the roller, the free end of said cover projecting through the transverse opening in the casing and adapted to be drawn over the frame and connected to the rear window assembly, said roller with the cover sheet material being removable from the hollow casing, the rear of the body having a transverse recess therein, a casing mounted on the top of said posts of said rear window assembly, means mounting said assembly in said traverse recess for reciprocal vertical movement whereby said assembly and casing thereon are retractable into said recess, said roller device with the cover sheet material adapted to be mounted removably in the casing on the rear posts so that the cover can be stretched either from the rear casing to the opposed posts in the tubular members at the sides of the body or to the casing mounted across the top of the front windshield, said roller device being interchangeably adapted to be mounted in either the casing at the front or at the rear of the body for stretching the cover over the entire length of the roof.

3,298,732
ADJUSTABLE COVERS FOR TRACTOR TRAILERS AND THE LIKE
Alexander N. Openshaw, 36 Kinghigh Drive, Concord, Ontario, Canada
Filed Oct. 20, 1965, Ser. No. 498,577
6 Claims. (Cl. 296—100)



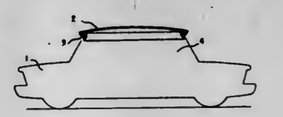
1. In an adjustabe cover for flat bed vehicles including a stake side assembly and a cover assembly; said stake side assembly including a transverse front section, a tailgate section and side sections; attachment means between said sections and said flat bed to maintain said sections substantially coplanar in upright engagement with said flat bed and in edge-to-edge engagement with each other; latch means between contiguous edges of said sections; upper and lower horizontal track members in parallel, spaced apart relation secured to each of said side sections, said upper and lower track members each being composed of endwise related sections, collars for connecting the meeting ends of adjacent sections to hold the sections of the back members in full longitudinal alignment on each side of said vehicle; said cover assembly including gable support units each comprising a pair of parallel vertical lower ends on each side of said vehilce, held in longitudinal spaced relation by cross bracing means, said lower ends supporting a pair of parallel, spaced apart, cross-braced gabled sections extending transversely across said vehicle; upper and lower axle means extending radially from each of said vertical lower ends, roller means rotatably supported by said axle means; said roller means being in freely rotatable engagement with their respective upper and lower track members to support said gable support unit in longitudinally moveable and transversely fixed relation with said vehicle and to maintain said gable support unit in a substantially vertical plane; said gable support units being arranged in longitudinal alignment on said track members and each being independently moveable; tarpaulin means supported by said gable units stretched between said front section at the one end, and the rearmost of said gable units at the other end upon said rearmost gable unit being located at the rear of said vehicle and the remaining gable units being substantially equispaced; flexible means attaching said tarpaulin to said gable units; and means for moving said rearmost gable unit longitudinally over said vehicle flat bed.

3,298,733
MULTI-PURPOSE VEHICLE BODY
Floyd G. Kerby, Grosse Pointe Woods, and Erwin B. Kolt, Birmingham, Mich., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1964, Ser. No. 405,918
9 Claims. (Cl. 296—108)



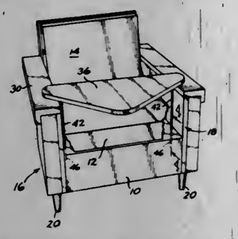
1. In a convertible type automobile body having a driver's compartment, a rear storage compartment, an intermediate compartment, and a foldable seat in said intermediate compartment, the combination comprising
(a) a horizontal pan movable from a position overlying said storage compartment to a position overlying said intermediate compartment when said seat is in folded condition,
(b) means for supporting said pan in both said positions,
(c) a collapsible top for said body having rearward supporting elements, and
(d) means pivotally connecting said top-supporting elements to interior side walls of said pan, said top being collapsibly movable to a stored condition within said pan,
said pan with said top in collapsed, stored position therein, when in position overlying said intermediate compartment permitting free access to said storage compartment.

3,298,734
VEHICLE TOP STRUCTURE
Bela Barenyi, 22 Weglanderstrasse, 7 Stuttgart-Vaihingen, Germany
Original application Mar. 19, 1963, Ser. No. 266,305, now Patent No. 3,233,937, dated Feb. 8, 1966. Divided and this application Oct. 22, 1965, Ser. No. 508,186
Claims priority, application Germany, Mar. 23, 1962, D 38,451
32 Claims. (Cl. 296—137)



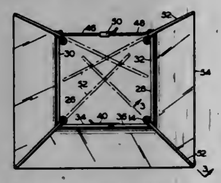
1. A vehicle body top, especially for passenger motor vehicles, comprising:
roof means having a roof rim,
annularly shaped roof frame means including connecting flange means,
and means including elastic profiled ledge means extending about said top connecting said roof means around the entire periphery thereof with said roof frame means exclusively by said elastic profiled ledge means, said roof frame means being completely resiliently mounted on the vehicle,
said connecting flange means and the corresponding roof rim overlapping at least partly,
said connecting flange means and the corresponding roof rim extending in substantially mutually opposite directions.

3,298,735
COMBINATION EASY CHAIR AND TABLE
Edwin Berman, Portland, Oreg., assignor to Room-A-Rama, Portland, Oreg., a corporation of Oregon
Filed Jan. 21, 1966, Ser. No. 522,304
4 Claims. (Cl. 297—145)



1. A combination easy chair and table comprising
(a) a chair including a seat, a back and two arms,
(b) one arm being recessed to form a compartment,
(c) the seat being provided with vertically arranged, laterally spaced, socket means,
(d) and a table comprising a top and hinged thereto a pair of folding legs adjustable between folded and extended positions,
(e) the table being dimensioned for reception in the arm compartment when the legs are in their folded position,
(f) the table legs when extended being dimensioned for reception in the socket means for mounting the table between the arms, spaced vertically from the seat.

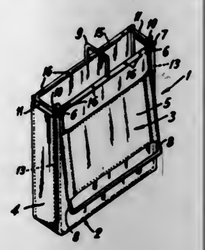
3,298,736
ATTACHMENT FOR HIGH CHAIRS
Orba L. Decker, 748 Larchmont Drive, Colma, Calif. 95613
Filed Oct. 22, 1965, Ser. No. 501,273
4 Claims. (Cl. 297—182)



2. An article catching attachment for high chairs having a seat and supporting legs, comprising a pair of frame members, latch means on said frame members for connecting the latter together in mounted engagement on the legs of the chair, a plurality of arms mounted on said frame members in an upwardly and outwardly projecting relation to said frame members, and a drop catch connected to said arms for catching articles dropped from above.

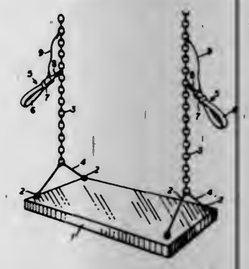
3,298,737
COMBINED STOWAGE UNIT AND SEAT
Frederick Rosenfeld and Stewart Schoen, New York, and Martin Fainblatt, Great Neck, N.Y., assignors to Innovation Industries, Inc., a corporation of New York
Filed Aug. 16, 1965, Ser. No. 479,921
1 Claim. (Cl. 297—192)

A combined portable stowage unit and seat comprising a rigid three-dimensional frame having a section adapted for positioning on a ground surface and supporting the weight of a human being, cover means adapted to be positioned on the frame with the exception of one end thereof and defining a receptacle with an opening at said one end, the receptacle adapted to receive gear, handle means straddling said frame at the center thereof at the open end, a back rest pivotably connected along one frame side adjacent the open end, and support means limiting the rearward movement of the back rest whereby the stowage unit and seat may be carried by the handle means to a



destination with gear within the receptacle and the back rest lying against the frame; upon reaching the destination the gear may be removed, the unit placed upon a desired surface, the back rest rotated to its rearward position, and the unit then being utilized as a seat.

3,298,738
PLAYGROUND SWING
William N. Shalhoob, 5061 San Julio Ave., Santa Barbara, Calif. 93105
Filed May 19, 1965, Ser. No. 457,089
2 Claims. (Cl. 297—273)

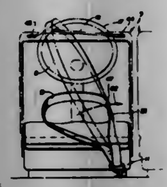


1. A safety device for playground swings for children in which a seat is held in a suspended condition by a pair of suspension members which are suspended over head to allow a swing motion comprising:
(a) a pair of freely hanging flexible slings of fixed size large enough to permit insertion of the hand of a child therethrough, a keeper on each of said slings, and
(b) means for attaching the upper end of one of each of said slings to each suspension member,
said slings being adapted to be tightened when hands are inserted through them to grasp the upper part of the slings in the hand and pulling the corresponding keeper downwardly.

3,298,739
SEAT BELT SAFETY APPARATUS
Thomas M. Scruggs, 1250 Millbrae Ave., Millbrae, Calif. 94031
Filed Dec. 16, 1964, Ser. No. 418,816
11 Claims. (Cl. 297—389)

1. A seat belt safety apparatus for a vehicle having side openings, a floor body section, and an occupant seat having back and bottom portions disposed above and forwardly of said section comprising:
an anchor secured to said floor section interjacent the longitudinal center line of said seat and the longitudinal center line of said vehicle;

a single loop flexible belt having an end connected to said anchor forming a single pivot point and adapted to be extended upwardly between said back and bottom seat portions for encircling an occupant of said seat; and



said apparatus restricting the movement of said occupant relative to said seat and the location of said anchor relative to said seat and vehicle center line functioning to swing said occupant toward the center line of said vehicle under conditions of abrupt forward deceleration, and to securely prevent said occupant from moving through the side openings under conditions of abrupt transverse acceleration of said vehicle.

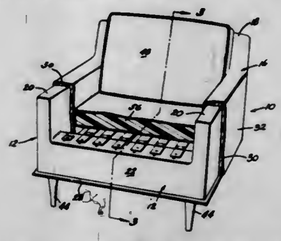
3,298,740
COMBINATION INVALID'S CHAIR AND SAFETY BELT
Frederick V. Shelton, 11200 Elm St., Lynwood, Calif. 90262
Filed Aug. 24, 1965, Ser. No. 482,099
4 Claims. (Cl. 297—385)



1. In combination: an invalid's chair including a back, a seat and a frame having a pair of spurs projecting rearwardly behind the back and below the seat level, and a safety belt including an intermediate portion looped forwardly of said back and above said seat and around the sides of said back to provide a patient-restraining body loop, and an end portion extending obliquely downwardly and laterally behind said back, crossing from one side to the other and terminating in an end loop which is looped over one of said spurs and thereby anchored, and means for anchoring the other end of the belt to the chair with a connection which cannot be released by the chair occupant.

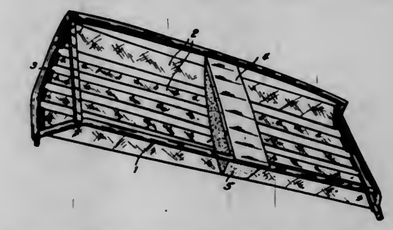
3,298,741
SEATING ARTICLE
Harold J. Lepard, Jr., 2037 Norway Ave., and Keith N. Thomas, 4086 Thornoaks Drive, both of Ann Arbor, Mich. 48104
Filed Jan. 3, 1966, Ser. No. 518,348
6 Claims. (Cl. 297—421)

1. An article of furniture comprising a one-piece formed body shaped to form a hollow back, hollow arms extending forwardly from said back, and a seat formed with an opening, resilient means mounted on said seat so as to substantially span said opening, padding covering the portions of said body normally subjected to direct pressure by a user, a cover removably attached to said body and disposed over said padding and the other parts of said



body normally exposed to view, and cushion means mounted on said body in a position overlying said resilient means.

3,298,742
BENCH SEAT
Jean Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed May 11, 1965, Ser. No. 454,833
Claims priority, application France, May 15, 1964, 3,128
2 Claims. (Cl. 297—452)



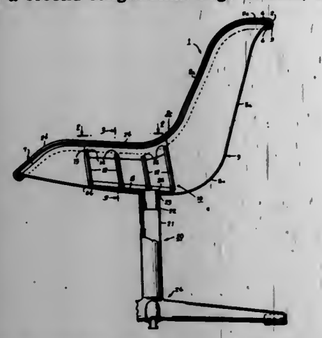
1. A bench seat having a seat part and a back part for accommodating a plurality of persons and wherein at least one of said parts comprises
a rigid frame,
a plurality of elastic straps stretched laterally across said frame in parallel spaced relationship to one another and being secured to said frame at the ends of the straps,
said frame including a rigid supporting member extending transversely of said straps at a lateral mid-position along the length of the seat, and
a member of foam material extending transversely of the straps at said lateral mid-position and being mounted on said rigid supporting member of the frame and providing support for said straps midway between said ends of the latter.

3,298,743
CONNECTOR MEANS FOR UPHOLSTERY-FRAME CONNECTION
Don C. Albinson, Zionsville, and Charles Robert Helms, Old Zionsville, Pa., assignors to Knoll Associates, Inc., New York, N.Y., a corporation of New York
Filed June 10, 1965, Ser. No. 462,823
5 Claims. (Cl. 297—445)

1. An upholstery-frame connection for securing upholstery to an article of furniture having a rigid, skeletal frame, said connection comprising:
(a) a set of body-supporting frame elements including a continuous channel extending about and having a restricted opening at the surface thereof,
(b) an elongated connector strip of resilient material including a web portion and a rib portion,
(c) said rib portion being formed integrally with said web portion along a first longitudinal edge thereof and including a pair of barbs extending outwardly

from opposite side of said web portion, said rib portion being hollow and defining an elongated chamber therein,

(d) said web portion being secured to said upholstery along a second longitudinal edge thereof, and



(e) said rib portion being compressible by collapsing inwardly of said elongated chamber to draw said barbs inwardly for insertion through said restricted opening and being resiliently expansible within said channel to move said barbs into locking engagement therein for securing said upholstery to said rigid frame.

3,298,744

TRAILER HITCH FOR DUMP TRUCK

Allen J. Keim, R.R. 1, Levee Township, Pike County, Ill. 62343

Filed Apr. 28, 1965, Ser. No. 451,388
14 Claims. (Cl. 298—17)



1. A trailer hitch assembly for use with a vehicle having an overhanging platform type body comprising:

a support bracket having hinge means at one end for hinged connection to a supporting structure; a hitch plate mounted at the other end of said bracket, disposed to be coupled to a trailer tongue when the bracket is suspended from the supporting structure in a generally vertical towing position;

a telescoping tow bar hingedly connected at one end to said hitch plate, and having hinge means at the other end for hinged connection to the supporting structure;

means for locking said telescoping tow bar in an extended position to define a rigid towing connection between said hitch plate and said supporting structure; and said tow bar being telescopically collapsible to permit the swinging of said bracket about its hinge means to a generally horizontal stored position.

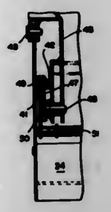
3,298,745

DUAL DUMP GATE CONSTRUCTION

Billy S. Czapiewski, Omaha, Nebr., assignor to Omaha Body & Equipment Company, Omaha, Nebr., a corporation of Nebraska

Filed June 2, 1965, Ser. No. 460,788
5 Claims. (Cl. 298—37)

1. A dual dump gate construction, comprising a hopper having an open bottom, the first pair of co-acting gates pivotally mounted on said hopper for closing said open bottom, means on said hopper for opening and closing said first pair of gates, a second pair of co-acting gates pivotally mounted in said hopper partially closing said open bottom to temporarily support a bridged mass during initial opening of said first pair of gates, and means on said first pair of gates for opening said second pair of gates during the opening of said first pair of gates including an over-center bell crank on said hopper normally maintaining said second pair of gates in said partially closed position and lug means on said first pair of gates for upsetting said bell crank.

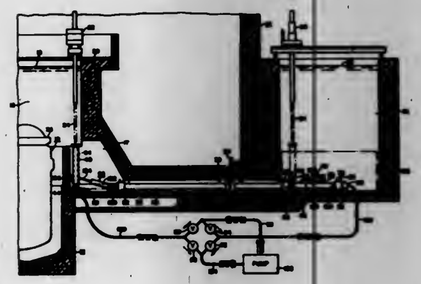


3,298,746

MATERIAL HANDLING APPARATUS

Walter E. Desmarchais, Pittsburgh, Pa., and Hjalmar W. P. Stanhope, Cleveland, Ohio, assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 20, 1964, Ser. No. 346,298
8 Claims. (Cl. 302—3)



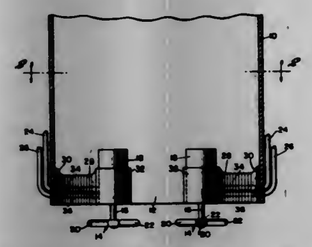
1. Apparatus for handling a component comprising a compartment capable of holding a liquid, another compartment also capable of holding a liquid, conduit means for connecting said compartments at the lower portions thereof, a first tilting device in one of said compartments rotatable about a generally horizontal axis between a substantially vertical position whereat said reactor component can be inserted and withdrawn and a substantially horizontal position whereat said first tilting device is aligned with said conduit means, a second tilting device disposed in the other of said compartments rotatable about a generally horizontal axis between a substantially vertical position whereat said component can be inserted and withdrawn and a substantially horizontal position whereat said second tilting device can be aligned with said conduit means, and means for hydraulically forcing said component when inserted in one of said tilting devices through the conduit means to the other of said tilting devices where said last-mentioned tilting device and said component can be rotated into a substantially vertical position from which said component can be withdrawn.

3,298,747

SUCTION NOZZLE

Donald E. Beckett and Robin K. Beckett, Wilmington, Ohio, assignors to Beckett-Harcum Company, Wilmington, Ohio, a corporation of Ohio

Filed May 11, 1965, Ser. No. 454,866
5 Claims. (Cl. 302—58)



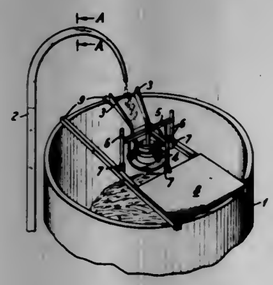
1. A suction nozzle for gathering loose light-weight compactable material, said nozzle having a peripheral wall defining an intake mouth, and at least two rotary screw propellers located exteriorly and ahead of said mouth, for loosening compacted material and thrusting the loosened material into the mouth of the nozzle, motors for individually rotating the screw propellers, said motors each including a driving shaft upon which a screw propelller is fixedly mounted, said driving shafts being substantially parallel to the direction of material movement through the nozzle, and rotatable in opposite directions to neutralize the torque forces generated by the screw propellers when rotating.

3,298,748

APPARATUS FOR DELIVERING MATERIAL TO STORAGE CONTAINERS

Hjalmar Hilding Hultgren, Uttran, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden

Filed July 6, 1965, Ser. No. 469,376
Claims priority, application Sweden, July 3, 1964, 8,155/64
14 Claims. (Cl. 302—60)



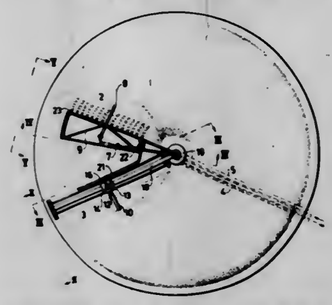
1. Apparatus for feeding and distributing material to a storage container, such as a silo, through a top opening of the container, which comprises a fan wheel, means including a frame for supporting the fan wheel centrally in a horizontal section of the container below said opening, said means supporting the fan wheel for rotation about a generally vertical axis, a disk mounted on the frame for rotation about a generally vertical axis and underlying said fan wheel, said disk being contoured to give it a radial dimension which is different in different radial directions, and driving means operatively connected to the fan wheel for rotating said wheel.

3,298,749

ARRANGEMENT FOR STORING WOOD CHIPS

Ingemar Lee-Albin Croon, Alfredsheim, and Anders Assarsson and Olof Edvin Frisk, Ornskoldsvik, Sweden, assignors to Mo Och Domsjo Aktiebolag, Ornskoldsvik, Sweden, a corporation of Sweden

Filed June 4, 1965, Ser. No. 461,378
Claims priority, application Sweden, June 30, 1964, 7,968/64
7 Claims. (Cl. 302—56)



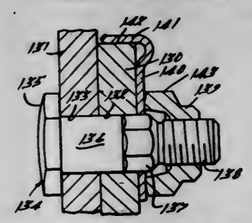
1. A method of storing wood chips which comprises laying the chips along a substantially circular path to form an interrupted annular chip pile the cross section of which in its upper portion is in the form of a segment of a circle, and in its lower portion is in the form of a trapezoid, and to one end of which the chips are fed and from the other end of which the chips are removed, the said one end being continuously displaced away from the chip pile along said circular path, while feeding the chips thereto, and said other end being simultaneously continuously displaced along said circular path in the same direction and at substantially the same rate by removal of chips from the pile.

3,298,750

FASTENER ASSEMBLY

Harold A. Storch, Birmingham, Mich., assignor to Federal Screw Works, Detroit, Mich., a corporation of Michigan

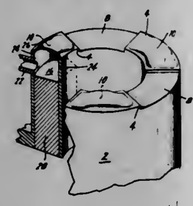
Filed Aug. 2, 1965, Ser. No. 479,037
4 Claims. (Cl. 308—2)



4. An assembly including a pair of members; a stud pivotally connecting said members, said stud having a male threaded portion at one end thereof and a portion of noncircular cross section possessing a minimum diameter at least as great as the crest diameter of said male threaded portion; a washer nonrotatably mounted on said stud portion of noncircular cross section, said washer having a planar portion disposed perpendicular to the axis of said threads and a portion disposed at right angles to said planar portion and engageable with one of said members to prevent rotation of said washer with respect to said one member; a nut having a threaded bore threaded on said stud threaded portion, a seat at one end thereof engageable with said washer, a distorted thread area operable to frictionally grip said stud male threaded portion, and a counterbore extending inwardly

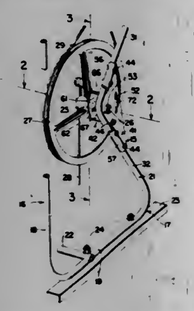
from said seat and of a size sufficient to receive said stud portion of noncircular cross section; and means for prevention rotation of said washer and said stud relative to one of said members.

3,298,751
GAS LUBRICATED BEARINGS
Richard C. Elwell, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 30, 1964, Ser. No. 363,697
7 Claims. (Cl. 308—9)



1. A bearing comprising
stationary means for guiding a rotating member,
means defining a space between said stationary means and said rotating member for the passage of a lubricant streaming in the general direction of rotation of said rotating member and,
a projection made of flexible material and having a cavity thereunder for imparting pressure thereto, said projection being fixed to and extending near the rim of said stationary means and having a plurality of points at and near which the clearance between the bearing surface of the rotating member and the bearing surface of the stationary means is about a maximum and having a plurality of other points downstream of the maximum clearance at and near which the clearance between them approximates a minimum value whereby the streaming lubricant is under greater pressure at said points of minimum clearance than at said points of maximum clearance.

3,298,752
BAND WHEEL SUPPORTS FOR SEWING MACHINE STANDS
Henry J. Milan, Clark, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 16, 1964, Ser. No. 351,955
2 Claims. (Cl. 308—15)



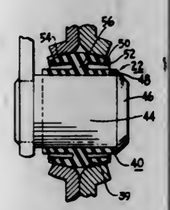
1. A band wheel support adapted to be attached to a bent tubular leg member of a sewing machine stand, said band wheel support comprising a support bracket; an apertured plate portion formed as part of said support bracket; at least one C-shaped lug secured to said plate portion at one edge thereof, said C-shaped lug being so constructed and arranged as to engage one of the tubular leg members of said sewing machine stand; a locking bracket; a plurality of walls, some of said walls being placed in parallel relationship to other of said walls and some of said walls being placed normal to other of said walls thereby to form a box-like portion of said locking bracket; at least one apertured bent lug secured to one of said walls and extending normal thereto, the said bent lug engaging the plate portion of said support bracket; a straight lug forming part of one of the walls of said locking bracket and extending in the same plane as said wall, said straight lug entering one of the apertures in said plate portion; a pair of concentric pushed-out nipples, one of said nipples being formed in said support bracket and the other of said nipples being formed in said locking bracket; a band-wheel shaft extending through and supported by said pushed-out nipples; a set screw threaded into said locking bracket and engaging said band-wheel shaft to lock said shaft in place; and means for securing the bent lug of said locking bracket to said support bracket.

3,298,753
CARBON AND CARBON-GRAPHITE BEARINGS WITH ANTI-FRICTION SURFACE
Edgar P. Eaton, Jr., Morristown, N.J., assignor to The Carbone Corporation, Boonton, N.J., a corporation of New Jersey
Filed May 30, 1963, Ser. No. 277,750
5 Claims. (Cl. 308—36)



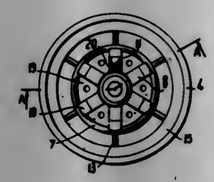
1. A self-lubricating bearing structure comprising an essentially carbon-graphite support of substantial thickness and a substantially continuous thin layer of tetrafluorethylene bonded to the load receiving surfaces of the support.

3,298,754
SELF-ALIGNING BEARING ASSEMBLY FOR WINDSHIELD WIPER MECHANISM
William C. Riester, Williamsville, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Dec. 21, 1962, Ser. No. 246,481
6 Claims. (Cl. 308—72)



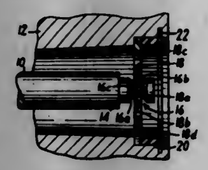
1. A ball joint assembly comprising a bearing housing having a bearing retaining seat of substantially spherical configuration, a double-walled bearing including an inner wall having an inner cylindrical bearing surface, an outer wall having a curvilinear outer bearing surface of greater radius of curvature than said bearing retaining seat when unassembled, means for spacing and connecting said inner wall and said outer wall, said bearing being received in said bearing seat with said outer wall being deformed in compression to resiliently engage said bearing seat whereby said outer bearing surface of said outer wall resiliently engages said bearing seat for movement therein.

3,298,755
PRESSURE-FLUID BEARINGS FOR ROTATING SHAFTS
Gérald Gobert, Orsay, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Nov. 5, 1963, Ser. No. 321,585
Claims priority, application France, Nov. 14, 1962, 915,365
11 Claims. (Cl. 308—122)



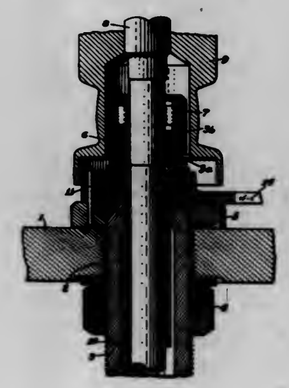
1. A bearing assembly for a rotating shaft comprising a circumferentially-spaced series of bearing elements adapted to surround a shaft and having radially-inner end surfaces adapted to be closely spaced from the shaft surface, means mounting said elements for limited, individual radial displacement towards and away from the shaft, a substantially closed pressure chamber defined within each element, at least one orifice formed in each element to provide passage for fluid under pressure in the pressure chamber to said radially inner end surface of the element for spacing said elements away from said shaft, means restraining the radial outward displacements of the elements, and means supplying fluid under pressure from a source thereof to all of said pressure chambers.

3,298,756
DIAPHRAGM THRUST BEARING
Donald S. Wilson, West Hurley, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York
Filed May 14, 1964, Ser. No. 367,444
12 Claims. (Cl. 308—135)



1. A thrust bearing for rotating machinery having a shaft rotating relatively to a surrounding member comprising, annular groove means around said shaft by a cylindrical root portion of limited axial extent and a pair of opposed shoulders at either end of said root portion, at least one of the shoulders defining said groove means sloping away from the other such that said groove means is widest at the periphery of said shaft, and resilient diaphragm means having an aperture therein for engagement with said groove means, said diaphragm means adapted to rotate relative to said shaft and being capable of absorbing thrust forces occurring relative to said shaft, the area of contact between said diaphragm means and at least said one of said shoulders being proportional to the magnitude of said thrust forces.

3,298,757
SPINDLE BEARING ARRANGEMENT FOR A TEXTILE MACHINE
Erwin Friedrich Schmid, Kemnat, Kreis Esslingen, Germany, assignor to SKF Kugellagerfabriken Gesellschaft mit beschrankter Haftung, Stuttgart-Bad Cannstatt, Germany, a company of Germany
Filed Oct. 16, 1964, Ser. No. 404,296
Claims priority, application Germany, Oct. 25, 1963, S 88,021
12 Claims. (Cl. 308—152)

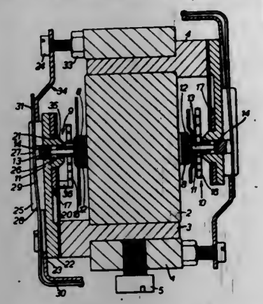


1. A bearing arrangement for spindles of a textile machine, comprising, in combination:
(a) a stationary support;
(b) a plurality of individual tubular members arranged to extend coaxially, each of a first and second of said tubular members having a radially extending end face, the two end faces being opposite and spaced from each other, said plurality of tubular members forming together bearing housing means;
(c) fastening means rigidly fastening said first tubular member to said support;
(d) a collar bearing coaxially arranged in said second tubular member;
(e) a resilient non-metallic annular member interposed between said first and second tubular members and fixedly fastened to and across said end faces, said resilient member primarily extending in radial direction; and
(f) supporting means for supporting a footstep bearing in a position axially spaced from said collar bearing in a direction from said second toward said first tubular member, said supporting means being mounted on one of said first and second tubular members.

3,298,758
INSTRUMENT BEARINGS AND INSTRUMENTS INCORPORATING SUCH BEARINGS
Hugh Sutherland Macadie, Mill Hill, London, England, assignor to Avo Limited
Filed Apr. 29, 1964, Ser. No. 363,448
Claims priority, application Great Britain, May 3, 1963, 17,690/63
16 Claims. (Cl. 308—159)

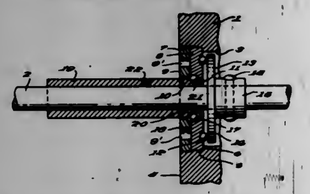
1. An instrument bearing in which a spindle can be supported comprising a bearing block, means for slidably supporting the bearing block so that it can move in the

direction of the axis of the spindle, a leaf spring which can act to resiliently locate the bearing block axially in a direction toward the spindle, and a carrier to which said



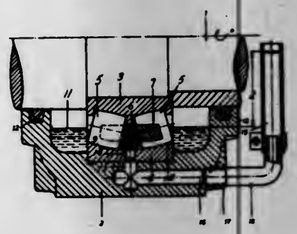
leaf spring is connected and which is adjustable to remove the biasing force of said leaf spring against said bearing block.

3,298,759
BALL BEARING ASSEMBLY
Ernest J. Halter, Hawthorne, Calif.
(4314 W. 234th Place, Torrance, Calif. 90505)
Filed June 28, 1963, Ser. No. 291,497
7 Claims. (Cl. 308—175)



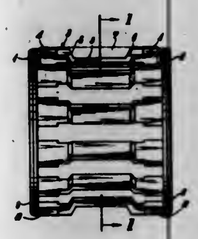
1. A ball bearing assembly for resisting both radial loads and axial thrust loads and including a shaft, first and second ball bearing means, said first ball bearing means comprising rigid first and second members relatively rotatably movable about a common axial line of said shaft; said members presenting one each of a pair of parallel, opposed surfaces spaced from each other and disposed normal to said axial line, said first member being mountable on said shaft and said second member being mountable on an associated component of a mechanism for relative rotary movement of said members between said shaft and the associated component about the axial line of the shaft, one of said members having an annular ball race comprising a groove formed in the surface thereof constituting one of said parallel, opposed surfaces and disposed coaxially with respect to the axial line of the shaft and having a first series of bearing balls disposed in said groove and retained therein by the parallel opposed surface of the other of said members; said second ball bearing means comprising means effective to resist both axial thrust loads in the direction opposite the loads resisted by said first ball bearing means and radial loads and including a second ball race formed by juxtaposed, opposing ball race grooves formed, respectively, in said second member of said first ball bearing means and in a third member carried by the shaft and a series of bearing balls in said second ball race, the ball groove for said second ball bearing means formed in said second member of said first ball bearing means being of greater radial dimension with respect to the axial line of the shaft than the complementary groove of said second ball race formed in said third member by an amount which is less than the diametral dimension of one of the bearing balls contained in said second ball race, said third member and the ball race groove thereof being disposed at the side of said second member of said first ball bearing means with which it cooperates which is remote from said first member of said first ball bearing means.

3,298,760
ANTIFRICTION BEARING
Ludwig Linner and Heinrich Korrenn, Schweinfurt, and Rudolf Mann, Mannheim-Kafertal, Germany, assignors to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany
Filed May 4, 1964, Ser. No. 364,687
Claims priority, application Germany, May 8, 1963, K 49,687
10 Claims. (Cl. 308—187)



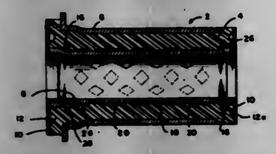
1. An immersion-lubricated antifriction bearing whose rotating parts are adapted to pump the lubricant into an external conduit system, wherein the action of pumping the lubricant is exclusively provided by the hydrodynamic pressure built up in the gap existing between a peripheral surface of a cage and the adjacent inner surface of a stationary outer race serving to guide the said cage, the oil subjected to the pumping action being discharged from the antifriction bearing through a hole provided in the lowermost portion of the surface guiding the cage.

3,298,761
ROLLER BEARING CAGE FOR CYLINDRICAL ROLLERS
Georg Schaeffler, Herzogenaurach, near Nurnberg, Germany, assignor to Industriewerk Schaeffler, OHG., Nurnberg, Germany, a corporation of Germany
Filed July 8, 1964, Ser. No. 381,131
Claims priority, application Germany, July 19, 1963, J 11,835
5 Claims. (Cl. 308—217)



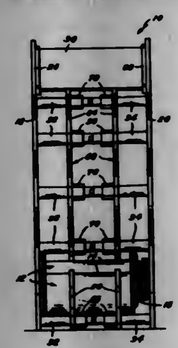
1. A thin-walled cage for cylindrical rollers in roller bearings comprised of bars which form apertures for the rollers and whose ends are connected by radially-inwardly directed flanges and which bars are bent at such angles that the individual bar portions are spaced at different distances from the cage axis and radially-extending discs within the radially-inwardly directed flanges which closely abut against the said flanges.

3,298,762
SELF-LUBRICATING JOINT
Richard O. Peck, and Charles O. Siemmons, Akron, Ohio, assignors to The General Tire & Rubber Company, a corporation of Ohio
Filed Dec. 18, 1962, Ser. No. 245,558
12 Claims. (Cl. 308—238)



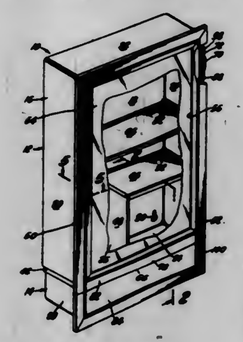
1. A self-lubricating articulate joint comprising a pair of concentrically disposed and relatively rotatable members, said members defining an annular space therebetween, a resilient member of organic polymeric material occupying said space, the outer member of said pair of members substantially encapsulating and compressively constraining said resilient member therein, said resilient member having a plurality of separate pockets in a rotatable member abutting surface thereof said pockets having sides, each of which are substantially perpendicular to the rotatable member abutting surface of said resilient member, fluid lubricant material filling said pockets, said pockets being spaced laterally and transversely to provide a sufficient area of said abutting surface between said pockets to insure compressive nonbuckling yielding of said abutting surface when said joint is subjected to radial loading, whereby radial loading of said joint causes compressive yielding of said abutting surfaces thereby decreasing the volume of said pockets and causing a portion of the lubricant material therein to be ejected therefrom to provide lubrication of said abutting surfaces.

3,298,763
DEVICE FOR DISPENSING CYLINDRICAL ARTICLES
Joseph Di Domenico, 575 Mount Pleasant Ave., Providence, R.I. 02908
Filed Feb. 8, 1965, Ser. No. 431,093
15 Claims. (Cl. 312—45)



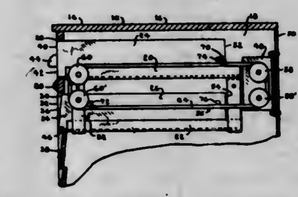
2. In a dispensing device, a pair of vertically positioned side walls that are located in spaced apart relation, means for joining said side walls and locating them in their spaced apart relation, a plurality of inner plates mounted on said joining means intermediate said side walls and located in parallel relation with respect thereto, at least two of said inner plates being substantially coplanar and at least two other of said inner plates being substantially coplanar and horizontally spaced from said first two inner plates, the upwardly facing edges of said inner plates defining track sections on which cylindrical articles are movable from a loading station to a dispensing station, the track sections as defined by the upper edges of said inner plates being downwardly inclined and arranged in alternate oppositely extending direction for transferring said cylindrical articles from said loading station to said dispensing station in a circuitous path.

3,298,764
CABINET
Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif. 91605
Filed Feb. 11, 1965, Ser. No. 431,904
4 Claims. (Cl. 312—204)



1. A vanity cabinet comprising:
a body portion having a closed rear wall and encompassing side, top and bottom walls forming an open front,
hinge means mounted on one of said walls adjacent said open front,
a door swingably connected to said hinge means for closing said open front, and
drawer support and guide means comprising an L-shaped bracket having a vertical leg affixed to said rear wall and a horizontal leg extending subjacent said bottom wall, and drawer guide bars affixed to the under surface of said bottom wall.

3,298,765
CASH DRAWERS AND METHOD FOR OPERATING SAME
George Rakich, Lake County, Ind.
(900 W. 67th Ave., Crown Point, Ind. 46307)
Filed Aug. 18, 1965, Ser. No. 480,636
5 Claims. (Cl. 312—223)



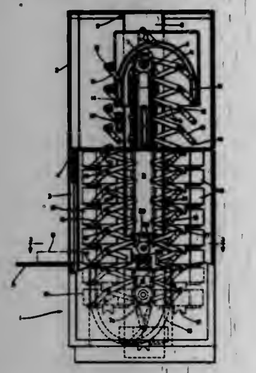
1. A money depository station comprising:
a counter housing having a front facia wall and a rear wall, said facia wall provided with an opening therein;
a pair of drawers supported in said counter housing vertically aligned in stack relation, each of said drawers being manually shiftable horizontally in and out of said housing through said opening in said front facia wall, independently of each other; said drawers having a front facia end and a rear end;

a pulley device supported in said counter housing, said pulley device comprising spaced pulleys, and belt means encircling said pulleys for translating unidirectional rotary motion of said pulleys to simultaneous, oppositely directed, lineal motion, and dog means connecting said belt means, one of said dog means extending from said belt means to engage said rear end of one of said drawers to move said one drawer out of said housing when said drawer is contained in said housing, and another of said dog means extending from said belt means to engage the rear end of the other of said drawers to simultaneously move said other drawer into said housing when said other drawer is out of said housing;

an electric motor in said housing drivingly connecting said pulley device; and

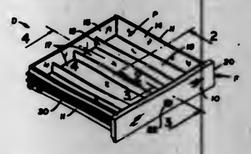
a switch means for operating said electric motor.

3,298,766
POWER FILE EJECTOR CONSTRUCTION
Carl D. Graber, Orrville, and Leo J. Grosswiller, Jr., East Canton, Ohio, assignors to Diebold Incorporated, Canton, Ohio, a corporation of Ohio
Filed Aug. 23, 1965, Ser. No. 481,857
6 Claims. (Cl. 312—223)



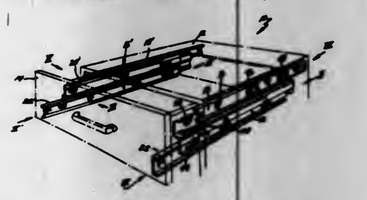
1. Power-operated, ejector-retractor construction for moving the drawers of a power file of the type in which a plurality of pans are mounted on an endless conveyer mechanism carried by support means for movement in either direction in a continuous orbit of travel having at least one flight of travel in a plane extending parallel with the orbital axes and any selected pan is delivered by conveyor drive power means to a predetermined work station location, and in which a drawer is supported on each pan as a pan-drawer assembly on suspension mechanism which permits the drawer to be moved between ejected and retracted positions through a file access opening provided in the file case at said work station location; the construction including in combination, drawer-moving mechanism, means mounting said drawer-moving mechanism on the file support means adjacent the work station and between flights of orbital conveyer travel; the drawer-moving mechanism including slide bar means movable generally in a direction between home and extended positions parallel with the axes of the orbital path of conveyor travel, means for imparting generally accelerating and decelerating slow-fast-slow movement in either direction to the slide bar means including reversing motor drive means, an oscillating crank operatively connected with the drive means, and a connecting rod pivotally connected with the crank and slide bar means; column-acting, force-transmitting coil spring thrustor means connected at one end to the slide bar means having a magnet adapted for magnetic coupling at its other end with a drawer of any pan-drawer assembly located at said predetermined work station location; means for directing thrust movement of said thrustor magnet in a direction normal to the plane of at least one of the flights of conveyer travel; and control means for operating the reversing motor drive means.

3,298,767
DRAWER
Richard Thomas Crandell and Chester B. Schellenger, Denver, Colo., and Fred Lee Weiss, 325 Ash St., Denver, Colo. 80220, assignors, by direct and mesne assignments, to Fred Lee Weiss, Denver, Colo.
Filed Dec. 30, 1964, Ser. No. 422,355
2 Claims. (Cl. 312—330)



1. A drawer formed by mounting a pan within a frame, wherein the pan comprises, a drawn sheet of plastic synthetic resin drawn to form as a unitary structure, a substantially flat bottom and a front wall, opposing side walls and a rear wall upstanding from said bottom, with the front wall being drawn to be perpendicular to the plane of the bottom and with the side and rear walls being included outwardly from the perpendicular at a small angle sufficient to provide for drawing draft, and wherein said frame member comprises a flat front face piece, rectangular in section, lying flatly against and be adhered to the perpendicular front wall extending and with each end extending therebeyond, and flat, opposing side pieces, trapezoidal in section, abutting against the ends of said front face piece at each side of the pan, said side pieces having inclined inner surfaces lying flatly against and be adhered to the inclined pan side walls with the outer surfaces of the side pieces being perpendicular to the plane of the bottom of the drawer and thereby adapted to fit into a conventional square drawer socket and to receive and hold conventional drawer guide members.

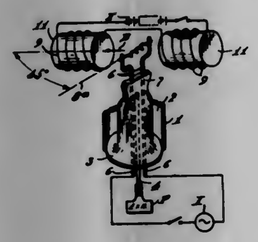
3,298,768
DRAWER RAIL STRUCTURE
James B. Vogt, Grand Rapids, Mich., assignor to Knape & Vogt Manufacturing Co., Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 31, 1965, Ser. No. 444,315
5 Claims. (Cl. 312—339)



1. A drawer rail assembly including a drawer rail, a case rail, and an intermediate rail; said case rail and drawer rail both being open sided channel elements having an inner track space, and having wheel retention flange means at the open sides defining an elongated receiving opening at said open sides; said intermediate rail element being shaped in cross section like a Z on its side having each of its connected legs generally normal to the adjacent leg, and having a plurality of vertical wheel type rollers rotatably mounted thereto on opposite sides of the cross

member of said intermediate element to comprise upper rollers and lower rollers; fixed stop means between said case rail and said intermediate rail to limit relative extension therebetween; the height of said case rail track space being greater than the diameter of said wheels, and the height of said opening being less than the diameter of said wheels; the vertical height between the top of said track space and the bottom edge of said opening being greater than the wheel diameter, and the vertical distance from the bottom of said track space to the top of said opening being less than the wheel diameter; whereby said upper rollers are insertable laterally into said case rail by tilting the top edge of said intermediate rail toward said case rail to insert said upper rollers, and then tipping said intermediate rail back to the vertical position to insert the entire upper rollers.

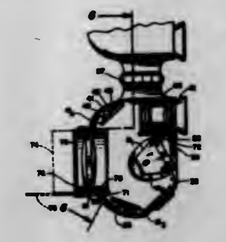
3,298,769
METHOD AND APPARATUS FOR MAKING ELECTRON DISCHARGE DEVICES
Charles L. Toomey, Danvers, Mass., assignor to Sylvania Electric Products, Inc., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,753
7 Claims. (Cl. 316—15)



4. In the process of making an electron discharge device including an envelope and an electrode therein for treatment above a predetermined temperature, the steps comprising exhausting the envelope to leave a residue of gas normally ionizable at a predetermined potential, passing a current through the electrode at a voltage above said normal ionization potential and effective to heat the electrode resistively to said predetermined temperature, and simultaneously applying to the electrode an external magnetic field of strength to inhibit ionization of said gas adjacent said electrode, thereby to prevent said gas from shunting said current around the electrodes and preventing heating of the electrode to said predetermined treatment temperature.

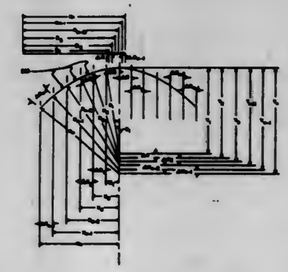
3,298,770
OPTICAL INSTRUMENT WITH ADJUSTABLE ERECTING MIRROR SYSTEM
Gottfried R. Rosendahl, Philadelphia, Pa., assignor, by mesne assignments, to International Telephone and Telegraph Corporation
Filed Mar. 16, 1962, Ser. No. 180,154
3 Claims. (Cl. 350—36)

1. In an optical instrument having an objective lens and an ocular lens arranged in spaced parallel relationship, the combination therewith of an optical image-erecting system between said objective and said ocular including four plane mirrors each having a first surface of reflection, a pair of said mirrors defining a roof-mirror, a roof-mirror support for said roof-mirror including adjusting means to control the tilting angle of the roof line of intersection by rotating said roof-mirror in a vertical plane passing through said roof line of intersection, said rotation taking place about an axis perpendicular to said vertical plane and passing close to the center point of said roof line of intersection, a roof-angle adjusting means to regulate the roof angle between said pair of mirrors of said roof-mirror, the remaining ones of said four plane mirrors being positioned in spaced relationship to one another and to said roof-mirror, said roof-mirror being positioned in the optical path between said objective lens and said remaining ones of said four plane mirrors, said



remaining ones of said four plane mirrors having a common axis of intersection substantially normal to said roof line of intersection, and each of said remaining ones of said four plane mirrors having adjusting means for adjusting each said mirror only in a direction perpendicular to the direction of adjustment of the other of said remaining one of said four plane mirrors.

3,298,771
STEPPED ZONE LENSES FOR WIDE-ANGLE OCULARS
Harvey L. Ratliff, Jr., Oxon Hill, Md., assignor to Jetru Inc., Amarillo, Tex.
Original application Apr. 24, 1963, Ser. No. 275,411. Divided and this application Oct. 18, 1965, Ser. No. 505,119
1 Claim. (Cl. 350—197)



A stepped zone lens for wide angle oculars being of refractive material with an index of refraction substantially greater than the surrounding media comprising: a first surface on one side thereof; a truncated peripheral extremity being substantially symmetric about the optical axis of the lens; and a second stepped, convex, aspherical surface on the other side thereof, said second surface comprising: a finite multiplicity of finite incremental spherical portions with the respective radii of each having its origin on the optical axis of the lens and which form said second surface as one continuous surface that will intersect said first surface to form a circle in close proximity to said peripheral extremity,

the respective central and peripheral incremental portions of said second surface being ΔS and ΔS_{n-1},

the respective central and peripheral incremental portions of a substantially flat object plane which is substantially perpendicular to said optical axis of said lens and on the side of said second surface being ΔC and ΔC_{n-1},

the radius of curvature of the central incremental portion of said second surface being R_1 and:

$$R_1=\frac{(f_1)(r'')(n_1-n_2)}{r''+(f_1)(n_1-n^2)}$$

where f_1 is the distance from ΔS to ΔC, r'' is the radius of curvature of said first surface, n_1 is the refractive index of the lens material and n_2 is the refractive index of the surrounding media,

the radius of curvature of the peripheral incremental portion of said second surface being R_n and:

$$R_n=\frac{(f_n)(r'')(n_1-n_2)}{r''+(f_n)(n_1-n_2)}$$

where f_n is the distance from ΔS_{n-1} to ΔC_{n-1},

the maximum incremental distance between adjacent origins along said optical axis being ΔY_{n-1} and:

$$\Delta Y_{n-1}=R^2{}_n/X_n \sin \alpha$$

where α equals approximately one minute and X_n is the perpendicular distance from said optical axis to ΔS_{n-1},

each respective incremental portion between ΔS and ΔS_{n-1} being $\Delta S_{1 \ldots n-2}$,

each respective incremental portion of said second surface which is adjacent and subsequent to $\Delta S_{1 \ldots n-2}$ being $\Delta S_{2 \ldots n-1}$,

$R_{1 \ldots n-2}$, the respective radius of curvature of $\Delta S_{2 \ldots n-1}$, being approximately ΔR_{n-1} longer than $R_{1 \ldots n-2}$, the respective radius of curvature of $\Delta S_{1 \ldots n-2}$, and:

$$\Delta R_{n-1}=\frac{\Delta Y_{n-1}}{\text{sec.}\left(\text{arc sin}\frac{X_n}{R_n}\right)}$$

the number of spherical portions within said second surface being n, and:

$$n \cong (R_n-R_1)/(\Delta R_{n-1})$$

$Y_{1 \ldots n-2}$ being the respective distance along the said optical axis to the plane of the corresponding $\Delta S_{1 \ldots n-2}$ from the respective origin of the corresponding $\Delta S_{1 \ldots n-2}$,

$Y_{2 \ldots n-1}$ being the respective distance along the said optical axis to the plane of the corresponding $\Delta S_{2 \ldots n-1}$ from the respective origin of said corresponding $\Delta S_{2 \ldots n-1}$,

$X_{1 \ldots n-2}$ being the respective perpendicular distance from said optical axis to the corresponding $\Delta S_{1 \ldots n-2}$,

$X_{2 \ldots n-1}$ being the respective perpendicular distance from said optical axis to the corresponding $\Delta S_{2 \ldots n-1}$, and:

$Y_{2 \ldots n-1}-Y_{1 \ldots n-2}=(R_{2 \ldots n-1}-R_{1 \ldots n-2})$ sec (arc sin $(X_{2 \ldots n-2})/(R_{2 \ldots n-1})$)

where $Y_{2 \ldots n-1}$, $Y_{1 \ldots n-2}$, $R_{2 \ldots n-1}$, $R_{1 \ldots n-2}$ and $X_{1 \ldots n-2}$ are respectively with regard to two corresponding adjacent portions of said lens, and:

$$X_{1 \ldots n-2}=X_{2 \ldots n-1}-\Delta X$$

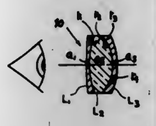
where ΔX is approximately X_n/n,

whereby all the rays from said flat object plane enter the eyes of a viewer substantially parallel and no two rays enter said eyes diverging from each other at angles greater than approximately one minute.

3,298,772
TRIPLET-TYPE MAGNIFYING LENS

Arthur Milinowski, Norwalk, Conn., assignor to Republic Lens Co., Inc., New York, N.Y., a corporation of New York

Filed Aug. 2, 1963, Ser. No. 299,543
2 Claims. (Cl. 88—57)



1. A magnifying lens composed of a first, a second and a third lens member cemented together, the magnitude in linear units of the radii r_1 to r_4 and the axial thicknesses a_1 to a_3 of said first, second and third lens members L_1, L_2, L_3, their refractive indices n_d and their dispersion numbers ν being substantially as given in the following table:

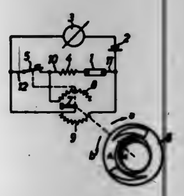
TABLE

Lens member	Radius	Thickness	n_d	ν
L_1	$r_1=+370.84$	$a_1=1.82$	1.52620	51.00
	$r_2=+34.66$	$a_2=9.32$		
L_2	$r_3=-17.60$	$a_3=1.82$	1.51671	64.20
L_3	$r_4=-29.00$		1.66662	33.09

3,298,773
EXPOSURE CONTROLS FOR MOTION PICTURE CAMERAS

August Auracher, Unterhaching, near Munich, Germany, assignor to AGFA Aktiengesellschaft, Leverkusen, Germany

Filed Sept. 17, 1964, Ser. No. 397,168
Claims priority, application Germany, Sept. 20, 1963
A 44,099
7 Claims. (Cl. 352—141)



7. In a motion picture camera, in combination, moving coil means adapted to be connected with a diaphragm of the camera for adjusting the diaphragm; an electrical circuit electrically connecting a photosensitive resistor and a source of current to said moving coil instrument for actuating the latter according to the intensity of light impinging on said resistor; a pair of variable resistors respectively connected in series and in parallel with said circuit for respectively providing an overexposure and an underexposure; and single manually operable means operatively connected with both of said resistors for optionally connecting a selected one of said variable resistors into said circuit while simultaneously disconnecting the other of said variable resistors from said circuit, so that the operator can provide intentionally either an overexposure or an underexposure.

CHEMICAL

3,298,774
DYEING POLYAMIDE FIBERS

Charles Soiron, Riehen, Switzerland, Hans Rafael, Weil am Rhine, Germany, and Walter Stockar, Munchenstein, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed July 19, 1963, Ser. No. 296,390
Claims priority, application Switzerland, July 31, 1962, 9,157/62
18 Claims. (Cl. 8—74)

1. In a process for dyeing polyamide fibers which process comprises heating and thereby reacting, in an acid dyebath, said fibers with a reactive dyestuff which contains at least one mobile substituent which is split off as anion, the improvement comprising

(I) adding to the dyebath which still contains the fibers, after the dye has drawn onto the latter, a condensation product of

(a) a member selected from the group consisting of a naphthalene sulfonic acid and a 1,2,3,4-tetrahydronaphthalene sulfonic acid,

(b) from about 0.5 to 1.5 parts by weight of a compound of the formula

HO—phenylene—SO_2—phenylene—OH

per part by weight of (a), and

(c) from about 0.1 to 0.2 part by weight of formaldehyde per part by weight of (a), in aqueous solution, and

(II) heating the dyebath and fibers therein for about 10 to 60 minutes at a temperature of about 50° to 100° C.

3,298,775
PROCESS FOR BLEACHING TEXTILE FIBRES AND NEW BLEACHING COMPOSITIONS

Jean Malafosse and Pierre H. Gouse, Lyon, France, assignors to l'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,765
Claims priority, application France, Apr. 14, 1962, 894,538
17 Claims. (Cl. 8—101)

1. A process for bleaching textile fibers comprising immersion in a bleaching bath containing as a source of active oxygen a peroxygen compound and containing a source of active oxygen, comprising additionally adding to the bleaching bath a phthalic acid anhydride having in its molecule at least one hydrogen atom replaced by an electronegative group.

6. A bleaching composition for textile fibers, containing as a source of active oxygen a peroxygen compound and a phthalic acid anhydride having in its molecule at least one hydrogen atom replaced by an electronegative group.

3,298,776
PORTABLE AUTOCLAVE

Donald J. Beecher, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania

Filed Aug. 20, 1964, Ser. No. 390,971
1 Claim. (Cl. 21—98)

An autoclave comprising a generally cylindrical pressure tank,

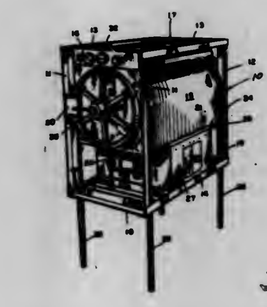
two spaced corner members at each end of said tank,

longitudinal frame members connecting the opposite ends of said corner members at one end of said tank to the respective ends of said corner members at the other end of said tank,

transverse frame members connecting the ends of said corner members at each end of said tank,

said corner members, a part of said pressure tank, and said longitudinal frame members defining a space generally triangular in cross section above and to each side of said pressure tank,

two elongated generally cylindrical liquid tanks having their longitudinal axes parallel to the longitudinal axis of said pressure tank,



one said liquid tank being disposed in each said space,

means connecting each said liquid tank in fluid flow relation with the inside of said pressure tank,

means to selectively admit liquid from said liquid tanks to said pressure tank,

a fire box on said frame below said pressure tank, and heating means in said first box for said pressure tank on said autoclave,

said heating means being a gasoline fired stove.

3,298,777
THERMOELECTRIC COMPOSITIONS OF $Nb_xTa_{1-x}Si_yGe_{2-y}$

Lothar H. Brixner, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 12, 1961, Ser. No. 158,865
4 Claims. (Cl. 23—315)

1. Thermoelectric compositions having figure of merit of not less than 0.5×10^{-4}° C.$^{-1}$ and having the general formula $Nb_xTa_{1-x}Si_yGe_{2-y}$, where x is a value of 0 to 1 inclusive, and y is a value of 0 to 2 inclusive, with the further provision that the value of at least one of x and y must differ within their specified ranges from the minimum and maximum limits by a value of at least 0.25.

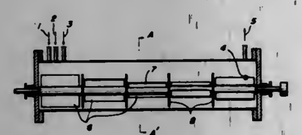
3,298,778
PREPARATION OF MOLYBDENUM DI- AND TRIHALIDES

Robert E. Robinson, Adrian, Mich., assignor to Stauffer Chemical Company

No Drawing. Filed Nov. 4, 1964, Ser. No. 408,739
1 Claim. (Cl. 23—87)

The method comprising reacting molybdenum hexacarbonyl and molybdenum pentachloride at a temperature of from about 300° C. to about 650° C. in an inert atmosphere for a period of at least about 5 minutes thereby to produce a compound selected from the group consisting of molybdenum dichloride and molybdenum trichloride.

3,298,779
METHOD FOR SEPARATING COBALT FROM OXO-REACTION PRODUCTS
Toshihide Goto, Nishinomiya-shi, and Akio Yamagishi and Takao Sawada, Nihama-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
Filed June 19, 1962, Ser. No. 203,630
Claims priority, application Japan, June 23, 1961, 36/22,486; July 12, 1961, 36/25,017
5 Claims. (Cl. 23—117)



1. A method for separating cobalt from oxo-reaction products produced by reaction of an organic compound having an olefinic double bond, carbon monoxide and hydrogen in the presence of a cobalt-containing catalyst at an elevated temperature and at an elevated pressure, which comprises contacting said oxo-reaction product with an aqueous sulfuric acid solution in the presence of an oxidizing agent selected from the group consisting of air and hydrogen peroxide to form phases consisting of an aqueous phase and an organic phase and to transfer the cobalt compound involved in said oxo-reaction product to said aqueous phase in the form of cobalt sulfate.

3,298,780
PROCESS FOR PREPARING A CRYSTALLINE ZEOLITE
Raymond N. Fleck, Berkeley, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Mar. 21, 1961, Ser. No. 97,135
10 Claims. (Cl. 23—113)

1. A process for synthesizing a crystalline zeolite having a composition, expressed as mole ratios of oxides, corresponding to

$$0.9\pm0.2R_{2/\nu}O:Al_2O_3:5.0\pm1.5SiO_2:wH_2O$$

wherein R represents at least one cation having a valence of not more than 4, ν represents the valence of R, and w can be any value up to about 5, said zeolite having an X-ray powder diffraction pattern essentially as shown in the following table,

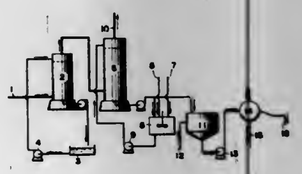
Interplanar spacing, d(A.):	Relative intensity
16.25±0.25	VS
7.55±0.15	M
6.50±0.10	M
5.91±0.10	W
4.61±0.05	S
3.93±0.05	S
3.67±0.05	W
3.49±0.05	M
3.29±0.05	W
3.19±0.05	M
3.07±0.05	M
2.92±0.05	M
2.66±0.05	W

which process comprises: preparing an aqueous reactant solution having a composition, expressed as mole ratios of oxides, corresponding to

SiO_2/Al_2O_3 of from about 6 to about 30,
$R_{2/\nu}O/SiO_2$ of from about 0.30 to about 0.70, and
$H_2O/R_{2/\nu}O$ of from about 80 to about 140;

and maintaining said reactant solution at a temperature between about 150° F. and about 325° F. until said zeolite crystals are formed.

3,298,781
PRODUCTION OF SULFITES FROM RED MUD
Shinichi Fukuma, Tokyo, and Masumi Atsukawa, Yoshihiko Nishimoto, and Yoshiya Inoue, Hiroshima, Japan, assignors to Mitsubishi Shipbuilding & Engineering Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Feb. 5, 1963, Ser. No. 256,346
Claims priority, application Japan, Feb. 9, 1962, 37/4,268
1 Claim. (Cl. 23—131)



A process for reacting a gas containing sulfur dioxide with a red mud produced as a by-product of an alkali extraction of bauxite, said red mud comprising alumina, silica and sodium oxide comprising: adding water to said red mud to form a slurry thereof containing at most 40% by weight of said red mud; contacting said gas with said slurry at a temperature between room temperature and about 70° C., whereby said slurry absorbs the sulfur dioxide, until the pH of the slurry is from 4 to 5; separating from a resulting insoluble residue of said red mud an aqueous solution mainly of sodium bisulfite resulting from the absorption of sulfur dioxide and treating said solution to recover therefrom a compound selected from the group consisting of bisulfites and sulfites.

3,298,782
PURIFICATION OF PHOSPHORIC ACID
Jacques Olivier Archambault, Montreal, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada
No Drawing. Filed May 16, 1963, Ser. No. 281,065
Claims priority, application Canada, May 24, 1962, 849,934
5 Claims. (Cl. 23—165)

1. A process for the purification of an impure aqueous phosphoric acid solution which comprises contacting said solution with an extraction liquid comprising 5% to 20% by weight of a water-insoluble amine and 95% to 80% by weight of an aliphatic monohydric alcohol having from 4 to 12 carbon atoms per molecule to form an aqueous phase and an alcohol-amine phase containing the major portion of the phosphoric acid solubilized therein, separating the alcohol-amine phase from the aqueous phase, and recovering purified phosphoric acid from said alcohol-amine phase.

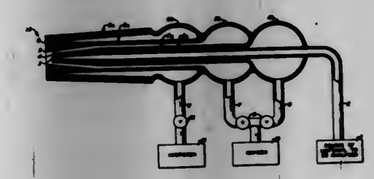
3,298,783
PHOSPHORIC ACID CONCENTRATION
Gerald I. Gruber and Walter Lyman Staker, Salt Lake City, Utah, assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 23, 1959, Ser. No. 848,206
1 Claim. (Cl. 23—165)

A process for the preparation of a concentrated phosphoric acid having a P_2O_5 content of 68–72 weight percent and having aluminum and iron impurities therein which consists essentially of: heating wet process phosphoric acid containing between about 27 and about 55 weight percent P_2O_5 and containing aluminum and iron impurities therein to a temperature of between about 280° F. and about 380° F. while under a pressure of between about 10 and about 150 mm. of mercury absolute for a period of time sufficient to concentrate said phosphoric acid to between about 68 and 72 weight percent P_2O_5 and for a period of time sufficient to form a mixture of orthophosphoric and pyrophosphoric acids which remains fluid, said period of time being not in excess of about twelve hours, said pyrophosphoric acid sequestering the said iron and aluminum impurities therein whereby to prevent precipitation thereof when said acid is diluted and ammoniated, said heating and concentrating being conducted with said acid in direct contact with processing equipment constructed of a normally corrodible metallic material which would be uneconomical due to excessive corrosion should the heating and concentrating be conducted at atmospheric pressure, and recovering said concentrated phosphoric acid having said 68–72 weight percent of P_2O_5 therein.

3,298,784
PREPARATION OF HEXABORANE(10)
William V. Hough, Valencia, Pa., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 23, 1959, Ser. No. 788,510
8 Claims. (Cl. 23—204)

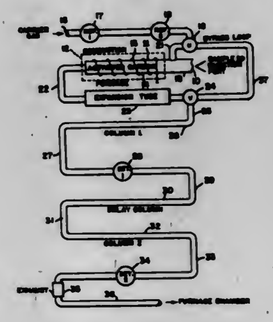
1. A method of preparing hexaborane(10) which comprises the step of contacting pentaborane(11) and a Lewis base which will not form a borane adduct with diborane at room temperature and is selected from the class consisting of alkyl ethers, cyclic ethers, liquid polyethers, thioethers, tertiary amines and hydrocarbon substituted phosphines, in proportions of at least about 0.52 mole of Lewis base for each mole of pentaborane(11), and recovering the hexaborane(10) produced thereby.

3,298,785
BURNER AND METHOD OF USE
Friedrich Reul, Windecken, Hanau, Germany, assignor to Heraeus Quarzschmelze G.m.b.H., Rohrstrasse, Germany, a corporation of Germany
Filed Dec. 21, 1962, Ser. No. 246,572
Claims priority, application Germany, Jan. 13, 1962, H 44,610
8 Claims. (Cl. 23—230)



7. The method of burning a fuel which comprises burning the fuel with a burner comprising four concentrically disposed pipes providing a first passageway through the innermost pipe, a second passageway as an annulus about said first passageway, a third passageway as an annulus about said second passageway, and a fourth passageway as an annulus about said third passageway, each of said passageways having an inlet end and an outlet end, and said inlet ends being disposed adjacent each other and said outlet ends being disposed adjacent each other, said first, second, and third passageways terminating short of said fourth passageway whereby three shortened passageways are provided, passing fuel for combustion through said first passageway, passing oxygen through said second and third passageways, and passing a combustible material through said fourth passageway.

3,298,786
GAS CHROMATOGRAPHIC METHOD AND APPARATUS FOR DETERMINATION OF OXYGEN CONTENT IN ORGANIC SUBSTANCES
Orville N. Hinsvark, Wilmington, Del., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Mar. 4, 1963, Ser. No. 262,518
8 Claims. (Cl. 23—230)

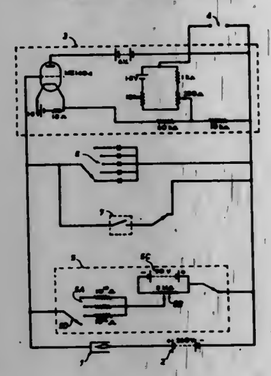


1. A method of determining the oxygen content of an organic chemical substance containing carbon, hydrogen, and oxygen comprising the steps of:
introducing a sample of the substance to be analyzed into a closed, heated reaction chamber having an inert gas atmosphere,
subjecting the sample to thermal decomposition in the presence of carbon in said closed chamber to yield decomposition products including carbon dioxide, carbon monoxide, and water vapor,
retaining the decomposition products in said closed chamber until they are reduced by the carbon to reduction products including carbon monoxide and hydrogen gas, whereby substantially all of the oxygen in said sample is converted to carbon monoxide,
sweeping the reduction products from said chamber as a plug sample with an inert gas,
passing the reduction products through a chromatographic separating column, and
detecting changes in the composition of the effluent from said column.

3,298,787
COLOR PREGNANCY TEST
Eric T. Fossel, New Haven, Conn., assignor to Unimed, Inc., Morristown, N.J., a corporation of Delaware
No Drawing. Filed Sept. 11, 1964, Ser. No. 395,950
7 Claims. (Cl. 23—230)

1. Method of determining whether or not a female animal is pregnant, which comprises contacting the female animal's urine with a chelating agent which will chelate with chelated magnesium of chorionic gonadotropin, and with a color indicator which changes color in pH range of about 7.0–9.0 upon release of chelated magnesium from said chelating agent, so that upon titration with a strong base, the requirement of an amount of base necessary to release the theoretical amount of chelated magnesium which could be chelated by said chelating agent before a color change occurs indicating that the female is pregnant, whereas a lesser amount of base producing the change of color indicates that the female is not pregnant.

3,298,788
IONISATION DETECTOR CIRCUIT
Robert Alfred Dewar, Ashburton South, and Volker Elmar Maier, Hampton, Australia, assignors to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia, a company of Victoria, Australia
Filed July 13, 1964, Ser. No. 382,102
Claims priority, application Australia, Aug. 14, 1963, 34,202/63
7 Claims. (Cl. 23—232)



1. Apparatus for measuring organic substance by flame ionisation technique in integrating presentation comprising, in combination, firstly, a flame ionisation detector, secondly, a primary source of electrical energy having a potential suitable for the flame ionisation detector; thirdly, an electrometer suitable for the amplification of signals from said flame ionisation detector and characterised in that it has a high input resistance; fourthly, a recorder suitable for and connected to the output of said electrometer; fifthly, a condenser connected across the input to said electrometer where the condenser capacitance is selected from the range from 0.001 to 100 microfarads and the above-mentioned input resistance of said electrometer is chosen to be so high as to minimise leakage of charges from said condenser through said electrometer; sixthly, a by-pass switch connected across said condenser and capable of being closed for a fraction of a second by circuit closing means activated by the recorder at a preselected point of the recorder pen excursion; and seventhly, also connected across the input to said electrometer, a compensator comprising a variable resistor having a resistance selected from the range from 10^{12} to 10^{9} ohms and a source of electrical potential selected from the range from 5 to 500 v. in such a manner that the current produced from said compensator and opposing the signal current can be adjusted to the magnitude of the background current to be compensated for.

3,298,789
TEST ARTICLE FOR THE DETECTION OF GLUCOSE
Raymond L. Mast, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Dec. 14, 1964, Ser. No. 418,340
1 Claim. (Cl. 23—253)

A test article for detecting glucose in a fluid which comprises a bibulous material containing impregnated therein a mixture which consists essentially of an enzyme system having glucose oxidase activity, a substance having peroxidative activity, polyvinylpyrrolidone, a derivative of an interpolymer of methylvinyl ether and maleic anhydride, said derivative being selected from the class consisting of the acid form and the partial ester form, a buffer system consisting essentially of tris(hydroxymethyl)-aminomethane, malonic acid and disodium malonate, and an indicator mixture which is oxidized in the presence together of both peroxide and said substance having peroxidative activity and which changes color thereupon, said indicator mixture consisting essentially of 2,7-diaminofluorene dihydrochloride, o-tolidine dihydrochloride and benzidine dihydrochloride, said test article also having a semi-permeable coating of transparent ethyl cellulose film over the impregnated bibulous material.

3,298,790
REACTION VESSELS FOR CALORIMETRY APPARATUS
Theodor H. Benzinger, Holly Oaks, Tilden Lane, Rockville, Md. 20852
Original application Mar. 23, 1960, Ser. No. 17,232, now Patent No. 3,273,968, dated Sept. 20, 1966. Divided and this application July 27, 1964, Ser. No. 395,977
4 Claims. (Cl. 23—259)



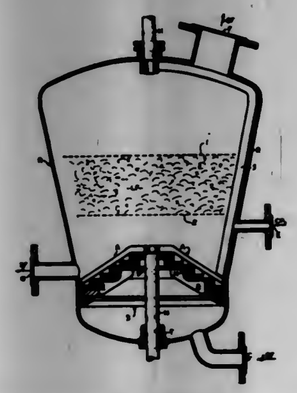
1. A reaction vessel for use in a calorimeter comprising, in combination, a first metallic sleeve having an aperture in its wall, a second metallic sleeve having a diameter less than that of said first sleeve, said first sleeve being provided with an internal circular collar at one end thereof, said second sleeve being provided with an external circular collar at one end thereof, self-holding tapers cut in the outer wall of said external collar and the other end of said first sleeve, and self-holding tapers cut in the inner wall of said internal collar and the other end of said second sleeve whereby both sleeves can be telescoped to form an enclosed double-walled cylindrical vessel.

3,298,791
ION-EXCHANGE RESIN COUNTER-CURRENT EXTRACTION APPARATUS
Walter Meyer and Richard S. Oleen, Corvallis, Oreg., assignors to Research Corporation, New York, N.Y., a corporation of New York
Filed July 22, 1963, Ser. No. 296,820
3 Claims. (Cl. 23—270)



1. Apparatus for continuous countercurrent contact of liquid with a particulate solid comprising a generally upright cylindrical vessel, outlet means for the flow of liquid from the upper portion of said vessel including a perforate member permeable to liquid but not to the particulate solid and including valve means permitting only flow out of the vessel, inlet means for supplying particulate solid to the upper portion of said vessel including an aperture and check valve means permitting flow through said aperture only into the vessel, outlet means for the flow of particulate solid from the lower portion of said vessel including valve means permitting only flow out of the vessel, inlet means for the supply of liquid to said vessel below said perforate member including valve means permitting only flow into the vessel and means for applying pulses to the liquid in said vessel to cause on the positve stroke of each pulse particulate solid material to flow from the lower portion of the vessel to said inlet means for supplying particulate solid and on the negative stroke of each pulse to cause particulate solid material to flow into the upper portion of the vessel through said aperture.

3,298,792
APPARATUS FOR IMPROVED FLUIDIZED BEDS AND REACTORS CONTAINING SAME
Giovanni Di Drusco, Bologna, Italy, assignor to Montecatini Societa Generale per l'Industria Mineria e Chimica, Milan, Italy
Filed Sept. 22, 1965, Ser. No. 489,806
Claims priority, application Italy, Sept. 28, 1961, 17,403/61
7 Claims. (Cl. 23—284)



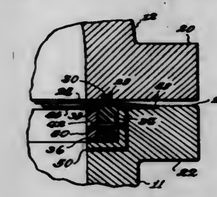
1. A distributor device for establishing a fluidized bed which comprises coaxial alternating fixed and mobile disks spaced apart from each other on a vertical axis, the outer diameters of adjacent disks decreasing in an upward direction along said vertical axis, said mobile disks comprising a flat-annular portion having at the inner end thereof an upwardly directed vertical side, said fixed disks comprising a flat-annular portion having an upwardly directed vertical side at the inner end thereof and a downwardly directed vertical side at the outer end thereof, the flat-annular portion of a given fixed disk being wider than the flat-annular portion of the mobile disk immediately thereabove, a portion of the outer vertical side of a fixed disk exteriorly overlapping the vertical side of the mobile disk immediately therebeneath and a portion of the inner vertical side of a fixed disk interiorly overlapping the vertical side of the mobile disk immediately thereabove, said disks thereby forming a series of coaxial channels having a substantially vertical portion, and means associated with said mobile disks for rotating said mobile disks about said vertical axis whereby the relative movement between said mobile disks and said fixed disks prevents obstruction of said channels by solid particles during operation of said distributor device.

3,298,793
FLUID BED DIFFUSION
William Charles Mallison, Topsfield, George Albert Randall, Newbury, Philip Henry Seaver, Marblehead, and William Caubu Rousseau, Reading, Mass., and Robert Baldwin Egbert, Stamford, Conn., assignors to The Badger Company, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 4, 1963, Ser. No. 270,581
3 Claims. (Cl. 23—288)



2. A catalytic reactor comprising a housing enclosing a bed of catalyst fluidizable by passage of gas upwardly therethrough, a substantially horizontal grid plate mounted across said housing above its lower end supporting said bed of catalyst thereon and a plenum enclosed by the lower end of said housing extending substantially below said grid plate, means for introducing a fluidizing gaseous stream into said plenum and thence upward through said grid plate to fluidize the catalyst, said grid plate having numerous equally-sized openings disposed evenly distributed in a pattern across the grid plate through which the gaseous stream passes, each opening having a nozzle supported by said grid plate, said nozzle having a constricted orifice at the inlet end thereof, each nozzle being of substantially larger diameter than said inlet orifice, whereby high velocity gas entering the inlet of each nozzle is expanded therein to substantially reduced velocity before contacting catalyst, each nozzle being supported by and extending upward from the grid plate, each nozzle being bent with a return bend at the outlet directing the gas flow downward upon the grid plate.

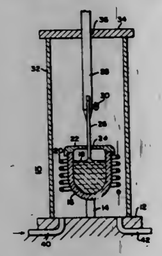
3,298,794
SEALING MEANS FOR PRESSURE VESSELS
Walter R. Mikesell, Jr., Chicago Heights, and Leonard P. Zick, Jr., Chicago, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Jan. 28, 1964, Ser. No. 340,749
6 Claims. (Cl. 23—290)



1. In an autoclave construction, a sealing means between a first and a second member having opposed matching surfaces, comprising:
(a) a continuous groove provided in said surface of said first member;
(b) a resilient, annular sealing gasket mounted in said groove of said first member;
(c) an annular channel provided in said surface of said second member substantially opposite the groove in said first member;

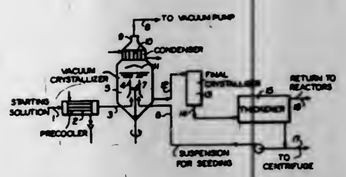
(d) a flexible metal sheet extending substantially across said channel of said second member and attached to said second member outwardly from said channel;
(e) resilient material provided in said channel to urge said sheet substantially normal from said surface of said second member;
(f) fluid passage between the interior of said autoclave and the region between said metal sheet and said second member; and
(g) means for pressurizing said autoclave whereby fluid pressure transmitted from the interior of said autoclave via said passage urges said sheet from said surface of said second member to effect a sealing contact between the outwardly disposed surface of said sheet and said surface of said first member.

3,298,795
PROCESS FOR CONTROLLING DENDRITIC CRYSTAL GROWTH
Donald R. Hamilton, Monroeville, and Sydney O'Hara and Raymond G. Seidensticker, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1964, Ser. No. 353,709
6 Claims. (Cl. 23—301)



1. In the process of producing elongated bodies of dendritic material of selected width and thickness by continuous withdrawal of dendritic crystals from a supercooled melt of the material, the improvement comprising the steps of
(1) initiating dendritic crystal growth from the melt,
(2) establishing an inverted temperature gradient in the melt so that the surface where the dendritic crystal leaves the melt is hotter than portions of the melt directly below wherein the melt is supercooled to a selected degree of supercooling about and adjacent to regions of dendritic crystal growth, whereby at a given rate of crystal withdrawal from the melt a dendritic crystal of a given width and thickness is produced, said given thickness being greater than said selected thickness,
(3) increasing the temperature of the melt in the region of dendritic crystal growth to provide a lesser degree of supercooling for a period of time while maintaining an inverted temperature gradient, and while maintaining substantially the given rate of dendritic crystal withdrawal whereby there results a decrease of the thickness of the dendritic crystal being withdrawn from the melt to the selected thickness, and
(4) thereafter decreasing the temperature of the supercooled portion of the melt to provide a greater degree of supercooling while maintaining the inverted temperature gradient and while maintaining substantially the given rate of withdrawal so that the width of the dendritic crystal increases to the selected width without substantially increasing the thickness over the selected thickness.

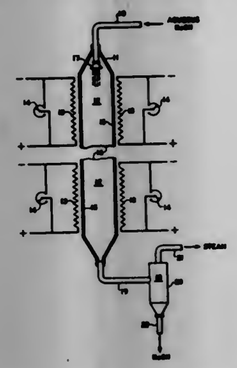
3,298,796
CRYSTALLIZATION OF HYDROSULFITE
Marina Adriana van Damme-van Weele and Arie Pieter van der Molen, Hengelo, Netherlands, assignors to N.V. Koninklijke Nederlandsche Zoutindustrie, Hengelo, Netherlands
Filed May 19, 1964, Ser. No. 368,643
Claims priority, application Netherlands, May 31, 1963, 293,550
6 Claims. (Cl. 23—302)



1. In a process of crystallizing alkali metal dithionite dihydrate from an aqueous solution obtained in preparing alkali metal dithionite and containing an alcohol, the steps of
(a) seeding said solution by adding part of a thickened dihydrate crystal slurry, obtained subsequently in the process, to said solution in a volume less than that of said solution,
(b) exposing the mixture of said solution and said slurry to a reduced pressure so as to effect cooling thereof by evaporation of liquid from said mixture while maintaining the amount of alcohol substantially constant during vacuum cooling by condensing the alcohol at the top of the vacuum cooling region as the alcohol evaporates, and returning the alcohol to the mixture and suspension in the vacuum cooling region,
(c) passing the thus cooled mixture through a crystallization zone so as to effect crystallization of alkali metal dithionite dihydrate therefrom,
(d) separating said mixture in a thickening zone into a thickened crystal slurry and a substantially clear supernatant solution, and
(e) returning part of the slurry to the new solution for the initial seeding step.

3,298,797
ALKALI METAL HYDROXIDE EVAPORATION
Dudley P. Fernandes, Montague, Mich., and David S. Rosenberg and Eric H. Scremin, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Nov. 29, 1965, Ser. No. 510,223
12 Claims. (Cl. 23—302)

1. A process for concentrating aqueous alkali metal hydroxide solutions which comprises: continuously introducing aqueous alkali metal hydroxide solution containing about forty to seventy-five percent solids by weight in an atomized state into a walled heated zone; conveying the atomized particles through said heated zone with minimum contact with the zone wall means while maintaining the temperature in said heated zone between about one hundred degrees centigrade and about eight hundred degrees centigrade by heating the said wall means of the said zone so that said wall means radiate heat into the zone to thereby maintain the said temperature, and while maintaining the pressure in said heated zone between about one inch of mercury absolute and about ten atmospheres absolute, to produce steam evolved from said atomized particles and a more concentrated alkali metal hydroxide product; passing the steam and concentrated alkali metal hydroxide product concurrently downwardly through said radiantly heated zone; passing all of said evolved steam and concentrated alkali metal hydroxide from the bottom of said zone into a separation zone;



separating the steam from the more concentrated alkali metal hydroxide product and recovering the alkali metal hydroxide product so produced.

3,298,798
BOROHYDRIDES OF BORANATES OF HEAVY METAL COMPLEXES
Eberhard Zirngiebl and Alex Bürger, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 20, 1959, Ser. No. 787,838
Claims priority, application Germany, Feb. 7, 1958, F 24,996
7 Claims. (Cl. 23—358)
7.Tetrammine carbonato cobalt (III)-boranate.

3,298,799
BORANE-HYDRAZINE COMPOUNDS
William V. Hough, Valencia, and Joseph S. Hashman, Evans City, Pa., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 15, 1959, Ser. No. 806,728
7 Claims. (Cl. 23—358)

1. An addition compound of hydrazine and a borane selected from the group consisting of $N_2H_4 \cdot B_4H_{10}$, $N_2H_4 \cdot B_{10}H_{14}$, $3N_2H_4 \cdot B_{10}H_{14}$, $N_2H_4 \cdot B_8H_9$, $3N_2H_4 \cdot B_8H_9$ and $4N_2H_4 \cdot B_8H_9$.

3,298,800
METHOD FOR PREPARING METAL ALUMINUM HYDRIDES
Robert C. Wade, Beverly, Mass., assignor to Metal Hydrides Incorporated, Beverly, Mass., a corporation of Massachusetts
No Drawing. Filed May 3, 1963, Ser. No. 277,708
10 Claims. (Cl. 23—365)

1. The method for preparing a metal aluminum hydride having the formula $M(AlH_4)_x$ where M is a metal selected from the group consisting of alkali metals and alkaline earth metals and x is the valence of said metal which comprises heating in a confined reaction zone a material selected from the group consisting of alkali metals, alkaline earth metals and hydrides thereof with a finely divided aluminum metal and from about 0.1 to 25.0 percent by weight based upon the weight of said selected material used of a reaction promotor in an inert liquid carrier selected from the group consisting of hexane, dimethyl ether, diethyl ether, tetrahydrofuran, dioxan, and dimethyl ether of ethylene glycol at a temperature above about 100° C. but below the decomposition temperature of the metal aluminum hydride in the presence of hydrogen under superatmospheric pressure above about 2500 p.s.i. while agitating the mixture until reaction between the aluminum, hydrogen and said selected material is substantially complete, said reaction promotor being an alkali metal complex of an organic compound selected from the group consisting of naphthalene, anthracene, phenanthrene, biphenyl, terphenyl, and tetraphenyl ethylene prepared by reacting said organic compound with an alkali metal in the presence of an ether of high oxygen content selected from the group consisting of dioxan, tetrahydrofuran, and dimethyl ether of ethylene glycol at a temperature between about minus 10° and plus 30° C.

3,298,801
POWDER METALLURGICAL ADDITION AGENT
Charles B. Goodrich, Charles E. Manilla, Cecil L. Ramsey, Richard H. Hanewald, all of Huntington, W. Va., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 29, 1966, Ser. No. 538,197
3 Claims. (Cl. 29—182)

1. A sintered briquette having high crushing strength, containing about 4% to about 20% magnesium, up to about 25% iron, with the balance essentially nickel, having a porosity of about 20% to about 50% and an average pore size of about 50 to about 500 microns.

3,298,802
METHOD FOR COVERING OBJECTS WITH A DECORATIVE BRIGHT-NICKEL/CHROMIUM COATING, AS WELL AS OBJECTS COVERED BY APPLYING THIS METHOD
Jules Marie Odekerken, Vught, Netherlands, assignor to N.V. Research-Holland, 's Hertogenbosch, Netherlands, a limited-liability company of the Netherlands
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,854
Claims priority, application Netherlands, Feb. 23, 1962, 275,167
16 Claims. (Cl. 29—194)

13. An object comprising a base having thereon a bright nickel coating, an intermediate metal layer over said coating, said intermediate layer having therein particles having a conductivity not exceeding the conductivity of graphite, and a plated chromium layer over said intermediate layer.

3,298,803
COMPOSITE METAL ARTICLE OF STAINLESS STEEL AND COPPER
John B. Ulam, McMurray, Pa., assignor to Composite Metal Products, Inc., a corporation of Pennsylvania
No Drawing. Filed Mar. 15, 1965, Ser. No. 439,985
7 Claims. (Cl. 29—196.3)

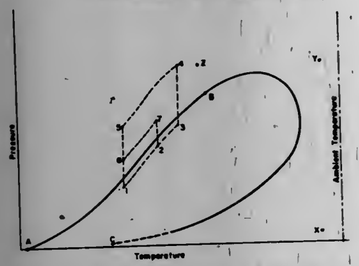
1. A composite metallic article comprising at least one layer of stainless steel bonded on one face to one face of at least one layer of a copper base alloy that consists essentially of from 0.01% to 0.85% of one or more members selected from the group consisting of zirconium and boron, balance copper.

3,298,804
PREVENTION OF FREEZING TOGETHER OF COAL PARTICLES AND COMPOSITIONS THEREOF
John F. Schoch, Olney, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Jan. 14, 1965, Ser. No. 425,617
8 Claims. (Cl. 44—6)

1. A process for anti-freeze treatment of coal which comprises surface-coating small coal particles with about 0.5 to 5 gallons per ton of coal of a liquid hydrocarbon having a solidification point at least as low as —20° F.

and containing a small amount in the order of 300–8000 p.p.m. of a member selected from the group consisting of (a) imidazolines having on a ring carbon a hydrocarbon substituent with 6–35 carbons and (b) quaternary salts of said imidazolines.

3,298,805
NATURAL GAS FOR TRANSPORT
Herbert Campbell Secord, Markyate, England, and Bernard J. Clarke, Columbus, Ohio, assignors to Vehoc Corporation, a corporation of Delaware
Filed Aug. 10, 1965, Ser. No. 478,604
The portion of the term of the patent subsequent to Feb. 1, 1983, has been disclaimed
5 Claims. (Cl. 48—190)



1. A method of storing for transport a natural gas mixture containing at least 60 mol percent methane and at least 80 mol percent methane-plus-ethane, the remainder being heavier hydrocarbons and up to 10 mol percent inert constituents, and having a gross calorific value of from 800 B.t.u./s.c.f. to 1600 B.t.u./s.c.f., which comprises:

(a) establishing the pressure and temperature of the gas mixture within an operating state wherein

(i) the maximum operating temperature is immediately below about the critical temperature of methane,

(ii) the minimum operating temperature is about −200° F.,

(iii) the maximum operating pressure is 300 p.s.i. above the bubble point-dew point pressure of the gas mixture at the operating temperature, and

(iv) the minimum operating pressure is 15 p.s.i. below the bubble point-dew point pressure of the gas mixture at the operating temperature,

(b) containing said gas in the operating state to prevent expansion of said gas mixture; and

(c) thermally insulating the contained gas mixture against substantial heat leakage into said gas mixture so that it remains in said operating state throughout the duration of its containment;

(d) whereby the gas mixture is maintained in a dense state suitable for storage and transport at minimal compression, refrigeration and containment costs per unit weight of gas mixture.

3,298,806
METHOD FOR MAKING ABRASIVE SEGMENTS FOR SAWS
Cosimo D. Cicchelli, Torrance, Calif., assignor to Felker Manufacturing Company, Torrance, Calif., a corporation of California
Filed Dec. 27, 1961, Ser. No. 162,340
1 Claim. (Cl. 51—293)

The method of making a diamond-containing segment which comprises

providing a mold having an elongated cavity of the desired size and shape of said segment, said mold including a concave bottom adapted to form the outer surface of the face of said segment,

spreading a mixture of matrix-forming metallic powder material and diamond particles to a uniform thickness over the bottom of said mold to form the face of said segment, inserting in said mold a plunger having a width and length to fill said cavity, and provided with a concave bottom which is parallel to the bottom of said mold, said plunger comprising three elongated upstanding spacer blocks arranged side by side,

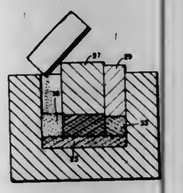
compressing said layer of diamond particles and matrix-forming metallic powder material sufficiently to fix it in place,

removing the middle said spacer block,

inserting in the cavity left thereby a charge of the matrix-forming metallic powder material free of diamonds to form the core of said segment,

compressing said charge of matrix-forming metallic powder material free of diamonds sufficiently to compact the particles thereof to make the compacted mass dimensionally stable,

removing the remaining two spacer blocks,



inserting in the space left by said two said spacer blocks a charge of a mixture of diamond particles and the matrix-forming metallic powder material to form the sides of said segment,

compressing the last recited said charges sufficiently to fix the same in place,

spreading a layer of the matrix-forming metallic powder material free of diamonds over the previously inserted charges to form the backing pad of said segment,

inserting a plunger adapted to fill said cavity and having a concave bottom conforming to the desired shape of the outer surface of said backing pad in said cavity,

subjecting the contents of said cavity to a pressure sufficient to consolidate the same into a unitary mass,

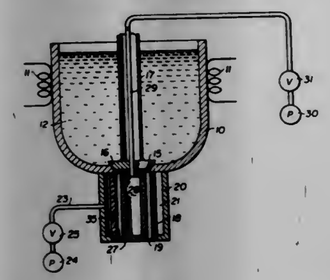
and heating the unitary mass to an elevated temperature sufficient to sinter the matrix-forming metallic powder material.

3,298,807
PROCESS FOR PREPARING A POLISHING COMPOUND AND PRODUCT
Richard M. Mandle, Pompton Lakes, N.J., and William T. Straehle, Ellicott City, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Dec. 17, 1964, Ser. No. 419,211
6 Claims. (Cl. 51—307)

1. The method of preparing a polishing material which comprises firing a concentrate of bastnasite which contains at least 65% rare earth oxides in an atmosphere containing hydrogen fluoride at a temperature of from about 1000° F. up to the sintering temperature of the concentrate for at least about 0.25 hour, and thereafter grinding the fired concentrate until 80% of the material has a particle size of less than 5 microns.

5. The method of preparing a polishing material which comprises grinding a concentrate of bastnasite containing at least about 65% rare earth oxides until 80% of the material has a particle size of less than 5 microns and firing the concentrate in an atmosphere of hydrogen fluoride from about 1600° F. up to the sintering temperature of the concentrate for a period of at least about 0.25 hour.

3,298,808
CONCENTRIC FORAMINOUS SHAPING MEANS FOR TUBES OR BARS
Elmer Fred Macks, Willow Lane, Vermilion, Ohio 44089
Continuation of application Ser. No. 353,016, Mar. 12, 1964, which is a continuation of application Ser. No. 50,939, Aug. 22, 1960. This application May 11, 1965, Ser. No. 458,822
9 Claims. (Cl. 65—25)



1. A molding apparatus comprising:

(a) a vessel for containing a quantity of molten material to be molded, said vessel having a gate opening in a lower portion thereof;

(b) a foraminous tube secured to the vessel and surrounding and below said opening to receive material passed through such opening;

(c) the tube defining a molding region and having an inner surface of uniform cross section from one end of the region to the other, said uniform cross section being of the contour of an object to be molded;

(d) a member surrounding the tube and defining a fluid chamber between the member and the tube;

(e) means connected to the member to supply fluid under pressure to the chamber and cause fluid under pressure to flow through the foraminous tube;

(f) a foraminous mandrel having an internal fluid chamber suspended in the tube in spaced relationship with said inner surface;

(g) the mandrel having an outer surface of uniform cross section from one end of the molding region to the other of the contour of the interior of a tubular object to be molded;

(h) the mandrel having an internal chamber;

(i) a fluid supply means connected to the mandrel to supply fluid under pressure to the mandrel chamber; and,

(j) means for controlling the pressure of the gas supplied by each of said supply means and thereby control the dimension of an object being molded.

3. The method of continuously molding an elongated object comprising:

(a) providing a quantity of molten material;

(b) shaping the material into an elongated member of constant cross-sectional configuration by continuously feeding the material through a molding region with force applied by the molten material and the region defined by a foraminous tube shaped to the contour of the object being molded;

(c) solidifying the material as it moves through said region by confining the material in the region until it solidifies to its finished shape; and,

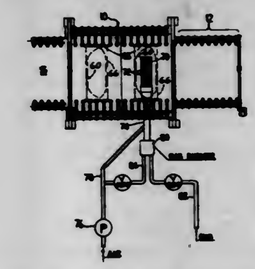
(d) maintaining a thin circumscribing film of moving gas around the entire object being molded from one end of the region to the other by continuously passing gas from a plurality of spaced sources of gas under pressure through the walls of the foraminous tube.

3,298,809
METHOD OF PRESS BENDING VERTICALLY SUPPORTED GLASS SHEETS
Herbert W. Barch, Natrona Heights, and Clement Edward Valchar, Tarentum, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 20, 1963, Ser. No. 289,326
4 Claims. (Cl. 65—106)



2. A method of shaping a glass sheet comprising supporting said glass sheet along a lower edge thereof, orienting said glass sheet in an oblique plane of support, heating the glass sheet while so supported to a temperature high enough to begin to slump said heated glass sheet by gravity and to permit press bending thereof, and press bending said heated glass sheet while at such temperature by engaging its uppermost major surface with a convex shaping member and its lowermost major surface with a concave shaping member.

3,298,810
METHOD AND APPARATUS FOR BENDING AND TEMPERING GLASS SHEETS
Harold E. McKelvey, New Kensington, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 26, 1963, Ser. No. 290,659
6 Claims. (Cl. 65—107)



1. In the art of bending and tempering glass sheets, wherein a flat glass sheet is supported in a substantially horizontal plane in bending relation to a curved shaping surface of outline configuration conforming to the shape desired for the glass sheet after bending and the glass sheet is heated to an elevated temperature sufficient to soften the sheet so that its marginal portion adjacent its entire periphery is brought into continuous contact with said curved shaping surface and wherein the heated sheet tends to sag intermediate the side edge portions of its said marginal portion supported on said curved shaping surface, and the bent sheet so supported is suddenly chilled to impart a temper thereto, the improvement comprising:

(1) heating said flat glass sheet to a temperature below its deformation temperature in the absence of an

application of fluid in an upward direction against the undersurface of the glass sheet,

(2) applying fluid in an upward direction against the undersurface of the glass sheet intermediate its supported side edge portions at a temperature between about 1100 degrees Fahrenheit and 1150 degrees Fahrenheit at a pressure sufficient to support said intermediate portion against substantial cross-sag while heating said glass sheet to its deformation temperature,

(3) and continuing said upward force when said marginal portion is in contact with said curved shaping surface and the temperature of the glass sheet is such that the glass sheet is susceptible of sagging intermediate its said supported side portions, thereby inhibiting the sagging in said portion of the glass sheet subjected to said pressurized fluid while the glass sheet is exposed to an environment sufficiently hot to cause the glass sheet to develop undesired cross-sag.

6. In apparatus for bending a glass sheet with a minimum of cross-sag, a heating zone for receiving a mold supporting a glass sheet thereon, heating means disposed within said zone for heating said glass sheet to its deformation temperature, said mold having a shaping surface of outline configuration conforming to the shape desired for said glass sheet after bending, and means for supplying heated fluid to an interior portion of a surface of said glass sheet within an area defined and encompassed by said shaping surface of outline configuration and spaced inward from said outline at a pressure sufficient to support said area of said glass sheet against substantial cross-sag, said shaping surface supporting said bent glass sheet along its marginal portion adjacent its entire periphery.

3,298,811

PREPARATION OF CERIUM-CONTAINING GLASSES

Charles R. Kurkjian, Basking Ridge, and Arnold W. Treptow, Fanwood, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 23, 1963, Ser. No. 274,996
2 Claims. (Cl. 65—117)

1. A method for making a cerium-containing glass which consists essentially of forming a mixture of basic ammonium phosphate and cerous carbonate in a mole ratio of phosphate to carbonate in the range of 3.71:1 to 8:1, calcining the resulting mixture at a temperature in the range 800° C. to 1200° C. for a period of at least 20 minutes, firing the calcined product at a temperature of 25° C. to 250° C. above the melting point of the aforesaid mixture for a period of 20 minutes to two hours, cooling the melted mixture to a temperature of approximately 600° C. over a period of not more than 60 seconds, and cooling the glass to room temperature.

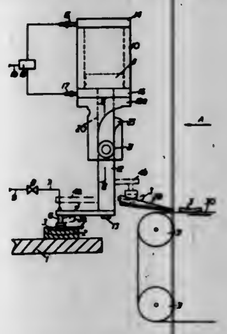
3,298,812

MOLD WITH VACUUM TRANSFER APPARATUS

Francis William Holland, St. Asaph, Flintshire, Wales, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed June 27, 1963, Ser. No. 291,164
Claims priority, application Great Britain, July 24, 1962, 28,467/62
4 Claims. (Cl. 65—260)

1. Apparatus for removing moulded articles from successively presented moulds fixed to the top surface of a rotatable table of a moulding machine, each mould having a mould cavity open at the top, comprising an arm for mounting above the table, a vacuum pad carried at one end of the arm which pad is shaped so that it can enter the mould and engage the upper surface of a moulded article in the mould, control means for the vacuum pad operable to apply suction to the pad, driving means connected to the other end of the arm and operable to move the arm towards and away from the table top, said driving means including a cam track having a first portion parallel to the axis of the mould and so positioned relative to the mould that the guided movement of the arm moves the



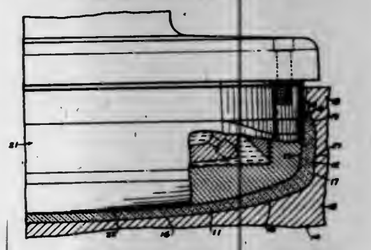
vacuum pad from a position well clear of the mould into and out of the mould to lift a gripped moulded article well clear of the mould, said cam track having a second portion helically curved from the first portion to pivot the arm away from the mould on further operation of the driving means after the article has been completely extracted from the mould.

3,298,813

MOLD AND PLUNGER FOR PRESSING FLANGED GLASS ARTICLES

Roland L. Vogelpohl, Gahanna, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Feb. 4, 1963, Ser. No. 255,762
5 Claims. (Cl. 65—305)



1. In an apparatus for pressing a charge of glass to form a glass article such as a face plate for a cathode ray tube or the like which has a base portion and a flange portion extending from the periphery of the base portion, the combination comprising

a mold having a base surface and a peripheral flange surface corresponding to the outer surface of the glass article to be formed,

said mold including an inwardly extending lip defining the outer edge of the flange portion of the glass article,

and a cooperating plunger adapted to be moved axially into the mold,

said plunger having an external surface corresponding to the internal surface of the glass article to be formed,

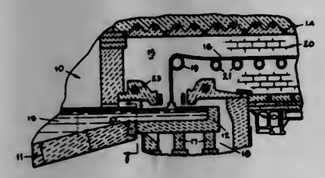
the peripheral portion of the surface of the plunger having at least some portions thereof adjacent the lip of the mold and extending substantially straight and parallel to the axis of the plunger for a substantial distance axially from the lip of the mold toward the base surface of the mold when the plunger is in operative position pressing a charge of glass in the mold, said peripheral portion having other portions thereof tapering radially inwardly from and merging with said straight portions of the peripheral portion.

3,298,814

APPARATUS FOR PREVENTING DEVITRIFICATION OF MOLTEN GLASS AT THE JOINTS OF A GLASS FURNACE

James E. Mambourg, Shreveport, La., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed May 8, 1962, Ser. No. 193,141
4 Claims. (Cl. 65—346)



1. In a continuous tank-type furnace, a cooling chamber including a floor and opposite side walls defining a channel along which a stream of molten glass flows into a working area, said floor and side walls comprising a plurality of individual refractory elements having joints therebetween extending transversely across said stream, and a strip heating element extending transversely of said stream along one of said joints for counteracting the chilling effect of said one joint on the molten glass and preventing devitrification of the molten glass along said one joint.

3,298,815

HERBICIDAL COMPOSITION AND METHOD

Victor Mark, Ransomville, N.Y., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 8, 1964, Ser. No. 381,210
8 Claims. (Cl. 71—2.5)

1. The method of selectively inhibiting the preemergent growth of weeds in contact with soil which comprises treating the soil with a herbicidal amount of 1,4,5,6,7,7-hexahalospiro[5-norbornene - 2,2' - oxirane] wherein the halogen is selected from the group consisting of chlorine, bromine and fluorine.

3,298,816

METHOD FOR PROTECTING PLANTS IN A SALT CONTAINING ENVIRONMENT

Justin H. Reinhart, Jamesburg, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 9, 1963, Ser. No. 293,840
1 Claim. (Cl. 71—2.5)

The method of protecting plants from the injurious effects of a salt containing environment which comprises applying to said plants and their environment an effective amount of a compound selected from the group consisting of lauryl-dimethylammonium-2-mercaptobenzothiazolate; lauryl-dimethylammonium-2 - hydroxynaphthalene sulfonate; lauryl-2,4-dimethylbenzyl dimethylammonium - 2-mercaptobenzothiazolate; dodecylbenzyl-trimethylammonium-2-mercaptobenzothiazolate; 1,1-dimethyl-1-dodecylhydrazinium-2 - mercaptobenzothiazolate; N - amino - N-dodecylpiperidinium - 2 - mercaptobenzothiazolate; said compound dispersed in a substantial amount of a suitable extending agent.

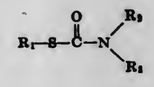
3,298,817

METHOD OF COMBATING WEEDS

Harry Tilles, 703 Baira Drive, El Cerrito, Calif. 94530, and Joe Antognini, 22362 Freemont Drive, Mountain View, Calif. 94040

No Drawing. Filed Apr. 16, 1959, Ser. No. 806,779
9 Claims. (Cl. 71—2.6)

1. The method of combating weeds comprising applying a phytotoxic amount to the soil of a compound:



wherein R_1 is selected from lower chloroalkyl and bromoalkyl radicals, R_2 is a member selected from the group consisting of a lower alkyl radical, a lower chloroalkyl radical, a lower alkenyl radical, a lower chloroalkenyl radical and an alkynyl radical, and R_3 is a member of the group consisting of a lower alkyl radical, a lower cycloalkyl radical, a lower chloroalkyl radical and a lower alkenyl radical.

3,298,818

TETRAHALOBENZOIC ACID-N-PHENYL-N',N'-DIALKYLUREA HERBICIDE COMPOSITIONS

Jack S. Newcomer, E. Lake Road, Wilson, N.Y. 14172; Jerome Linder, 522 78th St., Niagara Falls, N.Y. 14304; and Keith J. Smith, 6185 Ridge Road, Lockport, N.Y. 14094

No Drawing. Filed May 15, 1961, Ser. No. 109,851
4 Claims. (Cl. 71—2.6)

1. A herbicidal composition comprising from one to forty parts by weight of a compound selected from the group consisting of 2,3,5,6-tetrachlorobenzoic acid, the acid chloride of 2,3,5,6-tetrachlorobenzoic acid, 2,3,5,6-tetrachlorobenzamide and the salts of 2,3,5,6-tetrachlorobenzoic acid wherein the cation is selected from the group consisting of metal, ammonium, alkanol ammonium and alkyl substituted ammonium, combined with one to forty parts by weight of a N-phenyl-N',N'-disubstituted urea, wherein the substituent is selected from the group consisting of lower alkyl and phenyl substituted lower alkyl, said components being present in such amount as to exert herbicidal activity.

3,298,819

METHOD OF CONTROLLING WEEDS

Llewellyn W. Fancher, Lafayette, Calif., and Chester L. Dewald, Houston, Tex., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application May 28, 1963, Ser. No. 283,709, now Patent No. 3,205,253, dated Sept. 7, 1965. Divided and this application July 16, 1965, Ser. No. 484,498
8 Claims. (Cl. 71—2.6)

1. The method of controlling weeds comprising applying to the soil a herbicidally effective amount of a compound of the formula:

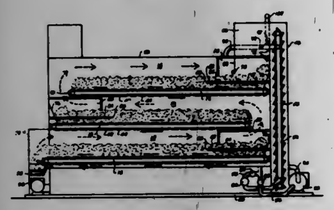


wherein R_1 and R_2 are lower alkyl radicals and X is selected from the group consisting of hydrogen, chlorine, lower alkyl and nitro.

3,298,820
HERBICIDAL CONCENTRATE CONTAINING MONOSODIUM ACID METHANEARSONATE
Stanley M. Woogerd, Corte Madera, Calif., assignor to Hercules Glue Company, Ltd., a corporation of California
No Drawing. Filed Apr. 20, 1964, Ser. No. 361,290
2 Claims. (Cl. 71—2.7)

1. A herbicide concentrate comprising in combination a solution containing from about 10% to 45% of monosodium acid methanearsonate and from about 6% to about 35% of a surfactant, the balance of the composition being water, wherein the surfactant has as its principal active ingredient an 85% to 15% mixture of dodecyldiphenyl ether disulfonic acid and didodecyldiphenyl ether disulfonic acid, respectively and wherein the surfactant includes an amount of amine having a maximum chain length of four carbon atoms, sufficient to adjust the pH to about 6.4, and approximately equal amount of ethyl hexyl sulfate, and a small amount of ethylene glycol.

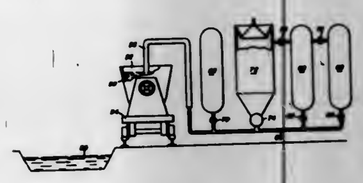
3,298,821
AEROBIC COMPOSTING WITH COMMINUTION AND FORCED AERATION
Norman A. Pierson, P.O. Box 755, Norman, Okla. 73069
Filed Mar. 26, 1964, Ser. No. 357,344
13 Claims. (Cl. 71—9)



3. In a method of composting organic waste material which comprises the steps of comminuting the waste material to be composted; laterally confining the comminuted waste material to promote the lateral agglomeration of particles of said comminuted refuse and form said comminuted refuse into a generally rectangularly cross sectioned configuration; moving the comminuted waste material in a direction parallel to the confined sides thereof and simultaneously imposing a drag on the external surfaces of said moving comminuted refuse sufficient to cause said comminuted refuse to develop generally parallel, spaced vertical cracks therein extending substantially transversely to the direction of movement of said comminuted refuse; freeing said comminuted refuse from lateral confinement to provide a space at the sides of said comminuted refuse; then subjecting the comminuted refuse to controlled aerobic bacterial digestion while minimizing anaerobic bacterial activity until the heat of digestion raises the temperature above about 140° F. whereby substantially all of the pathogens in said comminuted refuse are destroyed.

3,298,822
METHOD OF MAKING SLAG-BASED SOIL TREATMENT COMPOSITION COMPRISING PLANT-AVAILABLE PHOSPHORUS VALUES
William J. Arvay and Cornelia P. Arvay, Mount Lebanon, Pa. (both of 1012 Larchdale Drive, Pittsburgh, Pa. 15216), and George A. Bartholomew, 122 Yorkshire Road, Pittsburgh, Pa. 15208
Filed Sept. 24, 1963, Ser. No. 311,148
6 Claims. (Cl. 71—33)

1. The method of converting insoluble phosphorus in phosphate rock to plant available phosphorus which comprises mixing the phosphate rock with molten metallurgical slag, and maintaining said mixture at a temperature

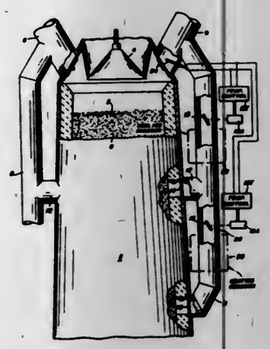


of between 2600° F. and 2700° F. for a period of at least two minutes, and then rapidly cooling said mixture.

3,298,823
METHOD FOR THE PRODUCTION OF ALLOYS
Cord H. Sump, Chattanooga, Tenn., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Feb. 8, 1966, Ser. No. 525,821
5 Claims. (Cl. 75—10)

1. A method of preparing tungsten-silicon and molybdenum-silicon master alloys which comprises fusing a reducible compound selected from the group consisting of tungsten and molybdenum acids, oxides and sulfides with calcium silicon as a reducing metal, the fusion being carried out in an electric arc furnace using a graphite crucible and graphite electrode.

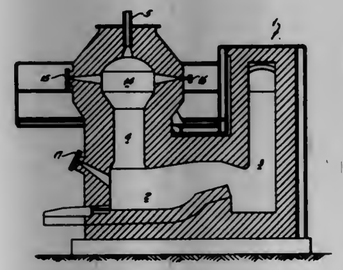
3,298,824
METHOD AND APPARATUS FOR CONTROLLING THE TEMPERATURE OF BLAST FURNACE GASES
Lloyd Francis Grace, Franklin Township, Westmoreland, Pa., and William Patrick Manning, Tulsa, Okla., assignors to United States Steel Corporation, a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 509,073
8 Claims. (Cl. 75—41)



1. In a blast furnace including a stack having a burden therein extending upwardly to a stockline below the top of the stack and through which combustible blast furnace gases pass upwardly; apparatus for controlling the temperature of the blast furnace gases at the top of the blast furnace stack comprising a duct, a connection between the lower end of said duct and the burden containing portion of the stack at an elevation a substantial distance below the stockline, a second connection between said duct and said stack at an elevation above said first connection and below said stockline, a valve in said duct between said connections for controlling flow of gases through said duct, and means for opening said valve when the temperature of the combustible gases at the top of the stack fall below a predetermined level.

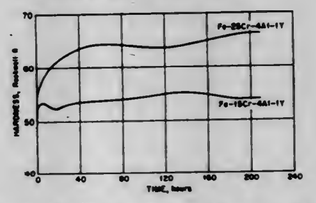
7. The method of operating a blast furnace of the type including a stack having a burden therein extending upwardly to a stockline below the top of the stack and through which combustible blast furnace gases pass upwardly; which method comprises removing a portion of the blast furnace gases from the burden containing portion of the stack a substantial distance below the stockline when the temperature of the blast furnace gases above the stockline is below a predetermined level, and mixing the removed gases with the remaining blast furnace gases at a higher elevation below the stockline.

3,298,825
PROCESS AND FURNACE FOR SEPARATING VOLATILE FROM NON-VOLATILE MATERIAL
Alfred Lange and Joachim Barthel, Freiberg, Germany, assignors to Veb Mansfeld-Kombinat Wilhelm Pieck, Eisleben, Germany
Continuation of application Ser. No. 740,419, June 6, 1958. This application July 15, 1963, Ser. No. 295,115
5 Claims. (Cl. 75—63)



1. A process for separating volatile and non-volatile components from raw material containing metal values comprising the steps of initially admitting said raw material in a finely divided form in a downward direction directly into the primary reaction zone of a furnace having a hearth situated beneath said reaction zone and extending rearwardly therefrom into communication with a flue which is situated to the rear of said hearth and extends upwardly therefrom, maintaining said reaction zone above the temperature of volatilization of said volatile components, suspending said raw material by injecting a stream of gas radially into said reaction zone in a direction substantially transverse to the direction of flow of said raw material at a velocity sufficient to create a turbulence in said reaction zone, maintaining said material in suspension until the volatile components thereof are substantially driven off by exhaust gases from said zone containing said gaseous volatile components, and exhausting them first in a downward direction from said reaction zone, then rearwardly over said hearth, so that entrained liquid droplets of non-volatile material will be deposited on said hearth, and finally out through said flue.

3,298,826
EMBRITTLEMENT-RESISTANT IRON-CHROMIUM-ALUMINUM-YTTRIUM ALLOYS
Carl S. Wukusick, Cincinnati, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 6, 1964, Ser. No. 357,845
4 Claims. (Cl. 75—124)



1. An alloy of iron, chromium, aluminum and yttrium which consists of 0 to 15 weight percent chromium, 0.5 to 12 weight percent aluminum, 0.1 to 3 percent yttrium and the balance iron.

3,298,827
AIR HARDENING BEARING STEEL AND BEARINGS MADE THEREFROM
Chester F. Jatczak, Canton, Ohio, assignor to The Timken Roller Bearing Company, Canton, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 13, 1963, Ser. No. 308,648
4 Claims. (Cl. 75—128)

1. An air hardening steel consisting essentially of about 0.7 to 0.8 percent of carbon, about 0.9 to 1.2 percent of chromium, about 1.10 to 1.35 percent of manganese, about 1.2 to 1.4 percent of molybdenum, about 1.3 to 1.65 percent of nickel, and about 0.2 to 0.35 percent of silicon balance iron, and characterized in sections up to 5-inch diameter of hardening to Rockwell C of 60 or higher upon air cooling from 1500° to 1650° F. followed by tempering at 350° to 400° F.

3,298,828
TREATMENT OF LEADED BRASS ALLOYS FOR IMPROVING MACHINEABILITY AND PRODUCTS SO PRODUCED
Lewis E. Thelin, Waterbury, Conn., assignor to The Bristol Brass Corporation, Bristol, Conn., a corporation of Connecticut
No Drawing. Filed July 5, 1962, Ser. No. 207,802
8 Claims. (Cl. 75—157.5)

5. Free-cutting brass having improved machining qualities containing an additive selected from the group of lithium and admixtures of lithium and calcium in an amount of from two to eight ounces of additive per thousand pounds of brass, said amount being determined by the addition of the said amount of additive to the brass when said brass is in a molten state.

3,298,829
BERYLLIUM PRODUCT AND METHOD OF MAKING SAME
Charles J. Havel, Allentown, Pa., assignor to The Beryllium Corporation, Reading, Pa., a corporation of Delaware
No Drawing. Filed June 18, 1965, Ser. No. 465,167
5 Claims. (Cl. 75—212)

1. A method of producing a beryllium product characterized by high strength comprising, coating beryllium powders of a size of from 4 to 74 microns with a metal selected from the group consisting of chromium, copper, nickel, columbium, molybdenum, cobalt and iron, and hot pressing the coated powders at a pressure of from 350 to 2000 p.s.i. and at a temperature of from 1900° F. to 2200° F. to form a beryllium product.

3,298,830
IMAGEWISE SENSITIZATION OF ELECTROPHOTOGRAPHIC LAYERS

Walter Simm, Opladen, and Otto Koch, Cologne, Stammheim, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

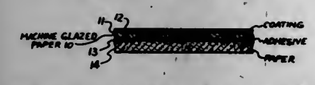
No Drawing. Filed May 14, 1963, Ser. No. 280,433
Claims priority, application Germany, June 16, 1962, A 40,459
2 Claims. (Cl. 96—1)

1. A process for the production of electrophotographic images, wherein an electrophotographic material is given a negative electric charge, exposed through an image, developed with an electrically charged aerosol of a solution of a sensitizer, whereby the electrophotographic layer carrying the charge image is sensitized in a pattern corresponding to the image, and the layer is then charged again in the dark, exposed uniformly with light of a wavelength to which the sensitized regions of the electrophotographic layer are sensitive, and finally developed in the usual manner, whereby a picture is obtained whose gradation is the reverse of that of the original.

3,298,831
PAPER LAMINATES FOR ELECTROSTATIC PRINTING SUPPORT MEMBERS

Ralph L. Lau, Wisconsin Rapids, and Groff Collett, Biron, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin

Filed July 2, 1963, Ser. No. 292,269
20 Claims. (Cl. 96—1.5)



1. A laminate for use as an electrostatic printing paper base comprising a plurality of plies of adhesively bonded paper webs, a first surface of one of said webs forming an outer defining face of the laminate and being relatively non-porous and defined by a smooth, densified fiber zone, the opposed surface of said web being defined by a relatively porous undensified fiber zone and bonded thereat by an interposed ply of adhesive, to a similarly porous undensified adjacent surface of a second web defined by a relatively porous undensified fiber zone thereof, said relatively non-porous, smooth, densified fiber zone being resistant to penetration of subsequently applied dielectric coating composition solvent.

5. The laminate of claim 1 wherein said first surface carries a first coating of mineral pigment and adhesive and a second coating thereover of a dielectric forming resin having dispersed therein photoconductive particle material.

3,298,832
COPPER GLUCONATE CONTAINING RECEIVING ELEMENT AND ITS DIFFUSION TRANSFER PHOTOGRAPHY USE

William H. Ryan, Carlisle, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Sept. 26, 1962, Ser. No. 226,326
4 Claims. (Cl. 96—3)

3. In a diffusion transfer process, the steps which comprise developing an exposed photosensitive silver halide emulsion with a processing composition comprising a silver halide developing agent and a silver halide solvent, forming thereby an imagewise distribution of soluble silver complex as a function of the point-to-point degree of exposure thereof, and transferring at least part of said imagewise distribution of soluble silver complex, by imbibition, from said emulsion, to a superposed image-receiving layer containing copper gluconate and slver precipitating nuclei dispersed in a permeable matrix, to thereby provide a visible transfer image.

3,298,833
METHOD FOR STORING INFORMATION

Joseph Gaynor, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 22, 1965, Ser. No. 489,422
1 Claim. (Cl. 96—27)

The method of storing information comprising the steps of providing a recording medium comprising a thin solid film of an optically transparent, thermally cross-linkable, organic polymer containing uniformly dispersed, solid, discrete, finely divided, radiation absorptive particles having an emissivity of at least 0.5, exposing said film to an image pattern of high energy radiation of at least 0.1 joule per square centimeter of the surface area of said particles causing said particles to emit sufficient energy in the form of heat substantially simultaneously with said exposure to cause said polymer to cross-link in zones in the vicinity of said irradiated particles to form an image pattern of zones of cross-linked polymer associated with said irradiated particles which corresponds to the illuminated areas of said image pattern, said cross-linked zones forming optical discontinuities in said film which are significantly larger than said particles enabling said image patern to be detectable by visible light and discriminated from said particles.

3,298,834
DIAZOTYPE PHOTOPRINTING MATERIAL SUSCEPTIBLE TO THERMAL DEVELOPMENT

Robert I. Eldred, Jr., Endicott, and John Joseph McKinney, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 1, 1963, Ser. No. 292,098
8 Claims. (Cl. 96—91)

1. Two-component diazotype photoprinting material susceptible to development on heating, having on a surface of a supporting sheet, a light-sensitive layer containing an azo coupling component, a light-sensitive diazonium compound, an acid stabilizer against premature coupling, a neutral to acid monoalkali metal salt of a strong acid which is decomposed to yield an alkaline reacting compound on heating to a temperature between 100 and 200° C. and a neutral salt of a naphthalene sulfonic acid having the formula:



wherein n is an integer from 2 to 3, amounting to at least 5% by weight of the components of the light-sensitive layer.

3,298,835
PROCESS FOR PRODUCTION OF A HOP CONCENTRATE

Robert Peter Hildebrand, Mount Waverley, Victoria, Frank Vincent Harold, Caulfield, Victoria, Brian James Clarke, East Bentleigh, Victoria, and Peter John Andrew Murray, East Malvern, Victoria, Australia, assignors to Carlton and United Breweries Limited, Carlton, Victoria, Australia, a corporation of Victoria

Filed July 27, 1964, Ser. No. 385,310
Claims priority, application Australia, Sept. 3, 1963, 34,921/63
2 Claims. (Cl. 99—50.5)

1. A process for the production from hops of a hop concentrate for use in the manufacture of a brewed beverage which includes the steps:

(a) extracting hops with a water-immiscible organic solvent selected from the group consisting of aromatic hydrocarbons, low boiling petroleum solvents and chlorinated aliphatic hydrocarbons to obtain an organic hops extract solution;

(b) extracting alkali-soluble constituents from the hops extract solution obtained from step (a) with an aqueous solution of an alkaline substance selected from the group consisting of sodium hydroxide, potassium hydroxide, sodium carbonate and potassium carbonate;

(c) separating the extract solutions obtained from steps (a) and (b) into an organic phase and an aqueous phase, respectively;

(d) heating the separated aqueous phase to convert humulones of the α-acids of hops into iso-humulones;

(e) oxidizing lupulones and lupulone-like substances of the β-acids of hops in the separated organic phase into hulupones and hulupone-like substances by passing a free oxygen-containing gas through the organic phase solution;

(f) concentrating the aqueous phase solution and the organic phase solution respectively, by distilling off water and solvent under reduced pressure while continuing distillation of the organic phase to remove from the hop-oils low boiling esters with undesirable taste characteristics, and

(g) recovering concentrated extracts from both phases for subsequent addition to wort.

3,298,836
PROCESS FOR PRODUCING SOLUBLE CITRUS FRUIT POWDER

Jorge Rivera Villarreal, 37 San Juan de Letran, 8th Floor, Mexico City, Mexico

No Drawing. Filed May 6, 1963, Ser. No. 278,434
6 Claims. (Cl. 99—206)

1. A process for forming a soluble citrus fruit powder free from preservative additives and having the food and flavor characteristics of the natural fruit comprising the steps of subjecting the whole fruit to a cold water bath to remove surface adherents; subjecting the washed fruit to a squeezing action to separate the liquid components from the skin, seeds and pulp; centrifuging the liquid components to separate the liquid components into its constituent skin oils, gum and pulp juice; separately dehydrating the resulting constituents thereby forming separate vitamin free concentrated residues; subjecting the separated concentrated residues to spray drying to reduce each to powder form; mixing the resulting powders together while adding vitamin C and food coloring in powder form; and homogenizing the resulting powder mix to obtain the powder in final form.

3,298,836
PROCESS FOR PREPARING COTTAGE CHEESE CURD

Carl A. Ernstrom, Logan, Utah, assignor to Wisconsin Alumni Research Foundation, Madison, Wis., a corporation of Wisconsin

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,787
10 Claims. (Cl. 99—116)

1. An improved process for preparing cottage cheese curd which comprises adding a water-soluble, nontoxic acid to a cool high nonfat milk solids liquid milk product containing about 13–40 percent nonfat milk solids with agitation at a temperature of from about 35° to about 50° F., sufficient acid being added to provide the said milk product, when at a temperature of about 70° F., with an equilibrium pH in the range from about 4.5 to about 4.7, and then warming the resulting acidified high nonfat milk solids product to the coagulation temperature in the substantial absence of turbulence and interparticle motion in the milk-acid mixture during subsequent coagulation and the resulting formation of the curd.

3,298,837
MARGARINE OILS

Paul Seiden, Burlington, Ontario, Canada, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 236,416, Nov. 8, 1962. This application Apr. 6, 1965, Ser. No. 446,111
4 Claims. (Cl. 99—118)

1. A margarine oil adapted to be manufactured into margarine of good spreadability, oil-off, slump, and eating quality comprising an oil selected from the group consisting of soybean oil, cottonseed oil, corn oil, sunflower oil, and mixtures thereof, and an oil selected from the group consisting of 5% to 30% by weight, coconut oil, 10% to 40%, by weight, palm oil, and 10% to 40%, by weight, palm kernel oil, and containing 0.2% to 2.5%, by weight, rapeseed oil hydrogenated to an iodine value of less than 30, the combined fatty acid content of said hydrogenated rapeseed oil being at least 10%, by weight, of acid selected from the group consisting of arachidic acid, behenic acid and mixtures thereof.

3,298,838
PROCESS FOR PRODUCING SOLUBLE CITRUS FRUIT POWDER

Jorge Rivera Villarreal, 37 San Juan de Letran, 8th Floor, Mexico City, Mexico

No Drawing. Filed May 6, 1963, Ser. No. 278,434
6 Claims. (Cl. 99—206)

1. A process for forming a soluble citrus fruit powder free from preservative additives and having the food and flavor characteristics of the natural fruit comprising the steps of subjecting the whole fruit to a cold water bath to remove surface adherents; subjecting the washed fruit to a squeezing action to separate the liquid components from the skin, seeds and pulp; centrifuging the liquid components to separate the liquid components into its constituent skin oils, gum and pulp juice; separately dehydrating the resulting constituents thereby forming separate vitamin free concentrated residues; subjecting the separated concentrated residues to spray drying to reduce each to powder form; mixing the resulting powders together while adding vitamin C and food coloring in powder form; and homogenizing the resulting powder mix to obtain the powder in final form.

3,298,839
REFRACTORY BONDING MORTAR

Peter T. Troell, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,181
3 Claims. (Cl. 106—57)

1. An air setting, particulate mortar mixture consisting essentially of, by weight, sufficient dry crystalline pyrophosphoric acid to provide from about 2 to 18% of P_2O_5, and the balance a nonbasic refractory material selected from the group consisting of high alumina materials analyzing at least 50% Al_2O_3 on an oxide basis and zircon sands.

3,298,840
MATERIAL HANDLING

William W. Campbell, Ludington, Mich., Earl Lentham, Wexford, Pa., and Albert H. Pack, Ludington, Mich., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 21, 1962, Ser. No. 218,396
5 Claims. (Cl. 106—58)

3. As an article of manufacture, a refractory briquette characterized by a pair of generally convex elliptical sides joined at an apex to form an outwardly opening generally V-shaped mouth, the inner faces of said sides characterized by a generally concave surface configuration, said briquette fabricated of refractory material selected from the group consisting of dolomite, magnesite, lime and mixtures thereof.

3,298,841
BASIC REFRACTORY PARTICULARLY SUITED FOR USE IN ROTARY KILN

Peter Harry Havranek, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,636
6 Claims. (Cl. 106—58)

1. A basic refractory shape made from batch consisting essentially of 0 to 20 parts, by weight, of chrome ore and 80 to 100 parts by weight of magnesite, from 80 to 100% of said magnesite being synthetic grain, said synthetic grain by weight and on the basis of an oxide analysis analyzing as follows:

	Percent
MgO	88–95
Reducible oxide or mixtures thereof	1–3
Al_2O_3	Less than about 1

and there being both CaO and SiO_2 present, said CaO and SiO_2 being in a weight ratio exceeding 2:1 to assure formation of refractory dicalcium silicate or tricalcium silicate.

3,298,842
PROCESS FOR PREPARING HOLLOW REFRACTORY PARTICLES

Ludwig Edward Seufert, Boothwyn, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,338
12 Claims. (Cl. 106—65)

1. A process for preparing hollow particles of refractory compounds which comprises forming a substantially uniform, porous admixture of (1) metal particles of the class consisting of aluminum, and alloys thereof in which aluminum constitutes the major component, said metal particles having one dimension between about 0.5 and 500 mils and a second and third dimension of at least 0.5 and 7 mils respectively, (2) refractory diluent particles in an amount of at least 5 parts refractory particles per part of metal particles all on a volume basis, and (3) at least 0.02% by weight based on the weight of aluminum, of a fluxing agent selected from the class consisting of oxides and hydroxides of alkali metals, oxides of alkaline earth metals, vanadium, chromium, tungsten, copper, silver, zinc, antimony, and bismuth and precursors of said oxides, the said admixture having a porosity of at least about 60%, placing the admixture in an oven, gradually heating the admixture to a temperature of at least 650° C. but below that temperature at which self-bonding of the refractory diluent occurs, continuing to fire the admixture at a temperature in this range and in the presence of an oxygen-containing atmosphere, until at least about 11% by weight of the aluminum is oxidized and separating the hollow particulate product from unreacted diluent.

3,298,843
METHOD FOR THE PREPARATION OF CEMENT

Tadashi Asano, Tokyo, Japan, assignor to Onoda Cement Company, Limited, Onoda, Yamaguchi Prefecture, Japan

Filed Dec. 3, 1963, Ser. No. 327,608
Claims priority, application Japan, Dec. 13, 1962, 37/55,060
4 Claims. (Cl. 106—100)

1. A method for the preparation of cement which comprises preparing a powdered raw cement mixture including as calcium raw materials calcium oxide and calcium carbonate, the ratio by weight of said calcium oxide to said calcium carbonate being above 45.4:54.6, compressing said raw cement mixture as a powder into molded articles and calcining said compressed article.

3,298,844
PROCESS FOR REGENERATING CELLULOSE MONOTHIOLCARBONATE SOLUTION

Edward A. Swakon, Hammond, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Dec. 6, 1963, Ser. No. 328,508
11 Claims. (Cl. 106—165)

1. A method of preparing an aqueous alkaline solution of a carbonyl sulfide derivative of alkali metal cellulose which comprises steeping cellulose in an aqueous solution of alkali metal hydroxide having an alkali metal content not exceeding 15% by weight and in an amount of said solution in excess of that required to form the alkali metal cellulose whereby during said steeping the cellulose swells and alkali metal cellulose forms, removing the steep liquor from the alkali metal cellulose to obtain a wet alkali cellulose mass of a press weight in the range of 2 to 10, reacting said wet alkali cellulose mass with carbonyl sulfide at a temperature below 10° C., thereafter diluting the product resulting from said carbonyl sulfide reaction with an aqueous solution of alkali metal hydroxide having 1 to 10% alkali metal hydroxide by weight at a temperature below 25° C., subjecting said diluted reaction product to high speed shearing stirring whereby an aqueous alkaline solution of a carbonyl sulfide derivative of alkali metal cellulose forms from which regenerated cellulose may be obtained without aging of said aqueous alkaline solution.

3,298,845
CYANOETHYLATED HYDROXYALKYLSUCROSE AND ITS PREPARATION

George P. Touey and Herman E. Davis, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Dec. 6, 1962, Ser. No. 242,597, now Patent No. 3,222,358, dated Dec. 7, 1965. Divided and this application June 28, 1965, Ser. No. 478,004
7 Claims. (Cl. 106—169)

1. A composition of matter comprising (*a*) a polymeric material selected from a group consisting of a lower fatty acid ester of cellulose, poly (vinyl acetate), poly (methyl methacrylate), poly (vinyl butyral), a vinyl chloride-vinyl acetate copolymer and (*b*) cyanoethyl hydroxyalkyl sucrose in which substantially all of the hydroxyl groups have been replaced with cyanoethyl groups.

3,298,846
REDUCING ACIDITY OF POLYMER LATICES

Neville Leverne Cull, Baker, La., and Murray Nadler, Morristown, N.J., assignors to Esso Research and Engineering Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 14, 1963, Ser. No. 287,790
7 Claims. (Cl. 106—287)

1. In a method for preparing a thermally stable latex from an air-blown liquid polymer of a conjugated diolefin of 4 to 6 carbon atoms in which a solution of said oxidized polymer is agitated with water in the presence of 2 to 5 parts by weight of an emulsifier per 100 parts by weight of oxidized polymer, said emulsifier having the formula $MRSO_4$ where M is selected from the group consisting of sodium, potassium, ammonium, triethanolamine and diethanolamine and R is selected from the group consisting of lauryl, cetyl, oleyl and ethoxylated derivatives thereof, and from which the solvent is removed to form a finished latex containing about 40 to 60 wt. percent of total solids, the improvement which comprises adding to said latex before said solvent is removed a sufficient amount of a pH-controlling material chosen from the group consisting of sodium hydroxide, sodium acetate, lithium acetate and sodium borate to form a stable latex having a pH of at least 3 after the solvent has been removed said sodium hydroxide being added in amounts below 0.4 wt. percent and said other salts being added in as small amounts as possible.

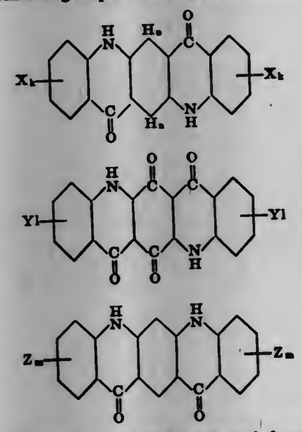
3,298,847
METHOD OF MAKING QUINACRIDONE SOLID SOLUTIONS

Albert Robert Hanke, Westfield, and William J. Marshall, Scotch Plains, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,620
11 Claims. (Cl. 106—288)

1. In the preparation of a solid solution of at least

two linear quinacridone compounds having formulae selected from the group consisting of:



where X, Y and Z are radicals selected from the group consisting of fluorine, chlorine, bromine, alkyl, groups of 1–4 carbon atoms and alkoxy groups of 1–4 carbon atoms and where *k*, *l* and *m* are integers of from 0–2, inclusive, and *n* is an integer of from 1–2, inclusive, by contacting said quinacridone compounds with a polar organic liquid selected from the group consisting of strongly polar amides, sulfones, sulfoxides, primary alcohols having up to three carbon atoms, polyhydric alcohols containing up to four carbon atoms and amines to form a quinacridone-liquid mixture, the improvement which comprises performing said contacting step in the presence of a strong base in an amount of at least 2% based on the weight of said linear quinacridone compounds.

3,298,848
AQUEOUS DISPERSION OF MODIFIED DRYING AND SEMI-DRYING OILS CONTAINING WATER-SOLUBLE DRIER

Fritz H. W. Wachholtz, Molenweg 28, Nunspeet, Netherlands, and Christiaan Korf, Caen van Necklaan 47, Rijswijk, Netherlands

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,912
19 Claims. (Cl. 106—264)

1. An aqueous dispersion of
(a) a water dispersible, organic coating vehicle selected from the group consisting of modified drying and semi-drying oils containing carboxyl groups at least partially neutralized with a nitrogen containing base, the vehicle being highly dispersed in water and capable of oxidation polymerization, and
(b) a water soluble drier, said drier consisting of a compound of a heavy metal selected from the group consisting of iron, cobalt, nickel, vanadium, chromium, manganese, copper, zirconium and molybdenum,
(c) the amount of the water soluble metal compound in the dispersion being such that the metal constitutes from 0.01% to 3% by weight of the coating vehicle.

3,298,849
AMINE MODIFIED CLAY AND METHOD

Eugene J. Dohman, Richard G. Shaler, and William A. Rinehimer, Las Vegas, Nev., assignors, by mesne assignments, to American Tansul Company, Las Vegas, Nev., a corporation of California

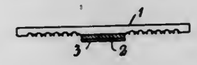
No Drawing. Filed July 5, 1963, Ser. No. 293,150
18 Claims. (Cl. 106—288)

1. A clay composition having improved hydration properties comprising a modified swelling, gelling, cation exchangeable clay containing an alkanolamine acid salt in an amount sufficient to substantially increase the rate of initial viscosity development when the dried composition is dispersed in an aqueous medium, and a humectant having a boiling point above water in an amount of about 1–20% by weight of the clay, said alkanolamine acid salt and humectant being present in proportions sufficient to synergistically increase the rehydration rate of the dry clay composition when compared with that exhibited by clay modified with either the alkanolamine acid salt or the humectant alone.

3,298,850
DRY TRANSFER MATERIALS

Kenneth James Reed and Alan Lennox Lythgoe, London, England, assignors to Letraset Limited, London, England, a British company

Filed Mar. 18, 1963, Ser. No. 265,996
Claims priority, application Great Britain, Mar. 21, 1962, 10,862/62
18 Claims. (Cl. 117—3.1)

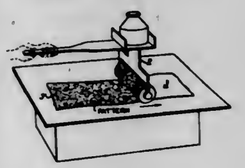


1. A dry transfer material which comprises
(a) a carrier sheet which has a surface of high-polymeric material,
(b) transfer films on said surface,
(c) pressure-sensitive adhesive material covering said transfer films and overlapping onto said carrier sheet surface in overlap areas,
(d) the polymeric surface material in said overlap areas having greater adhesive-retaining properties as compared to those of the portions of said carrier sheet surface occupied by said transfer films,
(e) the adhesive power of the adhesive material for a receiving surface, determined by the peel bond adhesion thereto, being less in said overlap areas than in those areas occupied by said transfer films by reason of interaction between said adhesive material and said polymeric material in said overlap areas.

3,298,851
EMBOSSED LEATHER AND PROCESS FOR PREPARING THE SAME

Hermann Fuchs, Weinheim an der Bergstrasse, Germany, assignor to Carl Freudenberg, Weinheim an der Bergstrasse, Germany, a corporation of Germany

Filed Nov. 30, 1964, Ser. No. 414,813
Claims priority, application Germany, Dec. 5, 1963, F 41,475
17 Claims. (Cl. 117—11)

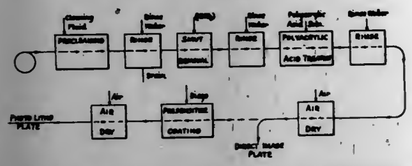


1. Process for imparting an enduring pattern into the surface of leather which comprises hot impressing by line pressure contact a pattern onto a paraffin coated leather surface at a temperature between about 200°–650° C., the paraffin of said paraffin coated leather surface having a melting point between about 50–70° C. and being substantially present on the surface of the leather during the hot impressing.

3,298,852
METAL OFFSET PLATE AND METHOD FOR MANUFACTURE

Julian Lee Beatty, Northbrook, and Seamon A. Lincoln, Wheaton, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Filed Feb. 7, 1963, Ser. No. 257,020
10 Claims. (Cl. 117—34)



1. In the process of manufacturing an aluminum lithographic plate, the steps in the order specified of thoroughly cleaning the surface of the aluminum plate, treating the cleaned surface of the aluminum plate with an aqueous solution containing 0.1 to 1.5 percent by weight polyacrylic acid with the remainder substantially water while the solution is at a pH less than 4 and at a temperature within the range of 150° to 212° F. for a period of time within the range of 15 to 300 seconds, drying the treated surface and rinsing the surface with aqueous medium to remove soluble salts, and then again drying the rinsed surface.

3,298,853
WATER-INSOLUBILIZING STARCH-CLAY PAPER COATINGS WITH A REACTION PRODUCT OF DIALDEHYDE STARCH AND A DICYANDIAMIDE FORMALDEHYDE CONDENSATION PRODUCT

Mitchell Frank Zienty, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed June 3, 1963, Ser. No. 284,808
3 Claims. (Cl. 117—62.2)

1. A coated paper product having improved wet rub resistance comprising a paper substrate, a base coating overlaying a surface of said substrate and comprising a mixture of clay and a starch adhesive, and a surface layer on said base coating comprising a mixture of clay and the reaction product of the starch adhesive with an aqueous dispersion of a reaction product of a dialdehyde starch and a dicyandiamide-formaldehyde condensation product, said aqueous dispersion having a solids content of from about 7% to about 10% by weight dialdehyde starch and from about 0.5% to about 10% by weight dicyandiamide-formaldehyde condensation product, said percentages based on the total volume of the dispersion.

3,298,854
METHOD OF COATING YARN

Alfred Marzocchi, Cumberland, and Adrien E. Beaudoin, Central Falls, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

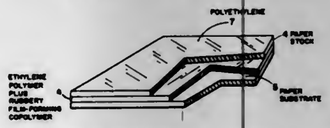
No Drawing. Filed Feb. 2, 1962, Ser. No. 170,817
9 Claims. (Cl. 117—72)

1. The method of coating a glass fiber yarn as to adapt it for use as a perforate screen defining element, said method comprising: (1) applying to the yarn a coating comprising a low boiling substance capable of catalyzing polymerization of a material selected from the group consisting of an epoxy containing substance and an isocyanato group containing substance, said substance having a boiling point above room temperature but not greater than 450° F. (2) applying a second coating of a flowable composition comprising an intimate physical mixture of a fusible vinyl plastisol and a polymerizable material selected from the group consisting of epoxy containing substances and an isocyanato group containing substance and (3) exposing said coated yarn to a temperature sufficient to cause said substance to migrate into said second coating layer and polymerize said polymerizable material and sufficient to simultaneously fuse said plastisol whereby the presence of said polymerized material reduces plasticizer loss normally associated with exposure of the coated yarn to elevated temperature and weather conditions.

3,298,855
MOISTURE-RESISTANT WRAPPING PAPER

Arthur F. Helin and Gerald J. Mantell, Kansas City, Mo., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 23, 1962, Ser. No. 211,489
8 Claims. (Cl. 117—76)



1. A coated paper resistant to moisture vapor transmission and comprising a paper substrate having thereon an aqueous emulsion-deposited coating comprising about 30–95% by weight of at least one ethylene polymer and, correspondingly, about 70–5% by weight of at least one rubbery film-forming thermoplastic polymer which has a film-forming temperature of less than about 50° C. and an elongation at break of at least about 150%, said rubbery film-forming thermoplastic polymer being a member selected from the class consisting of (a) hydrolyzed copolymers of ethylene and an alkyl acrylate in which at least 10% by weight of the alkyl acrylate moiety has been hydrolyzed to carboxylate groups, (b) copolymers of butadiene with an effective concentration of acrylonitrile and containing at least 40% butadiene, (c) copolymers of isobutylene with a comonomer selected from the group consisting of butadiene and isoprene and containing between 92–98% isobutylene and 8–2% of said comonomer, and (d) copolymers of vinyl acetate with an alkyl ester of an acid selected from the group consisting of fumaric acid and maleic acid and containing a concentration of vinyl acetate in the range of 10–90%.

8. A coated paper resistant to moisture vapor transmission and comprising a paper substrate having thereon an aqueous emulsion-deposited coating comprising about 30–95% by weight of at least one ethylene polymer and, correspondingly, 70–5% by weight of at least one rubbery film-forming polymer which has a film-forming temperature of less than about 50° C. and an elongation at break of at least about 150%, with said ethylene polymer and said rubbery film-forming thermoplastic polymer being present as separate superimposed coatings, and wherein the coating in immediate contact with the paper substrate is said rubbery film-forming thermoplastic polymer comprised of a hydrolyzed copolymer of ethylene and an alkyl acrylate in which at least 10% by weight of the alkyl acrylate moiety has been hydrolyzed to carboxylate groups.

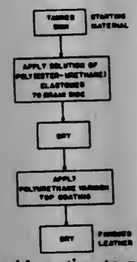
3,298,856
METHODS OF FINISHING LEATHER, AND PRODUCTS THEREBY OBTAINED

Archibald B. Harding, Exeter, N.H., assignor to Miljo Chemical Company, Incorporated, Exeter, N.H., a corporation of New Hampshire

Filed Feb. 12, 1965, Ser. No. 432,421
7 Claims. (Cl. 117—76)

1. The method of finishing leather which comprises applying directly to the grain side of a previously tanned skin a substantially non-penetrating surface coating comprising a solution in an organic solvent of a completely

reacted, thermoplastic, uncured and normally non-curing poly(ester-urethane) elastomer which is cross-link free and substantially free of unreacted aromatic diisocyanate,



and then drying said coating to remove the solvent therefrom, whereby a substantially dry outer layer on said leather is obtained, which retains the thermoplasticity and solubility of the original elastomer.

3,298,857
METHOD OF STIFFENING POLYURETHANE FOAMS

Samuel M. Terry, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,868
15 Claims. (Cl. 117—98)

1. A method of increasing the stiffness of a formed open cell polyurethane foam product of the reaction of a polyfunctional reactive hydrogen compound and an organic polyisocyanate, comprising exposing such a formed foam to the action of an organic polyisocyanate.

3,298,858
METHOD OF TREATING SURFACES OF IRON AND STEEL

Katsuyo Ashikari, Suginami-ku, Tokyo-to, Japan, assignor of one-half to Yawata Seitetsu Kabushiki Kaisha, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan

No Drawing. Filed July 8, 1963, Ser. No. 293,244
3 Claims. (Cl. 117—107.2)

1. A method of treating the surface of iron and steel articles which comprises: preparing, as a diffusion agent, a powder mixture of at least one ferro-metal selected from the group consisting of ferro-tungsten, ferro-molybdenum, ferro-chromium, ferro-titanium, ferro-tantalum, ferro-zirconium, and ferro-boron, at least one metal carbide selected from the group consisting of tungsten carbide, molybdenum carbide, titanium carbide, tantalum carbide, boron carbide, and zirconium carbide, and at least one substance selected from the group consisting of metallic nickel, metallic cobalt, metallic tungsten, metallic molybdenum, ammonium para-tungstate, and ammonium molybdate; adding an organic salt selected from the group consisting of cobalt acetate and cobalt oxalate, as a catalyst, to the said powder mixture; covering the surface of the article to be treated with the resulting powder mixture; and heat treating the said article, in the state of being so covered, at a temperature of 800 to 1,300 degrees C. under a reducing atmosphere.

3,298,859
EPOXIDE ADDITIVE FOR AMYLACEOUS FORMING SIZE COMPOSITIONS

Robert Wong and Philip W. Sullivan, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, Toledo, Ohio, a corporation of Delaware

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,258
7 Claims. (Cl. 117—126)

1. A method for sizing glass fibers comprising applying to the surfaces of said fibers during their formation by attenuation an aqueous dispersion consisting essentially of:

(a) between 1 to 12% by weight of a starch, and

(b) between 0.005 to 3.0% by weight of a water soluble epoxide compound consisting of the acidified reaction product of:

(1) an epoxide compound having at least two oxirane groups, and

(2) a monoamine having the formula



wherein R_1 is a member of the class consisting of an alkyl radical of a chain length of from 1 to 7 carbon atoms, an amine, or an R_2 radical; and R_2 is a member of the group consisting of: (1) an aliphatic hydrocarbon having a chain length of from 1 to 7 carbon atoms and including at least one hydroxy group, (2) —OH, and (3) $-(XR_3)_nOH$ wherein X is an atom of the group of oxygen and nitrogen, R_3 is a lower alkyl having a carbon to carbon chain length of from 1 to 6 carbon atoms, and n is an integer of from 1 to 25,

(3) the ratio of said monoamine to said oxirane groups being less than 1:1, the balance of said aqueous dispersion being essentially water.

3,298,860
COATING METAL WITH A CLAYLESS SUSPENSION OF CERAMIC SLIPS

Eugene E. Bryant, Cleveland, and Albert L. Gugeler, Northfield, Ohio, assignors to Ferro Corporation, Cleveland, Ohio

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,574
5 Claims. (Cl. 117—129)

1. The method of producing a vitrified coating on a metallic substrate comprising the steps of:

(A) milling, in a liquid medium, a predominantly fritted slip suspension of 100 parts of a vitreous enamel ground coat frit containing adherence-promoting oxides, said slip containing at least one electrolyte, in an amount from about 1/64 to about 1.0 part by weight, based upon the weight of the total frit contained in said suspension, selected from the class consisting of:

potassium carbonate
potassium chloride
potassium nitrate
sodium carbonate
sodium chloride
sodium nitrate
sodium aluminate
sodium nitrite
potassium nitrite
sodium acetate
potassium acetate
sodium chlorate
potassium chlorate
urea
magnesium carbonate
barium carbonate
barium chloride
borax
magnesium sulphate
calcium chloride
calcium carbonate
barium sulphate

said slip having contained therein from about 1/8 part to about 7 parts by weight, based upon the weight of said frit, of zinc oxide, said slip suspension milled substantially free of clay,

(B) applying the slip derived from step A, substantially unaltered as to clay and zinc oxide content, directly to a base metal substrate, and

(C) firing said slip to a vitrified coating on said substrate.

3,298,861

HEAT AND LIGHT STABLE SOLID POLYOLEFIN ARTICLE AND PROCESS OF MAKING SAME

Domenick Donald Gagliardi, 185 Howland Road, East Greenwich, R.I. 02818

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,507
11 Claims. (Cl. 117—138.8)

1. A process of improving the heat and light stability of articles made of solid polyolefins which comprises:

(A) wetting the surface of the article with a solution consisting essentially of between about

(1) 0.1 and 25% by weight of alkyl acid orthophosphate in which the alkyl radical contains between 2 and 20 carbon atoms, and

(2) solvent having a boiling point below about 150° C.,

(B) drying the resulting wetted surface by evaporation of volatile solvent leaving as a residue a substantially uniform layer of alkyl acid orthophosphate,

(C) heating the dried surface to a temperature at least 10° C. below the melting point of the polyolefin of which the surface is formed between about 100° and 150° C. for between about 1 to 15 minutes to imbue the surface with alkyl acid orthophosphate,

(D) contacting the resulting treated surface with an aqueous solution containing about 1 to 25% by weight of a salt formed of a metal selected from the group consisting of cadmium, chromium, cobalt, nickel, tin and zinc, and a weak acid having a dissociation constant less than said alkyl acid orthophosphate,

(E) heating the surface while in contact with said aqueous solution at a temperature between about 50° and 100° C. until at least a portion of metal has been exhausted from the solution onto said surface, and

(F) scouring the article surface to remove excess treating materials, rinsing and drying the article.

3,298,862

PAPER SIZING PROCESS

William P. Fairchild, San Diego, Calif., and John E. Robison, Portland, Oreg., assignors to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Sept. 5, 1962, Ser. No. 221,444
4 Claims. (Cl. 117—155)

1. The process of sizing paper which comprises the steps of: applying to a surface of said paper an aqueous composition consisting essentially of water, from ½% to 10% polyvinyl alcohol by weight of said composition, and from 1/10% to 1% of a water soluble alginate by weight of said composition; and thereafter drying said paper.

3,298,863

METHOD FOR FABRICATING THIN FILM TRANSISTORS

Joseph H. McCusker, Princeton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 8, 1964, Ser. No. 366,205
4 Claims. (Cl. 117—212)

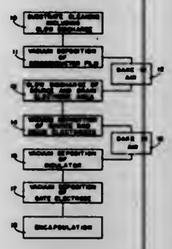
2. In a method for fabricating a thin film insulated gate field effect device, the steps of

vacuum depositing on an insulating substrate a thin film of a semi-conductor material;

subjecting a pair of spaced areas of said thin film to an ion bombardment;

vacuum depositing metallic contacts over said spaced areas, thereby to form a "source" and "drain" electrode;

vacuum depositing an electrically insulating material over the space separating said metallic contacts and



allowing a portion of said insulating material to overlay a pair of confronting edge portions of said electrodes;

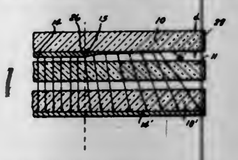
and vacuum depositing a metallic contact over a portion of said last-mentioned insulating material thereby to form a "gate" electrode at a location which is midway between said "source" and "drain" electrodes.

3,298,864

SEMI-CONDUCTING COATING FOR USE IN A SELF-HEALING ALTERNATING VOLTAGE CAPACITOR AND METHOD

Helmut Maylandt, Plochingen am Neckar, Germany, assignor to Firma Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Aug. 3, 1965, Ser. No. 476,947
Claims priority, application Germany, Oct. 7, 1960, B 59,669
16 Claims. (Cl. 117—212)



1. In a self-healing alternating voltage capacitor,

a sheet member of dielectric material having a determined thickness and a determined surface area;

a first metal layer on a face of said sheet member covering a first portion of the surface area of said sheet member and having an edge forming a boundary between the first portion of said surface area and a second portion of said surface area free of said first metal layer; and

a second layer of semi-conductor material on a part of said second portion of the surface area of said sheet member next adjacent the edge of said first metal layer, said layer of semi-conducting material having a determined width and a specific resistance per square unit

$$R\square = K\frac{d}{\epsilon o \cdot \epsilon r \cdot b_s^3 \cdot \omega}$$

wherein K is a constant having a magnitude in the range 10^{-2} to 10^{0}, d is the thickness of said sheet member in mm., ϵo is the dielectric constant for air, ϵr is the relative dielectric constant of said dielectric material, b_s is the width of the layer of semi-conductor material in mm. and ω is 2π times the frequency of the alternating voltage at which said capacitor operates in cycles per second.

3,298,865

CRUDE SUGAR LIQUOR DEFECATION PROCESS

Harold Eli Bode, 308 Schofield Bldg., Cleveland, Ohio 44115

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,072
7 Claims. (Cl. 127—41)

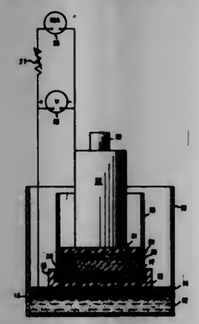
1. A crude sugar liquor defecation process comprising: blending said liquor with a phosphated starch paste, adding sufficient alkaline earth hydroxide defecating reagent to adjust the said sugar liquor to an alkaline pH, heating the resulting liquid mixture; and separating the resulting precipitated blend of an alkaline earth metal derivative of said phosphated starch having adsorbed within it non-sugar solids emanating from said crude sugar liquor.

3,298,866

PRIMARY ELECTROCHEMICAL CELL EMPLOYING BORATE ANION AS AN ANODE COMPONENT

Philip E. Lindvig, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 9, 1962, Ser. No. 208,648
8 Claims. (Cl. 136—83)



1. In a primary electrochemical cell, the improvement in combination therewith comprising the active anode component consisting essentially of:

(1) a material selected from the group consisting of acids and salts with cations having a valence between 1 and 3, inclusive, of at least one ion of the group consisting of decahydrodecaborate, tetradecahydrodecaborate, tridecahydroundecaborate, dodecahydrododecaborate and di- and tetravalent octadecahydroeicosaborate ions; and

(2) at least one catalyst selected from the group consisting of the metals nickel, ruthenium, rhodium, palladium, osmium, iridium and platinum and compounds of these metals.

3,298,867

HYDROGEN DISTRIBUTION FUEL CELL

Mario J. Diotalevi, Somers, Conn., assignor, by mesne assignments, to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

Filed Dec. 31, 1962, Ser. No. 248,622
7 Claims. (Cl. 136—86)

1. In a fuel cell, an electrode assembly comprising a mount including a gas separator, an electrode on said mount; said mount, separator and electrode defining a gas chamber behind said electrode, means for supplying a gas around the periphery of said electrode and to said chamber including an intake port and a gas channel extending around one portion of the periphery of the electrode, said gas channel having a plurality of gas passages therein communicating with said gas chamber, and having flow-directing means within said chamber to direct the flow of gas in substantially the same direction, said assembly further comprising an exhaust port, an exhaust gas channel extending around a portion of the periphery of the electrode and communicating with said exhaust port and exhaust passage means communicating with said exhaust channel and said chamber.

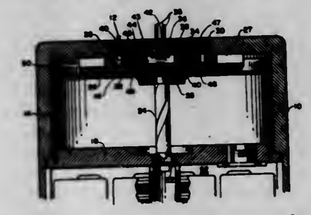


3,298,868

RESERVE ACTIVATED VOLTAIC BATTERY HAVING A GAS GENERATOR FOR SHOCK-FREE OPERATION

Rex L. Smith, Corona, and John C. Daley, La Sierra, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 29, 1964, Ser. No. 363,650
5 Claims. (Cl. 136—90)



1. In a reserve activated voltaic battery a device for activating said battery consisting of the combination of an electrolyte reservoir having a rupturable membrane means and a gas generator for producing high gas pressure in a smooth shock-free manner for a finite period of time comprising:

(a) a battery casing designed to withstand high internal pressures,

(b) said gas generator and electrolyte reservoir housed within said battery casing such that gas produced by said gas generator will exert pressure on a surface of said reservoir to cause the rupture of the reservoir membrane, collapse of the reservoir and expulsion of electrolyte therefrom to activate said battery,

(c) said gas generator including a gas generator cup containing a gas generator material capable of generating a relatively cool gas, a layer of material being provided on two surfaces of said gas generating material to inhibit the burning thereof for maintaining the desired level of pressure which the gas produced will exert against said reservoir surface,

(d) an initiator charge, consisting essentially of a mixture of lead styphnate, lead dioxide, zirconium and binder, within said gas generator cup together with externally connected means for initiating said initiator charge to produce a small spit of flame with moderate amount of hot particles and gas pressure,

(e) a second charge, consisting essentially of a mixture of lead dioxide and zirconium, which provides a large amount of hot particles with very low gas production surrounding said initiator charge and augmenting the flame from said initiator charge,

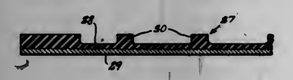
(f) a third charge consisting essentially of a slow burning mixture of boron and barium chromate and metal and halogenated hydrocarbon for providing a flame with longer duration, a large number of hot particles and a moderate amount of gas surrounding said second charge and enhancing the flame from said second charge,

(g) a fourth charge, consisting essentially of metal and halogenated hydrocarbon, surrounding said third charge and ignited by said third charge in a minimum time,

(h) said gas generating material encircling and contacting said fourth charge; the ignition train formed by said four charges providing the proper amounts of hot particles, hot gases and pressure to cause combustion and progressive burning of said gas generating material without detonation.

3,298,869
LAMINATED BATTERY SEPARATORS
Herman A. Swoboda, Verona, N.J., assignor to Amerace Corporation, New York, N.Y., a corporation of Delaware

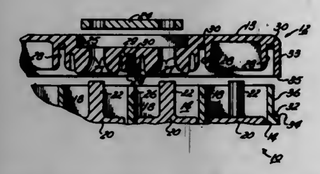
Filed Aug. 23, 1961, Ser. No. 133,464
5 Claims. (Cl. 136—145)



1. A battery separator consisting of a two-ply permanently joined and laminated body, in which one ply of said body is made up of a vulcanized rubber composition, which is micro-porous, and in which the other ply of said body is made up of a porous sheet of felted fibers impregnated with about 15–25% of cured resin selected from a group consisting of thermosetting and thermoplastic resins based on the dry weight of resin plus fiber sheet; and said two plies being intimately and permanently interlocked together throughout with portions of said rubber composition extending into pores in said ply of felted fibers, and with extended end portions of some of said fibers extending into and being embedded in said rubber composition.

3,298,870
BATTERY CASING CONSTRUCTION
Anthony Sabatino, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

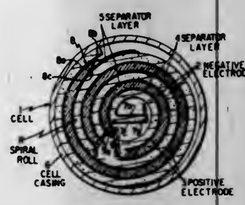
Filed May 6, 1964, Ser. No. 365,404
5 Claims. (Cl. 136—170)



1. A casing for a battery comprising a casing body member and a casing cover member, one of said members having channel means comprising an outer peripheral wall to receive an edge portion of the other member, said other member having walls with an edge of reduced thickness, thereby defining a laterally extending ledge, a plastic sealant which remains pliable at ambient temperatures disposed within said channel means and forming a substantially liquid-impervious seal between said channel means and said edge of said other member, and a relatively rigid setting cement disposed between said ledge and said peripheral wall of said channel means to form a substantially rigid continuous smooth and tenacious bond therebetween.

3,298,871
ELECTRIC CELLS WITH SPIRAL WOUND ELECTRODES
Pierre Binder, Paris, and Yves Jacques Felix Lecouffe, Vincennes, France, assignors to Societe des Accumulateurs Fixes et de Traction, Romainville, Seine, France, a French company

Filed July 31, 1964, Ser. No. 386,642
Claims priority, application France, Aug. 2, 1963, 943,666; June 19, 1964, 979,019
8 Claims. (Cl. 136—175)



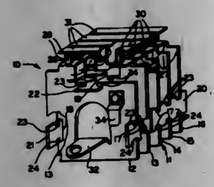
1. A process of manufacturing electric cells of the type utilizing thin sintered electrodes wound into spiral form with an interposed separator between adjacent electrodes to prevent damage to the separator and short circuits between electrodes by loosened and piercing particles of the sintered material of the electrodes located at ends and at deformations in the electrodes, comprising the steps of providing a winding mandrel, applying a protective adhesive covering sheet around an end of one of the electrodes so that it extends along at least one face of the latter for a limited part of its length adjacent said last-named end, inserting said last-named end into said winding mandrel so that the protective adhesive covering sheet extends outwardly of the mandrel and overlies a portion of said last-named electrode that becomes deformed in the region adjacent said mandrel when said last-named electrode is wound up on said mandrel and tends to prevent cracking off of particles of the sintered material at said region which is likely to cause damage to the separator, then partially winding up the last-named electrode on the mandrel, then applying a separator and a second electrode to said first-named electrode and completing the winding up of the electrodes and separator into spiral form on said mandrel, and thereafter removing them therefrom, the separator then being protected from damage by said particles by said protective covering sheet in said region.

3,298,872
MEANS FOR GENERATING AN ELECTROMOTIVE FORCE
Nils Tryggve E. A. Baak, Waterville, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Original application Jan. 2, 1963, Ser. No. 248,915. Divided and this application Oct. 7, 1964, Ser. No. 402,156
6 Claims. (Cl. 136—205)

1. Means for generating an electromotive force when subjected to heat sufficient to thermally devitrify a crystallizable vitreous mass comprising a pair of plates having adjoining faces in non-adherent contact with each other, one of said plates being a crystallizable vitreous material and the other of said plates being a partially crystallized material having an energy level different from that of said vitreous plate, electrical conductors in contact with each of the outer faces of said plates, respectively, said means being capable of being subjected to heat sufficient to cause crystallization of said vitreous plate.

3,298,873
THERMOELECTRIC DEVICE HAVING A RIGID BASE STRUCTURE
Robert E. Norton, Minneapolis, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

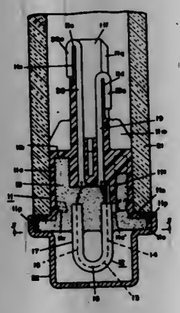
Filed Jan. 3, 1961, Ser. No. 80,418
10 Claims. (Cl. 136—208)



1. A thermoelectric device comprising a plurality of similar electrically and thermally conductive thermojunction and heat transfer plates, said plates being provided at one edge thereof with transversely extending surface portions; an N-type and a P-type thermoelement, each having opposite end surfaces, electrically conductively joined to each of said plates with one thermoelement on each said surface portion by one of said opposite end surfaces of each thermoelement; means for rigidly securing said plates in electrically insulated spaced relation to provide a rigid base structure with said thermoelements arranged in two rows, each containing one of the thermoelements of each plate; a thermally and electrically conductive thermojunction and heat transfer member electrically conductively joined to the other of said end surfaces of each P-type thermoelement and to the other of said end surfaces of the N-type thermoelement of the next adjacent plate, such that said P and N-type thermoelements are connected in alternate series circuit relation through said thermojunction plates and members.

3,298,874
EXPENDABLE IMMERSION TEMPERATURE RESPONSIVE UNIT
Roy E. Davies, Roslyn, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

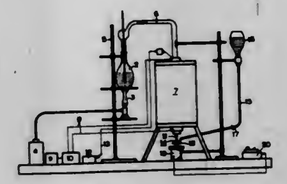
Filed May 10, 1962, Ser. No. 193,706
18 Claims. (Cl. 136—232)



13. A supporting body structure for a temperature responsive unit of the type having a temperature responsive device projecting from the body structure through which electrical conductors extend from the device, the body structure comprising cylindrical wall structure and a transverse wall of material to form a cup having passage means for passing electrical conductors therethrough, an extension projecting from within the cup and carried by the interior surface of a wall of the cup, said extension including means for holding the device in place with respect to the cup prior to filling the cup with electrically insulating material to seal the device in place.

3,298,875
METHOD FOR SURFACE TREATMENT OF SEMICONDUCTOR ELEMENTS
Norbert Schink, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin - Siemensstadt, Germany, a corporation of Germany

Filed June 5, 1963, Ser. No. 285,784
Claims priority, application Germany, June 20, 1962, S 79,992
3 Claims. (Cl. 148—6.3)



2. The method for the surface treatment of a semiconductor element having a substantially monocrystalline semiconductor body and at least one metal electrode applied thereto, which comprises directing a heated jet of a fluid oxidizing agent upon the semiconductor surface, and directing another jet of a fluid cooling agent upon the electrode, and rotating the semiconductor element around its axis of rotation while subjecting it to the jets.

3,298,876
PROCESS AND COMPOSITION FOR FORMING CLEAR PROTECTIVE COATINGS ON CADMIUM METAL SURFACES
Merton M. Beckwith, Timberlake, Darryl A. Richard, North Ridgeville, and Joseph A. Zehnder, Rocky River, Ohio, assignors to R. O. Hull & Company, Inc., Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,314
4 Claims. (Cl. 148—6.21)

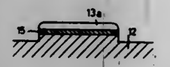
1. A dry powder composition for admixture with water to form a solution for treating cadmium surfaces to produce thereon clear protective coatings consisting essentially of the following ingredients in the proportions by weight specified:

	Parts
Potassium chrome alum	60
Sodium hydrogen fluoride	40
Sodium chromate	0.5
Sodium acetate	0.25

3,298,877
PROTECTIVE COATING FOR BERYLLIUM METAL
Simon J. Morana, Hazleton, Pa., assignor to The Beryllium Corporation, Reading, Pa., a corporation of Delaware
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,811
2 Claims. (Cl. 148—31.5)

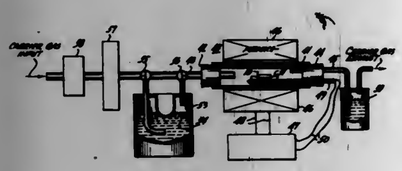
1. A beryllium metal containing a coating of a titanium suboxide-beryllium oxide complex.

3,298,878
SEMICONDUCTOR P-N JUNCTION DEVICES AND METHOD FOR THEIR MANUFACTURE
Reimer Emeis, Ebermannstadt, and Arnulf Hoffmann, Pretzfeld, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Mar. 10, 1964, Ser. No. 350,842
Claims priority, application Germany, Mar. 13, 1963, S 84,128
5 Claims. (Cl. 148—177)



2. The method of producing a semiconductor p-n junction device, which comprises machining a monocrystalline semiconductor body of a given conductance type to provide the body with a mesa portion extending substantially perpendicular to said semiconductor body and having a planar top area, alloying into the top area a dopant-containing metal foil whose edge is within the contour of the mesa top area and maximally spaced from the contour a distance about equal to the thickness of the metal plate.

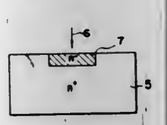
3,298,879
METHOD OF FABRICATING A SEMICONDUCTOR BY MASKING
Joseph H. Scott, Jr., Newark, N.J., and George W. McIver, Playa del Rey, Calif., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 23, 1964, Ser. No. 353,957
2 Claims. (Cl. 148—187)



1. The method of fabricating a semiconductor device, comprising the steps of:
masking a portion of a crystalline semiconductive body consisting of a material selected from the group consisting of the nitrides, phosphides, arsenides and antimonides of boron, aluminum, gallium, and indium with a layer of silicon oxide,
said silicon oxide layer including phosphorus dispersed therein; and,
heating said body in the vapors of zinc to diffuse zinc into the unmasked portion only of said body.

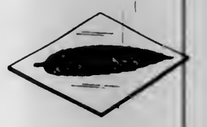
3,298,880
METHOD OF PRODUCING SEMICONDUCTOR DEVICES
Takeshi Takagi, Musashino-shi, Masatoshi Migitaka and Hiroshi Ueda, Tokyo-to, and Hirokazu Kimura, Koganei-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed Aug. 21, 1963, Ser. No. 303,516
Claims priority, application Japan, Aug. 24, 1962, 37/35,072; Aug. 27, 1962, 37/35,277
2 Claims. (Cl. 148—191)

1. A method of producing semiconductor devices which comprises the steps of: locally heating a particular region of a semiconductor material containing an active impurity by means of an electron beam; establishing an atmosphere selected from the group consisting of gaseous



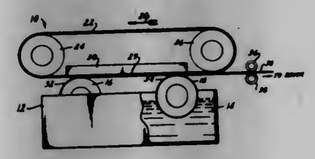
halogen and gaseous P_2O_5 to assist and promote outward diffusion about said particular region; and maintaining heating until said outward diffusion is terminated.

3,298,881
METHOD OF FORMING FACSIMILE IMPRESSIONS OF BIOLOGICAL SPECIMENS
George A. Higley and Anna J. Higley, both of P.O. Box 228, Snoqualmie, Wash. 98065
Filed Apr. 15, 1963, Ser. No. 273,805
1 Claim. (Cl. 156—59)



The method of forming an indented facsimile impression of a thickly contoured, semi-rigid biological specimen in a transparent thermoplastic sheet to faithfully and substantially microscopically reproduce three-dimensional thickness detail of the specimen without materially distorting or otherwise impairing the light transmitting properties of the bordering area of the plastic sheet surrounding the facsimile impression therein, said method comprising subjecting the specimen to cushioned pressure and elevated temperature for a substantial time by: sandwiching a flat-faced thermoplastic sheet and the biological specimen directly in contact with one another; directly interposing said sheet and specimen between polished plates; backing at least one of said plates with a flat sheet of cushioning material; uniformly applying to said plates sufficient pressurization to cause an impression to be made in the thermoplastic sheet when in a near-plastic condition but insufficient pressurization to permanently upset the surface configurations of the specimen, the pressurization of the specimen being characterized by an initial pressurization for an initial period, an intermediate pressurization for an intermediate period and a maximum pressurization for a final period, such successive periods of pressurization each being about equal, and the initial pressurization being about one-third the final pressurization, while the intermediate pressurization is about two-thirds the final pressurization, said final pressurization being from about 30–200 p.s.i with relatively greater maximum pressures being used for relatively more rigid specimens; heating the pressurized assembly to an elevated temperature just below the temperature of plasticity of the thermoplastic sheet; maintaining the assembly in heated condition for a time sufficient for the specimen to form an inverse impression in the near-plastic thermoplastic sheet; cooling the pressurized assembly to substantially room temperature while maintaining the pressurization thereof; then disassembling the assembly and removing the specimen from the formed thermoplastic sheet.

3,298,882
PROCESS OF PRODUCING FLEXIBLE GLASS FLAKE ELECTRICAL INSULATION
John A. Waugh, Huntingdon, Pa., and Leslie L. Warner, Roswell, N. Mex., assignors to Owens-Corning Fiberglas Corporation, Toledo, Ohio, a corporation of Delaware
Filed Jan. 19, 1961, Ser. No. 83,823
5 Claims. (Cl. 156—62.8)



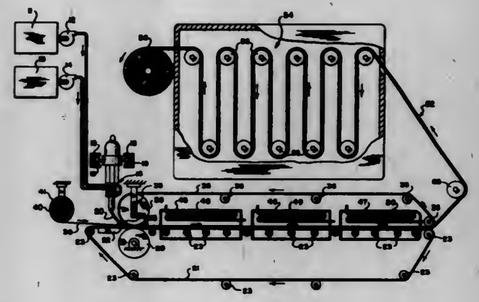
1. The method for producing flexible glass flake electrical insulating material comprising first boiling glass flakes in a hydrochloric acid solution and subsequently neutralizing the glass flakes, forming a water slurry of said neutralized flakes, withdrawing flakes from the slurry to form at least two separate sheets of water-wet glass flakes, joining the so formed sheets in surface to surface contact, and then compressing said sheets together to drive off the water, laminate the sheets together, and compact the individual glass flakes together in overlapping engagement.

3,298,883
METHOD OF MAKING BUILDING PANELS
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Filed May 1, 1963, Ser. No. 277,340
13 Claims. (Cl. 156—71)



1. A method of fabricating a building wall panel in place comprising the steps of:
(a) providing a sheet of flexible foamed plastic material having open surface cells,
(b) supporting said foamed plastic sheet in a curved or bowed attitude to define a particular well shape,
(c) applying a first layer of mortar-like material to a major face of said flexible foamed plastic sheet by spray-up means with said first layer adhering thereto in a mechanical bond by filling said open surface cells,
(d) and thereafter constructing a hard shell of self supporting mortar substantially the contour of said supported foamed plastic sheet by successively applying further layers of said mortar-like material in a manner to build up said hard shell.

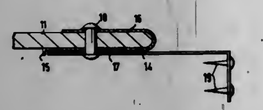
3,298,884
METHOD OF MANUFACTURING REINFORCED PLASTIC FOAM IN SHEET FORM
John Willy, Attleboro, Mass., assignor to Specialty Converters, Inc., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,641
3 Claims. (Cl. 156—79)



1. In a method of making a unitary single sheet of flexible polyurethane foam having a unitary and continuous cellular structure throughout wherein a liquid polyurethane foaming mixture is continuously prepared and chilled below room temperature to a temperature at which it will not react to delay foaming thereof, spreading the chilled mixture onto a moving flexible carrier web, directing a moving flexible covering web over the foam mixture to position the mixture between the carrier and covering webs, fixing a uniform thickness of the chilled foam mixture between the carrier and covering webs, raising the temperature of the foam mixture to react the mixture and form a foam sheet between the webs, directing the webs with the foam therebetween into a preliminary heat-curing zone, separating the carrier and covering webs from the foam sheet, and directing the foam sheet to a final curing operation, the improvement in combination therewith of reinforcing the foam sheet with a flexible discontinuous reinforcing layer embedded within said foam sheet and extending substantially parallel to the broad faces thereof comprising:
(a) feeding a discontinuous layer of spaced reinforcing strands into the liquid foaming mixture at a first position where it is still chilled and before any foaming has occurred,
(b) controlling the angle of entry of said reinforcing material into said chilled foam mixture at said first position in relation to its position between the broad faces of the sheet to determine its final location between the broad faces of the sheet so that decreasing the angle relative to one of the broad faces at the first position finally positions the reinforcing angle closer to that face,
(c) compressing the carrier and cover webs toward each other at the first position to squeeze excess mixture from between the webs and force the remainder of said mixture fully through and around the strands of said reinforcing layer before foaming of the mixture to fill the interstices and coat the strands with said foaming mixture and thereby entirely enclose the reinforcing layer in the foaming mixture,
(d) freeing the webs from said squeezing action at a second position to allow the mixture therebetween to foam,
(e) moving the webs, reinforcing layer and foam mixture together at a constant rate, and

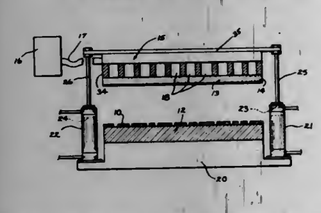
(f) foaming said mixture in situ into a unitary foamed sheet integrally about and penetrating the interstices between the reinforcing strands so that it possesses substantially the same pore structure within such interstices as on the opposite sides of the reinforcing elements.

3,298,885
METHOD OF MAKING CUSHION SUPPORTING MEMBERS
Norman Grimshaw, Ashton-under-Lyne, England, assignor to Vitafoam Limited, a company of Great Britain
Original application Sept. 25, 1961, Ser. No. 140,436, now Patent No. 3,125,156, dated Mar. 17, 1964. Divided and this application July 29, 1963, Ser. No. 298,352
1 Claim. (Cl. 156—245)



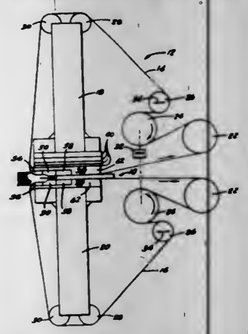
The method of making a support for furniture by simultaneously moulding and curing a sheet of rubber and also bonding it to a plurality of flat U-shaped metal fastening members each having a pair of parallel arms with recesses therein, comprising the following steps; placing uncured rubber and the U-shaped members in a mould, subjecting said rubber and U-shaped members to sufficient pressure and heat to cure said rubber and make it resilient and also bond it into said recesses and in between said arms, positioning an apertured attachment device against said fastening member and said flange to thereby align the apertures in said device with the recesses in said member, and securing said fastening device to said U-shaped, fastening member by inserting at least a part thereof through said apertures and said recesses to thereby remove at least a portion of said cured rubber therefrom.

3,298,886
PROCESS AND APPARATUS FOR MANUFACTURING MOSAICS
Ernest Vevoda, San Francisco, Calif., assignor to Soule Steel Company, San Francisco, Calif.
Filed Feb. 4, 1963, Ser. No. 255,894
3 Claims. (Cl. 156—285)



1. A method of positioning a plurality of mosaic chips in a common plane to define a mosaic pattern comprising providing a controlled flow of chips onto a moving web in a single layer, providing a tunnel having one closed end and a height approximately equal to the thickness of said layer of chips, moving said web with said chips resting thereon through said tunnel along its bottom and under the closed end thereof so that the chips on said web are stopped by the closed end of the tunnel and retained therein, said closed tunnel end and chips initially stopped also serving to stop subsequent chips moved by said web while the impact of chip upon chip and tunnel serve to shift the chips into a closely spaced mosaic pattern on said web, transferring said closely spaced mosaic pattern of chips from said web to a generally flat resiliently deformable horizontal surface by holding said web stationary, swinging said tunnel about a fixed point away from said web, swinging said resilient flat surface about a fixed point into overhead parallel contact with the mosaic pattern on said web, turning said resilient flat surface 180° in cooperation with the web without disturbing the mosaic pattern so that the chips face upwardly on said resilient surface, providing a permanent normally flexible backing member having first and second flat surfaces and adhesive on the first flat surface thereof, supporting said backing member substantially uniformly over its second flat surface with a vacuum plate so that said entire first flat adhesive surface lies substantially in a single plane, moving said first flat adhesive surface by swinging said backing member about a fixed point, while continuing to uniformly support the backing member, parallel to said upwardly spaced chips and into parallel bonding contact therewith.

3,298,887
METHOD OF MANUFACTURING LAMINATE SHEET
Carroll H. Van Hartesveldt, Toledo, Ohio, and Buddy D. Wahl, Ann Arbor, Mich., assignors to Hoover Ball and Bearing Company, Ann Arbor, Mich., a corporation of Michigan
Filed July 23, 1964, Ser. No. 384,580
5 Claims. (Cl. 156—311)



1. The method of molding a plastic laminate comprising positioning a plurality of layers of thermosetting plastic in overlaying relationship, heating the plastic to a viscous state, applying a progressing local pressure to the surface of the plastic, and while continuously maintaining pressure on the plastic heating the plastic to a temperature for a time sufficient to cure the plastic and immediately thereafter cooling the plastic.

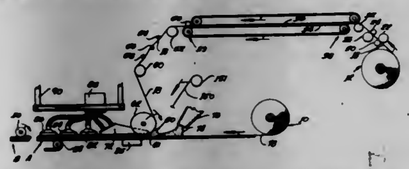
3,298,888
PRODUCTION OF RIBBED BUILDING BOARD
John Page, Glenview, and Rupert J. Straub, Lisle, Ill., assignors to United States Gypsum Company, Chicago, Ill., a corporation of Delaware
Original application Aug. 22, 1963, Ser. No. 303,794. Divided and this application Aug. 12, 1965, Ser. No. 508,610
9 Claims. (Cl. 156—347)

1. An apparatus for the continuous manufacture of ribbed building board or the like from opposed continuous webs of paper having parallel edges, one web being a face-side web, the other web being a rib-side web with longitudinal folded portions corresponding to desired locations of a plurality of ribs, which apparatus comprises in combination:

(a) a lower elongated support surface for said face-side web whereby said face-side web may be flatly disposed thereon;

(b) an upper rib-forming surface for said rib-side web disposed in opposed and spaced relation above and adjacent one extremity of said lower elongated support surface, said rib-forming surface having curved portions to effect spaced convergence of said rib-side web with said face-side web and also having longitudinal recesses therein corresponding to desired locations of a plurality of ribs;

(c) a source of supply of calcined gypsum slurry disposed to provide a head of slurry just ahead of the

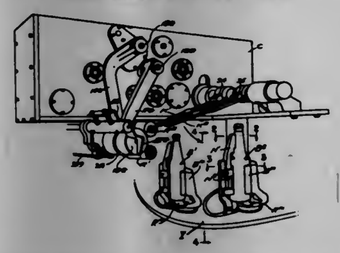


vertical passage constituted by the space between said lower elongated support surface and said upper rib-forming surface;

(d) driving means associated with said lower elongated support surface whereby face-side and rib-side webs with gypsum therebetween which are disposed thereon are moved longitudinally; and

(e) cutting means adjacent the other extremity of said support surface whereby the resulting building board may be transversely severed.

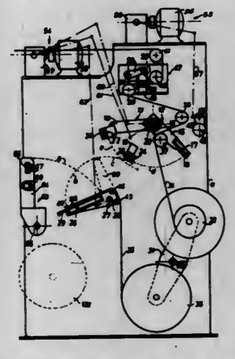
3,298,889
LABEL PICKER APPARATUS
Sidney T. Carter, Shrewsbury, Mass., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Original application May 20, 1963, Ser. No. 281,624, now Patent No. 3,262,422, dated July 26, 1966. Divided and this application Oct. 21, 1965, Ser. No. 499,763
12 Claims. (Cl. 156—484)



1. In combination, in a labeling machine, a magazine, a separable blade picker comprising a pair of blades disposed in the same plane, a rock shaft on which said blades are mounted, means for rocking the shaft thereby, cycle-after-cycle, to move the blades from the magazine to a label delivery position, means for sliding the blades toward and from each other along the shaft during each cycle, and means for sliding both blades simultaneously along the shaft first in one direction and then in the other during each cycle.

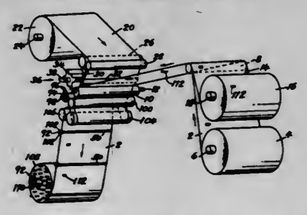
3,298,890
APPARATUS FOR JOINING WEBLIKE MATERIAL
Albert Joseph Hellemans, Berchem-Antwerp, Belgium, assignor to Gevaert Photo-Producten N.V. Mortsel-Antwerp, Belgium, a Belgian company
Filed Nov. 12, 1963, Ser. No. 323,547
Claims priority, application Netherlands, Nov. 13, 1962, 285,406
13 Claims. (Cl. 156—504)

1. Apparatus for joining one web to another whilst this is being continuously and progressively fed, said apparatus comprising an accumulator device via which a web is progressively fed from a roll and which in operation allows web accumulated in the device to be drawn off while the feed of such web to the device is temporarily arrested, means whereby such arrest is effected, a web support equipped for holding an appropriately cut trailing end portion of a web during temporary arrest as aforesaid, with its trailing edge at a predetermined position in relation to such support, a second web support which is equipped for holding an appropriately cut leading end portion of a further web with its leading edge at a predetermined position in relation to this second support, at least one of the said supports being equipped for achieving its said hold of a web portion while leaving this portion exposed on one side, and said supports being relatively displaceable in a plane normal to the



planes occupied by the end portions of webs when held by said supports as aforesaid, into relative positions in which such trailing and leading web end portions are in registering end-to-end co-planar relationship, means associated with a said support equipped for holding a length of adhesive tape in a flat condition and which is mounted for displacement with said relative displacement of the said web supports for bringing a piece of tape into a position in which it overlaps and unites the two registering web edges on the side of the webs corresponding to said exposed side of a web end portion, and means for controlling said web and tape supporting means to bring about such union of the webs during a said period of temporary arrest of the trailing end portion of a web being continuously drawn from the accumulator device.

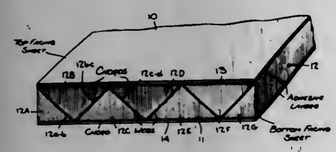
3,298,891
MECHANISM FOR APPLYING TEAR STRIPS TO WRAPPER-FORMING MATERIAL
Carl A. Beck, Bala Cynwyd, Pa., assignor to Charles Beck Machine Corporation, King of Prussia, Pa., a corporation of Pennsylvania
Filed June 4, 1963, Ser. No. 285,337
4 Claims. (Cl. 156—519)



1. Mechanism for applying a heat sealable tear strip to a web of wrapper-forming material comprising means for moving a web of heat sealable tear strip-forming

material to a position adjacent a stationary cutting element, means for moving a web of material to which the tear strip is to be applied to a position adjacent a pressure member, and a tear strip-handling member including means movable from a position adjacent said cutting element to a position adjacent said pressure member, said tear strip-handling member embodying a knife blade engageable with said tear strip-forming material and cooperating with said stationary cutting element to produce a tear strip, means for holding the tear strip produced in a predetermined position on the tear strip-handling member and means carried by said tear strip handling member for heating the tear strip so held while transferring said tear strip from a point adjacent the stationary cutting element to that portion of the web of wrapper-forming material adjacent said pressure member.

3,298,892
TRUSSED SANDWICH LAMINATES
Alexander Lippay, Croton-on-Hudson, N.Y., assignor to Balsa Ecuador Lumber Corporation, New York, N.Y., a corporation of New York
Filed Dec. 6, 1963, Ser. No. 328,606
10 Claims. (Cl. 161—38)



1. A composite truss and laminate structure comprising a core composed of interfitting sections having a triangloid cross-sectional form, facing sheets of high tensile strength laminated to the upper and lower surfaces of said core to form a sandwich, said sections being bonded together by adhesive layers constituting the web members of a truss whose upper and lower chords are formed by said facing sheets, said core being formed of relatively lightweight orthotropic material whose grain runs perpendicularly to the plane of said facings.

3,298,893
PREFORMED PLASTIC BLANK FOR MAKING A PLASTIC CONTAINER
Kenneth R. Allen, Wenona, Ill., assignor to Flair Plastics Corporation, Wenona, Ill., a corporation of Delaware
Original application July 29, 1959, Ser. No. 830,229. Divided and this application Apr. 10, 1963, Ser. No. 272,150
3 Claims. (Cl. 161—42)



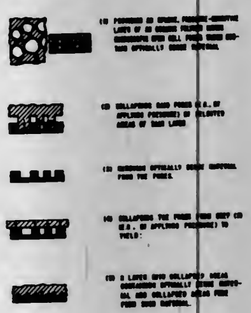
1. A preformed plastic blank for making an open mouth plastic container, said plastic blank having a circular planar central portion for forming the bottom wall of the container, said central bottom wall forming portion of said blank being of approximately the thickness of the bottom wall of the finished container, said plastic blank having an annular side wall forming portion for the container surrounding and integral with the outer periphery of said bottom wall forming portion, said side wall forming portion being of a thickness greater than the thickness of said bottom wall portion to permit stretching and thinning of the side wall portion of the blank to generally cup-shaped form, and a rim portion integral with the outer periphery of said annular side wall forming portion and of a cross section and outline of substantially the rim of the finished container.

3,298,894
PLASTIC ARTICLE WITH ENVELOPED CORE
Stanley Ronald Barnette, 90 Cherokee St., Miami Springs, Fla. 33166
Filed Jan. 14, 1963, Ser. No. 251,260
6 Claims. (Cl. 161—43)



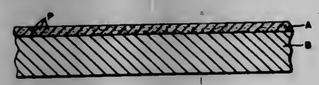
1. A cast balanced isotropic structural slab decorative surfacing material which comprises one plastic body substantially enveloping a resinous structural slab core stock means, said core stock providing rigidity to said structural slab said plastic body consisting of one decorative cured polymerized resinous liquid layer interlocking and self-bonded to said core, said plastic layer forming the surface, edges and a portion of the back of the article, said core having one flat surface side completely covered by the plastic that corresponds to the surface of the article and an opposite parallel flat surface having at least one attached element extending from said opposite surface and terminating at a level that corresponds to the plastic surface on the back of the article that surrounds said element, thereby providing a predetermined space cavity beneath said core, said core centered and positioned in said plastic body in a plane parallel to the surface of the article, the plastic edges being seamless, unitary and integral with the plastic surface of the article, and having the same thickness measured from the edge of the core to the outer surface of the plastic edge, said article having one even extremely hard plastic surface and a decorative effect visible through the plastic.

3,298,895
PROCESS FOR PRODUCING IMAGES AND PRODUCTS THEREOF
Louis Plambeck, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 244,902
8 Claims. (Cl. 161—160)



1. An opaque pressure-sensitive element comprising a transparent film base bearing a thin, adherent, opaque, pressure-sensitive layer, said layer comprising an organic polymer having open cell pores of microscopic size, said pores containing a salt of an acid dye with a cationic surface-active material.

3,298,896
FILM FOR RECEIVING, STORING OR CONTROLLING ELECTRIC IMPULSES
Andrew Szegvari, 201 Castle Blvd., Akron, Ohio 44313
Filed May 23, 1962, Ser. No. 203,423
4 Claims. (Cl. 161—164)



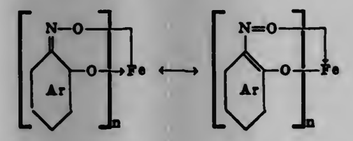
1. Recording film of uniform thickness having a relatively thick lamina of a latex-type elastomeric film-former and a relatively less thick smooth-surfaced, solid lamina which is a flexible matrix of a cement-type elastomeric film-former having finely ground magnetizable or electrically conductive pigment uniformly dispersed therein in a very high state of microscopic homogeneity; the lamina of latex-type elastomeric film-former being free of such pigment.

3,298,897
PRODUCTION OF REINFORCED METAL SALT PRODUCT
Richard F. Shannon, Lancaster, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
No Drawing. Filed Jan. 29, 1963, Ser. No. 254,586
6 Claims. (Cl. 161—170)

1. A product consisting essentially of a continuous solid mass of fine crystals of a plastic fusible inorganic metal salt, reinforced with a plurality of solid vitreous reinforcing bodies of a fiber or flake physical form having a high ratio of surface to volume and at least one dimension in at least one direction of the fiber or flake being not greater than 0.005 inch, in which the continuous solid mass of said crystals spaces said bodies an average distance of from about 0.0015 to 0.0001 inch between adjacent bodies and in which said fine crystals were obtained by solidification of said salt from a molten state to a solid state while contained in close association with said bodies.

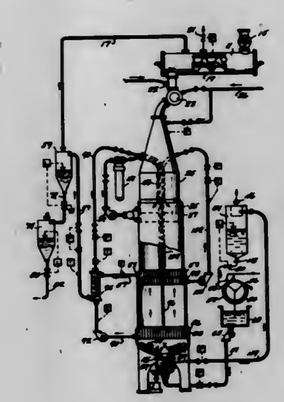
3,298,898
SOLAR INFRARED ABSORBERS
Walter George Gall, Shellbourne, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 6, 1962, Ser. No. 177,731
11 Claims. (Cl. 161—199)

5. A safety-glass laminate having an interlayer formed of polyvinyl butyral having dissolved therein from 0.01 to 2 percent of an iron chelate having the structure



where *n* is an integer selected from the group consisting of 2 and 3 and Ar is an aromatic ring derived from the group consisting of benzene and naphthalene which may be substituted with a group selected from the group consisting of hydroxyl and bromyl.

3,298,899
METHOD AND ARRANGEMENT FOR WASHING AND COOLING AT THE OUTLET END OF A CONTINUOUS CELLULOSE DIGESTER
Oliver A. Laakso, Glens Falls, N.Y., assignor to Aktiebolaget Kamyr, Karlstad, Sweden
Filed Feb. 28, 1963, Ser. No. 261,730
Claims priority, application Sweden, Mar. 3, 1962, 2,357/62
6 Claims. (Cl. 162—19)



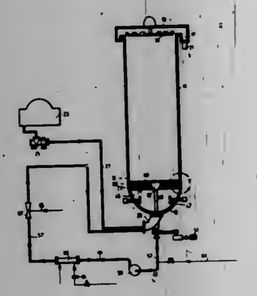
1. In a method of liberating cellulosic fibrous material by digestion thereof with a digesting liquor at a high pressure and a high temperature in a continuous digester having a fibrous material inlet, a digesting liquid inlet, and a fibrous material outlet, the improvement of washing the fibrous material counter-current to the flow thereof and immediately before the same is discharged through the digester outlet, comprising supplying cooling liquid to the digester close to the digester outlet, screening off the liquid in the fibrous material and cooling liquid, heating said screened off liquids exteriorly of the digester, returning the heated liquid as a washing liquid to the digester at a greater distance from the digester outlet than the cooling liquid is supplied and heating said washing liquid by exchanging heat with digesting liquid that is discharged from the digester prior to introducing the washing liquid.

2. In an apparatus for liberating cellulosic fibrous material by digestion thereof in a longitudinal cellulose digester with a digesting liquor at a high temperature and a high pressure and adapted such that the fibrous material will be continuously fed in the longitudinal direction of the digester, said apparatus having a fibrous material inlet, a digesting liquor inlet and an outlet for digested fibrous material, and said apparatus including means for heating said digesting liquor, the improvement which comprises providing said apparatus with a cooling liquid inlet positioned close to said outlet, a sieve girdle in said digester for screening off spent digesting liquor from the fibrous material, a sieve girdle between said cooling liquid inlet and said spent digesting liquor sieve girdle for screening off said cooling liquid, a second heating device exterior of the digester, a conduit connected to said cooling liquid sieve girdle, said conduit passing through said second heating device and returning to the digester, an orifice in said conduit within said digester between said cooling liquid inlet and said spent digesting liquor sieve girdle, said apparatus being adapted such that cooling liquid supplied through said cooling liquid inlet first cools the fibrous material and then washes it at a raised temperature.

3,298,900
METHOD AND APPARATUS FOR THE CONTINUOUS BLEACHING OF CELLULOSIC PULP

Oliver A. Laakso, Glens Falls, N.Y., assignor to Aktiebolaget Kamyr, Karlstad, Sweden

Filed Mar. 17, 1964, Ser. No. 352,606
Claims priority, application Sweden, Mar. 22, 1963, 3,124/63
7 Claims. (Cl. 162—17)



1. A method for continuously bleaching cellulosic pulp comprising continuously introducing cellulosic pulp, bleach and a relatively large amount of dilution liquid to the bottom portion of a vertically elongated container so that said pulp is of lower consistency in said bottom portion than prior to the introduction therein; agitating said pulp, bleach and liquid to form a relatively homogenous mixture therefrom; rotating a liquid collector through said mixture at a point spaced upwardly from said bottom portion; removing a major portion of said liquid and said bleach from said mixture through said liquid collector, the remaining bleach in the thickened mixture bleaching the pulp therein as the mixture moves upwardly in the container, wherein the pulp moving upwardly in the container past said liquid collector is of higher consistency than the pulp in said bottom portion; and removing the bleached pulp from the upper portion of the container.

3. Apparatus for bleaching cellulosic pulp at a high consistency during continuous vertically rising movement of the pulp, comprising: an upright cylindrical container; a screen body located in said container intermediate the upper and lower ends thereof; said screen body being rotatable about the longitudinal axis of the container and extending from the vicinity of said longitudinal axis to the vicinity of the container sidewall so that substantially the entire cross-sectional area of the container is swept over by said screen body during rotation thereof, said cross-sectional area thereby defining a first chamber in said container below said screen body and a second chamber in said container above said screen body; said screen body and said container sidewall defining open areas through said screen body configured and arranged to pass vertically rising pulp from said first chamber to said second chamber; agitating means mounted in said first chamber; means for introducing bleaching agent and pulp to said first chamber for mixing therein by said agitating means; conduit means communicating with said screen body, said conduit means communicating with the exterior of the container and having inlets communicated with said first chamber, said conduit means being constructed and arranged to withdraw liquid including a part of said bleaching agent from pulp in said first chamber and discharge the liquid from the container thereby thickening the pulp as the pulp passes into said second chamber, and to recycle said liquid to said first chamber; and means for withdrawing pulp from the second chamber near the upper end of the container.

3,298,901
FORMATION OF BEATER SATURATED PRODUCTS USING A PARTIALLY CROSS-LINKED ACRYLIC LATEX BINDER AND PRODUCT THEREOF

Jay L. Piersol, East Hempfield Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed July 6, 1964, Ser. No. 380,655
7 Claims. (Cl. 162—168)

1. In the deposition of an acrylic latex on fibers in aqueous suspension in a beater saturation process, said latex being a curable acrylic latex containing groups selected from the group consisting of carboxyl groups, amide groups, and mixtures thereof distributed along the polymeric backbone, the method of improving the strength and flex-cracking resistance of the water-laid product which comprises adding to said latex 0.5–5% by weight based on the dry weight of said latex of trimethylol trimethoxymethyl melamine, heating the resulting mixture to a temperature in the range of 150–200° F. for a period of time ranging from one minute to one hour to partially cross-link said latex, depositing the partially cross-linked latex on papermaking fibers in aqueous suspension, forming a product from the resulting coated fibers, drying the product, and heating the product to a temperature in the range of 200–300° F. for a period of time of from about five minutes to one hour to completely cure the latex.

6. A water-laid, beater saturated sheet of papermaking fibers coated with a binder, the binder consisting essentially of an acrylic latex cross-linked with 0.5–5% by weight based on the dry weight of said latex of a trimethoxymethyl trimethylol melamine, said latex being a curable acrylic latex containing groups selected from the group consisting of carboxyl groups, amide groups, and mixtures thereof distributed along the polymeric backbone.

3,298,902
PROCESS OF FORMING CELLULOSIC PAPER CONTAINING TRIS-(1-AZIRIDINYL) PHOSPHINE OXIDE AND POLYETHYLENE IMINE AND PAPER THEREOF

Hans Osborg, Port Washington, N.Y., and John W. Brook, East Brunswick, and Albert Goldstein, New Shrewsbury, N.J., assignors to Chemirad Corporation, East Brunswick, N.J., a corporation of Delaware

No Drawing. Filed June 26, 1964, Ser. No. 378,426
7 Claims. (Cl. 162—158)

1. A process for making paper products having improved strength and stiffness which comprises adding to an aqueous suspension of cellulosic fibers polyethylene imine in an amount of from 0.01 to 10% and tris-(1-aziridinyl) phosphine oxide in an amount of from 0.04 to 10%, each based upon the dry weight of the fibers, forming said suspension into a paper product, and curing said cellulosic product so as to react said cellulosic fibers with said polyethylene imine, and said tris-(1-aziridinyl) phosphine oxide.

3,298,903
CONTINUOUS DIGESTER INCLUDING MECHANICAL DEFIBERING MEANS THEREIN

Robert H. Hart, Beloit Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Mar. 11, 1964, Ser. No. 350,964
4 Claims. (Cl. 162—236)

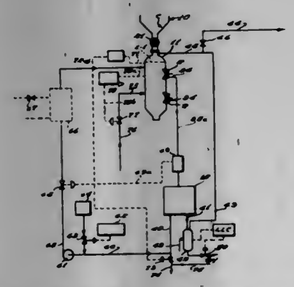
1. A continuous digester-chemical pulping system, which comprises

(1) means for continuously driving a pulping liquor stream at superatmospheric pressure and cooking temperature through a cycle consisting essentially of a digester zone feeding through a discharge zone into a physical separation zone and then back to said digester zone;

(2) means for continuously introducing digestion liquor and ligno-cellulose fiber particles to said digester to continuously maintain a highly fluid suspension in said digester having substantially a dry solids to liquor ratio of 1:100 to 1:8;

(3) means operatively connected with means (1) through (5) hereof for continuously maintaining a pressure-temperature relationship at the immediate periphery of said particles and fibers in such means (1) through (5) such that at all times and locations in said system the minimum pressure areas are above the saturation pressure of the liquor in the particles and fibers, thereby precluding mechanical bursting of the fibers by release of internal pressures; said means (3) also including means for continuously maintaining in said digester zone a chemical digestion and de-lignification concentration-temperature-pressure relationship sufficient to continuously effect chemical de-lignification with resultant weakening of the bond of peripheral fibers of said particles at a substantially greater rate than with internal fibers of such particles;

(4) rotary blade means for continuously subjecting the suspension to mild agitation sufficient to continuously free from such particles individual peripheral fibers



whose bonds are so weakened, thereby exposing new peripheral particle fibers to the conditions of (3); said rotary blade means (4) being positioned within the digester for continuously subjecting the aforesaid particles to movement in the dispersion in the immediate vicinity of the oncoming side of the restriction of means (5) to effect movement of the same countercurrent to the fiber-bearing liquor stream entering such restriction and to continuously clean such discharge restriction; and

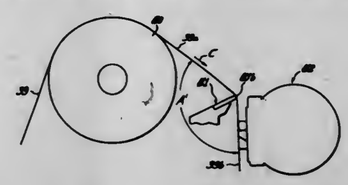
(5) pressure differential creating means for continuously driving said liquor stream bearing the aforesaid freed fibers of (4) through a substantially free-fiber size restriction defined by spacing between first and second substantially coextensive surface portions, one of which is held against rotation and the other of which is rotated relative to said one, in said discharge zone outside of the digester and into said physical separation zone where a substantial portion in the range of 10% to 95% of the free liquor is physically separated from said free fibers and recycled back to said digester zone in the cycle at (1).

3,298,904
BELT CLEANING APPARATUS FOR A PAPERMAKING MACHINE

Archie R. Le Compte, Jr., Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Aug. 10, 1964, Ser. No. 388,618
4 Claims. (Cl. 162—274)

1. In a felt cleaning arrangement for a papermaking machine, an endless felt movably supported by a plurality of supporting rolls and adapted to carry a wet paper web on its outer surface, a member having a rounded edge in forceful contact with the inside surface of said felt for compressing the felt as it passes over the rounded edge to force moisture out of the felt on to its outer surface, and a suction box effective on the outer surface on the stretch of the felt leaving said rounded edge at a place

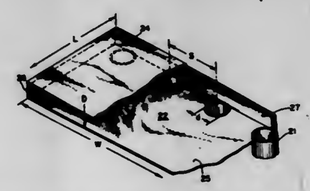


adjacent to said edge for removing said moisture and the moisture carried soil left by said web, said rounded edge having a radius between .050 inch and 2 inches and said suction box being located 6 inches to 2 feet from the rounded edge on said stretch of the felt leaving the rounded edge.

3,298,905
TAPERED MANIFOLD TYPE STOCK DISTRIBUTOR FOR A PAPERMAKING MACHINE

Aris C. Spengos, Wallingford, and Richard B. Kaiser, Swarthmore, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 14, 1964, Ser. No. 367,366
6 Claims. (Cl. 162—343)



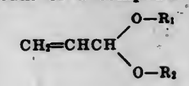
1. Apparatus for developing in a relatively wide conduit fluid flow having a substantially uniform velocity profile across the width of the conduit, comprising a box-like blending chamber associated with said conduit and being co-extensive in width therewith, said blending chamber being defined by wall means including top and bottom walls, side walls and an end wall, and a plurality of laterals communicating through one of said top or bottom walls for admitting fluid to said blending chamber, the center lines of said laterals being substantially parallel and arranged in a plane closely spaced from said end wall, and the ratio of the flow area in said blending chamber between center lines of adjacent laterals measured in said center line plane to the flow area in each of said laterals being in the range of from about 1.1 to about 1.7.

3,298,906
SUBSTITUTED ACROLEIN ACETALS IN PLANT PROTECTANT AND NEMATOCIDAL METHODS

Richard N. Knowles, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,389
10 Claims. (Cl. 167—22)

1. A method for protecting plants from nematodes comprising applying to soil in the locus of the plant a protectant amount of a compound of the formula:



wherein

R_1 is selected from the group consisting of alkyl of less than 5 carbon atoms, alkenyl of not less than 3 and not more than 4 carbon atoms, and alkynyl of not less than 3 and not more than 4 carbon atoms; and

R_2 is selected from the group consisting of alkyl of less than 5 carbon atoms, alkenyl of not less than 3 and not more than 4 carbon atoms, and alkynyl of not less than 3 and not more than 4 carbon atoms.

3,298,907
NON-FLAMMABLE CARBON DISULFIDE FUMIGANT COMPOSITION

Albert W. Bauer and Frederick B. Hill, Jr., Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,172
2 Claims. (Cl. 167—23)

1. A fumigant composition consisting essentially of from about 10% to 40% by weight of carbon disulfide, from about 15% to 60% by weight of 1,1,2-trichloro-1,2,2-trifluoroethane, and from about 25% to 60% by weight of dichloromethane.

3,298,908
N-HYDROXYMETHYL-2,3,6-TRICHLOROPHENYLACETAMIDE AS A FUNGICIDE

Jack S. Newcomer, Wilson, Edward D. Weil, Lewiston, and Edwin Dorfman, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,058
2 Claims. (Cl. 167—30)

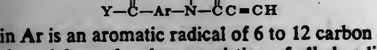
1. A method of controlling fungal plant pathogens which comprises applying to plants to be protected an effective amount of N-hydroxymethyl-2,3,6-trichlorophenylacetamide.

3,298,909
INHIBITING MICROORGANISMS WITH PROPIOLAMIDES

Lee A. Miller, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Original application Dec. 18, 1961, Ser. No. 160,295. Divided and this application Aug. 16, 1965, Ser. No. 489,453
3 Claims. (Cl. 167—30)

1. The method of inhibiting the growth of microorganisms which comprises exposing them to a growth-inhibiting quantity of a composition comprising as the essential ingredient an amide of the general formula



wherein Ar is an aromatic radical of 6 to 12 carbon atoms, Y is selected from the class consisting of alkyl radicals of 1 to 8 carbon atoms and alkoxy radicals of 1 to 8 carbon atoms, and Z is selected from the class consisting of hydrogen and alkyl radicals of from 1 to 5 carbon atoms.

3,298,910
METHOD FOR PROTECTING AGAINST FUNGI WITH PYOLUTEORIN

Richard J. O'Connor, John M. Van Deren, Jr., and Walter A. Darlington, St. Louis, Mo., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 3, 1963, Ser. No. 292,755
3 Claims. (Cl. 167—33)

1. A method of inhibiting the growth of fungi on plants comprising treating plants with a sufficient amount to inhibit fungi growth of 2-(2,6-dihydroxybenzoyl)-x,x'-dichloropyrrole.

3,298,911
BACTERIOSTATIC AND FUNGICIDAL COMPOSITION COMPRISING 5,7-DIBROMO-8-BENZOYLOXY-QUINALDINE IN INERT CARRIER

Jany Renz, Jean-Pierre Bourquin, and Erhard Schenker, Basel, Switzerland, and Rudolf Griot, Hanover, N.J., assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,443
Claims priority, application Switzerland, Dec. 23, 1959, 82,244/59; Mar. 8, 1960, 2,608/60; July 15, 1960, 8,114/60
2 Claims. (Cl. 167—33)

1. A bacteriostatic and fungicidal composition consisting of an inert carrier and 5,7-dibromo-8-benzoyloxyquinaldine of melting point 130–132°, said quinaldine being effective over a wide dosage range, the minimal effective dosage being 10 mg. as a bacteriostatic and fungistatic against gram-positive organisms selected from the group of *Streptococcus pyogenes*, *Staphylococcus aureus*, *Streptococcus faecalis* and *Bacillus subtilis*, against Vibrio El Tor and against the fungi *Candida albicans*, yeast, trichophyton species, *Aspergillus niger*.

3,298,912
EMULSIFIABLE TOXICANT SOLUTION CONTAINING EMULSIFIER OF ALKARYL SULFONIC ACID POLYOXYALKYLATED POLYAMINE SALT

Oscar L. Scherr, La Mirada, Calif., assignor to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 2, 1963, Ser. No. 313,190
4 Claims. (Cl. 167—42)

1. In an emulsifiable toxicant composition comprising an organic solvent, a toxicant, and at least one polyoxyalkylene ether nonionic emulsifier, the improvement comprising an oil soluble anionic emulsifier made up of the salt of a C_8–C_{18} alkyl-substituted benzene sulfonic acid and a polyamine compound selected from the group consisting of ethylene diamine, diethylene triamine, triethylene tetramine, tetraethylene pentamine and propylene diamine, wherein a total of from two to three C_2–C_4 hydroxyalkyl groups are attached to the nitrogen atoms of said polyamine.

3,298,913
TREATING THE BARK OF TREES TO PREVENT INSECT DAMAGE BY TREE BARK BEETLES AND INSECTS

Katherine F. Stewart, New Orleans, La., assignor to Stewart Operations, Inc., Kenner, La., a corporation of Louisiana

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,468
9 Claims. (Cl. 167—42)

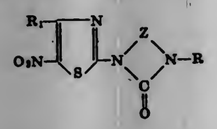
1. A method of treating the bark of trees to prevent insect damage which comprises applying to the bark a dispersion of an effective amount of an insecticide in an aqueous solution of a residual, carrying, penetrating agent which consists essentially of a condensate of ethylene oxide with tridecyl alcohol, sodium N-methyl-N-oleoyl taurate, a member of the group consisting of primary and secondary alcohols, a polyfunctional alcohol, a monoether of a polyfunctional alcohol and an inorganic chromate, the proportions of materials in the aqueous solution being the same as of a composition derived by mixing water with about 1–5% of a concentrate consisting essentially of 15–25% of said condensate of ethylene oxide with tridecyl alcohol, about 1–2% of sodium-N-methyl-N-oleoyl taurate, about 2.5–3% of said member of the group consisting of primary and secondary alcohols, about 30–35% of said polyfunctional alcohol, about 0.05–0.5% of said inorganic chromate, about 0.04–3% of said monoether of polyfunctional alcohol and about 25–45% water, all percentages being by weight.

3,298,914
ANTI-PARASITIC 5-NITROTHIAZOLYL OXODIAZACYCLOALKANE COMPOSITIONS

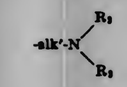
Paul Schmidt, Therwil, Max Wilhelm, Allschwil, and Kurt Eichenberger, Therwil, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 12, 1966, Ser. No. 564,536
Claims priority, application Switzerland, May 30, 1962, 6,604/62
8 Claims. (Cl. 167—53)

1. A feedstuff composition comprising (1) a nitrothiazolyl compound of the formula



in which Z represents a member selected from the group consisting of straight and branched lower alkylene separating the two nitrogen atoms by 2 to 5 carbon atoms and straight and branched lower alkylene separating the two nitrogen atoms by 2 to 5 carbon atoms and substituted by at least one member selected from the group consisting of lower alkenyl, phenyl, lower alkyl-phenyl, lower alkoxy-phenyl, halogenphenyl, trifluoromethyl-phenyl, nitrophenyl, phenyl-lower alkyl, lower alkyl-phenyl-lower alkyl, lower alkoxy-phenyl-lower alkyl, halogeno-phenyl-lower alkyl, trifluoromethyl-phenyl-lower alkyl and nitrophenyl-lower alkyl, R represents a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl-lower alkyl, lower alkylphenyl-lower alkyl, lower alkoxy-phenyl-lower alkyl, halogeno-phenyl-lower alkyl, trifluoromethyl-phenyl-lower alkyl, nitrophenyl-lower alkyl, hydroxy-lower alkyl, lower alkanoyl, halogenated lower alkanoyl, benzoyl, lower alkyl-benzoyl, lower alkoxy-benzoyl, halogeno-benzoyl, trifluoro-methyl-benzoyl, aminobenzoyl, nitrobenzoyl, phenyl-lower alkanoyl, lower alkyl-phenyl-lower alkanoyl, lower alkoxy-phenyl-lower alkanoyl, halogeno-phenyl-lower alkanoyl, trifluoromethyl-phenyl-lower alkanoyl, amino-phenyl-lower alkanoyl, nitrophenyl-lower alkanoyl, phenyl-lower alkenoyl, lower alkyl-phenyl-lower alkenoyl, lower alkoxy-phenyl-lower alkenoyl, halogeno-phenyl-lower alkenoyl, trifluoromethyl-phenyl-lower alkenoyl, aminophenyl-lower alkenoyl, nitro-phenyl-lower alkenoyl, pyridoyl, lower alkyl-pyridoyl, lower alkoxy-pyridoyl, halogeno-pyridoyl, trifluoromethyl-pyridoyl, aminopyridoyl, nitropyridoyl, furoyl, lower alkylfuroyl, lower alkoxy-furoyl, halogenofuroyl, trifluoromethylfuroyl, aminofuroyl, nitrofuroyl, thiophenecarbonyl, lower alkyl-thiophenecarbonyl, lower alkoxy-thiophenecarbonyl, halogeno-thiophenecarbonyl, trifluoromethyl-thiophenecarbonyl, amino-thiophene-carbonyl and nitrothiophenecarbonyl and a radical of the formula



in which R_2 and R_3 each stands for a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower cycloalkyl and, when taken together, alkylene, mono-oxa-alkylene and mono-aza-alkylene having from 4 to 8 carbon atoms, alk' for lower alkylene and R_1 stands for a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, lower alkylphenyl, lower alkoxyphenyl, halogenophenyl, trifluoromethyl-phenyl and nitrophenyl and (2) an animal feedstuff.

3,298,915
VASCULAR HEADACHE TREATMENT

Spencer M. Fossel, Morristown, N.J., assignor to Unimed, Inc., Morristown, N.J., a corporation of Delaware

No Drawing. Filed Feb. 18, 1964, Ser. No. 345,558
5 Claims. (Cl. 167—65)

1. Method of treating the sufferings of vascular headache, which comprises administering to a patient suffering from the same an effective amount of at least one compound selected from the group consisting of alpha-picolinic acid diloweralkyl-amide and non-toxic acid addition sales thereof.

3,298,916
TREATMENT AND COMPOSITION FOR HIGH BLOOD PRESSURE AND PALPITATION

Sam I. Stein, 4535 Oakton Ave., Skokie, Ill. 60076

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,896
4 Claims. (Cl. 167—65)

1. A method for the treatment of high blood pressure and palpitation in a patient requiring such treatment comprising the oral administration of a composition comprising L-trytophan and reserpine in an amount per day of 0.05 to 2.0 grams of L-tryptophan, and 0.2 to 2.0 milligrams of reserpine, and a monoamine oxidase inhibitor in an amount per day of 4 to 40 milligrams, and monoamine oxidase inhibitor being selected from the group consisting of iproniazid, isocarboxazid, nialamid, phenelzine, beta-phenylisopropyl hydrazine, etryptomine and hydrochlorides thereof.

3,298,917
ANTIDIABETIC N-ACYLALIPHATIC-SULFONAMIDES

John B. Bicking, Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 15, 1964, Ser. No. 397,073
5 Claims. (Cl. 167—65)

2. The process of effecting a lowering of the blood sugar level of a mammal which comprises administering orally to said hypoglycemic mammal between about 75 to about 250 mg./kg. of an N-acylsulfonamide selected from the group consisting of N-cyclohexylsulfonyl-p-anisamide, N-cyclopentylsulfonyl-benzamide, N-cyclohexylsulfonyl - p-toluamide, N-cyclohexylsulfonyl-hexahydrobenzamide, N-cyclohexylsulfonylcinnamamide, N-cyclopentylsulfonyl - p-anisamide, N-heptylsulfonylbenzamide and N-(3-pentylsufonyl)-benzamide.

3,298,918
WATER SOLUBLE PHENOLIC ESTER COMPOSITIONS

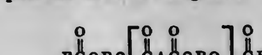
Darrell D. Hicks and John E. Masters, Louisville, Ky., assignors, by mesne assignments, to Celanese Coatings Company, a corporation of Delaware

No Drawing. Filed Nov. 27, 1963, Ser. No. 326,380
10 Claims. (Cl. 260—78.5)

1. A process for preparing water soluble resinous compositions which comprises

heat reacting

an unsaturated dicarboxylic acid selected from the group consisting of maleic acid, maleic anhydride, fumaric acid and itaconic acid with a phenolic ester of the general formula



wherein

F is the hydrocarbon portion of an unsaturated fatty acid, said acid containing 10 to 24 carbon atoms,

R is the aromatic nucleus of a dihydric phenol,

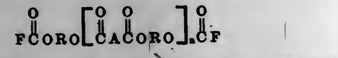
A is the hydrocarbon portion of an aliphatic dicarboxylic acid, said acid containing 4 to 36 carbon atoms and being free of polymerizable double bonds and

n has a value of 0 to 2

wherein the unsaturated dicarboxylic acid and the phenolic ester are in a ratio so as to form a phenolic ester adduct having an acid value of 80 to 275 and then

reacting the resulting phenolic ester adduct with sufficient amino compound selected from the group consisting of ammonia and water soluble amines to form a water soluble amine salt of the phenolic ester adduct.

9. A protective coating composition comprising an aqueous solution of an adduct of an unsaturated dicarboxylic acid and an unsaturated phenolic ester, said adduct rendered water soluble by salt formation with a water soluble amine, said unsaturated dicarboxylic acid being selected from the group consisting of maleic acid, maleic anhydride, fumaric acid, and itaconic acid, said unsaturated phenolic ester being represented by the general formula



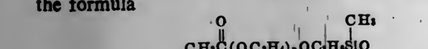
wherein F is the hydrocarbon portion of an unsaturated fatty acid, said acid containing 10 to 24 carbon atoms, R is the aromatic nucleus of a dihydric phenol, A is the hydrocarbon portion of an aliphatic dicarboxylic acid, said acid containing 4 to 36 carbon atoms and being free of polymerizable double bonds, and *n* has a value of 0 to 2.

3,298,919
SHAVING CREAM CONTAINING POLYSILOXANES

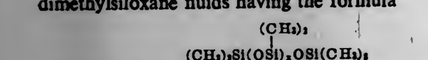
Jack L. Bishop, Jr., and Charles W. Todd, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,337
10 Claims. (Cl. 167—85)

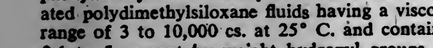
1. A shaving cream comprising about 0.5 to 9 percent stearic acid, about 0.5 to 3 percent lauric acid, about 1 to 15 percent glycerine, about 1 to 7 percent triethanolamine, about 40 to 80 percent water, about 2 to 12 percent of a propellant and about 0.1 to 5 percent of a silicone fluid selected from the group consisting of (I) fluids having the formula



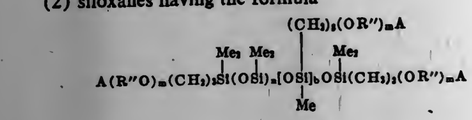
where *n* has an average value of from 3 to 4, (II) polydimethylsiloxane fluids having the formula



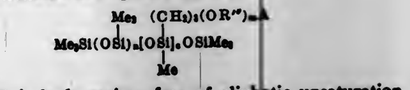
wherein *x* has an average value of from 0 to 160 inclusive and having a viscosity in the range of 0.65 to 500 cs. at 25° C., (III) absolute ethanol soluble polydimethylsiloxane fluids having a viscosity in the range of 5 to 15 cs. at 25° C., (IV) copolymer fluids consisting essentially of phenylmethyl and dimethylsiloxane units, (V) hydroxylated polydimethylsiloxane fluids having a viscosity in the range of 3 to 10,000 cs. at 25° C. and containing about 0.1 to 5 percent by weight hydroxyl groups, and (VI) siloxane fluids selected from the group consisting of (1) siloxanes having the formula



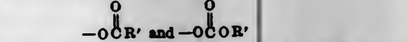
(2) siloxanes having the formula



and (3) siloxanes having the formula



wherein R is hydrocarbon free of aliphatic unsaturation and contains from 1 to 10 inclusive carbon atoms, Me is methyl, *n* has an average value of from 6 to 30, R'' is alkylene containing from 2 to 4 inclusive carbon atoms, *m* has an average value of from 25 to 80, A is selected from the group consisting of —OR',

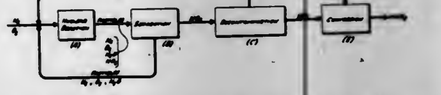


R' is selected from the group consisting of hydrocarbon and hydrocarbonoxy free of aliphatic unsaturation and containing from 1 to 10 inclusive carbon atoms, *a* has an average value of from 0 to 2 inclusive, *b* has an average value of from 1 to 2 inclusive and *c* has an average value of from 3 to 4 inclusive, said siloxane containing at least 13 percent by weight of Me_2SiO units based on the weight of the siloxane, said percents being on a weight basis.

3,298,920
PROCESS FOR PRODUCING NITRIC ACID

Marvin R. Gustavson, Walnut Creek, David R. Sawle, Lafayette, and Arthur T. Biehl, Diablo, Calif., assignors, by mesne assignments, to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

Filed Jan. 27, 1960, Ser. No. 5,060
1 Claim. (Cl. 176—39)



A chemical process for producing nitric acid comprising the steps of forming a gas of four parts nitrogen to one part oxygen, dispersing in said gas finely-divided particles of fissionable material to form an aerosol smoke fuel, compressing said smoke fuel and circulating same through convoluted paths in a limited volume to thereby produce atomic fission of the fuel particles whereby fission fragment energy severs molecular nitrogen bonds to free nitrogen atoms which then form oxides, disengaging particles and fission fragments from the reacted fuel to leave rich gas having an increased amount of nitrogen dioxide therein, separating nitrogen dioxide from the rich gas, decontaminating the separated nitrogen dioxide to remove radioactivity therefrom including the steps of mixing into the gas a substantial amount of an impurity which is already present therein in a radioactive state and again separating the impurity from the gas to thus further reduce the concentration of such impurity as a radioactive contaminant in the gas, and reacting the pure nitrogen dioxide with air and water to form nitric acid.

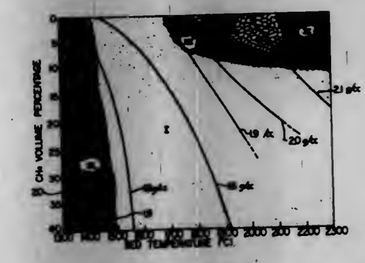
3,298,921
PYROLYTIC CARBON COATED PARTICLES FOR NUCLEAR APPLICATIONS

Jack C. Bokros, San Diego, Walter Y. Goeddel, Poway, and Jack Chin and Robert J. Price, San Diego, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 22, 1965, Ser. No. 502,702
10 Claims. (Cl. 176—67)

1. A coated article having increased stability under prolonged exposure to high temperature and neutron irradiation, which article comprises a central core selected from the group consisting of nuclear fuel materials and neutron poison materials, and a protective coating surrounding said core, said coating including a dense continuous jacket of isotropic carbon which isotropic carbon has good structural strength and dimensional stability under conditions of high temperature and high neutron irradiation, said isotropic carbon jacket completely surrounding said core.

9. A coated article having increased stability under prolonged exposure to high temperature and neutron irradiation, which article comprises a central core of a spheroidal particle of nuclear fuel material and a protective coating surrounding said core, said coating having a

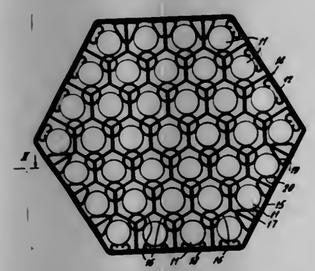


thickness between about 40 and about 50% of the diameter of said core and including a layer of spongy pyrolytic carbon adjacent said core, said spongy carbon layer having a density about one-half the theoretical density of carbon or less and having a thickness of at least about 25 microns, and a dense isotropic carbon layer exterior of said low density layer, which isotropic carbon layer has good structural strength under conditions of high temperature and high neutron irradiation, said isotropic carbon layer having a thickness of at least 10 microns, having a Bacon anisotropy factor of 1.2 or less, having a density of at least about 2.1 grams per cc. having an apparent crystallite size of between about 100 and 200 A., and providing an integral jacket surrounding said low density carbon layer.

3,298,922
NUCLEAR FUEL ASSEMBLY

Michael John Prince, Widnes, and Arthur Edwards Timbs, Flixton, England, assignors to Societe Anglo-Belge Vulcain S.A., Brussels, Belgium

Filed Feb. 14, 1964, Ser. No. 345,029
Claims priority, application Great Britain, Dec. 16, 1963, 49,663/63
4 Claims. (Cl. 176—78)



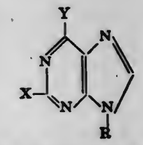
1. A nuclear fuel assembly comprising a plurality of elongate fuel elements supported in a bundle with their longitudinal axes parallel, a cellular grid penetrated by the fuel elements, and resilient rings secured immovably into the grid and interposed as spacers between and in contact with adjacent fuel elements, said cellular grid comprising sinuous metal strips defining polygonal cells penetrated by the fuel elements, said metal strips having closed slots formed therein which are boundaried on all sides by the metal of the strips, the slots of each strip being located at cell corners and extending lengthwise outwardly from the corners to form closed sockets in cooperation with slots in an adjacent strip, the resilient rings being secured immovably into the sockets with the ring axes parallel to the longitudinal axes of the fuel elements and each ring being in contact with adjacent fuel elements.

3,298,923
METHOD FOR PRODUCING PURINE DERIVATIVES

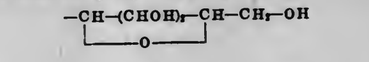
Isao Banno, Teiji Iijima, and Takezi Hasegawa, Toyonaka, Seizi Igarasi, Ashiya, Akira Imada, Nishinomiya, Ikuo Nogami, Suita, Ikuo Suhara and Masahiko Yoneda, Nishinomiya, and Einosuke Ohmura, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,672
Claims priority, application Japan, Aug. 8, 1962, 37/34,286

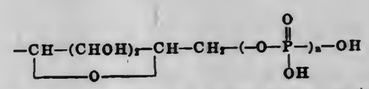
1. A method for producing a purine derivative of the formula:



wherein X stands for a member selected from the group consisting of H, OH and NH_2, Y stands for a member selected from the group consisting of OH and NH_2, X being H when Y is NH_2, and R stands for a member selected from the group consisting of H,



and



where *n* is an integer from 1 to 3 inclusive, which comprises inoculating a microbial mutant which is resistant to an antimetabolite in purine metabolism and which is induced from a naturally existing strain, the growth of which in purine metabolism is inhibited by the presence of said antimetabolite, said antimetabolite being selected from the group consisting of 8-azaguanine and 6-mercaptopurine, into a culture medium containing assimilable carbon source and solely as growth factor, utilizable nitrogen source, incubating said culture whereupon said purine derivative is biosynthesized and accumulated in the culture broth, and recovering the purine derivative thus accumulated from the culture broth.

3,298,924
PROCESS FOR MAKING PENICILLIN AMIDASE

Thomas Ronald Carrington, Milestones, Amberly Drive, Goring-by-Sea, England; Thomas Adrian Savidge, 18 Hawthorn Road, Worthing, England; and Martin Francis Walmsley, Rose Cottage, Ferring St., Ferring, England

No Drawing. Filed Nov. 6, 1964, Ser. No. 409,594
Claims priority, application Great Britain, Nov. 7, 1963, 43,910/63
4 Claims. (Cl. 195—65)

1. A process for the production of penicillin-splitting enzyme preparations, which process comprises cultivating penicillin-splitting bacteria under aerobic conditions in a

nutrient medium substantially free from fermentable carbohydrate, and adding ammonium phenylacetate to the medium slowly during the course of the fermentation to a total final concentration of between 0.12 and 2.0% w./v.

3,298,925

CHROMATOGRAPHIC SEPARATION OF SUBSTANCES OF DIFFERENT MOLECULAR WEIGHT

Karl Theo Rolf Mosbach, Studentstaden 10, Uppsala, Sweden

Filed Dec. 13, 1962, Ser. No. 244,434

Claims priority, application Sweden, Dec. 15, 1961, 12,556/61

4 Claims. (Cl. 195—66)

1. A method for chromatographic separation of high-molecular substances into fractions and the separation of high-molecular substances from low molecular substances, which comprises passing said substances through a bed of solvent-swollen granules of a polymerization product made by polymerization of a >C=C< double bond-containing compound initially in the presence of a polymerization catalyst and treating the polymer formed with a cross-linking agent in the presence of a polymerization catalyst, the >C=C< double bond-containing compound being selected from the group consisting of acrylic acid, acrylic acid amide, acrylic acid N-dimethylamide, vinyl sulphonic acid, dimethylamino styrene, esters of acrylic acid and vinyl alkyl ethers and using 0.5 to 20% by weight of cross-linking agent in the form of N,N'-dimethylene bisacrylamide, performing the polymerization in a liquid medium as pearl polymerization, the products after the cross-linking, being dried by freeze-drying and thereafter being pulverized, the product after drying and pulverizing being treated with a swelling agent selected from the group consisting of hydrophilic and hydrophobic agents.

3,298,926

PROCESS FOR THE PRODUCTION OF GLUCOAMYLASE

Lester E. Baribo, Syracuse, N.Y., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,043

4 Claims. (Cl. 195—66)

1. A process for the production of glucoamylase which comprises fermenting in a nutrient medium an organism selected from the group consisting of *Aspergillus phoenicis* Staley 298–150 (ATCC 15555), and *Aspergillus phoenicis* Staley 298–155 (ATCC 15556).

3,298,927

PROCESS FOR PREPARING 6-DEMETHYLTETRACYCLINES USING ETHIONINE SULFOXIDE

Saul L. Neidleman, Highland Park, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,945

2 Claims. (Cl. 195—80)

1. A process for the production of 7-chloro-6-demethyltetracycline which comprises cultivating a chlorotetracycline-producing strain of Streptomyces in an aqueous nutrient medium, said medium being low in biologically available chloride ions, under aerobic conditions in the presence of a small but effective amount of ethionine sulfoxide.

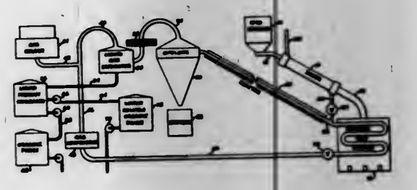
3,298,928

PYROLYSIS OF CELLULOSIC MATERIAL IN CONCURRENT GASEOUS FLOW

Arnulf K. Esterer, Longview, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Original application Nov. 22, 1963, Ser. No. 325,660. Divided and this application Jan. 18, 1966, Ser. No. 521,280

9 Claims. (Cl. 201—6)



1. A process for the pyrolytic degradation of cellulosic material which comprises:
(a) introducing small pieces of cellulosic material and a stream of heated gas substantially free of oxidizing effects into a reaction zone,
(b) moving the pieces and the entraining hot gaseous medium in concurrent flow through the reaction zone,
(c) maintaining the pieces in the reaction zone at a temperature of 600–1500° F. thereby forming a reaction product comprising char, condensable gases and non-condensable gases,
(d) removing the reaction product from the reaction zone after a residence time not exceeding 30 seconds,
(e) rapidly cooling the reaction product,
(f) separating the resulting condensate of condensed gases and char from the non-condensable gases and
(g) separating from the condensate the selected pyrolytic degradation products of the cellulosic material.

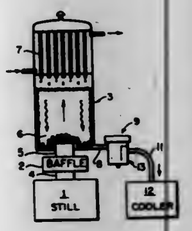
3,298,929

WATER DISTILLATION APPARATUS WITH VAPOR TRAP

Verity C. Smith, Dedham, Mass., assignor to Barnstead Still & Sterilizer Co., Boston, Mass., a corporation of Massachusetts

Filed Aug. 7, 1963, Ser. No. 300,474

1 Claim. (Cl. 202—190)



In a water distillation system which includes in vertical alignment a still, a vented condenser, and a scrubbing column between the still and condenser having a distillate outlet at the bottom of said scrubbing column, the improvement comprising a vapor trap housing, a baffle wall within the housing dividing the housing into an inlet compartment and an outlet compartment in fluid communication with one another only adjacent the base of the housing, means for supplying the distillate collected at the outlet of the scrubbing column to the inlet compartment, the distillate collecting in the lower portion of the inlet compartment and flowing to the outlet compartment, means for venting the upper portion of the inlet compartment, a dust cover overlying said venting means, and means at the outlet compartment for supplying the distillate collecting in the outlet compartment to a cooler and storage unit.

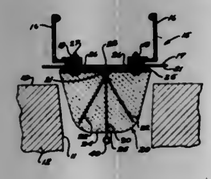
3,298,930

COKE OVEN DOOR

Earl C. Hartman and Millard B. Johnson, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 6, 1963, Ser. No. 263,339

4 Claims. (Cl. 202—248)



3. A prefabricated, reinforced refractory plug construction for closing an elongate coke oven door opening comprising, a coke oven door frame, an elongate metal plate which is wider and longer than the coke oven door opening, said plate attached along one face to said door frame, a plurality of smaller metal plates which are approximately as wide as the door opening so that these plates may be received within the opening, a plurality of fastening means and a plurality of spacing means, the fastening means maintaining the smaller metal plates substantially centrally along and parallel to the other face of the elongate plate, the spacing means maintaining a gap between the elongate plate and the smaller plates, each of the smaller plates having a reinforced, precast monolithic refractory plug secured to its outer face, the refractory plugs being secured to respective smaller metal plates by a plurality of spaced anchors, each anchor including a base and a plurality of forwardly-extending rod-like arms, said arms characterized by outward divergence from the base to thereby engage the refractory plug material in which they are embedded, said arms being joined at a said base, each base being attached to one of the smaller metal plates, the plug being made of a coarsely size graded refractory mixture.

3,298,931

REMOVAL OF SCALE IN DISTILLATION OF SEA WATER CONTAINING MAGNESIUM SALTS

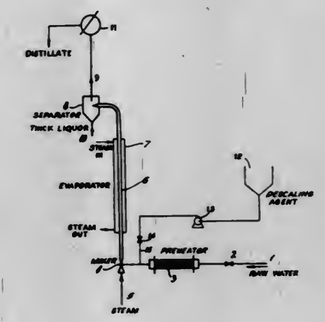
Leonard S. Herbert, Mount Waverley, Victoria, and Uldis Jekabs Sterns, Cheltenham, Victoria, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate

Filed Jan. 15, 1963, Ser. No. 251,511

Claims priority, application Australia, Jan. 15, 1962, 13,303/62

8 Claims. (Cl. 203—7)

1. A method of forming pure water from raw water containing dissolved magnesium salts with high thermal efficiency which comprises intermittently entraining droplets of said raw water into a constantly moving current of steam to flow said entrained droplets through a tube in a spray type evaporator, heating said tube to evaporate said droplets, removing the resulting evaporant from the resulting heavy liquor, condensing said evaporant to form



pure water and maintaining the current of said steam during periods when the droplets of raw water are not being entrained into said current of steam to dry, shrink and loosen the gelatinous scale deposited upon said tube.

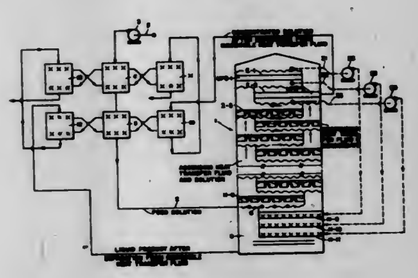
3,298,932

DISTILLATION OF A SOLUTE-SOLVENT MIXTURE IN SUCCESSIVELY REDUCED PRESSURE STAGES WHILE IN DIRECT CONTACT AND CONCURRENT FLOW WITH A HEAT TRANSFER MEDIUM

William V. Bauer, Scarsdale, N.Y., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Apr. 25, 1962, Ser. No. 190,170

18 Claims. (Cl. 203—11)



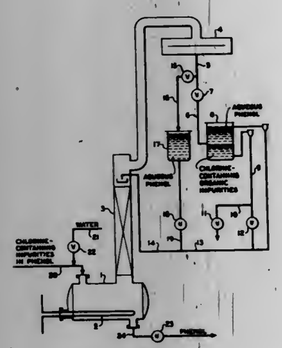
1. A method of separating a solute-solvent mixture comprising the steps of passing the mixture and a heated liquid medium substantially insoluble in the solvent in contacting relationship through a series of discrete zones in fluid communication therebetween of successively decreasing pressures and temperatures, vaporizing at least part of the solvent in each of said zones, simultaneously heating said medium by passing the same through a series of discrete zones in fluid communication therebetween of successively increasing pressures and temperatures, introducing a major portion of the vapors formed in said first mentioned series into said last mentioned zones and condensing the same therein to provide heat for said medium and collecting the condensed solvent.

3,298,933

PRODUCTION OF ULTRA-PURE PHENOL BY REMOVAL FROM A PHENOL OF HIGH PURITY OF SMALL AMOUNTS OF CHLORINE-CONTAINING ORGANIC IMPURITIES

Walter H. Prahl, Buffalo, and Sol J. Lederman, Kenmore, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed May 31, 1966, Ser. No. 554,203
10 Claims. (Cl. 203—39)



1. A process for removing chlorine-containing impurities from phenol produced by the hydrolysis of chlorobenzene, said chlorine-containing organic impurities boiling close to phenol and resulting from said production of phenol and being present in said phenol in an amount up to about one mole percent, which comprises:

(1) admixing said phenol containing the organic impurities with water and distilling the mixture in a transfer zone to obtain a vapor at one end of the transfer zone containing water, the chlorine-containing organic impurities and a minor proportion of phenol, and a liquid at the other end of the transfer zone containing liquid aqueous phenol,

(2) withdrawing and condensing the said vapor to form a two-phase distillate of an upper aqueous phase containing phenol and a lower organic phase of the said chlorine-containing organic impurities in phenol,

(3) returning the said aqueous phase to the said transfer zone wherein it contacts countercurrently the said vapor,

(4) withdrawing at least a portion of said organic phase as separated impurities, and

(5) recovering a substantially pure phenol product from the said liquid aqueous phenol from which impurities and some phenol have been removed.

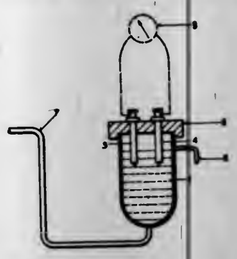
3,298,934

METHOD OF ANALYSIS TO DETERMINE THE RATIO BETWEEN BIVALENT AND MONOVALENT COPPER IONS IN A CUPROUS AMMONIACAL SOLUTION

Pietro Angeleri, Milan, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy

Filed Apr. 8, 1963, Ser. No. 271,172
Claims priority, application Italy, Apr. 10, 1962, 7,124/62
1 Claim. (Cl. 204—1)

A method for determining the ratio of cupric to cuprous ions in a copper-ammonia salt solution containing both ions, which comprises inserting a copper measuring electrode and a gold comparison electrode into the said solution, and measuring the potential difference between the two electrodes by suitable measuring devices.



3,298,935

PREPARATION OF REACTIVE METAL SOLUTIONS BY ELECTRODEPOSITION METHODS

Thomas A. Henrie, Donald G. Kesterke, and Edward Morrice, all of Reno, Nev., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,923
4 Claims. (Cl. 204—1.5)

1. A process for the electrolytic preparation of a molten solution of at least two metals comprising:

(a) dissolving metal oxides of said at least two metals in a molten salt electrolyte, one of said at least two metals selected from the group consisting of thorium, uranium, titanium, yttrium, lanthanum and cerium, and another of said at least two metals selected from the group consisting of nickel, copper, tin and iron, said molten salt electrolyte comprising a fluoride of at least one of said at least two metals and a fluoride selected from the group consisting of alkali metal fluoride and alkaline earth metal fluorides;

(b) electrolytically reducing said metal oxides dissolved in said electrolyte;

(c) electro-codepositing said reduced metal oxides as a molten solution of said at least two metals on a non-reactive cathode in contact with said molten salt electrolyte, said electrolyte being maintained at a temperature sufficiently high enough to maintain said deposited metals in a molten condition;

(d) passing said molten metal solution which deposits on said cathode to a collection zone.

3,298,936

METHOD OF PROVIDING HIGH TEMPERATURE PROTECTIVE COATINGS

Harold J. Michael, Columbus, Ohio, assignor to North American Aviation, Inc.

No Drawing. Filed Apr. 17, 1961, Ser. No. 103,243
9 Claims. (Cl. 204—38)

1. In a method of providing a workpiece having an oxidizable metallic surface with a high-temperature ceramic protective coating, the steps of: providing said oxidizable surface with an adhering continuous nickel strike in contacting relation thereto, afterwards providing a continuous chromium strike in adhering and contacting relation to said nickel strike, and then providing a high-temperature ceramic protective coating in adhering relation to and over said nickel and chromium strikes, said high-temperature ceramic protective coating being adhered to said workpiece by firing in an air atmosphere at a temperature in the range of approximately 1700° F. to 2200° F. and in contacting relation to said chromium strike.

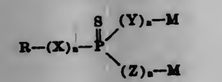
3,298,937

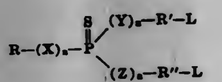
ELECTROPLATING BATHS AND PROCESSES

Wennemar Strauss and Wolf-Dieter Willmund, Duesseldorf-Holthausen, and Alfred Kirstahler, Duesseldorf, Germany, assignors to Dehydag Deutsche Hydrierwerke G.m.b.H., Duesseldorf, Germany, a corporation of Germany

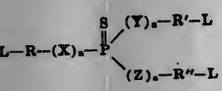
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,724
Claims priority, application Germany, Jan. 12, 1963, D 40,675; Jan. 19, 1963, D 40,723; Apr. 24, 1963, D 41,416
86 Claims. (Cl. 204—44)

1. Electroplating baths for obtaining bright level electrodeposits of metals selected from the group consisting of copper, brass, bronze, zinc, cadmium, silver and nickle, comprising in aqueous solution a compound of the metal to be electrodesposited and as an additive a compound having a formula selected from the group consisting of





and



wherein R, R' and R'' are selected from the group consisting of aliphatic, cycloaliphatic, aromatic and araliphatic radicals, X, Y, and Z are heteroatoms selected from the group consisting of O, S and NH, L is a water-solubilizing group, *n* is an integer from 0 to 1, and M is selected from the group consisting of hydrogen, metals and organic bases, said additive compound being added in sufficient amount to obtain bright, level electrodeposits.

3,298,938

ELECTRODEPOSITION OF ZINC

Yasuichi Shibasaki, Yokohama, Japan, assignor to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed June 10, 1964, Ser. No. 374,178
Claims priority, application Japan, June 14, 1963, 38/30,527
5 Claims. (Cl. 204—55)

1. In a process for electrodepositing zinc wherein an electric current is passed from a zinc anode to a cathode on which the zinc is to be electrodeposited through an aqueous electrolyte solution, the improvement wherein the said solution consists essentially of water, zinc gluconate, and sufficient ammonia to give a pH of 7.5 to 10.

3,298,939

ELECTROLYTIC PREPARATION OF ORGANO-LEAD COMPOUNDS

Jack Linsk, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Nov. 4, 1960, Ser. No. 67,178
13 Claims. (Cl. 204—59)

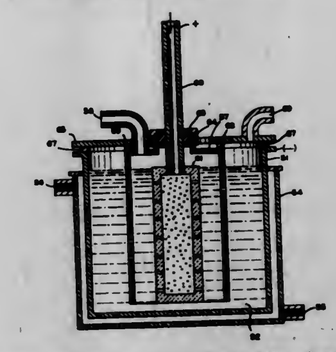
1. In a process for preparing a tetra-alkyl lead compound by electrolyzing an electrolyte comprising an alkyl Grignard reagent, excess alkyl halide, and an ether, with a lead anode, the improvement comprising effecting said electrolysis in the presence of a solvent mixture comprising a dialkyl ether of an ethylene glycol having at least two carbon atoms in each alkyl group and not more than two ethylene groups in the glycol portion, and aromatic hydrocarbon in an amount effective to reduce the tendency for the electrolyte conductivity to decrease during the course of said electrolysis.

3,298,940

FLUORINATION PROCESS

Paul E. Ashley, Minneapolis, Minn., and Kenneth J. Radimer, Little Falls, N.J., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Minnesota

Filed Nov. 8, 1960, Ser. No. 68,099
7 Claims. (Cl. 204—62)



1. A process for the preparation of fluorinated organic compounds comprising the step of subjecting an acetylenic hydrocarbon to the action of liquid anhydrous hydrofluoric acid, containing therein a soluble conductivity promoting alkali metal salt of hydrofluoric acid, during concomitant electrolysis of said hydrofluoric acid whereby a perfluorinated hydrocarbon is obtained.

2. A process for the electrolytic production of perfluoroalkanes which comprises electrolyzing an anhydrous electrolyte consisting essentially of hydrogen fluoride and at least one alkali metal fluoride, feeding to the electrolytic cell a partially fluorinated saturated hydrocarbon consisting of at least two carbon atoms substituted solely by at least two fluorine atoms, and recovering a perfluoroalkane as a product.

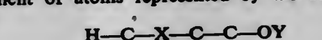
3,298,941

PHOTOCHEMICAL PROCESS FOR REARRANGING ORGANIC HYPOHALITE AND NITRITE COMPOUNDS

Derek H. R. Barton, Northwood, England, assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed May 29, 1961, Ser. No. 113,086
16 Claims. (Cl. 204—158)

1. A process of converting a derivative of an organic compound, said derivative having at least six carbon atoms and an atom selected from the group consisting of carbon, sulfur, oxygen and nitrogen, and also having a radical OY wherein Y is a member of the group consisting of halogen and nitroso; said derivative including an arrangement of atoms represented by the following diagram:



wherein OY is a radical as defined hereinabove, H is a reactive hydrogen conformationally adjacent to said radical OY, and X is an atom selected from the group consisting of carbon, nitrogen, sulfur, and oxygen; which comprises irradiating a solution of said derivative with ultraviolet radiation having a band of radiation approximating that absorbed by the OY radical, and in said derivative thus irradiated, photolytically exchanging said reactive hydrogen with the Y group in said OY radical.

3,298,942
PRODUCTION OF GRAFT COPOLYMERS OF PERHALOGENATED OLEFINS

Michel Magat and Adolphe Chapiro, Paris, France, assignors to Centre National de la Recherche Scientifique Ministere de l'Education Nationale, Paris, France

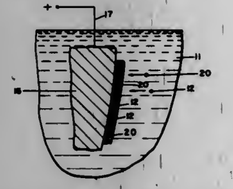
Filed May 20, 1958, Ser. No. 736,614
Claims priority, application France, Oct. 26, 1957, 750,274; Jan. 31, 1958, 757,183; Feb. 12, 1958, 758,081
21 Claims. (Cl. 204—159.17)

1. In the process for producing graft copolymers, in which styrene is grafted on a polyperhalogenated olefin selected from the group consisting of polytetrafluoroethylene and polychlorotrifluoroethylene polymer, in which said polymer is subjected to high energy ionizing radiation in the presence of styrene, the improvement which comprises effecting the radiation at a low intensity, producing a polymerization rate below the rate of penetration of the monomer through the graft copolymer formed, while the monomer is present in a solvent.

3,298,943
METHOD OF PRODUCING RUBBER SHEET MATERIAL

Howard J. Strauss, Elkins Park, Pa., and Ernest Weiss, Trenton, N.J., assignors to ESB-Reeves Corporation, a corporation of Delaware

Filed June 27, 1962, Ser. No. 205,713
14 Claims. (Cl. 204—182)

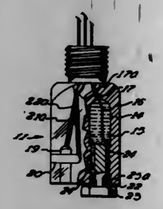


1. A method of producing rubber sheet material of substantial thickness comprising immersing an anode and cathode in a bath comprising an aqueous dispersion of rubber particles having a negative charge, applying a voltage across the anode and cathode thereby causing the rubber particles to migrate to the anode for deposit thereon, and adding to the dispersion starch in a finely divided form and in an amount approximately equal to the amount of rubber particles present in the bath on a dry solids basis, the starch having a negative charge and thereby migrating to the anode along with the rubber particles and providing multiple conductive paths of low resistance through the rubber particles as deposited in sheet form on the anode.

3,298,944
ELECTROCHEMICAL SENSORS

James R. Luck, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Aug. 22, 1962, Ser. No. 218,668
12 Claims. (Cl. 204—195)

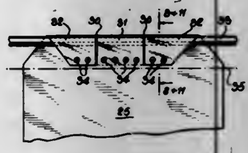


1. An electrode assembly comprising in combination: a first body of chemically inert, electrically nonconductive material adapted to be immersed in a test solution, said first body defining a chamber with an opening in a wall of said first body leading into said chamber; a sealing surface on said first body encompassing said opening; an electrolyte solution in said chamber; a solid body of electrolytic bridge material having first and second oppositely disposed sealing surfaces and positioned so as to have said first sealing surface contacting said sealing surface on said first body; a second body of chemically inert, electrically nonconductive material contacting said second sealing surface; fastening means acting between said first and second bodies to maintain intimate contact between said sealing surfaces and hold said body of bridge material in said position with only a peripheral portion exposed to the test solution and an interior portion thereof exposed to said electrolyte, and an electrode disposed within said first body and contacting said electrolyte.

3,298,945
ELECTROLYTIC CELL INCLUDING A STARTING CATHODE HAVING AN INTEGRAL SUPPORTING MEANS

George H. Weis, Locust, and Adolph Busch, Red Bank, N.J., assignors to American Smelting and Refining Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 24, 1962, Ser. No. 225,524
3 Claims. (Cl. 204—242)



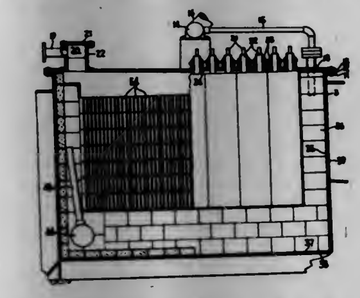
1. In an electrolytic cell for the electrodeposition of metal comprising an anode and a cathode starting sheet having a body constituting a deposit area for immersion in an electrolyte, a cathode bar for supporting the cathode starting sheet, means for hanging said starting sheet from the bar, and means supporting the cathode bar to maintain said starting sheet immersed in an electrolyte, the improvement which comprises providing as the cathode starting sheet bar hanging means integral loop means at the upper edge of the cathode starting sheet body, said loop means having a portion constituting an integral extension of said starting sheet body and including at least three tongues extending generally in the same direction, spaced apart from each other thereby defining slots therebetween, and bent in opposite directions to form side by side loop tongues, the cathode bar being disposed in said loop means, and joint means securing a free end of the loop means integral extension surrounding said bar to said sheet, said joint means being disposed above the level of the electrolyte, whereby said sheet is suspended truly symmetrically with respect to said cathode bar and entrapment of electrolyte between metal layers at the joint is eliminated with attendant elimination of impurities addition to the electrodeposited metal.

3,298,946
ELECTROLYTIC BIPOLAR ALKALI CHLORATE CELL

Sydney Forbes, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Mar. 30, 1962, Ser. No. 183,974, now Patent No. 3,203,882, dated Aug. 31, 1965. Divided and this application Nov. 3, 1964, Ser. No. 408,615
3 Claims. (Cl. 204—268)

1. An electrolytic alkali metal chlorate cell comprising an enclosed box, a plurality of bipolar electrodes in said box constructed and arranged to electrolyze brine in said box, means to pass current through said box and across said electrodes, an inclined cover member on said box, a gas collection zone located beneath said cover at the upper end of the inclined surface, said gas collection zone being restricted in size and provided at the cover surface with a rupturable disc, and means to pass electrolyte into said cell and remove the liquid products of electrolysis therefrom.



3,298,947
PRODUCING PURIFIED FLUID COKE

C F Gray, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 6, 1963, Ser. No. 278,446
6 Claims. (Cl. 208—46)

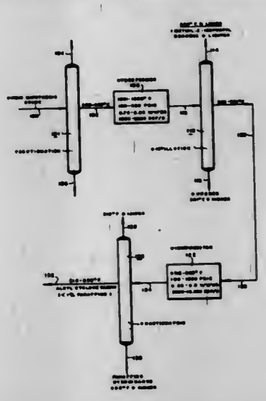
1. A process for producing fluid coke of reduced metals content which comprises mixing from about 3–12 wt. percent of a caustic material selected from the group consisting of sodium hydroxide and sodium carbonate with residual petroleum oil having an initial boiling point above about 900° F., coking the mixture in a fluid bed at a temperature above about 900° F. to produce coke and vaporous hydrocarbons, cooling the coke, leaching the cooled coke with hot aqueous nitric acid having an acid concentration between about 4 and 12 wt. percent HNO_3 and then water washing the leached coke.

3,298,948
METHOD FOR MAKING A ROCKET AND MISSILE FUEL

William R. Edwards, Baytown, Tex., assignor to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Nov. 16, 1962, Ser. No. 238,218
3 Claims. (Cl. 208—66)

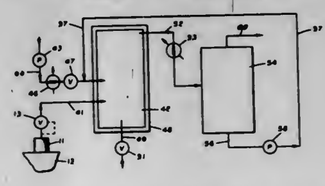
1. A method which comprises fractionating a virgin naphthenic crude oil to obtain a first fraction boiling within the range of about 250° F. to about 400° F. and containing paraffins, C_{10} and C_{11} alkyl cyclohexanes, and methyl hydrindanes, said alkyl cyclohexanes including 1-methyl-2-isopropyl cyclohexane, methyl-t-butyl cyclohexanes, and t-butyl cyclohexanes, contacting said first fraction in a hydroforming zone at a temperature within the range from 800° F. to 1000° F. and a pressure within the range from 100 to 400 p.s.i.g. with from 1000 to 5000 s.c.f./b. of hydrogen in the presence of a hydroforming catalyst and at a liquid space velocity within the range from 0.75 to 2.25 v./v./hr. to obtain an aromatized stream containing alkyl benzenes, methyl indanes, and paraffins, said alkyl benzenes including 1-methyl-2-isopropyl benzene and being substantially free of t-butyl and methyl-t-butyl benzenes, fractionating said aromatized stream to obtain an aromatized fraction boiling within the range of 355° F. to 381° F., whereby 1-methyl-2-isopropyl benzene and lighter materials and durenes and heavier materials are removed, contacting said aromatized fraction in a hydrogenation zone at a temperature within the range of 300° F. to 600° F. and a pressure within the range from 100 to 1000 p.s.i.g. with from 3000 to 15,000 s.c.f./b. of hydrogen in the presence of a hydrogenation catalyst and at a liquid space velocity of from 0.25 to 2.0 v./v./hr. to obtain a hydrogenated stream containing alkyl cyclohexanes in which each alkyl carbon alpha to the ring has at least two attached hydrogen atoms, paraffins, and methyl hydrindanes, and fractionating said hydrogenated stream to obtain a substantially paraffin-free alkyl cyclohexane product boiling within the range of 319° F. to 358° F.



3,298,949
TREATING NATURAL GAS STREAMS

Murrell D. Nelson, Jr., Arlington, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Oct. 21, 1963, Ser. No. 317,708
4 Claims. (Cl. 208—340)



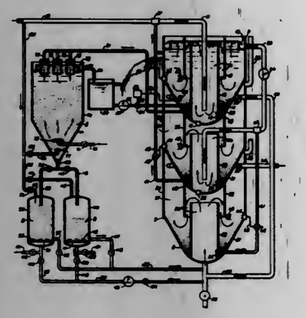
1. A process for treating a natural gas stream produced from a subterranean reservoir at high pressure and which gas contains a high concentration of carbon dioxide comprising the steps of:

(a) intermixing ammonia with the high pressure gas stream,
(b) contacting the high pressure gas stream and ammonia under reaction conditions such that solid materials including urea are formed by the reaction of ammonia with the carbon dioxide in the gas stream,
(c) separating the high pressure gas stream with a reduced carbon dioxide content from the resulting solid materials,
(d) separating urea from said solid materials,
(e) intermixing urea separated from the solid materials with the separated gas stream,
(f) contacting the urea and the separated gas stream under reaction conditions such that crystalline adducts of urea with straight-chain aliphatic hydrocarbons having at least three carbon atoms are formed,
(g) separating the high pressure gas stream with a reduced content of straight-chain aliphatic hydrocarbons from the crystalline adducts, and
(h) recovering the hydrocarbons from the crystalline adducts.

3,298,950
LIQUID TREATING APPARATUS AND METHOD

Albert B. Mindler, Princeton, N.J., assignor to Ritter Pfaudler Corporation, a corporation of New York

Filed Apr. 13, 1964, Ser. No. 359,101
18 Claims. (Cl. 210—33)



14. A method of treating liquid by contact with granular treating material which comprises maintaining a series of treatment stages, maintaining in each of said stages a mixing zone and a separating zone, establishing in each of said stages flow of a slurry consisting of liquid being treated and granular treating material through said mixing zone and from said mixing zone to said separating zone, supplying liquid to be treated to the mixing zone of the first stage in said series, flowing liquid from the upper portion of the separating zone of each except the last stage to the mixing zone of the next succeeding stage in said series, and from the upper portion of the separating zone of the last stage in said series to a point of disposal, supplying fresh granular treating material to the mixing zone of the last stage in said series, transferring granular treating material from the lower portion of the separating zone of each except the first stage to the mixing zone of the next preceding stage in said series, and removing granular treating material from the lower portion of the separating zone of the first stage in said series.

3,298,951
STABILIZED POLYBUTENE COMPOSITION

Roman D. Guminski, "The Croft," Banbury Road, Bloxham, England

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,414
11 Claims. (Cl. 252—52)

1. A stabilized lubricant composition which comprises:
(a) a major amount of a base fluid selected from the class consisting of (I) a polybutene having an approximate number average molecular weight between about 500 and about 5000 and (II) a blend of I and a light mineral oil of low bromine number; and
(b) oil-soluble, ethylenically unsaturated organic compound having a molecular weight below about 300, characterized by the ability to substantially stabilize the viscosity of said composition, when said composition is subjected to heavy loads and shearing forces, said organic compound being selected from the class consisting of hydrocarbon carboxylic acids, hydrocarbon esters, hydrocarbon aldehydes, hydrocarbon ketones, hydrocarbon alcohols, aliphatic substituted aromatic hydrocarbons and branched chain alkenes, said organic compound being present in an amount of not more than 5 weight percent.

3,298,952
METHOD FOR RESTORING FRICTION LUBRICATIVE SURFACES OF MACHINE PARTS

Boris Petrovich Grigorjev, Polajrnykh Zorj St. 74, Apt. 8, Murmansk 12, U.S.S.R.

No Drawing. Filed May 21, 1963, Ser. No. 282,106
2 Claims. (Cl. 252—24)

1. A method of extending the service life of friction machine parts and lubricants of machines in operation for improving wear resistance of friction parts and the efficiency of the lubricants, which comprises adding metals and haloids to the lubricants, said metal additions comprising sodium alloyed with tin in the ratio of 1 to 3 parts by weight, said haloid addition comprising iodine as an accelerator and said lubricant oxidizing by reason of temperature conditions arising during machine operation to form free tin cations capable of plating out on lubricated surfaces.

3,298,953
LUBRICANTS CONTAINING MIXED METAL SALTS OF FATTY ACID AND AROMATIC POLYBASIC ACID

Arnold J. Morway, Clark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 1, 1964, Ser. No. 356,661
6 Claims. (Cl. 252—41)

1. A lubricating grease consisting essentially of a major amount of lubricating oil and about 5 to 40 wt. percent of alkali metal salt of C_2 to C_6 fatty acid, C_{10} to C_{30} fatty acid and a polycarboxylic aromatic acid consisting of a single benzene ring having 2 to 4 carboxy groups, in a mole equivalent ratio of about 0.5 to 6.0 mole equivalents of said C_2 to C_6 fatty acid per mole equivalent of said aromatic acid and about 0.5 to 3.0 mole equivalents of said C_{10} to C_{30} fatty acid per mole equivalent of said aromatic acid.

3,298,954
METAL WORKING LUBRICANT

John S. Brown, Flossmoor, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,269
12 Claims. (Cl. 252—51.5)

9. A water emulsifiable non-staining steel rolling lubricant consisting essentially of (A) about 95–100% of a mixture of substantially equal parts of liquid polybutene having a viscosity at 210° F. of about 1100 SSU, and hydrogenated tallow fatty acid; and (B) from 0 to about 5% of an emulsifier.

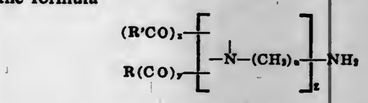
10. The composition of claim 9 wherein said emulsifier is diglycolamine.

3,298,955
LUBRICANTS CONTAINING NON-ASH-FORMING ADDITIVES

Aart Strang, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,653
Claims priority, application Netherlands, Jan. 29, 1964, 6,400,690
20 Claims. (Cl. 252—51.5)

1. A lubricating oil composition comprising a major amount of lubricating oil and a minor amount, sufficient to impart detergency, of an oil-soluble polyamide containing at least one polyolefinic group and having the formula



where R is a polyolefinic group having a molecular weight of from about 400 to about 10,000, R′ is a C_{1-6} alkyl

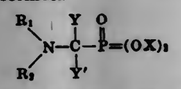
radical, n is an integer of from 1 to 8, x is an integer of from 2–5, y is a number of from zero to 1, and z is an integer of from 3–8.

3,298,956
LIME SOAP DISPERSANTS

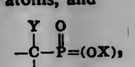
Riyad R. Irani, St. Louis, and Kurt Moedritzer, Webster Groves, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,170
20 Claims. (Cl. 252—117)

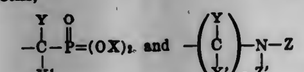
1. A soap composition consisting essentially of soap and at least one weight percent based on the weight of said soap of an organo-amino polymethylphosphonic compound of the formula



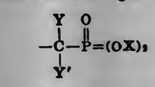
wherein X is a cation selected from the class consisting of hydrogen, alkali metal ion, ammonuim ion, and lower molecular weight alkyl, alkylene and alkanol amine ions; Y and Y′ are members selected from the class consisting of hydrogen and lower alkyl groups containing from 1 to 4 carbon atoms; R_1 is a member selected from the class consisting of hydrogen, aliphatic groups containing from 1 to 30 carbon atoms, and



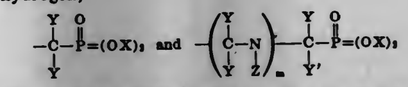
and R_2 is a member selected from the class consisting of hydrogen, aliphatic groups containing from 1 to 30 carbon atoms,



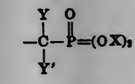
wherein n is an integer from 1 to 30; Z is a member selected from the class consisting of hydrogen and



and Z′ is a member selected from the class consisting of hydrogen,



wherein m is an integer from 1 to 30; with at least one of the groups represented by R_1 and R_2 containing at least one



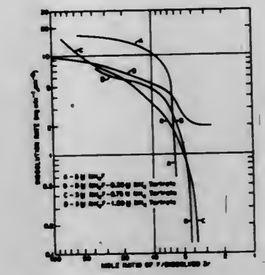
group.

3,298,957
METHOD FOR DISSOLVING ZIRCONIUM AND FORMING STABILIZED ALKALINE SOLUTIONS THEREOF

Theodore A. Gens, Oak Ridge, Tenn., assignor to the United States of America, as represented by the United States Atomic Energy Commission

Filed Apr. 6, 1964, Ser. No. 357,830
5 Claims. (Cl. 252—182)

1. A method for forming a stable alkaline solution of zirconium which comprises dissolving zirconium in an aqueous solution of ammonium fluoride and a zirconium complexing agent selected from the group consisting of tartaric acid, glycolic acid, lactic acid and salts of said acid which are soluble in aqueous ammonium fluoride solutions thereof and then adjusting the resulting solution



to an alkaline pH at which the resulting zirconium complex remains in solution.

3,298,958
GELATIN DESICCANT TABLETS

Robert A. Mosher, Seymour, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

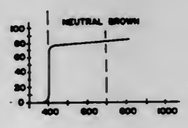
No Drawing. Filed Sept. 21, 1962, Ser. No. 225,371
5 Claims. (Cl. 252—194)

1. As a desiccant for a solid propellant, a consolidated desiccant mass which consists essentially of gelatin having a water content substantially less than 9 weight percent, said mass having been formed from compacted gelatin solids, said compacted solids having been treated with a solution of 5–40 volume percent of water in 95–60 volume percent of an organic solvent to swell and consolidate the compacted solids, said solvent having substantial solubility for water and selected from at least one member of the class consisting of ketones of the formula RCOR′, alcohols of the formula R″OH, and esters of the formula CH_3COOR'', wherein R and R′ are hydrocarbons having 1–2 carbon atoms, R″ is a hydrocarbon having 1–3 carbon atoms, said treated compacted solids being subsequently dehydrated to form said desiccant mass.

3,298,959
ULTRA VIOLET LIGHT ABSORBING COMPOSITIONS HAVING A SUSPENSION OF SUBMICRON PARTICLES

Alvin M. Marks, 149–61 Powells Cove Blvd., and Mortimer M. Marks, 166–25 Cryders Lane, both of Whitestone, N.Y. 11357

Filed Oct. 26, 1962, Ser. No. 233,417
9 Claims. (Cl. 252—300)



1. A composition for partially absorbing visible and absorbing ultra violet light comprising a clear transparent plastic film-forming solution and a suspension in said solution of from 0.01% to 2% based on the weight of said solution of light absorbing particles, said solution comprising a solvent portion and a solute portion, said solvent portion being composed of from 5 to 25% by

weight of slow evaporation rate solvents and the balance intermediate evaporation rate solvents, said solute portion comprising a transparent film-forming plastic material in amount not exceeding its solubility in said solvent portion, said particles having a maximum diameter no greater than about 50 millicrons and an average diameter no greater than about 10 millicrons, said particles being insoluble in said solution and unreactive therewith, said composition being castable as a transparent film substantially free of light scatter, whereby the composition will flow downwardly for long distances to form upon drying a transparent film.

3,298,960

METHOD FOR THE DISPOSAL OF WASTE SOLUTIONS USING RIGID GELS

Edgar C. Pitzer, Scotia, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed June 17, 1964, Ser. No. 375,984
15 Claims. (Cl. 252—301.1)

1. A process for the encapsulation of radioactive wastes comprising adding a gelling agent to a solution of hydrazine and ethylenediaminetetraacetic acid containing dissolved radioactive wastes, in an amount sufficient to produce a solid, vibrant gel.

3,298,961

CONCENTRATION AND CONTAINMENT OF RADIOACTIVITY FROM RADIOACTIVE WASTE SOLUTIONS IN ASPHALT

George D. Davis, Kingston, Edward J. Frederick, Knoxville, Herschel W. Godbee, Oak Ridge, and John M. Holmes, Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 26, 1965, Ser. No. 482,950
2 Claims. (Cl. 252—301.1)

1. A method of concentrating and containing the solid content of an intermediate level radioactive solution which comprises mixing said solution with emulsified asphalt, evaporating essentially all of the water content of said mixture at a temperature no greater than 160° C., and then flowing the resultant asphalt composition into a container to solidify in a desired configuration.

3,298,962

SPIN BATH ADDITIVES

Max E. Chiddix, Easton, and Earl P. Williams, Pen Argyl, Pa., and Robert L. Sundberg, Martinsville, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,170
10 Claims. (Cl. 252—357)

1. A surface active composition consisting essentially of (A) a condensation product of at least 1 mole of alkylene oxide of 2 to 3 carbon atoms with a member of the group consisting of primary and secondary aliphatic and alicyclic amines containing at least 8 carbon atoms and (B) a reaction product prepared by reacting 1 mole of a polyamine of the formula $H(NHR)_xNH_2$, in which R is an alkylene radical containing 2 to 6 carbon atoms and x has a value of 1 to 6, with about $0.2x$ to x molecular equivalents of an acylating agent selected from the group consisting of rosin acids and refined tall oil containing at least 50% by weight of rosin acids, and then reacting the resulting N-acylated polyamine product in the presence of an alkali catalyst with up to about 40 moles, per mole of said product, and more than sufficient alkylene oxide of 2 to 4 carbon atoms to condense with all the remaining replaceable N-hydrogen atoms therein, component (A) being present in proportions of about 0.1 to 10 parts for each part by weight of component (B).

3,298,963

DETERGENT BREAKER COMPOSITION

James Stuart Frank, 7057 N. Fairchild Circle, Milwaukee, Wis. 53217

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,813
5 Claims. (Cl. 252—358)

1. A synthetic detergent breaker composition consisting essentially of 2 to 60% by weight dialkylpolysiloxane having the general formula $(RSiO)_n$ where n is a positive integer of 2 to 100 and, where the R radicals are alkyl and at the chain ends, the alkyl radicals being selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl and hexyl; 2 to 70% by weight alkylsiloxy-metallic complex having the general formula $(RSiO)_3M$ where M is the metallic ion selected from the group consisting of aluminum, ferrous, ferric and cobalt and the R radicals are alkyl selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl and hexyl; 10 to 70% by weight metallic sulfate where the metallic ion thereof is selected from the group consisting of aluminum, ferrous, ferric, and cobalt; 0.5% to 20% by weight silica gel; and 0.2 to 0.5% by weight of pH controlling material where the pH controlling material is selected from the group consisting of sulfuric acid, sulfurous acid and ascorbic acid.

3,298,964

LIQUID STABILIZERS FOR VINYL CHLORIDE RESINS COMPRISING METAL SALTS OF EPOXIDIZED FATTY ACIDS

Alfred Szczepanek, Duren-Rolsdorf, and Günter Koenen, Duren, Germany, assignors to Chemische Fabrik Hoesch K.-G., Duren, Rhineland, Germany

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,562
Claims priority, application Germany, Apr. 2, 1962, C 26,631
8 Claims. (Cl. 252—400)

1. Liquid stabilizers for polymeric and copolymeric vinylchloride comprising a solution containing 40 to 60 wt. percent of at least one member selected from the group consisting of lithium, sodium, potassium, calcium, strontium, magnesium, beryllium, zinc, nickel, manganese, tin, cerium, bismuth, and cobalt soaps of epoxidized higher fatty acids having 16 to 18 carbon atoms in an organic solvent capable of simultaneously serving as a plasticizer and/or stabilizer for said polymeric vinylchloride selected from the group consisting of alkyl monohydric phenols, aliphatic polyhydric alcohols, alkanolamines containing at least two hydroxyl groups, partial ethers and esters of aliphatic polyhydric alcohols and alkanolamines containing at least one free hydroxyl group, and non-volatile tri-esters of phosphorous acid (H_3PO_3) prepared by heating a mixture of said soap group member and said organic solvent group member at a temperature of from 80 to 140° C.

3,298,965

METHOD FOR FORMING POLYOLEFIN CATALYST

Erik Tornqvist, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,648
10 Claims. (Cl. 252—429)

1. A method for preparing an improved catalyst component useful in the polymerization of olefins which comprises contacting a trihalide of a transition metal with a halide of a member of the group consisting of Group II and Group III metals at a temperature above 200° C. for a time sufficient to form a co-crystalline material.

3,298,966

PROCESS FOR PREPARING A CALCIUM-NICKEL PHOSPHATE CATALYST

Lucien J. Bagnetto, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 11, 1962, Ser. No. 186,749
3 Claims. (Cl. 252—437)

1. A process for preparing a calcium-nickel-phosphate catalyst employable for the dehydrogenation of olefins which comprises first introducing an aqueous solution of soluble calcium and nickel salts having an initial acidic pH into a catalyst preparation zone and thereafter introducing, with mixing, into said solution of soluble calcium and nickel salts an aqueous solution of ammonium phosphate and precipitating a metal-phosphate material at a final pH in the range of 7 to 9, said calcium and nickel being chemically combined with phosphate radicals in the relative proportions of between 6 and 12 atoms of calcium per atom of nickel, and treating the precipitated metal-phosphate material with chromium oxide so as to add chromium oxide in an amount less than the weight of said precipitated metal-phosphate material.

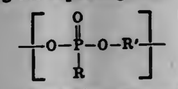
3,298,967

PROCESS FOR PREPARING HIGH MOLECULAR WEIGHT PHOSPHONATE POLYMERS

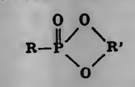
John H. Mason, Grand Island, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 4, 1963, Ser. No. 270,521
4 Claims. (Cl. 260—2)

1. A method of preparing an organic phosphonate polymer containing the repeating unit



wherein R is a non-reactive monovalent hydrocarbon radical of from 1 to 18 carbon atoms inclusive and R′ is an alkylene radical containing from 2 to about 18 carbon atoms inclusive in which the two valency carbon atoms are separated by no more than one carbon atom, with the proviso that when the said organic phosphonate polymer is a homopolymer, it exhibits a reduced viscosity greater than 0.35 as measured at 25° C. in chloroform at a concentration of about 0.2 gram of polymer per 100 cubic centimeters of chloroform, which includes polymerizing the cyclic phosphonates of the formula



wherein R is a non-reactive monovalent hydrocarbon radical of from 1 to 18 carbon atoms and R′ is a divalent aliphatic hydrocarbon radical containing from 2 to 18 carbon atoms in which the two valency carbon atoms are separated by no more than 1 carbon atom which comprises heating said phosphonate monomers to a temperature of from 10° C. to 180° C. inclusive in the presence of a catalytic amount of a catalyst selected from the group consisting of lower dialkyl zinc, lower dialkyl cadmium and poly(isobutylaluminum oxide).

3,298,968

PREPARATION OF ORGANOPHOSPHORUS POLYMERS BY REACTING A PHOSPHORUS OXYHALIDE WITH A GLYCOL

William L. Fierce, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Dec. 12, 1963, Ser. No. 330,083
9 Claims. (Cl. 260—2)

1. In a process of preparing rubbery organophosphorus polymers by reacting a phosphorus oxyhalide with a glycol in the presence of an amine, selected from the group consisting of pyridine, quinoline, dialkylanilines and trialkylamines, in an inert, non-aqueous solvent at a temperature of about −10° C. to +20° C., said glycol being selected from the group consisting of polyethylene glycols of the formula $HO(C_2H_4O)_nH$, where n is 2 to 45, and α,ω-C_3-C_{24} straight-chain alkanediols, and recovering as a solid precipitate the reaction product consisting of a rubbery solid characterized by its insolubility in water, dilute acids, ketones, ether, alcohols, and hydrocarbons, and melting, with decomposition, at a temperature above 200° C., the improvement which comprises gradually adding said glycol to said phosphorus oxyhalide in the order indicated over an extended period and using a glycol:phosphorus oxyhalide mol ratio within the range of about 1.5:1 to 2.5:1.

3,298,969

PROCESS OF PREPARING GRAFT COPOLYMERS FOR ION EXCHANGE AND CHELATING PURPOSES

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Metal Recovery Systems, Cleveland, Ohio

No Drawing. Filed May 12, 1960, Ser. No. 28,562
17 Claims. (Cl. 260—2.1)

1. The process of preparing graft copolymers which comprises absorbing a water-insoluble monomer having at least one $CH_2{=}C<$ group into a peroxidized synthetic organic polymer in solid undissolved form at a non-reactive temperature, separating said solid polymer from excess non-absorbed monomer, and thereafter heating said polymer with absorbed monomer in a non-reactive aqueous medium to cause reaction between said polymer and said monomer.

3,298,970

EXPANDED COATINGS

Donald E. Stare, Donald R. Strack, and Harold J. Reindl, all of Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,275
3 Claims. (Cl. 260—2.5)

1. A flowable, permanent sealing cement for applications to surfaces to be sealed comprising in combination; a fluid compound having as a base an uncured rubbery material taken from the class consisting of butadiene styrene copolymer rubber, natural rubber and mixtures thereof together with accelerator, softeners, fillers and vulcanizing agents and a blowing agent, said compound being dissolved in an organic solvent capable of being evaporated after application of the compound to a surface whereby the compound upon heating will blow and vulcanize concurrently so that the final thickness of the layer applied is in the order of from 2 to 3 times the original thickness thereof and comprises a spongy closed cell cured, rubbery structure.

3,298,971

MALEIC ANHYDRIDE-TERTIARY AMINE ADDUCT FOAMING AGENT

William R. Davie, Aliquippa, Pa., assignor, by mesne assignments, to United States Steel Corporation, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed May 21, 1963, Ser. No. 282,120
9 Claims. (Cl. 260—2.5)

1. A foamable composition comprising a plastic or elastomer selected from the group consisting of asphalt, pitch, bitumen, tar, natural rubber, rubbery copolymer of isobutylene and isoprene, rubbery butadiene styrene copolymer, butadiene acrylonitrile copolymer, polychloroprene, butadiene-vinyl pyridine copolymer, acrylonitrile-butadiene styrene terpolymer, polystyrene, a fiber-forming synthetic linear polycarbonamide having recurring car-

bonamide groups as an integral part of the polymer chain, which groups are separated by at least two carbon atoms, polyethylene, polypropylene, polyvinyl chloride polycarbonates, vinylidene chloride-acrylonitrile copolymer, vinylidene chloride-vinyl chloride copolymer, polyvinyl acetals, polyoxymethylene, vinyl chloride-vinyl acetate copolymer, ethyl acrylate polymer, methyl acrylate polymer, butyl acrylate polymer, polyvinyl acetate and vinyl chloride-ethyl acrylate copolymer and as a foaming agent an adduct of maleic anhydride and an amine having at least one tertiary amine group, said adduct containing one mol of maleic anhydride for each tertiary amino group present.

3,298,972

CELLULAR POLYMERIC COMPOSITIONS AND METHOD FOR THEIR PREPARATION

Roland J. Kern, Bridgeton, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 6, 1963, Ser. No. 328,519
16 Claims. (Cl. 260—2.5)

1. A cellular polymeric lactone product obtained by heating a tert-butyl vinyl ether/unsaturated carboxylic acid anhydride copolymer at a temperature sufficiently high to rearrange the molecular structure of said copolymer and to liberate isobutylene gas.

3,298,973

PHENOLIC FOAM COMPOSITIONS

Richard W. Quarles, Princeton, and John A. Baumann, Dunellen, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,397
20 Claims. (Cl. 260—2.5)

1. A method for producing non-burning, non-punking phenolic foams comprising admixing an organic foaming agent with a liquid phenol-aldehyde resole having a viscosity from 200 to 300,000 centipoises at 25° C. and at least two acidic agents, one of which is boric acid, and another of which is an organic hydroxy acid in which the hydroxyl group is on a carbon atom no more than one carbon atom removed from a carboxyl group in amounts of at least 2 parts by weight of each acid per hundred parts by weight of said resole and sufficient to initiate the foaming of the resulting mixture and curing the resole to produce a stable cured foam.

3,298,974

RIGID POLYURETHANE FOAMS

Carl Bernstein, Deerfield, and Kermit Longley, Park Forest, Ill., assignors to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,516
20 Claims. (Cl. 260—2.5)

1. In a method of making rigid polyurethane foams wherein a halogen-substituted alkane is incorporated with a polyester and with an organic polyisocyanate and wherein the temperature of the mixture is permitted to rise during the ensuing action to produce a rigid polyurethane foam, the improvement which consists in utilizing as the polyester component, an esterification reaction product of (a) polycarboxylic acid component of which aromatic dicarboxylic acid constitutes at least 25% by weight, with (b) an ethylene oxide adduct of an aliphatic polyhydric alcohol, said aliphatic polyhydric alcohol containing from 3 to 6 hydroxyl groups, said adduct containing, for each mol of said aliphatic polyhydric alcohol, such a number of mols of ethylene oxide whereby said adduct contains from 10 to 22 milliequivalents, per gram, of hydroxyl groups, said polyester having an hydroxyl number between about 280 and about 550.

8. In a method of making rigid polyurethane foams wherein a halogen-substituted alkane is incorporated with a polyester and with an organic polyisocyanate and wherein the temperature of the mixture is permitted to rise during the ensuing action to produce a rigid polyurethane foam, the improvement which consists in utilizing, as the polyester component, an esterification reaction product consisting essentially of (a) a mixture of a dicarboxylic acid component and a water-immiscible higher molecular weight fatty acid, with (b) a member selected from the group of alkylene oxide adducts consisting of (1) ethylene oxide adducts of aliphatic polyhydric alcohols and (2) mixed ethylene oxide and propylene or butylene oxide adducts of aliphatic polyhydric alcohols the mol ratio of the ethylene oxide to the propylene or butylene oxide being at least 2 to 1, said aliphatic polyhydric alcohols containing at least 3 hydroxy groups, said adduct containing, for each mol of said aliphatic polyhydric alcohol, such a number of mols of said alkylene oxide whereby said adduct contains from 10 to 22 milliequivalents, per gram, of hydroxyl groups, said polyester having an hydroxyl number between 400 and 600.

3,298,975

EXPANDABLE PARTIALLY-FOAMED AND CURED POLYPROPYLENE COMPOSITION

George B. Feild, New Castle, and Paul L. Johnstone, Greenville, Del., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,370
4 Claims. (Cl. 260—2.5)

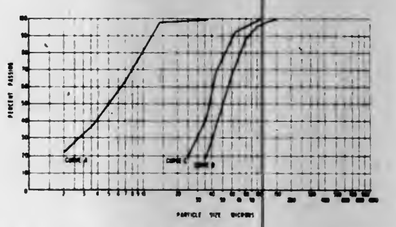
1. As a new composition of matter, an expandable composition comprising a partially cross-linked and expanded blend of stereoregular polypropylene, a blowing agent which yields at least one mole of gas per mole of blowing agent at a temperature within the range of softening temperature of said composition to about 190° C., and from about 0.01% to about 2%, based on the weight of polypropylene, of a poly(sulfonazide) as the cross-linking agent, said blend having been partially cross-linked and expanded to from about 5% to about 75% of the potential expansion of the blend.

3,298,976

CELLULAR POLYURETHANE CONTAINING BARYTES AND METHOD OF MAKING SAME

Myron H. Reinhart, Richmond, Va., assignor to E. R. Carpenter Company, Richmond, Va., a corporation of Virginia

Filed May 12, 1966, Ser. No. 549,654
12 Claims. (Cl. 260—2.5)



1. In a process for producing a foamed polyurethane which comprises reacting an organic polyisocyanate having at least two functional isocyanate groups with a polyether polyol having hydrogen atoms reactive with said isocyanate groups in the presence of an activator mixture comprising water and a catalyst for the reaction, to form said foamed polyurethane, the improvement which comprises reacting said polyisocyanate and said polyol in the presence of from about 0.5 to about 2.00 parts by weight of water per 100 parts by weight of said polyol and in the presence of about 50 to 150 parts by weight of finely divided particles of barytes based upon 100 parts by weight of said polyol, said barytes particles being of a size such that they will fall within the curves A and B of the drawing in the percentages indicated.

3,298,977

SUSPENSION POLYMERIZATION OF LACTAMS USING POLYMERIC MATERIALS AS SUSPENSION AGENTS

James J. Robertson, Franklin Township, Summit County, and Robert A. Hayes, Cuyahoga Falls, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed May 7, 1962, Ser. No. 192,962
16 Claims. (Cl. 260—3)

1. The method of polymerizing lactams containing 4 to 10 carbon atoms in the ring, by polymerization in an organic solvent, which method comprises treating said lactam in the presence of a polymeric suspending ingredient with a molecular weight of at least substantially 1500 which is dissolved in the solvent at the temperature at which polymerization of said monomer occurs, allowing substantial polymerization to occur with production of beads each measuring within the range of substantially 10 microns to 5 millimeters in size, the polymeric product being insoluble in the solvent at that temperature.

3,298,978

INTERPOLYMERS OF ALDEHYDE MODIFIED AMIDES AND POLYALLYL ETHERS OF POLYHYDRIC ALCOHOLS

William F. Rutherford, Port Washington, Wis., assignor to Freeman Chemical Corporation, Port Washington, Wis., a corporation of Delaware

No Drawing. Filed Oct. 12, 1962, Ser. No. 230,244
13 Claims. (Cl. 260—15)

1. A thermosetting, ungelled, resinous composition comprising an interpolymer of monomers consisting essentially of:

from 5 to 30 percent of

(a) an unsaturated amide selected from the class consisting of acrylamide, alkyl acrylamides, itaconic diamide, maleuric acid and alkyl esters of maleuric acid;

(b) a hydroxy-alkyl-polyallyl-ether having the formula

$$(CH_2{=}CHCH_2O)_m{-}R{-}(OH)_n$$

wherein m is an integer from 2 to 3; n is an integer from 1 to 2; the sum of $(m+n)$ is from 3 to 4; and R is an alkane residue having the formula $C_aH_{2a+2-(m+n)}$ wherein a is an integer from 3 to 8; and

from 95 to 70 percent of

(c) at least one other monomer containing a terminal $>C{=}CH_2$ group;

said interpolymer containing a ratio of said unsaturated amide-to-hydroxy-alkyl-polyallyl-ether in the range of from 0.3 to 0.9;

substantially all of the nitrogen atoms in the said interpolymer being trivalent nitrogen atoms, said interpolymer being characterized by having at least 50 percent of the amide groups thereof having a hydrogen atom replaced with a structure

$$-\mathrm{CHOR_1}\quad (\text{with } R_2 \text{ on the CH})$$

wherein

R_2 is a member of the class consisting of hydrogen, furyl and a saturated lower aliphatic hydrocarbon radical; and

R_1 is a member of the class consisting of:

alkyl radicals containing from about one to twelve carbon atoms;

benzyl radicals; and

alkoxy alkyl radicals having the formula $-R_3OR_1$ wherein R_3 is an alkylene radical having the formula C_xH_{2x}, wherein x is an integer from one to eight.

3,298,979

GRAFT COPOLYMERS COMPRISING ACRYLONITRILE AND CELLULOSE DERIVATIVES

Hugh J. Hagemeyer, Jr., Alden E. Blood, and Marvin B. Edwards, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,185
8 Claims. (Cl. 260—17)

1. A resinous graft copolymer of (1) from 50–95% by weight of monomeric material consisting of from 75–98% by weight of acrylonitrile and from 25–2% by weight of at least one other ethenoid comonomer selected from the group consisting of vinyl and isopropenyl esters of 2,2-dimethylalkanoic acids of from 5–16 carbon atoms, 2,2-dimethylalkyl acrylates and methacrylates, di-2,2-dimethylalkyl maleates, fumarates, itaconates, citraconates, N-2,2-dimethylalkyl acrylamides and methacrylamides, di-N-2,2-dimethylalkyl maleamides, fumaramides, itaconamides and citraconamides, 2,2-dimethylalkyl vinyl ethers and 2,2-dimethylalkyl vinyl ethers, wherein in each instance the said 2,2-dimethylalkyl group contains from 5–10 carbon atoms, and (2) from 50–5% by weight of a compound composed of cellulose having from 10–70% of the hydroxyl groups of the cellulose in free form and having the hydrogen of the remainder of the hydroxyl groups replaced by radicals from the group consisting of alkyl groups of from 1–4 carbon atoms, carboxyalkyl groups of from 2–5 carbon atoms and saturated aliphatic acyl groups of from 2–5 carbon atoms.

8. A process for preparing a resinous graft copolymer which comprises graft copolymerizing a mixture of (1) from 75–98% by weight of acrylonitrile and from 25–2% by weight of at least one other ethenoid comonomer selected from the group consisting of vinyl and isopropenyl esters of 2,2-dimethylalkanoic acids of from 5–16 carbon atoms, 2,2-dimethylalkyl acrylates and methacrylates, di-2,2-dimethylalkyl maleates, fumarates, itaconates, citraconates, N-2,2-dimethylalkyl acrylamides and methacrylamides, di-N-2,2-dimethylalkyl maleamides, fumaramides, itaconamides and citraconamides, 2,2-dimethylalkyl vinyl ethers and 2,2-dimethylalkyl vinyl ethers, wherein in each instance the said 2,2-dimethylalkyl group contains from 5–16 carbon atoms, said graft copolymerizing being effected by heating said mixture of said monomeric material and (2) a cellulose derivative having free hydroxyl groups in the presence of a polymerization catalyst.

3,298,980

ALKYLENE OXIDE POLYMER COMPOSITIONS FLEXIBILIZED WITH SALTS OF CARBOXYLIC ACIDS

Robert D. Lundberg and Robert W. Callard, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 1, 1963, Ser. No. 299,194
7 Claims. (Cl. 260—18)

3. The homogeneous composition comprising a poly(ethylene oxide) having a reduced viscosity of at least 1 and from about 20 to about 40 percent by weight, based upon said poly(ethylene oxide), of a salt containing from 4 to 22 carbon atoms selected from the group consisting of ammonium salts of aliphatic carboxylic acids, ammonium salts of aromatic carboxylic acids, alkali metal salts of aliphatic carboxylic acids, and alkali metal salts of aromatic carboxylic acids.

4. The homogeneous composition of claim 3 wherein said salt is sodium oleate.

3,298,981

POLYHYDROXYETHERS OF 1,4-CYCLOHEXANEDIMETHANOL

John S. Fry and Warren F. Hale, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,180
11 Claims. (Cl. 260—18)

8. The method of preparing weather resistant coatings which comprises contacting a polyhydroxyether of 1,4-cyclohexanedimethanol with a crosslinking amount of a crosslinking agent selected from the group consisting of the hexamethyl ether of hexamethylol melamine, butylated melamine formaldehyde resin, diisocyanates and polyunsaturated fatty acids.

3,298,982

SOIL TREATMENT COMPOSITIONS COMPRISING POLYMER SALT, PETROLEUM OIL AND CARBOXYLIC ACID SALT

John H. Glenn, Torrance, and George M. Brown, Los Angeles, Calif., assignors to Brown Mud Company, Torrance, Calif., a corporation of California

No Drawing. Original application Jan. 13, 1958, Ser. No. 708,386, now Patent No. 3,124,934, dated Mar. 7, 1964. Divided and this application Aug. 12, 1963, Ser. No. 305,912
6 Claims. (Cl. 260—23)

1. An oil-in-water emulsion for treating the soil bed of a waterway, said emulsion comprising water, and in rough proportions about one part by weight of water soluble polymer salt, said polymer salt being a linear hydrocarbon chain polymer having a molecular weight greater than 10,000 and containing carboxylic acid salt groups selected from the group consisting of the alkali metal and ammonium salts in a ratio of one carboxylic acid salt group to each two to six linear carbon atoms, about three parts by weight of an organic acid selected from at least one of the group consisting of C_{16}–C_{18} fatty acids and rosin acids, about thirty parts by weight of petroleum hydrocarbon oil, and about one part by weight of an inorganic alkaline agent.

3,298,983

WATERPROOF, PLASTIC COMPOSITIONS OF MATTER RESISTANT TO ELECTROSTATIC CHARGE CONSISTING OF HOMO- AND COPOLYMERS OF VINYL CHLORIDE

Werner Wolff, Neuotting (Inn), Germany, assignor to Farbwerke Hoechst Aktiengesellschaft, vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 22, 1964, Ser. No. 369,631
Claims priority, application Germany, May 22, 1963, F 39,810
6 Claims. (Cl. 260—23)

1. A composition of matter resistant to electrostatic charge consisting essentially of:

(1) a polymer selected from the group consisting of:
  (A) vinyl chloride homopolymers, and
  (B) copolymers of vinyl chloride and another vinyl monomer copolymerizable therewith; and

(2) from 0.5 to 10% by weight of a partial ester derived from the reaction of
  (A) a polyol selected from the group consisting of diglycerol and polyglycerol, and
  (B) as a sole acid, a monocarboxylic organic acid, component (2) being the sole partial ester of a polyol present in the composition.

3,298,984

METHOD OF REINFORCING A RUBBER LATEX WITH CARBON BLACK BY PREBLENDING SAID CARBON BLACK WITH A PHENOL-ALDEHYDE RESIN

Grover W. Rye, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed June 6, 1963, Ser. No. 285,920
4 Claims. (Cl. 260—29.3)

1. The method of reinforcing rubber in latex form which comprises blending carbon black with a water solution of a water-soluble phenol/aldehyde-deficient resin to form a blend of the carbon black and the resin which is then mixed with the rubber latex, aging the mixture until the rubber portion of the latex is reinforced with the carbon black.

3,298,985

RESINS FORMED FROM FORMALDEHYDE, RESORCINOL AND 4,4-BIS-(4-HYDROXYPHENYL)-PENTANOIC ACID OR AMIDE THEREOF

Charles Tyler Bills, Metuchen, and Peter A. Yurcick, South River, N.J., assignors to Catalin Corporation, a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,119
16 Claims. (Cl. 260—29.3)

1. An adhesive composition particularly adapted for bonding automative tire cords which comprises a rubber latex and in mixture therewith a reaction product of resorcinol, from about 0.01 to about 0.4 mol of 4,4-bis(4-hydroxyphenyl)-pentanoic acid or the amide thereof per mol of resorcinol and from about 0.05 to about 1.5 mols of formaldehyde per mol of resorcinol, the relative weight proportions of said rubber latex and said reaction product per 100 parts of the mixture thereof being from 5 to 95 parts of said rubber latex and from 95 to 5 parts of said reaction product.

3,298,986

PROCESS FOR PREPARING A POLYMER LATEX

Richard Louis Ray, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,613
8 Claims. (Cl. 260—29.6)

1. A process of producing an improved aqueous latex which comprises dissolving a rubbery polymer selected from the group consisting of a butyl rubber copolymer of an isoolefin with a multiolefin, polyisobutylene, natural rubber, a copolymer of isobutylene with styrene, a copolymer of butadiene with styrene, and a copolymer of butadiene with acrylonitrile in a C_5 to C_{12} aliphatic hydrocarbon solvent having a boiling point above 32° F.; emulsifying the resultant rubbery solution with an aqueous solution comprising between about 30 and about 200 parts of water per 100 parts of rubber and between about 1 and about 6 parts of an emulsifier per 100 parts of rubber at a temperature between about 260° F. and about 150° F. respectively, and correlating the amount of emulsifier with the temperature so that a temperature of 260° F. is maintained when 1 part of emulsifier is used and a temperature of 150° F. is maintained when 6 parts of emulsifier are used while maintaining a pressure on the admixture sufficient to maintain liquid phase emulsification and being between about 1 and about 10 atmospheres and stripping the aliphatic hydrocarbon from said dispersion to provide an improved aqueous latex therefrom.

3,298,987

COATED FIBROUS WEB AND COATING COMPOSITION THEREFOR

George P. Colgan, Whippany, N.J., and Joseph J. Latimer, Mountain Lake Park, Md., assignors, by mesne assignments, to Cumberland Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 31, 1963, Ser. No. 334,902
3 Claims. (Cl. 260—29.6)

1. An aqueous coating composition for application to a paper web comprising polyvinyl alcohol, a synthetic polymer latex, glyoxal and a mineral clay filler, the solids contents of said composition being 35 to 70% and, per 100 parts by weight of said mineral filler, the polyvinyl alcohol being present in the amount of 3.5 to 6, said synthetic polymer being present in the amount of 7 to 11 parts, and said glyoxal being present in the amount of 0.5 to 1.5 parts, said polyvinyl alcohol being present in an amount which is at least one-half the amount of said synthetic polymer, said synthetic polymer being selected from the group consisting of polymers of lower alkyl acrylic esters, polymers of vinyl acetate, and copolymers of butadiene-styrene containing at least 25% styrene.

3,298,988

PROCESS FOR PREPARING AQUEOUS POLYVINYL ALCOHOL SOLUTION CONTAINING PENTAVALENT VANADIUM COMPOUND

Harold King Sinclair, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 11, 1964, Ser. No. 374,243
3 Claims. (Cl. 260—29.6)

1. The process of preparing an aqueous polyvinyl alcohol solution which remains fluid for at least a few seconds after preparation and spontaneously gels thereafter, which process consists essentially of contacting a gelable fluid aqueous polyvinyl alcohol solution at a pH of not more than about 2 with a pentavalent vanadium compound dissoluble therein to provide at least about 1×10^{-4} gram atom of pentavalent vanadium per gram of polyvinyl alcohol.

3,298,989

POLYCHLOROPRENE ADHESIVE CONTAINING ZINC HALIDE

Clarence D. Moore, Manor Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,030
8 Claims. (Cl. 260—29.7)

1. A non-gelling polychloroprene adhesive composition comprising polychloroprene dissolved in a volatile solvent therefor, a zinc halide selected from the group consisting of zinc chloride and zinc bromide in an amount of 1–20 parts by weight per 100 parts by weight polychloroprene, and water in an amount of 5–20 parts by weight per 100 parts by weight polychloroprene.

3,298,990

DISPERSION OF A VINYL POLYMER IN AN ORGANIC LIQUID CONTAINING A REACTIVE PLASTICIZER

Richard Henry Cousens, Gerrards Cross, and Desmond Wilfrid John Osmond, Iver Heath, England, and David Henry Solomon, Glen Waverley, Australia, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 1, 1961, Ser. No. 127,760
Claims priority, application Great Britain, May 4, 1960, 15,829/60
14 Claims. (Cl. 260—30.4)

1. A dispersion of particles of a vinyl polymer dispersed in a volatile organic liquid in which the vinyl polymer is insoluble, a solvent-type plasticizer for the polymer dissolved in said volatile organic liquid, the polymer and plasticizer each containing a complementary group selected from the class consisting of hydroxyl, epoxy, N-methylol, carboxyl, carboxylic anhydride, amino, amido, isocyanato and N-(alkoxy methyl)amido, the complementary groups being capable, on heating, of undergoing a reaction which causes the plasticizer to be chemically bound to the polymer and consequently not removable by solvent extraction and volatilization.

3,298,991

PIGMENTATION OF POLYAMIDES WITH 2,9-DIMETHYL-QUINACRIDONE

Herman Gerson, New York, N.Y., and John F. Santimauro, Wyckoff, and Vincent C. Vesce, Saddle River, N.J., assignors to Allied Chemical Corporation, a corporation of New York

No Drawing. Filed Nov. 30, 1961, Ser. No. 156,146
8 Claims. (Cl. 260—37)

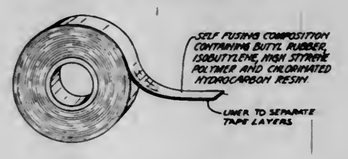
1. A synthetic linear polyamide pigmented with 2,9-dimethyl-quinacridone, said polyamide being colored pink to deep bluish red and having been heated at a temperature within the range of from 350° to 700° F. while so pigmented.

3,298,992

HIGH DIELECTRIC STRENGTH INSULATING COMPOSITION

Herbert M. Bond, Stillwater, Wash., and Robert B. Snell, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 2, 1962, Ser. No. 228,784
4 Claims. (Cl. 260—41.5)



1. A high dielectric strength insulating composition possessing improved high voltage endurance, ozone resistance and handleability over a wide temperature range, said composition comprising in a parts by weight relative to one another, (1) about 30–50 parts of a butyl rubber copolymer of isobutylene and a diolefin containing no more than about 1.5 weight percent diolefin, (2) about 15–35 parts of a high molecular weight polyisobutylene of at least about 60,000, (3) about 12–24 parts of a chlorinated hydrocarbon resin containing from 20 to 70% chlorine and, (4) about 12–24 parts of a copolymer of about 80–90% styrene and 10–20% butadiene.

3,298,993

POLYOXYMETHYLENE COMPOSITIONS STABILIZED WITH BIURETS AND PHENOLS OR AMINES

Ibrahim Dakli and Dario Grazioli, Busto Arsizio, Varese, and Nino Oddo, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,587
Claims priority, application Italy, Dec. 14, 1961, 22,359/61
3 Claims. (Cl. 260—45.9)

1. A thermally stable composition comprising (1) a high molecular weight polyoxymethylene homopolymer having an inherent viscosity, as determined in dimethylformamide at 150° C. at a concentration of 0.5% by weight, of at least 0.3, (2) from about 0.01 to 10% by weight, based on the weight of said homopolymer, of a compound selected from the group consisting of biuret, tetrauret, thiobiuret and phenylmonothiobiuret,

C_6H_5—NH—CO—NH—CS—NH_2, and (3) from about 0.01 to 5% by weight, based on the weight of said homopolymer of a compound selected from the group consisting of alpha-naphthylamine, beta-naphthylamine, N,N'-diphenyl-p-phenylenediamine, diphenylamine, 4,4' butylidene-bis (6 tert.butyl-3-methyl phenol), and 2,2'-methylene-bis (4 methyl-6 tert.butyl phenol).

3,298,994

STABILIZED POLY(OMEGA-AMINO CARBOXYLIC ACID) COMPOSITIONS CONTAINING COPPER AND A DICARBOXYLIC ACID DIAMIDE

Alex Krieger, Emmenbrucke, Lucerne, Switzerland, assignor to Societe de la Viscose Suisse, Emmenbrucke, near Lucerne, Switzerland, a Swiss body corporate

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,589
Claims priority, application Great Britain, Jan. 24, 1963, 3,060/63
3 Claims. (Cl. 260—45.75)

1. A poly(omega-amino carboxylic acid) composition stabilized against degradation by heat by having incorporated therein copper acetate in an amount between about 15 to 60 parts by weight per million parts by weight of poly(omega-amino carboxylic acid) and a heat-stable diamide of a dicarboxylic acid selected from the group consisting of oxamide, adipamide and terephthalamide, said diamide being present in an amount such that the amount by weight of the acid amide radical (—$CONH_2$) is between about 500 to 2500 parts per million parts of poly (omega-amino carboxylic acid).

3,298,995

POLYESTERURETHANE ELASTOMERS HAVING IMPROVED COLOR CHARACTERISTICS

Robert R. Bloor and Edmond G. Kolycheck, Lorain, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 21, 1964, Ser. No. 339,080
7 Claims. (Cl. 260—45.85)

1. A polyesterurethane elastomer having improved color comprising the reaction product of a mixture of (A) a hydroxyl terminated polyester of a saturated aliphatic glycol containing from 2 to 10 carbon atoms and an aliphatic dicarboxylic acid containing from 2 to 10 carbon atoms, said polyester having an average molecular weight between about 400 and 5000 and (B) from 0.03 to 0.4% based on the weight of the total of (A) and (C) of an acetic acid substituted aliphatic alkylene amine having from 1 to 5 acetic acid constituents, from 0 to 3 hydroxyl groups attached to terminal carbon groups of an alkylene group, active hydrogen atoms only in said acetic acid groups and hydroxyl groups and 1 to 3 amine nitrogen atom valences are connected only to carbon atoms, with (C) at least 0.7 mol equivalent per mol of polyester of an aromatic diisocyanate.

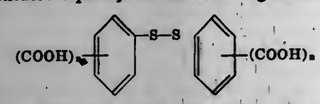
3,298,996

STABILIZED POLYOLEFINS CONTAINING CARBOXY-SUBSTITUTED DIPHENYL DISULFIDES

William M. Nelson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 22, 1964, Ser. No. 377,086
8 Claims. (Cl. 260—45.85)

1. A solid polymer of a 2 to 8 carbon atoms per molecule monoolefin and 0.01 to 5.0 weight percent of a carboxy-substituted diphenyl disulfide having the formula:



wherein the carboxy groups are attached at any of the available five positions and *n* is an integer selected from the group consisting of 1 and 2.

3,298,997

PROCESS FOR MAKING OIL AND SOLVENT RESISTANT FLUOROSILICON RESINS

George W. Holbrook, Midland, Mich., assignor to Dow Corning Company, Midland, Mich., a corporation of Michigan

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,314
12 Claims. (Cl. 260—46.5)

1. A process for making silicone resins which process comprises,

(1) admixing partial hydrolyzates with no more than 80 percent water necessary for complete hydrolysis, said partial hydrolyzates being prepared of

(a) from 0 to 60 mole percent of silanes of the general formula $RSiX_3$, wherein R is a perfluoroalkylethyl radical and X is an alkoxy radical of less than 7 carbon atoms,

(b) from 40 to 60 mole percent of silanes of the general formula $RR'SiX_2$, wherein R and X are as defined above and R' is a monovalent hydrocarbon radical free of aliphatic unsaturation,

(c) from 0 to 60 mole percent of organosilanes of the general formula $YSi(X)_3$, wherein X is as defined above and Y is a member selected from the group consisting of aryl, alkaryl, and aralkyl radical, at least 25% of the total silicon atoms present in the mixture having aryl, alkaryl, or aralkyl substituents bonded thereto, there being a total of 100 mol percent of (a), (b), and (c), and

(2) further condensing in a temperature range of from 60° to 200° C. said partial hydrolyzates in the presence of a fluoroalkane sulphonic acid.

7. A siloxane copolymer consisting essentially of

(a) from 0 to 60 mole percent of units of the formula $RSiO_{3/2}$, wherein R is a perfluoroalkylethyl radical,

(b) from 40 to 60 mole percent of units of the formula RR'SiO, wherein R is as defined above and R' is a monovalent hydrocarbon free of aliphatic unsaturation,

(c) from 0 to 60 mole percent of units of the formula $YSiO_{3/2}$, wherein Y is a member selected from the group consisting of aryl, alkaryl, and aralkyl radical, at least 25% of the total silicon atoms present in the mixture having aryl, alkaryl, or aralkyl substituents bonded thereto, there being a total of 100 mol percent of (a), (b), and (c).

3,298,998

BISGLYCIDYL ETHERS OF BISPHENOLS

Richard L. McConnell and Harry W. Coover, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 7, 1961, Ser. No. 93,866
5 Claims. (Cl. 260—47)

1. 2,2-bis[p-(2,3-epoxypropoxy)phenyl]norcamphane.

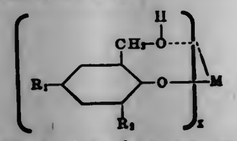
3,298,999

CURING EPOXY RESINS WITH CHELATED O-METHYLOL PHENOLIC COMPOUNDS OR RESINS

Shigeru Kiriyama, 123–1 Tsushimae, Neyagawa-shi, Osaka-fu, Japan; Nobuyoshi Mabuchi, 15 Kyuoobayonban, Ooaza-Dainichi, Moriguchi-shi, Osaka-fu, Japan; and Masahiro Sakai, Motofumi Yoshida, Susumu Okamoto, and Harumitsu Ikeda, 434 Niwaji, Neyagawa-shi, Osaka-fu, Japan

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,407
Claims priority, application Japan, Dec. 21, 1961, 36/46,222, 36/46,223, 36/46,224, 36/46,225
18 Claims. (Cl. 260—47)

1. A method for preparing heat resistive epoxy resin comprising hardening epoxy resin derived from a polyhydric phenol and a compound selected from the group consisting of epihalohydrin and dihalohydrin, by admixing therewith a chelated phenolic compound as a hardening agent for the epoxy resin said chelated phenolic resin having the structural formula



wherein R_1 is selected from the group consisting of nitro, sulpho, amino, halogen, allyl, alkyl and aryl and R_2 is selected from the same group plus methylol and X is an integer from 1 to 3 and M represents a polyvalent metal; said compound having been prepared by reacting an orthometholphenol with a salt of a polyvalent metal in the presence of an alkali and in aqueous solution.

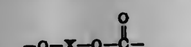
3,299,000

POLYCARBONATES FROM SUBSTITUTED 4,4'-(CYCLOHEXYLMETHYLENE)BIS(2,6-DICHLOROPHENOLS)

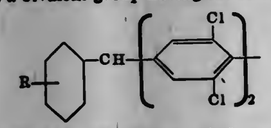
Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 7, 1964, Ser. No. 336,133
7 Claims. (Cl. 260—47)

1. The polymer consisting essentially of the recurring structural unit



wherein X is a bivalent group having the formula



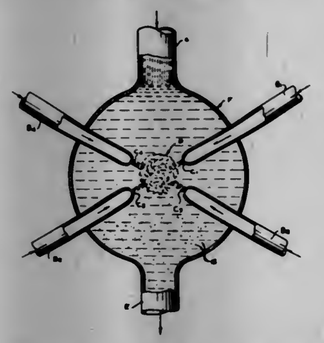
wherein R is at least one methyl, ethyl, propyl, butyl or phenyl group.

3,299,001

ISOLATION AND PURIFICATION OF PHOSPHONITRILIC CHLORIDE ADDUCTS

Lloyd A. Kaplan, Silver Spring, Md., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

Continuation of application Ser. No. 37,466, June 20, 1960. This application July 27, 1964, Ser. No. 385,517
12 Claims. (Cl. 260—47)



1. The process for the isolation and purification of the adduct of cyclic phosphonitrilic chloride and a polyhydroxy aromatic compound, formed in the presence of a tertiary amine, the PN rings of said phosphonitrilic chloride being present in said adduct, which comprises introducing a water soluble solvent solution of the crude oil containing said adduct and impurities of the condensation reaction for producing said adduct, including tertiary amine hydrochloride, in the form of a stream into a body of flowing water, said adduct being insoluble in water and said impurities being soluble in said body of water, precipitating said adduct in said water and dissolving therein said impurities and solvent, the rate of introduction of said solution into said water being controlled to produce a light flocculent solid precipitate removing a mixture containing said water, solvent and precipitate, and recovering said solid from the resulting mixture.

3,299,002

PESTICIDALLY ACTIVE PHENOL-FORMALDEHYDE-TRIALKYLTIN-OXIDE RESINS

Walter A. Stamm, Dobbs Ferry, and Warren B. Stanton, New York, N.Y., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 20, 1963, Ser. No. 260,032
4 Claims. (Cl. 260—59)

1. A pesticidally active phenol-formaldehyde resin characterized in that at least part of the phenolic hydroxyl groups have been reacted with a trialkyltin oxide each alkyl radical of which contains from 1 to 8 carbon atoms whereby at least every tenth phenolic hydroxyl group of said resin has its hydrogen atom replaced with a trialkyltin residue having the same number of carbon atoms per alkyl radical as above recited.

3,299,003

PROCESS FOR THE CONTINUOUS POLYMERIZATION OF LOWER CYCLIC FORMALDEHYDE POLYMERS

Erich Böder, Hanau am Main, and Wolfgang Sibenhorn, Steinheim am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Oct. 14, 1964, Ser. No. 403,917
Claims priority, application Germany, Oct. 18, 1963, D 42,748
6 Claims. (Cl. 260—67)

1. In a method for the continuous bulk polymerization of a polymerizable mass comprising a lower cyclic formaldehyde in contact with an effective amount of a polymerization catalyst while excluding atmospheric oxygen and moisture, the steps of continuously introducing the polymerizable mass into a moving tube shaped synthetic resin structure while at least practically completely displacing all air in such tube thereby encasing the polymerizable mass in said moving tube shaped structure continuously passing the thus encased polymerizable mass along with the encasing tube shaped structure through a polymerization zone maintained at a temperature required for polymerization of the polymerizable mass until the polymerization has been effected and subsequently removing the encasing tube shaped structure from the polymer produced.

3,299,004

PROCESS FOR THE MANUFACTURE OF LINEAR POLYESTERS WITH METAL IMIDE SALT CATALYSTS

Adolf Hartmann, Gessertshausen, near Augsburg, and Peter Kresse, Bobingen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main Hochst, Germany, a company of Germany

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,834
Claims priority, application Germany, Apr. 25, 1962, F 36,636
6 Claims. (Cl. 260—75)

1. A process for the manufacture of linear, fiber-forming polyesters by reesterification of an ester of a dicarboxylic acid selected from the group consisting of

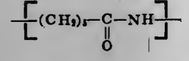
adipic acid, sebacic acid, trans-1,2-cyclobutane dicarboxylic acid, terephthalic acid, 1,4-naphthalene dicarboxylic acid, 4,4'-diphenyldicarboxylic acid, 4,4'-sulfonyl dibenzoic acid, and 2,5-thiophene dicarboxylic acid and methanol with a bi-functional organic hydroxy compound having 2 to 8 carbon atoms at a temperature within the range of from 180° to 200° C. and subsequent polycondensation of the dihydroxy ester obtained under reduced pressure at a temperature within the range of from 200° to 300° C., which comprises catalying the reesterification and the polycondensation by adding 0.01 to 0.2 percent by weight, calculated on the dicarboxylic acid ester, of an acid imide selected from the group consisting of phthalimide, 1,8-naphthalene dicarboxylic acid imide, pyromellitic acid diimide, succinimide, imidazole, benzimidazole, triazole, and tetrazole of a metal selected from the group consisting of calcium, magnesium, zinc, cadmium, lanthanum, germanium, tin, lead, titanium, antimony, bismuth, manganese and cobalt.

3,299,005
OXYMETHYLENE-EPSILON CAPROLACTAM COPOLYMERS AND METHOD OF PREPARATION

Kornel D. Kiss, University Heights, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed June 3, 1963, Ser. No. 284,823
11 Claims. (Cl. 260—67.5)

1. A linear, thermoplastic copolymer composition having a high degree of thermal stability consisting essentially of recurring oxymethylene groups and recurring groups derived from ε-caprolactam which have the structure



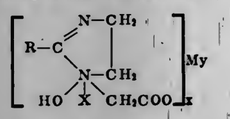
said copolymer composition containing from about 79 to 99.97 percent of recurring oxymethylene units and from about 0.03 up to about 21 percent of recurring ε-caprolactam units, the said ε-caprolactam units being incorporated in the copolymer during the preparation thereof by the opening of the ε-caprolactam ring.

3,299,006
ANTISTATIC SYNTHETIC RESINS AND FIBERS

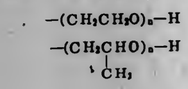
Shinichi Tomiyama, Ichikawa-shi, Hideo Marumo, Musashino-shi, and Makoto Takai, Chiba-shi, Japan, assignors to Lion Yushi Kabushiki Kaisha, Edogawa-ku, Tokyo-to, Japan, a joint-stock company of Japan

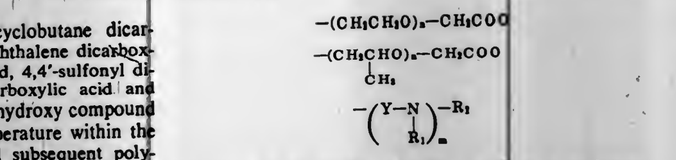
No Drawing. Filed Nov. 30, 1964, Ser. No. 414,831
14 Claims. (Cl. 260—75)

1. A method of suppressing electrostatic charges in synthetic polymers, copolymers and polycondensates and/or fibers susceptible to accumulating static charges and selected from the group consisting of polyethylenes, polyvinylchloride, polymethacrylates, polyamides, polyethyleneglycol terephthalates, polypropylene, polystyrene and copolymers of vinyl chloride and vinyl acetate by incorporating therein 0.05 to 5.0% by weight of a substance having the following structural formula:

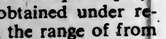


wherein R is a radical selected from the group consisting of alkyl radicals containing 7 to 21 carbon atoms; X is a substance selected from a group consisting of





wherein *n* is an integer of from 1 to 6, *m* is an integer of from 1 to 7, Y is an alkylene radical containing 2 to 6 carbon atoms, and R_1, and R_2 are selected from a group consisting of H, alkyl radicals containing 1 to 5 carbon atoms, hydroxyalkyl radicals, alkylaryl radicals,



M is selected from a group consisting of H, Mg, Ca, Cd, Sn, Ba, Pb, Al, Fe, Co, Ni, Cu, Zn and Mn, said H not being used in the state of H alone; and x and v are numbers which are determined by valency of said M and number of anions in [ ] of the formula respectively.

3,299,007
INTERPOLYMER OF ACRYLONITRILE, A MASKED ISOCYANATE AND A HYDROXYL SUBSTITUTED MONOMER AND A PROCESS FOR MAKING SAME

Carlhans Süling and Egon Kuntz, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 6, 1964, Ser. No. 387,997
Claims priority, application Germany, Aug. 31, 1963, F 40,649
12 Claims. (Cl. 260—77.5)

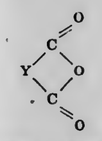
1. A fiber-forming cross-linkable acrylonitrile copolymer comprising at least 80% of acrylonitrile, a masked isocyanate and an ethylenically unsaturated monomer containing at least one hydroxyl group selected from the group consisting of primary and secondary hydroxyl groups, said hydroxyl group containing monomer being present in said copolymer in an amount of from 0.1% to about 15%.

3,299,008
PROCESS FOR PREPARING FLEXIBLE RESINIFIED PRODUCTS FROM POLYEPOXIDES AND RESULTING PRODUCTS

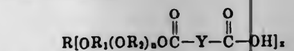
Albert C. Mueller, Berkeley, Calif., assignor to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Dec. 23, 1958, Ser. No. 784,837
13 Claims. (Cl. 260—78.5)

1. A process for preparing flexible insoluble infusible products from polyepoxides which consists of heating and reacting (1) a polyepoxide having more than one vic-epoxy group with (2) from .9 to 1.1 chemical equivalent amounts of a partial ester of an acid anhydride of the formula



and a long chain polyhydric alcohol having a molecular weight between 600 and 10,000, said partial ester having the structural formula



wherein R is a polyvalent saturated aliphatic hydrocarbon radical, R_1 and R_2 are radicals derived from an alkylene oxide by removing the epoxy oxygen atom, *x* is 2 to 4, *n* is an integer such that the molecular weight of the alcohol portion of the partial ester molecule does not exceed 10,000, and Y in the above formulae is the residue of a dicarboxylic acid hydride by removing the anhydride group, in the presence of (3) a catalyst of the group consisting of tertiary amines, quaternary ammonium salts and organo-substituted phosphines.

3,299,009
CHEMICALLY CRIMPED NYLON FIBERS

Stephen D. Bruck, Bethesda, Md., assignor to the United States of America as represented by the Secretary of Commerce

No Drawing. Original application Nov. 22, 1961, Ser. No. 154,371. Divided and this application Apr. 18, 1963, Ser. No. 274,063
2 Claims. (Cl. 260—78)

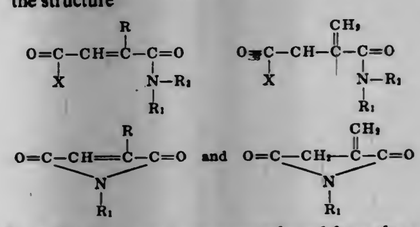
1. A crimped polycarbonamide fiber made by:
(a) reacting an oriented polycarbonamide fiber having at least 20% by volume crystallites therein with the hemiacetal of formaldehyde and methanol,
(b) thereafter reacting said fiber with a member of the group consisting of thiourea and thioacetamide in the presence of methanol and a mineral acid,
(c) thereafter reacting said fiber with a solution of an alkali metal hydroxide and methanol, and simultaneously bubbling air through said solution, and
(d) washing and drying said fiber.

3,299,010
PRESSURE SENSITIVE ADHESIVE POLYMERS AND TAPES THEREFROM

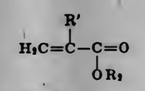
Carlos M. Samour, Wellesley Hills, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

No Drawing. Filed July 21, 1964, Ser. No. 386,476
45 Claims. (Cl. 260—78)

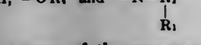
15. A pressure-sensitive adhesive polymer of monomers consisting essentially of:
(A) at least one monomer selected from the group consisting of monomers the molecules of which have the structure



(B) at least one ester monomer selected from the group consisting of monomers the molecules of which have the structure



in which monomer molecules:
(1) R and R' are selected from the class consisting of hydrogen and methyl groups;
(2) the X groups are at least one member selected from the group consisting of



(3) The R_1 groups of the monomer (A) molecules are selected from alkyl groups containing up to and including about 28 carbon atoms, said monomer (A) molecules consisting of mixture of molecules containing different alkyl groups in which the average number of carbon atoms of the selected alkyl groups is from about 8 to about 24, the alkyl groups selected which contain more than about 6 carbon atoms consisting essentially of branched alkyl groups in which the extent of branching increases as the size of said alkyl groups selected increases, the number of molecules containing different alkyl groups increasing in said mixtures as the size of the alkyl groups increases;
(4) the R_2 groups of the ester monomer (B) molecules are selected from alkyl groups containing up to and including about 14 carbon atoms, the average number of carbon atoms of the selected alkyl groups being no greater than about 13, at least about 50% of the ester monomer molecules having the R_2 groups attached at non-tertiary carbon atoms to the oxygen atom;
(5) the R_3 groups of the monomer (A) molecules are selected from the class consisting of hydrogen and alkyl groups containing up to and including about 10 carbon atoms, the alkyl groups selected which contain more than about 6 carbon atoms consisting essentially of branched alkyl groups; and
(6) the R_4 groups of the monomer (A) molecules are selected from alkyl groups containing up to and including 18 carbon atoms, the alkyl groups selected which contain more than about 8 carbon atoms consisting essentially of branched alkyl groups;
the proportion, by weight, of monomer (A) to ester monomer (B) which is combined in said polymer being within the range of 1:19 to 7:3, but not exceeding the mol ratio of 1:1;
the proportion, the size and extent of branching of said R_1, R_2, R_3 and R_4 groups and the extent to which each of said monomers consists of mixtures of different molecules being interdependent.

3,299,011
METHOD OF FORMING FINELY-DIVIDED MATERIAL FROM FILAMENT-FORMING SYNTHETIC LINEAR POLYAMIDE

Orlando A. Battista, Yardley, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,124
5 Claims. (Cl. 260—78)

1. A process for preparing finely-divided material from filament-forming synthetic linear polyamide which comprises first treating said polyamide with a dilute aqueous solution of a mineral acid selected from the group including hydrochloric, sulfuric, and nitric acids at a temperature of at least 50° C. without substantial dissolution thereof whereby a polyamide material is obtained having a proportionately higher crystalline content than that material prior to the acid treatment, thereafter treating the crystalline polyamide with a liquid swelling agent therefore, and then mechanically attriting said polyamide.

ERRATUM

For Class 260—78.5 see:
Patent No. 3,298,916

3,299,012
PROCESS FOR THE PREPARATION OF POLYLACTONES

Roland J. Kern, Bridgeton, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,096
12 Claims. (Cl. 260—78.5)

1. A process for rearranging interpolymers of olefinically unsaturated carboxylic anhydrides and vinyl ethers of the formula R—O—CH=CH_2, wherein R represents

a radical capable of forming a stable carbonium ion, which comprises contacting said interpolymers with a catalytic quantity of a Lewis acid and obtaining polymers characterized by lactone groups along the polymer chains.

12. A process for the preparation of ester lactones of polymers which comprises heating to reaction temperature an alternating copolymer of a tert-alkyl vinyl ether and an anhydride selected from the group consisting of maleic anhydride, citraconic anhydride and itaconic anhydride with a catalytic quantity of a Lewis acid and an alcohol.

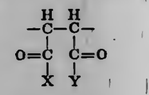
3,299,013

DYE INTERMEDIATES

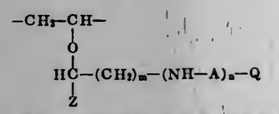
Jacob Q. Umberger, Holmdel, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 113,101, May 29, 1961. This application Dec. 17, 1964, Ser. No. 419,227
7 Claims. (Cl. 260—78.5)

1. An addition copolymer consisting of alternating units of the formula



and

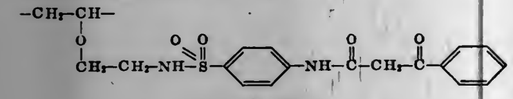


wherein the free bonds are linked together in about a 1:1 ratio and wherein X is a member selected from the group consisting of —OR, —NH_2, —NHR, —NR_2 and —NRR' where R is alkyl of 1 to 8 carbon atoms and R' is selected from the group consisting of hydrogen and alkyl of 1 to 8 carbon atoms; Y represents the radical —OM where M is selected from the group consisting of alkali metals, ammonium, and substituted ammonium, and X and Y when taken together form a linkage selected from the group consisting of a single divalent oxygen atom link and an imide group link; Z is a member selected from the group consisting of hydrogen and methyl; A is a member selected from the group consisting of



and —SO_2—; Q is a color-forming nucleus having as the active color-former a member selected from the group consisting of indazolones, naphthols and active methylene containing compounds and *m* and *n* are selected from the group consisting of 0 to 1 with the proviso that *m* is 1 when *n* is 1.

6. An addition copolymer as defined in claim 1 where said recurring vinyl ether unit is



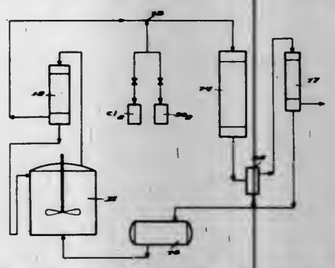
3,299,014

PROCESS FOR CHLOROSULFONATING OLEFINIC HYDROCARBON POLYMERS USING SULFURYL CHLORIDE

James Kalil, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 19, 1964, Ser. No. 391,364
7 Claims. (Cl. 260—79.3)

1. In a process for treating a polymer of a monoolefinic hydrocarbon with sulfuryl chloride which comprises: (1) reacting an organic solvent solution of said polymer with sulfuryl chloride, thereby forming an off-gas from the reaction containing sulfur dioxide and hydrogen chloride, the improvement which consists in (2) mixing said off-gas with chlorine and exothermically reacting the off-gas with the chlorine to form sulfuryl chloride, and (3) introducing the sulfuryl chloride formed in step (2) to the reaction of step (1).



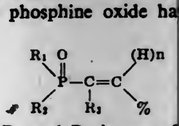
3,299,015

METHOD FOR PREPARING α,β-UNSATURATED TERTIARY PHOSPHINE OXIDES AND POLYMERS THEREOF

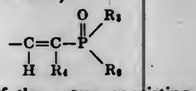
Robert C. Miller, Chicago, Ill., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 15, 1960, Ser. No. 36,127
24 Claims. (Cl. 260—80)

1. The composition of matter comprising an α,β-unsaturated tertiary phosphine oxide having the structural formula:



wherein each of R_1 and R_2 is one of the group consisting of aryl, alkyl, aralkyl and alkaryl; R_3 is one of the group consisting of hydrogen and lower alkyl; *n* is an integer less than two; and Z is one of the group consisting of (1) when *n* is 1,



wherein R_4 is one of the group consisting of hydrogen and lower alkyl, and each of R_5 and R_6 is one of the group of radicals consisting of aryl, alkyl, aralkyl and alkaryl; and (2) $=CH_2$ when *n* is 0.

3,299,016

POLYMERS OF 1-MONOOLEFINS AND AN ALKENYL ACETYLENE AND PROCESS FOR PREPARING SAME

Richard J. Sonnenfeld, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,341
6 Claims. (Cl. 260—80.5)

1. An unsaturated rubbery terpolymer consisting essentially of ethylene, at least one other 1-monoolefin, and an ethynyl ethylene.

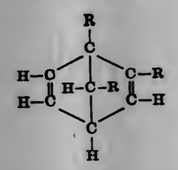
3,299,017

COPOLYMERS OF 1,3-BUTADIENE AND A NORBORNADIENE

Robert P. Zelinski and Floyd E. Naylor, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,166
12 Claims. (Cl. 260—82.1)

1. In a process for polymerizing 1,3-butadiene with an iodine containing catalyst which forms on mixing components comprising an organometal component and a titanium halide component, the improvement which comprises polymerizing said 1,3-butadiene with a minor amount of a norbornadiene having the following formula



wherein R is selected from the group consisting of hydrogen and an alkyl group containing from 1 to 4, inclusive, carbon atoms and wherein at least two of said R groups are hydrogen, to produce a polymer wherein at least 85 percent of the butadiene units have a cis 1,4-configuration.

3,299,018

METHOD FOR THE PREPARATION OF CONTROLLED MOLECULAR WEIGHT ACRYLONITRILE COPOLYMERS USING TETRAHYDRONAPHTHALENE AS REGULATOR

Allan R. Freedman, Springfield, and John T. Massengale, West Chester, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,376
4 Claims. (Cl. 260—85.5)

1. In a method for the polymerization reaction of from about 50 up to about 85% by weight of acrylonitrile and at least one other ethylenically unsaturated copolymerizable monomer in the presence of a redox catalyst system, the improvement which comprises carrying out the reaction in the presence of from about 0.05 to about 1.0% by weight of tetrahydronaphthalene based on the weight of the reactive monomers.

3,299,019

DEHYDROFLUORINATION OF A COPOLYMER OF TRIFLUOROMETHYL VINYL ETHER AND TETRAFLUOROETHYLENE

Thomas Joseph Kealy, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 26, 1963, Ser. No. 267,959
6 Claims. (Cl. 260—87.5)

1. A process which comprises dehydrofluorinating a copolymer which consists essentially of about 50 to 75 mole percent of trifluoromethyl vinyl ether units and about 25 to 50 mole percent of tetrafluoroethylene units by reaction with from 20 to 120 parts per 100 parts of copolymer of a nitrogen base having a K_b of at least 1×10^{-5} at a temperature of from 50 to 100° C. for a period of from 1 to 12 hours, until said copolymer exhibits an infrared absorption band at 3.25 microns which has about 10–40% of the intensity of the band at 3.4 microns.

3,299,020

OLEFIN-ALLYL HALIDE COPOLYMER

Edward Allen Hunter, Baton Rouge, and Clyde Lee Aldridge, Baker, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 24, 1963, Ser. No. 333,208
9 Claims. (Cl. 260—87.5)

1. A process which comprises forming a first solution comprising 5 to 25 parts by weight of an allyl halide, 75 to 95 parts by weight of an alkyl halide and adding thereto a Friedel-Crafts catalyst chosen from the group consisting of boron fluoride, aluminum chloride, aluminum bromide and stannic chloride, until a strong color develops; forming a second solution comprising 10 to 35 parts by weight of an olefin and 65 to 90 parts by weight of an alkyl halide; and reacting said second solution with said first solution at a temperature between —40 and —100° F. to provide a copolymer therefrom of high molecular weight and a high intrinsic viscosity.

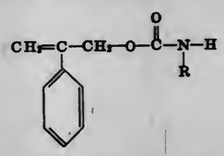
3,299,021

ADDITION COPOLYMERS OF N-SUBSTITUTED 2-PHENYL-ALLYL CARBAMATE AND ETHYLENICALLY UNSATURATED HYDROCARBONS

Jerrold R. Denchfield, Chicago Heights, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,625
The portion of the term of the patent subsequent to May 19, 1981, has been disclaimed
4 Claims. (Cl. 260—88.1)

1. A composition comprising a solid copolymer of



wherein R is a hydrocarbon radical of about 1 to 12 carbon atoms with a copolymerizable ethylenically unsaturated hydrocarbon which contains a >C=C< grouping.

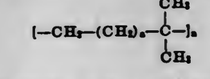
3,299,022

POLYMER

William R. Edwards, Baytown, Tex., assignor to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

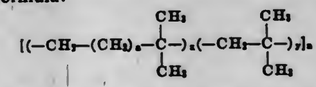
No Drawing. Filed Apr. 4, 1962, Ser. No. 184,920
26 Claims. (Cl. 260—88.2)

1. An amorphous, hydrocarbon-soluble, elastomeric polymer of the formula:



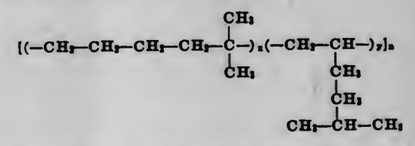
wherein *a* is an integer from 1 to 3 and *n* is sufficiently great to provide said polymer with its amorphous and elastomeric properties.

5. An amorphous, elastomeric random copolymer having the formula:



wherein *a* is an integer from 1 to 3, *x* is from 5% to 95% of the total repeating groups in the polymer, *y* is from 95% to 5% of the total repeating groups in the polymer, and *n* is sufficiently great to provide said polymer with its amorphous and elastomeric properties.

9. An amorphous, elastomeric randomly distributed polymer of 5-methylhexene-1 having the formula:



wherein *x* represents from 10% to 90% of the total repeating groups in the polymer, *y* represents from 90% to 10% of the total repeating groups in the polymer, and *n* is sufficiently great to provide said polymer with its amorphous and elastomeric properties.

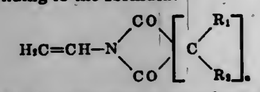
3,299,023

METHODS OF POLYMERIZING N-VINYL IMIDES

Frederick Grosser, Midland Park, and Marvin R. Leibowitz, Edison, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 26, 1963, Ser. No. 290,651
11 Claims. (Cl. 260—88.3)

1. The method of producing an insoluble polymer of an N-vinyl imide which comprises heating an N-vinyl imide corresponding to the formula:



wherein R_1 and R_2 represent a member of the group consisting of hydrogen and alkyl groups and *n* represents a whole positive integer of 1 through 4, and wherein all carbon valences are tetravalent at an elevated temperature in the presence of a catalytic amount of a catalyst selected from the group consisting of hydrides and borohydrides of alkali metals.

3,299,024

OLEFIN POLYMERIZATION PROCESS AND THREE COMPONENT CATALYSTS THEREFOR

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

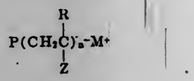
No Drawing. Filed Mar. 19, 1963, Ser. No. 266,209
24 Claims. (Cl. 260—93.1)

1. The improved process of polymerizing an α-olefin hydrocarbon of the formula $CH_2=CHR$ wherein R is a hydrocarbon radical of no more than 12 carbons atoms in the presence of a catalytic mixture consisting essentially of

(a) a compound selected from the group consisting of halides and lower alkoxides of a metal selected from the class consisting of titanium, zirconium, vanadium, chromium and molybdenum,

(b) organo-aluminum halides having the formula R''''_mAlX_n and $R''''_3Al_2X_3$ wherein R'''' is a hydrocarbon radical selected from the group consisting of alkyl, aryl, cycloalkyl, and cycloalkene radicals and combinations thereof, containing one to twelve carbon atoms, X represents a halogen selected from the class of Cl, Br and I, and *m* and *n* are integers whose sum is equivalent to the valency of Al,

(c) a preformed polymeric anion having the general formula



wherein

P is selected from the class consisting of H, R'' and M+,

M represents a member selected from the group consisting of alkali, alkaline earth metals, —MgX and $MAlR'''_3$ wherein R''' represents H and R'',

R' is a member selected from the group consisting of H and CH_3,

Z represents a member selected from the class of —CN, an aryl radical containing 6 to 12 carbon atoms, $-CON(R'')_2$ and —COOR'' wherein R'' represents a member selected from the class of aliphatic, cycloaliphatic, and aromatic hydrocarbon radicals containing one to twenty carbon atoms,

n represents a numerical value of at least 4, the molar ratio of catalyst components a:b being within the range of 1:0.25 to 1:5, and the ratio of components c:b being within the range 10:1 to 1:5.

3,299,025

PROCESS FOR ACYLATION OF ALKENYL AROMATIC POLYMERS

Frederick C. Leavitt, Midland, Mich., and Priscilla A. Carney, Madison, Wis., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 24, 1964, Ser. No. 346,998
13 Claims. (Cl. 260—93.5)

1. The process for solvent-free acylation of an aromatic polymer comprising the steps of passing simultaneously through a mass of solid, powdered aromatic polymer:

(a) an acylating agent in vapor form, having a formula selected from the class consisting of

$CH_2=CHCOX$, $X—CH_2CH_2COX$, and CH_3CHCOX (X)

wherein X represents a halogen atom; and

(b) an acylation catalyst in vapor form selected from the class consisting of hydrogen fluoride, boron chloride and boron fluoride;

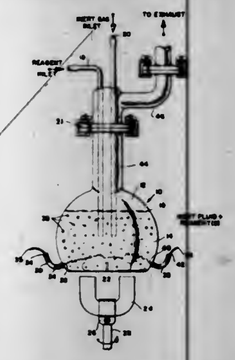
said vapors being allowed to come into intimate contact with each other and with said polymer powder at temperatures ranging from 0–100° C. for a period sufficient to effect acylation of said aromatic polymer, said aromatic polymer being selected from the class consisting of polymers of an alkenyl aromatic compound having at least four aromatic nuclear positions unsubstituted.

3,299,026

PROCESS FOR PRODUCING AND USING A METALLOID MATERIAL AS A POLYMERIZATION CATALYST

John L. Lang, 42 Windgate Drive, Box 820–III, Murrysville, Pa. 16880

Filed Aug. 28, 1961, Ser. No. 134,256
12 Claims. (Cl. 260—93.7)



3. The process for polymerization, comprising the steps of disposing a metalloid material within an inert fluid dispersing phase which will not react with the metalloid material, the metalloid material as disposed in the dispersing phase being in unreacted form and including an element selected from the group consisting of lithium, rubidium, potassium, barium, strontium, calcium, sodium, magnesium, zinc, manganese, beryllium, mercury, aluminum, tin, cadmium, titanium, gallium, arsenic, bismuth, chromium, cobalt, vanadium, nickel, iron, lead, silver, carbon, silicon, sulfur and phosphorus, arcing a quantity of electrical energy through the metalloid material within the inert dispersing phase, the magnitude of the electrical energy being sufficient to disintegrate the metalloid material into finely divided form, reacting said finely divided metalloid material with a co-reagent comprising a compound of a heavy metal selected from Groups IV*a* through VIII*a* of the Periodic Table, and bringing said finely divided metalloid material and said co-reagent into

contact with a polymerizable hydrocarbon with an olefinic linkage to effect polymerization thereof.

3,299,027

PURIFICATION OF POLYOLEFINS

Luciano Luciani and Piero Manaresi, Ferrara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed June 24, 1963, Ser. No. 290,178
Claims priority, application Italy, June 27, 1962, 12,875/62
11 Claims. (Cl. 260—93.7)

1. In a method of purifying a polyolefin obtained with the aid of stereospecific catalysts made from a transition metal halide and an organometallic compound, said method comprising treating said polyolefin with an alkaline alcoholic solution, the improvement comprising incorporating in said solution an organic compound selected from the group consisting of aromatic nitro compounds and quinones.

6. The method of claim 1 wherein said organic compound is 2,4-dinitrophenylhydrazine.

7. The method of claim 1 wherein said organic compound is anthraquinone.

3,299,028

SOLID OLEFINIC POLYMERS CONTAINING CRYSTALLINE COMPONENTS AND PROCESS OF PRODUCING SAME

Joseph P. Kennedy, Clark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 24, 1963, Ser. No. 282,884
4 Claims. (Cl. 260—93.7)

1. A process which comprises polymerizing 3-methyl-1-butene at a temperature between about —120° C. and about —150° C. in an inert, precooled, organic solvent with a Friedel-Crafts type catalyst selected from the group consisting of aluminum chloride, aluminum bromide, boron trifluoride, and titanium tetrachloride and recovering from the reacted mixture a solid polymer having crystalline components therein.

3,299,029

POLYMER COMPOSITION AND PREPARATION

Frederik L. Binsbergen and Pieter W. O. Wijga, both of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 14, 1963, Ser. No. 287,758
Claims priority, application Netherlands, June 18, 1962, 279,855
20 Claims. (Cl. 260—93.7)

1. The method of crystallizing a crystallizable polyolefin which comprises

(A) admixing

(a) powdered polyolefin containing no more than 10 p.p.m., measured as metal, of catalyst residue,

(b) an aluminum compound reactive with carboxylic acids to form salts thereof, in an amount to provide at least 0.0005 percent by weight of aluminum, based on polyolefin, and

(c) about a stoichiometric equivalent of a carboxylic acid from the following group

(1) monocarboxylic acids whose carboxyl group is attached to a ring carbon atom;

(2) polycarboxylic acids having at least four carbon atoms and at least two carboxyl groups per molecule;

(3) carbocyclic ring - substituted aliphatic monocarboxylic acids having the carboxyl group attached to a terminal carbon atom;

(B) melting and mechanically working the resulting admixture at a temperature of from 20° to 150° above the melting point of said polyolefin, and

(C) solidifying the melt by cooling it.

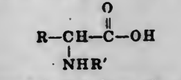
3,299,030

DYEABLE POLYOLEFINS

Albin F. Turbak, Danville, Ill., and Allen Noshay, East Brunswick, and Gabriel Karoly, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 22, 1963, Ser. No. 303,916
7 Claims. (Cl. 260—93.7)

1. A dyeable composition of matter comprising a polymer of a hydrocarbon alpha olefin blended with a nickel derivative of an alpha amino acid of the formula:



where R and R' are selected from the class of substituted and unsubstituted alkyl, aryl and aralkyl residues, and hydrogen.

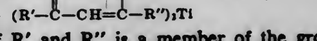
3,299,031

PROCESS FOR THE MANUFACTURE OF POLYBUTADIENE

Nikolaus Schön and Gottfried Pampus, Leverkusen, and Josef Witte, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,295
Claims priority, application Germany, Aug. 19, 1961, F 34,737
11 Claims. (Cl. 260—94.3)

1. The process for the manufacture of an improved rubbery polybutadiene comprising polymerizing 1,3-butadiene in the presence of a catalyst prepared by combining (a) a titanium-III-β-dicarbonyl compound represented by the formula



wherein each of R' and R'' is a member of the group consisting of lower alkyl, aralkyl and aryl radicals, (b) a halogen selected from the group consisting of iodine, iodomonochloride, iodomonobromide and mixtures of iodine and bromine with at least 30 mol percent of iodine and (c) an organic compound of aluminium having the valence linkages bound to members selected from the group consisting of hydrogen, saturated acyclic hydrocarbon radicals and saturated cyclic hydrocarbon radicals, the mol ratio of the halogen to the titanium-III-β-dicarbonyl compound ranging from about 1:1 to about 10:1 and the mol ratio of the organic compound of aluminium to the titanium-III-β-dicarbonyl compound is about 1:1 to about 20:1; and carrying out the polymerization of said 1,3-butadiene in an inert hydrocarbon diluent at a temperature between about —50° and about +80° C.; and recovering the polymer from solution.

3,299,032

PROCESS FOR TREATING POLYBUTADIENE WITH SULFURIC ACID TO IMPROVE COLD FLOW

Kent W. Rollmann, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

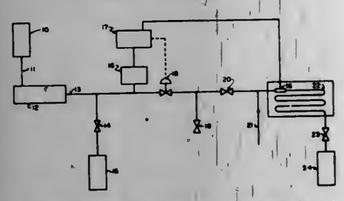
No Drawing. Filed Oct. 8, 1962, Ser. No. 229,223
7 Claims. (Cl. 260—94.7)

1. A method for reducing the tendency of polybutadiene to cold flow when in the unvulcanized state which comprises the steps of dispersing from 0.2 to 5 parts by weight of a reagent consisting essentially of about 90–98 percent concentrated sulfuric acid into a sufficient amount of a hydrocarbon to provide a dispersion having a concentration of 1 to 25 weight percent sulfuric acid in the hydrocarbon and adding said dispersion to a solution comprising 100 parts by weight of said polybutadiene dissolved in a hydrocarbon; rapidly stirring the resulting mixture; adding an alkaline material to said mixture in order to neutralize said sulfuric acid; and recovering a polybutadiene having a reduced tendency to cold flow.

3,299,033
PROCESS FOR CONTROLLING A HIGH PRESSURE POLYMERIZATION OF ETHYLENE AND PRODUCT PROPERTIES RESULTING THEREFROM

Robert M. Douglas, Dumont, N.J., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Feb. 15, 1963, Ser. No. 258,856
5 Claims. (Cl. 260—94.9)



1. In a high pressure ethylene polymerization process the method for continuously injecting a controlled volume of an initiator solution through a line into a polymerization zone maintained at normal operating pressures of at least 7500 p.s.i. wherein the pressure in said zone is subject to periodic pressure variations of a magnitude of at least 500 p.s.i., the steps which comprise:

(a) applying and maintaining a pressure on said initiator solution in said line greater than the maximum operating pressure existing in the reaction zone,

(b) continuously sensing said periodic pressure variations occurring in said zone and

(c) continuously controlling the volume of initiator solution injected into said zone in response to said sensed periodic pressure variations, said control of said volume of initiator solution being effective to increase said volume introduced during a pressure decrease in said reaction zone proportional to a resulting momentary increase in ethylene flow and effective to decrease said volume introduced during a pressure increase in said reaction zone proportional to a momentary decrease in ethylene flow.

3,299,034
SIZING AGENTS AND PROCESSES FOR PREPARATION THEREOF

Osamu Nishiura, Nishinomiya-shi, Sadao Mano, Amagasaki-shi, Isao Morikawa, Nishinomiya-shi, and Kiyoshi Yakahashi, Tokyo, Japan, assignors to Japan Reichhold Chemicals, Inc., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Aug. 31, 1965, Ser. No. 484,098
Claims priority, application Japan, Mar. 7, 1961, 36/7,106
7 Claims. (Cl. 260—101)

1. A method for preparing a water-soluble petroleum sizing agent comprising:

(1) forming a polymer having an acid number in excess of 75 by reacting:

(a) rosin,

(b) an alpha-beta unsaturated organic compound selected from the group consisting of:

(i) mono and dicarboxylic acids,

(ii) anhydrides of (i),

(iii) esters of (i) and alcohols having 1 to 4 carbon atoms, and

(iv) nitriles of (i); and

(c) an oil having a boiling point above 130° C. and containing as principal components unsaturated cyclic structures, said oil being produced by thermally cracking naphtha to produce ethylene, and,

(2) alkali saponifying the polymer obtained in (1).

3,299,035
L-ASPARTYL-L-ALANYL-L-PHENYLALANYL-L-ISOLEUCYL-GLYCYL-L-LEUCYL-L-METHIONINAMIDE AND ITS ACID ADDITION SALTS

Roger Boissonnas, Bottmingen, Basel-Land, and Edmond Sandrin, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland, a Swiss firm

Filed July 11, 1962, Ser. No. 209,810
Claims priority, application Switzerland, July 14, 1961, 8,264/61
3 Claims. (Cl. 260—112.5)

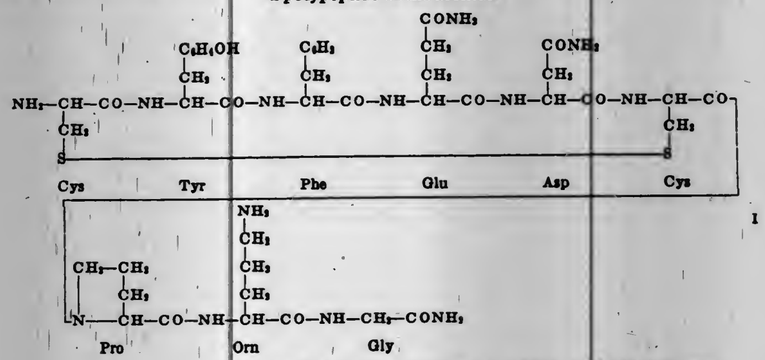
1. A peptide selected from the group consisting of L-aspartyl-L-alanyl-L-phenylalanyl-L-isoleucyl-glycyl - L-leucyl-L-methionine amide, L-asparaginyl-L-alanyl - L-phenylalanyl-L-isoleucyl-glycyl-L-leucyl - L - methionine amide and their acid addition salts.

3,299,036
NOVEL POLYPEPTIDES AND INTERMEDIATES FOR THE PREPARATION THEREOF

Roger Boissonnas, Bottmingen, and René Huguenin, Reinach, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Mar. 31, 1964, Ser. No. 356,026
Claims priority, application Switzerland, Apr. 5, 1963, 4,361/63
7 Claims. (Cl. 260—112.5)

1. A compound selected from the group consisting of a polypeptide of the formula



(I)

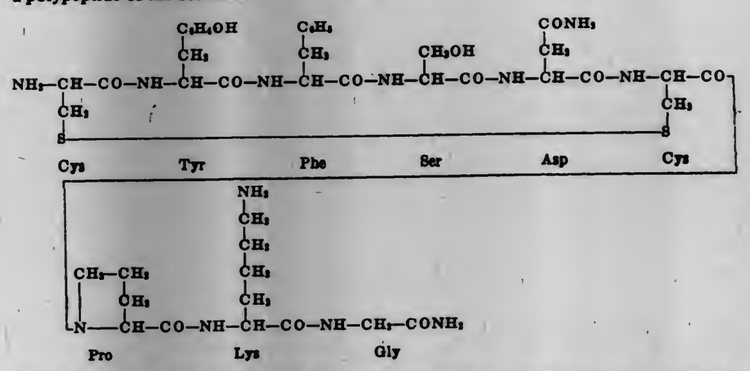
and its pharmaceutically acceptable acid addition salts.

3,299,037
NOVEL POLYPEPTIDES AND INTERMEDIATES FOR THE PREPARATION THEREFOR

Roger Boissonnas, Bottmingen, and Stephan Guttmann, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Apr. 28, 1964, Ser. No. 363,285
Claims priority, application Switzerland, May 2, 1963, 5,514/63
7 Claims. (Cl. 260—112.5)

1. A compound selected from the group consisting of a polypeptide of the formula



(I)

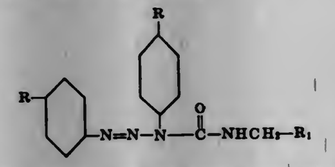
and its pharamaceutically acceptable acid addition salts.

3,299,038
N-SUBSTITUTED-1,3-DIPHENYL-3-TRIAZENE-CARBOXAMIDE COMPOUNDS

Andrew Stephen Tomcufcik, Old Tappan, N.J., and Ralph Grassing Child and Adolph Whitten Vogel, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 6, 1964, Ser. No. 380,667
3 Claims. (Cl. 260—140)

1. A compound of the formula:



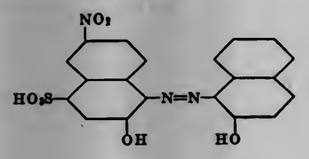
wherein R is selected from the group consisting of hydrogen and lower alkoxy and R_1 is selected from the group —CH=CH$_2$ and —CH$_2$CN.

3,299,039
MIXED TERNARY COMPLEX OF MONOAZO COMPOUNDS

Ugo Moiso and Sisto Sergio Papa, Milan, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy

No Drawing. Filed Apr. 15, 1963, Ser. No. 272,839
Claims priority, application Italy, Apr. 18, 1962, 7,640/62
3 Claims. (Cl. 260—145)

1. A metallized azo dye having a black shade, said dye being the mixed chromium ternary complex of the following monoazo compounds:



(I)

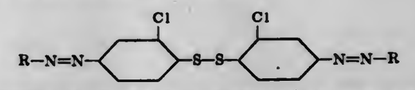
said monoazo compounds being present in the complex in molar ratios of 50% (I), 25–28% (II), and correspondingly 25–22% (III).

3,299,040
DISAZO-DISULFIDE DYES

Charles G. Jeremias, Newberry, S.C., and Frederick E. Barwick III, Mount Holly, N.C., assignors to Martin-Marietta Corporation, a corporation of Maryland

No Drawing. Filed Sept. 6, 1963, Ser. No. 307,014
6 Claims. (Cl. 260—160)

1. An azo dyestuff of the formula



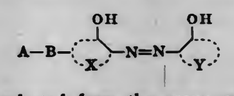
wherein R is the radical of a naphthol, a pyrazolone or acetoacet-ortho-anisidide azoic coupling component, and further characterized in that both R groups are the same.

3,299,041
ORTHO- AND PARA-DIHYDROXYPHENYL SUBSTITUTED MONOAZO DYES

Milton Green and Myron S. Simon, Newton, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Apr. 15, 1964, Ser. No. 359,998
4 Claims. (Cl. 260—197)

1. An azo dye developer of the formula:



wherein A is selected from the group consisting of an ortho-dihydroxyphenyl group and a para-dihydroxyphenyl group; B is a lower alkylene group containing from 1 to 5 carbon atoms, inclusive; and one of X and Y represents the atoms necessary to complete a radical of a diazotizable aromatic amine and the other of said X and Y represents the atoms necessary to complete an aromatic azo dye coupler, wherein the aromatic nucleus of both of said X and Y is selected from the group consisting of benzene and naphthalene nuclei.

3,299,042

IODINATION OF THE HETEROCYCLIC BASES IN NUCLEOSIDES, NUCLEOTIDES, NUCLEOSIDE-5'-POLYPHOSPHATES, AND NUCLEIC ACIDS

David Lipkin, St. Louis, Mo., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare

No Drawing. Filed June 22, 1964, Ser. No. 377,142
17 Claims. (Cl. 260—211.5)

1. Process for the iodination of the heterocyclic bases in sensitive derivatives thereof selected from the class consisting of nucleotides, nucleosides, nucleoside-polyphosphates and nucleic acids, which comprises

(a) reacting the sensitive derivative with N-iodo-succinimide

(b) in a sulfoxide solvent

(c) in the presence of a sulfur catalyst selected from the group consisting of elemental sulfur and the alkyl, aryl, and heterocyclic di-sulfides, and

(d) recovering the iodinated product.

16. A compound selected from the group consisting of 8-iodo-guanosine, its nucleotides and nucleic acids.

3,299,043

PROCESS FOR PREPARING POLYNUCLEOTIDES

Gerhard Schramm, Tubingen, Horst Grötsch, Frankfurt am Main, and Wolfgang Pollmann, Sinzheim, Baden, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 9, 1964, Ser. No. 381,532
Claims priority, application Germany, May 24, 1961, F 33,984
5 Claims. (Cl. 260—211.5)

1. A process of preparing polynucleotides which comprises reacting a member selected from the group consisting of nucleotides and nucleosides with a cyclic polyphosphoric acid lower alkyl ester.

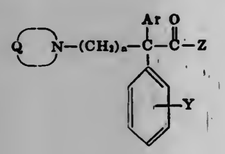
3,299,044

COMPLEX N-SUBSTITUTED AZABICYCLOALKANES

John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,289
8 Claims. (Cl. 260—239)

1. A compound of the formula



wherein



is azabicycloalkyl containing from 7 to 9 carbon atoms and containing at least 5 atoms in each ring of the azabicycloalkane structure; *n* is a whole number greater than 1 and less than 4; Ar is selected from the group consisting of phenyl and pyridyl; Y is selected from the group consisting of hydrogen and chlorine; and Z is selected from the group consisting of amino, dimethylamino, and pyrrolidino.

3,299,045

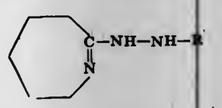
7-HYDRAZINO-3,4,5,6-TETRAHYDRO-2H-AZEPINES

Karl Gatzi, Basel, Switzerland, assignor, by mesne assignments, to H. A. Whitten & Co., New York, N.Y., a partnership

No Drawing. Original application June 25, 1963, Ser. No. 290,308. Divided and this application Nov. 24, 1965, Ser. No. 528,000
Claims priority, application Switzerland, July 10, 1962, 8,320/62
2 Claims. (Cl. 260—239)

1. A member selected from the group consisting of

(a) a compound of the formula



(I)

and

(b) a fungicidally effective salt of the compound of Formula I and an acid,

R in Formula I being alkyl with from 1 to 15 carbon atoms.

3,299,046

METHOD OF PREPARING ANHYDROUS AMPICILLIN

Harvey E. Alburn, West Chester, and Norman H. Grant, Wynnewood, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Filed June 23, 1964, Ser. No. 377,345
3 Claims. (Cl. 260—239.1)

1. The method of preparing the substantially anhydrous crystalline form of D-6-(2-amino-2-phenyl-acetamido) penicillanic acid, which method comprises:

(A) preparing a mixture comprising (1) the crystalline trihydrated form of D-6-(2-amino-2-phenyl-acetamido) penicillanic acid and (2) a reaction medium comprising, (a) a water-miscible organic solvent capable of dissolving at least 5% by volume thereof of water, and present in amount that is at least 20% by volume of said medium, and (b) sufficient free water to bring the total amount of bound and free water in the mixture to at least 10% by weight based on solids and total water present;

(B) heating said mixture to a temperature of from about 50° C. to about 100° C.; and

(C) drying the mixture to obtain crystals of the substantially anhydrous form of D-6-(2-amino-2-phenyl-acetamido) penicillanic acid.

3,299,047

PROCESS FOR PURIFYING VERNAMYCIN C

Miklos Bodanszky, Princeton, and John Timothy Sheehan, Middlesex, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,988
2 Claims. (Cl. 260—239.3)

1. A process for isolating vernamycin C from a mixture thereof with vernamycin B, which comprises dissolving said mixture in a warm lower alkanol, cooling the resulting solution to precipitate the vernamycin B, and recovering the vernamycin C from the remaining solution.

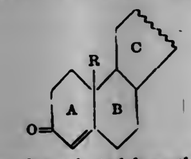
3,299,048

3α,5α-EPOXY METHANO-STEROIDAL COMPOUNDS AND PROCESS FOR THE PRODUCTION THEREOF

Wataru Nagata, Nishinomiya-shi, and Tsutomu Sugasawa, Kobe, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,133
35 Claims. (Cl. 260—239.55)

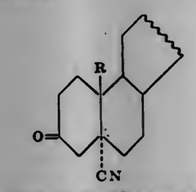
1. A process for formation of a double bond in steroids which comprises: (1) treating a 9,11-saturated Δ^4-3-oxo-steroid having a structure represented by the formula:



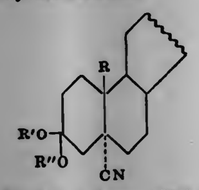
wherein R is a member selected from the group consisting of hydrogen and methyl substantially with a complex anion represented by the formula:

$$[AlYY'Y''CN]^-$$

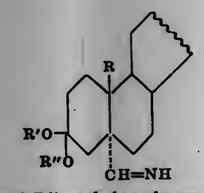
wherein Y is a member selected from the group consisting of lower alkyl and lower alkoxy and Y' and Y'' each is a member selected from the group consisting of lower alkyl, lower alkoxy, halogen and cyano in a substantially anhydrous medium; (2) treating the resultant 9,11-saturated 3-oxo-5α-cyanosteroid having a structure represented by the formula:



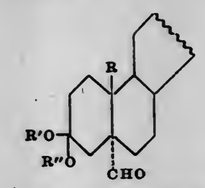
wherein R has the same significance as designated above with a member selected from the group consisting of lower alkanol and lower alkylene glycol in the presence of an acidic catalyst; (3) treating the resultant 9,11-saturated 3-ketalated oxo-5α-cyano-steroid having a structure represented by the formula:



wherein R' and R'' each is lower alkyl and, when linked together, they represent lower alkylene and R has the same significance as designated above with a metal hydride in a substantially anhydrous inert solvent; (4) treating the resultant 9-11-saturated 3-ketalated oxo-5α-iminomethyl-steroid having a structure represented by the formula:



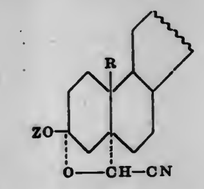
wherein R, R' and R'' each has the same significance as designated above with a member selected from the group consisting of acidic substance and basic substance in an aqueous medium; (5) treating the resultant 9-11-saturated 3-ketalated oxo-5α-formyl-steroid having a structure represented by the formula:



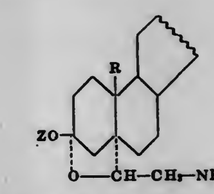
wherein R, R' and R'' each has the same signifiance as designated above substantially with a complex anion represented by the formula:

$$[AlYY'Y''CN]^-$$

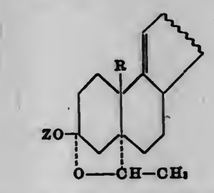
wherein Y, Y' and Y'' each has the same significance as designated above in a substantially anhydrous medium; (6) treating the resultant 9,11-saturated 5'-cyano-3α,5α-epoxy-methano-steroid having a structure represented by the formula:



wherein Z is a member selected from the group consisting of lower alkyl and ω-hydroxy(lower)alkyl and R has the same significance as designated above with a metal halide in a substantially anhydrous inert solvent; and (7) treating the resultant 9,11-saturated 5'-aminomethyl-3α,5α-epoxymethano-steroid having a structure represented by the formula:



wherein R and Z each has the same significance as designated above substantially with nitrous acid in an aqueous medium to give the corresponding 9,11-unsaturated 5'-methyl-3α,5α-epoxymethano-steroid having a structure represented by the formula:



wherein R and Z each has the same significance as designated above.

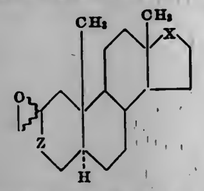
5. 3,3,20,20 - bisethylenedioxy - 5 - iminomethyl - 5α-pregnane.

3,299,049
3,17-BISOXYGENATED SPIRO-2-OXIRANYL-5α-ANDROSTANES

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,802
17 Claims. (Cl. 260—239.55)

1. A compound of the structural formula



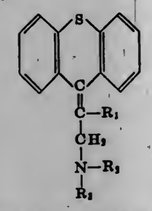
wherein X is selected from the group consisting of carbonyl, β-hlydroxymethylene, β-(lower alkanoyl)oxymethylene, and α-(lower alkyl)-β-hydroxymethylene radicals, and Z is a member of the class consisting of carbonyl, β-hydroxymethylene, and β-(lower alkanoyl)oxymethylene groups.

3,299,050
THIAXANTHENE DERIVATIVES

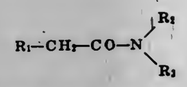
Ernst Jucker, Ettingen/Basel Land, Anton Ebnöther, Basel, and Andre Stoll, Birsfelden, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed June 18, 1963, Ser. No. 288,604
Claims priority, application Switzerland, Sept. 13, 1960, 10,389/60; Nov. 30, 1960, 13,392/60; June 23, 1961, 7,350/61
1 Claim. (Cl. 260—240)

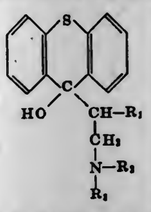
A process for the preparation of a thiaxanthene derivative of the formula:



wherein R_1 represents a member selected from the group consisting of hydrogen and lower alkyl, each of R_2 and R_3 taken individually represents lower alkyl, R_2 and R_3 taken collectively with the nitrogen atom to which they are joined are a member selected from the group consisting of pyrrolidino, piperidino and morpholino, and R_3 together with R_1 represents a member selected from the group consisting of dimethylene and tetramethylene, and non-toxic therapeutically useful salts thereof with an acid selected from the group consisting of hydrochloric acid, hydrobromic acid, hydriodic acid, sulfuric acid, acetic acid, fumaric acid, maleic acid, malic acid, tartaric acid, succinic acid, methanesulfonic acid, benzoic acid and naphthalene-1,5-disulfonic acid, which comprises condensing thiaxanthone in tetrahydrofuran with a compound of the formula:



R_1, R_2 and R_3 having the above significance, and with an alkali amide condensing agent at a temperature of −35° C. to +5° C., said alkali amide condensing agent in liquid ammonia and selected from the group consisting of sodium amide and potassium amide, treating the condensation mixture by pouring it into an excess of cold water, extracting the water mixture with an inert volatile organic solvent, and separating by crystallizing the keto-substituted thiaxanthone from said condensation, reducing said keto-substituted thiaxanthone with lithium aluminum hydride in absolute tetrahydrofuran at 0° to 60° C. to produce a compound to the formula:



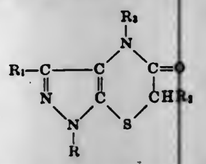
wherein R_1, R_2 and R_3 have the above significance, and thereafter dehydrating said reduced compound to remove the 9'-hydroxy group by heating to reflux with a dehydrating agent selected from the group consisting of concentrated hydrochloric acid and acetic acid.

3,299,051
CERTAIN SUBSTITUTED 5-KETO-PYRAZOLOTHIAZINES

Robert G. Stein and Hollis G. Schoepke, Waukegan, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,269
14 Claims. (Cl. 260—243)

1. A compound of the formula



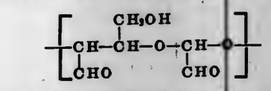
in which R, R_1 and R_2 are independently selected from the group consisting of hydrogen, loweralkyl, phenyl, halophenyl, loweralkylphenyl and loweralkoxyphenyl and R_3 is a member of the group consisting of hydrogen, loweralkyl, loweralkenyl, loweralkynyl, benzyl, halobenzyl, loweralkylbenzyl and loweralkoxybenzyl.

3,299,052
WATER-DISPERSIBLE FORM OF DIALDEHYDE STARCH AND PROCESS THEREFOR

James Huey Curtis, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,987
8 Claims. (Cl. 260—233.3)

1. A composition dispersible in water at room temperature consisting essentially of the finely-divided solidified reaction product of from about 15 to about 30 parts by weight hypochlorite oxidized starch and from about 70 to about 85 parts by weight dialdehyde starch wherein from about 90 to about 100 units out of 100 of the original anhydroglucose units of the original starch have been oxidized to dialdehyde units represented by the formula:



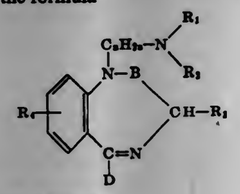
8. A process for preparing a composition dispersible in water at room temperature which comprises mixing in water a mixture consisting essentially of about 70 parts by weight dialdehyde starch and about 30 parts by weight hypochlorite oxidized starch to form a slurry containing about 10–15 weight percent solids, reacting the non-aqueous constituents of the slurry with each other by heating the slurry to about 95°–97° C. for about 5–15 minutes with stirring until the dispersion of the solid material is complete, cooling the dispersion to about 70° C., adjusting the pH of the dispersion to about 4.3–4.5 and then spray drying the dispersion and collecting the finely-divided dried solidified product.

3,299,053
NOVEL 1- AND/OR 4-SUBSTITUTED ALKYL 5-AROMATIC - 3H - 1,4 - BENZODIAZEPINES AND BENZODIAZEPINE-2-ONES

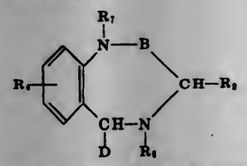
Giles A. Archer, Essex Fells, Rodney Ian Fryer, West Orange, Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,941
26 Claims. (Cl. 260—239.3)

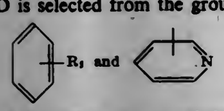
1. A compound selected from the group consisting of compounds of the formula



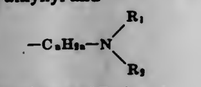
compounds of the formula



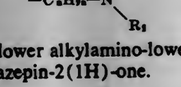
and pharmaceutically acceptable acid addition salts thereof, wherein D is selected from the group consisting of



B is selected from the group consisting of methylene and carbonyl; n is a whole integer from 2 to 7; R_1 and R_2 are selected from the group consisting of individually hydrogen and lower alkyl and, taken together with the nitrogen atom, N-lower alkyl-piperazinyl, N-hydroxy-lower alkyl-piperazinyl, N-lower alkoxy-lower alkyl-piperazinyl, N-lower alkenyloxy-lower alkyl-piperazinyl, pyrrolidinyl, piperazinyl, morpholinyl and piperidinyl; at least one of R_1 and R_2 being other than hydrogen; R_3 is selected from the group consisting of hydrogen, lower alkyl, hydroxy and lower alkanoyloxy; R_4 is selected from the group consisting of hydrogen, halogen, trifluoromethyl, lower alkyl-mercapto, cyano, lower alkyl and nitro; R_5 is selected from the group consisting of hydrogen, halogen, lower alkyl, trifluoromethyl and nitro; R_6 and R_7 are each selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkynyl and



and at least one of R_6 and R_7 is



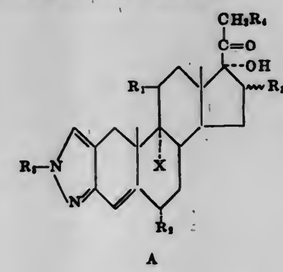
5. 7-halo-1-(di-lower alkylamino-lower alkyl)-5 - phenyl-3H-1,4-benzodiazepin-2(1H)-one.

3,299,054
4-PREGNENO-[3,2-c]PYRAZOLES AND PROCESSES OF PREPARING THEM

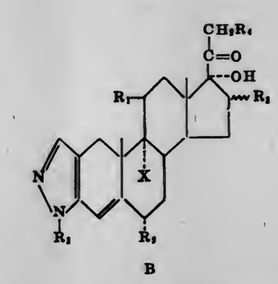
Max Tishler, Westfield, N.J., Nathan G. Steinberg, Brooklyn, N.Y., and Ralph F. Hirschmann, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application Dec. 1, 1961, Ser. No. 156,465, now Patent No. 3,067,193, dated Dec. 4, 1962. Divided and this application July 2, 1962, Ser. No. 207,078
1 Claim. (Cl. 260—239.5)

A compound selected from the group of compounds having structural formulas A and B:



A



B

wherein R_1 is a member of the group consisting of β-halogen, β-hydroxy and keto, but β-halogen is present at R_1 only when X is halogen, R_2 is a member of the group consisting of hydrogen, α-fluoro and α-methyl, R_3 is a member of the group consisting of hydrogen, α-methyl, β-methyl and methylene when R_1 is β-halogen, but R_3 must be methylene when R_1 is β-hydroxy or keto, R_4 is a member of the group consisting of hydrogen, hydroxy, lower hydrocarbon carboxylic acyloxy, fluoro, iodo, the dihydrogen phosphate and the alkali metal salts of said dihydrogen phosphate, and the methylsulfonyloxy-radical, R_5 is a member of the group consisting of hydrogen, alkyl, aralkyl, aryl and lower hydrocarbon carboxylic acyl, and X is member of the group consisting of hydrogen and halogen, but hydrogen is present at not more than three of the four positions R_2, R_3, R_5, and X; and salts of the foregoing compounds.

3,299,055
DITHIOLIUM COMPOUNDS AND PREPARATION

Erwin Klingsberg, Mountainside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 2, 1963, Ser. No. 299,474
3 Claims. (Cl. 260—240)

1. A compound of the formula:

$$[D^+—CH=D']X^-$$

wherein D and D' individually represent members selected from the group consting of 1,2-dithiolium, 1,3-dithiolium, benzo-1,2-dithiolium and benzo-1,3-dithiolium, at least

one of D and D' being monocyclic, said D and D' radicals each having up to two substituents selected from the group consisting of phenyl and di-lower alkylaminophenyl; and X is the anion of an acid having a pKa below 4.

3,299,056

PREPARATION OF 3,3' - ETHYLENE BIS(TETRAHYDRO-4,6-DIMETHYL 2H - 1,3,5-THIADIAZINE-2-THIONE)

Earl W. Cummins, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 8, 1963, Ser. No. 271,461
3 Claims. (Cl. 260—243)

1. The process of making 3,3'-ethylenebis(tetrahydro-4,6-dimethyl-2H-1,3,5-thiadiazine-2-thione) which comprises reacting (1) an ammonium salt selected from the group consisting of ammonium chloride, sulfate, acid sulfate, nitrate, formate, bromide, phosphate, and acetate, (2) acetaldehyde and (3) a salt of ethylenebisdithiocarbamic acid selected from the group consisting of the sodium, potassium, ammonium, and mixed sodium/ammonium salts, in an aqueous medium, and at a temperature of from 30 to 50° C., said ammonium salt being used in an amount of from 15 to 50% excess, and the acetaldehyde being used in an amount of from 40 to 60% excess, both being based on the stoichiometric amount of the salt of ethylenebisdithiocarbamic acid, and recovering the 3,3'-ethylenebis(tetrahydro-4,6-dimethyl-2H-1,3,5-thiadiazine-2-thione) thus formed.

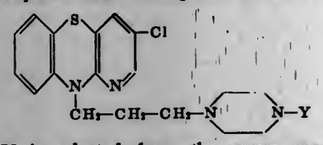
3,299,057

2-CHLORO SUBSTITUTED-4-AZAPHENOTHIAZINES

Albert Gross and Kurt Thiele, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,167
Claims priority, application Germany, Apr. 13, 1962, D 38,675
3 Claims. (Cl. 260—243)

1. An azaphenothiazine compound of the formula



wherein Y is selected from the group consisting of $-CH_2-CH_2-OH$ and $-CH_2-CH_2-O-CO-CH_3$.

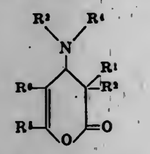
3,299,058

4-AMINO-3,4-DIHYDRO-2H-PYRAN-2-ONES

James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 25, 1964, Ser. No. 413,992
11 Claims. (Cl. 260—247.2)

1. A 4-amino-3,4-dihydro-2H-pyran-2-one of the formula:



wherein R^1 and R^2, when taken singly, are selected from the group consisting of:
(a) alkyl of 1 to 8 carbon atoms,
(b) benzyl and
(c) monocarbocyclic aryl of 6 to 9 carbon atoms and,

when taken collectively with the carbon atom to which they are attached, represent a saturated carbocyclic ring of 5 to 6 ring carbon atoms; R^3 and R^4, when taken singly, are selected from the group consisting of:
(a) alkyl of 1 to 8 carbon atoms and
(b) monocarbocyclic aryl of 6 to 9 carbon atoms and,

when taken collectively with the nitrogen atom to which they are attached, represent a heterocyclic ring selected from the group consisting of azetidino, pyrrolidino, piperidino, 4-methylpiperidino, hexahydroazepino, morpholino and thiamorpholino; R^5 is selected from the group consisting of:
(a) alkyl of 1 to 8 carbon atoms and
(b) monocarbocyclic aryl of 6 to 9 carbon atoms; and

R^6 is selected from the group consisting of:
(a) hydrogen,
(b) alkyl of 1 to 8 carbon atoms and
(c) monocarbocyclic aryl of 6 to 9 carbon atoms.

6. 3,3 - diethyl - 3,4 - dihydro - 6 - methyl - 4 - morpholino - 5 - propyl - 2H - pyran - 2 - one.

3,299,059

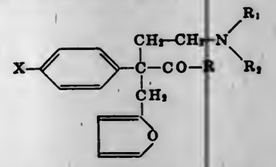
1-TERTIARY AMINO-3-PHENYL-3-FURFURYL-4-LOWER ALKYL KETONES

Marcel Pesson, Paris, France, assignor to Laboratoire Roger Bellon, Neuilly-sur-Seine, France, a company of France

No Drawing. Filed Nov. 4, 1963, Ser. No. 321,363
Claims priority, application Great Britain, Nov. 7, 1962, 42,154/62
6 Claims. (Cl. 260—247.7)

2. 1-morpholino-3-phenyl-3-furfuryl-4-hexanone.

6. An aminoketone selected from the group consisting of an aminoketone of the formula



wherein
X is a member selected from the group consisting of hydrogen and halogen;
R is alkyl with 1 to 6 carbon atoms; and
R_1 and R_2 are members selected from the group consisting of alkyl with 1 to 4 carbon atoms; and
R_1 and R_2 together with the nitrogen atom to which they are attached, form the pyrrolidino, piperidino, and morpholino ring,
and its pharmaceutically acceptable acid addition salts.

3,299,060

METHOD FOR PRODUCING STABLE SALTS OF DICHLOROISOCYANURIC ACID (II)

Stephen J. Kovalsky, Scotch Plains, and Raymond A. Olson, Westfield, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 17, 1964, Ser. No. 375,935
4 Claims. (Cl. 260—248)

1. In the process of producing a salt of dichloroisocyanuric acid selected from the group consisting of sodium dichloroisocyanurate and potassium dichloroisocyanurate wherein dichloroisocyanuric acid and an alkali metal hydroxide selected from the group consisting of sodium hydroxide and potassium hydroxide are reacted together as a slurry in an aqueous reaction medium maintained at a pH of from about 6 to about 7 and at a temperature of from about 5 to about 65° C. to produce a dichloroisocyanuric acid salt product, said reaction mixture is separated into a substantially solid product stream and a substantially liquid effluent stream, said liquid effluent stream is recycled for use as an aqueous reaction medium in the make-up of additional slurries of said dichloroisocyanuric acid and an alkali metal hydroxide, said solid product stream is dried to obtain said dichloroisocyanuric acid salt product in a substantially anhydrous state, the improvement which comprises filtering the liquid effluent stream to remove suspended particles larger than 15 microns before said stream is utilized as an aqueous reaction medium in the make-up of additional slurries of dichloroisocyanuric acid and an alkali metal hydroxide, whereby said aqueous reaction medium is freed of impurities which affect the thermal stability of the dichloroisocyanuric acid salt crystals produced therein, and recovering from said reaction mixture a dichloroisocyanuric acid salt product having a high thermal stability.

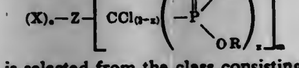
3,299,061

PHOSPHONYLCHLOROMETHYL TRIAZINES AND THIODIAZOLES

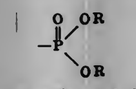
Hansjuergen A. Schroeder, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed July 15, 1964, Ser. No. 382,931
13 Claims. (Cl. 260—248)

1. Substituted phosphonates having the formula



wherein Z is selected from the class consisting of a 1,3,5-triazine nucleus and a 1,2,4-thiadiazole nucleus, X is selected from the class consisting of hydrogen, lower alkyl, lower alkoxy and



x, m, and n are integers from 1–2 and the sum of m and n is not more than 3, and wherein R is lower alkyl.

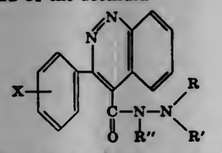
3,299,062

HYDRAZIDES OF 3-PHENYLCINNOLINE-4-CARBOXYLIC ACIDS

Harman S. Lowrie, Glenview, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 6, 1965, Ser. No. 453,806
6 Claims. (Cl. 260—250)

1. A compound of the formula



wherein X is selected from the group consisting of hydrogen, chlorine, and methoxy; NRR' is selected from the group consisting of amino, di(lower alkyl)amino, piperidino, and 4-methyl-1-piperazinyl; R'' is selected from the group consisting of hydrogen and methyl.

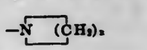
3,299,063

DERIVATIVES OF PYRAZINE

Edward J. Cragoe, Jr., Lansdale, and James H. Jones, Blue Bell, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

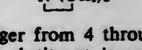
No Drawing. Filed Oct. 4, 1965, Ser. No. 492,842
10 Claims. (Cl. 260—250)

1. The method comprising the reaction of a product selected from 3-amino-5-X-6-halopyrazinonitrile, an alkyl 3-amino-5-X-6-halopyrazinthioimidate and an alkyl 3-amino-5-X-6-halopyrazinimidate hydrochloride with 2-amino-2-imidazoline to form 2-(3-amino-5-X-6-halopyrazinamidino)-2-imidazoline in a lower alkanol with moderate heating wherein in each of the foregoing products X is selected from the group consisting of hydrogen, chloro, bromo, lower-alkyl, phenyl-lower alkyl, lower alkoxy, phenyl-lower alkoxy, lower alkylthio, phenyl-lower alkylthio, phenyl, lower alkylphenyl, halophenyl, and an amino having the structure R^1R^2N- wherein R^1 and R^2 separately is selected from the group consisting of hydrogen, lower alkoxy, phenyl, lower alkylphenyl, halophenyl, lower alkyl, hydroxy lower alkyl, halo lower alkyl, lower(cycloalkylalkyl) where the cycloalkyl moiety has from 3 to 6 nuclear carbon atoms, lower(alkylaminoalkyl), phenyl lower alkyl, lower(alkoxyalkyl), halophenyl lower alkyl, pyridyl lower alkyl, furyl lower alkyl, and lower alkenyl, lower alicyclic having from 3 to 6 nuclear carbons, and together with the nitrogen atom form



wherein n is an integer from 4 through 6; and wherein the 6-position halo substituent is selected from chloro and bromo.

4. 2 - (3-amino-5-X-6-halopyrazinamidino)-2-imidazoline wherein X is selected from the group consisting of hydrogen, chloro, bromo, lower-alkyl, phenyl-lower alkyl, lower alkoxy, phenyl-lower alkoxy, lower alkylthio, phenyl-lower alkylthio, phenyl, lower alkylphenyl, halophenyl and an amino having the structure R^1R^2N- wherein R^1 and R^2 separately is selected from the group consisting of hydrogen, lower alkoxy, phenyl, lower alkylphenyl, halophenyl, lower alkyl, hydroxy lower alkyl, halo lower alkyl, lower(cycloalkylalkyl), wherein the cycloalkyl moiety has from 3 to 6 nuclear carbons, lower(alkylaminoalkyl), phenyl lower alkyl, lower(alkoxyalkyl), halophenyl lower alkyl, pyridyl lower alkyl, furyl lower alkyl, lower alkenyl, lower alicyclic having 3 to 6 nuclear carbons, and together with the nitrogen atom form



wherein n is an integer from 4 through 6; and wherein the 6-position halo substituent is selected from chloro and bromo.

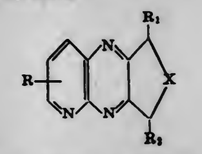
3,299,064

CYCLOPENTA[b]PYRIDO[2,3-e]-PYRAZIN DERIVATIVES

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,833
11 Claims. (Cl. 260—250)

1. A compound selected from the group consisting of those having the formula:



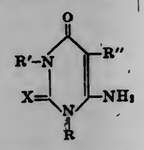
wherein R is selected from the group consisting of hydrogen, chloro, bromo, iodo, carboxy. lower alkoxy and lower alkyl; R_1 is selected from the group consisting of hydrogen and carb(lower)alkoxy; R_2 is selected from the group consisting of lower alkyl and carb(lower)alkoxy; X is selected from the group consisting of carbonyl, methylidynecarb(lower)alkoxy and methylidynecarboxy; and the pharmaceutically acceptable acid addition salts thereof.

3,299,065
PHTHALOPERINONE COMPOUND
Chi K. Dien, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 29, 1963, Ser. No. 327,078
1 Claim. (Cl. 260—251)

8,9,10,11-tetrahydro-12-phthaloperinone.

3,299,066
CYANOETHYLATED 6-AMINOURACILS
Viktor Papesch, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Oct. 12, 1964, Ser. No. 403,325
6 Claims. (Cl. 260—256.4)

1. A compound of the formula

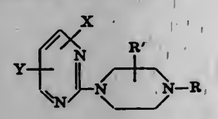


wherein X is selected from the group consisting of O and S; R is selected from the group consisting of lower alkyl, lower alkenyl, and hydroxyethyl; R′ is selected from the group consisting of hydrogen, lower alkyl and cyanoethyl; R″ is selected from the group consisting of hydrogen and cyanoethyl; and R′ and R″ are selected in such a way that at least one of them is cyanoethyl.

3. 6-amino-5-(2-cyanoethyl)-1,3-diethyluracil.

3,299,067
2-[1′-(BENZYL AND PHENYL)-4′-PIPERAZINYL]-PYRIMIDINE DERIVATIVES
Gilbert Regnier, Sceaux, Roger Canevari, La Haye-les Roses, and Michel Lauble, Vaucresson, France, assignors to Science Union et Cie, Societe Francaise de Recherche Medicale, Suresnes, France, a French society
No Drawing. Filed Nov. 12, 1964, Ser. No. 410,771
Claims priority, application Great Britain, Nov. 19, 1963, 45,685/63
9 Claims. (Cl. 260—256.4)

1. A compound selected from the group consisting of (A) new pyrimidines of the formula

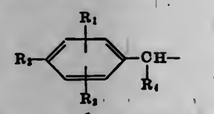


(I)

in which:

(a) R is selected from the group consisting of

(1) benzyl of the formula



(II)

in which R_1, R_2 and R_3 are each individually selected from the group consisting of hydrogen, hydroxyl, lower-alkoxy having up to 5 carbon atoms inclusive, and lower-alkanoyloxy, and further members of the group wherein any two of R_1, R_2 and R_3 in ortho position to each other together represent an alkylene dioxy chain, $—O—(CH_2)_n—O—$, in which n is selected from the integers 1 and 2, and R_4 is selected from the group consisting of hydrogen, lower-alkyl having up to 5 carbon atoms inclusive, and phenyl having substituents selected from the group consisting of R_1, R_2 and R_3 as defined above; and

(2) phenyl selected from 2-, 3- and 4-mono-substituted phenyl and 2:3, 3:4 and 2:5 disubstituted phenyl, the substituents being selected from the group consisting of halogen, lower-alkyl having up to 5 carbon atoms inclusive, lower-alkoxy having up to 5 carbon atoms inclusive, trifluoromethyl (CF_3), and hydroxyl;

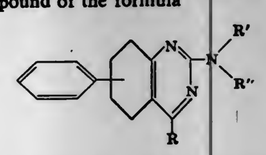
(b) R′ is selected from the group consisting of hydrogen and methyl; and

(c) X and Y are each individually selected from the group consisting of hydrogen, lower-alkyl having up to 5 carbon atoms inclusive, lower-alkoxy having up to 5 carbon atoms inclusive, hydroxyl, and amino-R″R‴ in which R″ and R‴ are each individually selected from the group consisting of hydrogen lower-alkyl having up to 5 carbon atoms inclusive, provided that, when X and Y are selected from hydrogen and lower-alkyl, then R is selected from alkylenedioxybenzyl, hydroxymethoxybenzyl, dimethoxybenzyl, trimethoxybenzyl, and benzhydryl, and hydroxy-lower-alkyl; and

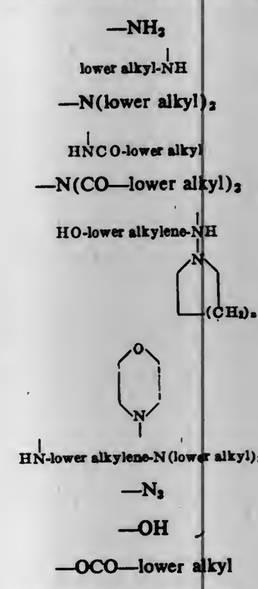
(B) pharmaceutically acceptable acid addition salts thereof.

3,299,068
2,4-DIAMINO-5,6,7,8-TETRAHYDRO-6-PHENYL-QUINAZOLINE AND CONGENERS
Leland J. Chinn, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Feb. 10, 1966, Ser. No. 526,343
13 Claims. (Cl. 260—256.4)

1. A compound of the formula



wherein R represents a member of the group consisting of chlorine, bromine, and a radical of the formula



n being a positive integer less than 3, and R′ and R″ each represent a member of the group consisting of hydrogen and a radical of the formula

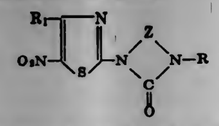
—CO—lower alkyl

except when R represents chlorine or bromine, in which event R′ and R″ each represent hydrogen only.

3. A compound according to claim 1 which is 2,4-diamino-5,6,7,8-tetrahydro-6-phenylquinazoline.

3,299,069
5-NITROTHIAZOLYL OXO-DIAZACYCLOALKANES
Paul Schmidt, Therwil, Max Wilhelm, Allschwil, and Kurt Eichenberger, Therwil, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 8, 1965, Ser. No. 485,927
Claims priority, application Switzerland, May 30, 1962, 6,604/62; Apr. 23, 1963, 5,056/63; Aug. 30, 1963, 10,800/63; Apr. 24, 1964, 5,395/64; July 8, 1964, 8,961/64; Sept. 3, 1964, 11,534/64; Mar. 3, 1965, 2,949/65; Mar. 31, 1965, 4,423/65; July 20, 1965, 10,198/65
41 Claims. (Cl. 260—256.5)

1. A compound of the formula

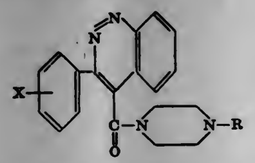


in which Z represents a member selected from the group consisting of lower alkylene separating the two nitrogen atoms by 2 to 5 carbon atoms and lower alkylene separating the two nitrogen atoms by 2 to 5 carbon atoms and substituted by at least one member selected from the group consisting of lower alkyl, lower alkenyl, phenyl, lower alkyl-phenyl, lower alkoxy-phenyl, halogenophenyl, trifluoromethyl-phenyl, nitrophenyl, phenyl-lower alkyl, lower alkylphenyl-lower alkyl, lower alkoxy-phenyl-lower alkyl, hologeno-phenyl-lower alkyl, trifluoromethyl-phenyl-lower alkyl and nitrophenyl-lower alkyl, R represents a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl-lower alkyl, lower alkyl-phenyl-lower alkyl, lower alkoxy-phenyl-lower alkyl, halogeno-phenyl-lower alkyl, trifluoromethyl-phenyl-lower alkyl and nitrophenyl-lower alkyl, and R_1 stands for a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, lower alkylphenyl, lower alkoxyphenyl, halogenophenyl, trifluoromethyl-phenyl and nitrophenyl.

9. 1-[5-nitrothiazolyl-(2)]-2-oxo-hexahydropyrimidine.

3,299,070
PIPERAZINE AMIDES OF 3-PHENYLCINNOLINE-4-CARBOXYLIC ACIDS
Harman S. Lowrie, Glenview, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed May 6, 1965, Ser. No. 453,823
4 Claims. (Cl. 260—268)

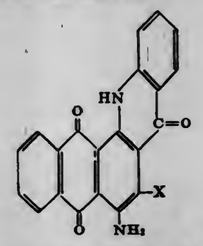
1. A compound of the formula



wherein X is selected from the group consisting of hydrogen, chlorine, and methoxy; and R is selected from the group consisting of hydrogen, lower alkyl, and hydroxy-(lower alkyl).

3,299,071
6-AMINONAPHTH[2,3-c]ACRIDAN-5,8,14-TRIONES
Joseph William Fitzpatrick, Pine Beach, N.J., assignor to Toms River Chemical Corporation, Toms River, N.J., a corporation of Delaware
No Drawing. Filed Sept. 27, 1963, Ser. No. 311,955
3 Claims. (Cl. 260—276)

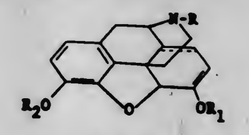
1. A compound of the formula:



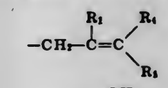
in which X is a member selected from the group consisting of cyano and carboxamide.

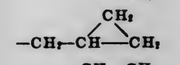
3,299,072
THEBAINE DERIVATIVES
James Richard Bartels-Keith, Welwyn Garden City, England, assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 4, 1963, Ser. No. 313,793
Claims priority, application Great Britain, Oct. 10, 1962, 38,444/62, 38,445/62
14 Claims. (Cl. 260—285)

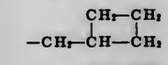
1. A compound selected from the group consisting of a base, its N-oxide derivative and its pharamaceutically acceptable acid addition salts, said base being of the structure:

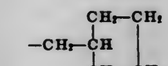


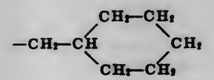
in which – – – – represents an optional carbon-carbon bond; R is a member selected from the group consisting of

(a) 

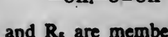
(b) 

(c) 

(d) 

(e) 

and

(f) 

in which R_3, R_4 and R_5 are members selected from the group consisting of hydrogen, methyl and chloro;

R_1 is methyl; and

R_2 is a member selected from the group consisting of methyl, hydrogen and a lower acyl group derived from a pharmaceutically acceptable carboxylic acid of a maximum of 8 carbon atoms.

4. N-cyclopropylmethyl-Δ^6-dihydronororipavine.

14. Δ^6-dihydronorthebaine.

3,299,073
QUATERNARY AMMONIUM AROMATIC AMINO SULFONATES
Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Contes, Washington, D.C., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 14, 1963, Ser. No. 323,598
7 Claims. (Cl. 260—286)

1. A quaternary ammonium aromatic amino sulfonate in which the quaternary nitrogen atom is linked to at least one straight-chain alkyl having 12 to 18 carbon atoms.

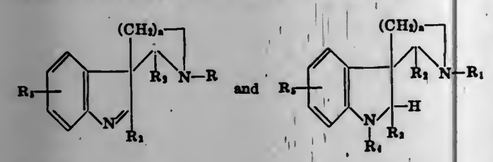
3. Lauryl isoquinolinium metanilate.

3,299,074
MANUFACTURE OF ORGANIC BASES
Ian Campbell, Widnes, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 2, 1964, Ser. No. 380,050
Claims priority, application Great Britain, July 19, 1963, 28,719/63
11 Claims. (Cl. 260—290)

1. A process for the production of a member selected from the group consisting of pyridine and lower alkyl substituted derivatives thereof which comprises reacting a member selected from the group consisting of a lower alkyl ether of 2-hydroxy-3,4-dihydro-2H-pyran and lower alkyl substituted derivatives thereof with between about 1–20 moles of ammonia per mole of said ether and a diluent selected from the group consisting of nitrogen, hydrogen, steam, and alkanols, in the vapor phase at a temperature in the range 200°–500° C. and in the presense of a catalyst consisting essentially of a noble metal deposited on a support selected from the group consisting of silica, alumina, and mixtures and combinations thereof.

3,299,075
SPIRO[3H-INDOLE-3,3'-PYRROLIDINE AND PIPERIDINE] DERIVATIVES
Jerry A. Weisbach, Cherry Hill, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 12, 1964, Ser. No. 351,542
5 Claims. (Cl. 260—293)

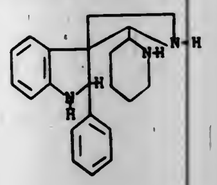
1. A compound selected from the group consisting of compounds having the following formulas:



and

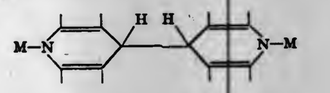
in which:
R is a member selected from the group consisting of tolylsulfonyl, benzenesulfonyl, halobenzenesulfonyl, lower alkoxybenzenesulfonyl and lower alkylsulfonyl;
R_1 is a member selected from the group consisting of tolylsulfonyl, benzenesulfonyl, halobenzenesulfonyl, lower alkoxybenzenesulfonyl, lower alkylsulfonyl, hydrogen, lower alkyl and lower alkanoyl;
R_2 is a member selected from the group consisting of phenyl, halophenyl, lower alkoxyphenyl, lower alkylphenyl, methylenedioxyphenyl, furyl, pyridyl, C-piperidyl and C-pyrrolyl;
R_3 is a member selected from the group consisting of phenyl, halophenyl, lower alkoxyphenyl, lower alkylphenyl and pyridyl;
R_4 is a member selected from the group consisting of hydrogen and lower alkyl;
R_5 is a member selected from the group consisting of hydrogen, halogen, lower alkoxy and lower alkyl; and
n is an integer of from 1 to 2
and pharmaceutically acceptable, nontoxic, acid addition salts thereof.

3. A compound having the formula:

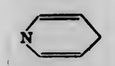


3,299,076
ESTERS OF N-N'-DICARBOXYLIC ACID AND A METHOD OF THEIR PREPARATION
Walter E. Kramer, Niles, and Louis A. Joo and Robert M. Haines, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Original application May 13, 1960, Ser. No. 28,866, now Patent No. 3,147,262, dated Sept. 1, 1964. Divided and this application Jan. 9, 1964, Ser. No. 356,344
15 Claims. (Cl. 260—295)

1. The method of preparing esters of N-N'-dicarboxylic acids which comprises reacting an alkali metal diamine of the formula



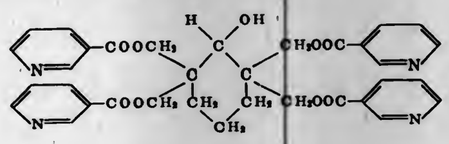
wherein M is an alkali metal and the nuclei



are derived from a heterocyclic aromatic amine containing no substituents linked to the nuclei which are not inert to alkali metal at −50° C. to +50° C., with carbon dioxide, thereby forming the alkali metal dicarbamate of the diamine and reacting the resulting dicarbamate with a halogenated aliphatic hydrocarbon from the group consisting of halogenated lower alkyl and lower alkylene hydrocarbons under conditions suitable for forming N-N'-dicarboxylic acid esters.

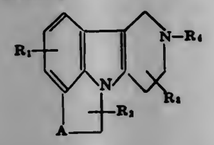
3,299,077
CYCLOHEXANOL - 2,2,6,6 - TETRAKIS(HYDROXYMETHYL)TETRANICOTINATE AND PREPARATION THEREOF
Tsutomu Irikura, Tokyo, Shimao Sato, Ichikawa-shi, and Yasuo Abe and Kazunori Kasuga, Tokyo, Japan, assignors to Kyorin Seiyaku Kabushiki Kaisha, Tokyo, Japan
No Drawing. Filed Jan. 27, 1965, Ser. No. 428,530
Claims priority, application Japan, July 1, 1964, 39/38,143
1 Claim. (Cl. 260—295.5)

Cyclohexanol - 2,2,6,6 - tetrakis(hydroxylmethyl)tetranicotinate having the constitutional formula,



3,299,078
PYRIDO[3',4':4,5]PYRROLO[3,2,1-hi]INDOLES AND -[3,2,1-ij]QUINOLINES
Irwin J. Pachter, Erdenheim, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 1, 1962, Ser. No. 227,579
5 Claims. (Cl. 260—296)

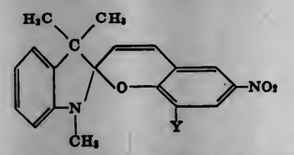
1. A compound selected from the group consisting of a free base and its nontoxic, pharmaceutically acceptable, acid addition and quaternary ammonium salts, the free base having the formula:



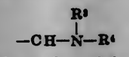
in which:
R_1 is a member selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy and trifluoromethyl;
R_2 is a member selected from the group consisting of hydrogen, lower alkyl and phenyl;
R_3 is a member selected from the group consisting of hydrogen and lower alkyl;
R_4 is a member selected from the group consisting of hydrogen, lower alkyl and benzyl; and
A is a member selected from the group consisting of $—CH_2—$ and $—CH_2CH_2—$.

3,299,079
CHELATABLE SPIRO [BENZOPYRAN-2,2'-INDOLINE] DERIVATIVES
Lloyd D. Taylor, Everett, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed Mar. 11, 1966, Ser. No. 533,406
4 Claims. (Cl. 260—294.7)

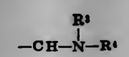
1. A photospiran, chelatable in the open form, of the formula



wherein Y is selected from the group consisting of $—CH=O$, $—CH=NR^1$, $—N=NR^1$, $—CH_2—O—R^2$, and

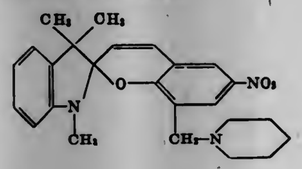


wherein R^1 is a member selected from the group consisting of lower alkyl and phenyl; R^2 is a member selected from the group consisting of hydrogen, lower alkyl, and phenyl; each of R^3 and R^4 is a member selected from the group consisting of lower alkyl and phenyl, and R^3 and R^4 taken together may form, together with the nitrogen atom of said



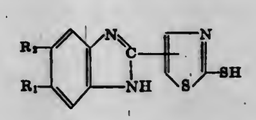
a piperidine ring.

3. A compound of the formula

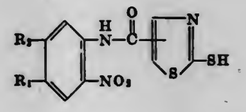


3,299,080
PROCESSES AND INTERMEDIATES FOR PREPARING CERTAIN 2-THIAZOLYLBENZIMIDAZOLES
George Gal, Summit, and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed July 5, 1962, Ser. No. 207,779
20 Claims. (Cl. 260—302)

1. The process for the preparation of acid addition salts of a benzimidazole compound having the following formula

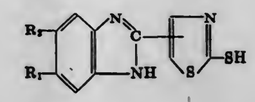


wherein R_1 and R_2 are selected from the group consisting of hydrogen lower alkyl, lower alkoxy and trifluoromethyl groups which comprises contacting an anilide of the formula

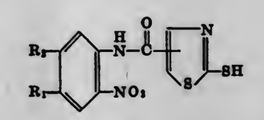


with hydrogen in the presence of a strong acid wherein the amount of hydrogen employed is greater than 3 and less than 13.5 moles per mole of said anilide and R_1 and R_2 are as above assigned.

4. The process for the preparation of a benzimidazole compound having the formula

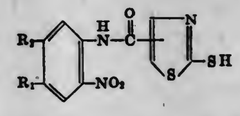


wherein R_1 and R_2 are selected from the group consisting of hydrogen lower alkyl, lower alkoxy and trifluoromethyl groups which comprises treating an anilide of the formula



wherein R_1 and R_2 are as above assigned, with hydrogen in the presence of a strong acid wherein the amount of hydrogen employed is greater than 3 and less than 13.5 moles per mole of said anilide to obtain the acid addition salt of said benzimidazole compound, and neutralizing said salt with a base.

13. A compound having the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen lower alkyl, lower alkoxy and trifluoromethyl.

14. 2-mercaptothiazole-4-carboxy-(2'-nitroanilide).

3,299,081
CHEMICAL PROCESSES FOR PREPARING N-SUBSTITUTED AMIDINES

Meyer Sletzinger, North Plainfield, Walter A. Gaines, Rahway, and Victor J. Grenda, Edison, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 13, 1963, Ser. No. 308,638

9 Claims. (Cl. 260—302)

1. In the method for making an N-substituted amidine by heating together under anhydrous conditions a primary aromatic amine hydrochloride and a nitrile of the formula R—CN, where R is a member of the class consisting of aryl, pyridyl, and five-membered heterocyclic rings containing at least 2 carbon atoms in the hetero ring, wherein the hetero atoms are selected from the group consisting of oxygen, sulfur, and nitrogen, the improvement that comprises conducting the reaction in a solvent medium comprising a polychlorinated benzene having a boiling point below 222° C.

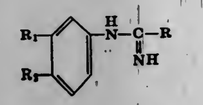
3,299,082
CHEMICAL COMPOUNDS AND PROCESSES FOR PREPARING SAME

Robert E. Jones, North Muskegon, Mich., and George Gal, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,873

5 Claims. (Cl. 260—302)

1. A hydrohalide acid addition salt of a compound having the formula



where R is a five membered heterocyclic radical selected from the class consisting of thiazolyl, thiadiazolyl and isothiazolyl rings, the point of attachment of the heterocyclic ring to the amidine carbon atom being at a carbon atom of said heterocyclic rings; and R_1 and R_2 are hydrogen, loweralkyl, loweralkoxy, loweralkylthio, phenoxy, phenylthio, halo, phenyl, halophenyl or thienyl, provided that when both R_1 and R_2 are other than halo, at least one of R_1 and R_2 is hydrogen.

3,299,083
PROCESSES FOR PREPARING HYDROXYMETHYLTHIAZOLE

James Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application Oct. 2, 1961, Ser. No. 142,000. Divided and this application May 2, 1966, Ser. No. 546,534

3 Claims. (Cl. 260—302)

1. The method for producing a hydroxymethylthiazole from the corresponding halomethylthiazole which comprises treating a monohalomethylthiazole with an acid selected from the group consisting of sulfuric acid, phosphoric acid, hydrochloric acid and hydrobromic acid in an aqueous medium, wherein the amount of acid used when the halogen acids are employed is less than 4 moles per mole of said thiazole.

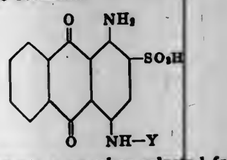
3,299,084
BENZOTHIAZOLSULPHONYL SUBSTITUTED REACTIVE ACID ANTHRAQUINONE DYESTUFFS

André Albert Paul Simonnet and Jean André Paul Kleazle, both of Creil, France, assignors to Etablissements Kuhlmann, Paris, France

No Drawing. Filed Sept. 21, 1965, Ser. No. 489,041
Claims priority, application France, Sept. 24, 1964, 989,178

1 Claim. (Cl. 260—303)

Dyestuffs of the formula:



in which Y represents a member selected from the group consisting of N - (2' - chloro - benzothiazolsulphonyl) N - methyl 4 - amino - 2 - sulpho - phenyl and N - (2'-chlorobenzothiazolsulphonyl) N-methyl 3-amino-4-sulfophenyl).

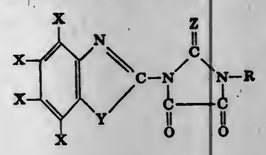
3,299,085
CERTAIN BENZAZOLYL-SUBSTITUTED IMIDAZOLIDINES

Werner Schäfer and Richard Wegler, Leverkusen, Ludwig Ene, Cologne-Stammheim, and Helmuth Hack, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 17, 1965, Ser. No. 433,515
Claims priority, application Germany, Feb. 21, 1964, F 42,081

17 Claims. (Cl. 260—305)

1. Imidazolidines of the formula



in which each X is selected from the group consisting of hydrogen, alkyl having 1–2 carbon atoms, and halogen; Y and Z each is selected from the group consisting of oxygen and sulfur; and R is selected from the group consisting of hydrogen, aliphatic hydrocarbon having 1–5 carbon atoms inclusive, and haloaliphatic hydrocarbon having 1–5 carbon atoms inclusive.

3,299,086
PROCESS FOR THE PREPARATION OF MERCAPTOBENZTHIAZOLE

Gottfried Gollmer, Cologne-Stammheim, and Hermann Wolz, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed Oct. 25, 1963, Ser. No. 318,928
Claims priority, application Germany, Nov. 29, 1962, F 38,419

4 Claims. (Cl. 260—306)

1. Process for the continuous production of mercaptobenzthiazole which comprises running an aqueous solution of a mercaptobenzthiazole salt selected from the group consisting of alkaline and alkaline earth salts and containing 1 to 20% of mercaptobenzthiazole through a flow tube at a velocity of 0.1 to 10 m./sec. and at a temperature of 0 to 100° C., mixing said aqueous solution with an aqueous solution of an inorganic acid in an equivalent ratio of at least 1:1 while flowing through the flow tube and filtering the precipitated mercaptobenzthiazole from the obtained suspension.

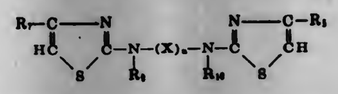
3,299,087
N,N'-BIS-(THIAZOLYL)-PHENYLENEDIAMINES

John D. Spivack, Spring Valley, and Martin Dexter, White Plains, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application Apr. 24, 1961, Ser. No. 104,805. Divided and this application Aug. 6, 1965, Ser. No. 487,348

3 Claims. (Cl. 260—306.8)

1. A compound of the formula:



wherein

R_7 and R_8 each independently is taken from the group consisting of alkyl having from 1 to 18 carbon atoms, phenyl, and alkylphenyl having from 7 to 24 carbon atoms;

R_9 and R_{10} are each selected from the group consisting of hydrogen and phenyl, at least one R group always representing hydrogen;

X represents phenylene; and

n is a number selected from the group consisting of 1 and 2.

3,299,088
HALO-SUBSTITUTED PHENOXYMETHYL OXAZOLIDONES

Carl D. Lunsford, Richmond, Va., assignor to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed June 19, 1959, Ser. No. 821,358

2 Claims. (Cl. 260—307)

1. 5-(p-chlorophenoxymethyl)2-oxazolidone.
2. 5-(m-chlorophenoxymethyl)-2-oxazolidone.

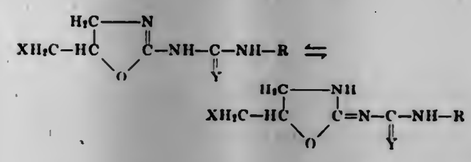
3,299,089
DERIVATIVES OF 5-METHYLOXAZOLINE AND 5-CHLOROMETHYLOXAZOLINE

Rolf Zimmermann, Wiesbaden-Biebrich, Alfred Englisch, Opladen-Lutzenkirchen, and Conrad Koch, Duesseldorf-Benrath, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Feb. 5, 1964, Ser. No. 347,067
Claims priority, application Germany, Feb. 6, 1963, C 29,096

14 Claims. (Cl. 260—307)

1. Compounds of the general formula



wherein X is selected from the group consisting of hydrogen and chlorine and R and Y are present in a combination selected from the group consisting of (A) Y representing oxygen and R one of the radicals at most dinuclear unsubstituted aryl hydrocarbon and at most dinuclear aryl hydrocarbon which is substituted by at least one and at most two of the substituents alkyl and alkoxy, each having from 1 to 4 carbon atoms, and (B) Y representing sulfur and R one of the radicals alkyl having from 1 to 6 carbon atoms and alkyl having from 1 to 6 carbon atoms substituted by an alkoxy group having from 1 to 4 carbon atoms.

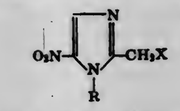
3,299,090
NITROIMIDAZOLES

Dale R. Hoff, Cranford, and David W. Henry, Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,428

6 Claims. (Cl. 260—309)

1. A 5-nitroimidazole of the formula



where X represents halogen having an atomic weight greater than 35 and less than 130, R is selected from the class consisting of lower alkyl and $—(CH_2)_nOY$, n has a value of 2–4 and Y is selected from the class consisting of hydrogen, lower alkanoyl and benzoyl; and acid addition salts thereof.

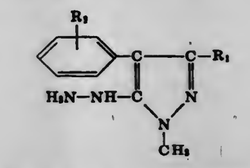
3,299,091
5-HYDRAZINO-PYRAZOL DERIVATIVES

Ernst Jucker, Ettingen, and Adolf J. Lindenmann and Arnold Vogel, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Dec. 4, 1964, Ser. No. 416,130
Claims priority, application Switzerland, Dec. 13, 1963, 15,297/63; July 30, 1964, 10,017/64

6 Claims. (Cl. 260—310)

1. A compound selected from the group consisting of compounds of the formula:



wherein R_1 is alkyl of 1 to 8 carbon atoms and R_2 is a member selected from the group consisting of hydrogen and halogen, and their pharmaceutically acceptable acid addition salts.

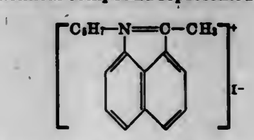
3,299,092
NAPHTHOLACTAM REACTION PRODUCTS AND PROCESS FOR PREPARATION OF THE SAME

Alfred Brack, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

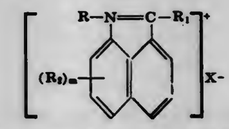
No Drawing. Filed Apr. 2, 1964, Ser. No. 356,979
Claims priority, application Germany, Apr. 6, 1963, F 39,425

11 Claims. (Cl. 260—313.1)

4. The chemical compound represented by the formula:



11. A naphtholactam reaction product represented by the formula:



wherein R is a member selected from the group consisting of a lower alkyl of 2–5 carbon atoms, cyclohexyl, benzyl,

methylbenzyl, phenyl, methoxyphenyl, and napthyl; R_1 is a lower alkyl of 1-4 carbon atoms; R_2 is a member selected from the group consisting of hydrogen, bromo, chloro, methoxy, and dimethylamino; *m* is an integer from 1–2; and *x* is an anion of an acid.

3,299,093

PROCESS FOR PREPARING PHTHALOCYANINES

Luke Ralph Ocone, Wyndmoor, and Burton Peter Block, Wayne, Pa., and Edward George Meloni, Metuchen, N.J., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 3, 1964, Ser. No. 349,165
8 Claims. (Cl. 260—314.5)

1. A process for the preparation of chromium (II) phthalocyanine which comprises contacting chromium hexacarbonyl with phthalonitrile at a temperature above about 240° C.

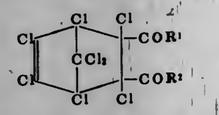
3,299,094

ESTERS, AMIDES, AND IMIDES OF OCTACHLORO-3,6 - METHANO-1,2,3,6-TETRAHYDROPHTHALIC ANHYDRIDE

Edward D. Weil, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

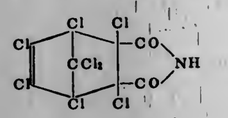
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,678
11 Claims. (Cl. 260—326)

1.



wherein R^1 and R^2, which may be the same or different, are selected from the group consisting of hydroxy, amino, alkoxy, phenoxy, lower alkylphenoxy wherein the alkyl is of 1 to 4 carbon atoms alkylamino and dialkylamino, providing that no more than one of R^1 and R^2, may be hydroxyl, and R^1 and R^2, when conjoined to form a ring, are selected from the group consisting of imino and alkylimino, said alkyl groups being of 1 to 8 carbon atoms.

9.



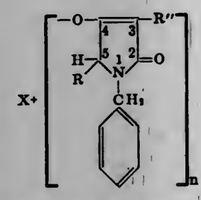
3,299,095

1-BENZYL TETRAMIC ACID DERIVATIVES

Stanton A. Harris, Westfield, and Charles O. Gitterman, Cranford, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 16, 1964, Ser. No. 360,416
12 Claims. (Cl. 260—326.3)

1. A compound having the following structural formula



wherein R is selected from the group consisting of loweralkyl, haloloweralkyl and phenyl; R'' is selected from the group consisting of acetyl, carboxamido, and carboethoxy; X is selected from the group consisting of hydrogen and Periodic Chart Group I and Group IIA metal cation; and *n* is a whole number corresponding to the valency of X.

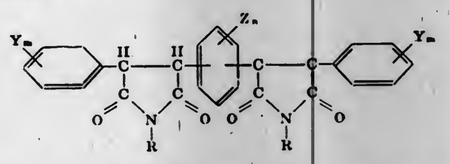
3,299,096

DIPHENETHYLBENZENE TETRACARBOXYLIC ACID DIIMIDES

Ferdinand B. Zienty, Warson Woods, and Myron J. Holm, Olivette, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application June 5, 1964, Ser. No. 373,065. Divided and this application Mar. 24, 1966, Ser. No. 536,968
3 Claims. (Cl. 260—326.3)

1. A diphenethylbenzene-α,α',β,β'-tetracarboxylic acid diimide of the formula



wherein R is selected from the group consisting of hydrogen, alkyl, alkenyl, cycloalkyl, monocarbocyclic aryl and monocarbocyclic aralkyl having up to 18 carbon atoms, Y is a monovalent substituent selected from the group consisting of alkyl, monocarbocyclic aryl, phenoxy, tolyloxy, alkoxy having up to 18 carbon atoms, nitro and halogen, Z is a monovalent substituent selected from the group consisting of methyl, nitro and halogen, *m* is a cardinal number from 0 to 5 inclusive, and *n* is a cardinal number from 0 to 4 inclusive.

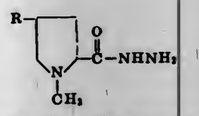
3,299,097

4-ALKYLHYGRIC ACID HYDRAZIDES

William Schroeder, North Muskegon, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 24, 1966, Ser. No. 536,971
5 Claims. (Cl. 260—326.3)

1. A member of the group consisting of a compound of the formula:



wherein R is selected from the group consisting of ethyl and propyl and the acid addition salts thereof.

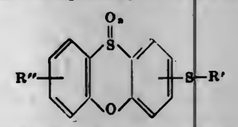
3,299,098

PHENOXATHIINS AND THEIR PREPARATION

Walter Reifschneider, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,061
6 Claims. (Cl. 260—327)

1. Compound corresponding to the formula



wherein R' represents a member of the group consisting of an alkyl group containing from 1 to 24, inclusive, carbon atoms; cycloalkyl; an aryl group containing from 6 to 15 carbon atoms, inclusive, R'' represents hydrogen or R', and *n* is an integer from 0 to 2, inclusive.

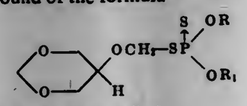
3,299,099

5-(O,O-DI-LOWER ALKYLPHOSPHORODITHIOYL-METHOXY)-1,3-DIOXANE

Arnold D. Gutman, Pinole, and David J. Broadbent, San Jose, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 13, 1965, Ser. No. 495,716
3 Claims. (Cl. 260—340.7)

1. A compound of the formula



wherein R and R_1 are lower alkyl.

3,299,100

MANUFACTURE OF BUTYROLACTONES

Lee V. Phillips, Overland Park, Kans., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 20, 1963, Ser. No. 325,143
2 Claims. (Cl. 260—343.6)

1. A method of manufacturing α-substituted-γ-butyrolactones comprising the following steps:

(a) Reacting an ester of a substituted malonic acid with ethylene oxide in the presence of less than an equimolar quantity of sodium alkoxide to produce an α-carbalkoxy-α-substituted-γ-butyrolactone.

(b) Reacting the substituted lactone produced in step (a) in a solution of an effective, but less than equimolar quantity of sodium alkoxide in ethanol to yield an α-substituted-γ-butyrolactone.

3,299,101

SUBSTITUTED PYROMELLITIC DIANHYDRIDES

Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 4, 1965, Ser. No. 453,189
3 Claims. (Cl. 260—346.3)

1. Benzoylpyromellitic dianhydride.

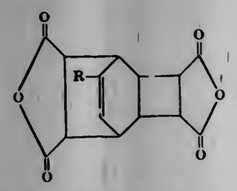
3,299,102

LOWER 9-ALKYL SUBSTITUTED TRICYCLO-DEC-ENE-9 CARBOXYLIC ACID DIANHYDRIDES

Jerald S. Bradshaw, Richmond, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

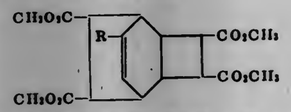
No Drawing. Filed Oct. 12, 1965, Ser. No. 495,307
3 Claims. (Cl. 260—346.3)

1. A compound of the formula



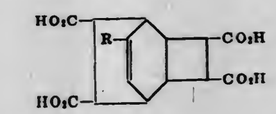
wherein R is an alkyl group having from 2 to 6 carbon atoms, respectively.

2. A compound of the formula



wherein R is an alkyl group having from 2 to 6 carbon atoms, respectively.

3. A compound of the formula



wherein R is an alkyl group having from 2 to 6 carbon atoms, respectively.

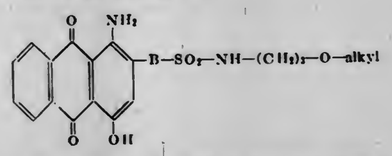
3,299,103

1-AMINO-4-HYDROXY-2-(PHENOXY AND PHENYLTHIO) ANTHRAQUINONES

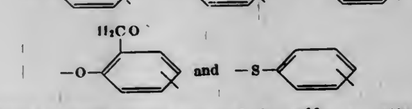
Karl Maier, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,560
Claims priority, application Germany, May 12, 1960, B 57,821
5 Claims. (Cl. 260—373)

1. Dyes of the formula:



wherein B is selected from the groups consisting of



in which groups the oxygen and the sulfur are attached to the anthraquinone nucleus and wherein alkyl represents an alkyl group with 1 to 4 carbon atoms.

3,299,104

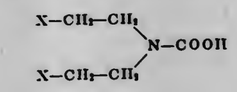
CERTAIN STEROID N-BIS-(HALOETHYL)-CARBAMATES

Hans Jakob Fex, Knut Bertil Högberg, Imre Könyves, and Paul Hans Otto Joseph Kneip, all of Halsingborg, Sweden, assignors to Aktiebolaget Leo, Halsingborg, Sweden

No Drawing. Filed Apr. 1, 1964, Ser. No. 356,666
Claims priority, application Great Britain, Apr. 9, 1963, 14,160/63
19 Claims. (Cl. 260—397.4)

4. Estradiol-3-N-bis-(β-chloroethyl)-carbamate.

9. Mono- and polyesters of androgenic steroid hormones selected from the group consisting of androstane-3α,17β-diol, androstane-3α-ol-17-one, androstane-3β-ol-17-one, androst-5-ene-3β-ol-17-one, and etiocholane-3α-ol-17-one, with N-bis-(β-haloethyl)-carbamic acid of the formula:



wherein X is selected from the group consisting of chlorine and bromine, one or more remaining hydroxyl

groups when present in the steroid nucleus being selected from the group consisting of free hydroxyl groups and hydroxyl groups esterified with an acid selected from the group consisting of aliphatic, cycloaliphatic and aromatic carboxylic acids, and inorganic polybasic acids.

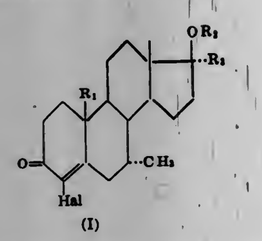
3,299,105

4-HALOGEN-ANDROSTENES

Georg Anner and Peter Wieland, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 11, 1964, Ser. No. 366,632
Claims priority, application Switzerland, May 17, 1963, 6,278/63; Mar. 9, 1964, 2,992/64
4 Claims. (Cl. 260—397.4)

1. A 4-halogen-androstene of the formula



(I)

where R_1 stands for a member selected from the group consisting of a hydrogen atom and a methyl group, Hal for a member selected from the group consisting of a fluorine, chlorine and bromine atom, R_2 for a member selected from the group consisting of a hydrogen atom, lower alkyl, cyclo-lower alkyl, phenyl-lower alkyl, the tetrahydropyranyl group and an acyl radical with 1 to 18 carbon atoms, and R_3 stands for a member selected from the group consisting of a hydrogen atom, lower alkyl, lower alkenyl and lower alkinyl.

4. 3 - oxo - 4-chloro-7α,17α-dimethyl-17β-hydroxy-Δ^4-19-norandrostene.

3,299,106

PROCESS FOR THE PREPARATION OF UNCONTAMINATED 17α - ETHYNYL - 19 - NOR - Δ^4 - ANDROSTEN-17β-OL-3-ONE

Francisco Alvarez, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Apr. 14, 1965, Ser. No. 447,968
Claims priority, application Mexico, June 1, 1964, 77,274
20 Claims. (Cl. 260—397.4)

1. A process for the preparation of 17α-ethynyl-19-nor-Δ^4-androsten-17β-ol-3-one uncontaminated with 3,17-diones which comprises heating a solution containing at least one compound selected from the group consisting of 17α-ethynyl-19-nor-Δ^4-androsten-17β-ol-3-one and 17α-ethynyl-19-nor-$\Delta^{5(10)}$-androsten-17β-ol-3-one and at least one compound selected from the group consisting of 19-nor-Δ^4-androstene - 3,17 - dione and 19-nor-$\Delta^{5(10)}$-androstene-3,17-dione, in an organic solvent which is substantially inert to dry hydrogen chloride, under substantially anhydrous conditions, with hydrogen chloride to precipitate 5α-chloro-17α-ethynyl-19-nor-androstan-17β-ol-3-one, and contacting said 5α-chloro compound with an alcoholic solution of a strong base to give 17α-ethynyl-19-nor-Δ^4-androsten-17β-ol-3-one.

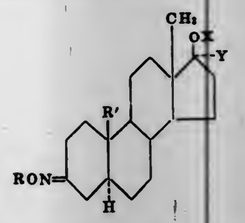
3,299,107

17 - (UNSATURATED HYDROCARBON - SUBSTITUTED)-3-HYDROXYIMINO-5α - ANDROSTAN-17β-OLS, ALKYL AND ACYL DERIVATIVES THEREOF

Robert H. Mazur, Deerfield, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,413
12 Claims. (Cl. 260—397.5)

1. A compound of the formula



wherein R is selected from the group consisting of hydrogen, lower alkyl, and radicals of the formula



Z being a member of the class consisting of lower alkyl, p-chlorophenyl, p-(lower alkoxy)phenyl, and benzhydryl radicals, R' is a member of the class consisting of hydrogen and a methyl radical, X is selected from the group consisting of hydrogen and a radical of the formula



A being a member of the class consisting of lower alkyl and benzhydryl radicals, and Y is a lower aliphatic unsaturated hydrocarbon radical.

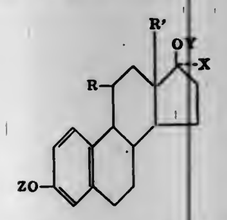
3,299,108

17α - ALKYNYL/ALKENYL - 13β - ALKYL - 11 - ALKYLGONA - 1,3,5(10) - TRIENE - 3,17β - DIOLS, ETHERS AND ESTERS THEREOF AND INTERMEDIATES THERETO

John S. Baran, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,462
8 Claims. (Cl. 260—397.5)

1. A compound of the formula



wherein R and R' are lower alkyl radicals, X is an unsaturated lower aliphatic hydrocarbon radical, Y is selected from the group consisting of hydrogen and a lower alkanoyl radical and Z is selected from the group consisting of hydrogen, lower alkyl and lower alkanoyl radicals.

3,299,109

ALUMINIUM, TITANIUM AND ZIRCONIUM CHELATE COMPOUNDS OF PERFLUORALKYLCARBOXYLIC ACIDS AND PROCESS FOR MAKING SAME

Manfred Sander, Frankfurt am Main, Germany, assignor to Chemische Fabrik Pfersee G.m.b.H., Augsburg, Germany, a firm of Germany

No Drawing. Filed Aug. 28, 1962, Ser. No. 220,071
Claims priority, application Germany, Sept. 29, 1961, C 25,164
15 Claims. (Cl. 260—408)

1. A chelate of a prefluorocarboxylic acid metal salt and a beta-dicarbonyl chelate-forming compound, said metal being selected from the group consisting of aluminium, titanium and zirconium.

3,299,110

CONDENSATION OF CARBOXYLIC ACIDS AND OLEFINS TO PRODUCE ESTERS

Lloyd Albert Pine, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 22, 1963, Ser. No. 303,921
18 Claims. (Cl. 260—410.9)

1. A process for producing esters which comprises contacting a carboxylic acid with an aliphatic mono-olefin at temperatures of from about 100 to 600° F. in the presence of a catalytic amount of a molybdenum-containing catalyst selected from the group consisting of molybdenum sulfide, molybdenum oxide, and sulfided cobalt molybdate.

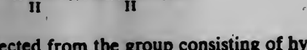
3,299,111

UNSATURATED ACIDS DERIVED FROM POLYACETYLENIC COMPOUNDS

Bobby F. Adams, Painesville, Ohio, and John H. Wotiz, Huntington, W. Va., assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Jan. 2, 1963, Ser. No. 248,861
3 Claims. (Cl. 260—413)

1. Compounds of the formula



wherein R^6 is selected from the group consisting of hydrogen and carboxy; R^7 is carboxy; n is an integer from 2 to 100, inclusive; and x is an integer from 1 to 20, inclusive.

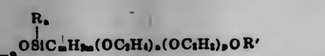
3,299,112

SILOXANE WETTING AGENTS

Donald L. Bailey, Snyder, N.Y., assignor to Union Carbide Corporation, a corporation of New York

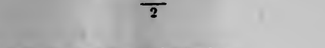
No Drawing. Filed June 19, 1964, Ser. No. 376,549
8 Claims. (Cl. 260—448.2)

1. A siloxane composed of only (a) one group having the formula:



(A)

and (b) from 1 to 4 groups represented by the formula:



(B)

wherein:
(1) a has a value from 0 to 2 inclusive;
(2) b has a value from 2 to 3 inclusive;
(3) R is a methyl or an ethyl group;
(4) R' is an alkyl group containing from 1 to 4 carbon atoms inclusive;
(5) m has a value from 2 to 4 inclusive;
(6) n has an average value from about 4 to 17 inclusive;
(7) p has an average value from 0 to 5 inclusive;
(8) the ratio of n to p is at least 2 to 1;
(9) $n+p$ has a value from 4 to 17 inclusive; and
(10) the alkoxypoly(ethyleneoxy) group is attached to the silicon atom of Formula A through at least two carbon atoms of the C_mH_{2m} group.

3,299,113

BRANCHED SILOXANE-ALKYLENE OXIDE COPOLYMERS

Loren A. Haluska, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,551
1 Claim. (Cl. 260—448.8)

A composition each molecule of which consists essentially of (1) a siloxane moiety composed of a copolymer of a $SiO_{4/2}$ unit and dimethylsiloxane units in which the mol ratio of $SiO_{4/2}$ to dimethylsiloxane units is from 1:20 to 1:50 and (2) polyalkylene oxide moieties of the formula $-(RO)_nCH(CH_2OCH_3)_2$ in which R is an alkylene radical of 2 to 3 inclusive carbon atoms, n is an integer from 20 to 65 inclusive, in the $(RO)_n$ chain the being such that the C—O ratio is from 2.3:1 to 2.8:1 (1) and (2) being interconnected through SiOC linkages in which the carbon is a part of an alkylene oxide unit and the silicon is a part of (1), there being on the average four alkylene oxide moieties attached to (1) and there being in said composition from 15 to 40 percent by weight of (1) and 60 to 85 percent by weight of (2) based on the combined weights of (1) and (2).

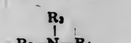
3,299,114

PROCESS FOR MAKING CHLOROFORMATES WITH AMINES AS CATALYSTS

Harry Tilles, El Cerrito, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 10, 1965, Ser. No. 463,005
1 Claim. (Cl. 260—455)

A method for preparing chlorothiolformates comprising reacting a compound selected from the class consisting of alkyl mercaptans, cycloalkyl mercaptans, lower alkenyl mercaptans, aryl mercaptans, alkaryl mercaptans, aralkyl mercaptans, haloaryl mercaptans, haloaralkyl mercaptans and carboalkoxyalkyl mercaptans with phosgene in the presence of a catalytic amount of a nitrogen containing compound selected from the group consisting of (1) tertiary amines of the formula



wherein R_3, R_3 and R_4 individually are selected from the group consisting of alkyl and phenyl, or when R_2 is alkyl or phenyl R_3 and R_4 jointly are a divalent alkylene radical of 4 to 6 carbon atoms, inclusive; and (2) heterocyclic amine compounds selected from the group consisting of pyridines, quinolines, isoquinolines, pyrazines, pyrroles and pyrimidines.

3,299,115

PREPARATION OF BIS(TRICHLOROETHYL) CARBONATE

Harry W. Weber, Jr., Baltimore County, Md., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 26, 1963, Ser. No. 290,585
2 Claims. (Cl. 260—463)

1. A method of preparing bis(2,2,2-trichloroethyl) carbonate which comprises reacting 2,2,2-trichloroethanol, phosgene, and an alkali metal hydroxide in an aqueous medium at room temperature or below.

3,299,116
CONTINUOUS PROCESS FOR PRODUCING ADIPONITRILE

Roberto Romani and Mario Ferri, Novara, Italy, assignors to Società Rhodiatoce S.p.A., Milan, Italy

Filed Feb. 10, 1964, Ser. No. 343,879
Claims priority, application Italy, Feb. 20, 1963, 3,533/63
7 Claims. (Cl. 260—465.2)

1. A process for producing adiponitrile which comprises continuously contacting, in liquid phase, adipic acid, an excess of 5–14 mols gaseous ammonia per 1 mol adipic acid, and a catalyst soluble in the reaction medium at a temperature between 255° C. and 320° C. in the presence of a diluent selected from the group consisting of adiponitrile, the intermediate products of the reaction of adipic acid and ammonia and mixtures thereof, to yield a reaction product comprising two phases, a gaseous phase and a liquid phase, continuously introducing said gaseous phase into a rectification column, and drawing water, excess ammonia and volatile by-products from the head of said column, drawing adiponitrile of at least 98% purity from an intermediate point of the column and drawing a fraction comprising adiponitrile and reaction intermediates from the base of said column and recycling the latter fraction, free from both catalyst and tarry by-products as the diluent to the process.

3,299,117
STEPWISE PREPARATION OF FATTY ACID NITRILES

Ralph H. Potts, La Grange, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

Filed Mar. 25, 1966, Ser. No. 544,642
4 Claims. (Cl. 260—465.2)

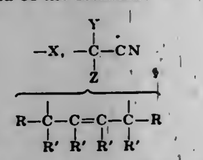
1. In the stepwise preparation of fatty acid nitrile by reacting fatty acid feed with ammonia in a reaction zone to form a corresponding fatty acid amide and subsequently reacting the fatty acid amide in a second separate and discrete zone with additional ammonia to form a corresponding fatty acid nitrile, the pressure in said reaction zones being maintained at a level for keeping said acid, amide, nitrile, and all intermediate products in liquid phase, the improvement which consists in subjecting said resultant products in a third separate and discrete reaction zone to additional ammonia at about 300° C. and under sufficient pressure to maintain the products in liquid phase, said additional ammonia being introduced into said third reaction zone at about 0.5 mol per mol of fatty acid feed, reducing the pressure to atmospheric pressure to remove the ammonia, and then distilling the liquid product under vacuum to obtain a nitrile product substantially free of impurities.

3,299,118
PRODUCTION OF α-HALONITRILES BY THE 1,4-ADDITION OF AN α-HALONITRILE TO A CONJUGATED DIENE

Harvey S. Klein, Berkeley, and Frederick F. Rust, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,646
12 Claims. (Cl. 260—465.7)

1. The compound of the formula



wherein X is halogen of atomic number from 17 to 53 inclusive, Y is hydrogen or X, Z is Y, aliphatic non-acetylenic hydrocarbyl radical of 1 to 8 carbon atoms or aliphatic non-acetylenic halohydrocarbyl radical of 1 to 8 carbon atoms, and R and R′ independently are hydrogen, halogen of atomic number from 17 to 53 inclusive, alkyl of 1 to 8 carbon atoms or haloalkyl of 1 to 8 carbon atoms with the proviso that an R and an R′ may form a divalent alkylene radical of 1 to 8 carbon atoms.

3,299,119
2-CYANOSORBAMIDE

Martin E. Cupery, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,723
1 Claim. (Cl. 260—465.4)

2-cyanosorbamide.

3,299,120
MIXED GLYCOL ESTER OF 2,3,6-TRICHLOROPHENYLACETIC ACID AND TRICHLOROACETIC ACID

Jack S. Newcomer, Wilson, Edward D. Weil, Lewiston, and Edwin Dorfman, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Apr. 12, 1965, Ser. No. 447,529
1 Claim. (Cl. 260—476)

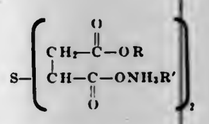
The product of the process of reacting substantially equimolar proportions of ethylene glycol, 2,3,6-trichlorophenylacetic acid and trichloroacetic acid.

3,299,121
THIO BIS (MONO ALKYL ESTER SUCCINATE SALTS AND AMIDES OF PRIMARY AMINES)

Billy D. Vineyard, Bellefontaine Neighbors, Mo., assignor to Monsanto Company, a corporation of Delaware

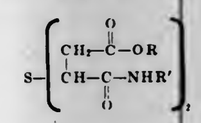
No Drawing. Filed Nov. 6, 1961, Ser. No. 150,202
2 Claims. (Cl. 260—481)

1. A thio bis (acid succinate amine salt) having the formula



wherein R and R′ are alkyl radicals containing between 1 and 20 carbon atoms.

2. A thio bis succinamate having the formula



wherein R and R′ are alkyl radicals containing between 1 and 20 carbon atoms.

3,299,122
9,10-DIHYDRO-9-MONOTHIOANTHROIC ACID

William F. Wolff, Park Forest, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Sept. 21, 1962, Ser. No. 225,373
1 Claim. (Cl. 260—500)

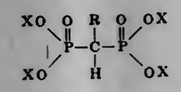
9,10-dihydro-9-monothioanthroic acid.

3,299,123
SUBSTITUTED METHYLENE DIPHOSPHONIC ACIDS AND SALTS AND ESTERS THEREOF

Steven J. Fitch, Creve Coeur, and Riyad R. Irani, Florissant, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 9, 1963, Ser. No. 271,607
13 Claims. (Cl. 260—500)

1. A compound having the formula



wherein R is selected from the class consisting of aliphatic hydrocarbyl groups of from 7 to 30 carbon atoms and alicyclic, aryl, alkaryl, aralkyl groups of from 5 to 30 carbon atoms and X is selected from the class consisting of cations selected from the group consisting of hydrogen ions, alkali metal cations, alkaline earth metal cations, aluminum cations, ammonium ions and amine ions, and aliphatic hydrocarbyl, aryl, alkaryl and aralkyl groups of from 1 to 30 carbon atoms.

3,299,124
TETRACYCLINE CYCLOHEXYL SULPHAMATE AND PROCESS FOR PREPARATION

Jacques Robert Boissier, Paris, and Georges André Combes, Versailles, France, assignors to Societe anonyme dite: Societe Industrielle pour la Fabrication des Antibiotiques (S.I.F.A.), Paris, France, a French company

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,138
Claims priority, application France, Jan. 30, 1963, 923,168; Apr. 10, 1963, 931,084; July 1, 1963, 939,959; Nov. 19, 1963, 945,176
6 Claims. (Cl. 260—501)

1. Cyclohexyl sulphamate salt of tetracycline.

3,299,125
PROCESS FOR THE PREPARATION OF AROMATIC CARBOXYLIC ACIDS

Yataro Ichikawa, Iwakuni-shi, Japan, assignor to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 24, 1964, Ser. No. 362,488
Claims priority, application Japan, May 1, 1963, 38/22,991
11 Claims. (Cl. 260—524)

1. A process for the preparation of aromatic carboxylic acids, which comprises reacting in a solvent stable under conditions of oxidation an aromatic compound having at least one substituent attached to a nuclear carbon wherein said substituent is a member of the group consisting of methyl, hydroxymethyl and an aldehyde radical; when said aromatic compound has at least two of said substituents, each substituent is spaced from the adjacent substituent or substituents by at least one unsubstituted nuclear carbon, with molecular oxygen in the presence of a catalyst system containing in combination (A) at least one substance selected from the group consisting of scandium, yttrium, lanthanum, neodymium, gadolinium, thorium, zirconium and hafnium and the organic acid salts, inorganic acid salts, oxides, hydroxides, basic salts, complex salts and alcoholates thereof, and (B) at least one substance selected from the group consisting of the metal cobalt, organic acid salts, oxides, hydroxides and complex salts of the metal cobalt.

3,299,126
PROCESS FOR OXIDIZING QUINODIMETHANES TO FORM AROMATIC CARBOXYLIC ACIDS

Louis A. Errede, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Original application Sept. 4, 1962, Ser. No. 221,375. Divided and this application Aug. 11, 1965, Ser. No. 493,292
4 Claims. (Cl. 260—524)

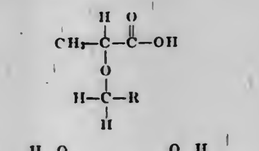
1. A method for the preparation of aromatic carboxylic acid comprising the steps of:
(a) pyrolyzing a gas stream comprising p-xylene,
(b) pyrolyzing a gas stream comprising a material selected from the group consisting or HNO_3 and NO_2,
(c) blending the respective resulting streams of pyrolyzates at temperatures below the pyrolysis temperatures, and
(d) recovering aromatic carboxylic acid from the reaction products of the combined pyrolyzate streams.

3,299,127
HYDROGENATION OF ALDEHYDE DIOXOLONE DERIVATIVES OF LACTIC ACID

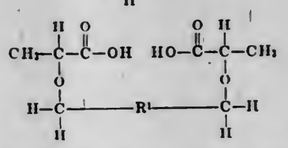
Mitchell Frank Zienty, Elkhart County, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,361
14 Claims. (Cl. 260—535)

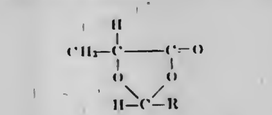
1. A process for the preparation of ether derivatives of propionic acid selected from the class consisting of compounds of the formulae:



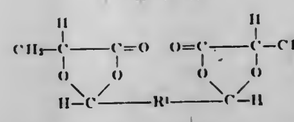
and



wherein R is selected from the class consisting of the hydrogen atom and monovalent hydrocarbon radicals selected from the class consisting of alkyl, aryl, alkaryl, aralkyl, alicyclic, and furfuryl, thienyl, and pyridyl radicals and substituted radicals thereof wherein the substitutents are selected from the class consisting of halogen, amino, cyano, nitro, hydroxy and alkoxy radicals and R^1 is a divalent hydrocarbon radical selected from the class consisting of alkylene, arylene, cycloalkylene radicals and divalent radicals obtained from furfural, thiophene and pyridine, which comprises reacting an aldehyde dioxolone derivative of lactic acid selected from the class consisting of compounds of the formulae:



and



wherein R and R^1 are defined above, with hydrogen in the presence of a hydrogenation catalyst.

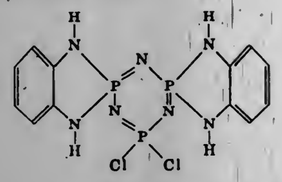
3,299,128

SUBSTITUTED CYCLIC PHOSPHONITRILIC COMPOUNDS AND METHODS OF PREPARING SAME

Harry Rex Allcock, Darien, and Robert Louis Kugel, South Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 10, 1964, Ser. No. 381,892
4 Claims. (Cl. 260—543)

2. The disubstituted trimer



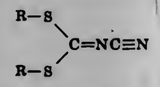
3,299,129

CYANOIMIDODITHIOCARBONATES

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 13, 1963, Ser. No. 330,224
6 Claims. (Cl. 260—551)

1. A compound of the formula



where R is selected from the group consisting of lower alkenyl, halogen substituted lower alkenyl, and lower alkynyl.

3,299,130

PRODUCTION OF SUBSTITUTED THIOUREAS

Reginald Trevor Wragg, Bolehall, Tamworth, England, and Charles Edwin Kendall, Downer, Canberra, Australia, assignors to Dunlop Rubber Company Limited, London, England, a British company

No Drawing. Filed Aug. 24, 1964, Ser. No. 391,729
Claims priority, application Great Britain, Aug. 29, 1963, 34,141/63
11 Claims. (Cl. 260—552)

1. A method for the manufacture of a thiourea of the general formula RHN.CS.NRH where R represents an alkyl, cycloalkyl or aromatic radical comprising reacting carbon tetrachloride with a primary amine having the general formula RNH_2, in which R is the same as R in the desired product, in the presence of hydrogen sulphide, under a pressure greater than atmospheric pressure, the amount of primary amine being at least sufficient to react with all the carbon tetrachloride.

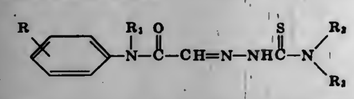
3,299,131

GLYOXANILIDE THIOSEMICARBAZONES

Milton Wolf and Joseph Lester Szabo, West Chester, and James L. Diebold, Havertown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,648
9 Claims. (Cl. 260—552)

1. A compound selected from the group consisting of those having the formula:

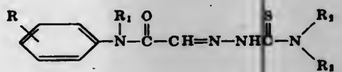


wherein R is selected from the group consisting of hydrogen, cyano, nitro, trifluoromethyl, halo, lower alkyl, lower alkoxy, phenyl, piperidyl, benzyl, phenoxy, phenthio, phenimido, phensulfuryl, and $(R_4)_2NCO$— and

$(R_4)_2NSO$—

wherein R_4 is selected from the group consisting of hydrogen and lower alkyl; R_1 is selected from the group consisting of hydrogen and lower alkyl; R_2 is selected from the group consisting of hydrogen, lower alkyl and lower alkenyl, and R_3 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, halophenyl, (lower)alkylphenyl, benzyl, piperidyl, furyl and furfuryl.

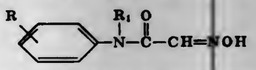
7. A process for the production of a compound of the formula:



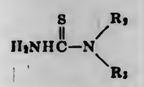
wherein R is selected from the group consisting of hydrogen, cyano, nitro, trifluoromethyl, halo, lower alkyl, lower alkoxy, phenyl, piperidyl, benzyl, phenoxy, phenthio, phenimido, phensulfuryl, and $(R_4)_2NCO$— and

$(R_4)_2NSO$—

wherein R_4 is selected from the group consisting of hydrogen and lower alkyl; R_1 is selected from the group consisting of hydrogen and lower alkyl; R_2 is selected from the group consisting of hydrogen, lower alkyl and lower alkenyl; and R_3 is selected from the group consisting of hydrogen, lower alkyl, lower alkene, phenyl, halophenyl, (lower) alkylphenyl, benzyl, piperidyl, furyl and furfuryl, which comprises contacting a compound of the formula:



wherein R and R_1 are defined as above, with a compound of the formula:



wherein R_2 and R_3 are defined as above, in an acidified reaction-inert organic solvent at a temperature that is in the range of from about 30° C. to about 100° C. for a period of from about five minutes to about four hours.

3,299,132

PROCESS FOR GRANULATING UREA

Charles Dougherty, Memphis, Tenn., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Oct. 16, 1963, Ser. No. 316,628
1 Claim. (Cl. 260—555)

A continuous process for preparing urea granules having substantially no tendency to cake comprising;

(a) tumbling a bed of urea initially charged as crystalline urea in a treating zone having an entrance and an exit while maintaining the temperature of said bed at about 115–125° C.;

(b) repeatedly passing urea from said tumbling bed through a high temperature zone having a temperature higher than the melting point of urea, said zone consisting of a flame produced by burning natural gas in air, thereby incipiently fusing the surfaces of said urea, and returning the thus heated urea to said tumbling bed, thereby causing said urea to agglomerate on re-entering said tumbling bed and passing out of contact with said flame;

(c) continuously removing urea from said treating zone at such rate as to provide a residence time of said urea in said treating zone of about 45–125 minutes while continuously feeding urea including urea recycled from later mentioned sizing and recycling steps into said treating zone at about the same rate that urea is removed therefrom;

(d) screening urea exit said treating zone and removing all oversize particles, that is, particles retained on about a 4 mesh, U.S. standard screen, thereby obtaining an oversize-free product;

(e) crushing said oversize particles so that the crushed particles will pass about a 40 mesh, U.S. standard screen;

(f) recycling said crushed particles to said treating zone;

(g) screening the aforesaid over-size free product to recover therefrom; (1) a product within the size range of 8 to 40 mesh, U.S. standard, said product within said size range forming no particles retained on a 2 mesh, U.S. standard screen on being subjected to a seven day warehouse stack test; and (2) undersize particles, said undersize particles being smaller than said product; and

(h) recycling said undersize particles to said treating zone.

3,299,133

PROCESS FOR THE IMPROVEMENT OF THE STORAGE PROPERTIES OF UREA

Ernst Peterhans, Visp, and Friedrich Schilltknecht, Postfach, Basel, Switzerland, assignors to Lonza Ltd., Basel, Switzerland, a corporation of Switzerland

No Drawing. Filed Oct. 20, 1964, Ser. No. 405,243
Claims priority, application Switzerland, Oct. 24, 1963, 13,030/63
11 Claims. (Cl. 260—555)

1. The process for improving the storage characteristics of urea which comprises incorporating therewith an effective amount up to less than about one percent by weight thereof, of an amide of a lower carboxylic acid containing from 1 to 4 carbon atoms per molecule.

3,299,134

PROCESS FOR THE PREPARATION OF SULPHONYL ISOCYANIDE DICHLORIDES

Bertram Anders, Cologne-Stammheim, Engelbert Kühle, Bergisch-Gladbach, and Karlfried Dickoré, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 19, 1964, Ser. No. 412,309
Claims priority, application Germany, Dec. 11, 1963, F 41,515
5 Claims. (Cl. 260—556)

1. A sulphonyl isocyanide dichloride of the formula

$$R—SO_2—N=CCl_2$$

wherein R is a member selected from the group consisting of lower alkyl benzyl, halobenzyl, cyclohexyl, toluyl, xylyl, phenyl, halophenyl, methoxyphenyl, nitrophenyl, piperidyl pyrrolidyl, quinolyl, naphthyl, phenylene, xylylene and dimethylamino.

2. Benzenesulphonylisocyanide dichloride.

3,299,135

PROCESS FOR THE PREPARATION OF N,N'-DIMETHYL-N,N'-DINITROSO-OXAMIDE

Basil S. Farah, Rockaway, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 22, 1963, Ser. No. 325,786
4 Claims. (Cl. 260—561)

1. A process for producing N,N'-dimethyl-N,N'-dinitroso-oxamide which comprises admixing N,N'-dimethyl oxamide with nitrosylpyrosulfuric anhydride, adding water to said admixture to convert nitrosylpyrosulfuric anhydride to nitrosyl sulfuric acid to effect reaction of said nitrosyl sulfuric acid and N,N'-dimethyl oxamide, said water being added in incremental amounts such that there is generated less than 1/10 of the total amount of nitrosyl sulfuric acid needed for reaction of nitrosyl sulfuric acid with N,N'-dimethyl oxamide until water has been added in an amount sufficient to generate about 75% of the stoichiometric amount of nitrosyl sulfuric acid required for reaction with the N,N'-dimethyl oxamide and thereafter adding the balance of the water needed for conversion of the nitrosylpyrosulfuric anhydride to nitrosyl sulfuric acid.

3,299,136

METHOD FOR PRODUCING CYCLOHEXYLAMINE BIBORATES

Michael Peter Brown, East Molesey, Surrey, and Anthony E. Dann, Chiswick, London, England, assignors to United States Borax & Chemical Corporation, Los Angeles, Calif.

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,844
Claims priority, application Great Britain, Oct. 25, 1962, 40,479/62
10 Claims. (Cl. 260—563)

1. The method for producing a cyclohexylamine biborate which comprises reacting at an elevated temperature of from about 25° C. to about 150° C., a member of the group consisting of cyclohexylamine and secondary and tertiary cyclohexylamines in which the amino-nitrogen is substituted with lower alkyl groups, with a member of the group consisting of metaboric acid and a substantially equimolar mixture of boric oxide and boric acid.

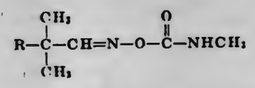
3,299,137

ACYCLIC HYDROCARBON ALDEHYDE CARBAMOYL OXIMES

Linwood K. Payne, Jr., Charleston, W. Va., and Mathias H. J. Welden, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 25, 1962, Ser. No. 226,173
5 Claims. (Cl. 260—566)

1. A compound of the formula



wherein R is saturated and monoolefinic hydrocarbon of up to 10 carbon atoms, inclusive.

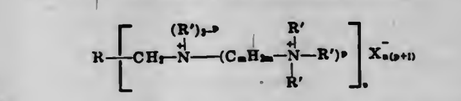
3,299,138

QUATERNIZED DIMER TETRAMINE

Arthur B. Sveum, Minneapolis, and John F. Zalar, St. Paul, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,282
2 Claims. (Cl. 260—567.6)

1. Compounds having the following formula:



in which R is the hydrocarbon radical of the polymeric fat acids, $R(COOH)_n$ obtained by polymerization of an unsaturated higher fatty acid, R' is an aliphatic hydrocarbon group having from 1 to 4 carbon atoms and X is a quaternary ammonium anion, *m* is an integer selected from the group consisting of 3 and 4, *n* is an integer selected from the group consisting of 2 or 3, *p* is an integer selected from the group consisting of 1 and 2.

3,299,139

5 - (3' - DIMETHYLAMINOPROPYLIDENE)-DIBENZO [a,d] - CYCLOHEPTA - [1,4] - DIENE N-OXIDE AND HYDROCHLORIDE THEREOF

Jørgen Brix Pedersen, Copenhagen-Hvidovre, Denmark, assignor to A/S Dumex (Dumex Ltd.), Copenhagen, Denmark, a Danish company

No Drawing. Filed Feb. 14, 1964, Ser. No. 344,817
Claims priority, application Great Britain, Feb. 20, 1963, 6,857/63
1 Claim. (Cl. 260—570.8)

A compound selected from the group consisting of 5-(3' - dimethylaminopropylidene) - dibenzo(a,d) - cyclohepta-1,4-diene N-oxide, and or the hydrochloric acid addition salt thereof.

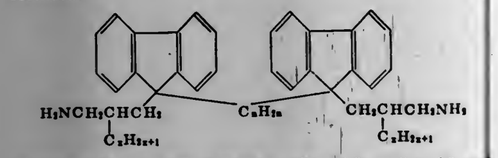
3,299,140

BIS[9-(3-AMINOALKYL)FLUOREN-9-YL]ALKANES

Henry E. Fritz, South Charleston, and David W. Peck, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Sept. 10, 1962, Ser. No. 222,694, now Patent No. 3,205,257, dated Sept. 7, 1965. Divided and this application Mar. 8, 1965, Ser. No. 438,062
2 Claims. (Cl. 260—570.8)

1. A bis[9-(3-aminoalkyl)fluoren-9-yl]alkane of the formula:



wherein *n* is an integer having a value of from 2 to 10 and *x* is an integer having a value of from 0 to 1.

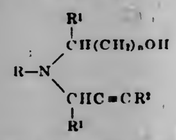
3,299,141

N-HYDROXYALKYL-N-ALKYNYL-N-ALKYL- AND ARALKYL AMINES AND PROCESS FOR THE PREPARATION THEREOF

Willard Joseph Croxall, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,235
15 Claims. (Cl. 260—570.9)

1. A compound of the formula:



wherein R is selected from the class consisting of alkyl radicals of 1 to 8 carbon atoms and benzyl radical; R^1 is selected from the class consisting of the hydrogen atom, propyl and phenyl radicals; R^2 is selected from the class consisting of the hydrogen atom, alkyl radicals of 1 to 4 carbon atoms, alkenyl radicals of 3 carbon atoms, monohydroxyalkyl radicals of 1 to 4 carbon atoms and monohydroxycyclohexyl radical; and *n* is an integer from 1 to 2 inclusive.

3,299,142

PREPARATION OF ALKYL AMINES

Billy D. Simpson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 27, 1963, Ser. No. 283,608
5 Claims. (Cl. 260—585)

1. In the method for the preparation of alkyl amines by the ammonolysis of alkyl halides having the general formula RX, where R is an alkyl radical with 1 to 20 carbon atoms and X is a halogen, selected from the group consisting of iodine, bromine, and chlorine, which is attached to a primary or secondary carbon atom of said alkyl radical, said method being carried out in the liquid phase, the improvement comprising carrying out said ammonolysis in the presence of a diluent selected from the group consisting of ethylene glycol, propylene glycol and glycerol in an amount sufficient to prevent salt formation.

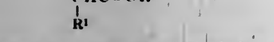
3,299,143

METHOD OF MAKING PHOSPHONIUM SALTS

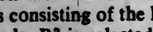
Martin Grayson, Norwalk, Patricia Tarpey Keough, Ridgefield, and Michael McKay Rauhut, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation of application Ser. No. 256,124, Feb. 4, 1963. This application Feb. 12, 1964, Ser. No. 344,224
2 Claims. (Cl. 260—606.5)

1. A method which comprises bringing into reactive contact a phosphonium salt of the formula



with a sulfhydryl of the formula



in the presence of an inert organic solvent and recovering the corresponding salt of the formula



R^1, R^2, and R^3 in the above formulae each represent a member selected from the group consisting of alkyl C_1–C_{16}, substituted alkyl C_1–C_{16}, cycloalkyl, phenyl, substituted phenyl, and naphthyl, said substituents for alkyl being selected from the group consisting of lower alkoxy and cyano and said substituents for phenyl being selected from the group consisting of lower alkyl and halogen;

X represents halogen;

R represents a member selected from the group consisting of alkyl having from 1 to 12 carbon atoms, alkylene having from 1 to 12 carbon atoms, benzyl, trialkylsilyl methylene in which the alkyl moiety has from 1 to 8 carbon atoms, benzene, toluene, xylene, and 2-naphthylene;

n is selected from 1 and 2.

3,299,144

METHOD FOR THE PREPARATION OF ALLYL DECABORANE

Robert J. F. Palchak, La Vale, Md., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Jan. 30, 1959, Ser. No. 790,294
8 Claims. (Cl. 260—606.5)

1. A method for the preparation of allyl decaborane which comprises reacting an allyl halide and a compound of the class $B_{10}H_{13}M$, wherein M is an alkali metal, at a temperature within the range from 25° C. to 75° C.

3,299,145

METHOD FOR PREPARING BIS(2-ALKOXYETHYL) SULFONES

Charles H. Chang, Easton, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,611
7 Claims. (Cl. 260—607)

1. A method for preparing a bis(2-alkoxyethyl) sulfone comprising reacting 1 mole of a 1,4-thioxane dioxide with 2 moles of an aliphatic alcohol containing a single

OH group bonded to a carbon atom as the sole reactive hydrogen-containing group at an elevated temperature of at least about 50° C. in the presence of a member of the group consisting of alkali metal hydroxides and alkoxides.

3,299,146

PREPARATION OF DIMETHYL DISULFIDE

Leslie A. Gillette, Wayne, Pa., and Le Roy Martin, Riverview, Mich., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 26, 1964, Ser. No. 354,977
4 Claims. (Cl. 260—608)

1. A process for preparing dimethyl disulfide which comprises reacting methyl mercaptan with dimethyl trisulfide in the presence of a basic catalyst selected from the group consisting of alkali metal hydroxides, alkaline earth metal oxides and hydroxides, and tertiary aliphatic amines and after reaction is complete removing the volatile by-product.

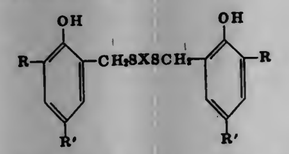
3,299,147

CERTAIN BIS (HYDROXY-ALKYLBENZYLTHIO) COMPOUNDS AND METHOD OF MAKING SAME

Francis X. O'Shea, Wolcott, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

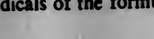
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,170
22 Claims. (Cl. 260—609)

1. Chemicals of the formula:



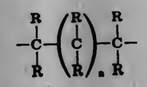
in which R and R' are selected from the group consisting of alkyl, cycloalkyl, and aralkyl groups of up to 12 carbon atoms and X is a diradical containing 2 to 18 carbon atoms, the said diradical X being selected from

(a) polymethylene diradicals of the formula



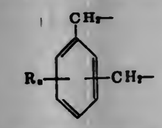
wherein *n* is a whole number from 2 to 12;

(b) branched chain polyalkylene diradicals of the formula:



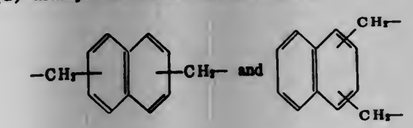
wherein *n* is a whole number from 0 to 9 and the R groups may be hydrogen or alkyl and at least one of the R groups is an alkyl group;

(c) an aralkyl diradical of the formula:



wherein R is an alkyl group of 1 to 4 carbon atoms and *n* is a whole number from 0 to 4;

(d) aralkyl diradicals of the formulae:

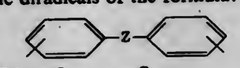


(e) aromatic diradicals of the formula:



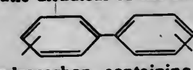
wherein R is an alkyl radical and *n* is a whole number from 0 to 4;

(f) aromatic diradicals of the formula:

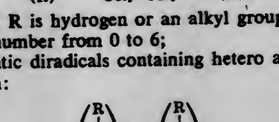


wherein Z is —O— or —S—;

(g) the aromatic diradical of the formula

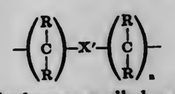


(h) cyclic hydrocarbon containing diradicals of the formula:



wherein R is hydrogen or an alkyl group and *n* is a whole number from 0 to 6;

(i) aliphatic diradicals containing hetero atoms of the formula:



wherein R is hydrogen or alkyl, *n* is a whole number from 1 to 6 and X' is —O— or —S—; and

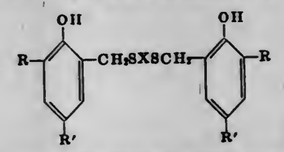
(j) diradicals of the formulae:

—$CH_2CH_2OCH_2CH_2OCH_2CH_2$—

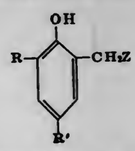
and

—$CH_2CH_2OCH_2OCH_2CH_2$—

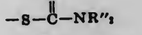
16. A method of preparing a chemical of the formula



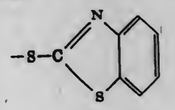
in which R and R' are selected from the group consisting of alkyl, cycloalkyl, and aralkyl groups of up to 12 carbon atoms and X is a diradical containing 2 to 18 carbon atoms, comprising heating two molar equivalents of a phenolic intermediate compound of the formula:



in which R and R' are as previously defined and Z is selected from the group consisting of a dithiocarbamyl radical of the formula



in which R'' is a lower alkyl radical and the mercaptobenzothiazolyl radical:



with two molar equivalents of an alkali metal hydroxide and one molar equivalent of a dithiol of the formula:

HSXSH

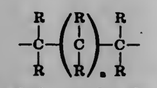
in which X is as previously defined, at a temperature from room temperature to 100° C., the said diradical X being selected from

(a) polymethylene diradicals of the formula

$$-(CH_2)_n-$$

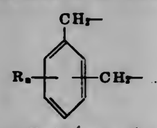
wherein n is a whole number from 2 to 12;

(b) branched chain polyalkylene diradicals of the formula:



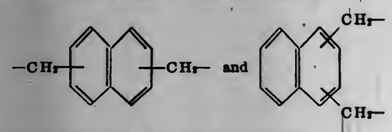
wherein n is a whole number from 0 to 9 and the R groups may be hydrogen or alkyl and at least one of the R groups is an alkyl group;

(c) an aralkyl diradical of the formula:



wherein R is an alkyl group of 1 to 4 carbon atoms and n is a whole number from 0 to 4;

(d) aralkyl diradicals of the formulae:

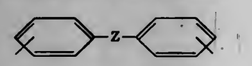


(e) aromatic diradicals of the formula:



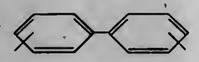
wherein R is an alkyl radical and n is a whole number from 0 to 4;

(f) aromatic diradicals of the formula:

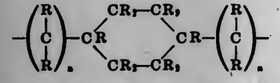


wherein Z is —O— or —S—;

(g) the aromatic diradical of the formula



(h) cyclic hydrocarbon containing diradicals of the formula:



wherein R is hydrogen or an alkyl group and n is a whole number from 0 to 6;

(i) aliphatic diradicals containing hetero atoms of the formula:



wherein R is hydrogen or alkyl, n is a whole number from 1 to 6 and X′ is —O— or —S—; and

(j) diradicals of the formulae:

$$-CH_2CH_2OCH_2CH_2OCH_2CH_2-$$

and

$$-CH_2CH_2OCH_2OCH_2CH_2-$$

3,299,148

TRIHALOGENATED METHYL MERCAPTANS

Engelbert Kühle, Cologne-Stammheim, and Erich Klauke, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

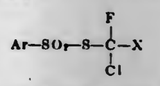
No Drawing. Filed Feb. 6, 1964, Ser. No. 343,109
Claims priority, application Germany, Apr. 27, 1963, F 39,606
7 Claims. (Cl. 260—609)

1. Trihalogen-methylmercaptans of the formula



wherein X is a member of the group consisting of chlorine and fluorine.

4. Process for the production of trihalogenated methylmercaptans, which comprises reacting aromatic thiosulphonates of the formula



wherein Ar is a phenyl radical and X is a member of the group consisting of chlorine and fluorine, with dry hydrogen chloride at a temperature of 150 to 250° C. and recovering the trihalogenated methylmercaptans formed.

3,299,149

PROCESS FOR THE PREPARATION OF CHLORINATED ETHERS

Francesco Minisci and Ugo Pallini, Milan, and Remo Galli, Cremona, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Feb. 28, 1962, Ser. No. 176,440
Claims priority, application Italy, Mar. 2, 1961, 3,855/61
10 Claims. (Cl. 260—614)

1. A process for the preparation of 1,4 and 1,2 chlorobutenyl ethers of the formula RO—C_4H_6—Cl wherein R is selected from the group consisting of alkyl, cycloalkyl and aralkyl of up to 9 carbon atoms, which comprises reacting 1,3 butadiene with a hydroperoxide of the formula RO—OH, where R has the above meaning, and a chlorine ion yielding substance selected from the group consisting of hydrochloric acid and water-soluble inorganic chlorides, in the presence of a catalyst selected from the group consisting of cuprous and ferrous salts and in an aqueous solution.

3,299,150

HYDRATION OF OLEFINS TO ALCOHOLS AND ETHERS USING HALOGENATED ALKANOL SOLVENTS

Robert B. Mosely and Michael N. Papadopoulos, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 31, 1963, Ser. No. 299,117
7 Claims. (Cl. 260—614)

1. A process for the conversion of olefin to alcohol and ether which comprises:

(a) passing substantially in the liquid phase a hydrocarbon mixture containing paraffin and olefin, each having from 2 to about 7 carbon atoms per molecule into a hydration zone containing an aqueous hydration catalyst selected from the group consisting of phosphoric, hydrofluoric and sulfuric acids, and halogenated alcohol having the formula:

$$Y(CX_3)_nZOH$$

wherein X is selected from the group consisting of chlorine and fluorine, Y is selected from the group consisting of hydrogen, chlorine and fluorine, Z is a hydrocarbon radical selected from the group consisting of $-CH_2-$, $-CH_2CH_2-$, and



and n is a positive integer from 1 to 6, the halogenated alcohol being present in an amount such that the volumetric ratio of halogenated alcohol to aqueous phase is from about 5:1 to 1:5;

(b) hydrating said olefin at a temperature of from about 0° C. to about 150° C.; and

(c) recovering the resulting hydration product selected from the group consisting of alcohol and ether from the hydration zone effluent.

3,299,151

PREPARATION OF POLYETHER POLYOLS

Marco Wismer, Gibsonia, and Herman P. Doerge and John R. Peffer, Springdale, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 8, 1963, Ser. No. 314,615
5 Claims. (Cl. 260—615)

1. A process for purifying a crude lower alkylene oxide-polyether polyol containing an alkali metal hydroxide catalyst, which comprises adding formic acid to said polyether polyol in sufficient quantity to precipitate substantially all of said catalyst in the crude polyether polyol, and removing said precipitate.

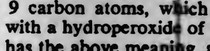
3,299,152

PREPARATION OF ALPHA, OMEGA-DICHLOROOLEFIN

Yanosuke Inaba, Fujisawa, Kanagawa, and Goro Kimura and Takushi Uematsu, Kamakura, Kanagawa, Japan, assignors to Toyo Koatsu Industries, Inc., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Oct. 11, 1962, Ser. No. 229,997
Claims priority, application Japan, Nov. 6, 1961, 36/39,489
9 Claims. (Cl. 260—654)

1. Process for making alpha, omega-dihaloolefins comprising contacting a trihaloalkane of the formula:



wherein X is chlorine or bromine, m and n each is an integer equal to at least 2 and $m+n$ is an integer from 4 to 9, as sole ingredient, with a catalyst from the class consisting of charcoal, activated carbon, pumice, silica gel, alumina and mixtures thereof at a temperature of 160° C. to about 250° C. to selectively remove the secondary halogen atom and to form the corresponding alpha, omega-dihaloolefin.

3,299,153

NAPHTHENIC ISOMERIZATION PROCESS WITH SYNTHETIC MORDENITE

Clark Edward Adams and Charles Newton Kimberlin, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed May 6, 1964, Ser. No. 365,390
15 Claims. (Cl. 260—666)

1. An improved process for isomerizing naphthenic hydrocarbons which comprises subjecting said naphthenic hydrocarbons to isomerization conditions in the presence of a catalyst comprising a crystalline synthetic mordenite zeolite containing less than about 10 wt. percent Na_2O.

3,299,154

PROCESS FOR PRODUCING MONOMETHYLCYCLOHEXENE MIXTURES HAVING HIGH CONTENT OF 1-METHYL ISOMER

Louis E. Kidwell, Jr., Midland, Tex., assignor to El Paso Natural Gas Products Company, Odessa, Tex., a corporation of Texas

Filed Aug. 18, 1964, Ser. No. 390,354
4 Claims. (Cl. 260—666)

1. A process for the production of a methylcyclohexene mixture having a weight ratio of 1-methylcyclohexene to other methylcyclohexene isomers and methylenecyclohexane of greater than 1.3 comprising passing 2-methylcyclohexanol over an aluminum oxide dehydrating catalyst at a temperature in the range of about 210° to 250° C. and at a space velocity correlated so as to convert about 2 to 50% of the 2-methylcyclohexanol to mixed methylcyclohexenes and methylenecyclohexane.

3,299,155

OXIDATIVE DEHYDROGENATION OF ALKYL BENZENES WITH $CaNiPO_4$ AND SO_2

Charles R. Adams, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 24, 1964, Ser. No. 347,058
10 Claims. (Cl. 260—669)

1. The process for the production of alkylene substituted benzenes selected from the group consisting of benzene and methyl substituted benzenes having at least one alkylene of the group consisting of vinyl and isopropenyl directly attached to the benzene nucleus which consists of contacting an alkyl-substituted benzene selected from the group consisting of benzene and methyl-substituted benzenes having at least one alkyl selected from the group consisting of ethyl and isopropyl directly attached to the benzene nucleus, in admixture with sulfur dioxide, in vapor phase, at a temperature of from about 300° to about 700° C., with a metal phosphate catalyst.

3,299,156

DEHYDROCYCLIZATION CATALYST AND PROCESS

Jimmy Dwayne Ashley and Theodore August Swenson, Jr., Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 21, 1963, Ser. No. 289,710
8 Claims. (Cl. 260—673.5)

1. A process for the preparation of aromatic hydrocarbons which comprises contacting a non-aromatic hydrocarbon feed of from 6 to 7 carbon atoms with a catalyst containing a mixture of both cerium and nickel on an alumina support.

5. A dehydrogenation-cyclization catalyst which contains a mixture of cerium and nickel oxides each in approximately equal amounts in a range of from about .25 to about 3% by weight, based on the total catalyst weight on a gamma-alumina support.

3,299,157

PERMEABLE MEMBRANE AND METHOD OF MAKING SAME FOR USE IN A PARAXYLENE SEPARATION

Raymond F. Baddour, Belmont, and Alan S. Michaels, Lexington, Mass., assignors to Amicon Corporation, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Mar. 7, 1961, Ser. No. 93,842
4 Claims. (Cl. 260—674)

1. The method of making a diffusion membrane which has a selective permeability for paraxylene of a mixture of ortho-, meta-, and paraxylene which comprises selecting paraxylene, providing a membrane of low density polyethylene in which said paraxylene is soluble to the extent of 1% to 30% by weight at a selected temperature more

than 10° C. below the temperature at which dissolution of said membrane in said paraxylene occurs, maintaining said membrane in contact with a mass of said paraxylene at a temperature below said dissolution temperature and at least 5° C. above said selected temperature to cause said membrane to absorb said paraxylene and cooling said membrane to said selected temperature.

2. The method of separating paraxylene from a mixture of fluid materials which comprises preparing a diffusion membrane as claimed in claim 1, thereafter placing one side of said membrane in contact with a supply of said mixture, and reducing the pressure at the opposite side of said membrane to cause said paraxylene to diffuse therethrough.

3,299,158

PRODUCTION OF PURE AROMATIC HYDROCARBONS

Hans Wirth and Karl-Heinz Eisenlohr, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed Sept. 8, 1964, Ser. No. 396,801
Claims priority, application Germany, June 4, 1960, M 45,554
2 Claims. (Cl. 260—674)

1. A process for separating pure aromatic hydrocarbons boiling at about 80 to 160° C. from a starting hydrocarbon mixture consisting essentially of aromatic and non-aromatic hydrocarbons comprising intimately contacting the said hydrocarbon mixture with a selective solvent consisting essentially of N-methyl-pyrrolidone with more than 10% by weight and up to 40% by weight water whereby the aromatic hydrocarbons are dissolved in the selective solvent to form an extract, and passing a mixture consisting essentially of a non-aromatic hydrocarbon anti-solvent boiling below the aromatic hydrocarbons in combination with recycled extracted aromatics countercurrently through the resulting extract and recovering the aromatic hydrocarbons dissolved in the extract in pure form.

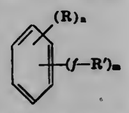
3,299,159

PROCESS FOR THE PRODUCTION OF QUATERNARY CARBON-CONTAINING OLEFINS

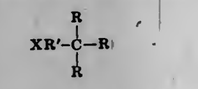
Emmett H. Burk, Jr., Glenwood, and Byron W. Turnquest, Chicago, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1964, Ser. No. 371,788
15 Claims. (Cl. 260—677)

1. A process for the production of a quaternary carbon-containing olefin which consists essentially of thermally dehydrohalogenating in the vapor form at a temperature of about 400 to 650° C. in the presence of an aromatic hydrocarbon having the formula:



wherein R is an alkyl radical of up to about 15 carbon atoms; n is 0 to 4; R′ is an aromatic hydrocarbon ring; f indicates a fused ring relationship; and m is 0 to 1; with the proviso that when m is 0, n is 1 to 4 and the total number of carbon atoms in the R structure is up to about 20; and in a non-catalytic environment, a halogenated hydrocarbon having the structural formula:



wherein R is an aliphatic monovalent hydrocarbon radical of up to 8 carbon atoms, the total carbon atoms in all R's being up to 18; R′ is a divalent aliphatic hydrocarbon radical of 2 to 8 carbon atoms; and X is a halogen atom having an atomic weight of 35 to 127, the mole ratio of said aromatic hydrocarbon to halogenated hydrocarbon being about 0.5 to 20:1.

3,299,160

METHOD FOR SEPARATING MYRCENE FROM OCIMENE

Jerome S. Luloff, East Paterson, and Morris Dunkel, Paramus, N.J., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 24, 1966, Ser. No. 537,006
10 Claims. (Cl. 260—677)

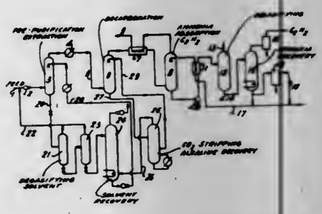
1. A method for separating myrcene from ocimene which comprises: (A) reacting the myrcene with a dienophile; (B) removing the resultant adduct of the myrcene and the dienophile from the reaction mixture; and (C) recovering the ocimene from the reaction mixture substantially free from myrcene.

3,299,161

PURIFICATION OF ACETYLENE FROM GASEOUS MIXTURES

Frederic F. A. Braconier, Plainevaux, and Jean J. L. E. Riga, Liege, Belgium, assignors to Societe Belge de l'Azote et des Produits Chimiques, Liege, Belgium

Filed Feb. 11, 1963, Ser. No. 257,689
7 Claims. (Cl. 260—679)



1. In a process for the separation and purification of acetylene from gaseous mixtures which also include substantial proportions of other hydrocarbons and carbon dioxide and other inorganic gases, the steps which comprise extracting said other hydrocarbons from said gaseous mixture with a solvent consisting essentially of a kerosene fraction of petroleum hydrocarbons, thereafter decarbonating the thus treated gaseous mixture with an alkaline aqueous solution for the removal therefrom of carbon dioxide, and thereafter separating said acetylene from the thus treated gaseous mixture by extraction with anhydrous liquid ammonia.

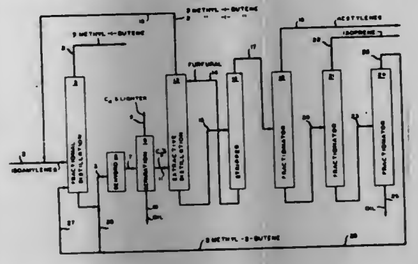
3,299,162

PRODUCTION OF ISOPRENE AND 3-METHYL-1-BUTENE

Harris A. Clay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 26, 1963, Ser. No. 333,485
4 Claims. (Cl. 260—680)

1. A method for the production of 3-methyl-1-butene and isoprene which comprises in a fractional distillation zone fractionally distilling an isoamylenes feed stock containing 3-methyl-1-butene, 2-methyl-1-butene and 2-methyl-2-butene, recovering overhead said 3-methyl-1-butene as a product of the process, passing at least a portion of the remainder of said feed stock to a dehydrogenation zone wherein isoprene, 3-methyl-1-butene, acetylenes and some oil are formed, extractively distilling the dehydrogenation zone effluent, obtaining and passing to said fractional distillation zone an extractive distillation overhead containing 2-methyl-1-butene and 3-methyl-1-butene, ob-



taining a bottoms fraction from said extractive distillation and subjecting the same to treatment to recover isoprene therefrom.

3,299,163

REMOVAL OF CONTAMINANTS FROM UNSATURATED HYDROCARBON-CONTAINING MIXTURES

Robert P. Zelinski, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,846
10 Claims. (Cl. 260—681.5)

1. A process for separating polyenes and acetylenic compounds from a conjugated diene mixture containing same which comprises contacting said mixture at a temperature above 100° C. with an alkali metal hydroxide solution of a compound selected from the group consisting of alkylene and polyalkylene glycols, primary, secondary and polyamines having from 2–20 carbon atoms per molecule, and mixtures of these.

3,299,164

TWO-STAGE POLYMERIZATION PROCESS

William Cyril Webber, Westhumble, near Dorking, and James Keith Hambling, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed May 8, 1963, Ser. No. 279,005
Claims priority, application Great Britain, May 11, 1962, 18,194/62, 18,195/62, 18,196/62
6 Claims. (Cl. 260—683.15)

1. A two-stage polymerization process which comprises contacting a methyl pentene monomer in a first stage with an aluminum alkyl catalyst at temperatures above 80° C. to form a first polymeric product comprising the dimer and trimer of the starting monomer and thereafter reacting the first polymeric product in a second stage with an olefin selected from the group consisting of methyl pentenes, butenes, propylene and ethylene in contact with an aluminum chloride catalyst and thereafter recovering a second polymeric product.

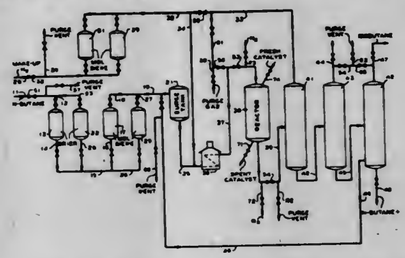
3,299,165

TURN AROUND FOR CATALYST REACTOR

Wayne E. Abrahamson, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 24, 1963, Ser. No. 289,829
6 Claims. (Cl. 260—683.68)

1. In a process of conducting a turn around of a catalyst reaction system wherein water is a catalyst poison, the catalyst reaction system contains a component which reacts with rust to form water under the operating conditions of said reaction system, and the catalyst reaction zone contains a used catalyst which it is desired to replace with fresh catalyst comprising isolating the catalyst reaction zone and shutting down the remainder of the reaction system, opening at least a portion of said remainder of the reaction system to the atmosphere, conducting any desired turn around operations, closing said at least a portion of said remainder of the reaction system which has been opened to the atmosphere, passing a purge gas through said remainder of the reaction system; the improvement comprising reestablishing fluid communication between said catalyst reaction zone containing said used catalyst and said remainder of the reaction system, passing the reactants into said catalyst reaction zone and maintaining said catalyst reaction zone under suitable reaction conditions for at least a



time sufficient for said component to react with substantially all of the rust formed in said reaction system and for the water formed by the reaction of said component and rust to react with said used catalyst to thereby remove free water from said reaction system, subsequent to the expiration of said sufficient time isolating said catalyst reaction zone and shutting down the remainder of the reaction system, withdrawing said used catalyst from said catalyst reaction zone and introducing fresh catalyst into said catalyst reaction zone, and returning said reaction system to on-stream conditions.

3,299,166

HARDENING OF EPOXY RESIN BY MEANS OF CONDENSATION PRODUCTS OF AMINOALKOXYSILANES AND MONO-OXIRANE COMPOUNDS

Harold Garton Emblem, Grappenhall, Norman Albert Hurt, Lymm, and Stanley Arthur Trow, Salford, England, assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 3, 1963, Ser. No. 277,707
Claims priority, application Great Britain, May 14, 1962, 18,505/62
3 Claims. (Cl. 260—824)

1. A method of hardening an epoxy resin comprising the reaction product of epichlorohydrin and 2,2-bis(4-hydroxy phenyl)propane which comprises:

(a) forming a mixture of 1 part by weight of said epoxy resin and about 0.3 to 2.5 parts by weight of a condensation product of an aminoalkoxy silane and a monooxirane compound, said aminoalkoxy silane having the formula:

$$R^3_nSi(OR^4)_m(OR^5NHR^6)_{4-m-n}$$

wherein

R^3 is selected from the class consisting of alkyl and alkenyl groups having up to 5 carbon atoms, and the phenyl group;

R^4 is an alkyl group having up to 4 carbon atoms;

R^5 is selected from the class consisting of alkylene

and monohydroxyalkylene radicals having up to 6 carbon atoms;

R^6 is selected from the class consisting of hydrogen, alkyl and monohydroxyalkyl groups having up to 6 carbon atoms;

n is selected from the values 1, 2 and 3;

m is selected from the values 0, 1 and 2; and

$n+m$ is selected from the values 1, 2 and 3;

and said oxirane compound is one selected from the class consisting of aliphatic compounds containing up to 6 carbon atoms and styrene oxide, and

(b) heating the mixture at a temperature of from 140° C. to 250° C. for from 1 to 5 hours.

3,299,167

PHENOLIC-ENCAPSULATING COMPOSITIONS

Paul D. Knowlson and Elliot Wilbur Simpson, North Tonawanda, and Minert E. Hull III, Kenmore, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 10, 1963, Ser. No. 279,620
18 Claims. (Cl. 260—829)

1. A process for preparing encapsulating resins which comprises (A) preparing a furfuryl alcohol condensation resin product which comprises condensing furfuryl alcohol with an aliphatic aldehyde in the presence of an acid catalyst, neutralizing the reaction mixture and thereafter admixing a heterocyclic aldehyde which is a five membered monohetero conjugated diene cyclic compound wherein four members of the ring are carbon atoms and the fifth member is selected from the group consisting of oxygen, nitrogen and sulfur, with the furfuryl alcohol condensation resin product (B) preparing a phenol-aliphatic aldehyde condensation resin product which comprises condensing a phenol with an aliphatic aldehyde in the presence of a catalyst and thereafter neutralizing the reaction mixture (C) admixing the said furfuryl alcohol condensation resin product and said phenol-aliphatic aldehyde condensation resin product and thereafter (D) removing water therefrom until the desired melting point of the resin is achieved.

3,299,168

EPOXY RESIN COMPOSITIONS AND CURED PRODUCTS OBTAINED THEREFROM

George B. Payne, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 17, 1961, Ser. No. 124,393
8 Claims. (Cl. 260—830)

1. A composition comprising (1) 99 parts to 30 parts by weight of a glycidyl polyether of a polyhydric compound of the group consisting of polyhydric phenols and polyhydric alcohols, and (2) 1 part to 70 parts by weight of glycidyl glycidate.

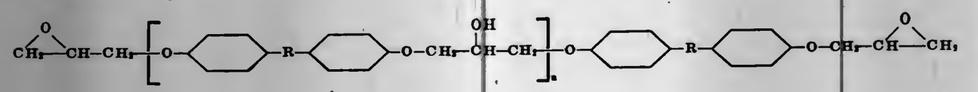
3,299,169

ELASTOMERIC EPOXY RESIN

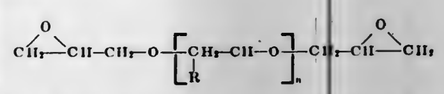
John C. Smith, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 18, 1961, Ser. No. 138,619
4 Claims. (Cl. 260—830)

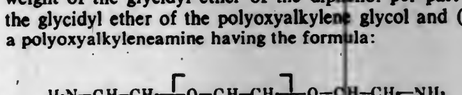
1. An elastomeric resin of high elongation, flexural strength, and transparency without noticeable distortion of images received therethrough consisting of the reaction product of (1) a glycidyl ether of a diphenol having the formula:



wherein R is the residue of an isoalkylidene group and n has an average value of from 0 to about 4 and (2) a glycidyl ether of a polyoxyalkylene glycol having the formula:



wherein R is selected from class consisting of H and lower alkyl and n has an average value of from about 1 to about 90, in proportions of each of (1) and (2) sufficient to provide between about 0.1 and 9.0 parts by weight of the glycidyl ether of the diphenol per part of the glycidyl ether of the polyoxyalkylene glycol and (3) a polyoxyalkyleneamine having the formula:



wherein R is selected from the class consisting of H and lower alkyl and n has a value of from 0 to about 4, in an amount of (3) sufficient to provide between about 0.95 and 1.05 equivalence of N—H groups per equivalent of oxirane groups present.

3,299,170

ALPHA PINENE COPOLYMER AS A TACKIFIER FOR POLYMERS

Carlos T. Gonzenbach, Scotia, N.Y., assignor to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,379
6 Claims. (Cl. 260—845)

2. A mixture of isobutylene-isoprene copolymer containing 85 to 99.5% isobutylene and 0.5 to 15% isoprene and as a tackifying agent therefor a minor amount of a copolymer of 1 to 1.1 moles of alpha pinene and 1.1 to 1 moles of dicyclopentadiene.

3. A mixture according to claim 2 including an alkylphenol-formaldehyde novolak containing 4 to 12 carbon atoms in the alkyl group.

3,299,171

FIBERS OF MODIFIED POLYPIVALOLACTONE

Fred W. Knobloch, Hockessin, and William O. Statton, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 20, 1964, Ser. No. 360,956
8 Claims. (Cl. 260—857)

1. A high work recovery fiber consisting essentially of polypivalolactone, said fiber having an orientation angle less than the numerical value given by the expression

$$10(\eta_{inh}+1)$$

where η_{inh} is the inherent viscosity of the polymer of the fiber, said viscosity being determined at a concentration of 0.5 gm. of polymer per 100 ml. of solution in trifluoroacetic acid, and at a temperature of 30° C. and is at least 0.75, the said fiber having an α ratio of at least 1.70, an α crystallite size transverse to the fiber axis of at least 85 A. and a radial breadth of not more than 0.40°.

3,299,172

PROCESS FOR THE PREPARATION OF LINEAR THERMOPLASTIC MIXED POLYESTERS HAVING SOFTENING TEMPERATURES ABOVE 100° C.

Gerhard Schade, Witten-Bommern, and Franz Blaschke, Witten (Ruhr), Germany, assignors to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany

No Drawing. Filed Sept. 18, 1964, Ser. No. 397,618
Claims priority, application Germany, Sept. 26, 1963, C 30,978
13 Claims. (Cl. 260—860)

1. In a process for the preparation of linear thermoplastic mixed polyesters having softening temperatures of above 100° C. which comprises heating a mixture comprising 0 to 100 mole percent of a diaryl terephthalate, 100 to 0 mole percent of a diaryl isophthalate, 0 to 10 mole percent of a diaryl ester selected from the group consisting of diaryl carbonates and diaryl oxalates, the total amount of said diaryl terephthalate and diaryl isophthalate in said mixture being from 90 to 100 mole percent and the total mole percent of said diaryl terephthalate, said diaryl isophthalate and said diaryl ester being equal to 100 mole percent, and about 100 mole percent of a dihydric phenol to about 320° C. to effect a transesterification and polycondensation to produce a mixed polyester, the improvement which comprises adding to said mixture at temperatures of up to about 280° C. as soon as the melting viscosity of said mixture reaches a value of from about 2000 to 4000 poise at said temperature about 15 to 120% by weight, based on the theoretical weight of polyester produced by said transesterification and polycondensation, of a linear thermoplastic polyester consisting of units of residues of a diprimary dialcohol and residues of an acid selected from the group consisting of terephthalic acid, isophthalic acid and mixtures thereof, and subsequently continuing the polycondensation reaction until a linear thermoplastic mixed polyester product having desired mechanical properties is obtained.

3,299,173

UNSATURATED POLYESTERS PREPARED FROM REACTABLE FIRE-RETARDANT AGENTS

Frank F. Roselli, San Mateo, Calif., assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Apr. 15, 1963, Ser. No. 272,882
42 Claims. (Cl. 260—869)

1. A fire-resistant, curable polyester composition which comprises:

(A) About 30–83% by weight of the reaction product of (1) about 2.0–2.5 molar parts of at least one aliphatic polyhydroxy compound, (2) about 0.4–2.0 molar parts of a compound selected from the group consisting of dibasic carboxylic acids containing a polymerizable double bond and anhydrides thereof, and (3) about 0–1.6 molar parts of a compound selected from the group consisting of non-polymerizable dibasic carboxylic acids and anhydrides thereof;

(B) About 15–68% by weight of a solvent for said reaction product (A), said solvent comprising a monovinyl aromatic compound; and

(C) As a reactive fire-retardant additive, about 2–30% by weight of a compound of the formula

$$(R^1O)_aM(OR^2)_b$$

wherein M is selected from the group consisting of antimony, titanium, boron, silicon, arsenic, tin, lead and bismuth; R^1 is an aliphatic olefinic radical; R^2 is a radical derived from R^1 by addition across the olefinic bond of a halogen of atomic weight 35–80, inclusive; a and b are integers from 1 to 4, inclusive; and $a+b$ is an integer from 3 to 5, inclusive.

3,299,174

COMPOSITIONS COMPRISING MONO-OLEFIN POLYMERS AND HYDROGENATED BLOCK COPOLYMERS

Calvin J. Kuhre and Charles A. Dallas, Berkeley, Walter R. Haefele, Orinda, and Marvin A. Deisz, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1963, Ser. No. 275,501
8 Claims. (Cl. 260—876)

1. A polymeric composition comprising:

(1) a hydrogenated block copolymer having the general configuration A-B-A wherein, prior to hydrogenation,

(a) the A's are polymer blocks of a mono alkenyl aromatic hydrocarbon, said block having an average molecular weight of 4000 to 115,000, and

(b) B is a polymer block of a conjugated diene, said block having an average molecular weight of 20,000 to 450,000,

(c) said copolymer being hydrogenated sufficiently to reduce its unsaturation to less than 30% of its original value; and

(2) an alpha olefin polymer having a molecular weight of at least 5000 of the group consisting of homopolymers of unbranched alpha-monoolefins of about 2 to 6 carbon atoms and copolymers of these materials with each other.

3,299,175

VULCANIZING OF OLEFIN COPOLYMERS

Gerolamo Marchesini, Milan, and Michele Manica, Ferrara, Italy, assignors to Pirelli S.p.A., & Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed June 21, 1963, Ser. No. 289,746
Claims priority, application Italy, June 26, 1962, 12,814/62
13 Claims. (Cl. 260—876)

1. A vulcanizable composition comprising a saturated amorphous copolymer of ethylene with a different alpha-mono-olefin and, as a vulcanizing agent, an organic peroxide, said composition also containing uniformly dispersed therein a polymeric filler obtained by the free radical polymerization of divinyl-benzene in the presence of a polymer of a conjugated diolefin, said polymer being selected from the group consisting of sodium and lithium polybutadiene having prevailingly 1,2-bonding, 1,2-polyisoprene, 3,4-polyisoprene, and a copolymer of butadiene and styrene, the amount of said polymeric filler being from about 10 to 50% by weight of the mixture of said copolymer and said polymeric filler.

3,299,176

COMPATIBLE BLENDS OF 1-OLEFINS

Ruskin Longworth, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 24, 1963, Ser. No. 290,188
6 Claims. (Cl. 260—876)

1. The method of compatibilizing different thermoplastic 1-mono-olefin polymers which comprises chemically incorporating by melt grafting in the presence of oxygen from 0.1 to 0.5% by weight of an ethylenically unsaturated carboxylic acid having from 3 to 20 carbon atoms in at least one thermoplastic component, chemically incorporating by melt grafting in the presence of oxygen from 0.1 to 0.5% by weight of an ethylenically unsaturated tertiary amine having from 4 to 20 carbon atoms in the remaining components, and thereafter intimately blending the components.

3,299,177

POLYETHYLENE MODIFIED WITH BRANCHED POLYETHYLENE WAX

Frederick P. Reding, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,537
10 Claims. (Cl. 260—878)

1. A process for producing modified polyethylene which comprises polymerizing ethylene in contact with a free radical initiator and a pre-formed, highly branched, low molecular weight polyethylene wax, said polyethylene wax having a flow rate of from about 50 decigrams per minute to about 500 decigrams per minute, a density of from about 0.80 gram/cc. to about 0.92 gram/cc. at 23° C., and a specific viscosity in methylcyclohexane at 70° C. of from about 0.05 to about 0.15 so as to produce a modified polyethylene having a melt index of from about 0.002 decigram per minute to about 3.0 decigrams per minute and containing from about 5 percent by weight to about 20 percent by weight of chemically combined polyethylene wax.

3,299,178

POLYMERIZATION OF 1,3-BUTADIENE TO PRODUCE CIS 1,4-POLYBUTADIENE IN THE PRESENCE OF STYRENE MONOMER WITH AN ORGANOMETAL AND IODINE CONTAINING CATALYST, FOLLOWED BY STYRENE POLYMERIZATION

James N. Short and Robert S. Hanmer, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 14, 1963, Ser. No. 251,038
16 Claims. (Cl. 260—880)

1. A polymerization process which comprises polymerizing a major amount of 1,3-butadiene charged to a polymerization zone with a catalyst formed by mixing materials comprising an organometal compound and an iodine-containing component in the presence of a monovinyl aromatic compound to produce a homopolymer of butadiene having at least 85 percent cis-1,4-addition, said 1,3-butadiene being charged to said zone in an amount of from 3 to 49 weight percent and correspondingly said monovinyl aromatic compound being present in an amount of from 97 to 51 weight percent; and thereafter polymerizing said monovinyl aromatic compound in the substantial absence of 1,3-butadiene and in the presence of the previously polymerized polybutadiene.

3,299,179

GRAFT COPOLYMER PREPARED BY REACTING AN OXIDIZED LIQUID DIOLEFIN POLYMER AND A VINYL MONOMER

George Rodney Rippel, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed June 14, 1963, Ser. No. 287,895
3 Claims. (Cl. 260—880)

1. A method for preparing a graft copolymer which comprises mixing a liquid polymer of a conjugated diolefin of 4 to 6 carbon atoms with 5 to 40 wt. percent of a reactive monomer selected from the group consisting of styrene, vinyl toluene, vinyl naphthalene, divinyl benzene and mixtures thereof and blowing said mixture in a hydrocarbon solvent with a gas chosen from the group consisting of air and oxygen at a temperature between 70 and 300° F. in the presence of an organic salt of cobalt, lead iron or manganese as catalyst until at least a small amount of oxygen has been incorporated into the polymer.

3,299,180

POLYVINYL CHLORIDE-POLYMERIZED CYCLOPENTADIENE COMPOSITION AND ELECTRICAL CONDUCTOR COATED WITH SAME

Louis P. Wilks, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,356
7 Claims. (Cl. 260—890)

1. A composition composed principally of polyvinyl chloride and up to about 35% by weight based on the polyvinyl chloride of thermally polymerized cyclopentadiene homopolymer.

3,299,181

THERMALLY MODIFIED POLYETHYLENE AND OTHER POLYMERS AND PROCESS FOR PREPARING THE SAME

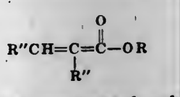
Harry W. Coover, Jr., Marvin A. McCall, and James E. Guillet, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 3, 1960, Ser. No. 26,408
19 Claims. (Cl. 260—897)

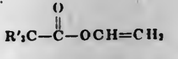
1. The method of tailoring polyethylene to increase its value and versatility which comprises degrading by heating, at a temperature in the range of 290° to about 450° C., for at least one minute, a mixture comprising about 5 to about 95 percent, by weight, of solid non-cross-linked polyethylene resin and about 5 to about 95 percent, by weight, of a modifier selected from the group consisting of (1) a polymer of a compound having the formula:

$$CH_2{=}CRR'$$

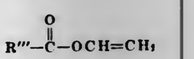
where R is a member selected from the group consisting of aliphatic and aromatic hydrocarbon radicals containing 1–20 carbon atoms, R′ being a member selected from the group consisting of hydrogen and methyl, (2) a polymer of an unsaturated polymerizable compound having the formula:



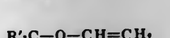
(3) a polymer of an unsaturated polymerizable compound having the formula:



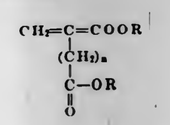
(4) a polymer of an unsaturated polymerizable compound having the formula:



(5) a polymer of an unsaturated polymerizable compound having the formula:



and (6) a polymer of an unsaturated polymerizable compound having the formula:



where, in (2), (3), (4), (5) and (6), R is an alkyl radical containing 1–8 carbon atoms, R′ is a member selected from the group consisting of hydrogen, halogen, alkyl and alkoxy radicals containing 1–8 carbon atoms, R″ is a member selected from the group consisting of hydrogen and methyl, R‴ is a member selected from the group consisting of aryl and alkaryl radicals and *n* is an integer from 0–1, inclusive.

3,299,182

HIGH IMPACT, HEAT AND CHEMICAL RESISTANT BLENDS OF CHLORINATED POLYVINYL CHLORIDE AND CHLORINATED POLYETHYLENE

Garland B. Jennings, Avon, and George J. Kliner, Avon Lake, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed May 5, 1961, Ser. No. 107,929
7 Claims. (Cl. 260—897)

1. The composition comprising a mixture of 100 parts by weight of a post-chlorinated polyvinyl chloride characterized by having a heat distortion temperature, as measured by ASTM Test Method D–648, which is at least 20° C. higher than that of unchlorinated polyvinyl chloride, and from 2 to 8 parts by weight of a homogeneously chlorinated polymer of at least one aliphatic alpha-olefin said alpha-olefin having a chain length no greater than 8 carbon atoms and said polymer having a melt index value above about 0.05, the mixture characterized in that it is extrudable into pipe suitable for conveying water at a temperature within the range of about 85° C. to 120° C.

3,299,183

CO-VULCANIZABLE MIXES OF AN AMORPHOUS ETHYLENE-ALPHA OLEFIN COPOLYMER AND POLYISOBUTYLENE AND VULCANIZED ELASTOMERS THEREOF HAVING LOW PERMEABILITY TO GASES

Camillo Borghese, Terni, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy

Filed Oct. 24, 1961, Ser. No. 147,281
Claims priority, application Italy, Oct. 28, 1960, 18,770/60
10 Claims. (Cl. 260—897)

1. A co-vulcanizable mixture comprising at least one saturated elastomeric amorphous copolymer of ethylene with an alphaolefin selected from the group consisting of propylene and butene, and solid polyisobutene in an amount up to about 60% by weight of the copolymer-polyisobutene mixture, and at least a vulcanizing amount of sulfur and organic peroxide, said copolymer containing from about 20 to 80 mole percent of ethylene and having a molecular weight of from about 30,000 to 1,000,000.

3,299,184

METHOD FOR PROCESSING FUSIBLE CROSS-LINKED ETHYLENE/DICARBOXYLIC ANHYDRIDE COPOLYMERS

Clyde J. Whitworth, Jr., and Nathan L. Zutty, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,699
6 Claims. (Cl. 260—897)

1. The method for processing a crosslinked polymeric composition of an ethylene/bicyclo[2.2.1]hept-2-ene-5,6-dicarboxylic anhydride copolymer and an organic compound having at least two substituents selected from the group consisting of hydroxy, primary amino and secondary amino, wherein the crosslinks of said polymeric composition are selected from the group consisting of half-ester and half-amide crosslinks of said copolymer, which comprises heating said crosslinked polymeric composition at a temperature sufficient to break said crosslinks wherein by said composition is rendered substantially free of said crosslinks, working the resulting crosslink-free composition at said temperature and cooling said crosslink-free composition to a temperature sufficient to permit said crosslinks to re-form.

3,299,185

DYEABLE POLYOLEFIN FIBERS CONTAINING A BINARY COPOLYMER OF STYRENE AND ACRYLONITRILE

Ryohei Oda, Kyoto, and Norihisa Takeda and Shiro Ueki, Fukushima-ken, Japan, assignors, by mesne assignments, to Ube-Nitto Kasei Co., Ltd., Chuo-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed July 30, 1963, Ser. No. 298,546
Claims priority, application Japan, Sept. 27, 1962, 37/41,377
2 Claims. (Cl. 260—897)

1. A process for the production of readily dyeable polyolefine fibers which comprises blending a polyolefine with a binary copolymer of styrene and acrylonitrile and melt-spinning the blended polymer.

3,299,186

MELT BLENDING OF POLYOLEFINS

Robert G. Wallace, Tokyo, Japan, assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,639
8 Claims. (Cl. 260—897)

1. A process for blending a first olefin polymer of a given melt index with a second olefin polymer of a significantly different melt index which comprises:

(a) charging water and said first and second olefin polymers into a mixing zone comprising a confined working space wherein the polymers are subjected to intense mixing action, the water being added in an amount in the range of 0.1–5 weight parts water per 100 weight parts of polymer to be blended;

(b) subjecting the resulting mixture of first and second olefin polymers and water to an intense mixing action at a temperature between 285 and 340° F.;

(c) venting vaporized water from said mixing zone; and

(d) thereafter recovering the resulting blend of said first and second olefin polymers from said mixing zone.

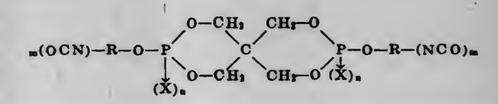
3,299,187

PHOSPHORUS-CONTAINING POLYISOCYANATES OF PENTAERYTHRITOL

Rudi F. W. Rätz, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,932
6 Claims. (Cl. 260—927)

1. Phosphorus containing polyisocyanates having the formula



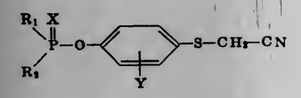
wherein R represents a benzene ring, a methyl substituted benzene ring, or a naphthalene ring; wherein X is selected from the class consisting of oxygen and sulfur; wherein *n* is an integer from 0–1; and wherein *m* is an integer from 1–3.

3,299,188
PHOSPHORIC, PHOSPHONIC, PHOSPHINIC OR THIONOPHOSPHORIC, -PHOSPHONIC, -PHOSPHINIC ACID ESTERS

Hans-Gerd Schicke, Wuppertal-Elberfeld, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed June 23, 1964, Ser. No. 377,380
Claims priority, application Germany, June 24, 1963, F 40,053
15 Claims. (Cl. 260—940)

1. A compound of the formula



in which

R_1 stands for a member selected from the group consisting of lower alkyl having up to 4 carbon atoms, lower alkoxy having up to 4 carbon atoms, lower N-alkylamino having up to 4 carbon atoms, lower N,N-dialkylamino having up to 8 carbon atoms and phenyl,

R_2 stands for a member selected from the group consisting of lower alkyl having up to 4 carbon atoms, lower alkoxy having up to 4 carbon atoms, lower N-alkylamino having up to 4 carbon atoms and lower N,N-dialkylamino having up to 8 carbon atoms

and in which X stands for a member selected from the group consisting of oxygen and sulfur

and Y stands for a member selected from the group consisting of hydrogen, halogen and lower alkyl having up to 4 carbon atoms.

3,299,189
METHYLENE ESTERS OF CARBOXYLIC AND PHOSPHORODIAMIDODITHIOIC ACIDS

Allen F. Millikan, Crystal Lake, and Gifford W. Crosby, Woodstock, Ill., assignors, by mesne assignments, to The Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Apr. 19, 1962, Ser. No. 188,870
2 Claims. (Cl. 260—952)

1. Methylene toluate-N,N'-tri-n-butylphosphorodiamidodithioate.

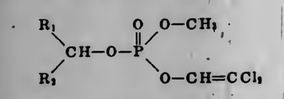
2. Methylene 2-ethylhexanoate - N,N' - diphenylphosphorodiamidodithioate.

3,299,190
O,O-DIALKYL-O-DICHLOROVINYL PHOSPHATES

Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 19, 1963, Ser. No. 324,882
Claims priority, application Germany, Jan. 23, 1962, F 35,829
5 Claims. (Cl. 260—957)

1. A compound of the formula



in which R_1 and R_2 separately stand for alkyl groups containing 1 to 4 carbon atoms and R_1 and R_2 jointly stand for alkylene bridges containing 4 to 5 carbon atoms.

3,299,191
METHOD AND MEANS FOR ERECTING BRIDGES

Alexander Mantscheff, Rodenkirchen, and Hans Wittfoht and Helmut Ochsenbauer, Cologne, Germany, assignors to Polensky & Zollner, Cologne-Bayenthal, Germany

Filed Dec. 17, 1963, Ser. No. 331,991
Claims priority, application Germany, Dec. 21, 1962, P 30,840
18 Claims. (Cl. 264—34)

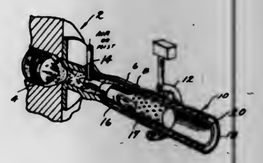


1. In a method of erecting multispan bridges including one and another spaced support, at least said one support being located intermediate the ends of the bridge to be erected, the steps of building a portion of a first span extending from said other support toward said one support; shifting from said other support onto said one support an elongated double-armd temporary staging one arm of which bridges the gap between said one support and said built portion of the first span and the other arm of which forms a cantilever extending beyond said one support in a direction away from said other support whereby the staging enables the crew to work on opposite sides of said one support; building the remainder of said first span by working on said staging from said one support toward said other support; building a portion of a second span by working on said staging from said one support in a direction away from said other support; and repeating said steps—with the exception of the first one—towards at least one additional support.

3,299,192
METHOD OF EXTRUDING A FOAMED PLASTIC TUBE HAVING INTERNAL AND EXTERNAL SKINS THEREON

John H. Lux, Charlestown, Md., assignor to Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Powder Company, New Castle, Del., a corporation of Delaware

Filed June 11, 1963, Ser. No. 287,128
5 Claims. (Cl. 264—48)

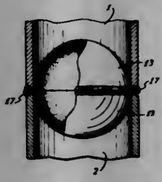


1. A method of forming a tubular extrusion of a thermoplastic resin form comprising extruding a hot hollow tube of a foamable thermoplastic resin, quench chilling the external wall of said tube by fluid chilling means surrounding said wall within a short time after it emerges from the extrusion die to form an impervious, non-porous, external skin, quench chilling the internal wall of said tube by fluid chilling means surrounded by said wall within a short time after it emerges from the extrusion die to form an impervious, non-porous, internal skin, said chilling of said external and internal walls being insufficient to cool the major portion of the tube whereby the core of the tube expands to form a foam, said core being 50 to 94% of the thickness of said tube.

3,299,193
PROCESS FOR MAKING PNEUMATIC BALLS

Salvador R. Vergara, deceased, late of Guadalajara, Jalisco, Mexico, by Maria Guadalupe Ochoa Viuda de Vergara, administratrix, Guadalajara, Jalisco, Mexico, assignor to Luis Vergara, Alfonso Vergara, Jaime Vergara and Jose Dolores Vergara

Filed Feb. 14, 1966, Ser. No. 529,173
Claims priority, application Mexico, Apr. 12, 1961, 62,340; Feb. 10, 1966, 87,057
9 Claims. (Cl. 264—163)



1. A process for forming hollow articles of plastic material, comprising the steps of injection molding of plastic material to form a pair of symmetrical halves of said hollow articles, each having a peripheral flange comprising at least an outer portion, heat sealing said flanges together between pressing and cutting means partially closed to a first position, to unite said symmetrical halves, and trimming the external portions of said flanges by the full closing of said pressing and cutting means to a second position whereby an internal reinforcing welded rib is formed at the seam between the joined symmetrical halves.

3,299,194
ORIENTED FILMS OF ETHYLENE POLYMERS

Ralph Crosby Golike, Tonawanda, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

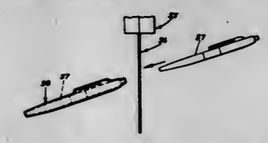
No Drawing. Filed Mar. 9, 1964, Ser. No. 350,597
12 Claims. (Cl. 264—210)

1. A process for producing a heat-shrinkable sheet structure which consists of the sequential steps of forming a self-supporting, unoriented sheet from a homogeneous blend of (1) from 70% to 85% by weight, based on the total weight of the blend, of a low density polymer selected from the group consisting of polyethylene, and copolymers of ethylene with olefinically unsaturated monomers copolymerizable therewith, said polymer having a density within the range of 0.91 to 0.93 gram/cc. at 25° C. and (2) from 30% to 15% by weight of a high density linear polymer selected from the group consisting of linear polyethylene and linear copolymers of ethylene with olefinically unsaturated monomers copolymerizable therewith to form linear copolymers, said high density linear polymer having a density within the range of 0.94 to 0.98 gram/cc. at 25° C.; stretching said sheet in each of two mutually perpendicular directions in the plane of the sheet to at least three times the original dimension of the sheet in each direction at a temperature between about 95° C. to about 115° C. and therefore cooling said sheet.

3,299,195
METHOD OF ENCAPSULATING AN ARTICLE IN A SEAMLESS UNBROKEN CLEAR FILM

Dean B. Chenoweth, Minneapolis, and Richard Louis Barnard, Wayzata, Minn., assignors, by mesne assignments, to Eastman Kodak Company

Filed Feb. 19, 1963, Ser. No. 259,707
7 Claims. (Cl. 264—238)



1. The method of coating an article including the following steps:

(a) continuously extruding molten highly viscous thermoplastic material to form a freely falling film of substantial width,

(b) exerting a tension force on the film being extruded at the extremities of said width while in its freely falling state to cause said film normally to be disposed in a plane,

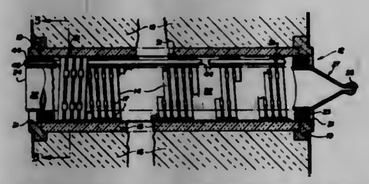
(c) passing said article by projecting it and allowing its free fall through said plane in contact with a portion of the width of the film lying within said extremities to deposit material on and completely around the article, said material in the film tending to follow its trailing edges as it departs from said plane and then breaking away from the article to resume a path along said plane.

ELECTRICAL

3,299,196
DIFFUSION FURNACE

Cecil A. Lasch, Jr., Redwood City, Gordon P. Hampton, Sunnyvale, and Boris J. Speransky, Menlo Park, Calif., assignors to Electroglas, Inc., Menlo Park, Calif., a corporation of California

Filed July 13, 1964, Ser. No. 382,038
9 Claims. (Cl. 13—24)



1. In a diffusion furnace, a substantially hollow processing member having a processing zone therein, a heating element surrounding said processing member and supplying heat to said processing zone, said processing member being substantially transparent to radiation from the heating element, a plurality of thermocouples, means for supporting said thermocouples in positions adjacent to the processing zone and within the heating element, said means for supporting said plurality of thermocouples being substantially transparent to radiation from the heating element, said thermocouples being spaced apart longitudinally of the processing member, and control means connected to the thermocouples for controlling the heat supplied to the heating element in accordance with the temperature sensed by the thermocouples.

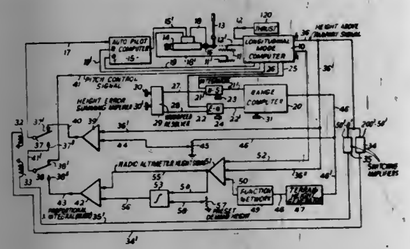
3,299,197
GROUND-BASED FLIGHT TRAINING APPARATUS

Albert Ernest Cutler, Barnet, England, assignor to Communications Patents Ltd., London, England

Filed Jan. 3, 1963, Ser. No. 249,244
Claims priority, application Great Britain, Jan. 11, 1962, 1,034/62
7 Claims. (Cl. 35—10.2)

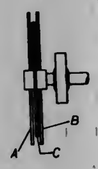
1. Ground-based flight training apparatus for simulating operation of an aircraft automatic landing system, and

comprising flight computing means for simulating flight conditions, auto-pilot simulating means for simulating longitudinal and lateral control by an aircraft auto-pilot, said auto-pilot simulating means being responsive to a plurality of alternative control signals corresponding each to a different longitudinal control mode, control signal generating means for each of the alternative control signals and switch means operated by altitude signals corresponding to different altitudes for supplying to the auto-pilot simulating means a selected one of the alternative control signals, said altitude signals being computed by the flight computing means which provides an aircraft height signal corresponding to the simulated height of the aircraft above



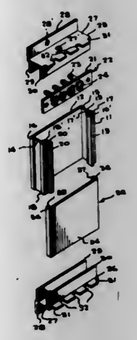
a reference level, a range computing means for computing simulated range, and a terrain height generator means for generating a signal corresponding to the height of the terrain above the said reference level, the control signal provided by one of the control signal generating means being derived from the simulated range computing means, the said range computing means being fed with signals obtained from the flight computing means, and the control signal provided by another of the control signal generating means being derived from the terrain height generator, wherein said terrain height generator is operative to generate a signal in response to a signal derived from the range computing means.

3,299,198
ELECTROSTATIC SOUND GENERATORS
Miguel Mugica Irastorza, Alto de Aldaconea, San Sebastian, Spain
Filed Nov. 5, 1963, Ser. No. 321,485
Claims priority, application Spain, Nov. 6, 1962, 282,216
5 Claims. (Cl. 84—1.28)



1. An electrostatic tone generator comprising at least one scanning electrode, a first tone pattern positioned adjacent said scanning electrode and having a reentrant tone pattern representative of a first selected note in the musical scale, a second tone pattern positioned adjacent said scanning electrode and having a reentrant tone pattern representative of a note in the musical scale having a pitch related by a musical fifth to said first note, and means for effecting rotary movement between said scanning electrode and said first and second tone patterns to cause said scanning electrode to generate signals representative of said selected note and said note bearing a musical fifth pitch relationship thereto, said first and second tone patterns having a stationary relationship to each other during said rotary movement.

3,299,199
TERMINAL BOX
Lawrence J. Mattingly, Dallas, Tex., assignor, by mesne assignments, to Cadre Industries Corp., Endicott, N.Y., a corporation of New York
Filed Feb. 20, 1964, Ser. No. 346,232
5 Claims. (Cl. 174—50)

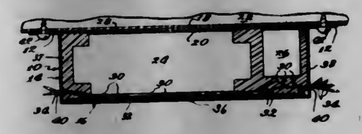


1. An electrical terminal box for removably supporting terminal strip panels therein comprising an elongated, substantially channel shaped body member having a planiform base wall and side walls extending substantially perpendicular from opposite lateral edges thereof, said side walls having slide groove portions opening inwardly of the side walls and through the opposite longitudinal ends of said side walls lying in two spaced planes paralleling the base wall, the slide groove portion in one of said planes extending continuously from end to end longitudinally of said side walls for slidably receiving opposite edge portions of the terminal strip panels to support the same between said side walls, removable end members for closing the longitudinal ends of said body member each having an end wall extending generally perpendicular to said base wall and said side walls and a pair of rib-like projections extending from said end wall along said pair of parallel planes having edge portions conforming closely to the configuration of said slide groove portions slidably interfitted in said slide groove portions of said side walls in frictionally retained relation therein, a cover member forming a removable closure spanning the space between the edges of said side walls remote from said base wall, and means for removably interlocking said cover member with the remote edges of said side walls.

3,299,200
BALLAST CANISTER CONSTRUCTION
Robert I. Sulzer, Skokie, Ill., assignor to Advance Transformer Co., Chicago, Ill., a corporation of Illinois
Original application Dec. 22, 1958, Ser. No. 782,158, now Patent No. 3,113,694, dated Dec. 10, 1963. Divided and this application May 17, 1963, Ser. No. 281,226
16 Claims. (Cl. 174—52)

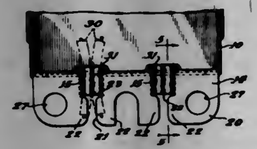
1. A ballast canister adapted to house electrical heat-producing components immersed in potting compound and the components having electrical terminals and leads adapted to extend from said components to the exterior of said canister, said canister adapted to be mounted to a metal surface for heat dissipation from said components to said surface, said canister comprising a trough-like

formation open at its top and having walls closing the ends of said formation, and said formation including a generally planar bottom wall and parallel side walls integral with said bottom wall, the components and potting compound adapted to be disposed in said formation with the leads extending through said ends and terminals adjacent said open top, a cover member secured on the



formation to close off said open top, and bracket means provided on said canister substantially coplanar with said bottom wall whereby to enable said canister to be mounted to said surface with said bottom wall juxtaposed face to face relative to said surface, said cover member and the top edges of said closing walls having slot and tab engaging means for enabling said cover to be locked in place upon said canister.

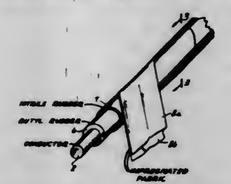
3,299,201
LEAD WIRE EXIT FOR ELECTRICAL APPARATUS
Walter S. Koke, Homewood, Ill., assignor to Jefferson Electric Company, Bellwood, Ill., a corporation of Delaware
Filed July 23, 1964, Ser. No. 384,695
4 Claims. (Cl. 174—65)



1. A lead wire exit for electrical apparatus which includes two casing parts, comprising a lip formed on each casing part, said lips being in contact with each other after assembly, one of said lips being deformed over a portion of its width to provide a lead wire receiving groove and having an undeformed coplanar portion extending beyond said groove, a slot in said coplanar extended portion extending in the same direction as said groove and communicating therewith, said slot having a width substantially equal to the diameter of a lead wire, said slot providing a wing portion at one side thereof which partially overlies a lead wire disposed in said groove to maintain said lead wire in said groove prior to the time that the lip of said other casing part is placed over said groove.

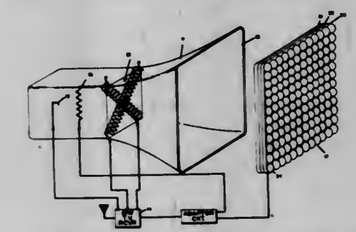
3,299,202
OIL WELL CABLE
Grover W. Brown, Glen Rock, N.J., assignor to The Okonite Company, Passaic, N.J., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,119
8 Claims. (Cl. 174—121)

1. An oil well cable that is resistant to the chemical agents found in oil wells, including at least one electrical conductor, an insulating layer formed about said conductor from a polymeric material that is swellable upon contact with hydrocarbons, and a protective jacket formed about said insulating layer, said protective jacket including a layer of nitrile rubber and a layer of tape that is resistant to dimensional change and that is disposed substantially concentric with the insulating layer, said tape being impregnated with nitrile rubber, said tape and said layer of nitrile rubber being cured together into an integral, mono-



lithic mass whereby swelling is restrained in the presence of hydrocarbons.

3,299,203
COLOR TELEVISION DISPLAY MEANS INCLUDING A MULTIPLICITY OF LIGHT VALUES
Leonidas Gil de Gibaja, 19—19 21st Drive, Woolsey, Long Island, N.Y. 11105
Filed Aug. 27, 1964, Ser. No. 392,384
13 Claims. (Cl. 178—5.4)

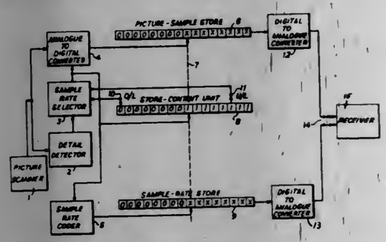


1. A mask for enabling a single gun cathode ray tube to produce color images comprising a polarizing sheet containing a multiplicity of segments, adjacent ones of said segments being in contact, said segments being divided into three portions for passing light polarized in three different directions, the area of each of said segments being approximately equal to the area of the cathode ray of said tube, said polarizing sheet adapted to be attached to the face of said tube, an electro-optical shutter responsive to light deriving from said polarizing sheet, said shutter including means for passing light polarized in each of sad three directions, but in only one direction at a time, a light filter containing a multiplicity of segments, the segments of said light filter and polarizing sheet being approximately the same area and aligned, each of the segments of said light filter being divided into three portions aligned with corresponding portions of said polarizing sheet, the three portions of each segment having color filters for respectively passing red, green and blue light.

3,299,204
TELEVISION AND LIKE DATA TRANSMISSION SYSTEMS
Edward Colin Cherry, Shere, Surrey, and Donald Edwin Pearson and Marcus Paul Barton, London, England, Muthanna Hussain Kubba, Baghdad, Iraq, and Herbert Bernhardt Voelcker, Rochester, N.Y., assignors to National Research Development Corporation
Filed June 26, 1963, Ser. No. 290,863
16 Claims. (Cl. 178—6)

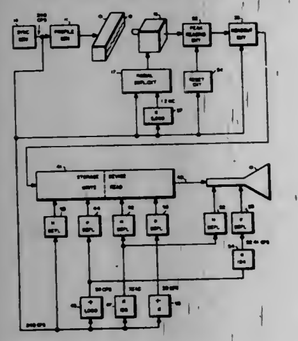
12. A signal transmission system having a transmission channel, a source of an information signal, a detail detector unit for estimating the detail content of the information signal continuously and for providing a corresponding detail level signal, a sampling unit supplied with the information signal and controlled by the detail level signal to provide evaluation of the information signal amplitude at discrete sampling instants, the interval between any two consecutive sampling instants being chosen from

a plurality of predetermined sampling intervals defining a plurality of different information signal sampling rates, the choice of the sampling rate being determined by the detail level signal, a first multi-stage store for storing information about the samples of the information signal amplitude, means for extracting from the first store said information about said samples at a first extraction rate, means for suppyling said information about said samples, extracted from the first store, to said transmissian channel, a second multiple stage store for storing information about the sample supply rate defining the intervals between successive samples of the information signal, means for extracting from the second store the information stored therein at a second extraction rate, means for supplying



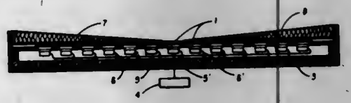
the information extracted from the second store to the transmission channel, means at the output of the transmission channel for respacing the information signal samples according to the sample supply rate information, and a storage content unit for continuously examining the number of samples contained in the first store and providing an overload and an underload signal, respectively, as the first store becomes full or becomes empty, said overload and underload signal being effective to over-ride the choice of signal sampling rate, and to choose a signal sampling rate less than or equal to the sample extraction rate in the case of the overload signal and a signal sampling rate greater than or equal to the sample extraction rate in the case of the underload signal.

3,299,205
MOVING MAP DISPLAY
Gus Stavis, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,595
2 Claims. (Cl. 178—6.8)



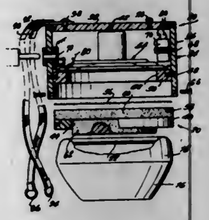
1. Display apparatus, comprising,
means for storing an input signal as a raster of charges, said raster having a capacity of a predetermined number of lines,
means for recording successive lines in excess of said predetermined number starting at the beginning of said raster in place of the oldest stored information, whereby a boundary between the oldest and newest recorded information moves across said raster,
means for reading out the stored information at a rate fast compared to the rate at which it was stored,
a cathode ray tube,
means for displaying the information read out as a raster on the face of said cathode ray tube,
means for controlling the line deflection rate of said cathode ray tube to be equal to that at which the information is read out, and
means for controlling the frame deflection rate of said cathode ray tube to be equal to the frame rate of readout minus the frame rate at which the information was stored.

3,299,206
LINE-SOURCE LOUDSPEAKERS
David L. Klepper, Cambridge, Mass., assignor to Bolt Beranek and Newman Inc., Cambridge, Mass., a corporation of Massachusetts
Filed July 24, 1963, Ser. No. 397,359
5 Claims. (Cl. 179—1)



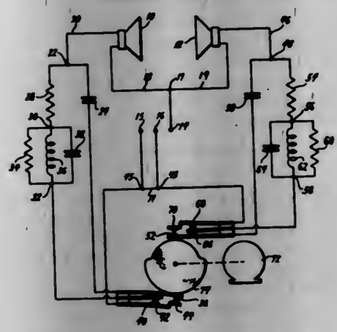
1. An array of combined low-, medium-, and high-sound frequency transmitting devices the width of the transmission directivity patterns of which at the low-, medium-, and high-frequencies are markedly different, having apparatus for rendering such directivity patterns substantially similar, that comprises, means disposed along the array of high-frequency-absorbing properties that successively increase from one portion of the array to another, whereby the effective length of the array, in wavelengths, as modified by the absorbing means, and the directivity patterns at the low-, medium-, and high-sound frequencies are rendered more substantially the same.

3,299,207
SOUND REPRODUCER WITH MEANS FOR ATTACHMENT TO A TELEPHONE HANDPIECE
Robert James Cooke, 50—27 213th St., Bayside, N.Y. 11364
Filed Aug. 29, 1963, Ser. No. 305,418
11 Claims. (Cl. 179—1)



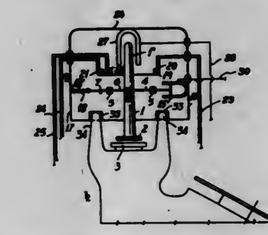
1. A sound reproducer for attachment to a telephone handpiece comprising a housing, a loud speaker mounted in said housing, a protective screen in said housing, said housing having an opening therein, and a porous sound and air transmitting member disposed in said housing and having a portion thereof extending at least into said opening and being adapted to engage a telephone mouthpiece, said screen holding said member in spaced relationship to said loud speaker.

3,299,208
ELECTRICAL EQUIPMENT
Norman L. Driemeyer, 5760A Saloma, St. Louis, Mo. 63120
Filed Apr. 29, 1963, Ser. No. 276,577
7 Claims. (Cl. 179—1.3)



1. A sound-reproducing device which can be connected to a source of signals and which comprises:
(a) a speaker,
(b) a sound speaker,
(c) a capacitor and a set of contacts that can selectively connect the first said speaker to said source of signals,
(d) a second set of contacts and a parallel-connected inductor, capacitor and resistor that can selectively connect the first said speaker to said source of signals,
(e) a third set of contacts and a second capacitor that can selectively connect said second speaker to said source of signals,
(f) a fourth set of contacts and a second parallel-connected inductor, capacitor and resistor that can selectively connect said second speaker to said source of signals, and
(g) a motor-driven cam that can actuate the first said, said second, said third, and said fourth sets of contacts,
(h) said cam responding to operation of said motor to recurrently close the first said set of contacts and open said second set of contacts to enable signals to be supplied to the first said speaker through the first said capacitor and not through the first said parallel-connected inductor, capacitor and resistor,
(i) said cam responding to operation of said motor to recurrently close said third set of contacts and open said fourth set of contacts to enable signals to be supplied to said second speaker through said second capacitor and not through said second parallel-connected inductor, capacitor and resistor,
(j) said cam responding to operation of said motor to recurrently permit the first said set of contacts to open and said second set of contacts to close to enable signals to be supplied to the first said speaker through the first said parallel-connected inductor, capacitor and resistor and not through the first said capacitor,
(k) said cam responding to operation of said motor to recurrently permit said third set of contacts to open and said fourth set of contacts to close to enable signals to be supplied to said second speaker through said second parallel-connected inductor, capacitor and resistor and not through said second capacitor,
(l) said motor being a variable speed motor,
(m) said cam having a high dwell with an angular extent slightly greater than one hundred and eighty degrees,
(n) the first said and said second sets of contacts being approximately one hundred and eighty degrees from said third and said fourth sets of contacts,
(o) said cam responding to operation of said motor to recurrently close said third set of contacts and open said fourth set of contacts while the first said set of contacts is still closed and said second set of contacts is still open,
(p) said cam responding to operation of said motor to recurrently close the first said set of contacts and open said second set of contacts while said third set of contacts is still closed and said fourth set of contacts is still open.

3,299,209
ACTUATING STRUCTURE FOR CONTROLLING A TELEPHONE SWITCH BUTTON
Raul Roger, 2124 Jose Cabas St., Buenos Aires, Argentina
Filed Jan. 13, 1964, Ser. No. 337,367
5 Claims. (Cl. 179—1)



1. Actuating structure in a message recording device for controlling a telephone switch button, comprising a box adapted to be seated on a telephone handset cradle, an upright member in said box having an enlarged lower end portion propecting from the bottom thereof and capable of being freely seated on said telephone switch button, a first plate member slidably associated with said upright member at a position intermediate the ends thereof, means in said first plate member and said upright member for releasably supporting said upright member in a raised position relative to said telephone switch button, a first electromagnet mounted on the inner top wall of said box in alignment with said upright member, the upper end portion of said upright member being positioned within the magnetic field thereof, a second electromagnet mounted on an inner side wall of said box and aligned with said first plate member, one end of said first plate member being positioned within the magnetic field of said second electromagnet, a second plate member fixed to said upright member at a position above said first plate member and having contact members on the upper face thereof, and fixed contact members aligned with and normally spaced upwardly from said second plate contact members.

3,299,210
APPARATUS FOR CONNECTING A MULTI-CHANNEL DATA PROCESSOR WITH A PLURALITY OF TELEPHONE LINES
Peter B. Bandy, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 18, 1963, Ser. No. 265,956
13 Claims. (Cl. 179—2)

1. Apparatus for dialing remote locations from a central data processing system through telephone lines connected to a telephone switching exchange including:
a plurality of channels, including a dialing channel, connected to said central data processing system;
a plurality of telephone dialing and data communication

circuits, connected to telephone lines from said telephone switching exchange;

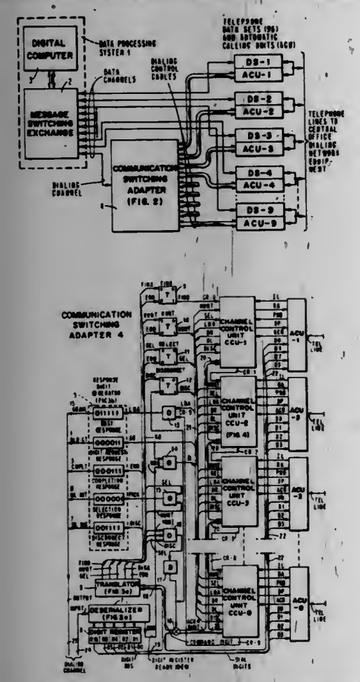
a register, connected to said dialing channel, for serially receiving dialing messages comprising commands and dialing information from said data processing system;

a translator, connected to said register, for recognizing different commands and generating a different command signal for each command recognized;

a response generator, connected to said dialing channel, for serially supplying to said data processing system different responses as a function of different response signals;

a plurality of first control circuits, each connected to a corresponding one of said communication circuits, each operable to generate a "not busy" signal if the associated telephone line is not busy;

a plurality of second control circuits, each connected to a corresponding one of said first control circuits and to said translator, each operable in accordance



with command signals to interrogate said first control circuits for "not busy" signals;

a plurality of third control circuits, each connected to a corresponding one of said second control circuits and to said response generator, each operable in accordance with the results of interrogation by said second control circuits to supply response signals to said response generator; and

a plurality of fourth control circuits, each connected to a corresponding one of said communication circuits and to said register, each operable to supply dialing information to said communication circuits from said register.

3. In apparatus for automatically controlling the connection of a computer with a plurality of remote users, a plurality of control circuits associated with a plurality of corresponding user lines, each circuit including:

first storage means for supplying a "request" signal indicating a request for the use of the corresponding line;

monitoring means for supplying a "line idle" signal indicating availability for use of the corresponding line;

second storage means, connected to said first storage means and to said monitoring means, operable to generate a "service request" signal for use by the corresponding line when both said "request" and said "line idle" signals are present; and

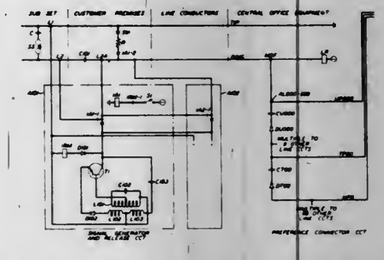
third storage means, connected to said first storage means and to said monitoring means, operable to generate a control signal, for initiating a request for the use of a line corresponding to another one of said circuits, when said "request signal" is present and said "line idle" signal is absent.

3,299,211

TELEPHONE SIGNAL REPORTING SYSTEM

Robert C. Avery, Jackson Heights, and Anthony Majlinger, Long Island City, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York N.Y., a corporation of New York

Filed Dec. 22, 1961, Ser. No. 161,650
14 Claims. (Cl. 179—5)



1. In an automatic signal reporting system, in combination, a plurality of signal stations, means at each of said stations responsive to a preselected condition for generating respective tone signals, a translating station, transmission means for applying each of said tone signals to said translating station, means at said translating station for converting each one of said tone signals into a respective unique combination of multivalued direct voltages indicative of the identity of the corresponding one of said stations, a control point, transmission means for applying each combination of said voltages on a space division basis to said control point, and means at said control point responsive to said space division voltages for registering the identity of the corresponding one of said stations in terms of a unique code.

ERRATA

For Class 179—18 see:
Patent No. 3,299,437
Patent No. 3,299,438

3,299,212

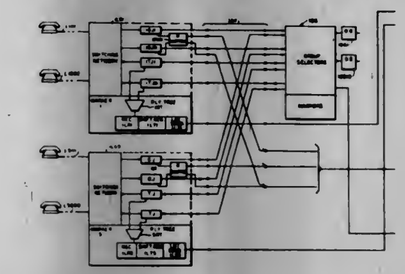
MAGNETIC DRUM TRANSLATOR

John R. Maneschi, Oak Park, Joseph E. Meschi and Verner K. Rice, Elmhurst, John G. Van Bosse, Park Ridge, and Lawrence W. Amiot, Villa Park, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Mar. 27, 1963, Ser. No. 268,384
18 Claims. (Cl. 179—18)

1. A translator for use in an automatic telephone system including register-senders, and a translator allotter, said translator including: a first plurality of incoming register means operated upon receipt of a plurality of digits to register said digits, a record means having recorded therein a plurality of sets of coded call routing and control data items, readout means adapted to read

said recorded data from said record means, first counter means arranged to indicate the address of said readout means in relation to said record means, coincidence detecting means, buffer register means, first counter gating means, process control means, last-digit gating means operated after receipt of the last one of said plurality of digits to pass said last digit to said process control means, first decoding means in said process control means operated upon receipt of said last digit to enable said first counter gating means to pass said first counter count to said buffer register means, circuit means comprising the connections of said buffer register means and said



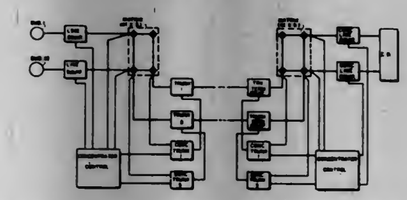
incoming register means to said coincidence means to operate said coincidence means to compare said data from said incoming register and said counter count, coincidence signal means in said coincidence means operated upon parity between said two sets of data to signal said process control means, control means in said process control means operated responsive to said signal to enable said readout means, said readout means thereby operated to transfer said appropriate coded call routing and control data items from said record means to said buffer register, other means thereafter operated to send said coded call routing and control data from said buffer register to said register-sender.

3,299,213

TRUNK SELECTION ARRANGEMENT FOR A LINE CONCENTRATOR SYSTEM

John S. Young, Addison, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Nov. 5, 1963, Ser. No. 321,623
4 Claims. (Cl. 179—18)



1. An automatic communications switching system including:

a central switching office,

a plurality of subscribers' lines,

a plurality of trunks fewer in number than said lines for connecting said lines to said office,

remote switching means for connecting said lines to said trunks,

a first plurality of line terminations in said central office individual to said lines,

a second plurality of line terminations individual to said lines for connecting said lines to said remote switching means,

central switching means for connecting said first plurality of line terminations to said trunks,

remote and central control means connected to said remote and central switching means for operating said switching means,

selecting means in each of said control means for selecting an idle one of said trunks,

start means in each of said control means under the control of one of said line terminations at said subscriber lines to initiate the operation of said control means to step a line select means to a first step toward said line termination, select means at said central switching office, synchronizing means, said synchronizing means comprising a first circuit means at said remote line select means to complete a stepping circuit to said select means at said central switching office and open its own control means, said last means remaining open until said central office select means completes a corresponding step, and second circuit means at said central office select means to operate said first circuit means to reclose, said stepping alternately operated to step a corresponding line termination and a connect control means thereafter operated to operate said switching means to connect said line via said selected trunk and said two line termination equipments to said control switching office.

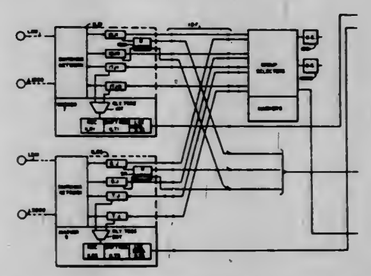
3,299,214

COMMUNICATION SWITCHING SYSTEM COMMON CONTROL ARRANGEMENT

Kenneth E. Prescher, Chicago, and John G. Van Bosse, Park Ridge, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Original application Mar. 27, 1963, Ser. No. 268,385. Divided and this application May 13, 1964, Ser. No. 367,003

56 Claims. (Cl. 179—18)



1. In a communication switching system having a plurality of register junctors for connection to calling lines to receive call signals;

register apparatus comprising a memory and logic circuits shared on a time division multiplex basis, said memory having a coordinate array of storage elements in rows and columns, a plurality of registers individually associated with said register junctors, each register comprising a given number of said rows including a control row and at least one data row, a source of recurring pulses supplied to the memory, a multiplex arrangement associating each register with an individual pulse time slot during which the stored information is recirculated and may be selectively modified by means of the logic circuits, call signal information being received by the logic circuits from the register junctors during the associated time slots for storage in the memory;

each data row of each register being individually asso-

ciated with a sub-time slot, and said control row of each register being associated with one sub-time preceeding and one sub-time slot following the sub-time slots of the data rows within the time slot of the register;

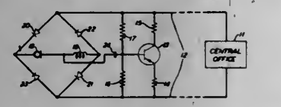
carry storage means in said logic circuits to receive information during particular sub-time slots to control rewrite of rows having subsequent sub-time slots, including rewrite of the control row during its second sub-time slot.

3,299,215

BIPOLAR TRANSISTOR AMPLIFIER FOR TELEPHONE SET USE

James A. Mines, Middlesex, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 16, 1963, Ser. No. 331,062
7 Claims. (Cl. 179—81)



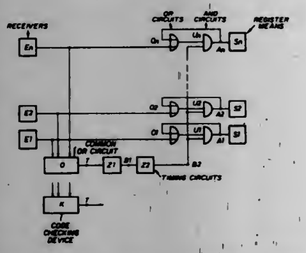
1. In a telephone set connected to a subscriber line, a transmitter and an amplifier which comprises a transistor having its emitter-collector path connected across said line, means connecting said transmitter between the base and emitter electrodes of said transistor when the central office battery voltage at said line has one polarity, and means connecting said transmitter between the base and collector electrodes of said transistor when the central office battery voltage of said line has the apposite polarity, whereby the operation of said amplifier is substantially independent of the polarity of the central office battery voltage on said line.

3,299,216

SIGNAL EVALUATION CIRCUITS

Ernst Beyerle, Fellbach, Wurttemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,912
Claims priority, application Germany, July 6, 1962, St 19,452
7 Claims. (Cl. 179—84)



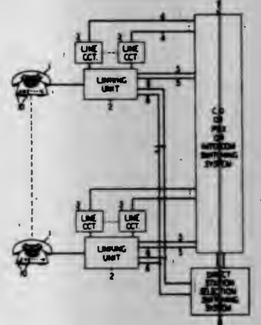
1. A multi-frequency code receiving system having a plurality of receivers equipped with speech immunity circuits, first OR gate means connected directly to said receivers and actuated responsive to a signal received by any of said receivers, timing means operated responsive to a signal received from said first OR gate means to delay the start of said signal and to extend the length of said signal, evaluation means comprising a register associated with each of said receivers, control means operated responsive to a coincidence of signals from said receivers and said timing means for controlling the input of signals into said registers, said control means including feedback loop circuitry extending from the output of said control means to the input of said control means, and means for excluding said first OR gate means from said feedback loop circuitry.

3,299,217

AUXILIARY INTERCONNECTING UNIT FOR MULTI-LINE SUBSCRIBER TELEPHONE SYSTEM

James E. Burns, Eatontown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 31, 1963, Ser. No. 320,297
4 Claims. (Cl. 179—99)



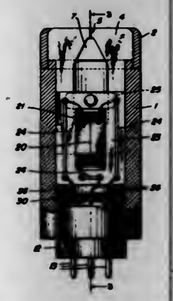
1. In combination with a key telephone set employing nonlocking keys, an auxiliary linking unit comprising an individual relay associated with each of said keys, first means for operating said relays when said respective keys are actuated, second means for operating said relays upon the arrival of calls to said set, means for locking said relays in the operated condition, timing means for releasing a relay locked in the operated condition a predetermined time after said relay has been operated by said first means, and lockout means for preventing the operation of any others of said relays when any one of said relays has been operated by said second means.

3,299,218

MAGNETIC HEAD HAVING INTERNAL PRINTED CIRCUIT CONNECTION MEANS

Carl W. Wagenhals, Silver Spring, Md., assignor to Honeywell, Inc., a corporation of Delaware

Filed Oct. 30, 1961, Ser. No. 148,325
3 Claims. (Cl. 179—100.2)



1. A magnetic head comprising a magnetic core structure having a gap therein formed by a non-magnetic spacer, a magnetic coil on said core structure in a transducing relationship with said core structure, a hollow cylindrical shell having an internal diameter and a first

and a second end, said shell being arranged to support said core structure and said coil therein with said gap at said first end of said shell, an annular end cap for said shell, said end cap being supported on said first end, magnetic shields supported within the space defined by the end cap on both sides of said core structure, non-magnetic spacers also supported within the space defined by the end cap, said core structure, said shields, and said spacers being arranged to form a smooth surface with said end cap across said first end of said shell, a printed circuit board arranged in closely fitting relationship within said internal diameter of said cylindrical shell, means for retaining said board within said shell, said board having printed wiring thereon corresponding to desired electrical connections for said coil, first means electrically connecting said printed circuit board to said coil, magnetic head connections means, said connections means being mounted in said second end of said shell, and second means electrically connecting said printed circuit board to said connection means whereby said printed wiring on said board is effective to provide a signal path between said first and said second means and said printed circuit board is further effective to isolate forces associated with said second means from said first means.

3,299,219

STEREOPHONIC TRANSDUCER CARTRIDGE

Erik Markvard Christopher Rørbæk Madsen, Gimsingehøje, Struer, Denmark, assignor to A/S Bang & Olufsen Produktionsselskab, Struer, Denmark

Filed Apr. 8, 1963, Ser. No. 271,379
Claims priority, application Denmark, Nov. 10, 1958, 4,053/58
20 Claims. (Cl. 179—100.41)



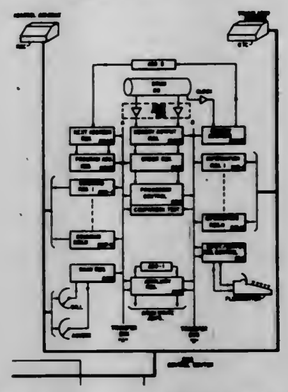
1. In an electromechanical transducer having a single stylus adapted to track a record groove having individual sound recordings disposed substantially at right angles relative to each other in combination: a relatively stationary magnetic structure having opposite faces defining a magnetic gap and including permanent magnet means for generating a magnetic field across said magnetic gap, a relatively movable structure including a stylus arm and an armature member therefore, said armature member having opposite substantially parallel surfaces and having the stylus arm extending from one of said surfaces, means for mounting said structure with said armature member in said magnetic gap with said substantially parallel surfaces substantially parallel with the opposite faces of said magnetic gap, said mounting means including resilient means providing substantially equal elastic response of said relatively movable structure in all directions, first induction coil means and second induction coil means included in said transducer to provide individual energization of said first and said second coil means respectively in response to oscillations of said armature member in said magnetic gap in compliance with the tracking of the stylus to selectively achieve outputs from said coil means corresponding to said individual sound recordings.

3,299,220

PROGRAMMED DIAGNOSTIC EQUIPMENT FOR A COMMUNICATION SWITCHING SYSTEM

William R. Wedmore, Lombard, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed May 8, 1963, Ser. No. 278,954
6 Claims. (Cl. 179—175.2)



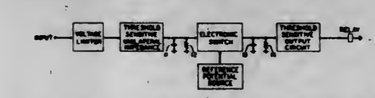
1. In an electronic system having a plurality of different circuit units operating in predetermined programs individually and in cooperation with each other, wherein each circuit unit includes a program function timing means operated to indicate a failure to complete said predetermined program: a fault indicator for use therewith comprising; associating means operated upon a failure indication from a particular circuit unit for temporarily associating therewith, process control means, said associating means including means operated upon associating with a circuit unit to indicate to said process control the type of unit associated therewith, test program storage means comprising a magnetic drum, means in said process control operated in response to said type indication to interrogate said storage means for an appropriate test program, a common test access path connectable to each circuit unit, connecting means in each circuit unit operable to connect said circuit unit to said test access path, first control means in said process control means operated upon said associating means associating with a circuit unit to operate said particular connecting means, transfer means in said control means thereafter operated to apply said test program to said circuit unit, coincidence means in said control means, second control means in said process control means operated after application of said test program to said circuit unit to apply said circuit unit output and part of said storage means program to said coincidence means, and other means in said control circuit operated upon coincidence of said two inputs to said coincidence means to indicate the faulty condition.

3,299,221

NOISE INDICATOR CIRCUIT

Stephen H. Maybar, Brooklyn, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 31, 1963, Ser. No. 320,375
12 Claims. (Cl. 179—175.2)



12. A circuit for indicating the presence of a sustained noise in a speech signal comprising capacitor

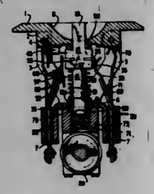
means, threshold sensitive input means connected to said capacitor means for rapidly changing the charge on said capacitor means in response to a peak of the signal which exceeds a predetermined threshold, resistive means connected to said capacitor means for returning the capacitor means to its original charge, electronic switching means having a control element and a stable state, output means connected to said electronic switching means for providing an output indication when said switching means has been maintained out of its stable state for a predetermined interval of time, and means for conductively connecting the control element of said switching means to said capacitor means.

3,299,222

PUSH BUTTON MECHANISM WITH INTERLOCKING APPARATUS AND ENERGIZING MEANS THEREFOR

Marshall F. Thompson, 3112 W. Marshall St., Richmond, Va. 23220

Filed Oct. 23, 1964, Ser. No. 406,025
18 Claims. (Cl. 200—5)



1. An electric circuit control switch comprising, a face plate, a frame structure connected in spaced relation with said face plate, a plurality of push button members connected in side-by-side relation and slidably connected at opposite ends to said face plate and said frame structure for axial movement, an individual contact member connected to each of said push button members between said frame structure and said face plate for movement therewith, first and second stationary contacts for each of said push button members insulatingly supported on said frame structure, said first and second stationary contacts having contact portions disposed substantially parallel with the axes of said push button members and extending into sliding contact with the respective contact members, said contact member of each push button member and said first and second stationary contacts of each push button member connected to form a normally closed series circuit, from one end of the control switch to the other end thereof, said contact portions of said first stationary contacts being of a length to remain in sliding contact with the respective contact members throughout the axial movement of the respective push button members, and said contact portions of said second stationary contacts being relatively short, whereby upon depressing one of said push button members the series circuit between the respective contact member and second stationary contact is broken while contact with the respective first stationary contact is maintained.

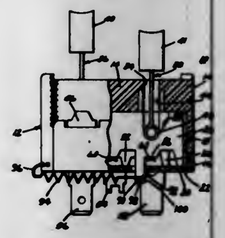
3,299,223

PUSHBUTTON SWITCH ASSEMBLY WITH FLASHOVER PROTECTION DELAY SLIDER MEANS

Stewart A. Woodward, Stratford, Conn., assignor to General Electric Company, a corporation of New York

Filed Apr. 27, 1966, Ser. No. 545,619
13 Claims. (Cl. 200—5)

1. A pushbutton switch assembly having a housing, a plurality of movable switch elements in the housing, at least one main slider in the housing, said main slider having cam means for actuation of said switch elements, a plurality of push rods extending into the housing and engaging said main slider for effecting longitudinal movement thereof, said main slider being movable by one of said push rods for closing at least one selected switch element and for opening at least one of said switching elements, an auxiliary slider in said housing, said auxiliary slider having camming means, said auxiliary slider being normally maintained in a first position for permitting actuation of said selected switch element to a closed condition and being movable to a second position upon actuation of said one push rod for holding the selected switch element in an open condition, and means for moving said auxiliary slider from said second position to said first position upon release of said one push rod to permit the selected switch element to be closed thereby providing a delay between the closing of the selected switch element and the opening of at least one of said other switch elements.

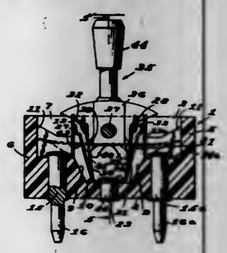


3,299,224

SELF-CENTERING TOGGLE SWITCH WITH IMPROVED ACTUATOR CONTACT STRUCTURE

Albert R. De Lorme, Detroit, and Jimmie G. Perkins, Inkster, Mich., assignors to Boyne Products, Inc., Boyne City, Mich., a corporation of Michigan

Filed Jan. 7, 1966, Ser. No. 519,272
10 Claims. (Cl. 200—6)



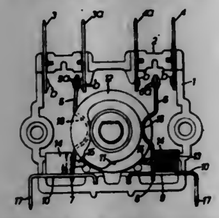
1. A switch construction comprising a casing; a first pair of fixed contacts secured adjacent one end of said casing; a second pair of fixed contacts secured adjacent the other end of said casing; a pair of movable contacts respectively having first conductive surfaces normally in engagement with a fixed contact at opposite ends of said casing and having second conductive surfaces normally disengaged from all of said fixed contacts; conductive means connected to said movable contacts and adapted for connection to a source of electrical energy; operating means; means mounting said operating means for back and forth movements toward opposite ends of said casing; and actuating means operable in response to movement of said operating means toward either end of said casing to disengage the first conductive surface of one of said movable contacts from its associated contact of said first pair of fixed contacts and to engage the second conductive surface of said one of said movable contacts with one of the contacts of said second pair of fixed contacts.

3,299,225

ROTARY SWITCH WITH IMPROVED CONTACT STRUCTURE AND CAMMING MEANS

Clarence Willans Heath, Bleasby, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Mar. 9, 1966, Ser. No. 532,997
Claims priority, application Great Britain, Mar. 31, 1965, 13,637
2 Claims. (Cl. 200—6)



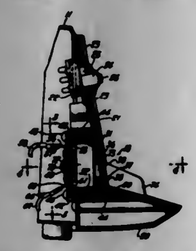
1. A rotary electrical switch comprising a rotatable cam, mounted in a casing, at least one contact arm pivotally mounted, at one end, in said casing, the opposite end being provided with an electrical contact for engagement with a fixed contact, said contact arm engageable by said cam so as to be displaceable thereby to position said electrical contact into and out of engagement with said fixed electrical contact, spring means enclosed in a flexible housing of insulating material provided adjacent the pivot end of said arm to urge an intermediate portion of said arm into engagement with said cam, the action of said spring means being transmitted through said housing to said arm.

3,299,226

ELECTRICAL SWITCH FOR FOOD BLENDER WITH IMPROVED CONTACT DETENT STRUCTURE

Margaret M. Edwards, Milwaukee, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 22, 1965, Ser. No. 501,056
17 Claims. (Cl. 200—16)



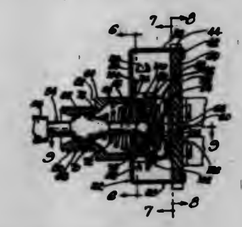
1. A multiple pole electric slide switch comprising a rivet block carrying a plurality of spaced contact rivets aligned in a first straight row with said rivets in electric contact with a common terminal bar, a plurality of spaced contact rivets attached to said block in a second straight row positioned parallel to said first row with the rivets in each row in alignment with one another to form pairs, said block defining a plurality of spaced integral cams which are located in a third straight row positioned between said first and second rows with each cam longitudinally spaced between adjacent pairs of rivets, a contact carrier, means supporting and guiding said carrier so that it is slidable in a direction parallel to said three rows, a contact positioned between said carrier and block and having an integral detent portion which is adapted to cooperate with said cams to locate said contact in engagement with a selected pair of rivets, a spring positioned between said carrier and contact bar biasing said contact toward said block.

3,299,227

ELECTRICAL SWITCHES WITH IMPROVED CONTACT AND DETENT STRUCTURES

William J. Schaad, Glenview, and William N. Schink, Crystal Lake, Ill., assignors to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois

Filed Feb. 14, 1966, Ser. No. 527,270
20 Claims. (Cl. 200—16)



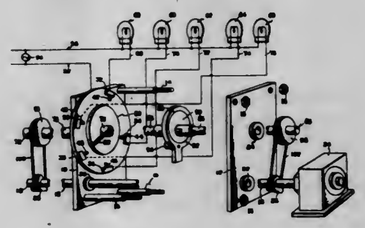
1. In an electrical switch,
the combination comprising a casing,
an insulating carriage movable in said casing,
means for moving said carriage,
an insulating member mounted on said casing opposite one side of said carriage,
a plurality of contacts mounted on said insulating member,
a conductive contactor mounted on said carriage and movable into engagement with said contacts,
a coil spring compressed between said carriage and said contactor,
and a plurality of individual seat members in the form of distinct projections formed integrally with said contactor and projecting therefrom toward said carriage,
said seat members having recesses therein for receiving and locating said spring to transmit the force of said spring to said contactor.

3,299,228

MECHANISM FOR CONVERTING PREDETERMINED INPUT SPEED TO RANDOM OUTPUT SPEED

Hans H. Tormolen, 3142 Sumter, Dallas, Tex. 75220

Filed Jan. 28, 1965, Ser. No. 428,801
20 Claims. (Cl. 200—18)



3. A random operating mechanism, comprising:
(a) a driving means adapted to operate at a predetermined rotative speed;
(b) a driven means adapted to be driven at a random rotative speed differing from the predetermined rotative speed of said driving means;
(c) at least one first pulley means operatively coupled to and adapted to be rotated by said driving means;
(d) at least one second pulley means operatively coupled to and adapted to drive said driven means;
(e) at least one of said pulley means having at least two points on the periphery thereof spaced dif-

ferent radial distances from the center of rotation of said one pulley means; and

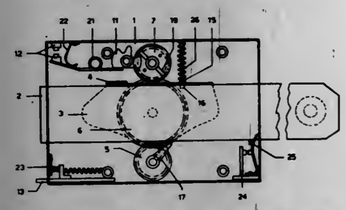
(f) at least one elastic belt means operatively connecting said first and said second pulley means.

3,299,229

BURGLAR PROOF SAFETY LOCK WITH CAMS THAT BLOCK THE BOLT AND ELECTRIC ALARM DEVICES

Claudio Lombardi, Via Ciccotti 11, Rome, Italy

Filed Mar. 12, 1964, Ser. No. 351,349
8 Claims. (Cl. 200—44)



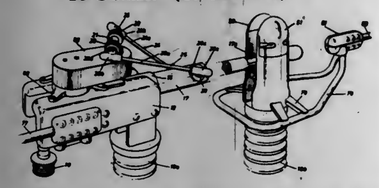
1. A safety lock, comprising a case, a bolt slidable in said case, a movable mushroom-shaped dial having a stem portion extending into said case and an outer indicia-carrying portion, a key plate enclosed by said outer portion, a knife lever having a bent portion extending adjacent said bolt and adapted to engage said bolt, a plurality of cams, the number of said cams corresponding to that of said indicia, electric switches actuated by said cams, and means connected with said key plate for actuating said knife lever and for actuating said cams.

3,299,230

ELECTRICAL SWITCH HAVING A PIVOTABLE AND ROTATABLE BLADE AND SWITCH OPERATING MECHANISM THEREFOR

John Howard Myers, Guelph, Ontario, Canada, assignor to James R. Kearney Corporation of Canada, Limited, Guelph, Ontario, Canada

Filed Oct. 9, 1964, Ser. No. 402,748
16 Claims. (Cl. 200—48)



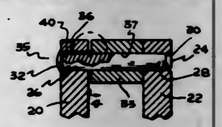
1. In combination with a switch of the type having a blade member rotatable about the longitudinal axis thereof and also pivotable in a first plane, a switch operating mechanism for selectively and sequentially pivoting said blade member in said first plane and rotating said blade member about said longitudinal axis, said switch operating mechanism comprising a first crank member; means for rotating said first crank member about a first axis from a first position through a second position to a third position; a rotatable member carried by said first crank member, said rotatable member being rotatable about a second axis spaced from and parallel to said first axis; at least one arm pivotally connected to said rotatable member at a point spaced from said second axis and also pivotally connected to said blade member; and means for holding said rotatable member against rotation about said second axis during movement of said first crank member from said first position to said second position and for rotating said rotatable member about said second axis during rotation of said first crank member from said second position to said third position. whereby rotation of said first crank member between said first and second positions thereof is translated by said rotatable member and said arm into pivoting of said blade member in said first plane and rotation of said first crank member between said second and third positions thereof is translated by said rotatable member and said arm into rotation of said blade member about said longitudinal axis.

3,299,231

TIE PIN WITH IMPROVED FASTENING MEANS FOR CIRCUIT BREAKER HANDLES

William W. Camp, Lawrenceville, and Charles Mune, Trenton, N.J., assignors to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey

Filed Jan. 28, 1966, Ser. No. 523,768
15 Claims. (Cl. 200—50)



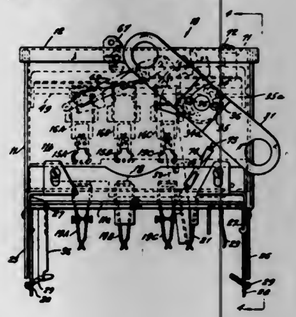
1. In combination, side-by-side circuit breaker handles and a tie pin for connecting the handles, said tie pin comprising a shaft connecting said handles, said shaft having a local projection, said shaft being small enough to easily slip into holes in the handles except for said projection, said projection providing a cutting interference between a local part of said tie pin and one of said handles, said tie pin being made from a material which is harder than said handles, whereby said projection cuts a slot into at least one of said handles, said projection being small enough so that the force required to drive said tie pin to its final position is substantially finger pressure.

3,299,232

INTERLOCK STRUCTURE FOR BUS DUCT PLUG COVER SWITCHING MECHANISM

Paul J. Geppert, Redford Township, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 1, 1966, Ser. No. 539,338
10 Claims. (Cl. 200—50)



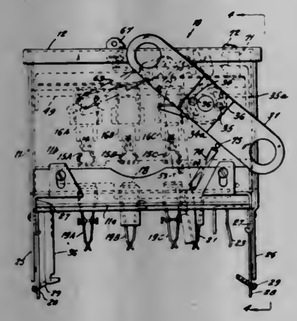
1. A plug unit for tapping electrical power from a multi conductor bus duct; said plug unit including a housing having a openable cover; a plurality of conducting fingers for engaging different bus bars of a duct when said plug unit is mounted to such duct; first means fixedly mounting said fingers to said housing with said fingers projecting from said housing beyond a first wall thereof; a switching device mounted within said housing and electrically connected to said fingers; an operating means for said switching device; said operating means including a handle extending externally of said housing for manually opening and closing said switching device; a first interlock means to prevent said plug unit from being mounted to and dismounted from a duct when said switching device is closed; a second interlock means to prevent opening of said cover when said switching device is closed; a third interlock means to prevent closing of said switching device when said cover is open; said operating means including a portion positioned within said housing and movable by said handle between an open and a closed position when said switching device is open and closed, respectively; said third interlock means including a section biased to a first position, operable to a second position by closing of said cover, and operable to a third position by said portion upon movement thereof to said closed position; said section when in said first position blocking movement of said portion to said closed position; said second interlock means including a catch mounted to said cover on the inside thereof; biasing means urging said catch to a latching position; said catch being operable from outside of said cover for unlatching said catch; with said cover closed, said catch in said latching position cooperating with said section in said third position to prevent opening of said cover; said first interlock means including a part extending from said housing in the same general direction as said fingers; said part being in a releasing position when said switching device is open to permit mounting and dismounting of said plug unit with respect to a duct; said portion when in said closed position operating said part to a holding position to prevent mounting and dismounting of said plug unit with respect to a duct; a single member wherein said part and said section are incorporated.

3,299,233

INTERLOCK STRUCTURE FOR BUS DUCT, PLUG COVER SWITCHING MECHANISM

Harry Sciba, Fraser, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 1, 1966, Ser. No. 539,357
10 Claims. (Cl. 200—50)



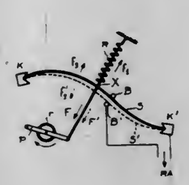
1. A plug unit for tapping electrical power from a multi conductor bus duct; said plug unit including a housing having an openable cover; a plurality of conducting fingers for engaging different bus bars of a duct when said plus unit is mounted to such duct; first means fixedly mounting said fingers to said housing with said fingers projecting from said housing beyond a first wall thereof; a switching device mounted within said housing and electrically connected to said fingers; an operating means for said switching device; said operating means including a handle extending externally of said housing for manually opening and closing said switching device; a first interlock means to prevent said plug unit from being mounted to and dismounted from a duct when said switching device is closed; a second interlock means to prevent opening of said cover when said switching device is closed; a third interlock means to prevent closing of said switching device when said cover is open; said operating means including a portion positioned within said housing and movable by said handle between an open and a closed position when said switching device is open and closed, respectively; said third interlock means including a section biased to a first position, operable to a second position by closing of said cover, and operable to a third position by said portion upon movement thereof to said closed position; said section when in said first position blocking movement of said portion to said closed position; said second interlock means including a catch mounted to said cover on the inside thereof; biasing means urging said catch to a latching position; said catch being operable from outside of said cover for unlatching said catch; with said cover closed, said catch in said latching position cooperating with said section in said third position to prevent opening of said cover; said first interlock means including a part extending from said housing in the same general direction as said fingers; said part being in a releasing position when said switching device is open to permit mounting and dismounting of said plug unit with respect to a duct; said portion when in said closed position operating said part to a holding position to prevent mounting and dismounting of said plug unit with respect to a duct; a pivot-slot type means mounting said section to said housing whereby said section experiences generally linear motion in moving between said first and said second positions, and said section is pivoted in moving between said second and said third positions.

3,299,234

VELOCITY RESPONSIVE ACTUATING MEANS

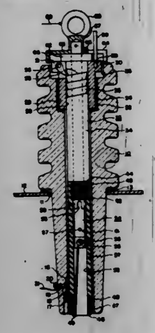
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works

Filed June 7, 1965, Ser. No. 461,906
Claims priority, application France, July 22, 1964, 982,641, Patent 1,409,877
9 Claims. (Cl. 200—61.45)



1. A velocity responsive actuating means for use in the gear shift control means of, for example, an automotive vehicle which includes an engine and an accelerator pedal for controlling the velocity output thereof, said means comprising: a rotating member, an actuating means which is movable in response to the velocity of said rotating member, a switch means comprising a flexible S-shaped metal blade flexibly snapable to either side of a neutral axis, said blade being mounted at its ends in fixed bearings, a contact on each side of said blade at a location intermediate its ends, said actuating means being connected to said blade and urging it towards one of said contacts, a yieldable means urging said blade towards the other of said contacts, said blade resting against one or the other of said contacts depending upon the velocity of said rotating member and the consequent force exerted by said velocity responsive actuating means upon said blade, and adjustment means actuable by said accelerator pedal to adjustably move one of said contacts laterally relative to said blade.

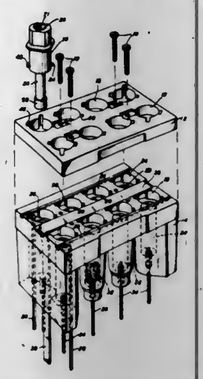
3,299,235
FUSE AND DISCONNECT DEVICE FOR MANUAL OR THERMAL OPERATION
Merrill G. Leonard, Brookfield Township, Fowler, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 26, 1965, Ser. No. 435,538
14 Claims. (Cl. 200—127)



1. In fuse and disconnect apparatus, in combination, a bushing composed of insulating material and having an axial bore therethrough, the bushing having electrical contact means at one end thereof, a pawl disposed at the other end of the bushing, a tubular structure composed at least partially of insulating material slidably disposed in the bore in the bushing and carrying other contact means at one end thereof which makes electrical connection with the contact means on the bushing while the tubular structure is in the bore in the bushing, the tubular structure having a plurality of threads on the outer surface thereof at the other end thereof adapted to be engaged by said pawl, connecting rod means composed of conductive material slidably disposed in the tubular structure, first coupling means on the connecting rod means, the tubular structure including second coupling means, the first and second coupling means engaging each other while the tubular structure and connecting rod means have a predetermined axial relationship with respect to each other for transmitting rotary motion from the connecting rod means to the tubular structure, and a fuse element extending between the other contact means and the adjacent end of the connecting rod means, said threads being slidable past the pawl when the tubular structure is inserted in the bore in the bushing, the pawl engaging the threads when the tubular structure is being withdrawn from the bore in the bushing whereby the tubular structure must be turned to permit movement of the threads past the pawl.

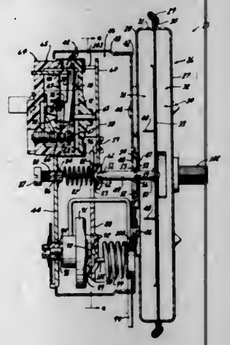
3,299,236
MODULAR FUSE BLOCK ASSEMBLY
Thomas H. Barker, Westerville, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 12, 1964, Ser. No. 389,004
9 Claims. (Cl. 200—133)

1. A fuse block assembly, comprising a fuse block forming a plurality of elongated chambers for receiving elongated fuses, said chambers extending transversely into said fuse block, bus bars in said block having portions extending transversely into each of said chambers, springy means within each of said chambers for biasing each fuse longitudinally outward from said chambers, a plurality of fuse caps each removably positioned in a portion of one of said chambers and each having fuse holding means grasping an end of one of the fuses when the fuse is seated in the block by said cap, a pair of diametrically opposing tabs extending outwardly from each of said caps and entering said respective chambers behind the portion of said bus bars when the fuse is seated, said tabs engaging the inwardly facing surface of said bus bars in response to the outward force of said springy means on said fuses, each of said holding means having a pair of diametrically



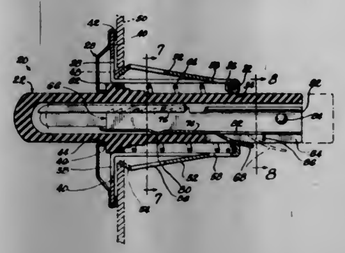
located resilient fingers in a plane transverse to a line between said tabs and a pair of protrusions within each of said caps in the plane transverse to said caps against which the end of said fuse pivots.

3,299,237
DEFROSTER CONTROL OR THE LIKE
Svend E. Sorensen, King of Prussia, and William L. McHale, Broomall, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,458
10 Claims. (Cl. 200—140)



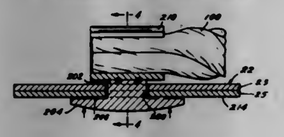
1. A defroster control or the like comprising a first housing having a compartment therein divided into two chambers by a movable diaphragm means, a second housing interconnected to said first housing and having a compartment therein, electrical switch means in said compartment of said second housing and having an open position and a closed position, means interconnecting said diaphragm means with said switch means whereby movement of said diaphragm means operates said switch means between its open and closed positions, said diaphragm means causing said switch means to move to one of its positions to cause a defrost cycle when said defrost control detects a defrost condition, and a separate and independent condition responsive means interconnected to said switch means only to move said switch means back to the other position thereof to terminate the defrost cycle when said condition responsive means senses that the defrost cycle has been accomplished to a predetermined condition.

3,299,238
PUSH BUTTON SWITCHES HAVING WIPING CONTACT BETWEEN A FLEXIBLE CONTACT BLADE AND AN APERTURED CONTACT MEMBER
Jesse M. Cobb, Glenview, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois
Filed Sept. 28, 1964, Ser. No. 399,626
17 Claims. (Cl. 200—159)



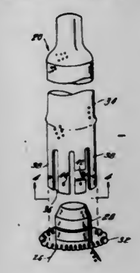
1. In an electrical switch, the combination comprising a movable operating member of generally cylindrical shape and made of insulating material, a fixed conductive contact member having a generally circular guide opening in which said movable member is slidably received, means supporting said movable member for longitudinal movement relative to said fixed contact member, said movable member having a radial opening therein, a flexible conductive resilient contact blade mounted on said movable member and projecting diagonally out of said radial opening, said blade angling both longitudinally and radially from said radial opening and being movable part way through said opening into wiping engagement with said fixed contact member at the edge of said opening therein, and means for establishing an electrical connection to said blade whereby an electrical circuit may be connected between said blade and said fixed contact member.

3,299,239
RIVET FOR WELDED ELECTRICAL CONNECTIONS
Robert G. Mawney, Louis C. Beggs, and Robert A. Renaud, Attleboro, Mass.; said Mawney and said Beggs assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 97,409, Mar. 17, 1961, which is a division of application Ser. No. 34,043, June 6, 1960. This application Jan. 25, 1965, Ser. No. 436,977
5 Claims. (Cl. 200—166)



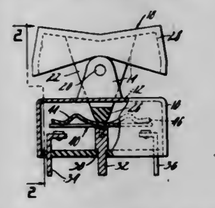
1. In combination: a snap-acting thermostatic element having a deformed portion therein responsible for its snap action; said thermostatic element providing an aperture; an electrically conductive rivet including a shank portion; said rivet having a weld projection means engageable with one side of said thermostatic element; said shank disposed in said aperture and including a portion adjacent its free end projecting beyond an opposite side of said thermostatic element and said weld projection means; and an electrically conductive member welded to the projecting portion of said shank adjacent and spaced from the said opposite side of said thermostatic element, the aperture being larger than the cross section of the shank portion such that the shank portion is substantially free from engagement with the portion of the thermostatic element defining the aperture.

3,299,240
HINGE CONTACT FOR DISCONNECT SWITCH
Arem Foti, Greensburg, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 25, 1965, Ser. No. 458,595
8 Claims. (Cl. 200—166)



1. A blade for a disconnect switch comprising an elongated body having a central portion and first and second end portions, said first end portion movable into and out of engagement with a cooperating contact, said second end portion rotatably and electrically engaging a cooperating hinge support member, said second end portion including a plurality of contact points engaging said hinge support member to provide a path for electrical conduction therebetween, said central portion and said second end portion is an integral cylindrical member of aluminum and said contact points are constructed of a conductive material other than aluminum.

3,299,241
ROCKER TYPE SWITCH DETENT CONTACT CONSTRUCTION
John William Sayward, Stow, Mass, assignor to Ark-Les Switch Corporation, Watertown, Mass., a corporation of Massachusetts
Filed Oct. 20, 1965, Ser. No. 498,522
1 Claim. (Cl. 200—166)



A rocker switch, which comprises a housing, a manual controller supported to turn on a pivotal axis having a switch actuating edge surface disposed radially from and extending parallel to the rotational axis of said controller, a rectangular switch plate disposed in said housing opposite said radially movable actuating edge surface formed of a stiff, resilient electrical conducting material having parallel slots extending from opposite ends of said plate in the direction of movement of said switch actuating edge surface, providing a relatively fixed central area of said switch plate, and a pair of switch arms attached at opposite ends of said switch plate and extending beyond said switch edge in opposite directions, each said switch arm having an upwardly bent press surface to be engaged

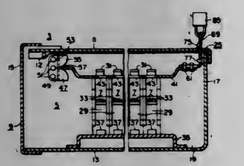
and pressed by movement of said controller about its axis in the direction of said arm, and a switch contact surface adjacent the end thereof, a switch contact terminal attached to and providing a solid support for said contact plate at the mid-point of the central area thereof, and contact terminals to be engaged by said switch arms when pressed.

3,299,242

CIRCUIT INTERRUPTER ENCLOSURE OF THE TYPE COMPRISING AN OPENABLE COVER AND A SHIELD SUPPORTED UNDER THE COVER

George F. Hawkes, Jr., Trumbull, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 7, 1964, Ser. No. 343,386
17 Claims. (Cl. 200—168)



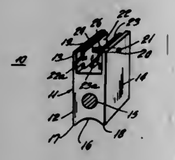
1. An enclosure for circuit interrupters of the type comprising a housing with an operating handle extending from the housing to permit manual operation of the circuit interrupter, said enclosure comprising receptacle means and an openable cover supported on said receptable means in a closed position, a shield member having opening means therein for receiving the operating handles of said circuit interrupters, support means supporting said shield member on said reecptacle means under said cover, said support means comprising a support-and-latch member movably supported on said shield member and movable on said shield member between supporting and non-supporting positions, said support-and-latch member in the supporting position thereof operating to automatically latch said cover closed when said cover is moved into said closed position on said receptacle means.

3,299,243

SHOCK LATCH

George A. Wilson, Media, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 29, 1964, Ser. No. 407,393
5 Claims. (Cl. 200—169)



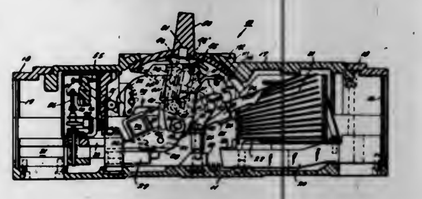
1. Shock latch means for use in preventing false operation of circuit breaker trip latch members comprising an unbalanced rigid body having first and second arms disposed in a first direction from said body; one surface of said body being generally arcuate and terminating in first and second corners facing in a second direction opposite said first direction; means for pivotally mounting said body at a point intermediate said arms and said corners; spring loaded finger means for centering said latch means.

3,299,244

ANTI-REBOUND LATCH

Albert Strobel, Cherry Hill, N.J., and David T. Gray, Roslyn, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 11, 1965, Ser. No. 494,313
14 Claims. (Cl. 200—169)



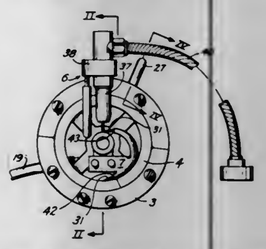
1. In a circuit breaker comprising at least one pair of cooperating contacts and an operating means for moving said cooperating contacts between disengaged and engaged positions, said operating means comprising a plurality of individual elements, including a movable contact arm carrying one of said cooperating contacts, a latchable cradle connected thereto, such that movement of the cradle between its latched and unlatched conditions is transmitted to said movable contact arm for movement thereof between its positions, a support member, said cradle pivotally mounted to said support member at a first pivot axis for movement between its said latched and unlatched conditions, an anti-rebound latch mechanism positionable to operatively engage said contact arm when in its disengaged position and thereby maintain said cooperating contacts disengaged, said anti-rebound latch mechanism including a first section mounted to said cradle for movement therewith, between said cradle latched and unlatched conditions, a second section including a means for grasping a cooperating portion of said movable contact arm and a lost motion connection between said first and second sections, such that reliable operation of the anti-rebound latch mechanism is maintained when subjected to a predetermined degree of misalignment between the individual elements of the operating means.

3,299,245

AUTOMATIC PIPE WELDING WIRE-FEED APPARATUS

Leroy Tinnes, 744 Ohio St., Vallejo, Calif. 94590

Filed Mar. 25, 1964, Ser. No. 354,804
6 Claims. (Cl. 219—60)



1. Wire-feeding pipe welding apparatus comprising:
a stationary housing adapted to be mounted on and fixedly supported by said pipe,
a driven shaft assembly rotatably journaled in and projected outwardly of said housing,
means carried by said housing for rotatably driving said shaft,
a wire reel,
a reel frame fixedly carried by said housing,
a welding electrode assembly carried by and rotatable with said shaft assembly,

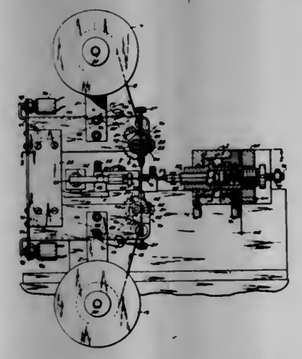
a wire scoop also carried by and rotatable with the shaft assembly,
said electrode assembly including an electrode disposed adjacent to said reel frame and adapted to be disposed over the pipe section to be welded when the housing is mounted on the pipe,
said scoop having a wire inlet end disposed adjacent said wire reel and an outlet end disposed adjacent to said electrode,
said wire reel being loosely mounted in said frame for rotation relative thereto, and
means for binding together the reel and the frame whereupon rotation of the scoop relative to said bound reel feeds wire through the scoop outlet to the pipe section to be welded,
said binding means being releasable whereupon said wire reel rotates with the scoop to avoid wire feed.

3,299,246

APPARATUS FOR WELDING CONTACTS ON CONDUCTIVE PARTS

Frank Wahl, North Bergen, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 29, 1964, Ser. No. 363,466
10 Claims. (Cl. 219—79)



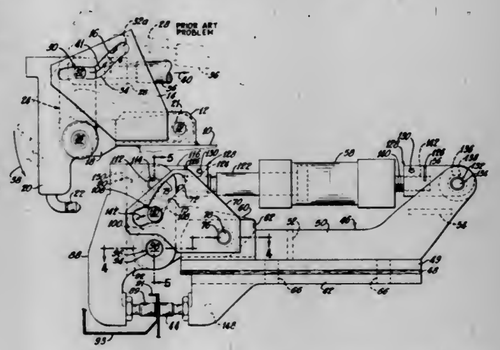
1. An apparatus for welding contacts on successively advanced conductive parts which are joined end to end in a generally flat metal strip of indeterminate length, which comprises,
a first electrode having a recess therein over which the parts are advanced,
a guide for a conductive ribbon from which the contacts are to be cut,
a cutter interposed between the guide and the first electrode and having an aperture therein to receive a length of the ribbon,
means to advance the ribbon longitudinally in the guide transverse to the advance of said metal strip of parts, to feed measured lengths thereof successively into the aperture of the cutter,
means for moving the cutter relative to the guide to cut contacts of said successively measured lengths therefrom, and for moving said cutter to align the aperture therein with the recess in the first electrode, whereupon said cut contacts are pushed, by the advance of the next successive advanced uncut ribbon, into the recess in said first electrode,
a second movable electrode,
means rendered effective upon pushing said contact into said recess for moving said second electrode to press the part into engagement with the contact in the recess to form a pocket therein for the contact,
means for applying welding energy to said electrodes to weld the contacts successively to the parts, and
means responsive to the welding of the contacts to the parts for advancing said indeterminate length strip of parts to position each successively advanced part into alignment with said second electrode.

3,299,247

FORCE APPLYING DEVICES HAVING DUAL GUIDE STRUCTURES

Edward J. Waltonen, Southfield, Mich., assignor to Wes Industries, Inc., Royal Oak, Mich., a corporation of Michigan

Filed Nov. 15, 1963, Ser. No. 324,014
16 Claims. (Cl. 219—89)



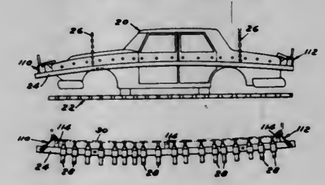
16. In a base-supported, force-applying fabricating device having means carrying a workpiece fabricating means, which carrying means and fabricating means are mounted for curvilinear movement between retracted and working positions, the improvement comprising abutment means mounted on said carrying means and first and second guide means interposed between said carrying means and said base, said first guide means comprising a link movably connected to said base and engaging a first part of said abutment means to control the pattern of movement of said fabricating means away from the working position, and said second guide means comprising a member rigidly connected to said base and having a cam track engaging a second part of said abutment means to control the pattern of movement of said fabricating means toward said working position.

3,299,248

APPARATUS FOR ELECTRIC WELDING FASTENERS TO AUTOMOBILE BODIES

Engelbert A. Meyer, Union Lake, Mich., assignor to Chicago United Products Company, Inc., Detroit, Mich., a corporation of Michigan

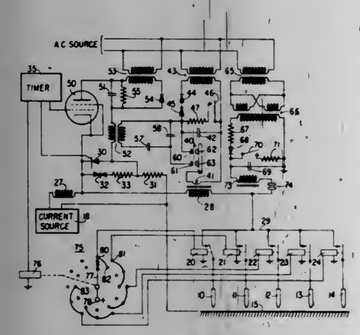
Filed May 15, 1963, Ser. No. 280,531
2 Claims. (Cl. 219—98)



1. A self-loading welding gun assembly for welding successive components to a metal surface comprising, in combination: a support having means providing a component transfer chamber for receiving successive components from a source thereof, a source of components connected to said chamber for successively delivering

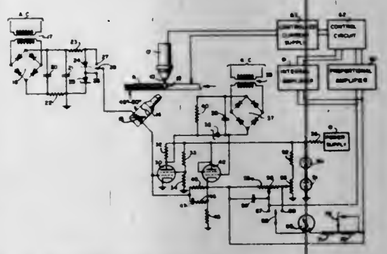
components thereto, electrode means mounted on the support to hold each successive component in a welding position spaced forwardly of said chamber, said electrode means extending through said transfer chamber and shiftable therein to load successive components on the electrode means and position each in the aforesaid welding position, double acting motive means on the support connected to said electrode means for shifting the same relative to the chamber as aforesaid, means on the support connected to said electrode means and operable to momentarily retract the same rearwardly to strike an arc between a component carried thereby and a metal surface to which the component is to be welded and plunge the component through the arc against such metal surface, a source of welding current connected to the electrode means, and a control system connected to said source of welding current and to said means for retracting the electrode means and to said double acting motive means for synchronizing and controlling operation thereof and including a switch for initiating operation of each welding cycle.

3,299,249
WELDING SYSTEM
Albert M. Sciaky, Palos Park, Ill., assignor to Welding Research, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 4, 1964, Ser. No. 349,270
8 Claims. (Cl. 219—131)



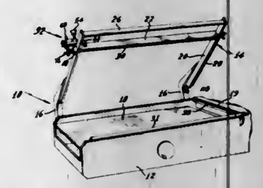
1. A welding system including in combination, a plurality of welding torches, an energizing circuit including output terminals and arc starting means providing pulses at said output terminals, said arc starting means including a shunt circuit portion selectively rendered conducting for diverting current from said output terminals, a plurality of switch means for individually connecting said torches to said output terminals, and timing means for controlling said energizing circuit and for actuating said switch means, said timing means including first, second and third portions, said first portion being coupled to said shunt circuit portion and acting to render the same conductive to provide pre-firing current, said second portion being coupled to said switch means and actuating one of said switch means to connect one of said torches to said output terminals, said third portion being coupled to said energizing circuit for actuating the same to produce said arc firing pulse to initiate an arc at said one torch, said second portion of said timing means operating after the arc is initiated to actuate the second switch means for connecting a second torch to the energizing circuit, said first portion of said timing means operating at a predetermined time after operation of said third portion thereof to render said shunt circuit portion conducting to divert current from said output terminals and terminate the arc at said one torch, said second portion of said timing means operating to release said one switch means and disconnect said one torch after said arc is terminated, and said third portion of said timing means operating after release of said one switch means to provide a voltage pulse to initiate an arc at said second torch.

3,299,250
WELDING SYSTEM
Eugene P. Vilkas, Chicago, and Richard W. Reynolds, Hazel Crest, Ill., assignors to Welding Research, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 17, 1965, Ser. No. 488,193
13 Claims. (Cl. 219—131)



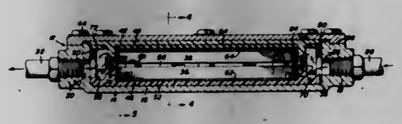
1. In welding apparatus of the type in which a welding electrode is positioned to strike an arc with a work piece to heat the same to produce a weld, a system for controlling the penetration of the weld including in combination, welding current supply means connected to the welding electrode and the work piece for providing controlled current through the welding arc, radiation sensitive means responsive to the radiation emitted by the heated material of the work piece, said radiation sensitive means including a radiation sensitive device positioned to receive radiation from the heated material and provide an indication thereof, circuit means coupled to said radiation sensitive device for producing a control voltage which varies with said radiation indication, said circuit means including a circuit portion responsive to rapid changes in the control voltage to reduce the effect thereof in the output signal of said circuit means, and control means connected to said circuit means and to said welding current supply means and responsive to said output signal for controlling the current supplied to the arc by the welding current supply means.

3,299,251
TEMPERATURE CONTROL MEANS FOR ELECTRICALLY HEATED IMPULSE SEALING ELEMENTS
Seymour Zelnick, Toms River, N.J., assignor to Weldotron Corporation, Newark, N.J., a corporation of New Jersey
Filed June 10, 1964, Ser. No. 374,108
14 Claims. (Cl. 219—243)



1. Automatic temperature control means for controlling the temperature of a heat-expansible element in response to the expansion of the element by controlling the heating thereof, comprising: circuit means including a heat-expansible element connected therein, transformer means coupled to an electrical source and operable when energized to pass a heating current of high amplitude through the element, first and second relatively movable electrical contact means, at least one of which is movable with the element upon the expansion thereof, relay means having contacts in circuit with said transformer and said source and operable when energized to de-energize said transformer means, said first and second contact means being operable upon abutment therebetween to de-energize said relay means to discontinue the passage of the heating current through the element, said contact means being relatively movable from spaced, first positions thereof when the element is in the unheated condition thereof to abutting, second positions of the contacts when the element is in the heated condition thereof, and means to maintain said first and second contact means spaced apart by a predetermined distance when the element is in the unheated condition thereof notwithstanding any permanent elongation which may develop in the element due to the heating thereof, and second relay means operable upon the energization thereof to maintain the first-mentioned relay means de-energized until said second relay means are de-energized, and switch means to de-energize said second relay means.

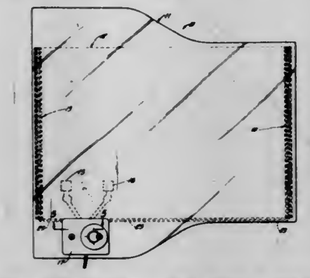
3,299,252
ELECTRIC FLUID HEATING DEVICE
John E. Meek, Belleville, Ill.
(R.R. 2, Box 27, Valparaiso, Ind. 46383)
Filed Aug. 10, 1964, Ser. No. 388,569
9 Claims. (Cl. 219—293)



1. An apparatus for electrically heating liquids comprising a hollow casing having inlet and outlet ports, a non-conductive liner held assembled within said casing, said liner completely covering the casing interiorly and defining a fluid flow passageway between the inlet and outlet ports including chambers respectively communicating with said inlet and outlet ports and an electrode passage between the chambers, spaced electrodes positioned in said electrode passage between said chambers, and spaced partition means connected to the liner between each of the chambers and the electrode passage having circuitous passages formed therein communicating with said chambers and the electrode passage.

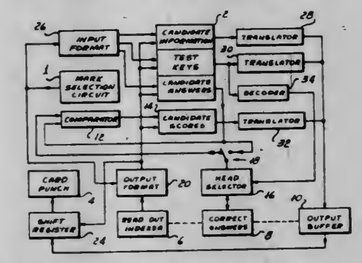
3,299,253
WARMING DEVICE
William H. Lawson, Jr., Northridge, Calif., assignor to The Sierracin Corporation, Burbank, Calif., a corporation of California
Filed Oct. 30, 1963, Ser. No. 320,019
4 Claims. (Cl. 219—385)

1. A device for covering and warming a body without obstructing the visual observation thereof comprising an arcuate transparent shield for positioning over said body, means in said shield for producing radiant heat energy over substantially the entire surface thereof, the arcuate shape of said shield directing said radiant heat energy toward said body, means immediately associated with said body for sensing the temperature of said body, and means responsive to said sensing means for controlling the heat energy produced by said means in said shield



whereby the temperature of said body is maintained at a desired level.

3,299,254
TEST SCORING MACHINE
Willis E. Dobbins, Manhattan Beach, and Frederick C. Fischer, Westminster, Calif., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 21, 1961, Ser. No. 132,970
11 Claims. (Cl. 235—61.7)

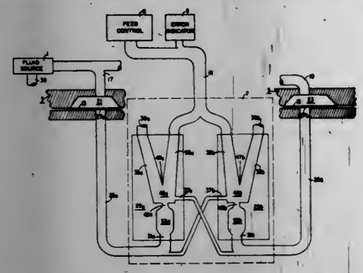


7. A test scoring machine including in combination a test paper having provision for a test key, means for storing the test key and resolved representations of candidate answers, a decoder, means for presenting the stored test key to the decoder, a signal channel, means including rotating indexing means for serially presenting to the signal channel pulses in accordance with the stored representations of resolved candidate answers, means responsive to the decoder and including storage means rotating in unison with the indexing means for providing one of a plurality of sequences of correct answer pulses synchronously with the presentation of resolved candidate answer pulses, means for serially presenting to the signal channel further pulses indicating answers which are to be scored wrong, an accumulator for wrong answers, and means responsive to a signal channel pulse for actuating the wrong answer accumulator in the absence of a concurrent correct answer pulse.

3,299,255
FLUID DATA COMPARATOR
Peter Bauer, Rockville, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 18, 1962, Ser. No. 231,404
13 Claims. (Cl. 235—61.7)

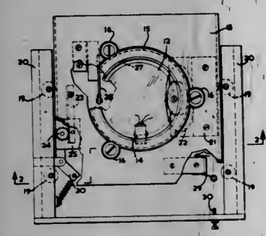
11. A pure fluid operated device for performing the Exclusive-Or logical function on first and second fluid signals, said device comprising: first and second pure fluid amplifiers, each of said amplifiers having a power stream input channel, first and second output channels and a control signal input channel, said channels intersecting whereby a power stream emerging from said power stream chan-

nel normally flows into said first output channel but flows into said second output channel in response to a control signal applied to said control signal input channel; means for applying said first fluid signal to said power stream input channel of said first amplifier and said control signal input channel of said second amplifier; means for applying



said second fluid signal to said power stream input channel of said second amplifier and said control signal input channel of said first amplifier; and means responsive to power stream flow into either of said first output channels for producing a signal indicating that only one of said first and second fluid signals is present.

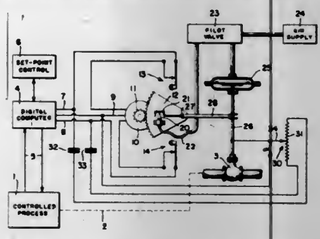
3,299,256
AUTOMATIC COUNTING DEVICE FOR COUNTING PARTICLES
Charles Howe, Bramhall, and James W. Abson, Cheadle Heath, Stockport, England, assignors to Simon-Carves Limited, Cheadle Heath, Stockport, England, a British company
Filed Mar. 20, 1963, Ser. No. 266,669
Claims priority, application Great Britain, Mar. 30, 1962, 12,454/62
8 Claims. (Cl. 235—92)



1. An automatic counting and/or recording device, comprising means to direct a concentrated light beam upon a light-responsive device, means to rotate a transparent container containing matter to be counted and/or recorded in a circular horizontal path between said light beam and said light-responsive device, and means periodically operable to advance said container a predetermined distance in a linear direction at the end of each complete revolution thereof; the intensity of the light falling on said light-responsive device being varied in accordance with variations in the density of the matter passing through said light beam and said variations in intensity being adapted to actuate a counting and/or recording device.

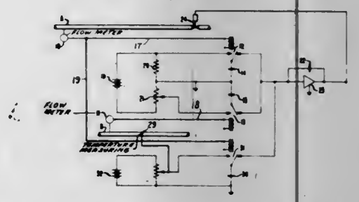
3,299,257
ELECTRICAL APPARATUS
Geert H. Bouman, Glenside, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 269,005
9 Claims. (Cl. 235—151.34)

1. A digitally responsive valve comprising a valve means, a primary valve operator operative to adjust said valve means, a secondary pilot valve operative to control an energizing fluid supply to said valve operator, and digitally responsive means operative to control an energizing fluid supply to said pilot valve, said responsive means including a reversible stepping motor arranged to produce incremental motion in response to digital signals, a support means driven by said motor between spatial positions



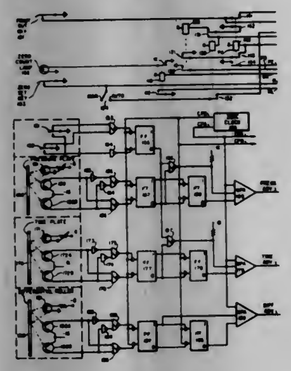
and a nozzle and flapper combination arranged to bypass a fluid supply for said pilot valve in proportion to their mutual separation, said combination having one element attached to said support means and the other element attached to said valve means whereby the motion of said support means produced by said stepping motor is offset by the motion of said valve means.

3,299,258
CORRECTION DEVICE FOR ELECTRONIC FLOW RATIO CONTROLLER
Albertus C. H. Borsboom and Hendrikus J. Nihof, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,709
Claims priority, application Netherlands, Aug. 3, 1962, 281,721
4 Claims. (Cl. 235—151.34)



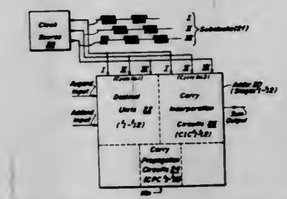
1. A device for the automatic control of the relationship of the quantities of streams of media supplied through two lines comprising:
a flow meter disposed in each of the lines to supply two output signals having frequencies proportional to the rate of flow in the two lines;
two switching relays, one of said relays being coupled to the flow meter in one line, the other relay being coupled to the flow meter in the second line;
two auxiliary capacitors, one of said capacitors being coupled to a first source of direct current voltage and to a reservoir capacitor through the contacts of said one relay and the other of said capacitors being coupled to a second source of direct current voltage and said reservoir capacitor through the contacts of said other relay;
means coupled to said first and second sources of direct current voltage to carry the relationship between said sources;
at least one additional auxiliary capacitor;
an additional switching relay, said additional auxiliary capacitor being coupled to a third source of direct current voltage and said reservoir capacitor through the contacts of said additional switching relay, said additional switching relay being coupled to one of the flow meters; and
monitoring means disposed to monitor a characteristic of the media in one stream, said means being coupled to said third direct current voltage source to control the magnitude thereof.

3,299,259
DEVICE FOR ACCUMULATING AND INDICATING PULSE DATA
Lawrence S. Grygienc, Ronald E. Schauer, and Martin R. Winandy, Chicago, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,785
4 Claims. (Cl. 235—160)



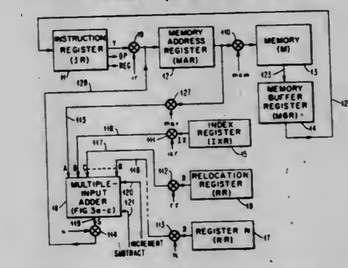
1. A data accumulator comprising: data receiving means including a light source, a first and second photo transistor; and light reflecting means controlled by a data source periodically positioned to reflect light from said light source onto said photo transistors; a pulse source comprising an electronic clock producing a first train of equally spaced periodic pulses and a second train of equally spaced periodic pulses, said second pulses each occurring midway between pulses produced in said first train; counting means; gating means including a first flip-flop circuit connected to said photo transistors and to said electronic clock, a second flip-flop connected to said first flip-flop and to said electronic clock, and a gated pulse amplifier having individual circuit connections to said first flip-flop, to said second flip-flop, to said electronic clock and to said counting means, said first flip-flop set in response to the rendering of said first and second photo transistors conductive coincident with receipt of a periodic pulse from said first pulse train, said gated pulse amplifier operated in response to the setting of said first flip-flop and to the receipt of a first periodic pulse and said second pulse train, to transmit a count pulse to said counting means, said second flip-flop operated in response to the setting of said first flip-flop and to the receipt of a second periodic pulse received from said first pulse train, to terminate the operation of said gated pulse amplifier; said counting means operated in response to the receipt of said count pulses to register the number of times said first and second photo transistors are rendered conductive; recording means comprising a printer including advance means; and connecting means comprising an electromechanical stepping switch including, a motor magnet including circuit connections to said printer advance means, and a plurality of banks each including a bank wiper connected to said printer and a plurality of bank contacts connected to said counting means, said wipers operated in response to said motor magnet to connect said printer to said counting means; said printer operated in response to connection to said counting means to record the number of times said photo transistors are rendered conductive as registered in said counting means.

3,299,260
PARALLEL ADDER USING MAJORITY DECISION ELEMENTS
Morris Cohen, Los Angeles, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Aug. 6, 1963, Ser. No. 300,202
18 Claims. (Cl. 235—173)



12. A parallel adder for summing a pair of plural-digit numbers having a radix n (wherein n is equal to either 10 or 2) comprising: a plurality of adder stages each of which corresponds to a respective denomination of the digits of said numbers, each of said adder stages comprising a partial adder circuit for producing an output representing the partial sum (mod n) of the corresponding digits of said numbers and carry detection circuit means for producing carry information signals including both an absolute carry signal and a redundant, conditional carry signal when the partial sum is at least equal to n and for producing a conditional carry signal only when the partial sum is at least equal to $(n-1)$; carry propagation circuit means coupled to said carry detection circuit means to be responsive to said carry information signals produced for the respective stage and carry information signals produced for any lower order stages for producing final carry information; and carry incorporation means responsive to the output of the respective partial adder circuit and the final carry information produced for any next lower order stage for producing an output representing the respective digit of the final sum.

3,299,261
MULTIPLE-INPUT MEMORY ACCESSING APPARATUS
George F. Steigerwalt, Jr., Troy, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 16, 1963, Ser. No. 330,841
2 Claims. (Cl. 235—175)



1. Memory address modification apparatus comprising:
an addressable memory;
a number of multi-bit word sources, each source hav-

ing one output for each bit of a multi-bit word, for supplying operands to be combined with each other for the purpose of addressing said memory;

a matrix of full adders, each full adder having first, second and third inputs and sum and carry outputs;

said matrix comprising a number of levels equal to said number of multi-bit word sources minus one, each of said levels having a number of full adders equal to the number of bits in the largest of said operands;

first means connecting the outputs of three of said multi-bit word sources to the inputs of corresponding full adders in a first level of said matrix;

second means connecting the outputs from each remaining one of said multi-bit word sources to the first inputs of corresponding full adders of a different level of said matrix so that each level except a last level and said first level of said matrix receives the output from one and only one of said sources of multi-bit words;

third means connecting the sum output of each adder in each level except said last level to a second input of the corresponding adder in the succeeding level so that the sum output of the mth adder in the nth level is connected to a second input of the mth adder in the $(n+1)^{st}$ level;

fourth means connecting the carry output of each adder except the highest order adder of each level except said last level to a third input of the next higher order adder in the succeeding level so that the carry output of the mth adder in the nth level is connected to the third input of the $(m+1)^{st}$ adder in the $(n+1)^{st}$ level;

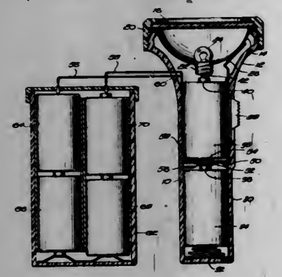
fifth means connecting the carry output of each adder of said last level except the highest order adder of said last level to the first input of the next higher order adder in said last level so that the carry output of the mth adder of the last level is connected to the first input of the $(m+1)^{st}$ adder of the last level;

a source of incrementing signals;

means connecting said source of incrementing signals to the third input of the lowest order adder in each level except said first level for incrementing address words; and

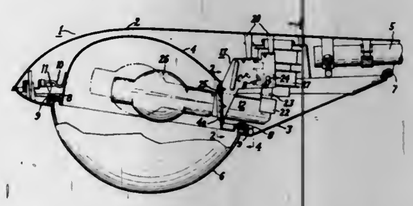
means connecting the sum output of each adder in said last level to said addressable memory for supplying modified address words that have been formed as a function of said operands and increments.

3,299,262
FLASHLIGHT
Walter L. Duncan, Central St., Rowley, Mass. 01969
Filed Mar. 1, 1965, Ser. No. 435,826
2 Claims. (Cl. 240—10.6)



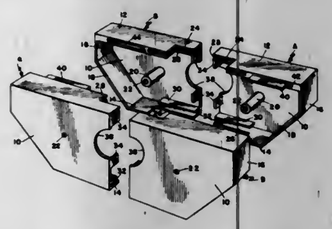
1. A flashlight comprising a casing with an aperture in the side thereof, a plurality of battery cells arranged end to end in said casing, a light bulb mounted in said casing with an end bearing against an end of one of said cells, and a switch connected in series with said cells and light bulb, in combination with a separate container, battery cells carried in said container, an insulating disk having a conductor mounted on each face thereof between the ends of two of the cells in said casing, said conductors being in contact respectively with said two cells, and wires connecting said conductors in series with the cells in said container, whereby the cells in the container, the cells in the casing, the light bulb and the switch are all in a single circuit.

3,299,263
LUMINAIRE SOCKET SUPPORT
Arthur M. Bjontegard, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed July 7, 1964, Ser. No. 380,826
10 Claims. (Cl. 240—25)



1. A luminaire comprising, in combination, elongated housing means having an opening, a concave reflector in said housing means facing said opening, said reflector being elongated along the elongate axis of said housing means and having front and rear ends, elongated lamp support means arranged in said housing means rearward of and projecting through the rear end of said reflector and adapted to support a lamp within said concave reflector, and bracket means fixed to said housing means and adjustably holding said lamp support means for movement of the lamp along the elongate axis of the reflector and toward and away from the mouth of the reflector for varying light distribution patterns emanating from the luminaire, the rear end of said reflector being supported by said bracket means spaced from said lamp support means.

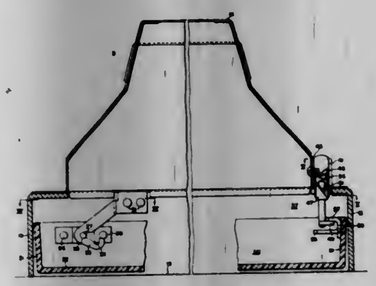
3,299,264
END PLATE FOR LIGHTING FIXTURES
Willis L. Lipscomb, 333 Spreckels Bldg., San Diego, Calif. 92101
Filed Aug. 28, 1964, Ser. No. 392,824
3 Claims. (Cl. 240—51.11)



3. An end plate assembly for lighting fixtures comprising: complementary, allochiral, hollow enclosure members, each comprising two mating shell units having open end portions, the diagonally opposite shell units being identical; means to secure said open end portions together to constitute a single hollow housing; and

said housing having means to support lamp sockets comprising mating complementary recessed portions in said end portions and clamped around the lamp sockets when said enclosure members are secured together by said means to secure.

3,299,265
LUMINAIRE
Carle E. Rackley, Westlake, and Winfried Nieder-Westermann, Parma, Ohio., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 20, 1964, Ser. No. 353,419
6 Claims. (Cl. 240—147)



5. A luminaire comprising; a troffer having a top member and downwardly extending walls defining a bottom opening; light-transmitting closure means having a body portion which fits snugly into the bottom opening of said troffer and side members which extend upwardly from edges of the bottom opening of said troffer; the side members of said closure means spaced a slight amount from the inner surface of wall portions of said troffer; hinge means connected to wall portions of said troffer and to the inner surfaces of opposite side members of said closure means to hingeably secure one edge of said closure means to said troffer; latch means including a groove and finger associated to produce rotary motion, connected to wall portions of said troffer and to the inner surface of side members of said closure means which are oppositely disposed from said hinge means; and said latch means being rotatably engageable and disengageable by a slight upward motion of said closure means respectively to secure said closure means within said troffer bottom opening and to release said closure means to permit same to swing to an open position about said hinge means.

3,299,266
INSTRUMENTATION TO DETERMINE THE POSITIVE ION PRODUCTION RATE IN THE IONOSPHERE USING THE MASS SPECTROMETER
Charles Y. Johnson, Annandale, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 22, 1964, Ser. No. 384,558
5 Claims. (Cl. 250—41.9)

1. Instrumentation for determining the positive ion production rate in the ionosphere which comprises:

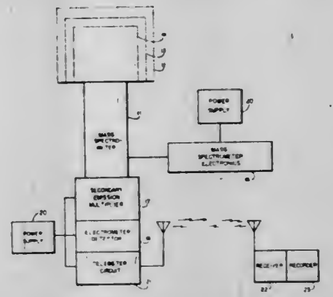
an ion mass spectrometer for analyzing positive ions,

means connected with said mass spectrometer for detecting ions analyzed by said mass spectrometer,

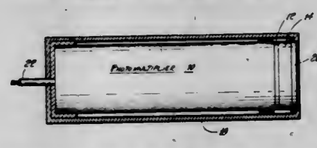
telemetering means connected with said detecting means for telemetering detected signals,

a ground receiver-recorder for receiving said telemetered signals and recording said signals which indicate the ion production rate, and

a positive ion and an electron electrical shield secured to the ion inlet end of said spectrometer to form a volume between said electrical shield and said mass spectrometer, said electrical shield admits ambient atmosphere, ionizing solar radiation and energetic secondary electrons to said volume whereby ion production occurs by the interaction of the solar radiation with the ambient atmosphere admitted to said volume formed by said electrical shield and said ions are analyzed by said mass spectrometer.



3,299,267
IONIZING RADIATION DETECTOR AND MEASURING INSTRUMENT HAVING A FLAT ENERGY RESPONSE OVER A WIDE ENERGY RANGE
Charles Christianson, New York, Edward F. Duffy, Hewlett, Lester Mackay, Hollis, and Arthur Rutkowski, New York, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 21, 1964, Ser. No. 339,309
3 Claims. (Cl. 250—71.5)



1. A luminophore for a scintillation type radiation instrument comprising:

(a) disk-shaped Pilot Scintillator B, 50 millimeters thick and one and one-quarter inch diameter,

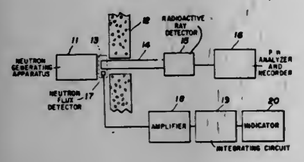
(b) a dispersion of .0043 gram silver activated zinc sulphide in 3.5000 grams of Lucite in the form of a transparent disk one and one-quarter inch diameter, and

(c) silicone grease optically coupling said disks in-line face-to-face.

3,299,268
QUANTITATIVE CHEMICAL ANALYSIS COMPRISING IRRADIATING WITH NEUTRONS AND MEASURING THE CHARACTERISTIC DECAY PATTERN
Haruo Muto, Yokohama-shi, and Koichi Onodera, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed June 12, 1963, Ser. No. 287,396
Claims priority, application Japan, June 14, 1962, 37/24,251
2 Claims. (Cl. 250—83.1)

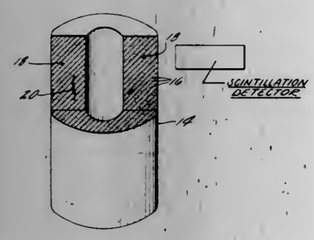
1. A system for the quantitative chemical analysis of substances, said system comprising means for generating neutron flux, means for presenting samples of the substance to be analyzed to the generated flux to be irradiated thereby and to form radioactive nuclides in an amount which is proportional to the amount of the substance present in the sample and to the amount of flux generated, each kind of said radioactive nuclides having

a characteristic pattern of decay or half-life which is dependent upon the nature of the nuclide, means for measuring the amount of radioactivity induced in a sample of the substance being analyzed, said measuring means including a detector of radioactivity which generates electrical pulses proportional to the amount of radiation from said sample and a means for measuring and indicating by the amplitude of a first direct current the height of the pulses produced by said detector, a comparison device for determining and indicating the amount of neutron flux generated for irradiating said samples, said comparison device including means for detecting the neutron flux being generated and for producing a second direct electrical current in proportion thereto, and electrical circuit means connected to the output from said neutron flux



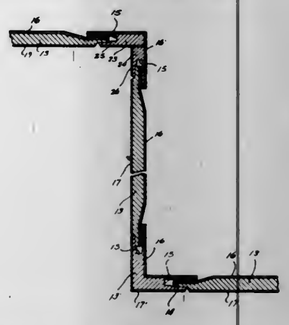
detecting means for integrating said second direct current therefrom in accordance with the disintegration constant of the particular nuclide being measured at any time, the output from said electrical circuit means being directly proportional to the radiation produced by a known amount of a selected nuclide irradiated by the available flux whereby the outputs from said integrating circuit and from said measuring means may be compared to determine the amount of the element being measured that is contained in said samples, said electrical circuit comprising at least a resistor and a capacitor connected together, the values of said resistor and said capacitor being such that the time constant of said electrical circuit is proportional to the reciprocal of the disintegration constant of the nuclide being measured.

3,299,269
NON-DESTRUCTIVE TESTING METHOD UTILIZING RADIOACTIVE CLATHRATES
Merlyn L. Hanson, Springfield, Mass., and Charles T. Brown, Windsor, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 27, 1963, Ser. No. 290,947
6 Claims. (Cl. 250—106)



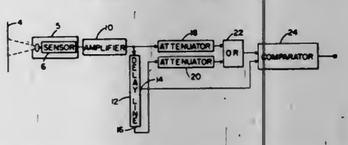
1. A method of detecting voids in a solid body comprising the steps of imbedding a powdered clathrate material having a radioactive gas with a relatively high gamma emission trapped therein in the body homogeneously mixing said clathrate material into said body, heating said body to a temperature sufficient to break down said clathrate and release said gas, and inspecting said body to determine the presence of pockets of said gas within said body.

3,299,270
RADIATION-PROOF STRIP FOR WALL AND CEILING PANEL HAVING A GROOVE FORMED BY TWO BIFURCATIONS
Benjamin A. D'Avella, 1012 N. 7th St., Belleville, N.J. 07109
Filed Nov. 18, 1965, Ser. No. 516,195
3 Claims. (Cl. 250—108)



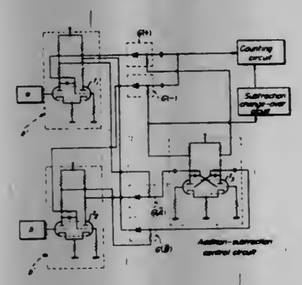
1. A radiation-proof wall element comprising an elongated substantially flat strip of rigid nonmetallic material of uniform width having at least one longitudinal edge of reduced thickness to define a tongue and formed at its opposite edge with a longitudinal groove adapted to receive the tongue of an adjacent strip, a layer of lead secured on one face of said strip covering its entire area including said first named tongue, and a relatively thin layer of plastic facing material secured on and covering substantially the entire area of the opposite face of said strip, said groove being formed by two bifurcations along an edge of said element, one bifurcation including the layer of lead, the other bifurcation including the layer of plastic facing material, the one bifurcation having a length substantially greater than said other bifurcation, said tongue having a length equal to said one bifurcation, the thickness of said one bifurcation and its layer of lead being substantially equal to the thickness of said other bifurcation in its layer of plastic facing material.

3,299,271
ELECTRO-OPTICAL LABEL READING SYSTEM USING PULSE WIDTH DETECTION CIRCUIT
Francis H. Stites, Wayland, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 18, 1963, Ser. No. 331,990
7 Claims. (Cl. 250—219)



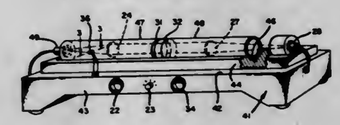
6. In an electro-optical label reading system including a label containing coded data, apparatus for optically scanning said label, and a sensor operative in response to light reflected from said label to produce signal pulses of varying amplitude and wave shape representative of said coded data, a circuit for measuring the mid-amplitude width of said signal pulses comprising: a delay line having an input terminal and first and second output taps, the delay between said input terminal and said second output tap being twice the delay to said first output tap and approximately equal to the maximum rise time of said signal pulses, means coupling said signal pulses to the input terminal of said delay line, first means to which said signal pulses are also applied for attenuating by half the amplitude of said input signal pulses, second means coupled to the second output tap of said delay line for attenuating by half the amplitude of delayed signal pulses appearing thereat, a difference amplifier having first and second input terminals, means coupling said attenuated signals from said first and second means to the first input terminal of said difference amplifier, means coupling the delayed signal pulses appearing at the first output tap of said delay line to the second input terminal of said difference amplifier, and means coupled to said difference amplifier and operative in response to the simultaneous application to said first and said input terminals, respectively, of said difference amplifier of said attenuated pulse signals and a signal from the first output tap of said delay line to produce rectangular pulses of uniform amplitude.

3,299,272
PHOTOSENSITIVE SYSTEM FOR TAKING OUT DESIRED PORTIONS OF RECORDS ON MICROFILM
Yozo Furukawa, Tokyo, Toyokazu Satomi, Kawasaki-shi, and Hajime Hariu and Shuji Takei, Tokyo, Japan, assignors to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan
Filed Feb. 6, 1964, Ser. No. 343,020
Claims priority, application Japan, Feb. 9, 1963, 38/6,676
4 Claims. (Cl. 250—219)



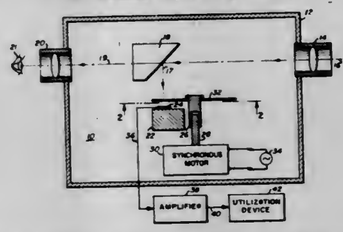
1. A system for selecting desired portions of records on a microfilm having thereon such records as well as areas that identify respective portions of records, comprising a light source, and a pair of photoelectric transducing elements disposed for receiving light from said light source, said microfilm being adapted to travel either in forward direction or in reverse direction with said identifying areas passing between said light source and said pair of photoelectric transducing elements which are disposed side-by-side in the direction of travel of said microfilm, each of the projections of said identifying areas onto said photoelectric transducing elements having a length longer than the distance between said photoelectric transducing elements, gate circuits for receiving electric signals produced by said pair of photoelectric transducing elements as said microfilm travels, a counting circuit and an addition-subtraction control circuit for receiving signals from said gate circuits, said gate circuits beng selectively opened and closed in accordance with time shift between light signals entering into said pair of photoelectric transducing elements through said identifying areas, one of said photoelectric transducing elements serving for indicating the direction of travel of said microfilm to switch over said addition-subtraction control circuit, while the other of said photoelectric transducing elements serves for counting.

3,299,273
OPTICAL GAUGING SYSTEM WITH INTERCHANGEABLE MASKS
Joseph T. Sturdevant, 4151 Pepper Tree Lane, San Jose, Calif. 95127
Filed Aug. 17, 1964, Ser. No. 389,867
8 Claims. (Cl. 250—229)



5. An optical gauge for measuring the area of a light transmitting section in an opaque workpiece comprising,
a source of collimated light,
a photocell,
a mask formed with an opaque area of substantially the same shape and of smaller size than the light transmitting section in said workpiece,
said mask and said workpiece being disposed in the path of collimated light and together blocking out most of the light from the source to the photocell, the cross section of the light beam after passing said workpiece and mask comprising a thin closed line, the amount of light striking said photocell providing a measure of the area of the light transmitting section in the workpiece.

3,299,274
CHOPPER WITH ALTERNATING REFLECTIVE AND ABSORPTIVE SEGMENTS FOR RADIANT ENERGY MEASURING SYSTEM AND METHOD OF OPTIMIZING SAME
Roger L. Hoelter, Mountain View, Calif., assignor to Huggins Laboratories, Inc., Sunnyvale, Calif., a corporation of California
Filed Dec. 5, 1963, Ser. No. 328,272
13 Claims. (Cl. 250—233)



1. In a radiant energy measuring system for determining a characteristic of a body in which an optical system collects a solid angle of radiation emanating from said body into an optical path and directs said path upon a detector means responsive to said radiation and in which said radiation is modulated prior to reception by said detector means, a modulation means comprising: a rotating toothed gear chopper wheel having alternating circumferential teeth and spaces, the rotating axis of said wheel being substantially parallel to said optical path and being spaced therefrom so that the optical path is alternately obturated by said teeth, the surface of said chopper wheel facing said detector having reflective and absorptive portions arranged in an alternating pattern corresponding to that of said teeth and spaces.

13. A method for compensating for the residual signal generated from internal sources of radiant energy of a radiant energy measuring system contained within an enclosure having an optical system for collecting a solid angle of radiation emanating from an external source of radiant energy into an optical path and for filtering said radiation and for directing said radiation upon a detector

means and in which a rotating toothed gear chopper wheel having its circumferential teeth and spaces alternately block and pass the optical path to modulate said radiation, the method comprising the steps of:

obstructing the optical system so that no external radiation is admitted into the enclosure housing the radiant energy measuring system;

taking a first measurement with a chopper wheel having a uniformly highly absorptive surface facing the detector to derive a first signal;

taking a second measurement with a chopper wheel having a uniformly highly reflective surface facing the detector to derive a second signal; and

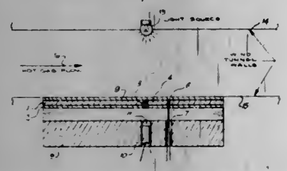
constructing a chopper wheel having a surface facing the detector means which is absorptive with a reflective portion in each space sector if the amplitude of the second signal exceeds the first signal, and which is reflective with an absorptive portion in each space sector if the amplitude of the first signal exceeds the second signal, and in which the size and location of the portion in the space sector is selected in accordance with the relative amplitude of the first and second signal.

3,299,275

MEASURING SURFACE TEMPERATURES OF ABLATING MATERIALS WITH THERMOCOUPLE AND PHOTOCELL

Lewis B. Green and Dale A. Kleppin, Bellevue, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Aug. 14, 1963, Ser. No. 302,016
13 Claims. (Cl. (250—222)



1. Mechanism for measuring the surface temperature of ablating material subjected to heating from the flow of hot gas or the like comprising a first layer of ablating material operatively attached to a metal substrate, said first layer of material being provided with a hole therethrough, temperature sensitive means positioned on the surface of said first layer and adjacent said hole, a second layer of ablating material positioned over said first layer and covering said hole and said temperature sensitive means, support means for said materials, radiant energy sensitive means positioned in said support means and in alignment with said hole, and means adapted to interconnect said temperature and radiant energy sensitive means with recording means, whereby said second layer of ablating material is eroded away by heating thus allowing radiant energy to pass through said hole onto said radiant energy sensitive means while said temperature sensitive means indicates the temperature of said material at said hole.

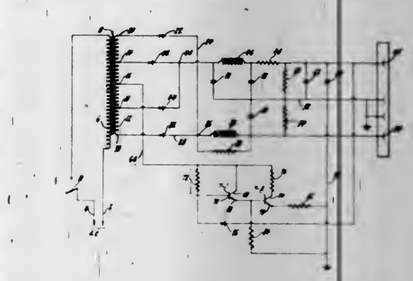
3,299,276

TRANSISTORIZED MULTIPLE VOLTAGE REGULATION SYSTEM

Harry Rolland Buell and Richard L. Jenkins, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 9, 1963, Ser. No. 301,019
4 Claims. (Cl. 307—34)

1. In power supply means, a source of alternating current power, a transformer having a primary and a secondary winding, said primary winding being connected to the source of alternating current, said secondary winding having end terminals and intermediate taps including a center tap, rectifying means connected to the end terminals and the intermediate taps, a plurality of direct current output lines of different voltage connected to the rectifying means to provide a plurality of different direct current voltages, a resistance-transistor network connected between the center tap of the secondary and ground and



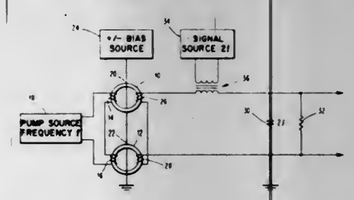
acting as a common return lead for the plurality of direct current output lines and a means providing a maximum voltage index level connected between the resistance-transistor network and one of the direct current output lines to determine the bias on the resistance-transistor network and vary it as the voltage on the one direct current output line varies to change the voltage at the center tap to compensate and regulate the direct current voltages.

3,299,277

PARAMETRIC DEVICES

John Presper Eckert, Jr., Gladwynne, Albert Brown, Philadelphia, Leonard R. Hulls, Gwynedd Valley, and Robert A. Brinker, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 26, 1963, Ser. No. 275,888
6 Claims. (Cl. 307—88)



1. In combination, a first and a second magnetically saturable element each having a substantially rectangular hysteresis characteristic with relatively low $d\phi/d(NI)$ portions and relatively high $d\phi/d(NI)$ portions, each element having an input, a bias and an output winding coupled thereto, means for receiving a direct current bias source, means interconnecting said bias windings together in series so as to form a first polarity type series circuit, means coupling said receiving means to the bias windings of said elements for causing each of said elements to be driven to saturation each in a first direction, means for receiving an alternating current pump source having a frequency f, means coupling said pump source receiving means to the input windings of said elements in an opposed manner so that, alternately, said first element is driven further in said first direction while said second element is driven towards the opposite direction, and said first element is driven towards said opposite direction while said second element is driven further in said first direction; the alternation occurring normally about said low $d\phi/d(NI)$ portions of said hysteresis characteristics,

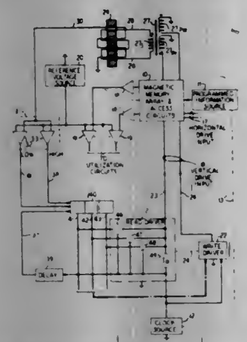
means interconnecting said output windings together in series so as to form a first polarity type series circuit of the same type as said bias winding circuit, a capacitor coupled to said output windings and forming therewith a tuned circuit resonant at a frequency $2f$, and means coupled to said tuned circuit for inducing a temporary signal therein at a frequency $2f$, for inducing oscillation therein, whereby said tuned circuit continues to oscillate upon removal of said temporary signal and wherein said elements operate along both relatively high and relatively low portions of their hysteresis characteristics.

3,299,278

STABILIZING FEEDBACK CIRCUIT FOR A CURRENT PULSE GENERATOR

Philip A. Harding, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 21, 1962, Ser. No. 246,505
11 Claims. (Cl. 307—88)



1. A current pulse generating circuit comprising

a pulse generator circuit,

a magnetic load coupled in an electric loop circuit with said pulse generator,

magnetic means of the same type as said load and having input and output circuits,

means coupling said input circuit to said loop circuit for driving said magnetic means in response to pulses from said generator,

a reference voltage source,

means comparing signals in said output circuit with the output of said reference voltage source,

a reversible binary counter having input means connected to control the direction of operation of said counter in response to the output of said comparing means,

said counter having plural output connections on which output signals are produced as a function of a count condition of said counter, and

means coupling said counter output connections to said current pulse generator for altering the magnitude of output pulses therefrom to null the output of said comparing means.

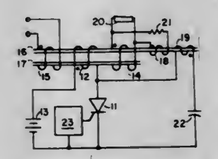
3,299,279

TURN-OFF CIRCUITRY FOR SILICON CONTROLLED RECTIFIER AND OTHER THYRATRON-LIKE DEVICES

Edward T. Moore, 190 Withers Road, Wytheville, Va. 24382, and Thomas G. Wilson, 2721 Sevier St., Durham, N.C. 27705

Filed Dec. 31, 1962, Ser. No. 249,110
42 Claims. (Cl. 307—88)

1. In an electrical system, a controlled unidirectional conducting device having a control gate electrode; a source of voltage; a triggering source for said gating electrode operative to render said device conducting; a load circuit energized when said device is conducting; magnetic core means establishing first and second magnetic paths of predetermined hysteresis-loop characteristics; first winding means energized by said voltage source when said device is conducting and operative to apply magneto-motive forces of predetermined values to each of said paths whereby to effect a flux change predominantly in the first path followed by a flux change in the same direction predominantly in the second path; second



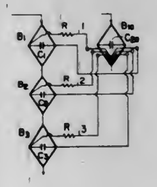
winding means encircling only said second path; a capacitor connected in a series circuit with said second winding means and said circuit forming a shunt path around said device, said capacitor and second winding means being arranged and operative to apply a negative turn-off voltage across said device when under the influence of said second-path flux change, and said capacitor being operative to block flow of current in said shunt path when said device is non-conducting.

3,299,280

PARAMETRON BRIDGE CIRCUIT UTILIZING FERROMAGNETIC THIN FILM

Hisao Maeda, 211 Minamisenzoku-Machi, Ota-ku, Tokyo-to, Japan

Filed Oct. 15, 1963, Ser. No. 316,415
Claims priority, application Japan, Oct. 17, 1962, 37/46,188
2 Claims. (Cl. 307—88)



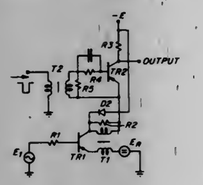
1. In a parametron bridge circuit comprising a first stage including a plurality of serially connected parametron bridges and a second stage including at least one parametron bridge, each of said bridges of said first and second stages comprising bridge arms formed by core wires coated with ferromagnetic films, a tuning capacitor connected across balanced terminals of said bridge thereby to cause oscillation; said first and second stages having a single input line disposed closely adjacent to, and in parallel with, bridge arms of said second stage, a plurality of outputs derived from the opposite terminals of said tuning capacitor of said first stage applied to said single input line of said second stage, thereby to cause a decision by majority and to cause coupling as the result of said decision to the parametron bridge of said second stage through said single input line.

3,299,281
TRANSISTOR ELEMENT AND TRANSISTOR CIRCUIT
Johannes Meyer Cluwen, Eindhoven, Netherlands, assignor, by mesne assignments, to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 1, 1953, Ser. No. 395,550
Claims priority, application Netherlands, Dec. 1, 1952, 174,267
20 Claims. (Cl. 307—88.5)



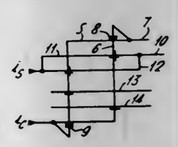
1. A transistor comprising a semi-conductive body of one conductivity type, at least three spaced zones within the body of a conductivity type opposite to said one conductivity type, two of said zones each being spaced from a third zone by semi-conductive material of said one type having a thickness smaller than the characteristic diffusion length of minority carriers in said one type material, said two zones being spaced from each other by semi-conductive material of said one type having a thickness greater than said characteristic diffusion length, a pair of connections secured to said body of said one type material at spaced positions, and connections secured to at least said two zones of said opposite type material.

3,299,282
COMPARATOR CIRCUIT USING A TRANSISTOR GATED BLOCKING OSCILLATOR
Elof Erik Eriksson, Bandhagen, and Sverre George Semb Sandberg, Vendelso, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 15, 1963, Ser. No. 251,669
Claims priority, application Sweden, Jan. 19, 1962, 575/62
2 Claims. (Cl. 307—88.5)



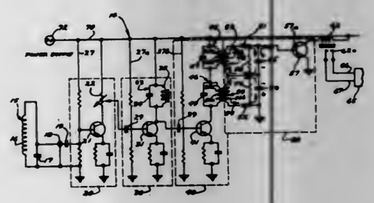
1. Apparatus for comparing a varying potential with a reference potential, comprising: a regenerative amplifier including a first transistor having an emitter, a collector and a base terminal, and a first transformer having a primary winding and secondary winding, said base terminal being adapted to receive the varying potential, one end of said secondary winding being connected to said emitter terminal, the other end of said secondary winding being adapted to receive said reference potential, one end of said primary winding being connected to said collector terminal; a gated amplifier including a second transistor having an emitter, a collector and a base terminal, control means connected to said base terminal and adapted to receive signals for rendering said second transistor controllably conductive; means for connecting the other end of the primary winding of said first transformer to the emitter terminal of said second transistor; a source of operating potential different from said reference potential connected to the collector terminal of said second transistor, whereby when the varying potential is different from said reference potential while said second transistor is conductive, a pulse signal is transmitted from the collector terminal of said second transistor.

3,299,283
SUPERCONDUCTIVE CIRCUITRY
Michael Godfrey Harman, London, England, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 6, 1963, Ser. No. 263,270
Claims priority, application Great Britain, Mar. 30, 1962, 12,265/62; Jan. 14, 1963, 1,584/63
18 Claims. (Cl. 307—88.5)



1. Superconductive circuitry including a logical circuit having at least two stable states and a superconductive branch corresponding to each state coupled so that a current in one branch has a cooperative relation with respect to current in another branch, and means for simultaneously applying a reversible current to a plurality of branches of said logical circuit, the construction and arrangement of the branches of said logical circuit being chosen with respect to said reversible current so that the state of said logical circuit is changeable in response to the reversing of said current.

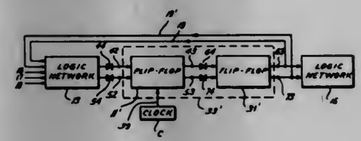
3,299,284
SELECTIVE ELECTRONIC SIGNAL RECEIVING AND ACTUATING DEVICE
Mark W. Hough, St. Paul, Minn., assignor to Liftronic, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Feb. 25, 1963, Ser. No. 260,724
2 Claims. (Cl. 307—88.5)



1. With respect to raw noise, an electronic selective signal receiving device having in combination,
a pickup coil tuned to pick up at a maximum signal strength a lockout signal frequency and to pick up at a reduced signal strength an operating signal frequency,
signal amplifying means forming parallel circuits, said circuits respectively comprising,
a first amplifying stage comprising a transistor in connection with a potentiometer forming a grounded emitter type of amplifier biased for D.C. stability and bypassed for A.C. gain,
a second amplifying stage consisting of a transistor having a collector load comprising a capacitor and an induction coil forming a low Q broad band circuit

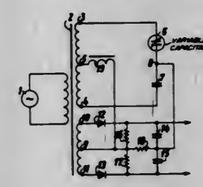
adapted to have the signal characteristics of said pickup coil,
a third amplifying stage consisting of a transistor having a collector load comprising a pair of similar LC circuits in series, said LC circuits each comprising a capacitor and a primary coil in connection with a secondary coil,
a capacitor coupling said pickup coil and said first amplifier stage and capacitors respectively coupling said amplifier stages,
one of said LC circuits being sharply tuned to pass said lockout signal frequency, the other of said LC circuits being sharply tuned to pass said operating signal frequency, said one of said LC circuits being adapted to pass said lockout signal frequency at a voltage greater than the voltage applied to said operating signal frequency by said other of said LC circuits,
a transistor having a base adapted to be biased to be non-conductive by a positive voltage,
means rectifying said voltages across said secondary coils,
the voltage from said secondary coil of said one of said LC circuits being adapted to flow in a positive direction through a circuit path including said last mentioned transistor and applying a positive voltage to the base thereof,
the voltage from said secondary coil in connection with said other LC circuit being adapted to flow in a negative direction through a circuit path including said last mentioned transistor applying a negative voltage to the base thereof, and
said circuit paths respectively comprising capacitors and resistors in connection with said last mentioned transistor.

3,299,285
TWO-PHASE COMPUTER SYSTEMS
John W. Cannon, Los Angeles, Calif., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn, a corporation of Minnesota
Filed Apr. 12, 1963, Ser. No. 272,611
10 Claims. (Cl. 307—88.5)



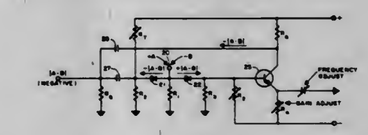
1. In a digital computer at least one logic block,
said logic block including at least a first bistable device and a second bistable device,
means coupling the output signals of said first bistable device to said second bistable device,
a fixed reference voltage level in said second bistable device,
means coupling directive SET and RESET signals to said first bistable device,
means coupling a clock signal to said first bistable device, said clock signal alternating about said fixed reference level whereby said first bistable device becomes responsive to one of said directive signals only when said clock signal falls below said fixed reference level, and
said second bistable device becomes responsive to one of said output signals from said first bistable device only when said clock signal exceeds said fixed reference level.

3,299,286
CAPACITIVE TRANSFORMER IN BRIDGE CONNECTION FOR PRODUCING ELECTRICAL CURRENT OUTPUT LINEARLY PROPORTIONAL TO CAPACITANCE
Harald Rohlwes, Paudex, Switzerland, assignor to Georg Neumann, Berlin-Grunewald, Germany
Filed May 31, 1963, Ser. No. 284,534
Claims priority, application Switzerland, May 31, 1962, 6,616/62, 6,687/62, 6,688/62
7 Claims. (Cl. 307—88.5)



1. A capacitive transformer in a bridge circuit comprising:
(a) a transformer being provided with a primary and a secondary winding,
(b) an oscillator operatively connected to said primary,
(c) a bridge circuit including a neutral branch connected to said secondary winding,
(d) a capacitance connected in said neutral branch,
(e) an inductance disposed in series with said capacitance and forming an LC-member with said capacitance, the resonant frequency of said LC-member coinciding with the frequency of said oscillator for obtaining a zero output voltage in said neutral branch, and
(f) a demodulation means connected to said neutral branch for demodulating a high frequency modulated signal in the secondary of said transformer.

3,299,287
CIRCUIT TO OBTAIN THE ABSOLUTE VALUE OF THE DIFFERENCE OF TWO VOLTAGES
Hans Staeudle, Arlington, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 30, 1963, Ser. No. 334,677
9 Claims. (Cl. 307—88.5)



1. In a circuit for obtaining the absolute difference of two signals using different paths for positive and negative signal voltages;
(a) an input terminal and an output terminal, said input terminal having two signals applied thereto for obtaining the absolute difference thereof,
(b) an input resistance connected between said input terminal and ground, and an output resistance connected between said output terminal and ground,
(c) a pair of diodes, one having its anode and the other having its cathode connected to said input terminal,
(d) a first capacitor means, and a transistor amplifier means having a collector, emitter and base, said transistor amplifier means having its collector connected to said output terminal through said first capacitor means,
(e) the cathode of said one diode connected to the base of said transistor amplifier means,

(f) a second capacitor means, the anode of said other diode connected to said output terminal through said second capacitor means,

(g) the polarity of the resultant value of two signals applied at said input terminal being dependent upon the polarity and amplitude of the applied signals,

(h) where the resultant of said input signals is negative said one diode connected to said output terminal conducts, said other diode is reverse biased, and the voltage across said output resistance is negative,

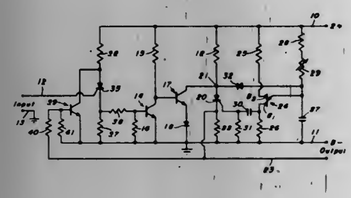
(i) where the resultant of said input signals is positive said one diode is reverse biased and said other diode conducts applying a positive input voltage to the base of said transistor amplifier means thus the output signal at the collector of said transistor amplifier means is negative and therefore the output signal across said output resistance again is negative.

3,299,288

CIRCUITS FOR DELAYING ELECTRIC SIGNALS WITH CONTROLLED CLAMPS INITIATING DELAY

Alan McDowell and Robert W. Mowery, Columbus, Ohio, assignors, by mesne assignments, to United States Steel Corporation, a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,981
1 Claim. (Cl. 307—88.5)



A circuit for delaying electric signals comprising:

positive and negative conductors adapted to be connected to opposite sides of a D.C. voltage source;

first and second controlled rectifiers having respective anodes connected to said positive conductors, respective cathodes connected to said negative conductors, and respective gates;

both said rectifiers being normally non-conductive but becoming conductive when pulses are applied to their respective gates;

a capacitor connected across said conductors;

means normally clamping said capacitor and the anode of said first rectifier to near ground potential and including:

a first transistor connected across said conductors and being normally turned off; and

a second transistor connected across said conductors and being normally turned on;

means connected to the gate of said second rectifier for applying input signals thereto in the form of momentary pulses to render this rectifier conductive;

said second rectifier being connected to the base of said first transistor to turn on this transistor when the second rectifier becomes conductive;

said first transistor being connected to the base of said second transistor to turn off the second transistor when the first is turned on;

said second transistor being connected to said capacitor and to the anode of said first rectifier to remove the clamp when the second transistor is turned off and enable the capacitor and anode to receive the potential of said positive conductor, thus allowing said capacitor to charge;

means connecting said capacitor and the gate of said first rectifier for transmitting a pulse to this gate and rendering this rectifier conductive when the capacitor has charged;

an output conductor connected with said first rectifier for transmitting signals when this rectifier becomes conductive; and

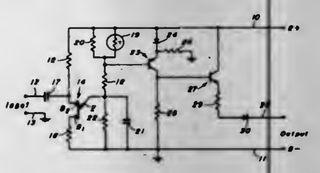
feedback means connecting said output conductor and said second rectifier for turning off the latter when an output signal has been transmitted and returning the circuit to its original state.

3,299,289

PULSE-LENGTHENING CIRCUIT EMPLOYING VOLTAGE CONTROLLED THRESHOLD TRANSISTOR FOR ISOLATING OUTPUT FROM INPUT DURING PULSE PRODUCING PERIOD

Alan McDowell and Robert W. Mowery, Columbus, Ohio, assignors, by mesne assignments, to United States Steel Corporation, a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,989
6 Claims. (Cl. 307—88.5)



1. A circuit for producing lengthened output pulses, said circuit comprising positive and negative conductors connected to opposite sides of a D.-C. voltage source, a voltage-controlled threshold transistor connected across said conductors, means normally biasing said transistor to be nonconducting, a capacitor connected across said conductors to be charged thereby and to remain charged while said transistor is nonconducting, means connected with said transistor for applying weak irregular input pulses of short duration relative to said output pulses, thereby overcoming the threshold bias and rendering said transistor momentarily conductive to discharge said capacitor, said transistor at turn-off acting to isolate the output from further input pulses during recharging of said capacitor, the charging time of said capacitor determining the duration of output pulses, and means connected across said conductors and controlled by said capacitor's charging for transmitting output pulses of lengthened duration and greater magnitude than the input pulses.

3,299,290

TWO TERMINAL STORAGE CIRCUIT EMPLOYING SINGLE TRANSISTOR AND DIODE COMBINATION

John L. Moll, Stanford, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Feb. 17, 1964, Ser. No. 345,418
3 Claims. (Cl. 307—88.5)

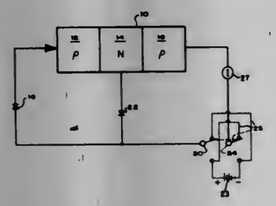
1. A signal circuit comprising:

first and second terminals;

a transistor having collector, base, and emitter regions:

first circuit means including a first diode and connecting said collector and base regions and said first diode intermediate to said first and second terminals for forming a unidirectional charging path including said collector and base regions and said first diode, said first diode being connected intermediate to said base region and to said first terminal and being poled in a direction determined by the conductivity type of said base region;

second circuit means including a second diode and connecting said second diode and said emitter, base, and collector regions intermediate to said first and second terminals for forming a unidirectional discharging path including said second diode and said emitter, base, and collector regions, said second diode being connected intermediate to said emitter region and to a point between said first diode and said first terminal



and being poled in a direction determined by the conductivity type of said emitter region; and

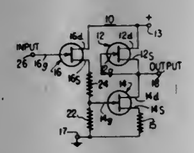
means connected to said first and second terminals for applying a potential difference of one polarity therebetween so as to provide a charging current in said unidirectional charging path and for subsequently applying a potential difference of opposite polarity therebetween so as to provide a discharging current in said unidirectional discharging path.

3,299,291

LOGIC ELEMENTS USING FIELD-EFFECT TRANSISTORS IN SOURCE FOLLOWER CONFIGURATION

Raymond M. Warner, Jr., Scottsdale, and Geza Csanky, Mesa, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Feb. 18, 1964, Ser. No. 345,667
6 Claims. (Cl. 307—88.5)



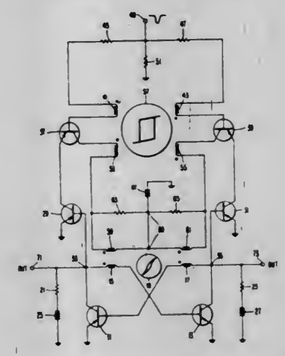
1. A logic element including in combination, first, second and third field-effect transistors each having drain, source and gate electrodes, means connecting the drain electrode of said first field-effect transistor to the source electrode of said second field-effect transistor, first resistor means connecting the source electrode of said first field-effect transistor to a first voltage source, means connecting the drain electrode of said second field-effect transistor to a second voltage source, means connecting the source electrode of said second field-effect transistor to its gate electrode, means connecting the drain electrode of said third field-effect transistor to said second voltage source, second resistor means connecting the source electrode of said third field-effect transistor to the gate electrode of said first field-effect transistor, third resistor means connecting the gate electrode of said first field-effect transistor to said first voltage source, at least one input terminal connected to the gate electrode of said third field-effect transistor, and an output terminal connected to the drain electrode of said first field-effect transistor.

3,299,292

CONTROL MEANS FOR TRANSISTORIZED MAGNETIC CORE SWITCHING CIRCUITS

Edward Gary Clark, Strafford, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 25, 1964, Ser. No. 347,274
13 Claims. (Cl. 307—88.5)



1. A circuit for controlling the level of transient pulse current in a transistor magnetic pulse amplifier in which the output of the amplifier is regeneratively coupled to the input through windings on a common square hysteresis loop magnetic core comprising

current-sensitive coupling means for detecting the instantaneous magnitude of transient pulse current flowing in said amplifying means and for coupling a triggering pulse at a predetermined current level of said transient current,

cross-coupled flip-flop means for receiving said triggering pulse and providing an output in response thereto, and

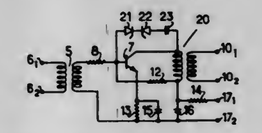
enabling means in series with said transistor magnetic pulse amplifying means, the conducting state of said enabling means and in turn said amplifying means being determined by the output of said flip-flop means.

3,299,293

SINUSOIDAL TO RECTANGULAR WAVE CONVERTER AND AMPLIFIER

Michel Edouard Georges Knapp-Ziller, Vaux-sur-Seine, France, assignor to Lignes Telegraphiques et Telephoniques, Paris, France

Filed Mar. 13, 1964, Ser. No. 351,812
Claims priority, application France, Mar. 21, 1963, 928,739
7 Claims. (Cl. 307—88.5)

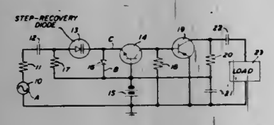


1. A sinusoidal to rectangular wave converter comprising, in combination, a transistor amplifier having an input circuit and an output circuit, input connection means for applying a sinusoidal wave voltage to said input circuit, output connection means for applying output signals from said output circuit to a utilization circuit, and a non-linear negative feedback circuit connecting a first point taken in said output circuit to a second point taken in said input circuit and including a capacitor in series connection with two back-to-back series-connected identically poled Zener diodes.

3,299,294
HIGH-SPEED PULSE GENERATOR USING CHARGE-STORAGE STEP-RECOVERY DIODE

Dankwart Koehler, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 28, 1964, Ser. No. 363,124
5 Claims. (Cl. 307—88.5)

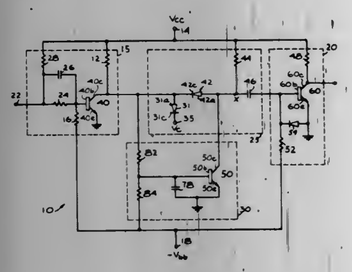


1. A high-speed pulse generator which comprises a source of alternating voltage, a semiconductor charge-storage step-recovery diode having a recombination time which is large in comparison with the period of the alternating voltage from said source, a series charging path for said charge-storage step-recovery diode operative during excursions of one polarity of the alternating voltage from said source which includes said charge storage step-recovery diode, said source, and a switching diode poled in the same direction as said charge-storage step-recovery diode, and a series discharge path for said charge-storage step-recovery diode operative during excursions of the other polarity of the alternating voltage from said source which includes said charge-storage step-recovery diode, said source, and the emitter-base junction of a transistor, said emitter-base junction being poled in the opposite direction from said charge-storage step-recovery diode.

3,299,295
PULSING CIRCUIT PROVIDING OUTPUT PULSES WHICH ARE INHIBITED UPON INPUT PULSES EXCEEDING PREDETERMINED RATE

Ben T. Goda, Gardena, Calif., assignor to Electronic Memories, Incorporated, Hawthorne, Calif., a corporation of California

Filed Dec. 7, 1964, Ser. No. 416,381
8 Claims. (Cl. 307—88.5)

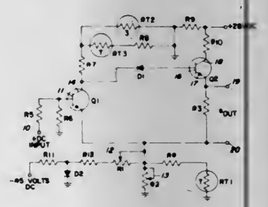


1. In a pulsing circuit wherein output means provide output pulses in response to input pulses of varying time durations supplied to input means, at an irregular rate, the improvement comprising: means coupled to said input means and to said output means, including first means responsive to the input pulses for controlling said output means to provide output pulses, each with a time duration related to the time duration of one of said input pulses but not to exceed a predetermined time duration; and second means coupled to said first and output means and responsive to said input pulses for inhibiting said output means from providing output pulses whenever the rate at which input pulses are supplied to said input means exceeds a selected limit.

3,299,296
LOW LEVEL THRESHOLD DETECTOR WITH TEMPERATURE COMPENSATION

Robert C. Bullene, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Continuation of application Ser. No. 200,030, June 1, 1962. This application Nov. 12, 1964, Ser. No. 412,584
9 Claims. (Cl. 307—88.5)



1. A switching circuit for low level threshold detection, comprising first and second transistors each having a base, a collector and an emitter, a first impedance means common to the emitter circuits of both said transistors, means for applying a voltage between the collector and the emitter of said second transistor to render said second transistor normally conducting, means for applying across said first impedance means a voltage of a polarity opposite to that produced in said first impedance means by the flow therethrough of the emitter current of said normally conducting second transistor, means for applying an input signal to the base of said first transistor to thereby render said first transistor conducting, means interconnecting the collector of said first transistor and the base of said second transistor to apply the voltage of the former to the latter to render said second transistor nonconducting upon the occurrence of conduction in said first transistor, second impedance means in the emitter circuit of said second transistor across which an output signal is developed, and a temperature compensating circuit in the collector circuit of said first transistor including a thermistor and a sensistor in parallel therewith.

3,299,297
SEMICONDUCTOR SWITCHING CIRCUITRY

John W. Motto, Jr., Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 230,170, Oct. 12, 1962. This application Dec. 17, 1965, Ser. No. 520,030
1 Claim. (Cl. 307—88.5)

A switching circuit operative with a source of potential and a load including:

a semiconductor controlled rectifier having a gate turn off characteristic including a gate electrode, an anode electrode and a cathode electrode, with said anode and cathode electrodes being operatively connected between said source of potential and said load;

a first timing circuit operative to provide a turn-on signal to said gate electrode of said rectifier after a predetermined time and render said rectifier conductive to provide a conductive path to said load,

said first timing circuit including,

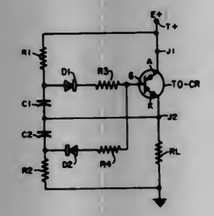
a first capacitor operatively connected between said anode and cathode electrodes and being charged during the time period when said rectifier is non-conductive, and

a first discharge circuit including first voltage responsive means operatively connected across said first capacitor to said gate electrode to permit said first capacitor to discharge after a predetermined time therethrough when a predetermined voltage is reached across said first capacitor to apply a turn-on signal to said gate electrode and render said rectifier conductive between said anode and cathode electrodes;

a second timing circuit operative to provide a turn-off signal to said gate electrode of said rectifier after a predetermined time and render said rectifier non-conductive,

said second timing circuit including,

a second capacitor operatively connected across the load, said second capacitor beginning to charge in response to said rectifier becoming conductive, and



a second discharge circuit including second voltage responsive means operatively connected across said second capacitor to said gate electrode to permit said second capacitor after a predetermined time from the time said rectifier is rendered conductive to discharge therethrough when a predetermined voltage is reached across said second capacitor to apply a turn-off signal to said gate electrode and render said rectifier non-conductive between said anode and cathode electrodes;

said first capacitor beginning to be charged in response to the non-conduction of said rectifier so that a positive turn-on signal is applied to said gate electrode of said rectifier to render it conductive after a predetermined time from the time said rectifier is rendered non-conductive; and

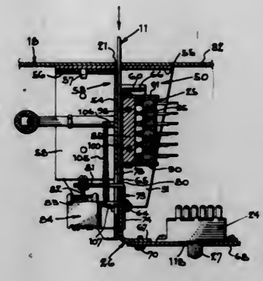
a shunt circuit including a third capacitor operatively connected between said anode and cathode electrodes of said rectifier to increase the amount of current that can be turned off by said rectifier.

3,299,298
EMBOSSED CARD READING DEVICE

Thomas J. Schinner, Cincinnati, Ohio, assignor to The Cincinnati Time Recorder Company, Cincinnati, Ohio, a corporation of Ohio

Filed Nov. 29, 1963, Ser. No. 326,661
15 Claims. (Cl. 307—113)

1. A card reader for reading embossed, semi-rigid cards, said card reader comprising a member having a card receiving slot, a shelf element for supporting a card inserted through said slot, a slide assembly, a plurality of code switches, a plurality of code switch actuating elements carried by said slide assembly for engagement with preselected areas of a card, said slide assembly including abutment means disposed for engagement with the end of said card when said card is inserted in said slot, means mounting said slide assembly for reciprocating movement parallel to said shelf in response to movement of said card

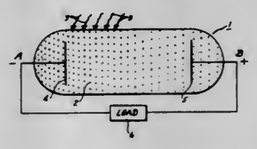


against said abutment means, and cam means associated with said slide for forcing said switches toward said shelf upon linear movement of said slide.

3,299,299
APPARATUS FOR GENERATING ELECTRICAL ENERGY BY THE APPLICATION OF HEAT

Theodore M. Dickinson, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 125,196, July 19, 1961. This application Aug. 18, 1965, Ser. No. 483,013
13 Claims. (Cl. 310—4)



1. Apparatus for converting energy in a first form into electrical energy comprising:

(a) an enclosure,

(b) an ionizable gaseous medium within said enclosure, said medium constituting the primary source of electrons,

(c) means for ionizing said gaseous medium,

(d) a first electrode in contact with said medium and subject to bombardment by both positive ions and electrons from said medium,

(e) a second electrode in contact with said medium and spaced from said first electrode, said second electrode also subject to bombardment by both positive ions and electrons from said medium,

(f) means for producing a thermal gradient in said medium between said spaced electrodes, said thermal gradient causing a greater number of electrons and positive ions to strike one of said electrodes than the other of said electrodes so that a potential difference is established therebetween, and

(g) means for utilizing said potential difference.

3,299,300
OSCILLATOR OVEN

Kenneth F. Read, Bowie, and J. Barry Oakes, Paul E. P. White, and Theodore Wyatt, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 24, 1963, Ser. No. 297,471
9 Claims. (Cl. 310—8.9)

1. An oscillator oven for use in a space environment, comprising,

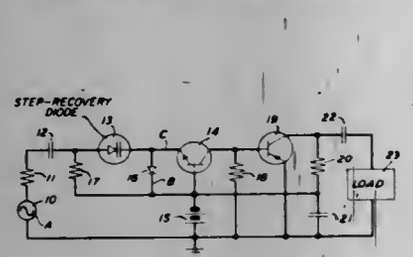
(a) a thermally capacitive container,

(b) a crystal oscillator in the container,

3,299,294
HIGH-SPEED PULSE GENERATOR USING CHARGE-STORAGE STEP-RECOVERY DIODE

Dankwart Koehler, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 28, 1964, Ser. No. 363,124
5 Claims. (Cl. 307—88.5)

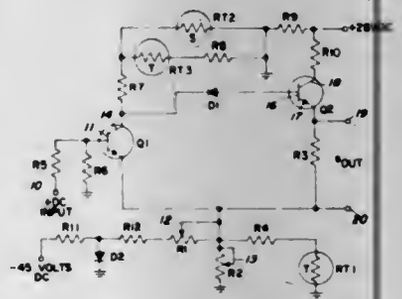


1. A high-speed pulse generator which comprises a source of alternating voltage, a semiconductor charge-storage step-recovery diode having a recombination time which is large in comparison with the period of the alternating voltage from said source, a series charging path for said charge-storage step-recovery diode operative during excursions of one polarity of the alternating voltage from said source which includes said charge storage step-recovery diode, said source, and a switching diode poled in the same direction as said charge-storage step-recovery diode, and a series discharge path for said charge-storage step-recovery diode operative during excursions of the other polarity of the alternating voltage from said source which includes said charge-storage step-recovery diode, said source, and the emitter-base junction of a transistor, said emitter-base junction being poled in the opposite direction from said charge-storage step-recovery diode.

3,299,296
LOW LEVEL THRESHOLD DETECTOR WITH TEMPERATURE COMPENSATION

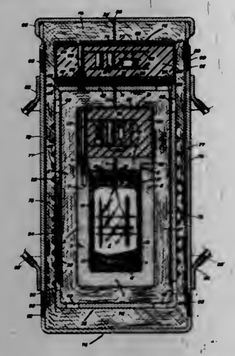
Robert C. Bullene, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Continuation of application Ser. No. 200,030, June 1, 1962. This application Nov. 12, 1964, Ser. No. 412,584
9 Claims. (Cl. 307—88.5)



1. A switching circuit for low level threshold detection, comprising first and second transistors each having a base, a collector and an emitter, a first impedance means common to the emitter circuits of both said transistors, means for applying a voltage between the collector and the emitter of said second transistor to render said second transistor normally conducting, means for applying across said first impedance means a voltage of a polarity opposite to that produced in said first impedance means by the flow therethrough of the emitter current of said normally conducting second transistor, means for applying an input inhibiting said output means from providing output pulses whenever the rate at which input pulses are supplied to said input means exceeds a selected limit.

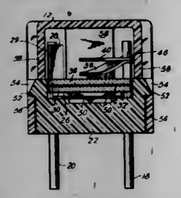
(c) an insulative casing surrounding said thermally capacitive container and including spaced, alternately arranged thermally reflective surfaces and thermally non-conductive surfaces,



(d) an outer container having a plurality of ports and enclosing said casing and said first-mentioned container, and

(e) means for facilitating the insertion of the casing, said first-mentioned container, and said crystal oscillator into the outer container.

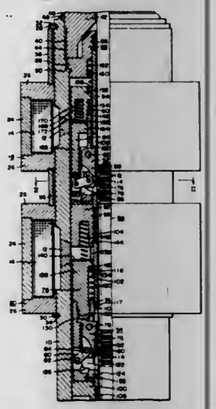
3,299,301
PIEZOELECTRIC CERAMIC FILTER
Philip E. Heilmann, Kearny, and John Chesney, Roselle Park, N.J., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Aug. 12, 1964, Ser. No. 389,068
12 Claims. (Cl. 310—9.1)



1. A piezoelectric filter comprising a molded insulation base, said base having a recess, and short stiff wire inserts acting as corner posts, a bottom contact in said recess and having a tail soldered to one of said posts, a piezoelectric disc in said recess and resting on said bottom contact, a common contact in said recess over said disc, said common contact having a tail which is soldered to a post located opposite the aforesaid tail and post, a second piezoelectric disc received in said recess and resting on said common contact, a resilient means acting as a top contact and spring, said means being received over the remaining two posts, said posts holding said spring at proper height to provide a desired pressure and consequent filter band width.

3,299,302
LINEAR MOTION DEVICE
Erling Frisch, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 20, 1964, Ser. No. 390,903
9 Claims. (Cl. 310—12)

9. In a linear motion device for moving a linearly movable element only in one direction and utilizing only two solenoid means, the combination comprising a linearly movable element having a plurality of axially spaced teeth thereon, a first and a second gripper means each movable to unlatched, coupled, latched and linked positions relative to said elements, a first and a second pair of supports for said first and second gripper means, respectively, said gripper means being pivotally mounted on said pairs of supports, respectively; a first and a second solenoid means disposed adjacent said first and said second pairs of supports, repectively, first resilient means biasing said one pair of supports in the direction opposite to said one direction, second resilient means biasing apart said supports of said first pair of supports, means energizing said first solenoid means to move said first pair of supports into engagement against the force of said second resilient means and to move said first gripper means pivotally toward said element, means for energizing said second solenoid means to move said second pair of supports relative to one another to move said second gripper

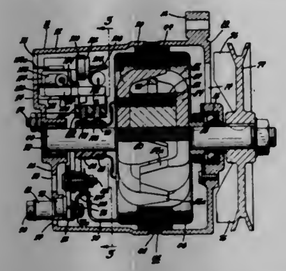


means from the unlatched position to the coupled position and then to the latched position and then to move said element a distance equal to the spacing between said teeth, said first gripper means during the aforesaid movement of said second gripper means and said element being moved from the latched position through the coupled position to the linked position and then being moved against the force of said first resilient means with said element for at least a portion of said distance, means deenergizing said first solenoid means when said first gripper means is in said linked position to move said first pair of supports apart under the influence of said second resilient means to move said first gripper means from the linked to the unlatched position, said first gripper means being moved when in the unlatched position under the influence of said first resilient means axially to a position juxtaposed to adjacent teeth on said element.

3,299,303
DYNAMOELECTRIC MACHINE WITH INCORPORATED VOLTAGE REGULATOR
Edward J. Newill, Pendleton, Allen E. Beaty and James H. English, Anderson, and Arza D. Heiny, Carmel, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,901
2 Claims. (Cl. 310—66)

1. A dynamoelectric machine comprising, housing means defining a compartment, a stator assembly including a stator winding disposed within said compartment, a field winding, a rotor member for causing an A.C. voltage to be generated in said stator winding when said field winding is energized with direct current and when said rotor member is rotating, rectifier means disposed within said compartment for converting the A.C. output of said stator winding to direct current, a support member having a bracket portion located within said compartment,

semiconductor voltage regulating means disposed within said compartment, electrical connections connecting said voltage regulating means with said field winding and with the output terminals of said rectifier means, said electrical connections being made within said compartment, said



semiconductor voltage regulating means including a metal heat sink which supports a semiconductor switch means that is positioned in thermal transfer relationship with said metal heat sink said metal heat sink secured to the bracket portions of said support member.

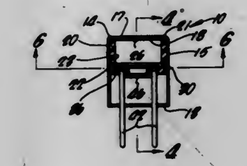
3,299,304
LAMINATED CORE HAVING LOW COMPRESSIBILITY CHARACTERISTICS FOR AN ELECTRICAL INDUCTIVE DEVICE
Bobbie B. Hull, Tiffin, Ohio, assignor to General Electric Company, a corporation of New York
Filed June 26, 1964, Ser. No. 378,100
5 Claims. (Cl. 310—217)



1. A magnetizable laminated core for use in an electrical inductive device, said core comprising a number of laminations each having openings and a plurality of selected holes spaced from the openings, said laminations being in stacked relation with the openings and selected holes of the individual laminations being aligned to form respectively winding accommodating means and at least a plurality of passageways axially through the stack, means including a hardened adhesive bonding material disposed between and engaging next adjacent laminations securing the laminations together, the regions around the individual holes of said adjacent laminations being substantially free from bonding material whereby said regions adjacent the plurality of passageways of said laminations tend to assume generally the same relative compressive positions to one another upon repeated applications of predetermined compressive forces by core securing means to said regions.

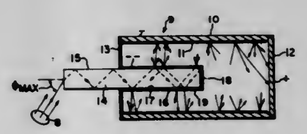
3,299,305
CATHODE RAY CIRCUIT CONDITION INDICATOR TUBE
Norman L. Kreuder, Glendora, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 28, 1963, Ser. No. 291,352
3 Claims. (Cl. 313—92)

1. A cathode ray indicator triode for use directly with a transistor circuit as an indicator of circuit condition and controllable by a circuit signal applied directly to the grid thereof comprising a hollow cylindrical enclosure having spaced apart ends, one end being translucent, a film of cathodoluminescent phosphors deposited across the one end of the enclosure interiorly thereof, a cylindrical non-conductive spacer having spaced apart ends and an axial bore therethrough disposed concentric to the enclosure interiorly of the enclosure, one end of the spacer being abutted with the one end of the enclosure, a non-conductive grid support disk having an annular bore therethrough disposed transversely of the interior of the enclosure in abutting relation with the other end of the spacer, a



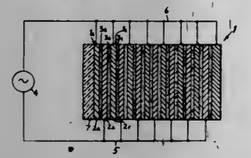
screen grid secured to the grid support disk and extending across the bore thereof, a non-conductive cathode support disk having an annular bore therethrough disposed transversely of the enclosure in abutting relation to the grid support disk opposite from the spacer, a cathode filament mounted to the cathode support disk and extending across the bore thereof, a plurality of connector pins extending through the other end of the enclosure, and means for conductively connecting respective ones of the pins to the phosphor film, to the grid and to the cathode filament for conduction of electrical current through the filament.

3,299,306
PHOTOTUBE HAVING A PHOTOCATHODE ADAPTED TO ABSORB SUBSTANTIALLY ALL THE LIGHT ENERGY RECEIVED
Narinder S. Kapany, Woodside, Calif., assignor to Optics Technology, Inc., Belmont, Calif., a corporation of California
Filed July 23, 1964, Ser. No. 384,667
13 Claims. (Cl. 313—95)



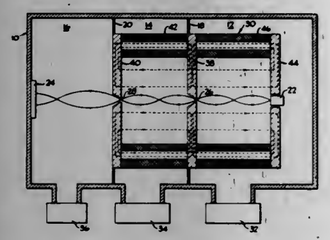
1. A phototube comprising a first light transmitting medium having a given refractive index; a light transmitting and absorbing cathode layer bounding at least a portion of said first medium; and anode spaced from said cathode; a second medium between said cathode and said anode having a refractive index lower than said index of said first medium; means for establishing a potential difference between said cathode layer and said anode; means for introducing light into said first medium to penetrate said cathode and enter the cathode at an angle at least as great as the trapping angle which prevents light from passing into said second medium, the boundaries of said first medium arranged to redirect light that is reflected from said cathode back to said cathode at an angle at least as great as said trapping angle.

3,299,307
ELECTROLUMINESCENT MULTILAYER STACK WITH IN SITU FORMATION OF ACTIVE LAYER AND METHOD OF MAKING SAME
Kiyoshi Inoue, 182 3-chome, Tokyo, Japan
Filed Jan. 13, 1964, Ser. No. 337,483
Claims priority, application Japan, Jan. 14, 1963, 38/1,725
12 Claims. (Cl. 313—108)



10. An electroluminescent body comprising a stack of metallic zinc films with a structure characteristic of vapor deposition and having surfaces characteristic of a sulfurizing treatment of the respective metallic films forming intervening layers of electroluminescent material between said films.

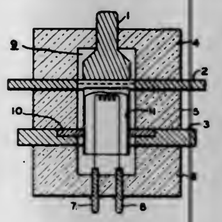
3,299,308
ELECTRON BEAM TRAVERSE OF NARROW APERTURE IN BARRIER SEPARATING REGIONS OF DIFFERENT PRESSURE
Charles W. Hanks, Orinda, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California
Filed July 19, 1963, Ser. No. 296,175
5 Claims. (Cl. 313—160)



1. An electron beam apparatus for treating material comprising an air-tight enclosure, a barrier in said enclosure for dividing the same into two chambers, said barrier having an elongated aperture therein, an elongated electron emitting surface in one of said chambers, said surface being parallel to and aligned with said aperture, said aperture being of substantially the same size as said surface, means for directing said electrons at said aperture, means for establishing a uniform magnetic field having parallel lines of flux from the emitting surface to the aperture whereby electrons from said surface follow a helical path to said aperture, the distance between the aperture and the emitting surface being substantially equal to an integral number of revolutions of the helical path, and means connected to said chambers for evacuating the same to maintain a pressure differential on opposite sides of the barrier, the narrow dimension of the aperture being less than the mean free path of the gas molecules in the chambers.

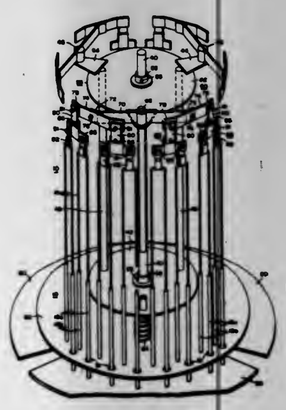
3,299,309
ANNULAR CATHODE ELECTRODE SUPPORT
Chester V. Claypool, Jr., Owensboro, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 24, 1963, Ser. No. 318,635
5 Claims. (Cl. 313—250)

1. In an electron discharge device, a plurality of coaxially disposed metallic terminals, including an annular cathode terminal; a plurality of coaxially disposed insulating spacers, said terminals and said spacers defining a walled electrode cavity; a plurality of electrodes, including a cathode carried by a metal support sleeve, positioned in said cavity and electrically connected to corresponding ones of said terminals; an annular metal disk having substantially spaced inner and outer peripheral surfaces the outer peripheral surface of said annular metal disk being adjacent the inner peripheral surface of said



cathode terminal; first securing means fixing said disk near its outer peripheral surface to the wall of said cavity in juxtaposition to the inner peripheral surface of said cathode terminal; and, second securing means fixing said metal support sleeve of the cathode to the inner peripheral surface of said disk said first securing means comprising an annular metal sealing shim having at least a portion thereof sandwiched between the adjacent surface of said disk and said cathode terminal.

3,299,310
ELECTRONIC TUBE DEVICE
Robert A. Freggens, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 28, 1964, Ser. No. 371,011
19 Claims. (Cl. 313—278)



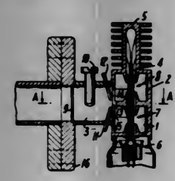
1. An electrode assembly for suspending a large number of filament elements comprising a standard, a mounting assembly being flexibly biased upward along said standard, means for maintaining the angular position of said mounting assembly fixed with respect to said filament elements, means for suspending one end of said filament elements from said mounting assembly, said means for suspending being freely pivoted about a single point of said mounting assembly and means for rigidly securing the other end of said filament elements so that said filament elements are maintained under substantially equal tension.

3,299,311
VELOCITY MODULATED ELECTRON TUBE WITH INTEGRATED FOCUSING AND GETTER PUMP SYSTEMS, THE PUMP HAVING MULTIPLE GETTER-COATED ELECTRODES
Werner Veith, Munich, and Paul Meyerer, Ottobrunn, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed May 7, 1963, Ser. No. 279,354
Claims priority, application Germany, May 9, 1962, S 79,366
15 Claims. (Cl. 315—3.5)



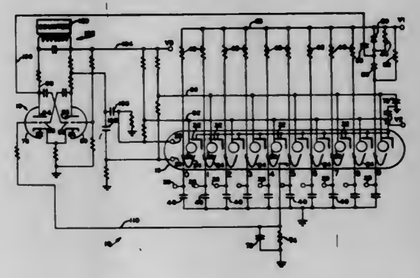
1. A system of electrodes arranged in a magnetic focusing field of a velocity modulated tube having an ion getter pump, wherein parts of the electrode system, with the potentials thereon and the magnetic focusing field, cooperate jointly to effect the operation of the getter pump, and comprising an ion collector formed by at least two electrodes arranged externally of and symmetrically with respect to the electron beam path, said electrodes carrying especially on the surface thereof material which is in the operation of the respective tube adapted to function as a getter.

3,299,312
TWO-CAVITY KLYSTRON OSCILLATOR USING AN AUXILIARY TUNING RESONATOR TO ADJUST THE RESONANT FREQUENCY OF THE CAVITIES
Norio Sato, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Dec. 10, 1962, Ser. No. 243,398
Claims priority, application Japan, Dec. 12, 1961, 36/45,270
3 Claims. (Cl. 315—5.44)



1. A klystron oscillator comprising
a vacuum envelope,
means for generating an electron beam within said envelope,
means also within said envelope for collecting the electrons from said beam,
a modulation cavity resonator and an output cavity resonator disposed within said envelope,
said resonators being located between said beam generating means and said electron collecting means and coupled to said electron beam, said resonators further being adapted to resonate at frequencies close to or identical to one another,
a first energy transfer window in said envelope and associated with said modulation cavity resonator,
a second energy transfer window in said envelope and associated with said output cavity resonator,
a tuning cavity resonator electrically coupled to said modulation cavity resonator through said first window and to said output cavity resonator through said second window,
said tuning cavity resonator forming a feedback circuit and including means for mechanically tuning the frequency of said oscillator,
said mechanical tuning means including a first adjustable screw member located in said tuning cavity resonator in a region of maximum high frequency voltage for movement in a direction generally parallel to the path of said beam,
a second adjustable screw member adjacent said first window for substantially independently varying the electrical coupling between said modulation cavity resonator and said tuning cavity resonator to thereby modify the characteristics of said oscillations,
a third adjustable screw member adjacent said second window for substantially independently varying the electrical coupling between said output cavity resonator and said tuning cavity resonator to thereby modify the characteristics of said oscillations,
said second and third screw members further comprising means for varying the ratio of the voltages in said modulation and output cavity resonators,
and each of said screw members being movable generally into and out of the interior of said tuning cavity resonator whereby said ratio may be varied while maintaining the frequency of oscillation substantially constant.

3,299,313
PULSE GENERATING AND COUNTING CIRCUIT WITH DISABLING MEANS
John Giacchi, Somerville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 8, 1964, Ser. No. 394,971
12 Claims. (Cl. 315—8.5)



9. A pulse generator circuit including
a pulse source having an input circuit and an output circuit and including a control electrode which permits the pulse source to be held in two states, one state in which it is disabled and does not generate pulses, or a second state in which it is free-running and generates pulses,
a multi-position pulse counting circuit which is adapted to be held in two states, one state in which it is energized and can receive and count pulses from said pulse source, or a second state in which it is disabled, said pulse source also being disabled, at the same time,
first means in said counting circuit for energizing it,
a first connection between said pulse counting circuit and said pulse source for rendering said pulse source free-running when the counting circuit is energized, or disabling said pulse source when said counting circuit is disabled,
said counting circuit being coupled to the output of said pulse source and including electrode means for registering the receipt of pulses serially in its positions starting at the first or some intermediate position and terminating at the last position,

second means in said counting circuit for selecting a position at which its counting operation is to start,

disabling circuit means at the last position in said pulse-counting circuit for disabling it when the pulse count reaches said last position, and

a second connection from the output of said pulse source to said disabling circuit means at said last position in said pulse counting circuit for operating said disabling circuit and thus disabling said pulse counting circuit and said pulse source when the pulse count reaches said last position.

3,299,314

CATHODE RAY TUBE HAVING A SCREEN CONFORMING TO THE PERIPHERAL SURFACE OF A CYLINDER

Tatsuya Yamada, Meguro-ku, Tokyo, Shin Hasegawa, Kanagawa-ken, Yoshiaki Nakayama, Setagaya-ku, Tokyo, and Hidetada Neishi, Hodogaya-ku, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Dec. 12, 1963, Ser. No. 330,077

Claims priority, application Japan, Dec. 29, 1962, 37/59,520; Aug. 31, 1963, 38/46,200, 38/46,203, 38/46,209

19 Claims. (Cl. 315—25)



1. A cathode ray tube comprising a thin exhausted envelope including one surface comprised by a face plate which forms a portion of the peripheral surface of a cylinder, said face plate having a coating of a fluorescent screen applied to the inner surface thereof, a funnel shaped portion formed on one side of said envelope, and a neck portion connected to the outer end of said funnel shaped portion and enclosing therein an electron gun which emits an electron beam; and a plurality of deflecting systems for deflecting said electron beam, one of said deflecting systems having its deflection center in a plane which is essentially a continuation of the inner surface of said face plate and said thin envelope being formed of a transparent material so as to enable said fluorescent screen to be viewed from both sides thereof.

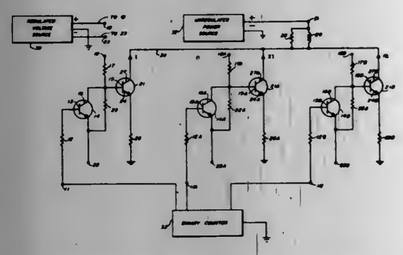
3,299,315

DIGITAL-MAGNETIC DEFLECTION WITH UNREGULATED DEFLECTION COIL SUPPLY VOLTAGE

Robert W. McMillan, Orlando, Fla., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 14, 1963, Ser. No. 288,056

1 Claim. (Cl. 315—27)



In combination, a digital-to-analog current converter and a magnetic deflection yoke of a cathode ray tube, said combination comprising;

a resistance ladder network comprising a plurality of parallel constant current circuits connected between the bus bars of the ladder,

said deflection yoke being connected in series with an unregulated direct-current power source across the bars of said ladder,

each of said constant current circuits comprising a resistor and the collector-emitter path of a transistor with a base electrode for establishing the impedance of each path,

means for applying between each base electrode and reference ground a binary bias voltage to switch each transistor between cut-off and a predetermined conduction current, the predetermined conduction current of each transistor being twice the predetermined conduction current of the next transistor corresponding to the powers-of-two series of numbers 1, 2, 4 . . . *n*, said means comprising a voltage divider connected across a fixed regulated voltage source with a mid tap connected to said base,

switch means connected to said divider to selectively switch the voltage of said mid tap and connected base between said cut-off and said predetermined conduction current, and

a source of binary coded voltages with separate leads for the different significant bits of the coded voltages connected, respectively, to and operating said switch means.

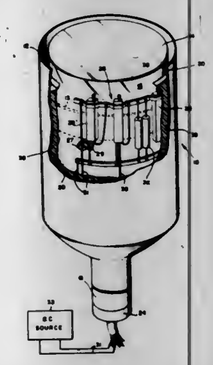
3,299,316

VOLTAGE DIVIDER NETWORK ENCAPSULATED IN THE HOUSING OF A STORAGE TUBE

Arthur E. Wollrich, Carlsbad, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Aug. 28, 1963, Ser. No. 305,086

2 Claims. (Cl. 315—52)



1. In combination with a source of D.-C. voltage an integrated storage tube voltage dividing system comprising:

a storage tube having an envelope and a plurality of control elements enclosed therein, each of said elements being connected to an electrical terminal on the periphery of said envelope;

a voltage dividing network circumscribing said envelope and coupled to said electrical terminals and to said source of D.-C. voltage to supply a voltage of a predetermined magnitude to each of said control elements; and

an encapsulating member in contact with a portion of said envelope for enclosing and hermetically sealing said network, said member having a reduced thickness portion adapted to be ruptured to expose predetermined portions of said voltage dividing network.

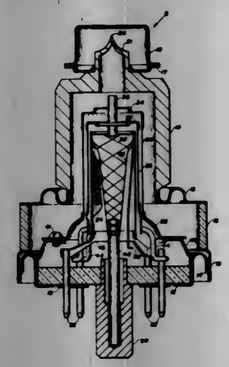
3,299,317

ELECTRON TUBE HAVING A QUICK HEATING CATHODE WITH MEANS TO APPLY A VARIABLE VOLTAGE TO THE QUICK HEATING CATHODE

Jackson W. Kendall, Jr., Los Altos, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California

Filed June 12, 1963, Ser. No. 287,263

3 Claims. (Cl. 315—106)



3. Electron tube apparatus comprising an electron tube having a cathode connected in series with a heater for said cathode, and means for controlling voltage to said series connected cathode and heater, said voltage controlling means comprising a variable voltage source connected to said series connected cathode and heater, said variable voltage source being adjustable to supply either a high voltage which will bring said cathode quickly to emissive temperature or a low voltage which will maintain said cathode at emissive temperature, a Wheatstone bridge in which said cathode forms one leg of the bridge and said heater forms another leg of the bridge, and relay means responsive to unbalance of said bridge for reducing the voltage of said variable voltage source from said high voltage to said low voltage, said heater being made of a conductor which has a high electrical resistance when hot and a low electrical resistance when cold, and said cathode being made of a conductor which has a more constant resistance with change in temperature relative to the change in resistance of said heater with change in temperature.

3,299,318

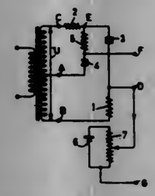
ARRANGEMENT FOR IGNITING CONTROLLED RECTIFIERS WITH THE AID OF PULSES

Werner Schütte, Hamburg-Nlendorf, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 25, 1964, Ser. No. 413,905

Claims priority, application Germany, Dec. 13, 1963, P 33,186

11 Claims. (Cl. 315—168)



1. A control circuit for a controlled rectifier of the type having an anode, a cathode, and a control electrode, comprising means for applying an A.C. supply voltage to the anode-cathode path of said controlled rectifier, means for deriving an A.C. voltage which leads said A.C. supply voltage by approximately 90 degrees, means for deriving an A.C. voltage which lags said A.C. supply voltage by approximately 15 degrees, means for rectifying the lagging voltage to obtain a rectified half-wave voltage, means for combining said lagging rectified voltage and said derived leading A.C. voltage to produce a control voltage, a source of direct voltage, and means for supplying said control voltage and said direct voltage to said control electrode so as to control the conduction of said controlled rectifier.

3,299,319

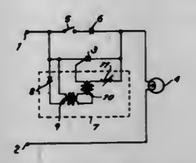
DIMMER FOR ELECTRIC LAMPS

Osamu Nomura, Kohoku-ku, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Mar. 3, 1964, Ser. No. 348,981

Claims priority, application Japan, Mar. 4, 1963, 38/11,315

1 Claim. (Cl. 315—199)



A dimmer for an electric lamp load disposed across A.-C. terminals, comprising in combination, a first circuit in series with said lamp having a switch and a rectifier element; a second circuit in series with said lamp and in parallel with said first circuit having a silicon controlled rectifier, the polarity thereof, defining the forward firing being opposite to that of said first circuit rectifier element, said silicon controlled rectifier including a firing control element; a third circuit including one lead extending to said first circuit, a second lead extending to said silicon controlled rectifier firing control element, having a saturable reactor secondary in series between said leads; and, a fourth circuit in parallel with said first and second circuits including a second rectifier element disposed to block reverse current flow, the primary of said saturable reactor defining the firing angle of said silicon controlled rectifier over an A.-C. cycle, and variable resistance means for adjusting said firing angle.

3,299,320

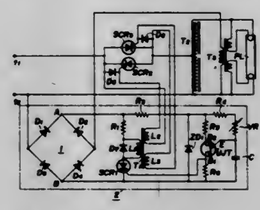
DIMMER FOR A PLURALITY OF DISCHARGE LAMPS

Mamoru Kurata, Kawasaki-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Oct. 28, 1963, Ser. No. 319,288

Claims priority, application Japan, Oct. 31, 1962, 37/64,944

1 Claim. (Cl. 315—210)



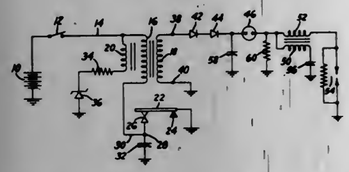
A dimmer circuit comprising
a plurality of discharge lamps,
a source of alternating current,

a conduction controller including
a first silicon controlled rectifier element connected between said source of alternating current and said discharge lamps,
and a gate signal generator adapted to supply a gate signal to said first silicon controlled rectifier element,
said gate signal generator including
a rectifier to rectify the alternating current voltage of said source,
a pulse oscillator for generating electric pulses comprising
a unijunction transistor supplied with the output of said rectifier,
a circuit connected across the output terminals of said rectifier and including in series
a primary winding of a gate transformer,
a resistor of relatively low value compared to the impedance of said primary winding,
and a second silicon controlled semiconductor rectifier element,
said electric pulses being applied to the gate electrode of said second silicon controlled rectifier element to repetitively trigger and cut-off said second silicon controlled rectifier element
means to supply the output of a secondary winding of said gate transformer to the gate electrode of said first silicon controlled rectifier element of said conduction controller,
and a diode means of polarity opposite to that of said second silicon controlled rectifier element and connected in parallel with said primary of said gate transformer and in series with said second silicon controlled rectifier element for passing therethrough the current which tends to flow through said primary winding due to its inductive impedance when said second silicon controlled rectifier element is cut-off in response to a pulse from said pulse oscillator, thereby causing a positive cut-off action.

3,299,321
VIBRATOR-TRANSFORMER POWER SUPPLY SYSTEM HAVING AN OVERPOTENTIAL PROTECTION FEATURE

Wayne E. Damon, Martinsville, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 26, 1963, Ser. No. 333,464
1 Claim. (Cl. 317—14)

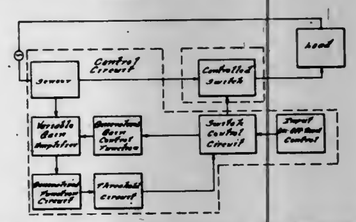


A vibrator-transformer power supply system having an overpotential protection feature comprising, input circuit means suitable for connection across a source of direct current potential, a vibrator-transformer having at least a primary winding, a secondary winding, a bias winding and a pair of magnetically operable vibrating contacts, electrical circuit means for connecting said primary winding and said vibrating contacts in series across said input circuit means, potential sensitive circuit means characterized by the ability to become electrically conductive with an applied potential greater than a predetermined magnitude and means for connecting said potential sensitive circuit means and said bias winding in series across said input circuit means whereby said vibrating contacts are magnetically operated to open in response to the energization of said bias winding upon conduction through said potential sensitive circuit means with overpotential conditions.

3,299,322
ELECTRONIC CIRCUIT PROTECTOR

Gordon A. Roberts, Ann Arbor, Mich., assignor to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware

Continuation of application Ser. No. 211,668, July 23, 1962. This application Aug. 9, 1965, Ser. No. 482,990
5 Claims. (Cl. 317—33)

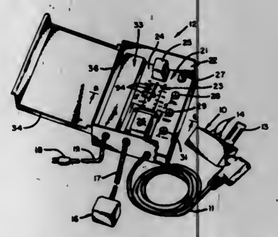


2. An electronic circuit protector for interrupting an electrical circuit upon the occurrence of a predetermined condition therein, said electronic circuit protector comprising a signal responsive switch electrically connected in said circuit, and a control circuit having a time dependent characteristic for controlling the condition of said switch, said control circuit comprising means for sensing an electrical condition in the circuit having an output signal, a variable gain amplifier for controlling the variations of the output of said sensing means, a generalized function circuit for modifying the output from the variable gain amplifier in accordance with a desired function, a threshold circuit for comparing the output of said generalized output function circuit with a reference output, an on-off-reset control switch for providing on and off control of the controlled switch and reset of the control circuit, a switch control circuit for determining the state of the signal responsive switch in response to the state of the on-off-reset switch and the threshold circuit, and a generalized gain control function for controlling variations of the variable gain amplifier in relation to time.

3,299,323
ELECTRICAL CONTROL DEVICE WITH INTERCONNECTED MAIN AND SUB-CHASSIS

Edmond R. Dudley, Santa Clara, Calif., assignor to Peco Corporation, Mountain View, Calif., a corporation of California

Filed Sept. 1, 1964, Ser. No. 393,562
8 Claims. (Cl. 317—99)

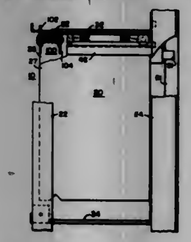


8. In an electrical assembly which includes a main chassis with wiring and a removable sub-chassis with electrical components thereon;
an electrical connector comprising first and second detachable electrical connector members having interconnectable contact elements connected to said sub-chassis electrical components and main chassis wiring, respectively,
said sub-chassis including a panel having inner and outer sides and formed with a hole therethrough,
means attaching said first electrical connector member to said panel with said member covering the hole therein,
means attaching said second electrical connector member to said main chassis,
means for removably attaching the sub-chassis to the main chassis for detachably interconnecting the first and second electrical connector members for electrical connection of said main chassis wiring with said sub-chassis electrical components at the inner side of said panel, and
means for electrically checking said electrical connector from the outer side of the panel through said hole formed in said panel.

3,299,324
LATCH MEANS FOR HOLDING ELECTRICAL UNIT ENGAGED AND DISENGAGED FROM BUS BARS

Garrett S. Yarbrough, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 31, 1964, Ser. No. 422,851
8 Claims. (Cl. 317—120)



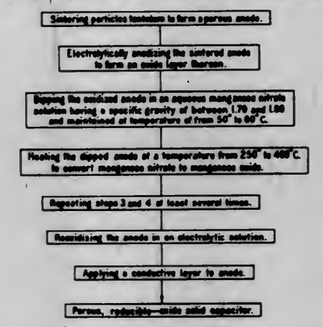
1. A switchboard structure comprising a housing having a front opening, one or more bus bars disposed in the housing, a unit disposed to move into and out of the housing through the front opening to engage and disengage said one or more bus bars, a unitary latch member mounted on the unit and having first and second latch portions spaced from one another along a line which is substantially parallel to the direction of movement of the unit, an additional opening in the housinrg, said latch member being movable with respect to the unit to actuate the first latch portion to enter the additional opening when the unit engages said one or more bus bars and to actuate the second latch portion to enter the additional opening when the unit is disengaged from said one or more bus bars.

3,299,325
CAPACITOR WITH REDUCIBLE SOLID OXIDE ELECTROLYTE DERIVED FROM HIGH CONCENTRATE SOLUTION AND METHOD FOR MAKING SAME

Johann S. Wagener and Roger J. Raschiotto, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Filed Jan. 29, 1963, Ser. No. 254,591
5 Claims. (Cl. 317—230)

4. A solid electrolytic capacitor comprising in combination a sintered porous body formed of sintered particles of an anodizable metal; a genetic dielectric film formed on the exposed surfaces of said particles; reducible semi-conductive manganese oxide disposed in the pores of said porous body on the dielectric film, said manganese nitrate being the reduction product of converted in situ manganese nitrate impregnated into said porous body from a solution of manganese nitrate having a specific gravity greater than 1.70 and maintained

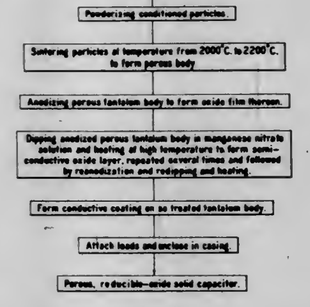


at a temperature of at least 50° C.; and an electrically conductive coating on the semi-conductive oxide layer.

3,299,326
SOLID ELECTROLYTIC CAPACITOR WITH POROUS SINTERED ELECTRODE OF THERMALLY PRETREATED ANODIZABLE METAL PARTICLES

Richard E. Gluyas, North Olmsted, and Stanley Meglic, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Filed Feb. 18, 1963, Ser. No. 259,359
16 Claims. (Cl. 317—230)



13. A solid electrolytic capacitor comprising in combination a sintered porous body formed of sintered particles of anodizable metal, said particles having reduced surface concentrations of carbides; a genetic dielectric film formed on the exposed surfaces of said sintered particles; a reducible semi-conductive oxide layer on the dielectric film; and an electrically conductive coating on the semi-conductive oxide layer.

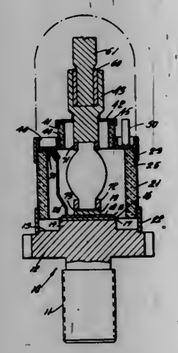
3,299,327
HOUSING FOR A THREE TERMINAL SEMICONDUCTOR DEVICE HAVING TWO INSULATION TUBE SECTIONS

Thomas J. Roach, Palos Verdes Estates, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Mar. 9, 1964, Ser. No. 350,433
2 Claims. (Cl. 317—234)

1. A housing for a semiconductor wafer having a first and second power terminal and a gate terminal having a lead extending therefrom; said housing comprising

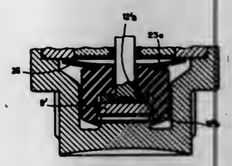
(a) a conductive base stud having a flat wafer receiving surface;
(b) a first insulation tube having spaced upper and lower brazing rings surrounding the upper and lower end respectively of said insulation tube and extending beyond the respective ends of said first insulation tube;
(c) a gate terminal conductor electrically connected to the interior of said upper brazing ring;
(d) a second insulation tube having a smaller outer diameter than the outer diameter of said first insulation tube and having spaced upper and lower brazing rings surrounding the upper and lower end respectively of said second insulation tube;



(e) a power terminal lead connected to said upper brazing ring of said second insulation tube and extending through said first and second insulation tubes and terminating on said first power terminal of said wafer;
(f) said wafer being mounted on said flat wafer-receiving surface of said conductive base stud; said second power terminal of said wafer being directly connected to said conductive base stud; said lower brazing ring of said first insulation tube being brazed to an annular area of said flat wafer-receiving surface surrounding said wafer; said lower brazing ring of said second insulation tube being brazed to said upper brazing ring of said first insulation tube;
(g) and means hermetically sealing said semiconductor wafer.

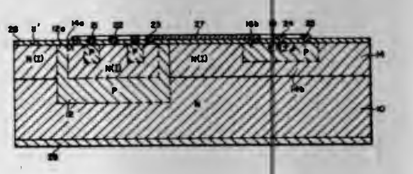
3,299,328
SEMICONDUCTOR DEVICE WITH PRESSURE CONTACT
Heinz Martin and Herbert Vogt, Munich, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Apr. 26, 1963, Ser. No. 276,061
Claims priority, application Germany, Apr. 28, 1962, S 79,235, S 79,236
19 Claims. (Cl. 317—234)

1. A semiconductor device, comprising a gas-tight housing, a semiconductor member having a metallic electrode surface mounted in said housing, an intermediate contact member of metal whose thermal coefficient of expansion differs from that of said semiconductor member, said contact member having a surface in fusion-resistant face-to-face gliding contact with said electrode surface, a terminal conductor having an elongated stem and a disc body of larger diameter than said stem located coaxially at one end of said stem adjacent to said contact member on the side facing away from said semiconductor member, said disc body and said contact member having a ring-shaped zone of mutual contact engagement extending about the axis of said stem, the portion of said disc body surrounded by said zone being flexible in the direction of said axis in response to thermal elongation



of said terminal conductor, and pressure means for applying pressure only to said ring-shaped zone portion of said disc body in the direction of said axis so as to hold said conductor forced toward said semiconductor member.

3,299,329
SEMICONDUCTOR STRUCTURES PROVIDING BOTH UNIPOLAR TRANSISTOR AND BIPOLAR TRANSISTOR FUNCTIONS AND METHOD OF MAKING SAME
Larry J. Pollock, Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 5, 1963, Ser. No. 292,880
5 Claims. (Cl. 317—235)



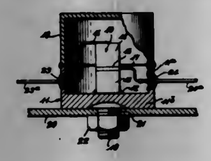
1. A semiconductor structure capable of providing the functions of a unipolar transistor and a bipolar transistor comprising: a unitary body of semiconductive material including a substrate of a first type of semiconductivity; a first region of semiconductive material of a second type of semiconductivity in a portion of a first surface of said substrate and forming a p-n junction therewith; a layer of semiconductive material of said first type of semiconductivity extending over said first region and said first surface of said substrate outside said first region; an isolation wall of semiconductive material of said second type of semiconductivity extending from said first region through said layer and enclosing a first portion thereof; a second region of semiconductive material of said second type disposed in p-n junction forming relationship with said first portion of said layer; a third region of semiconductive material of said second type disposed in p-n junction forming relationship with a second portion of said layer; and a fourth region of semiconductive material of said first type of semiconductivity disposed in p-n junction forming relationship with said third region so that said first portion of said layer and said first and second regions of semiconductive material form a semiconductive structure capable of operating as a unipolar transistor and said second portion of said layer and said third and fourth semiconductive regions form a structure capable of operating as a bipolar transistor.

3,299,330
INTERMETALLIC COMPOUND SEMICONDUCTOR DEVICES
Hisashi Watanabe and Kuniharu Nemoto, Shiba Mita, Minatoku, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Jan. 28, 1964, Ser. No. 340,734
Claims priority, application Japan, Feb. 7, 1963, 38/6,488
2 Claims. (Cl. 317—235)



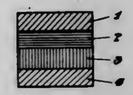
2. A transistor comprising
a semiconductor substrate crystal of germanium having a given type conductivity, said substrate forming a collector electrode,
a semiconductor intermetallic compound crystal layer of gallium arsenide formed on a surface of said substrate and also being of said given type conductivity,
a junction between said substrate and said layer having a low value of ohmic resistance, compared with the resistance values of said crystals,
a region of opposite type conductivity formed of gallium arsenide and zinc on said layer, said region comprising a base electrode,
a p-n junction between said region and said layer, a region of given type conductivity and including tin formed on said region of opposite type conductivity and comprising an emitter electrode,
and means for making electrical contact with each of said emitter, base and collector electrodes whereby said transistor has improved high frequency characteristics.

3,299,331
TRANSISTOR STRUCTURE WITH HEAT-CONDUCTIVE HOUSING FOR COOLING
James W. Lacy, Dallas Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 507,319, May 10, 1955. This application May 11, 1966, Ser. No. 550,583
6 Claims. (Cl. 317—235)



1. A transistor assembly comprising:
(a) a cup-shaped header having a base wall and a vertical wall portion, said header being composed of a material of high thermal conductivity;
(b) a transistor having one of its regions fixed directly to said header in good electrical and thermal contact therewith;
(c) a container of high thermal conductivity open at one end and closed at its other end surrounding said transistor and affixed to and being closed by said header at its open end, whereby said header and said container together define a completely enclosed space in which said transistor is located;
(d) a plurality of leads connected to said transistor and extending through said vertical wall portion of said header and insulated therefrom; and
(e) an element composed of a material of high thermal conductivity attached to said base wall of said header for fixing said assembly to a supporting structure of good thermal characteristics, in heat exchange relationship therewith.

3,299,332
SEMICONDUCTIVE CAPACITOR AND THE METHOD OF MANUFACTURING THE SAME
Osamu Saburi, Nagaoka-cho, Otokuni-gun, Kyoto-fu, Japan, assignor to Murata Manufacturing Co., Ltd., Nagaoka-cho, Otokuni-gun, Kyoto-fu, Japan, a corporation of Japan
Filed July 10, 1961, Ser. No. 123,055
25 Claims. (Cl. 317—237)



1. A capacitor, comprising a body of metallic oxide semi-conductor of the n-type having a composition represented by

$$E^{++}_{1-x}B^{b+}_{x}M^{++}_{1-(b-2)x}M^{++}_{x(b-2)}O^{--}_{2}$$

where E is an alkaline earth element taken from the group consisting of barium, strontium, calcium, magnesium and lead, and mixtures thereof, M is a metal taken from the group consisting of titanium, tin, zirconium and mixtures thereof, and O is oxygen, where B is a material having a valence b greater than 2 and the atoms of which have an ionic radius close to that of the alkaline earth E, and is taken from the group consisting of lanthanum, cerium, praseodymium, meodymium, samarium, bismuth, actinium and thorium, and the material B being present in an amount of x mole percent of element E and x lies between 0.01 and 0.5, and a semiconductor of the p-type on the opposite faces of said plate of metallic oxide semi-conductor and a barrier layer at the junctions between the semi-conductors.

3,299,333
ELECTRICAL CAPACITOR
Glenn D. Rayno, Glens Falls, Frederick W. Grahame, Fort Edward, and Carl E. Paul, Glens Falls, N.Y., assignors to General Electric Company, a corporation of New York
Filed Apr. 29, 1964, Ser. No. 363,427
3 Claims. (Cl. 317—260)



1. An electrical capacitor comprising:
(a) a metal casing having opposite sidewalls and a cover sealing the interior of said casing,
(b) terminal means mounted on said cover,
(c) a capacitor section impregnated with a dielectric fluid disposed within said casing and arranged with one end adjacent and connected to said terminal means and having opposite side surfaces adjacent said opposite sidewalls, said opposite sidewalls having portions formed therein contacting and compressionally engaging said adjacent capacitor section surfaces over a major portion thereof, the spacing between said opposite sidewalls in the region of said cover being

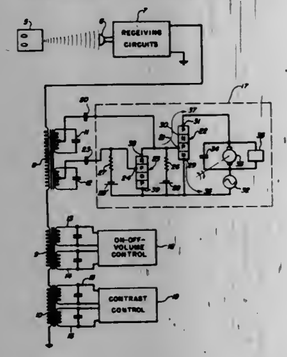
greater than the spacing between said opposite sidewalls contacting the capacitor section, said compression of said capacitor section maintaining said terminal means submerged in said dielectric fluid.

3,299,334

REMOTE CONTROL SYSTEM USING A PAIR OF SEMICONDUCTOR SWITCHES TO EFFECT BIDIRECTIONAL CURRENT FLOW IN A CONTROL DEVICE

Montaz A. Ramadan, Elmhurst, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 14, 1963, Ser. No. 323,683
5 Claims. (Cl. 318—16)



1. A remote control system for selectively utilizing superaudible command signals of different frequencies to perform predetermined control functions, said system comprising:

a control device responsive to current flow in a predetermined direction to perform a first predetermined control function and responsive to current flow in the opposite direction to perform a second, different, control function;

first and second semiconductor switching devices;

means including only one of said switching devices and responsive to said command signals of a predetermined first frequency for establishing current flow in said control device in said predetermined direction;

and means including both of said switching devices and responsive to said command signals of a second frequency, different than said first frequency, for establishing current flow in said control device in said opposite direction.

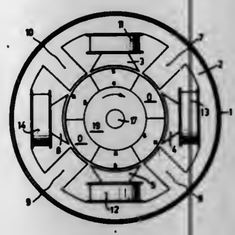
3,299,335

SELF-STARTING DIRECT-CURRENT MOTORS HAVING NO COMMUTATOR

Johannes Hendrik Wessels, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 10, 1964, Ser. No. 350,871
Claims priority, application Netherlands, Mar. 12, 1963, 290,123
18 Claims. (Cl. 318—138)

1. A direct current motor comprising a permanent magnet rotor, a source of supply voltage, a stator having at least two groups of coils, each of said groups comprising at least one winding, and control means for selectively interconnecting said voltage source with said groups of coils to effect rotation of the motor, said control means being controlled by the position of the rotor so that for each position thereof at least one group of stator coils is energized from said voltage source, said rotor comprising a plurality of radially magnetized permanent magnet members angularly spaced about the rotor circumference in pairs and a plurality of angularly spaced non-magnetic members each of which is interposed between successive



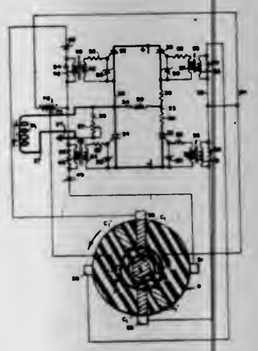
pairs of said permanent magnet members about the rotor circumference, the angular spacing between adjacent pairs of permanent magnets being substantially greater than the angular spacing between the magnets of a given pair.

3,299,336

DYNAMOELECTRIC MACHINE HAVING SOLID STATE COMMUTATION

Virgil I. Johannes, Plainfield, N.J., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed June 9, 1964, Ser. No. 373,718
3 Claims. (Cl. 318—138)



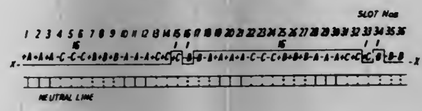
1. In a motor having a rotor and at least one energizing winding, the combination of a first pair of switching devices, one of said switching devices being adapted in response to a first control signal to connect said winding with the positive side of an energy source, a capacitor, the other of said first pair of switching devices being adapted in response to a second control signal to connect said winding with the positive side of said energy source through said capacitor, a second pair of switching devices, one of said switching devices being adapted in response to said first control signal to connect said winding with the negative side of said energy source, the other of said second pair of switching devices being adapted in response to said second control signal to connect said winding with the negative terminal of said energy source through said capacitor, and control means responsive to movement of said motor rotor adapted to provide said first and second control signals at one of said first and second pairs of switching devices in a determined sequence to energize and deenergize said winding.

3,299,337

POLE-CHANGING, THREE-PHASE, ALTERNATING CURRENT, ELECTRIC MOTORS AND GENERATORS

Gordon Hindle Rawcliffe, Clifton, Bristol, and William Fong, Bristol, England, assignors to National Research Development Corporation, London, England

Filed July 22, 1963, Ser. No. 296,826
Claims priority, application Great Britain, July 24, 1962, 2,838/62
5 Claims. (Cl. 318—224)



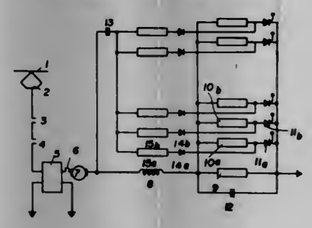
1. For a pole-changing rotary electric machine having a three-phase alternating current winding comprising three phase-windings each with coils wound and connected to provide a first number of poles other than three pole-pairs or a multiple thereof and having switch means for reconnecting the coils of each phase-winding according to a pole-amplitude modulation wave extending over the three-phase winding as a whole, said wave comprising an odd number of complete cycles other than three or a multiple thereof, whereby a second number of poles is provided which number is three pole-pairs or a multiple thereof, a magnetomotive field corresponding to a third number of poles, which number is not three pole-pairs or a multiple thereof being suppressed by the arrangement of the coils of the three-phase winding, a method of selecting said coils for reconnection to provide said second number of poles comprising selecting a frame for the said three-phase winding which has substantially three slots per pole per phase, or a multiple thereof, for the said second number of poles and selecting substantially one-half the total number of coils of each phase-winding for reversal in circuit upon said reconnection in a manner both to provide the said pole-amplitude modulation wave extending over the three-phase winding as a whole and to provide that each phase-winding is substantially geometrically balanced about the neutral line for the phase, as shown by a slot-star diagram for each of the three phase-windings.

3,299,338

STARTING DEVICE FOR DIRECT CURRENT MOTORS

Yasunosuke Torii, Musashino-shi, Tokyo, Japan, assignor to Tokyo Shibaura Electric Co. Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Mar. 27, 1964, Ser. No. 355,259
Claims priority, application Japan, Mar. 30, 1963, 38/16,019
2 Claims. (Cl. 318—249)



1. A starting device for a direct current motor comprising a direct current motor having an armature and a series field winding joined at a first junction point;

a starting resistor connected in series with said field winding;

a plurality of control resistor branches, each branch including a control resistor, a junction point and a controlled rectifier element, said branches being connected in parallel with said starting resistor so that by a first sequential enabling of the controlled rectifier elements, said control resistors become sequentially electrically connected in parallel with said starting resistor to progressively reduce the resultant resistance value thereof;

a first contactor for short circuiting said starting resistor after all of said control resistors are electrically connected in parallel with said starting resistor;

a second contactor, one end of which is connected to the first junction point;

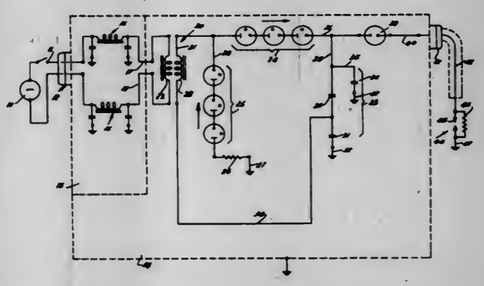
plurality of field shunting resistors, each being connected between the other end of said second contactor and one of said second junction points in one of said branches, and, a rectifier element between each of said second junction points and the corresponding field shunting resistor, said field shunting resistors being electrically connected all at one time in parallel with said field winding through the corresponding control resistor when said second contactor is short circuited, and are then sequentially electrically connected in parallel with said field winding to bypass the armature current around the field winding to weaken the magnetic field intensity by a second sequential enabling of said controlled rectifier elements, said controlled rectifiers being used both for reducing the resultant resistance value of the starting resistor and weakening the magnetic field intensity of the field winding.

3,299,339

ELECTRICAL PULSE GENERATING APPARATUS

Donald C. Loudon, Sidney, N.Y., assignor to The Bendix Corporation, a corporation of Delaware

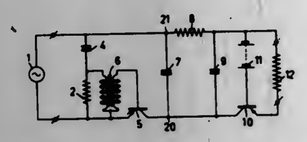
Continuation of application Ser. No. 665,558, June 13, 1957. This application Nov. 13, 1962, Ser. No. 236,885
14 Claims. (Cl. 320—1)



1. In electrical apparatus having a storage condenser, a load circuit connected to be fed by the storage condenser, and a control gap interposed between the storage condenser and the load circuit, the improvement which comprises a multiple condenser system forming said storage condenser, said system having a first and a second condenser connected in series and a third condenser connected in parallel with said series-connected first and second condensers, said first and second condensers being of substantially equal capacity and said third condenser having a capacity which is relatively large compared to that of either the first or second condenser, a source of current producing pulses of alternating polarity, means to establish a first charging circuit electrically connecting a first side of said source to the condenser system between the first and second condensers and the other side of said

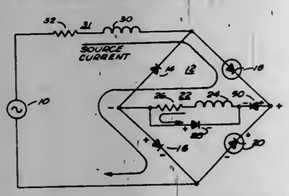
source between the first and third condensers at each positive pulse of the current source, and means to establish a second charging circuit electrically connecting said first side of the current source to the condenser system between the first and second condensers and the other side of said source between the second and third condensers at each negative pulse of the current source.

3,299,340
CIRCUIT ARRANGEMENT FOR OBTAINING A STABILIZED SUPPLY VOLTAGE
Gerardus Jacobus Deelman, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 28, 1963, Ser. No. 305,054
Claims priority, application Netherlands, Sept. 17, 1962, 283,318
12 Claims. (Cl. 321—18)



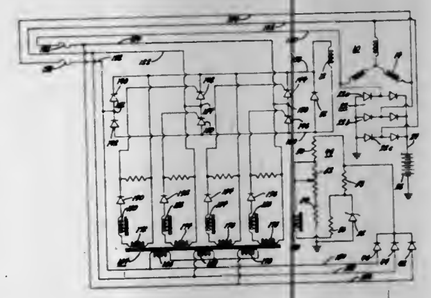
12. A circuit for regulating the voltage across a load comprising, a source of alternating current, controlled rectifier means having first and second electrodes defining a current path therein and a control electrode for controlling the current flow in said path, means connecting said rectifier current path in series with said current source so as to produce a direct current voltage at a pair of terminals of said circuit, a semiconductor device comprising first and second electrodes defining a current path therein and a control electrode for controlling the current flow in said path, means connecting said load and the current path of said semiconductor device in series across said terminals, means providing a constant voltage connected to said semiconductor device control electrode, a phase shift circuit interconnecting said current source and said controlled rectifier control electrode, said phase shift circuit including a temperature responsive impedance element thermally coupled to said semiconductor device and responsive to the temperature variations therein so as to vary the relative phase of the voltage applied to said controlled rectifier control electrode thereby to vary the conduction period of said controlled rectifier means in a sense to vary the average D.C. voltage produced at said terminals inversely with the temperature variations of the semiconductor device.

3,299,341
CONTROL ARRANGEMENT
Philip D. Corey, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Jan. 9, 1963, Ser. No. 250,264
10 Claims. (Cl. 321—47)



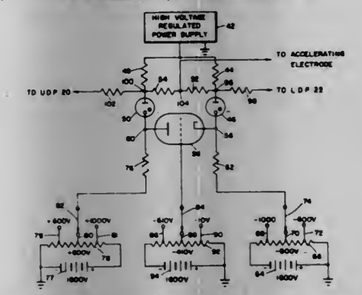
3. In a bridge rectifier circuit comprising at least a pair of gate controlled rectifiers in respective legs thereof, said gate controlled rectifiers being adapted to have applied thereto the output of an alternating current potential source, a load to which the rectified output of said source is applied, oscillating control means coupled to said source for providing a signal indicative of the deviation of the value of the output across said load from a chosen value, means coupled to said gate controlled rectifiers and said source for gating said gate controlled rectifiers during each half cycle from said source and responsive to said signal for gating said gate controlled rectifiers at points in said half cycles in accordance with said deviation, and a first rectifier in shunt with said load and in a polarity to provide current to said load when said gate controlled rectifiers are nonconductive; a second rectifier in series circuit between said gate controlled rectifiers and said first rectifier in a polarity such that the voltage provided by the sum of the voltage drops across the internal impedance of said source and the forward voltage drop across said first rectifier is prevented from causing said gate controlled rectifiers to conduct during their normally nonconductive periods.

3,299,342
SEMICONDUCTOR VOLTAGE REGULATOR
Gerald A. Rath, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation of application Ser. No. 223,746, Sept. 14, 1962. This application Nov. 12, 1965, Ser. No. 507,486
2 Claims. (Cl. 322—28)



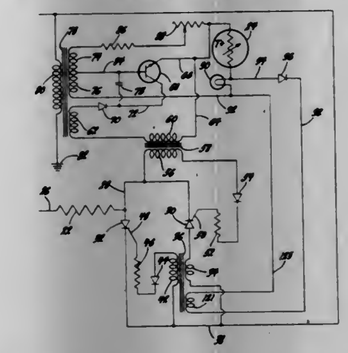
1. An electrical system comprising, an alternating current generator having a three phase Y-connected output winding and a field winding, a bridge rectifier network comprised of four controlled rectifiers and two diodes, said bridge rectifier network having first, second and third A.C. input terminals and first and second direct current output terminals, said first A.C. input terminal being connected with the cathode of one of said controlled rectifiers and the anode of another controlled rectifier, said second A.C. input terminal being connected with the cathode of one of said controlled rectifiers and the anode of another controlled rectifier, said third A.C. input terminal being connected with the anode of one of said diodes and the cathode of the other of said diodes, the cathodes of two controlled rectifiers and the cathode of one diode being connected to said first direct current output terminal, the anodes of the other controlled rectifiers and the anode of the other diode being connected to said second direct current output terminal, means connecting said field winding across said first and second direct current output terminals of said bridge network, means connecting the phase windings of said output winding respectively to the A.C. input terminals of said bridge rectifier network, and means responsive to the output voltage of said output winding for controlling the conduction of said controlled rectifiers whereby the current supplied to said field winding is a function of the output voltage of said output winding.

3,299,343
HIGH VOLTAGE CONTROL ARRANGEMENT
John J. Hickey and J Perry Smith, Hawthorne, Calif., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed June 3, 1963, Ser. No. 285,013
6 Claims. (Cl. 323—23)



3. A high voltage control arrangement, comprising:
a source of relatively high unidirectional supply voltage;
a pair of parallel branches in series with said source, each branch including a voltage regulator and a current limiting resistor connected between said source and the anode of said voltage regulator;
a voltage divider network connected between the anodes of said voltage regulators;
a vacuum tube having a cathode, a control grid, and an anode, with the cathode and anode connected across the cathodes of said voltage regulators;
two resistors connected in the anode and cathode circuit respectively of said vacuum tube;
means for applying operating potentials to that cathode and anode of said vacuum tube;
and means for selectively applying various potentials to said grid that are of substantially smaller magnitude than said supply voltage, thereby altering the potentials on the anodes of said regulators.

3,299,344
FULL WAVE VOLTAGE CONTROL SYSTEM FOR HEATING LOAD
Merle E. Werts, Piqua, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 11, 1964, Ser. No. 350,990
3 Claims. (Cl. 323—22)



1. In combination, an electrical heat dissipating load, an alternating current energy supply electrically connected to supply energy to said load, a voltage responsive semiconductor control means having electrodes connected in series with said load for controlling the supply of energy from said supply to said load, preponderantly inductive circuit means for repeatedly applying to said control means a voltage peak substantially at the time in the application of the alternating voltage sine wave to said control means when the voltage passes through zero comprising a first transformer having input terminal means connected to said energy supply and output terminal means, a second transformer having input and output terminal means, means comprising first conductor means and a current control means and a rectifier connecting the output terminal means of said first transformer with the input terminal means of said second transformer, second conductor means connecting the output terminal means of said second transformer with two electrodes of said semiconductor control means for controlling the energy supply to said load in substantially complete half cycles in response to said current control means, said current control means comprising circuit means energized by said energy supply and a filament lamp connected in series with said circuit means, and means for additionally energizing said lamp in response to current flow through said load.

3,299,345
VOLTAGE CONTROL SYSTEM FOR HEATING LOADS
Merle E. Werts, Piqua, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,582
5 Claims. (Cl. 323—22)

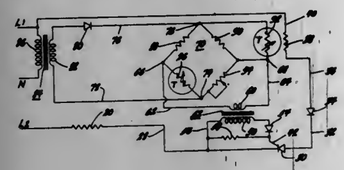


1. In combination, an electrical heat dissipating load, an alternating current energy supply electrically connected to supply energy to said load, a voltage responsive semiconductor control means having electrodes connected in series with said load for controlling the supply of energy from said supply to said load, preponderantly inductive circuit means for repeatedly applying to said control means a voltage peak substantially at the time in the application of the alternating voltage sine wave to said control means when the voltage passes through zero comprising a first transformer having input terminal means connected to said energy supply and output terminal means, a second transformer having input and output terminal means, means comprising first conductor means and a current control means and a rectifier connecting the output terminal means of said first transformer with the input terminal means of said second transformer, and second conductor means connecting the output terminal means of said second transformer with two electrodes of said semiconductor control means for controlling the energy supply to said load in substantially complete half cycles in response to said current control means.

3,299,346
HALF-WAVE VOLTAGE CONTROL SYSTEM FOR HEATING LOADS
Charles C. Gambill, Tipp City, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,584
6 Claims. (Cl. 323—22)

1. In combination, an electrical load, alternating current supply means electrically connected to said electrical

load, a semi-conductor control means having electrodes connected in series with said electrical load, preponderantly inductive circuit means between said supply means and said electrodes for repeatedly applying to said electrodes a peak voltage substantially at the time in the application of the alternating current sine wave to the control means when the voltage passes through zero comprising a first transformer having input terminal means electrically connected to said supply means and having output terminal



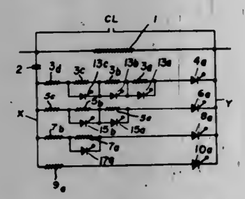
means, a control bridge circuit having input terminal means connected to said output terminal means and having output terminal means, one of said terminal means having a diode rectifier connected in series with it, a second transformer having input terminal means connected to the output terminal means of said bridge circuit and having output terminal means connected to two electrodes of said semiconductor control means, and a diode electrically connected in series with the output terminal means of said second transformer.

3,299,347

STARTING DEVICE FOR GRADUALLY APPLYING CURRENT TO A LOAD BY MEANS OF PARALLEL BRANCH CIRCUITS

Yasunosuke Torii, Musashino-shi, Tokyo, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Mar. 27, 1964, Ser. No. 355,247
Claims priority, application Japan, Mar. 29, 1963, 38/16,015
4 Claims. (Cl. 323—97)



1. A starting device for gradually applying current to a load comprising a main resistor, a plurality of branch circuits, each said branch circuits including a plurality of resistors connected in series, and a first controlled rectifier element, which when enabled will pass current across the respective branches, said main resistor and each of the resistors in said branch circuits having substantially the same resistance value;

a shunt circuit across each of said resistors less one in each of said branches, including a second controlled rectifier element in each of said shunt circuits; and,

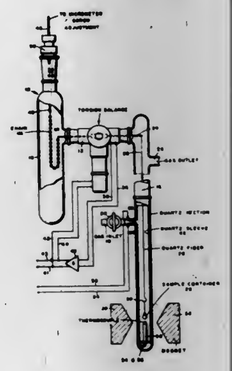
means to sequentially enable said first controlled rectifier elements in the respective branch circuits concurrently with the simultaneously enabling of a selected one of said second controlled rectifier elements to progressively short circuit the series resistors in each branch across which said second controlled rectifier elements are shunted as current passes across succeeding branches.

3,299,348

MAGNETIC SUSCEPTIBILITY MEASURING SYSTEM

John O. Beauxis, Jr., and James T. Richardson, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Feb. 8, 1963, Ser. No. 257,162
6 Claims. (Cl. 324—34)



1. A system for making magnetic susceptibility measurements of a sample comprising: a weight indicator for the sample; temperature-sensing means for sensing the temperature of the sample; an electromagnetic circuit for subjecting the sample to a magnetic field, said electromagnetic circuit having magnet current control means including a reference voltage means and a feedback voltage means responsive to changes in reference voltages to maintain the difference between the reference voltage and feedback voltage constant and wherein the reference voltage means includes time-operated switches for controlling the rise time and peak interval of the current applied to the magnet; a recorder; and an electrical control circuit including timing means and switching means controlled by said timing means for sequentially recording the temperature of the sample, the mass of the sample, and the apparent weight change of the sample caused by the magnetic field at the peak interval of the current applied to the magnet.

3,299,349

MAGNETIC PIPE INSPECTION DEVICE WITH PIVOTALLY MOUNTED SENSOR MEANS

David R. Tompkins and Thomas R. McClughan, Houston, Tex., assignors to Plastic Applicators, Inc., a corporation of Texas

Filed Feb. 28, 1964, Ser. No. 348,047
2 Claims. (Cl. 324—37)

1. Apparatus for inspecting elongate members moving longitudinally through the apparatus comprising:

(a) a frame;

(b) said frame including a pair of parallel, longitudinally spaced bases;

(c) means connected between said bases to maintain them fixed in spaced relation;

(d) each of said bases including a pair of plate members having central openings therethrough;

(e) coil means carried by each of said bases;

(f) said coil means having support means including sleeves extending longitudinally adjacent the central opening formed in said plate members;

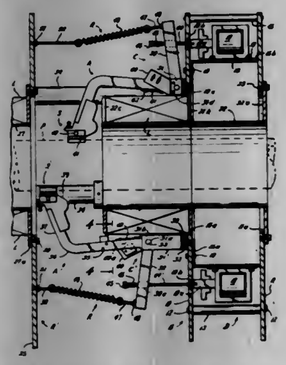
(g) said coil means forming an aiding longitudinal magnetic field therebetween in the elongate members;

(h) means pivotally mounted on one of said bases forming at least a pair of pivotal mounting axes parallel to the path of the elongate members;

(i) an extended arm pivotally mounted between its ends on each of said last named means for pivoting each of said arms about an axis that is perpendicular to the path of the elongate members;

(j) sensor mounting means carried near one end of each of said arms, said sensor mounting means being pivotally connected thereto forming another axis which is perpendicular to the path of the elongate members;

(k) said pivotal mounting axes being spaced circumferentially of the path of the elongate members to position the sensor mounting means at positions spaced circumferentially of the elongate members;



(l) said means forming said pivotal mounting axes being constructed and arranged to position said sensor mounting means at longitudinally spaced intervals relative to the elongate members so that the sensor means carried by said sensor mounting means overlap circumferentially without interfering with one another;

(m) resilient means connected to one of said bases and extending toward the other of said bases and connected to the other end of each of said arms for urging the one end of each of said arms toward the elongate members to maintain the sensor mounting means carried on each arm adjacent the elongate members; and

(n) said sensor mounting means providing inspection about the elongate members as flaws pass relative to the sensor mounting means.

3,299,350

ROTATING PIPE INSPECTION ASSEMBLY WITH SOLENOID OPERATED MEANS TO RAISE AND LOWER THE SENSOR MEANS

David R. Tompkins and Lemuel L. Council, Houston, Tex., assignors to Plastic Applicators, Inc., a corporation of Texas

Filed Feb. 24, 1964, Ser. No. 346,658
1 Claim. (Cl. 324—37)

Apparatus having a frame for passing longitudinally moving, circumferentially magnetized tubular members therethrough to detect flaws, voids, seams, and other structural anomalies in the tubular members including:

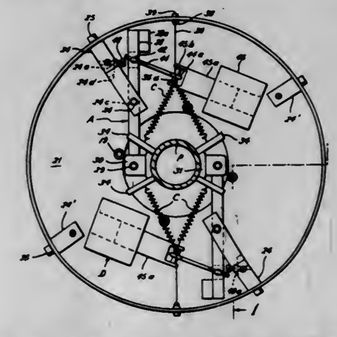
(a) a pair of sensor shoes;

(b) means supported by the frame for accommodating movement of said sensor shoes relative to the center line of the frame in response to movement of the tubular members relative to the center line of the frame as the tubular members pass therethrough;

(c) means for urging said sensor shoes toward the tubular members to maintain said sensor shoes in contact with the outer surface of the tubular members whether or not the tubular members remain in the center line of the frame as the tubular members move therethrough;

(d) means for rotating the frame and said sensor shoes about the longitudinally moving tubular members to sense variations in the magnetic field exterior of the tubular members;

(e) said means that is supported by the frame for accommodating movement of said sensor shoes relative to the center line of the frame including a pair of arms pivotally supported between their ends to the frame so that each may pivot about a fixed axis which is parallel to the axis of the longitudinally



moving tubular members, and one end of each of said arms being pivotally secured to one of said sensor shoes so that each of said shoes may pivot about an axis that is parallel to the axis of the longitudinally moving tubular members; and

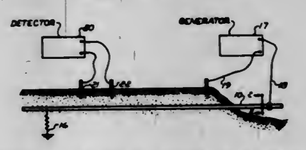
(f) a pair of solenoid means supported by the frame and each being pivotally connected, respectively, adjacent the other end of each of said arms whereby said arms may be moved substantially simultaneously about the pivot between their ends for engagement of said sensor means with the outer surface of the tubular members for inspection thereof as the tubular members move through the frame and said solenoid means also operable substantially simultaneously to disengage each of said sensors from the outer surface of the tubular members when desired.

3,299,351

APPARATUS FOR DETECTING FAULTS IN BURIED CABLES INCLUDING MEANS FOR APPLYING A COMPOSITE SIGNAL HAVING FUNDAMENTAL AND EVEN HARMONIC FREQUENCY COMPONENTS

Dewi L. Williams, Chateaugay Centre, Quebec, Canada, assignor to Northern Electric Company, Limited, Montreal, Quebec, Canada

Filed Mar. 27, 1964, Ser. No. 355,216
7 Claims. (Cl. 324—52)



1. A system for locating faults in a cable having a metallic sheath covered by a layer of insulating material and buried in a conducting medium, said system comprising means for applying to the metallic sheath a com-

posite signal containing a first component having a fundamental frequency and a second component having an even harmonic frequency of said first component, and fault detector means including:

(a) means to detect signals along the cable at pairs of locations spaced longitudinally of the cable, which signals are representative of the differences in potentials at each of said pairs of locations due to the composite signal;

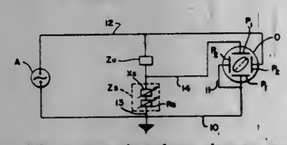
(b) tuned circuit means connected to the signal detecting means to separate each detected signal into said first and second components;

(c) means to convert the frequency of the separated first component to equal the frequency of the second component;

(d) means for comparing the phase relationship between said converted frequency and the frequency of the separated second component;

(e) and means responsive to a change in phase relationship to indicate the location of the fault.

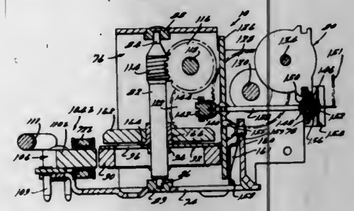
3,299,352
METHOD AND APPARATUS FOR MEASURING AN UNKNOWN IMPEDANCE BY COMPARISON WITH A STANDARD IMPEDANCE
Paul E. Carroll, 486 Cornwall Ave., Tonawanda, N.Y. 14150
Filed Aug. 12, 1963, Ser. No. 301,308
9 Claims. (Cl. 324—57)



1. A method for measuring the resistance and reactance of an unknown impedance by comparison with a standard impedance connected in series therewith and including resistance and reactance, and which method comprises: applying an A.C. voltage across said impedances, comparing the phase of the voltage across at least one of said impedances with the phase of the voltage across the other of said impedances, adjusting the resistance and/or reactance of said standard impedance until said phases are equal, comparing the value of the voltage across at least one of said impedances with the value of the voltage across the other of said impedances and determining the resistance and reactance of said unknown impedance from the relationship $Ru/Rs=Xu/Xs=Vu/Vs$, where Vu, Ru and Xu are respectively the voltage across and the resistance and reactance of said unknown impedance, and Vs, Rs and Xs are respectively the voltage across and the resistance and reactance of said standard impedance.

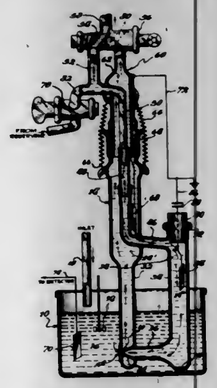
3,299,353
ELECTRICAL SPEEDOMETER UTILIZING UNSYMMETRICALLY POSITIONED FIELD COILS
Robert A. Grant, Emmons F. Sumner, Rex R. Holbrook, and George W. Ince, Ann Arbor, Mich., assignors to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed June 8, 1962, Ser. No. 201,038
20 Claims. (Cl. 324—70)

1. In an electric speedometer, the combination of a magnetized rotor, stator means supported adjacent to and magnetically coupled with said rotor, said stator means including field electromagnets having windings thereon selectively energized for producing a step-wise advancing field of force which interacts with said magnetized rotor to cause relative rotation between said magnetized rotor and said stator means in response to said step-wise advancing field of flux, said relative rotation producing a rotating magnetic field, all of said field magnets being grouped within an arc which is substantially less than 180° to prevent reversals in the direction of rotation, spring retarded non-magnetic conductive speed-indicating means located in magnetic intersecting relationship with



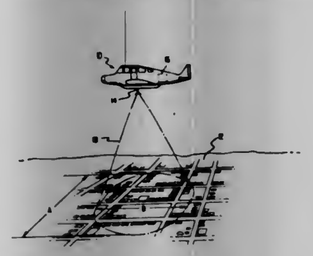
the rotating magnetic field produced by said magnetized rotor at a point which is isolated from the influence of the advancing field of force produced by said field magnets, and means operatively responsive to the rotation of said magnetized rotor for indicating its revolutions.

3,299,354
APERTURE TUBE STRUCTURE FOR PARTICLE STUDY APPARATUS
Walter R. Hogg, Miami Springs, Fla., assignor to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois
Filed July 5, 1962, Ser. No. 207,582
3 Claims. (Cl. 324—71)



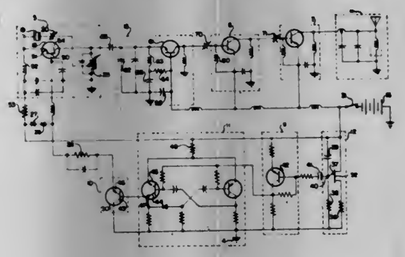
1. In a particle measuring apparatus including a container of liquid suspension to be tested, an aperture tube extending into said container, a vacuum source for moving the liquid from the container into and through the aperture tube, means establishing an electrical field between said container and the aperture tube, and a detector, the improvement comprising the aperture tube having first and second chambers, an aperture in the first chamber in communication with the liquid suspension in the container, a conduit extending from the second chamber into the first chamber and having one open end terminating at a point closely spaced from and directly opposite the interior of said aperture, means connecting said second chamber to said vacuum source and means to initially fill both the first and second chambers with the liquid suspension, and said means establishing an electrical field including a first electrode in said container and a second electrode in said aperture tube, whereby the suspension will flow from the container through the aperture and into said conduit and then into said second chamber.

3,299,355
RADIO AND TELEVISION AUDIENCE SURVEY SYSTEM
Arthur E. Jenks, Bethesda, Md., and David W. Ginn, Newton, Conn., assignors to Television Audit Corporation, Winter Park, Fla., a corporation of Florida
Filed Mar. 11, 1964, Ser. No. 350,969
3 Claims. (Cl. 325—31)



1. A method of conducting an audience survey comprising sweeping the radiation pattern of the antenna of a radiant energy responsive monitor over a metropolitan area from a location elevated above the buildings in said area to decrease the obstructions in the radiant energy paths to said monitor from the communications receivers in said area, detecting in said monitor the local oscillator signals radiated to said antenna from said communications receiver, separating in said monitor said received signals according to their differences in frequency, and counting the number of signals received in each of a plurality of predetermined frequency bands representative of the different transmitting stations to which said communications receivers may be tuned.

3,299,356
PULSED CARRIER RADIO BEACON TRANSMITTER
Kenneth F. Bornhorst and Edward L. Gliatti, Dayton, and William L. Colello, Troy, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 10, 1964, Ser. No. 358,781
5 Claims. (Cl. 325—105)



5. A pulsed carrier radio transmitter beacon comprising

a source of direct current potential,

a radio frequency oscillator circuit means, including input and output circuit means, for producing a radio frequency carrier signal,

a modulator circuit means, including input and output circuit means, for keying said radio frequency oscillator circuit,

electrical circuit means for connecting said modulator circuit means output circuit means to the input circuit means of said radio frequency oscillator circuit means,

electrical circuit means for connecting said modulator circuit means output circuit means to said source of direct current potetial,

a modulator circuit control circuit, including input and output circuit means, for determining the "on" time of said modulator circuit means,

electrical circuit means for connecting said modulator circuit control circuit output circuit means to the input circuit means of said modulator circuit means,

potential-signal-generating circuit means, including input and output circuit means, for controlling the operation of said modulator circuit control circuit means by repeatedly producing a periodic substantially linearly variable potential signal the magnitude of which changes substantially linearly over each period for producing the frequency-determining potential for said modulator circuit control circuit means,

electrical circuit means for connecting said potential-signal-generating circuit input circuit means to said source of direct current potential,

electrical circuit means for connecting said potential-signal-generating circuit output circuit means to said modulator circuit control circuit input circuit means whereby the frequency of said modulator circuit control circuit is varied over a predetermined range during each period of said substantially linearly variable potential signal,

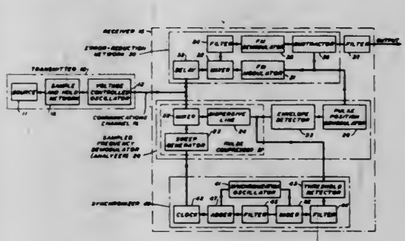
a frequency doubler circuit means, including input and output circuit means,

at least one radio frequency amplifier circuit means having input and output circuit means,

electrical circuit means for connecting in order said oscillator circuit means, said frequency doubler circuit means, and said radio frequency amplifier circuit means in cascade,

and antenna circuit means connected to said output circuit means of the last radio frequency amplifier stage.

3,299,357
SAMPLED FREQUENCY MODULATION
Sidney Darlington, Passaic Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 4, 1962, Ser. No. 199,854
8 Claims. (Cl. 325—349)



8. A communication system comprising a source of signals,

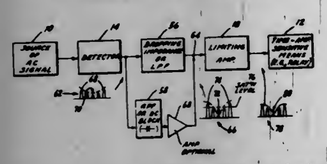
means for deriving samples from the signals of said source, means for generating a wave whose frequency is controlled by said samples,

means for sweeping the frequency of said wave for each of said samples,

means for dispersing the frequency constituents of the frequency-swept wave,

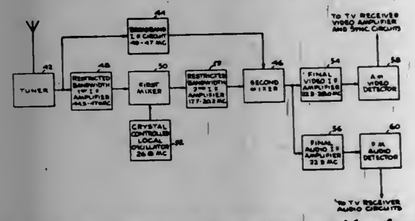
and means for detecting the dispersed constituents of said frequency-swept wave.

3,299,358
REMOTE CONTROL RECEIVER WITH A DETECTOR RESPONSIVE ONLY TO UNMODULATED CARRIER WAVE
Richard F. Wood, Marlton, N.J., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed Jan. 23, 1963, Ser. No. 253,337
5 Claims. (Cl. 325—393)



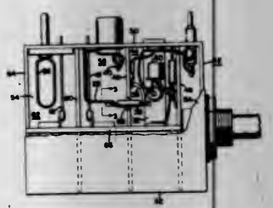
1. A highly sensitive noise and modulation detector comprising:
(a) a source of alternating signal,
(b) a signal detector for deriving a rectified signal from said alternating signal,
(c) means for isolating the alternating current component from said rectified signal,
(d) means for amplifying the said alternating current component,
(e) means for combining the amplified alternating current component with said rectified signal to provide a resulting signal,
(f) limiting means for reproducing amplitude variations of said resulting signal up to a predetermined level and supplying a substantially constant level output when the amplitude of said resulting signal exceeds said predetermined level,
(g) means for initiating a control function when the output signal of said limiting means equals said substantially constant output for a predetermined interval.

3,299,359
FREQUENCY COMPENSATING SYSTEM
Patrick R. J. Court, Los Angeles, and Abraham M. Reiter, Reseda, Calif., assignors, by mesne assignments, to International Telemeter Corporation, Los Angeles, Calif., a corporation of New York
Filed Nov. 14, 1963, Ser. No. 324,607
9 Claims. (Cl. 325—431)



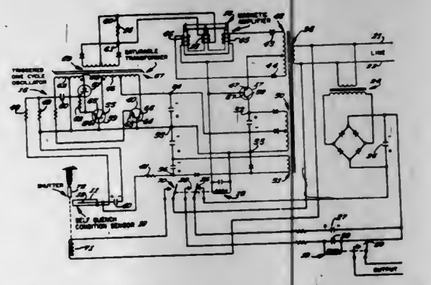
1. In a system wherein a receiver provides from received signals first intermediate frequency carrier signals and second frequency modulated intermediate frequency carrier signals, the frequency of said first intermediate carrier signal and the center frequency of said second intermediate frequency carrier signals being unstable, means for stabilizing said first and second intermediate frequency carrier signals comprising a first mixer circuit, a second mixer circuit, a source of stable frequency local oscillations, means for applying signals from said source of stable local frequency oscillations to said first mixer, means for applying said first intermediate frequency carrier signal to said first mixer circuit with a minimum amplitude which exceeds the maximum amplitude of signals from said source of local oscillations, means for deriving a third intermediate frequency carrier from said first mixer circuit output, means for applying said first and second intermediate frequency carrier signals to said second mixer input, means for applying said third intermediate frequency carrier to said second mixer input with an amplitude greater than the maximum amplitude of the applied first and second intermediate frequency carrier signals, and means for deriving from said second mixer output a fourth intermediate frequency carrier having the frequency of said local oscillator and a fifth frequency modulated intermediate frequency having a center frequency which is stable and displaced from said local oscillator frequency.

3,299,360
ULTRA HIGH FREQUENCY CONVERTER
Adolf E. Wolfram, Jamesville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 22, 1963, Ser. No. 267,207
2 Claims. (Cl. 325—436)



1. In an ultra high frequency converter an arrangement for reducing undesired radiation therefrom comprising:
a converter having an enclosure and including oscillator, mixer and radio frequency stages positioned therein,
a metal plate positioned between said oscillator stage and a portion of said mixer stage, said plate having an aperture therein,
said mixer stage including a diode having a pair of electrodes and a pick-up element, said pick-up element having one end thereof connected to one of said electrodes of said diode to form a series circuit therewith, said one electrode of said diode and said pick-up element lying entirely on the oscillator side of said plate,
said diode extending through said aperture and the other electrode of said diode lying entirely on the other side of said plate.

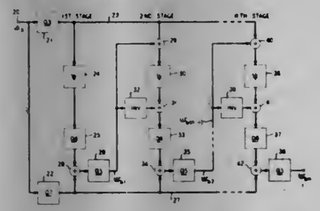
3,299,361
CONDITION DETECTING APPARATUS
Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,410
7 Claims. (Cl. 328—6)



1. In combination,
a source of signal pulses of a frequent rate,

a triggered one cycle oscillator having an input and a D.C. output and a frequency of oscillation which is less than said frequent rate and having an input and an output,
means connecting said source of signal pulses in controlling relation to the input of said oscillator to trigger the same and to cause substantially continuous D.C. output in response to the frequent rate of signal pulses,
a magnetic amplifier having output winding means and input winding means,
D.C. voltage means,
means connecting said D.C. voltage means to said output winding means to normally saturate said magnetic amplifier,
and means connecting the D.C. output of said oscillator in controlling relation to the input winding means of said magnetic amplifier to reset the same from saturation only in response to substantially continuous D.C. output of said oscillator.

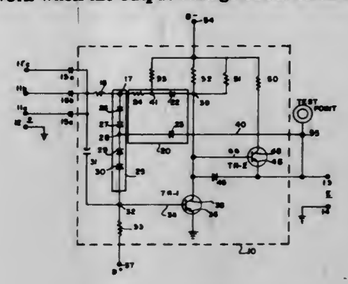
3,299,362
RECOVERY OF NONLINEARLY DISTORTED SIGNALS
Irwin W. Sandberg, Springfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 13, 1963, Ser. No. 308,722
20 Claims. (Cl. 328—163)



1. In a nonlinear distortion producing signal transmission system having an input signal applied thereto and from which there is derived a corresponding distorted and subsequently bandlimited output signal, means for recovering said input signal from said distorted and bandlimited output signal which comprises, an input frequency separating network for separating frequency bands within said band limitation, a plurality of iterative stages, each stage comprising an inverse nonlinear network, means for eliminating signals from said inverse nonlinear network which fall within one of said separated frequency bands, and means for combining the output of said eliminating means with the output of the previous stage, and an output frequency combining network for combining the output of the last one of said stages and outputs from said input separating network.

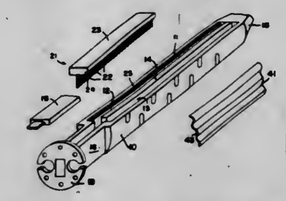
3,299,363
PHASE INVERTING DIRECT CURRENT AMPLIFIER CIRCUIT
Leo F. Slattery, St. Paul, and Lynn W. Gallup and Henry W. Schoenherr, Minneapolis, Minn., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed June 4, 1963, Ser. No. 285,493
3 Claims. (Cl. 328—209)

1. A circuit arrangement capable of rapid switching action and of inverting input voltages comprising: an input network including a plurality of non-linear elements connected in series; a phase inverting direct current amplifier having its input connected to one point in said input network; a first negative feedback path conducting direct current from said amplifier to the input network when the output voltage of the circuit reaches a predetermined first level, thus controlling the input current to said amplifier at a value which prevents the amplifier from saturating and which holds the output voltage of the circuit at a first prescribed level; and a second negative feedback path conducting direct current from said amplifier to the input network when the output voltage of the circuit reaches



a predetermined second level, thus controlling the input current to said amplifier at a value which prevents the amplifier from cutting-off and which holds the output voltage of the circuit at a second prescribed level; said first and second feedback paths being connected to separate additional points in said input network, each of the three points being separated by at least one element of the input network.

3,299,364
FOLDED TRAVELING WAVE MASER STRUCTURE
Lyle D. Buchmiller, Menlo Park, Robert W. De Grasse and William Pickney Jones, Los Altos, and William A. Peterson, Palo Alto, Calif., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 3, 1964, Ser. No. 336,103
1 Claim. (Cl. 330—4)



A traveling wave maser structure which comprises:
(a) a body of conductive material having a pair of parallel waveguides therein; (1) said waveguides being separated by a common wall;
(b) a waveguide short on one end of said body for closing one end of said waveguide and contributing to reversing a signal traveling down one waveguide and returning via the other waveguide;
(c) a common pump signal input waveguide at the other end of said body which is cryogenically cooled to thereby cool each of said waveguides and structure therein;
(d) means adjacent said waveguide short for coupling an amplified signal from said one waveguide to said other waveguide;
(e) a tip loaded slow-wave comb structure disposed within each of said waveguides;
(f) active material on each side of said comb structure for amplifying a signal wave imposed on each comb structure;
(g) spring means for holding said active material against said comb structure in each waveguide,

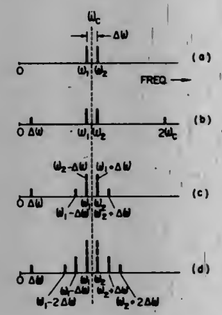
(1) said spring means including a corrugated metallic resilient member substantially coextensive with each comb structure and being disposed adjacent to and in contacting engagement with the common wall to thereby provide a heat conduction path between said waveguides; and

(h) means for sending a signal down said one waveguide and extracting an amplified signal returning via said other waveguide.

3,299,365
DOUBLE PUMPED FERROMAGNETIC MICROWAVE AMPLIFIER

Edward T. Hooper, Jr., Silver Spring, and Albert D. Krall, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Sept. 24, 1965, Ser. No. 490,144
9 Claims. (Cl. 330—4.8)



1. A ferromagnetic microwave amplifier comprising:

a ferromagnetic nonlinear reactance having a plurality of resonance modes, at least one of said modes being resonant to an idler frequency and one of said modes resonant to a signal frequency,

a magnet positioned in the vicinity of said reactance for coupling a D.C. magnetic field into said reactance,

input-output means coupled to said reactance for applying microwave signals having frequencies within a predetermined range into said reactance and for reflecting an amplified output signal from one of said resonance modes,

and means coupled to said reactance for pumping said reactance at first and second frequencies which are respectively equal to the sum of an idler frequency and first and second signal frequencies within said predetermined range.

3,299,366
TEMPERATURE COMPENSATED AMPLIFIER

David W. Hackett, Burbank, and Andre J. Huot, North Hollywood, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 27, 1963, Ser. No. 283,648
1 Claim. (Cl. 330—23)

A servo amplifier which is stabilized under a no signal condition comprising:

(a) an amplifier transistor having an emitter electrode, a base electrode and a collector electrode;

(b) said base electrode being connected to an input terminal for receiving an error signal;

(c) said emitter electrode being connected via a resistor to a grounded terminal;

(d) said collector being connected via a resistor to a terminal for receiving a power voltage;

(e) a resistor connected between the collector electrode and the base electrode so as to stabilize the transistor upon a temperature rise thereof;

(f) a pair of opposing diodes each connected between the input terminal and the ground terminal for limiting the current of the error signal;

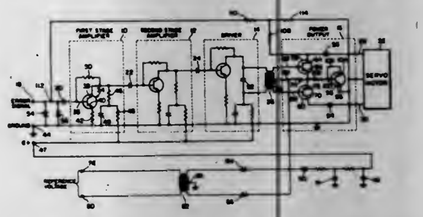
(g) a pair of transistors having substantially identical transfer characteristics;

(h) each of said pair of transistors having an emitter electrode, a base electrode and a collector electrode;

(i) transformer means coupling the collector electrode of said amplifier transistor to the base electrode of each of said pair of transistors;

(j) means connecting the electrodes of said pair of transistors together for class B operation with a first resistor mutually connected between the emitter electrode and base electrode of each transistor for emitter degeneration;

(k) means connecting the collector electrode of one of said pair of transistors to said input terminal so



as to provide feedback for stabilizing said servo amplifier;

(l) a third transistor having a dynamic transfer characteristic substantially identical to each of said pair of transistors;

(m) said third transistor having an emitter electrode, a base electrode and a collector electrode;

(n) means connecting a second resistor of a predetermined resistance between the base electrode of said third transistor to the emitter electrodes of said pair of transistors;

(o) the collector electrode of said third transistor being connected to a point of voltage potential; and

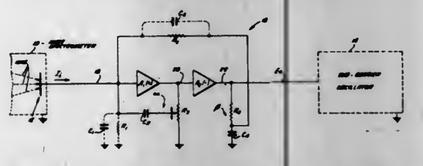
(p) a feedback loop connecting the emitter electrode of said third transistor to its base electrode,

whereby leakage current in the third transistor will cause a voltage drop across said second resistor to oppose the bias of said pair of translstors due to leakage current therein, thereby preventing conduction of said pair of transistors under the no signal condition.

3,299,367
FEEDBACK AMPLIFIER

Patrick F. Howden, Monrovia, Calif., assignor to SDS Data Systems, a corporation of California

Filed May 31, 1960, Ser. No. 32,953
8 Claims. (Cl. 330—104)

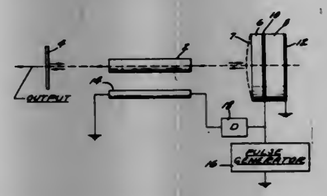


1. A high gain amplifier, comprising: a positive gain amplifier for receiving a low level input signal and for providing an output signal proportional thereto; a negative gain amplifier connected to be responsive to the output signal from said first amplifier for providing an output signal proportional thereto; an integrating circuit connected for integrating the output signal of said negative grain amplifier; a degenerative feedback circuit for coupling the integrated signal from said integrating circuit to the input of said first amplifier; and a capacitive feedback circuit connected for applying a signal proportional to the output signal of said positive gain amplifier to the input of said positive gain amplifier the integrating circuit and capacitive feedback circuits thereby cooperating to compensate for deleterious capacitance in the amplifiers for causing the amplifiers to form a stable amplifier with high gain and wide band width characteristics.

3,299,368
LASER LIGHT GATE WITH PIEZOELECTRIC CRYSTAL

Arthur A. Klebba, Thompsonville, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 24, 1963, Ser. No. 290,111
10 Claims. (Cl. 331—94.5)



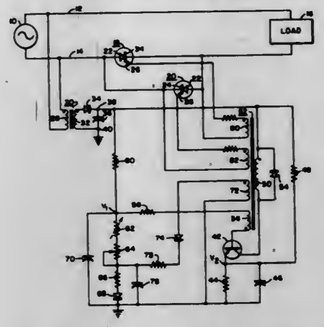
1. A laser system including an active laser element, a first reflector associated with one end of said laser element, means for energizing said laser element, at least one piezoelectric element, at least one surface of said piezoelectric element being of variable contour with respect to the other end of said laser element in response to an electric field across said piezoelectric element, a second reflector on said one surface of said piezoelectric element, said second reflector facing said other end of said laser element, and means for establishing an electric field across said piezoelectric element to vary the contour of said one surface of said piezoelectric element with respect to said other end of said laser element whereby the contour of said second reflector is varied between nonparallelism and substantial parallelism with said first reflector to gate the output of said laser.

3,299,369
CONDITION RESPONSIVE ON-OFF BLOCKING OSCILLATOR

Leonard C. Vercellotti, Penn Hills Township, and Richard A. Johnson, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 22, 1964, Ser. No. 384,321
6 Claims. (Cl. 331—112)

1. In apparatus for gating a controlled semiconductor rectifier on and off as a function of a change in impedance of a variable impedance element, the combination of a blocking oscillator, a semiconductive device in the oscillator having an emitter, a collector and a base, transformer means including a first feedback winding inductively coupling said collector and said base for applying a positive feedback signal to said base, means including said variable impedance element connected between said base and emitter for controlling conduction in the semiconductive device as a function of the impedance of said variable impedance element, said transformer means including a second feedback winding responsive to the conduction of said semiconductive device for providing an additional positive feedback signal to more rapidly effect the desired conduction of said semiconductive device, and

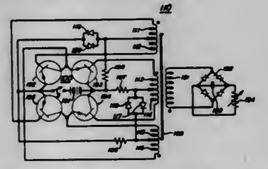


winding means inductively coupled to said transformer means for applying said train of pulses to the gate element of said controlled semiconductor rectifier.

3,299,370
TRANSISTOR BRIDGE CONVERTER

Richard P. Massey, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 24, 1959, Ser. No. 861,947
27 Claims. (Cl. 331—113)



25. An electric circuit for converting direct voltage to alternating voltage comprising a first and second pair of unilaterally conducting devices, each device having a conduction control element; a saturable core transformer having an input winding and two feedback windings; a source of direct voltage; one of said first pair of unilaterally conducting devices, said input winding, and the other of said first pair of unilaterally conducting devices being connected in series in the order recited to said direct voltage source to provide current flow through said input winding in one direction; one of said second pair of unilaterally conducting devices, said input winding, and the other of said second pair of unilaterally conducting devices being connected in series in the order recited to said direct voltage source to provide current flow through said input winding in a direction opposite to said one direction; and means responsive to voltages in one feedback winding for applying control potentials to the control elements of two of said unilaterally conducting devices and responsive to voltages in the other feedback winding for applying control potentials to the control elements of the remaining unilaterally conducting devices to provide alternate conduction of said first and second pairs of amplifying devices.

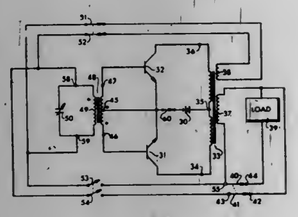
3,299,371
PLURAL TRANSISTOR LC OSCILLATOR CIRCUIT WITH SQUARE WAVE OUTPUT

John T. Ryan, Hyde Park, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Aug. 23, 1965, Ser. No. 481,792
9 Claims. (Cl. 331—114)

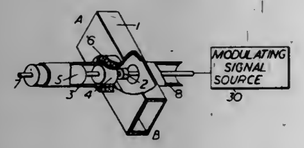
1. A square-wave power oscillator circuit comprising: first and second transistors, each having base, emitter and collector electrodes;

a first transformer means including a center-tapped primary winding having first and second terminals connected to the collector electrodes of said transistors, and a secondary winding;
a load connected across the secondary winding of said first transformer means;
means connecting the emitter electrodes of said transistors to a point of reference potential;
direct current means connected between the center tap of the primary winding of said first transformer means and point of reference potential for initiating conduction in one of said transistors;
a second transformer means having a primary winding and a center-tapped secondary winding connected between the base electrodes of said transistors, the center-tap being connected to said point of reference potential;



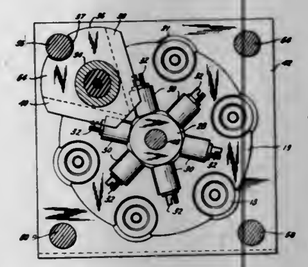
a capacitor connected in parallel with the primary winding of said second transformer means to form therewith a parallel tuned tank means resonant at a frequency determined by said capacitor and primary winding; and
means for coupling a feedback signal from said first transformer means directly to said tuned tank, means to initiate oscillations in said tank means whereby a voltage potential is induced in the secondary winding of said second transformer means, independent of load effects, of a polarity to render the initially conducting transistor non-conducting and the other of the transistors conducting and thereby introduce a square-wave signal to said load through said first transformer means.

3,299,372
ISOLATOR-MODULATOR
Akio Saeki and Yutaka Horiguchi, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Feb. 26, 1964, Ser. No. 347,426
Claims priority, application Japan, Apr. 2, 1963, 38/16,242
1 Claim. (Cl. 332—51)



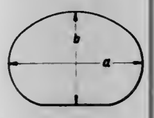
A microwave isolator-modulator comprising: a main waveguide, an isolator including, a branch stub waveguide attached at one end of said main waveguide, an adjustable short closing the other end of said stub waveguide, a ferromagnetic member substantially codimensional with the inside stub waveguide dimensions positioned in said stub waveguide, excitation means for said ferromagnetic member; a modulating signal source; and a crystal diode connected to said modulating signal source and positioned in one of said waveguides to control the operation of said isolator in response to variations of the impedance of the crystal produced by the modulating signals from the source.

3,299,373
COAXIAL STEP ATTENUATOR
Marcellus Conney, 13 McDonnell St., Amsterdam, N.Y. 12010
Filed Aug. 31, 1964, Ser. No. 393,132
11 Claims. (Cl. 333—81)



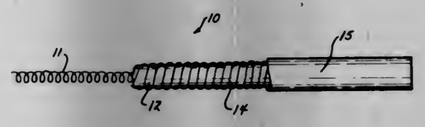
8. In combination, an assembly of a plurality of angularly spaced circuit components, a pair of connectors, means for mounting said connectors in spaced registration for selectively engaging the respective terminals of said components, means associated with said assembly and independently rotatable with respect thereto for causing, the displacement of said connectors from said terminals and the thereafter rotation of said assembly to effect the engagement of said connectors with discrete selected ones of said circuit components upon the rotation of said rotatable means only the angular spacing between two adjacent ones of said components, and means for rotating said rotatable means.

3,299,374
ASYMMETRICAL WAVEGUIDE
Gerhard Schickle, Wolfgang Krank, and Erich Schüttlöffel, Backnang, Wurttemberg, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Apr. 5, 1965, Ser. No. 445,506
Claims priority, application Germany, Apr. 4, 1964, T 25,956; May 8, 1964, T 26,155; Dec. 12, 1964, T 27,605
21 Claims. (Cl. 333—95)



1. A flexible waveguide device for the correct transmission of a particular type wave and preferably a linearly polarized electromagnetic wave, comprising a waveguide in which the two axes of the cross sectional plane which are perpendicular to each other are of different length, the cross section of the waveguide being asymmetrical relative to at least one axis, and the edges of the cross section being smooth and free of corners and the periphery of the cross section having everywhere a curvature which is free of changes in sign.

3,299,375
ELASTIC STRETCHABLE COAXIAL CABLE HAVING CONSTANT CAPACITANCE USING WOVEN OR HELICALLY WOUND CONDUCTORS
Charles S. Thompson, Fort Wayne, Ind., assignor to The Magnavox Company, Fort Wayne, Ind., a corporation
Continuation of application Ser. No. 291,192 June 27, 1963, which is a continuation of application Ser. No. 73,917, Dec. 5, 1960. This application Sept. 22, 1965, Ser. No. 496,230
4 Claims. (Cl. 333—96)



2. In an extensible elastic coaxial cable having a helically wound inner conductor, an inner insulating jacket covering said inner conductor, a helically wound outer conductor, and an outer insulating jacket covering said outer conductor, a relationship defining the capacitance of said cable and the variation of said capacitance with the coefficient of elongation expressed as

$$C_H = 315H(\beta+1)\delta_H \frac{-\log\left(H\frac{h_1}{d}\right)}{\log\frac{r_3}{r_4}} \mu\mu f. \text{ per foot, relaxed}$$

where:

(1) β is the coefficient of elongation represented as

$$\frac{\text{feet elongation}}{\text{feet original length}} \text{ or } \frac{L_n - L_0}{L_0}$$

(2) δ_H is a factor introduced to correct for any inequalities between h_1, the perpendicular distance between adjacent parallel conducting wires for the outer conductor for the cable, and h_2, the perpendicular distance between adjacent parallel conducting wires for the inner conductor of the cable, stated as

$$\delta_H = 1 + .330 \log \frac{h_1}{h_2}$$

where:

$$\frac{h_1}{h_2} = \frac{e_2 P_1 r_1 \sqrt{P_{02}^2 + (2\pi r_{02})^2}}{e_1 P_2 r_2 \sqrt{P_{01}^2 + (2\pi r_{01})^2}}$$

in which:

e_1 is the number of wires wound in parallel in the outer conductor.
e_2 is the number of wires wound in parallel in the inside conductor.
P_1 is the pitch distance for one turn of any one wire of the outer conductor at any elongation, stated as

$$P_1 = P_{01}(\beta+1)$$

where:

P_{01} is the pitch distance for one turn of any one wire of the outer conductor in relaxed state.
P_2 is the pitch distance for one turn of any one wire of the inner conductor at any elongation, stated as

$$P_2 = P_{02}(\beta+1)$$

where:

P_{02} is the pitch distance for one turn of any one wire of the inner conductor in relaxed state.
r_1 is the average radius of the outer conductor in the elongation under consideration, stated as

$$r_1 = \frac{\sqrt{(2\pi r_{01})^2 - P_{01}^2(\beta^2+2\beta)}}{2\pi}$$

where:

r_{01} is the average radius of the outer conductor from the axis of the helix to the axis of the conductor wire in relaxed state, stated as

$$r_{01} = r_{03} + \frac{t_1}{2}$$

in which:

r_{03} is the radius of the I.D. (without insulation) of the outer conductor in relaxed state,

and

t_1 is the diameter of the outer conductor wire-bare copper.
r_2 is the average radius of the inner conductor in the elongation under consideration, stated as

$$r_2 = \frac{\sqrt{(2\pi r_{02})^2 - P_{02}^2(\beta^2+2\beta)}}{2\pi}$$

where:

r_{02} is the average radius of the inner conductor from the axis of the helix to the axis of the conductor wire in relaxed state, stated as

$$r_{02} = r_{04} - \frac{t_2}{2}$$

in which:

r_{04} is the radius of the O.D. (without insulation) of the inner conductor in relaxed state,

and

t_2 is the diameter of the inner conductor wire-bare copper.
(3) H is a defined term expressed as

$$H = \frac{.32}{(12.4 - K_2)}$$

where:

$$K_2 = \frac{\log\frac{r_3}{r_4}}{\log\frac{r_3}{r_{03}(\beta+1)^j} + \frac{1}{K}\log\frac{r_{03}(\beta+1)^j}{r_4}}$$

where:

r_3 is the radius of the I.D. of the outer conductor in the elongation under consideration, stated as

$$r_3 = r_1 - \frac{t_1}{2}$$

r_4 is the radius of the O.D. (without insulation) of the inner conductor in the elongation under consideration,

$$r_4 = r_2 + \frac{t_2}{2}$$

j is the exponent in Poissons' Ratio Equations representing the material forming the inner insulating jacket (always a negative number).
K is the dielectric constant of the inner insulating jacket.
(4) h_1 is the perpendicular distance between adjacent parallel conducting wires for the outer conductor of the cable, stated as

$$h_1 = \frac{2\pi P_1 r_1}{e_1\sqrt{P_{01}^2 + (2\pi r_{01})^2}}$$

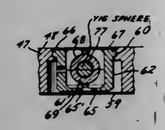
and,

(5) d is the thickness of dielectric material between the conductors of the coaxial cable, stated as

$$d = r_3 - r_4$$

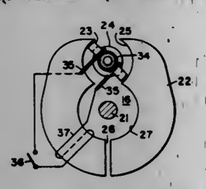
and where the design constants to be given for each calculation are t_1, t_2, r_{03}, r_{04}, P_{01}, P_{02}, e_1, e_2, k and j.

3,299,376
YTTRIUM IRON GARNET PRESELECTORS
Robert Blau, North Bergen, N.J., Burton Sedlak, Brooklyn, and Robert M. Phillips, Bronx, N.Y., assignors to Loral Electronics Corporation, Bronx, N.Y., a corporation of New York
Continuation of application Ser. No. 179,824, Oct. 17, 1961. This application Feb. 10, 1965, Ser. No. 433,842
4 Claims. (Cl. 333—24.2)



1. In a gyromagnetic coupling device, including a sphere of gyromagnetic material, and a pair of conductors disposed at a substantial mutual angle, improved sphere-supporting means comprising: a pair of symmetrical holding members, each of said holding members having a substantially hemispherical recess corresponding in diameter to that of said sphere, each of said members having grooves positioned in an outwardly disposed surface thereof, said conductors being positioned within the grooves in each of said holding members to maintain the same in surrounding relation with respect to said sphere.

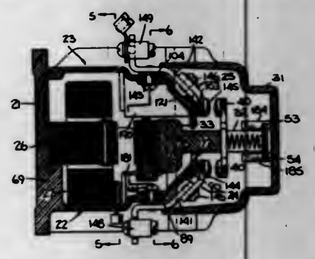
3,299,377
SYNCHRONOUS OPERATING MECHANISMS FOR CONTROLLING CIRCUIT BREAKERS
Robert R. Circle, Fairfax, Va., and Thomas E. Browne, Jr., Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 17, 1965, Ser. No. 433,407
14 Claims. (Cl. 335—19)



1. A synchronous-type circuit interrupter including a pair of separable contacts and a synchronous operator for controlling the opening movement of one of said contacts, said synchronous operator including a saturating iron core having an air gap therein, a current-conducting armature coil movably disposed in said air gap and mechanically connected to said one contact, primary winding means for said core carrying at least a portion of the line current flowing through the contacts, secondary winding means for controlling the induced current flow through said armature coil, switching means for said secondary winding means, and tripping means for the circuit interrupter for controlling the operation of said switching means.

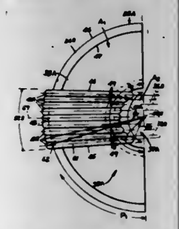
3,299,378
ELECTROMAGNETICALLY ACTUATED CONTACTOR HAVING A LINEARLY MOVABLE CONTACT CARRIER
John Scheib, Jr., Elmsford, N.Y., assignor to Ward Leonard Electric Co., Mount Vernon, N.Y., a corporation of New York
Filed Mar. 25, 1965, Ser. No. 442,658
7 Claims. (Cl. 335—131)

7. An electrical contactor comprising a core and coil assembly including a movable armature actuated by said core and coil assembly, a contact carrier having means for connecting said armature to said carrier to actuate said carrier and having movable contact supporting means, a casing formed by two upper and lower holding members enclosing and supporting said core and coil assembly, one of said holding members having means slidably supporting and guiding said armature and contact carrier in a given direction and plane of movement, each of said holding members having a fixed contact holding means above and below said contact carrier and plane of movement, sets of fixed contacts exteriorly mounted on said fixed contact holding means and extending towards said contact carrier, said contact carrier extending exteriorly



to said holding members in the direction of movement of said carrier to position said movable contact supporting means exteriorly to said holding members, movable contacts mounted on said movable contact supporting means in facing relation to said fixed contacts in a make and break relation therewith, projecting portions on said holding members and extending exteriorly therefrom at opposite sides of said contact carrier in a direction parallel to the movement of said contact carrier, and cover and partition means removably mounted on said projecting portions and extending to cover and isolate said exteriorly positioned fixed and movable contacts.

3,299,379
DEFLECTION YOKE
Charles E. Torsch, Lakewood, Ohio, assignor to The Muter Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 22, 1962, Ser. No. 231,890
24 Claims. (Cl. 335—213)

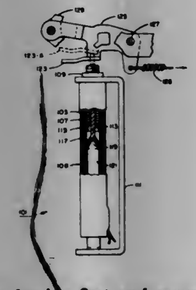


1. A deflection coil for use in cathode ray beam deflection yokes including a series of turns of wire toroidally disposed on the core with at least some of the turns being tilted so as to be non-radially aligned on the inner surface of the core relative to the longitudinal central axis of the coil.

3,299,380
PLUNGER ELECTROMAGNET WITH ANTI-STICK MEANS SEPARATING THE POLES AND OPERATING A UTILIZATION DEVICE
Boone K. McReynolds, Oakland, Calif., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Mar. 15, 1965, Ser. No. 439,812
6 Claims. (Cl. 335—220)

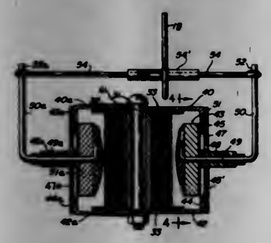
1. A tractive electromagnet for operating a utilization device comprising:
(a) a coil;

(b) a first ferromagnetic pole having one end internal to said coil, said end having a recess therein;
(c) a second ferromagnetic pole having one end internal to said coil;
(d) means for holding one of said poles stationary with respect to the other to permit movement of the other pole toward the stationary pole upon energization of the coil;
(e) a nonferromagnetic member positioned between the ends of the poles for movement therebetween,



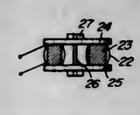
said member having first and second surfaces opposite respective one ends of said poles, each said surface being shaped for mating engagement corresponding one end of a pole;
(f) an opening defined by a third surface, said third surface being on one of said poles, and
(g) an extension secured to one of said first and second surfaces and passing through said opening to enable operative engagement between said member and said utilization device in response to movement of said other pole.

3,299,381
MAGNETIC ACTUATOR DEVICE WITH COUPLED ROTORS
Frank R. Adams, 2625 Ruger Ave., Janesville, Wis. 52505
Filed May 2, 1966, Ser. No. 546,978
7 Claims. (Cl. 335—232)



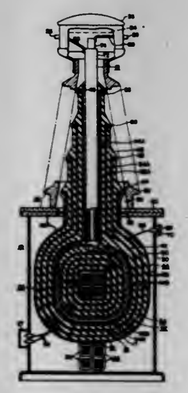
1. A light-weight magnetic actuator for controlling a model vehicle comprising,
(a) an electromagnet having a core and a winding on the core,
(b) a pair of magnetizable assemblies connected to opposite ends of the core and selectively energized thereby,
(c) said assemblies arranged on opposite sides of and spaced from the core,
(d) each assembly including magnetizable pole pieces disposed in a common plane to complete a separate magnetic circuit, and a permanent magnet member mounted in a plane parallel to said common plane,
(e) each magnet member having a rock shaft joined for movement therewith for providing a mechanical output, and
(f) non-magnetic coupling means connecting said magnets to provide a common mechanical output from both of said rock shafts.

3,299,382
VARIABLE MAGNETOSTRICTIVE INDUCTANCE DEVICES
Takashi Tanaka, Yao-shi, Minoru Sakata, Osaka, Hozumi Hirota, Neyagawa-shi, and Yukihiro Yanagiuti, Moriguchi-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Apr. 15, 1964, Ser. No. 359,943
Claims priority, application Japan, Apr. 17, 1963, 38/28,930; Apr. 19, 1963, 38/174, 38/20,603; Apr. 20, 1963, 38/29,850, 38/29,851
2 Claims. (Cl. 336—20)



1. A variable inductance device comprising an annular magnetic core having a pair of axial ends and at least a recess formed therein, a winding disposed in said recess in said magnetic core, a pair of end plates sandwiching said magnetic core with said winding and engaging the axial ends of said core, and means for changing the sandwiching pressure of said end plates, whereby the pressure is applied to said core in the regions where said end plates engage said axial ends.

3,299,383
CURRENT TRANSFORMER HAVING FLUID CARRY PASSAGES IN HIGH VOLTAGE CONDUCTOR
Edmond E. Conner, Brookfield, Ohio, and Charles E. Grassl, Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 4, 1965, Ser. No. 506,351
8 Claims. (Cl. 336—60)



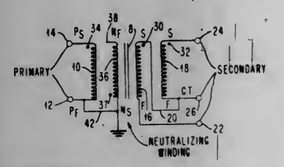
1. A high voltage current transformer comprising a high voltage winding section, a high voltage lead assembly connected to said high voltage winding section, a low voltage winding section, a magnetic core, said high and low voltage winding sections being disposed in inductive relation with said magnetic core to form a winding-core assembly, a housing comprising a tank and bushing assembly, said winding-core assembly being disposed within said housing, dielectric fluid means disposed within said housing, said high voltage lead assembly including inner

and outer concentrically disposed tubular electrically conductive members, said inner tubular electrically conductive member extending past the outer tubular electrically conductive member, at least at the ends which are connected to said high voltage winding section, the inside diameter of the outer tubular conductive member exceeding the outside diameter of the inner tubular conductive member to provide a first space for said dielectric fluid means, the inside diameter of said inner tubular conductive member providing a second space for said dielectric fluid means, said high voltage winding section having first and second ends and at least one opening therein which extends between its ends, the first end of said high voltage winding section being electrically connected to the outer tubular conductive member, with the at least one opening in said high voltage winding section being in communication with the first space for said dielectric fluid, the second end of said high voltage winding section being electrically connected to the inner tubular conductive member, with the at least one opening in said high voltage winding section being in communication with the second space for said dielectric fluid, said transformer being cooled by circulation of said dielectric fluid through the at least one opening in said high voltage winding section and through the first and second spaces for said dielectric fluid in said high voltage lead assembly.

3,299,384
WIDE-BAND TRANSFORMER HAVING NEUTRALIZING WINDING

Hua-Tung Lee, Olive, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 1, 1964, Ser. No. 379,644
4 Claims. (Cl. 336—171)



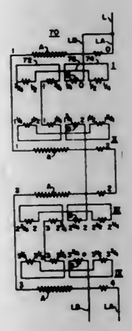
3. In a transformer,
a magnetic circuit assembly comprising:
a first winding having terminal means,
a neutralizing winding geometrically coextensive with said first winding,
said neutralizing winding being wound oppositely with respect to said first winding,
one end of said neutralizing winding being substantially open circuited,
and second winding means substantially geometrically coextensive with said first and neutralizing windings,
whereby said neutralizing winding is operative to offset in its effect on said second winding means an electric potential applied to said first winding.

3,299,385
INTERLEAVED WINDINGS FOR ELECTRICAL INDUCTIVE APPARATUS

Gerhard M. Stein, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 13, 1964, Ser. No. 351,674
4 Claims. (Cl. 336—187)

1. An interleaved winding for electrical inductive apparatus comprising:
a plurality of pancake coils,
each of said pancake coils including at least one turn group, each of said turn groups including at least first and second insulated electrically conductive strands spirally wound together to provide a plurality of radially disposed turns,
means connecting the first conductive strands of each turn group in series circuit relation with one another, to provide a first series path through the winding having first and second ends,
the second conductive strand of each of said turn groups being severed at substantially its midpoint to provide first and second radial sections in each turn group which have adjacent ends and opposite ends,
means connecting the opposite ends of the first and second radial sections together in each of said turn groups,

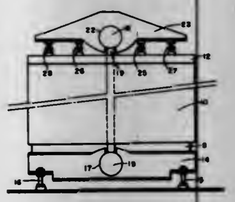


and means interconnecting predetermined inner ends of the first and second radial sections of each turn group with predetermined inner ends of the first and and second radial sections of other turn groups to provide a second series path through the winding having first and second ends in which the direction of current flow is always the same as in the first series path it is interleaved with,
each of said pancake coils being completed before said first and second conductive strands proceed to and adjacent pancake coil, said first and second series paths proceeding through said plurality of pancake coils in sequence,
at least the first and seconds ends of said first and second series paths being connected together, respectively.

3,299,386
FASTENING DEVICE FOR WINDINGS OF STATIC ELECTRICAL EQUIPMENT

Marcel Vulliermet, Aix-les-Bains, France, assignor to Compagnie Generale d'Electricite, Paris, France

Filed Aug. 21, 1963, Ser. No. 303,642
Claims priority, application France, Aug. 21, 1962, 907,401
6 Claims. (Cl. 336—197)



1. A unitary structure including concentric coils which subsequent to assembly of its component parts is arranged to have its inner coil surround a magnetic core to form a transformer, said structure comprising a pair of chord members extending substantially to the perimeter of the outer of said concentric coils, a base member provided with means defining a central perforation supported on said chord members and arranged to support said coils, a pair of ring means, one each of which is mounted on the coils, pressure applying means positioned above said coils and said ring means, a pair of bar means having upper and lower end portions, the lower end portion of each of the bar means being pivotally attached to said chord members and the upper end portions being pivotally attached to said pressure applying means, said pressure applying means exerting pressure on said ring means and said coils.

3,299,387
HUMIDITY-SENSITIVE RESISTOR

Robert A. Sanford, Marblehead, Mass., assignor to General Electric Company, a corporation of New York

Filed Dec. 23, 1964, Ser. No. 420,530
10 Claims. (Cl. 338—35)

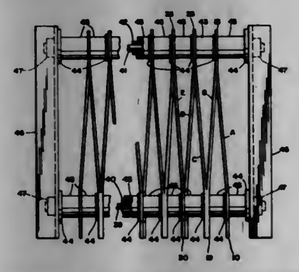


1. A humidity-sensitive resistor comprising:
(a) a porous ceramic body having a porous surface and a modifying compound from the group consisting of lead sulfide, lead selenide and lead telluride, said compound distributed homogeneously throughout said ceramic body, and
(b) first and second electrodes electrically connected to said porous ceramic body.

3,299,388
ELECTRIC RESISTANCE UNIT

Oswald M. Bundy, Cleveland, Ohio, assignor, by mesne assignments, to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Continuation of application Ser. No. 103,067, Apr. 14, 1961. This application Jan. 27, 1965, Ser. No. 436,978
6 Claims. (Cl. 338—284)

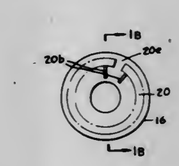


1. A resistance grid assembly comprising a pair of spaced insulated support members, a plurality of plate-like grids formed of a single piece of flat metal to provide a continuous current path throughout the grid assembly, said grids being connected to one end by a terminal portion formed by bending the grids to different planes so the grids extend in a zigzag manner between the support members, every other grid having an integral mounting projection forming a part of the corresponding grid terminal portion and secured to the adjacent support member in spaced relation to a contact connecting portion of the terminal portion.

3,299,389
VARIABLE RESISTANCE POTENTIOMETER OF THE TYPE HAVING A CONDUCTIVE PLASTIC TRACK ON AN ELECTRICALLY INSULATING BASE

Americo A. Vercesi, Woodbury, and Roy R. Segerdahl, Bellmore, N.Y., assignors to Fairchild Camera & Instrument Corporation, Syosset, N.Y., a corporation of New York

Continuation of abandoned application Ser. No. 264,130, Mar. 11, 1963. This application Oct. 24, 1965, Ser. No. 504,459
2 Claims. (Cl. 338—309)

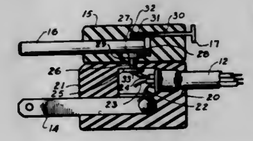


1. A potentiometer of the class described integrally comolded and comprising a non-flexible electrically insulating plastic base having an uninterrupted planar surface, a wafer thin spray coating of particles deposited on said surface of the base forming a variable resistance conductive plastic track varying in its depth dimension in proportion to the resistance characteristic at given points on said track, said track being flush with said surface of the base and the particles of said coating being pressed into comingling association with respect to the surface particles of said surface of the base for receiving a movable wiper thereon, and conductive plastic terminals in electrical connection with the underside of said track and flush with said surface of the base outside of the track width.

3,299,390
ELECTRICAL CONNECTOR WITH GROUNDING TERMINAL

Lawrence Eckelkamp, 166 Lincoln St., Garden City, N.Y. 11530

Filed Oct. 6, 1964, Ser. No. 401,785
13 Claims. (Cl. 339—12)

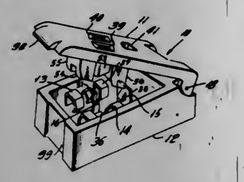


1. An electric plug having an outwardly extending magnetic ground connector plate and two outwardly extending prongs, said plug providing an electrical coupling means between (a) a three wire system having two current carrying wires and a ground and (b) a wall receptacle adapted to receive only two-prong male plugs; said plug comprising a plug housing having
(i) means for electrically connecting said two wires and said ground to three internal connections in said plug housing,
(ii) means for connecting each of said outwardly extending prongs to a current carrying connection in said housing, and
(iii) means in said housing for making electrical contact between the ground connection in said housing and said outwardly extending magnetic connector plate.

3,299,391
2 WIRE AND 3 WIRE NO FUSE ELECTROSTRIP RECEPTACLE

John A. Herrmann, Grosse Pointe Farms, Russell S. Davis, Detroit, and Ralph C. Clement, Mount Clemens, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 9, 1964, Ser. No. 350,152
8 Claims. (Cl. 339—14)



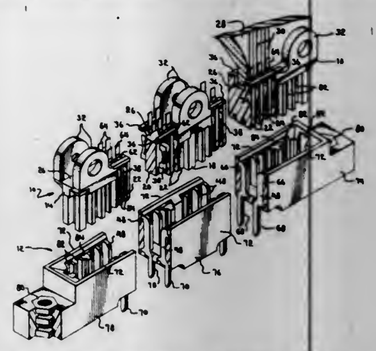
1. A removable receptacle adapted to be operatively connected to a continuous outlet duct; said receptacle including an insulating housing comprised of a case and an operating member, a first and a second contact means mounted within said case; each of said contact means having a first and a second leg each with an extension; said extensions of said first contact means engageable with a duct conductor and said extensions of said second contact means engageable with a different duct conductor; biasing means urging said first legs toward one another and said second legs toward one another to retracted positions wherein said receptacle is mountable to and dismountable from a continuous outlet cable; said operating member being movable between a first and a second position relative to said case; said legs being in retracted position when said operating member is in said first position; said operating member having means which, when said operating member is moved from said first to said second position, moves said first legs in opposite directions and said second legs in opposite directions to extended positions wherein said extensions are engageable with current carrying conductors of a continuous outlet cable, said operating member being elongated and positioned in front of said case; pivot means mounting said operating member at one end thereof to said case for movement between said first and said second positions; said operating member, when in said first position, having its other end more remote from said case then when said operating member is in said second position, a grounding contact means mounted in said case; biasing means urging a portion of said grounding contact means to a normal position; said means of said operating member moving said portion to a grounding position when said operating member is in said second position, said operating member constituting a cover for said case; said cover having a first and a second prong receiving aperture; said first and said second apertures being aligned with said first and said second contact means, respectively, when said cover is in said second position; said cover also having a third prong receiving aperture aligned with another portion of said grounding contact means when said cover is in said second position.

3,299,392
ELECTRICAL CONNECTOR FOR PRINTED CIRCUIT BOARDS

William R. Evans, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Continuation of application Ser. No. 302,695, Aug. 16, 1963. This application June 21, 1966, Ser. No. 561,313
11 Claims. (Cl. 339—17)

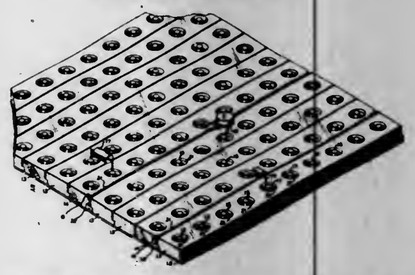
11. In an electrical contact mounted on a supporting insulating block, a groove extending along one side of said block to an end face thereof, a recess extending into said end face in alignment with and intersecting said groove and being wider than said groove to provide undercut surfaces adjacent the bottom of said groove, said contact being of sheet metal and including a base portion laid along the bottom of said groove, a pair of opposed ears extending from opposite sides of said base portion and bent around toward each other to define an oval deformable locking element forming a tube having a longitudinal axis offset from and parallel to said base portion, said element being pressed into and against the bottom of said recess, said recess being shallower than the undeformed element, said element being deformed and expanded laterally with portions underlying the undercut of said recess to lock the contact to said block and said base portion in and along said groove.



3,299,393
ELECTRICAL CIRCUIT CONNECTOR

George F. Kelley, Hayward, and Clois W. Tedford, Fremont, Calif., assignors to Q/T Circuits Co., San Lorenzo, Calif., a partnership

Filed Feb. 18, 1964, Ser. No. 345,668
5 Claims. (Cl. 339—18)

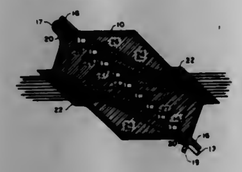


1. An electrical connector device comprising a mounting member of rigid electrically nonconductive material, a plurality of insulating blocks of resilient material each secured to the surface of said mounting member in parallel adjacent side by side relationship, each said block being formed with a plurality of spaced apart apertures extending from the upper surface therethrough, the upper portion of each aperture being flared outwardly, a plurality of terminal members of electrically conductive material operably connected through said apertures with the upper end thereof recessed below the upper surface of said insulating strip whereby an electrical member inserted into the aperture and against said terminal member operably causes said electrical member to be resiliently and frictionally held against the terminal member for electrical connection therewith, a bus bar strip of electrically conductive material insertably connected between adjacent pairs of resilient blocks whereby an electrical member inserted between said strip and the side wall of said adjacent insulating strip operably causes said electrical member to be frictionally and resiliently held against the bus bar strip to create an electrical connection therewith.

3,299,394
EASY BREAK-AWAY ELECTRICAL STEP CONNECTOR

Wilmar L. Prescott, 1231 N. Seward, Hollywood, Calif. 90028

Filed June 23, 1964, Ser. No. 377,430
6 Claims. (Cl. 339—45)

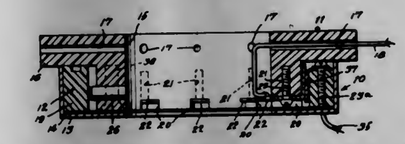


1. An easy break-away multi-conductor electrical step connector comprising:
(a) a pair of interfitting contactor sections,
(b) each of said two sections having a plurality of steps rising at an angular incline along the contacting faces thereof in parallel rows,
(c) a plurality of electrical contacts mounted in a row along each step of the first of said stepped sections,
(d) a plurality of electrical contacts positioned in a row along each corresponding step of the second of said stepped sections for making good electrical connection with respective contacts on said first stepped section upon the mating together of both of said sections,
(e) an electrical lead wire connected to each of said electrical contacts,
(f) said sections each contained within respective protective housings which are releasably joined together along a diagonal corresponding to the angular incline of said steps for ease in separation when desired and said electrical conductors being in respective cable bundles which extend out in opposite directions through apertures in said respective housings and also at a corresponding angle to the incline of said steps,
(g) means for holding said contactor sections and electrical contacts together in good electrical contact and means for providing quick break-away and easy release of the two sections and electrical contacts when desired.

3,299,395
PANCAKE CONNECTOR

Baltzar Leo De Maré, Aberdeen, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed June 22, 1965, Ser. No. 466,134
2 Claims. (Cl. 339—176)

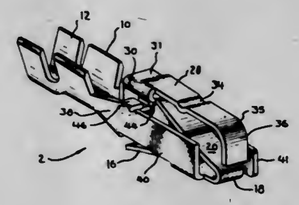


1. An electrical connector subjectable to high rotation including in combination, a plug and a socket, said plug comprising an annular body having a downwardly extending reduced portion formed with a series of symmetrically arranged, radial grooves cut in its bottom side, an angular spring contact having one arm detachably secured in each said groove for the attachment of an electrical lead thereto, the other arm of said contact extending upwardly and outwardly along the outer peripheral surface of said reduced portion, said socket comprising an annular body, there being a series of symmetrically arranged radial grooves cut in its upper side, an angular spring contact having one arm detachably secured in each of said last named grooves for the attachment of an electrical lead thereto, the other arm of said last named contact extending downwardly and inwardly along the inner peripheral surface of said socket whereby when said plug is inserted into said socket, said downwardly extending arm of a said spring contact on said socket will normally bias against said upwardly extending arm of a said spring contact on said plug, said bias increasing with centrifugal force when applied to said connector and means carried by said plug and said socket adapted to prevent rotational movement of said plug with respect to said socket and subsequental dis-alignment of said spring contacts on said plug and socket.

3,299,396
CONTACT TERMINAL

Robert J. Kinkaid, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Nov. 27, 1964, Ser. No. 414,326
1 Claim. (Cl. 339—258)



A bellows-type contact terminal having a substantially Z-shaped profile comprising a pair of substantially parallel arms and an obliquely extending arm, one of said parallel arms constituting a contact arm and being connected to said obliquely extending arm by means of a first bight integral with the side edges of said one parallel arm and said obliquely extending arm, the other one of said parallel arms being connected to said obliquely extending arm by a second bight integral with the adjacent ends of said obliquely extending arm and said other parallel arm, sidewalls integral with said other arm and extending towards said one arm, said one arm having an end portion directed towards said other arm and extending beyond the edge of at least one of said sidewalls, each of said sidewalls having an inwardly directed ear, a flange extending from said obliquely extending arm towards said other arm, said flange having portions thereof extending between said other arm and said ears thereby to prevent bending of said obliquely extending arm about said second bight beyond the limits of said ears, and means on the free end of said other arm for securing said terminal to a conductor.

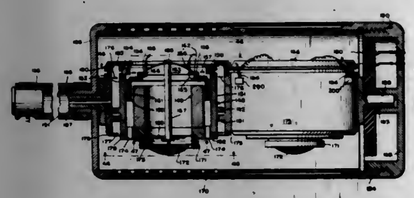
3,299,397
UNDERWATER DETECTOR STREAMER APPARATUS FOR IMPROVING THE FIDELITY OF RECORDED SEISMIC SIGNALS

George M. Pavey, Jr., Dallas, and Raymond H. Pearson, Richardson, Tex., assignors to Sonic Engineering Company, Dallas, Tex.

Filed Mar. 8, 1965, Ser. No. 439,136
17 Claims. (Cl. 340—7)

1. A waterborne seismic prospecting system for subaqueous geological structures comprising, in combination,
(1) an oil filled flexible elongated neutrally buoyant streamer adapted to be towed at various depths of submersion beneath the surface of a body of water,

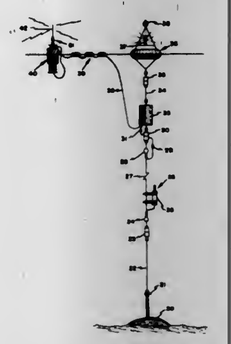
(2) a plurality of pressure responsive detectors disposed at intervals within the streamer throughout the length thereof for producing an output electrical signal correlative with the character of a seismic wave reflected from subbottom strata beneath the streamer,
(3) means within the streamer for erasing the electrical signal generated by the pressure responsive detectors and caused by a secondary seismic wave reflected downwardly from the surface of the water and impinging on the streamer at each of said depths of submersion, said erasing means comprising,
(a) a plurality of vertically mounted particle velocity detectors each having means including an annular magnet resiliently mounted within and supported by a like number of gimbal supported sleeves and forming a circular magnetic air gap,
(b) a movable annular wire coil,
(c) means for resiliently supporting said coil by said magnet means in a manner to allow a reciprocal movement of the coil within said air gap, and
(d) a dome shaped diaphragm secured to said coil supporting means for causing reciprocal movement thereof in response to the instantaneous particle velocity of an acoustic wave applied thereto,



(4) a signal output circuit, and
(5) means connecting said pressure responsive devices and said particle velocity detectors electrically in said output circuit in a manner to generate a voltage signal of equal and opposite polarity to the signal generated by the pressure responsive detectors in response to a secondary wave acting on the streamer while the streamer is being towed through the water,
(6) the means resiliently mounting said annular magnet means within the gimbal supported sleeves including a pair of spring members respectively connected to and encircling the annular magnet means at the upper and lower portions thereof and having the outer peripheral portions of the springs connected to said gimbal supported sleeve at respective upper and lower portions thereof, and
(7) a pair of annular baffle devices respectively connected to said annular magnet means and said gimbal supported sleeves to restrict the flow of oil therebetween as the sleeve moves relative to said magnet sufficiently in response to a particle velocity wave applied to said streamer.

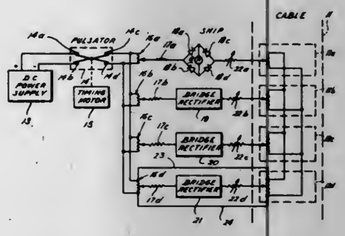
3,299,398
DEEP WATER RADIO-ACOUSTIC BUOY
John B. Hersey and Willard Dow, Falmouth, Mass., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 14, 1965, Ser. No. 425,640
2 Claims. (Cl. 340—2)

1. A radio-acoustic buoy for marking a predesignated bottom location in extremely deep water comprising, in combination,
a subsurface float positioned above said location;
a bottom anchor positioned at said predesignated bottom location;
a first electric cable having a length sufficient to extend from said subsurface float to a short distance above the ocean bottom;
means for connecting the upper end of said electric cable to said subsurface float and the lower end to said bottom anchor, said last-mentioned means including a pair of swivels for preventing twisting of said electric cable;



a hydrophone supported near the lower end of said electric cable and electrically connected to that end of said electric cable;
a surface float;
a radio transmitter mounted in said surface float; and
a second electric cable electrically connected to the upper end of said first electric cable and said radio transmitter whereby acoustic signals detected by said hydrophone are relayed over said first and second electric cables to said radio transmitter and then broadcast as radio signals.

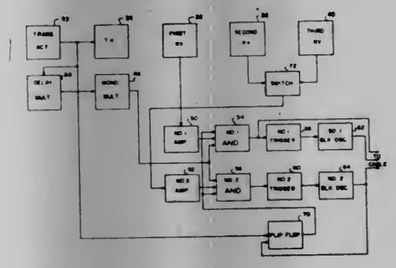
3,299,399
METHODS AND APPARATUS FOR INDICATING AN UNDERWATER PARAMETER IN A MARINE SEISMIC SYSTEM
William E. Bowers, Houston, Tex., assignor to Vector Cable Company, Houston, Tex., a corporation of Texas
Filed Dec. 2, 1965, Ser. No. 511,076
8 Claims. (Cl. 340—7)



2. In a marine seismic survey system, a device for indicating an underwater parameter at at least one point along the length of the cable, comprising:
(a) at least one parameter measuring device located at at least one point along the length of the cable;

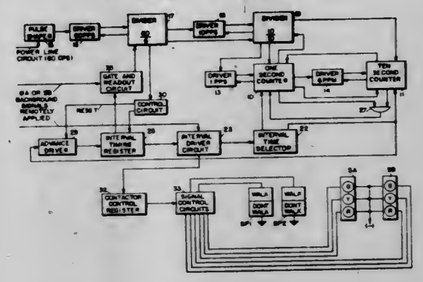
(b) first means for supplying a pulsating, polarity-reversing direct current signal to the parameter measuring device, said first means including:
(1) means for supplying a direct current signal;
(2) pulsating means for periodically reversing the polarity of the signal from the direct current supplying means to the parameter measuring device; and
(c) second means responsive to the parameter measured by the parameter measuring device for providing an indication of the underwater parameter, the changes in the parameter causing the parameter measuring device to vary the magnitude of the pulsating, polarity-reversing direct current signal applied to the second means.

3,299,400
DUAL-SPACED ACOUSTICAL WELL LOGGING SYSTEM
Lawrence E. Trowbridge and Reginald O. Medlin, Jr., Houston, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 14, 1964, Ser. No. 344,911
6 Claims. (Cl. 340—18)



1. An acoustic well logging system comprising surface recording means, a subsurface instrument, and a logging cable interconnecting said instrument and said recording means, said instrument further including
a transmitter arranged and adapted to generate acoustic pulses,
a transmitter actuator arranged and adapted to periodically actuate said transmitter at a preselected frequency,
a first receiver means spaced a first distance from said transmitter,
a second receiver means trailingly spaced from said transmitter and said first receiver means a predetermined second distance from said first receiver means,
a third receiver means trailingly spaced from said transmitter and said first and second receiver means a third predetermined distance from said second receiver means which is twice said second predetermined distance,
signal generating means having two inputs and having an output connected to said logging cable,
means connecting said first receiver means to one of said two inputs of said signal generating means,
switch means responsive to actuation of said transmitter actuator for alternately connecting and disconnecting said second and third receiver means to and from the other of said two inputs of said signal generating means upon respective alternate actuations of said transmitter, and
gating means responsive to actuation of said transmitter to render said signal generating means responsive to said first receiver means and said one of said second and third receiver means.

3,299,401
TRAFFIC SIGNAL CONTROLLER
Norman A. Bolton, Scottsville, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Continuation of abandoned application Ser. No. 308,597, Sept. 12, 1963. This application Oct. 23, 1965, Ser No. 503,674
9 Claims. (Cl. 340—41)

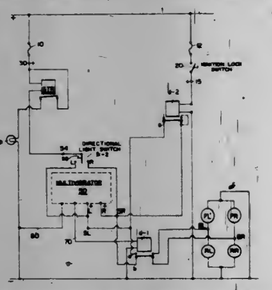


1. In a controller for operating a traffic signal through its signal cycle at an intersection, the combination comprising,
(a) cycle demarcating means operable through a plurality of successively different conditions for demarcating the various portions of said signal cycle on each of which a traffic signal is controlled to display a different combination of signal indications,
(b) counting means for measuring each of a plurality of different time intervals from a single starting condition to a particular one of a plurality of different operating conditions,
(c) control means responsive to said cycle demarcating means in each condition of its plurality of different conditions for controlling said traffic signal to display the corresponding combination of signal indications,
(d) means controlled by said cycle demarcating means for controlling said counting means to provide an output when it operates to the particular condition thereof corresponding to the measured time interval allotted to that condition of said cycle demarcating means,
(e) and means responsive to each output provided by said counting means for each of said plurality of different conditions in which said cycle demarcating means operates to advance said demarcating means to its next condition and for returning said counting means to said single starting condition.

3,299,402
EMERGENCY BLINKING LIGHT SYSTEM FOR AN AUTOMOTIVE VEHICLE
Wilhelm Schilling, Obertshausen, near Offenbach (Main), Germany
Filed Apr. 28, 1964, Ser. No. 363,260
Claims priority, application Germany, Apr. 30, 1963, Sch 33,216
3 Claims. (Cl. 340—81)

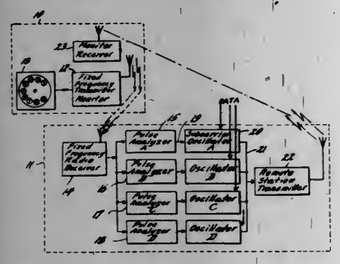
1. In a blinking light system for an automotive vehicle having an electric ignition system, in combination:
(a) a source of electric voltage;
(b) an ignition switch in circuit with said source and movable between a first position in which said switch is adapted to connect said source with said ignition system for energizing the same, and a second position in which said switch disconnects the source from said system;
(c) flasher means for generating electrical signal pulses in response to an applied voltage;

(d) a directional light switch for energizing said flasher light means;
(e) operating means for moving said directional light switch between a neutral position, a left position, and a right position;
(f) a left directional light and a right directional light;
(g) first circuit means connecting said source of voltage to said ignition switch; and
(h) second circuit means connecting said source of voltage to said directional light switch, to said flasher means, and to said directional lights, the circuit means including
(1) first relay means having contacts connected to said directional lights, and further having contact means connecting the left position of said directional light switch to said left directional



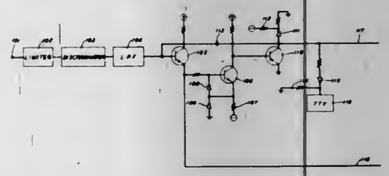
light for applying the pulses generated by said flasher means in a first pattern, and said first relay means having additional contact means connecting the right position of said directional light switch to said right directional light for applying said pulses generated by said flasher means in a second pattern, and
(2) a second relay means in series circuit with said ignition switch and said source of voltage, the second relay means having contacts connected to be responsive to said second position of said ignition switch, and said second relay contacts connected to both of said right and left positions of said directional light switch for applying said pulses to both said directional lights in a third pattern different from said first and second patterns.

3,299,403
MULTIDIGIT PULSE CODE RESPONSIVE SYSTEM
Edward W. Young, Trevose, Pa., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware
Filed Mar. 30, 1962, Ser. No. 183,873
10 Claims. (Cl. 340—151)



1. A multidigit pulse code analyzer comprising:
a counter means for progressively receiving groups of input pulses representing each digit of the code and subtotaling each group,
a preset decoding matrix having a plurality of sections each responding to a different succeeding subtotal and producing a correct digit pulse in the event that the subtotal received corresponds to a preset digit,
means responsive to input pulses representing each digit received to produce a time delayed reset pulse,
gate means jointly energized by each of said correct digit pulses except for the final correct digit pulse and by all of said reset pulses to reset the analyzer in response to any of said reset pulses and to automatically reset the analyzer in response to the reset pulse occurring after the final correct digit pulse, in the event that a correct digit pulse has not been previously received,
and output gate means responsive after all subtotals of the digits have been completed and found correct to produce an output energization.

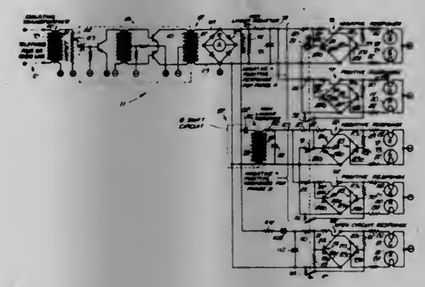
3,299,404
DETECTION CIRCUIT RESPONSIVE TO PULSE DURATION AND FREQUENCY
Ronald E. Yamarone, Staten Island, and Herbert M. Zydney, New York, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 28, 1962, Ser. No. 248,044
7 Claims. (Cl. 340—167)



1. In a circuit for detecting a call progress signal which includes a tone interval of alternate pulses and a no-tone interval, a transition detector operated by said tone pulses when the occurrence of the pulse transitions exceed a predetermined rate, a pulse width detector operated by said tone pulses when the pulses exceed a predetermined width, and a coincidence circuit normally operated to one of two states and operated to the other one of said two states in response to the joint operation of said pulse width detector and said transition detector.

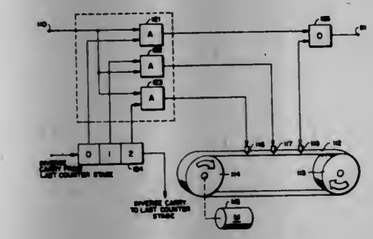
3,299,405
SIGNALLING SYSTEM
Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill. 60062
Filed Jan. 4, 1963, Ser. No. 249,527
9 Claims. (Cl. 340—170)

5. A system for signalling from a first station to a second station interconnected by a signalling circuit comprising:
(a) at the first station:
(1) means for generating two frequencies one of which is a harmonic of the other and for applying them to said signalling circuit, and
(2) means for shifting the phase of one of said frequencies with respect to the phase of the other frequency in any of four phase relationships 90° apart; and
(b) at the second station:
(1) circuit means including first non-linear resistance means connected to said signalling circuit whereby across said circuit means a unidirectional control voltage appears the magnitude and polarity of which correspond to the phase relation between said frequencies and a phase shift circuit and a second non-linear resistance means,
(2) two pairs of load devices each individual to one of said four phase relationships, and
(3) two pairs of switching means connected to said circuit means, one pair being individual to one pair of load devices, and the other pair being



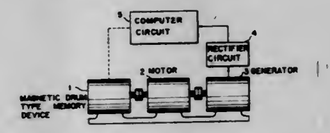
individual to the other pair of load devices, each switching means and thereby its load device being responsive only to the unidirectional voltage corresponding to the phase relationship individual thereto.

3,299,406
MULTIPLE ACCESS DELAY STRUCTURES
Clifford A. Isberg, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,785
19 Claims. (Cl. 340—172.5)



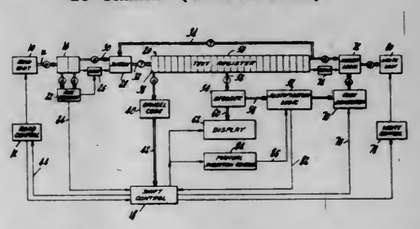
1. A variable time delay device for use in manipulating records in the time domain comprising: passive delay means having a total delay interval equal to an integral number of record cycles; a plurality of information access means equally spaced along said passive delay means an integral number of record cycles apart for introducing and removing records from said passive delay means for producing a number of different record delay intervals; counter means for registering a digital count therein corresponding to a desired record delay and for producing gating signals indicative of the digital count registered, said counter means being operable to count with a radix equal to the number of record cycles between adjacent information access means; and gate means responsive to said gating signals for operating said plurality of information access means to provide the desired record delay interval between introduction and removal of a record from said passive delay means.

3,299,407
ELECTRONIC DIGITAL COMPUTER PROVIDED WITH A DRUM TYPE MEMORY DEVICE
Kazutoshi Ikegami, Kitatama-gun, Tokyo-to, and Akira Kamoi, Musashino-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Aug. 6, 1963, Ser. No. 300,281
Claims priority, application Japan, Aug. 11, 1962, 37/45,753; Aug. 15, 1962, 37/33,783
2 Claims. (Cl. 340—172.5)



1. In an electronic digital computer, an improvement comprising
a motor-generator operatively generating an A.C. output; a magnetic drum memory device provided with write-in and read-out heads thereover; connecting means for mechanically coupling said motor-generator with said magnetic drum in shaft-to-shaft coupling together; and circuit means supplied with said output of said motor-generator and supplying a D.C. output to said computer.

3,299,408
DATA TRANSLATION SYSTEM
An Wang and Ge-Yao Chu, Lincoln, Mass., assignors to Wang Laboratories Inc., East Natick, Mass., a corporation of Massachusetts
Filed Aug. 27, 1963, Ser. No. 304,804
25 Claims. (Cl. 340—172.5)



1. Apparatus for generating line casting machine control signals, comprising
means to sense signals representing text data comprising characters and interwords,
means to accumulate a line length indication from said text signals as a function of a predetermined interword spacing,
means responsive to said accumulating means to generate an overset point indication as a line length limit for said predetermined interword spacing,
means responsive to said overset indication to display the location of said overset point relative to text characters,
and manually operable means to enter an end of line code in said text data as a function of said display for control of a line casting machine.

3,299,409
DIGITAL APPARATUS
Robert A. Herman, Los Angeles, Calif., assignor, by mesne assignment, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,316
13 Claims. (Cl. 340—172.5)

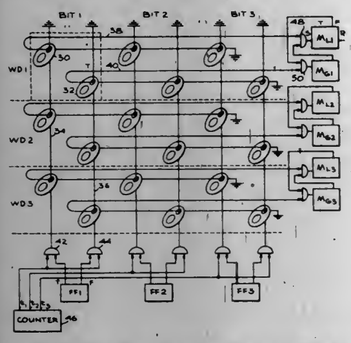
1. Apparatus for comparing the magnitude of each of a plurality of multibit binary numbers, wherein each

such number is stored in a different location in a digital memory, with the magnitude of a multibit binary test number, said apparatus comprising:

a source of successive clock signals;

means responsive to said successive clock signals for respectively generating binary signals each representing the state of a different test number bit, the bits defining said test number being represented in order of numerical significance;

means responsive to the generation of each of said binary signals for performing a simultaneous comparison between the state of a given bit in the test number represented by said binary signal and the

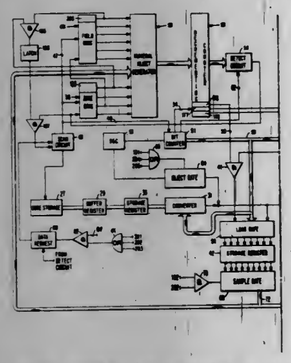


states of all bits of corresponding significance stored in said memory;

means responsive to the performance of each of said simultaneous comparisons for providing a plurality of binary indicating signals wherein each such signal indicates whether or not the state of a different bit stored in said memory is the same as or different from the state of the test number bit of corresponding significance; and

a plurality of sensing devices, each associated with a different location and responsive to a binary indicating signal provided as a consequence of a comparison of a bit thereof.

3,299,410
DATA FILING SYSTEM
James R. Evans, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 25, 1964, Ser. No. 354,740
9 Claims. (Cl. 340—172.5)



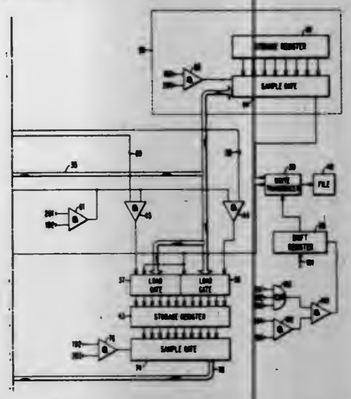
1. A data filing system for entering a record format onto a magnetizable surface rotating at a constant rate, comprising

a core storage circuit for holding a plurality of records each including a plurality of fields of determinable length,

one of said fields containing indicia designating said length of at least said other remaining field,

means for writing a plurality of gaps onto said magnetizable surface,

means for transferring said fields onto said magnetizable surface,

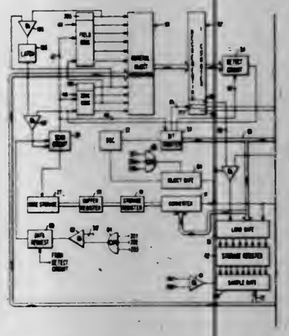


control means connected to said gap writing means and said field transfer means for producing a plurality of enabling signals which alternately enter fields and gaps onto said magnetizable surface,

storage means enabled by said control means and connected to said transfer means for storing said field length indicia, and

means responsive to said control means and connected to said storage means for applying said indicia to said control means.

3,299,411
VARIABLE GAP FILING SYSTEM
Anthony J. Capozzi, Binghamton, and Robert A. Jones, Johnson City, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 25, 1964, Ser. No. 354,741
6 Claims. (Cl. 340—172.5)



1. A data filing system for entering a record format onto a magnetizable surface rotating at a constant rate, comprising

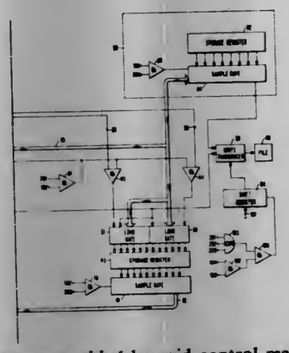
a core storage circuit for holding a plurality of variable length records, each including at least two fields,

one of said fields including indicia designating the length of the other of said fields,

means for injecting a plurality of gaps onto said magnetizable surface,

means for transferring each of said fields to said magnetizable surface,

control means connected to said gap injecting means and said field transfer means for producing a plurality of enabling signals which alternately enter fields and gaps onto said magnetizable surface,

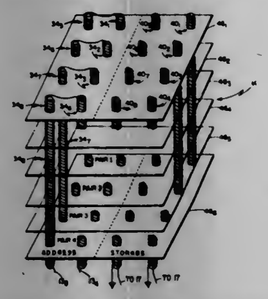


storage means enabled by said control means and connected to said transfer means for storing said length indicia,

means responsive to said control means and connected to said storage means for applying said length indicia to said control means, and

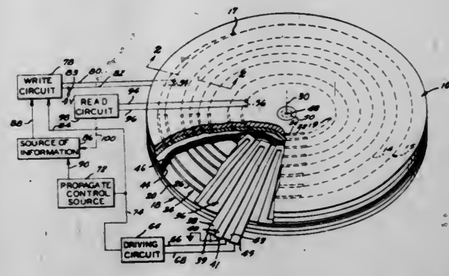
means responsive to said control means and connected to said storage means for shifting a portion of said length indicia to said control means.

3,299,412
SEMI-PERMANENT MEMORY
George G. Pick, Lexington, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,413
7 Claims. (Cl. 340—173)



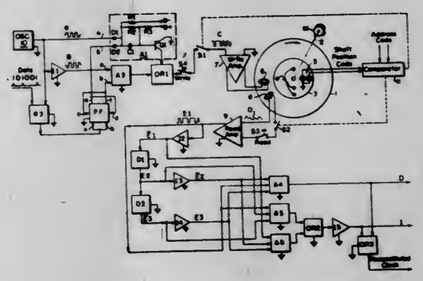
1. A semi-permanent non-destructive memory comprising a plurality of insulative sheets stacked in parallel relationship with each other and each having data and the address of said data encoded therein by suitably configured series connected conductive paths, a first and a second plurality of elongated solenoids each passing through said sheets, said conductive paths on each sheet either surrounding or by-passing corresponding ones of said first and second plurality of solenoids to respectively represent the address of the associated sheet and the data content of the associated sheet, means for energizing selected ones of said first plurality of solenoids to thereby address said sheets, and means coupled to said second plurality of solenoids and operative to sense the data stored in a selected sheet.

3,299,413
MAGNETIC WIRE SPIRAL SHIFT REGISTER
Richard L. Snyder, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Feb. 1, 1963, Ser. No. 255,581
13 Claims. (Cl. 340—174)



1. A shift register device comprising a plurality of spiral elements including complementary spirals of a magnetic medium, said spiral elements positioned on a common axis, and propagating conductor means magnetically coupled to said spiral elements.

3,299,414
PHASE MODULATED BINARY MAGNETIC RECORDING AND REPRODUCING SYSTEM
John C. Sims, Jr., Sudbury, Mass., assignor to Anelex Corporation, Boston, Mass., a corporation of New Hampshire
Filed Feb. 3, 1964, Ser. No. 341,969
10 Claims. (Cl. 340—174.1)

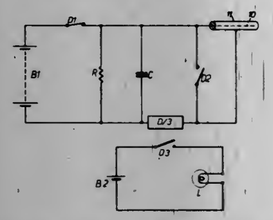


1. In combination, means for producing a first alternating voltage having a first frequency and phase, means for producing a second alternating voltage having said first frequency and being 180 degrees out of phase with said first alternating voltage, magnetic recording means for recording an applied alternating voltage, first gate means responsive to an applied voltage of predetermined magnitude for applying said first voltage to said recording means, second gate means responsive to an applied voltage of said predetermined magnitude for applying said second voltage to said recording means, bistable means alternately operable by applied pulses between first and second states, means controlled by said bistable means for applying a voltage of predetermined magnitude to said first gate means in its first state and to said second gate means in its second state, and third gate means enabled synchronously with said first and second voltages and controlled by an applied series of pulses representing a selected truth value in a digital series for applying said pulses to said bistable means at the start of a cycle of said first and second voltages.

3,299,415
ELECTRICAL CIRCUITS FOR USE WITH TEMPERATURE RESPONSIVE DEVICES

Bernard S. Hansom, Langley, England, assignor of one-half to Graviner Manufacturing Company Limited, Staines, England, and one-half to Wilkinson Sword Limited, London, England, both British companies

Filed Oct. 25, 1963, Ser. No. 318,930
Claims priority, application Great Britain, Nov. 1, 1962, 41,292/62
2 Claims. (Cl. 340—227)



1. An electrical circuit for use with a temperature responsive device having first and second electrodes, comprising

a first unidirectional potential source,

an electromagnetic relay, said relay controlling a first pair of contacts which are normally closed, a second pair of contacts which are normally open and a third pair of contacts which are normally open, the condition of said contacts being changed from their normal condition when said relay is electrically energised, said first potential source being connected in series electrical circuit with said relay and said first pair of contacts between said first and second electrodes, said second pair of contacts being connected between said first and second electrodes,

a capacitor,

a resistor, said resistor being electrically connected in parallel with said capacitor in series electrical circuit with said first potential source and said first pair of contacts,

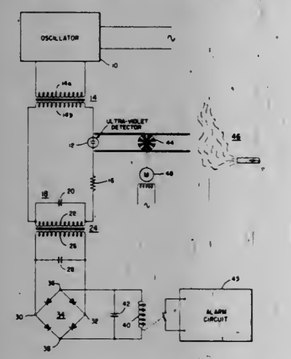
a second potential source, and

an electrically operated indicator, said indicator being connected in series electrical circuit with said second potential source and said third pair of contacts.

3,299,416
FAIL-SAFE FLAME DETECTOR

Harold H. Koppel, Cleveland, Ohio, assignor to Bailey Meter Company, a corporation of Delaware

Filed Mar. 27, 1964, Ser. No. 355,387
8 Claims. (Cl. 340—228)



1. Apparatus for fail-safe flame detection, comprising, a detector means sensitive to the existence of a flame, means for producing a periodically varying voltage across said detecting means, a resonant circuit including a transformer having a primary and secondary winding, said primary winding connected in series with said detecting means and said voltage producing means, alarm means connected to said secondary winding and responsive to a voltage appearing across said winding, and shutter means for interrupting the flame impinging on said detecting means thereby modulating said periodically varying voltage and producing a cyclically varying voltage equal to the resonant frequency of said resonant circuit.

3,299,417
FLEXIBLE PRESSURE TUBES AND CONDUITS

Anthony M. Sibthorpe, Romford, Essex, England, assignor to DK Manufacturing Company, Batavia, Ill., a corporation of Illinois

Filed July 23, 1963, Ser. No. 297,004
Claims priority, application Great Britain, July 24, 1962, 28,330/62
2 Claims. (Cl. 340—242)



2. In a flexible metal conduit,

the combination comprising a double-walled metal tube having concentric inner and outer annular metal walls with a closed annular space therebetween,

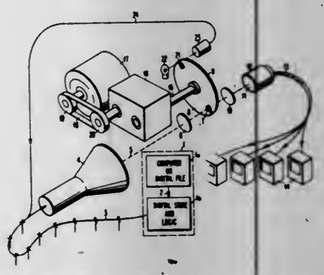
said walls being formed with interlocking convolutions whereby said walls are rendered flexible,

and a layer of flexible metal wire braid mounted in said annular space and maintaining the space between said inner and outer walls, said flexible metal wire braid being closely confined between said interlocking convolutions of said walls.

3,299,418
REMOTE TERMINAL DISPLAY SYSTEM

Robert C. Treseder, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 14, 1963, Ser. No. 280,196
3 Claims. (Cl. 340—324)



1. A display system wherein a central control unit controls the information displayed at a plurality of remote display terminals linked thereto by means of a narrow bandwidth line, each of said remote display terminals comprising:

mask means including a plurality of masks each containing a plurality of identical print characters,

at least one cathode ray tube for strobing selected print characters on each mask connected by means of said narrow bandwidth line to said central control unit,

drive means positioning each of said masks in a strobing relationship with said cathode ray tubes,

synchronization means connected to said central control unit identifying which of said masks are in strobing relationship with said cathode ray tubes at any given time,

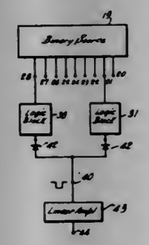
a memory tube in optical association with each of said cathode ray tubes and said masks, and

at least one display means connected to each of said memory tubes.

3,299,419
DECIMAL NUMBER TO LOG ANALOGUE CONVERSION

Joe F. Kumm, Lindenhurst, and John R. Schauerman, Huntington, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Nov. 28, 1962, Ser. No. 240,765
8 Claims. (Cl. 340—347)



1. Apparatus for converting a decimal number into an approximation of the common logarithm of the number comprising:

(A) a decimal number-to-binary converter having binary output terminals corresponding to 2^1 through 2^n respectively, for converting a voltage corresponding to a decimal number into binary form represented by a pulse from one of the output terminals or coincident pulses from more than one of the output terminals,

(B) n direct voltage circuits each having a binary input terminal,

(a) each circuit being connected to a respective binary output terminal of said number-to-binary converter,

(b) each circuit having a stable operating state and a transitory operating state when triggered by an input pulse from said decimal number to binary converter,

(c) said circuits when in the stable operating state providing identical output reference voltages,

(d) each circuit being in the transitory operating state only when triggered by an output pulse from the respective binary terminal,

(e) each circuit when in the transitory operating state providing a predetermined output voltage differing from the reference voltage by an integral multiple of one volt, the integral multiple corresponding to the binary exponent of the terminal to which the respective circuit is connected,

(C) a linear amplifier wherein input and output are in the ratio of $\log_{10} 2$,

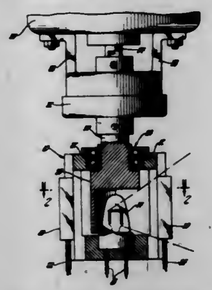
(D) means connected to the outputs of said circuits to pass to said linear amplifier only the largest of coincident voltage differentials from said circuits,

(E) whereby the output of said differential amplifier in volts is a rough approximation of the common logarithm of the number.

3,299,420
ANALOG TO DIGITAL ANGLE CONVERTER

Gale R. Grabow, Clearwater, Fla., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 19, 1963, Ser. No. 288,952
3 Claims. (Cl. 340—347)

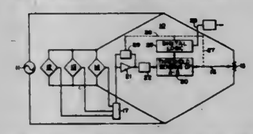


1. Apparatus for providing digital information related to the displacement of a movable member comprising: a light source for radiating light in a substantially radial pattern about an axis through the source; a pair of photovoltaic cells to produce output signals in accordance with the amount of light incident thereon and positioned on opposite sides of the source along a diameter through said axis so as to be within the pattern; shutter means including an essentially solid semicylindrical element of opaque material; mounted to be rotatable through a circular path about the axis and between the source and the photovoltaic cells, the shutter means being mechanically connected to the movable member to be rotated about the source to interrupt the transmission of light to the cells at a rate dependent on the rate of displacement of the member, the element being of sufficient circumferential dimension to fully eclipse either of the cells, the cells being electrically connected in opposition whereby the net output signal of the pair of cells alternately varies between two signal levels of different character at a rate dependent upon the rate of angular displacement of the shutter means.

3,299,421
ANALOG-DIGITAL ENCODER FOR TIME-VARYING SIGNALS

Edwin B. Neitzel, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 31, 1963, Ser. No. 320,571
10 Claims. (Cl. 340—347)



1. An encoder for digitizing a time-variable analog signal which comprises:

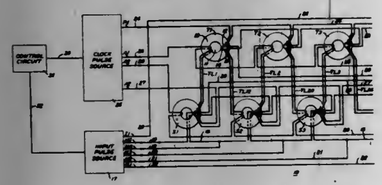
(a) an analog signal source having an energizing circuit and producing on its output channel an analog signal, the magnitude of which at least in part is dependent upon the energization of said source,

(b) an impedance means connected in parallel to said energizing circuit and having a variable tap thereon for production of a selectively variable reference voltage,

(c) an energizing means connected in parallel with said impedance means and said source to form a bridge network in which said source forms two adjacent arms and said impedance means forms two adjacent arms,

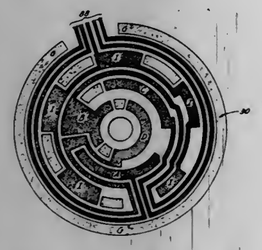
(d) means for sequentially storing a direct function and a delayed function of each of a plurality of time-spaced samples of said signal,
(e) digital logic means for comparing each direct function with said reference voltage held at a predetermined level to adjust the amplitude of the delayed function to a level compatible with said reference voltage,
(f) digital logic means for comparing each delayed function, adjusted in amplitude, by varying said reference voltage to sense the level of the adjusted delayed function, and
(g) means for producing digital representations of the adjustment in magnitude of said delayed function and of the variations in said reference voltage.

3,299,422
ELECTRICAL PULSE GENERATOR
Nelson Botsford, Jr., Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 24, 1963, Ser. No. 333,149
5 Claims. (Cl. 340—347)



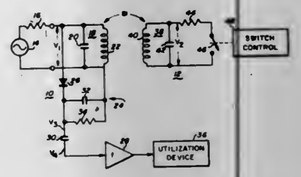
1. An electrical circuit comprising plurality of first elements, and a second element, said elements being arranged consecutively and having first and second stable states, first input circuit means for selectively setting $n/2$ of said first elements to said first stable state in response to a coded signal corresponding to an even number in a second input circuit means for selectively setting $n/2$ of said first elements and said second element to said first stable state in response to a coded signal corresponding to an odd number $n+1$, and signal means connected to each of said input circuit means for applying coded signals thereto.

3,299,423
DIGITAL ENCODER
Jacob Chapsky, Los Angeles, George A. Ruger, Manhattan Beach, and R. T. Hood, Jr., Torrance, Calif., assignors, by mesne assignments, to Hersey-Sparling Meter Company, Dedham, Mass.
Filed Mar. 9, 1964, Ser. No. 350,197
5 Claims. (Cl. 340—347)



1. A digital encoder for converting analog quantities into signals representative of decimal digits ranging from 0–9, including: a support means, a code pattern disposed on said support means, said code pattern including electrically conductive number segments positioned in a pair of channels and including a further discontinuous electrically conductive common segment positioned in a further channel and interrupted at a point representative of a selected decimal digit, three wiper brushes electrically connected to one another and positioned to engage respectively the segments in said pair of channels and said discontinuous common segment in said further channel, so as to interconnect selectively the number segments in said pair of channels to said common segment in said further channel, and means for supporting said support means and said brushes for relative motion therebetween.

3,299,424
INTERROGATOR-RESPONDER IDENTIFICATION SYSTEM
Jorgen P. Vinding, 18780 Withey Road, Monte Sereno, Calif. 95030
Filed May 7, 1965, Ser. No. 453,939
21 Claims. (Cl. 343—6.5)



1. An identification system for identifying responders when brought within inductive coupling proximity of an interrogator, said identification system comprising:
an interrogator including, a substantially nonradiative coupling circuit tuned to an interrogator frequency, signal source means connected to said tuned coupling circuit to excite said tuned circuit to oscillate at said interrogator frequency, sensing means responsive to said tuned coupling circuit to provide a sensed signal commensurate with a selected characteristic of the oscillations in said tuned coupling circuit, and utilization means responsive to said sensed signal and operative to provide an indication when the selected characteristic of said sensed signal varies in accordance with a preselected program; and
at least one responder, each responder including, a substantially nonradiative coupling circuit tuned to said interrogator frequency, impedance circuit means for changing the impedance of the tuned coupling circuit of said responder, and switching means for connecting said impedance circuit means to the tuned coupling circuit of said responder, said switching means being operative to connect and disconnect said impedance circuit means into the tuned coupling circuit of said responder in accordance with said preselected program.

3,299,425
VEHICLE GUIDANCE APPARATUS UTILIZING WAVE GENERATED RANGE ONLY INFORMATION
Richard H. Smith, North Canton, and John R. Shoemaker, Akron, Ohio, assignors to Goodyear Aerospace Corporation, a corporation of Delaware
Filed Oct. 14, 1960, Ser. No. 62,795
9 Claims. (Cl. 343—7)

1. The combination in apparatus for guiding a vehicle over a course of means for substantially isotropically transmitting a wave signal from the vehicle, means for picking up the return signals in terms of range from terrain over which the vehicle is passing, reference means for providing signals in terms of range for the terrain over

which the vehicle should be passing, means for comparing the return signals with the reference means signals,

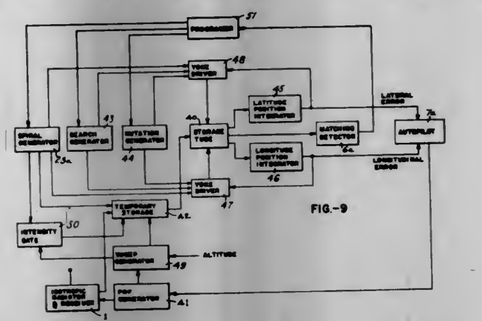
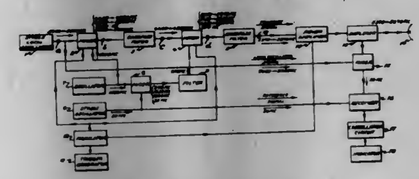


FIG.-9

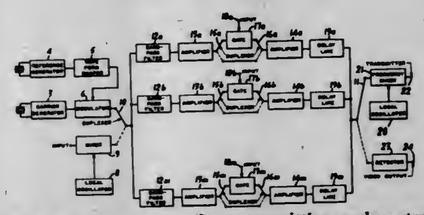
and means for correcting the course of the vehicle from the output of the comparing means.

3,299,426
MOVING TARGET RADAR SYSTEM
Vincent R. Learned, Garden City, N.Y., and Charles A. Moreno, Los Angeles, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed June 16, 1955, Ser. No. 515,836
13 Claims. (Cl. 343—7.7)



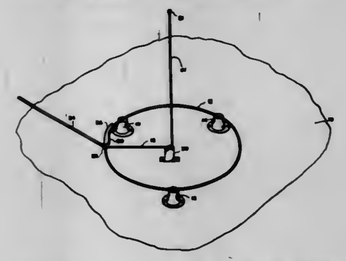
1. A variable frequency moving target indicator radar system comprising a high frequency local oscillator, an intermediate frequency oscillator, a third oscillator, a receiver mixer connected to said local oscillator for converting received echo signals to corresponding signals of intermediate frequency, means connected to said mixer and said intermediate frequency oscillator to discriminate between those intermediate frequency signals that are respectively coherent and not coherent with the output of said intermediate frequency oscillator, said local oscillator being tunable to any frequency within a band, the frequency difference between the extremes of which is substantially greater than said intermediate frequency, a frequency converter chain connected to said local oscillator and comprising a mixer, a bandpass filter, a mixer and a bandpass filter connected respectively in cascade, said third oscillator producing a beating signal for one of said chain mixers having a fixed frequency higher than the difference between the extremes of the tuning band of said local oscillator, and means including a fourth mixer connected to said intermediate frequency and third oscillators for producing a beating signal for the other of said chain mixers that differs from the frequency of the beating signal for said one chain mixer by said intermediate frequency, the sidebands produced in the outputs of each of said chain mixers thereby being separated by substantially more than said tuning range, said bandpass filters being designed each to pass only one of the sidebands in the output of its respective mixer whereby the frequency of the output component of said chain differs constantly from that of said local oscillator by said intermediate frequency, and the operating frequency of the radar system can be changed by adjusting only the frequency of said local oscillator.

3,299,427
RADAR SYSTEM
Teruo Kondo, Amagasaki, Hyogo, Japan, assignor to Mitsubishi Denki Kabushiki-Kaisha, Tokyo, Japan
Filed May 12, 1964, Ser. No. 366,840
Claims priority, application Japan, May 14, 1963, 38/25,193
9 Claims. (Cl. 343—17.1)



1. In a radar system for transmitting pulses toward a target and determining the position of the target by pulses reflected from said target, the combination of transmitting means for transmitting a train of pulses to said target and each composed of different frequencies of a predetermined duration, and arranged in a random order at predetermined intervals of time, and receiving means for receiving said train of pulses reflected from said target, means imparting a different time delay to each pulse received in the train of pulses, and means combining all of the differently delayed pulses at a common time point.

3,299,428
HORIZONTAL SEMIENCLOSED LOOP WITH CONDUCTIVE GROUND PLANE, HAVING VERTICAL WHIP EXTENDING FROM WITHIN LOOP ENCLOSURE
Lawrence P. Tessari III, 5871 Pine, Taylor, Mich. 48764
Filed Sept. 11, 1964, Ser. No. 395,956
9 Claims. (Cl. 343—743)



1. An antenna, comprising: a planar metal section generally disposed in the horizontal plane: an elongated conductive section disposed above said metallic plane, bent into a semienclosed configuration lying in the horizontal plane: a straight elongated whip section extending in the vertical direction from a point within said semienclosed configuration away from said planar section: and a conductive connecting section joining one end of said semienclosed configuration to the end of said whip section which is within said semienclosed section.

3,299,429
VERTICAL ARRAY OF FOLDED DIPOLES ADJUSTABLY MOUNTED ON SUPPORT MAST
Thomas J. McMullin, Dallas, Tex., assignor to Decibel Products, Inc., Dallas, Tex., a corporation of Texas
Filed Aug. 5, 1963, Ser. No. 303,204
1 Claim. (Cl. 343—796)

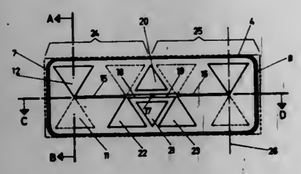
An antenna system having an alterable horizontal radiation pattern comprising an elongated substantially

vertically disposed mast of radiation reflective material having upper and lower sections, rotatable flange means securing said sections together whereby one of said sections may be rotated relative to the other, a plurality of elongated substantially half wave antenna elements attached to said mast, each of said elements extending in a generally vertical direction generally parallel to said mast and spaced equal angles about said mast, said plurality of elements being substantially evenly spaced from one another along the length of said mast on centers disposed between three-fourths and one and one-half



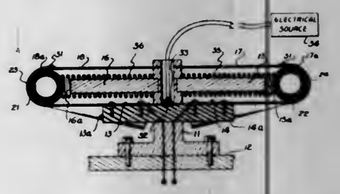
wavelength of the operating frequency of said antenna system, each of said elements being spaced outwardly from said mast by a distance less than three-sixteenths wavelength of said operating frequency, a rotatable mounting tube securing each of said elements to said mast, a center feed coaxial cable harness within said mast having feed lines passing through said mounting tubes to establish electrical connection to one side of said elements, means for grounding the other side of said elements to said mast, and foam dielectric means sealing off said cable and feed lines.

3,299,430
PARALLEL DIPOLE ARRAY SUPPORTED ON INSULATOR HAVING A LOW DIELECTRIC CONSTANT
Franz R. Huber, Neukeferloh, near Munich, and Manfred Schiller, Munich, Germany, assignors to Rohde & Schwarz, Munich, Germany, a partnership of Germany
Filed July 26, 1965, Ser. No. 478,021
9 Claims. (Cl. 343—812)



1. An antenna structure comprising
a homogeneous foamed plastic planar member having a dielectric constant comparable to that of free space,
a first longitudinally extending conductive strip feed means secured to one side of said planar member,
a first plurality of plane shaped triangular dipole elements secured to one side of said planar member and having one vertex coupled to said first feed means at a distance along its length of the average operating wave length,
a second longitudinally conductive strip feed means secured to the opposite side of said planar member and coextensively parallel to said first feed means,
a second plurality of plane shaped triangular dipole elements secured to the other side of said planar member and having one vertex coupled to said second feed means at a distance along its length of the average operating wave length,
and locking flaps bent out of the plane of said dipoles and said feed means so that the flaps penetrate through the planar member and are bent over on the opposite side of said member.

3,299,431
UNFURLABLE STRUCTURE INCLUDING COILED STRIPS THRUST LAUNCHED UPON TENSION RELEASE
Lester E. Hoblin, Fairfax County, Va., granted to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457(d)
Filed Feb. 10, 1964, Ser. No. 343,760
8 Claims. (Cl. 343—823)

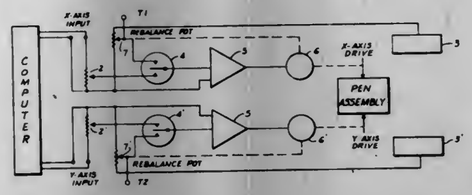


1. An unfurlable structure comprising a central support member; a plurality of ribbon like flexible strip elements each having a coiled portion and a free end portion disposed with the free end thereof directed toward said central support member; a like plurality of rod means extended from said central support member in selected directions; means for attaching said free end of each of said strip elements to a respective rod means in said plurality thereof such that the axis of each coiled portion and its respective rod means are in a transverse relation; each of said elements having a selected length and width and characterized by a stable circular cross-section with a substantial overlap and by a resiliency such that said stable circular cross-section may be readily restored subsequent to deformation of said strip element into coil form; detent means adapted to maintain said coiled portion of said elements at a selected distance from said central support member; tension loaded ejection means interposed said coiled portion of each of said strip elements and said central support member and adapted to provide a thrust force therebetween upon tension release; and detent release means adapted to free said coiled portion of said strip element such that said tension release occurs.

3,299,432
X–Y RECORDER PLOTTING CIRCUIT
Royce L. Cutler, Bellaire, Tex., assignor to Houston Instruments Corporation, Bellaire, Tex.
Filed June 30, 1964, Ser. No. 379,202
19 Claims. (Cl. 346—29)

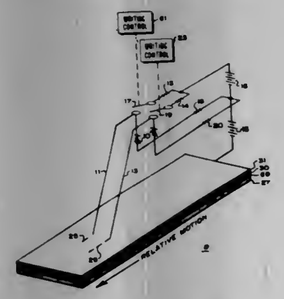
1. In an X–Y point plotter having servomechanisms which drive a record making mechanism along X and Y axes to a null point on each axis, means connected to the drive of each servomechanism for sensing the rate of movement of the record making mechanism along each axis and for generating a rate signal for each such movement while the rates of movement are above predetermined magnitudes and ceasing to generate said rate signal when the rates of movement are below predetermined magnitudes; a null detector circuit responsive to each of

said rate signals and generating a null signal upon cessation of generation of each of said rate signals in response to the rates of movement of said record making mecha-



nism being below said predetermined magnitudes; and means responding to said null signal and adapted to cause the record making mechanism to be actuated to record a point.

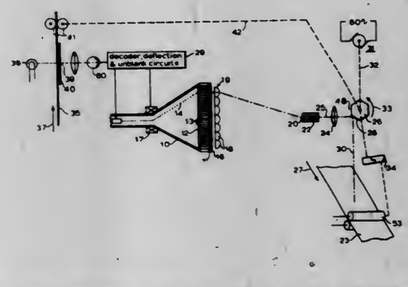
3,299,433
ELECTROSENSITIVE RECORDING
Charles S. Reis, Mountain View, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 21, 1964, Ser. No. 405,444
3 Claims. (Cl. 346—74)



2. Recording apparatus comprising:
a non-conductive backing material;
a conductive layer on said backing material;
an insulating film on said conductive layer having a predetermined dielectric and thickness to provide a selected voltage breakdown strength;
an electrically conductive surface layer disposed on said insulating film and including a heat-sensitive material which changes color at elevated temperatures;
a source of writing signal; and
an electrode connected to said source and disposed in contact with said surface layer for applying a writing signal thereto;
whereby a writing signal in excess of said voltage breakdown strength applied to said surface layer provides current flow therethrough with sufficient current density to elevate the temperature of local regions thereof for producing a color change in such regions.

3,299,434
SYSTEM FOR TRANSFERRING DATA FROM A STORAGE MEDIUM TO A RECORD MEDIUM
Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif. 92041
Filed July 30, 1964, Ser. No. 386,265
3 Claims. (Cl. 346—110)

1. In a system for transferring data from a storage medium to a record medium
(a) a tape, having message codes recorded thereon, with means for imparting motion thereto;
(b) a light reflector with means for imparting motion thereto;
(c) means intermediate said tape and said reflector for converting said codes to light beam information and directing said information along a path toward said light reflector; and
(d) a drive mechanism intermediate said tape and said reflector linking mechanically the means for imparting motion to said tape and the means for imparting motion to said light reflector;
(e) means for sensing message codes recorded on said tape;
(f) said motion imparted to said light reflector includes rotation thereof through (1) a plurality of light directing positions, during which said light beam information will be directed to said record medium, and (2) a plurality of non-directing positions, during which said reflector will not direct light beam information to said record medium;

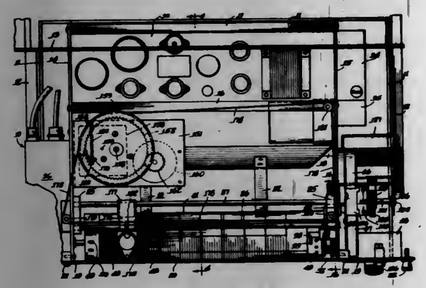


(g) said message codes comprise a series of codes recorded on said tape in individual groups, each of said groups spaced a predetermined distance from adjacent groups and space between said groups being substantially greater than spacing between the codes of said groups;
(h) said rotation of each light directing position, relative to said path, corresponds to the movement of a predetermined one of said groups relative to said means for sensing message codes recorded on said tape;
(i) said rotation of each of said non-directing positions, relative to said path, corresponds to the movement of one of said spaces between said groups relative to said means for sensing message codes recorded on said tape; and
(j) said directing of the light beam information by said light reflector from said path to said record medium being dissociated from said tape and the means for sensing message codes recorded on said tape.

3,299,435
MEASURING AND RECORDING INSTRUMENT
Garfield A. Dawe, Northbrook, and Carl A. Nielsen, Chicago, Ill., assignors to E. H. Sargent & Company, Chicago, Ill., a corporation of Illinois
Filed July 30, 1964, Ser. No. 386,365
18 Claims. (Cl. 346—136)

1. In a measuring and recording instrument having recording means adjacent a chart feed roll and movable across a chart for making a record on the chart, the improvement comprising, a frame including a pair of side plates, a shaft extending between and rotatably mounted in said side plates adjacent the top of the frame, a chart feed roll fixedly secured to said shaft between said side plates for advancing the chart, a synthetic plastic drive gear rotatably mounted on said shaft between one end of said chart drive roll and one of said side plates, a hardened steel thrust washer about said shaft between

said drive gear and said one side plate and secured to said one side plate, a cork friction washer about said shaft between said drive gear and said one end of said chart feed roll and secured to said one end of said chart feed roll, spring means carried by the other of said



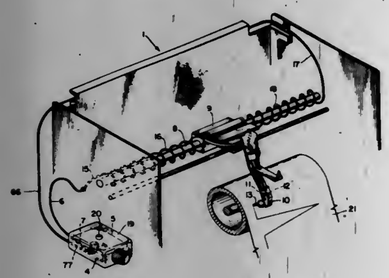
side plates and operating against said shaft for resiliently urging said friction washer against said drive gear and said drive gear against said thrust washer to frictionally couple said chart feed roll to said drive gear, and electric motor means gear connected to said drive gear for positively driving said drive gear and frictionally driving said chart feed roll.

3,299,436

RECORDER USING DUAL CAPILLARY INK SUPPLY

Jacques Behmoras, Upper Darby, Pa., and Stanley G. Wlaz, Haddonfield, N.J., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 1, 1964, Ser. No. 379,563
4 Claims. (Cl. 346—140)



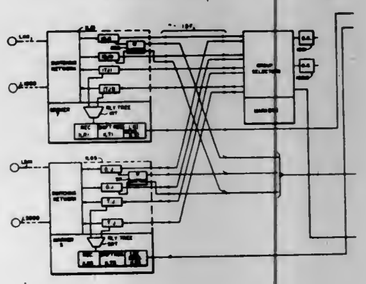
1. In a recorder having a chart in it, a case, a stationary ink container mounted on said case, a capillary tube having a helical portion intermediate its ends and wound about an axis spaced from said container so as to be movable longitudinally along said axis, a pen communicating with one end of said tube and discharging ink from said tube to said chart, the other end of said tube being fixed and communicating with said container, a means for moving said pen and the helical portion of said capillary tube along said axis in response to changes in a variable to be recorded, a second capillary tube communicating with said pen and having a helical portion intermediate its ends and wound about said axis so as to be movable longitudinally therealong in response to said means for moving said pen, and said helical portions of the capillary tubes being juxtapositioned said ink reservoir at selected positions to provide contracting and expanding changes of volume and acceleration of the ink in one of the capillary tubes while a simultaneous counterbalancing opposite change in volume and acceleration of the ink occurs in the other remaining capillary tube during movement of the pen to thereby provide a stabilizing effect on the flow of ink from the pen to the chart.

3,299,437

REGISTER-SENDER ARRANGEMENT FOR A COMMUNICATION SWITCHING SYSTEM

Ronald E. Schauer and Kenneth E. Prescher, Chicago, John G. Van Bosse, Park Ridge, and Alfred C. Lange, Oak Park, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Mar. 27, 1963, Ser. No. 268,385
17 Claims. (Cl. 179—18)



1. In a communication switching system having a plurality of communication paths and register means, said register means comprising:

a memory having a plurality of storage elements for storage of digital call signaling information from a calling one of said paths, said storage elements being oriented in a plurality of positions in at least one row, each position in said row comprising a given number of said storage elements for storage of a coded digit;

gate means individually responsive to each of said memory positions being selectively available for storage of information to selectively generate "empty" signals each corresponding to an available memory position;

logic means responsive to said call signaling information to detect one digit at a time and to transfer said digit in coded form into one of said memory positions for storage thereof; and

shifting means responsive to an "empty" signal corresponding to a memory position adjacent to said memory position to subsequently shift said digit into the adjacent memory position for storage thereof.

3,299,438

SWITCHING SYSTEM COMMON CONTROL

Ivan V. Coleman, Naperville, Lester L. Smith, McHenry, and Willard A. Rust, Park Ridge, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

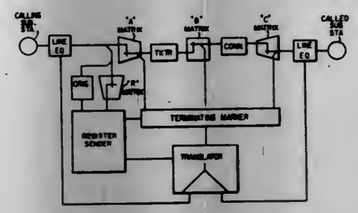
Filed Oct. 24, 1963, Ser. No. 318,646
8 Claims. (Cl. 179—18)

1. A communication switching system comprising a plurality of switching groups, each group including a plurality of crospoint switching devices arranged in coordinate matrices;

marker apparatus for controlling the establishment of connections through said crosspoint matrices;

register-sender apparatus comprising a register means and a sender means;

translating means common to said plurality of switching groups, and means for transferring information



directly between the register means and the translator means;

means including the marker apparatus, responsive to a calling line service request signal for identifying the calling line and connecting it to the register means,

means for transmitting the information identifying the calling line from the marker apparatus to the register means for registration therein;

means for registering in said register means the called line directory number as transmitted over the calling line and for translating, under the control of said translating means, at least a part of said directory information into corresponding equipment location information;

means including the translator for marking said equipment location information for said marker apparatus;

and means including the marker apparatus for completing a connection between the calling and called lines.

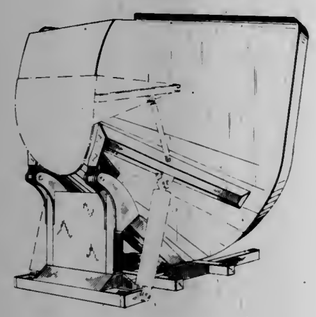
DESIGNS

JANUARY 17, 1967

206,707
PREFABRICATED SHELTER OR THE LIKE
Ving Smith, 2 Agar Ave., New Rochelle, N.Y. 10801
Filed Jan. 24, 1966, Ser. No. 745
Term of patent 14 years
(Cl. D13—1)



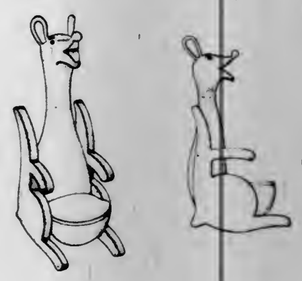
206,708
DUMP BODY AND TILT FRAME UNIT
Glenway Maxon, Jr., 1830 E. Kane Place, Milwaukee, Wis. 53217
Filed Mar. 16, 1966, Ser. No. 1,490
Term of patent 14 years
(Cl. D14—3)



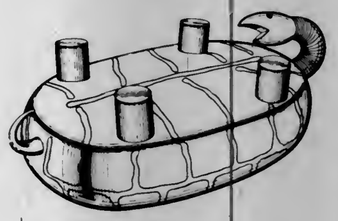
WHEEL
206,709
Donald J. Reid, Pleasant Ridge, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed May 4, 1966, Ser. No. 2,166
Term of patent 14 years
(Cl. D14—30)



206,710
CHAIR
Phillip K. Raiford, Memphis, Tenn., assignor to Shoe House, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Oct. 20, 1965, Ser. No. 87,641
Term of patent 14 years
(Cl. D15—1)



206,711
HASSOCK
Phillip K. Raiford, Memphis, Tenn., assignor to Shoe House, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Oct. 20, 1965, Ser. No. 87,621
Term of patent 14 years
(Cl. D15—8)



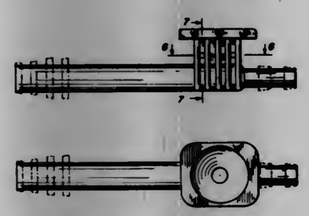
206,712
HASSOCK
Phillip K. Raiford, Memphis, Tenn., assignor to Shoe House, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Oct. 20, 1965, Ser. No. 87,631
Term of patent 14 years
(Cl. D15—8)



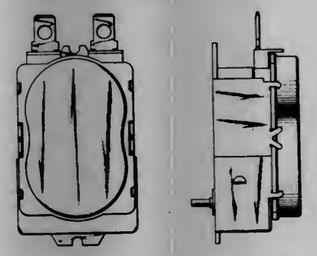
206,713
BAR STOOL
Leopold Durko, Morton Grove, Ill., assignor to Comfort Lines, Inc., Chicago, Ill.
Filed Apr. 22, 1965, Ser. No. 84,917
Term of patent 14 years
(Cl. D15—8)



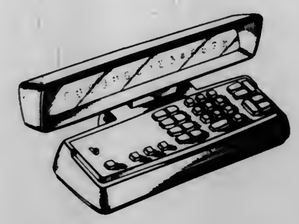
206,714
SUCTION CATHETER FLOW REGULATOR OR SIMILAR ARTICLE
Ravindra K. Badkar, Playa Del Rey, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Jan. 24, 1966, Ser. No. 729
Term of patent 14 years
(Cl. D16—1)



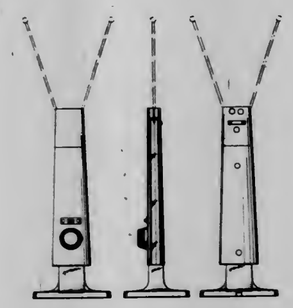
206,715
SYNCHRONOUS GEARED MOTOR HOUSING
Ted N. Svarnias, Elmwood Park, Ill., assignor to International Register Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 23, 1965, Ser. No. 86,668
Term of patent 14 years
(Cl. D26—5)



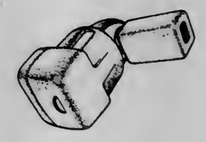
206,716
DISPLAY AND ENTRY UNIT FOR ELECTRONIC COMPUTER
Alessandro de Rossi, Rome, Italy, assignor to Ime-Studi S.p.A., Rome, Italy
Filed Sept. 1, 1965, Ser. No. 87,367
Claims priority, application Italy Mar. 3, 1965
Term of patent 14 years
(Cl. D26—5)



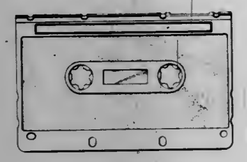
206,717
TELEVISION ANTENNA
Mel Appel and Martin Schnur, West Orange, N.J. (both of 87 Woodland Road, Short Hills, N.J. 07078)
Filed Sept. 27, 1965, Ser. No. 87,174
Term of patent 14 years
(Cl. D26—14)



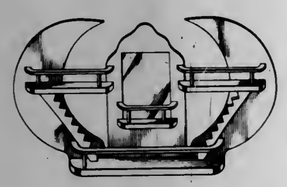
206,718
HEARING AID
Leon G. Barry, Danbury, Conn., assignor to Dictograph Products Inc., Danbury, Conn., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 87,471
Term of patent 14 years
(Cl. D26—14)



206,719
SOUND TAPE SPOOL HOLDER
Gerhard Dietrich, Furth, Bavaria, Germany, assignor to Max Grundig, Furth, Germany
Filed Oct. 15, 1965, Ser. No. 87,493
Term of patent 14 years
Claims priority, application Germany July 8, 1965
(Cl. D26—14)



206,720
KNICK-KNACK SHELF
William R. Hardin, P.O. Box 198, R.D. 1, Litchfield, Ohio 44253
Filed Oct. 21, 1965, Ser. No. 87,676
Term of patent 14 years
(Cl. D33—3)



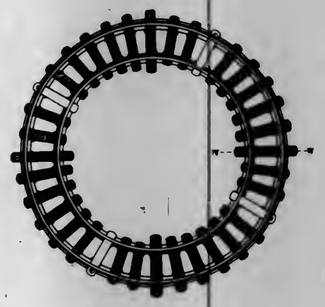
206,721
COMBINATION CHAIR-DESK
Sidney A. Durfee, Bennie L. Culwell, and Raymond C. Barnes, Temple, Tex., assignors to American Desk Manufacturing Company, Temple, Tex., a corporation of Texas
Filed Apr. 22, 1965, Ser. No. 84,909
Term of patent 14 years
(Cl. D33—11)



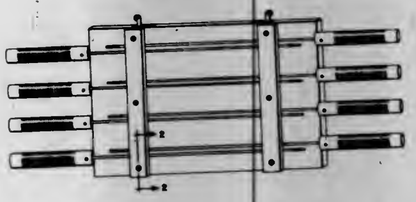
206,722
DOLL OR SIMILAR ARTICLE
Margaret M. Mulvihill, 5929 Roosevelt Road, Cicero, Ill. 60650
Filed July 28, 1965, Ser. No. 86,345
Term of patent 7 years
(Cl. D34—4)



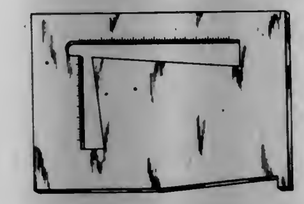
206,723
TRACK IN A MUSIC PLAYING TOY RAILROAD
Matsuzo Kosuge, 1516 Okudohoncho, Katsushika-ku, Tokyo, Japan
Filed Dec. 14, 1965, Ser. No. 174
Term of patent 14 years
(Cl. D34—15)



206,724
COMBINED SKEWER SET AND CUTTING BOARD RACK
Oliver M. Marcy, Webster Lake, West Franklin, N.H. 03235
Filed Dec. 9, 1965, Ser. No. 134
Term of patent 14 years
(Cl. D44—1)



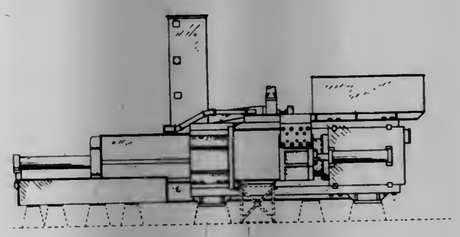
206,725
TEMPLET FOR STAIRWAYS
Darwin K. Pelz, Blairsburg, Iowa, assignor to Hydrodynamic Development Corporation, Inc., Baltimore, Md., a corporation of Maryland
Filed July 29, 1966, Ser. No. 3,268
Term of patent 14 years
(Cl. D52—6)



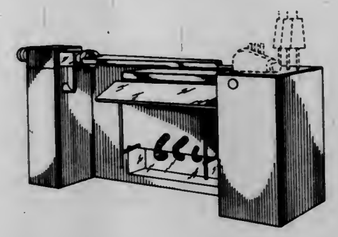
206,726
TURRET LATHE TOOL
Michael W. Papp, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 14, 1966, Ser. No. 607
Term of patent 14 years
(Cl. D54—6)



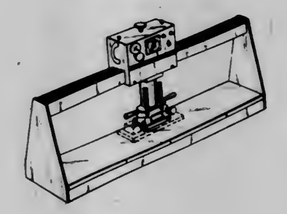
206,727
MACHINE FOR COMPACTING FIBROUS MATERIAL
Hilary A. Raab, Hammond, Ind., assignor to East Chicago Machine Tool Corporation, East Chicago, Ind., a corporation of Indiana
Filed Dec. 15, 1965, Ser. No. 190
Term of patent 14 years
(Cl. D55—1)



206,728
HOSIERY INSPECTION AND SEAMING CONSOLE
Ralph B. Jones, Greensboro, N.C., assignor to Textile Metals & Plastics, Inc., Greensboro, N.C., a corporation of North Carolina
Filed June 24, 1966, Ser. No. 2,801
Term of patent 14 years
(Cl. D55—1)



206,729
PRESS FOR HEAT SEALING PLASTIC MATERIALS OR THE LIKE
Theodore R. Finke, Euclid, Ohio, assignor to The Euclid Products Co., Inc., Willoughby, Ohio, a corporation of Ohio
Filed July 29, 1966, Ser. No. 3,250
Term of patent 14 years
(Cl. D55—1)



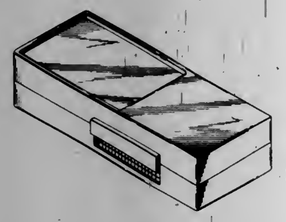
206,730
ORGAN
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 3, 1965, Ser. No. 86,821
Term of patent 14 years
(Cl. D56—2)



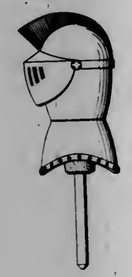
206,731
PHONOGRAPH VIEWER CABINET
Richard E. Lee, Cazenovia, N.Y., and Kurt F. Mizen, Chicago, Ill., assignors to General Electric Company, a corporation of New York
Filed July 1, 1965, Ser. No. 85,983
Term of patent 7 years
(Cl. D56—4)



206,732
COMBINED DISPLAY AND STORAGE CASE FOR A SAFETY RAZOR OR THE LIKE
Alan B. Lowry, Canton, Mass., assignor to The Gillette Company, Gillette Park, Boston, Mass., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 86,589
Term of patent 14 years
(Cl. D58—12.6)



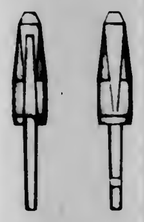
206,733
LIQUOR POURER
James E. McPhee, 2 E. Field Drive, Rolling Hills Estates, Los Angeles, Calif. 90274
Filed Mar. 30, 1966, Ser. No. 1,690
Term of patent 14 years
(Cl. D58—26)



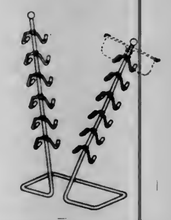
206,734
HELICOPTER
Paul Kesling, Arlington, Tex., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Oct. 13, 1965, Ser. No. 87,463
Term of patent 14 years
(Cl. D71—1)



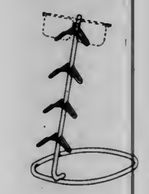
206,735
PEN CAP
Morris D. Levy, Hackensack, N.J., assignor to David Kahn Inc., a corporation of New Jersey
Filed Jan. 26, 1966, Ser. No. 772
Term of patent 14 years
(Cl. D74—17)



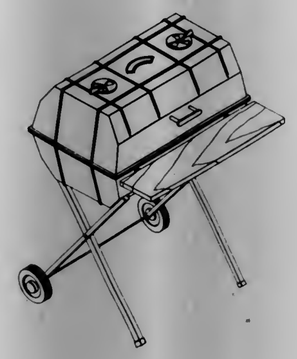
206,736
DISPLAY STAND
Roy C. Brown, Canterbury, Conn., assignor to Artistic Wire Products Company, Inc., Taftville, Conn., a corporation of Connecticut
Filed Mar. 9, 1966, Ser. No. 1,370
Term of patent 14 years
(Cl. D80—10)



206,737
DISPLAY STAND
Roy C. Brown, Canterbury, Conn., assignor to Artistic Wire Products Company, Inc., Taftville, Conn., a corporation of Connecticut
Filed Mar. 10, 1966, Ser. No. 1,389
Term of patent 14 years
(Cl. D80—10)



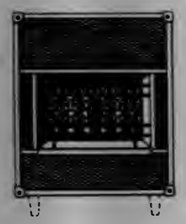
206,738
OUTDOOR COOKER
Judkins E. Wilkinson, Birmingham, Ala., assignor to Atlanta Stove Works, Inc., a corporation of Georgia
Filed May 11, 1966, Ser. No. 2,254
Term of patent 14 years
(Cl. D81—10)



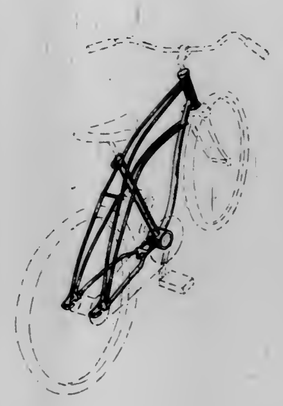
206,739
HEATER
William M. Hoeffken, Belleville, Ill., assignor to Premier Stove Company, Belleville, Ill., a corporation of Illinois
Filed June 9, 1966, Ser. No. 2,629
Term of patent 14 years
(Cl. D81—19)



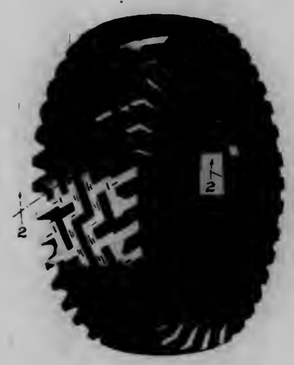
206,740
HEATER
William M. Hoeffken, Belleville, Ill., assignor to Premier Stove Company, Belleville, Ill., a corporation of Illinois
Filed June 16, 1966, Ser. No. 2,697
Term of patent 14 years
(Cl. D81—19)



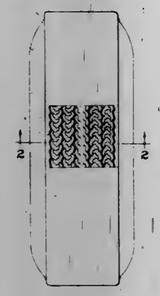
206,741
BICYCLE
Sherwood B. Ross, Woodsburgh, N.Y., assignor to Chain Bike Corporation, Rockaway Beach, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 80,216
Term of patent 14 years
(Cl. D90—8)



206,742
TIRE
Glen L. Wittenmyer, 121 Dodge Ave., Akron, Ohio 44302
Filed Dec. 22, 1965, Ser. No. 278
Term of patent 14 years
(Cl. D90—20)



206,743
TIRE
Frank S. Vukan, Stow, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 2, 1966, Ser. No. 1,253
Term of patent 14 years
(Cl. D90—20)

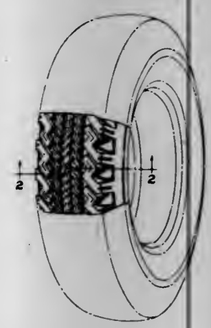


206,744
TIRE
William D. Alexis, Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 2, 1966, Ser. No. 1,254
Term of patent 14 years
(Cl. D90—20)

206,745
TIRE
Frank S. Vukan, Stow, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 2, 1966, Ser. No. 1,260
Term of patent 14 years
(Cl. D90—20)



206,746
TIRE
George W. MacWherter, Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 15, 1966, Ser. No. 1,469
Term of patent 14 years
(Cl. D90—20)



LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF JANUARY, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Dunham, Orville O.: *See*—
Miller, Edward H. 2,699.

Miller, Edward H., to O. O. Dunham. Chrysanthemum plant. 2,699, 1-17-67, Cl. 77.

LIST OF DESIGN PATENTEES

Alexis, William D., to The B. F. Goodrich Co. Tire. 206,744, 1-17-67, Cl. D90—20.
American Desk Mfg. Co.: *See*—
Durfee, Sidney A., Culwell, and Barnes. 206,721.
Appel, Mel, and M. Schnur. Television antenna. 206,717, 1-17-67, Cl. D26—14.
Artistic Wire Products Co., Inc.: *See*—
Brown, Roy C. 206,736.
Brown, Roy C. 206,737.
Atlanta Stove Works, Inc.: *See*—
Wilkinson, Judkins E. 206,738.
Badkar, Ravindra K., to Pharmaseal Laboratories. Suction catheter flow regulator or similar article. 206,714, 1-17-67, Cl. D16—1.
Baldwin, D. H., Co.: *See*—
White, Winson D., Jr. 206,730.
Barnes, Raymond C.: *See*—
Durfee, Sidney A., Culwell, and Barnes. 206,721.
Barry, Leon G., to Dictograph Products Inc. Hearing aid. 206,718, 1-17-67, Cl. D26—14.
Bell Aerospace Corp.: *See*—
Kesling, Paul. 206,734.
Brown, Roy C., to Artistic Wire Products Co., Inc. Display stand. 206,736, 1-17-67, Cl. D80—10.
Brown, Roy C., to Artistic Wire Products Co., Inc. Display stand. 206,737, 1-17-67, Cl. D80—10.
Chain Bike Corp.: *See*—
Ross, Sherwood B. 206,741.
Comfort Lines, Inc.: *See*—
Durko, Leopold. 206,713.
Culwell, Bennie L.: *See*—
Durfee, Sidney A., Culwell, and Barnes. 206,721.
De Rossi, Alessandro, to Ime-Studi S.p.A. Display and entry unit for electronic computer. 206,716, 1-17-67, Cl. D26—5.
Dictograph Products Inc.: *See*—
Barry, Leon G. 206,718.
Dietrich, Gerhard, to M. Grundig. Sound tape spool holder. 206,719, 1-17-67, Cl. D26—14.
Durfee, Sidney A., B. L. Culwell, and R. C. Barnes, to American Desk Mfg. Co. Combination chair-desk. 206,721, 1-17-67, Cl. D33—11.
Durko, Leopold, to Comfort Lines, Inc. Bar stool. 206,713, 1-17-67, Cl. D15—8.
East Chicago Machine Tool Corp.: *See*—
Raab, Hilary A. 206,727.
Euclid Products Co., Inc., The: *See*—
Finke, Theodore R. 206,729.
Finke, Theodore R., to The Euclid Products Co., Inc. Press for heat sealing plastic materials or the like. 206,729, 1-17-67, Cl. D55—1.
General Electric Co.: *See*—
Lee, Richard E., and Mizen. 206,731.
Gillette Co., The: *See*—
Lowry, Alan B. 206,732.
Goodrich, B. F., Co., The: *See*—
Alexis, William D. 206,744.
MacWherter, George W. 206,746.
Vukan, Frank S. 206,743.
Vukan, Frank S. 206,745.
Grundig, Max: *See*—
Dietrich, Gerhard. 206,719.
Hardin, William R. Knick-knack shelf. 206,720, 1-17-67, Cl. D33—3.
Hoeffken, William M., to Premier Stove Co. Heater. 206,739, 1-17-67, Cl. D81—19.
Hoeffken, William M., to Premier Stove Co. Heater. 206,740, 1-17-67, Cl. D81—19.
Hydrodynamic Development Corp., Inc.: *See*—
Pelz, Darwin K. 206,725.
Ime-Studi S.p.A.: *See*—
De Rossi, Alessandro. 206,716.
International Register Co.: *See*—
Svarnias, Ted M. 206,715.
Jones, Ralph B., to Textile Metals & Plastics, Inc. Hosiery inspection and seaming console. 206,728, 1-17-67, Cl. D55—1.
Kahn, David, Inc.: *See*—
Levy, Morris D. 206,735.
Kelsey-Hayes Co.: *See*—
Reid, Donald J. 206,709.
Kesling, Paul, to Bell Aerospace Corp. Helicopter. 206,734, 1-17-67, Cl. D71—1.
Kosuge, Matsuzo. Track in a music playing toy railroad. 206,723, 1-17-67, Cl. D34—15.
Lee, Richard E., and K. F. Mizen, to General Electric Co. Phonograph viewer cabinet. 206,731, 1-17-67, Cl. D56—4.
Levy, Morris D., to David Kahn, Inc. Pen cap. 206,735, 1-17-67, Cl. D74—17.
Lowry, Alan B., to The Gillette Co. Combined display and storage case for a safety razor or the like. 206,732, 1-17-67, Cl. D58—12.6.
MacWherter, George W., to The B. F. Goodrich Co. Tire. 206,746, 1-17-67, Cl. D90—20.
Marcy, Oliver M. Combined skewer set and cutting board rack. 206,724, 1-17-67, Cl. D44—1.
Maxon, Glenway, Jr. Dump body and tilt frame unit. 206,708, 1-17-67, Cl. D14—3.
McPhee, James E. Liquid pourer. 206,733, 1-17-67, Cl. D58—26.
Mizen, Kurt F.: *See*—
Lee, Richard E., and Mizen. 206,731.
Mulvihill, Margaret M. Doll or similar article. 206,722, 1-17-67, Cl. D34—4.
Papp, Michael W., to The Warner & Swasey Co. Turret lathe tool. 206,726, 1-17-67, Cl. D54—6.
Pelz, Darwin K., to Hydrodynamic Development Corp., Inc. Templet for stairways. 206,725, 1-17-67, Cl. D52—6.
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Badkar, Ravindra K. 206,714.
Premier Stove Co.: *See*—
Hoeffken, William M. 206,739.
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Raab, Hilary A., to East Chicago Machine Tool Corp. Machine for compacting fibrous material. 206,727, 1-17-67, Cl. D55—1.
Raiford, Phillip K., to Shoe House, Inc. Chair. 206,710, 1-17-67, Cl. D15—1.
Raiford, Phillip K., to Shoe House, Inc. Hassock. 206,711, 1-17-67, Cl. D15—8.
Raiford, Phillip K., to Shoe House, Inc. Hassock. 206,712, 1-17-67, Cl. D15—8.
Reid, Donald J., to Kelsey-Hayes Co. Wheel. 206,709, 1-17-67, Cl. D14—30.
Ross, Sherwood B., to Chain Bike Corp. Bicycle. 206,741, 1-17-67, Cl. D90—8.
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Smith, Ving. Prefabricated shelter or the like. 206,707, 1-17-67, Cl. D13—1.
Svarnias, Ted N., to International Register Co. Geared motor housing. 206,715, 1-17-67, Cl. D26—5.
Textile Metals & Plastics, Inc.: *See*—
Jones, Ralph B. 206,728.
Vukan, Frank S., to The B. F. Goodrich Co. Tire. 206,743, 1-17-67, Cl. D90—20.
Vukan, Frank S., to The B. F. Goodrich Co. Tire. 206,745, 1-17-67, Cl. D90—20.
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Wilkinson, Judkins E., to Atlanta Stove Works, Inc. Outdoor cooker. 206,738, 1-17-67, Cl. D81—10.
Wittenmyer, Glen L. Tire. 206,742, 1-17-67, Cl. D90—20.

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TO WHOM

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ACF Industries Inc.: *See*—
Becker, Carl E., and Kemp. 3,298,323.
Reifel, Allan J. 3,298,321.
AMP Inc.: *See*—
Evans, William R. 3,299,392.
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Boissonnas, Roger. 3,299,037.
A/S Bang & Olufsen Produktionsselskab: *See*—
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A/S Dumex (Dumex Ltd.): *See*—
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Abbott, Frank R.: *See*—
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Irikura, Tsutomu, Sato, and Abe. 3,299,077.
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Acton, Frank J., to Stephens-Adamson Mfg. Co. Inclined moving walkway arrangement. 3,298,495, 1-17-67, Cl. 198—16.
Adams, Bobby F., and J. H. Wotiz, to Diamond Alkali Co. Unsaturated acids derived from polyacetylenic compounds. 3,299,111, 1-17-67, Cl. 260—413.
Adams, Charles R., to Shell Oil Co. Oxidative dehydrogenation of alkyl benzenes with $CaNiPO_4$ and SO_2. 3,299,155, 1-17-67, Cl. 260—669.
Adams, Clark E., and C. N. Kimberlin, Jr., to Esso Research and Engineering Co. Napthenic isomerization process with synthetic mordenite. 3,299,153, 1-17-67, Cl. 260—666.
Adams, Donald R. Manicure implement. 3,298,381, 1-17-67, Cl. 132—76.4.
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Adrian, Robert G., and W. L. Lower. Tear gas gun. 3,298,125, 1-17-67, Cl. 42—1.
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Rumpelein, Fritz, and Kopf. 3,298,293.
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Alburn, Harvey E., and N. H. Grant, to American Home Products Corp. Method of preparing anhydrous ampicillin. 3,299,046, 1-17-67, Cl. 260—239.1.
Alden, John W., Jr., to Combustion Engineering Inc. Vertical steam generator with a central downcomer. 3,298,358, 1-17-67, Cl. 122—34.
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Alvarez, Francisco, to Syntex Corp. Process for the preparation of uncontaminated 17α-ethynyl-19-nor-Δ^4-androsten-17β-ol-3-one. 3,299,106, 1-17-67, Cl. 260—397.4.
Alyea, Harold W., to Johnson Service Co. Length-changing mechanism for linkage of an actuated device. 3,298,658, 1-17-67, Cl. 251—11.
Ambruch, Michael. Cigar or cigarette holder with adaptor. 3,298,379, 1-17-67, Cl. 131—179.
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Borsboom, Albertus C. H., and H. J. Nihof, to Shell Oil Co. Correction device for electronic flow ratio controller. 3,299 258, 1–17–67, Cl. 235—151.34.

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Bouman, Geert H., to Honeywell Inc. Electrical apparatus. 3,299,257, 1–17–67, Cl. 235—151.34.

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Bowman, Carol K. Method of centering a tool in a tool holder. 3,298,091, 1–17–67, Cl. 29—406.

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Brown, John S., to Standard Oil Co. Metal working lubricant. 3,298,954, 1–17–67, Cl. 252—51.5.

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Browne, Thomas E., Jr.: *See*—
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Bubniak, William C., to General Motors Corp. Rotary regenerator seal. 3,298,429, 1–17–67, Cl. 165—9.

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Dyer, Daniel P., Jr. 3,298,223.
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Kerby, Floyd G., and Kolt. 3,298,733.

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Bullard, Edward P., III, to The Bullard Co. Fluid transmission system. 3,298,283, 1–17–67, Cl. 91—37.

Bullene, Robert C., to Collins Radio Co. Low level threshold detector with temperature compensation. 3,299,296, 1–17–67, Cl. 307—88.5.

Bundy, Oswald M., to A. O. Smith Corp. Electric resistance unit. 3,299,388, 1–17–67, Cl. 338—284.

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Burkam, John E., and E. W. Glatfelter, to The Boeing Co. Vibration absorbing system. 3,298,443, 1–17–67, Cl. 170—159.

Burke, Lawrence A., to Temprite Products Corp. Solid state ice bank control. 3,298,191, 1–17–67, Cl. 62—140.

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Butler, James L. Rotary heat engine. 3,298,331, 1–17–67, Cl. 123—8.

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Byers, Edward V. Type levers having type heads molded thereon. 3,298,493, 1-17-67, Cl. 197—36.

Byfield, Donald R., and G. G. Reintjes. Apparatus for lining kilns. 3,298,155, 1-17-67, Cl. 52—749.

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Cadiou, Jean, to Societe Anonyme Andre Citroen. Universal joint. 3,298,201, 1-17-67, Cl. 64—21.

Cadiou, Jean, to Societe Anonyme Andre Citroen. Steering systems of automobile vehicles. 3,298,708, 1-17-67, Cl. 280—96.

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Callard, Robert W.: *See*—
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Hough, William V., and Hashman. 3,298,799.

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Campbell, Ian, to Imperial Chemical Industries Ltd. Manufacture of organic bases. 3,299,074, 1-17-67, Cl. 260—290.

Campbell, William W., E. Leatham, and A. H. Pack, to Harbison-Walker Refractories Co. Material handling. 3,298,840, 1-17-67, Cl. 106—58.

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Canevari, Roger: *See*—
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Cannon, John W., to Control Data Corp. Two-phase computer systems. 3,299,285, 1-17-67, Cl. 307—88.5.

Capozzi, Anthony J., and R. A. Jones, to International Business Machines Corp. Variable gap filing system. 3,299,411, 1-17-67, Cl. 340—172.5.

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Carboni, Ralph J. Golf practice game. 3,298,232, 1-17-67, Cl. 73—379.

Carlsen, Carl E. Pad-inked hand stamp with stencil-attaching means. 3,298,304, 1-17-67, Cl. 101—125.

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Carriers Corp.: *See*—
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Carrington, Thomas R., T. A. Savidge, and M. F. Walmsley. Process for making penicillin amidase. 3,298,924, 1-17-67, Cl. 195—65.

Carroll, Paul E. Method and apparatus for measuring an unknown impedance by comparison with a standard impedance. 3,299,352, 1-17-67, Cl. 324—57.

Carson, John F., to Midwest Bank Builders, Inc. Drive-in banking system. 3,298,632, 1-17-67, Cl. 243—10.

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Carstens, Bernard A., Jr., and R. L. 3,298,329.

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Carter, Robert E. Folding doors. 3,298,423, 1-17-67, Cl. 160—97.

Carter, Sidney T., to Geo. J. Meyer Mfg. Co. Label picker apparatus. 3,298,889, 1-17-67, Cl. 156—484.

Case, J. I., Co.: *See*—
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Long, Elton B., and Coleman. 3,298,548.

Catalin Corp.: *See*—
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Cease, William W., to Cease Centrol, Inc. Apparatus for dispensing articles from a stack of article carrying unit. 3,298,565, 1-17-67, Cl. 221—13.

Cehnoweth, Dean B., and R. L. Barnard, to Eastman Kodak Co. Method of encapsulating an article in a seamless unbroken clear film. 3,299,195, 1-17-67, Cl. 264—238.

Celanese Coating Co.: *See*—
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Celmer, Ernest V. Insert page with contained bookmarks. 3,298,714, 1-17-67, Cl. 281—42.

Centre de Recherches de Pont-a-Mousson: *See*—
Driancourt, Jean E. 3,298,720.

Centre National de la Recherche Scientifique ministere de l'Education Nationale: *See*—
Magat, Michel, and Chapiro. 3,298,942.

Chaikin, Malcolm, and A. D. Dircks. Apparatus for treating slivers of wool or other fibers. 3,298,068, 1-17-67, Cl. 19—66.

Chalfin, William L., Regina Enterprises, Inc. Garment retainer. 3,298,036, 1-17-67, Cl. 2—337.

Champion Spark Plug Co.: *See*—
Anderson, Rolland L. 3,298,677.

Chang, Charles H., to General Aniline & Film Corp. Method for preparing bis(2-alkoxyethyl) sulfones. 3,299,145, 1-17-67, Cl. 260—607.

Chapsky, Jacob, G. A. Ruger, and R. T. Hood, Jr., to Hersey-Sparling Meter Co. Digital encoder. 3,299,423, 1-17-67, Cl. 340—347.

Charles Beck Machine Corp.: *See*—
Beck, Carl A. 3,298,891.

Charos, Peter. Heated cream applicator gloves. 3,298,368, 1-17-67, Cl. 128—260.

Chatham Mfg. Co.: *See*—
Smith, Alexander M., II. 3,298,080.

Chelner, Herbert, and R. R. Doubleday, to North American Aviation, Inc. Probe transducer. 3,298,233, 1-17-67, Cl. 73—398.

Chemetals Corp.: *See*—
Yurko, William J., and Pickens. 3,298,070.

Chemirad Corp.: *See*—
Osborg, Hans, Brook, and Goldstein. 3,298,902.

Chemische Fabrik Pfersee G.m.b.H.: *See*—
Sander, Manfred. 3,299,109.

Chemische Fabrik Hoesch K.-G.: *See*—
Szczepanek, Alfred, and Koenen. 3,298,964.

Chemische Werke Witten G.m.b.H.: *See*—
Schade, Gerhard, and Blaschke. 3,299,172.

Chemische Werke Albert: *See*—
Zimmermann, Rolf, and Koch. 3,299,089.

Cherry, Edward C., D. E. Pearson, M. P. Barton, M. H. Kubba, and H. B. Voelcker, to National Research Development Corp. Television and like data transmission systems. 3,299,204, 1-17-67, Cl. 178—6.

Chesney, Carl E.: *See*—
Ellis, Earl B., and Chesney. 3,298,499.

Chesney, John: *See*—
Heilmann, Philip E., and Chesney. 3,299,301.

Chevron Research Co.: *See*—
Bradshaw, Jerald S. 3,299,102.

Chicago Bridge & Iron Co.: *See*—
Mikesell, Walter R., Jr., and Zick. 3,298,794.

Chicago Pneumatic Tool Co.: *See*—
Schaedler, Raymond J., and Simmons. 3,298,481.

Chicago-United Products Co., Inc.: *See*—
Meyer, Engelbert A. 3,299,248.

Chiddix, Max E., E. P. Williams, and R. L. Sundberg, to General Aniline & Film Corp. Spin bath additives. 3,298,962, 1-17-67, Cl. 252—357.

Chikawa, Yataro, to Tejin Ltd. Process for the preparation of aromatic carboxylic acids. 3,299,125, 1-17-67, Cl. 260—524.

Child, Ralph G.: *See*—
Tomcufcik, Andrew S., Child, and Vogel. 3,299,038.

Chin, Jack: *See*—
Bokros, Jack C., Goeddel, Chin, and Price. 3,298,921.

Chinn, Leland J., to G. D. Searle & Co. 2,4-Diamino-5,6,7,8-tetrahydro-6-phenylquinazoline and congeners. 3,299,068, 1-17-67, Cl. 260—256.4.

Chlystun, Walter K. Container with pouring spout. 3,298,577, 1-17-67, Cl. 222—529.

Chorkey, William J. Check valve. 3,298,394, 1-17-67, Cl. 137—525.

Christensen, Joseph M. Coin receptacle. 3,298,602, 1-17-67, Cl. 232—62.

Christianson, Charles, E. F. Duffy, L. Mackey, and A. Rutkowski, to United States of America, Navy. Ionizing radiation detector and measuring instrument having a flat energy response over a wide energy range. 3,299,267, 1-17-67, Cl. 250—71.5.

Chu, Ge-Yao: *See*—
Wang, An, and Chu. 3,299,408.

Ciba Corp.: *See*—
Anner, Georg, and Wieland. 3,299,105.
Schmidt, Paul, Wilhelm, and Eichenberger. 3,298,914.
Schmidt, Paul, Wilhelm, and Eichenberger. 3,299,069.

Cicchelli, Cosimo D., to Felker Mfg. Co. Method for making abrasive segments for saws. 3,298,806, 1-17-67, Cl. 51—293.

Cincinnati Time Recorder Co., The: *See*—
Schinner, Thomas J. 3,299,298.

Circle, Robert R., and T. E. Browne, Jr., to Westinghouse Electric Corp. Synchronous operating mechanisms for controlling circuit breakers. 3,299,377, 1-17-67, Cl. 335—100.

Cirocco, Paul: *See*—
Russell, Fred J., and Cirocco. 3,298,211.

Citroen, Andre, Societe Anonyme: *See*—
Cadiou, Jean. 3,298,708.
Cadiou, Jean. 3,298,742.

Clark, Edward G., to Burroughs Corp. Control means for transistorized magnetic core switching circuits. 3,299,292, 1-17-67, Cl. 307—88.5.

Clark Equipment Co.: *See*—
McIntosh, Richard F. 3,298,463.

Clark, Joseph A., Sr. Means for regulating the height of fuel mounds within a furnace. 3,298,338, 1-17-67, Cl. 110—101.

Clark, Robert A., to Caloric Corp. Outdoor cooking apparatus. 3,298,361, 1-17-67, Cl. 126—25.

Clarke, Bernard J.: *See*—
Secord, Herbert C., and Clarke. 3,298,805.

Clarke, Brian J.: *See*—
Hildebrand, Robert P., Harold, Clarke, and Murray. 3,298,835.

Clay, Harris A., to Phillips Petroleum Co. Production of isoprene and 3-methyl-1-butene. 3,299,162, 1-17-67, Cl. 260—680.

Claypool, Chester V., Jr., to General Electric Co. Annular cathode electrode support. 3,299,309, 1-17-67, Cl. 313—250.

Clayton Dewandre Co. Ltd.: *See*—
Page, Wilbur M. 3,298,387.

Clement, Ralph C.: *See*—
Herrmann, John A., Davis, and Clement. 3,299,391.

Clementi, Armando, and G. Fangorra, to Pirelli Sapsa, S.p.A. Upholsteries of elastic sponge material. 3,298,046, 1-17-67, Cl. 5—345.

Clouthier, Robert G. File for vertically mounted tape reels. 3,298,530, 1-17-67, Cl. 211—40.

Cluwen, Johannes M., to North American Phillips Co. Transistor element and transistor circuit. 3,299,281, 1-17-67, Cl. 307—88.5.

Coates, Joseph F.: *See*—
Wakeman, Reginald L., and Coates. 3,299,073.

Cobb, Jesse M., to Indak Mfg. Corp. Push button switches having wiping contact between a flexible contact blade and an apertured contact member. 3,299,238, 1-17-67, Cl. 200—159.

Cochran, Steven M. Sail construction. 3,298,346, 1-17-67, Cl. 114—103.

Cogsdill, Stuart A., to Cogsdill Tool Products, Inc. Deburring tool. 3,298,256, 1-17-67, Cl. 77—73.5.

Cogsdill Tool Products, Inc.: *See*—
Cogsdill, Stuart A. 3,298,256.

Cohen, Jerrold, to Hughes Aircraft Co. Bonding process. 3,298,093, 1-17-67, Cl. 29—473.1.

Cohen, Max, E. R. Elston, and J. Rosenblum, to Insco Enterprises, Inc. Liquid container. 3,298,591, 1-17-67, Cl. 229—7.

Cohen, Morris, to The National Cash Register Co. Parallel adder using majority decision elements. 3,299,260, 1-17-67, Cl. 235—173.

Coin Acceptors Inc.: *See*—
Duncan, Clifford E. 3,298,492.

Colello, William L.: *See*—
Bornhorst, Kenneth F., Gliatti, and Colello. 3,299,356.

Coleman, Ivan V., L. L. Smith, and W. A. Rust, to Automatic Electric Laboratories, Inc. Switching system common control. 3,299,438, 1-17-67, Cl. 179—18.

Coleman, Theodore J.: *See*—
Long, Elton B., and Coleman. 3,298,548.

Coleman, Theodore J., and J. M. Maxwell, to J. I. Case Co. Quick disconnect mechanisms. 3,298,724, 1-17-67, Cl. 287—189.36.

Colgan, George P., and J. J. Latimer, to Cumberland Chemical Corp. Coated fibrous web and coating composition therefor. 3,298,987, 1-17-67, Cl. 260—29.6.

Collett, Groff: *See*—
Lau, Ralph L., and Collett. 3,298,831.

Collins, Donald G., J. Seifner, and C. W. Wandrey, to United States of America, Army. Escapment mechanism for clockwork fuzes. 3,298,310, 1-17-67, Cl. 102—84.

Collins Radio Co.: *See*—
Bullene, Robert C. 3,299,296.

Collura, Peter C., to Container Corp. of America. Carton having economical opening construction. 3,298,595, 1-17-67, Cl. 229—51.

Colsman, Hans, to Colsman & Kirschner. Apparatus for wrapping a roll of textile material or the like. 3,298,159, 1-17-67, Cl. 53—380.

Colsman & Kirschner: *See*—
Colsman, Hans. 3,298,159.

Combes, Georges A.: *See*—
Boissier, Jacques R., and Combes. 3,299,124.

Combustion Engineering Inc.: *See*—
Alden, John W., Jr. 3,298,358.

Comer, Marvin H., to Deering Milliken Research Corp. Method for processing yarn. 3,298,169, 1-17-67, Cl. 57—157.

Comerford, Ronald W. Wad column device. 3,298,313, 1-17-67, Cl. 102—95.

Commissariat a l'Energie Atomique: *See*—
Gobert, Gérald. 3,298,755.

Commonwealth Scientific and Industrial Research Organization: *See*—
Herbert, Leonard S., and Sterns. 3,298,931.

Communications Patents Ltd.: *See*—
Cutler, Albert E. 3,299,197.

Compagnie Generale d'Automatisme: *See*—
Moricet, Jean-Paul. 3,298,517.

Compagnie General d'Electricite: *See*—
Vulliermet, Marcel. 3,299,386.

Composite Metal Products, Inc.: *See*—
Ulam, John B. 3,298,803.

Comstock & Wescott, Inc.: *See*—
Weaver, Eastman A. 3,298,431.

Condon, Harry F., to Owens-Illinois Glass Co. Pipe coupling for joining pipe sections of varying size. 3,298,698, 1-17-67, Cl. 277—101.

Conlan-Sieloff Industries, Inc.: *See*—
Sieloff, Kenneth A. 3,298,665.

Conner, Edmond E., and C. E. Grassi, to Westinghouse Electric Corp. Current transformer having fluid carry passages in high voltage conductor. 3,299,383, 1-17-67, Cl. 336—60.

Conney, Marcellus. Coaxial step attenuator. 3,299,373, 1-17-67, Cl. 333—81.

Conrad, Martin B. Actuator device for well tool. 3,298,437, 1-17-67, Cl. 166—63.

Consolidated Papers, Inc.: *See*—
Lau, Ralph L., and Collett. 3,298,831.

Container Corp. of America: *See*—
Collura, Peter C. 3,298,595.
Hurley, Robert M. 3,298,592.
Makowski, Alexander G., and Walter. 3,298,594.

Consolidated Electrodynamics Corp.: *See*—
Du Bois, Elliot, and Lovering. 3,298,275.

Consolidated Thermoplastics Co.: *See*—
Grether, Tobias H., Ziegenmeyer, and Bermann. 3,298,183.

Consolidated Vacuum Corp.: *See*—
Dayton, Benjamin B. 3,298,599.

Continental Can Co., Inc.: *See*—
Klygis, Mindaugas J. 3,298,415.
Lurie, Randolph D. 3,298,659.

Control Data Corp.: *See*—
Cannon, John W. 3,299,285.
Slattery, Leo F., Gallup, and Schoenherr. 3,299,363.

Cook, John W., to Westinghouse Electric Corp. Rolling mill control apparatus. 3,298,212, 1-17-67, Cl. 72—8.

Cooke, Joseph A.: *See*—
Walker, William B., Harkin, and Cooke. 3,298,100.

Coonrod, Earl L.: *See*—
Peterson, Robert J., and Coonrod. 3,298,287.

Cooper, Delbert J., to Phillips Petroleum Co. Fluid blending system. 3,298,383, 1-17-67, Cl. 137—3.

Coover, Harry W., Jr.: *See*—
McConnell, Richard L., and Coover. 3,298,998.

Coover, Harry W., Jr., M. A. McCall, and J. E. Guillet, to Eastman Kodak Co. Thermally modified polyethylene and other polymers and process for preparing the same. 3,299,181, 1-17-67, Cl. 260—897.

Corder, Elmo C.: *See*—
Pfaiser, Donald R., and Corder. 3,298,544.

Corey, Philip D., to General Electric Co. Control arrangement. 3,299,341, 1-17-67, Cl. 321—47.

Costello, Robert B., and R. M. Robertson, to General Motors Corp. Device for measuring surface characteristics. 3,298,222, 1-17-67, Cl. 73—84.

Coult, John H. Device for preserving the form of a shoe. 3,298,049, 1-17-67, Cl. 12—120.5.

Coulter Electronics, Inc.: *See*—
Hogg, Walter R. 3,299,354.

Council, Lemuel L.: *See*—
Tompkins, David R., and Council. 3,299,350.

Court, Patrick R. J., and A. M. Reiter, to International Telemeter Corp. Frequency compensating system. 3,299,359, 1-17-67, Cl. 325—431.

Courtright, Milton A. Plant starting device. 3,298,133, 1-17-67, Cl. 47—1.2.

Cousens, Richard H., D. W. J. Osmond, and D. H. Solomon, to Imperial Chemical Industries Ltd. Dispersion of a vinyl polymer in an organic liquid containing a reactive plasticizer. 3,298,990, 1-17-67, Cl. 260—30.4.

Cox, Clifford B.: *See*—
Valdespino, Joe M., and Cox. 3,298,526.

Cragoe, Edward J., Jr., and J. H. Jones, to Merck & Co., Inc. Derivatives of pyrazine. 3,299,063, 1-17-67, Cl. 260—250.

Crampton, Charles P., to The Hamilton Tool Co. Sheet end stabilizer and method of use. 3,298,684, 1-17-67, Cl. 271—69.

Crandell, Richard T., C. B. Schellenger, and F. L. Weiss, to F. L. Weiss. Drawer. 3,298,767, 1-17-67, Cl. 312—330.

Crane, Samuel P. Article holding sheet and package. 3,298,512, 1-17-67, Cl. 206—65.

Crom, Theodore R. Rotating digestive covers. 3,298,670, 1-17-67, Cl. 259—5.

Croon, Ingemar L.-A., A. Assarsson, and O. E. Frisk, to Mo Och Domsjo Aktiebolag. Arrangement for storing wood chips. 3,298,749, 1-17-67, Cl. 302—56.

Crosby, Gifford W.: *See*—
Millikan, Allen F., and Crosby. 3,299,189.

Cross, Horace A., to Girling Ltd. Detent held operating members. 3,298,245, 1-17-67, Cl. 74—540.

Croxall, Willard J., to Miles Laboratories, Inc. N-hydroxyalkyl-N-alkynyl-N-alkyl- and aralkyl amines and process for the preparation thereof. 3,299,141, 1-17-67, Cl. 260—570.9.

Cryogenic Engineering Co.: *See*—
Loudon, John D. 3,298,185.

Csanky, Geza: *See*—
Warner, Raymond M., Jr., and Csanky. 3,299,291.

Cull, Neville L., and M. Nadler, to Esso Research and Engineering Co. Reducing acidity of polymer latices. 3,298,846, 1-17-67, Cl. 106—287.

Cumberland Chemical Corp.: *See*—
Colgan, George P., and Latimer. 3,298,987.

Cummins, Earl W., to E. I. du Pont de Nemours and Co. Preparation of 3,3'-ethylene bis(tetrahydro-4,6-dimethyl) 2h-1,3,5-thiadiazine-2-thione. 3,299,056, 1-17-67, Cl. 260—243.

Cupedo, Douwe J. Fluid power actuated butterfly valve or plug cock. 3,298,659, 1-17-67, Cl. 251—14.

Cupery, Martin E., to E. I. du Pont de Nemours and Co. 2-cyanosorbamide. 3,299,119, 1-17-67, Cl. 260—465.4.

Current, James H., to Schlumberger Well Surveying Corp. Non-retrievable bridge plug. 3,298,440, 1-17-67, Cl. 166—123.

Curry, Byron: *See*—
Anderson, Paul G. 3,298,045.

Curtis, James H., to Miles Laboratories, Inc. Water-dispersible form of dialdehyde starch and process therefor. 3,299,052, 1-17-67, Cl. 260—233.3.

Curtiss-Wright Corp.: *See*—
Perryman, John S. 3,298,486.

Cusic, John W., and P. Yonan, to G. D. Searle & Co. Complex N-substituted azabicycloalkanes. 3,299,044, 1-17-67, Cl. 260—239.

Cutler, Albert E., to Communications Patents Ltd. Ground based flight training apparatus. 3,299,197, 1-17-67, Cl. 35—10.2.

Cutler, Royce L., to Houston Instruments Corp. X-Y recorder platting circuit. 3,299,432, 1-17-67, Cl. 346—29.

Czaplewski, Billy S., to Omaha Body & Equipment Co. Dual dump gate construction. 3,298,745, 1-17-67, Cl. 298—37.

DCA Food Industries Inc.: *See*—
Fries, Edward W., Kaufman, Spiel, and Lipka. 3,298,302.

DK Mfg. Co.: *See*—
Sibthorpe, Anthony M. 3,299,417.

DMD Corp.: *See*—
Meath, Franklin D., and Doyle. 3,298,325.

Daffin Corp.: *See*—
Schiltz, Boyd D. 3,298,550.

Daimler-Benz Aktiengesellschaft: *See*—
Altmann, Werner E., Enke, and Rothweiler. 3,298,200.

Dakli, Ibrahim, D. Grazioli, and N. Oddo, to Montecatini Edison S.p.A. Polyoxymethylene compositions stabilized with biurets and phenols or amines. 3,298,993, 1-17-67, Cl. 260—45.9.

D'Alelio, Gaetano F., to Metal Recovery Systems. Process of preparing graft copolymers for ion exchange and chelating purposes. 3,298,969, 1-17-67, Cl. 260—2.1.

D'Alelio, Gaetano F., to Dal Mon Research Co. Olefin polymerization process and three component catalysts therefor. 3,299,024, 1-17-67, Cl. 260—93.1.

Daley, John C.: *See*—
Smith, Rex L., and Daley. 3,298,868.

Dallas, Charles A.: *See*—
Kuhre, Calvin J., Dallas, Haefele, and Deisz. 3,299,174.

Dal Mon Research Co.: *See*—
D'Alelio, Gaetano F. 3,299,024.

D'Amico, John J., to Monsanto Co. Cyanoimidodithiocarbonates. 3,299,129, 1-17-67, Cl. 260—551.

Damm, Carl A., to United States of America, Navy. Mechanical coupling. 3,298,723, 1-17-67, Cl. 287—119.

Damon, Wayne E., to General Motors Corp. Vibrator-transformer power supply system having an overpotential protection feature. 3,299,321, 1-17-67, Cl. 317—14.

Danielson, Harry A. Patient handling device. 3,298,042, 1-17-67, Cl. 5—83.

Dann, Anthony E.: *See*—
Brown, Michael P., and Dann. 3,299,136.

Dargent, E. H., & Co.: *See*—
Daw, Garfield A., and Nielsen. 3,299,435.

Darlington, Sidney, to Bell Telephone Laboratories, Inc. Sampled frequency modulation. 3,299,357, 1-17-67, Cl. 325—349.

Darlington, Walter A.: *See*—
O'Connor, Richard J., Van Deren, and Darlington. 3,298,910.

Darnell Corp., Ltd.: *See*—
Darnell, William L. 3,298,467.

Darnell, William L., to Darnell Corp., Ltd. Caster brake. 3,298,467, 1-17-67, Cl. 188—29.

Darrol Co., Inc.: *See*—
Ganz, Daniel M., and Mahler. 3,298,538.

Dastoli, Joseph, W. Dehnel, and L. J. Halepas. Separable aircraft. 3,298,633, 1-17-67, Cl. 244—2.

Daubitz, Walter F., to Oxford Precision, Inc. Collet indexing and grinding fixture. 3,298,141, 1-17-67, Cl. 51—217.

D'Avella, Benjamin A. Radiation-proof strip for wall and ceiling panel having a groove formed by two bifurcations. 3,299,270, 1-17-67, Cl. 250—108.

Davie, William R., to United States Steel Corp. Maleic anhydride-tertiary amine adduct foaming agent. 3,298,971, 1-17-67, Cl. 260—2.5.

Davies, Roy E., to Leeds & Northrup Co. Expendable immersion temperature responsive unit. 3,298,874, 1-17-67, Cl. 136—232.

Davis, George D., E. J. Frederick, H. W. Godbee, and J. M. Holmes, to United States of America, Atomic Energy Commission. Concentration and containment of radioactivity from radioactive waste solutions in asphalt. 3,298,961, 1-17-67, Cl. 252—301.1.

Davis, Herman E.: *See*—
Touey, George P., and Davis. 3,298,845.

Davis Russell S.: *See*—
Herrmann, John A., Davis, and Clement. 3,299,391.

Davy and United Engineering Co. Ltd.: *See*—
Stubbs, Dennis, Roy, Bond, and Vollans. 3,298,214.
Sturdy, Clifford, and Jackman. 3,298,627.

Daw, Garfield A., and C. A. Nielsen, to E. H. Dargent & Co. Measuring and recording instrument. 3,299,435, 1-17-67, Cl. 346—136.

Day, John B., to The Budd Co. Disc brake rotor. 3,298,476, 1-17-67, Cl. 188—218.

Dayton, Benjamin B., to Consolidated Vacuum Corp. Pump nozzle. 3,298,599, 1-17-67, Cl. 230—101.

Dayton Perforators, Inc.: *See*—
Bleicher, Robert L. 3,298,085.

Dean Gainet Mfg. Co.: *See*—
Platzer, Peter J., Anderson, and Selenski. 3,298,235.

De Castelet, Gaeten de C., to Regie Nationale des Usines Renault. Low-pressure fuel injection metering devices for internal combustion engines. 3,298,335, 1-17-67, Cl. 123—119.

De Castelet, Gaeten de C., to Regie Nationale des Usines Renault. Velocity responsive actuating means. 3,299,234, 1-17-67, Cl. 200—61.45.

Decibel Products, Inc.: *See*—
McMullin, Thomas J. 3,299,429.

Decker, Orba L. Attachment for high chairs. 3,298,736, 1-17-67, Cl. 297—182.

Deelman, Gerardus J., to North American Philips Co., Inc. Circuit arrangement for obtaining a stabilized supply voltage. 3,299,340, 1-17-67. Cl. 321—18.

Deering Milliken Research Corp.: *See*—
Comer, Marvin H. 3,298,169.

Deere & Co.: *See*—
Harris, Kenneth J., Meyer, and Malm. 3,298,252.

De Graaf, Paul A., to Parker Hannifin Corp. Hydrant valve unit. 3,298,390, 1-17-67, Cl. 137—459.

De Grasse, Robert W.: *See*—
Buchmiller, Lyle D., De Grasse, Jones, and Peterson. 3,299,364.

Dehnel, William: *See*—
Dastoli, Joseph, Dehnel, and Halepas. 3,298,633.

Dehydrag Deutsche Hydrierwerke G.m.b.H.: *See*—
Strauss, Wennemar, Willmund, and Kirstahler. 3,298,937.

Deisz, Marvin A.: *See*—
Kuhre, Calvin J., Dallas, Haefele, and Deisz. 3,299,174.

Delfeld, William F.: *See*—
Noll, Stanley D., and Delfeld. 3,298,264.

De Lorme, Albert R., and J. G. Perkins, to Boyne Products, Inc. Self-centering toggle switch with improved actuator contact structure. 3,299,224, 1-17-67, Cl. 200—6.

Demare, Baltzar L., to United States of America, Army. Pancake connector. 3,299,395, 1-17-67, Cl. 339—176.

Denchfield, Jerrold R., to Sinclair Research, Inc. Addition copolymers of *N*-substituted 2-phenyl-allyl carbamate and ethylenically unsaturated hydrocarbons. 3,299,021, 1-17-67, Cl. 260—77.5.

Dercoli, Joseph P. Spacing form for bolts and the like embedded in concrete constructions. 3,298,657, 1-17-67, Cl. 249—177.

Deremer, Floyd E., to Oldberg Mfg. Co. Exhaust pipe silencers with telescoped gas passage tubes. 3,298,458, 1-17-67, Cl. 181—54.

Desmarchais, Walter E., and H. W. P. Stanhope, to Westinghouse Electric Corp. Material handling apparatus. 3,298,746, 1-17-67, Cl. 302—2.

Deuring Hans: *See*—
Tolksdorf, Hans-Joachim, and Deuring. 3,298,487.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See*—
Bäder, Erich, and Sibenhorn. 3,299,003.
Gross, Albert, and Thiele. 3,299,057.

De Vergara, Maria G. O. V.: *See*—
Vergara, Salvador R., and De Vergara. 3,299,193.

Dewald, Chester L.: *See*—
Fancher, Llewellyn W., and Dewald. 3,298,819.

Dewar, Robert A., and V. E. Maier, to Imperial Chemical Industries of Australia and New Zealand Ltd. Ionisation detector circuit. 3,298,788, 1-17-67, Cl. 23—232.

Dewers, Donald K., and R. S. Richards. Clamp-on adjustable dolly. 3,298,704, 1-17-67, Cl. 280—35.

Dexter, Martin: *See*—
Spivack, John D., and Dexter. 3,299,087.

Diamond Alkali Co.: *See*—
Adams, Bobby F., and Wotiz. 3,299,111.
Kiss, Kornel D. 3,299 005.
Roselli, Frank F. 3,299,173.

Dick, A. B., Co.: *See*—
Beatty, Julian L., and Lincoln. 3,298,852.

Dickinson, Theodore M., to General Electric Co. Apparatus for generating electrical energy by the application of heat. 3,299,299, 1-17-67, Cl. 310—4.

Dickore, Karlfried: *See*—
Anders, Bertram, Kuhle, and Dickore. 3,299,134.

Dickson, Rufus F. Tie-down holea. 3,298,148, 1-17-67, Cl. 52—309.

Di Domenico, Joseph. Device for dispensing cylindrical articles. 3,298,763, 1-17-67, Cl. 312—45.

Di Drusco, Giovanni, to Montecatini Societa Generale per l'Industria Mineria e Chimica. Apparatus for improved fluidized beds and reactors containing same. 3,298,792, 1-17-67, Cl. 23—284.

Diebold Inc.: *See*—
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Dien, Chi K., to Allied Chemical Corp. Phthaloperinone compound. 3,299,065, 1-17-67, Cl. 260—251.

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Dill, John J., and A. J. Black, to J. J. Dill Co. Foldable fiberboard rodenticide feeding apparatus. 3,298,128, 1-17-67, Cl. 43—131.

Di Marco, Silvio P. Garment rack hinge and leg assembly. 3,298,537. 1-17-67, Cl. 211—178.

Diotalevi, Mario J., to Leesona Corp. Hydrogen distribution fuel cell. 3,298,867, 1-17-67, Cl. 136—86.

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Newcomer, Jack S., Weil, and Dorfman. 3,299,120.

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Douglas, Robert M., to Rexall Drug and Chemical Co. Process for controlling high pressure polymerization of ethylene and product properties resulting therefrom. 3,299,033, 1-17-67, Cl. 260—94.9.

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Rothwell, Thomas F., and Paterson. 3,298,717.
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Gail, Walter G. 3,298,898.
Golike, Ralph C. 3,299,194.
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Kalil, James. 3,299,014.
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Eckelkamp, Lawrence. Electrical connector with grounding terminal. 3,299,390, 1-17-67, Cl. 339—12.

Eckert, John P., Jr., A. Brown, L. R. Hulla, and R. A. Brinker, to Sperry Rand Corp. Parametric devices. 3,299,277, 1-17-67, Cl. 307—88.

Edwards, Margaret M., to John Oster Mfg. Co. Electrical switch for food blender with improved contact detent structure. 3,299,226, 1-17-67, Cl. 200—16.

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Emels, Reimer, and A. Hoffmann, to Siemens-Schuckertwerke Aktiengesellschaft. Semiconductor P-N junction devices and method for their manufacture. 3,298,878, 1-17-67, Cl. 148—177.

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Engel, Edward G., B. W. Rowland, and A. Torok, to Georgia Kaolin Co. Selective separation of heterogeneous particles. 3,298,617, 1-17-67, Cl. 241—20.

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Erb, Robert A., to United States of America, Interior. Method and apparatus for dropwise condensation. 3,298,427, 1-17-67, Cl. 165—1.

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Erickson, Herbert V. Chain saw chain. 3,298,406, 1–17–67, Cl. 143—32.

Eriksson, Elof E., and S. G. Sem-Sandberg, to Telefonaktiebolaget LM Ericsson. Comparator circuit using a transistor gated blocking oscillator. 3,299,282, 1–17–67, Cl. 307—88.5.

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Errede, Louis A., to Minnesota Mining and Mfg. Co. Process for oxidizing quinodimethanes to form aromatic carboxylic acids. 3,299,126, 1–17–67, Cl. 260—524.

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Lea, James D. 3,298,238.
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Beauxis, John O., Jr., and Richardson. 3,299,348.
Cull, Neville L., and Nadler. 3,298,846.
Edwards, William R. 3,298,948.
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Gray, C. F. 3,298,947.
Hunter, Edward A., and Aldridge. 3,299,020.
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Pine, Lloyd A. 3,299,110.
Pratt, Harold R. 3,298,345.
Ray, Richard L. 3,298,986.
Rippel, George R. 3,299,179.
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Evans, Robert C. Valve for hydraulic brake holding system. 3,298,471, 1–17–67, Cl. 188—152.

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Kovalsky, Stephen J., and Olson. 3,299,060.
Millican, Basil F., and Rolleston. 3,298,265.
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Fairchild, William P., and J. E. Robison, to Kelco Co. Paper sizing process. 3,298,862. 1–17–67, Cl. 117—155.

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Schon, Nikolaus, Pampus, and Witte. 3,299,031.
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Feild, George B., and P. L. Johnstone, to Hercules Inc. Expandable partially-foamed and cured polypropylene composition. 3,298,975, 1–17–67, Cl. 260—2.5.

Feinberg, Maurice. Surgical hydrocephalus shunt sleeve for placement in a vertebra. 3,298,372, 1–17–67, Cl. 128—350.

Feinerman, Jack. Tufted upholstery panel. 3,298,047, 1–17–67, Cl. 5—356.

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Field, Joe, and H. Hanger support bar for garment packing case. 3,298,503, 1–17–67, Cl. 206—7.

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Fitton, Norman E. Apparatus for driving a spinning frame for making covered elastic yarn. 3,298,168, 1–17–67, Cl. 57—104.

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Flamand, Maurice R., to Draper Corp. Filling carrier for shutteless looms. 3,298,400, 1–17–67, Cl. 139—122.

Fleck, Raymond N., to Union Oil Co. of California. Process for preparing a crystalline zeolite. 3,298,780, 1–17–67, Cl. 23—113.

Fleming, William T., and J. P. McHugh, to The Kirk & Blum Mfg. Co Furnace wall maintenance nozzle. 3,298,616, 1–17–67, Cl. 239—568.

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Forsyth, George H., J. C. Braithwaite, and A. C. Grant, to Vickers-Armstrongs (Engineers) Ltd. Apparatus and method adding oxygen to re-cycled power plant exhaust gases. 3,298,176, 1–17–67, Cl. 60—39.02.

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Fossel, Eric T., to Unimed, Inc. Color pregnancy test. 3,298,787, 1–17–67, Cl. 23—230.

Fossel, Spencer M., to Unimed, Inc. Vascular headache treatment. 3,298,915, 1–17–67, Cl. 167—65.

Foti, Arem, to I-T-E Circuit Breaker Co. Hinge contact for disconnect switch. 3,299,240, 1–17–67, Cl. 200—166.

Franci, David O., to Leesona Corp. Knotter. 3,298,726, 1–17–67, Cl. 289—2.

Franck, George E., to Imperial-Eastman Corp. Strainer. 3,298,528, 1–17–67, Cl. 210—444.

Francke, Harry C., and E. G. Laggis, to United States of America, Atomic Energy Commission. Weight responsive dispenser. 3,298,452, 1–17–67, Cl. 177—120.

Frank, James S. Detergent breaker composition. 3,298,963, 1–17–67, Cl. 252—358.

Frankel, Merwin, to Geigy Chemical Corp. Measuring device. 3,298,536, 1–17–67, Cl. 220—23.83.

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Freedman, Allan R., and J. T. Massengale, to FMC Corp. Method for the preparation of controlled molecular weight acrylonitrile copolymers using tetrahydronaphthalene as regulator. 3,299,018, 1–17–67, Cl. 260—85.5.

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Freeman, Mathew L., to Rockwell Mfg. Co. Pressure balanced valve. 3,298,389, 1–17–67, Cl. 137—454.6.

Freggens, Robert A., to Westinghouse Electric Corp. Electronic tube device. 3,299,310, 1–17–67, Cl. 313—278.

French, John H., to Merit Plastics, Inc. Extrusion die construction. 3,298,063, 1–17–67, Cl. 18—13.

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Frick, Richard H., and H. H. Scholz, to Kimberly-Clark Corp. Expansible mandrel. 3,298,626, 1–17–67, Cl. 242—72.

Friedman, Bernard. Apparatus for drying articles. 3,298,113, 1–17–67. Cl. 34—219.

Friedrich Behrens, Joh.: *See*—
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Fries, Edward W., H. B. Kaufman, Jr., A. Spiel, and D. H. Lipka, to DCA Food Industries Inc. Apparatus for producing fried comestibles. 3,298,302, 1–17–67, Cl. 99—354.

Frisch, Erling, to Westinghouse Electric Corp. Linear motion device. 3,299,302, 1–17–67, Cl. 310—12.

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Fry, John S., and W. F. Hale, to Union Carbide Corp. Polyhydroxyethers of 1,4-cyclohexanedimethanol. 3,298,981, 1–17–67, Cl. 260—18.

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Green, James H., to James Green Developments Ltd. Fire access door unit. 3,298,397, 1-17-67, Cl. 138—92.

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Griffin, Frederick P. Building closure construction. 3,298,424, 1-17-67, Cl. 160—113.

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Halter, Ernest J. Ball bearing assembly. 3,298,759, 1-17-67, Cl. 308—175.

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Harker, Charles B., to Tekni Craft, Inc. Freezing condition control. 3,298,190, 1-17-67, Cl. 62—136.

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Harlee-George, Inc.: *See*—
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Harman, Michael G., to The National Cash Register Co. Superconductive circuitry. 3,299,283, 1-17-67, Cl. 307—88.5.

Harold, Frank V.: *See*—
Hildebrand, Robert P., Harold, Clarke, and Murray. 3,298,835.

Harrington, Gerald D., and H. G. Shakespeare, to Shakespeare Co. Closed-face spinning reel having improved push-button line release. 3,298,628, 1-17-67, Cl. 242—84.2.

Harris, Kenneth J., R. J. Meyer, and D. I. Malm, to Deere & Co. Transmission. 3,298,252, 1-17-67, Cl. 74—761.

Harris, Stanton A., and C. O. Gitterman, to Merck & Co., Inc. 1-benzyl tetramic acid derivatives. 3,299,095, 1-17-67, Cl. 260—326.3.

Hart, Robert H., to Beloit Corp. Continuous digester including mechanical defibering means therein. 3,298,903, 1-17-67, Cl. 162—236.

Hartmann, Adolf, and P. Kresse, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of linear polyesters with metal imide salt catalysts. 3,299,004, 1-17-67, Cl. 260—75.

Hartman, Earl C., and M. B. Johnson, to Harbison-Walker Refractories Co. Coke oven door. 3,298,930, 1-17-67, Cl. 202—248.

Hartranft, Donald Z., to Morehouse Instrument Co. Proving rings. 3,298,225, 1-17-67, Cl. 73—141.

Hasegawa, Shin: *See*—
Yamada, Tatsuya, Hasegawa, Nakayama, and Neishi. 3,299,314.

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Banno, Isao, Iijima, Hasegawa, Igarasi, Imada, Nogami, Suhara, Yoneda, and Ohmora. 3,298,923.

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Hawkes, George F., Jr., to Westinghouse Electric Corp. Circuit interrupter enclosure of the type comprising an openable cover and a shield supported under the cover. 3,299,242, 1-17-67, Cl. 200—168.

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Robertson, James J., and Hayes. 3,298,977.

Heath, Clarence W., to United-Carr Inc. Rotary switch with improved contact structure and camming means. 3,299,225, 1-17-67, Cl. 200—6.

Heilmann, Philip E., and J. Chesney, to General Instrument Corp. Piezoelectric ceramic filter. 3,299,301, 1-17-67, Cl. 310—9.1.

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Heinrich, Helmut G., E. L. Haak, R. J. Niccum, and E. A. Gimalouski, to Pioneer Parachute Co., Inc. Gliding parachute. 3,298,630, 1-17-67, Cl. 244—145.

Heinrich, Helmut G., to Pioneer Parachute Co., Inc. Parachute. 3,298,640, 1-17-67, Cl. 244—145.

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Helin, Arthur F., and G. J. Mantell, to Gulf Oil Corp. Moisture-resistant wrapping paper. 3,298,855, 1-17-67, Cl. 117—76.

Hellemans, Albert J., to Gevaert Photo-Producten N.V. Apparatus for joining weblike material. 3,298,890, 1-17-67, Cl. 156—504.

Helms, Charles R.: *See*—
Albinson, Don C., and Helms. 3,298,743.

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Hendrix, Lloyd T., to Richfield Oil Corp. Atmospheric L.P.G. storage tank and process. 3,298,186, 1-17-67, Cl. 62—50.

Hennen, Roy E.: *See*—
Anderson, Walter E., Hennen, and Redmon. 3,298,454.

Henrie, Thomas A., D. G. Kesterke, and E. Morrice, to United States of America, Interior. Preparation of reactive metal solutions by electrodeposition methods. 3,298,935, 1-17-67, Cl. 204—1.5.

Henry, David W.: *See*—
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Hentzi, Joffre E. R., to The Stanley Works. Door guide. 3,298,056, 1-17-67, Cl. 16—90.

Heraeus Quarzschmelze G.m.b.H.: *See*—
Reul, Friedrich. 3,298,785.

Herbert, Leonard S., and U. J. Sterns, to Commonwealth Scientific and Industrial Research Organization. Removal of scale in distillation of sea water containing magnesium salts. 3,298,931, 1-17-67, Cl. 203—7.

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Hercules Inc.: *See*—
Feild, George B., and Johnstone. 3,298,975.

Herman, Robert A., to The Bunker-Ramo Corp. Digital apparatus. 3,299,409, 1-17-67, Cl. 340—172.5.

Herrmann, John A., R. S. Davis, and R. C. Clement, to I-T-E Circuit Breaker Co. 2-wire and 3-wire no fuse electrostrip receptacle. 3,299,391, 1-17-67, Cl. 339—14.

Hersey-Sparling Meter Co.: *See*—
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Hewlett-Packard Co.: *See*—
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Selsted, Walter T., and Girdner. 3,298,490.

Hextell, Dale H. Fence stretcher. 3,298,663, 1-17-67, Cl. 254—83.

Hickey, John J., and J. P. Smith, to TRW Inc. High voltage control arrangement. 3,299,343, 1-17-67, Cl. 323—23.

Hickman, Albert F. Heavy duty vehicle spring suspension. 3,298,711, 1-17-67, Cl. 280—124.

Hicks, Darrell D., and J. E. Masters, to Celanese Coating Co. Water soluble phenolic ester compositions. 3,298,918, 1-17-67, Cl. 260—78.5.

Hicks, Norman W., to Texas Petroleum Co. Semi-automatic well testing system. 3,298,227, 1-17-67, Cl. 73—155.

Hicks, William T., to E. I. du Pont de Nemours and Co. Bonding telluride-containing thermoelectric modules. 3,298,095, 1-17-67, Cl. 29—472.7.

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Gressman, Edward G., and Hiers. 3,298,396.

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Higley, George A. and A. J. Method of forming facsimile impressions of biological specimens. 3,298,881, 1-17-67, Cl. 156—59.

Hildebrand, Robert P., F. V. Harold, B. J. Clarke, and P. J. A. Murray, to Carlton and United Breweries Ltd. Process for production of a hop concentrate. 3,298,835, 1-17-67, Cl. 99—50.5.

Hildebrandt, Alexander B., to Esso Production Research Co. System for recording work done during rotary drilling operations. 3,298,226, 1-17-67, Cl. 73—151.

Hill, Frederick B., Jr.: *See*—
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Hirano, Koki, to Jidosha Denki Kogyo Kabushiki Kaisha. Cleaning apparatus for the front windshield glass of motor cars. 3,298,610, 1-17-67, Cl. 239—284.

Hirota, Hozumi: *See*—
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Muto, Yoshiji, Hyugaji, and Mihara. 3,298,673.

Hoblin, Lester E., to National Aeronautics and Space Administration. Unfurlable structure including coiled strips thrust launched upon tension release. 3,299,431, 1-17-67, Cl. 343—823.

Hoelter, Roger L., to Huggins Laboratories, Inc. Chopper with alternating reflective and absorptive segments for radiant energy measuring system and method of optimizing same. 3,299,274, 1-17-67, Cl. 250—233.

Hoff, Dale R., and D. W. Henry, to Merck & Co., Inc. Nitroimidazoles. 3,299,090, 1-17-67, Cl. 260—309.

Hoffecker, Frank V., to Huntley Knitting Mills, Inc. Full-fashioned knitted slacks. 3,298,204, 1-17-67, Cl. 66—177.

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Hoffman-La Roche Inc.: *See*—
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Hoffmann, Richard L., to United States of America, Agriculture. Gas-solid chromatography using column comprising $AgNO_3$-coated alumina. 3,298,160, 1-17-67, Cl. 55—67.

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Hogg, Walter R., to Coulter Electronics, Inc. Aperture tube structure for particle study apparatus. 3,299,354, 1-17-67, Cl. 324—71.

Holan, James H., and C. W. Verrell, to The Ohio Brass Co. Extensible boom with load compensating means. 3,298,540, 1-17-67, Cl. 212—55.

Holbrook, George W., to Dow Corning Co. Process for making oil and solvent resistant fluorosilicon resins. 3,298,997, 1-17-67, Cl. 260—46.5.

Holbrook, Rex R.: *See*—
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Holland, Francis W., to Pilkinton Bros. Ltd. Mold with vacuum transfer apparatus. 3,298,812, 1-17-67, Cl. 65—260.

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Holm, Myron J.: *See*—
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Holman, John A. Device for injecting an additive into the output of a carburetor. 3,298,334, 1-17-67, Cl. 123—119.

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Quest, Karl, and Assmuth. 3,298,491.

Honeywell Inc.: *See*—
Behmoras, Jacques, and Wlaz. 3,299,436.
Bouman, Geert H. 3,299,257.
Gilbertson, Lynn A. 3,298,674.
Luck, James R. 3,298,944.
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Wagenhals, Carl W. 3,299,218.

Hood, R. T., Jr.: *See*—
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Hoodis, Marvin. Collapsible beach picnic table. 3,298,328, 1-17-67, Cl. 108—129.

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Knowlson, Paul D., Simpson, and Hull. 3,299,167.
Newcomer, Jack S., Weil, and Dorfman. 3,298,908.
Newcomer, Jack S., Weil, and Dorfman. 3,299,120.
Prahl, Walter H., and Lederman. 3,298,933.
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Hooper, Edward T., Jr., and A. D. Krall, to United States of America, Navy. Double pumped ferromagnetic microwave amplifier. 3,299,365, 1-17-67, Cl. 330—4.8.

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Van Hartesveldt, Carroll H., and Wahl. 3,298,887.

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Hoskin, Franklin L. Hydraulic wrench. 3,298,259, 1-17-67, Cl. 81—129.

Hough, Mark W., to Liftronic, Inc. Selective electronic signal receiving and actuating device. 3,299,284, 1-17-67, Cl. 307—88.5.

Hough, William V., to Callery Chemical Co. Preparation of hexaborane (10). 3,298,784, 1-17-67, Cl. 23—204.

Hough, William V., and J. S. Hashman, to Callery Chemical Co. Borane-hydrazine compounds. 3,298,799, 1-17-67, Cl. 23—358.

Houser, Roy W., to Robertshaw Controls Co. Washing machine system. 3,298,525, 1-17-67, Cl. 210—144.

Houston Instruments Corp.: *See*—
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Howden, Patrick F., to SDS Data Systems. Feedback amplifier. 3,299,367, 1-17-67, Cl. 330—104.

Howe, Charles, and J. W. Abson, to Simon-Carves Ltd. Automatic counting device for counting particles. 3,299,256, 1-17-67, Cl. 235—92.

Hubbell, Robert F.: *See*—
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Huber, Franz R., and M. Schiller, to Rohde & Schwarz. Parallel dipole array supported on insulator having a low dielectric constant. 3,299,430, 1-17-67, Cl. 343—812.

Huck, William F. Method and apparatus for turning the path of continuous webs collated in register. 3,298,581, 1-17-67, Cl. 226—2.

Huffman, Harold W., to The Hamilton Tool Co. Multiple orifice glue applicator. 3,298,353, 1-17-67, Cl. 118—411.

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Hull, Bobbie B., to General Electric Co. Laminated core having low compressibility characteristics for an electrical inductive device. 3,299,304, 1-17-67, Cl. 310—217.

Hull, Minert E., III: *See*—
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Hull, R. O., Co., Inc.: *See*—
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Hulls, Leonard R.: *See*—
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Hultgren, Eric G., to United Tool & Plastics, Inc. Lipstick device. 3,298,509, 1-17-67, Cl. 206—56.

Hultgren, Hjalmar H., to Alfa-Laval AB. Apparatus for delivering material to storage containers. 3,298,748, 1-17-67, Cl. 302—60.

Humble, Maglena, and J. L. McDonald, to J. L. McDonald. Closure for nail polish container or the like. 3,298,054, 1-17-67, Cl. 15—521.

Hunt, Claude W. Remotely controlled highway flare ejector. 3,298,307, 1-17-67, Cl. 102—37.4.

Hunt, Robert E., to Sylvania Electric Products Inc. Method for producing semiconductor devices. 3,298,087, 1-17-67, Cl. 29—155.5.

Hunter, Edward A., and C. L. Aldridge, to Esso Research and Engineering Co. Olefin-allyl halide copolymer. 3,299,020, 1-17-67, Cl. 260—87.5.

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Hackett, David W., and Huot. 3,299,366.

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I-T-E- Circuit Breaker Co.: *See*—
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Jensen, Otto. 3,298,473.
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Igarasi, Seizi: *See*—
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Iijima, Teiji: *See*—
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Ikegami, Kazutoshi, and A. Kamoi, to Kabushiki Kaisha Hitachi. Electronic digital computer provided with a drum type memory device. 3,299,407, 1-17-67, Cl. 340—172.5.

Imada, Akira: *See*—
Banno, Isao, Iijima, Hasegawa, Igarasi, Imada, Nogami, Suhara, Yoneda, and Ohmora. 3,298,923.

Imperial Chemical Industries Ltd.: *See*—
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Cousens, Richard H., Osmond, and Solomon. 3,298,990.

Imperial Chemical Industries of Australia and New Zealand Ltd.: *See*—
Dewar, Robert A., and Maier. 3,298,788.

Imperial-Eastman Corp.: *See*—
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Inaba, Yanosuke, G. Kimura, and T. Uematsu, to Toyo Koatsu Industries, Inc. Preparation of alpha,omega-dichloroolefin. 3,299,152, 1-17-67, Cl. 260—654.

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Soley, Warren G. 3,298,730.

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Industrie-Werke Karlsruhe Aktiengesellschaft: *See*—
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Inoue, Kiyoshi. Electroluminescent multilayer stock with in situ formation of active layer and method of making same. 3,299,307, 1-17-67, Cl. 313—108.

Inoue, Yoshiya: *See*—
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Institut Francais du Petrole des Carburants et Lubrifiants: *See*—
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Bandy, Peter B. 3,299,210.
Capozzi, Anthony J., and Jones. 3,299,411.
Evans, James R. 3,299,4410.
Isberg, Clifford A. 3,299,406.
Lee, Hua-Tung. 3,299,384.
Shepard, Joseph E. 3,298,485.
Steigerwalt, George F., Jr. 3,299,261.
Treseder, Robert C. 3,299,418.

International Nickel Co., The: *See*—
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International Rectifier Corp.: *See*—
Roach, Thomas J. 3,299,327.

International Standard Electric Corp.: *See*—
Beyerle, Ernst. 3,299,216.

International Telemeter Corp.: *See*—
Court, Patrick R. J., and Reiter. 3,299,359.

International Telephone and Telegraph Corp.: *See*—
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Irani, Riyad R., and K. Moedritzer, to Monsanto Co. Lime soap dispersants. 3,298,956, 1-17-67, Cl. 252—117.

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Irastorza, Miguel M. Electrostatic sound generators. 3,299,198, 1-17-67, Cl. 84—1.28.

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Irikura, Tsutomu, S. Sato, and Y. Abe, to Kyorin Seiyaku Kabushiki Kaisha. Cyclohexanol-2,2,6,6-tetrakis (hydroxymethyl) tetranicotinate and preparation thereof. 3,299,077, 1-17-67, Cl. 260—295.5.

Isaac, Peter. Reelable reversibly flexible and rigid structural members. 3,298,142, 1-17-67, Cl. 52—2.

Isberg, Clifford A., to International Business Machines Corp. Multiple access delay structures. 3,299,406, 1-17-67, Cl. 340—172.5.

Ito, Ryusuke, H. Tado, and S. Jinno, to Yanmar Diesel Engine Co., Ltd. Rotary piston engine. 3,298,330, 1-17-67, Cl. 123—8.

Iwata, Yoshiaki. Grille device in air-conditioning. 3,298,298, 1-17-67, Cl. 98—40.

Jablin, Richard, to Bethlehem Steel Corp. Vacuum degassing apparatus. 3,298,680, 1-17-67, Cl. 266—34.

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Sturdy, Clifford, and Jackman. 3,298,627.

Jackson, John G., and Spineto, to Weil Completions, Inc. Constant circulating coupling device. 3,298,385, 1-17-67, Cl. 137—112.

Jackson, Winston J., Jr., and J. R. Caldwell, to Eastman Kodak Co. Polycarbonates from substituted 4,4'-(cyclohexylmethylene) bis(2,6-dichlorophenols). 3,299,000, 1-17-67, Cl. 260—47.

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Jager, Heinz: *See*—
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Japan Reichhold Chemicals, Inc.: *See*—
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Jarrett, Charles R.: *See*—
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Jenks, Arthur E., and D. W. Ginn, to Television Audit Corp. Radio and television audience survey system. 3,299,355, 1-17-67, Cl. 325—31.

Jennings, Garland B., and G. J. Kliner, to The B. F. Goodrich Co. High impact, heat and chemical resistant blends of chlorinated polyvinyl chloride and chlorinated polyethylene. 3,299,182, 1-17-67, Cl. 260—897.

Jensen, Harold: *See*—
Weathers, Thomas C., and Jensen. 3,298,583.

Jensen, Melvin J., ½ to Wallace H. Jerome. Poultry conveying and tripping device. 3,298,500, 1-17-67, Cl. 198—177.

Jensen, Otto, to I-T-E Circuit Breaker Co. Self-adjusting load responsive brake. 3,298,472, 1-17-67, Cl. 188—171.

Jensen, Otto, to I-T-E Circuit Breaker Co. Automatic air gap adjustment for spring brake. 3,298,473, 1-17-67, Cl. 188—171.

Jeremias, Charles G., and F. E. Barwick, to Martin-Marietta Corp. Disazo-disulfide dyes. 3,299,040, 1-17-67, Cl. 260—160.

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Oltean, George, Mortensen, and Jessen. 3,298,228.

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Johnsen, Clifford N., to The Trane Co. Refrigeration unit. 3,298,193. 1-17-67, Cl. 62—244.

Johnson, Charles Y., to United States of America, Navy. Instrumentation to determine the positive ion production rate in the ionosphere using the mass spectrometer. 3,299,266, 1-17-67, Cl. 250—41.9.

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Kern, Roland J., to Monsanto Co. Process for the preparation of polylactones. 3,299,012, 1–17–67, Cl. 260—78.5.

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Kirk & Blum Mfg. Co., The: *See*—
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Kish, Michael, Jr., to Atlantic Products Corp. Carrying bag construction. 3,298,480, 1–17–67, Cl. 190—54.

Kisling, James W., III, to Schlumberger Well Surveying Corp. Safety seal packer. 3,298,442, 1–17–67, Cl. 166—196.

Kiss, Kornel D., to Diamond Alkali Co. Oxymethylene-epsilon caprolactam copolymers and method of preparation. 3,299,005, 1–17–67, Cl. 260—67.5.

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Klein, Louis. Mold-down clamp assembly. 3,298,157, 1–17–67, Cl. 53—93.

Klein, Nicholas, to Technion Research and Development Foundation, Ltd. Temperature detector. 3,298,229, 1–17–67, Cl. 73—204.

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Kliner, George J.: *See*—
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Knape & Vogt Mfg. Co.: *See*—
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Knoll Associates, Inc.: *See*—
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Knowlson, Paul D., E. W. Simpson, and M. E. Hull, III, to Hooker Chemical Corp. Phenolic encapsulating compositions. 3,299,167, 1–17–67, Cl. 260—829.

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Kodaira, Nobuhisa. Apparatus of heat-treatment for synthetic yarns. 3,298,430, 1–17–67, Cl. 165—105.

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Koehler, Dankwart, to Bell Telephone Laboratories, Inc. High-speed pulse generator using charge-storage step-recovery diode. 3,299,294, 1–17–67, Cl. 307—88.5.

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Kondo, Teruo, to Mitsubishi Denki Kabushiki-Kaisha. Radar system. 3,299,427, 1–17–67, Cl. 343—17.1.

Könyves, Imre: *See*—
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Kramer, Hyman. Webbing-strip fasteners. 3,298,426, 1–17–67, Cl. 160—404.

Kramer, Walter E., L. A. Joo, and R. M. Haines, to Union Oil Co. of California. Esters of N-N'-dicarboxylic acid and a method of their preparation. 3,299,076, 1–17–67, Cl. 260—295.

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Schickle, Gerhard, Krank, and Schuttloffel. 3,299,374.

Krautheim, Edgar H., and V. C. Veverka, to Harbison-Walker Refractories Co. Rotary kiln scraper. 3,298,679, 1–17–67, Cl. 263—33.

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Kreuder, Norman L., to Burroughs Corp. 3,299,305, 1–17–67, Cl. 313—92.

Krieger, Alex, to Societe de la Viscose Suisse. Stabilized poly (omega-amino carboxylic acid) compositions containing copper and a dicarboxylic acid diamide. 3,298,994, 1–17–67, Cl. 260—45.75.

Krooss, Robert J., and R. F. Novak, to Simautics, Inc. Paperboard package. 3,298,513, 1–17–67, Cl. 206—65.

Krueger, Carl E., to General Electric Co. Fastener having layer of foamed resin with indexing means projecting therethrough. 3,298,271, 1–17–67, Cl. 85—32.

Kubba, Muthanna H.: *See*—
Cherry, Edward C., Pearson, Barton, Kubba, and Voelcher. 3,299,204.

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Kugelfischer Georg Schafer & Co.: *See*—
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Kuhle, Engelbert: *See*—
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Kuhle, Engelbert, and E. Klauke, to Farbenfabriken Bayer Aktiengesellschaft. Trihalogenated methyl mercaptans. 3,299,148, 1–17–67, Cl. 260—609.

Kühner, Ernst E., and E. W. Sutter. Material hoist for bulk material. 3,298,552, 1–17–67, Cl. 214—707.

Kuhre, Calvin J., C. A. Dallas, W. R. Haefele, and M. A. Delsz, to Shell Oil Co. Compositions comprising mono-olefin polymers and hydrogenated block copolymers. 3,299,174, 1–17–67, Cl. 260—876.

Kull, Gustav. Underground passage forming apparatus. 3,298,448, 1–17–67, Cl. 175—19.

Kumm, Joe F., and J. R. Schauerman, to United States of America, Navy. Decimal number to log analogue conversion. 3,299,419, 1–17–67, Cl. 340—347.

Kunreuther and Merfeld: *See*—
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Kurata, Mamoru, to Tokyo Shibaura Electric Co., Ltd. Dimmer for a plurality of discharge lamps. 3,299,320, 1–17–67, Cl. 315—210.

Kurkjian, Charles R., and A. W. Treptow, to Bell Telephone Laboratories, Inc. Preparation of cerium-containing glasses. 3,298,811, 1–17–67, Cl. 65—117.

Kus, Rudolf, and H. Jager, to Wedag Westfalia Dinnedahl Groppe Aktiengesellschaft. Apparatus for the preheating of raw cement material. 3,298,110, 1–17–67, Cl. 34—37.

Kyorin Seiyaku Kabushiki Kaisha: *See*—
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Kyowa Hakko Kogyo Co., Ltd.: *See*—
Shibasaki, Yasuichi. 3,298,938.

Laakso, Oliver A., to Aktiebolaget Kamyr. Method and arrangement for washing and cooling at the outlet end of a continuous cellulose digester. 3,298,899, 1–17–67, Cl. 162—19.

Laakso, Oliver A., to Aktiebolaget Kamyr. Method and apparatus for the continuous bleaching of cellulosic pulp. 3,298,900, 1–17–67, Cl. 162—17.

Laakso, Oliver A., to Aktiebolaget Kamyr. Washing container. 3,298,209, 1–17–67, Cl. 68—181.

Laama, Vello: *See*—
Ottosen, Frederick O., Mattson, and Laama. 3,298,163.

Laboratorni Pristroje, narodni podnik: *See*—
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La Cie Hydrolic Vincent Ltee: *See*—
Lacoste, Georges, Rouville, Racicot, and Vincent. 3,298,496.

Lacoste, Georges, P. E. Rouville, D. Racicot, and H. Vincent, to La Cie Hydrolic Vincent Ltee. Swinging discharge conveyor for stable-cleaning apparatus. 3,298,496, 1–17–67, Cl. 198—124.

Lacy, James W., to Texas Instruments Inc. Transistor structure with heat-conductive housing for cooking. 3,299,331, 1–17–67, Cl. 317—235.

La Fosse, Jean G.: *See*—
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Laidig, Jonathan J., to Laidig Silo Unloaders, Inc. Silo unloader with load responsive drive control. 3,298,543, 1–17–67, Cl. 214—17.

Laidig Silo Unloaders, Inc.: *See*—
Laidig, Jonathan J. 3,298,543.

L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude: *See*—
Malafosse, Jean, and Gonse. 3,298,775.

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Landbouwwerktuigen-en Maschinefabriek H. Vissers N.V.: *See*—
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Lang, John L. Process for producing and using a metalloid material as a polymerization catalyst. 3,299,026, 1–17–67, Cl. 260—93.7.

Lange, Alfred, and J. Barthel, to Veb Mansfeld-Kombinat Wilhelm Pieck. Process and furnace for separating volatile from non-volatile material. 3,298,825, 1–17–67, Cl. 75—63.

Lange, Alfred C.: *See*—
Schauer, Ronald E., Prescher, Van Bosse, and Lange. 3,299,437.

Langlade Operating Co.: *See*—
Liebmann, Herbert C., Jr. 3,298,057.

Lanza Ltd.: *See*—
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Larsen, Norman B., to Matrix Laboratories, Inc. Disposable dispensing container. 3,298,575, 1–17–67, Cl. 222—399.

Larson, Ernest J., Jr. Temporary shelter for injured persons. 3,298,382, 1–17–67, Cl. 135—14.

Lasch, Cecil A., Jr., G. P. Hampton, and B. J. Speransky, to Electroglas, Inc. Diffusion furnace. 3,299,196, 1–17–67, Cl. 13—24.

La Telemecanique Electrique: *See*—
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Lau, Ralph L., and G. Collett, to Consolidateed Papers, Inc. Paper laminates for electrostatic printing support members. 3,298,831, 1–17–67, Cl. 96—1.5.

Lauble, Michel: *See*—
Regnier, Gilbert, Canevari, and Lauble. 3,299,067.

Laucks, Howard H.: *See*—
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Launay, Pierre. Fixation device comprising a screw and a ring. 3,298,270, 1–17–67, Cl. 85—1.

Lawson, William H., Jr., to The Sierracin Corp. Warming device. 3,299,253, 1–17–67, Cl. 219—385.

Layton, Jack D. Paver screed assembly. 3,298,291, 1–17–67, Cl. 94—45.

Lea, James D., to Esso Production Research Co. Proportioning transmission. 3,298,238, 1–17–67, Cl. 74—191.

Lea, James D., to Esso Production Research Co. Proportioning transmission. 3,298,238, 1–17–67, Cl. 74—191.

Learned, Vincent R., and C. A. Moreno, to United States of America, Army. Moving target radar system. 3,299,426, 1–17–67, Cl. 343—7.7.

Leatham, Earl: *See*—
Campbell, William W., Leatham, and Pack. 3,298,840.

Leavitt, Frederick C., and P. A. Carney, to The Dow Chemical Co. Process for acylation of alkenyl aromatic polymers. 3,299,025, 1–17–67, Cl. 260—93.5.

Le Brocq, Walter. Bread dispenser. 3,298,568, 1–17–67, Cl. 221—155.

Le Compte, Archie R., Jr., to Kimberly-Clark Corp. Belt cleaning apparatus for a papermaking machine. 3,298,904, 1–17–67, Cl. 162—274.

Lecouffe, Yves J. F.: *See*—
Binder, Pierre, and Lecouffe. 3,298,871.

Lederman, Sol J.: *See*—
Prahl, Walter H., and Lederman. 3,298,933.

Ledford, Glenn J., and W. E. Mason, to Burlington Industries, Inc. Electrostatic charge eliminator combined with a tufting machine. 3,298,340, 1–17–67, Cl. 112—79.

Ledig, Kurt W.: *See*—
Wendt, Gerhard R., and Ledig. 3,299,064.

Lee, Arnold S. J. Freezing probe for the treatment of tissue, especially in neurosurgery. 3,298,371, 1–17–67, Cl. 128—303.1.

Lee, Donald H.: *See*—
Webb, James E. 3,298,182.

Lee, Hua-Tung, to International Business Machines Corp. Wide-band transformer having neutralizing winding. 3,299,384, 1–17–67, Cl. 336—171.

Lee, Shao-Tang. Engine inlet protective screen arrangement. 3,298,637, 1–17–67, Cl. 244—53.

Leeds & Northrup Co.: *See*—
Davies, Roy E. 3,298,874.

Leesona Corp.: *See*—
Diotalevi, Mario J. 3,298,867.
Franci, David O. 3,298,726.

Leibowitz, Marvin R.: *See*—
Grosser, Frederick, and Leibowitz. 3,299,023.

Leigh Products, Inc.: *See*—
Moore, Robert J. 3,298,676.

Leitz, Ernst, G.m.b.H.: *See*—
Schlapp, Werner. 3,298,295.

Lemelson, Jerome H. Panel structure. 3,298,433, 1–17–67, Cl. 165—168.

Lemelson, Jerome H. Method of making building panels. 3,298,883, 1–17–67, Cl. 156—71.

Leonard, Merrill G., to Westinghouse Electric Corp. Fuse and disconnect device for manual or thermal operation. 3,299,235, 1–17–67, Cl. 200—127.

Leopold, Paul F., to Pendleton Tool Industries, Inc. Display package. 3,298,516, 1–17–67, Cl. 206—80.

Lepard, Harold J., Jr., and K. N. Thomas. Seating article. 3,298,741, 1–17–67, Cl. 297—421.

Lerner, Hershey, to Automated Packaging Corp. Method and apparatus for packaging. 3,298,166, 1–17–67, Cl. 53—29.

Lerner, Hershey, to Automated Packaging Corp. Container delivery apparatus. 3,298,580, 1–17–67, Cl. 225—106.

Letraset Ltd.: *See*—
Reed, Kenneth J., and Lythgoe. 3,298,850.

Lewin, Henry: *See*—
Petri, Albert L., and Lewin. 3,298,375.

Lewis, Hector E., to Surgical Appliance Industries, Inc. Ankle brace. 3,298,365, 1–17–67, Cl. 128—80.

Lewis, Jay L., to Robertshaw Controls Co. Sequence valve. 3,298,395, 1–17–67, Cl. 137—607.

Libbey-Owens-Ford Glass Co.: *See*—
Mambourg, James E. 3,298,814.

Liebmann, Herbert C., Jr., to Langlade Operating Co. Apparatus for processing meat. 3,298,057, 1–17–67, Cl. 17—32.

Liftronic, Inc.: *See*—
Hough, Mark W. 3,299,284.

Lighton, John W., and L. F. Moate, to Fuller Electric Ltd. Rollstand equipment for unwinding and rewinding web material. 3,298,623, 1–17–67, Cl. 292—50.2.

Lignes Telegraphiques et Telephoniques: *See*—
Knapp-Ziller, Michel E. G. 3,299,293.

Likavec, Paul F., to Holly Carburetor Co. Pressure regulator. 3,298,600, 1–17–67, Cl. 230—114.

Lincoln Brass Works: *See*—
Blanzy, Eugene J. 3,298,420.

Lincoln, Seamon A.: *See*—
Beatty, Julian L., and Lincoln. 3,298,852.

Lindenmann, Adolf J.: *See*—
Jucker, Ernst, Lindenmann, and Vogel. 3,299,091.

Linder, Jerome: *See*—
Newcomer, Jack S., Linder, and Smith. 3,298,818.

Lindvig, Philip E., to E. I. du Pont de Nemours and Co. Primary electrochemical cell employing borate anion as an anode component. 3,298,866, 1–17–67, Cl. 136—83.

Linner, Ludwig, H. Korrenn, and R. Mann, to Kugelfischer Georg Schafer & Co. Antifriction bearing. 3,298,760, 1–17–67, Cl. 308—187.

Linsk, Jack, to Standard Oil Co. Electrolytic preparation of organo-lead compounds. 3,298,939, 1–17–67, Cl. 204—59.

Lion Mfg. Corp.: *See*—
Berninger, Harold O., and Selden. 3,298,691.

Lion Yushi Kabushiki Kaisha: *See*—
Tomiyama, Shinichi, Marumo, and Takai. 3,299,006.

Lipka, August: *See*—
Behr, Hugo, and Lipka. 3,298,154.

Lipka, David H.: *See*—
Fries, Edward W., Kaufman, Spiel, and Lipka. 3,298,302.

Lipkin, David, to United States of America, Health, Education and Welfare. Iodination of the heterocyclic bases in nucleosides, nucleotides, nucleoside-5'-polyphosphates, and nucleic acids. 3,299,042, 1–17–67, Cl. 260—211.5.

Lippay, Alexander, to Balso Ecuador Lumber Corp. Trussed sandwich laminates. 3,298,892, 1–17–67, Cl. 161—38.

Lippitt, Maxwell W., Jr., and J. H. Reed, Jr., to United States of America, National Aeronautics and Space Administration. Instrument for use in performing a controlled Valsalva Maneuver. 3,298,362, 1–17–67, Cl. 128—2.05.

Lipscomb, Willis L. End plate for lighting fixtures. 3,299,264, 1–17–67, Cl. 240—51.11.

Little, Arthur D., Inc.: *See*—
Latham, Allen Jr. 3,298,320.
Plasse, Paul A., and Johnson. 3,298,053.

Little, Edmund J., and G. K. Raider, to The Pyle-National Co. Side entry valve for air handling troffers. 3,298,299, 1–17–67, Cl. 98—40.

Loach, John H. Adapter for conveying indexed sheets in a stack. 3,298,501, 1–17–67, Cl. 198—221.

Lock, Everett H.: *See*—
Eckel, John E., and Lock. 3,298,451.

Lockshaw, James J. Interconnected spaced reticulated members. 3,298,152, 1–17–67, Cl. 52—650.

Loepfe, A. G., Gebrueder: *See*—
Stutz, Hansruedi. 3,298,401.

Loffler, Theodor, and K. Harbrecht, to Firma Rheinmetall G.m.b.H. Buffer systems for automatic firearms. 3,298,282, 1–17–67, Cl. 89—198.

Lombardi, Claudio. Burglar proof safety lock with cams that block the bolt and electric alarm devices. 3,299,229, 1–17–67, Cl. 200—44.

Loncaric, Rado G.: *See*—
Anthony, Donald R., Loncaric, and Fields. 3,298,438.

Long, Arthur H., and A. Shashaty, to Wm. K. Stamets Co. Coupling screw-on-machine. 3,298,089, 1–17–67, Cl. 29—240.

Long, Elton B., and T. J. Coleman, to J. I. Case Co. Extendable backhoe assembly. 3,298,548, 1–17–67, Cl. 214—138.

Longley, Kermit: *See*—
Bernstein, Carl, and Longley. 3,298,974.

Longnecker, Harold D., to The Elmco Corp. Sludge removal means for sedimentation apparatus. 3,298,529, 1–17–67, Cl. 210—533.

Longworth, Ruskin, to E. I. du Pont de Nemours and Co. Compatible blends of 1-olefins. 3,299,176, 1–17–67, Cl. 260—876.

Loof, Nils O. T. Manufacture of hollow bodies. 3,298,405, 1–17–67, Cl. 142—1.

Looman, Johannes, to Zahnradfabrik Friedrickshafen AG. Face and side cutter. 3,298,084, 1–17–67, Cl. 29—95.

Loos, George J.: *See*—
Hague, Robert Z., Laucks, and Loos. 3,298,603.

Loral Electronics Corp.: *See*—
Blau, Robert, Sedlak, and Phillips. 3,299,376.

Lord Corp.: *See*—
Warnaka, Glenn E. 3,298,457.

Loudon, Donald C., to The Bendix Corp. Electrical pulse generating apparatus. 3,299,339, 1–17–67, Cl. 320—1.

Loudon, John D., to Cryogenic Engineering Co. Low temperature storage container. 3,298,185, 1–17–67, Cl. 62—48.

Louverdrake, Inc.: *See*—
Cayton, Robert J., and La Mers. 3,298,425.

Lovering, Howard B.: *See*—
Du Bois, Eliot, and Lovering. 3,298,275.

Lower, Willison L.: *See*—
Adrian, Robert G., and Lower. 3,298,125.

Lowndes, Jane U. Barbecue stand with rotary gridiron and spit and common drive therefor. 3,298,301, 1–17–67, Cl. 99—340.

Lowrie, Harman S., to G. D. Searle & Co. Hydraxides of 3-phenylcinnoline-4-carboxylic acids. 3,299,062, 1–17–67, Cl. 260—250.

Lowrie, Harman S., to G. D. Searle & Co. Piperazine amides of 3-phenylcinnoline-4-carboxylic acids. 3,299,070, 1–17–67, Cl. 260—268.

Lucas, Joseph (Industries) Ltd.: *See*—
Watkins, Sidney C. 3,298,613.

Luciani, Luciano, and P. Manaresi, to Montecatini Edison S.p.A. Purification of polyolefins. 3,299,027, 1–17–67, Cl. 260—93.7.

Luck, James R., to Honeywell Inc. Electrochemical sensors. 3,298,944, 1–17–67, Cl. 204—195.

Ludington, Robert L.: *See*—
Rosellus, Charles F. 3,298,474.
Mersereau, Everard C., Holloway, and Ludington. 3,298,475.

Luloff, Jerome S., and M. Dunkel, to Universal Oil Products Co. Method for separating myrcene from ocimene. 3,299,160, 1–17–67, Cl. 260—677.

Luramus Co., The: *See*—
Bauer, William V. 3,298,932.
Summerville, Robert N. 3,298,038.

Lundberg, Robert D., and R. W. Callard, to Union Carbide Corp. Alkylene oxide polymer compositions flexibilized with salts of carboxylic acids. 3,298,980, 1–17–67, Cl. 260—18.

Lunsford, Carl D., to A. H. Robins Co., Inc. Halo-substituted phenoxymethyl oxazolidones. 3,299,088, 1–17–67, Cl. 260—307.

Lurie, Randolph D., to Continental Can Co., Inc. Containers cold-formed from plastic and metal laminate. 3,298,559, 1–17–67, Cl. 220—63.

Lusher, Kenneth G., to Owens-Illinois, Inc. Partially devitrified glass articles and method for making the same. 3,298,553, 1–17–67, Cl. 215—1.

Luther, John R., to American Sterilizer Co. Automatic control for scrub sink. 3,298,037, 1–17–67, Cl. 4—166.

Lux, John H., to Haveg Industries, Inc. Method of extruding a foamed plastic tube having internal and external skins thereon. 3,299,192, 1–17–67, Cl. 264—48.

Lynn, Ben H. Multi-socket wrench. 3,298,261, 1–17–67, Cl. 81—185.

Lyall, Ralph G. Axle load distributing devices for use with heavy motor vehicles and equipment. 3,298,706, 1–17–67, Cl. 280—81.

Lythgoe, Alan L.: *See*—
Reed, Kenneth J., and Lythgoe. 3,298,850.

Mabuchi, Nobuyoshi: *See*—
Kiriyama, Shigeru, Mabuchi, Sakai, Toshida, Okamoto, and Ikeda. 3,298,999.

Macadie, Hugh S., to Avo Ltd. Instrument bearings and instruments incorporating such bearings. 3,298,758, 1–17–67, Cl. 308—159.

MacCarthy, Richard W. Counter-rotating head electric razor. 3,298,101, 1–17–67, Cl. 30—43.5.

MacGlashan, William F., Jr.: *See*—
Webb, James E. 3,298,285.

Mackay, Lester: *See*—
Christianson, Charles, Duffy, Mackay, and Rutkowski. 3,299,267.

Macks, Elmer F. Concentric foraminous shaping means for tubes or bars. 3,298,808, 1–17–67, Cl. 65—25.

MacLean-Fogg Lock Nut Co.: *See*—
Schwiebert, Phillip D. 3,298,324.

Maeda, Hisao. Parametron bridge circuit utilizing ferromagnetic thin film. 3,299,280, 1–17–67, Cl. 307—88.

Maes, Michel E., to Rocket Research Corp. Confined parallel rail pulsed plasma accelerator. 3,298,179, 1–17–67, Cl. 60—202.

Magat, Michel, and A. Chapiro, to Centre National de la Recherche Scientifique Ministere de l'Education Nationale. Production of perhalogenated graft copolymers. 3,298,942, 1–17–67, Cl. 204—159.17.

Magnavox Co., The: *See*—
Thompson, Charles S. 3,299,375.

Mahler, Harold J.: *See*—
Ganz, Daniel M., and Mahler. 3,298,538.

Maier, Karl, to Badische Anilin & Soda-Fabrik Aktiengesellschaft. 1-amino-4-hydroxy-2-(phenoxy and phenylthio) anthraquinones. 3,299,103, 1–17–67, Cl. 260—373.

Maier, Volker E.: *See*—
Dewar, Robert A., and Maier. 3,298,788.

Maino, Joseph: *See*—
Maino, George. 3,298,675.

Majlinger, Anthony: *See*—
Avery, Robert C., and Majlinger. 3,299,211.

Major Pool Equipment Corp.: *See*—
Schmerler, Joseph. 3,298,039.

Makowski, Alexander G., and R. T. Walter, to Container Corp. of America. Egg carton. 3,298,594, 1–17–67, Cl. 229—45.

Malafosse, Jean, and P. H. Gonse, to l'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude. Process for bleaching textile fibres and new bleaching compositions. 3,298,775, 1–17–67, Cl. 8—101.

Maillison, William C., G. A. Randall, P. H. Seaver, W. C. Rousseau, and R. B. Egbert, to The Badger Co., Inc. Fluid bed diffusion. 3,298,793, 1–17–67, Cl. 23—288.

Mallory, P. R., & Co., Inc.: *See*—
Puerner, George O. 3,298,641.

Malm, Donald I.: *See*—
Harris, Kenneth J., Meyer, and Malm. 3,298,252.

Mambourg, James E., to Libbey-Owens-Ford Glass Co. Apparatus for preventing devitrification of molten glass at the joints of a glass furnace. 3,298,814, 1–17–67, Cl. 65—346.

Manaresi, Piero: *See*—
Luciani, Luciano, and Manaresi. 3,299,027.

Mandle, Richard M., and W. T. Straeble, to W. R. Grace & Co. Process for preparing a polishing compound and product. 3,298,807, 1–17–67, Cl. 51—307.

Maneschi, John R., J. E. Meschi, V. K. Rice, J. G. Van Bosse, and L. W. Amiot, to Automatic Electric Laboratories, Inc. Magnetic drum translator. 3,299,212, 1–17–67, Cl. 179—18.

Manica, Michele: *See*—
Marchesini, Gerolamo, and Manica. 3,299,175.

Manilla, Charles E.: *See*—
Goodrich, Charles B., Manilla, Ramsey, and Hanewald. 3,298,801.

Mann, Ellsworth Y. Support for containers. 3,298,650, 1–17–67, Cl. 248—154.

Mann, Rudolf: *See*—
Linner, Ludwig, Korrenn, and Mann. 3,298,760.

Manning, James J. Camera apparatus especially adapted for the photographic identification of horses. 3,298,294, 1–17–67, Cl. 95—11.

Manning, William P.: *See*—
Grace, Lloyd F., and Manning. 3,298,824.

Mantell, Gerald J.: *See*—
Helin, Arthur F., and Mantell. 3,298,855.

Mantscheff, Alexander, H. Wittfcht, and H. Ochsenbauer, to Polensky & Zollner. Method and means for erecting bridges. 3,299,191, 1–17–67, Cl. 264—34.

Marchesini, Gerolamo, and M. Manica, to Pirelli S.p.A. and Montecatini Edison S.p.A. Vulcanizing of olefin copolymers. 3,299,175, 1–17–67, Cl. 260—876.

Marchisella, Americo. Feminine foundation garment especially for separately shaping the individual buttocks of a wearer. 3,298,373, 1–17–67, Cl. 128—523.

Maris, Thomas G.: *See*—
Tolaas, William M., Ragan, and Maris. 3,298,506.

Mark, Alexander M.: *See*—
McDowell, Charles H., and Mark. 3,298,240.

Mark, Victor, to Monsanto Co. Herbicidal composition and method. 3,298,815, 1–17–67, Cl. 71—2.5.

Marker, Hannes. Toe iron for safety ski bindings. 3,298,703, 1–17–67, Cl. 280—11.35.

Marks, Alvin M. and M. M. Ultra violet light absorbing compositions having a suspension of submicron particles. 3,298,959, 1–17–67, Cl. 252—300.

Marks, Mortimer M.: *See*—
Marks, Alvin M. and M. M. 3,298,959.

Marley Co., The: *See*—
Fordyce, Homer E. 3,298,672.

Marraffino, Leonard L., and R. J. Miolla, Jr.; said Miolla assor. to said Marraffino. Spray head with rotatable selector. 3,298,611, 1–17–67, Cl. 239—305.

Marsh, Lynn W., Jr. Key generator. 3,298,114, 1–17–67, Cl. 35—4.

Marshall, William J.: *See*—
Hanke, Albert R., and Marshall. 3,298,847.

Martin, Heinz, and H. Vogt, to Siemens-Schuckertwerke Aktiengesellschaft. Semiconductor device with pressure contact. 3,299,328, 1–17–67, Cl. 317—234.

Martin, James C., to Eastman Kodak Co. 4-amino-3,4-dihydro-2H-pyran-2-ones. 3,299,058, 1–17–67, Cl. 260—247.2.

Martin, Le Roy: *See*—
Gillette, Leslie A., and Martin. 3,299,146.

Martin-Marietta Corp.: *See*—
Jeremias, Charles G., and Barwick. 3,299,040.

Martinez, Erasmo. Convertible carrier, head rest and sun shade. 3,298,477, 1–17–67, Cl. 190—1.

Marumo, Hideo: *See*—
Tomiyama, Shinichi, Marumo, and Takai. 3,299,006.

Marzocchi, Alfred, and A. E. Beaudoin, to Owens-Corning Fiberglas Corp. Method of coating yarn. 3,298,854, 1–17–67, Cl. 117—72.

Maschinenfabrik Augsburg-Nurnberg AG: *See*—
Elsbett, Ludwig. 3,298,332.

Mason, John H., to Union Carbide Corp. Process for preparing high molecular weight phosphonate polymers. 3,298,967, 1–17–67, Cl. 260—2.

Mason, Walter E.: *See*—
Ledford, Glenn J., and Mason. 3,298,340.

Massengale, John T.: *See*—
Freedman, Allan R., and Massengale. 3,299,018.

Massey, Richard P., to Bell Telephone Laboratories, Inc. Transistor bridge converter. 3,299,370, 1–17–67, Cl. 331—113.

Mast, Raymond L., to Miles Laboratories, Inc. Test article for the detection of glucose. 3,298,789, 1–17–67, Cl. 23—253.

Master Consolidated Inc.: *See*—
Briggs, Eugene C. 3,298,418.

Masters, John E.: *See*—
Hicks, Darrell D., and Masters. 3,298,918.

Matrix Laboratories, Inc.: *See*—
Larsen, Norman B. 3,298,575.

Matsushita Electric Industrial Co., Ltd.: *See*—
Tanaka, Takashi, Sakata, Hirota, and Yanagiuti. 3,299,382.

Mattel, Inc.: *See*—
Allan, Donald R. 3,298,165.
Ryan, John W. 3,298,130.

Mattingly, Lawrence J., to Cadre Industries Corp. Terminal box. 3,299,199, 1–17–67, Cl. 174—50.

Mattson, Charles A.: *See*—
Ottosen, Frederick O., Mattson, and Laama. 3,298,163.

Maurer, John A., to The Weber Dental Mfg. Co. Fluid-driven dental handpiece construction. 3,298,103, 1–17–67, Cl. 32—27.

Mawney, Robert G., L. C. Beggs, and R. A. Renaud; said Mawney and Beggs assors. to Texas Instruments Inc. Rivet for welded electrical connections. 3,299,239, 1–17–67, Cl. 200—166.

Maxwell, John M.: *See*—
Coleman, Theodore J., and Maxwell. 3,298,724.

Maybar, Stephen H., to Bell Telephone Laboratories, Inc. Noise indicator circuit. 3,299,221, 1–17–67, Cl. 179—175.2.

Maylandt, Helmut, to Firma Robert Bosch G.m.b.H. Semiconducting coating for use in a self-heating alternating voltage capacitor and method. 3,298,864, 1–17–67, Cl. 117—212.

Mazur, Robert H., to G. D. Searle & Co. 17-(unsaturated hydrocarbon-substituted)-3-hydroxyimino-5α-androstan-17β-ols, alkyl and acyl derivatives thereof. 3,299,107, 1–17–67, Cl. 260—397.5.

McCaleb, Harold K.: *See*—
Wheatley, Seth J., and McCaleb. 3,298,564.

McCall, Marvin A.: *See*—
Coover, Harry W., Jr., McCall, and Guillet. 3,299,181.

McCardell, William M., to Esso Production Research Co. Method of secondary oil recovery using surfactants formed in situ. 3,298,436, 1–17–67, Cl. 166—9.

McCarty, Horace G.: *See*—
Halis, Lawrence M., and McCarty. 3,298,161.

McClughan, Thomas R.: *See*—
Tompkins, David R., and McClughan. 3,299,349.

McConnell, Richard L., and H. W. Coover, Jr., to Eastman Kodak Co. Bisglycidyl ethers of bisphenols. 3,298,998, 1–17–67, Cl. 260—47.

McConnie, Arthur E. Combined paint can cover and brush wiper. 3,298,561, 1–17–67, Cl. 220—90.

McCord Corp.: *See*—
Porter, Edward B., and Urso. 3,298,460.

McCormick, William A., Jr., to The Pangborn Corp. Apparatus for deflashing molded resilient pieces. 3,298,138, 1–17–67, Cl. 51—13.

McCoy, William D. Filament winding apparatus. 3,298,621, 1–17–67, Cl. 242—18.

McCusker, Joseph H., to United States of America, Navy. Method for fabricating thin film transistors. 3,298,863, 1–17–67, Cl. 117—212.

McDowell, Alan, and R. W. Mowery, to United States Steel Corp. Circuits for delaying electric signals with controlled clamp initiating delay. 3,299,288, 1–17–67, Cl. 307—88.5.

McDonald, James A. Torque limiting clutch. 3,298,488, 1–17–67, Cl. 192—56.

McDonald, James L.: *See*—
Humble, Maglena, and McDonald. 3,298,054.

McDowell, Alan, and R. W. Mowery, to United States Steel Corp. Circuits for delaying electric signals with controlled clamp initiating delay. 3,299,288, 1–17–67, Cl. 307—88.5.

McDowell, Alan, and R. W. Mowery, to United States Steel Corp. Pulse-lengthening circuit employing voltage controlled threshold transistor for isolating output from input during pulse producing period. 3,299,289, 1–17–67, Cl. 307—88.5.

McDowell, Charles H., and A. M. Mark, to United States of America, Navy. Floating pinion for reduction gears. 3,298,240, 1–17–67, Cl. 74—411.

McHale, William L.: *See*—
Sorensen, Svend E., and McHale. 3,299,237.

McHugh, James P.: *See*—
Fleming, William T., and McHugh. 3,298,616.

McIntosh, Richard F., to Clark Equipment Co. Triple stage upright for lift truck. 3,298,463, 1–17–67, Cl. 187—9.

McIver, George W.: *See*—
Scott, Joseph H., Jr., and McIver. 3,298,879.

McKelvey, Harold E., to Pittsburgh Plate Glass Co. Method and apparatus for bending and tempering glass sheets. 3,298,810, 1–17–67, Cl. 65—107.

McKelvey, Michael J. Releasable fastener. 3,298,273, 1–17–67, Cl. 85—62.

McKinlay, Dan. Water filtration bed and method of producing same. 3,298,521, 1–17–67, Cl. 210—75.

McKinney, John J.: *See*—
Eldred, Robert I., Jr., and McKinney. 3,298,834.

McMillan, Robert W., to United States of America, Navy. Digital-magnetic deflection with unregulated deflection coil supply voltage. 3,299,315, 1–17–67, Cl. 315—27.

McMullin, Thomas J., to Decibel Products, Inc. Vertical array of folded dipoles adjustably mounted on support mast. 3,299,429, 1–17–67, Cl. 343—796.

McNaney, Joseph T. System for transferring data from a storage medium to a record medium. 3,299,434, 1–17–67, Cl. 346—110.

McNeil Corp.: *See*—
Soderquist, Leslie E. 3,298,066.

McReynolds, Boone K., to SCM Corp. Plunger electromagnet with anti-stick means separating the poles and operating a utilization device. 3,299,380, 1–17–67, Cl. 335—220.

Meath, Franklin D., and J. L. Doyle, to DMD Corp. Ironing board. 3,298,325, 1–17–67, Cl. 108—25.

Mechanical Products Inc.: *See*—
Roberts, Gordon A. 3,299,322.

Medd, Robert E. Forage harvester and corn picker. 3,298,162, 1–17–67, Cl. 56—16.

Medlin, Reginald O., Jr.: *See*—
Trowbridge, Lawrence E., and Medlin. 3,299,400.

Meek, John E. Electric fluid heating device. 3,299,252, 1–17–67, Cl. 219—293.

Meglic, Stanley: *See*—
Gluyas, Richard E., and Meglic. 3,299,326.

Meitinger, Heinz, and J. Egger, to The United States Time Corp. Dial train drive. 3,298,170, 1–17–67, Cl. 58—28.

Mellen, William F. Tractor with liftable rear coulter and moldboard plow combination. 3,298,445, 1–17–67, Cl. 172—166.

Meloni, Edward G.: *See*—
Ocone, Luke R., Block, and Meloni. 3,299,093.

Mercier, Pierre E. Suspension equipment for vehicles. 3,298,709, 1–17–67, Cl. 280—104.

Merck & Co., Inc.: *See*—
Bicking, John B. 3,298,917.
Cragoe, Edward J., Jr., and Jones. 3,299,063.
Gal, George, and Sletzinger. 3,299,080.
Harris, Stanton A., and Gitterman. 3,299,095.
Hoff, Dale R., and Henry. 3,299,090.
Jones, Robert E., and Gal. 3,299,082.
Kollonitsch, Janos. 3,299,083.
Sletzinger, Meyer, Gaines, and Grenda. 3,299,081.
Tishler, Max, Steinberg, and Hirschmann. 3,299,054.

Merfeld, Kurt W., to Kunreuther and Merfeld. Garment clip. 3,298,073, 1–17–67, Cl. 24—255.

Merit Plastics, Inc.: *See*—
French, John H. 3,298,063.

Mersereau, Everard C., R. M. Holloway, and R. L. Ludington; said Mersereau assor. to said Holloway and Ludington. Brake mechanism. 3,298,475, 1–17–67, Cl. 188—200.

Meschi, Joseph E.: *See*—
Maneschi, John R., and Meschi, Rice, Van Bosse, and Amiot. 3,299,212.

Metal Hydrides Inc.: *See*—
Wade, Robert C. 3,298,800.

Metal Recovery Systems: *See*—
D'Alelio, Gaetano F. 3,298,969.

Metallgesellschaft Aktiengesellschaft: *See*—
Wirth, Hans, and Eisenlohr. 3,299,158.

Mey, Hansjuerg, to Gretag Aktiengesellschaft. Apparatus for automatically controlling exposure in photographic printing machines. 3,298,296, 1–17–67, Cl. 95—73.

Meyer, Engelbert A., to Chicago-United Products Co., Inc. Apparatus for electric welding fasteners to automobile bodies. 3,299,248, 1–17–67, Cl. 219—98.

Meyer, Geo. J., Mfg. Co.: *See*—
Carter, Sidney T. 3,298,889.

Meyer, Raymond J.: *See*—
Harris, Kenneth J., Meyer, and Malm. 3,298,252.

Meyer, Walter, and R. S. Olsen, to Research Corp. Ion-exchange resin counter-current extraction apparatus. 3,298,791, 1–17–67, Cl. 23—270.

Meyerer, Paul: *See*—
Veith, Wernr, and Meyerer. 3,299,311.

Miano, George, to J. Maino. Accessory for controlling operation of carburetor accelerator pump. 3,298,675, 1–17–67, Cl. 261—34.

Micciche, Frank. Disposable tooth cleaner. 3,298,507, 1–17–67, Cl. 206—46.

Michael, Harold J., to North American Aviation, Inc. Method of providing high temperature protective coatings. 3,298,936, 1–17–67, Cl. 204—38.

Michaels, Alan S.: *See*—
Baddour, Raymond F., and Michaels. 3,299,157.

Michalak, Martin H. Methods and apparatus for compacting powdered metal to form strips. 3,298,060, 1–17–67, Cl. 18—9.

Michel, Rupprecht, to Siemens-Schuckertwerke Aktiengesellschaft. Pressure-fired once-through boiler. 3,298,360, 1–17–67, Cl. 122—510.

Midland-Ross Corp.: *See*—
Pomper, Anthony W. 3,298,061.

Midwest Bank Builders, Inc.: *See*—
Carson, John F. 3,298,632.

Miehle-Goss-Dexter, Inc.: *See*—
Raymond, Francis A., and Bonasera. 3,298,622.

Migitaka, Masatoshi: *See*—
Takagi, Takeshi, Migitaka, Ueda, and Kimura. 3,298,880.

Mihara, Toshio: *See*—
Muto, Yoshiji, Hyugaji, and Mihara. 3,298,673.

Mikesell, Walter R., Jr., and L. P. Zick, Jr., to Chicago Bridge & Iron Co. Sealing means for pressure vessels. 3,298,794, 1–17–67, Cl. 23—290.

Milan, Henry J., to The Singer Co. Band wheel supports for sewing machine stands. 3,298,752, 1–17–67, Cl. 308—18.

Miles Laboratories, Inc.: *See*—
Croxall, Willard J. 3,299,141.
Curtis, James H. 3,299,052.
Mast, Raymond L. 3,298,789.
Zienty, Mitchell F. 3,298,853.
Zienty, Mitchell F. 3,299,127.

Milholland, Dick E., to S. C. Johnson & Son, Inc. Method and apparatus for testing aerosol spray devices. 3,298,518, 1–17–67, Cl. 209—111.9.

Milinowski, Arthur, to Republic Lens Co., Inc. Triplet-type magnifying lens. 3,298,772, 1–17–67, Cl. 350—234.

Miljo Chemical Co., Inc.: *See*—
Harding, Archibald B. 3,298,856.

Miller, Alfred V., deceased (A. L. Miller, personal representative of said A. V. Miller). Roof shingle applying machine. 3,298,594, 1–17–67, Cl. 227—48.

Miller, Alicia L.: *See*—
Miller, Alfred V. 3,298,584.

Miller, Charles E., and R. B. Jacobs, to United States of America, NASA. Densitometer. 3,298,221, 1–17–67, Cl. 73—32.

Miller, Lee A., to Monsanto Co. Inhibiting microorganisms with propiolamides. 3,298,909, 1–17–67, Cl. 167—30.

Miller, Robert C., to E. I. du Pont de Nemours and Co. Method for preparing α,β-unsaturated tertiary phosphine oxides and polymers thereof. 3,299,015, 1–17–67, Cl. 260—80.

Millican, Basil F., and C. B. Rolleston, to FMC Corp. Article wrapping apparatus. 3,298,265, 1–17–67, Cl. 83—171.

Millikan, Allen F., and G. W. Crosby, to Union Oil Co. of California. Methylene esters of carboxylic and phosphorodiamidodithioic acids. 3,299,189, 1–17–67, Cl. 260—952.

Milliken, Donald B., to National Aeronautics and Space Administration. Camera film feed having a detent means. 3,298,582, 1–17–67, Cl. 226—58.

Millmaster Onyx Corp.: *See*—
Wakeman, Reginald L., and Coates. 3,299,073.

Mindler, Albert B., to Ritter Pfaudler Corp. Liquid treating apparatus and method. 3,298,050, 1–17–67, Cl. 210—33.

Minervini, Frank, and T. Fugel. Invisible molding fastener. 3,298,145, 1–17–67, Cl. 52—127.

Mines, James A., to Bell Telephone Laboratories, Inc. Bipolar transistor amplifier for telephone set use. 3,299,215, 1–17–67, Cl. 179—81.

Minisci, Francesco, U. Pallini, and R. Galli, to Montecatini Edison S.p.A. Process for the preparation of chlorinated ethers. 3,299,149, 1–17–67, Cl. 260—614.

Minnesota Mining and Mfg. Co.: *See*—
Ashley, Paul E., and Radimer. 3,298,940.
Bond, Herbert M., and Snell. 3,298,992.
Errede, Louis A. 3,299,126.
Norton, Robert E. 3,298,873.

Miolla, Ralph J., Jr.: *See*—
Marrafino, Leonard L., and Miolla. 3,298,611.

Mitchell, William J. Combination can punch and handle. 3,298,099, 1–17–67, Cl. 30—16.

Mitsubishi Denki Kabushiki-Kaisha: *See*—
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Mitsubishi Shipbuilding & Engineering Co., Ltd.: *See*—
Fukuma, Shinichi, Atsukawa, Nishimoto, and Inoue. 3,298,258.

Miyamae, Kenzo. Chain pipe wrench. 3,298,258, 1–17–67, Cl. 81—68.

Miyoshi, Katsuki, to Tadao Yamaoko. Agricultural tractors controlled by hydraulic systems. 3,298,239, 1–17–67, Cl. 74—218.

Moate, Leslie F.: *See*—
Lighton, John W., and Moate. 3,298,623.

Mobil Oil Corp.: *See*—
Nelson, Murrell D., Jr. 3,298,949.

Moedritzer, Kurt: *See*—
Irani, Riyad R., and Moedritzer. 3,298,956.

Möhrke, Walter, and H. E. Bade, to Friedrich Behrens, Joh. Compressed air operable nail driving device. 3,298,585, 1–17–67, Cl. 227—114.

Moiso, Ugo, and S. S. Papa, to Aziende Colori Nazionali Affini ACNA S.p.A. Mixed ternary complex of monoazo compounds 3,299,039, 1–17–67, Cl. 260—145.

Moll, John L., to Hewlett-Packard Co. Two terminal storage circuit employing single transistor and diode combination. 3,299,290, 1–17–67, Cl. 307—88.5.

Molnar, Michael. Tube cutting machine. 3,298,266, 1–17–67, Cl. 83—311.

Monahan, David E. Stick puppets. 3,298,131, 1–17–67, Cl. 46—126.

Monsanto Co.: *See*—
D'Amico, John J. 3,299,129.
Fitch, Steven J., and Irani. 3,299,123.
Irani, Rivad R., and Moedritzer. 3,298,956.
Kern, Roland J. 3,299,012.
Kern, Roland J. 3,298,972.
Mark, Victor. 3,298,815.
Miller, Lee A. 3,298,909.
Vineyard, Billy D. 3,299,121.
Zienty, Ferdinand B., and Holm. 3,299,096.

Monsanto Chemical Co.: *See*—
O'Connor, Richard J., Van Deren, and Darlington. 3,298,910.

Montecatini Edison S.p.A.: *See*—
Angeleri, Pietro. 3,298,934.
Borghese, Camillo. 3,299,183.
Dakli, Ibrahim, Grazioli, and Oddo. 3,298,993.
Luciani, Luciano, and Manaresi. 3,299,027.
Minisci, Francesco, Pallini, and Galli. 3,299,149.

Montecatini Societa Generale per l'Industria Minerla e Chimica: *See*—
Di Drusco, Giovanni. 3,298,792.

Mo Och Domsjo Aktiebolag: *See*—
Croon, Ingemar L.-A., Assarsson, and Frisk. 3,298,749.

Moog, Inc.: *See*—
Hague, Robert Z., Laucks, and Loos. 3,298,603.

Moore, Clarence D., to Armstrong Cork Co. Polychloroprene adhesive containing zinc halide. 3,298,989, 1–17–67, Cl. 260—29.7.

Moore, Edward T., and T. G. Wilson. Turn-off circuitry for silicon controlled rectifier and other thyratron-like devices. 3,299,279, 1–17–67, Cl. 307—88.

Moore, Emory S., and E. M. Still. Surgical abdominal binder. 3,298,366, 1–17–67, Cl. 128—157.

Moore, Robert J., to Leigh Products, Inc. Air humidifiers for forced air ducts. 3,298,676, 1–17–67, Cl. 261—35.

Moore, Stanley C.: *See*—
Bachman, William S., Moore, Rollins, and Garrett. 3,298,449.

Morana, Simon J., to The Beryllium Corp. Protective coating for beryllium metal. 3,298,877, 1–17–67, Cl. 148—31.5.

Morehouse Instrument Co.: *See*—
Hartranft, Donald Z. 3,298,225.

Moreno, Charles A.: *See*—
Learned, Vincent R., and Moreno. 3,299,426.

Morgan, Harold J., to General Dynamics Corp. Safety face mask. 3,298,031, 1–17–67, Cl. 2—9.

Morgan, Robert D., to Carrier Corp. Control apparatus with timing means for refrigeration systems. 3,298,192, 1–17–67, Cl. 62—158.

Moricet, Jean-Paul, to Compagnie Generale d'Automatisme. Device for separating flat objects according to their linear dimensions. 3,298,517, 1–17–67, Cl. 209—84.

Morifuji Haguruma Seisakusho Co., Ltd.: *See*—
Morifuji, Noboru. 3,298,410.

Morifuji, Noboru, to Morifuji Haguruma Seisakusho Co., Ltd. Screw holder structure for use with screw drivers. 3,298,410, 1–17–67, Cl. 145—52.

Morris, Kenneth R. Pipe support. 3,298,645, 1–17–67, Cl. 248—71.

Morris, Philip, Inc.: *See*—
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Morris, Ronald G., to Beaver-Advance Corp. Traction lift for scaffolding towers. 3,298,462, 1–17–67, Cl. 187—2.

Morrison, William M. M., to Turner Mfg. Co., Ltd. Gear shift mechanisms. 3,298,483, 1–17–67, Cl. 192—3.5.

Morse, Charles P., to National Aeronautics and Space Administration under Provision of 42 U.S.C. 2457 (d). Method and device for cooling. 3,298,175, 1–17–67, Cl. 60—26.7.

Mortensen, Richard C.: *See*—
Oltean, George, Mortensen, and Jessen. 3,298,228.

Morton International, Inc.: *See*—
Grady, James M. 3,298,416.

Morway, Arnold J., to Esso Research and Engineering Co. Lubricants containing mixed metal salts of fatty acid and aromatic polybasic acid. 3,298,953, 1–17–67, Cl. 252—41.

Mosbach, Karl T. R. Chromatographic separation of substances of different molecular weight. 3,298,925, 1–17–67, Cl. 195—66.

Moseley, Robert B., and M. N. Papadopoulos, to Shell Oil Co. Hydration of olefins to alcohols and ethers using halogenated alkanol solvents. 3,299,150, 1–17–67, Cl. 260—614.

Mosher, Robert A., to Standard Oil Co. Gelatin desiccant tablets. 3,298,958, 1–17–67, Cl. 252—194.

Mosier, Kenneth C. Check valve having throttling passage. 3,298,393, 1–17–67, Cl. 137—513.3.

Moss, Norman, and P. Stanwell, to Plessey V. K. Ltd. Composite mechanical drives. 3,298,250, 1–17–67, Cl. 74—675.

Moss, Norman, to Plessey V. K. Ltd. Constant-speed drives. 3,298,251, 1–17–67, Cl. 74—687.

Motiguji Haguruma Seisakusho Co., Ltd.: *See*—
Morifuji, Noboru. 3,298,410.

Motorola, Inc. *See*—
Warner, Raymond M., Jr., and Csanky. 3,299,291.

Motto, John W., Jr., to Westinghouse Electric Corp. Semiconductor switching circuitry. 3,299,297, 1–17–67, Cl. 307—88.5.

Mowery, Robert W.: *See*—
McDowell, Alan, and Mowery. 3,299,288.
McDowell, Alan, and Mowery. 3,299,289.

Mueller, Albert, to Shell Oil Co. Process for preparing flexible resinified products from polyepoxides and resulting products. 3,299,008, 1–17–67, Cl. 260—78.5.

Mueller, Robert S., I. M. Gurol, and M. W. Uitvlugt, to Eaton Yale & Towne Inc. Speed governor. 3,298,482, 1–17–67, Cl. 192—3.

Muller, Albert F., and J. A. Controllably adjustable automobile bed-platform. 3,298,043, 1–17–67, Cl. 5—118.

Muller, Jacques, to Rellumit, Inter. Water removal equipment for fuels. 3,298,522, 1–17–67, Cl. 210—90.

Muller, Janice A.: *See*—
Muller, Albert F., and J. A. 3,298,043.

Mundschenk, Glenn B., to General Electric Co. Dial pointer assembly. 3,298,350, 1–17–67, Cl. 116—124.1.

Mune, Charles: *See*—
Camp, William W., and Mune. 3,299,231.

Murata Mfg. Co. Ltd.: *See*—
Suburi, Osamu. 3,299,332.

Murray, Peter J. A.: *See*—
Hildebrand, Robert P., Harold, Clarke, and Murray. 3,298,835.

Muter Co., The: *See*—
Torach, Charles E. 3,299,379.

Muto, Haruo, and K. Onodera, to Tokyo Shibaura Electric Co., Ltd. Quantitative chemical analysis comprising irradiating with neutrons and measuring the characteristic decay pattern. 3,299,268, 1–17–67 Cl. 250—83.1.

Muto, Yoshiji, T. Hyugaji, and T. Mihara, to Hitachi, Ltd. Rectification towers. 3,298,673, 1–17–67, Cl. 261—22.

Myers, F. E., & Bro Co.: *See*—
Wolford, Dale E. 3,298,608.

Myers, John H., to James R. Kearney Corp. Electrical switch having a pivotable and rotatable blade and switch operating mechanism therefor. 3,299,230, 1–17–67, Cl. 200—48.

N. V. Konimklijke Nederlandsche Zoutindustrie: *See*—
van Damme-van Weele, Marina A., and van Der Molen. 3,298,796.

Nadler Murray: *See*—
Cull, Neville L., and Nadler. 3,298,846.

Nagata, Wataru, and T. Sugasawa, to Shionogi & Co., Ltd. 3α,5α-epoxy methano-steroidal compounds and process for the production thereof. 3,299,048, 1–17–67, Cl. 260—239.55.

Nagel, Jerome K.: *See*—
Rogers, John B., Nagel, and Burrey. 3,298,143.

Nakayama, Yoshiaki: *See*—
Yamada, Tatsuya, Hasegawa, Nakayama, and Neishi. 3,299,314.

Nalco Chemical Co.: *See*—
Schoch, John F. 3,298,804.

National Aeronautics and Space Administration: *See*—
Hoblin, Lester E. 3,299,431.
Milliken, Donald B. 3,298,582.
Morse, Charles P. 3,298,175.
Webb, James E. 3,298,182.
Webb, James E. 3,298,285.

National Cash Register Co., The: *See*—
Bornhorst, Kenneth F., Gliatti, and Colello. 3,299,356.
Carlson, Carl O., and Scherr. 3,298,297.
Cohen, Morris. 3,299,260.
Harman, Michael G. 3,299,283.

National Research Development Corp.: *See*—
Cherry, Edward C., Pearson, Barton, Kubba, and Voelcker. 3,299,204.
Rawcliffe, Gordon H., and Fong. 3,299,337.

Naylor, Floyd E.: *See*—
Zelinski, Robert P., and Naylor. 3,299,017.

Neaverson, Peter A.: *See*—
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Neaverson, Rowland A. and P. A. Wheeled trolleys. 3,298,705, 1–17–67, Cl. 280—46.

Neidleman, Saul L., to Olin Mathieson Chemical Corp. Process for preparing 6-dimethyltetracyclines using ethionine sulfoxide. 3,298,927, 1–17–67, Cl. 195—80.

Neishi, Hidetada: *See*—
Yamada, Tatsuya, Hasegawa, Nakayama, and Neishi. 3,299,314.

Neitzel, Edwin B., to Texas Instruments Inc. Analog-digital encoder for time-varying signals. 3,299,421, 1–17–67, Cl. 340—347.

Nelson, Murrell D., Jr., to Mobil Oil Corp. Treating natural gas streams. 3,298,949, 1–17–67, Cl. 208—340.

Nelson, William M., to Phillips Petroleum Co. Stabilized polyolefins containing carboxy-substituted diphenyl disulfides. 3,298,996, 1–17–67, Cl. 260—45.85.

Nemoto, Kuniharu: *See*—
Watanabe, Hisashi, and Nemoto. 3,299,330.

Nemechek, Joseph F.: *See*—
Briggs, Stephen F., and Nemechek. 3,298,333.

Netta, Louis A., to The Thomas & Betts Co., Inc. Terminal attaching machines. 3,298,217, 1–17–67, Cl. 72—326.

Newbrough, Joseph S.: *See*—
Schoenfeld, Otto B., and Newbrough. 3,298,435.

Newcomer, Jack S., J. Linder, and K. J. Smith. Tetrahalobenzoic acid-N-phenyl-N',N'-dialkylurea herbicide compositions. 3,298,818, 1–17–67, Cl. 71—2.6.

Newcomer, Jack S., E. D. Weil, and E. Dorfman, to Hooker Chemical Corp. N-hydroxymethyl-2,3,6-trichlorophenylacetamide as a fungicide. 3,298,908, 1–17–67, Cl. 167—30.

Newcomer, Jack S., E. D. Weil, and E. Dorfman, to Hooker Chemical Corp. Mixed glycol ester of 2,3,6-trichlorophenylacetic acid and trichloroacetic acid. 3,299,120, 1–17–67, Cl. 260—476.

Newill, Edward J., A. E. Beaty, J. H. English, and A. D. Heiny, to General Motors Corp. Dynamoelectric machine with incorporated voltage regulator. 3,299,303, 1–17–67, Cl. 310—66.

Newton, Albert E., to United Shoe Machinery Corp. Cement dispensers. 3,298,572, 1–17–67, Cl. 222—146.

Niccum, Ronald J.: *See*—
Heinrich, Helmut G., Haak, Niccum, and Gimalouski. 3,298,639.

Nichol, Richard J., to Avon Products, Inc. Molded laminated article. 3,298,558, 1–17–67, Cl. 220—63.

Nicholl, Peter J., to Brown and Williamson Tobacco Corp. Extrusion dies. 3,298,062, 1–17–67, Cl. 18—12.

Nicholson, William A., to Radiation Ltd. Radiating or incandescent burner. 3,298,419, 1–17–67, Cl. 158—99.

Nieder-Westermann, Winfried: *See*—
Rackley, Carle E., and Nieder-Westermann. 3,299,265.

Nielsen, Carl A.: *See*—
Daw, Garfield A., and Nielsen. 3,299,435.

Nihof, Hendrikus J.: *See*—
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Nippon Electric Co., Ltd.: *See*—
Saeki, Akio, and Horiguchi. 3,299,372.
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Watanabe, Hisashi, and Nemoto. 3,299,330.

Nishimoto, Yoshihiko: *See*—
Fukuma, Shinichi, Atsukawa, Nishimoto, and Inoue. 3,298,781.

Nishiura, Osamu, S. Mano, I. Moridaw, and K. Yakahashi, to Japan Reichhold Chemicals, Inc. Sizing agents and processes for preparation thereof. 3,299,034, 1–17–67, Cl. 260—101.

Nitafoam Ltd.: *See*—
Grimshaw, Norman. 3,298,885.

Nogami, Ikuo: *See*—
Banno, Isao, Iijima, Hasegawa, Igarasi, Imada, Nogami, Suhara, Yoneda, and Ohmor. 3,298,923.

Nolin, Roger J.: *See*—
Russell, Fred J., and Nolin. 3,298,094.
Russell, Fred J., and Nolin. 3,298,729.

Noll, Stanley D., and W. F. Delfeld, to Production Experts, Inc. Crop pusher for slab shears and the like. 3,298,264, 1–17–67, Cl. 83—135.

Nomura, Osamu, to Tokyo Shibaura Electric Co. Ltd. Dimmer for electric lamps. 3,299,319, 1–17–67, Cl. 315—199.

Noon, Alonzo W. Inking mechanism held in an indenting relationship with the form roll. 3,298,305, 1–17–67, Cl. 101—366.

North American Aviation, Inc.: *See*—
Chelner, Herbert, and Doubleday. 3,298,233.
Michael, Harold J. 3,298,936.

North American Philips Co., Inc.: *See*—
Cluwen, Johannes M. 3,299,281.
Deelman, Gerardus J. 3,299,340.
Schutte, Werner. 3,299,318.
Wessels, Johannes H. 3,299,335.

Northern Electric Co., Ltd.: *See*—
Williams, Dewi L. 3,299,351.

Norton, Robert E., to Minnesota Mining and Mfg. Co. Thermoelectric device having a rigid base structure. 3,298,873, 1–17–67, Cl. 136—208.

Noshay, Allen: *See*—
Turbak, Albin F., Noshay, and Karoly. 3,299,030.

Nott, Peter T. M., to Rotork Engineering Co. Ltd. Valve actuators. 3,298,249, 1–17–67, Cl. 74—625.

Novak, Joseph F. Automatically actuated fluid pressure triggering and discharge valve. 3,298,571, 1–17–67, Cl. 222—5.

Novak, Richard F.: *See*—
Krooss, Robert J., and Novak. 3,298,513.

Nowicki, Henry F.: *See*—
Smiley, Harry J., and Nowicki. 3,298,342.

Nyborg, George L., to Elevator Specialties Corp. Elevator shaft door safety mechanism. 3,298,210, 1–17–67, Cl. 70—91.

Oakes, J. Barry: *See*—
Read, Kenneth F., Oakes, White, and Wyatt. 3,299,300.

Ochsenbauer, Helmut: *See*—
Mantscheff, Alexander, Wittfcht, and Ochsenbauer. 3,299,191.

Ocone, Luke R., B. P. Block, and E. G. Meloni, to Pennsalt Chemicals Corp. Process for preparing phthalocyanines. 3,299,093, 1–17–67, Cl. 260—314.5.

O'Connell, Daniel J., and R. Q. Stockholm, to Trojan Pools, Inc. Construction members for swimming pools. 3,298,038, 1–17–67, Cl. 4—172.

O'Connell, Frank L.: *See*—
Grantham, John M., Irik, O'Connell, and Pecheck. 3,298,667.

O'Connor, Richard J., J. M. Van Deren, Jr., and W. A. Darlington, to Monsanto Chemical Co. Method for protecting against fungi with pyoluteorin. 3,298,910, 1–17–67, Cl. 167—33.

Oda, Ryohei, N. Takeda, and S. Ueki, to Ube-Nitto Kasei Co., Ltd. Dyeable polyolefin fibers containing a binary copolymer of styrene and acrylonitrile. 3,299,185, 1–17–67, Cl. 260—897.

Oddo, Nino: *See*—
Dakli, Ibrahim, Grazioli, and Oddo. 3,298,993.

Odekerken, Jules M., to Research-Holland, N.V. Method for covering objects with a decorative bright nickel/chromium coating, as well as objects covered by applying this method. 3,298,802, 1–17–67, Cl. 29—194.

O'Hara, Sydney: *See*—
Hamilton, Donald R., O'Hara, and Seidensticker. 3,298,795.

Ohio Brass Co., The: *See*—
Holan, James H., and Verrell. 3,298,540.

Ohmora, Einsouke: *See*—
Banno, Isao, Iijima, Hasegawa, Igarasi, Imada, Nogami, Suhara, Yoneda, and Ohmora. 3,298,923.

Ohnstad, Burl B., to American Pipe and Construction Co. Gasket for concrete conduits. 3,298,697, 1–17–67, Cl. 277—11.

Okonite Co., The: *See*—
Brown, Grover W. 3,299,202.

Oldberg Mfg. Co.: *See*—
Deremer, Floyd E. 3,298,458.

Olin Mathieson Chemical Corp.: *See*—
Neidleman, Saul L. 3,298,927.
Palchak, Robert J. F. 3,299,144.
Ratz, Rudi F. W. 3,299,187.
Reinhart, Justin H. 3,298,816.
Schroeder, Hansjuergen A. 3,299,061.

Olivetti, C., Ing., & C., S.p.A.: *See*—
Gatti, Giancarlo. 3,298,682.

Olsen, Richard S.: *See*—
Meyer, Walter, and Olsen. 3,298,791.

Olson, Raymond A.: *See*—
Kovalsky, Stephen J., and Olson. 3,299,060.

Oltean, George, R. C. Mortensen, and P. J. Jessen, to American Motors Corp. Differential testing machine. 3,298,228, 1–17–67, Cl. 73—162.

Omaha Body & Equipment Co.: *See*—
Czapiewski, Billy S. 3,298,745.

Omholt, Ray E., to Powerlock Floors, Inc. Anchoring structure for gymnasium floors. 3,298,653, 1–17–67, Cl. 248—361.

Onoda Cement Co., Ltd.: *See*—
Asano, Tadashi. 3,298,843.

Onodera, Koichi: *See*—
Muto, Haruo, and Onodera. 3,299,268.

Openshaw, Alexander N. Adjustable covers for tractor trailers and the like. 3,298,732, 1–17–67, Cl. 296—100.

Optics Technology, Inc.: *See*—
Kapany, Narinder S. 3,299,306.

Osborg, Hans, J. W. Brook, and A. Goldstein, to Chemirad Corp. Process of forming cellulosic paper containing tris-(1-aziridinyl) phospine oxide and polyethylene imine and paper thereof. 3,298,902, 1–17–67, Cl. 162—158.

O'Shea, Francis X., to United States Rubber Co. Certain bis (hydroxy-alkylbenzylthio) compounds and method of making same. 3,299,147, 1–17–67, Cl. 260—609.

Osmond, Desmond W. J.: *See*—
Cousens, Richard H., Osmond, and Solomon. 3,298,890.
Cousens, Richard H., Osmond, and Solomon. 3,298,990.

Oster, John, Mfg. Co.: *See*—
Edwards, Margaret M. 3,299,226.

Ottosen, Frederick O., C. A. Mattson, and V. Laama, to Sunbeam Corp. Rotary electric lawn mower. 3,298,163, 1–17–67, Cl. 56—25.4.

Outboard Marine Corp.: *See*—
Irgens, Finn T. 3,298,315.
Watkins, Lucius D. 3,298,336.

Overby, Theodore A. Gate assembly. 3,298,134, 1–17–67, Cl. 49—394.

Owens-Corning Fiberglas Corp.: *See*—
Marzocchi, Alfred, and A. E. Beaudoin. 3,298,854.
Shannon, Richard F. 3,298,897.
Waugh John A., and Warner. 3,298,882.
Wong, Robert, and Sullivan. 3,298,859.

Owens-Illinois Glass Co.: *See*—
Condon, Harry F. 3,298,698.
Vogelpohl, Roland L. 3,298,813.

Owens-Illinois, Inc.: *See*—
Baak, Nils T. E. A. 3,298,872.
Lusher, Kenneth G. 3,298,553.
Smalley, Ned J. 3,298,573.

Ownbey, Lloyd C. Sign character structure. 3,298,123, 1–17–67, Cl. 40—138.

Oxberry Corp.: *See*—
Bender, Haarald. 3,298,276.

Oxford Precision, Inc.: *See*—
Daubitz, Walter F. 3,298,141.

Pachter, Irwin J., to Smith Kline & French Laboratories. Pyrido[3',4':4,5]pyrrolo O[3,2,1-hl]indoles and -[3,2,1-ij] quinolines. 3,299,078, 1–17–67, Cl. 260—296.

Pacific Flush Tank Co.: *See*—
Valdespino, Joe M., and Cox. 3,298,526.

Pack, Albert H.: *See*—
Campbell, William W., Leatham, and Pack. 3,298,840.

Page, John, and R. J. Straub, to United States Gypsum Co. Production of ribbed building board. 3,298,888, 1–17–67, Cl. 156—347.

Page, Wilbur M., to Clayton Dewandre Co. Ltd. Automatic drain valves for air reservoirs. 3,298,387, 1–17–67, Cl. 137—203.

Paglee, Mario R. Nursing bottle holder. 3,298,649, 1–17–67, Cl. 248—103.

Palchak, Robert J. F., to Olin Mathieson Chemical Corp. Method for the preparation of allyl decaborane. 3,299,144, 1–17–67, Cl. 260—606.5.

Pallini, Ugo: *See*—
Minisci, Francesco, Pallini, and Galli. 3,299,149.

Palm, James M., to Rockford Engineered Products Co. Picture and mirror hanging hardware. 3,298,055, 1–17–67, Cl. 248—498.

Palmer, Henry F., W. J. Stoner, and N. Feld, to Jay Feld & Co. Ltd. Luggage. 3,298,479, 1–17–67, Cl. 190—51.

Pampus, Gottfried: *See*—
Schon, Nikolaus, Pampus, and Witte. 3,299,031.

Pangborn Corp., The: *See*—
McCormick, William A., Jr. 3,298,138.

Papa, Sisto S.: *See*—
Moiso, Ugo, and Papa. 3,299,039.

Papadopoulos, Michael N.: *See*—
Mosely, Robert B., and Papadopoulos. 3,299,150.

Papesch, Viktor, to G. D. Searle & Co. Cyanoethylated 6-aminouracils. 3,299,066, 1–17–67, Cl. 260—256.4.

Parker Hannifin Corp.: *See*—
De Graaf, Paul A. 3,298,390.

Parkin, Chester A., to Parmac Corp. Physiotherapy apparatus with adjustable body supporting members. 3,298,363, 1–17–67, Cl. 128—33.

Parmac Corp.: *See*—
Parkin, Chester A. 3,298,363.

Parr, Bernard F., to Westinghouse Electric Corp. Hair dryer heater assembly. 3,298,111, 1–17–67, Cl. 34—99.

Passer, La Roy B. Wall hanger. 3,298,651, 1–17–67, Cl. 248—217.

Paterson, Robert N.: *See*—
Rothwell, Thomas F., and Paterson. 3,298,717.

Patton, Temple C. Grass clipper. 3,298,102, 1–17–67, Cl. 30—248.

Paul, Carl E.: *See*—
Rayno, Glenn D., Grahame, and Paul. 3,293,333.

Pavey, George M., Jr., and R. H. Pearson, to Sonic Engineering Co. Underwater detector streamer apparatus for improving the fidelity of recorded seismic signals. 3,299,397, 1–17–67, Cl. 340—7.

Payne, George B., to Shell Oil Co. Epoxy resin compositions and cured products obtained therefrom. 3,299,168, 1–17–67, Cl. 260—830.

Payne, Linwood K., Jr., and M. H. J. Weiden, Jr., to Union Carbide Corp. Acyclic hydrocarbon aldehyde carbamoyl oximes. 3,299,137, 1–17–67, Cl. 260—566.

Payne, Vivian H. Hydro-pneumatic pressure regulator. 3,298,384, 1–17–67, Cl. 137—102.

Pearson, Donald E.: *See*—
Cherry, Edward C., Pearson, Barton, Kubba, and Voelcker. 3,299,204.

Pearson, Raymond H.: *See*—
Pavey, George M., Jr., and Pearson. 3,299,397.

Pearson, Roy W.: *See*—
Seeloff, Melvin M., and Pearson. 3,298,587.

Pecheck, Robert R.: *See*—
Grantham, John M., Irik, O'Connell, and Pecheck. 3,298,667.

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Peck, Richard O., and C. O. Siemmons, to The General Tire & Rubber Co. Self-lubricating joint. 3,298,762, 1–17–67, Cl. 308—238.

Peco Corp.: *See*—
Dudley, Edmond R. 3,299,323.

Pedersen, Jorgen B., to A/S Dumex (Dumex Ltd.). 5-(3'-dimethylaminopropylidene)-dibenzo [a,d]-cycloheptа-[1,4]-diene N-oxide and hydrochloride thereof.. 3,299,139, 1–17–67, Cl. 260—570.8.

Peffer, John B.: *See*—
Wismer, Marco, George, and Peffer. 3,299,151.

Pelzer, Hans, and R. Sukurs, to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung. Transloading device, especially bucket wheel transloading device. 3,298,117, 1–17–67, Cl. 37—190.

Pendleton, James W., to Union Carbide Corp. Apparatus for applying ultrasonic vibration to thermoplastic polymers during forming. 3,298,065, 1–17–67, Cl. 18—14.

Pendleton Tool Industries, Inc.: *See*—
Leopold, Paul F. 3,298,516.

Penn Metal Co. Inc.: *See*—
Terrell, Robert D., and Abney. 3,298,081.

Pennsalt Chemicals Corp.: *See*—
Gillette, Leslie A., and Martin. 3,299,146.
Ocone, Luke R., Block, and Meloni. 3,299,093.

Perkins, Jimmie G.: *See*—
De Lorme, Albert R., and Perkins. 3,299,224.

Perryman, John S., to Curtiss-Wright Corp. Spring clutch mechanism. 3,298,486, 1–17–67, Cl. 192—47.

Pesson, Marcel, to Roger Bellon Laboratoire. 1-Tertiary amino-3-phenyl-3-furfuryl-4-lower alkyl ketones. 3,299,059, 1–17–67, Cl. 260—247.7.

Peterhans, Ernst, and F. Schiltknecht, to Lansa Ltd. Process for the improvement of the storage properties of urea. 3,299,133, 1–17–61, Cl. 260—555.

Peterson, Robert J., and E. L. Coonrod, to American Can Co. Cartoning machine. 3,298,287, 1–17–67, Cl. 93—49.

Peterson, William A.: *See*—
Buchmiller, Lyle D., De Grasse, Jones, and Peterson. 3,299,364.

Petri, Albert L., and H. Lewin, to Petri Cigar Co. Cigar making machine. 3,298,375, 1–17–67, Cl. 131—81.

Petri Cigar Co.: *See*—
Petri, Albert L., and Lewin. 3,298,375.

Petrie & McNaught Ltd.: *See*—
Bowe, Maurice T. 3,298,208.

Pfalser, Donald R., and E. C. Corder; said Pfalser assor. to said Corder. Grain elevator spout holder. 3,298,544, 1–17–67, Cl. 214—17.

Pfeffer, Vaclav, F. Holecek, and K. Gemperle, to Laboratorni Pristroje, narodni podnik. Apparatus for remote control of pendulum movement master clocks. 3,298,171, 1–17–67, Cl. 58—35.

Pfeiffer, Hans E., to Rolma A.G. Device for automatically adjusting slides or tables or the like. 3,298,255, 1–17–67, Cl. 77—64.

Pfeilschifter, Dieter, to Reteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung. Device for picking up and unloading pourable material. 3,298,494, 1–17–67, Cl. 198—9.

Philadelphia Quartz Co.: *See*—
Emblem, Harold G., Hurt, and Trow. 3,299,166.

Philco-Ford Corp.: *See*—
Wood, Richard F. 3,299,358.

Philip, Morris. Knitting machine and method of knitting. 3,298,202, 1–17–67, Cl. 66—50.

Philipchuk, Vasil, to United States of America, Navy. Continuous rod warhead. 3,298,309, 1–17–67, Cl. 102—67.

Phillips, Lee V., to Gulf Oil Corp. Manufacture of butyrolactones. 3,299,100, 1–17–67, Cl. 260—343.6.

Phillips Petroleum Co.: *See*—
Abrahamson, Wayne E. 3,299,165.
Bagnetto, Lucien J., Jr. 3,298,966.
Clay, Harris A. 3,299,162.
Cooper, Delbert J. 3,298,383.
Gray, Lew T. 3,298,590.
Nelson, William M. 3,298,990.
Rollmann, Kent W. 3,299,032.
Short, James N., and Hanmer. 3,299,178.
Simpson, Billy D. 3,299,142.
Sonnenfeld, Richard J. 3,299,016.
Wallace, Robert G. 3,299,186.
Zelinski, Robert P., and Naylor. 3,299,017.
Zelinski, Robert P. 3,299,163.

Phillips, Robert M.: *See*—
Blau, Robert, Sedlak, and Phillips. 3,299,376.

Picard, Adhemar J. Apparatus for dispensing grit material. 3,298,727, 1–17–67, Cl. 291—3.

Pick, George G., to Sylvania Electric Products Inc. Semipermanent memory. 3,299,412, 1–17–67, Cl. 340—173.

Pickens, Dennis K.: *See*—
Yurko, William J., and Pickens. 3,298,070.

Picou, Claude, 50% to Generale de Geophysique and Institut Francais du Petrole des Carburants et Lubrifiants and Ruell-Malmaison (S & O). Electromechanical vibrators. 3,298,456, 1–17–67, Cl. 181—.5.

Piersol, Jay L., to Armstrong Cork Co. Formation of beater saturated products using a partially cross-linked acrylic latex binder and product thereof. 3,298,901, 1–17–67, Cl. 162—168.

Pierson, Norman A. Aerobic composting with comminution and forced aeration. 3,298,821, 1–17–67, Cl. 71—9.

Piker, Herbert M., to The Hamilton-Skotch Corp. Insulated picnic jug or container. 3,298,554, 1–17–67, Cl. 215—13.

Pilkington Bros. Ltd.: *See*—
Holland, Francis W. 3,298,812.

Pinckaers, Balthasar H., to Honeywell Inc. Condition detecting apparatus. 3,299,261, 1–17–67, Cl. 328—6.

Pine, Lloyd A., to Esso Research and Engineering Co. Condensation of carboxylic acids and olefins to produce esters. 3,299,110, 1–17–67, Cl. 260—410.9.

Pioneer Packaging, Inc.: *See*—
Carter, Frank L. 3,298,504.

Pioneer Parachute Co., Inc.: *See*—
Heinrich, Helmut G. 3,298,640.
Heinrich, Helmut G., Haak, Niccum, and Gimalouski. 3,298,639.

Pirelli S.p.A.: *See*—
Marchesini, Gerolamo, and Manica. 3,299,175.

Pirie, Jean. Menstrual device. 3,298,369, 1–17–67, Cl. 128—285.

Pittsburgh Plate Glass Co.: *See*—
Barch, Herbert W., and Valchar. 3,298,809.
Forbes, Sydney. 3,298,946.
McKelvey, Harold E. 3,298,810.
Wismer, Marco, Doerge, and Peffer. 3,299,151.

Pitzer, Edgar C., to United States of America, Atomic Energy Commission. Method for the disposal of waste solutions using rigid gels. 3,298,960, 1–17–67, Cl. 252—301.1.

Plain, Joseph L. Extension adapter and method for lengthening the wheel base of a motorcycle. 3,298,713, 1–17–67, Cl. 280—284.

Plambeck, Louis, Jr., to E. I. du Pont de Nemours and Co. Process for producing images and products thereof. 3,298,895, 1–17–67, Cl. 161—160.

Plasse, Paul A., and W. C. Johnson, to Arthur D. Little, Inc. Scouring pads. 3,298,053, 1–17–67, Cl. 15—506.

Plastic Applicators, Inc.: *See*—
Tompkins, David R., and McClughan. 3,299,349.
Tompkins, David R., and Council. 3,299,350.

Platzer, Peter J., E. H. Anderson, and R. O. Selenski, to Dean Gainet Mfg. Co. Automatic sampling device. 3,298,235, 1–17–67, Cl. 73—422.

Plessey V. K., Ltd.: *See*—
Moss, Norman, and Stanwell. 3,298,250.
Moss, Norman. 3,298,251.

Pleuger, Friedrich W., and J. Schneider. Propulsion and steering device for watercrafts. 3,298,349, 1–17–67, Cl. 115—18.

Plymoth, Inge A. Propulsion means for a platform parking system. 3,298,542, 1–17–67, Cl. 214—16.1.

Polaroid Corp.: *See*—
Green, Milton, and Simon. 3,299,041.
Ryan, William H. 3,298,832.
Taylor, Lloyd D. 3,299,079.

Pollmann, Wolfgang: *See*—
Schramm, Gerhard, Grotsch, and Pollmann. 3,299,043.

Pollock, Larry J., to Westinghouse Electric Co. Semiconductor structures providing both unipolar transistor and bipolar transistor functions and method of making same. 3,299,329, 1–17–67, Cl. 317—235.

Polo, Vincent: *See*—
Geissler, Ulrich M., and Polo. 3,298,243.

Pomper, Anthony W., to Midland-Ross Corp. Extruder apparatus. 3,298,061, 1–17–67, Cl. 18—12.

Popma, Jewett E. and V. J. Coloring and mixing paddle. 3,298,671, 1–17–67, Cl. 259—114.

Porter, Edward B., and R. F. Urso, to McCord Corp. Divisional lubricant feeder. 3,298,460, 1–17–67, Cl. 184—7.

Porter, Kenneth W.: *See*—
Stoyke, Ludwig T., and Porter. 3,298,174.

Potts, Ralph H., to Armour and Co. Stepwise preparation of fatty acid nitriles. 3,299,117, 1–17–67, Cl. 260—465.2.

Poynter, Donald B.: *See*—
Turnau, Robert R., and Poynter. 3,298,694.

Prahl, Walter H., and S. J. Lederman, to Hooker Chemical Corp. Production of ultra-pure phenol by removal from a phenol of high purity of small amounts of chlorine-containing organic impurities. 3,298,933, 1–17–67, Cl. 203—39.

Prange, Charles J., to Flexible Sewertool Corp. Reciprocable clutch means for feeding sewer tool drive rod. 3,298,666, 1–17–67, Cl. 254—105.

Pratt, Harold R., to Esso Research and Engineering Co. Double hulled ship. 3,298,345, 1–17–67, Cl. 114—74.

Prescher, Kenneth E., and J. G. Van Bosse, to Automatic Electric Laboratories, Inc. Communication switching system common control arrangement. 3,299,214, 1–17–67, Cl. 179—18.

Prescher, Kenneth E.: *See*—
Schauer, Ronald E., Prescher, Van Bosse, and Lange. 3,299,437.

Prescott, Wilmar L. Easy break-away electrical step connector. 3,299,394, 1–17–67, Cl. 339—45.

Price, Richard H., and C. R. Jarrett, to Saunders Valve Co. Ltd. Diaphragm valve actuator construction. 3,298,660. 1–17–67, Cl. 251—331.

Price, Robert J.: *See*—
Bokros, Jack C., Goeddel, Chin, and Price. 3,298,921.

Prince, Michael J., and A. E. Timbs, to Societe Anglo-Belge Vulcain S.A. Nuclear fuel assembly. 3,298,922, 1–17–67, Cl. 176—78.

Procter & Gamble Co., The: *See*—
Seiden, Paul. 3,298,837.

Prosen, Stanley P.: *See*—
Barnet, Fredrick R., and Prosen. 3,298,279.

Przyborowski, Stanislaus. Radiators. 3,298,432, 1–17–67, Cl. 165—153.

Polensky & Zollner: *See*—
Mantscheff, Alexander, Wittfcht, and Ochsenbauer. 3,299,191.

Poor & Co.: *See*—
Groff, Emory L. 3,298,607.

Popma, Vincent J.: *See*—
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Pousson, Eric B.: *See*—
Griffin, Josephus H. 3,298,317.

Powerlock Floors, Inc.: *See*—
Omholt, Ray E. 3,298,653.

Production Engineering Research Association of Great Britain: *See*—
Birchall, Thomas M., and Richards. 3,298,224.

Production Experts, Inc.: *See*—
Noll, Stanley D., and Delfeld. 3,298,264.

Puerner, George O., to P. R. Mallory & Co., Inc. Mounting means for variable resistor. 3,298,641, 1–17–67, Cl. 248—27.

Purdy, Rolland M., to The Bendix Corp. Electro-explosive device. 3,298,306, 1–17–67, Cl. 102—28.

Purex Corp., Ltd.: *See*—
Rubinwitch, Kenneth C. 3,298,246.

Purtell, Rufus J., to The J. B. Knight Co., Inc. Draining sprinkler connectors. 3,298,388, 1–17–67, Cl. 137—382.

Pyle-National Co., The: *See*—
Little, Edmund J., and Raider. 3,298,299.

Q/T Circuits Co.: *See*—
Kelley, George F., and Tedford. 3,299,393.

Quarles, Richard W., and J. A. Baumann, to Union Carbide Corp. Phenolic foam compositions. 3,298,973, 1–17–67, Cl. 260—2.5.

Quest, Karl, and A. Assmuth, to Holstein & Kappert Maschinenfabrik Phoenix G.m.b.H. Apparatus for arraying and feeding bottle caps and the like. 3,298,491, 1–17–67, Cl. 193—43.

Rabb, Irving L. Bottle carrier. 3,298,563, 1–17–67, Cl. 220—110.

Racicot, Donatien: *See*—
Lacoste, Georges, Rouville, Racicot, and Vincent. 3,298,496.

Rackley, Carle E., and W. Nieder-Westermann, to Westinghouse Electric Corp. Luminaire. 3,299,265, 1–17–67, Cl. 240—147.

Radei, Karl. Round double bed of the type convertible into a single or double couch. 3,298,040, 1–17–67, Cl. 5—12.

Rademacher, Thomas P. Mobile exercising and amusement device. 3,298,702, 1–17–67, Cl. 280—1.22.

Radford, Jack C. Therapeutic traction device. 3,298,364, 1–17–67, Cl. 128—75.

Radiation Ltd.: *See*—
Nicholson, William A. 3,298,419.

Radimer, Kenneth J.: *See*—
Ashley, Paul E., and Radimer. 3,298,940.

Radio Corp. of America: *See*—
Kelly, Thomas J. 3,298,083.
Scott, Joseph H., Jr., and McIver. 3,298,879.
Weathers, Thomas C., and Jensen. 3,298,583.

Rafael, Hans: *See*—
Solron, Charles, Rafael, and Stockar. 3,298,774.

Ragan, Robert O.: *See*—
Tolaas, William M., Ragan, and Maris. 3,298,596.

Rahm, Joseph L. Gun stabilizer. 3,298,280, 1–17–67, Cl. 89—14.

Raider, George K.: *See*—
Little, Edmund J., and Raider. 3,298,299.

Rakich, George. Cash drawers and method for operating same. 3,298,765, 1–17–67, Cl. 312—223.

Ramadan, Montaz A., to Zenith Radio Corp. Remote control system using a pair of semiconductor switches to effect directional current flow in a control device. 3,299,334, 1–17–67, Cl. 318—16.

Rambo, Elvind M.: *See*—
Beebe, James R., and Rambo. 3,298,545.

Ramsey, Cecil L.: *See*—
Goodrich, Charles B., Manilla, and Ramsey. 3,298,801.

Randall, George A.: *See*—
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Raschiotto, Roger J.: *See*—
Wagener, Johann S., and Raschiotto. 3,299,325.

Raskhodoff, Nicholas M., to United States of America, Navy. Module cooling system. 3,298,195, 1–17–67, Cl. 62—414.

Rath, Gerald A., to General Motors Corp. Semiconductor voltage regulator. 3,299,342, 1–17–67, Cl. 322—28.

Ratliff, Harvey L., Jr., to Jetru Inc. Stepped zone lenses for wide-angle oculars. 3,298,771, 1–17–67, Cl. 350—197.

Ratliff, Troy L. Conduit cleaning apparatus. 3,298,051, 1–17–67, Cl. 15—104.3.

Ratz, Rudi F. W., to Olin Mathieson Chemical Corp. Phosphorus-containing polyisocyanates of pentaerythritol 3,299,187, 1–17–67, Cl. 260—927.

Rauhut, Michael M. N.: *See*—
Grayson, Martin N., Keough, and Rauhut. 3,299,143.

Rawcliffe, Gordon H., and W. Fong, to National Research Development Corp. Pole-changing, three-phase, alternating current electric motors and generators. 3,299,337, 1–17–67, Cl. 318—224.

Ray, Richard L., to Esso Research and Engineering Co. Process for preparing a polymer latex. 3,298,986, 1–17–67, Cl. 260—29.6.

Raymond, Francis A., and D. E. Bonasera, to Miehle-Goss-Dexter, Inc. Speed control appparatus. 3,298,622, 1–17–67, Cl. 242—58.1.

Raymond International Inc.: *See*—
Gendron, George J. 3,298,447.

Rayno, Glenn D., F. W. Grahame, and C. E. Paul, to General Electric Co. Electrical capacitor. 3,299,333, 1–17–67, Cl. 317—260.

Read, Kenneth F., J. B. Oakes, P. E. P. White, and T. Wyatt, to United States of America, Navy. Oscillator oven. 3,299,300, 1–17–67, Cl. 310—8.9.

Reaney, Warford A. Production of burnt lime with a rotary kiln and a rotary hearth. 3,298,678, 1–17–67, Cl. 263—32.

Reding, Frederick P., to Union Carbide Corp. Polyethylene modified with branched polyethylene wax. 3,299,177, 1–17–67, Cl. 260—878.

Redmon, John T.: *See*—
Anderson, Walter E., Hennen, and Redmon. 3,298,454.

Reed, John H., Jr.: *See*—
Lippitt, Maxwell W., Jr., and Reed. 3,298,362.

Reed, Kenneth J., and A. L. Lythgoe, to Letraset Ltd. Dry transfer materials. 3,298,850, 1–17–67, Cl. 117—3.1.

Reeder, Earl: *See*—
Archer, Giles A., Fryer, and Reeder. 3,299,053.

Rees, Warren A., Jr., to Texaco Inc. Bottom hole burner. 3,298,439, 1–17–67, Cl. 166—59.

Regie Nationale des Usines Renault: *See*—
De Castelet, Gaëten de C. 3,298,335.
De Castelet, Gaëten de C. 3,299,234.

Regina Enterprises, Inc.: *See*—
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Regnier, Gilbert, R. Canevari, and M. Laubie, to Science Union et Cie, Societe Francaise de Recherche Medicale. 2-[1'-(benzyl and phenyl)-4'-piperazinyl]-pyrimidine derivatives. 3,299,067, 1–17–67, Cl. 260—256.4.

Reifel, Allan J., to ACF Industries, Inc. Fuel booster pump. 3,298,321, 1–17–67, Cl. 103—153.

Reifschneider, Walter, to The Dow Chemical Co. Phenoxathiins and their preparation. 3,299,098, 1–17–67, Cl. 260—327.

Reindl, Harold J.: *See*—
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Reiner, Kenneth, and R. F. Hubbell; said Hubbell assor. to said Reiner. Merchandise packages and method of manufacture thereof. 3,298,506, 1–17–67, Cl. 206—45.33.

Reinnart, Justin H., to Olin Mathieson Chemical Corp. Method for protecting plants in a salt containing environment. 3,298,816, 1–17–67, Cl. 71—2.5.

Reinhart, Myron H., to E. R. Carpenters Co. Cellular polyurethane containing barytes and method of making same. 3,298,976, 1–17–67, Cl. 260—2.5.

Reintjes, George G.: *See*—
Byfield, Donald R., and Reintjes. 3,298,155.

Reis, Charles S., to Hewlett-Packard Co. Electrosensitive recording. 3,299,433, 1–17–67, Cl. 346—74.

Reiter, Abraham M.: *See*—
Court, Patrick R. J., and Reiter. 3,299,359.

Rellumit, Inter: *See*—
Muller, Jacques. 3,298,522.

Remaley, Paul M. Handle and locking means. 3,298,722, 1–17–67, Cl. 287—53.

Remington Arms Co., Inc.: *See*—
Catlin, Robert T. 3,298,311.

Remmele Engineering, Inc.: *See*—
Zastrow, Thomas S. 3,298,656.

Renaud, Robert A.: *See*—
Mawney, Robert G., Begga, and Renaud. 3,299,239.

Renz, Jany, J.-P. Bourquin, E. Schenker, and R. Griot, to Sandoz Ltd. (also known as Sandoz A.G.). Bacteriostatic and fungicidal composition comprising 5,7-dibromo-8-benzoyloxy-quinaldine in inert carrier. 3,298,911, 1–17–67, Cl. 167—33.

Republic Lens Co., Inc.: *See*—
Milinowski, Arthur. 3,298,772.

Research Corp.: *See*—
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Reteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung: *See*—
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Retz, Philip. Multilevel subsurface building construction. 3,298,146, 1–17–67, Cl. 52—169.

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Russak, Joseph. Automatic separator. 3,298,077, 1–17–67, Cl. 28—17.

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Schmidt, Max, to Bellmann & Co. Apparatus for, preserving and sealing a serving tray of thermoplastic material containing food products particularly frozen foods. 3,298,158, 1-17-67, Cl. 53—112.
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Schramm, Gerhard, H. Grotsch, and W. Pollmann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing polynucleotides. 3,299,043, 1-17-67, Cl. 260—211.5.
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Scott, Hugh A. Clean cut saws. 3,298,407, 1-17-67, Cl. 143—43.
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Lowrie, Harman S. 3,299,062.

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Harrington, Gerald D., and Shakespeare. 3,298,628.
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Shenard, Joseph E., to International Business Machines Corp. Clutch and brake mechanism with energy storing means. 3,298,485, 1-17-67, Cl. 192—12.
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Simm, Walter, and O. Koch, to AGFA Aktiengesellschaft. Imagewise sensitization of electrophotographic layers. 3,298,830, 1-17-67, Cl. 96—1.
Simmonnet, Andre A. P., and J. A. P. Kienzle, to Etablissements Kuhlmann. Benzothiazolsulphonyl substituted reactive acid anthraquinone dyestuffs. 3,299,084, 1-17-67, Cl. 260—303.
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Sinclair, Harold K., to E. I. du Pont de Nemours and Co. Process for preparing aqueous polyvinyl alcohol solution containing pentavalent vanadium compound. 3,298,988, 1-17-67, Cl. 260—29.6.
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Slade, Ernest A., to Warren Petroleum Corp. Apparatus to detect and temporarily seal a leak in a pipeline. 3,298,399, 1-17-67, Cl. 138—97.
Slattery, Leo F., L. W. Gallup, and H. W. Schoenherr, to Control Data Corp. Phase inverting direct current amplifier circuit. 3,299,363, 1-17-67, Cl. 328—209.
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Smida, Luverne R., to Wilcox Mfg. Co. Onion trimming machine. 3,298,412, 1-17-67, Cl. 146—83.
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Smith, Hobart G. Steering wheel lock. 3,298,242, 1-17-67, Cl. 74—495.
Smith, J. Perry: *See*—
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Smith, Joseph B. Plugging apparatus for pipe lines. 3,298,398, 1-17-67, Cl. 138—94.
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Smith, Nervin P. Combined tee holder and ball marker. 3,298,579, 1-17-67, Cl. 224—5.

Smith, Rex L., and J. C. Daley, to United States of America, Navy. Reserve activated voltaic battery having a gas generator for shock free operation. 3,298,868, 1-17-67, Cl. 136—90.

Smith, Richard H., and J. R. Shoemaker, to Goodyear Aerospace Corp. Vehicle guidance apparatus utilizing wave generated range only information. 3,299,425, 1-17-67, Cl. 343—7.

Smith, Robert E., R. L. Kosrow, and J. G. Attwood, to Union Special Machine Co. Work piece inverter conveyor. 3,298,498, 1-17-67, Cl. 198—33.

Smith, Verity C., to Barnstead Still & Sterilizer Co. Water distillation apparatus with vapor trap. 3,298,929, 1-17-67, Cl. 202—190.

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Snyder Paper Corp.: *See*—
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Societe Belge de l'Azote et des Produits Chimiques: *See*—
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Societe Des Accumulateurs Fixes et de Traction: *See*—
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Societe Anonyme Andre Citroen: *See*—
Cadiou, Jean. 3,298,201.

Societe Nationale D'Etude et de Construction: *See*—
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Socite anonyme dite: Societe Industrielle Pour La Fabrication Des Antibiotiques (S.I.F.A.): *See*—
Boissier, Jacques R., and Combes. 3,299,124.

Soderlund, Per-Erik, to Ytong International Aktiebolag. Bottom plates for moulds intended for the manufacture of cellular concrete and other materials in the manufacture of which great differences in temperature appear between the content of the moulds and the surrounding medium. 3,298,076, 1-17-67, Cl. 25—1.

Soderquist, Leslie E., to McNeil Corp. Tire presses. 3,298,066, 1-17-67, Cl. 18—17.

Soiron, Charles, H. Rafael, and W. Stockar, to J. R. Geigy, A.-G. Dyeing polyamide fibers. 3,298,774, 1-17-67, Cl. 8—74.

Soley, Warren G., to Indiana General Corp. Coil lifter. 3,298,730, 1-17-67, Cl. 294—65.5.

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Sonic Engineering Co.: *See*—
Pavey, George M., Jr., and Pearson. 3,299,397.

Sonnenfeld, Richard J., to Phillips Petroleum Co. Polymers of 1-monolefins and an alkenyl acetylene and process for preparing same. 3,299,016, 1-17-67, Cl. 260—80.5.

Sooke, Robert J. Sound reproducer with means for attachment to a telephone handpiece. 3,299,207, 1-17-67, Cl. 179—1.

Sopranl, Paolo S. Casing for portable apparatus, in particular for portable musical instruments. 3,298,478, 1-17-67, Cl. 190—11.

Sorensen, Svend E., and W. L. McHale, to Robertshaw Controls Co. Defroster control or the like. 3,299,237, 1-17-67, Cl. 200—140.

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Southern, John P.: *See*—
Yunker, Robert E., and Southern. 3,298,344.

Specialty Converters, Inc.: *See*—
Willy, John. 3,298,884.

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Lasch, Cecil A., Jr., Hampton, and Speransky. 3,299,196.

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Bauer, Peter. 3,299,255.
Brackbill, Warren H., and Smith. 3,298,695.
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Halls, Lawrence M., and McCarty. 3,298,161.

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Fries, Edward W., Kaufman, Spiel, and Lipka. 3,298,302.

Spineto, Eugene D.: *See*—
Jackson, John G., and Spineto. 3,298,385.

Spivack, John D., and M. Dexter, to Geigy Chemical Corp. N,N'-bis-(thiazolyl)-phenylenediamines. 3,299,087, 1-17-67, Cl. 260—306.8.

Squibb, E. R., & Sons: *See*—
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Stacy, John N. 3,298,139.

Stacy, John N., to Stacy-Gifford Co. Buffing machine. 3,298,139, 1-17-67, Cl. 51—95.

Staeudle, Hans, to United States of America, Navy. Circuit to obtain the absolute value of the difference of two voltages. 3,299,287, 1-17-67, Cl. 307—88.5.

Stahly, Eldon E., to Oliver W. Burke, Jr. Process for purification of tobacco smoke. 3,298,380, 1-17-67, Cl. 131—262.

Staker, Walter L.: *See*—
Gruber, Gerald I., and Staker. 3,298,783.

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Baribo, Lester E. 3,298,926.

Stam, Herbert H. Unidirectionally self-locking valve. 3,298,661, 1-17-67, Cl. 251—104.

Stanhope, Hjalmar W. P.: *See*—
Desmarchais, Walter E., and Stanhope. 3,298,746.

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Moss, Norman, and Stanwell. 3,298,250.

Stasenko, Stephen: *See*—
Johnson, Irving A., and Stasenko. 3,298,318.

Stamets, Wm. K., Co.: *See*—
Long, Arthur H., and Shashaty. 3,298,089.

Stamm, Walter A., and W. B. Stanton, to Stauffer Chemical Co. Pesticidally active phenol-formaldehyde-trialkyltin-oxide resins. 3,299,002, 1-17-67, Cl. 260—59.

Standard Brands, Inc.: *See*—
Ellis, Earle B., and Chesney. 3,298,499.

Standard Oil Co.: *See*—
Anderson, Robert H. 3,298,560.
Brown, John S. 3,298,954.
Linsk, Jack. 3,298,939.
Mosher, Robert A. 3,298,958.
Swakon, Edward A. 3,298,844.
Wolff, William F. 3,299,122.

Stanley Works, The: *See*—
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Strack, Donald R.: *See*—
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Stare, Donald E., D. R. Strack, and H. J. Reindl, to General Motors Corp. Expanded coatings. 3,298,970, 1-17-67, Cl. 260—2.5.

Stastny, Theodore G., to AAI Corp. Energy absorbing arrangement. 3,298,465, 1-17-67, Cl. 188—1.

Statton, William O.: *See*—
Knobloch, Fred W., and Statton. 3,299,171.

Stauffer Chemical Co.: *See*—
Faucher, Llewellyn W., and Dewald. 3,298,819.
Gruber, Gerald I., and Staker. 3,298,783.
Gutman, Arnold D., and Broadbent. 3,299,099.
Robinson, Robert E. 3,298,778.
Stamm, Walter A., and Stanton. 3,299,002.
Tilles, Harry. 3,299,114.

Stavis, Gus, to General Precision, Inc. Moving map display. 3,299,205, 1-17-67, Cl. 178—6.8.

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Willson, Jack E., and Steadle. 3,298,090.

Stehle, Norman E. Coupling handling and actuating ring. 3,298,715, 1-17-67, Cl. 285—18.

Steigerwalt, George F., Jr., to International Business Machines Corp. Multiple-input memory accessing apparatus. 3,299 261, 1-17-67, Cl. 235—175.

Stein, Gerhard M., to Westinghouse Electric Corp. Interleaved windings for electrical inductive apparatus. 3,299,385, 1-17-67, Cl. 336—187.

Stein, Robert G., and H. G. Schoepke, to Abbott Laboratories. Certain substituted 5-keto-pyrazolothiazines. 3,299,051, 1-17-67, Cl. 260—243.

Stein, Sam I. Treatment and composition for high blood pressure and palpitation. 3,298,916, 1-17-67, Cl. 167—65.

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Tishler, Max, Steinberg, and Hirschmann. 3,299,054.

Stephens-Adamson Mfg. Co.: *See*—
Acton, Frank J. 3,298,495.

Stephenson, Edward E., to Brown Co. Laminated closure for food trays and trays closed with same. 3,298,505, 1-17-67, Cl. 206—45.31.

Stephenson, Edward E., to Brown Co. Laminated closure for food trays and trays closed with same. 3,298,593, 1-17-67, Cl. 229—43.

Sternbach, Leo H.: *See*—
Archer, Giles A., Fryer, Reeder, and Sternbach. 3,299,053.

Sterns, Uldis J.: *See*—
Herbert, Leonard S., and Sterns. 3,298,931.

Stevens, Chester U. W. P. Schweitzer, and W. A. Selke, to Kimberly-Clark Corp. Method of making a tobacco product. 3,298,378, 1-17-67, Cl. 131—140.

Stevens, Richard M., to United Aircraft Corp. Torsional impact limiter. 3,298,248, 1-17-67, Cl. 74—609.

Stewart, John K., and H. R. E. Von Beckmann. High frequency surveying device. 3,298,105, 1-17-67, Cl. 33—60.

Stewart Operations, Inc.: *See*—
Stewart, Katherine F. 3,298,913.

Stewart, Katherine F., to Stewart Operations, Inc. Treating the bark of trees to prevent insect damage by tree bark beetles and insects. 3,298,913, 1-17-67, Cl. 167—42.

Stieglitz, Albert: *See*—
Trinkler, Alfred, Stieglitz, and Jumelle. 3,298,180.

Still, Esther M.: *See*—
Moore, Emory S., and Still. 3,298,306.

Stilwell, Bobby: *See*—
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Stites, Francis H., to Sylvania Electric Products Inc. Electro-optical label reading system using pulse width detection circuit. 3,299,271, 1-17-67, Cl. 250—219.

Stockar, Walter: *See*—
Soiron, Charles, Rafael, and Stockar. 3,298,774.

Stockholm, Robert Q.: *See*—
O'Connell, Daniel J., and Stockholm. 3,298,038.

Stokes, Peter G., to Westland Aircraft Ltd. Means for preparing gas-treated objects. 3,298,112, 1-17-67, Cl. 34—217.

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Jucker, Ernst, Ebnother, and Stoll. 3,299,050.

Stone, Robert L., and G. T. Burress, to Tracor, Inc. Thermocouple for DTA. 3,298,220, 1-17-67, Cl. 73—15.

Stoner, Walter J.: *See*—
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Stora Kopparbergs Bergslags Aktiebolag: *See*—
Bergstrom, Ernst R. 3,298,107.

Storch, Harold A., to Federal Screw Works. Fastener assembly. 3,298,750, 1-17-67, Cl. 308—2.

Stover, Emory F. Vane type flow meter. 3,298,230, 1-17-67, Cl. 73—228.

Stoyke, Ludwig T., and K. W. Porter, to Fairchild Hiller Corp. Control system for infinitely variable automatic transmission. 3,298,174, 1-17-67, Cl. 60—19.

Straehle, William T.: *See*—
Mandle, Richard M., and Straehle. 3,298,807.

Strang, Aart, to Shell Oil Co. Lubricants containing non-ash-forming additives. 3,298,955, 1-17-67, Cl. 252—51.5.

Straub, Rupert J.: *See*—
Page, John, and Straub. 3,298,888.

Strauss, Howard J., and E. Weiss, to ESB-Reeves Corp. Method of producing rubber sheet material. 3,298,943, 1-17-67, Cl. 204—182.

Strauss, Wennemar, W.-D. Willmund, and A. Kirstahler, to Dehydag Deutsche Hydrierwerke G.m.b.H. Electroplating baths and processes. 3,298,937, 1-17-67, Cl. 204—44.

Strobel, Albert, and D. T. Gray, to I-T-E Circuit Breaker Co. Anti-rebound latch. 3,299,244, 1-17-67, Cl. 200—169.

Stroud, William F. Paper-jogging apparatus. 3,298,683, 1-17-67, Cl. 271—59.

Stuart, William R., to Varian Associates. Method of forming distortion resistant tubular elements. 3,298,096, 1-17-67, Cl. 29—477.

Stubbs, Dennis, C. Roy, H. L. F. Bond, and N. Vollans, to Davy and United Engineering Co. Ltd. Rolling mills. 3,298,214, 1-17-67, Cl. 72—235.

Sturdevant, Joseph T. Optical gauging system with interchangeable masks. 3,299,273, 1-17-67, Cl. 250—229.

Sturdy, Clifford, and R. Jackman, to Davy and United Engineering Co., Ltd. Coiler mandrels. 3,298,627, 1-17-67, Cl. 242—72.1.

Sturm, Robert D. Elevator control circuit. 3,298,464, 1-17-67, Cl. 187—29.

Stutz, Hansruedi, to Gebrueder Loepfe A.G. Thread controller for textile machines. 3,298,401, 1-17-67, Cl. 139—371.

Sugasawa, Tsutomu: *See*—
Nagata, Wataru, and Sugasawa. 3,299,048.

Suhara, Ikuo: *See*—
Banno, Isao, Iijima, Hasegawa, Igarasi, Imada, Nogami, Suhara, Yoneda, and Ohmora. 3,298,923.

Sukurs, Raimonds: *See*—
Pelzer, Hans, and Sukurs. 3,298,117.

Suling, Carlhans, and E. Kuntz, to Farbenfabriken Bayer Aktiengesellschaft. Interpolymer of acrylonitrile, a masked isocyanate and a hydroxyl substituted monomer and a process for making same. 3,299,007, 1-17-67, Cl. 260—77.5.

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Swain, Arthur F., and F. R. Abbott, to United States of America, Navy. Submersible towing apparatus. 3,298,347, 1-17-67, Cl. 114—235.

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Szabo, Tibor, to Industrie-Werke Karlsruhe Aktiengesellschaft. Apparatus for handling container blanks. 3,298,289, 1-17-67, Cl. 93—53.

Szczepanek, Alfred, and G. Koenen, to Chemische Fabrik Hoesch K.-G. Liquid stabilizers for vinyl chloride resins comprising metal salts of epoxidized fatty acids. 3,298,964, 1-17-67, Cl. 252—400.

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Taggart, John K. Line winding mechanism for a spinning reel. 3,298,630, 1-17-67, Cl. 242—84.21.

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Taylor, Albert J. Tree stand. 3,298,643, 1-17-67, Cl. 248—44.

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Taylor, Lloyd D., to Polaroid Corp. Chelatable spiro [benzopyran-2,2'-indoline] derivatives. 3,299,079, 1-17-67, Cl. 260—294.7.

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Terrell, Robert D., and J. O. Abney, to Penn Metal Co. Inc. Method of and apparatus for cold working and expanding a metal member such as a channel stud. 3,298,081, 1-17-67, Cl. 29—6.2.

Terry, Samuel M., to Hoover Ball and Bearing Co. Method of stiffening polyurethane foams. 3,298,857, 1-17-67, Cl. 117—98.

Tessari, Lawrence P., III. Horizontal semienclosed loop with conductive ground plane, having vertical whip extending from within loop enclosure. 3,299,428, 1-17-67, Cl. 343—748.

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Tilles, Harry, to Stauffer Chemical Co. Process for making chloroformates with amines as catalysts. 3,299,114, 1–17–67, Cl. 260—455.

Tilles, Harry, and J. Antognini. Method of combating weeds. 3,298,817, 1–17–67, Cl. 71—2.6.

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Tishler, Max, N. G. Steinberg, and R. F. Hirschmann, to Merck & Co., Inc. 4-pregneno-[3,2-c] pyrazoles and processes of preparing them. 3,299,054, 1–17–67, Cl. 260—239.5.

Tiwari, Rabindranath K. Devices for enhancing the beauty of fountains and like garden decorations. 3,298,609, 1–17–67, Cl. 239—17.

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Torii, Yasunosuke. 3,299,347.
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Tomcufcik, Andrew S., R. G. Child, and A. W. Vogel, to American Cyanamid Co. N-substituted-1,3-diphenyl-3-triazenecarboxamide compounds. 3,299,038, 1–17–67, Cl. 260—140.

Tomiyama, Shinichi, H. Marumo, and M. Takai, to Lion Yushi Kabushiki Kaisha. Antistatic synthetic resins and fibers. 3,299,006, 1–17–67, Cl. 260—75.

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Tompkins, David R., and T. R. McClughan, to Plastic Applicators, Inc. Magnetic pipe inspection device with pivotally mounted sensor means. 3,299,349, 1–17–67, Cl. 324—37.

Tompkins, David R., and L. L. Council, to Plastic Applicators, Inc. Rotating pipe inspection assembly with solenoid operated means to raise and lower the sensor means. 3,299,350, 1–17–67, Cl. 324—37.

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Torii, Yasunosuke, to Tokyo Shibaura Electric Co., Ltd. Starting device for gradually applying current to a load by means of parallel branch circuits. 3,299,347, 1–17–67, Cl. 323—97.

Tormolen, Hans H. Mechanism for converting predetermined input speed to random output speed. 3,299,228, 1–17–67, Cl. 200—18.

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Turbak, Albin F., A. Noshay, and G. Karoly, to Esso Research and Engineering Co. Dyeable polyolefins. 3,299,030, 1–17–67, Cl. 260—93.7.

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Verch, George O., to Allis-Chalmers Mfg. Co. Multiple compartment grinding mills. 3,298,619, 1–17–67, Cl. 241—179.

Vercellotti, Leonard C., and R. A. Johnson, to Westinghouse Electric Corp. Condition responsive on-off blocking oscillator. 3,299,369, 1–17–67, Cl. 331—112.

Vercesi, Ameico A., and R. R. Segerdahl, to Fairchild Camera & Instrument Corp. Variable resistance potentiometer of the type having a conductive plastic track on an electrically insulating base. 3,299,389, 1–17–67, Cl. 338—309.

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Viecell, Joseph L., to Sunbeam Corp. Electric pressing iron water level gauge. 3,298,119, 1–17–67, Cl. 38—77.

Vilkas, Eugene P., and R. W. Reynolds, to Welding Research, Inc. Welding system. 3,299,250, 1–17–67, Cl. 219—131.

Villarreal, Jorge R. Process for producing soluble citrus fruit powder. 3,298,838, 1–17–67, Cl. 99—206.

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Vinding, Jorgen P. Interrogator-responder identification system. 3,299,424, 1–17–67, Cl. 343—6.5.

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Vissers, Herbert, to Landbouwwerktuigen- en Maschinefabriek H. Vissers N.V. Apparatus for spreading or sowing granular material. 3,298,606, 1–17–67, Cl. 275—15.

Voelcker, Herbert B.: *See*—
Cherry, Edward C., Pearson, Barton, Kubba, and Voelcker. 3,299,204.

Vogel, Adolph W.: *See*—
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Vogelpohl, Roland L., to Owens-Illinois Glass Co. Mold and plunger for pressing flanged glass articles. 3,298,813, 1–17–67, Cl. 65—305.

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Vrablik, Richard J. High speed automated painting device. 3,298,352, 1–17–67, Cl. 118—4.

Vuillermet, Marcel, to Compagnie Generale d'Electricite. Fastening device for windings of static electrical equipment. 3,299,386, 1–17–67, Cl. 336—197.

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Wachholtz, Fritz H. W., and C. Korf. Aqueous dispersion of modified drying and semi-drying oils containing water- soluble drier. 3,298,848, 1–17–67, Cl. 106—264.

Wade, Robert C., to Metal Hydrides Inc. Method for preparing metal aluminum hydrides. 3,298,800, 1–17–67, Cl. 23—365.

Wagener, Johann S., and R. J. Raschiotto, to Union Carbide Corp. Capacitor with reducible solid oxide electrolyte derived from high concentrate solution and method for making same. 3,299,325, 1–17–67, Cl. 317—230.

Wagenhals, Carl W., to Honeywell Inc. Magnetic head having internal printed circuit connection means. 3,299,218, 1–17–67, Cl. 179—100.2.

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Wakeman, Reginald L., and J. F. Coates, to Millmaster Onyx Corp. Quaternary ammonium aromatic amino sulfonates. 3,299,073, 1–17–67, Cl. 260—286.

Walden, Lester M. Rocking mechanical toys. 3,298,120, 1–17–67, Cl. 40—106.41.

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Wallschmiller, Hans. Brake and coupling apparatus. 3,298,484, 1–17–67, Cl. 192—8.

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Wallace, Robert G., to Phillips Petroleum Co. Melt blending of polyolefins. 3,299,186, 1–17–67, Cl. 260—897.

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Wartell, Harry, to Harlee-George, Inc. Article dispenser having empty supply source responsive means. 3,298,566, 1–17–67, Cl. 221—19.

Watanabe, Hisashi, and K. Nemoto, to Nippon Electric Co. Ltd. Intermetallic compound semiconductor devices. 3,299,330, 1–17–67, Cl. 317—235.

Wathen, Ernest L. Tire display and advertising device. 3,298,121, 1–17–67, Cl. 40—125.

Watkins, Lucius D., to Outboard Marine Corp. Engine. 3,298,336, 1–17–67, Cl. 123—148.

Watkins, Sidney C., to Joseph Lucas (Industries), Ltd. Spray nozzles. 3,298,613, 1–17–67, Cl. 239—421.

Watts, Ridley, Jr., to The American Packaging Corp. Package. 3,298,515, 1–17–67, Cl. 206—78.

Waugh, John A., and L. L. Warner, to Owens-Corning Fiberglass Corp. Process of producing flexible glass flake electrical insulation. 3,298,882, 1–17–67, Cl. 156—62.8.

Weathers, Thomas C., and H. Jensen, to Radio Corp. of America. Tape transport threading mechanism having movable pressure roller. 3,298,583, 1–17–67, Cl. 226—90.

Weaver, Eastman A., to Comstock & Wescott, Inc. Heat transfer system. 3,298,431, 1–17–67, Cl. 165—105.

Webb, James E., administrator of the National Aeronautics and Space Administration, with respect to an invention of D. H. Lee and D. D. Evans. Ignition means for monopropellant. 3,298,182, 1–17–67, Cl. 60—251.

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Webber, William C., and J. K. Hambling, to The British Petroleum Co. Ltd. Two-stage polymerization process. 3,299,164, 1–17–67, Cl. 260—683.15.

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Webster, Robert C., and J. S. Hinn, to Air Reduction Co., Inc. Method and apparatus for freezing food products. 3,298,188, 1–17–67, Cl. 62—63.

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Weil, Edward D., to Hooker Chemical Corp. Esters, amides, and imides of octachloro - 3,6-methano-1,2,3,6-tetrahydrophthalic anhydride. 3,299,094, 1–17–67, Cl. 260—326.

Weil, Edward D.: *See*—
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Weis, George H., and A. Busch, to American Smelting and Refining Co. Electrolytic cell including a starting cathode having an integral supporting means. 3,298,945, 1–17–67, Cl. 204—242.

Weisbach, Jerry A., to Smith Kline & French Laboratories. Spiro[3-indole-3', -pyrrolidine and piperidine] derivatives. 3,299,075, 1–17–67, Cl. 260—293.

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Weitzman, Norman G. Non-jamming agitating and dispensing apparatus for a vending machine. 3,298,569, 1–17–67, Cl. 221—203.

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Well Completions, Inc.: *See*—
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Wendt, Gerhard R., and K. W. Ledig, to American Home Products Corp. Cyclopenta [b]pyrido[2,3-e]-pyrazin derivatives. 3,299,064, 1–17–67, Cl. 260—250.

Werts Merle E., to General Motors Corp. Full wave voltage control system for heating load. 3,299,344, 1–17–67, Cl. 323—22.

Werts, Merle E., to General Motors Corp. Voltage control system for heating loads. 3,299,345, 1–17–67, Cl. 323—22.

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West, Robert C., and T. C. Boberg, to Esso Production Research Co. Steam generation system and method of generating steam. 3,298,359, 1–17–67, Cl. 122—379.

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Hamilton, Donald R., O'Hara, and Seidensticker. 3,298,795.
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Whalen, William T., to Burndy Corp. Bolted connector. 3,298,072, 1–17–67, Cl. 24—125.

Wheatley, Seth J., and H. K. McCaleb, to United States of America, Atomic Energy. Machine for dispensing thin elongated objects. 3,298,564, 1–17–67, Cl. 221—10.

White, Edmund M., and C. T. Rhoades. Alarm for fishing line. 3,298,126, 1–17–67, Cl. 43—17.

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Whitten, H. A., & Co.: *See*—
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Wilcke, Carl. Devices for storing tools and the like. 3,298,531, 1–17–67, Cl. 211—60.

Wilcke, Carl. Device for storing articles. 3,298,532, 1–17–67, Cl. 211—60.

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Wiley, Allen D., to Armco Steel Corp. Coupling band for joining corrugated pipes. 3,298,721, 1–17–67, Cl. 285—419.

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Wilks, Louis P., to Velsical Chemical Corp. Polyvinyl chloride-polymerized cyclopentadiene composition and electrical conductor coated with same. 3,299,180, 1–17–67, Cl. 260—890.

Willetts, Elwood H. Tandem axle torsional suspension system for vehicles. 3,298,710, 1–17–67, Cl. 280—104.5.

Williams, Dewi L., to Northern Electric Co., Ltd. Apparatus for detecting fauls in buried cables including means for applying a composite signal having fundamental and even harmonic frequency. 3,299,351, 1–17–67, Cl. 324—52.

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Williams, Edgar S. Versatile earth-moving equipment. 3,298,547, 1–17–67, Cl. 214—138.

Williams, James E. Complete circle swing. 3,298,685, 1–17–67, Cl. 272—33.

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Willson, Jack E., and J. M. Steadle, Jr., to Ingersoll-Rand Co. Power fastener device. 3,298,090, 1–17–67, Cl. 29—240.

Willy, John, to Specialty Converters, Inc. Method of manufacturing reinforced plastic foam in sheet form. 3,298,884, 1–17–67, Cl. 156—79.

Wilson, Donald S., to Rotron Mfg. Co., Inc. Diaphragm thrust bearing. 3,298,756, 1–17–67, Cl. 308—135.

Wilson, George A., to I-T-E Circuit Breaker Co. Shock latch. 3,299,243, 1–17–67, Cl. 200—169.

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Wirth, Hans, and K.-H. Eisenlohr, to Metallgesellschaft Aktiengesellschaft. Production of pure aromatic hydrocarbons. 3,299,158, 1–17–67, Cl. 260—674.

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Wlaz, Stanley G.: *See*—
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Wolf, Milton, J. L. Szabo, and J. L. Klebold, to American Home Products Corp. Glyoxanilide thiosemicarbazones. 3,299,131, 1–17–67, Cl. 260—552.

Wolfe, Max G. Automatic window washer and dryer for modern skyscrapers. 3,298,052, 1–17–67, Cl. 15—302.

Wolff, Werner, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Waterproof, plastic compositions of matter resistant to electrostatic charge consisting of homo- and copolymers of vinyl chloride. 3,298,983, 1–17–67, Cl. 260—23.

Wolff, William F., to Standard Oil Co. 9,10-dihydro-9-monothioanthroic acid. 3,299,122, 1–17–67, Cl. 260—500.

Wolford, Dale E., to F. E. Myers & Bro. Co. Method for spraying. 3,298,608, 1–17–67, Cl. 239—8.

Wolfram, Adolf E., to General Electric Co. Ultra high frequencey converter. 3,299,360, 1–17–67, Cl. 325—436.

Wollrich, Arthur E., Hughes Aircraft Co. Voltage divider network encapsulated in the housing of a storage tube. 3,299,316, 1–17–67, Cl. 315—52.

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Wood, John O., to Dunlop Rubber Co., Ltd. Lace-fabric making machines. 3,298,274, 1–17–67, Cl. 87—24.

Wood, Richard F., to Philco-Ford Corp. Remote control receiver with a detector responsive only to unmodulated carrier wave. 3,299,358, 1–17–67, Cl. 325—393.

Woodward, Stewart A., to General Electric Co. Pushbutton switch assembly with flashover protection delay slider means. 3,299,223, 1–17–67, Cl. 200—5.

Woogerd, Stanley M., to Hercules Glue Co. Herbicidal concentrate containing monosodium acid methanearsonate. 3,298,820, 1–17–67, Cl. 71—2.7.

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Wright, John L. Chromatographic flow column. 3,298,527, 1–17–67, Cl. 210—198.

Wukusick, Carl S., to United States of America, Atomic Energy Commission. Embrittlement-resistant iron-chromium-aluminum yttrium alloys. 3,298,826, 1–17–67, Cl. 75—124.

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Yamada, Tatsuya, S. Hasegawa, Y. Nakayama and H. Neishi, to Tokyo Shibaura Electric Co., Ltd. Cathode ray tube having a screen conforming to the perinheral surface of a cylinder. 3,299,314, 1–17–67, Cl. 315—25.

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Yamarone, Ronald E., and H. M. Zydney, to Bell Telephone Laboratories Inc. Detection circuit responsive to pulse duration and frequency. 3,299,404, 1–17–67, Cl. 340—167.

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Yarbrough, Garrett S., to Westinghouse Electric Corp. Latch means for holding electrical unit engaged and disengaged from bus bars. 3,299,324, 1–17–67, Cl. 317—120.

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Yoshida, Motofumi: *See*—
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Young, David E., to Schlumberger Well Surveying Corp. Safety seal packer. 3,298,441, 1–17–67, Cl. 166—179.

Young, Edward W., to United Aircraft Corp. Multidigit pulse code responsive system. 3,299,403, 1–17–67, Cl. 340—151.

Young, John S., to Automatic Electric Laboratories, Inc. Trunk selection arrangement for a line concentrator system. 3,299,213, 1–17–67, Cl. 179—18.

Youngblood, Sidney C. Rotatable angle block tool. 3,298,681, 1–17–67, Cl. 269—69.

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Yunker, Robert E., and J. P. Southern. Automatic trim correction. 3,298,344, 1–17–67, Cl. 114—665.

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Yurko, William J., and D. K. Pickens, to Chemetals Corp. Method of producing oxygen-free high conductivity copper. 3,298,070, 1–17–67, Cl. 22—214.

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Zelinski, Robert P., and F. E. Naylor, to Phillips Petroleum Co. Copolymers of 1,3-butadiene and a norbormadiene. 3,299,017, 1–17–67, Cl. 260—82.1.

Zelinski, Robert P., to Phillips Petroleum Co. Removal of contaminants from unsaturated hydrocarbon-containing mixtures. 3,299,163, 1–17–67, Cl. 260—681.5.

Zelnick, Seymour, to Weldotron Corp. Temperature control means for electrically heated impulse sealing elements. 3,299,251, 1–17–67, Cl. 219—243.

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Zienty, Ferdinand B., and M. J. Holm, to Monsanto Co. Diphenethylbenzene tetracarboxylic acid diimides. 3,299,096, 1–17–67, Cl. 260—326.3.

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ISSUED JANUARY 17, 1967

NOTE.—First number, class; second number, subclass; third number, patent number.

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(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

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3,298,594	3,298,949	3,298,644	3,298,435	3,298,309	3,298,147
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3,298,715	3,299,018	3,298,342	3,298,442	3,298,976	3,298,315
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3,298,874	3,299,302	3,299,132	3,299,397	54 : 3,298,065	3,299,226
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1 : 206,738	17 : 206,715	25 : 206,732	36 : 206,741	39 : 206,735	47 : 206,710
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 17, 1967 Volume 834 Number 3

TRADEMARKS

CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]------- 27,353
Date of oldest new application---------- Dec. 3, 1965
Date of oldest amended application (filing date)---------- Feb. 3, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	12-8-65	8-24-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 28, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-13-66	2-3-64
Renewals (All Classes)	11-8-66	---------
Sec. 12(c) Publications (All Classes)	11-10-66	---------

Applications filed during the month of November—2,166

Registrations Issued----------422—No. 822,177 to No. 822,598
Renewals Issued---------- 70

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MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 177,053. Fuji Denki Seizo Kabushiki Kaisha, d.b.a. Fuji Electric Mfg. Co., Ltd., Kawasaki, Japan. Filed Sept. 16, 1963.

FUJI ELECTRIC

Applicant disclaims the word "Electric" apart from the mark as shown. Priority claimed under Sec. 44(d) on Japanese applications filed Apr. 5, 1963; Reg. No. 693,882, dated Dec. 25, 1965 and Reg. No. 701,482, dated Mar. 16, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus, Machines and Supplies—Namely, Generators; Transformers; Rotary Condensers; Static Condensers; Circuit Breakers; Electrical Transmission Switch Boards; Rectifiers of the Mercury Arc, Selenium and Silicon Type; Rotary and Contact Converters; D.C. and A.C. Motors; Electric Traction Motors; Electric Motor Starters and Speed Regulators; Voltage Regulators and the Like; Magnetic Switches; Combination Stereophonic Radio, Phonograph and Tape Recording Sets; Vacuum Cleaners; Electric Fans; Radios; Television Sets; Electric Juicers, Toasters, Hot Plates and Irons; Electric Foot Warmers, Bed Warmers and Body Warmers; Electric Stoves; Dry Batteries; Flashlights; Bulbs and Fluorescent Lamps; Switches for Electrical Transmission Switch Boards, Disconnecting and Knife Switches and Relays.

Class 26—Measuring and Scientific Appliances

For Measuring and Scientific Appliances—Namely, Watt-Hour Meters; Telemetry and Telecontrol Equipment for Measuring and Metering Industrial Operations and Automatically Controlling the Same; Pyrometers; Gas Analysers; Hygrometers; Salinometers; pH Meters; Pressure Gauges; Vacuum Meters, and Flow Meters for Water, Steam, Gas and Air; and Level Meters.

SN 193,138. Domar S.A., Barcelona, Spain. Filed May 11, 1964.

NEWPOL

Priority claimed under Sec. 44(d) on Spanish application filed Jan. 11, 1964; Reg. No. 439,254, dated Sept. 20, 1966.

Class 24—Laundry Appliances and Machines

For Laundry Washers and Clothes Wringers.

Class 31—Filters and Refrigerators

For Freezers and Refrigerators.

SN 195,466. Toho Rayon Company Limited, Tokyo, Japan. Filed June 11, 1964.

TOVIS M-63

Priority claimed under Sec. 44(d) on Japanese applications filed Feb. 5, 1964; Reg. Nos. 699,390, 685,688, and 701,300, dated Feb. 15, 1966, Sept. 14, 1965, and Mar. 10, 1966, respectively.

Class 1—Raw or Partly Prepared Materials

For Regenerated Cellulose Fiber.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Textile Fabrics Made of Regenerated Cellulose.

Class 43—Thread and Yarn

For Threads and Yarns, Excluding Sutures and Fishing Lines, Made of Regenerated Cellulose.

SN 196,722. Sandefur Engineering Co., Inc., Lawndale, Calif. Filed June 29, 1964.

LINE-MASTER

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial Work Holding and Positioning Fixtures—Namely, Clamps, Work Positioners and Vises, and Industrial Work Benches.

Class 32—Furniture and Upholstery

For Industrial Furniture—Namely, Desks and Chairs.

First use Mar. 1, 1963.

SN 207,459. Carrier Corporation, Syracuse, N.Y. Filed Dec. 4, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Steam and Gas Turbines, Compressors, Turbochargers Comprising Centrifugal Blowers That Are Driven by Turbines for Supplying Air to Diesel Engines, Turbine-Gears, Steam Jet Ejectors, and Tube Cleaners of the Rotary Impact Type.

First use Feb. 1, 1963.

Class 31—Filters and Refrigerators

For Filters and Grease Extractors That Are Used for Removing Organic Matter, Sediment, Etc., and for Extracting Oil and Grease, From Water in Power and Industrial Plants, and For Strainers That Are Used for Straining Fuel Oil for Internal Combustion Engines, Lubricating Oil in Lubricating Systems and Water and Other Liquids for Industrial Uses.

First use May 1, 1963.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Feedwater Heaters for Pre-Heating Water That Is Supplied to Water Heaters, Deaerating Heaters for Heating and Removing Gases From Water That Is Used for Industrial Purposes, Surface Condensers for Condensing Vapors by Contact With Cooled Surfaces, Barometric Condensers for Condensing Vapors by Contact With Liquids, Jet Condensers for Condensing Vapors by Contact With Liquids, and Turboblowers.

First use May 24, 1963.

SN 209,049. Fujitsu Limited, Kawasaki, Japan. Filed Dec. 30, 1964.

FUJITSU

Owner of Japanese Reg. No. 588,894, dated June 6, 1962.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus, Machines and Supplies—Namely, Telephone Head Sets and Hand Sets; Telephone and Telegraph Exchange Systems and Equipment; Interphones; Teleprinting and Teletype Systems; Open Wire Carrier Transmission Systems; Power Line Carrier Transmission Systems; Loading Coils; Cable Carrier Transmission Systems; Voice Frequency Transmission Equipment; Carrier Intercommunication Systems; Radio and Television Receivers; Single Channel and Multiplex Communication Equipment for Stationary and Mobile Installations; Loud Speaker Systems; Resistors; Capacitors; Transformers; Connectors; Tuning Bars; Relays; Vacuum Tubes; Discharge Tubes; Electron Tubes; Diodes; Transistors; Varisters; Thermisters; Solid State Circuits; Electrical Score Boards and Signs for the Display of Numbers, Letters, Words, and Codes.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cutlery, Machinery and Tools and Parts Thereof—Namely, Automatic, Controlling Devices for Machine Tools.

Class 26—Measuring and Scientific Appliances

For Measuring and Scientific Appliances—Namely, Electronic Computers; Automatic Totalisers, Counters, Score Boards and Signs for the Display of Numbers, Letters, Words and Codes Associated With Computers, Automatic Totalisers, and Counters; Supervisory Measuring and Control Systems for Electric Power Transmission Lines, Gas Supply Channels and Meteorology.

SN 209,050. Fujitsu Limited, Kawasaki, Japan. Filed Dec. 30, 1964.

FUJITSU LIMITED

Applicant, without waiving its common law rights therein, disclaims any exclusive right in the word "Limited" apart and separate from the mark as a whole. Owner of Japanese Reg. No. 634,683, dated Jan. 20, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus, Machines and Supplies—Namely, Telephone Head Sets and Hand Sets; Telephone and Telegraph Exchange Systems and Equipment; Interphones; Teleprinting and Teletype Systems; Open Wire Carrier Transmission Systems; Power Line Carrier Transmission Systems; Loading Coils; Cable Carrier Transmission Systems; Voice Frequency Transmission Equipment; Carrier Intercommunication Systems; Radio and Television Receivers; Single Channel and Multiplex Communication Equipment for Stationary and Mobile Installations; Loud Speaker Systems; Resistors; Capacitors; Transformers; Connectors; Tuning Bars; Relays; Vacuum Tubes; Discharge Tubes; Electron Tubes; Diodes; Transistors; Varisters; Thermisters; Solid State Circuits; Electrical Score Boards and Signs for the Display of Numbers, Letters, Words, and Codes.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cutlery, Machinery and Tools and Parts Thereof—Namely, Automatic, Controlling Devices for Machine Tools.

Class 26—Measuring and Scientific Appliances

For Measuring and Scientific Appliances—Namely, Electronic Computers; Automatic Totalizers, Counters, Score Boards and Signs for the Display of Numbers, Letters, Words and Codes Associated With Computers, Automatic Totalizers, and Counters; Supervisory Measuring and Control Systems for Electric Power Transmission Lines, Gas Supply Channels and Meteorology.

SN 211,969. Charles K. Williams, Ottawa, Ontario, Canada. Filed Feb. 15, 1965.

POLI-WASH

Priority claimed under Sec. 44(d) on Canadian application filed Aug. 19, 1964; Reg. No. 145,771, dated June 10, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Motor Vehicle Washing Equipment—Namely, Storage, Mixing and Dispensing Apparatus for Liquid Washing Solutions.

Class 103—Construction and Repair

For Service of Washing Motor Vehicles.

SN 213,291. Brunswick Corporation, Chicago, Ill. Filed Mar. 4, 1965.

CLARION

Class 2—Receptacles

For Products, Largely Disposable and Intended for Single Use in Aiding in the Prevention of Cross-Infection in Hospitals and Doctor's Offices—Namely, Sanitary Napkin Bags, Carafes, Plastic Condiment Containers, and Food Tray Kits Comprising Plastic Trays.

Class 18—Medicines and Pharmaceutical Preparations

For Alcohol Saturated Sponges, Lubricating Jelly and Medical Lotions.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Disposable Razors and Disposable Cutlery.

Class 37—Paper and Stationery

For Paper Towels and Napkins.

Class 44—Dental, Medical, and Surgical Appliances

For Tongue Blades, Dressings, Obstetrical Pads, Gowns To Be Worn by Staff and Patient in the Hospital and the Clinic, Plastic Bed and Pillow Covers, Plastic Medicine Cups, Tracheotomy Masks, Enema Irrigation Bottles and Finger Cots, and Patient Preparatory Container Kits Comprising a Razor, Astringents, Disinfectant Pads, and the Like.

Class 52—Detergents and Soaps

For Soap and Detergents.

First use Dec. 13, 1962.

SN 214,060. Tracor, Inc., Austin, Tex. Filed Mar. 15, 1965. Owner of Reg. Nos. 761,743 and 788,286.

TRACOR

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus—Namely, Radio Receivers, Servo-Resolvers, Electronic Servos, Electrical Power Supplies, Inverters, Frequency Synthesizers, Antennas, and Antenna Tuning Equipment.

Class 26—Measuring and Scientific Appliances

For Measuring and Scientific Appliances—Namely, Phase Tracking Receivers, Frequency Difference Meters, Oscillators, Oscillator Circuits, Oscillator and Phase Comparator Circuits, Electrical Energy Discriminators, Electrical Counters, Magnetic Counters, and Frequency Dividers, and Calibrational, Standardisational, and Navigational Instruments Involving Such Components.

Class 27—Horological Instruments

For Horological Instruments—Namely, Frequency Standards, Clocks, Frequency Resonators, Tuning Fork Resonators, and Timekeeping Instruments Involving Such Components.

First use as early as Sept. 10, 1964.

SN 216,355. Symington Wayne Corporation, Salisbury, Md. Filed Apr. 12, 1965.

NYE WAYNE

Owner of Reg. Nos. 80,295, 575,135, and others.

Class 2—Receptacles

For Carrying Boxes.
First use Jan. 1, 1965.

Class 15—Oils and Greases

For Cutting Oil.
First use Jan. 1, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pipe Tools—Namely, Pipe Cutters; Pipe Cutter Wheels; Pipe Vises; Vise Stands; Threading Dies (Pipe and Conduit); Threading Dies (Bolt); Die Heads; Tube Cutters; Tube Cutter Wheels; Power Drives and Accessories, Namely, Stands, Die Heads, Cutters, Saddles, Yokes and Brushes; Universal Drive Shafts; Flaring Tools, Manual and Hydraulic Knock-Out Punches; Pipe Taps; Reamers; Wrenches (Pipe, Spud, Adjustable, Closet, Nipple, Ratcheting Chain); and Sets, Parts, and Accessories therefor.

First use Sept. 7, 1964.

SN 219,910. Reilly Tar & Chemical Corporation, Indianapolis, Ind. Filed May 27, 1965.

ARMED GARD

Class 12—Construction Materials

For Glass Fiber Mesh Saturated With Plasticized Coal Tar Enamel for Application to Pipeline Joints and Fittings.

Class 16—Protective and Decorative Coatings

For Liquid Primer Used To Prepare Metal Surfaces for the Application of Coal Tar-Impregnated Mesh.

First use Oct. 5, 1964.

SN 223,858. Lafayette Radio Electronics Corporation, Syosset, N.Y. Filed July 21, 1965.

LRE

Class 13—Hardware and Plumbing and Steam-Fitting

For Drawer Slides and Brackets.
First use on or about July 7, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

For Citizens Band Transceivers; AM and FM Stereo, Radio and Communications Receivers; Antennas; Amplifiers; Tuners; Speakers; TV Picture Tubes.
First use Apr. 30, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Metal Forming Equipment—Namely, a Bending and Forming Brake or Press for Use by Hobbyists and Servicemen; Chassis Punch Sets; and Plier Sets.
First use June 3, 1965.

Class 26—Measuring and Scientific Appliances

For Microscopes; Curves; Engineers' Scales; Rifle Scopes, and Electronic Test Equipment.
First use June 3, 1965.

Class 32—Furniture and Upholstery

For Speaker Enclosures.
First use Apr. 30, 1965.

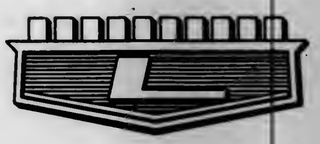
Class 34—Heating, Lighting, and Ventilating Apparatus

For Soldering Handles.
First use June 3, 1965.

Class 36—Musical Instruments and Supplies

For Guitars; and Taper Recorders.
First use Apr. 30, 1965.

SN 225,702. Z & T Importing Co., Inc., Los Angeles, Calif. Filed Aug. 16, 1965.



Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Receiving Sets, Intercoms, Lamps, Transceivers, Clock Radios, Microphones, A.C. Adaptors, Walkie-Talkies, and Accessories and Parts for Said Goods.

Class 36—Musical Instruments and Supplies

For Tape Recorders, Phonographs, and Accessories and Parts Therefor.

First use at least as early as Mar. 9, 1964; at least as early as October 1963 in a different form.

SN 227,937. Duron Paint Manufacturing Company, Inc., Beltsville, Md. Filed Sept. 16, 1965.

DURON

Class 20—Linoleum and Oiled Cloth

For Vinyl Wall Covering.

Class 37—Paper and Stationery

For Wallpaper.

First use Sept. 7, 1965.

SN 229,292. H. Robert Industries, Inc., St. Louis, Mo. Filed Oct. 4, 1965.



Class 32—Furniture and Upholstery

For Room Furniture for Hospitals and Institutions—Namely, Dormitory Beds, Dressers, Chests, Night Stands, Chairs, Settees, and the Like.

Class 44—Dental, Medical, and Surgical Appliances

For Hospital Head Lift Beds, Examining and Treatment Tables, Instrument Tables, and Operating Room Furniture.

First use Nov. 14, 1964.

SN 231,969. Honda Giken Kogyo Kabushiki Kaisha (Honda Motor Co. Ltd.), Chuo-ku, Tokyo, Japan. Filed Nov. 2, 1965.

HONDA

Owner of Japanese Reg. Nos. 656,585, 681,685, and 673,273, dated Oct. 24, 1964, July 21, 1965 and Apr. 12, 1965, respectively.

Class 19—Vehicles

For Land Vehicles of All Types—Namely, Motor Cars, Motorcycles, Motor Bicycles, Motor Tricycles, Motor Trucks, Motor Scooters, Mopeds, and Parts Thereof.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Internal Combustion Engines.

SN 232,379. Pittsburgh Plate Glass Company, d.b.a. Barreled Sunlight Paint Company, Newark, N.J. Filed Nov. 9, 1965.

GLAZE GARD

Owner of Reg. No. 755,806.

Class 16—Protective and Decorative Coatings

For Clear and Pigmented Finishers, Curing Agents and Fillers.

Class 52—Detergents and Soaps

For Cleaning Solvents.

First use at least as early as Sept. 28, 1965.

SN 232,496. Wallace Business Forms, Inc., Chicago, Ill. Filed Nov. 12, 1965.



Class 37—Paper and Stationery

For Business Form of All Types.
First use September 1960.

Class 38—Prints and Publications

For Books, Catalogues, and Brochures.
First use August 1964.

SN 232,643. Associated Spring Corporation, Bristol, Conn. Filed Nov. 15, 1965.



Owner of Reg. Nos. 670,827 and 775,682.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fastener Hardware—Namely, Bolts, Screws, Nuts, Lock Nuts, and Washers; Cap Screws, Marine Hardware and Accessories, Fasteners, Studs, Bolts, Screws and Nuts, Washers, Clips and Cotter Pins, Hardware Cabinets, Brake Tubing, Unions for Metal Brake Tubing, Fuel Lines, Fuel Line Fittings and Valves, and Shear Pins; Canvas Fastening Equipment—Namely, Eyelets, Studs, Buttons, and Sockets; and Cap Screw Type Bolts for Motor Vehicles and Off-The-Road Equipment.
First use May 12, 1965.

Class 19—Vehicles

For Service and Replacement Parts for Automotive and Aviation Vehicles—Namely, Windshield Wipers and Parts Therefor, Steering Gear Mechanism and Component Parts Thereof, Radiator and Gasoline Tank Caps, Running Board Moldings, Shackles and Component Parts Thereof, Shock Absorber Parts, Namely, Link Pins and Assemblies, Tie Rod Ends, Spindle and King Pin Assemblies, Wheel Weights, U-Bolts, Wheel Studs, Window Channels, Window Regulators, Rubber Grommets for Pedal Aperture in Floor Boards, and Brake Shoes; Marine Steering Apparatus and Parts Thereof, Rope and Cable Clamping, Tightening, Guiding and Clipping Equipment, Deck Hooks and Sockets, Step Plates, Transom Pads, Oar Locks, Cleats, Chocks and Handles.
First use May 12, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Service and Replacement Automotive Parts—Namely, Battery Bolts, Cables, and Ground Straps, Motor and Generator Parts, Namely, Brushes, Bearings, and Regulators; Ignition System Parts, Namely, Distributor Rotors, Caps and Points, Condensers and Spark Plug Terminals, Wiring Assemblies and Terminals, Switches, Fuses, Lamp Assemblies; Marine Electrical Switches, Lights, Pilot Lamps, Deck Lamps, Wire and Wire Terminals, Fuses, Points and Condensers, Electric Horns, Switch Plates, Fuse Blocks, Electrical Contacts and Connectors.
First use May 13, 1965.

Class 22—Games, Toys, and Sporting Goods

For Water Skis and Related Accessories.
First use May 14, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Structural and Replacement Parts for Automotive and Aviation Vehicles—Namely, Connecting Rod Bearings, Pistons, Carburetors and Parts Thereof, Fuel Pumps, Poppet Valves for Internal Combustion Engines, Fan Blades, Generator Pulleys, Mufflers, and Clutch Springs; and Marine Resinous Pulley Blocks and Screw Drivers.
First use May 12, 1965.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Radiator Hose, Brake Hose, and Windshield Wiper Hose.
First use May 12, 1965.

SN 233,736. Perfect Paint Products, Inc., Brentwood, Md. Filed Dec. 1, 1965.

ETC

Class 12—Construction Materials

For Liquid Plastic Coating for Sealing Concrete.

Class 16—Protective and Decorative Coatings

For Clear Plastic Floor Coatings, Plastic Exterior Paint, and Glossy Plastic Porch, Deck, and Patio Paint.

First use Oct. 15, 1965.

SN 237,191. Aitkin Iron Works, Inc., Aitkin, Minn. Filed Jan. 25, 1966.

AITKIN

Class 19—Vehicles

For Trailers, Specifically One-Wheel, Two-Wheel, and Four-Wheel General Purpose Trailers for Hauling Logs and All Types of Equipment, Wheel-Equipped Log Trailers, and Sled-Equipped Log Trailers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Fork Lifts, Bulldozers, Bulldozer Blades, Log Loading and Skidding Equipment, and Lawn Rollers.

First use July 1952.

SN 239,192. Sierra Engineering Company, Sierra Madre, Calif. Filed Feb. 21, 1966.

SECO$_2$

Class 19—Vehicles

For Carts.

Class 44—Dental, Medical, and Surgical Appliances

For Masks for Bottled Gas.

First use Jan. 1, 1965.

SN 239,522. L & M-Surco Mfg., Inc., Dallas, Tex. Filed Feb. 21, 1966.

L & M

Class 6—Chemicals and Chemical Compositions

For Mortar Concentrate.

Class 12—Construction Materials

For Grout and Mortar.

First use Feb. 23, 1953.

SN 242,681. The Tapecoat Company, Inc., Evanston, Ill. Filed Apr. 4, 1966.

TAPECOAT

Owner of Reg. No. 538,965.

Class 12—Construction Materials

For Fortified Coal Tar Tape of Various Widths, and a Fabric Tape of Various Widths Saturated and Coated With a Coal Tar Material, Both for Use in Covering and Protecting Pipe, Ducts, Tanks and the Like, Against Corrosion.
First use on or about May 1, 1940.

Class 16—Protective and Decorative Coatings

For Liquid Coating for Use in Covering and Protecting Pipe, Ducts, Tanks and the Like, Against Corrosion; and Surface Primers for Priming Surfaces Prior to the Application of Protective Coatings.
First use June 13, 1956.

SN 248,941. Health Products, Inc., Chicago, Ill. Filed June 27, 1966.



saunda

Class 44—Dental, Medical, and Surgical Appliances

For Mechanical Vaporizer Appliances.
First use Feb. 16, 1966.

Class 51—Cosmetics and Toilet Preparations

For Cosmetics—Namely, Facial Freshener, Facial Moisturizer, Facial Scrub, and Facial Emollient.
First use June 2, 1966.

SN 257,225. Sugar Beet Products Company, Saginaw, Mich. Filed Oct. 26, 1966.

SBS

Owner of Reg. Nos. 340,491 and 541,107.

Class 51—Cosmetics and Toilet Preparations

For Medicated Skin Cream.
First use on or about June 16, 1959.

Class 52—Detergents and Soaps

For Soap Powders, Deodorant Soap, and Waterless Skin Cleansers.
First use on or about Dec. 4, 1935.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.
[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 246,828. Lauhoff Grain Company, Danville, Ill. Filed May 23, 1966.

SUPER-X

For Brewers' Grits, Meal and Flakes, Specifically Cereal Adjunct for Use in the Making of Fermentative Beverages.
First use in or before March 1949.

SN 247,830. Pioneer Hi-Bred Corn Company, Des Moines, Iowa. Filed June 10, 1966.



Owner of Reg. Nos. 778,911 and 778,912.
For Soybean and Wheat Seeds.
First use on or about May 10, 1966.

SN 247,908. Fiberfil, Inc., Evansville, Ind. Filed June 13, 1966.

SULFAGLAS

For Plastics, Specifically Synthetic Injection Molding Materials in Pellet or Granular Form.
First use May 18, 1966.

SN 248,038. Hastings & Co., Inc., Philadelphia, Pa. Filed June 14, 1966.

SPECTRA-FOIL

For Metallized Plastic Film.
First use June 1, 1966.

SN 248,097. Armour and Company, Chicago, Ill. Filed June 15, 1966.

BEAULO

For Leather.
First use Aug. 4, 1965.

SN 257,003. Minerals & Chemicals Philipp Corporation, Menlo Park, N.J. Filed Oct. 24, 1966.

ATTACLAY

For Finely Divided Fuller's Earth Used as an Insecticide Carrier or Diluent.
First use Feb. 23, 1945.

Class 2—Receptacles

SN 211,917. Park Manufacturing Company, Grant Park, Ill. Filed Feb. 12, 1965.

PARK

For Tool Boxes.
First use 1947.

SN 221,280. Kleer-Vu Industries, Inc., New York, N.Y. Filed June 16, 1965.

SONITUBES

For Plastic Tubes Used in Packaging.
First use Sept. 15, 1964.

SN 226,891. Atlantic Products Corporation, Trenton, N.J. Filed Sept. 1, 1965.

DEN Caddy

Applicant claims the word "Caddy" only for use in combination with the mark as shown.
For Receptacles for Wastepaper, Magazines, and Newspapers.
First use July 21, 1965.

SN 231,285. Sweetheart Plastics, Inc., Wilmington, Mass. Filed Oct. 22, 1965.

COMFORT CUP

The word "Cup" is disclaimed apart from the mark as shown.
For Disposable Plastic Cups.
First use Oct. 11, 1965.

SN 240,872. Erell Manufacturing Company, Chicago, Ill. Filed Mar. 14, 1966.

CONVENTIONEER

For Badge Holders.
First use March 1964.

SN 241,136. Floral Development Corp., Holliston, Mass. Filed Mar. 16, 1966.

BAR-FAST

For Floral Foam Flower Bases.
First use at least as early as Feb. 9, 1966.

SN 241,685. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Mar. 23, 1966.

CRISP-A-TIER

For Plastic Household Containers and Covers Therefor.
First use Feb. 16, 1966.

SN 243,015. Pennsylvania Box & Lumber Company, Inc., Warminster, Pa. Filed Apr. 8, 1966.

PANABIN

For Panels for Converting a Pallet to an Enclosed Receptacle.
First use Mar. 23, 1966.

SN 255,679. Du-Mor Blade Company, Pennsauken, N.J. Filed Oct. 4, 1966.

BLADE-TAINER

For Paperboard Containers for Housing Cutting Blades.
First use Sept. 19, 1966.

SN 257,864. International Minerals & Chemical Corporation, Skokie, Ill. Filed Nov. 3, 1966.

RAINBOWLADER

Owner of Reg. No. 78,690.
For Bulk Storage Tanks, Especially Used on Farms for Bulk Fertilizer Storage.
First use about May 1965.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 242,865. United States Trunk Company, Inc., d.b.a. United States Luggage, Fall River, Mass. Filed Apr. 11, 1966.

FLITEWAY

For Luggage—Namely, Trunks, Suitcases, Week-End Cases, Hat Cases, Shoe Cases, Travelling Bags, Pullman Cases, Wardrobe Trunks, Wardrobe Cases, Foot Lockers, and Toilet Accessory Cases.
First use Apr. 1, 1955.

Class 4—Abrasives and Polishing Materials

SN 200,498. Snap-On Tools Corporation, Kenosha, Wis. Filed Aug. 24, 1964.

SNAP-ON

Owner of Reg. Nos. 660,530, 814,778, and others.
For Abrasive and Polishing Materials—Namely, Grinding Wheels and Discs, and Abrasive Implements for General Use, Composed of a Flexible Body and Grit Particles Superficially Adhering to Such Body.
First use sometime during 1929.

SN 231,019. Barrier Chemicals, Inc., Warwick, N.Y. Filed Oct. 22, 1965.

SLOWDOWN

For Floor Polish.
First use July 20, 1965.

SN 231,020. Barrier Chemicals, Inc., Warwick, N.Y. Filed Oct. 22, 1965.

SHOWDOWN

For Floor Polish.
First use Sept. 24, 1965.

SN 234,355. Manufacturers' Marketing Co., U.S.A., Inc., New York, N.Y. Filed Dec. 10, 1965.

CAREFREE

For Combination of Polishes and Cleaners Used To Polish and Clean Surfaces of Automobiles, Shoes, Metals, Furniture, and Stoves.
First use May 1, 1965.

SN 235,480. American-Lincoln Corporation, Toledo, Ohio. Filed Dec. 29, 1965.

AMER-SHEEN

For Surface Coating Material—Namely, Wax Used as a Protective Coating for Floors, Particularly in Industrial and Commercial Applications.
First use Feb. 17, 1965.

SN 238,445. Plasticon Chemicals, Inc., Long Island City, N.Y. Filed Feb. 9, 1966.

PLEXO-7

For Preparation for Cleaning and Polishing Marine Surfaces and Leaving a Protective Guard Thereon.
First use May 1, 1965.

Class 5—Adhesives

SN 222,847. Earle Jennings and Associates Incorporated, Seattle, Wash. Filed July 7, 1965.

BIND-ALL

For Water Soluble Adhesive Containing Properties Adapted for Joining the Edges of Paper in Book Form.
First use Jan. 7, 1965.

SN 222,876. Standard Chemical Products, Inc., Hoboken, N.J. Filed July 7, 1965.

VINYL-TITE

For Synthetic Adhesive Wallpaper Paste in Powder Form.
First use June 24, 1965.

Class 6—Chemicals and Chemical Compositions

SN 221,379. Le Page's, Inc., Pittsburgh, Pa. Filed June 17, 1965.

LEPAGE'S

Owner of Reg. Nos. 72,172, 662,077, and others.
For Additive for Cement and Plaster To Increase the Bonding Strength Thereof.
First use May 6, 1965.

SN 231,529. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Oct. 24, 1965.

SUPERB

For Alkali-Refined Vegetable Oils Used in the Manufacture of Paints and Varnishes.
First use in or about August 1927.

SN 231,531. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Oct. 24, 1965.

SNOWFLAKE

For Blown Soybean Oils Used in the Manufacture of Caulks, Glazes, Paints, and Lacquers.
First use in or about May 1930.

SN 247,104. Bristol-Myers Company, New York, N.Y. Filed June 2, 1966.

AVERT

For Room Deodorant.
First use Apr. 27, 1966.

SN 248,698. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories, Toronto, Ontario, Canada. Filed June 22, 1966.

CMRL-1415-SER

Owner of Canadian Reg. No. 144,981, dated Apr. 22, 1966.
For Chemical Solutions Used for Growing Tissue.

SN 248,699. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories, Toronto, Ontario, Canada. Filed June 22, 1966.

CMRL-1415-D

Owner of Canadian Reg. No. 144,983, dated Apr. 22, 1966.
For Chemical Solutions Used for Growing Tissue.

SN 248,700. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories, Toronto, Ontario, Canada. Filed June 22, 1966.

CMRL-1415-SCV

Owner of Canadian Reg. No. 144,985, dated Apr. 22, 1966.
For Chemical Solutions Used for Growing Tissue.

SN 248,701. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories, Toronto, Ontario, Canada. Filed June 22, 1966.

CMRL-1420

Owner of Canadian Reg. No. 144,980, dated Apr. 22, 1966.
For Chemical Solutions Used for Growing Tissue.

SN 248,702. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories, Toronto, Ontario, Canada. Filed June 22, 1966.

CMRL-1415-DSCV

Owner of Canadian Reg. No. 144,982 dated Apr. 22, 1966.
For Chemical Solutions Used for Growing Tissue.

SN 248,703. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories, Toronto, Ontario, Canada. Filed June 22, 1966.

CMRL-1415

Owner of Canadian Reg. No. 144,984, dated Apr. 22, 1966.
For Chemical Solutions Used for Growing Tissue.

SN 248,704. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories, Toronto, Ontario, Canada. Filed June 22, 1966.

CMRL-1415-ATM

Owner of Canadian Reg. No. 144,979, dated Apr. 22, 1966.
For Chemical Solutions Used for Growing Tissue.

SN 248,779. Chevron Chemical Company, San Francisco, Calif. Filed June 23, 1966.

CALERT

For Volatile Odorant.
First use Nov. 2, 1962.

SN 248,996. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 27, 1966.

ATRATOL

Owner of Reg. No. 719,477.
For Herbicide.
First use May 5, 1966.

SN 249,021. J. & L. Adikes, Inc., Jamaica, N.Y. Filed June 27, 1966.

WEED-N-CHICK

For Herbicide.
First use May 6, 1962.

SN 256,483. Stauffer Chemical Company, New York, N.Y. Filed Oct. 14, 1966.

TIGER

For Sulfur.
First use at least as early as Jan. 2, 1925.

SN 257,239. International Minerals & Chemical Corporation, Skokie, Ill. Filed Oct. 26, 1966.

SHOWDOWN

For Emulsifiable Oil for Use With Agricultural Pesticides.
First use June 23, 1966.

Class 8—Smokers' Artides, Not Including Tobacco Products

SN 252,988. Alfred Dunhill of London, Inc., New York, N.Y. Filed Aug. 24, 1966.

LONSDALE

For Tobacco Pipes.
First use Aug. 9, 1966.

SN 256,218. Japan Gas Lighter Corp., New York, N.Y. Filed Oct. 11, 1966.

J-3

Owner of Reg. No. 815,277.
For Gas Lighters for Cigars, Cigarettes, and Pipes.
First use Oct. 6, 1966.

Class 10 — Fertilizers

SN 256,793. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 20, 1966.

AGRISTIM

For Plant Growth Stimulant and Fertilizer.
First use Feb. 8, 1957.

Class 11 — Inks and Inking Materials

SN 237,806. Burroughs Corporation, Detroit, Mich. Filed Feb. 2, 1966.

INK-CELL-ON

For Reproductive Transfer or Copy Paper, Containing an Inking Material.
First use Jan. 17, 1966.

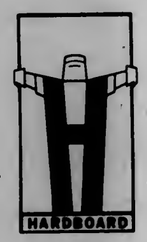
SN 249,138. Claremont Polychemical Corporation, Roslyn Heights, N.Y. Filed June 28, 1966.

INSTAMID

For Series of Pigments Dispersed in Polyamid Resins Used in the Production of Printing Inks.
First use June 15, 1966.

Class 12 — Construction Materials

SN 221,598. Hardboard Fabricators Corp., Newark, N.J. Filed June 21, 1965.



No claim is made to the word "Hardboard" apart from the other features of the mark; no common law rights being waived.
For Hardboard.
First use May 17, 1960.

SN 230,221. "Akemi" Chemisch-Technische Spezialfabrik Erich Hontsch, Nuremberg, Germany. Filed Oct. 15, 1965.

AKEMI

For Putty.
First use 1952; in commerce 1952.

SN 232,321. Marvin Kramer, d.b.a. Kramer Associates, Hicksville, N.Y. Filed Nov. 8, 1965.

marvelwood

For Wood Simulated Plastic Doors, Pilasters, Panels, Moldings, Beams, Framing, and Other Similar Structural Shapes and Forms.
First use Oct. 6, 1965.

SN 232,798. Tera-Lite Mfg. Company, Inc., San Jose, Calif. Filed Nov. 16, 1965.

TERA-DECK

For Monolithic Thermosetting Resin Decking Compound To Be Applied on Wood or Concrete Subsurface.
First use Apr. 21, 1961.

SN 232,861. Republic Gypsum Company, Lubbock, Tex. Filed Nov. 17, 1965.



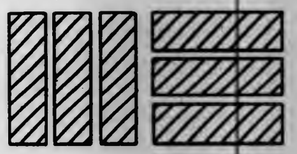
For Gypsum Wallboard.
First use Sept. 7, 1965.

SN 233,150. Unistrut Corporation, Wayne, Mich. Filed Nov. 22, 1965.

MET-L-STRUT

Owner of Reg. No. 711,650.
For Flooring Systems Composed of Metal Framing, Screw Jacks, Fittings, and Panels.
First use Mar. 31, 1959.

SN 233,295. Metropolitan Brick, Inc., Canton, Ohio. Filed Nov. 26, 1965.



The drawing is lined for the color brown, but color is not claimed as an integral part of the mark. The trademark consists of six rectangles divided into two groups of three each, three of the rectangles in one group being arranged side by side vertically and three rectangles in a second group being arranged horizontally, the vertical group being placed next to the horizontal group.
For Brick, Tile, Glazed Brick and Glazed Tile.
First use June 8, 1965.

SN 233,523. Pacific Corrugated Culvert Co., Irwindale, Calif. Filed Nov. 29, 1965.

DEEP CORE

For Corrugated Steel Pipe and Culvert.
First use Sept. 1, 1965.

SN 299,648. Oscar J. Swenson, Branford, Conn. Filed Nov. 30, 1965.

CAR COVE

For Prefabricated Automobile Shelters.
First use Dec. 28, 1964.

SN 234,101. American Fire Clay & Products Company, Canfield, Ohio. Filed Dec. 7, 1965.

AMCRETE

For Castable Refractories—Namely, Pouring, Ramming, and Gunning Mixtures.
First use during January 1964.

SN 235,240. The Tremco Manufacturing Company, Cleveland, Ohio. Filed Dec. 23, 1965.

"CUSHION-GRIP"

For Glass-Setting Tape for Automobile Windshields and the Like, the Tape of Non-Hardening Mastic Material Being Sold in Kit Form.
First use Aug. 2, 1965.

SN 236,649. Reynolds Metals Company, Richmond, Va. Filed Jan. 17, 1966.

REYNOPLY

Owner of Reg. No. 729,330.
For Aluminum Laminated to Plywood for Use as Structural Sheathing and Siding Panels.
First use on or about Jan. 7, 1965.

SN 236,682. The Vista-Lux Hardboard Company, Baltimore, Md. Filed Jan. 17, 1966.

VISTA-PANEL

The lining and stippling effects in the drawing do not have any color significance. Owner of Reg. No. 760,218.
For Hardboard Building Panels.
First use July 15, 1965.

SN 237,838. The Herrick Company Steel Products, Midland, Tex. Filed Feb. 2, 1966.

KOLTON

For Steel Buildings—Namely, Pre-Fabricated Farm, Commercial, and Industrial Buildings; and Structural Systems—Namely, Tapered Beam Roof Systems.
First use Jan. 29, 1966.

SN 238,006. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Feb. 3, 1966.

HYLITE

For Structural Materials—Namely, Store Front Structural Panels, Doors and Components Thereof; and Aluminum Panels for Construction Work.
First use at least as early as Nov. 24, 1937.

SN 239,330. Sooner Moulding Corporation, Oklahoma City, Okla. Filed Feb. 21, 1966.

COURBETTE

For Decorative Wood Moulding and Panels.
First use Jan. 5, 1966.

SN 239,354. Volkmer Manufacturing Company, Dallas, Tex. Filed Feb. 21, 1966.

"GASKET WALL"

For Glass Wall and Door Members Used in Building Constructions.
First use Mar. 2, 1965.

SN 240,318. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Mar. 7, 1966.

3M

Owner of Reg. Nos. 712,738, 748,605, and others.
For Marine Sealants.
First use Feb. 23, 1966.

SN 240,912. Honeggers' & Co., Inc., Fairbury, Ill. Filed Mar. 14, 1966.

THRIVE CENTER

The drawing is lined for green. The word "Center" is disclaimed apart from the mark as shown.
For Prefabricated Livestock and Poultry Houses With Essential Equipment, Sold as a Unit.
First use Feb. 1, 1966.

SN 241,432. Coleco Industries, Inc., Hartford, Conn. Filed Mar. 21, 1966.

COLECO

Owner of Reg. No. 740,248.
For Swimming Pools and Components Thereof and Accessories Therefor, Sold Together as a Complete Unit.
First use on or before Sept. 16, 1965.

SN 241,507. Pecora Chemical Corporation, Philadelphia, Pa. Filed Mar. 21, 1966.

UNICRYLIC

For Acrylic Polymeric Joint Sealant.
First use Feb. 7, 1966.

SN 241,938. A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill. Filed Mar. 25, 1966.

Water-trol

For Weirs, Dams, and Irrigation Gates, Prefabricated From Metal and Coated With Glass.
First use Nov. 24, 1965.

SN 242,578. Elliott Lumber Company, Danville, Ill. Filed Apr. 4, 1966.

ELCO

For Movable Wall Panel Systems; Architectural Hardwood Mouldings; Architectural Circular Resawed Prefinished and Unfinished Paneling; Doors; Door Frames; Windows and Window Frames; Cabinets; Wardrobe Units; Plastic Laminate Woodwork and Fire Retardant Paneling and Architectural Woodwork.
First use on or about Sept. 1, 1965, on doors.

SN 242,787. J. H. Baxter & Co., San Francisco, Calif. Filed Apr. 6, 1966.

HEART
TRTD

Owner of Reg. Nos. 626,451 and 647,245.
For Deep-Incized Poles.
First use Aug. 1, 1965.

SN 242,788. J. H. Baxter & Co., San Francisco, Calif. Filed Apr. 6, 1966.

J.H. BAXTER & CO. HEART TRTD

Owner of Reg. Nos. 626,451 and 647,245.
For Deep-Incised Poles.
First use Aug. 1, 1965.

SN 243,245. Indiana Limestone Company, Inc., Bedford, Ind. Filed Apr. 12, 1966.



Applicant disclaims all interest in the broken outline of the State of Indiana.
For Limestone Blocks and Slabs, Fabricated Limestone, Veneer, Sills, Coping, and Precast Concrete Panels.
First use May 15, 1965.

SN 244,267. Symons Mfg. Company, Des Plaines, Ill. Filed Apr. 25, 1966.

FORM-FIX

For Two Component Plastic Filler and Hardener Preparation for Construction Use, Such, for Example, as in Patching or in Filling Holes in the Wooden Facings of Concrete Wall Form Panels.
First use Nov. 10, 1965.

SN 244,621. Rollform Incorporated, Ann Arbor, Mich. Filed Apr. 29, 1966.

UNIGRID

For Ceiling Grid Systems and Components.
First use Mar. 14, 1966.

SN 244,998. Masonite Corporation, Chicago, Ill. Filed May 5, 1966.

WEATHR·X·ninety

Owner of Reg. Nos. 793,167, 751,133, and others.
For Construction Board, and More Specifically Hardboard Panels for Various Building Purposes.
First use on or about Nov. 27, 1965.

SN 245,036. Weyerhaeuser Company, Tacoma, Wash. Filed May 5, 1966.

FRONTIER

For Hardwood Paneling.
First use Feb. 7, 1966.

SN 245,376. American Door Company, Inc., South Bend, Ind. Filed May 11, 1966.

ADJUST-A-FOLD

For Accordion Pleated Folding Doors.
First use on or before Jan. 28, 1966.

SN 245,484. Hough Manufacturing Corporation, Janesville, Wis. Filed May 12, 1966.

ENVIRO-WALL

For Demountable Wall Panel Partitions.
First use July 31, 1964.

SN 245,485. Hough Manufacturing Corporation, Janesville, Wis. Filed May 12, 1966.

ENVIRO-FLEX

For Operable Wall Panel Partitions.
First use Feb. 24, 1965.

SN 245,653. Georgia-Pacific Corporation, Portland, Oreg. Filed May 10, 1966.

JONES

Owner of Reg. No. 696,626.
For Plywood and Hardwood Paneling.
First use on or about Mar. 1, 1959.

SN 246,265. The Carter-Waters Corporation, Kansas City, Mo. Filed May 23, 1966.

Excellart XLRT

For Aluminum Extrusions for Frames Used for Signs and Holding Plastic Materials for Facing Buildings.
First use February 1962.

SN 248,783. Dean Floor Covering Co., Inc., Parsippany, N.J. Filed June 23, 1966.

DEAN

Owner of Reg. Nos. 667,788, 667,932, and 667,961.
For Floor and Wall Coverings, Including Asphalt, Rubber and Vinyl Tile, Felt Linings, and Enamel Surface Coverings.
First use May 5, 1966.

SN 249,610. Sekisui Chemical Company Ltd., Kita-ku, Osaka, Japan. Filed July 6, 1966.

ESLON

For Corrugated Panels Fabricated of Polyvinyl Chloride, and Pipe Joint Cement.
First use March 1963; in commerce March 1963.

SN 251,695. Atlas Enameling Company, Inc., St. Louis, Mo. Filed Aug. 4, 1966.

LEVELINE

For Doors, Exterior Wall Panels, and Fascia Panels.
First use 1955.

SN 252,312. Brooks-Willamette Corporation, Portland, Oreg. Filed Aug. 15, 1966.

KORPINE

For Particleboard Produced in Sheets of Different Thicknesses for Use as Finished Lumber in Cabinet Work.
First use on or about June 13, 1966.

SN 252,313. Joseph Busik, Jr., d.b.a. Delaware Quarries, Lumberville, Pa. Filed Aug. 15, 1966.

RIVER JACKS

For Natural Stone Cut or Selected to Various Sizes and Shapes, for Decorative Use in the Construction of Stone Masonry and Landscaping.
First use June 17, 1960.

SN 252,327. Brooks-Williamette Corporation, Portland, Oreg. Filed Aug. 15, 1966.

TRU-KOR

For Particleboard Produced in Sheets Used Mainly as an Underlayment for Floors and for Other Purposes.
First use on or about June 2, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 235,925. The McKay Company, Pittsburgh, Pa. Filed Jan. 6, 1966.

McKAY

Owner of Reg. No. 555,247.
For Welded and Weldless Chain, Chain Attachments and Assemblies, Tire Chains, and Parts Thereof.
First use 1881.

SN 236,121. Moore-Rane Mfg. Co., Corvallis, Oreg. Filed Jan. 10, 1966.

MOORE RANE

For Agricultural Irrigation Equipment—Namely, Irrigation Pipe Couplers, Valves, Discharge Adapters, End Plugs, Valve Openers, Suction Adapters, T's, Elbows, Reducers, Latches, Aprons, and Line Wheels for Mounting Irrigation Pipe.
First use July 1952.

SN 243,521. Aluminum Company of America, Pittsburgh, Pa. Filed Apr. 15, 1966.

AARCAL

For Protective Resinous Coating Sold as a Part of Aluminum Conduits.
First use Oct. 29, 1965.

SN 245,633. Wadsworth Equipment Company, Akron, Ohio. Filed May 13, 1966.

GROOVE TWIST

For Metal Dowels and Gaggers.
First use Apr. 14, 1966.

Class 14 — Metals and Metal Castings and Forgings

SN 234,303. Reynolds Metals Company, Richmond, Va. Filed Feb. 14, 1966.

TOOL-SAVER

For Aluminous Metal Screw Machine Stock.
First use November 1962.

SN 238,515. General Aniline & Film Corporation, New York, N.Y. Filed Feb. 10, 1966.

MET-1

For Carbonyl Metal Powders.
First use Oct. 20, 1965.

SN 238,702. The Bradley Metal Company, Cleveland, Ohio. Filed Feb. 14, 1966.

PIGLETS

For Small Metal Castings Primarily for Use in a Steel-Making Operation.
First use on or about Oct. 8, 1965.

SN 256,411. Diamond Alkali Company, Cleveland, Ohio. Filed Oct. 14, 1966.

DACROMETAL

For Steel in Sheet or Strip Form Treated With Corrosion Resistant Bonding Coatings.
First use May 3, 1966.

Class 15 — Oils and Greases

SN 237,670. Cromwell Oil Company, Los Angeles, Calif. Filed Feb. 1, 1966.

COMPETITION

For Motor Oil Stabilizer Additive, Gasoline Additive for Cleaning and Stabilizing Carburetor, Crankcase Oil Additive for Conditioning and Stabilizing Engine, Gasoline Additive for Cleaning and Stabilizing Upper Cylinder, Transmission Sealer and Stabilizer and Oil Additive for Cleaning and Stabilizing Engine.
First use Jan. 21, 1966.

SN 239,931. Radiator Specialty Company, Charlotte, N.C. Filed Mar. 1, 1966.

L-S-C

For Lubricant and Corrosive Protection Spray.
First use Dec. 6, 1963.

SN 243,035. Stewart-Warner Corporation, Chicago, Ill. Filed Apr. 8, 1966.

ALEMITE

Owner of Reg. Nos. 148,635, 731,392, and others.
For Lubricants—Namely, Oils, Greases, and Additives.
First use Mar. 22, 1965.

SN 256,219. Japan Gas Lighter Corp., New York, N.Y. Filed Oct. 11, 1966.

J-3

Owner of Reg. No. 815,277.
For Butane Fuel Gas in a Dispenser-Container for Cigar and Cigarette Lighters.
First use Oct. 6, 1966.

Class 16 — Protective and Decorative Coatings

SN 219,088. The Thermoclad Company, Erie, Pa. Filed May 17, 1965.

DURAVIN

For Heat Fusible Plastic Powders for Use in Protective and Decorative Finish Coatings Applicable to Furniture, Appliance Parts, Marine Hardware, Wire Goods, and Pipe and Pipe Fittings, and the Like.
First use Nov. 4, 1963.

SN 230,735. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Oct. 20, 1965.

GALVANOX

For Zinc-Rich Organic Paint Which Can Also Be Used as a Primer.
First use on or about November 1954.

SN 231,170. Model Wallpaper and Paint Company, Taylor, Mich. Filed Oct. 22, 1965.

MODELCRAFT

For Polyvinyl Acetate Vinyl Latex Interior Paints, Vinyl Epoxy Latex Interior Paints, and Exterior House Paints.
First use Apr. 20, 1965.

SN 231,684. Henkel & Cie., G.m.b.H., Duesseldorf-Holthausen, Germany. Filed Oct. 27, 1965.

TAPETRA

Owner of German Reg. No. 521,333, dated Feb. 8, 1940.
For Products for the Preparation and Smoothing of Rough Walls Before the Hanging of Wallpaper.
First use in or about November 1947; in commerce in or about November 1947.

SN 232,399. The Glidden Company, Cleveland, Ohio. Filed Nov. 9, 1965.

GLIDAIR

Owner of Reg. Nos. 588,213, 717,343, and others.
For Paint and Paint Material, Especially for Aircraft, Such as Cellulose Acetate Butyrate Dope and Reducers, Cellulose Nitrate Dope and Reducers, Enamels, Spray Paints, Silicone Sprays, Primers, Lacquers, Solvents, Thinners, Varnishes, Finishes, and Fungicidal Additives for Finishes.
First use Apr. 7, 1927.

SN 235,085. Acme Quality Paints, Inc., Detroit, Mich. Filed Dec. 22, 1965.

AMPRUF

Applicant disclaims the words "For Durability" apart from the mark as shown. Owner of Reg. No. 741,515.
For House Paint, Interior Enamel, Porch, Floor and Patio Enamel, Concrete Floor Primer, Swimming Pool Paint, and Masonry Conditioner.
First use Dec. 31, 1958.

SN 235,182. The Glidden Company, Cleveland, Ohio. Filed Dec. 23, 1965.

LIFEMASTER

For Water-Reducible Maintenance Coatings, Especially Chemically Resistant Primers.
First use Feb. 1, 1965.

SN 238,443. Penn Petroleum Corporation, Detroit, Mich. Filed Feb. 9, 1966.

RUST-PRO

For Petroleum Derivative Rust-Proofing Compounds.
First use Jan. 17, 1966.

SN 239,929. Pratt & Lambert, Incorporated, Buffalo, N.Y. Filed Mar. 1, 1966.

PAL-COTE

Owner of Reg. No. 664,964.
For Exterior House Paint, Exterior House Paint Primer, Interior Latex Wall Primer, Interior Latex Flat Wall Paint, Alkyd Enamel Undercoating, Alkyd Enamel Semi-Gloss, Alkyd Flat Wall Paint, Latex Block Filler, Interior and Exterior Latex Masonry Paint, and Sanding Sealer.
First use Jan. 18, 1966.

SN 242,693. Wolverine Shoe and Tanning Corporation, Rockford, Mich. Filed Apr. 4, 1966.



Owner of Reg. Nos. 727,047, 766,766, and 767,345.
For Protective and Restorative Spray Stain for Leather.
First use on or about Feb. 11, 1966.

SN 243,199. U.S. Marine Coatings, Inc., Sarasota, Fla. Filed Apr. 11, 1966.

POLYCOP

For Anti-Fouling, Marine Growth Inhibiting Boat Bottom Paints.
First use July 22, 1965.

SN 244,351. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Apr. 26, 1966.

DELSTAR

For Resinous-Based Finishes.
First use at least as early as Oct. 5, 1964.

SN 244,751. The Smith-Alsop Paint and Varnish Company, Terre Haute, Ind. Filed May 2, 1966.

STAMPEDE

For Non-Skid Latex Floor Paint.
First use Mar. 7, 1966.

SN 245,206. Lawter Chemicals, Inc., Chicago, Ill. Filed May 9, 1966.

ALVCOLITE

For Protective Coating Composition—Namely, Varnish and Overprint Varnish.
First use Apr. 15, 1966; 1949 as to "Alvco."

SN 245,208. Lawter Chemicals, Inc., Chicago, Ill. Filed May 9, 1966.

ALVCOTE

For Protective Coating Composition—Namely, Varnish and Overprint Varnish.
First use Apr. 15, 1966; 1949 as to the mark "Alvco."

SN 246,569. Interchemical Corporation, New York, N.Y. Filed May 25, 1966.

GEMFAX

For Pigmented Ground or Primer Coatings and Gaining Inks in the Nature of Paint and/or Baking Enamels (for Reproducing Wood Grains).
First use on or about Mar. 29, 1966.

SN 246,602. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed May 25, 1966.

Selectrofoam

Owner of Reg. No. 753,101 and others.
For Synthetic Resin or Latex-Based Coatings.
First use at least as early as Apr. 20, 1965.

SN 246,683. Harris Paint Co., Tampa, Fla. Filed May 26, 1966.

Cerami-Cote

For Enamel Paint for Producing a Porcelanized Finish.
First use in or about May 1958.

SN 255,755. The Coricone Corporation, Chicago, Ill. Filed Oct. 5, 1966.

CORICONE

For Coatings for Non-Ferrous Metals With Priming, Sealing, Bonding, Moisture and Corrosion Preventative Properties, and Dielectric Coatings.
First use November 1962.

SN 256,412. Diamond Alkali Company, Cleveland, Ohio. Filed Oct. 14, 1966.

DACROMET

For Corrosion Resistant Bonding Coatings for Use on Metal Substrates.
First use Apr. 28, 1966.

Class 17—Tobacco Products

SN 238,481. The American Tobacco Company, New York, N.Y. Filed Feb. 10, 1966.

TRAFALGAR

For Cigarettes.
First use Dec. 11, 1964.

SN 241,224. The American Tobacco Company, New York, N.Y. Filed Mar. 17, 1966.

245 PARK

For Cigarettes.
First use Mar. 7, 1966.

SN 244,068. The American Tobacco Company, New York, N.Y. Filed Apr. 22, 1966.

PALADIN

For Pipe Tobacco.
First use Apr. 8, 1966.

SN 244,482. General Cigar Co., Inc., New York, N.Y. Filed Apr. 28, 1966.

VISTA

Owner of Reg. No. 802,559.
For Cigars.
First use Feb. 10, 1966.

SN 244,881. Carreras Limited, Basildon, Essex, England. Filed May 4, 1966.

OXBRIDGE

Owner of British Reg. No. 870,480, dated Oct. 15, 1964.
For Cigarettes.

SN 245,669. Bayuk Cigars Incorporated, Philadelphia, Pa. Filed May 16, 1966.

BANDWAGON

For Cigars.
First use Mar. 17, 1966.

SN 246,697. Liggett & Myers Tobacco Company, New York, N.Y. Filed May 26, 1966.



The drawing is lined for the colors green and gold. Owner of Reg. Nos. 128,430, 218,263, and 695,189.
For Cigarettes.
First use Mar. 21, 1966; 1896 as to "Chesterfield."

SN 246,698. Liggett & Myers Tobacco Company, New York, N.Y. Filed May 26, 1966.



The drawing is lined for the colors red, maroon, and gold. Owner of Reg. Nos. 128,430, 218,263, and 695,189.
For Cigarettes.
First use Mar. 18, 1966; 1896 as to "Chesterfield."

SN 254,923. Detroit Athletic Club, Detroit, Mich. Filed Sept. 22, 1966.

DAC

For Cigars and Cigarettes.
First use 1915.

Class 18—Medicines and Pharmaceutical Preparations

SN 244,378. A. H. Robins Company, Incorporated, Richmond, Va. Filed Apr. 27, 1966.

ASTHMATUSSIN-T

For Antiasthmatic Medicinal Preparation.
First use Apr. 4, 1966.

SN 244,380. A. H. Robins Company, Incorporated, Richmond, Va. Filed Apr. 27, 1966.

ASTHMATUSSIN

For Antiasthmatic Medicinal Preparation.
First use Mar. 24, 1966.

SN 246,863. Betan Company, Inc., Knoxville, Tenn. Filed May 31, 1966.

ChemoVag

For Suppositories.
First use at least as early as March 1965.

SN 246,869. Betan Company, Inc., Knoxville, Tenn. Filed May 31, 1966.

GERI-PEN

For Analeptic-Respiratory Stimulant.
First use May 1956.

SN 247,717. Norden Laboratories, Inc., Lincoln, Nebr. Filed June 9, 1966.

THERABLOAT

For Preparation for Treatment of Legume or Frothy Bloat in Cattle, Used in Veterinary Medicine.
First use June 3, 1966.

SN 249,754. Fuller Pharmaceutical Company, Minneapolis, Minn. Filed July 7, 1966.

HYDROCIL

For Natural Vegetable Substance for Treatment of Constipation.
First use Feb. 21, 1949.

SN 250,109. U.S. Vitamin & Pharmaceutical Corporation, New York, N.Y. Filed July 12, 1966.

pantho-Foam

Owner of Reg. Nos. 569,705, 628,954, and 688,605.
For Pharmaceutical Preparation Comprising Hydrocortisone and Pantothenylol (Alcoholic Analog of Pantothenic Acid), for Topical Application by Aerosol Dispenser.
First use July 28, 1959.

SN 250,296. Paul S. Paschal, d.b.a. Tri-Une Chemical Company, Wake Forest, N.C. Filed July 14, 1966.

TRI-UNE

For Preparations for the Relief of Athlete's Foot, Callouses, and Corns.
First use Nov. 1, 1921.

SN 250,693. William H. Rorer, Inc., Fort Washington, Pa. Filed July 20, 1966.

ASCRIPTIN

For Pharmaceutical Preparation—Namely, an Analgesic Preparation.
First use July 15, 1955.

SN 251,229. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 28, 1966.

FLEXAMYCIN

For Antibiotic Preparation.
First use July 25, 1966.

SN 251,383. Colgate-Palmolive Company, New York, N.Y. Filed Aug. 1, 1966.

DACTIL-OB

Owner of Reg. Nos. 593,554 and 740,838.
For Medicinal Agent for the Prevention of Premature Delivery.
First use on or about Aug. 22, 1960.

SN 252,769. S. J. Tutag & Company, Detroit, Mich. Filed Aug. 19, 1966.

VĀSAL

For Vascular Relaxant and Antispasmodic Composition.
First use Aug. 4, 1966.

SN 257,240. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 26, 1966.

TEF

For Antibiotic Vitamin Preparation for Veterinary Use.
First use Oct. 4, 1966.

SN 257,241. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 26, 1966.

TOS

For Antibiotic Preparation for Veterinary Use.
First use Oct. 4, 1966.

Class 19—Vehicles

SN 223,369. White Motor Corporation, Cleveland, Ohio. Filed July 14, 1965.

VELVET-RIDE

For Tandem Axle Suspensions for Trucks and Trailer.
First use at least as early as Apr. 19, 1965.

SN 224,795. Rowil Cycle Corporation, Hewlett, N.Y. Filed Aug. 2, 1965.

ROWIL

For Bicycles and Parts Thereof.
First use June 8, 1964.

SN 237,045. Space Age Camper Co., Inc., Wakarusa, Ind. Filed Jan. 21, 1966.

SPACE AGE

For Travel Trailers, Campers, and Pickup Campers.
First use May 1962.

SN 238,677. Space Age Camper Co., Inc., Wakarusa, Ind. Filed Feb. 11, 1966.

SPACE AGE

For Travel Trailers, Campers, and Pickup Campers.
First use Aug. 21, 1965.

SN 239,837. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Feb. 28, 1966.

TRI-CHEM

For Tank Cars Used in Spraying Herbicides Along Railroad Rights-of-Way.
First use Jan. 19, 1966.

SN 239,926. Pickup Tops Manufacturing Co., Sunnyvale, Calif. Filed Mar. 1, 1966.

SIESTA

Owner of Reg. No. 739,657.
For Demountable Camper Units for Pick-Up Trucks, Canopies and Covers for Trucks and Travel Trailers.
First use April 1943 on travel trailers.

SN 239,927. Pickup Tops Manufacturing Co., Sunnyvale, Calif. Filed Mar. 1, 1966.

Siesta

Owner of Reg. No. 739,657.
For Demountable Camper Units for Pick-Up Trucks, Canopies and Covers for Trucks and Travel Trailers.
First use June 1954.

SN 257,128. H. P. Snyder Manufacturing Company, Inc., Little Falls, N.Y. Filed Oct. 25, 1966.

FORMULA V

For Bicycles.
First use Oct. 21, 1966.

Class 20 — Linoleum and Oiled Cloth

SN 233,077. Colamco, Inc., San Gabriel, Calif. Filed Nov. 22, 1965.

SoftWall

For Vinyl Wall Panels.
First use Dec. 8, 1964.

SN 244,466. Congoleum-Nairn Inc., Kearny, N.Y. Filed Apr. 28, 1966.

VILLAGE SQUARE

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Apr. 18, 1966.

SN 248,785. Dean Floor Covering Co., Inc., Parsippany, N.J. Filed June 23, 1966.

DEAN

Owner of Reg. Nos. 667,788, 667,932, and 667,961.
For Floor and Wall Coverings of Linoleum or Linoleum-Like Composition in Roll, Rug, or Tile Form.
First use May 3, 1966.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 217,260. Astrodata, Inc., Anaheim, Calif. Filed Apr. 26, 1965.

ASTROLOCK

For Electronic Telemetry Equipment—Namely, Discriminators and Components Thereof.
First use Dec. 18, 1964.

SN 220,701. Steatite and Porcelain Products Limited, Stourport-on-Severn, England. Filed June 8, 1965.

TITACON

Owner of British Reg. Nos. 817,873 and 817,874, dated Mar. 6, 1961.
For Electrical Insulating Materials and Parts Made Therefrom, and Electrical Insulators.

SN 225,882. Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan. Filed Aug. 17, 1965.

Beam Eye

The word "Beam" is disclaimed apart from the mark as shown.
For Automatic Headlight Dimmers.
First use May 1960; in commerce August 1964.

SN 227,844. JFD Electronics Corporation, Brooklyn, N.Y. Filed Sept. 15, 1965.

ACCUROTOR

For TV Antenna Rotators.
First use Sept. 1, 1965.

SN 232,702. La Spirotechnique, Paris, France. Filed Nov. 15, 1965.

AQUAFLASH

Owner of French Reg. No. 497,082, dated June 15, 1961 (Paris); Natl. Inst. No. 166,522.
For Watertight Lamps and Watertight Flashlight Containers or Casings.

SN 235,620. Brasch Manufacturing Company, St. Louis, Mo. Filed Jan. 3, 1966.

BRASCH ELECTRODUCT

For Electric Heaters.
First use May 21, 1965.

SN 238,036. Anderson Power Products Inc., Boston, Mass. Filed Feb. 4, 1966.

POWERPOLE

For Modular Eitherend Connectors.
First use on or about Sept. 15, 1965.

SN 238,120. Shure Brothers, Incorporated, Evanston, Ill. Filed Feb. 4, 1966.

SPHER-O-DYNE

For Microphones.
First use on or about Nov. 24, 1965.

SN 238,121. Shure Brothers Incorporated, Evanston, Ill. Filed Feb. 4, 1966.

SOLO-PHONE

For Electronic Amplifiers.
First use on or about Mar. 19, 1965.

SN 238,301. Sabina Electrical Company, d.b.a. Advance Electric, Anaheim, Calif. Filed Feb. 7, 1966.

ADJUSTODYNE

For Control Panel for Direct Current Electric Motors.
First use Oct. 22, 1965.

SN 238,804. United States Rubber Company, New York, N.Y. Filed Feb. 14, 1966.

FLEETMASTER

Owner of Reg. No. 599,687.
For Storage Batteries.
First use Jan. 10, 1966.

SN 242,849. Sheffield Plastics, Inc., Sheffield, Mass. Filed Apr. 6, 1966.

TU-TONE

For Shaped, Light-Diffusing, Lighting Panels of Resin Material for Fluorescent Lighting Fixtures.
First use Jan. 8, 1960.

SN 250,804. Thermalloy Company, Dallas, Tex. Filed July 22, 1966.

THERMALLOY

For Electronic Apparatus and Equipment—Namely, Heat Sinks and Mounting Pads for Transistors and Semiconductor Devices.
First use November 1962.

SN 252,708. Concord Electronics Corporation, Los Angeles, Calif. Filed Aug. 19, 1966.

RADIOCORDER

For Tape Recorder-Radio Receivers.
First use Apr. 19, 1966.

Class 22 — Games, Toys, and Sporting Goods

SN 221,910. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed June 24, 1965.

E. FABER

Owner of Reg. Nos. 129,700, 699,426, and others.
For Games—Namely, Coloring Sets.
First use Aug. 2, 1955.

SN 242,206. The "Bingo King" Company, Incorporated, Englewood, Colo. Filed Mar. 30, 1966.

HIGH TOM

For Bingo Number Selection Apparatus, and Scoreboards for Bingo Games.
First use on or about Mar. 1, 1966.

SN 242,208. The "Bingo King" Company, Incorporated, Englewood, Colo. Filed Mar. 30, 1966.

SOFT BREEZE

For Bingo Number Selection Apparatus, and Scoreboards for Bingo Games.
First use on or about June 1, 1956.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 208,117. Saginaw Products Corporation, Saginaw, Mich. Filed Dec. 14, 1964.

RACEAWAY

Owner of Reg. No. 274,723.
For Ball Bearing Screws and Splines, and Ball Bearing Screw Actuators.
First use Aug. 25, 1964.

SN 212,536. Holley Carburetor Company, Warren, Mich. Filed Feb. 23, 1965.

HOLLEY

Owner of Reg. Nos. 188,941, 554,356, and 581,148.
For Marine Steering Mechanisms.
First use Jan. 26, 1965.

The word "Aqua" is disclaimed apart from the mark as Pump Co., Berkeley, Calif. Filed June 22, 1965.

ATLANTIS AQUAJET

The word "Aqua" is disclaimed apart from the mark as shown. Owner of Reg. No. 783,160.
For Aquarium Pumps.
First use Mar. 29, 1965.

SN 222,398. The Minster Machine Company, Minster, Ohio. Filed June 30, 1965.

DILODER

For Accessory Air-Actuated Mechanisms for Die Stamping Presses Useful for Facilitating the Changing and Setting Up of Dies Therein.
First use Feb. 18, 1965.

SN 226,627. Cookton Pneumatics, Inc., Hyattsville, Md. Filed Aug. 27, 1965.

PNEUMAFLOAT

For Pneumatic Carrier Systems for Messages, Dispatches and Materials To Be Irradiated, and Parts Therefor.
First use on or about July 6, 1964.

SN 226,936. Nordberg Manufacturing Company, Milwaukee, Wis. Filed Sept. 1, 1965.

FUELAIRTROL

For Control Apparatus for Internal Combustion Engines.
First use July 22, 1965.

SN 227,029. Gresen Manufacturing Company, Minneapolis, Minn. Filed Sept. 2, 1965.

GRESEN
MINNEAPOLIS

No claim of exclusiveness is made to the word "Minneapolis."
For Hydraulic Machine Actuators and Hydraulic Pumps, and Parts Therefor.
First use January 1954.

SN 229,119. The Originators Engineering and Development Company, Fort Worth, Tex. Filed Oct. 1, 1965.

KEY KUT

The word "Kut" is disclaimed apart from the mark as shown.
For Woodworking Machinery.
First use July 9, 1964.

SN 229,668. Midland-Ross Corporation, Cleveland, Ohio. Filed Oct. 8, 1965.

TURNAREEL

For Power-Operated Winders for Winding and Unwinding Rolls of Film, Fabric, Foil, and Paper.
First use on or about Aug. 30, 1965.

SN 232,224. Nelco Corp., New York, N.Y. Filed Nov. 5, 1965.

NELCO

The representation of the sewing machine is disclaimed apart from the mark as shown. Owner of Reg. No. 782,349.
For Sewing Machines and Parts Therefor.
First use Feb. 19, 1965; Oct. 1, 1962, as to the trademark "Nelco."

SN 232,358. Solomon Sprecher, d.b.a. Sprecher, New York, N.Y. Filed Nov. 8, 1965.

SPRECHERCUT

For Table and Kitchen Knives, Forks, and Spatulas.
First use November 1952.

SN 232,919. Huntingdon Industries, Inc., Bethayres, Pa. Filed Nov. 18, 1965.

HYDRA-MELT

For Apparatus for Melting a Solid Adhesive and Supplying It to Applicators.
First use Oct. 26, 1965.

SN 232,950. Vacuum Processes, Inc., Richardson, Tex. Filed Nov. 18, 1965.

VAC·U·LOK

For Transfer Locks for Loading and Unloading Vacuum Chambers.
First use Feb. 15, 1965.

SN 233,251. Dawn Research Corporation, Newark, N.J. Filed Nov. 24, 1965.

HEX-MASTER

For Spring-Loaded Multiple Head, Small Utility Socket Wrenches.
First use Nov. 10, 1965.

SN 234,412. Garrett Enumclaw Co., Enumclaw, Wash. Filed Dec. 13, 1965.

NUBBINS

Owner of Reg. No. 778,491.
For Wire Rope Ferrule.
First use July 1, 1962.

SN 234,790. Vermette Machine Company, Inc., Hammond, Ind. Filed Dec. 16, 1965.

520

For Multi-Purpose Mechanical Lift.
First use June 8, 1965.

SN 237,876. Oxwall Tool Co., Ltd., Flushing, N.Y. Filed Jan. 26, 1966.



No claim is made for the pictorial representation of any goods apart from the mark as shown.
For Hand Tools—Namely, Screw-Drivers, Wrenches, Hammers, Drills, and Pliers.
First use May 15, 1964.

SN 239,138. FMC Corporation, Philadelphia, Pa. Filed Feb. 18, 1966.

AVISTRAPPER

Owner of Reg. No. 708,075.
For Strapping Machines.
First use May 9, 1961.

SN 239,350. Gary Industries, Inc., d.b.a. Vail Manufacturing Company, Chicago, Ill., assignee of Vail Manufacturing Company, Chicago, Ill. Filed Feb. 21, 1966.

MONARCH

Owner of Reg. Nos. 678,733, 687,533, and others.
For Desk-Type Stapling Machines.
First use Sept. 28, 1957.

SN 239,380. Chandler Machine Company, Ayer, Mass. Filed Feb. 23, 1966.

BUTTON-MASTER

Applicant claims no rights in the word "Button" apart from the mark as shown.
For Button Sewing Machines.
First use 1956.

SN 239,390. Delaware Tool Steel Corporation, Wilmington, Del. Filed Feb. 23, 1966.

PNEUMOIL

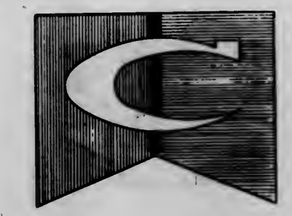
For Pavement or Masonry Breaking Tool Used in Pneumatic Hammer Devices.
First use Feb. 5, 1966.

SN 239,974. Cyclops Corporation, Bridgeville, Pa. Filed Mar. 2, 1966.

BAND-LOK

For Strapping Tools.
First use Dec. 20, 1965.

SN 243,634. Champion Pneumatic Machinery Company, Inc., Princeton, Ill. Filed Apr. 18, 1966.



The drawing is lined for orange and blue.
For Air Compressors and Pumps.
First use July 1, 1965.

SN 250,710. F. D. Kees Manufacturing Company, Beatrice, Nebr. Filed July 21, 1966.

powerake

Owner of Reg. No. 775,566.
For Power Raking Device Capable of Pulling Out the Accumulation of Thatch, and Thus Opening Up the Turf to Air and Sunlight.
First use June 1, 1961.

Class 24—Laundry Appliances and Machines

SN 241,686. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Mar. 23, 1966.

TUP-PINS

For Clothes Pins.
First use Feb. 16, 1966.

Class 26—Measuring and Scientific Appliances

SN 212,777. Delbert C. Hewitt, Portland, Oreg. Filed Feb. 25, 1965.

ARISTO-AIRE

For Pyrometers for Vehicles.
First use Mar. 31, 1964.

SN 221,086. Photomechanisms, Inc., Huntington Station, N.Y. Filed June 14, 1965.

DATASTAT

For Recording and Photo Copying Equipment Which Converts Cathode-Ray Tube Displayed Data Into Electrostatic Prints, and Supplies Therefor—Namely, Sensitized Paper.
First use in or about August 1964.

SN 233,628. The Mosler Safe Co., Hamilton, Ohio. Filed Nov. 30, 1965.

SCAN FILE

Applicant makes no claim to the exclusive right to the use of the word "File" separate and apart from the mark as shown.
For Equipment for Retrieving Aperture Cards, Card Documents or the Like.
First use Oct. 8, 1965.

SN 236,095. William H. Johnston Laboratories, Inc., Baltimore, Md. Filed Jan. 10, 1966.

JLI

For Measuring and Scientific Appliances, Including Radioactivity Counting Systems, etc.
First use on or before Jan. 4, 1961.

SN 237,842. Ion Exchange Products, Inc., Chicago, Ill. Filed Feb. 2, 1966.

ARAD

For Water Meters.
First use Nov. 5, 1965.

SN 238,072. General Aniline & Film Corporation, New York, N.Y. Filed Feb. 4, 1966.

ANSCOVISION

Owner of Reg. Nos. 685,920 and 712,828.
For Photographic Projectors.
First use July 7, 1965.

SN 238,948. Fotomatic Corporation, Indianapolis, Ind. Filed Feb. 16, 1966.

ROMELCO

For Photographic Control Devices—Namely, Exposure Controls and Meters.
First use Nov. 2, 1965.

SN 239,204. Automatic Control Company, St. Paul, Minn. Filed Feb. 21, 1966.

AUTOCON

Owner of Reg. No. 632,200.
For Automatic Electrical Controls for Liquid Distribution and Supply Systems and for Sewage Systems, Automatic Electrical Apparatus for Measurement and Control of Fluid Pressure and Liquid Level, Automatic Electrical Protective Alarm and Detection Systems, Alternators for Controlling the Sequence of Operation of Electrical Equipment and Electrical Apparatus for Monitoring and Transmitting Electrical Impulses Used in Conjunction With Above Described Controls, Apparatus, and Systems.
First use Sept. 1, 1965.

SN 247,996. New Castle Products, Inc., New Castle, Ind. Filed June 14, 1966.

PYRO

The lining in the drawing indicates shading as part of the mark and does not indicate color.
For Thermocouples and Temperature Sensing Devices.
First use May 19, 1966; June 21, 1965, as to "Pyro."

SN 251,978. Andrew J. White, South Lee, N.H. Filed Aug. 8, 1966.

MILE-O-METER

For Gauge To Indicate the General Condition and Efficiency of an Internal Combustion Motor.
First use on or about Apr. 14, 1966.

Class 27—Horological Instruments

SN 237,063. F. W. Woolworth Co., New York, N.Y. Filed Jan. 21, 1966.



YOUR
SYMBOL OF QUALITY
HAPPY
HOME

The words "Your Symbol of Quality" are disclaimed apart from the mark as shown.
For Alarm Clocks and Travel Clocks.
First use Sept. 30, 1965.

SN 237,284. Lucien Piccard Watch Corp., New York, N.Y. Filed Jan. 25, 1966.

ACCUMATIC

For Watches.
First use Nov. 13, 1965.

SN 237,509. F. W. Woolworth Co., New York, N.Y. Filed Jan. 27, 1966.

HAPPY HOME

For Alarm Clocks and Travel Clocks.
First use Sept. 30, 1965.

Class 28—Jewelry and Precious-Metal Ware

SN 239,968. Ciro of Bond Street, Inc., New York, N.Y. Filed Mar. 2, 1966.

Ciro

Owner of Reg. Nos. 827,696 and 601,862.
For All Kinds of Jewelry Made From Precious and Non-Precious Metals, Precious, Semi-Precious Stones and Imitations Thereof, Reconstructed Gems, Pearls, Cultured Pearls, and Imitation Pearls, and Jewelry Containing the Foregoing.
First use 1938.

Class 32—Furniture and Upholstery

SN 236,981. Fidelity File Box, Inc., d.b.a. Safco Products Co., Minneapolis, Minn. Filed Jan. 21, 1966.

SAFCO PRODUCTS

The term "Safco Products" is disclaimed apart from the mark as shown.
For Filing Cases and Cabinets, Sectional Units for Same Constructed of Multi-Ply Corrugated Cardboard, Sectional Filing Cabinets Provided With Hinged Doors of Corrugated Cardboard or Metal Construction, and Storage Box Files and Metal Racks for Assembly of Such Box Files Into Cabinets and Tiers.
First use Nov. 15, 1965.

SN 244,741. Rhodes, Inc., Atlanta, Ga. Filed May 2, 1966.

RIVERLY HOUSE

For Upholstered Furniture.
First use Apr. 11, 1966.

SN 245,121. Visual Graphics Corporation, New York, N.Y. Filed May 6, 1966.

FILMFRIDGE

For Film Storage Cabinets.
First use Feb. 7, 1966.

SN 245,314. Jackson Mattress Company, Inc., Fayetteville, N.C. Filed May 10, 1966.

Ortho-Restive

For Mattresses and Box Springs.
First use Oct. 31, 1956.

SN 245,315. Jackson Mattress Company, Inc., Fayetteville, N.C. Filed May 10, 1966.

ELJA

For Mattresses and Spring Boxes.
First use May 6, 1965.

SN 247,296. New Castle Products, Inc., New Castle, Ind. Filed June 6, 1966.

PEABODY

The lining on the drawing is part of the mark and does not indicate color. Owner of Reg. Nos. 808,820 and 811,395.
For School, Auditorium, and Stadium Seating, Desks, Chair-Desks, Tables, and Accessory Parts Sold Together Therewith.
First use Apr. 25, 1966; at least as early as May 1, 1921, as to "Peabody."

SN 247,970. Rhodes, Inc., Atlanta, Ga. Filed June 13, 1966.

RIVERLY HALL

For Furniture—Namely, Dressers, Chests of Drawers, and the Like.
First use May 23, 1966.

Class 33—Glassware

SN 239,864. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed Mar. 1, 1966.

BRAVO

For Glass Tableware.
First use on or about Nov. 12, 1965.

SN 240,402. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed Mar. 8, 1966.

ANCHOR-LOK

Owner of Reg. Nos. 419,329, 798,398, and others.
For Glass Containers and Bottles.
First use on or about Feb. 11, 1966; during 1938 as to "Anchor."

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 213,295. Chore-Time Equipment, Inc., Milford, Ind. Filed Mar. 4, 1965.

VOLumaire

For Stationary Electrical Ventilating Fans.
First use Feb. 19, 1965.

SN 242,949. The J. B. Williams Company, Inc., Thomaston, Conn. Filed Apr. 7, 1966.

ACORN

For Oil Burners for Lamps.
First use in or about 1885.

SN 242,951. The J. B. Williams Company, Inc., Thomaston, Conn. Filed Apr. 7, 1966.

BANNER

For Oil Burners for Lamps.
First use in or about 1880.

SN 243,966. Fred Cuff, d.b.a. Torch Aid Industries, Paducah, Ky. Filed Apr. 21, 1966.

TORCH AID

The term "Torch" is disclaimed apart from the mark as shown.
For Battery Powered Circle Burners and Straight Line Cutters for Oxy-Acetylene Torches.
First use Mar. 30, 1965.

SN 244,362. Slant/Fin Corporation, Greenvale, N.Y. Filed Apr. 26, 1966.

MINI/LINE

For Base-Board Radiators.
First use Mar. 28, 1966.

SN 257,335. J & J Soft Pretzel Co. Inc., d.b.a. J & J Products Co. Inc., Pennsauken, N.J. Filed Oct. 27, 1966.

J&J INFRA-MATIC

Owner of Reg. No. 809,353.
For Heaters for Warming and/or Baking Comestibles Such as Pretzels or the Like.
First use Aug. 31, 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 218,570. Oy Kovametalli Ab, Lintuvaara, Finland. Filed May 11, 1965.

KOMETA

Priority claimed under Sec. 44(d) on Finnish application filed Nov. 11, 1964; Reg. No. 47,858, dated June 6, 1966.
For Antiskid Means—Namely, Studs for Vehicle Tires.

Class 36 — Musical Instruments and Supplies

SN 224,557. The Seeburg Corporation, Chicago, Ill. Filed July 29, 1965.

DISC TEEN

Applicant disclaims the term "Disc" and the representation of the phonograph record apart from the mark as shown.
For Phonographs.
First use May 12, 1965.

SN 227,889. Big-Five, Honolulu, Hawaii. Filed Sept. 8, 1965.

BIG FIVE

For Phonograph Records.
First use Nov. 24, 1964.

SN 229,083. Gordon C. Fikejs, d.b.a. Par Records, Fairfield, Iowa. Filed Oct. 1, 1965.

PAR RECORDS

Applicant disclaims the word "Records" apart from the mark as shown.
For Phonograph Records and Prerecorded Magnetic Tapes.
First use June 23, 1965.

SN 232,563. Stacy Keach, Studio City, Calif. Filed Nov. 12, 1965.

TRAVELANGUAGE

For Phonograph Records Accompanied by Record Jackets on Which There Are Printed the Foreign Words and Phrases and the English Translations of the Words and Phrases Recorded on the Said Records.
First use Sept. 1, 1965.

SN 243,294. Amway Corporation, Ada, Mich. Filed Apr. 13, 1966.

AMWAY

For Recordings.
First use on or about June 2, 1962.

SN 250,624. Womack Electronics, Inc., Danville, Va. Filed July 20, 1966.

Weltron

Owner of Reg. Nos. 752,858 and 810,968.
For Electrical Musical Instruments—Namely, Electric Organs, and Hollow Guitars, and Accessories, Namely, Straps, Picks, Strings and Cords; and Wind and Reed Musical Instruments—Namely, Cornets and Clarinets.
First use July 1965.

Class 37 — Paper and Stationery

SN 215,734. Groveton Papers Company, Groveton, N.H. Filed Apr. 5, 1965.

DOWN-E-SOF

For Toilet Tissue.
First use October 1963.

SN 225,331. Lectro-Stik Company, Chicago, Ill. Filed Aug. 9, 1965.

E-Z-UP

For Paper Clips Having a Pressure-Sensitive Adhesive Backing.
First use on or about Jan. 26, 1965.

SN 228,828. Clifford G. Lontz, d.b.a. Illiana Business Systems, Lansing, Ill. Filed Sept. 28, 1965.

RECORDA-SCRIP

For Partially Printed Forms Used in Recording Prescription Sales of Pharmaceuticals.
First use Aug. 27, 1965.

SN 239,774. Frank T. Johmann, Berkeley Heights, N.J. Filed Feb. 28, 1966.

CUSH 'N MATIC

For Writing Instruments—Namely, Ballpoint Pens.
First use Jan. 28, 1966.

SN 242,877. Arrbest Pen, Inc., New York, N.Y. Filed Apr. 7, 1966.

Best Point

The words "Best Point" are disclaimed apart from the mark as shown.
For Ball Point Pens.
First use June 1, 1965.

SN 248,252. L & J Products Corp., Boston, Mass. Filed June 16, 1966.

COYLON

For Plastic Film Used Principally for Packaging Seafood.
First use April 1965.

SN 248,429. Cory Corporation, Chicago, Ill. Filed June 20, 1966.

UTL

For Mechanical Pencils and Lead Refill Packages.
First use Apr. 28, 1966.

SN 249,097. Westab Inc., Dayton, Ohio. Filed June 27, 1966.

IN

For Stationery Products—Namely, Packaged Writing Paper and Correspondence Envelopes.
First use June 2, 1966.

SN 250,913. The Paper Supply Company, Baltimore, Md. Filed July 25, 1966.

PASCO

For Stationery and Paper Supplies—Namely, Writing, Printing, Book, Thin, and Text Paper.
First use at least as early as February 1948.

SN 251,686. The Paper Supply Company, Baltimore, Md. Filed Aug. 4, 1966.

PASCO

For Paper and Stationery Supplies—Namely, Writing, Printing, Book, Thin, and Text Paper.
First use at least as early as 1948.

Class 39 — Clothing

SN 214,413. Autry Rubber Company, Dallas, Tex. Filed Mar. 18, 1965.

'Flash N Dash'

For Rubber Sole Canvas Shoes.
First use Jan. 1, 1963.

SN 218,858. Forum Sportswear, Inc., New York, N.Y. Filed May 14, 1965.

FORUM

For Sweaters.
First use Jan. 4, 1965.

SN 220,783. Mothercare Limited, London, England. Filed June 9, 1965.

Mothercare

Priority claimed under Sec. 44(d) on British Reg. No. B878,023, dated Apr. 8, 1965.
For Aprons, Bed Jackets, Blouses, Underwear and Foundation Garments, Dresses, Nightgowns, Skirts, Slacks, Slips, and Suspender Belts, All Being Articles of Clothing for Women; Bibs, Blouses, Bonnets, Bootees, Suits, Cardigans for Babies and Young Children, Christening Garments, Coats, Coat and Hat Sets, Dresses, Dressing Gowns, Hats, Helmets, Jumpers, Leggings, Mittens, Diapers, Nightdresses, Pants, Petticoats, Pajamas, Rompers, Rubber Pants, Shawls, Shoes, Shorts, Skirts, Slippers, Snow Suits, Socks, Sweaters, Tights, Trews, Vests, All Being Articles of Clothing for Babies and Children.

SN 226,079. The Puritan Sportswear Corp., Altoona, Pa. Filed Aug. 19, 1965.

SEA ROVERS

For Swim Trunks, Walk Shorts, Jackets, Knit Shirts, Sweater Shirts, Sweaters, and Sport Shirts.
First use July 16, 1965.

SN 226,243. Adele Kaempf, New York, N.Y. Filed Aug. 23, 1965.

RAIN PETS

For Rain Footwear.
First use July 10, 1965.

SN 242,951. The J. B. Williams Company, Inc., Thomaston, Conn. Filed Apr. 7, 1966.

BANNER

For Oil Burners for Lamps.
First use in or about 1880.

SN 243,966. Fred Cuff, d.b.a. Torch Aid Industries, Paducah, Ky. Filed Apr. 21, 1966.

TORCH AID

The term "Torch" is disclaimed apart from the mark as shown.
For Battery Powered Circle Burners and Straight Line Cutters for Oxy-Acetylene Torches.
First use Mar. 30, 1965.

SN 244,362. Slant/Fin Corporation, Greenvale, N.Y. Filed Apr. 26, 1966.

MINI/LINE

For Base-Board Radiators.
First use Mar. 28, 1966.

SN 257,335. J & J Soft Pretzel Co. Inc., d.b.a. J & J Products Co. Inc., Pennsauken, N.J. Filed Oct. 27, 1966.

J&J INFRA-MATIC

Owner of Reg. No. 809,353.
For Heaters for Warming and/or Baking Comestibles Such as Pretzels or the Like.
First use Aug. 31, 1966.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 218,570. Oy Kovametalli Ab, Lintuvaara, Finland. Filed May 11, 1965.

KOMETA

Priority claimed under Sec. 44(d) on Finnish application filed Nov. 11, 1964; Reg. No. 47,358, dated June 6, 1966.
For Antiskid Means—Namely, Studs for Vehicle Tires.

Class 36—Musical Instruments and Supplies

SN 224,557. The Seeburg Corporation, Chicago, Ill. Filed July 29, 1965.

DISC TEEN

Applicant disclaims the term "Disc" and the representation of the phonograph record apart from the mark as shown.
For Phonographs.
First use May 12, 1965.

SN 227,389. Big-Five, Honolulu, Hawaii. Filed Sept. 8, 1965.

BIG FIVE

For Phonograph Records.
First use Nov. 24, 1964.

SN 229,083. Gordon C. Fikejs, d.b.a. Par Records, Fairfield, Iowa. Filed Oct. 1, 1965.

PAR RECORDS

Applicant disclaims the word "Records" apart from the mark as shown.
For Phonograph Records and Prerecorded Magnetic Tapes.
First use June 23, 1965.

SN 232,563. Stacy Keach, Studio City, Calif. Filed Nov. 12, 1965.

TRAVELANGUAGE

For Phonograph Records Accompanied by Record Jackets on Which There Are Printed the Foreign Words and Phrases and the English Translations of the Words and Phrases Recorded on the Said Records.
First use Sept. 1, 1965.

SN 243,294. Amway Corporation, Ada, Mich. Filed Apr. 13, 1966.

AMWAY

For Recordings.
First use on or about June 2, 1962.

SN 250,624. Womack Electronics, Inc., Danville, Va. Filed July 20, 1966.

Weltron

Owner of Reg. Nos. 752,858 and 810,968.
For Electrical Musical Instruments—Namely, Electric Organs, and Hollow Guitars, and Accessories, Namely, Straps, Picks, Strings and Cords; and Wind and Reed Musical Instruments—Namely, Cornets and Clarinets.
First use July 1965.

Class 37—Paper and Stationery

SN 215,734. Groveton Papers Company, Groveton, N.H. Filed Apr. 5, 1965.

DOWN-E-SOF

For Toilet Tissue.
First use October 1963.

SN 225,331. Lectro-Stik Company, Chicago, Ill. Filed Aug. 9, 1965.

E-Z-UP

For Paper Clips Having a Pressure-Sensitive Adhesive Backing.
First use on or about Jan. 26, 1965.

SN 228,828. Clifford G. Lonts, d.b.a. Illiana Business Systems, Lansing, Ill. Filed Sept. 28, 1965.

RECORDA-SCRIP

For Partially Printed Forms Used in Recording Prescription Sales of Pharmaceuticals.
First use Aug. 27, 1965.

SN 239,774. Frank T. Johmann, Berkeley Heights, N.J. Filed Feb. 28, 1966.

CUSH 'N MATIC

For Writing Instruments—Namely, Ballpoint Pens.
First use Jan. 28, 1966.

SN 242,877. Arrbest Pen, Inc., New York, N.Y. Filed Apr. 7, 1966.

Best Point

The words "Best Point" are disclaimed apart from the mark as shown.
For Ball Point Pens.
First use June 1, 1965.

SN 248,252. L & J Products Corp., Boston, Mass. Filed June 16, 1966.

COYLON

For Plastic Film Used Principally for Packaging Seafood.
First use April 1965.

SN 248,429. Cory Corporation, Chicago, Ill. Filed June 20, 1966.

UTL

For Mechanical Pencils and Lead Refill Packages.
First use Apr. 28, 1966.

SN 249,097. Westab Inc., Dayton, Ohio. Filed June 27, 1966.

IN

For Stationery Products—Namely, Packaged Writing Paper and Correspondence Envelopes.
First use June 2, 1966.

SN 250,913. The Paper Supply Company, Baltimore, Md. Filed July 25, 1966.

PASCO

For Stationery and Paper Supplies—Namely, Writing, Printing, Book, Thin, and Text Paper.
First use at least as early as February 1948.

SN 251,686. The Paper Supply Company, Baltimore, Md. Filed Aug. 4, 1966.

PASCO

For Paper and Stationery Supplies—Namely, Writing, Printing, Book, Thin, and Text Paper.
First use at least as early as 1948.

Class 39—Clothing

SN 214,413. Autry Rubber Company, Dallas, Tex. Filed Mar. 18, 1965.

'Flash N Dash'

For Rubber Sole Canvas Shoes.
First use Jan. 1, 1963.

SN 218,858. Forum Sportswear, Inc., New York, N.Y. Filed May 14, 1965.

FORUM

For Sweaters.
First use Jan. 4, 1965.

SN 220,783. Mothercare Limited, London, England. Filed June 9, 1965.

Mothercare

Priority claimed under Sec. 44(d) on British Reg. No. B878,023, dated Apr. 8, 1965.
For Aprons, Bed Jackets, Blouses, Underwear and Foundation Garments, Dresses, Nightgowns, Skirts, Slacks, Slips, and Suspender Belts, All Being Articles of Clothing for Women; Bibs, Blouses, Bonnets, Bootees, Suits, Cardigans for Babies and Young Children, Christening Garments, Coats, Coat and Hat Sets, Dresses, Dressing Gowns, Hats, Helmets, Jumpers, Leggings, Mittens, Diapers, Nightdresses, Pants, Petticoats, Pajamas, Rompers, Rubber Pants, Shawls, Shoes, Shorts, Skirts, Slippers, Snow Suits, Socks, Sweaters, Tights, Trews, Vests, All Being Articles of Clothing for Babies and Children.

SN 226,079. The Puritan Sportswear Corp., Altoona, Pa. Filed Aug. 19, 1965.

SEA ROVERS

For Swim Trunks, Walk Shorts, Jackets, Knit Shirts, Sweater Shirts, Sweaters, and Sport Shirts.
First use July 16, 1965.

SN 226,243. Adele Kaempf, New York, N.Y. Filed Aug. 23, 1965.

RAIN PETS

For Rain Footwear.
First use July 10, 1965.

SN 226,244. Adele Kaempf, New York, N.Y. Filed Aug. 23, 1965.

RAIN CAPER

For Rainwear.
First use July 1, 1965.

SN 226,301. Somerset Knitting Mills, Inc., Philadelphia, Pa. Filed Aug. 23, 1965.

ACRIPACA

For Sweaters for Men, Women, and Children.
First use July 7, 1965.

SN 226,309. Trend Centers, Inc., d.b.a. Trend Centers, New York, N.Y. Filed Aug. 23, 1965.

Audrey-Jane

For Women's and Misses' Blouses, Coats, Slack Sets, Skirt Sets and Short Sets, the Sets Consisting of Slacks, Skirts and Shorts With a Matching Top; Dresses, Jackets, Lingerie, Pedal Pushers, Raincoats, Shifts, Shirts, Shorts, Skirts, Slacks, Suits, Sweaters, Swim Suits, T-Shirts, and Toppers.
First use on or about July 27, 1965.

SN 227,968. David H. Smith, Inc., Lynn, Mass. Filed Sept. 16, 1965.

GOLF MATES

For Women's and Misses' Shirts, Shorts, Skirts, and Dresses.
First use Aug. 30, 1965.

SN 229,389. Wentworth Manufacturing Company, Lake City, S.C. Filed Oct. 5, 1965.

Janis LEE

The name "Janis Lee" as a whole is fanciful.
For Women's Dresses.
First use Nov. 1, 1960.

SN 229,957. Gregg Draddy, Inc., New York, N.Y. Filed Oct. 12, 1965.

STEPPY by Gregg Draddy

Gregory C. Draddy, otherwise known as "Gregg Draddy," is the name of the living individual whose consent is of record.
For Ladies' Dresses and Shorts.
First use Aug. 31, 1965.

SN 230,268. Maidenform, Inc., New York, N.Y. Filed Oct. 15, 1965.

SHEER EASE

Owner of Reg. No. 556,814.
For Foundation Garments.
First use Sept. 20, 1965.

SN 232,995. J. H. Kellman Co.,Inc., New York, N.Y. Filed Nov. 19, 1965.

GRID COAT

Applicant disclaims the word "Coat" apart from the mark as shown.
For Children's Coats.
First use Sept. 27, 1965.

SN 234,693. Winer Sportswear, Inc., Paterson, N.J. Filed Dec. 15, 1965.

TRAILMASTER

For Jackets, Coats, and Snowsuits for Men, Women, and Children.
First use Oct. 26, 1965.

SN 235,293. Gnnnin Manufacturing Company, Dawson, Ga. Filed Dec. 27, 1965.

CLAMSAM

For Men's and Ladies' Walking Shorts.
First use Dec. 3, 1965.

SN 235,777. Hart Schaffner & Marx, Chicago, Ill. Filed Jan. 4, 1966.

OLIVINO

For Men's Clothing—Namely, Suits and Sport Coats.
First use Dec. 17, 1965.

SN 235,835. William T. Lewis, d.b.a. Lewis Salon Shoes, Tucson, Ariz. Filed Jan. 5, 1966.

Debbie Lewis YOUNG FASHIONS

The term "Young Fashions" is disclaimed apart from the mark as shown. The name "Debbie Lewis" is not known to be that of a living individual.
For Shoes.
First use Aug. 2, 1965.

SN 237,873. Respolco AG, Zurich, Switzerland. Filed Feb. 2, 1966.

croydor

The drawing is lined for gold or yellow. Owner of Swiss Reg. No. 195,571, dated Jan. 9, 1965.
For Rainproof Coats and Articles of Sports Clothing for Skiing and Summer Wear, Especially Raincoats, Skijackets, and Skipants for Women and Men.

SN 238,210. S. L. Gilbert Company, Inc., New York, N.Y. Filed Feb. 7, 1966.

Gilbérre

For Men's Shirts.
First use Dec. 28, 1965.

SN 238,291. The Puritan Sportswear Corp., Altoona, Pa. Filed Feb. 7, 1966.

TAG

For Sportswear—Namely, Men's and Boys' Sweaters, Shirts, Walk Shorts, and Swim Trunks.
First use Dec. 29, 1965.

SN 238,477. Anne Klein, Inc., New York, N.Y. Filed Feb. 10, 1966.

Anne Klein

"Anne Klein" is the name of a living individual whose consent is of record.
For Coats, Suits, Jackets, Pants, Skirts, and Dresses.
First use Aug. 15, 1964.

SN 239,141. General Sportwear Company, Inc., Ellenville, N.Y. Filed Feb. 18, 1966.

STABLE MATES

For Shirts, Dungarees, Jackets, Overalls, Shorts, Long-Legged Underwear With Either an All-Elastic Waist or Half-Elastic Waist, Pedal Pushers, Capris and Pants for Infants, Children, Boys, and Girls.
First use Jan. 6, 1964.

SN 239,530. Maidenform, Inc., New York, N.Y. Filed Feb. 24, 1966.

SILCONTROL

For Foundation Garments.
First use Dec. 30, 1965.

SN 240,171. Gaylor Products, Incorporated, Chicago, Ill. Filed Mar. 4, 1966.

MISTY

For Hair Nets.
First use Oct. 31, 1963.

SN 240,931. Maidenform, Inc., New York, N.Y. Filed Mar. 14, 1966.

COUNTER-PART

Owner of Reg. No. 437,024.
For Foundation Garments.
First use Feb. 21, 1966.

SN 240,987. Town and Country Shoes, Inc., St. Louis, Mo. Filed Mar. 14, 1966.

MAD·73

For Women's Shoes.
First use Mar. 4, 1966.

SN 242,004. Gretel, Inc., Mamaroneck, N.Y. Filed Mar. 28, 1966.

GRETEL

For Dresses and Coats for Children, Women, and Juniors.
First use Feb. 22, 1966.

SN 242,409. Wee Editions, Inc., New York, N.Y. Filed Mar. 31, 1966.

WEE EDITIONS

For Infants' and Little Girls' and Boys' Wearing Apparel—Namely, Dresses, Blouses, Shorts, Slacks, Sweaters, Skirts, Overalls, Hats, Coats, and Jackets.
First use Mar. 1, 1966.

SN 242,457. Donald S. Lavigne, Inc., Miami, Fla., Filed Apr. 1, 1966.

9950

Owner of Reg. No. 698,219.
For Police Uniform Shirts.
First use Jan. 15, 1966.

SN 242,506. Sears, Roebuck and Co., Chicago, Ill. Filed Apr. 1, 1966.

COMFORT CLING

Owner of Reg. Nos. 540,865, 710,949, and 759,272.
For Women's Underwear.
First use Dec. 27, 1965

SN 242,709. Blue Bell, Inc., Greensboro, N.C. Filed Apr. 5, 1966.

Wrangler

Owner of Reg. Nos. 441,727, 795,609, and others.
For Sneakers.
First use Mar. 29, 1966.

SN 242,729. International Latex Corporation, Dover, Del. Filed Apr. 5, 1966.

CROSS 'N CLING

Owner of Reg. No. 665,114.
For Foundation Garments.
First use Jan. 12, 1966.

SN 243,265. Philip Rothenberg & Co., Inc., New York, N.Y. Filed Apr. 12, 1966.

MICHAEL WEBB

The name "Michael Webb" is fictitious.
For Men's, Women's, and Girls' Shirts.
First use Mar. 25, 1966.

SN 243,347. Marie Phillips, Inc., New York, N.Y. Filed Apr. 13, 1966.

PETITE PHILIPPE

For Women's and Girls' Dresses and Suits.
First use Jan. 5, 1966.

SN 244,564. Blue Gem Manufacturing Company, Greensboro, N.C. Filed Apr. 29, 1966.

COUNTRY BOY

For Men's, Boys', Ladies', and Girls' Western Jeans.
First use Apr. 7, 1966.

SN 244,616. Puritan Fashions Corporation, New York, N.Y. Filed Apr. 29, 1966.

TRAKS

For Men's and Boys' Slacks, Casual Pants, and Dungarees.
First use Apr. 6, 1966.

SN 244,805. Defender, Inc., Philadelphia, Pa. Filed May 3, 1966.

FASTASTIC

For Bathing Suits, Swimming Suits, and Tank Suits.
First use on or about Apr. 5, 1966.

SN 244,806. Defender, Inc., Philadelphia, Pa. Filed May 3, 1966.

TANKINI

For Bathing Suits, Swimming Suits, and Tank Suits.
First use on or about Apr. 16, 1966.

SN 244,887. De Luxe Girdlecraft Co., Inc., New York, N.Y. Filed May 4, 1966.

ADJUSTO-FORM

For Girdles.
First use Mar. 9, 1966.

SN 245,081. Juniorite, Inc., New York, N.Y. Filed May 6, 1966.

SWITCH CRAFT

For Girls' and Ladies' Skirts, Jackets, Dresses, Blouses, Slacks, Pants, and Sweaters.
First use Apr. 1, 1966.

SN 245,405. The Lovable Company, Atlanta, Ga. Filed May 11, 1966.

SHOW ME

For Women's Foundation Garments.
First use Apr. 15, 1966.

SN 245,598. Manchester Shoe Stores, Inc., Baltimore, Md. Filed May 13, 1966.

Manchester

Owner of Reg. No. 427,790.
For Shoes Made of Leather, Fabric or Rubber, or of Combinations of Said Materials.
First use Feb. 1, 1920.

SN 245,916. Endicott Johnson Corporation, Endicott, N.Y. Filed May 18, 1966.

Cool Notes

Owner of Reg. No. 660,815.
For Ladies' Footwear.
First use on or about Jan. 12, 1962.

SN 246,030. The Barbizon Corporation, New York, N.Y. Filed May 19, 1966.

BODY CONTOUR

Owner of Reg. No. 419,560.
For Ladies' Wearing Apparel—Namely, Slips.
First use Sept. 27, 1944.

SN 246,069. Andrew Geller, Inc., Brooklyn, N.Y. Filed May 19, 1966.

R.D.

For Ladies' Shoes.
First use Mar. 31, 1966.

SN 251,374. Biltwell Company, Inc., St. Louis, Mo. Filed Aug. 1, 1966.

Mr. Golf

The word "Golf" is disclaimed apart from the mark as shown.
For Men's Walk Shorts and Slacks.
First use February 1960.

SN 251,569. Seaspun, Inc., Green's Farms, Conn. Filed Aug. 2, 1966.

SEASPUN

For Sweaters, Skirts, and Dresses.
First use at least as early as December 1949 on sweaters.

SN 252,941. Angel-Etts, Inc., Los Angeles, Calif. Filed Aug. 23, 1966.

ANGEL-ETTS

For Footwear and Gloves.
First use Oct. 31, 1952.

SN 256,410. Jantsen Inc., Portland, Oreg. Filed Oct. 14, 1966.

UNDERKNACK

For Foundation Garments.
First use Aug. 4, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 244,356. Reid-Meredith, Inc., Lawrence, Mass. Filed Apr. 26, 1966.

REGENCY

For Wigs, Wiglets, and Hairpieces.
First use Nov. 5, 1965.

SN 244,531. F. C. Schmidt, Ltd., Brooklyn, N.Y. Filed Apr. 28, 1966.

CORINA

For Wigs, Wiglets, Falls (Demi Wigs), Bangs, and Eye-Lashes.
First use Jan. 15, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 235,954. Braetan Juniors, Inc., New York, N.Y. Filed Jan. 7, 1966.

TANGLETWEED

BY BRAETAN

Owner of Reg. No. 772,872.
For Piece Goods for Use in the Manufacture of Ladies' Coats and Suits.
First use Sept. 1, 1964.

SN 237,109. Gilde für Textile Raumkultur Gesellschaft mit beschrankter Haftung, Essen, Germany. Filed Jan. 24, 1966.

gilde muster

The English translation of "Gildemuster" is "guild design."
Owner of German Reg. No. 419,341, dated Nov. 1, 1929.
For Carpets, Rugs, Runners, Curtains, Upholstery Fabrics, Decorating Fabrics, Rug Fabrics, Drapery Fabric, Voile, Tulle, and Muslin.

SN 241,712. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Mar. 23, 1966.

See AMERITEX first

For Fabrics Made of or Containing Natural and/or Man-Made and/or Synthetic Fibers, and Adapted To Be Made Up Into Articles of Apparel for Men, Women, and Children.
First use on or about Mar. 8, 1966.

SN 248,784. Dean Floor Covering Co., Inc., Parsippany, N.J. Filed June 23, 1966.

DEAN

Owner of Reg. Nos. 667,788, 667,932, and 667,961.
For Textile Carpeting and Rugs.
First use Apr. 16, 1966.

SN 248,992. Fieldcrest Mills, Inc., Spray, N.C. Filed June 27, 1966.

apropeau

For Textile Rugs and Carpeting.
First use June 14, 1966.

SN 249,306. Deering Milliken, Inc., New York, N.Y. Filed June 30, 1966.

CAMP-SITE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about June 20, 1966.

SN 249,317. Fieldcrest Mills, Inc., Spray, N.C. Filed June 30, 1966.

MISTIQUE

For Textile Rugs and Carpeting.
First use June 16, 1966.

SN 249,452. Stacy Fabrics Corp., New York, N.Y. Filed July 1, 1966.

VERI-WISP

For Woven Fabric Made of Synthetic or Natural Fibers, or a Combination of Both, for Use as a Lining, Interfacing, or Underlining in Garments.
First use June 24, 1966.

SN 257,332. Hamilton Adams Imports Limited, New York, N.Y. Filed Oct. 27, 1966.

BRAIDWATER

For Table Linen Including Tablecloths, Napkins, and Doilies.
First use July 27, 1966.

SN 257,333. Deering Milliken, Inc., New York, N.Y. Filed Oct. 27, 1966.

POCKETS UNLIMITED

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers, and Combinations Thereof.
First use on or about Oct. 21, 1966.

SN 257,551. Cone Mills Corporation, Greensboro, N.C. Filed Oct. 31, 1966.

POLYBEAU

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combination Thereof.
First use Dec. 7, 1965.

SN 257,552. Cone Mills Corporation, Greensboro, N.C. Filed Oct. 31, 1966.

POLYCAY

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combination Thereof.
First use Dec. 2, 1965.

SN 257,553. Cone Mills Corporation, Greensboro, N.C. Filed Oct. 31, 1966.

POLY BASKET

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combination Thereof.
First use Jan. 28, 1966.

SN 257,554. Cone Mills Corporation, Greensboro, N.C. Filed Oct. 31, 1966.

POLYFASHION

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combination Thereof.
First use May 16, 1966.

SN 257,555. Cone Mills Corporation, Greensboro, N.C. Filed Oct. 31, 1966.

POLY TEEN

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combination Thereof.
First use Jan. 28, 1966.

SN 257,557. Deering Milliken, Inc., New York, N.Y. Filed Oct. 31, 1966.

LOCHMORE

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers, and Combinations Thereof.
First use on or about Oct. 25, 1966.

SN 257,558. Deering Milliken, Inc., New York, N.Y. Filed Oct. 31, 1966.

GALANTE

Owner of Reg. No. 222,675.
For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers, and Combinations Thereof.
First use on or about Oct. 25, 1966.

Class 43—Thread and Yarn

SN 238,946. Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix, Nord, France. Filed Feb. 16, 1966.

NATTE ROYAL

The mark "Natte Royal" means roughly in English "royal matted." No claim is made to the word "Natte" apart from the mark as shown. Owner of French Reg. No. 9,944, dated Apr. 21, 1965 (Nord); Natl. Inst. No. 248,782.
For Yarns and Threads.

SN 241,887. Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix, Nord, France. Filed Mar. 25, 1966.

ESCALADE

Owner of French Reg. No. 6,898, dated Jan. 21, 1966.
For Yarns and Threads.

SN 247,076. Spinnerin Yarn Co., Inc., South Hackensack, N.J. Filed June 1, 1966.

ARLY

For Yarns of Natural and Synthetic Fibers for Hand Knitting.
First use May 23, 1966.

SN 247,586. Deering Milliken, Inc., New York, N.Y. Filed June 8, 1966.

COLOR STORM

For Yarn.
First use on or about May 9, 1966.

SN 247,783. Deering Milliken, Inc., New York, N.Y. Filed June 10, 1966.

COLOR FAIR

For Yarn.
First use on or about May 23, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 208,528. Rudolph Beaver, Belmont, Mass. Filed Dec. 21, 1964.



For Surgical Knives.
First use Oct. 23, 1950.

SN 213,290. Brunswick Corporation, Chicago, Ill. Filed Mar. 4, 1965.

HORIZON

For Medical Aids or Corrective Devices for Handicapped Persons—Namely, Crutches, Orthopedic Heels, Orthopedic Bandages, Elastic Rib Belts; Chart File Holders; Steriliser Controls; Surgeons' Brushes; Conductive Overshoes; Armboards; Identification Bracelets; Wet-Proof Bedding, Hospital Gowns, Rubber Sheeting; Hospital Utensils—Namely, Sputum Cups and Dishes, Bed Pans, and Wash Basins.
First use June 27, 1962.

SN 220,901. Bird Corporation, Richmond, Calif. Filed June 11, 1965.

MARK

For Breathing Apparatus for Gas Inhalation and Nebulization, Cardiopulmonary Therapy, Resuscitation and Anesthesia and Chemotherapy.
First use March 1956.

SN 242,779. Milton Roy Company, Philadelphia, Pa. Filed Apr. 6, 1966.

ERYTHROLYZER

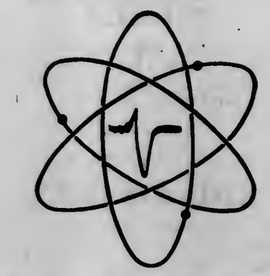
For Instrument for Detecting Blood Leakage in Membranes of Artificial Kidney.
First use Oct. 30, 1965.

SN 244,184. Harlan M. Buck of Connecticut, Inc., Holbrook, Mass. Filed Apr. 25, 1966.

SIT-N-SIP

For Straw Attachment for Nursing Nipple.
First use Jan. 15, 1966.

SN 250,426. Electromagnetic Probe Company, Inc., Winston-Salem, N.C. Filed July 18, 1966.



For Blood Flow Transducers and Electric Dissecting Knives.
First use in or before April 1963.

SN 252,052. American Home Products Corporation, New York, N.Y. Filed Aug. 10, 1966.

STERI-GARD

For Cotton Tipped Swabs.
First use July 20, 1966.

SN 255,028. Stylors, Inc., Jacksonville, Fla. Filed Sept. 23, 1966.

CYCLOMATIC

For Electrically Operated, Radiant Heat Hair Treating Machine With Floor Engaging Wheels on a Base for Beauty Parlor Use for Enhancing the Action of Bleaches, Tints, Toners, Permanent Waves, and Hair Conditioners.
First use Aug. 12, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 256,698. PepsiCo, Inc., New York, N.Y. Filed Oct. 19, 1966.



Owner of Reg. Nos. 696,146 and 701,060.
For Soft Drinks and Extracts for the Preparation of Soft Drink Syrups.
First use Aug. 4, 1966; Mar. 7, 1963, on soft drinks in a different form of display.

Class 46—Foods and Ingredients of Foods

SN 243,001. Mason, Au & Magenheimer Confy. Mfg. Co., Inc., Mineola, N.Y. Filed Apr. 8, 1966.

LOTSADOTS

Owner of Reg. Nos. 532,308 and 532,417.
For Candy.
First use Nov. 15, 1965.

SN 243,695. Mead Johnson & Company, Evansville, Ind. Filed Apr. 18, 1966.

SIPREN

Owner of Reg. Nos. 610,942 and 707,251.
For Nutritionally Complete Liquid Dietary With Minerals and Vitamins, Designed for Optimal Nourishment.
First use on or prior to Feb. 25, 1966.

SN 247,179. Stange Co., Chicago, Ill. Filed June 3, 1966.

ADD-A-SAUCE

For Mixture of Ingredients To Make a Meatless Sauce of a Vegetable Nature.
First use May 22, 1966.

SN 251,863. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. Filed Aug. 8, 1966.

CLARK

Owner of Reg. Nos. 609,236, 791,935, and others.
For Chewing Gum.
First use Apr. 8, 1964; at least as early as 1924 in a different form.

Class 47 — Wines

SN 257,140. E. & J. Gallo Winery, d.b.a. The Vintners of Eden Roc, Modesto, Calif. Filed Oct. 25, 1966.

EDEN

Owner of Reg. Nos. 684,887 and 731,935.
For Wines.
First use Oct. 6, 1966.

Class 49 — Distilled Alcoholic Liquors

SN 253,554. Societe Anonyme Jules Robin, Ancienne Maison Jules Robin et Cie, d.b.a. Folligny & Co., Cognac, Charente, France. Filed Aug. 31, 1966.

FOLLIGNY

Owner of French Reg. No. 14,987, dated July 29, 1965.
For Cognac.

SN 256,499. Hiram Walker & Sons, Inc., Peoria, Ill. Filed Oct. 17, 1966.

LIMBO

For Blended Whiskey.
First use Sept. 27, 1966.

SN 256,506. Hiram Walker & Sons, Inc., Peoria, Ill. Filed Oct. 17, 1966.

SHIP'S WHEEL

For Blended Whiskey.
First use Sept. 27, 1966.

SN 256,507. Hiram Walker & Sons, Inc., Peoria, Ill. Filed Oct. 17, 1966.

WEDGEWOOD

For Blended Whiskey.
First use Sept. 27, 1966.

SN 256,508. Hiram Walker & Sons, Inc., Peoria, Ill. Filed Oct. 17, 1966.

FIRST CABIN

For Blended Whiskey.
First use Sept. 27, 1966.

Class 50 — Merchandise Not Otherwise Classified

SN 245,076. Grad-Line, Inc., Woodinville, Wash. Filed May 6, 1966.

GRAD-LINE

For Grade Stakes—Namely, Markers Used in Surveying.
First use May 15, 1957.

SN 246,989. Allen Industries, Inc., Detroit, Mich. Filed June 1, 1966.

AIRYTREAD

For Rug and Carpet Underpadding.
First use Dec. 1, 1930.

SN 247,091. Asten-Hill Mfg. Company, Philadelphia, Pa. Filed June 1, 1966.

ASCOE

For Machinery Felts Used in the Paper-Making Industry.
First use May 25, 1966.

SN 247,123. Hub Floral Manufacturing Company, Boston, Mass. Filed June 2, 1966.

TRIM-A-PAC

For Decorative Ornaments, Useful, for Example, on Christmas Trees, as Corsages, and in Christmas Gift Wrapping.
First use September 1955.

SN 249,943. Boys Republic, Boys Republic, Calif. Filed July 11, 1966.

Della Robbia

For Christmas Wreaths.
First use Christmas Season 1923.

Class 51 — Cosmetics and Toilet Preparations

SN 237,362. L'Oreal, Paris, France. Filed Jan. 26, 1966.

SI BLONDE

Applicant disclaims the term "Blonde" aside from its use in the mark. Owner of French Reg. No. 525,851, dated Nov. 27, 1964 (Seine); Natl. Inst. No. 235,952.
For Hair Colorings.

SN 254,066. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Sept. 9, 1966.

JELVYN

For Skin Lotion.
First use Oct. 21, 1965; in commerce Oct. 21, 1965.

SN 254,848. Redken Laboratories, Inc., Van Nuys, Calif. Filed Sept. 21, 1966.

CLIMATRESS

Owner of Reg. No. 817,521.
For Moisturising Creme Hair Conditioner.
First use Aug. 2, 1966.

SN 256,498. Puerto Rico Distillers, Inc., d.b.a. Puerto Rico Distilling Co., Arecibo, Puerto Rico. Filed Oct. 17, 1966.

BRIGADIER

For Cologne.
First use Oct. 4, 1966.

Class 52 — Detergents and Soaps

SN 245,685. Cohoon Products Corporation, Jackson, Miss. Filed May 16, 1966.

OPPO

For Whitening and Brightening Agent Incorporated as an Ingredient in a Household Preparation Which Cleans, Disinfects, and Deodorizes.
First use Dec. 13, 1965.

SN 245,753. The Procter and Gamble Company, Cincinnati, Ohio. Filed May 16, 1966.

ALP

For Household Sudsing Cleaner, Cleanser, and Detergent.
First use Jan. 19, 1966.

SN 257,024. Roux Laboratories, Inc., New York, N.Y. Filed Oct. 24, 1966.

OBEY

Owner of Reg. Nos. 433,233, 560,847, and 588,614.
For Cleansing Conditioner in the Nature of a Shampoo for the Hair.
First use Sept. 30, 1966.

SN 257,025. Roux Laboratories, Inc., New York, N.Y. Filed Oct. 24, 1966.

OBAY

Owner of Reg. Nos. 433,233, 560,847, and 588,614.
For Cleansing Conditioner in the Nature of a Shampoo for the Hair.
First use Sept. 30, 1966.

SN 257,136. National Distributors, Inc., Nashua, N.H. Filed Oct. 25, 1966.

NOGU

For Liquid Glass Cleaning Preparation.
First use Nov. 15, 1965.

SN 257,435. Alberto-Culver Company, Melrose Park, Ill. Filed Oct. 27, 1966.

MOONSUN MANOR

For Detergent for Use in Household.
First use Oct. 17, 1966.

SERVICE MARKS

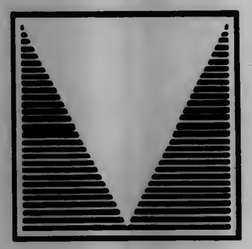
Class 100 — Miscellaneous

SN 187,010. Champion Brick Company, Baltimore, Md. Filed Feb. 19, 1964.

BRICKMOBILE

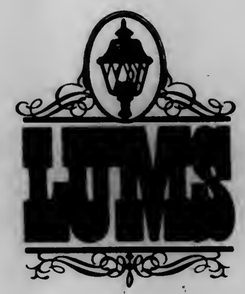
For Masonry Advisory Services—Namely, at Architects' and Builders' Offices or at Building Sites, Providing Actual Panel Displays of Various Types and Arrangements of Bricks and, Utilising Models Where Appropriate, Providing Expert Advice on the Best Uses of Brick for Construction Purposes, Methods of Laying Bricks, Types of Mortar Joints, and Other Information Relating to the Optimum Utilization of Bricks and Masonry Products.
First use September 1962.

SN 244,058. Molecular Research Corporation, Cambridge, Mass. Filed Apr. 22, 1966.



For Chemical Research, Development and Consulting Services.
First use Feb. 1, 1961.

SN 256,033. Lum's, Inc., Miami Beach, Fla. Filed Oct. 10, 1966.



Owner of Reg. Nos. 813,175 and 813,176.
For Restaurant Services.
First use July 1964; 1954 as to "Lums."

Class 102 — Insurance and Financial

SN 242,295. Union Oil Company of California, Los Angeles, Calif. Filed Mar. 30, 1966.



The mark consists of a two-dimensional representation of an orange sphere having inscribed on its surface the numeral "76," and the word "Union" in blue outlined in white.

For Credit Services for Vehicle Owners and Operators.

First use March 1963.

Class 103 — Construction and Repair

SN 242,296. Union Oil Company of California, Los Angeles, Calif. Filed Mar. 30, 1966.



The mark consists of an orange-colored sphere having inscribed on its surface the numeral "76" and the word "Union" in blue outlined in white.

For Vehicle Service Station Services.

First use December 1962.

Class 106 — Material Treatment

SN 247,421. United Merchants and Manufacturers, Inc., New York, N.Y. Filed June 6, 1966.

FORT SYNOCHLOR

Owner of Reg. No. 505,467.

For Treating of or Finishing of Cotton and Synthetic Fabrics of Others to Provide a Permanent Press.

First use on or about May 12, 1966.

SN 247,422. United Merchants and Manufacturers, Inc., New York, N.Y. Filed June 6, 1966.

SYNOCHLOR

For Treating of or Finishing of Cotton and Synthetic Fabrics of Others to Provide a Permanent Press.

First use on or about May 12, 1966.

Class 107 — Education and Entertainment

SN 242,362. Hennepin County Bar Association, Minneapolis, Minn. Filed Mar. 31, 1966.

IT'S A MATTER OF LAW

For Educational Television Program Services.

First use Apr. 23, 1965.

SN 252,054. Gotham Football Club, Inc., New York, N.Y. Filed Aug. 10, 1966.



For Entertainment Service in the Nature of Football Exhibitions, Some of Which Are Rendered Through the Medium of Radio and Television Broadcasts.

First use as early as April 1966.

SN 255,799. Gotham Football Club, Inc., New York, N.Y. Filed Oct. 5, 1966.

JETS

For Entertainment Service in the Nature of Football Exhibitions, Some of Which Are Rendered Through the Medium of Radio and Television Broadcasts.

First use at least as early as May 1963.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

822,177. DURAFLEX. Doughboy Industries, Inc. SN 198,865. Pub. 1-19-65. Filed 5-20-64.

822,178. FUSECHIP. Fusecolor Corporation. SN 230,580. Pub. 11-1-66. Filed 10-19-65.

822,179. SWEET-DAN. Dairyland Seed Company, Inc. SN 237,431. Pub. 11-1-66. Filed 1-27-66.

822,180. DAIRYLAND SEED. Dairyland Seed Company, Inc. SN 237,436. Pub. 11-1-66. Filed 1-27-66.

822,181. WM. PENN AND DESIGN. Fleet-Wing Corporation, d.b.a. Wm. Penn Laboratories. MULTIPLE CLASS (Classes 1, 6, 15, and 52). SN 239,954. Pub. 11-1-66. Filed 3-2-66.

822,182. WM. PENN. Fleet-Wing Corporation, d.b.a. Wm. Penn Laboratories. MULTIPLE CLASS (Classes 1, 6, 15, and 52). SN 239,955. Pub. 11-1-66. Filed 3-2-66.

822,183. MILIPOL. Bata Shoe Company, Inc. MULTIPLE CLASS (Classes 1 and 39). SN 240,899. Pub. 11-1-66. Filed 3-8-66.

822,184. JIFFY-MIX. Geo. J. Ball, Inc., d.b.a. Jiffy-Pot Company of America. SN 241,020. Pub. 11-1-66. Filed 3-15-66.

822,185. SIGMA. Sigma Leather, Inc. SN 241,188. Pub. 11-1-66. Filed 3-16-66.

822,186. CITY GARDENS. Moultrie Manufacturing Company. SN 241,598. Pub. 11-1-66. Filed 3-22-66.

822,187. AVISCO. FMC Corporation. SN 242,229. Pub. 11-1-66. Filed 3-30-66.

822,188. MICROCLAD. Spaulding Fibre Company, Inc. SN 243,725. Pub. 11-1-66. Filed 4-18-66.

822,189. SPAULDITE. Spaulding Fibre Company, Inc. SN 243,727. Pub. 11-1-66. Filed 4-18-66.

Class 2 — Receptacles

822,190. CERALON. P-G Products Mfg. Co., Inc. SN 207,145. Pub. 11-1-66. Filed 11-30-64.

822,191. CYCLOPS AND DESIGN. Cyclops Corporation. MULTIPLE CLASS (Classes 2, 12, 13, 14, and 28). SN 226,597. Pub. 11-1-66. Filed 8-27-65.

822,192. PERFLEX. Union Carbide Corporation. SN 233,017. Pub. 11-1-66. Filed 11-19-65.

822,193. FRESH-N-FANCY. Rexall Drug and Chemical Company, d.b.a. Tupperware Company. SN 233,825. Pub. 11-1-66. Filed 12-2-65.

822,194. ONEIDA AND DESIGN. Oneida Ltd. SN 234,060. Pub. 11-1-66. Filed 12-6-65.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

822,195. SAMSONITE JETPAK. Samsonite Corporation, assignee of Shwayder Brothers, Inc. SN 206,299. Pub. 6-29-65. Filed 11-16-64.

822,196. SONIC FLYTE. Antosek & Sons. SN 238,992. Pub. 11-1-66. Filed 2-17-66.

Class 4 — Abrasives and Polishing Materials

822,197. PENNY SHINE. Turtle Wax, Inc. SN 230,809. Pub. 11-1-66. Filed 10-15-65.

Class 5 — Adhesives

822,198. RED CAP AND DESIGN. Phil Johnson, d.b.a. Red Cap Adhesives. SN 231,188. Pub. 11-1-66. Filed 10-22-65.

Class 6 — Chemicals and Chemical Compositions

822,181. (See Class 1 for this trademark.)

822,182. (See Class 1 for this trademark.)

822,199. DOWANOL. The Dow Chemical Company. SN 174,653. Pub. 11-1-66. Filed 8-8-63.

822,200. DICUSAT. Aktiebolaget Ferrosan. SN 211,973. Pub. 11-1-66. Filed 2-12-65.

822,201. SUPER VALU AND DESIGN. Super Valu Stores, Inc. MULTIPLE CLASS (Classes 6 and 46). SN 239,100. Pub. 11-1-66. Filed 2-18-66.

822,202. PHILGUARD. Phillips Petroleum Company. SN 239,173. Pub. 11-1-66. Filed 2-18-66.

822,203. ECCOSLIP. Emerson & Cuming, Inc. SN 239,983. Pub. 11-1-66. Filed 3-2-66.

822,204. EMPTY-ALL. Renusit Home Products Co. SN 240,116. Pub. 11-1-66. Filed 3-3-66.

822,205. AMETRYNE. Geigy Chemical Corporation. SN 243,555. Pub. 11-1-66. Filed 4-15-66.

822,206. GMP AND DESIGN. General Machine Products Company, Inc. SN 243,556. Pub. 11-1-66. Filed 4-15-66.

822,207. NAUGARD. United States Rubber Company. SN 243,606. Pub. 11-1-66. Filed 4-15-66.

822,208. KRONIFLEX. FMC Corporation. SN 243,778. Pub. 11-1-66. Filed 4-19-66.

822,209. GRANUMAG. Basic Incorporated. SN 243,832. Pub. 11-1-66. Filed 4-20-66.

822,210. NEMARID. Geigy Chemical Corporation. SN 243,859. Pub. 11-1-66. Filed 4-21-66.

822,211. B-SHUR. Jaymass, Inc. SN 243,878. Pub. 11-1-66. Filed 4-20-66.

822,212. CYMEL. American Cyanamid Company. SN 243,942. Pub. 11-1-66. Filed 4-21-66.

822,213. NEMASOL. Geigy Chemical Corporation. SN 243,978. Pub. 11-1-66. Filed 4-21-66.

822,214. KIK. Geigy Chemical Corporation. SN 243,981. Pub. 11-1-66. Filed 4-21-66.

822,215. CYREZ. American Cyanamid Company. SN 244,066. Pub. 11-1-66. Filed 4-22-66.

822,216. VIGORO. Swift & Company. SN 244,151. Pub. 11-1-66. Filed 4-22-66.

822,217. LITHASORB. Foote Mineral Co. SN 244,211. Pub. 11-1-66. Filed 4-25-66.

822,218. VADEN-100. Ronco Laboratories, Inc. SN 244,359. Pub. 11-1-66. Filed 4-26-66.

822,219. NOCULATE. B. G. Pratt Company. SN 244,524. Pub. 11-1-66. Filed 4-28-66.

822,220. CY-GUARD. American Cyanamid Company. SN 244,648. Pub. 11-1-66. Filed 5-2-66.

822,221. OMNIFORMS. Bristol-Myers Company. SN 244,666. Pub. 11-1-66. Filed 5-2-66.

822,222. CROSS AND LEAF (DESIGN). Private Brands, Inc. SN 244,738. Pub. 11-1-66. Filed 5-2-66.

822,223. ACLATE. Allied Chemical Corporation. SN 245,574. Pub. 11-1-66. Filed 5-11-66.

822,224. GO BIRDS GO. Wolfe & Manning, Inc. SN 247,746. Pub. 11-1-66. Filed 6-9-66.

Class 7 — Cordage

822,225. WR. Wire Rope Corporation of America, Incorporated. SN 240,564. Pub. 11–1–66. Filed 3–9–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

822,226. AMERICAN 50 AND DESIGN. Robert C. Kain. SN 210,317. Pub. 11–1–66. Filed 1–21–65.

822,227. MONKEYS BRAND. Li & Fung, Ltd. SN 230,057. Pub. 11–1–66. Filed 10–13–65.

822,228. GIRAFFE BRAND AND DESIGN. Li & Fung, Ltd. SN 230,058. Pub. 11–1–66. Filed 10–13–65.

822,229. CAMEO. Universal Match Corporation. SN 235,743. Pub. 11–1–66. Filed 1–3–66.

822,230. SIGNET. Universal Match Corporation. SN 235,744. Pub. 11–1–66. Filed 1–3–66.

822,231. BLACK HAWK AND DESIGN. Chan Lan Fong, d.b.a. Kwong Man Lung Firecracker Factory. SN 236,079. Pub. 11–1–66. Filed 1–10–66.

Class 11 — Inks and Inking Materials

822,232. MINI-GRAPH. Weber Marking Systems, Inc. SN 225,086. Pub. 11–1–66. Filed 8–5–65.

822,233. SYN-DRY. Keystone Printing Ink Co. SN 252,785. Pub. 11–1–66. Filed 8–22–66.

Class 12 — Construction Materials

822,191. (See Class 2 for this trademark.)

822,234. BRICVNEER. Frederic Brick & Tile Co. SN 226,137. Pub. 11–1–66. Filed 8–20–65.

822,235. URESEAL. Mighty Andy Corporation. SN 229,849. Pub. 11–1–66. Filed 10–11–65.

822,236. M.P.G. General Aluminum Corporation. SN 233,488. Pub. 11–1–66. Filed 11–29–65.

822,237. SNOW BRIDGE. Byron C. Butler. SN 235,386. Pub. 11–1–66. Filed 12–28–65.

822,238. POLYFIX. Polycell Products Limited. SN 235,712. Pub. 11–1–66. Filed 1–3–66.

822,239. EVOSTRIP. Evode Ltd. SN 237,211. Pub. 11–1–66. Filed 1–25–66.

822,240. PLUMBER'S MAIT. Evomastics Ltd. SN 237,212. Pub. 11–1–66. Filed 1–25–66.

822,241. CARTER. General Refractories Company. SN 237,331. Pub. 11–1–66. Filed 1–26–66.

822,242. FLASHBAND. Evode Ltd. SN 237,627. Pub. 11–1–66. Filed 1–17–66.

822,243. PYROSCAT. Refractory & Insulation Corporation. SN 240,344. Pub. 11–1–66. Filed 3–7–66.

822,244. MYLOC. Frederick J. Dando Company. SN 240,415. Pub. 11–1–66. Filed 3–8–66.

822,245. CEMAG. General Refractories Company. SN 240,428. Pub. 11–1–66. Filed 3–8–66.

822,246. MULTIGRIP. United States Steel Corporation. SN 247,100. Pub. 11–1–66. Filed 6–2–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

822,191. (See Class 2 for this trademark.)

822,247. UNIPAK. Unipak, Inc. SN 228,956. Pub. 11–1–66. Filed 9–29–65.

822,248. HOTCHKISS. Gary Industries, Inc., d.b.a. Vail Manufacturing Company, assignee of Vail Manufacturing Company, d.b.a. E. H. Hotchkiss Company. SN 239,949. Pub. 11–1–66. Filed 3–1–66.

822,249. X-TRUBE. Republic Steel Corporation. SN 240,201. Pub. 11–1–66. Filed 3–4–66.

822,250. MONARCH AND DESIGN. Gary Industries, Inc., d.b.a. Vail Manufacturing Company, assignee of Vail Manufacturing Company. SN 241,551. Pub. 11–1–66. Filed 3–21–66.

822,251. ARMSTRONG PRODUCTS ETC. AND DESIGN. S. A. Armstrong Limited. MULTIPLE CLASS (Classes 13, 23, and 34). SN 241,722. Pub. 11–1–66. Filed 3–24–66.

822,252. CURTIS. Wilbur Curtis Co., Inc. SN 244,470. Pub. 11–1–66. Filed 4–28–66.

822,253. JOHNNY ON THE SPOT AND DESIGN. Industrial Sanitation, Inc. SN 248,478. Pub. 11–1–66. Filed 6–22–66.

Class 14 — Metals and Metal Castings and Forgings

822,191. (See Class 2 for this trademark.)

822,254. TRULOAD TESTED. Crucible Steel Company of America. SN 191,747. Pub. 11–1–66. Filed 4–22–64.

822,255. POSIT-BOND. Olin Mathieson Chemical Corporation. SN 235,219. Pub. 11–1–66. Filed 12–23–65.

822,256. WETALLOY-232. Victor King Laboratory. SN 251,100. Pub. 11–1–66. Filed 7–27–66.

Class 15 — Oils and Greases

822,181. (See Class 1 for this trademark.)

822,182. (See Class 1 for this trademark.)

822,257. MONOLEC. Lubrication Engineers, Inc. SN 239,057. Pub. 11–1–66. Filed 2–17–66.

822,258. CANDESCENT. Bluegate Candle Company. SN 239,371. Pub. 11–1–66. Filed 2–23–66.

Class 16 — Protective and Decorative Coatings

822,259. LITTLE JOB. Master Bronze Powder Company, Inc. SN 209,021. Pub. 11–1–66. Filed 12–29–64.

822,260. BEAR'S HEAD (DESIGN). Norton Company. SN 225,342. Pub. 7–12–66. Filed 8–9–65.

822,261. DRI-WIPE. Cusick Products. SN 231,063. Pub. 11–1–66. Filed 10–22–65.

822,262. BIX. Bix Manufacturing Company. MULTIPLE CLASS (Classes 16 and 52). SN 234,518. Pub. 11–1–66. Filed 12–13–65.

822,263. DIAMONISE. P.G.H. Industries Limited. SN 237,735. Pub. 11–1–66. Filed 2–1–66.

822,264. TI AND DESIGN. Texas Instruments Incorporated. SN 240,230. Pub. 11–1–66. Filed 2–23–66.

822,265. TC. The Tapecoat Company, Inc. SN 242,682. Pub. 11–1–66. Filed 4–4–66.

822,266. BPS METAL-MAGIC. Textron Industries, Inc. SN 246,425. Pub. 11–1–66. Filed 5–24–66.

Class 18 — Medicines and Pharmaceutical Preparations

822,267. CERNELLE. Aktiebolaget Cernelle. SN 204,537. Pub. 11–1–66. Filed 10–22–64.

822,268. FESTALAN. Canadian Hoechst (1964) Limited, assignee, by mesne assignment, of Lloyd Brothers, Inc. SN 209,097. Pub. 11–1–66. Filed 12–30–64.

822,269. NITE AND DAY. Richardson-Merrell Inc. SN 227,332. Pub. 11–1–66. Filed 9–7–65.

822,270. ECONOWISE AND DESIGN. Northern Drug Company, Inc. SN 236,195. Pub. 11–1–66. Filed 1–11–66.

822,271. KLEAR-FOOT. Guy J. Delbert, d.b.a. R.B.G. Products Co. SN 239,391. Pub. 11–1–66. Filed 2–28–66.

822,272. ALPICORT. Dr. August Wolff Chemische-Pharmaceutische Fabrik Kommanditgesellschaft. SN 241,325. Pub. 11–1–66. Filed 3–18–66.

822,273. LINOLA. Dr. August Wolff Chemische-Pharmaceutische Fabrik Kommanditgesellschaft. SN 241,326. Pub. 11–1–66. Filed 3–18–66.

822,274. WONDERFUL DREAM. Wonderful Dream Salve Corporation. SN 241,834. Pub. 11–1–66. Filed 3–24–66.

822,275. ASSET. Johnson & Johnson. SN 242,259. Pub. 11–1–66. Filed 3–30–66.

822,276. VIBRAMYCIN. Chas. Pfizer & Co., Inc. SN 243,576. Pub. 11–1–66. Filed 4–15–66.

822,277. YESEXTAN. Geigy Chemical Corporation. SN 243,979. Pub. 11–1–66. Filed 4–21–66.

822,278. BRUCO. Rabin-Winters Corporation, d.b.a. Bruco. SN 244,027. Pub. 11–1–66. Filed 4–21–66.

822,279. M MADAUS AND DESIGN. Dr. Madaus & Co. SN 244,125. Pub. 11–1–66. Filed 4–22–66.

822,280. A.F.C. Menley & James Laboratories, Ltd. SN 244,126. Pub. 11–1–66. Filed 4–22–66.

822,281. YP YOUNGS AND DESIGN. Youngs Drug Products Corporation. SN 246,418. Pub. 11–1–66. Filed 5–23–66.

822,282. JEL-CORT. Barnes-Hind Laboratories. SN 246,831. Pub. 11–1–66. Filed 5–2–66.

822,283. ALBA-NATAL. Betan Company, Inc. SN 246,862. Pub. 11–1–66. Filed 5–31–66.

822,284. NO AX AND DESIGN. Rabin-Winters Corporation. SN 246,941. Pub. 11–1–66. Filed 5–31–66.

822,285. RUELEX. The Dow Chemical Company. SN 250,894. Pub. 11–1–66. Filed 7–25–66.

Class 19 — Vehicles

822,286. ROLLIT. Budge Manufacturing Co., Inc. SN 228,507. Pub. 11–1–66. Filed 9–24–65.

822,287. ULTRA VAN. Ultra, Inc. SN 232,620. Pub. 11–1–66. Filed 11–12–65.

822,288. SUN AND DESIGN. Raleigh Industries, Ltd. SN 233,012. Pub. 11–1–66. Filed 11–19–65.

822,289. PARK AVE. Bilt-Rite Baby Carriage Co. Inc. SN 237,652. Pub. 11–1–66. Filed 2–1–66.

822,290. SILVER KING. Karpak Company. SN 237,709. Pub. 11–1–66. Filed 2–1–66.

822,291. CARGOMATE. Travel Equipment Corporation. SN 237,762. Pub. 11–1–66. Filed 2–1–66.

822,292. TRANS CART. James Mannix, d.b.a. Specialty Trailer Design & Mfg. Co. SN 245,047. Pub. 11–1–66. Filed 5–6–66.

Class 21 — Electrical Apparatus, Machines, and Supplies

822,293. TE AND DESIGN. Thermo-Electron Engineering Corporation. MULTIPLE CLASS (Classes 21, 26, and 34). SN 206,312. Pub. 11–1–66. Filed 11–16–64.

822,294. MONTVALE. Zayre Corp. SN 220,249. Pub. 11–1–66. Filed 6–2–65.

822,295. NOBLE-MET. American Components Incorporated. SN 220,818. Pub. 11–1–66. Filed 6–10–65.

822,296. JADE. Realtone Electronics Corporation. SN 226,285. Pub. 11–1–66. Filed 8–23–65.

822,297. M METALUX AND DESIGN. Metalux Corporation. SN 229,108. Pub. 11–1–66. Filed 10–1–65.

822,298. YAWNING BOY (DESIGN). United States Rubber Company. SN 229,609. Pub. 11–1–66. Filed 10–7–65.

822,299. MRC AND DESIGN. Milwaukee Resistor Company. SN 229,850. Pub. 11–1–66. Filed 10–11–65.

822,300. RAMA. Rama Corporation. SN 231,593. Pub. 11–1–66. Filed 10–24–65.

822,301. TIME-A-SIGN. Ve Ped Traffic Controls, Inc. SN 232,369. Pub. 11–1–66. Filed 11–8–65.

822,302. CLARK AND DESIGN. Clark Industries, Inc. SN 232,528. Pub. 11–1–66. Filed 11–12–65.

822,303. VAPOR SPEED-LOG AND DESIGN. Vapor Corporation. SN 233,289. Pub. 11–1–66. Filed 11–24–65.

822,304. YESCO AND DESIGN. Young Electric Sign Company. MULTIPLE CLASS (Classes 21 and 50). SN 233,547. Pub. 11–1–66. Filed 11–29–65.

822,305. TYRCO. Tyrco Industries. SN 234,959. Pub. 11–1–66. Filed 12–20–65.

822,306. DEGREE AND DESIGN. Degree Corporation. SN 240,589. Pub. 11–1–66. Filed 3–10–66.

822,307. VERSITATIC. Casman & Weiss Distributing Co. SN 244,677. Pub. 11–1–66. Filed 5–2–66.

822,308. TUTTLE & KIFT. Ferro Corporation. SN 246,548. Pub. 11–1–66. Filed 5–25–66.

Class 22 — Games, Toys, and Sporting Goods

822,309. VIBRAM. S.p.A. Vibram. SN 216,014. Pub. 11–1–66. Filed 4–7–65.

822,310. LINGO AND DESIGN. Florenso Di Donato, d.b.a. Gemini Associates. SN 222,678. Pub. 11–1–66. Filed 7–6–65.

822,311. HILL THRILL AND DESIGN. Wilbur R. Jenks, d.b.a. W. R. Jenks. SN 222,846. Pub. 11–1–66. Filed 7–7–65.

822,312. HOLLYWOOD. Hollywood Amusement Company. SN 224,421. Pub. 11–1–66. Filed 7–28–65.

822,313. GLAD-GLO. Chartered Enterprises, d.b.a. Superior Sports Specialties. SN 225,727. Pub. 11–1–66. Filed 8–16–65.

822,314. HY-ROLL. Lavoy Winton. SN 228,466. Pub. 11–1–66. Filed 9–23–65.

822,315. "BABY ELOISE." Alexander Doll Company, Inc., d.b.a. Madame Alexander. SN 233,855. Pub. 11–1–66. Filed 12–3–65.

822,316. HOT-SHOT. Mattel, Inc. SN 247,658. Pub. 11–1–66. Filed 6–9–66.

822,317. FILL-R-UP. Buddy L Corporation. SN 250,211. Pub. 11–1–66. Filed 7–14–66.

822,318. BABYSTEP. Mattel, Inc. SN 250,909. Pub. 11–1–66. Filed 7–25–66.

822,319. BEAT-A-DIDDLE. Mattel, Inc. SN 250,910. Pub. 11–1–66. Filed 7–25–66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

822,191. (See Class 2 for this trademark.)

822,251. (See Class 13 for this trademark.)

822,320. MAPLE LEAF ETC. AND DESIGN. Shurly-Dietrich-Atkins Company Limited. SN 223,168. Pub. 11–1–66. Filed 7–12–65.

822,321. ROTOWELD. Cleveland Hone & Manufacturing Co. SN 226,620. Pub. 11–1–66. Filed 8–27–65.

822,322. ROTOBUILT. Cleveland Hone & Manufacturing Co. SN 226,621. Pub. 11-1-66. Filed 8-27-65.

822,323. TARGETHEAD. Damascus Steel Products Corporation. SN 227,018. Pub. 11-1-66. Filed 9-2-65.

822,324. SIGNA-WRITER. Universal Match Corporation. SN 229,037. Pub. 11-1-66. Filed 9-30-65.

822,325. DUPLIFLO. Union Tank Car Company. SN 232,370. Pub. 11-1-66. Filed 11-8-65.

822,326. LANCE AND DESIGN. B. J. Lance, Inc., d.b.a. Lance Manufacturing Company. SN 232,701. Pub. 11-1-66. Filed 11-15-65.

822,327. MEIKI. Meiki Co., Ltd. SN 233,615. Pub. 11-1-66. Filed 11-30-65.

822,328. RAISE. Raise, Incorporated. SN 233,740. Pub. 11-1-66. Filed 12-1-65.

822,329. POD. Dresser Industries, Inc. SN 234,886. Pub. 11-1-66. Filed 12-20-65.

822,330. FLORIANA AND DESIGN. William & H. H. James Limited. SN 237,613. Pub. 11-1-66. Filed 1-28-66.

822,331. PENVELOPE. Brother International Corporation. SN 239,876. Pub. 11-1-66. Filed 3-1-66.

822,332. HOTCHKISS. Gary Industries, Inc., d.b.a. Vail Manufacturing Company, assignee of Vail Manufacturing Company, d.b.a. E. H. Hotchkiss Company. SN 239,950. Pub. 11-1-66. Filed 3-1-66.

822,333. TAW. R. H. Hood Company. SN 239,999. Pub. 11-1-66. Filed 3-2-66.

822,334. WHITE SEWING MACHINES AND DESIGN. White Consolidated Industries, Inc. SN 242,304. Pub. 11-1-66. Filed 3-30-66.

822,335. UNISIR. Universal Oil Products Company. SN 244,543. Pub. 11-1-66. Filed 4-28-66.

822,336. CROWN. Crown Cork & Seal Company, Inc. SN 248,433. Pub. 11-1-66. Filed 6-20-66.

822,337. SURE-CARB. Crown Cork & Seal Company, Inc. SN 248,434. Pub. 11-1-66. Filed 6-20-66.

822,338. LASSY. Carl O. Lassy, d.b.a. Lassy Tool Co. SN 248,919. Pub. 11-1-66. Filed 6-24-66.

822,339. HARTFORD. The Hartford Special Machinery Company. SN 249,009. Pub. 11-1-66. Filed 6-27-66.

822,340. BI-BAND. The Henry G. Thompson Company. SN 252,713. Pub. 11-1-66. Filed 8-19-66.

Class 24 — Laundry Appliances and Machines

822,341. SUSSMAN. Automatic Steam Products Corp. SN 223,276. Pub. 11-1-66. Filed 7-14-65.

Class 26 — Measuring and Scientific Appliances

822,293. (See Class 21 for this trademark.)

822,342. EDON. Edon Industrial Products. SN 206,837. Pub. 11-1-66. Filed 11-24-64.

822,343. LINASEC. Compugraphic Corporation. SN 220,462. Pub. 11-1-66. Filed 6-7-65.

822,344. STERI-KIT. Chester E. Beard, d.b.a. The Beard Company. SN 228,607. Pub. 11-1-66. Filed 9-27-65.

822,345. MINOX AND DESIGN. Minox Corporation. SN 234,357. Pub. 11-1-66. Filed 12-10-65.

822,346. POD. Dresser Industries, Inc. SN 234,887. Pub. 11-1-66. Filed 12-20-65.

822,347. BAILEY AND DESIGN. Bailey Meter Company. SN 235,156. Pub. 11-1-66. Filed 12-23-65.

822,348. PERMATON. Ametek, Inc. SN 235,481. Pub. 11-1-66. Filed 12-29-65.

822,349. MULTRA. Muirhead & Co. Limited. SN 235,922. Pub. 11-1-66. Filed 1-6-66.

822,350. MIMIK. Mimik, Ltd. SN 247,468. Pub. 11-1-66. Filed 6-7-66.

822,351. SWIFTA. Paul Halter. SN 250,801. Pub. 11-1-66. Filed 7-22-66.

Class 27 — Horological Instruments

822,352. NIVAROX AND DESIGN. Nivarox S.A. SN 229,275. Pub. 11-1-66. Filed 10-4-65.

Class 28 — Jewelry and Precious-Metal Ware

822,353. N NORCROSS. Norcross, Inc. SN 223,333. Pub. 11-1-66. Filed 7-14-65.

822,354. TWIN LOCK. Anson Incorporated. SN 227,226. Pub. 11-1-66. Filed 9-7-65.

822,355. SEA MAID. Albert Journeay, Jr., d.b.a. Sea Maid. SN 234,203. Pub. 11-1-66. Filed 12-8-65.

822,356. KING OF MY HEART. McGrath-Hamin, Inc. SN 235,324. Pub. 11-1-66. Filed 12-27-65.

Class 29 — Brooms, Brushes, and Dusters

822,357. IDEAL AND DESIGN. Ideal Brushes, Inc. SN 250,891. Pub. 11-1-66. Filed 7-12-66.

Class 31 — Filters and Refrigerators

822,358. KOLD PACK AND DESIGN. Taylor-Burch Refrigeration Products, Inc. SN. 225,374. Pub. 11-1-66. Filed 8-9-65.

822,359. MITEX. Millipore Filter Corporation. SN 244,508. Pub. 11-1-66. Filed 4-28-66.

Class 32 — Furniture and Upholstery

822,360. SI STAR INDUSTRIES. Star Industries. SN 251,774. Pub. 11-1-66. Filed 8-5-66.

Class 33 — Glassware

822,361. MINI-BLEND. John Oster Manufacturing Co. SN 231,200. Pub. 11-1-66. Filed 10-22-65.

822,362. CURTIS. Wilbur Curtis Co., Inc. SN 244,469. Pub. 11-1-66. Filed 4-28-66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

822,251. (See Class 13 for this trademark.)

822,293. (See Class 21 for this trademark.)

822,363. GOVERNAIR. United States Register Company, d.b.a. United States Register Co. SN 226,194. Pub. 11-1-66. Filed 8-19-65.

822,364. CHECO. Chittom Equipment Company. SN 234,386. Pub. 11-1-66. Filed 12-13-65.

822,365. LIVING AIR. Lennox Industries Inc. SN 235,682. Pub. 11-1-66. Filed 1-3-66.

822,366. ROLEC. Rolec, Inc. SN 236,845. Pub. 11-1-66. Filed 1-19-66.

822,367. CEN-TRIFIC-AIR. Cen-Trific-Air Products, Inc. SN 239,965. Pub. 11-1-66. Filed 3-2-66.

822,368. DYNAGRIP. All-State Welding Alloys Co., Inc. SN 240,401. Pub. 11-1-66. Filed 3-8-66.

822,369. DEGREE AND DESIGN. Degree Corporation. SN 240,590. Pub. 11-1-66. Filed 3-10-66.

822,370. D AND DESIGN. Degree Corporation. SN 240,592. Pub. 11-1-66. Filed 3-10-66.

822,371. DRAFTDODGER. Hill's Sheet Metal. SN 240,738. Pub. 11-1-66. Filed 3-11-66.

822,372. YELLOW JACKET. Air Reduction Company, Incorporated. SN 241,010. Pub. 11-1-66. Filed 3-10-66.

822,373. SPRAY-FILM. Aqua-Chem, Inc. SN 241,730. Pub. 11-1-66. Filed 3-24-66.

822,374. SIL-A-TRAN. Mid-States Welder Manufacturing Company. SN 241,917. Pub. 11-1-66. Filed 3-25-66.

822,375. GOLDEN CUP AND DESIGN. Sun-Ray Burner Manufacturing Corp. SN 252,037. Pub. 11-1-66. Filed 8-9-66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

822,376. BARWOOD. Barwood Manufacturing Corp. SN 228,873. Pub. 11-1-66. Filed 9-29-65.

822,377. PACK-UNYTE. J. C. Whitlam Manufacturing Co., Inc. SN 240,997. Pub. 11-1-66. Filed 3-14-66.

Class 36 — Musical Instruments and Supplies

822,378. TINY PAL. Standard Radio Corporation. SN 224,253. Pub. 11-1-66. Filed 7-26-65.

Class 37 — Paper and Stationery

822,379. NORTH-RITE. All-Rite Pen Company, Inc., assignee of Northern Industrial Products. SN 217,132. Pub. 11-1-66. Filed 4-22-65.

822,380. MOISTRITE. The Mead Corporation. SN 225,658. Pub. 11-1-66. Filed 8-13-65.

822,381. RAPIDFORMS. Regent Standard Forms, Inc. SN 229,872. Pub. 11-1-66. Filed 10-11-65.

822,382. NAPAC. National Packaging Products Corporation. SN 234,056. Pub. 11-1-66. Filed 12-6-65.

822,383. NAPAC AND DESIGN. National Packaging Products Corporation. SN 234,139. Pub. 11-1-66. Filed 12-7-65.

822,384. PUFKINS. The Procter & Gamble Company. SN 237,871. Pub. 11-1-66. Filed 2-2-66.

822,385. JUSTRITE ENVELOPES J AND DESIGN. Justrite Envelope Manufacturing Co. SN 238,537. Pub. 11-1-66. Filed 2-10-66.

822,386. HOLLISTER. Hollister Incorporated. MULTIPLE CLASS (Classes 37, 44, and 50). SN 238,689. Pub. 11-1-66. Filed 2-14-66.

822,387. FLAMBEAU BOND AND DESIGN. Flambeau Paper Company. SN 241,135. Pub. 11-1-66. Filed 3-16-66.

822,388. Q SYSTEM STATEMENTS. Minnesota Mining and Manufacturing Company. SN 242,630. Pub. 11-1-66. Filed 4-4-66.

Class 38 — Prints and Publications

822,389. MAN (DESIGN). Cliff's Notes, Incorporated. SN 225,927. Pub. 11-1-66. Filed 8-18-65.

822,390. MUNSELL. Munsell Color Company, Inc. SN 226,553. Pub. 11-1-66. Filed 8-26-65.

822,391. AMPAC POLITICAL STETHOSCOPE AND DESIGN. American Medical Political Action Committee, d.b.a. AMPAC. SN 226,885. Pub. 11-1-66. Filed 9-1-65.

822,392. AMPAC POLITICAL STETHOSCOPE NEWSLETTER AND DESIGN. American Medical Political Action Committee, d.b.a. AMPAC. SN 226,886. Pub. 11-1-66. Filed 9-1-65.

822,393. SMART CARD. Brown & Haley. SN 227,822. Pub. 11-1-66. Filed 9-15-65.

822,394. MAIDENS. Enrol Publishing Company, Inc. SN 229,001. Pub. 11-1-66. Filed 9-30-65.

822,395. FEMINIQUE. The Tribune Company. SN 229,467. Pub. 11-1-66. Filed 10-6-65.

822,396. TREE (DESIGN). Leanin' Tree Publishing Co., Inc. SN 230,263. Pub. 11-1-66. Filed 10-15-65.

822,397. BLENDMASTER. Continental Oil Company. SN 232,451. Pub. 11-1-66. Filed 11-10-65.

822,398. TERMINATOR. AMP Incorporated. SN 233,241. Pub. 11-1-66. Filed 11-24-65.

822,399. LARRY HARMON'S LAUREL AND HARDY AND DESIGN. Larry Harmon Pictures Corporation. SN 233,920. Pub. 11-1-66. Filed 12-3-65.

822,400. FINANCIAL EXECUTIVE. Financial Executives Institute. SN 236,740. Pub. 11-1-66. Filed 1-18-66.

822,401. SPORTS MEMORIES. David P. Fidler. SN 241,447. Pub. 11-1-66. Filed 3-21-66.

822,402. HERDWATCHER. Lewis H. Strauss. SN 245,629. Pub. 11-1-66. Filed 5-13-66.

Class 39 — Clothing

822,183. (See Class 1 for this trademark.)

822,403. MARCH MELLOWS. Wellco Ro-Search Industries, Inc. SN 204,338. Pub. 11-1-66. Filed 10-19-64.

822,404. MITCHELL. Mitchell Bros. Incorporated. SN 208,377. Pub. 11-1-66. Filed 12-17-64.

822,405. YOUNGSTERS AND DESIGN. Flora I. Talluto, d.b.a. Youngsters Shoe Manufacturers. SN 210,617. Pub. 11-1-66. Filed 1-25-65.

822,406. TREFFER. Christian Dierig Aktiengesellschaft. MULTIPLE CLASS (Classes 39 and 42). SN 211,628. Pub. 11-1-66. Filed 2-9-65.

822,407. PINDYCK AND DESIGN. Charles Pindyck, Inc. SN 213,475. Pub. 11-1-66. Filed 3-5-65.

822,408. OXFORDIAN. Phillips-Van Heusen Corporation. SN 226,561. Pub. 11-1-66. Filed 8-26-65.

822,409. CRUISE MATES. David H. Smith, Inc. SN 227,967. Pub. 11-1-66. Filed 9-16-65.

822,410. PANTASTICKS AND DESIGN. The H. Zusman & Son Company. SN 229,908. Pub. 11-1-66. Filed 10-11-65.

822,411. SOFT TREAT. Exquisite Form Industries, Inc. SN 230,371. Pub. 11-1-66. Filed 10-18-65.

822,412. WAKKIES. Weldon, Inc. SN 230,466. Pub. 11-1-66. Filed 10-18-65.

822,413. WACKY. Weldon, Inc. SN 230,467. Pub. 11-1-66. Filed 10-18-65.

822,414. HELON. Helen M. Peterson. SN 230,560. Pub. 11-1-66. Filed 10-19-65.

822,415. COUTURE INTERNATIONALE. Ford Lingerie, Inc. SN 232,828. Pub. 11-1-66. Filed 11-17-65.

822,416. PERFECTFORM. Perfectform Corporation. SN 233,384. Pub. 11-1-66. Filed 11-26-65.

822,417. BUDDHA ORIGINALS. William James Donovan, d.b.a. Buddha Originals. SN 233,473. Pub. 11–1–66. Filed 11–29–65.

822,418. KEY LARGO. Bayard Shirt Corp. SN 235,083. Pub. 11–1–66. Filed 12–22–65.

822,419. SURF-JAMMERS. Laguna Sportswear Co., Inc. SN 235,201. Pub. 11–1–66. Filed 12–23–65.

822,420. CYN LES AND DESIGN. Cyn Les Sportswear, Inc. SN 236,317. Pub. 11–1–66. Filed 1–10–66.

822,421. GOLDEN GRIP. Edward S. Fabry, d.b.a. Fabry Glove & Mitten Company. SN 236,581. Pub. 11–1–66. Filed 1–17–66.

822,422. CANDI'S CORNER. Russ Togs, Inc. SN 236,923. Pub. 11–1–66. Filed 1–20–66.

822,423. BOEPPLE. Boepple Sportswear Mills, Inc. SN 236,957. Pub. 11–1–66. Filed 1–21–66.

822,424. JUNIORBALOO. Phil Rose of California, Inc. SN 238,779. Pub. 11–1–66. Filed 2–14–66.

822,425. NOW. F. Jacobson & Sons, Inc. SN 239,052. Pub. 11–1–66. Filed 2–17–66.

822,426. FOUR ON THE FLOOR. F. Jacobson & Sons, Inc. SN 239,053. Pub. 11–1–66. Filed 2–17–66.

822,427. STAND/AID. Chadbourn Gotham, Inc. SN 239,226. Pub. 11–1–66. Filed 2–21–66.

822,428. ATMOSHEER. Chadbourn Gotham, Inc. SN 239,227. Pub. 11–1–66. Filed 2–21–66.

822,429. STONE MOUNTAIN AND DESIGN. Chadbourn Gotham, Inc. SN 239,228. Pub. 11–1–66. Filed 2–21–66.

822,430. SHORT GALS! Shoecraft, Inc. SN 239,329. Pub. 11–1–66. Filed 2–21–66.

822,431. DESIGN OF A MAN ON A PEDESTAL. Brockton Footwear, Inc. SN 239,373. Pub. 11–1–66. Filed 2–23–66.

822,432. FOREST PARK. Pannill Knitting Company, Inc. SN 239,537. Pub. 11–1–66. Filed 2–24–66.

822,433. TREBLA. Bernard Albert, d.b.a. Barney Albert Company. SN 239,693. Pub. 11–1–66. Filed 2–28–66.

822,434. THE PERSIMMON SHOP. Sanford L. Worth, d.b.a. The Persimmon Shop. SN 242,524. Pub. 11–1–66. Filed 4–1–66.

822,435. PISA ETC. AND DESIGN. Landesman Bros. Inc. SN 243,679. Pub. 11–1–66. Filed 4–18–66.

822,436. KISTLER 1840 BENCH BRAND (DESIGN). Penn Leather Company. SN 246,238. Pub. 11–1–66. Filed 5–23–66.

822,437. KID GLOVES. Johnson & Johnson. SN 252,993. Pub. 11–1–66. Filed 8–24–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

822,406. (See Class 39 for this trademark.)

822,438. TEMPO. Stevens Linen Associates, Inc. SN 215,660. Pub. 11–1–66. Filed 4–2–65.

822,439. TRIAS. Deutsche Bobinet-Industrie AG. SN 230,736. Pub. 11–1–66. Filed 10–20–65.

822,440. SWIFT AND DESIGN. Swift Manufacturing Company. SN 237,626. Pub. 11–1–66. Filed 1–19–66.

822,441. OMEGA. J. P. Stevens & Co., Inc. SN 238,125. Pub. 11–1–66. Filed 2–4–66.

822,442. PROTHERM AND DESIGN. Prodesco, Inc. SN 242,660. Pub. 11–1–66. Filed 4–4–66.

822,443. TRICOPRESS. Collins & Aikman Corporation. SN 243,309. Pub. 11–1–66. Filed 4–13–66.

822,444. AQUETTE. Deering Milliken, Inc. SN 243,414. Pub. 11–1–66. Filed 4–14–66.

822,445. AQUA VIVRA. Deering Milliken, Inc. SN 243,415. Pub. 11–1–66. Filed 4–14–66.

822,446. HOMESTEAD. United Merchants and Manufacturers, Inc. SN 243,502. Pub. 11–1–66. Filed 4–14–66.

Class 43 — Thread and Yarn

822,447. HEURE JOYEUSE. Filatures Prouvost & Cie, La Lainiere de Roubaix. SN 235,648. Pub. 11–1–66. Filed 1–3–66.

822,448. ORAGE. Filatures Prouvost & Cie, La Lainiere de Roubaix. SN 238,945. Pub. 11–1–66. Filed 2–16–66.

822,449. PERCE NEIGE. Filatures Prouvost & Cie, La Lainiere de Roubaix. SN 238,947. Pub. 11–1–66. Filed 2–16–66.

822,450. BEEHIVE (DESIGN). Patons & Baldwins Limited. SN 242,838. Pub. 11–1–66. Filed 4–6–66.

Class 44 — Dental, Medical, and Surgical Appliances

822,386. (See Class 37 for this trademark.)

Class 45 — Soft Drinks and Carbonated Waters

822,451. "FRESH UP" WITH 7 UP. The Seven-Up Company. SN 200,289. Pub. 11–1–66. Filed 8–20–64.

822,452. FOUR SEASON. Watkins Products, Inc. SN 233,228. Pub. 11–1–66. Filed 11–22–65.

822,453. CORINNIS AND DESIGNS. Hinckley & Schmitt, Inc. SN 237,813. Pub. 11–1–66. Filed 2–3–66.

822,454. NEPTUNE AND DESIGN. Hinckley & Schmitt, Inc. SN 238,030. Pub. 11–1–66. Filed 2–3–66.

Class 46 — Foods and Ingredients of Foods

822,201. (See Class 6 for this trademark.)

822,455. MRS. J'S. Frank E. Jakutis, d.b.a. Mrs. J's Food Products Company. SN 145,563. Pub. 11–1–66. Filed 5–28–62.

822,456. SCHAFER'S OLD HEIDELBERG AND DESIGN. Schafer Bakeries Inc. SN 167,579. Pub. 11–1–66. Filed 4–25–63.

822,457. KLEIN'S MILK CHOCOLATE TREATS. Klein Chocolate Company. SN 178,007. Pub. 11–1–66. Filed 9–30–63.

822,458. DUTCHIES. Estee Candy Co., Inc. SN 183,207. Pub. 11–1–66. Filed 12–18–63.

822,459. WAYNE FRYERS. Allied Mills, Inc. SN 193,084. Pub. 11–1–66. Filed 5–11–64.

822,460. YUMY. Yumy, Inc. SN 206,110. Pub. 11–1–66. Filed 11–12–64.

822,461. REPRESENTATION OF A BAKER. Yumy, Inc. SN 206,111. Pub. 11–1–66. Filed 11–12–64.

822,462. LITTLE KING AND DESIGN. King Kullen Grocery Co., Inc. SN 208,083. Pub. 7–6–65. Filed 12–14–64.

822,463. CHUBBY CHICKEN. A & W Root Beer Co. SN 211,010. Pub. 11–1–66. Filed 2–1–65.

822,464. WESTENER AND DESIGN. Jackson Produce Company. SN 213,019. Pub. 11–1–66. Filed 3–1–65.

822,465. ROSSO. Patrick Cudahy Inc. SN 214,083. Pub. 11–1–66. Filed 3–15–65.

822,466. LINDEN FARMS. Loblaw Inc. SN 217,367. Pub. 11–1–66. Filed 4–26–65.

822,467. POMPADOUR. Salada Foods Ltd. SN 221,638. Pub. 11–1–66. Filed 6–21–65.

822,468. ABBA. Abba-Fyrtornet AB. SN 224,360. Pub. 11–1–66. Filed 7–28–65.

822,469. ABBA FYRTORNET AND DESIGN. Abba-Fyrtornet AB. SN 224,361. Pub. 11–1–66. Filed 7–28–65.

822,470. AGWAY. Agway Inc. SN 224,368. Pub. 11–1–66. Filed 7–28–65.

822,471. APACHE KISSES AND DESIGN. Thelma Lu's, Inc. SN 229,605. Pub. 11–1–66. Filed 10–7–65.

822,472. CARDIOTROPHIN. Vitamin Products Company, d.b.a. Standard Process Laboratories. SN 230,316. Pub. 11–1–66. Filed 10–15–65.

822,473. OSTOGEN. Vitamin Products Company, d.b.a. Standard Process Laboratories. SN 230,317. Pub. 11–1–66. Filed 10–15–65.

822,474. ZYMEX. Vitamin Products Company, d.b.a. Standard Process Laboratories. SN 230,318. Pub. 11–1–66. Filed 10–15–65.

822,475. PNEUMOTROPHIN. Vitamin Products Company, d.b.a. Standard Process Laboratories. SN 230,323. Pub. 11–1–66. Filed 10–15–65.

822,476. NUTRIMERE. Vitamin Products Company, d.b.a. Standard Process Laboratories. SN 230,325. Pub. 11–1–66. Filed 10–15–65.

822,477. CYRO-YEAST. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,972. Pub. 11–1–66. Filed 10–21–65.

822,478. CYRUTA. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,975. Pub. 11–1–66. Filed 10–21–65.

822,479. FERROFOOD. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,976. Pub. 11–1–66. Filed 10–21–65.

822,480. CYROFOOD. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,977. Pub. 11–1–66. Filed 10–21–65.

822,481. PROTEFOOD. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,978. Pub. 11–1–66. Filed 10–21–65.

822,482. CALCIFOOD. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,979. Pub. 11–1–66. Filed 10–21–65.

822,483. ONION-TINI. J. Warren Bowman, Inc. SN 231,041. Pub. 11–1–66. Filed 10–22–65.

822,484. TIME 4. J. Warren Bowman, Inc. SN 231,042. Pub. 11–1–66. Filed 10–22–65.

822,485. SVR. Di Giorgio Corporation, d.b.a. Di Giorgio Fruit Corporation. SN 231,068. Pub. 11–1–66. Filed 10–22–65.

822,486. REPRESENTATION OF A POURING SPOON AND CANDY (DESIGN). Brown & Haley. SN 231,382. Pub. 11–1–66. Filed 10–23–65.

822,487. SELECT FARMS DEW FRESH AND DESIGN. Purity Stores, Inc. SN 231,650. Pub. 11–1–66. Filed 10–26–65.

822,488. DRISCOLL. Driscoll Strawberry Associates, Inc. SN 231,815. Pub. 11–1–66. Filed 10–29–65.

822,489. TEN PENNY. Little Crow Milling Company, Inc. SN 234,607. Pub. 11–1–66. Filed 12–13–65.

822,490. TOUCH OF EUROPE. Muriel Investment Company. SN 235,323. Pub. 11–1–66. Filed 12–27–65.

822,491. PARTY TYME. Freund Baking Company. SN 235,502. Pub. 11–1–66. Filed 12–29–65.

822,492. DIALAC. Foremost Dairies, Inc. SN 236,362. Pub. 11–1–66. Filed 1–13–66.

822,493. SUPER MAID. Super Food Services, Inc. SN 241,387. Pub. 11–1–66. Filed 3–18–66.

822,494. TEMPLE GOLD. The National Sugar Refining Company. SN 243,886. Pub. 11–1–66. Filed 4–20–66.

822,495. PANZAROTTI. Leopoldo Tarantini, d.b.a. Pizza King Tarantini. SN 246,241. Pub. 11–1–66. Filed 5–23–66.

822,496. JUMBO GREEN. J. H. Meidl, d.b.a. J. H. Meidl Company. SN 246,838. Pub. 11–1–66. Filed 5–31–66.

822,497. CENTRAL MARKET DELUXE. Central Market, Inc. SN 247,551. Pub. 11–1–66. Filed 6–8–66.

822,498. GOBBLES. General Mills, Inc. SN 250,897. Pub. 11–1–66. Filed 7–25–66.

822,499. TOKENS. General Mills, Inc. SN 250,898. Pub. 11–1–66. Filed 7–25–66.

822,500. BADGES. General Mills, Inc. SN 250,899. Pub. 11–1–66. Filed 7–25–66.

822,501. CLOCKS. General Mills, Inc. SN 250,900. Pub. 11–1–66. Filed 7–25–66.

822,502. CASTLES. General Mills, Inc. SN 250,901. Pub. 11–1–66. Filed 7–25–66.

822,503. FLUTTERBYS. General Mills, Inc. SN 250,902. Pub. 11–1–66. Filed 7–25–66.

822,504. BEANIES. General Mills, Inc. SN 250,903. Pub. 11–1–66. Filed 7–25–66.

822,505. PENNIES. General Mills, Inc. SN 250,904. Pub. 11–1–66. Filed 7–25–66.

Class 47 — Wines

822,506. CHATEAU LIBERTAS AND DESIGN. The Stellenbosch Farmers' Winery Limited. SN 234,949. Pub. 11–1–66. Filed 12–20–65.

822,507. TEMPLAR. Monarch Wine Co., Inc. SN 235,210. Pub. 11–1–66. Filed 12–23–65.

822,508. DACHEVI. Schenley Distillers, Inc., d.b.a. Weston Winery. SN 236,013. Pub. 11–1–66. Filed 1–7–66.

Class 48 — Malt Beverages and Liquors

822,509. WURZBURGER. Wurzburger Hofbrau Aktiengesellschaft. SN 194,449. Pub. 11–1–66. Filed 5–27–64.

822,510. STITE BY GLUEK. G. Heileman Brewing Company, Inc. SN 236,600. Pub. 11–1–66. Filed 1–17–66.

Class 49 — Distilled Alcoholic Liquors

822,511. AMER-BASQUE. Jules Berman & Associates, Inc. SN 233,062. Pub. 11–1–66. Filed 11–22–65.

822,512. MARIACHI. Joseph E. Seagram & Sons, Inc. SN 233,950. Pub. 11–1–66. Filed 12–3–65.

822,513. SOLID GOLD. Medley Distilling Company, d.b.a. Solid Gold Distilling Company. SN 234,047. Pub. 11–1–66. Filed 12–6–65.

822,514. BRALATTA. Bernard A. David, d.b.a. Liqueur Specialties Co. SN 234,808. Pub. 11–1–66. Filed 12–17–65.

822,515. GROSVENOR. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited. SN 237,938. Pub. 11–1–66. Filed 2–3–66.

822,516. DELMONICO. Hiram Walker & Sons (Scotland) Limited. SN 238,637. Pub. 11–1–66. Filed 2–11–66.

Class 50 — Merchandise Not Otherwise Classified

822,304. (See Class 21 for this trademark.)

822,386. (See Class 37 for this trademark.)

822,517. BIMCO AND DESIGN. S. Berger Import & Mfg. Corp. SN 208,988. Pub. 11–1–66. Filed 12–29–64.

822,518. WELCOME STRANGER BY RIEGEL. Riegel Textile Corporation. SN 211,931. Pub. 11–1–66. Filed 2–12–65.

822,519. HANDY. Owens-Illinois, Inc. SN 219,453. Pub. 11–1–66. Filed 5–21–65.

822,520. MUNSELL. Munsell Color Company, Inc. SN 226,552. Pub. 11–1–66. Filed 8–26–65.

822,521. FM. General Numismatics Corporation. SN 231,562. Pub. 11-1-66. Filed 10-24-65.

822,522. FREDRIX. E. H. & A. C. Friedrichs Co. SN 232,398. Pub. 11-1-66. Filed 11-9-65.

822,523. F AND DESIGN. E. H. & A. C. Friedrichs Co. SN 234,410. Pub. 11-1-66. Filed 12-13-65.

822,524. RED LION. E. H. & A. C. Friedrichs Co. SN 234,411. Pub. 11-1-66. Filed 12-13-65.

822,525. DADDY'S POCKETS. Donald Austerman and John Burgoyne. SN 243,625. Pub. 11-1-66. Filed 4-18-66.

822,526. FLAMEGARD. Socony Mobil Oil Company, Inc. SN 243,920. Pub. 11-1-66. Filed 4-20-66.

822,527. ALLMAG. Magna Visual, Inc. SN 244,004. Pub. 11-1-66. Filed 4-21-66.

822,528. STRUCTION. Dimensional Concepts, Inc. SN 247,204. Pub. 11-1-66. Filed 6-3-66.

Class 51 — Cosmetics and Toilet Preparations

822,529. AURA. Dorothy Perkins Cosmetics, Inc. SN 158,933. Pub. 11-1-66. Filed 12-11-62.

822,530. ODOL AND DESIGN. Odol Chemical Corporation. SN 193,809. Pub. 11-1-6. Filed 5-19-64.

822,531. HATE THAT GRAY? WASH IT AWAY! Clairol Incorporated. SN 199,885. Pub. 11-1-66. Filed 8-14-64.

822,532. CHANDOR. Chandor SA. MULTIPLE CLASS (Classes 51 and 52). SN 209,334. Pub. 11-1-66. Filed 1-5-65.

822,533. LADY MINK. Dr. John Claude McCoy, Sr., d.b.a. Dr. Claude McCoy's Mink Oil Products Co. SN 209,872. Pub. 11-1-66. Filed 1-13-65.

822,534. WESTERN LEATHER. Lifetime Products, Incorporated. SN 220,519. Pub. 11-1-66. Filed 6-7-65.

822,535. COREDO AND DESIGN. Anton A. Coreth, d.b.a. Anton Von Coreth. SN 223,781. Pub. 11-1-66. Filed 7-20-65.

822,536. CG. The Noxzema Chemical Company. SN 224,825. Pub. 11-1-66. Filed 7-27-65.

822,537. VO5. The Alberto-Culver Company. MULTIPLE CLASS (Classes 51 and 52). SN 225,912. Pub. 11-1-66. Filed 8-18-65.

822,538. CHAIRMAN. Stanley Home Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 226,175. Pub. 11-1-66. Filed 8-20-65.

822,539. NATURAL GLORY. Alberto-Culver Company. SN 231,877. Pub. 11-1-66. Filed 11-1-65.

822,540. SUBTLE TOUCH. Cecilia Products Ltd. SN 232,526. Pub. 11-1-66. Filed 11-12-65.

822,541. BUSSER. Manuel Buendia, d.b.a. Busser Hair Tint Company. SN 236,176. Pub. 11-1-66. Filed 1-11-66.

822,542. DESIGN OF A LIFE PRESERVER. John R. Virus, d.b.a. Brandy Harvest. SN 237,500. Pub. 11-1-66. Filed 1-27-66.

822,543. STUDD. Hi-Fashion, Inc. SN 240,299. Pub. 11-1-66. Filed 3-7-66.

822,544. TYCON. Freeman Industries, Inc. SN 240,725. Pub. 11-1-66. Filed 3-11-66.

822,545. MORNING 'TIL NIGHT. Carter-Wallace, Inc. SN 241,750. Pub. 11-1-66. Filed 3-24-66.

822,546. NUTRESS. Nutress Laboratories, Inc. MULTIPLE CLASS (Classes 51 and 52.). SN 246,012. Pub. 11-1-66. Filed 5-23-66.

822,547. LOTIONS OF LOVE BY JERGENS. The Andrew Jergens Company. SN 248,576. Pub. 11-1-66. Filed 6-21-66.

822,548. RITUAL. Lanvin-Charles of the Ritz, Inc. SN 250,722. Pub. 11-1-66. Filed 7-21-66.

Class 52 — Detergents and Soaps

822,181. (See Class 1 for this trademark.)

822,182. (See Class 1 for this trademark.)

822,262. (See Class 16 for this trademark.)

822,532. (See Class 51 for this trademark.)

822,537. (See Class 51 for this trademark.)

822,538. (See Class 51 for this trademark.)

822,546. (See Class 51 for this trademark.)

822,549. SKIDOO. Consolidated Stamp Manufacturing Company. SN 210,194. Pub. 11-1-66. Filed 1-19-65.

822,550. OUR DELUXE. The Hewitt Soap Company, Inc. SN 213,972. Pub. 11-1-66. Filed 3-12-65.

822,551. BIB. Geigy Chemical Corporation. SN 233,591. Pub. 11-1-66. Filed 11-30-65.

822,552. DOWN THE DRAIN. Aerosol Corporation of America. SN 241,406. Pub. 11-1-66. Filed 3-21-66.

822, 553. SHAMP-PET AND DESIGN. Samuel J. Foosaner, d.b.a. Better Products Co. SN 242,445. Pub. 11-1-66. Filed 4-1-66.

822,554. GLITTO. Lever Brothers Company. SN 250,230. Pub. 11-1-66. Filed 7-14-66.

Service Marks

Class 100 — Miscellaneous

822,555. FARMER'S DAUGHTER. Farmer's Daughter, Inc. SN 169,027. Pub. 11-1-66. Filed 5-16-63.

822,556. SILHOUETTE (DESIGN). Farmers' Daughter, Inc. SN 169,028. Pub. 11-1-66. Filed 5-16-63.

822,557. PERCEPTIVE. Perceptive Management Associates, Inc. SN 180,756. Pub. 11-1-66. Filed 11-8-63.

822,558. WEYERHAEUSER. Weyerhaeuser Company. SN 194,938-I. Pub. 11-1-66. Filed 6-4-64.

822,559. MS² AND DESIGN. Kiefer-Stewart Company, Inc. MULTIPLE CLASS (Classes 100, 101, and 107). SN 198,361. Pub. 11-1-66. Filed 7-22-64.

822,560. CHEZ BON. Ramada Inns, Inc. SN 211,576. Pub. 11-1-66. Filed 2-8-65.

822,561. OWL (DESIGN). Allstate Enterprises, Inc. SN 222,097. Pub. 11-1-66. 6-28-65.

822,562. MINI-PRICING. Stop & Shop, Inc. SN 228,574. Pub. 11-1-66. Filed 9-24-65.

822,563. MOTEL 6 AND DESIGN. Motel -6- of California. SN 229,993. Pub. 11-1-66. Filed 10-12-65.

822,564. MISCELLANEOUS DESIGN. Harsco Corporation. SN 232,311. Pub. 11-1-66. Filed 11-8-65.

822,565. WWP AND DESIGN. Western Wood Products Association. SN 240,042. Pub. 11-1-66. Filed 3-2-66.

822,566. GOLDEN EAGLE AND DESIGN. Golden Eagle Motor Inn, Inc. SN 241,142. Pub. 11-1-66. Filed 3-16-66.

Class 101 — Advertising and Business

822,559. (See Class 100 for this trademark.)

822,567. DREAM MAKER SHOP. Palmer Bedding Company. SN 203,992. Pub. 11-1-66. Filed 10-14-64.

822,568. MISCELLANEOUS DESIGN. The Thorson Company. SN 204,209. Pub. 11-1-66. Filed 10-16-64.

822,569. PRAIRIE MARKET. Park Grant Company. SN 213,699. Pub. 11-1-66. Filed 3-9-65.

822,570. WHITE COLLAR GIRLS OF AMERICA, INCORPORATED. White Collar Girls of America, Incorporated. SN 215,468. Pub. 11-1-66. Filed 3-31-65.

822,571. CONVENIENT FOOD MART. Convenient Food Mart, Inc. SN 215,487. Pub. 11-1-66. Filed 4-1-65.

822,572. RAM ROME ARNOLD MARKETING SERVICES AND DESIGN. Rome Arnold & Company. SN 226,998. Pub. 11-1-66. Filed 9-2-65.

822,573. STEP. Eric Marden Associates, Inc. SN 246,089. Pub. 11-1-66. Filed 5-19-66.

Class 102 — Insurance and Financial

822,574. LIFEGUARDED. American Republic Insurance Company. SN 183,546. Pub. 11-1-66. Filed 12-26-63.

822,575. HOME OWNERS SECURITY TRUST. William Bass & Associates, Inc. SN 198,617. Pub. 11-1-66. Filed 7-22-64.

822,576. ROOSTER DESIGN. First Federal Savings & Loan Association of Gainesville. SN 227,800. Pub. 11-1-66. Filed 9-9-65.

822,577. AETNA SEAL. Aetna Life Insurance Company. SN 232,049. Pub. 11-1-66. Filed 11-3-65.

822,578. DESIGN OF A HUMAN HOLDING A TELEPHONE. General Finance Corporation. SN 235,291. Pub. 11-1-66. Filed 12-27-65.

Class 103 — Construction and Repair

822,579. SMITH OIL AND DESIGN. Smith Oil Corporation. SN 222,773. Pub. 11-1-66. Filed 7-6-65.

822,580. CERTIFIED BURNER EFFICIENCY AND DESIGN. Union Oil Company of California. SN 232,098. Pub. 11-1-66. Filed 11-3-65.

822,581. DAPPER DAN. Winscott Corporation. SN 234,794. Pub. 11-1-66. Filed 12-16-65.

Class 104 — Communication

822,582. MR. DON'T BEE AND DESIGN. Romper Room, Inc. SN 217,499. Pub. 11-1-66. Filed 4-27-65.

Class 105 — Transportation and Storage

822,583. MILLER TOURS. Miller Tours, Inc. SN 227,699. Pub. 11-1-66. Filed 9-13-65.

822,584. SUPER SKUNK. California Western Railroad. SN 228,326. Pub. 11-1-66. Filed 9-22-65.

822,585. SKUNK (DESIGN). California Western Railroad. SN 228,327. Pub. 11-1-66. Filed 9-22-65.

Class 107 — Education and Entertainment

822,559. (See Class 100 for this trademark.)

822,586. BERLITZ TOTAL IMMERSION. The Berlitz Schools of Languages of America, Inc. SN 215,562. Pub. 10-25-66. Filed 3-31-65.

822,587. TOTAL IMMERSION. The Berlitz Schools of Languages of America, Inc. SN 215,563. Pub. 10-25-66. Filed 3-31-65.

822,588. B.T.I. The Berlitz Schools of Languages of America, Inc. SN 215,564. Pub. 10-25-66. Filed 3-31-65.

822,589. T.I. The Berlitz Schools of Languages of America, Inc. SN 215,565. Pub. 10-25-66. Filed 3-31-65.

822,590. AKAOHMEIA ACADEMY OF SUCCESSFUL ACHIEVEMENT. Sidney N. Bremer, d.b.a. Academy of Successful Achievement. SN 223,866. Pub. 11-1-66. Filed 7-21-65.

822,591. VICOUNTS. Richard D. Young. SN 231,962. Pub. 11-1-66. Filed 11-1-65.

Collective Membership Marks

Class 200

822,592. ERA. Electronic Representatives Association. SN 149,377. Pub. 11-1-66. Filed 7-19-62.

822,593. TRIANGLE WITH STAR (DESIGN). New York Yacht Club. SN 198,205. Pub. 11-1-66. Filed 7-20-64.

822,594. THE PACKAGING INSTITUTE AND DESIGN. The Packaging Institute, Inc. SN 233,293. Pub. 11-1-66. Filed 11-2-65.

822,595. C ETC. AND DESIGN. Choristers Guild. SN 234,880. Pub. 11-1-66. Filed 12-20-65.

Certification Marks

Class A — Goods

822,596. INCRAMET. International Copper Research Association, Inc. SN 214,765. Pub. 11-1-66. Filed 3-23-65.

822,597. GOLD BRICK HOME. Clay Products Association of the Southwest, Inc. SN 223,971. Pub. 11-1-66. Filed 7-22-65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 39 — Clothing

822,598. The Berger Brothers Company, New Haven, Conn. SN 208,066. Filed P.R. 10-1-64. Am. S.R. 11-16-66.

Designers ★★★ U.S.A.

For Women's Blouses, Jackets, Skirts, Suits and Negligees. First use Sept. 22, 1964.

TRADEMARK REGISTRATIONS RENEWED

55,965. AMERICAN. Cl. 42. 8–21–06.
57,536. SWAN. Cl. 52. 11–13–06.
57,674. FISH TAIL (DESIGN). Cl. 52. 11–27–06.
58,233. THE OVERLAND. Cl. 17. 12–11–06.
58,283. KOHLER. Cl. 36. 12–11–06.
58,489. DANBOLINE. Cl. 16. 12–18–06.
60,248. REMINGTON. Cl. 9. 1–29–07.
60,808. CHAIN WITHIN CIRCLE (DESIGN). Cl. 43. 2–5–07.
60,669. EBOLINE. Cl. 15. 2–19–07.
60,748. AUTO STROP. Cl. 23. 2–19–07.
60,767. VIM AND DESIGN. Cl. 35. 2–19–07.
61,366. PR AND DESIGN. Cl. 28. 3–19–07.
61,545. THREE IN ONE. Cl. 15. 3–26–07.
61,546. 3 IN 1 (DESIGN). Cl. 15. 3–26–07.
61,601. CREAMERY IDEAL BUTTER. Cl. 46. 3–26–07.
61,631. HOLZAPFEL'S AND DESIGN. Cl. 16. 4–2–07.
62,025. KEYSTONE. Cl. 13. 4–16–07.
62,313. MONARCH. Cl. 13. 4–30–07.
211,267. RIDGEWOOD AND DESIGN. Cl. 39. 4–6–26.
212,535. UNIVERSITY CLUB EXTRA QUALITY AND DESIGN. Cl. 39. 5–4–26.
216,525. ABRAHAM & STRAUS. Cl. 50. 8–10–26.
219,087. LIFETIME LEDGER. Cl. 37. 10–12–26.
220,913. CELANOL. Cl. 42. 11–16–26.
221,364. PULVO. Cl. 12. 11–30–26.
221,763. MANIKEW. Cl. 44. 12–7–26.
221,884. FLY DOOM AND DESIGN. Cl. 6. 12–14–26.
222,548. CRESCENT AND DESIGN. Cl. 37. 1–4–27.
222,863. HIGH FLEX. Cl. 35. 1–11–27.
223,144. HOOD AND DESIGN. Cl. 35. 1–18–27.
223,373. SUNTITE. Cl. 32. 2–1–27.
223,809. TENDERPAK. Cl. 46. 2–8–27.
223,868. NIDAR. Cl. 46. 2–15–27.
223,941. KALI-STEN-IKS AND DESIGN. Cl. 39. 2–15–27.
223,997. KLEANBORE AND DESIGN. Cl. 9. 2–15–27.
224,313. ASARCO. Cl. 14. 2–22–27.
224,608. VOLCK. Cl. 6. 3–1–27.
224,962. STIXIT. Cl. 5. 3–8–27.
225,227. NO-OXID-IZED WRAPPER. Cl. 6. 3–15–27.
225,919. RID-A-PAIN. Cl. 18. 3–29–27.
226,261. SELSHIRE AND DESIGN. Cl. 39. 4–5–27.
226,667. OLD MCBRAYER AND DESIGN. Cl. 49. 4–19–27.
226,702. CENTRAL. Cl. 23. 4–19–27.
226,703. CNT'L. Cl. 23. 4–19–27.
226,818. BELINDA HABANA AND DESIGN. Cl. 17. 4–19–27.
420,243. INSTANDRI. Cl. 11. 4–2–46.
425,005. SLITTERS'. Cl. 23. 10–29–46.
425,145. CIROSOL. Cl. 6. 11–5–46.
425,808. FIXAG. Cl. 12. 12–3–46.
425,925. PNEUDRAULIC. Cl. 23. 12–10–46.
426,003. THE PIPE MASTER. Cl. 23. 12–10–46.
426,168. SEALY. Cl. 32. 12–17–46.
426,270. DUART. Cl. 16. 12–24–46.
426,293. HELIPOT. Cl. 21. 12–24–46.
426,305. KC AND DESIGN. Cl. 26. 12–24–46.
426,441. OSMIX. Cl. 6. 12–24–46.
427,132. AIRBORNE. Cl. 3. 1–28–47.
427,148. LITTLE JEFF. Cl. 39. 1–28–47.
427,503. SEWER MASTER. Cl. 23. 2–11–47.
427,536. DURATEST. Cl. 27. 2–11–47.
427,537. TECHNATEST. Cl. 27. 2–11–47.
428,003. KIDDLE KARDS. Cl. 22. 3–4–47.
428,050. DARLING AND DESIGN. Cl. 22. 3–11–47.
428,156. LADY JEFF. Cl. 39. 3–11–47.
428,538. LUDA. Cl. 46. 3–25–47.
428,721. PC BRISTOL AND DESIGN. Cl. 12. 4–1–47.
428,723. PC ESSEX AND DESIGN. Cl. 12. 4–1–47.
428,724. PC VUE AND DESIGN. Cl. 12. 4–1–47.
429,384. SHOE SOLE (DESIGN). Cl. 39. 4–29–47.
429,387. MICCROTEX. Cl. 21. 4–29–47.
429,590. NEXT QUESTION. Cl. 38. 5–6–47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

692,628. STOP-RUST. Cl. 6. 2–9–60.

The following registrations issued Nov. 29, 1960

707,647. IRONTAN. Cl. 1.
707,653. NYCONE. Cl. 2.
707,655. AMERLAB. Cl. 4.
707,657. SASHAY. Cl. 6.
767,666. DELHI AND DESIGN. Cl. 6.
707,669. CABRITE. Cl. 6.
707,674. P–2–XX. Cl. 6.
707,675. S–224. Cl. 6.
707,676. 333. Cl. 6.
707,682. TRU-TONE. Cl. 12.
707,688. ALUMA-WOOD. Cl. 12.
707,700. ABC. Cl. 13.
707,708. SHIP N SHORE. Cl. 16.
707,711. OTASOL. Cl. 18.
707,712. NUTRITION-ALL. Cl. 18.
707,716. GAMAQUIL. Cl. 18.
707,723. SAV-ON. Cl. 18.
707,727. GBIDDA-RON. Cl. 18.
707,732. PANABARB. Cl. 18.
707,733. CEROLETS. Cl. 18.
707,734. PRENAUSEN. Cl. 18.
707,736. ALPEN. Cl. 18.
707,746. 5 FOR 3. Cl. 22.
707,753. FANTO. Cl. 22.
707,758. SCRAFFO. Cl. 22.
707,761. PERMA-LIFE MUFFLERS. Cl. 23.
707,762. HI-YIELD. Cl. 23.
707,765. INERTIA-MATIC AND DESIGN. Cl. 23.
707,780. HANDI-RAP. Cl. 23.
707,781. RZEPPA. Cl. 23.
707,789. ROMANESQUE. Cl. 27.
707,790. INTRIGUE. Cl. 28.
707,791. DIAMODA. Cl. 28.
707,794. UDDA SCRUBBA. Cl. 29.
707,797. PENGUIN. Cl. 31.
707,799. XTRACT O MOIST. Cl. 31.
707,801. ARVIN. Cl. 31.
707,802. JOLLY JACK AND DESIGN. Cl. 36.
707,810. WET 'N' STICK. Cl. 37.
707,813. THE LAST ARROW. Cl. 38.
707,814. OC. Cl. 38.
707,815. EMBASSY COURIER ETC. AND DESIGN. Cl. 38.
707,817. PAGETS BY SHELLEY PAIGE AND DESIGN. Cl. 39.
707,820. LAETA RAMAGE. Cl. 39.
707,822. GROTESQUE OF ALLIGATOR ON WEATHER-VANE. Cl. 39.
707,831. LABRETTE. Cl. 39.
707,835. PINK BAND. Cl. 39.
707,839. FASHIONS THAT FIT WELL BY KORDELL AND DESIGN. Cl. 39.
707,840. SOTTO BOSCO. Cl. 42.
707,847. FLAGSHIP AND DESIGN. Cl. 46.
707,854. LITTLE MISS COOKIE. Cl. 46.
707,855. CHIQUITA'S. Cl. 46.
707,856. FANCIFUL FIGURE (DESIGN). Cl. 46.
707,857. HOPPO. Cl. 46.
707,858. BONNEY BLUE AND DESIGN. Cl. 46.
707,860. VITALIZED. Cl. 46.
707,862. SUTTON PLACE ETC. AND DESIGN. Cl. 46.
707,863. MADISON AVE. AND DESIGN. Cl. 46.
707,874. SET 'EM UP JOES. Cl. 46.
707,875. SILVER CROSS AND DESIGN. Cl. 46.
707,876. PINEAPPLE ORANGE TREAT. Cl. 46.
707,880. BEAUTY FARM. Cl. 46.
707,882. FRECCIAROSSA. Cl. 47.
707,889. ECCOLITE. Cl. 50.
707,899. PERMA-RAIS. Cl. 100.
707,903. "ANALA-SYSTEM." Cl. 101.
707,906. A GOOD BRAND OF BANKING AND DESIGN. Cl. 102.
707,908. BEAUTY TOUCH AND DESIGN. Cl. 103.
707,910. VICTORIA CLEANERS. Cl. 105.
707,914. BIRTHDAY BANKROLL. Cl. 107.
707,922. COVERANGE. Cl. 34.
707,924. ASTRONAUTICS ENGINEERING. Cl. 38.
707,926. EXTRAIT DE MOELLE GARNIER. Cl. 51.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

710,397. TYROLIT. Cl. 4. 1–31–61. Tyrolit Company, Inc., New York, N.Y. Amended: In the statement, column 2, line 1, "emery wheels" is deleted and *grinding wheels and cut-off wheels* is inserted.

713,460. GBL. Cl. 23. 4–4–61. Foremost Machine Builders, Inc., Livingston, N.J. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *New Jersey* should be inserted.

770,790. SENTINEL. Cl. 26. 6–2–64. M. H. Rhodes, Inc., Hartford, Conn. Corrected: In the statement, column 1, line 1, "Connecticut" should be deleted and *Delaware* should be inserted.

796,663. FLEXIBOND. Cl. 21. 9–28–65. Electriflex Co., Roselle, Ill. Corrected: In the statement, column 1, line 1, "Electri-Flex Company" should be deleted and *Electriflex Co.* should be inserted.

816,599. CHLOROSOLVER. Cl. 31. 10–11–66. Diamond Alkali Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

818,432. PLAY MONEY-PLUS. Cl. 101. 11–8–66. Creative Marketing, Inc., Kalamazoo, Mich. Corrected: In the statement, column 2, line 2, "insurance" should be deleted and *issuance* should be inserted.

819,164. KERMALA. Cl. 42. 11–22–66. Aronian Hovsepian Stein, Philadelphia, Pa. Corrected: In the statement, column 1, line 1, "Aronia" should be deleted and *Aronian* should be inserted and before line 2, *% Strawbridge & Clothier, Dept. 621, Oriental Rugs* should be inserted.

INDEX OF REGISTRANTS

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A & W Root Beer Co., Santa Monica, Calif. 822,468, pub. 11–1–66. Cl. 46.
AMP Inc., Harrisburg, Pa. 707,780, canc. Cl. 23.
AMP Inc., Harrisburg, Pa. 822,398, pub. 11–1–66. Cl. 38.
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Abba-Fyrtornet AB, Stockholm, Sweden. 822,468, pub. 11–1–66. Cl. 46.
Abba-Fyrtornet AB, Stockholm, Sweden. 822,469, pub. 11–1–66. Cl. 46.
Abraham & Straus, Inc., New York, to Federated Department Stores, Inc., Brooklyn, N.Y. 216,525, ren. 1–17–67. Cl. 50.
Acerola Corp., The, Sabana Seca, Puerto Rico. 707,733, canc. Cl. 18.
Acme Markets, Inc. : *See*—
Kirschbraun & Sons.
Aetna Life Insurance Co., Hartford, Conn. 822,577, pub. 11–1–66. Cl. 102.
Aeroshade Co., Inc., The : *See*—
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Agliano, Joe, Tampa, Fla. 707,858, canc. Cl. 46.
Agway Inc., Syracuse, N.Y. 822,470, pub. 11–1–66. Cl. 46.
Aircraft Bolt Corp., Los Angeles, Calif. 707,700, canc. Cl. 13.
Airkem, Inc., Carlstadt, N.J. 426,441, ren. 1–17–67. Cl. 6.
Air Reduction Co., Inc., New York, N.Y. 822,372, pub. 11–1–66. Cl. 34.
Aktiebolaget Cernelle, Vegeholm, Sweden. 822,267, pub. 11–1–66. Cl. 18.
Aktiebolaget Ferrosan, Malmo, Sweden. 822,200, pub. 11–1–66. Cl. 6.
Albert, Bernard, d.b.a. Barney Albert Co., New York, N.Y. 822,433, pub. 11–1–66. Cl. 39.
Alberto-Culver Co., Melrose Park, Ill. 822,537, pub. 11–1–66. Multiple Class (Classes 51 and 52).
Alberto-Culver Co., Melrose Park, Ill. 822,539, pub. 11–1–66. Cl. 51.
Alexander Doll Co., Inc., d.b.a. Madame Alexander, New York, N.Y. 822,315, pub. 11–1–66. Cl. 22.
Allied Chemical Corp., New York, N.Y. 822,223, pub. 11–1–66. Cl. 6.
Allied Mills, Inc., Chicago, Ill. 822,459, pub. 11–1–66. Cl. 46.
Alligator Co., The, St. Louis, Mo. 707,822, canc. Cl. 39.
All-Rite Pen Co., Inc., from Northern Industrial Products, Hackensack, N.J. 822,379, pub. 11–1–66. Cl. 37.
Allstate Enterprises, Inc., Skokie, Ill. 822,561, pub. 11–1–66. Cl. 100.
All-State Welding Alloys Co., Inc., White Plains, N.Y. 822,-368, pub. 11–1–66. Cl. 34.
American Aviation Publications, Inc., Washington, D.C. 707,924, canc. Cl. 38.
American Cellulose & Chemical Mfg. Co., Ltd., to Celanese Corp., New York, N.Y. 220,918, ren. 1–17–67. Cl. 42.
American Components Inc., Conshohocken, Pa. 822,295, pub. 11–1–66. Cl. 21.
American Cyanamid Co., Wayne, N.J. 822,212, pub. 11–1–66. Cl. 6.
American Cyanamid Co., Wayne, N.J. 822,215, pub. 11–1–66. Cl. 6.
American Cyanamid Co., Wayne, N.J. 822,220, pub. 11–1–66. Cl. 6.
American Home Products Corp. : *See*—
Cole, G. W., Co.
American Medical Political Action Committee, d.b.a. AMPAC, Chicago, Ill. 822,391, pub. 11–1–66. Cl. 38.
American Medical Political Action Committee, d.b.a. AMPAC, Chicago, Ill. 822,392, pub. 11–1–66. Cl. 38.
American Mfg. Co., Inc. : *See*—
American Mfg. Co., The.
American Mfg. Co., The, New York, to American Mfg. Co., Inc., Brooklyn, N.Y. 55,965, ren. 1–17–67. Cl. 42.
American Republic Insurance Co., Des Moines, Iowa. 822,574, pub. 11–1–66. Cl. 102.
American Smelting and Refining Co., New York, N.Y. 224,-313, ren. 1–17–67. Cl. 14.
Amerlab Co. : *See*—
Anderson, Don A.
Ametek, Inc., Sellersville, Pa. 822,348, pub. 11–1–66. Cl. 26.
Anderson, Don A., d.b.a. Amerlab Co., Berkeley, Calif. 707,-655, canc. Cl. 4.
Anson Inc., Providence, R.I. 822,354, pub. 11–1–66. Cl. 28.
Antosek & Sons, Salisbury, N.C. 822,196, pub. 11–1–66. Cl. 3.
Apfelbaum, Alexander, from Cosmopolitan Exchange Corp., New York, N.Y. 707,802, canc. Cl. 36.
Aqua-Chem, Inc., Waukesha, Wis. 822,373, pub. 11–1–66. Cl. 34.
Arke Inc., New York, N.Y. 707,790, canc. Cl. 28.
Armstrong, S. A., Ltd., Toronto, Ontario, Canada. 822,251, pub. 11–1–66. Multiple Class (Classes 13, 23, and 34).
Arvan Products, Inc., Sharpsville, Pa. 707,801, canc. Cl. 31.
Ashland Oil & Refining Co. : *See*—
Valvoline Oil Co.
Austerman, Donald, and John Burgoyne, New York, N.Y. 822,525, pub. 11–1–66. Cl. 50.
Auto Strop Safety Razor Co., New York, N.Y., to The Gillette Co., Boston, Mass. 60,748, ren. 1–17–67. Cl. 28.
Automatic Steam Products Corp., New York, N.Y. 822,341, pub. 11–1–66. Cl. 24.
Azienda Agricola Frecciarossa di Odero Dr. Giorgio : *See*—
Odero, Giorgio.
Bailey Meter Co., Wickliffe, Ohio. 822,347, pub. 11–1–66. Cl. 26.
Ball, Geo. J., Inc., d.b.a. Jiffy-Pot Co. of America, West Chicago, Ill. 822,184, pub. 11–1–66. Cl. 1.
Barnes-Hind Laboratories, Sunnyvale, Calif. 822,282, pub. 11–1–66. Cl. 18.
Barwood Mfg. Corp., Everett, Mass. 822,376, pub. 11–1–66. Cl. 35.
Basic Inc., Cleveland, Ohio. 822,209, pub. 11–1–66. Cl. 6.
Bass, William, & Associates, Inc., Chicago, Ill. 822,575, pub. 11–1–66. Cl. 102.
Bata Shoe Co., Inc., Belcamp, Md. 822,183, pub. 11–1–66. Multiple Class (Classes 1 and 39).
Baxter Laboratories, Inc., d.b.a. Wallerstein Co., Morton Grove, Ill. 707,674, canc. Cl. 6.
Baxter Laboratories, Inc., d.b.a. Wallerstein Co., Morton Grove, Ill. 707,675, canc. Cl. 6.
Baxter Laboratories, Inc., d.b.a. Wallerstein Co., Morton Grove, Ill. 707,676, canc. Cl. 6.
Bayard Shirt Corp., New York, N.Y. 822,418, pub. 11–1–66. Cl. 39.
Beard, Chester E., d.b.a. The Beard Co., Hickory Flat, Miss. 822,344, pub. 11–1–66. Cl. 26.
Beard Co., The : *See*—
Beard, Chester E.
Beckman Instruments, Inc. : *See*—
National Technical Laboratories.
Berger, S., Import & Mfg. Corp., New York, N.Y. 822,517, pub. 11–1–66. Cl. 50.
Berger Brothers Co., The, New Haven, Conn. 822,598. Cl. 39.
Berlitz Schools of Languages of America, Inc., The, New York, N.Y. 822,856, pub. 10–25–66. Cl. 107.
Berlitz Schools of Languages of America, Inc., The, New York, N.Y. 822,587, pub. 10–25–66. Cl. 107.
Berlitz Schools of Languages of America, Inc., The, New York, N.Y. 822,588, pub. 11–1–66. Cl. 107.
Berlitz Schools of Languages of America, Inc., The, New York, N.Y. 822,589, pub. 11–1–66. Cl. 107.
Berman, Jules, & Associates, Inc., Beverly Hills, Calif. 822,-511, pub. 11–1–66. Cl. 49.
Betan Co., Inc., Knoxville, Tenn. 822,283, pub. 11–1–66. Cl. 18.
Better Products Co. : *See*—
Foosaner, Samuel J.
Bilt-Rite Baby Carriage Co. Inc., Brooklyn, N.Y. 822,289, pub. 11–1–66. Cl. 19.
Bix Mfg. Co., West Point, Iowa. 822,262, pub. 11–1–66. Multiple Class (Classes 16 and 52).
Bluegate Candle Co., Montara, Calif. 822,258, pub. 11–1–66. Cl. 15.
Boepple Sportswear Mills, Inc., New York, N.Y. 822,423, pub. 11–1–66. Cl. 39.
Boileau, Robert J., d.b.a. Robert J. Boileau and Associates, Memphis, Tenn. 707,903, canc. Cl. 101.
Boileau, Robert J., and Associates : *See*—
Boileau, Robert J.
Bowman, J. Warren, Inc., St. Petersburg, Fla. 822,483, pub. 11–1–66. Cl. 46.
Bowman, J. Warren, Inc., St. Petersburg, Fla. 822,484, pub. 11–1–66. Cl. 46.
Brandy Harvest : *See*—
Virus, John R.
Bremer, Sidney N., d.b.a. Academy of Successful Achievement, Columbia, S.C. 822,590, pub. 11–1–66. Cl. 107.
Bristol-Myers Co., New York, N.Y. 822,221, pub. 11–1–66. Cl. 6.
Brockton Footwear, Inc., Brockton, Mass. 822,431, pub. 11–1–66. Cl. 39.
Brother International Corp., New York, N.Y. 822,331, pub. 11–1–66. Cl. 22.
Brown & Haley, Tacoma, Wash. 822,393, pub. 11–1–66. Cl. 38.
Brown & Haley, Tacoma, Wash. 822,486, pub. 11–1–66. Cl. 46.
Bruco : *See*—
Rabin-Winters Corp.
Buddha Originals : *See*—
Donovan, William J.
Buddy L Corp., East Moline, Ill. 822,317, pub. 11–1–66. Cl. 22.
Budge Mfg. Co., Inc., Philadelphia, Pa. 822,286, pub. 11–1–66. Cl. 19.
Buendia, Manuel, d.b.a. Busser Hair Tint Co., New York, N.Y. 822,541, pub. 11–1–66. Cl. 51.
Busser Hair Tint Co. : *See*—
Buendia, Manuel.

Butler, Byron C., Phoenix, Ariz. 822,237, pub. 11-1-66. Cl. 12.

Cabot Corp.: *See*—
Cabot, Godfrey L., Inc.

Cabot, Godfrey L., Inc., to Cabot Corp., Boston, Mass. 707,669, canc. Cl. 6.

California Spray-Chemical Co., Watsonville, Calif., to Chevron Chemical Co., San Francisco, Calif. 224,608, ren. 1-17-67. Cl. 6.

California Western Railroad, Fort Bragg, Calif. 822,584, pub. 11-1-66. Cl. 105.

California Western Railroad, Fort Bragg, Calif. 822,585, pub. 11-1-66. Cl. 105.

Cal-Zona Co., also d.b.a. Cal-zona Inc., Phoenix, Ariz. 707,862, canc. Cl. 46.

Cal-Zona Co., also d.b.a. Cal-zona, Inc., Phoenix, Ariz. 707,863, canc. Cl. 46.

Cal-zona, Inc.: *See*—
Cal-Zona Co.

Canadian Hoechst (1964) Ltd., Montreal, Quebec, Canada, from Lloyd Brothers, Inc., Cincinnati, Ohio. 822,268, pub. 11-1-66. Cl. 18.

Carey, Phillip, Mfg. Co., The, Cincinnati, Ohio. 707,922, canc. Cl. 34.

Carter-Wallace, Inc., New York, N.Y. 822,545, pub. 11-1-66. Cl. 51.

Casman & Weiss Distributing Co., Los Angeles, Calif. 822,307, pub. 11-1-66. Cl. 21.

Cecilia Products Ltd., New York, N.Y. 822,540, pub. 11-1-66. Cl. 51.

Celanese Corp.: *See*—
American Cellulose & Chemical Mfg. Co., Ltd., The.

Centennial Industrial Bank, Denver, Colo. 707,906, canc. Cl. 102.

Central Automatic Sprinkler Co., Lansdale, Pa. 226,702, ren. 1-17-67. Cl. 23.

Central Automatic Sprinkler Co., Lansdale, Pa. 226,703, ren. 1-17-67. Cl. 23.

Central Market, Inc., Omaha, Nebr. 822,497, pub. 11-1-66. Cl. 46.

Cen-Trific-Air Products, Inc., New Haven, Conn. 822,367, pub. 11-1-66. Cl. 34.

Chadbourn Gotham, Inc., Charlotte, N.C. 822,427, pub. 11-1-66. Cl. 39.

Chadbourn Gotham, Inc., Charlotte, N.C. 822,428, pub. 11-1-66. Cl. 39.

Chadbourn Gotham, Inc., Charlotte, N.C. 822,429, pub. 11-1-66. Cl. 39.

Chandor SA., Baar, Zoug, Switzerland. 822,532, pub. 11-1-66. Multiple Class (Classes 51 and 52).

Chartered Enterprises, d.b.a. Superior Sports Specialties, San Fernando, Calif. 822,313, pub. 11-1-66. Cl. 22.

Chevron Chemical Co.: *See*—
California Spray-Chemical Co.

Chicago Cardboard Co., to Crescent Cardboard Co., Chicago, Ill. 222,548, ren. 1-17-67. Cl. 37.

Chicago Pneumatic Tool Co., New York, N.Y. 425,925, ren. 1-17-67. Cl. 23.

Chittom Equipment Co., Tulsa, Okla. 822,364, pub. 11-1-66. Cl. 34.

Chittick, Howard A.: *See*—
Murray, Edgar A.

Choristers Guild, Dallas, Tex. 822,595, pub. 11-1-66. Cl. 200.

Clairol Inc., New York, N.Y. 822,531, pub. 11-1-66. Cl. 51.

Clark Industries, Inc., Nashville, Tenn. 822,302, pub. 11-1-66. Cl. 21.

Clay Products Association of The Southwest, Inc., Austin, Tex. 822,597, pub. 11-1-66. Cl. A.

Cleveland Hone & Mfg. Co., Cleveland, Ohio. 822,321, pub. 11-1-66. Cl. 23.

Cleveland Hone & Mfg. Co., Cleveland, Ohio, 822,322, pub. 11-1-66. Cl. 23.

Cliff's Notes, Inc., Bethany Station, Lincoln, Nebr. 822,389, pub. 11-1-66. Cl. 38.

Coats & Clark Inc.: *See*—
Coats, J. & P., Ltd.

Coats, J. & P., Ltd., Paisley, Scotland, to Coats & Clark Inc., New York, N.Y. 60,308, ren. 1-17-67. Cl. 43.

Cocanower, Clair D., Phoenix, Ariz. 428,003, ren. 1-17-67. Cl. 22.

Cole, G. W., Co., Rahway, N.J., and New York, N.Y., to American Home Products Corp., New York, N.Y. 61,545, ren. 1-17-67. Cl. 15.

Cole, G. W., Co., Rahway, N.J., and New York, N.Y., to American Home Products Corp., New York, N.Y. 61,546, ren. 1-17-67. Cl. 15.

Collins & Aikman Corp., New York, N.Y. 822,443, pub. 11-1-66. Cl. 42.

Compugraphic Corp., Reading, Mass. 822,343, pub. 11-1-66. Cl. 26.

Consolidated Stamp Mfg. Co., Spring Valley, N.Y. 822,549, pub. 11-1-66. Cl. 52.

Continental Distilling Corp., d.b.a. Inver House Distillers, Ltd., Philadelphia, Pa. 822,515, pub. 11-1-66. Cl. 49.

Convenient Food Mart, Inc., Chicago, Ill. 822,571, pub. 11-1-66. Cl. 101.

Continental Oil Co., Ponca City, Okla. 822,397, pub. 11-1-66. Cl. 38.

Cookietime Products: *See*—
Goodhue, Joseph A.

Coreth, Anton A., d.b.a. Anton Von Coreth, Larchmont, N.Y. 822,535, pub. 11-1-66. Cl. 51.

Courtesy Carpet & Furniture Cleaners, Chicago, Ill. 707,908, canc. Cl. 103.

Creative Marketing, Inc., Kalamazoo, Mich. 818,432, cor. Cl. 101.

Crescent Cardboard Co.: *See*—
Chicago Cardboard Co.

Cross, Mark, Co., Ltd.: *See*—
Cross, Mark, Co.

Cross, Mark, Co., to Mark Cross Co., Ltd., New York, N.Y. 427,132, ren. 1-17-67. Cl. 3.

Crown Cork & Seal Co., Inc., Philadelphia, Pa. 822,336, pub. 11-1-66. Cl. 23.

Crown Cork & Seal Co., Inc., Philadelphia, Pa. 822,337, pub. 11-1-66. Cl. 23.

Crown Nut Co., Inc., Kingston, Pa. 707,874, canc. Cl. 46.

Crucible Steel Co. of America, Pittsburgh, Pa. 822,254, pub. 11-1-66. Cl. 14.

Cudahy, Patrick, Inc., Cudahy, Wis. 822,465, pub. 11-1-66. Cl. 46.

Curtis, Wilbur, Co., Inc., Los Angeles, Calif. 822,252, pub. 11-1-66. Cl. 13.

Curtis, Wilbur, Co., Inc., Los Angeles, Calif. 822,362, pub. 11-1-66. Cl. 33.

Cusick Products, Tunnelton, W. Va. 822,261, pub. 11-1-66. Cl. 16.

Cyclops Corp., Bridgeville, Pa. 822,191, pub. 11-1-66. Multiple Class (Classes 2, 12, 13, 14, and 23).

Cyn Les Sportswear, Inc., New York, N.Y. 822,420, pub. 11-1-66. Cl. 39.

Dairyland Seed Co., Inc., Campbellsport, Wis. 822,179, pub. 11-1-66. Cl. 1.

Dairyland Seed Co., Inc., Campbellsport, Wis. 822,180, pub. 11-1-66. Cl. 1.

Darling, L. A., Co., to L. A. Darling Co. Division of The Marmon Group, Inc., Bronson, Mich. 428,050, ren. 1-17-67. Cl. 32.

Darling, L. A., Co., Division of The Marmon Group, Inc.: *See*—
Darling, L. A., Co.

Damascus Steel Products Corp., Rockford, Ill. 822,323, pub. 11-1-66. Cl. 23.

Dana Corp., Toledo, Ohio. 707,781, canc. Cl. 23.

Danby Imported Cigar Corp.: *See*—
Fernandes, Pallcio, y Cia. S. en C.

Dando, Frederick J., Co., Irondale, Ohio. 822,244, pub. 11-1-66. Cl. 12.

David, Bernard A., d.b.a. Liqueur Specialties Co., San Francisco, Calif. 822,514, pub. 11-1-66. Cl. 49.

Dearborn Chemical Co., Chicago, Ill., to W. R. Grace & Co., New York, N.Y. 225,227, ren. 1-17-67. Cl. 6.

Deering Milliken, New York, N.Y. 822,444, pub. 11-1-66. Cl. 42.

Deering Milliken, Inc., New York, N.Y. 822,445, pub. 11-1-66. Cl. 42.

De Grandmaison, Nicholas, Banff, Alberta, Canada. 707,813, canc. Cl. 38.

Degree Corp., Kansas City, Kans. 822,368, pub. 11-1-66. Cl. 21.

Degree Corp., Kansas City, Kans. 822,369, pub. 11-1-66. Cl. 34.

Degree Corp., Kansas City, Kans. 822,370, pub. 11-1-66. Cl. 34.

Delbert, Guy J., d.b.a. R. B. G. Products Co., Zanesville, Ohio. 822,271, pub. 11-1-66. Cl. 18.

Delhi-Taylor Oil Corp., Dallas, Tex. 707,668, canc. Cl. 6.

Deutsche Bobinet-Industrie Ag., Timer, Germany. 822,439, pub. 11-1-66. Cl. 42.

Deutsche Bobinet-Industries A., Columbus, Ga. 822,440, pub. 11-1-66. Cl. 42.

Diamond Alkali, Cleveland, Ohio. 816,599, cor. Cl. 31.

Didonato, Florenzo, d.b.a. Gemini Associates, Arlington, Mass. 822,310, pub. 11-1-66. Cl. 22.

Dierig, Christian, Aktiengesellschaft, Augsburg, Germany. 822,406, pub. 11-1-66. Multiple Class (Classes 39 and 42).

Di Giorgio Fruit Corp.: *See*—
Di Giorgio Corp.

Di Giorgio Corp., d.b.a. Di Giorgio Fruit Corp., San Francisco, Calif. 822,485, pub. 11-1-66. Cl. 46.

Dimensional Concepts, Inc., Chicago, Ill. 822,528, pub. 11-1-66. Cl. 50.

Dixon, Joseph, Crucible Co., The: *See*—
Prang Co., The.

Dr. Madaus & Co., Cologne Merheim, Germany. 822,279, pub. 11-1-66. Cl. 18.

Donovan, William J., d.b.a. Buddha Original, North Providence, R.I. 822,417, pub. 11-1-66. Cl. 39.

Doughboy Industries, Inc., New Richmond, Wis. 822,177, pub. 1-19-65. Cl. 1.

Dow Chemical Co., The, Midland, Mich. 822,199, pub. 11-1-66. Cl. 6.

Dow Chemical Co., The, Midland, Mich. 822,285, pub. 11-1-66. Cl. 18.

Dresser Industries, Inc., Dallas, Tex. 822,329, pub. 11-1-66. Cl. 23.

Dresser Industries, Inc., Dallas, Tex. 822,346, pub. 11-1-66. Cl. 26.

Driscoll Strawberry Associates, Inc., Salinas, Calif. 822,488, pub. 11-1-66. Cl. 46.

Ecco-Lite A/S (Ravnholm Emaljevaerk A/S), Ravnholm Lyngby, Denmark. 707,889, canc. Cl. 50.

Edon Industrial Products, Royal Oak, Mich. 822,342, pub. 11-1-66. Cl. 26.

Electrifiex Co., Roselle, Ill. 796,663, cor. Cl. 21.

Electronic Representative Association, Chicago, Ill. 822,592, pub. 11-1-66. Cl. 200.

Embassy Courier, Inc., Washington, D.C. 707,815, canc. Cl. 38.

Emerson & Cuming, Inc., Canton, Mass. 822,203, pub. 11-1-66. Cl. 6.

Empire Dehydrated Products, Inc., Woodside, N.Y. 428,538, ren. 1-17-67. Cl. 46.

Enrol Publishing Co., Inc., Los Angeles, Calif. 822,394, pub. 11-1-66. Cl. 38.

Estee Candy Co., Inc., New York, N.Y. 822,458, pub. 11-1-66. Cl. 46.

Evode Ltd., Stafford, England. 822,239, pub. 11-1-66. Cl. 12.

Evode Ltd., Stafford, England. 822,242, pub. 11-1-66. Cl. 12.

Evomastics Ltd., Stafford, England. 822,240, pub. 11-1-66. Cl. 12.

Exquisite Form Industries, Inc., New York, N.Y. 822,411, pub. 11-1-66. Cl. 39.

F-R Publishing Corp., The, to The New Yorker Magazine, Inc., New York, N.Y. 429,590, ren. 1-17-67. Cl. 38.

Fabric Specialities Co., Inc., Grand Rapids, Mich. 444,044, canc. Cl. 39.

Fabry, Edward S., d.b.a. Fabry Glove & Mitten Co., Green Bay, Wis. 822,421, pub. 11-1-66. Cl. 39.

Fabry Glove & Mitten Co.: *See*—
Fabry, Edward S.

Fairfax Biological Laboratory: *See*—
Murray, Edgar A.

Farm Production and Marketing Corp., Van Wert, Ohio. 707,860, canc. Cl. 46.

Farmer's Daughter, Inc., Evansville, Ind. 822,555, pub. 11-1-66. Cl. 100.

Farmer's Daughter, Inc., Evansville, Ind. 822,556, pub. 11-1-66. Cl. 100.

Ferro Corp., Cleveland, Ohio. 822,308. Cl. 21.

Federated Department Stores, Inc.: *See*—
Abraham & Straus, Inc.

Fels & Co., Philadelphia, Pa., to Purex Corp., Ltd., Lakewood, Calif. 57,674, ren. 1-17-67. Cl. 52.

Fernandes, Pallcio Y Cia. S. En C., Havana, Cuba, to Danby Imported Cigar Corp., New York, N.Y. 226,618, ren. 1-17-67. Cl. 17.

Fidler, David P., Des Moines, Iowa. 822,401, pub. 11-1-66. Cl. 38.

Filatures Prouvost & Cie, La Lainere de Roubaix, Roubaix (Nord), France. 822,447, pub. 11-1-66. Cl. 43.

Filatures Prouvost & Cie, La Lainere de Roubaix, Roubaix (Nord), France. 822,448, pub. 11-1-66. Cl. 43.

Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix (Nord), France. 822,449, pub. 11-1-66. Cl. 43.

Financial Executives Institute, New York, N.Y. 822,400, pub. 11-1-66. Cl. 38.

First Federal Savings & Loan Association of Gainesville, Gainesville, Ga. 822,576, pub. 11-1-66. Cl. 102.

First Federal Savings & Loan Association of Gainesville, Gainesville, Ga. 822,576, pub. 11-1-66. Cl. 102.

First Pan-American Mercantile Corp., New York, to Magic Marker Corp., Brooklyn, N.Y. 420,243, ren. 1-17-67. Cl. 11.

Flagship Ice Cream: *See*—
Sardo, Vincent.

Flambeau Paper Co., Park Falls, Wis. 822,387, pub. 11-1-66. Cl. 37.

Fleet-Wing Corp., d.b.a. Wm. Penn Laboratories, Cleveland, Ohio. 822,181, pub. 11-1-66. Multiple Class (Classes 1, 6, 15, and 52).

Fleet-Wing Corp., d.b.a. Wm. Penn Laboratories, Cleveland, Ohio. 822,182, pub. 11-1-66. Multiple Class (Classes 1, 6, 15, and 52).

FMC Corp., Philadelphia, Pa. 822,187, pub. 11-1-66. Cl. 1.

FMC Corp., New York, N.Y. 822,208, pub. 11-1-66. Cl. 6.

Fong, Chan L., d.b.a. Kwong Man Lung Firecracker Factory, Hong Kong. 822,231, pub. 11-1-66. Cl. 9.

Foosaner, Samuel J., d.b.a. Better Products Co., Montclair, N.J. 822,553, pub. 11-1-66. Cl. 52.

Foote Mineral Co., Exton, Pa. 822,217, pub. 11-1-66. Cl. 6.

Ford Lingerie, Inc., Chelsea, Mass. 822,415, pub. 11-1-66. Cl. 39.

Foremost Dairies, Inc., San Francisco, Calif. 822,492, pub. 11-1-66. Cl. 46.

Foremost Machine Builders, Inc., Livingston, N.J. 713,460, cor. Cl. 23.

France, Josiah, Ltd., Honley, Huddersfield, England. 707,840, canc. Cl. 42.

Frederic Brick & Tile Co., St. Louis, Mo. 822,234, pub. 11-1-66. Cl. 12.

Freeman Industries, Inc., Tuckahoe, N.Y. 822,544, pub. 11-1-66. Cl. 51.

Freund Baking Co., St. Louis, Mo. 822,491, pub. 11-1-66. Cl. 46.

Friedrichs, E. H. & A. C., Co., New York, N.Y. 822,522, pub. 11-1-66. Cl. 50.

Friedrichs, E. H. & A. C., Co., New York, N.Y. 822,523, pub. 11-1-66. Cl. 50.

Friedrichs, E. H. & A. C., Co., New York, N.Y. 822,524, pub. 11-1-66 Cl. 50.

Fusecolor Corp., Middlesex, N.J. 822,178, pub. 11-1-66. Cl. 1.

Garod Radio Corp., Brooklyn, N.Y. 432,780, canc. Cl. 21.

Gary Industries, Inc., d.b.a. Vail Mfg. Co., from Vail Mfg. Co., d.b.a. E. H. Hotchkiss Co., Chicago, Ill. 822,248, pub. 11-1-66. Cl. 13.

Gary Industries, Inc., d.b.a. Vail Mfg. Co., Chicago, Ill. 822,250, pub. 11-1-66. Cl. 13.

Gary Industries, Inc., d.b.a. Vail Mfg. Co., from Vail Mfg. Co., d.b.a. E. H. Hotchkiss Co., Chicago, Ill. 822,332, pub. 11-1-66. Cl. 23.

Geigy Chemical Corp., Ardsley, N.Y. 822,277, pub. 11-1-66. Cl. 18.

Geigy Chemical Corp., Ardsley, N.Y. 822,551, pub. 11-1-66. Cl. 52.

Geigy Chemical Corp., Ardsley, N.Y. 822,210, pub. 11-1-66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 822,213, pub. 11-1-66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 822,214, pub. 11-1-66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 822,205, pub. 11-1-66. Cl. 6.

Gemini Associates: *See*—
Didonato, Florenzo.

General Aluminum Corp., Dallas, Tex. 822,236, pub. 11-1-66. Cl. 12.

General Finance Corp., Evanston, Ill. 822,578, pub. 11-1-66. Cl. 102.

General Machine Products Co., Inc., Trevose, Pa. 822,206, pub. 11-1-66. Cl. 6.

General Mills, Inc., Minneapolis, Minn. 822,498, pub. 11-1-66. Cl. 46.

General Mills, Inc., Minneapolis, Minn. 822,499, pub. 11-1-66. Cl. 46.

General Mills, Inc., Minneapolis, Minn. 822,500, pub. 11-1-66. Cl. 46.

General Mills, Inc., Minneapolis, Minn. 822,501, pub. 11-1-66. Cl. 46.

General Mills, Inc., Minneapolis, Minn. 822,502, pub. 11-1-66. Cl. 46.

General Mills, Inc., Minneapolis, Minn. 822,503, pub. 11-1-66. Cl. 46.

General Mills, Inc., Minneapolis, Minn. 822,504, pub. 11-1-66. Cl. 46.

General Mills, Inc., Minneapolis, Minn. 822,505, pub. 11-1-66. Cl. 46.

General Numismatics Corp., Yeadon, Pa. 822,521, pub. 11-1-66. Cl. 50.

General Refractories Co., Philadelphia, Pa. 822,241, pub. 11-1-66. Cl. 12.

General Refractories Co., Philadelphia, Pa. 822,245, pub. 11-1-66. Cl. 12.

Gilbert Paper Co., Menasha, Wis., to The Mead Corp., Dayton, Ohio. 219,087, ren. 1-17-67. Cl. 37.

Gilbert Shoe Co., The, Thiensville, Wis. 429,384, ren. 1-17-67. Cl. 39.

Gilbert Shoe Co., The, Thiensville, Wis. 223,941, ren. 1-17-67. Cl. 39.

Gillette Co., The: *See*—
Auto Strop Safety Razor Co.

Glidden Laboratories, Inc., Evanston, Ill. 707,727, canc. Cl. 18.

Gold Mfg. Co., New York, N.Y. 707,817, canc. Cl. 39.

Golden Eagle Motor Inn, Inc., Charlotte, N.C. 822,566, pub. 11-1-66. Cl. 100.

Goodhue, Joseph A., d.b.a. Cookietime Products, Division of Goodhue's, Leominster, Mass. 707,854, canc. Cl. 46.

Goodrich, B. F., Co., The, Akron, Ohio. 222,863, ren. 1-17-67. Cl. 35.

Goodrich, B. F., Co., The: *See*—
Hood Rubber Co.

Grace, W. R., & Co.: *See*—
Dearborn Chemical Co.

Halter, Paul, Bottmingen (Baselland), Switzerland. 822,351, pub. 11-1-66. Cl. 26.

Hamilton Watch Co., Lancaster, Pa. 707,789, canc. Cl. 27.

Harmon, Larry, Pictures Corp., Los Angeles, Calif. 822,399, pub. 11-1-66. Cl. 38.

Harsco Corp., Harrisburg, Pa. 822,564, pub. 11-1-66. Cl. 100.

Hartford Special Machinery Co., The, Simsbury, Conn. 822,339, pub. 11-1-66. Cl. 23.

Hassenfeld Bros., Inc., Central Falls, R.I. 707,758, canc. Cl. 22.

Heileman, G., Brewing Co., Inc., La Crosse, Wis. 822,510, pub. 11-1-66. Cl. 48.

Hewitt Soap Co., Inc., The, Dayton, Ohio. 822,550, pub. 11-1-66. Cl. 52.

Hi-Fashion, Inc., Atlanta, Ga. 822,543, pub. 11-1-66. Cl. 51.

Hill's Sheet Metal, Juneau, Alaska. 822,371, pub. 11-1-66. Cl. 34.

Hinckley & Schmitt, Inc., Chicago, Ill. 822,453, pub. 11-1-67. Cl. 45.

Hinckley & Schmitt, Inc., Chicago, Ill. 822,454, pub. 11-1-66. Cl. 45.

Hollister Inc., Chicago, Ill. 822,386, pub. 11-1-66. Multiple Class (Classes 37, 44, and 50).

Hollywood Amusement Co., Skokie, Ill. 822,312, pub. 11-1-66. Cl. 22.

Holsapfel's Compositions Co., Ltd., Newcastle-Upon-Tyne, England, to International Paint Co., Inc., New York, N.Y. 58,489, ren. 1-17-67. Cl. 16.

Holsapfel's Compositions Co., Ltd., Newcastle-Upon-Tyne, England to International Paint Co., Inc., New York, N.Y. 61,631, ren. 1-17-67. Cl. 16.

Hood, R. H., Co., Philadelphia, Pa. 822,333, pub. 11-1-66. Cl. 21.

Hood Rubber Co., Watertown, Mass., to The B. F. Goodrich Co., Akron, Ohio. 223,144, ren. 1-17-67. Cl. 35.

Hotchkiss, E. H., Co.: *See*—
Gary Industries, Inc.

Houghton, E. F., & Co.: *See*—
Houghton, E. F., & Co.

Houghton, E. F., & Co., to E. F. Houghton & Co., Philadelphia, Pa. 60,767, ren. 1-17-67. Cl. 35.

Hughes, Henry L., Co., Inc., New York, N.Y., to International Latex Corp., Dover, Del. 221,763, ren. 1-17-67. Cl. 44.

Ideal Brushes, Inc., North Hollywood, Calif. 822,357, pub. 11-1-66. Cl. 29.

Industrial Sanitation, Inc., Ironton, Ohio. 822,253, pub. 11-1-66. Cl. 13.

Inertia-Matic, Inc., Watertown, Mass. 707,765, canc. Cl. 23.
International Copper Research Association, Inc., New York, N.Y. 822,596, pub. 11–1–66. Cl. A.
International Latex Corp.: *See*—
Hughes, Henry L., Co., Inc.
International Paint Co., Inc.: *See*—
Holsapfel's Compositions Co., Ltd.
Inver House Distillers, Ltd.: *See*—
Continental Distilling Corp.
Jackson Produce Co., El Centro, Calif. 822,464, pub. 11–1–66. Cl. 46.
Jacobson, F., & Sons, Inc., New York, N.Y. 822,425, pub. 11–1–66. Cl. 39.
Jacobson, F., & Sons, Inc., New York, N.Y. 822,426, pub. 11–1–66. Cl. 39.
Jakutis, Frank E., d.b.a. Mrs. J's Food Products Co., Seattle, Wash. 822,455, pub. 11–1–66. Cl. 46.
Jaymass, Inc., Manchester, Conn. 822,211, pub. 11–1–66. Cl. 6.
Jenks, Wilbur R., d.b.a. W. R. Jenks, White Bear Lake, Minn. 822,311, pub. 11–1–66. Cl. 22.
Jergens, Andrew, Co., The, Cincinnati, Ohio. 822,547, pub. 11–1–66. Cl. 51.
Jiffy-Pot Co. of America: *See*—
Ball, Geo. J., Inc.
Johnson & Johnson, New Brunswick, N.J. 822,275, pub. 11–1–66. Cl. 18.
Johnson & Johnson, New Brunswick, N.J. 822,437, pub. 11–1–66. Cl. 39.
Johnson, Phil, d.b.a. Red Cap Adhesive, Kansas City, Mo. 822,198, pub. 11–1–66. Cl. 5.
Journeay, Albert, Jr., d.b.a. Sea Maid, Venice, Fla. 822,355, pub. 11–1–66. Cl. 28.
Justrite Envelope Mfg. Co., Atlanta, Ga. 822,385, pub. 11–1–66. Cl. 37.
K-C Lumber Co., The, d.b.a. Luce Packing Co., Lucedale, Miss., to King Pharr Canning Operations, Inc., Cullman, Ala. 223,809, ren. 1–17–67. Cl. 46.
K-Gar Corp.: *See*—
Mather Garland.
Kain, Robert C., Newfane, Vt. 822,226, pub. 11–1–66. Cl. 9.
Karpak Co., Minneapolis, Minn. 822,290, pub. 11–1–66. Cl. 19.
Keystone Fence Co., to Keystone Steel & Wire Co., Peoria, Ill. 62,025, ren. 1–17–67. Cl. 13.
Keystone Fence Co., to Keystone Steel & Wire Co., Peoria, Ill. 62,518, ren. 1–17–67. Cl. 13.
Keystone Steel & Wire Co.: *See*—
Keystone Fence Co.
Keystone Printing Ink Co., Philadelphia, Pa. 822,233, pub. 11–1–66. Cl. 11.
Kiefer-Stewart Co., Inc., Indianapolis, Ind. 822,559, pub. 11–1–66. Multiple Class (Classes 100, 101, and 107).
King Kullen Grocery Co., Inc., Westbury, N.Y. 822,462, pub. 7–6–65. Cl. 46.
King Pharr Canning Operations, Inc.: *See*—
K-C Lumber Co., The.
King, Victor, Laboratory, Los Altos, Calif. 822,256, pub. 11–1–66. Cl. 14.
Kirschbraun & Sons, Omaha, Nebr., to Acme Markets, Inc., Philadelphia, Pa. 61,601, ren. 1–17–67. Cl. 46.
Klein Chocolate Co., Elizabethtown, Pa. 822,457, pub. 11–1–66. Cl. 46.
Kohler & Campbell, Inc.: *See*—
Kohler & Campbell.
Kohler & Campbell, New York, N.Y., to Kohler & Campbell, Inc., Granite Falls, N.C. 58,283, ren. 1–17–67. Cl. 36.
Kollmorgen Corp.: *See*—
Kollmorgen Optical Corp.
Kollmorgen Optical Corp., Brooklyn, N.Y., to Kollmorgen Corp., Northampton, Mass. 426,305, ren. 1–17–67. Cl. 26.
Kordell Sportswear, Inc., New York, N.Y. 707,839, canc. Cl. 39.
Laboratoire Garnier, Paris, France. 707,926, canc. Cl. 51.
Laguna Sportswear Co., Inc., Los Angeles, Calif. 822,419, pub. 11–1–66. Cl. 39.
Lance, B. J., Inc., d.b.a. Lance Mfg. Co., Paramount, Calif. 822,326, pub. 11–1–66. Cl. 23.
Landersman Bros. Inc., New York, N.Y. 822,435, pub. 11–1–66. Cl. 39.
Lane Display Corp., New York, N.Y. 707,753, canc. Cl. 22.
Lance Mfg. Co.: *See*—
Lance, B. J., Inc.
Lanvin-Charles of the Ritz, Inc., New York, N.Y. 822,548, pub. 11–1–66. Cl. 51.
Lassy, Carl O., d.b.a. Lassy Tool Co., Plainville, Conn. 822,338, pub. 11–1–66. Cl. 23.
Lassy Tool Co.: *See*—
Lassy, Carl O.
Leanin' Tree Publishing Co., Inc., Boulder, Colo. 822,396, pub. 11–1–66. Cl. 38.
Lennox Industries Inc., Marshalltown, Iowa. 822,365, pub. 11–1–66. Cl. 34.
Lenoir Hosiery Mills, Inc., Lenoir, N.C. 707,835 canc. Cl. 39.
Lever Bros. Co., Cambridge, Mass. 57,536, ren. 1–17–67. Cl. 52.
Lever Bros. Co., New York, N.Y. 822,554, pub. 11–1–66. Cl. 52.
Li & Fung, Ltd., Hong Kong. 822,227, pub. 11–1–66. Cl. 9.
Li & Fung, Ltd., Hong Kong. 822,228, pub. 11–1–66. Cl. 9.
Lifetime Products, Inc., Scottsdale, Ariz. 822,534, pub. 11–1–66. Cl. 51.
Liqueur Specialties Co.: *See*—
David, Bernard A.
Little Crow Milling Co., Inc., Warsaw, Ind. 822,489, pub. 11–1–66. Cl. 46.
Lloyd Bros., Inc.: *See*—
Canadian Hoechst (1964) Ltd.
Loblaw Inc., Buffalo, N.Y. 822,466, pub. 11–1–66. Cl. 46.
Lord Jeff Knitting Co., Inc., Maspeth, N.Y. 427,148, ren. 1–17–67. Cl. 39.
Lord Jeff Knitting Co., Inc., Maspeth, N.Y. 428,156, ren. 1–17–67. Cl. 39.
Lubrication Engineers, Inc., Fort Worth, Tex. 822,257, pub. 11–1–66. Cl. 15.
Luce Packing Co.: *See*—
K-C Lumber Co., The.
Lung, Kwong Man, Firecracker Factory: *See*—
Fong, Chan L.
Mass & Waldstein Co., Newark, N.J. 426,270, ren. 1–17–67. Cl. 16.
Madame Alexander: *See*—
Alexander Doll Co., Inc.
Magic Marker Corp.: *See*—
First Pan-American Mercantile Corp.
Magna Visual, Inc., St. Louis, Mo. 822,527, pub. 11–1–66. Cl. 50.
Mannix, James, d.b.a. Specialty Trailer Design & Mfg. Co., Indianapolis, Ind. 822,292, pub. 11–1–66. Cl. 19.
Marden, Eric, Associates, Inc., New York, N.Y. 822,573, pub. 11–1–66. Cl. 101.
Master Bronze Powder Co., Inc., Chicago, Heights, Ill. 822,259, pub. 11–1–66. Cl. 16.
Mather Garland, Excelsior, from K-Gar Corp., Shakopee, Minn. 707,746, canc. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 822,316, pub. 11–1–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 822,318, pub. 11–1–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 822,319, pub. 11–1–66. Cl. 22.
Mead Corp., The: *See*—
Gilbert Paper Co.
Mead Corp., The, Dayton, Ohio. 822,380, pub. 11–1–66. Cl. 37.
Medley Distilling Co., d.b.a. Solid Gold Distilling Co., Owensboro, Ky. 822,513, pub. 11–1–66. Cl. 49.
Meidl, J. H. Co.: *See*—
Meidl, J. H.
Meidl, J. H., d.b.a. J. H. Meidl Co., Brawley, Calif. 822,496, pub. 11–1–66. Cl. 46.
Meiko Co., Ltd., Nagoya City, Japan. 822,327, pub. 11–1–66. Cl. 23.
Menley & James Laboratories, Ltd., Philadelphia, Pa. 822,280, pub. 11–1–66. Cl. 18.
Metalux Corp., Americus, Ga. 822,297, pub. 11–1–66. Cl. 21.
Michigan Chrome & Chemical Co., Detroit, Mich. 429,387, ren 1–17–67. Cl. 21.
Mid-States Welder Mfg. Co., Chicago, Ill. 822,374, pub. 11–1–66. Cl. 34.
Mighty Andy Corp., Palo Alto, Calif. 822,235, pub. 11–1–66. Cl. 12.
Miller, Richard J., St. Louis, Mo. 707,914 canc. Cl. 107.
Miller Tours, Inc., Indianapolis, Ind. 822,583, pub. 11–1–66. Cl. 105.
Millipore Filter Corp., Bedford, Mass. 822,359, pub. 11–1–66. Cl. 31.
Milwaukee Resistor Co., Milwaukee, Wis. 822,299, pub. 11–1–66. Cl. 21.
Mimik, Ltd., Galt, Ontario, Canada. 822,350, pub. 11–1–66. Cl. 26.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 822,388, pub. 11–1–66. Cl. 37.
Minox Corp., New York, N.Y. 822,345, pub. 11–1–66. Cl. 26.
Mitchell Bros. Inc., Bridgeport, Conn. 822,404, pub. 11–1–66. Cl. 39.
Modern Products, Inc., Milwaukee, Wis. 707,880, canc. Cl. 46.
Monarch Wine Co., Inc., Brooklyn, N.Y. 822,507, pub. 11–1–66. Cl. 47.
Motel of California, Santa Barbara, Calif. 822,563, pub. 11–1–66. Cl. 100.
Moultrie Mfg. Co., Moultrie, Ga. 822,186, pub. 11–1–66. Cl. 1.
Mrs. J's Food Products Co.: *See*—
Jakutis, Frank E.
Muirhead & Co., Ltd., Beckenham, Kent, England. 822,349, pub. 11–1–66. Cl. 26.
Munsell Color Co., Inc., Baltimore, Md. 822,390, pub. 11–1–66. Cl. 38.
Munsel Color Co., Baltimore, Md. 822,520, pub. 11–1–66. Cl. 50.
Muriel Investment Co., Oklahoma City, Okla. 822,490, pub. 11–1–66. Cl. 46.
Murphy-Gorman Co., Danbury, Conn., to John B. Stetson Co., Philadelphia, Pa. 211,267, ren. 1–17–67. Cl. 39.
Murphy Gorman Co., Danbury, Conn., to John B. Stetson Co., Philadelphia, Pa. 212,535, ren. 1–17–67. Cl. 39.
Murray, Edgar A., Co.: *See*—
Murray, Edgar A.
Murray, Edgar A., d.b.a. Edgar A. Murray Co., Detroit, Mich., to Howard A. Chittick, d.b.a. Fairfax Biological Laboratory, Clinton Corners, N.Y. 221,884, ren. 1–17–67. Cl. 6.
McCoy's, Dr. Claude, Mink Oil Products Co.: *See*—
McCoy, Dr. John Claude, Sr.
McCoy, Dr. John Claude, Sr., d.b.a. Dr. Claude McCoy's Mink Oil Products Co., Hendersonville, N.Y. 822,533, pub. 11–1–66. Cl. 51.
McGrath-Hamin, Inc., Providence, R.I. 822,356, pub. 11–1–66. Cl. 28.
McKnight, Laurence J., Cleveland, Ohio. 425,808, ren. 1–17–67. Cl. 12.
National Distillers Products Co.: *See*—
National Distillers and Chemical Corp.
National Distillers and Chemical Corp.: *See*—
Rosenfield Bros.
National Packaging Products Corp., Rockingham, N.C. 822,382, pub. 11–1–66. Cl. 37.

National Packaging Products Corp., Rockingham, N.C. 822,383, pub. 11–1–66. Cl. 37.
National Sugar Refining Co., The, New York, N.Y. 822,494, pub. 11–1–66. Cl. 46.
National Technical Laboratories, South Pasadena, Calif., to Beckman Instruments, Inc., Fullerton, Calif. 426,293, ren. 1–17–67. Cl. 21.
New England Lime Co., Pittsfield, Mass., to Chas. Pfizer & Co., Inc., New York, N.Y. 221,864, ren. 1–17–67. Cl. 12.
New York Yacht Club, New York, N.Y. 822,593, pub. 11–1–66. Cl. 200.
New Yorker Magazine, Inc., The: *See*—
F-R Publishing Corp., The.
Nidar Chokoladefabrik A/S, Trondhjem, Norway. 223,868, ren. 1–17–67. Cl. 46.
Nivarox S.A., St-Imier (Berneu), Switzerland. 822,853, pub. 11–1–66. Cl. 27.
Norcross, Inc., New York, N.Y. 822,853, pub. 11–1–66. Cl. 38.
North Hollywood Concrete Tile Co., North Hollywood, Calif. 707,682, canc. Cl. 12.
Northern Drug Co., Inc., Duluth, Minn. 822,270, pub. 11–1–66. Cl. 18.
Northern Industrial Products: *See*—
All-Rite Pen Co., Inc.
Northon Co., Watervliet, N.Y. 822,260, pub. 7–12–66. Cl. 16.
Noxsema Chemical Co., The, Baltimore, Md. 822,536, pub. 11–1–66. Cl. 51.
Nutress Laboratories, Inc., North Hollywood, Calif. 822,546, pub. 11–1–66. Multiple Class (Classes 51 and 52).
Nycone Corp., West Conshohocken, Pa. 707,653, canc. Cl. 2.
O'Connor Remedial Services, Inc., Birmingham, Mich. 707,814, canc. Cl. 38.
Odero, Giorgio, d.b.a. Azienda Agricola Frecciarossa di Odero Dr. Giorgio, Casteggio, Italy. 707,882, canc. Cl. 47.
Odol Chemical Corp., Plainfield, N.J. 823,530, pub. 11–1–66. Cl. 51.
Olin Mathieson Chemical Corp., East Alton, Ill. 823,255, pub. 11–1–66. Cl. 14.
Oneida Ltd., Oneida, N.Y. 822,194, pub. 11–1–66. Cl. 2.
Orchard Hill Co., d.b.a. Orchard Hill Farms, Mogadore, Ohio. 707,794 canc. Cl. 29.
Orchard Hill Farms: *See*—
Orchard Hill Co.
Oster, John, Mfg. Co., Milwaukee, Wis. 822,361, pub. 11–1–66. Cl. 33.
Oster Mfg. Co., The, Cleveland, Ohio, to The Plymouth Corp., Wickliffe, Ohio. 426,003, ren. 1–17–67. Cl. 23.
Oster Mfg. Co., The, Cleveland, Ohio, to The Plymouth Corp., Wickliffe, Ohio. 427,503, ren. 1–17–67. Cl. 23.
Owens-Illinois, Inc., Toledo, Ohio. 822,519, pub. 11–1–66. Cl. 50.
P-G Products Mfg. Co., Inc., Bronx, N.Y. 822,190, pub. 11–1–66. Cl. 2.
P.G.H. Industries Ltd., Waverton, New South Wales, Australia. 822,263, pub. 11–1–66. Cl. 16.
Packaging Institute, Inc., The, New York, N.Y. 822,594, pub. 11–1–66. Cl. 200.
Palmer Bedding Co., Denver, Colo. 822,567, pub. 11–1–66. Cl. 101.
Pan American Laboratories, Inc., New Orleans, La. 707,732, canc. Cl. 18.
Panill Knitting Co., Inc., Martinsville, Va. 822,432, pub. 11–1–66. Cl. 39.
Park Grant Co., Watertown, S. Dak. 822,569, pub. 11–1–66. Cl. 101.
Patons & Baldwins Ltd., Darlington, Durham, England. 822,450, pub. 11–1–66. Cl. 43.
Percentive Management Associates, Inc., Cleveland, Ohio. 822,557, pub. 11–1–66. Cl. 100.
Penn Leather Co., Philadelphia, Pa. 822,486, pub. 11–1–66. Cl. 39.
Penn, Wm., Laboratories: *See*—
Fleet-Wing Corp.
Perceptive Management Associates, Inc., Cleveland, Ohio. 822,557, pub. 11–1–66. Cl. 100.
Perkins, Dorothy, Cosmetics, Inc., St. Louis, Mo. 822,529, pub. 11–1–66. Cl. 51.
Perfectform Corp., New York, N.Y. 822,416, pub. 11–1–66. Cl. 39.
Peterson, Helen M., Boise, Idaho. 822,414, pub. 11–1–66. Cl. 39.
Pfeiffer Co., The: *See*—
Pfeiffer, S., Mfg. Co.
Pfeiffer, S., Mfg. Co., to The Pfeiffer Co., St. Louis, Mo. 225,919, ren. 1–17–67. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 822,276, pub. 11–1–66. Cl. 18.
Pfizer, Chas., & Co., Inc.: *See*—
New England Lime Co.
Phillips Petroleum Co., Bartlesville, Okla. 822,202, pub. 11–1–66. Cl. 6.
Phillips-Van Heusen Corp., New York, N.Y. 822,408, pub. 11–1–66. Cl. 39.
Pierce, S. S., Co., Boston, Mass. 58,233, ren. 1–17–67. Cl. 17.
Pindyck, Charles, Inc., New York, N.Y. 822,407, pub. 11–1–66. Cl. 39.
Pittsburgh Corning Corp., Pittsburgh, Pa. 428,721, ren. 1–17–67. Cl. 12.
Pittsburgh Corning Corp., Pittsburgh, Pa. 428,723, ren. 1–17–67. Cl. 12.
Pittsburgh Corning Corp., Pittsburgh, Pa. 428,724, ren. 1–17–67. Cl. 12.
Pissa King: *See*—
Tarantini, Leopoldo.
Plymouth Corp., The: *See*—
Oster Mfg. Co., The.
Polycell Products Ltd., Welwyn Garden City, England. 822,288, pub. 11–1–66. Cl. 12.
Polygraphic Co. of America, Inc., New York, N.Y. 707,810, canc. Cl. 37.
Praag Co., The, Chicago, Ill., to The Joseph Dixon Crucible Co., Jersey City, N.J. 224,962, ren. 1–17–67. Cl. 5.
Pratt, B. G., Co., Paterson, N.J. 822,219, pub. 11–1–66. Cl. 6.
Price Cleaners, Inc., New York, N.Y. 707,910, canc. Cl. 105.
Prim Tanning Co., Inc., Boston, Mass. 707,647, canc. Cl. 1.
Private Brands, Inc., Kansas City, Kans. 822,222, pub. 11–1–66. Cl. 6.
Procter & Gamble Co., The, Cincinnati, Ohio. 822,284, pub. 11–1–66. Cl. 37.
Prodesco, Inc., Perkasie, Pa. 822,442, pub. 11–1–66. Cl. 42.
Purex Corp., Ltd.: *See*—
Fels & Co.
Purity Stores, Inc., Burlingame, Calif. 822,487, pub. 11–1–66. Cl. 46.
Rabin-Winters Corp., d.b.a. Bruco, El Segundo, Calif. 822,278, pub. 11–1–66. Cl. 18.
Rabin-Winters Corp., El Segundo, Calif. 822,284, pub. 11–1–66. Cl. 18.
Raise, Inc., Rye, N.Y. 822,528, pub. 11–1–66. Cl. 23.
Raleigh Industries, Ltd., Nottingham, England. 822,288, pub. 11–1–66. Cl. 19.
Rama Corp., San Jacinto, Calif. 822,300, pub. 11–1–66. Cl. 21.
Ramada Inns, Inc., Phoenix, Ariz. 822,560, pub. 11–1–66. Cl. 100.
R.B.G. Products Co.: *See*—
Delbert, Guy J.
Realton Electronics Corp., Jersey City, N.J. 822,296, pub. 11–1–66. Cl. 21.
Refractory & Insulation Corp., Port Kennedy, Pa. 822,243, pub. 11–1–66. Cl. 12.
Regent Standard Forms, Inc., Philadelphia, Pa. 822,381, pub. 11–1–66. Cl. 37.
Remington Arms Co., New York and Ilion, N.Y., to Remington Arms Co., Inc., Bridgeport, Conn. 60,248, ren. 1–17–67. Cl. 9.
Remington Arms Co., Inc.: *See*—
Remington Arms Co.
Remington Arms Co., Inc., Bridgeport, Conn. 228,997, ren. 1–17–67. Cl. 9.
Renuzit Home Products Co., Philadelphia, Pa. 822,204, pub. 11–1–66. Cl. 6.
Republic Steel Corp., Cleveland, Ohio. 822,249, pub. 11–1–66. Cl. 13.
Rexall Drug and Chemical Co., d.b.a. Tupperware Co., Los Angeles, Calif. 822,193, pub. 11–1–66. Cl. 2.
Rhodes, M. H., Inc., Hartford, Conn. 770,790, cor. Cl. 26.
Richardson-Merrel Inc., New York, N.Y. 822,369, pub. 11–1–66. Cl. 18.
Riegel Textile Corp., New York, N.Y. 822,518, pub. 11–1–66. Cl. 50.
Rock Island Millwork Co., Rock Island, Ill. 707,688, canc. Cl. 12.
Rolec, Inc., Cleveland, Ohio. 822,366, pub. 11–1–66. Cl. 34.
Rome Arnold & Co., Chicago, Ill. 822,572, pub. 11–1–66. Cl. 101.
Romper Room, Inc., Baltimore, Md. 822,582, pub. 11–1–66. Cl. 104.
Ronco Laboratories, Inc., Pittsburgh, Pa. 822,218, pub. 11–1–66. Cl. 6.
Rose, Phil, of California, Inc., Los Angeles, Calif. 822,424, pub. 11–1–66. Cl. 39.
Rosenfield Bros., Chicago, Ill., to National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 226,667, ren. 1–17–67. Cl. 49.
Russ Togs, Inc., New York, N.Y. 822,422, pub. 11–1–66. Cl. 39.
Salada Foods Ltd., Don Mills, Ontario, Canada. 822,467, pub. 11–1–66. Cl. 46.
Samsonite Corp., from Shwayder Bros., Inc., Denver, Colo. 822,195, pub. 6–29–65. Cl. 3.
Sardo, Vincent, d.b.a. Flagship Ice Cream, Ridgewood, N.J. 707,847, canc. Cl. 46.
Sav-on Drugs, Inc., Los Angeles, Calif. 707,723, canc. Cl. 18.
Sea Maid: *See*—
Journeay, Albert, Jr.
Seagram, Joseph E., & Sons, Inc., New York, N.Y. 822,512, pub. 11–1–66. Cl. 49.
Seal Rite Caulking Co., Inc., Brooklyn, N.Y. 707,708, canc. Cl. 16.
Sears, Gerald Co., Inc., New York, N.Y. 707,791, canc. Cl. 28.
Sealy, Inc., Chicago, Ill. 426,168, ren. 1–17–67. Cl. 32.
Selber Bros., Inc., Shreveport, La. 226,261, ren. 1–17–67. Cl. 39.
Seven-Up Co., The, St. Louis, Mo. 822,451, pub. 11–1–66. Cl. 46.
Schafer Bakeries Inc., Detroit, Mich. 822,456, pub. 11–1–66. Cl. 46.
Schenley Distillers, Inc., d.b.a. Weston Winery, Americas, N.Y. 822,508, pub. 11–1–66. Cl. 47.
Schering Corp., Bloomfield, N.J. 707,736, canc. Cl. 18.
Schlitters Michael J., d.b.a. Screw Machine Tool Co., to Screw Machine Tool Co., Detroit, Mich. 425,005, ren. 1–17–67. Cl. 23.
Schwarzschild & Sulzberger Co., Kansas City, Kans., Chicago, Ill., and New York, N.Y., from Wilson & Co., Inc., Chicago, Ill. 60,284, canc. Cl. 46.
Screw Machine Tool Co.: *See*—
Schlitters, Michael J.
Shoecraft, Inc., New York, N.Y. 822,430, pub. 11–1–66. Cl. 39.
Shurly-Dietrich-Atkins Co., Ltd., Galt, Ontario, Canada. 822,320, pub. 11–1–66. Cl. 23.

Shwayder Brothers, Inc.: *See*—
Samsonite Corp.
Siegfried Aktiengesellschaft, Bruhlweg, Zofingen, Switzerland. 707,716, canc. Cl. 18.
Sigma Leather, Inc., New York, N.Y. 822,185, pub. 11–1–66. Cl. 1.
Silver, Chas. B., & Son, Inc., Havre de Grace, Md. 707,875, canc. Cl. 46.
Skarupa, Gregory T., Wheaton, Md. 707,761, canc. Cl. 23.
Smith, David H., Inc., Lynn, Mass. 822,409, pub. 11–1–66. Cl. 39.
Smith Oil Corp., Rockford, Ill. 822,579, pub. 11–1–66. Cl. 103.
Smith Oil Corp., Rockford, Ill. 882,589, pub. 11–1–66. Cl. 103.
Socony Mobil Oil Co., Inc., New York, N.Y. 822,526, pub. 11–1–66. Cl. 50.
Solid Gold Distilling Co.: *See*—
Medley Distilling Co.
S.p.A. Vibram, Milan, Italy. 822,309, pub. 11–1–66. Cl. 22.
Spaulding Fibre Co., Inc., Tonawanda, N.Y. 822,188, pub. 11–1–66. Cl. 1.
Spaulding Fibre Co., Inc., Tonawanda, N.Y. 822,189, pub. 11–1–66. Cl. 1.
Special Products Co., Silver Spring, Md. 441,024, canc. Cl. 21.
Specialty Trailer Design & Mfg. Co.: *See*—
Mannix, James.
Springer Industries, Inc., Long Island City, N.Y. 707,797, canc. Cl. 31.
Standard Process Laboratories: *See*—
Vitamin Products Co.
Standard Radio Corp., Kanagawa, Japan. 822,378, pub. 11–1–66. Cl. 36.
Stanley Home Products, Inc., Westfield, Mass. 822,538, pub. 11–1–66. Multiple Class (Classes 51 and 52).
Stanley Industries: *See*—
Stanley, J. A.
Stanley, J. A., d.b.a. Stanley Industries, Seattle, Wash. 430,224, canc. Cl. 6.
Star Industries, Santa Fe Springs, Calif. 822,360, pub. 11–1–66. Cl. 32.
Stellenbosch Farmers' Winery Ltd., Oude Libertas, Stellenbosch, Cape Province, Republic of South Africa. 822,506, pub. 11–1–66. Cl. 47.
Stetson, John B., Co.: *See*—
Murphy-Gorman Co.
Stevens, J. P., & Co., Inc., New York, N.Y. 822,441, pub. 11–1–66. Cl. 48.
Stevens Linen Associates, Inc., Dudley, Mass. 822,438, pub. 11–1–66. Cl. 42.
Strauss, Lewis H., Potomac, Md. 822,402, pub. 11–1–66. Cl. 38.
Stop-Rust Co., Inc., The, Chattanooga, Tenn. 692,628, canc. Cl. 6.
Stop & Shop, Inc., Boston, Mass. 822,562, pub. 11–1–66. Cl. 100.
Sun Oil Co., Philadelphia, Pa. 425,145, ren. 1–17–67. Cl. 6.
Sun-Ray Burner Mfg. Corp., Jamaica, N.Y. 822,375, pub. 11–1–66. Cl. 34.
Super Food Services, Inc., Chicago, Ill. 822,493, pub. 11–1–66. Cl. 46.
Superior Sports Specialties: *See*—
Chartered Enterprises.
Super Valu Stores, Inc., Hopkins, Minn. 822,201, pub. 11–1–66. Multiple Class (Classes 6 and 46).
Swift & Co., Chicago, Ill. 822,216, pub. 11–1–66. Cl. 6.
Talluto, Flora I., d.b.a. Youngsters Shoe Mfg., Rochester, N.Y. 822,405, pub. 11–1–66. Cl. 39.
Tampa Drug Co., Tampa, Fla. 707,711, canc. Cl. 18.
Tapecoat Co., Inc., The, Evanston, Ill. 822,265, pub. 11–1–66. Cl. 16.
Tarantini, Leopoldo, d.b.a. Pizza King, Camden, N.J. 822,495, pub. 11–1–66. Cl. 46.
Taylor-Burch Refrigeration Products, Inc., Jackson, Mich. 822,358, pub. 11–1–66. Cl. 31.
Texas Instruments Inc., Dallas, Tex. 822,264, pub. 11–1–66. Cl. 16.
Textool Products, Inc., Irving, Tex. 707,762, canc. Cl. 23.
Textron Industries, Inc., Orange, N.J. 822,266, pub. 11–1–66. Cl. 16.
Thavma, Inc., St. Paul, Minn. 707,712, canc. Cl. 18.
Thayer, Henry, Co., Cambridge, Mass. 707,657, canc. Cl. 6.
Thelma Lu's, Inc., Albuquerque, N. Mex. 822,471, pub. 11–1–66. Cl. 46.
Therapeutic Foods Co.: *See*—
Vitamin Products Co.
Thermo-Electron Engineering Corp., Waltham, Mass. 822,293, pub. 11–1–66. Multiple Class (Classes 21, 26, and 34).
Thompson, Henry G., Co., The, New Haven, Conn. 822,340, pub.11–1–66. Cl. 23.
Thorson Co., The, Los Angeles, Calif. 822,568, pub. 11–1–66. Cl. 101.
Tribune Co., The, Chicago, Ill. 822,395, pub. 11–1–66. Cl. 38.
Tir-Oen Ltd., Dungannon, Tyrone, Northern Ireland. 707,820, canc. Cl. 39.
Towle Mfg. Co., Newburyport, Mass. 61,366, ren. 1–17–67. Cl. 28.
Travel Equipment Corp., Elkhart, Ind. 822,291, pub. 11–1–66. Cl. 19.
Trwick, J. G., d.b.a. Xtract O Moist Mfg. Co., Birmingham, Ala. 707,799, canc. Cl. 31.
Tupperware Co.: *See*—
Rexall Drug and Chemical Co.
Turtle Wax, Inc., Chicago, Ill. 822,197, pub. 11–1–66. Cl. 4.
Tyreo Industries, Emeryville, Calif. 822,305, pub. 11–1–66. Cl. 21.
Tyrolit Co., Inc., New York, N.Y. 710,397. Am. 7(d). Cl. 4.
Ultra, Inc., Hutchinson, Kans. 822,287, pub. 11–1–66. Cl. 19.
Union Oil Co. of California, Los Angeles, Calif. 822,580, pub. 11–1–66. Cl. 103.
Union Carbide Corp., New York, N.Y. 822,192, pub. 11–1–66. Cl. 2.
Union Tank Car Co., Chicago, Ill. 822,325, pub. 11–1–66. Cl. 23.
Unipak, Inc., Dorchester, Mass. 822,247, pub. 11–1–66. Cl. 13.
United Fruit Co., Boston, Mass. 707,850, canc. Cl. 46.
United Fruit Co., Boston, Mass. 707,853, canc. Cl. 46.
United Merchants and Mfg., Inc., New York, N.Y. 822,446, pub. 11–1–66. Cl. 42.
United States Register Co., Battle Creek, Mich. 822,363, pub. 11–1–66. Cl. 34.
United States Rubber Co., New York, N.Y. 822,207, pub. 11–1–66. Cl. 6.
United States Rubber Co., New York, N.Y. 822,298, pub. 11–1–66. Cl. 21.
United States Steel Corp., Pittsburgh, Pa. 822,246, pub. 11–1–66. Cl. 12.
Universal Match Corp., St. Louis, Mo. 822,229, pub. 11–1–66. Cl. 9.
Universal Match Corp., St. Louis, Mo. 822,230, pub. 11–1–66. Cl. 9.
Universal Match Corp., St. Louis, Mo. 822,324, pub. 11–1–66. Cl. 23.
Universal Oil Products Co., Des Plaines, Ill. 822,335, pub. 11–1–66. Cl. 23.
Vail Mfg. Co.: *See*—
Garv Industries, Inc.
Vapor Corp., Chicago, Ill. 822,303, pub. 11–1–66. Cl. 21.
Valvoline Oil Co., Edgewater, N.J., and New York, N.Y., to Ashland Oil & Refining Co., Ashland, Ky. 60,669, ren. 1–17–67. Cl. 15.
Ve Ped Traffic Controls, Inc., Oklahoma City, Okla. 822,301, pub. 11–1–66. Cl. 21.
Virus, John R., d.b.a. Brandy Harvest, Woodside, N.Y. 822,542, pub. 11–1–66. Cl. 51.
Vitamin Products Co., d.b.a. Standard Process Laboratories, Milwaukee, Wis. 822,472, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Standard Process Laboratories, Milwaukee, Wis. 822,473, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Standard Process Laboratories, Milwaukee, Wis. 822,474, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Standard Process Laboratories, Milwaukee, Wis. 822,475, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Standard Process Laboratories, Milwaukee, Wis. 822,476, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 822,477, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 822,478, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 822,479, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 822,480, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 822,481, pub. 11–1–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 822,482, pub. 11–1–66. Cl. 46.
Vogue Thermographers Inc., Brooklyn, N.Y. 707,899, canc. Cl. 100.
Von Coreth, Anton: *See*—
Coreth, Anton A.
Walker, Hiram, & Sons (Scotland) Ltd., Dumbarton, England. 822,516, pub 11–1–66. Cl. 49.
Walker Laboratories, Inc., Mount Vernon, N.Y. 707,734, canc. Cl. 18.
Wallerstein Co.: *See*—
Baxter Laboratories, Inc.
Waltham Watch Co., Waltham, Mass., to Waltham Watch Co., Chicago Ill. 427,536, ren. 1–17–67. Cl. 27.
Waltham Watch Co., Waltham, Mass., to Waltham Watch Co., Chicago Ill. 427,537, ren. 1–17–67. Cl. 27.
Watkins Products, Inc., Winona, Minn. 822,452, pub. 11–1–66. Cl. 45.
Weber Marking Systems, Inc., Mount Prospect, Ill. 822,232, pub. 11–1–66. Cl. 11.
Weldon, Inc., New York, N.Y. 822,412, pub. 11–1–66. Cl. 39.
Weldon, Inc., New York, N.Y. 822,413, pub. 11–1–66. Cl. 39.
Wellco Ro-Search Industries, Inc., Waynesville, N.C. 822,403, pub. 11–1–66. Cl. 39.
Western Wood Products Association, Portland, Oreg. 822,565, pub. 11–1–66. Cl. 100.
Westfield Food Products, Inc., Westfield, N.Y. 707,876, canc. Cl. 46.
Weston Winery: *See*—
Schenley Distillers, Inc.
Weyerhaeuser Co., Tacoma, Wash. 822,557, pub. 11–1–66. Cl. 100.
Weyerhaeuser Co., Tacoma, Wash. 822,558, pub. 11–1–66. Cl. 100.
White Collar Girls of America, Inc., Chicago, Ill. 822,570, pub. 11–1–66. Cl. 101.
White Consolidated Industries, Inc., Cleveland, Ohio. 822,334, pub. 11–1–66. Cl. 23.
Whitlam, J. C., Mfg. Co., Inc., Wadsworth, Ohio. 822,377, pub. 11–1–66. Cl. 35.
Whitlam, J. C., Mfg. Co., Inc., Wadsworth, Ohio. 822,377, pub. 11–1–66. Cl. 35.
William & H. H. James Ltd., Empress Work, Willenhall, Stafford, England. 822,330, pub. 11–1–66. Cl. 23.
Wilson & Co., Inc.: *See*—
Schwarzschild & Sulzaberger Co.

Winscott Corp., Kansas City, Mo. 822,581, pub. 11–1–66. Cl. 103.
Winton, Lavoy, Mount Dora, Fla. 822,314, pub. 11–1–66. Cl. 22.
Wire Rope Corp. of America, Inc., St. Joseph, Mo. 822,225, pub. 11–1–66. Cl. 7.
Wolfe & Manning, Inc., Park Ridge, Ill. 822,224, pub. 11–1–66. Cl. 6.
Wolff, Dr. August Chemische-Pharmazeutische Fabrik Kommanditgesellschaft, Sudbrackstrasse, Bielefeld, Germany. 822,272, pub. 11–1–66. Cl. 18.
Wolff, Dr. August Chemische-Pharmazeutische Fabrik Kommanditgesellschaft, Sudbrackstrasse, Bielefeld, Germany. 822,273, pub. 11–1–66. Cl. 18.
Wonderful Dream Salve Corp., Croswell, Mich. 822,274, pub. 11–1–66. Cl. 18.
Worth, Sanford L., d.b.a. The Persimmon Shop, Menlo Park, Calif. 822,434, pub. 11–1–66. Cl. 39.
Wurzburger Hofbrau Aktiengesellschaft, Wurzburg, Germany. 822,509, pub. 11–1–66. Cl. 48.
Young Electric Sign Co., Salt Lake City, Utah. 822,304, pub. 11–1–66. Multiple Class (Classes 21 and 50).
Young, Richard D., Aberdeen, S. Dak. 822,591, pub. 11–1–66. Cl. 107.
Youngs Drug Products Corp., New York, N.Y. 822,281, pub. 11–1–66. Cl. 18.
Youngster Shoe Mfg.: *See*—
Talluto, Flora I.
Yumy, Inc., South Bend, Ind. 822,460, pub. 11–1–66. Cl. 46.
Yumy, Inc., South Bend, Ind. 822,461, pub. 11–1–66. Cl. 46.
Yung Kuang Co., Ltd., Pei Pu Hsinchu, Taiwan. 707,857, canc. Cl. 46.
Zayre Corp., Natick, Mass. 822,294, pub. 11–1–66. Cl. 21.
Zussman, H., & Son Co., The, Cincinnati, Ohio. 822,410, pub. 11–1–66. Cl. 39.

U.S. GOVERNMENT PRINTING OFFICE: 0—1967

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 24, 1967 Volume 834 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of December 1966

Examiner affirmed	158
Examiner affirmed in part	36
Examiner reversed	50
Total	244

Disclaimers

3,001,053.—*Richard Rubin*, Natick, Mass. COAXIAL SWITCH. Patent dated Sept. 19, 1961. Disclaimer filed Oct. 27, 1966, by the assignee, *Andrew Alford*.

Hereby enters this disclaimer to claims 1 and 2 of said patent.

3,201,386.—*Hiroshi Kawaguchi, Masanori Okanishi*, and *Takeo Miyaki*, Tokyo, Japan. COUMERMYCIN AND SALTS THEREOF. Patent dated Aug. 17, 1965. Disclaimer filed Oct. 24, 1966, by the assignee, *Bristol-Banyu Research Institute, Ltd.*

Hereby enters this disclaimer to claims 6 and 8 of said patent.

Dedication

Re. 26,082.—*George T. Osborne*, St. Paul, Minn. ASYNCHRONOUS BINARY COUNTER REGISTER STAGE WITH FLIP-FLOP AND GATE UTILIZING PLURALITY OF INTERCONNECTED (NOR) LOGIC CIRCUITS. Reissue patent dated Sept. 20, 1966. Dedication filed Oct. 10, 1966, by the assignee, *Sperry Rand Corporation*.

Hereby dedicates to the Public the remaining term of said patent.

Patents Available for Licensing or Sale

2,809,481. PORTABLE TAP SHARPENING FIXTURE. Arthur G. Bergstrom, 1646 Sandy Hollow, Rockford, Ill., 61109.

2,832,184. LAWN EDGER AND TRIMMER. Joseph H. Beuerle, 240 Gereghty St., South Amboy, N.J., 08879.

3,148,673. APPARATUS FOR CUTTING MARBLE BLOCKS INTO SLABS. S.p.A. Secobilts Ind. Mecc., % Dr. Enrico Cavallini, via Q. Sella 4, Verona, Italy.

3,230,441. REGULATED POWER SUPPLY WITH FEEDBACK MEANS. MPG Patent Department, Honeywell, Inc., 2600 Ridgway Road, Minneapolis, Minn., 55413.

3,271,212. EXPLOSIVE WITH TRINITROBENZENE. Wasag-Chemie Aktiengesellschaft. Essen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,274,810. PUZZLE LOCK. Felix P. and Armando M. Traversa, Buenos Aires, Argentina. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,277,275. SELF-CONTAINED HOT WATER SPACE HEATER. Amos O. Brusven, 1032 Williams Ave., Woodburn, Oreg., 97071.

3,283,792. PORTABLE MILL. Matthew J. Thomas, P.O. Box 26121, Los Angeles, Calif., 90026.

3,285,779. DISHWASHING APPARATUS. King Fifth Wheel Company, Mountaintop, Pa. Correspondence to: Henry W. Scarborough, 1432 Philadelphia National Bank Building, Philadelphia, Pa., 19107.

3,295,914. HITCH GUIDE MIRROR FOR TRAILER MOUNTING. William Dietrich. Correspondence to: Christensen, Sanborn & Matthews, 711 Olympic National Life Bldg., 920 2nd Ave., Seattle, Wash., 98104.

General Electric Company is prepared to grant non-exclusive licenses under the following 16 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,284,670. GROUND FAULT RESPONSIVE CONTROL MEANS FOR AN ELECTRIC CIRCUIT RECLOSER OR THE LIKE.

Applications for license under the following patent may be addressed to: Division Patent Counsel, Missile and Space Division, General Electric Company, Valley Forge Space Technology Center, P.O. Box 8555, Philadelphia, Pa., 19101.

3,287,676. TORQUE DEVICE HAVING A DIAMAGNETIC ROTOR.

Applications for license under the following 3 patents may be addressed to: Patent Counsel, Specialty Control Department, General Electric Company, Waynesboro, Va.

3,263,152. STATIC INVERTER.

3,247,929. ARTICLE SUPPLYING SYSTEM.

3,274,480. CONTROL ARRANGEMENT FOR LIMITING THE PEAK INSTANTANEOUS VOLTAGE FROM AN A.C. POWER SOURCE.

Applications for license under the following 4 patents may be addressed to: Patent Counsel, Construction Industries Division, General Electric Company, 1285 Boston Ave., Bldg. 1–B, Bridgeport, Conn., 06602.

3,278,708. ELECTRIC CIRCUIT BREAKER WITH THERMAL MAGNETIC TRIP.

3,278,807. PANEL ASSEMBLY WITH FRICTIONALLY HELD BUS BARS.

3,287,522. CIRCUIT BREAKER WITH SPRING-BIASED TOGGLE LINK.

New Applications Received During November 1966

Patents	7043
Designs	372
Plant Patents	9
Reissues	21
Total	7445

Issue—January 24, 1967

Patents	1,347	No. 3,299,439 to No.	3,300,785, incl.
Designs	36	No. 206,747 to No.	206,782, incl.
Plant Patents	6	No. 2,700 to No.	2,705, incl.
Reissues	7	No. 26,143 to No.	26,149, incl.
Total	1,396		

3,287,607. PANELBOARD AND CIRCUIT BREAKER.

Applications for license under the following 7 patents may be addressed to: Patent Counsel, Power Generation Division, General Electric Company, One River Road, Bldg. #53, Schenectady, N.Y., 10005.

2,957,340. ULTRASONIC IMAGE DETECTOR.

3,147,742. MULTI-PRESSURE WASTE HEAT BOILER.

3,149,470. LOW PRESSURE TURBINE EXHAUST HOOD.

3,263,087. ELECTRO-OPTICAL DISTANCE GAGE.

3,271,953. COMPOUND CONTROL SYSTEM FOR A TURBINE.

3,274,443. REDUNDANT SPEED CONTROL SYSTEM.

3,288,160. ACCELERATION LIMITING LONG RANGE SPEED CONTROL.

Correction

In the OFFICIAL GAZETTE of December 6, 1966, among the patents listed as being available for licensing or sale offered by Inland Paper Products, correspondence directed to: Karl F. Ross, 305 Broadway, New York, N.Y., Patent "3,215,006" should have been *3,155,006* ADHESIVE-STRIP-APPLYING APPARATUS.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 21, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-23-63	10-18-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-20-63	9-22-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	7-11-63	2-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-15-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-5-63	4-25-62
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	3-4-63	6-27-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-15-63	8-23-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-31-63	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	8-3-65	3-12-65

Total number of pending applications (excluding Designs)	194,565
Total number of Design applications pending	4,290
Total number of applications awaiting action (excluding Designs)	142,127
Total number of Design applications awaiting action	2,504
Date of oldest new application awaiting action	March 4, 1963
Date of oldest amended application awaiting action	June 27, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during January 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents..... Numbers 2,492,944 to 2,496,255, inclusive

Plant Patents..... Numbers 911 to 918, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	8-6-64	5-22-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	9-2-64	9-24-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGO, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-22-64	6-18-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3-5-65	11-14-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	11-16-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-8-64	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

DALTON H. PRITCHARD AND ALFRED C. SCHROEDER *v.* BERNARD D. LOUGHLIN

No. 7610. Decided June 9, 1966

[53 CCPA —; 361 F.2d 483; 149 USPQ 841]

1. INTERFERENCE—RIGHT TO MAKE—UNDISCLOSED CIRCUITRY WITHIN SKILL OF THE ART.

"The disclosure in the quoted passage of the specification of combining the red and blue color difference signals derived from the networks 29*b* and 29*c* in the adder to develop the green color difference signal G–Y is plain, and it is clear that the additional input to the adder, the brightness signal Y, must be combined with G–Y to obtain the described output signal G. Moreover, Pritchard has advanced no sound reason for doubting the Board's conclusion that one skilled in the art would have been able to provide the circuitry necessary to obtain that intended operation."

2. SAME—FINAL HEARING—PUBLIC INTEREST IN AVOIDING PIECEMEAL PROSECUTION.

"In effect, Pritchard is saying that the final hearing they requested was really final as to questions which could result in an award of priority adverse to Loughlin but was only an interlocutory affair so far as a possible ruling adverse to them was concerned. That position is untenable. There is an obvious public interest in avoiding piecemeal prosecution of interference proceedings in order to prevent unnecessary postponement of the beginning of the running of the term of patent resulting from an application involved in the proceedings. That interest is exemplified in the present case where the Pritchard application was filed over thirteen years ago. While Loughlin's application is for a reissue and the expiration date of any patent issuing thereon is already determined by the issue date of the patent sought to be reissued, the hardship which unnecessary delay in interference may impose on a reissue applicant is also apparent. It thus seems clear that a final hearing requested by a party under order to show cause must be a final hearing in a real sense and not just as to a question raised against that party's opponent."

3. SAME—SAME.

"In the present case, a contention that Loughlin had incorrectly been granted the benefit of the filing date of his parent application even if the divisional and reissue applications do support the count, and that Pritchard should therefore be allowed to take testimony to overcome the date of the divisional application, was clearly a pertinent matter which ordinary prudence would dictate raising in the request for final hearing. The failure of Pritchard to raise such issue left the question of support for the count in Loughlin's reissue application as the only ancillary question to be considered by the Board. The Board decided that question favorably to Loughlin, and we have found no error in that decision."

4. SAME—BENEFIT OF FILING DATE OF PARENT APPLICATION.

"We do not consider the fact that the Rules of Practice of the Patent Office do not specifically provide for a motion to deprive an opposing party of the benefit of the filing date of an earlier filed application excuses Pritchard from raising that question. The question would have been particularly pertinent and bears an obviously close analogy to a motion to shift the burden of proof."

APPEAL from the Patent Office. Interference No. 93,058.

AFFIRMED.

William H. Meagher (*A. Russinoff* of counsel) for appellants.
Edward Ruestow (*Jesse C. Bowyer* of counsel) for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK,

United States Senior District Judge for the Eastern District of Pennsylvania

ALMOND, *J.*, delivered the opinion of the court.

Dalton H. Pritchard and Alfred C. Schroeder, hereinafter Pritchard, appeal from the decision of the Board of Patent Interferences awarding priority as to the single count in Interference No. 93,058 to Bernard D. Loughlin, the senior party.

Pritchard is involved on application Serial No. 300,855, filed July 25, 1952, assigned to Radio Corporation of America (RCA). Loughlin is involved through his application Serial No. 619,912 for reissue of Patent No. 2,728,813, granted on application Serial No. 297,739, filed July 8, 1952. The latter application is a "division" of application Serial No. 159,212, filed May 1, 1950, the benefit of the filing date of which was accorded Loughlin by the Examiner.

The present interference was instituted as a result of Loughlin's motion to amend an earlier interference, No. 88,624, involving the same Pritchard and Loughlin applications. This new interference apparently was instituted instead of adding the count to No. 88,624 because that interference included additional parties not involved on the present count.[1]

The count relates to color television receivers and reads:

> 1. In a color television receiver that is adapted to reproduce images in color in response to a subcarrier that is phase and amplitude modulated with color difference signals and a brightness signal, apparatus for extracting selected component color signals comprising in combination a first synchronous detector adapted to derive a first color difference signal, a second synchronous detector adapted to derive a second color difference signal, an adder coupled to receive the outputs of color difference signals supplied by said synchronous detectors, said adder being adapted to add said color difference signals in such relative portions as to derive a third color difference signal, and a plurality of combining circuits each being coupled to receive the brightness signal and a different one of said color difference signals derived respectively from the outputs of said synchronous detectors and said adder.

The record discloses that information for producing a color television picture is transmitted by a complex signal including two components which are pertinent here. In the first of these component signals, called the luminance or brightness signal, the values of the three primary colors, red, blue, and green, in the scene are combined in proportion to their contribution to the total luminance. That signal is representative of the brightness of the scene rather than its color and is capable of producing the conventional black and white picture in a black and white receiver. The other signal component includes information as to color values in the original scene with the brightness value subtracted therefrom.

In the receiver, there is obtained, in addition to the brightness signal, usually designated Y, color difference signals for each of the primary colors, which signals may be designated R–Y (red), B–Y (blue) and G–Y (green). In the present system, each color difference signal is added to the brightness signal to provide the corresponding red (R), blue (B) and green (G) primary color signal, which color signal also includes brightness information for reproducing the color picture.

The circuitry of the count does not derive each of the three primary color difference signals separately from the received color signal. Instead, it separately derives only two color difference signals, such as the red and the blue, and obtains the third or green color difference signal by combining the first two in an "adder."[2] The count also recites a plurality of "combining circuits," each of which receives one of the three color difference signals and the brightness signal. Although not specified in the count, the outputs of the combining circuits are the color signals, R, B and G, respectively.

The first question before us is whether the Loughlin reissue application supports the count. Pritchard contends that Loughlin does not disclose two adders that successively perform the function of (1) adding R–Y and B–Y to obtain G–Y and (2) adding G–Y and Y to obtain G.[3] In the first place, Pritchard points out that Loughlin's drawing is in the form of a block diagram which does not show specific circuits. Thus the various circuits making up the receiver are represented by blocks or boxes not disclosing the elements or connections therein but including designations of functions performed and lines drawn between the blocks to represent the electrical connections between the circuits represented thereby. Only three blocks representing adder or combining circuits are illustrated. Two of those are shown as receiving the Y signal and the R–Y and B–Y signals, respectively, to provide the R signal at the output of one and the B signal at the output of the other. The third adder circuit, which is designated as providing the G signal at its output, is shown as having three inputs. Those are (1) the Y signal, (2) a signal representative of R–Y and (3) a signal representative of B–Y.

The Board observed that the specification of the Loughlin divisional and reissue applications, which is the same in both, does not describe specific circuitry to be used in that block of the drawing, designated 65*a*, representing the adder circuit which provides the G signal output. It noted, however, that the expected operation is described, and quoted the following passage:[4]

> In addition to being represenative of the primary colors red and blue, these signals include components which when properly combined develop a color difference signal G–Y representative of green in the reproduced image. The units 66*a* and 66*b* and the voltage divider 67 are effective to derive the latter components in proper proportion from the signals translated through the networks 29*b* and 29*c* *for combination in the adder circuit 65a to develop the color difference signal G–Y representative of the green of the image.* [Emphasis added by Board.]

The Board then stated:

> This passage, particularly the underlined portion, clearly indicates that it was expected that the circuitry within the box designated 65*a* would be such as to develop a distinct G–Y signal before combining with the brightness or luminance signal as the count requires. Pritchard has objected that such broad statements do not constitute a teaching of the particular circuit required by the count. We do not find this argument persuasive. At the time the Loughlin parent case was filed, the worker of ordinary skill in the art was familiar with adder circuits and in our opinion would have had no difficulty in providing circuitry to derive the signals as described in the quoted portion of the Loughlin specification, and circuitry functioning to so derive those signals would necessarily satisfy the requirement of the count which has been questioned.

[1] The Board's decision in Interference No. 88,624 was appealed to this court in P.A. 7567, decided May 19, 1966, *Pritchard v. Loughlin*, 53 CCPA —, — F.2d —, — USPQ —. We affirmed the Board's holding in favor of Loughlin.

[2] Appellants explain in their brief that

> • • • two color-difference signals (each, in itself, representing and being expressible in terms of a particular combination of three primary color components) can be combined to produce a resultant set of primary color components which represents a color-difference signal different from the original two.

[3] In the count, it is the "adder" that performs function (1) and one of the "plurality of combining circuits" that performs function (2).

[4] In the drawings (not reproduced herein) 29*b* and 29*c* designate the networks which supply signals R–Y and B–Y, respectively, and 66*a* and 66*b* designate phase inverter units through which those signals are passed. The reference character 67 designates a voltage divider interposed between unit 66*b* and the adder circuit 65*a*.

United States Senior District Judge for the Eastern District of Pennsylvania

ALMOND, *J.*, delivered the opinion of the court.

Dalton H. Pritchard and Alfred C. Schroeder, hereinafter Pritchard, appeal from the decision of the Board of Patent Interferences awarding priority as to the single count in Interference No. 93,058 to Bernard D. Loughlin, the senior party.

Pritchard is involved on application Serial No. 300,855, filed July 25, 1952, assigned to Radio Corporation of America (RCA). Loughlin is involved through his application Serial No. 619,912 for reissue of Patent No. 2,728,813, granted on application Serial No. 297,739, filed July 8, 1952. The latter application is a "division" of application Serial No. 159,212, filed May 1, 1950, the benefit of the filing date of which was accorded Loughlin by the Examiner.

The present interference was instituted as a result of Loughlin's motion to amend an earlier interference, No. 88,624, involving the same Pritchard and Loughlin applications. This new interference apparently was instituted instead of adding the count to No. 88,624 because that interference included additional parties not involved on the present count.[1]

The count relates to color television receivers and reads:

1. In a color television receiver that is adapted to reproduce images in color in response to a subcarrier that is phase and amplitude modulated with color difference signals and a brightness signal, apparatus for extracting selected component color signals comprising in combination a first synchronous detector adapted to derive a first color difference signal, a second synchronous detector adapted to derive a second color difference signal, an adder coupled to receive the outputs of color difference signals supplied by said synchronous detectors, said adder being adapted to add said color difference signals in such relative portions as to derive a third color difference signal, and a plurality of combining circuits each being coupled to receive the brightness signal and a different one of said color difference signals derived respectively from the outputs

Pritchard argues that the passage quoted by the Board "is concerned not with the internal functioning of the adder circuit 65*a* but with the requirements placed on 'units 66*a* and 66*b* and the voltage divider.'" Appellants further state that the requirements on the latter elements are the same irrespective of whether the adder 65*a* merely combines the three input signals to provide the output G or provides that output by a cascaded adder-combiner circuit which first adds R–Y and B–Y to obtain G–Y and then adds the latter to Y.

Those arguments do not satisfy us that the Board's holding is in error. [1] The disclosure in the quoted passage of the specification of combining the red and blue color difference signals derived from the networks 29*b* and 29*c* in the adder to develop the green color difference signal G–Y is plain, and it is clear that the additional input to the adder, the brightness signal Y, must be combined with G–Y to obtain the described output signal G. Moreover, Pritchard has advanced no sound reason for doubting the Board's conclusion that one skilled in the art would have been able to provide the circuitry necessary to obtain that intended operation.

Pritchard also urges that, although the parent Loughlin application includes a block diagram drawing essentially identical with that in the divisional and reissue applications, it includes a "mathematical discussion" that makes no mention of a green color difference signal but refers to the G signal as being obtained by "combining the monochrome [brightness] signal with proper proportions of the signals S_{29b} [red color difference signal] and S_{29c} [blue color difference signal] in the unit 65*a*." However, that argument is not persuasive on the question of support for the count in the Loughlin divisional and reissue applications. While the description referred to does not specify that a distinct G–Y signal is formed for addition to the Y signal, it clearly does not preclude the operation described in the passage from those applications quoted by the Board.

In a footnote in their brief, appellants intimate that the position that Loughlin can make the count is inconsistent with his having canceled, after a rejection for lack of supporting disclosure, certain claims which he had previously copied from a patent [5] in compliance with the Examiner's requirement and with reservations. However, no inconsistency is involved because, as Loughlin points out, those canceled claims specified distinguishing features not involved in the count here.

For the foregoing reasons, we think the Board correctly ruled that the count is supported by Loughlin's divisional and reissue applications.

Appellants additionally urge that, should we sustain the Board's holding that the reissue application supports the count, then the award of priority and the order to show cause should be vacated and the case remanded for taking of testimony. Their position is that the Board based its finding of support for the count in the involved Loughlin reissue application on material (the passage quoted hereinabove) which, although appearing in the divisional application that resulted in the Loughlin patent for which reissue is being sought and thus entitling Loughlin to the benefit of his filing date of July 8, 1952, does not appear in the parent application filed May 1, 1950. On that basis, appellants assert that Loughlin is not entitled to the

[5] Farr Patent No. 2,763,716, which was the source of the count in aforementioned interference No. 88,624.

latter filing date accorded him by the Examiner and that, as a result of their preliminary statement asserting reduction to practice by a date intermediate May 1, 1950 and July 8, 1952, they should be permitted to take testimony to overcome the latter date.

This matter of reopening the interference for taking testimony was raised after the Board's decision on priority in a request for reconsideration of said decision. The Board denied the request, stating:

> This contention should have been raised in answer to the order to show cause and not in connection with a petition for reconsideration of a decision after final hearing or even in briefs for the final hearing. No showing has been presented as to why this matter was not raised in time so that times for taking testimony prior to final hearing could be set. We will not set such times at this late stage in the proceeding in the absence of a showing which would justify reopening the testimony period. * * *

It seems to be the view of Pritchard that the hearing before the Board was merely a summary proceeding to determine whether Pritchard was properly put under order to show cause. We do not think that is correct. In the first place, the request of Pritchard in response to the order was that the case be "set down for final hearing" on "the matters previously raised in Pritchard and Schroeder's opposition to the Loughlin Motion to Amend, and formally repeated by reference in the foregoing motion to dissolve." One of those matters, and the only one remaining in issue, was that "the Loughlin reissue application does not properly support the proposed count." That obviously is a matter which would have been determinative of priority if decided adversely to Loughlin. The record does not show that, prior to the Board's determination of that question, Pritchard made any contention that the granting to Loughlin of the benefit of the May 1, 1950 filing date of his parent application was improper even if support for the count were found in his divisional and reissue applications.

[2] In effect, Pritchard is saying that the final hearing they requested was really final as to questions which could result in an award of priority adverse to Loughlin but was only an interlocutory affair so far as a possible ruling adverse to them was concerned. That position is untenable. There is an obvious public interest in avoiding piecemeal prosecution of interference proceedings in order to prevent unnecessary postponement of the beginning of the running of the term of patent resulting from an application involved in the proceedings. That interest is exemplified in the present case where the Pritchard application was filed over thirteen years ago. While Loughlin's application is for a reissue and the expiration date of any patent issuing thereon is already determined by the issue date of the patent sought to be reissued, the hardship which unnecessary delay in interference may impose on a reissue applicant is also apparent. It thus seems clear that a final hearing requested by a party under order to show cause must be a final hearing in a real sense and not just as to a question raised against that party's opponent.

[3] In the present case, a contention that Loughlin had incorrectly been granted the benefit of the filing date of his parent application even if the divisional and reissue applications do support the count, and that Pritchard should therefore be allowed to take testimony to overcome the date of the divisional application, was clearly a pertinent matter which ordinary prudence would dictate raising in the

request for final hearing.[6] The failure of Pritchard to raise such issue left the question of support for the count in Loughlin's reissue application as the only ancillary question to be considered by the Board. The Board decided that question favorably to Loughlin, and we have found no error in that decision.

Also, Pritchard seems to overlook the fact that the Board did not hold that Loughlin is not entitled to the benefit of the filing date of his parent application. While it did not consider that question specifically, and properly so since it was not raised in the request for final hearing, the Board did conclude that "Pritchard has not shown sufficient reason why priority should not be awarded against him in view of the fact that in his preliminary statement he has not alleged dates which would overcome the filing date of the party Loughlin." Thus the award of the benefit of the May 1, 1950 date of the parent application has not been overturned and no basis exists for their taking priority testimony.

Since Loughlin is entitled on the record to the benefit of his May 1, 1950 filing date, and that benefit renders the question of taking testimony moot, little discussion of *McGuire* v. *Hill*, 1898 C.D. 134, 84 O.G. 983, is necessary. However, it is apparent that any implication that might possibly be gleaned from that decision that a request to take testimony for contingent consideration might have been refused is clearly overcome by a much stronger implication to the contrary in the much later and much more related case of *Lorenian* v. *Winstead*, 127 USPQ 501 (Bd. of Pat. Intf., 1959). See also *McCormick* v. *Malherbe*, 28 CCPA 838, 116 F.2d 520, 48 USPQ 106.

For the foregoing reasons, we will not vacate the Board's decision and remand the case as requested by Pritchard. The decision is affirmed.

AFFIRMED.

[4] [6] We do not consider the fact that the Rules of Practice of the Patent Office do not specifically provide for a motion to deprive an opposing party of the benefit of the filing date of an earlier filed application excuses Pritchard from raising that question. The question would have been particularly pertinent and bears an obviously close analogy to a motion to shift the burden of proof.

REISSUES

JANUARY 24, 1967

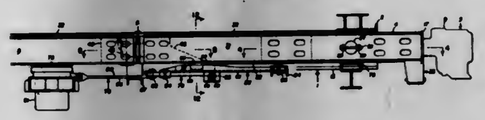
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,143
DRAFT RIGGING

Geoffrey W. Cope, Williamsville, N.Y., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland

Original No. 3,211,297, dated Oct. 12, 1965, Ser. No. 302,668, Aug. 16, 1963. Application for reissue Mar. 2, 1966, Ser. No. 536,535

22 Claims. (Cl. 213—72)



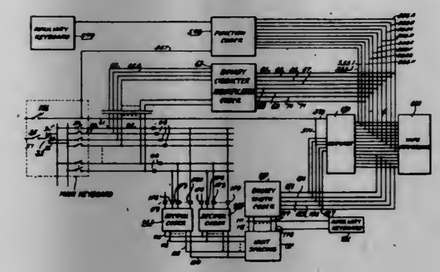
2. Draft rigging for a *long overhang* railway *freight* car comprising sill means extending longitudinally of said car and movable longitudinally relative thereto, a coupler, [and] a draft arm aligned horizontally with said sill means and carrying said coupler, said draft arm being connected forwardly to said coupler for relative vertical swinging and rearwardly to said sill means for horizontal swinging relative thereto in unison with said coupler, *and means operative with said coupler uncoupled and acting through said draft arm for centering a head of said coupler for coupling on both curved and straight underlying track.*

26,144
JUSTIFICATION INFORMATION COMPUTER AND TAPE PERFORATOR FOR PHOTOCOMPOSING MACHINES

Daniel H. Robbins, Rochester, and Victor M. Corrado, Albertson, N.Y., assignors to Eltra Corporation, a corporation of New York

Original No. 2,848,049, dated Aug. 19, 1958, Ser. No. 607,952, Sept. 4, 1956. Application for reissue Sept. 24, 1962, Ser. No. 227,111

63 Claims. (Cl. 234—7)



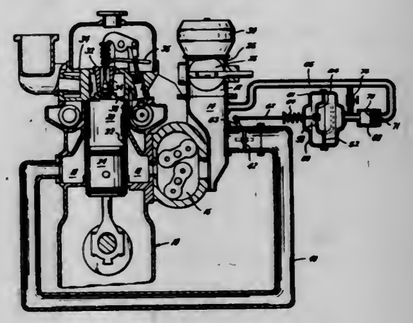
1. In a machine for producing a coded tape representative of a composed line of type characters which vary in set width on a units-of-an-em basis, the combination with character keys for coding character signals on the tape and additional keys for coding function signals which control composition of coded characters, of line length apparatus comprising means for indicating line length, means for setting said indicating means to accord with a selected value of line length, means for actuating said indicating means in response to operation of a character key to subtract the set width of the character represented by the key from the pre-set line length and thereby indicate line remainder, a computer mechanism for computing and coding the line remainder information, and means controlled by said computer mechanism and responsive to operation of a function key for producing a corresponding line remainder signal on the tape.

26,145
METHOD OF AND APPARATUS FOR CONVERTING A DIESEL ENGINE TO OPERATE ON NATURAL GAS

James F. Friddell, Houston, Tex., assignor to Stewart & Stevenson Services, Inc., Houston, Tex., a corporation of Texas

Original No. 3,187,728, dated June 8, 1965, Ser. No. 352,738, Mar. 18, 1964. Application for reissue Jan. 14, 1966, Ser. No. 526,941

8 Claims. (Cl. 123—32)



8. In a multicylinder two cycle, positive displacement blower engine having a blower intake and blower output, the combination of a fuel recirculation means comprising,

a recirculating duct connected between the blower output and the blower intake,

a valve for opening and closing said duct,

a diaphragm connected to and controlling said valve, said diaphragm being in communication with the blower intake,

a check valve between said diaphragm and said intake allowing the passage of gas toward said diaphragm but preventing passage of gas from the diaphragm towards the intake, and

a time delay valve positioned between the diaphragm and intake and in parallel with the check valve for restricting the passage of gas from the diaphragm to the intake thereby delaying the opening of said recirculating duct on a decrease in load.

26,146
CONNECTOR APPLYING TOOL

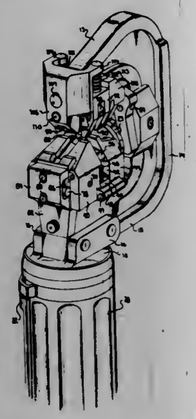
Herbert C. Stoltz, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Original No. 3,135,310, dated June 2, 1964, Ser. No. 110,234, May 15, 1961. Application for reissue June 23, 1965, Ser. No. 467,824

12 Claims. (Cl. 72—397)

9. A device for radially indenting electrical connecting devices comprising, two pairs of indentor arms, said arms being pivotally mounted on parallel, spaced-apart axes,

the arms of each pair extending towards, and past, each other, indentor means on the ends of said arms, said indentor means being directed towards a common point,

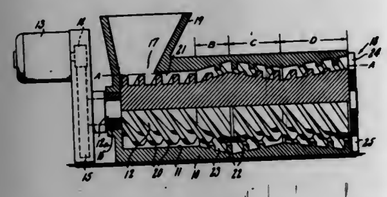


and actuating means for pivotally swinging each of said arms about its pivotal axis thereby to move said indentor means towards said common point and to indent a connector positioned at said common point.

26,147
MILL

Clarence M. Parshall, Grosse Pointe Woods, and Paul Geyer, Detroit, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Original No. 2,744,287, dated May 8, 1956, Ser. No. 311,243, Sept. 24, 1952. Application for reissue Feb. 1, 1966, Ser. No. 537,583
16 Claims. (Cl. 18—12)

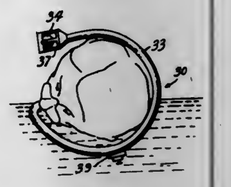


1. A mill comprising, a rotor member, a stationary barrel member providing a bore in which the rotor member is adapted to be rotated, means for rotating said rotor member, longitudinally extending helical grooves in one of said members, longitudinally extending grooves in said other member, the grooves in one member decreasing to substantially zero depth at at least one point along its length, the grooves in the other member decreasing to substantially zero depth at at least one point along its length spaced longitudinally from said one point on said one member, *the grooves in each of said members changing in depth throughout at least a common portion of the longitudinal extent of said mill between said one point on said one member and said one point on said other member,* said grooves in said rotor member and the grooves in the bore of said barrel member communicating with each other so as to form a continuous passage through the mill through which stock may pass whereby all the stock will pass through the shear plane developed in the clearance between the stationary barrel and the rotating rotor.

26,148
SWIMMING INSTRUCTION DEVICE

David J. Wayfield, 225 Liberty Ave., West Islip, Long Island, N.Y. 11795

Original No. 3,140,551, dated July 14, 1964, Ser. No. 743,796, June 23, 1958. Application for reissue Aug. 3, 1964, Ser. No. 399,116
11 Claims. (Cl. 35—29)

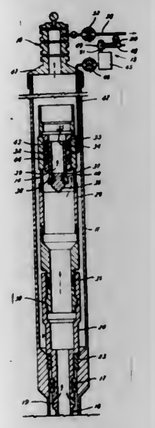


2. An aquatic device for teaching the American Crawl swimming stroke, comprising a mask adapted to fit tightly around the face of the swimmer and rotatable, inhalation valve means capable of being positioned on the right or left side of the swimmer's head.

26,149
APPARATUS FOR CONTROLLING FLOW WITHIN A WELL

Phillip S. Sizer, Dallas, Tex., Vonner R. Cherry, Mountain Home, Ark., and Lowell M. Wilhoit, Dallas, Tex., assignors to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware

Original No. 3,157,233, dated Nov. 17, 1964, Ser. No. 592,691, June 20, 1956. Application for reissue Dec. 17, 1964, Ser. No. 432,915
32 Claims. (Cl. 166—72)



21. Apparatus for protecting a flowing well having casing therein against the loss of the fluid products therefrom in the event the structure of the well above the ground is subjected to a damaging force, including: means operatively connected with said structure arranged to be actuated by response to initial loss of fluid products from the well; and means located in the well and connected with said first named means for shutting off the flow of the well responsive to said first named means being actuated; said means for shutting off well flow including a fluid pressure operated valve, and means for subjecting said valve to pressure from a source at the ground surface for maintaining said valve open.

PLANT PATENTS

GRANTED JANUARY 24, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,700
ROSE PLANT

Reimer Kordes, Barmstedt, near Elmshorn, Germany, assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Dec. 14, 1965, Ser. No. 513,875
1 Claim. (Cl. Plt.—28)

A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a small plant which is about ½ the size of "Lilli Marlene," a habit of bearing flowers similar to those of "Lilli Marlene," but which are smaller and only about ½ the size of those of this parent variety, thereby resulting in a very low-growing floribunda rose which is suitable for use for either pot forcing or for garden use, and a distinctive and attractive red general color tonality of the flowers.

2,701
ROSE PLANT

Eugene S. Boerner, Newark, N.Y., assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Dec. 20, 1965, Ser. No. 515,267
1 Claim. (Cl. Plt.—4)

A new and distinct variety of rose plant of the climber class, substantially as herein shown and described, characterized particularly as to novelty by being substantially similar to its parent variety "Tropicana" (Plant Patent No. 1,969), but essentially differing therefrom by its climbing habit of growth evidenced by its production of vigorous, upright and long basal shoots which attain a height of from about 5 feet to 6 feet the first year, which in turn produce lateral blooming spikes in the second year, with the flowers usually blooming in mass during the month of June.

2,702
APPLE TREE

Frank H. McDermid, deceased, late of Pennfield Township, Calhoun County, Mich., by James A. McDermid, administrator, Pennfield Township, Calhoun County, Mich., assignor to Stark Bro's Nurseries & Orchards Co., Louisiana, Mo., a corporation of Missouri

Filed Dec. 21, 1965, Ser. No. 515,808
1 Claim. (Cl. Plt.—34)

A new and distinct variety of apple tree, substantially as herein shown and described, characterized particularly as to novelty by its habit of bearing fruit which generally resembles the fruit of "Beacon" (unpatented) in general appearance and time of ripening, but essentially differing from "Beacon" by its larger foliage which is a slightly lighter shade of green color, and by its attractive fruit of excellent quality which has a shallower basin, a longer and more slender stem, an open core instead of a closed core like the fruit of "Beacon," and a very much superior fruit flavor.

2,703
MOCK ORANGE (PHILADELPHUS) PLANT

Roland Bergeron, Orleans, France, assignor, by mesne assignments, to Gulf Stream Products, Inc., Wachapreague, Va., a corporation of Virginia

Filed Nov. 25, 1964, Ser. No. 414,038
1 Claim. (Cl. Plt.—54)

A new and distinct variety of mock orange (Philadelphus) plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a dwarfish low-growing shrub habit of growth, a free-flowering habit, and abundant production of large, semi-double white flowers borne in clusters all along the branches, the weight of said flowers causing the branches to arch gracefully and resulting in complete coverage of the entire plant by the flowers which gives a very showy and attractive mass effect.

2,704
ROSE PLANT

David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed Nov. 2, 1965, Ser. No. 506,293
1 Claim. (Cl. Plt.—22)

A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very attractive, vigorous, bushy and rounded plant habit, attractive, dense, glossy, dark green foliage which clothes the plant well, nearly urn-shaped flower buds, double flowers of attractive form, said flowers being of exceptionally large size for a floribunda variety, and being borne in small to medium sized clusters which cover the plant very well, and a distinctive and attractive multi-colored floral effect of the flowers, with red and yellow colors in the bud, red in the newly open flower, but changing to attractive pinks as the flowers age.

2,705
ROSE PLANT

David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed Nov. 17, 1965, Ser. No. 508,401
1 Claim. (Cl. Plt.—20)

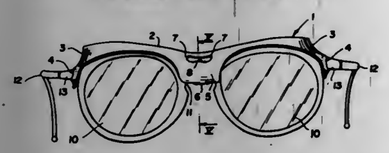
A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous, attractive, upright-spreading plant habit, large, attractive, leathery and semi-glossy dark green disease-resistant foliage, very good floriferousness, with the flowers borne both singly and in small clusters on medium to long flower stems, said flowers beginning as attractive urn-shaped buds which become medium to large, double flowers when open, and a distinctive and very attractive, rich and often glowing flower color ranging between Geranium Lake and Signal Red.

PATENTS

GRANTED JANUARY 24, 1967

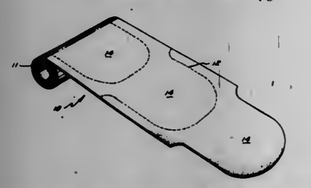
GENERAL AND MECHANICAL

3,299,439
DUST GUARD FOR SPECTACLES
William R. Bohner, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed May 25, 1965, Ser. No. 458,678
2 Claims. (Cl. 2—13)



1. In combination with a pair of spectacles having a nosepiece, frame and temple, a dust guard for the top portion thereof, comprising a strip of flexible material having two holes at the sides thereof through which the temples of the spectacles are inserted, and having a central slot and a lateral extension from the central portion thereof terminating in tab means, said lateral extension being wrapped around the nosepiece and said tab means extending through said slot to form a closed loop.

3,299,440
BIB
Gene T. Grable, 226 Mission Road, Corona, Calif. 91720
Filed Aug. 20, 1964, Ser. No. 390,847
3 Claims. (Cl. 2—49)



1. A blank for a plurality of bibs comprising:
a strip of flexible material having substantially parallel sides;
a plurality of perforation lines, each perforation line symmetrical about the centerline of said strip and extending between opposite edges of said strip;
first portions of said perforation lines, said first portions adjacent said strip sides and including parts defining angles of at least about 30° with the sides of said strip;
second portions of said perforation lines connecting with said first portions and extending substantially parallel with said parallel sides of said strip at a distance therefrom of less than about one-eighth the width of said strip; and
third portions of said perforation lines, said third portions connecting with said second portions and having parts extending through the center of said strip in a direction substantially perpendiculer to said parallel sides of said strip, said plurality of perforation lines spaced lengthwise along said strip at distances approximately equal to the lengthwise distance between the parts of said first portions of said perforation lines which define angles of at least about 30° with said sides of said strip and the parts of said third portions of said perforation lines which extend through the center of said strip.

3,299,441
FEEL GLOVE WITH FLAP HOLDDOWN
Morris L. Slimovitz, % Morris Manufacturing Co., P.O. Box 219, Newbern, Tenn. 38059
Filed Apr. 28, 1966, Ser. No. 545,978
1 Claim. (Cl. 2—158)

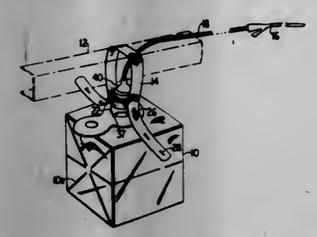


A hand covering comprising a flexible hand enclosing member including a palm covering panel having a transverse slit-like opening therein, a closure flap having substantially the same flexibility as the panel having one edge secured thereto between the opening and tip of the hand enclosing member with the other edge being free and overlying and closing the slit-like opening, and means releasably retaining the free edge of the flap alongside of the panel for retaining the flap in closing relation to the opening, said means being openable in response to pressure exerted against the interior of the flap by fingers of the hand within the hand enclosing member thereby enabling the flap to be opened without employing the fingers on the opposite hand of a person wearing the hand covering, said opening extending substantially across the width of said panel, said retaining means extending only partially across the width of the panel and flap to enable finger pressure to be exerted on the interior of the flap alongside the retaining means and at points outwardly from both ends thereof to enable easier separation of the retaining means, opening of the flap and ejection of the fingers through said opening, said retaining means securing the flap alongside of the panel including a fastener strip secured to a portion of the inner surface of the flap adjacent the free edge thereof, and a coacting fastener strip secured to the outer surface of the panel generally parallel to the slit-like opening in spaced relation thereto for securing the flap against the panel in closing relation to the opening, said fastener strips and flap each having an arcuate edge disposed remote from the edge of the flap attached to the panel.

3,299,442
BOTTLE WITH HANGER SUPPORT
Edward J. White, Denville, Frank J. Serany, Jr., Pompton Plains, and Jerome J. Stern, Englewood, N.J., assignors to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed Oct. 29, 1965, Ser. No. 505,704
14 Claims. (Cl. 4—110)

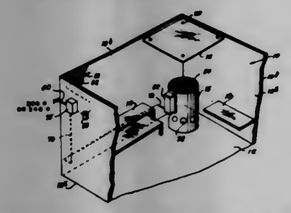
13. A plastic drainage bottle and support therefore, a cylindrical neck on said bottle, integral lugs extending outwardly of said neck, a suspension strap having means

engageable with said lugs, said lugs having hook means for receiving said engageable means to detachably affix said suspension strap thereto, a hanger having one section extending away from the neck to form a handle or the like and another section having an opening for



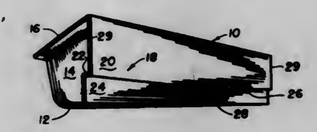
receiving said neck, at least one of said lugs being constructed and arranged to be temporarily flexed to permit said hanger to be slipped on said neck past said lugs to a position underlying the latter whereby said lugs hold said hanger on said neck as said lug resumes its normal unflexed condition.

3,299,443
ELECTRICALLY HEATED SAUNA INSTALLATION
Veikko K. Ketola, 6432 Slopes Drive, Dallas, Tex. 75231
Filed Jan. 22, 1964, Ser. No. 339,478
8 Claims. (Cl. 4—160)



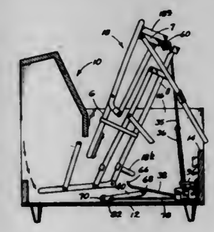
1. In a sauna installation, the combination of an insulated walled room, a heating unit disposed in said room for generating and emitting steam in a generally vertically upward direction therein, supporting means adapted to support the occupant while bathing mounted on the interior walls of said walled room, an insulating panel on the ceiling of said walled room directly above said heating unit and spaced from said ceiling, and means exterior to the walled room and connected with said heating unit for controlling the heat energy produced by said heating unit; said heating unit including a substantially vertical cylindrical housing having a plurality of electrical heating elements at vertically spaced positions therein and operatively electrically connected with said control means exteriorly of said room; perforate support means in said housing below said heating elements; a column of hard rounded rocks supported by said support means and having at each of its opposite ends a layer of rocks of approximately two (2") inches in vertical thickness or height, said rocks of said layers ranging in size from one inch to one and one-half (1½") inches in diameter; said column having between said upper and lower end layers of rocks a body of larger rounded hard rocks of diametric dimensions ranging between one and one-quarter (1¼") inches and two and one-half (2½") inches in diameter, said body of larger rocks filling the space between the lower body of smaller rocks and the upper body of smaller rocks; said plurality of vertically spaced electrical heating elements being disposed in said housing between said upper and lower layers of rocks, said larger rocks in said column being disposed between and above each of said heating elements; said column of rocks extending from said perforate support means to the upper end of said housing; the upper end of said housing being open; and aperture means in the wall of said housing below said support means providing for air inlet into said housing below said column of rocks whereby the air is circulated inwardly through said apertures and upwardly through said column of rocks and out the open end of said cylindrical housing to heat said room, said rocks being also heated by said heating elements.

3,299,444
BATHTUB CONSTRUCTION
Vernon E. Gangelhoff, 2114 Pacina Drive, San Jose, Calif. 95116
Filed Dec. 2, 1963, Ser. No. 327,356
4 Claims. (Cl. 4—173)



1. In a bathtub construction resting upon an alcove floor between side walls and having a flange extending outwardly from the top of the tub, a front enclosure extending between the side walls and from the flange to the floor, said front enclosure having an upper portion with a bottom edge, a lower portion having an upper edge recessed from said upper portion, and an intermediate portion linking the bottom edge of the upper portion with the upper edge of the lower portion, said upper portion bottom edge being inclined downwardly from the alcove side walls to a midpoint of the front enclosure so that water will flow away from the side walls.

3,299,445
POWER MEANS FOR SOFA BED
Walter J. Steffan, 12600 SE. Kelly, Portland, Oreg. 97266
Filed Sept. 28, 1965, Ser. No. 490,849
12 Claims. (Cl. 5—13)



9. In a sofa bed having a sofa body and an extensible folded-up bed frame mounted on the body, the combination of
a mounting plate secured to said sofa body below said bed frame,
a shaft,
means mounting said shaft adjacent said mounting plate for rotation of the shaft about its longitudinal axis,
a drive member operatively engaging said shaft, occupying a starting position on said shaft with the bed frame folded, said member, upon rotation of said shaft in one direction, being movable along said shaft to another position spaced from the starting position, said member said movable back to its starting position from its said other position upon rotation of the shaft in the opposite direction,

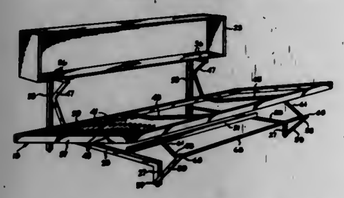
lifting means for lifting up portions of the bed frame comprising a lifting arm actuated, upon movement of said drive member from its starting position to its said other position, to assume an on-end position and lift portions of said bed frame,

ejection means for ejecting lifted-up portions of the bed frame comprising an ejection arm, and means operatively connecting said ejection arm and said drive member whereby, upon movement of said drive member from its said other position to its said starting position, the arm assumes an on-end position and ejects portions of the bed frame forwardly out of said sofa body,

a motor mounted on said sofa body connected to said shaft for rotating said shaft, and

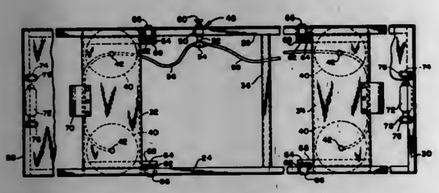
control means for reversing the direction of rotation of said shaft.

3,299,446
SOFA BED
Bernard G. Blise, Dyer, Ind., and Walter Friedeck, Kenosha, Wis., assignors to Simmons Company, New York, N.Y., a corporation of Delaware
Filed Jan. 18, 1965, Ser. No. 426,048
7 Claims. (Cl. 5—22)



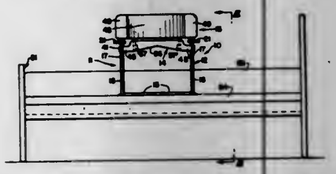
1. A sofa bed comprising a normally stationary frame having a back rest, a movable frame adapted to support a seat cushion, means shiftably mounting said movable frame on said stationary frame for movement between a rearward sofa position disposed partially beneath said back rest and a bed position forward of said back rest, said mounting means including linkage means interconnecting the front portion of said movable frame and said stationary frame and defining the path of movement of said front portion of said movable frame in shifting between said positions, said linkage means including strut means which supports said front portion of said movable frame in said bed position.

3,299,447
SUSPENSION SYSTEM FOR MATTRESSES AND THE LIKE
Edwin C. Dome, Lucas, Ohio, assignor to Artnell Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 9, 1965, Ser. No. 431,291
4 Claims. (Cl. 5—118)



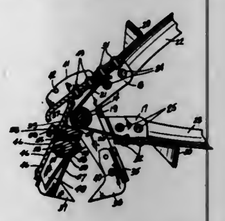
1. A suspension system for mattresses and the like, comprising a generally rectangular bottom frame assembly, a generally rectangular top frame assembly adapted to receive and support a mattress or the like, a plurality of expansible fluid spring members structurally interposed between and having upper and lower end portions connected respectively to said top and bottom frame assemblies relatively adjacent each corner thereof, means for variably controlling the fluid pressure simultaneously within said plurality of fluid spring members to control the position of said top frame assembly, means for limiting the vertical upward and downward movement of said top frame assembly relative to said bottom frame assembly, and shock absorber means operatively connected to said top and bottom frame assemblies at each end thereof to dampen the movement of said top frame assembly.

3,299,448
KNOCK DOWN CHAIR
Elizabeth R. Rucchio, 3527 Terrace Drive, Arlington, Va. 22003
Filed Feb. 23, 1965, Ser. No. 434,222
9 Claims. (Cl. 5—332)



1. A knock down chair structure adapted for use as a bed chair to support a patient in a normal sitting position comprising a pair of side arm assemblies each having a base structure, integral side arm means to grippingly receive a portion of a mattress therebetween, and upstanding front risers and rear corner posts; connector means on said front risers and rear corner posts; a front crossbar adapted by mating connector means at its opposite ends for removable interlocked connection to the connector means on said front risers; and a back support adapted by mating connector means at its opposite sides for removable interlocked connection to the connector means on said rear corner posts.

3,299,449
CARTON OPENING TOOL WITH SLIDABLE CUTTING MEANS
Nathaniel M. Olney, New York, N.Y., assignor to Swingline, Inc., Long Island City, N.Y., a corporation of New York
Filed July 31, 1964, Ser. No. 386,558
6 Claims. (Cl. 7—5.4)



1. A carton opening device comprising a pair of inwardly and pivotally movable connected jaws each having a support portion and a pair of spaced prong members connected thereto, a longitudinally extending handle member connected to each of said jaws, spring means between said jaws normally biasing them outwardly, locking means upon said handle members adapted to hold them in closed position, a slideway carried by the support portion of one of said jaws at the front thereof, a slidably movable carrier member within said slideway, a blade connected to said carrier, and means operatively connected to said carrier and said support portion adapted to maintain said carrier in selected fixed positions so that said blade member may be extended or retracted, said means comprising a movable actuator connected to said carrier, and releasable detent means upon said support portion adapted to hold said actuator in fixed positions.

3,299,450
CRIB-BED
Louis Gottfried, 515 West End Ave., New York, N.Y. 10024, and Jacob Berger, 600 W. 246th St., New York, N.Y. 10034
Filed Nov. 12, 1964, Ser. No. 410,610
10 Claims. (Cl. 5—100)



1. A convertible bed comprising

a head board,

a foot board,

a pair of side rails releasably connecting said head board with said foot board,

a first side gate disposed between said head board and said foot board,

a first guide rod secured to one side of said head board, and

a second guide rod secured to one side of said foot board,

a second side gate disposed between said head board and said foot board opposite said first side gate,

said head board comprising a lower section and an upper section removably disposed on top of said lower section,

said foot board comprising a lower section, a median section removably disposed on top of said lower section and an upper section removably disposed on top of said median section, and

means for releasably connecting each of said sections from its adjacent lower section, and

said upper section of said head board being adapted to be removed upon conversion of said bed from a youth bed to an adult bed,

said upper section of said foot board being adapted to be removed upon conversion of said bed from a crib bed to a youth bed, and

said median section of said foot board being adapted to be removed upon conversion of said bed from a youth bed to an adult bed.

3,299,451
CONVERTIBLE PILLOW
Thomas Trogdon, Waynesville, N.C., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Ohio
Filed Dec. 21, 1964, Ser. No. 420,057
1 Claim. (Cl. 5—337)

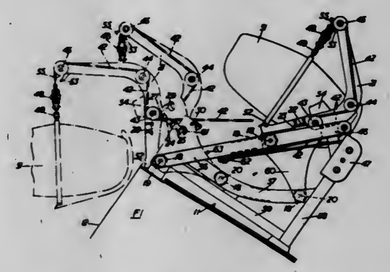


A pillow comprising a core and a cover, said core in the shape of a conventional comparatively flat member having a rectangular cross section, said cover having first and second closure means integral therewith, said first closure means located along one edge of said cover and operable to permit insertion and removal of said core, said second closure means located along the other edges of said cover and operable to convert said pillow into a bolster of cylindrical shape.

ERRATUM

For Class 7—5.4 see:
Patent No. 3,299,449

3,299,452
SHIP'S LIFEBOAT DAVITS
George W. Haycock, Clarkston, England, assignor to said George W. Haycock and John S. Thomson, Greenoch, Scotland
Filed Feb. 26, 1965, Ser. No. 435,664
5 Claims. (Cl. 9—38)

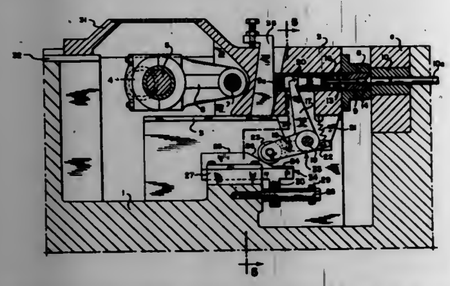


1. A roller track gravity davit in which a boat supporting and suspending structure comprises a roller carriage movable between a boat-inboard position and a boat-outboard position, a davit arm pivotally mounted on said carriage and movable between a normal launching and an extended-reach launching position relative thereto, latching means for holding the davit arm in said normal-launching position when the carriage is in the boat-inboard position and the boat-outboard position, said latching means being releasable to allow the davit arm to move to said extended-reach launching position when the carriage is in the boat-outboard position, and stop means for holding the davit arm in said extended-reach launching position.

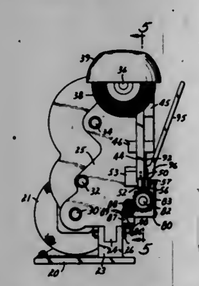
3,299,453
UPSETTING MACHINE WITH CONTROLLABLE EJECTOR MEANS FOR THE MANUFACTURE OF SCREWS, BOLTS, BOLT BLANKS AND THE LIKE
Gerardus Cornelis van de Meerendonk, Helmond, Netherlands, assignor to Nedschroef Octrooi Maatschappij N.V., Helmond, Netherlands, a limited-liability company of the Netherlands
Filed Dec. 9, 1964, Ser. No. 417,136
Claims priority, application Netherlands, Dec. 13, 1963, 301,772
6 Claims. (Cl. 10—12)

1. In a machine for upsetting workpieces for the production of bolts and the like, including a frame, a reciprocable carriage mounted for reciprocation in the frame carrying a workpiece-upsetting means having a forming cavity for receiving a portion of the workpiece and movable toward and away from a matrix mounted in the frame, a reciprocable workpiece-ejecting member mounted in the upsetting means for ejecting the workpiece from said cavity after it has been upset in the cavity of the upsetting means, mechanism for actutaing the ejecting member to eject the workpiece including a control

guideway attached to the frame, and an actuating means movable along and in engagement with said control guideway and acting on said ejecting member, wherein the improvement comprises means for adjusting the position of the control guideway so as to vary the movement of said actuating means.

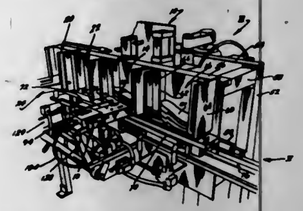


3,299,454
STITCH CUTTING MACHINE
Stanley F. Graff, 5252 Aldrich Ave. N., Minneapolis, Minn. 55419
Filed Mar. 5, 1965, Ser. No. 437,385
4 Claims. (Cl. 12—39.3)



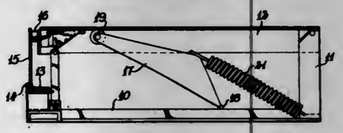
1. In a stitch cutting machine the improvement comprising:
(a) a knife mounted for reciprocating movement;
(b) a knife guard formed to engage a shoe in the slot formed by the junction of the upper and the welt and mounted on said machine to substantially enclose said knife in all positions except the fully extended cutting position;
(c) a depth gauge mounted on said machine to cooperate with said knife guard and adjustable to vary the depth to which said knife guard can be inserted into said slot;
(d) a rotatably mounted vertically movable feed wheel associated with said knife guard for bearing against the underside of the sole of said shoe and maintaining said shoe in engagement with said knife guard when said feed wheel is in the normal or vertically raised position;
(e) gear means, including a telescoping shaft for allowing vertical movement of said feed wheel, operatively connecting said feed wheel to said reciprocating knife in a ratio to cause said knife to reciprocate a sufficient number of times per revolution of said feed wheel to cut all of the threads holding the sole onto the shoe upon circumscribing the shoe once with said machine; and
(f) motor means operatively connected to said gear means for rotating said feed wheel and reciprocating said knife.

3,299,455
HEEL AND SOLE TRIMMER
John A. Harrington, Robert K. Allwardt, Burke E. Porter, and Robert J. Wass, Grand Rapids, Mich., assignors to Wolverine Shoe & Tanning Corporation, Rockford, Mich., a corporation of Michigan
Filed Oct. 26, 1964, Ser. No. 406,234
15 Claims. (Cl. 12—87)



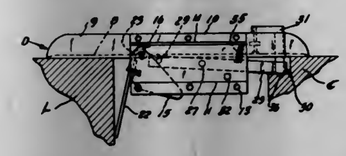
1. Apparatus for trimming shoe soles comprising: a framework; rotatably driven forming tool means mounted in one position on said framework; sole clamping means; a carriage supporting said sole clamping means and movably mounted on said framework for reciprocation toward and away from said forming tool means; powered carriage shifting means between said framework and said carriage; said clamping means being rotatably mounted to said carriage; rotational drive means operably connected to said clamping means including means to rotate said clamping means complete revolutions at a time; motion controlling template means drivingly connected to said rotational drive means, and template follower control means operably associated in control relationship with said powered carriage shifting means, to controllably reciprocate said clamping means with respect to said forming tool means during rotation of said clamping means.

3,299,456
DOCKBOARD
Donald P. Dieter, Chicago, Ill., and Willie O. Riggs, Springfield, Tenn., assignors to Unarco Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 5, 1964, Ser. No. 401,364
5 Claims. (Cl. 14—71)



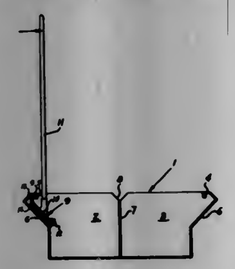
1. A dockboard comprising a frame, a generally rectangular board pivoted at one end on the frame on a horizontal axis for swinging vertically, a lip pivoted on the free end of the board to swing from a depending position to a raised position forming an extension of the board, a strut pivoted on the frame and extending toward the underside of the board, a latch plate and a cam plate carried by the board on its underside to be engaged by the free end of the strut, resilient means urging the free end of the strut into engagement with the latch and cam plates, the cam plate being formed with a smooth surface over which the free end of the strut can move to permit free vertical movement of the board, the latch plate being formed with at least one latching surface engageable with the free end of the strut to limit downward movement of the board, the plates being movable relative to each other, and control means operable in conjunction with movement of the lip to move the plates relative to each other thereby to position the plates so that the strut will engage the cam plate when the lip is raised and the latch plate when the lip is in its depending position.

3,299,457
DOCKBOARD LOCKING UNIT
John Harris, 1108 9th St., Bay City, Mich. 48706
Filed Dec. 11, 1964, Ser. No. 417,609
7 Claims. (Cl. 14—72)



1. The combination with a dockboard adapted to span the space between a loading dock and a carrier, of locking units secured thereto and comprising: a housing mounted on the wall of the dockboard; an angularly disposed bracket pivotally mounted therein; a depending blade swingingly mounted on said bracket mounting; a lever arm rockably mounted in said housing at a point intermediate its length with its one free end to be mounted on the carrier; said lever arm being provided with means on its opposite end for rolling engagement with said angularly disposed bracket to swing said blade into yielding engagement with the loading dock as the load is progressively removed from the carrier.

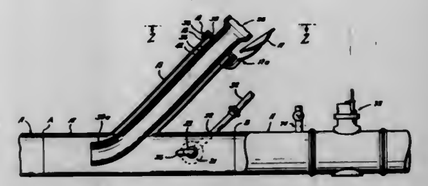
3,299,458
COMBINATION SCRUB MOP, SQUEEGEE, AND WRINGER RECEPTACLE TRAY
Galen E. Royalty, 1222 Cresthaven Drive, Silver Spring, Md. 20903
Filed May 27, 1965, Ser. No. 459,271
6 Claims. (Cl. 15—1)



1. The combination of an elongated plural compartment receptacle tray, upper portions of the opposite ends thereof being angled outwardly to provide mop squeezing surfaces, then angled inwardly and terminating in downwardly extending wringing flanges, a scrub mop and handle therefor associated therewith having a sponge block on its lower surface engageable with either of said mop squeezing surfaces, and the rear edge of said mop being curved upwardly for providing a camming engagement with said wringing flanges for wringing out the mop when the mop handle is moved back and forth.

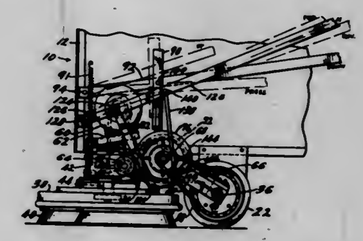
3,299,459
PIPELINE CLEANING APPARATUS
James D. McCune, La Porte, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 15, 1964, Ser. No. 375,037
10 Claims. (Cl. 15—3.51)

1. Apparatus for use in abrasive cleaning of a pipeline comprising:
pipe sections for permanent installation in a pipeline at spaced positions,
first lateral access means in one of the pipe sections,
means releasibly connectible with said first access means and insertable into said pipeline for injecting a particulate abrasive material and fluid carrier into said one pipe section,



second lateral access means in the other pipe section sized for receiving particulate abrasive material deflection means, and
deflection means for blocking the interior of said other pipe section at an acute angle relative to said other pipe section for diverting particulate abrasive material from said other pipe section.

3,299,460
FLOOR CLEANING MACHINE
Jack L. Burgoon, Toledo, Ohio, assignor to American-Lincoln Corporation, Toledo, Ohio, a corporation of Ohio
Filed Oct. 22, 1965, Ser. No. 501,208
8 Claims. (Cl. 15—49)



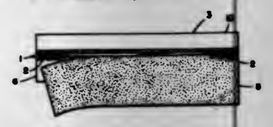
8. A floor scrubbing machine comprising a main frame, a main support movable relative to said frame, a second support movable independently of said main support, scrubbing means carried by said main support, said scrubbing means being engageable with the floor when said main support is in a lower position and spaced from the floor when said main support is moved to an upper position, means associated with said main support and said second support for driving said scrubbing machine in a forward direction and in a reverse direction, said machine being driven in one direction when said main support and said second support are moved toward one another and in the opposite direction when said main support and said second support are moved away from one another, means for lifting said supports substantially simultaneously to move said scrubbing means off the floor, and shifting linkage for moving said second support toward and away from said main support, said shifting linkage including a main link extending beyond the rear of the scrubbing machine, means pivotally connecting a portion of said main link and said frame, a connecting link connected to said main link and said main support, and a second connecting link connected to a portion of said main link and said second support.

3,299,461
LINT REMOVING SURFACE CLEANER FOR GARMENTS
Jerry H. Marks, P.O. Box 1198, Watsonville, Calif. 95076
Filed Dec. 13, 1965, Ser. No. 513,451
4 Claims. (Cl. 15—104)



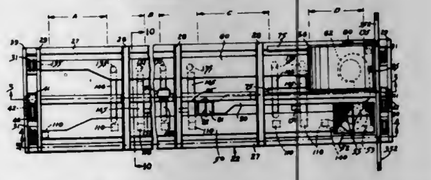
1. A lint, dandruff and small particle pick-up and removing device of the class described comprising: an elongated rear wall, a duplicate elongated companion front wall opposed to and parallel with said rear wall, significant portions of the respective interior end portions only of said walls being superimposed upon each other and adhesively bonded together to positively unite said end portions in a manner to interconnect said walls and also to define and provide double-thickness finger-grips at the respective opposite ends of said walls, the body portions of said walls between said bonded end portions being free of connection and defining and providing an expansible and contractible open-ended sleeve which when in use is adapted to encompass the fingers of the user's hand, the entire interior surfaces of said body portions being calendered and non-tacky, the entire exterior surface of at least one of said walls being coated with adhesive media and providing a tacky lint and small particle pick-up surface when patted or rubbed upon the desired spot of said garment, a first ply of flexible peelable sheet material superimposed upon adhering to and wholly covering said tacky surface, said ply being of a length greater than the surface covered thereby and a minimal end portion projecting beyond the corresponding terminal end portion of said one wall and constituting and providing a finger gripping ply-removing flap, said flap being provided on one lengthwise side with a superimposed permanently attached stabilizing strip member free of connection with but contiguous to and paralleling the coacting bonded end portions of said walls and which, in conjunction with said flap, provides a readily accessible pull-tab which assists and aids the user in grasping and stripping off said peelable sheet material and uncovering and exposing the underlying tacky surface of said one wall for use, the other one of said walls having its exterior surface likewise coated with adhesive media providing a second selectively usable tacky lint pick-up surface, and a second ply of flexible peelable sheet material superimposed upon and wholly covering said last named tacky surface, said second ply likewise being of a length greater than the surface which it covers and also having a terminal end portion projecting beyond a coinciding terminal end portion of said other wall and providing a second flap and also having a conformable stabilizing strip member superimposed on and attached to one side but free of connection with the coacting ends of said walls and providing a second accessible pull-tab, said first named tab being located at one end of the sleeve and said second named tab being located at the other end of the sleeve, and wherein portions of said walls and said peelable sheet material adjacent but inwardly of the respective finger-grips are foldable and inwardly collapsible when said finger-grips are simultaneously caught hold of and are forcibly pressed in a direction toward each other in a manner to spread said walls apart.

3,299,462
COMBINED SPONGE AND HOLDER AND ELEMENTS THEREOF
Robert V. Mathison, 5 Woodcrest Road, Asheville, N.C. 28804
Filed Sept. 27, 1963, Ser. No. 312,129
8 Claims. (Cl. 15—244)



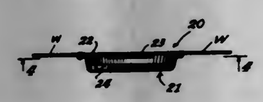
5. The combination of a cellular sponge and a sponge holder comprising a hand grip member; an elongated flexible, synthetic polymer supporting member attached to said hand grip member; and a plurality of smooth sided, substantially rigid, closely spaced projections integrally formed of said synthetic polymer at each end of said supporting member, said projections tapering from their bases to relatively sharp tips, and said projections slanting toward the respective ends of said supporting member, said projections extending into said sponge in opposite directions at opposite ends of said supporting member, said sponge being longitudinally stretched and thereby being attached to said holder via the penetration and gripping of said sponge by said projections.

3,299,463
SYSTEMS FOR COLLECTING AND HANDLING LINT
Loyd R. McEachern, Greenville, S.C., assignor to The American Monorail Co.
Filed July 6, 1964, Ser. No. 380,217
16 Claims. (Cl. 15—312)



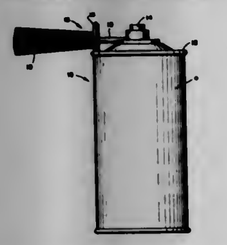
1. Apparatus for removing lint from textile machines and the like and for collecting the lint, said apparatus comprising in combination:
(a) a trackway;
(b) carriage means mounted for travel on said trackway over said machines;
(c) means supported by said carriage means including a high pressure tube having an outlet for directing a stream of air toward said machines to blow air therefrom and a low pressure tube having an inlet;
(d) fan means supported on said carriage means;
(e) said fan means having a high pressure side and a low pressure suction side;
(f) structure which establishes a first flow path providing communication between said high pressure side and said high pressure tube and which establishes a second flow path providing communication between said low pressure suction side and said low pressure tube so that operation of said fan means is effective to blow air from said high pressure tube outlet and to cause a low pressure lint-carrying air stream to flow into and through said low pressure tube;
(g) first screening means mounted in said first flow path upstream from said high pressure tube for removing lint from the air flowing to said high pressure tube;
(h) second screening means mounted in said second flow part in the path of travel of said low pressure lint-carrying air stream;
(i) said screening means being arranged in said flow paths in association with said structure so that operation of said fan means causes air streams to flow through both of said screening means in the same relative direction;
(j) and said first and second screening means having surfaces on which lint is deposited, during said operation of said fan means, said surfaces being located adjacent to each other and disposed in substantially the same plane so that lint can be removed from both surfaces at a single location adjacent the path of travel of said carriage means;
(k) and a pneumatic lint collecting system including a source of air and a member mounted along said trackway in position to be adjacent said surfaces of said screening means when said carriage means is moved past said member, said source of air being operable to create a flow of air through both of said screening means in a direction opposite to said relative direction in order to remove lint deposited on said surfaces.

3,299,464
APPLICATOR PACKAGE
Robert J. O'Brien, Evanston, and Elmer W. Griese, Jr., Chicago, Ill., assignors to Ekco Containers, Inc., a corporation of Illinois
Filed Jan. 3, 1964, Ser. No. 335,489
9 Claims. (Cl. 15—506)



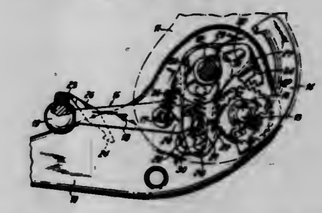
9. In a hermetically sealed applicator package, an open top container having a flowable material therein, a removable cover hermetically sealed to said container and having a compressed, expandable, absorbent member carried on the inner face of said cover, said member being of such size relative to said container and made of such material that it expands and absorbs such flowable material upon contact therewith and functions as an applicator when the cover is removed from the container.

3,299,465
BRUSH APPLICATOR FOR SHAVING CREAM DISPENSER
Willie M. Dykes, Jr., Cochran, Ga. 31014
Filed June 26, 1964, Ser. No. 378,347
8 Claims. (Cl. 15—552)



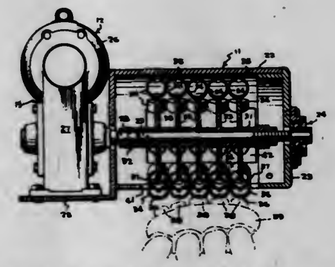
1. For use with a pressurized shaving cream dispenser comprising a container for shaving cream under pressure, said container having a discharge spout through which shaving cream is dispensed, a brush applicator comprising a support body, bristles secured to said body means for mounting said applicator on said dispense comprising a passage in said support body engagingly receiving said spout and a downwardly facing portion of said support body in engagement with a portion of the upper surface of said container.

3,299,466
JOINT FITTING FOR ADJUSTABLE BACKREST
Heinz Werner, Remscheid-Hasten, Germany, assignor to Fa. Fritz Keiper, Remscheid-Hasten, Germany
Filed Nov. 4, 1963, Ser. No. 321,111
11 Claims. (Cl. 16—146)



1. A hinge for use between a back rest and a seat comprising, in combination, a first hinge member adapted to be fixedly mounted on said seat; a second hinge member adapted to be fixedly mounted on said back rest; pivot means pivotally connecting said first and said second hinge member; an operating lever movably between a first, a second and third position; first lock means operable by said operating lever and arranged in said first position of said lever to prevent pivotal movement between said hinge members and in said second and third positions of said lever to allow free pivotal movement of said hinge member; and second lock means operable by said lever such that in said first and third positions of said lever, said second lock means allows free pivotal movement of said hinge members and in said second position of said lever allows a predetermined pivotal movement of said hinge members whereby said back rest may be moved backwardly in predetermined stages on repeated operation of said lever between said first and second positions thereof and said back rest may freely pivotally move with respect to said seat on movement of said operating lever to said third position.

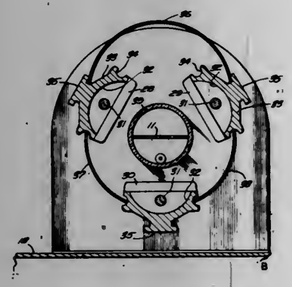
3,299,467
APPARATUS FOR CLEANING CRABS
Jay D. Hendrickson and Henry H. Osterlund, Astoria, Oreg., assignors to C.W.C. Fisheries, Inc., Seattle, Wash., a corporation of Alaska
Filed June 28, 1965, Ser. No. 467,610
5 Claims. (Cl. 17—2)



1. Apparatus for cleaning crabs and removing gills therefrom comprising an elongated cylindrical housing, the longitudinal axis of the housing lying in a horizontal plane, a supporting stand for the housing, a first opening in the housing lying perpendicular to the horizontal plane,

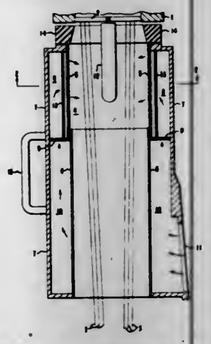
a second opening in the housing, a support shaft lying along the longitudinal axis of the housing, journal means in the housing for rotatably supporting the support shaft, drive means associated with the housing adapted to rotate the support shaft, power transfer means operatively interconnecting the drive means with the support shaft, a plurality of cutting means mounted for rotation with the support shaft and driven by the power transfer means, the cutting means each comprising a circular cutter mounting disk, a plurality of tubular cutters mounted on the periphery of each mounting disk, the cutters adapted to extend through the first opening in the housing during a portion of each revolution of the support shaft whereby when the gills of the crab are presented to the first opening the rotating tubular cutters ensnare and sever the gills from the crab body and discharge the removed gills through the second opening.

3,299,468
MATERIAL TREATING PROCESS AND APPARATUS
Paul B. Moore, Wayland, Mass., assignor to Irving B. Moore Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed July 27, 1964, Ser. No. 386,113
6 Claims. (Cl. 18—6)



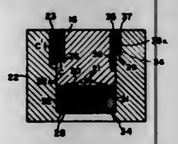
1. Apparatus for continuous thermal curing of rubber extrudate directly as that is discharged by the extruder, comprising a smooth, radiant-heat-transmitting belt arranged to carry the extrudate from the extruder in a path of desired length and direction, means for driving the belt to advance the extrudate at a desired rate controlled in relation to the rate of extruder delivery, a plurality of at least three infra red heaters substantially equidistantly distributed circumferentially around the belt, said heaters constructed and arranged to disperse curing heat into said extrudate rapidly but without burning the extrudate and comprising each a radiant source tube paralleling said belt and extrudate, and an elongated parabolic reflector oriented towards the extrudate and arranged with the tube at its focus whereby substantially all of the heat of the tube is directed in parallel rays at the extrudate, means for individually controlling the heaters for even distortion-free curing of the extrudate whether of round or non-round configuration, a gas-tight radiant transmitting tube enclosing said belt and extrudate between them and said heaters, said tube of quartz glass material passing infra red frequencies and refracting and diffusing said infra red rays to define and integrate said sources as a circumferentially continuous and uniform heat medium, and said tube serving also to carry out the fumes and gases from the extrudate and thereby to exclude them from contact with said heaters.

3,299,469
MELT-SPINNING APPARATUS
John Duncan Charlton, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,036
4 Claims. (Cl. 18—8)



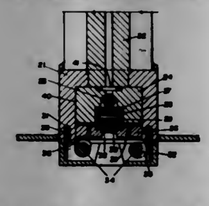
1. In apparatus for melt spinning synthetic filament-forming polymers through a spinneret, filament-quenching apparatus which comprises a hollow cylindrical foraminous member positioned to form a quenching chamber for the filaments immediately below the spinneret, a jacket surrounding the foraminous member to form an annnular plenum chamber, an exit tube positioned below the foraminous member in axial alignment therewith to form a continuous passageway for the spun filaments to pass downward from the spinneret to subsequent processing equipment, means including a gas distributing chamber surrounding the exit tube for supplying a uniform flow of cooling gas into said plenum chamber to provide a uniform radial flow of the gas into the quenching chamber through said foraminous member, and a generally cylindrical gas damper extending from the spinneret into the quenching chamber along the central axis of the foraminous member for directing the cooling gas downward in essentially streamline flow to quench the filaments by concurrent flow of gas.

3,299,470
SPINNERETTE CLOSURE FOR HIGH PRESSURE SPINNING OF MELT POLYMERS
Bruce W. Stockbridge, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 7, 1964, Ser. No. 416,460
4 Claims. (Cl. 18—8)



1. In a spinnerette assembly adapted for producing filamentary material by extrusion in the form of filaments of a viscous molten fiber-forming composition under pressure, the combination of a spinnerette adapter provided with a centrally disposed inlet or feed channel for introduction of molten fiber-forming composition and having an internal centrally disposed distribution chamber therein communicating with said feed channel, a clamp plate secured to said adapter and having an opening therein to receive the adapter in close fitting but removal relationship thereto, said clamp plate having an internal flange on the inner surface of which is disposed a perforated spinnerette plate, a filter screen superimposed on said spinnerette plate and means for connecting a high pressure supply of molten fiber-forming composition to said adapter, said clamp having disposed around its inner periphery and in centered relation along the parting line between the spinnerette adapter and the clamp plate a plurality of threaded semi-circular openings adapted to receive threaded securing pins, a series of corresponding semi-circular unthreaded openings in the spinnerette holder of the same diameter as said first mentioned circular openings and also adapted to receive said securing pins, said securing pins being threaded into the threaded semi-circular openings in the clamp plate to secure said adapter, clamp plate, filter and spinnerette together but being freely movable along the surfaces of the unthreaded openings in the spinnerette adapter, said securing pins, upon application of internal pressure to the distribution chamber of the spinnerette adapter through the medium of the molten fiber-forming composition, being under compression, whereby leakage of fiber-forming composition from the assembly is prevented.

3,299,471
SPINNING NOZZLE FASTENER
Hans Hench, Aschaffstrasse 75, Aschaffenburg, Germany
Filed Apr. 22, 1965, Ser. No. 449,952
Claims priority, application Germany, Apr. 27, 1964, H 52,519; Oct. 30, 1964, H 54,181
8 Claims. (Cl. 18—8)



2. A spinning device for the manufacture of filaments from synthetic materials comprising: a spinning nozzle having at least one filament emission orifice; a nozzle block having walls defining a hollow interior and having in said walls a filament discharge opening and a spinning nozzle insertion opening; said spinning nozzle situated in said interior with each of its orifices facing said discharge opening; said insertion opening having dimensions larger than the maximum dimensions of said spinning nozzle in cross sectional planes facing the insertion opening; said discharge opening displaced from said insertion opening; at least two wedges supported by said nozzle block and tightening means to cause said wedges to bear against the underside of the spinning nozzle to hold the nozzle in a fixed position relative to said nozzle block; said device having a service side for access to said insertion opening, wedges and tightening means.

3,299,472
SPINNERETTE PACK FOR MELT SPINNING
Eugie A. Martin, Gulf Breeze, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 444,986
4 Claims. (Cl. 18—8)

1. A spinnerette pack for melt spinning filaments from molten polymer comprising in combination in fixed adjacent relationship:

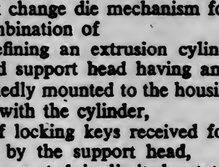
(a) walls defining a substantially dome-shaped spinnerette pack cavity having finely divided inert material therein, a polymer entrance port substantially at the top thereof, and a base of radius R, the center of both said port and said base being axially aligned on a centerline;

(b) screening means across said base of said dome-shaped cavity; and

(c) a spinnerette plate in sealed relationship with said walls defining said base of said cavity, said spinnerette plate having a plurality of capillaries therethrough, the number of capillaries within an intermediate base radius r being determined by the equation

$$N_r = N_R\left(\frac{Q_r}{Q_R}\right)$$

wherein N_R is the total number of capillaries through said spinnerette plate within said base radius R, N_r is



the number of capillaries within intermediate base radius r wherein r is less than base radius R but more than zero, Q_R is the total polymer flow through said cavity and Q_r is the polymer flow through the area of the base circumscribed by intermediate base radius r.

3,299,473
ADJUSTABLE SCREW MELTER HEATER
Ellis W. Rorer, Seaford, Del., and Abraham Scheinfeld, Philadelphia, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 14, 1964, Ser. No. 389,546
5 Claims. (Cl. 18—12)



1. In combination: a screw melter having a rotatable extrusion screw, said screw having an internal axial bore, an electrical heater assembly mounted within said bore, and adjusting means for adjusting the axial position of said heater assembly without modifying the rotational motion of said screw.

3,299,474
QUICK CHANGE APPARATUS FOR EXTRUSION DIES
Thomas Ashworth, Jr., Cuyahoga Falls, Ohio, assignor to Ashworth-McDade, Inc., Cuyahoga Falls, Ohio, a corporation of Ohio
Filed Mar. 30, 1965, Ser. No. 443,978
18 Claims. (Cl. 18—12)

1. In a quick change die mechanism for extrusion apparatus the combination of

a housing defining an extrusion cylinder,

a ring shaped support head having an opening therethrough fixedly mounted to the housing in concentric alignment with the cylinder,

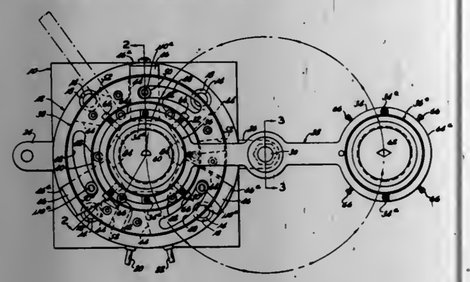
a plurality of locking keys received for radial sliding movement by the support head,

a cam ring mounted in limited rotatable relation to the support head and engaging said locking keys to effect substantially uniform radial movement thereof upon rotation of said ring,

a bracket fixedly mounted to the circumferential edge

of the support head and directed substantially radially therefrom,

an elongated fulcrum pin mounted in fixed relation to the bracket so as to be in substantial alignment with the axis of the support head,



a support arm mounted in sliding, pivotal and tilting relationship to the fulcrum pin, and

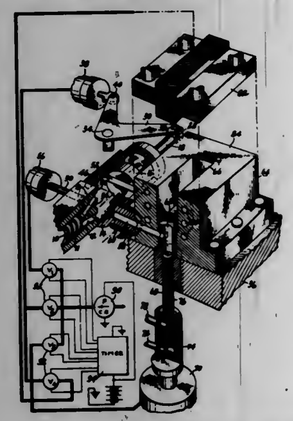
a die adapter operatively mounted to the arm and receivable in the opening of the support head to be locked into position by the radially inward movement of the locking keys upon rotation of the cam ring in the proper direction.

3,299,475

METERING APPARATUS FOR AN INJECTION MOLDING MACHINE

Donald W. Carlson, Anderson, and John M. Cox, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 24, 1963, Ser. No. 318,660
3 Claims. (Cl. 18—30)



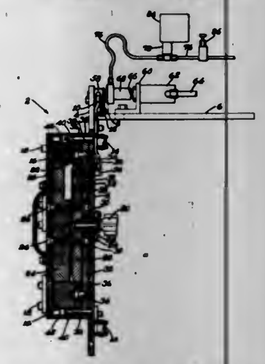
1. In a molding machine for the high pressure casting of thermoplastic materials, said machine having a metering apparatus arranged to selectively meter a predetermined amount of molding material, transfer means including an outlet chamber therefor, said chamber being in communicating relationship with said metering chamber, an impact means including a chamber in communication with said transfer chamber, and a die cavity having one portion formed by a movable core and another portion formed by said impact means, said die cavity being in fluid communication with said impact chamber, said metering apparatus comprising: a yieldable first piston slidable in a metering chamber and displaceable by molding material fed into said metering cavity; and a second piston forming a portion of said transfer means movable at right angles to said first piston in said metering chamber, and movable in an aperture formed in said yieldable first piston and said transfer means to displace all of the molding material remaining in said metering chamber after evacuation of the major portion of said metering chamber by a movement of said yieldable first piston towards said transfer means.

3,299,476

INJECTION MOLDING CUT-OFF DEVICE

Donald B. McIlvin, Danvers, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Aug. 12, 1964, Ser. No. 389,060
7 Claims. (Cl. 18—30)



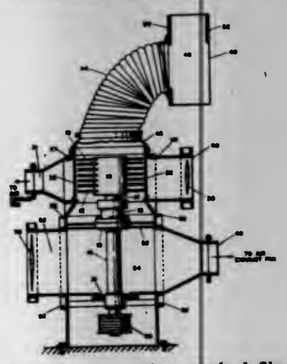
1. In an injection molding machine, an automatic injection cut-off means comprising a nozzle interconnecting the mold cavity and a source of pressurized air, an insert in the cavity end of said nozzle having a porosity sufficient to permit the flow of air therethrough but insufficient to permit the flow of fluid plastic, and an injection stop means in communication with said air source, said injection stop means being responsive to a back pressure caused by covering of said insert with fluid plastic for terminating the flow of plastic into the mold cavity.

3,299,477

APPARATUS FOR PROCESSING CRUSHED FIBROUS STALKS

Kenneth M. Gunkel, New Canaan, Conn., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Mar. 20, 1964, Ser. No. 353,407
12 Claims. (Cl. 19—90)



1. An apparatus for processing crushed fibrous stalks containing pith to separate the pith and fibers comprising

(a) a rotor having laterally extending hammers,

(b) a screening element surrounding the rotor, and having an open inlet and outlet ends, and

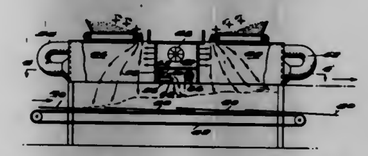
(c) a casing means surrounding the screening element for directing air around the outer surface of the screening element and having opposed, spaced apart walls terminating at a surface of the screening element.

3,299,478

APPARATUS FOR FORMING PARTICLE BOARDS

Walden M. Galtten, Sylacauga, Ala., assignor to Soderhamn Machine Manufacturing Co., Talladega, Ala., a corporation of Alabama

Filed July 9, 1963, Ser. No. 293,614
2 Claims. (Cl. 19—155)



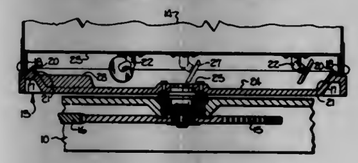
2. Apparatus for forming a particle mat comprising means for supporting the mat, a first chamber, a second chamber, said mat supporting means extending continuously under said chambers, each of said chambers having means for dispensing particles onto the mat supporting means, plenum chambers adjacent said first and second chambers, said plenum chambers including means for directing a stream of air through said first and second chambers, first and second auxiliary dispensers, means mounting said auxiliary dispensers over said mat supporting means and between said chambers, each of said plenum chambers directing a stream of air away from the other plenum chamber, a hopper between said first and second auxiliary dispensers for dispensing resin composition onto said mat supporting means, means between said first and second auxiliary dispensers for feeding a web of material onto said mat supporting means, and means for effecting relative motion of the mat supporting means with respect to said chambers and said dispensers, whereby particles of non-uniform size are distributed according to size in the first and second chambers while uniform particles are distributed in intermediate, homogenous layers by said first and second dispensers and a layer of resin composition and a web of material is applied to the surface of the mat between said first and second auxiliary dispensers.

3,299,479

SLIVER COILER

Allen B. Nivens, Gastonia, N.C., assignor to Ideal Industries Inc., Bessemer City, N.C., a corporation of North Carolina

Filed Jan. 22, 1965, Ser. No. 427,349
5 Claims. (Cl. 19—159)



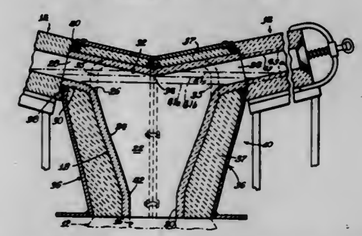
1. A rotatable platform for a textile sliver coiler adapted to receive and support for rotation conventional types of coiler cans having a bottom portion formed with a peripheral annular flange and a recessed bottom wall and having casters depending below the annular flange, the rotatable platform comprising a circular plate having an annular planar portion adapted to receive the bottom flange of a coiler can, an upstanding rim disposed inwardly of and immediately adjacent said planar portion and adapted to be disposed within the flange of a can to prevent lateral displacement of a can on the platform, a second annular planar portion disposed inwardly of and adjacent the rim and recessed below the first named planar portion and adapted to be out of contact with and underlie casters depending from a coiler can, and a raised portion disposed centrally of the plate and recessed below the first named planar portion.

3,299,480

BOTTOM FEED POURING HEAD

James Woodburn, Jr., Wheaton, and Richard Thomas Ver Halen, Forest Park, Ill., assignors to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed Sept. 13, 1963, Ser. No. 308,814
4 Claims. (Cl. 22—69)



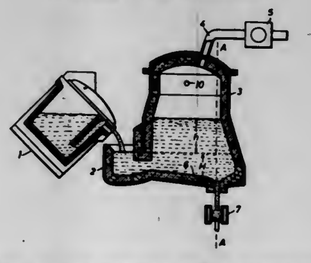
1. A pouring head for use in conjunction with pressure pouring through a pouring tube into mold means, comprising a housing member having a bottom inlet opening attached for communication with a pouring tube, the housing member having a plurality of top outlet openings attached for communication with the cavity of the mold means, the housing member having a turbulence control cavity extending between the bottom inlet opening and the top outlet opening increasing in vertical projection progressing in upward direction, the dimensions of the turbulence control cavity to the position of the outlet openings, together with the dimensions of the outlet openings, being relatively such as to maintain substantially constant exposed surfaces area of the molten metal as the level of the molten metal rises above the lowermost point of the outlet openings.

3,299,481

CONTINUOUS CASTING OF METAL MELTS

Karl Brotzmann, Westhofen-Buchholz, near Schwerte (Ruhr), Germany, assignor to Dortmund-Horder Huttenunion Aktiengesellschaft, Dortmund, Germany, a corporation of Germany

Filed Jan. 17, 1964, Ser. No. 338,343
Claims priority, application Germany, Jan. 25, 1963, D 40,757
2 Claims. (Cl. 22—200.1)



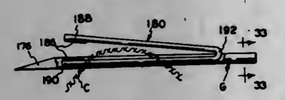
1. Method of continuously casting molten metal which comprises intermittently introducing charges of molten

metal from a succession of ladles into the open trough of a reservoir discharging the molten metal continuously into at least one mold, evacuating a space sealed from the atmosphere and located in contact with and above the level of the molten metal in the reservoir as each charge of molten metal is introduced into the trough so that the level of the molten metal contacting said space rises higher than if the space were maintained under normal atmospheric pressure, whereby a plurality of charges of molten metal may be accumulated in the reservoir, gradually increasing the pressure in the space before each succeeding charge of molten metal is introduced into the trough so that the molten metal discharging from the reservoir into the mold is under a substantially constant pressure head even during the intervals between successive charging of the reservoir with the molten metal and is continuously discharged from the reservoir at substantially constant velocity.

3,299,482
GRAY IRON CASTING PROCESS AND COMPOSITION
Arthur J. Tache, Madison Heights, Mich., and Robert M. Cage, Indianapolis, Ind., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
No Drawing. Filed Mar. 29, 1963, Ser. No. 269,155
5 Claims. (Cl. 22—211)

1. In a continuous process of making gray iron castings not susceptible to self annealing after pouring in the mold, and prior to core knockout, where said casting are slowly cooled on a moving line subject to stoppages which would cause such self-annealing of the castings and a soft matrix in the wear areas of the castings having a hardness substantially below 170 Brinell and a microstructure containing in excess of 5% uniformly dispersed free ferrite, the step which consists in adding to the molten gray iron composition prior to pouring, between 0.04 to 0.25% by weight of the composition of tin to substantially eliminate self annealing and to facilitate the production of castings having a matrix in the wear area thereof of between 170 to 241 Brinell hardness and a microstructure of fine pearlite containing not more than about 5% uniformly dispersed free ferrite, regardless of said line stoppages.

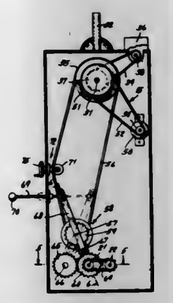
3,299,483
FASTENING DEVICE
Arthur Dritz, 171 Beach at 125th St., Rockaway Park, N.Y. 11694
Filed Jan. 4, 1965, Ser. No. 422,945
4 Claims. (Cl. 24—150)



4. An elongated wire-like pin for insertion in at least one layer of fabric material comprising plastic material that will readily dissolve upon contact with liquids.

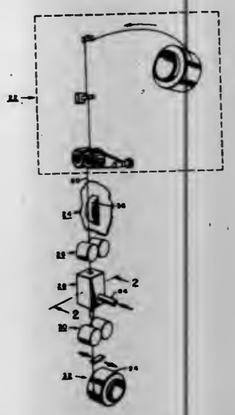
3,299,484
FABRIC INSPECTION MACHINE
David Pernick, 1020 Shore Blvd., Brooklyn, N.Y. 11235
Filed July 2, 1964, Ser. No. 379,975
4 Claims. (Cl. 26—70)

1. In a fabric inspection machine, the combination of a pair of let-off rolls for supporting and unwinding a rolled-up web of fabric, a take-up roll for rewinding the web into rolled-up condition, means for supporting the rewound rolled-up web on said take-up roll in driven contact therewith, fabric inspecting means between said let-off rolls and said take-up roll for positioning the web to visually inspect the same, and drive means for rotating said let-off rolls and said take-up roll at a speed to cause said let-off rolls to unwind the web at about the same rate as said web is rewound by said take-up roll, said drive means including means for driving said take-up roll,



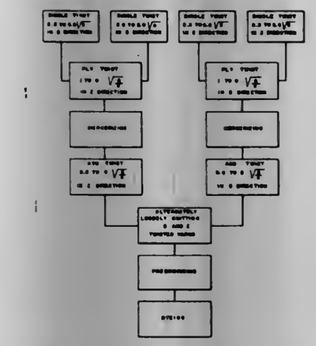
a first pulley rotatable with said take-up roll, a second pulley, a belt driven by said first pulley and driving said second pulley, means for rotatably interconnecting said pair of let-off rolls for rotation at the same speed and in the same direction, and gear means interposed between said last mentioned means and said second pulley for selectively rotating said let-off rolls in opposite directions.

3,299,485
YARN TEXTURING PROCESS
William H. Hills, Euell K. McIntosh, and Kenneth B. Roy, Jr., Pensacola, Fla., assignors to Monsanto Company, a corporation of Delaware
Filed Aug. 21, 1963, Ser. No. 303,495
2 Claims. (Cl. 28—75)



1. A process for improving tufting performance of a latent-crimped yarn, comprising in combination:
(a) applying colloidal silica dispersed in a liquid carrier to a yarn having latent crimps, at an application rate to deposit between 0.1 and 5.0 percent silica based on the weight of said yarn,
(b) feeding said yarn under substantially no tension through a heating region wherein said yarn is heated sufficiently to evaporate said carrier and to develop the bulk in said yarn,
(c) and taking up said yarn in orderly fashion.

3,299,486
METHOD OF MAKING STRETCH COTTON KNITTED FABRICS
Gordon E. Meyers, Rydal, and Milton M. Meyers, Jenkintown, Pa., assignors to Clarence L. Meyers & Co., Inc., Wyncote, Pa., a corporation of Pennsylvania
Filed July 3, 1963, Ser. No. 292,534
13 Claims. (Cl. 28—76)



1. A method of making stretch cotton knitted fabric, which comprises producing cotton yarn of a size between 1's and 120's, twisting the yarn in the single to a twist given by the following formula:

$$2.2 \text{ to } 5.5\sqrt{S}$$

some of said yarn being *s* twisted and some of said yarn being *z* twisted, making up a ply yarn having from 2 to 6 plies of said singles and having a twist in the ply corresponding to the formula:

$$1 \text{ to } 8\sqrt{\frac{S}{n}}$$

some of said ply yarn being *s* twisted and some of said ply yarn being *z* twisted, said ply yarn which is *s* twisted having *z* twist in the single and said ply yarn which is *z* twisted having *s* twist in the single, mercerizing said ply yarn under tension, adding *s* twist to the *s* twisted ply yarn and adding *z* twist to the *z* twisted ply yarn after mercerizing according to the following formula:

$$0.5 \text{ to } 5\sqrt{\frac{S}{n}}$$

knitting both the *s* twisted ply yarn and the *z* twisted ply yarn into the same fabric while feeding these yarns alternately, conducting the knitting so loosely that the knitted fabric has a longitudinal stretch before dyeing of at least 30%, and pre-shrinking the knitted fabric, the nomenclature being as follows:

S=cotton yarn number,
n=number of plies.

3,299,487
METHOD OF MAKING SYMMETRICAL SWITCHING DIODE
Donald F. Cook, Plano, and David F. Cosper, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas Tex., a corporation of Delaware
Original application Mar. 8, 1963, Ser. No. 263,943, now Patent No. 3,196,329. Divided and this application May 27, 1965, Ser. No. 477,055
1 Claim. (Cl. 29—25.3)

A method of manufacturing a symmetrical three-layer avalanche diode comprising:
(a) providing a thin wafer of monocrystalline silicon uniformly doped in growing to a concentration of over 10^{17} per cm.^{3} of conductivity determining impurity material of one type; the wafer having a thickness of about 3 mils; the wafer being subjected to cleaning and polishing of the surface thereof;
(b) simultaneously diffusing into both major faces of the wafer a conductivity-determining material of the opposite-conductivity type until the outer layers produced by the diffusion reach surface impurity



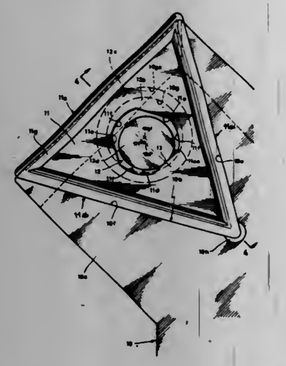
concentrations in the range of about 10^{20} to 10^{21} per cm.^{3} and more than two orders of magnitude greater than in the region separating said layers, the outer layers being within about .6 to 1.0 mil of each other, said outer layers being separated by a central region of said one conductivity type, and
(c) respectively applying metallic contacts to both of said major faces of the wafer to provide non-rectifying contacts to said outer layers.

3,299,488
TUBE CHAMFERING AND FINISHING DEVICE
Kenneth A. Bevington, 2755 Broadway, Evanston, Ill. 60201
Filed Aug. 17, 1964, Ser. No. 389,857
13 Claims. (Cl. 29—57)



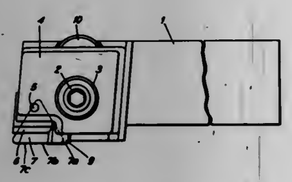
6. A tool assembly of the character described, comprising a head rotatable about an axis, a plurality of outside rollers mounted on studs fixedly secured in one end of the head in circumferentially spaced apart relation, around the axis of the head, said rollers being separately journaled for free rotation about axes which are relative to and extending in the direction of the axis of the head and each having a frusto-conical outer wall portion, said wall portions of said rollers cooperating to provide a guide zone for the reception and centering of a freely movable end of a preformed metal tube relative to the axis of the head, an inside roller mounted on a stud fixedly secured in said end of the head and journaled for free rotation about an axis which is fixed relatively to and extending in the direction of the axis of the head and located on a radius inside the radius of the axis of said plurality of rollers, said inside roller having a frusto-conical wall portion, said outside and inside rollers serving, when said head is rotating and the end of said tube is forcibly moved into the guide zone under pressure, to engage the outer and inner surfaces of the end of the tube for performing a swaging action on and forming a uniform chamfer around the outer and the inner surfaces of said end of the tube, and a cutting tool fixedly mounted on said one end of the head, intermediate an adjacent pair of said outside rollers, for facing the end of said tube when the latter is forcibly moved into said guide zone.

3,299,489
TOOL-HOLDER PROVIDED WITH REVERSIBLE CUTTING TOOL, AND THE TOOL ITSELF
Kurt Pohle, Stuttgart-Muhlehausen, Germany, assignor to Espa Establishment for Securities and Patents, Vaduz, Liechtenstein, a corporation of Liechtenstein
Filed July 10, 1964, Ser. No. 381,681
5 Claims. (Cl. 29—96)



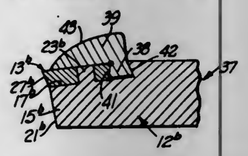
1. A tool-holder formed wtih a recess at one end, a reversible flat plate-like cutting tool formed with a hole and received in said recess, said cutting tool being formed with two edges disposed at an angle to each other, said holder having corresponding edges disposed at the same angle to each other, to contact said edges of said tool, a member rotatably mounted on said holder and having an eccentric pin projecting into said hole, said hole having at least one substantially flat inner edge portion to be contacted by said pin, when rotating said member, said hole being large enough that said member can be rotated to a position in which said pin is disposed in the hole in spaced relation to the inner edge of said hole, said substantially flat portion of said hole running substantially perpendicular to a line bisecting the angle between said cutting edges of said tool.

3,299,490
CUTTING TOOL, IN PARTICULAR TOOL HOLDER CLAMP CONSTRUCTION
Edgar Wyss, Morigen, and Pierre Davoli, Biel, Switzerland, assignors to Vereinigte Drahtwerke A.G., Biel, Switzerland
Filed Mar. 29, 1965, Ser. No. 443,541
Claims priority, application Switzerland, Apr. 1, 1964, 4,131/64
2 Claims. (Cl. 29—96)



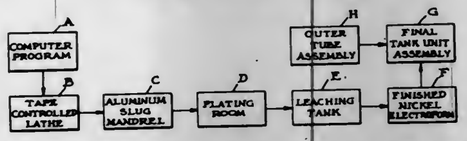
1. A tool holder clamp construction comprising at least one indexible multi-sided throwaway cutting tip having at each side a cutting edge, a chip breaker arranged upon said throwaway cutting tip, means provided for each throwaway cutting tip disposed to protect the rear portion of that cutting edge which is in position of use and momentarily functioning as the main cutting edge as well as protecting an adjoining portion of another cutting edge neighboring said main cutting edge, said protecting means being formed as a separate member from said chip breaker, to enable said chip breaker to be positioned upon said throwaway cutting tip completely independent of the position of said protecting means.

3,299,491
CUTTING TOOL
Teller B. Hall, Los Angeles, Calif.
(1456 La Linda, Lake San Marcos, Calif. 92069)
Filed Oct. 19, 1965, Ser. No. 498,063
6 Claims. (Cl. 29—96)



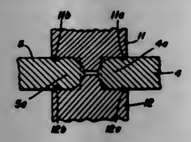
1. A cutting tool for cutting hard material, said tool being attachable to a cutting machine and comprising:
- a body member including first and second generally opposed and relatively rigid surfaces, said body member being attachable to the cutting machine;
- a hard insert engaging said first surface of said body member and including a face generally opposed to said second surface of said body member and an exposed cutting surface for engaging and cutting the hard material, said face lying between said first and said second surfaces of said body member to define a space between said face and said second surface of said body member;
- a sticking wedge having first and second generally opposed surfaces for engaging said face and said second surface of said body member, respectively, to wedge said insert against said first surface; and
- a chip breaker integral with said wedge and adjacent said insert.

3,299,492
ELECTROFORMED INNER TUBE FOR TANK UNIT
Raymond W. Sargent, Burlington, Vt., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed Aug. 14, 1963, Ser. No. 301,961
3 Claims. (Cl. 29—155.5)



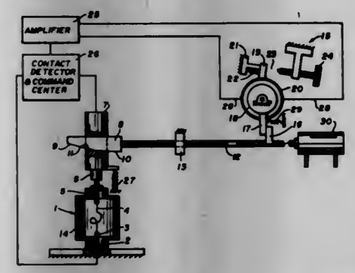
2. Method of making a matrix inner tube in a tank profile unit for a lightweight capacitance measuring system comprising:
- machining a plurality of tubes of aluminum metal supported in end-to-end relationship on an internal removable support member to form the matrix;
- electro-depositing a thin layer of nickel completely upon the outside surface of said metal matrix;
- removing the removable support member from the matrix;
- removing the metal forming the matrix from the outer nickel electro-deposit by passing caustic solutions through the metal matrix tube to form a hollow metal electrode inner tube;
- assembling the electrode inner tube concentric with and spaced from an outer electrode tube; and
- attaching electrodes to the inner electrode tube and the outer electrode tube at a common end thereof.

3,299,493
METHOD OF MAKING FORKED CONTACTS
Edwin E. Gehrt, Melrose Park, and William T. Jensen, Libertyville, Ill., assignors to Methode Electronics, Inc., a corporation of Illinois
Continuation of abandoned application Ser. No. 96,947, Mar. 20, 1961. This application June 25, 1964, Ser. No. 381,285
6 Claims. (Cl. 29—155.55)



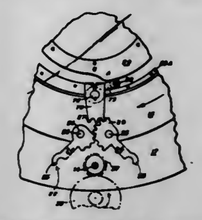
1. The method of forming from a sheet metal strip a forked contact having two parallel prongs formed integrally with a shank portion, said method comprising the steps of forming in said strip two holes spaced apart a distance approximately equal to the required length of the prongs, forming a narrow slot through said strip and connecting said holes, holding portions of said strip on opposite sides of said slot against outward displacement laterally of the slot and simultaneously therewith swaging the edge portions of said strip on opposite sides of said slot to provide rounded surfaces on opposite sides of said slot and conforming substantially to cylindrical surfaces of arcuate extent greater than 90°, and blanking out the shank and integrally attached prong portions from said strip.

3,299,494
APPARATUS FOR COMPONENT ASSEMBLY
Bernard A. Berger, Montreal, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Nov. 27, 1963, Ser. No. 326,439
6 Claims. (Cl. 29—203)



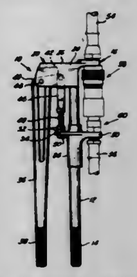
3. Apparatus for joining a cat's whisker member to a crystal member in the manufacture of a semi-conductor diode and comprising: means to fixedly mount one of the members to be joined, an arbor to position the other said member, a wedge for advancing said arbor towards said one member, a hydraulic actuator for advancing said wedge in a direction inclined to the direction of advance of said arbor, a rod drivingly connecting the hydraulic actuator to said wedge, a first stop means rigidly mounted on said rod for movement therewith, a second stop means rotatably mounted adjacent said rod and adapted to be driven by said first stop means, a third stop means mounted coaxially with said second stop means and having a limited arc of rotation, and brake means operable to link said second and said third stop means, whereby on operation of the said brake means to link said second and said third stop means, the subsequent advance of said first stop means and said rod is limited by the corresponding limited rotation of said third stop means.

3,299,495
APPARATUS FOR DIRECTING APPLICATOR AND OTHER CAP EXTENSIONS INTO CONTAINERS
Kazmier Wysocki, 293 Hudson St., Hackensack, N.J. 07601
Filed Mar. 23, 1965, Ser. No. 447,115
15 Claims. (Cl. 29—208)



1. An apparatus for directing the extensions of closure caps into the mouths of small-mouth containers traveling on a conveyor comprising, in combination, at least one endless means including thereon spaced placement means which include closure cap extension guide portions in the general form of co-planar cooperating jaws having abutting end portions each having a semi-circular inner face portion; means for moving said endless means so that at least some of said placement means periodically travel in synchronous aligned relation with the mouths of spaced containers on the conveyor; means cooperating with said cap extension guide portions of said aligned placement means for periodically creating with the semi-circular inner face portions of the abutting end portions of the jaws thereof, encircling jaws including an aperture which engage the cap extensions at their connection with the closure caps and hold the engaged portion thereof in aligned relation with the mouths of the containers; means forming a part of said placement means for suspending closure caps and their extensions in vertical alignment with the mouths of said containers; and additional means for feeding said caps to said suspension means and guiding them in the path thereof for suspension engagement thereby; said suspending means moving vertically relative to said encircling jaws to draw said extensions through said apertures to align the lower portions of said extensions with said container mouths.

3,299,496
TOOL FOR COUPLING HYDRAULIC HOSES
James B. Christensen, R.R. 1B, Spencer, Iowa 51301
Filed Mar. 17, 1965, Ser. No. 440,456
9 Claims. (Cl. 29—237)



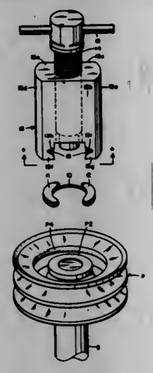
2. In a tool for coupling complementary fittings on hydraulic hoses, comprising:
- an elongated handle,
- a hose engaging fixed jaw on one end of said handle,
- a hose engaging movable jaw movably mounted on said handle for cooperative action with said fixed jaw,
- a lever pivotally attached near one end to said handle and near said fixed jaw, and

a lengthwise adjustable link means pivotally secured respectively to said movable jaw and to said lever at its pivoted end whereby movement of said lever toward and away from said handle will respectively move said movable jaw toward and away from said fixed jaw.

3,299,497
DEVICE FOR REMOVING PULLEYS AND THE LIKE FROM SHAFTS

Jerry H. Chmielewski, 7311 Filbert Lane, Tampa, Fla. 33610

Filed Oct. 11, 1965, Ser. No. 494,495
3 Claims. (Cl. 29—258)

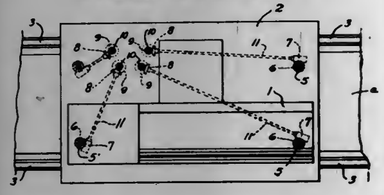


1. A device for removing a pulley or the like from the end of a shaft, the pulley including a hub having a bead thereabout adjacent the end of the shaft, said device comprising a body having two opposed legs extending from one end thereof and adapted to straddle the hub of the pulley and extending inwardly from the end of the pulley shaft and beyond the bead on said pulley, said legs having shoulders thereon extending towards the opposite leg and facing in the direction of said body, a C-shaped member adapted to partially surround said hub adjacent the bead thereon and having two oppositely disposed plate-like lugs extending radially thereof and adapted to be engaged by said shoulders respectively and to engage the inner opposite sides of said bead, means to yieldably support said C-shaped member on said hub, and means to force said body axially from said shaft.

3,299,498
METHOD OF ASSEMBLING A MACHINE TOOL AND THE LIKE

Tamaki Tomita, Okazaki-shi, Aichi-ken, Japan, assignor to Toyota Koki Kabushiki Kaisha, Kariya-shi, Aichi-ken, Japan

Filed Dec. 17, 1963, Ser. No. 331,308
Claims priority, application Japan, Sept. 28, 1961, 36/35,097
2 Claims. (Cl. 29—407)

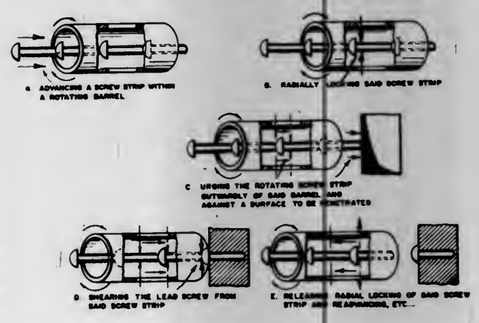


1. A method of assembling a machine tool and the like which consists in providing a track and a plurality of wheeled bases adapted to move on said track through a series of fixing stations, setting a bed of said machine tool on said base, providing at least two level vials on the datum level of said bed, staying said base at each of said stations, rotating at least three driving shafts provided in the station having said base thereon so as to raise said base above said track while observing said level vials so as to make said datum level horizontal, fixing a part of said machine tool on said bed, rotating said driving shafts reversely, respectively, so as to lower said base down onto said track, and displacing said base to the next station on said track for fixing another part of said machine tool on said bed at said next station in the same manner as at the first-named station.

3,299,499
METHOD FOR DRIVING SCREWS

Paul P. Ruminsky, Amherst, Ohio, assignor to Herbert C. Brauchla, Fremont, Ohio

Continuation of abandoned application Ser. No. 263,025, Mar. 5, 1963. This application Aug. 1, 1966, Ser. No. 573,747
1 Claim. (Cl. 29—413)



A method for driving a screw strip of the type including a plurality of threaded screws integrally formed in end to end relationship, each screw having a head lying substantially in a single plane, comprising:

(A) longitudinally advancing a strip of said threaded screws attached in end to end relationship in a rotating chamber;

(B) rotating and locking said strip against reverse longitudinal movement by radially engaging the threads of at least one of said screws with means on said rotating chamber, the portion of said threads being radially engaged being normal to the screw head;

(C) urging the lead screw of said rotating strip longitudinally forward against a surface to be penetrated; and

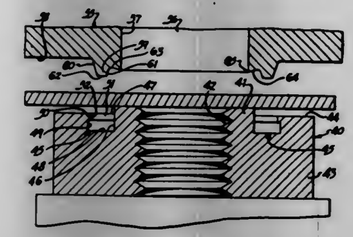
(D) penetrating said surface with the lead screw on said strip and shearing said lead screw from the strip as the head thereof abuts the surface penetrated.

3,299,500
METHOD OF MAKING A NUT AND PANEL ASSEMBLY

Plummer E. Double, Detroit, Mich., assignor to Multifastener Corporation, Redford, Mich.

Filed Nov. 28, 1961, Ser. No. 155,340
2 Claims. (Cl. 29—432.2)

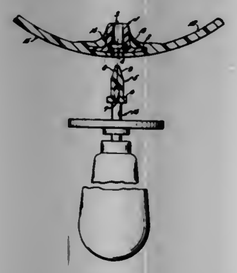
1. In a method of assembling a rectangular nut to a panel, the nut having a pilot portion and a pair of oppositely laterally extending flanges along opposite sides of the nut, said flanges each having a groove opening toward the pilot portion, by interposing the panel between a die button and the nut, the panel contacting the pilot portion only of the nut, the steps of relatively displacing the nut, panel and die button in a single, uninterrupted motion sequentially (1) piercing the nut pilot portion through the panel, (2) displacing a portion of the panel adjacent the nut pilot portion into the nut groove, (3) deforming the nut immediately adjacent the groove in a direction to overlie the groove and the metal displaced thereinto, and (4) displacing the non-flanged sides of the nut at the pilot portion thereof in contact with the panel to provide an enlarged nut-panel contact area.



3,299,501
METHOD OF MANUFACTURE AND ASSEMBLY OF HOLLOW INFLATABLE ARTICLES INCLUDING A TWO-PART VALVE THEREIN

Alvon R. Cox, Ashland, Ohio, assignor to The Faultless Rubber Company, Ashland, Ohio, a corporation of Ohio

Filed Apr. 14, 1964, Ser. No. 359,756
8 Claims. (Cl. 29—451)



1. A method of assembling a valve in an inflatable hollow article comprising the steps of

forming a plastic valve retainer having an axially extending bore therein and having a base flange, which bore has an enlarged chamber therein adjacent said base flange,

forming a soft plastic valve having a base flange larger in diameter than said chamber and having sealing lips at its top end,

bonding the base flange of said valve retainer to a hollow plastic article with said bore of said valve retainer connecting to the atmosphere,

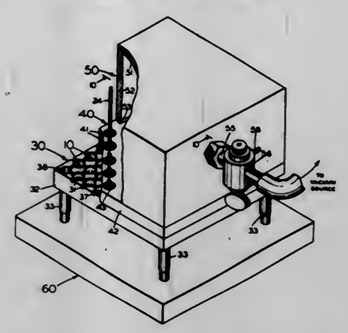
inflating the hollow article and stretching said base flange of said valve retainer so as to about double the diameter of said chamber, and

inserting said valve into said stretched valve retainer bore with said base flange received in said chamber and with the top end of said valve extending radially inwardly from said valve retainer to provide a reinflatable article.

3,299,502
METHODS AND APPARATUS FOR ASSEMBLING ARTICLES

William R. Wanesky, Emmaus, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 1, 1964, Ser. No. 400,823
9 Claims. (Cl. 29—464)



1. The method of assembling an article and an open can having a small hole in the base thereof, such that a portion of the article is received to a predetermined depth in the can, which method comprises:

(a) placing the can on a carrier having a seat designed to support the can with the open end up and the base of the can exposed beneath the carrier;

(b) applying a partial vacuum to the base of the can sufficient to hold the can against the carrier, while permitting a small stream of air to flow through the hole in the base of the can;

(c) moving the carrier, with the can held thereagainst, into proximity with the article in mutual alignment such that the open end of the can receives the required portion of the article therein, the can and article having portions designed to contact each other and form an air-tight seal when the predetermined depth has been reached, after which the article is held against the can by vacuum drawn through the hole in the can;

(d) returning the carrier to its initial position so that the article is supported in the can and projects upward therefrom;

(e) releasing the partial vacuum; and

(f) removing the assembled article and can from the carrier.

3,299,503
PROCESS FOR THE PRODUCTION OF BONDED METAL STRUCTURES

Donald L. Freyberger and John F. Longenecker, Coatesville, Pa., assignors to Lukens Steel Company, a corporation of Pennsylvania

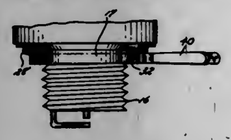
No Drawing. Filed Aug. 29, 1963, Ser. No. 305,519
14 Claims. (Cl. 29—471.5)

1. A method of producing clad metal comprising the steps of spraying a non-refractory molten metal selected from the group consisting of nickel, copper and mixtures thereof on at least one surface of a metal plate of the class consisting of carbon and low alloy steels, said molten metal being sprayed under a cover of gas, forming a pack from said plate and at least one other metal plate with the sprayed metal interposed between said plates, substantially sealing said pack, elevating the temperature of said sealed pack by heating to a temperature sufficient to evolve carbon monoxide gas, continuing said elevated temperature in said pack until said carbon monoxide gases have reduced the oxides within said pack and whereby

said sprayed metal consolidates and bonds to said first mentioned metal plate.

7. A method of producing clad steel comprising the steps of spraying a non-refractory molten metal selected from the group consisting of nickel, copper and mixtures thereof on at least one surface of a metal plate, said molten metal being sprayed under a cover of gas, forming a pack from said plate and at least one other metal plate from the class consisting of carbon and low alloy steels with the sprayed metal interposed between said plates, substantially sealing said pack, elevating the temperature of said sealed pack to a temperature of about 2000°–2350° F., continuing said elevated temperature in said pack until carbon monoxide gases have reduced the oxides within said pack and whereby said sprayed metal consolidates and bonds to said first mentioned plate.

3,299,504
METHOD OF APPLYING SPARK PLUG GASKETS
Harold P. Hopp, 372 Lantana Ave., Englewood, N.J. 07631
Filed Oct. 11, 1963, Ser. No. 315,610
1 Claim. (Cl. 29—511)



The method of permanently installing in captive relation a compressible annular spark plug gasket upon a spark plug having a threaded end thereon and an undercut portion which is free of threads adjacent said threaded end which comprises the steps of:

(a) providing an annular gasket having a principal axis of compression, said gasket including a sealing portion comprising in cross section an S-shaped sealing member with a radially extending portion adapted to abut the metallic body of a spark plug and a locking flange comprising a generally axially extending portion connected to said S-shaped sealing member at the opposite end from said radially extending portion;

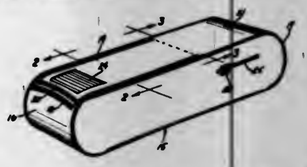
(b) placing said gasket concentrically upon said threaded end portion of said spark plug in such manner that said radially extending sealing portion abuts the body of the spark plug and said locking flange overlies said undercut portion thereof;

(c) providing a tool having an operative surface of effective diameter less than that of said sealing member; and

(d) mechanically deforming said locking flange by applying only a continuous circumferential force by means of said tool to an effective internal diameter less than the major diameter of said threaded end, in such manner that said sealing member is not contacted.

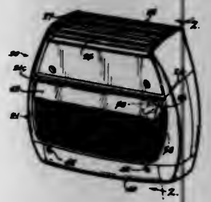
3,299,505
CLIPPER
Henry J. Pionek, Plover, Wis. (Rte. 3, Box 15A, Stevens Point, Wis. 54481)
Filed Feb. 8, 1965, Ser. No. 430,901
1 Claim. (Cl. 30—29)

A cutter comprising a hollow rectangular body having rounded ends and a lateral opening in the upper surface of one of said rounded ends, the top of said body being slit along a portion of both side edges thereof so as to define a resilient tab having a free cutting edge, said top having a plurality of lateral corrugations formed thereon adjacent said free cutting edge in order to provide a finger grip for vertical activation of said tab, said free cutting edge cooperating with one edge of said opening when



pressed upon by ones fingers to cut material disposed therebetween, and said free cutting edge being initially located above and is movable inwardly of the lateral opening in said body.

3,299,506
GLIDE AGENT DISPENSER FOR ELECTRIC SHAVER
Robert P. Gwinn, Riverside, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Jan. 21, 1963, Ser. No. 252,663, now Patent No. 3,176,392, dated Apr. 6, 1965. Divided and this application Feb. 15, 1965, Ser. No. 432,687
2 Claims. (Cl. 30—41)



1. A shaver comprising a casing, a prime mover mounted in said casing, a cutting head secured to said casing comprising a comb bracket, three combs disposed in spaced parallel relationship and secured to said bracket, a U-shaped comb spacer having curved flanges at the ends of the U one disposed on either side of the center comb, a plurality of cutters reciprocally movable in shearing engagement with each of said combs, means drivingly relating said cutters and said prime mover, and means secured to said spacer for dispensing a glide agent at the cutting surface of said cutting head, said last-mentioned means comprising a pair of conduits one disposed directly beneath each of said curved flanges.

3,299,507
DISPOSABLE CYLINDRICAL RAZOR APPARATUS
Victor S. Mistretta, 4703 11th Ave., Brooklyn, N.Y. 11219
Filed Sept. 23, 1964, Ser. No. 398,715
1 Claim. (Cl. 30—49)



A disposable cylindrical razor blade and apparatus comprising a cylindrical blade of stainless steel constructed of substantially thin material and having apertures extending along the length of an element of said cylinder forming a blade cutting surface on each side of said aperture, said apertures extending along the element of said cylinder and terminating proximate to the longitudinal ends of said cylinder, a holder of cylindrical configuration comprising a case and being slit from one end thereof, said slit extending almost to the other end, a substantial portion of said slit being enlarged in form to comprise an opening for allowing the cutting surface of said blade to perform the shaving function when a cylindrical blade is in said holder, a threaded portion at said one end of said holder, and a handle having a threaded receiving means for engaging the threaded portion of said holder.

3,299,508
SAFETY RAZOR HAVING PREDETERMINED OVERLOAD YIELDING MEANS
Leopold Karl Kuhnl, Stratford, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,924
5 Claims. (Cl. 30—60.5)



1. A safety razor comprising a razor head having means for clamping a razor blade therein, drive means to operate said clamping means, said drive means including a drive knob and a ratchet stem, torsion spring means operatively interposed between said drive knob and ratchet stem, said torsion spring having means thereon co-operating with said ratchet stem for rotation therewith and being positioned in frictional engagement within a bore formed in said drive knob, said ratchet stem being operative to open and close said clamping means in response to rotation of said knob, said torsion spring and said drive knob being adapted to rotate relative to one another on continued rotation of said drive knob, said relative rotation between said drive knob and said torsion spring preventing application of further clamping force on said razor blade after said razor blade has been properly clamped.

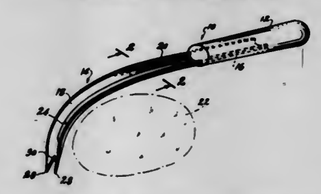
3,299,509
SPRING SEAT FOR ADJUSTABLE RAZOR
Leopold K. Kuhnl, Stratford, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 521,099
2 Claims. (Cl. 30—60.5)

1. An adjustable safety razor comprising a handle supporting a guard member, a spider assembly including a spider stem and a spider body, said spider stem extending into said handle and co-operating with an adjustment means mounted on said handle, said adjustment means permitting incremental shifting of said spider assembly relative to said guard member to vary the clearance of a razor blade relative to said guard member, a pair of cap sections pivotally carried by said spider assembly and engageable with said guard member to effect opening and closing thereof in response to substantial shifting of said spider assembly relative to said guard member, a platform spring positioned between said guard member and said cap sections and being operative to urge opposite margins of said razor blade upwardly against said cap sections when they are in the closed position thereby to hold said razor blade so positioned during incremental adjusting of said cap sections and said razor blade relative to said guard member, said platform



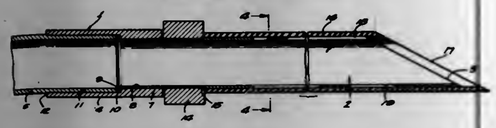
spring having razor blade engaging leaf portions disposed on opposite sides of said spider body, an intermediate body portion integrally joining said razor blade engaging leaf portions, each of said razor blade engaging leaf portions also engaging a longitudinally extending fulcrum means formed on said guard member, said fulcrum means being engaged by said leaf portions when a razor blade is clamped by said cap sections whereby downward clamping force applied to said leaf portions during adjusting of the razor blade clearance will operate to apply upwardly directed forces to said intermediate spring body portion, and tab means loosely holding said platform spring located on said guard member to permit free upward movement of said intermediate spring body portion during incremental movement of said spider stem.

3,299,510
VEGETABLE AND FRUIT PEELER
Anthony J. Taormina, 578 Seaman Ave., Baldwin, Long Island, N.Y. 11510
Filed May 27, 1965, Ser. No. 459,235
2 Claims. (Cl. 30—279)



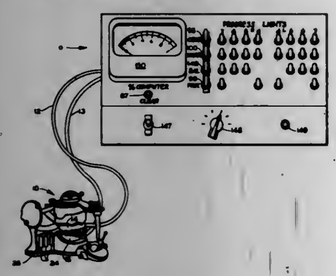
1. A potato peeling utensil comprising an elongated cylindrical plastic handle having a blade extending forwardly from one end thereof, the body of the blade having a curved profile and being curved longitudinally providing a concaved side, opening upwardly, said blade having a curved portion adjacent the handle and continuing outwardly to a substantially straight free end portion, said blade having an elongated closed slot forwardly of the curved portion adjacent the handle, inwardly facing sides of said elongated closed slot being sharpened to provide cutting edges on the blade, prongs on said free end portion, and scraping teeth on the top edge of one of the long edges of the blade adjacent the pronged end of the blade.

3,299,511
DENTAL ASPIRATOR
Clifford L. Hutson, 885 Cumberland Road, Glendale, Calif. 91202
Filed July 9, 1962, Ser. No. 208,264
7 Claims. (Cl. 32—33)



1. A dental aspirator, comprising: a tubular handle adapted to be connected to a source of vacuum forming an elliptical inlet opening; a tubular, elongated, straight tip member having a bevelled intake end; means providing a swivel joint of the tip member with said handle whereby said tip member may be freely rotated relative to said handle to variously position said bevelled intake end within the mouth of a patient; and an operating ring fixed to said tip adjacent said joint in position to be manipulated for turning the tip relative to the handle by the fingers of the hand of an operator holding the handle.

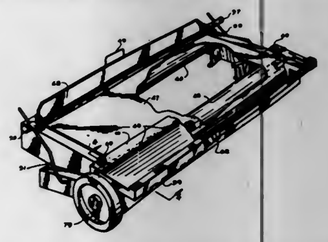
3,299,512
DENTAL TEACHING DEVICE
Robert F. Brigante, 2999 Regent St., Berkeley, Calif. 94705
Filed Oct. 23, 1964, Ser. No. 406,059
6 Claims. (Cl. 32—71)



1. Dental occlusion teaching apparatus, comprising:
(a) at least one pair of tooth models;
(b) means simulating jaw movement and mounting the tooth models of said pair for opposed movement into and out of a predetermined bit relationship;
(c) said mounting means including an adjustable mounting for one of the tooth models of said pair;
(d) electrical contact means on said tooth models positioned for engagement when said one tooth model is in correct occlusion with the other tooth model of said pair; and
(e) a circuit connecting said contact means and including indicating means indicating such engagement of said contact means.

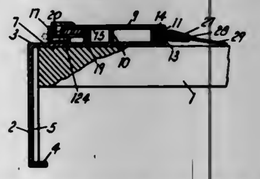
3,299,513
DRAFTING BOARD
Claude L. Spring, 907 31st St., Des Moines, Iowa 50317
Filed May 18, 1964, Ser. No. 367,933
7 Claims. (Cl. 33—76)

1. In a drafting board,
a lower frame having rearward and forward ends,
an upper frame having rearward and forward ends pivotally secured at its forward end to the forward end of said lower frame and adapted to assume a folded position on top of said lower frame at times,
a first elongated roller rotatably secured to said upper frame adjacent its forward end,
a second elongated roller rotatably secured to said upper frame adjacent its rearward end,
a continuous belt means mounted on said first and second rollers,
the forward end of said upper frame being at substantially a right angle to the direction of movement of said continuous belt means,



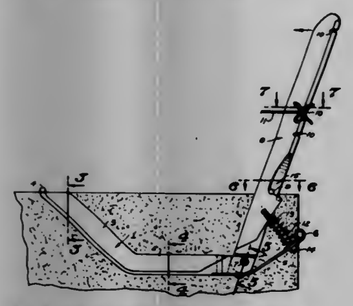
a tray means having rearward and forward ends hingedly secured at its forward end to the forward end of said upper frame and adapted to assume a folded position on top of a portion of said upper frame,
an elongated straight edge means movably mounted on the rearward end of said tray means, and
adjusting means on said straight edge means to adjust the angle between the longitudinal axis of said straight edge means and the direction of movement of said continuous belt.

3,299,514
DRAFTING IMPLEMENT OR DEVICE
Kermit K. Ingle, 125 E. South St., Hillsdale, Mich. 49242
Filed Oct. 19, 1964, Ser. No. 404,681
15 Claims. (Cl. 33—79)



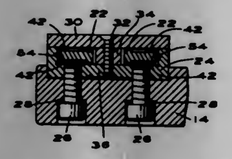
1. A draftsman's implement comprising a body member supportedly and slidably engageable with the edge of a drawing board, desk top, or the like and having an inwardly projecting flange on its upper edge engageable with the top of the support on which the body member is disposed, a top member having an integral hinge connection to said flange of said body member, said top member having a centrally disposed inwardly projecting portion which is supportedly engageable with the flange on the lower edge of said body member when the top member is in collapsed position on the inner side of said body member, a ruler support member of inwardly facing channel cross section disposed upon said inwardly projecting portion of said top member and pivotally connected thereto at the outer edge thereof, said ruler support member having a centrally disposed forwardly projecting flange disposed in overlapping relation to said inwardly projecting portion of said top member, said forwardly projecting portion of said ruler support member having a curved outer edge and having scale indicia thereon, means on said body member for securing said ruler support member in its adjusted positions relative to said body member including a clamp and pointer support member having an outwardly opening chamber therein, a clamp and pointer member supportedly mounted on said support member with its inner end in overlapping relation to said forwardly projecting portion of said ruler support member and having a pointer thereon associated with said indicia on said ruler support member, means for adjusting said clamp and pointer member to and from clamping position operatively connected thereto and disposed within said chamber and having a fingerpiece disposed at the front of said clamp and support member chamber, a ruler holder member having a longitudinal slot in its outer edge adapted to receive the inner edge of a ruler, a ruler supportedly and detachably engageable in said slot in said ruler holder member, flexible strands connected to the ends of said ruler holder member and disposed through openings adjacent the ends of the flange on the inner edge of said ruler support member, and resiliently extensible means disposed within said ruler support member and to which said strands are connected, said holder member with said ruler engaged therewith being housingly positionable between said body member and ruler support member.

3,299,515
LINE HOLDER FOR BRICK LAYING
Darrald G. Lessard, 975 W. Phillips, Pomona, Calif. 91766
Filed Apr. 11, 1966, Ser. No. 541,755
4 Claims. (Cl. 33—86)



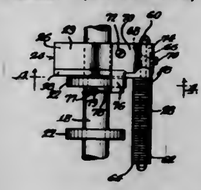
3. A line holder for brick laying, comprising:
(a) a hanger adapted to be placed alongside a brick forming a unit of a course of bricks;
(b) a pair of pins extending laterally therefrom and adapted to overlie the top and an end of the brick;
(c) an arm extending upwardly from said hanger near said end engaging pin, said arm adapted to secure an end of a gauging line;
(d) and a third pin extending from said arm and adapted to overlie the top of said brick whereby said hanger and arm are supported by said pins alongside said brick.

3,299,516
GAUGE
Jan Reef, 41520 8-Mile Road, Northville, Mich. 48167
Filed May 21, 1964, Ser. No. 369,253
4 Claims. (Cl. 33—147)



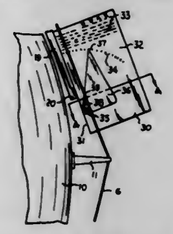
1. A gauge comprising, in combination, a generally U-shaped frame having a pair of opposed arms, a blade mounted upon each arm adjacent to the end thereof and extending transversely of the arm and adapted to project into the space between the arms, one of said blades being mounted within a channel-shaped guide carried by one of the arms for slidable movement of the blade within the channel guide toward and away from the blade carried by the other arm, said guide being a separate channel guide element secured to and carried by its arm, a ball bearing assembly disposed between each side wall of the channel guide and the adjacent edge of the slidable blade, said channel guide having the outer surface of the bottom portion thereof undercut between the outer side margins of the guide, and means extending between the undercut bottom of the channel guide and the frame adjustable to draw the undercut bottom of the guide toward the frame to urge one side wall of the guide channel inwardly toward the opposite side wall thereof.

3,299,517
REFERENCE GAUGE ACCESSORY
Otto Wiegel, Chicago, Ill. (3541 Martens St., Franklin Park, Ill. 60131)
Filed Nov. 22, 1963, Ser. No. 325,696
3 Claims. (Cl. 33—170)



2. An accessory for a reference height gauge of the type having a base, a bar having a plurality of reference surfaces spaced a unit of measurement apart therealong at right angles to the axis thereof, and a micrometer for moving said bar up and down; comprising a member mountable to said bar in a predetermined accurate relation to one of said reference surfaces, and a columnar scale on said member to be parallel to said bar when said member is mounted to said bar, said scale comprising a stack of alternate short and long plates of equal thickness, the ends of the long plates projecting alternately to the left and to the right of said stack, said projecting ends providing reference surfaces subdividing said units evenly.

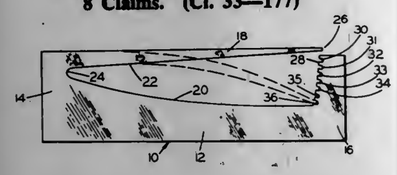
3,299,518
GAUGE FOR MEASURING HEIGHT OF STRINGS FROM FINGERBOARD OF STRINGED MUSICAL INSTRUMENTS
Rex A. Conner, Lexington, Ky., assignor, by mesne assignments, to The University of Kentucky Research Foundation, Lexington, Ky., a corporation of Kentucky
Filed June 15, 1965, Ser. No. 464,022
1 Claim. (Cl. 33—172)



A gauge for measuring the height of the strings of a stringed musical instrument from its fingerboard comprising a generally flat member carrying a measurement scale on one face thereof, said member having one side edge adapted to rest against the longitudinal outer surface

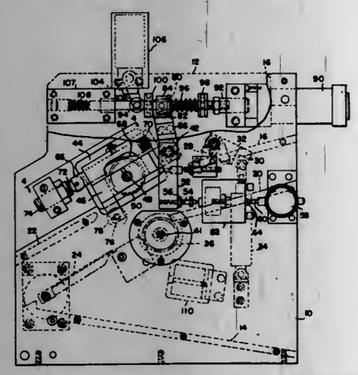
of the fingerboard during the taking of a measurement, a movable arm pivotally mounted upon said member adjacent said one side edge thereof and adapted to move in a plane parallel to the plane of said member, and a string-engaging means projecting generally normal to said plane of movement of said arm and carried by said arm and adapted to contact the underside of a given string of said instrument, said arm having a pointer means adapted to traverse said scale and to indicate thereon the distance of the string being measured from the fingerboard at the time said string-engaging means contacts said given string, said string-engaging means being disposed at a location between said pointer means of said arm and the pivotal engagement of said arm on said member, and said arm having its center of mass so located as to cause said arm to fall by gravity and to bring said string-engaging means into contact with said given string when said member occupies a generally vertical position upon the fingerboard.

3,299,519
ADJUSTABLE FRENCH CURVE
John E. Toth, 5812 Henley Drive, San Diego, Calif. 92120
Filed Apr. 30, 1965, Ser. No. 452,224
8 Claims. (Cl. 33—177)



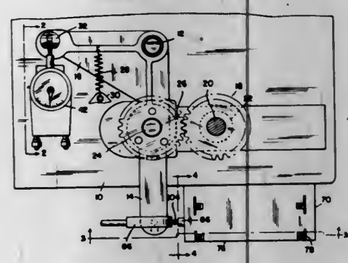
1. An adjustable curve template comprising:
(A) An integral sheet of flexible and resilient material having:
(1) an elongated base section,
(2) outwardly extending opposite end sections,
(3) a cantilever beam extending from one of the end sections toward the other end section,
(4) said other end section having an edge confronting said one of the end sections, said edge having notches for receiving said free end.

3,299,520
GEAR CHECKER
Carl H. Motz, Harper Woods, and Russel W. Anthony, Detroit, Mich., assignors to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 9, 1963, Ser. No. 307,611
12 Claims. (Cl. 33—179.5)



1. Apparatus for checking a continuous sequence of gears comprising a first rotatable master gear, a second rotatable master gear movable substantially toward and away from the first master gear, means for driving one of said master gears in rotation, stop and locating means engageable with the periphery of a work gear when meshed with both of said master gears with the axes thereof in substantial alignment effective to cooperate with the master gears to hold the work gear in operating position during rotation thereof in a 360° checking operation with sufficient accuracy as to eliminate the necessity for additional work gear support means, means for measuring relative movement between said master gears during rotation of a work gear in mesh therewith, and means operable between checking operations of successive gears to move said movable master gear and said stop means simultaneously into a clearance position which will permit passage of a cylindrical blank having the same outside diameter as the work gears being checked.

3,299,521
GEAR CHECKER
Russel W. Anthony, Detroit, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed May 5, 1964, Ser. No. 364,961
3 Claims. (Cl. 33—179.5)

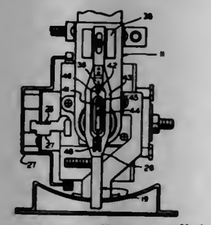


2. Gear checking apparatus comprising a stationary member, a member movable toward and away from said stationary member, means on one of said members for mounting a master gear for rotation, means on the other of said members for mounting a work gear for rotation in mesh with said master gear, means effective to maintain gears on said members in tight mesh, means for driving one of said gears in rotation, a sensing device comprising a casing member and an actuator movable relative to said casing member, operating means movable with said movable member during rotation of said gears to operate said actuator to measure gear eccentricity, and slidable means interconnecting two of said members having lost motion connections effective to retain all of said members in position to check eccentricity upon gear rotation during relatively great movement of said movable member during loading of a work gear.

3,299,522
GYROSCOPIC INSTRUMENT
Martin Huizinga, Wyoming, Mich., assignor to R. C. Allen Business Machines, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 8, 1964, Ser. No. 402,465
2 Claims. (Cl. 33—204)

1. In a gyroscopic instrument for use in determining the attitude of aircraft in flight including a frame adapted to be in fixed relationship to the aircraft, a gimbal pivotally mounted on the frame, a rotor housing pivotally carried by said gimbal, a rotor rotatably mounted in the rotor housing, a substantially U-shaped horizon bar having a pair of substantially parallel arms pivotally carried on said gimbal and extending to one side thereof and an indicating portion extending between the ends of said arms

at the one side of said gimbal, and means for coupling said rotor housing to said horizon bar so that said bar is responsive to relative movement between said gimbal and said rotor housing, said means comprising a bracket extending from said rotor housing and having a drive pin



mounted thereon and extending parallel to the pivotal axis of the horizon bar, a guide member having a slot therein normally extending parallel to one of the gimbal arms and slidably receiving said drive pin, and a plurality of springs resiliently mounting said guide member to one of said arms.

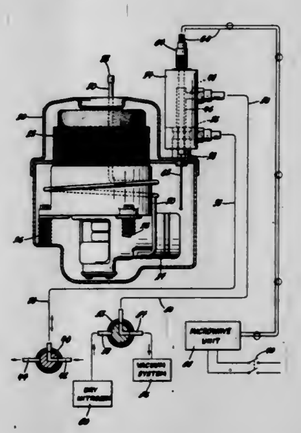
3,299,523
LEVELS
Lawrence N. Lea, 1683 University Ave., Bronx, N.Y. 10453
Filed June 5, 1964, Ser. No. 372,849
1 Claim. (Cl. 33—211)



In a level device of the character described, the combination of a body member having an outer surface to be set against an object; said surface being in a plane having a predetermined relation with respect to a horizontal plane, a cartridge fixed on said body, comprising an elongated arched dielectric envelope filled with a continuous mass of conductive liquid having a bubble therein, a first conductive element extending into said envelope and positioned spaced from the central section of said envelope so that said first element is in constant contact with said liquid, at all positions of said body member, a second conductive element extending into the central section of said envelope and so positioned that when said body surface is in said predetermined plane, all of said second conductive element within the envelope, is encompassed by said bubble and at all other positions of said bubble in said envelope, said second element is in contact with said liquid; said second conductive element comprising a substantially U-shaped piece of wire whose distal ends extend into said envelope and spaced therein so the bubble can encompass such distal ends of the wire; the legs of said U-piece of wire being parallel and extending a substantial distance around said envelope; said legs being exposed to view; said cartridge constituting a switch of which said conductive elements are the terminals, an electrically actuable signal means and a circuit including a power source, for actuating said signal means; said switch being interposed in said circuit.

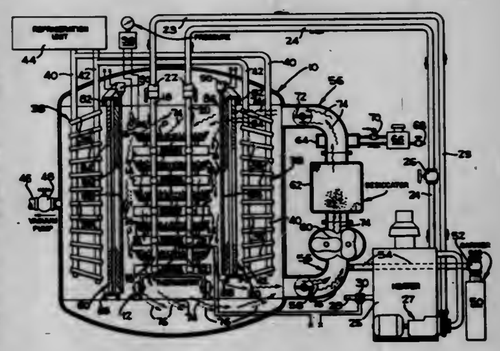
3,299,524
PROCESS FOR DEHYDRATING A SEALED MOTOR COMPRESSOR UNIT
James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,651
2 Claims. (Cl. 34—1)

1. The process of dehydrating a sealed motor compressor unit which includes inserting a microwave radiator into the unit and radiating microwaves from said radiator into the unit while evacuating the unit to remove moisture there-



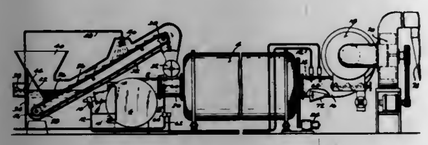
from and thereafter charging the unit with a dry gas and repeating the radiation of the microwaves from said radiator while again evacuating the unit.

3,299,525
CARRIER GAS SUBLIMATION
Erik Thuse, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,883
6 Claims. (Cl. 34—5)



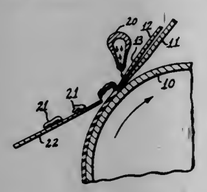
1. The method of freeze drying cellular materials comprising the steps of placing frozen cellular materials in a chamber, supplying heat of sublimation to the ice core of the frozen material by radiation and conduction, reducing the partial pressure of the water vapor in the chamber below the triple point pressure by condensing the water vapor sublimed from the frozen product directly in the chamber, initiating the circulation of a dry, heated, non-oxidizing, heat carrier gas through the chamber and across the materials after a majority of the ice core in the product has sublimed to sweep away water vapor and increase the conductivity of the shell of the dried material, partially shielding the vapor condensing elements in the chamber from the carrier gas, removing water vapor entrained by the gas, reheating the gas, and re-circulating the gas through the chamber until the material has fully dried.

3,299,526
DEHYDRATOR AND METHOD OF DEHYDRATION PARTICULARLY FOR GRAINS
Gerald D. Arnold, Galesville, Wis. 54630, and Arthur H. Eppler, 2518 W. Wisconsin, Milwaukee, Wis. 53200
Filed Oct. 14, 1963, Ser. No. 316,101
1 Claim. (Cl. 34—12)



A method of dehydration of grain which comprises exposing the grain to a current of dehydrating gas at temperatures above the boiling point of water, and introducing water vapor into the gas of said current before exposing the grain thereto, and carrying out the dehydrating process in the presence of such vapor at a rate at which water is continuously evaporating into the gas of said current whereby continued evaporation of water continuously cools the grain, and discharging the dehydrated grain from the gas of said current before the grain reaches temperature damaging thereto.

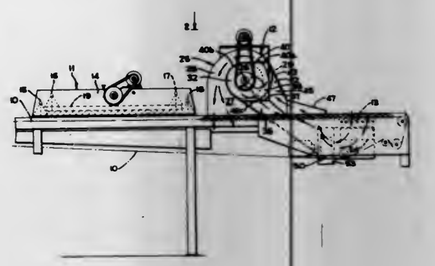
3,299,527
STRIPPING MECHANISM FOR DRUM DRYER DOCTOR BLADE
George Doukas, Beaumont, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 28, 1963, Ser. No. 305,034
6 Claims. (Cl. 34—12)



5. In a process for recovering solid polymeric material from a solution or latex thereof which comprises forming a coherent coating of said polymeric material on a rotating drum and doctoring said coating off with a doctor knife; the improvement of oscillating a plurality of fingers across said doctor knife thereby removing said solid polymeric material in particulate form.

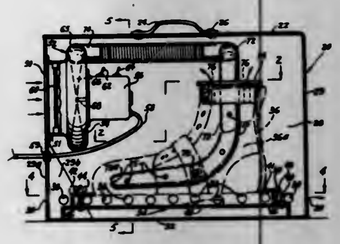
3,299,528
ARTICLE DRYING APPARATUS
Boyd W. Rose and Harold J. Mumma, Riverside, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Sept. 28, 1962, Ser. No. 226,994. Divided and this application Oct. 13, 1965, Ser. No. 495,541
3 Claims. (Cl. 34—60)

1. In an egg processing machine, a conveyor having a conveying surface arranged to transport eggs along a fixed path, said surface comprising egg support members with opening between the members, a candling light disposed beneath said conveying surface at a candling station, means for moving air downwardly through said conveying surface and over said candling light to cool said light and heat said air, means for moving the heated air upwardly through said conveying surface at a first point upstream from said candling station to dry eggs thereon and means for moving the heated air downwardly through said conveying surface at a second point upstream



from said candling station to carry out a second drying operation on the eggs.

3,299,529
DRIER DEVICE FOR SKI SHOES AND THE LIKE
Hershel C. Roberts, Marysville, Calif. (9744 N St., Live Oak, Calif. 95953), and Lloyd L. Peppley, 771 Rideout Way, Marysville, Calif. 95901
Filed Apr. 2, 1964, Ser. No. 356,871
7 Claims. (Cl. 34—104)

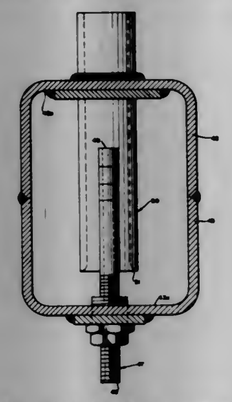


1. An air drier device for uniformly drying ski boots and the like comprising an enclonure means, heated air supply means cooperating with said enclosure means, positioning and clamping means for securing at least one ski boot therein for drying, at least one apertured shoe form heated air supply conduit means extending substantially within the full length of said boot cooperating with said heated air supply means, and boot closure means for securing said air conduit form means within said boot, said boot closure means containing aperture means therein adapted for escape of heated air within said boot means.

3,299,530
PAPERMAKING MACHINE
Robert M. Eiss and Joseph B. Webb, Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 438,837
6 Claims. (Cl. 34—124)

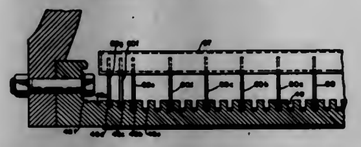
1. A hollow drier drum having journals for rotatably mounting the drum, a steam supply connection for directing steam into the drum, a manifold in said drum and lying adjacent to the inner surface of the drum, a plurality of water condensate removal tubes extending into and carried by said manifold and terminating closely adjacent to the inner drum surface, and a water condensate removal pipe connected to a condensate removal

connection and extending outwardly into said manifold, said pipe extending farther outwardly radially than the



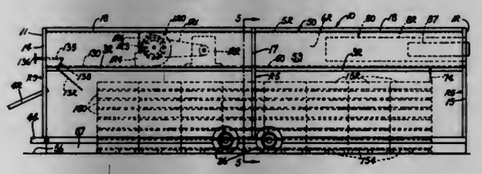
inner ends of said tubes so as to prevent blockage by condensate of said tubes.

3,299,531
PAPERMAKING MACHINE
Don H. Kutchera, Oshkosh, and Robert M. Eiss, Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Aug. 21, 1964, Ser. No. 391,210
3 Claims. (Cl. 34—125)



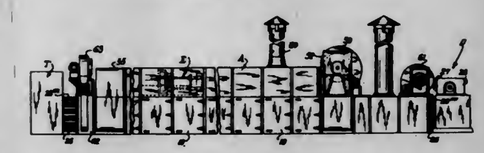
1. A drier drum comprising an outer cylindrical shell, a head on each end of said shell and forming a steam receiving cavity within the shell, a pair of journals on opposite ends of the drum for rotatably mounting the drum, and means for introducing steam into said cavity, said shell on its inner surface being provided with ribs and grooves extending generally circumferentially, said grooves gradually decreasing in depth at the ends of the shell for decreasing the transmission of heat through the shell and for reducing the local stresses at the ends of the shell.

3,299,532
MOBILE DEHYDRATOR
Vaughn W. Melikian, 5138 N. Van Ness, Fresno, Calif. 93721
Filed May 13, 1964, Ser. No. 367,131
8 Claims. (Cl. 34—195)



1. A mobile dehydrator for drying raisins in boxes stacked to provide elongated passages through the stack between the boxes comprising a housing having an open bottom, opposite ends and providing a longitudinal tunnel between the ends adapted to encompass said stack of raisin boxes, ground engaging support means mounted on the housing supporting the same for longitudinal earth traversing movement with said tunnel substantially aligned with the direction of movement to permit passage of the stack therethrough for disposing the housing about successive stacks of said boxes of raisins, means mounted on one end of the housing for movement between a tunnel closing position and an open position, means for imparting longitudinal earth traversing movement to the housing, and means borne by the housing for directing a stream of drying air into the tunnel adjacent to one end of the housing and through the passages between the stack of raisin boxes for discharge out the opposite end of the housing.

3,299,533
VENEER DRYER
Edward P. Morris, Painesville, Ohio, assignor to The Coe Manufacturing Company, Painesville, Ohio, a corporation of Ohio
Filed Dec. 20, 1963, Ser. No. 333,793
1 Claim. (Cl. 34—205)

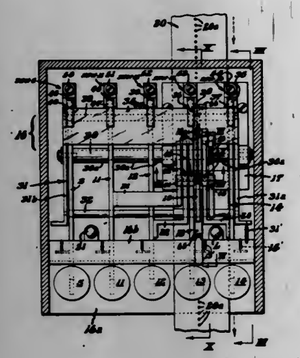


In apparatus for drying veneer, a housing having an elongated drying chamber therein, a plurality of discrete power driven horizontal conveyors in said drying chamber extending lengthwise thereof and positioned one above the other for moving material to be dried through said drying chamber along predetermined paths of travel spaced approximately ten to eighteen inches apart, each of said conveyors comprising a plurality of pairs of rolls extending crosswise of the length of said drying chamber the diameters of which are approximately three to five inches, each pair of said rolls comprising a top and a bottom roll located one directly above the other and above and below the path of travel of the material conveyed by the respective conveyor of which they are a part, said pairs of rolls being spaced along the respective conveyors of which they are a part such that their center distances are approximately six to twelve inches, said pairs of rolls of adjacent conveyors being offset horizontally approximately midway between one another, and means for introducing air into said chamber adjacent to one end thereof laterally of the roll axis and exhausting it adjacent to the other end of said chamber, whereby the air is caused to impinge upon one side of a veneer sheet and then upon an adjacent side of another veneer sheet as it travels therebetween.

3,299,534
DATA RECORDER RESPONDER AND TEACHING SYSTEM
Hubert J. Schlafly, Fort Lee, N.J., assignor to Tele-Pro Industries Incorporated, Cherry Hill, N.J., a corporation of New Jersey
Filed Dec. 9, 1964, Ser. No. 417,190
3 Claims. (Cl. 35—9)

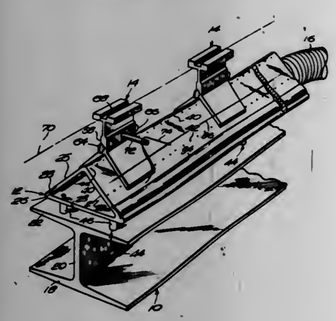
1. A plurality of multiple choice responders each electrically connected with a common control unit, said responders comprising a plurality of fingertip-operated response levers adapted to actuate means for punching and advancing multi-channel paper tape through the responder, each channel which is capable of being coded adapted to correspond to the response lever actuated, said response lever adapted to actuate selective switching means corresponding to the response lever actuated, said

switching means being incorporated within electric circuit means operatively connecting said control unit to each of said responders and adapted to repeatedly and immediately provide intelligible information at the con-



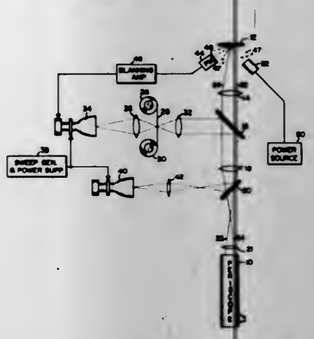
trol unit as to responses originating at said plurality of responder units on actuation of said response levers, and switching means operative at the control unit to energize the tape punching and tape advancing means located at said responders.

3,299,535
FRICTIONLESS TRACK AND GLIDERS HAVING AIR BEARING SURFACES FOR DEMONSTRATING MECHANICAL PRINCIPLES
John L. Stull, Alfred, N.Y., and Frank E. Ferguson, Lexington, Mass., assignors to The Ealing Corporation, Cambridge, Mass., a corporation of Delaware
Filed Nov. 10, 1964, Ser. No. 410,110
8 Claims. (Cl. 35—19)



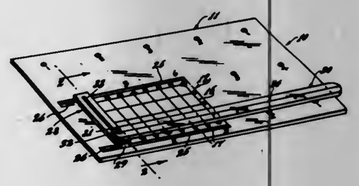
1. A device for experimenting and demonstrating in connection with physical, mechanical principles, said device comprising a track in the form of a hollow tube of triangular cross-section, said tube having a substantially horizontal cross-portion and a pair of downwardly diverging leg portions connected to each other and to said cross-portion said diverging leg portions having vent means for the transmision of air, ends of said tube being closed except for an opening for the introduction of compressed air, a plurality of gliders, each of said gliders having a pair of downwardly diverging leg portions having an apex and a body portion extending upwardly from said apex, the center of gravity of said glider being above said apex, said glider leg portions straddling said leg portions of said track.

3,299,536
IMAGE COMBINING APPARATUS
Arthur W. Sear, Arcadia, Calif., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,119
8 Claims. (Cl. 35—25)



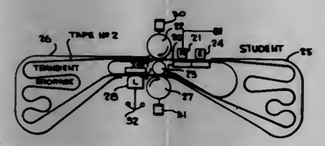
1. A system for combining a plurality of coincident, partially exclusive images without overlap comprising in combination:
an optical system operable to simultaneously and coincidently receive light from first and second areas;
means scanning said first area with a first light beam so as to incrementally illuminate said first area;
means scanning said second area with a second light beam so as to indicate the position of viewable objects in said second area; and
means for stopping said first light beam from illuminating portions of said first area when said second light beam indicates that said viewable objects are coincident with said portions of said first area in said optical system.

3,299,537
POOLPLAYING ACCESSORY
Robert S. Franks, West Berlin, N.J., assignor to Advanced Technical Products Co., a partnership, Berlin, N.J.
Filed Dec. 17, 1964, Ser. No. 419,095
5 Claims. (Cl. 35—29)



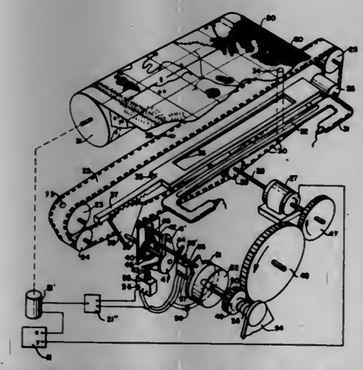
1. A poolplaying accessory comprising a plate member, one region of said plate member being provided with pocket and cushion markings in the arrangement of a pool table, an elongate alignment member, pivot means at one end of said alignment member for pivotally supporting the latter, and mounting means mounting said pivot means on said plate member for selective positioning of said pivot means at any desired point of said one region, said plate member being provided with alignment markings outside of said one region and keyed in correspondence with respective pocket markings, said alignment markings each being in alignment with the corresponding pocket marking and an additional pocket marking, whereby said pivot means is positionable at a point of said one region corresponding to the location of a ball to be played in a particular pocket and said alignment member is swingable into alignment with an alignment marking corresponding to the particular pocket for intersection of the alignment member with the cushion marking at a position of banking.

3,299,538
TEACHING MACHINE
James N. Cooper, Hyattsville, Md., assignor of one-third to Hyman Hurvitz, Washington, D.C.
Original application Oct. 21, 1963, Ser. No. 317,840, now Patent No. 3,234,666, dated Feb. 15, 1966. Divided and this application Oct. 20, 1965, Ser. No. 498,472
2 Claims. (Cl. 35—35)



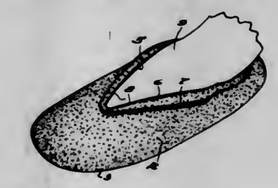
1. In a teaching machine employing a master tape containing duplicate pairs of items of pre-recorded information,
each pair being of random length with respect to others of said pairs,
a blank student tape,
a first readout head for said master tape,
a record head and a second readout head for said student tape,
a three-position switch,
means responsive to said switch in a first of said positions for reading out a first item of a pair from said master tape,
means responsive to said switch in a second of said positions for recording via said record head on said student tape,
means responsive to said switch in a third of said positions and including said second readout head for reading out precisely the recording on said student tape regardless of the length thereof, and
means for thereafter reading out the second item of said pair.

3,299,539
NAVIGATIONAL EQUIPMENT
Heinz Leiber, Leimen, Germany, assignor to Teldix Luftfahrt-Ausrustungs-G.m.b.H., Heidelberg-Wieblingen, Germany
Filed June 29, 1965, Ser. No. 468,031
Claims priority, application Germany, July 2, 1964, T 26,503
15 Claims. (Cl. 35—40)



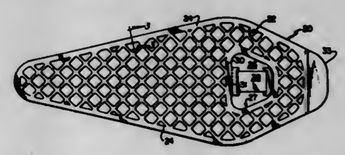
1. A map display device comprising, in combination:
(a) means for displaying any one of a plurality of map sections each of which has an overlap border which depicts portions of adjacent map sections, each map section having, in a given direction and exclusive of it overlap border, a predetermined length *t*;
(b) means for producing a plurality of markers, spaced from each other, in said given direction, a distance equal to *t*, and for bringing said markers into registration with a map section being displayed by said display means;
(c) means for moving said marker means, in said given direction, a distance greater than *t*, thereby to make it possible for more than one marker at a time to be brought into registration with a map section being displayed by said display means; and
(d) masking means movable in said given direction and operatively connected with said moving means for preventing more than one marker at a time from being shown on a map section which is displayed by said display means.

3,299,540
HOUSEHOLD SLIPPER
William M. Scholl, 213 W. Schiller St., Chicago, Ill. 60610
Filed May 27, 1963, Ser. No. 283,242
2 Claims. (Cl. 36—8.1)



1. In a household slipper,
a plastic foam sole layer,
a thinner plastic foam upper having a keyhole-shaped opening therein,
said opening having a relatively large rounded rear portion merging with an elongated front portion the side edges of which converge forwardly,
a fine-line heat seal seam joining said upper to said sole layer and defining the bounding edge of the slipper,
a decorative and reinforcing plastic foam piece around said opening,
a fine-line heat seal seam joining the upper and inner edge of said piece and defining said opening, and
a decorative heat seal seam joining the outer margin of said piece and said upper.

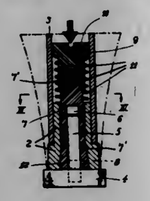
3,299,541
SNOWSHOE AND TREAD THEREFOR
Ernest L. Snyder, Boulder County, Colo., assignor to Design Enterprise, Inc., Boulder, Colo., a corporation of Colorado
Filed Oct. 21, 1965, Ser. No. 500,007
11 Claims. (Cl. 36—4.5)



1. A unitary, one-piece plastic snowshoe tread having a toe aperture portion formed in the forward part thereof and including a hinge portion integrally connected to the rearward part of said aperture portion, said hinge portion being adapted for pivotal movement about the rearward

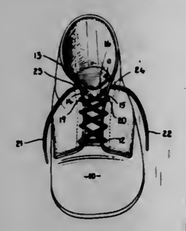
part of said aperture portion to overlie a part of said snowshoe tread disposed rearwardly of said aperture portion, said hinge portion including harness engaging means.

3,299,542
SHOE HEEL WITH EXCHANGEABLE TREAD PART
Knut Herbert Nylund, Box 77, Sundbyberg, Sweden
Filed Aug. 27, 1965, Ser. No. 483,254
Claims priority, application Sweden, Oct. 9, 1964, 12,126/64
5 Claims. (Cl. 36—42)



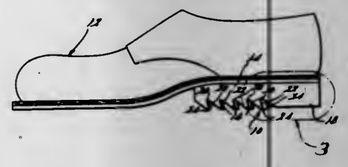
1. A shoe heel arrangement, particularly for ladies' shoes, and of the type including an exchangeable tread part having an upwardly projecting stem of unround cross section and a sleeve-shaped lower heel end portion which is rigidly connected to the rest of the heel and in which said stem of the tread part is adapted to be received and retained, said arrangement comprising a spring-actuated socket member which is axially slidable within said sleeve-shaped heel end portion and which in its lower end has a cavity adapted to receive and grip said unround stem of the exchangeable tread part, the cavited lower end portion of said socket member being axially slotted and having an unround outer cross section gradually increasing in size towards the tread part, and said heel end portion having a lower mouth matching said slotted socket end portion in cross section and tapering inwardly in such a manner that, when said spring is pulling said socket member inwardly in said hole, the stem of the tread part received in said socket cavity will be grasped and retained therein by wedge action.

3,299,543
SHOE TONGUE HAVING LACING MEANS
Marion M. Merritt, 744 Foch Ave.,
Toronto 14, Ontario, Canada
Filed Sept. 21, 1964, Ser. No. 397,937
3 Claims. (Cl. 36—54)



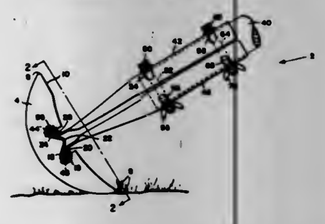
1. In footwear construction including a tongue element having a free top portion and a bottom portion attached to an upper, and a substantially compressible inner lining on said tongue element said upper including spaced pairs of lace-receiving eyelets, the improvement comprising a group of eyelets formed in the free top portion of the tongue element and recessed in relation to said substantially compressible inner lining on said tongue element. said group of eyelets including two pairs of eyelets symmetrically spaced about an axis extending through said free top portion and said bottom portion, an eyelet of each of said two pairs lying adjacent to and in a horizontal plane parallel to a plane containing respective eyelets of a selected pair of said lace-receiving eyelets.

3,299,544
SHOE HEEL
Nathan Hack, Santa Monica, Calif., assignor to Ripple Sole Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 20, 1965, Ser. No. 515,064
4 Claims. (Cl. 36—59)



1. In a ground contacting element for a shoe,
a resilient body adapted to be fixedly secured to the base of the shoe and comprising a series of transversely extending downwardly and rearwardly inclined rib members and a heel plateau,
each of said rib members having front and rear forwardly inclined face portions diverging upwardly and forming an arcuate juncture with said body, whereby when said rib members are engaged with a supporting surface, said rib members will flex forwardly under weight applied to the body and will impart a resilient forward gliding movement to the shoe,
the lower ends of said rib members all terminating along a common imaginary plane extending substantially parallel to the base of the shoe,
said heel plateau including a downwardly and rearwardly inclined forward surface and a lower contact surface which is substantially parallel to the base of the shoe,
said contact surface being spaced upwardly from said imaginary plane whereby said rib members will engage the support surface momentarily before said contact surface during normal walking or running to permit said flexing action of said rib members.

3,299,545
RAKE
Lawrence E. Husted, Fairhill, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,774
7 Claims. (Cl. 56—400.16)



1. A rake comprising tines each having a substantially convex lower edge and a pair of spaced openings in the upper edge of each tine,
a spacer bar having a pair of rolled edges respectively secured in said openings by a forced fit,
a handle, and
means to secure the handle to the spacer bar.

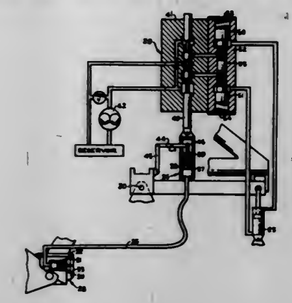
3,299,546
ROTARY SNOW PLOW
Alvin C. Ibisch, 347 Middleton St.,
Columbus, Wis. 53925
Filed Apr. 13, 1964, Ser. No. 359,254
9 Claims. (Cl. 37—43)



1. In a rotary snow plow, a rotor comprising:
(a) a substantially circular back plate having a front face and a rear face,
(b) a plurality of substantially flat paddles having a forward edge and a rear edge and being secured at said rear edge to said back plate front face in substantially perpendicular relation,
(c) each of said paddles being secured to the next adjacent paddle to form a housing extending outwardly from the center of said back plate front face in substantially perpendicular relation,
(d) said housing being adapted to be fixedly mounted on a substantially horizontal rotatable shaft,
(e) said back plate and said paddles defining a plurality of substantially equal size pockets,
(f) a blade secured in front of each of said pockets, the outline of said blades being approximately the same as that of the cross-section of the adjacent pocket,
(g) each blade having a first flat portion having a circumferential edge and a second forwardly sloping portion having a circumferential edge whereby an opening is defined between the adjacent first and second portions of each adjacent pair of blades to provide a front entrance to each pocket,
(h) a circumferential triangular-shaped panel secured to said adjacent first and second portions of each adjacent pair of blades each of said circumferential triangular-shaped panels extending substantially the entire length of the circumferential edge of the second portion to which it is attached and only a portion of the length of the circumferential edge of the first portion to which it is attached, said triangular-shaped panels providing a series of arcuate cutting edges between said first and second portion of each adjacent pair of blades.

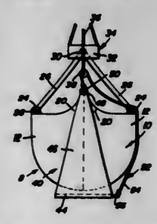
3,299,547
TRACTOR LEVELING DEVICE FOR EARTHMOVING SCRAPERS
James E. Gee, Washington, and Frank H. Winters, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 29, 1964, Ser. No. 378,687
6 Claims. (Cl. 37—129)

1. A tractor leveling device for a two axle tractor scraper combination in which the tractor and scraper are hingedly connected about a horizontal pivot comprising means to impart tilting movement to the tractor about its axle, means to adjust the scraper vertically and means operable automatically upon vertical adjustment of the scraper and in response to resulting variation in the angle between the tractor and the scraper to activate the



tractor tilting means for maintaining the tractor in a substantially level position.

3,299,548
SCREENING MEANS FOR CLAMSHELL BUCKET
Ernest F. Freyer, 5844 Avalon Ave., Chicago, Ill. 60628
Filed Feb. 10, 1964, Ser. No. 343,706
8 Claims. (Cl. 37—183)

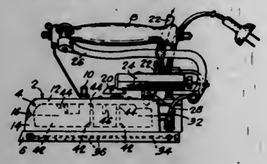


1. In combination, a material digging, scooping, handling and dumping clamshell bucket embodying a pair of aligned cooperating bucket sections, each section having end walls joined by an intervening main wall having concavo-convex bottom and top portions cooperative with each other and said end walls, cooperating upper end portions of said end walls having axially aligned pivot means hingedly joining said bucket sections in opposed coplanar normally closed bucket-forming relationship, links having lower diverging ends hinged to upper respectively cooperable corner portions of said bucket sections, assembling and hoist means to which upper converging ends of said links are hingedly joined, and screening means for the material while the same is being handled and separated, said means being operatively attached to, liftable and lowerable in conjunction with, constituting a complemental part of said clamshell bucket and embodying an elongated screen external to said bucket and wholly underlying the mouth of the bucket when the mouth is (1) closed and (2) partly open in a manner to sift, separate and otherwise handle the material which is being dumped from said bucket.

3,299,549
STEAM PRESSING IRON
William Blank, 270 Queen St., Montreal, Quebec, Canada
Filed June 6, 1966, Ser. No. 555,588
1 Claim. (Cl. 38—77)

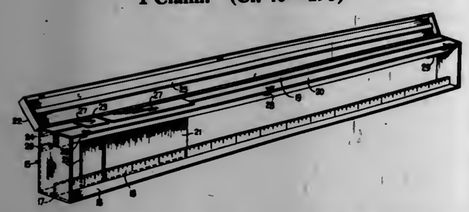
A steam iron including a steam chamber, a sole plate, a heating element positioned between the steam chamber and the sole plate, conduit means for introducing steam into the steam chamber, steam conduit means connecting the steam chamber with the sole plate and a plurality of evaporation baffles provided within the steam chamber and defining a circuitous path of travel for steam passing

through the chamber. Said steam iron being further characterized in that said steam chamber consists of an upper and lower part fixedly secured together, said lower



part having a plurality of upstanding evaporation baffles and said upper part having a plurality of evaporation baffles projecting downwardly between said upstanding baffles.

3,299,550
CARD HOLDER FOR USE AS A SCHEDULER
Yoshito Miyamoto, 98—355 Ponohana Loop, Aiea, Hawaii 96701
Filed Mar. 4, 1965, Ser. No. 437,203
1 Claim. (Cl. 40—195)



A slide scheduler of the character described, comprising a rectangular container embodying a bottom member on which is secured a member that is L shaped, when viewed from the end, and on the vertical face of which is placed certain scheduling data; and a vertically disposed member at each end supporting two parallel and equally spaced members that are L shaped when viewed from the end; and a plurality of multi-colored card strips that are T shaped, when viewed from the end, and having scheduling information placed on the vertically disposed portion thereof, the said card strips being inserted between the two already mentioned L-shaped members of the said container; and a lid secured to the top of the said container by a piano hinge, the said lid containing a spring-loaded pressure bar that prevents the said card strips from shifting position by pressing downward on the horizontally disposed top of each card strip; and means of securing the said lid firmly in place when it is in its closed position.

3,299,551
DISPLAY DEVICE
Josep Llobet, 24—15 21st Ave., Astoria, Long Island, N.Y. 11102
Filed Oct. 28, 1963, Ser. No. 319,485
2 Claims. (Cl. 40—32)

1. In a display device for presenting in a viewing position a sequence of composite images formed from groups of image segments, the improvement which comprises

(1) a plurality of continuously-formed endless flexible display bands,

(2) a plurality of image segments positioned immediately adjacent one another on each of said bands,

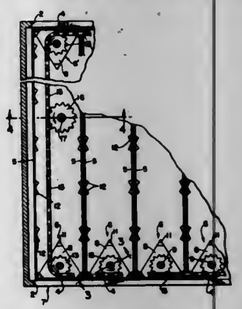
(3) a plurality of substantially parallel band conveyors for conveying said bands, each of said conveyors comprising

(a) a pair of spaced-apart triangular rotatable supports, said supports rotatable about substantially vertically axes,

(4) support means for supporting said bands during their movement around said rotatable supports, said support means in turn comprising

(a) a plurality of spaced-apart band-supporting flat surfaces formed on the corner areas of the upper end portions of said rotatable supports, said band-supporting flat surfaces positioned substantially in a horizontal plane,

(b) a plurality of flat supportable surfaces on said bands which surfaces move with the band into and out of overlying engagement with said upper band-supporting flat surfaces, said supportable surfaces being positioned substantially in a horizontal plane, said band-supporting surfaces and said supportable surfaces being arranged in such a manner that at least one supportable surface is at all times during the operation of the display device in engagement with a band-supporting surface on each of said rotatable supports thus providing at all times support of each band on each rotatable support,



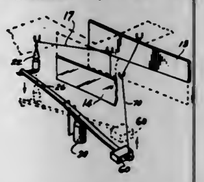
(5) engageable means positioned on each of said rotatable supports, said engageable means being positioned substantially in a horizontal plane,

(6) an endless flexible drive element engaging simultaneously each of said engageable means on said rotatable supports and positively driving all of said supports,

(7) drive means for driving in rapid interrupted movement the flexible drive element

whereby the image segments of the display bands are rapidly moved into and out of said viewing position and successive groups of image segments are thereby displayed.

3,299,552
AUTOMOTIVE MESSAGE INDICATOR AND ACTUATOR
Herman Newman, Bronx, N.Y. (97—30 57th Ave., Rego Park, N.Y. 11368), and David Coby, New York, N.Y. (19984 Hartwell Ave., Detroit, Mich. 48235)
Filed June 23, 1964, Ser. No. 377,366
2 Claims. (Cl. 40—52)



1. An indicating device comprising, in combination:

(a) a housing having a window portion,

(b) a plurality of indicator cards within said housing each adapted for successive display through said window portion,

(c) and means including one solenoid for urging any of said indicator cards to the display position,

(d) and magnetic coil means for successively connecting any of said indicating cards to said means including one solenoid,

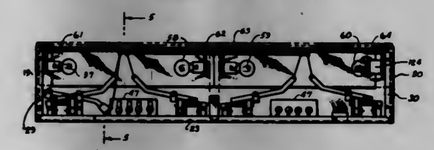
(e) and an electrical switch electrically connected to each of said magnetic coils whereby any of said magnetic coils may be actuated as desired,

(f) and flexible cord means between each of said coils and each of said indicator cards respectively whereby movement of any of said coils will result in corresponding movement of one of said indicator cards,

(g) and at least one blank card, said blank card being positioned for display through said window portion of said housing when any of said indicator cards are not displayed,

(h) said means including one solenoid also including a pivotable lever, said coils being connected to one end of said lever and said blank card being connected to said other end of said lever, said solenoid being adapted to pivot said lever from a first position to a second position.

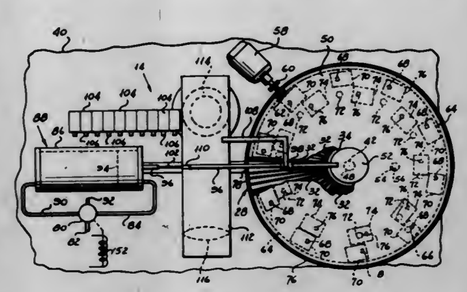
3,299,553
CHANGEABLE MESSAGE DISPLAY
Herman Newman, Bronx, N.Y. (97—30 57th Ave., Rego Park, N.Y. 11368), and David Coby, New York, N.Y. (19984 Hartwell Ave., Detroit, Mich. 48235)
Filed Sept. 27, 1965, Ser. No. 490,216
11 Claims. (Cl. 40—52)



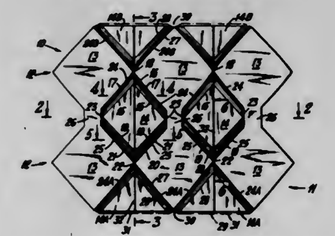
1. A changeable message display, said display comprising a housing having a viewing window, a shutter in said housing in closing relation with said window and mounted for alternate movement out of the viewing plane of said window into a second plane in said housing, a plurality of displays mounted in said second plane of said housing for selective independent movement into and out of said first viewing plane of said window, a first operating means associated with said shutter, a plurality of second operating means respectively associated with each of said displays to effect movement of the same, and a plurality of actuating means respectively connected to each of said second operating means of said displays, all of said plurality of actuating means being connected to the said first operating means of said shutter, whereby, by the actuation of any of said actuating means the said shutter is moved out of the viewing plane of said window and into said second plane and a corresponding display will move out of said second plane into the said viewing plane of said window, and, the de-actuation of the actuating means will move the said shutter out of the said second plane into the said viewing plane and the said display will move out of said viewing plane and into the said second plane.

3,299,554
READY ACCESS TRANSPARENCY FILING SYSTEM
Eric W. Leaver, Toronto, Ontario, Canada, assignor to Electronic Associates Limited, Willowdale, Ontario, Canada, a private company of Canada
Continuation of abandoned application Ser. No. 126,581, July 25, 1961. This application Nov. 2, 1964, Ser. No. 409,050
11 Claims. (Cl. 40—79)

1. A ready access information storage system for selectively positioning at an access location one of a plurality of items of recorded information stored on carriers each of which has a number of items thereon including in combination a turntable, a readily removable magazine for supporting a plurality of carriers, means mounting said magazine on said turntable, means for selectively moving said turntable to a position at which a carrier having a desired item thereon is adjacent said access location and means for selectively moving the carrier having the desired item thereon to one of a plurality of positions at which the desired item is in said access location.



3,299,555
DISPLAY DEVICES
John J. Scherotto, 840 Roosevelt Ave., Secaucus, N.J. 07094
Filed Oct. 28, 1964, Ser. No. 407,127
10 Claims. (Cl. 40—124.1)

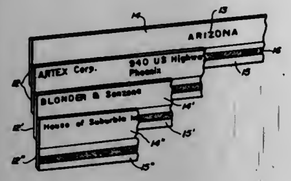


1. A display device formed from stiff sheet material and comprising a first series of at least one horizontal row of diamond shaped portions, and a second series of at least one horizontal row of diamond shaped portions, the diamond shaped portions of said second series being interposed between the diamond shaped portions of said first series, the diamond shaped portions of said first series being defined by score lines and cut lines arranged to allow said diamond shaped portions to be rearwardly displaced relative to the plane of the diamond shaped portions of said second series, each diamond shaped portion of said first series being defined by a pair of convergent cut lines extending from the lateral apices thereof to one vertical apex thereof.

3,299,556
DATA LISTING DEVICE
Rudy C. Stiefel, 860 5th Ave., New York, N.Y. 10021
Filed Mar. 3, 1965, Ser. No. 436,861
1 Claim. (Cl. 40—124)

A master copy of a page for listing a plurality of data items, comprising, in combination, a plurality of cards arranged in a row, holding means for maintaining said cards in said arrangement, said cards each having a data portion and an adhesive portion, said holding means comprising an adhesive substance affixed to said adhesive portion, said cards each having at least one locator key and

at least one locator hole, said arrangement comprising said cards adjacent one another in partially overlapping relationship such that said adhesive portion is included



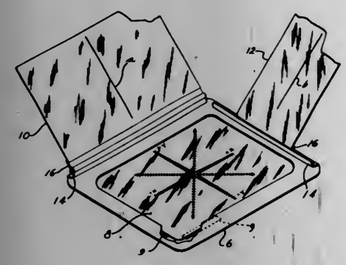
within said overlap, said data portions of said adjacent cards are contiguous, and each said locator key on each said card is engaged in one said locator hole in one said adjacent card.

3,299,557

PROJECTION TRANSPARENCIES

Bennett V. Schultz, Holyoke, Mass., assignor, by mesne assignments, to National Blank Book Company, Holyoke, Mass., a corporation of Massachusetts

Filed Jan. 6, 1965, Ser. No. 423,730
5 Claims. (Cl. 40—158)



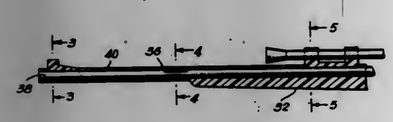
1. Projection slides for overhead projector comprising a frame, a first image bearing transparency affixed in coplanar relationship to said frame, at least one other image bearing movable transparency hingedly and slidably carried on said frame, whereby the latter transparency can be swung into and out of superposed relation with the first transparency and moved edgewise relative to said first transparency while in said superposed relation.

3,299,558

METAL GUN BARREL WITH ENCIRCLING PLASTIC LAYER AND INTEGRAL PLASTIC SIGHT

Anthony Robert Karl, 4 Walnut St., Rye, N.Y. 10580

Filed Aug. 27, 1965, Ser. No. 483,083
6 Claims. (Cl. 42—76)



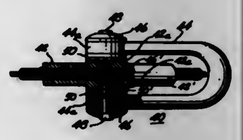
1. An article of manufacture comprising a tubular metal gun barrel having a thickness adapted to withstand the discharge of a cartridge, a layer of plastic encircling said barrel, and a plastic sight integral with said layer.

3,299,559

TRAWL NET LOAD RESPONSIVE APPARATUS

Frank J. Luketa, 5567 Greenwood Ave., Seattle, Wash. 98103

Continuation of application Ser. No. 305,485, Aug. 29, 1963, which is a continuation of application Ser. No. 52,141, Aug. 26, 1960. This application Dec. 16, 1965, Ser. No. 520,818
10 Claims. (Cl. 43—9)



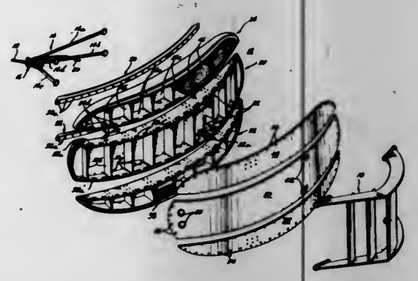
1. A trawl device for connecting an electrical conductor-cored, load-bearing cable physically to a loading device such as a trawl door while passing such cable intact through said device to extend therefrom in both directions and to electric terminal means, said device comprising an elongated tubular member throughout the length of which the cable extends and having means by which said cable is gripped in non-sliding contact, a shackle, and means pivotally connecting the shackle to said tubular member intermediate the ends thereof to permit pivoting of the shackle on an axis disposed transverse to the length of the tubular member, whereby the shackle when loaded by said loading device may seek alignment with the stretch of cable emergent from the end of said tubular member and may freely pivot either way out of such alignment, the opposite end portion of the tubular member through which the cable also emerges being bent laterally away from the loaded cable-aligned shackle to clear the shackle of the cable in different pivoted positions of the shackle out of said alignment position.

3,299,560

SECTIONAL TRAWL DOORS

Frank J. Luketa, 5567 Greenwood Ave., Seattle, Wash. 98103

Continuation of application Ser. No. 331,614, Dec. 18, 1963, which is a continuation of application Ser. No. 52,140, Aug. 26, 1960. This application Dec. 30, 1965, Ser. No. 524,369
6 Claims. (Cl. 43—9)



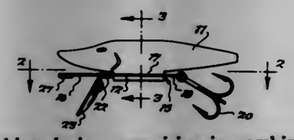
1. A bottom trawl door comprising a door body having separate top and bottom edge sections, the latter of which rides upon the bottom, and an intermediate section, said top and bottom sections having substantially identical flanged inner edge portions, and said intermediate section having substantially identical upper and lower flanged edge portions, each of which is matchable with the flanged inner edge portion of both the top and bottom sections; and substantially identical fastening means removably securing the flanged portions of said top and bottom sections to said flanged portions of said intermediate section, whereby the bottom section, with an edge which has become chafed by bottom contact, is interchangeable with the top section which has a relatively unchafed edge.

3,299,561

FISHING TACKLE

Theodore J. Desbois, 423 Hyde Park Blvd., Niagara Falls, N.Y. 14303

Filed Dec. 28, 1965, Ser. No. 517,012
5 Claims. (Cl. 43—42.09)



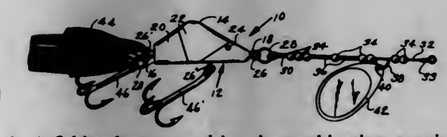
1. A fishing device comprising in combination a lure, said lure having downwardly projecting anchor means of a length materially less than the length of said lure and provided with opposed grooves lying in a horizontal plane; and separate means adapted to be attached to a line for holding said lure, said separate means comprising a clip having a pair of longitudinally extending legs engaging in said grooves, means for releasably retaining said legs engaged in said grooves, and means for attachment of a hook; said lure being removable from and replaceable in said clip without removing the line or said hook from said separate means.

3,299,562

FISHING LURE

David C. Bennecke, Lake Villa, Ill. 60046

Filed Nov. 27, 1964, Ser. No. 414,108
2 Claims. (Cl. 43—42.17)



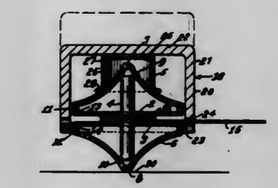
1. A fishing lure comprising, in combination, a pair of spaced apart treble hooks, an elongated, humped main body having a flat base providing attachment means for said pair of treble hooks, a plastic streamer carried by said main body providing tail means offset of the longitudinal axis of said main body, a wire leader and a freely moving spinner having an opening therein carried by said leader providing attraction to said lure when said lure is pulled through the water, the nose of said main body being small and rounded and having eyes painted substantially rearward of said rounded nose to simulate a living creature, the exterior surface of said body being divided into sections of different colors to further simulate a living creature, the upper hump of said main body being tapered from a flat bottom surface of said main body while the rear end of said main body is flat and at right angles to the longitudinal axis of said main body, a forward screw eye being threadingly received within the round nose of said main body, a split ring being received by said screw eye, said split ring further receiving a twisted eye of said leader wire, said leader wire having a twisted eye on the other end to receive the line of a fisherman's reel and pole, said wire being provided with bunched beads, spaced apart beads and a pair of coiled springs freely received between said spaced apart beads, said beads and said coil springs having openings therethrough, said wire being inserted through said openings of said beads and said coil springs, said beads and coil springs serving as spacers, and an area between two of said bunched beads being provided with a wire clevis, said clevis freely receiving the opening of said spinner, said spinner being elliptically configurated and free to move continuously when said lure is in motion in the water, the securement of said pair of spaced apart treble hooks comprising a pair of screw eyes threadingly received, one in the base of the forward end of said main body of said lure and the other of said screw eyes being received in the flat rear end of said main body, and said screw eye received in the rear end of said main body being offset to one side of the longitudinal axis of said main body while the forward screw eye threadingly received within the base of said main body is offset to said one side as well, thus when said main body is being pulled through the water by said fisherman, said main body rides at a tilted angle to simulate a wounded minnow.

3,299,563

HOLDER FOR SPINNING TOP

Pedro B. Arboladura, 261 Rosemont Ave., Los Angeles, Calif. 90026

Filed Nov. 18, 1963, Ser. No. 324,269
1 Claim. (Cl. 46—72)



A holder for a top of the type which has a body formed to provide two axially aligned spinning points, and around which a pull cord may be wound to spin the top, said holder including: outer and inner cuplike members fixedly secured together, the outer cuplike member having an annular side wall and an end wall, the opposite end being open; said annular side wall having a greater diameter than the greatest diameter of the body of the top, one spinning point of the top adapted to be received within the holder through the open end of the outer cuplike member and the inner cuplike member having an annular side wall provided with an outwardly curved rim, the annular side walls of the outer and inner cuplike members being concentric, with the curved rim of the inner cuplike member adapted to engage the body of the top, said annular side wall of the outer cuplike member being provided with spaced apart keyhole grooves extending inwardly from the outer edge thereof, and which keyhole grooves communicate with the interior of the outer cuplike member at points spaced below the curved rim of the inner cuplike member a distance such that a cord passed through a groove can be wound upon the spindle of a top having its upper curved surface engaging said rim.

3,299,564

LAUNCHING PAD AND FLYING TOY COMBINATION

Alessandro Quercetti, 77/16 Via Bardonecchia, Turin, Piedmont, Italy

Filed Jan. 6, 1964, Ser. No. 335,872
Claims priority, application Italy, Jan. 15, 1963, 236/63
5 Claims. (Cl. 46—74)

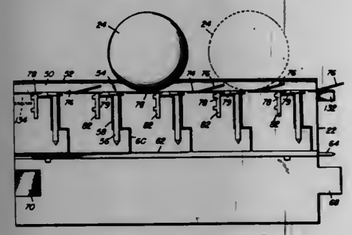
1. In combination, a sling, a launching pad, a flying toy having means at the rear part for releasable engagement with said launching pad, said sling having means

to engage said flying toy, said launching pad comprising a footrest means having a head, and in said head a hooking means for effecting said releasable engagement with said means of the flying toy, whereby said footrest means



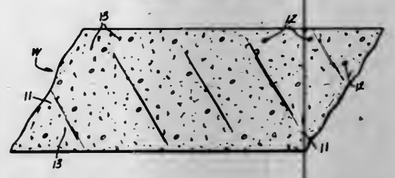
is held against the ground by one foot of the launcher while the sling is strained; then by releasing the pressure of the foot the launching pad is allowed to tilt upwardly and permit said hooking means to release the flying toy.

3,299,565
ELECTRO-MAGNETIC TRANSPORT SYSTEM
John C. Yarashes, 342 Bennett St., Luzerne, Pa. 18709
Filed Aug. 6, 1963, Ser. No. 300,313
11 Claims. (Cl. 46—235)



1. In an electro-magnetic transport system, the combination of a pair of tracks, a magnetic material vehicle rollable thereon, a concave channel between said tracks, said vehicle having a rolling surface substantially complementary to said channel, a plurality of direct-current electro-magnetic coils spaced apart along said channel and connected to a circuit of direct current, a readily depressible circuit-completing switch for each coil extending normally upwardly through the bottom of said channel in circuit-interrupting position ahead of the coil it controls, said vehicle in rolling over said tracks also rolling over said switch to depress said switch to coil energizing position to cause said coil to accelerate said vehicle toward said energized coil, said vehicle rolling beyond said switch as said vehicle approaches said coil permitting said switch to return to circuit interrupting position to deactivate said coil and permit said vehicle to coast over said deactivated coil to activate the next successive switch to energize the next successive coil, a booster circuit of direct current connected to a plurality of said spaced apart coils through a manually controllable booster circuit completing means whereby to manually complete a coil energizing booster circuit to a selected coil to further accelerate the approach of said vehicle to said selected coil, or to stop and hold said vehicle at said vehicle at said selected coil, said booster circuit completing means comprising a plurality of circuit contacts, one for each coil, mounted in spaced apart relation in a common channel, and a manually controllable circuit completing probe movable along said common channel to successively complete the booster circuit to successive coils and further accelerate said vehicle as it approaches said successive coils, or stop said vehicle at a particular coil if the circuit thereto is maintained when said vehicle reaches said particular coil.

3,299,566
WATER SOLUBLE FILM CONTAINING AGRICULTURAL CHEMICALS
Clinton W. MacMullen, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed June 1, 1964, Ser. No. 371,710
1 Claim. (Cl. 47—1)

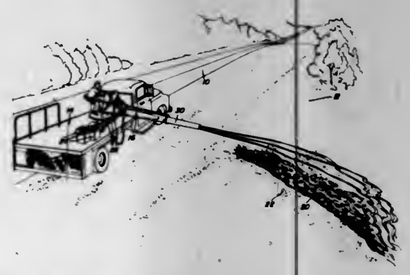


A flexible sheet operative by dissolution to release pesticides into the earth's surface comprising a water soluble sheet, said sheet being randomly perforated to admit air to the earth's surface, said sheet being fabricated from material selected from the group consisting of polyvinyl alcohol and polyethylene oxide, said sheet having incorporated therein

(a) water-soluble dye indicia,
(b) a water-soluble surface active agent, and
(c) a pesticide,

said dye indicia, said surface active agent and said pesticide being uniformly dispersed throughout said sheet.

3,299,567
METHOD OF SOIL EROSION CONTROL
John H. Perkins, 1517 North Shore Drive, Clear Lake, Iowa 50428
Filed Jan. 11, 1965, Ser. No. 424,555
4 Claims. (Cl. 47—9)

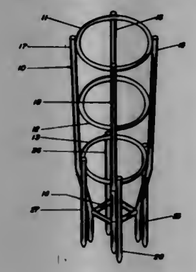


1. An improved method of applying a protective soil covering of fiber glass strands comprising producing a main conveying straight line flowing air stream towards the ground, protecting the produced flowing air stream from ambient atmospheric conditions, feeding a plurality of separate and individual strands of fiber glass from separate sources simultaneously and laterally into said air stream whereby each strand is converted from one of relatively dense fibrous condition into one of relatively large fibrous condition by the immediate subjection of each to the air stream and said fluffed out strands are deposited in an intermingled relation on the ground.

3,299,568
COMPOSITIONS PLASTICIZED WITH SULPHUR
Arthur V. Tobolsky, Princeton, N.J., and Masao Takahashi, Sonoyama, Otsu, Japan, assignors to Research Corporation, New York, N.Y., a nonprofit corporation of New York
No Drawing. Filed Mar. 1, 1966, Ser. No. 530,782
12 Claims. (Cl. 47—9)

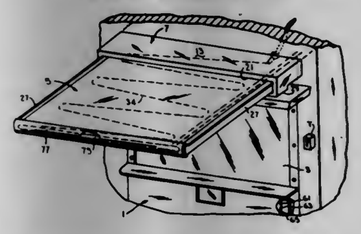
5. The method which comprises applying a polymer film as an agricultural mulch over ground which has been planted to conserve water and heat during plant growth, said film comprising a polymer selected from the group consisting of poly(ethylene tetrasulphide), polyethylene and polyisobutylene, including in said film sufficient elemental sulphur to cause said film to crystallize and disintegrate toward the end of the growing season to provide sulphur as additional plant food, and allowing said film to so crystallize and disintegrate.

3,299,569
TOMATO PLANT HOUSING SUPPORT
Barton P. Lemrick, Percival, Iowa 51648
Filed Oct. 11, 1965, Ser. No. 494,371
4 Claims. (Cl. 47—45)



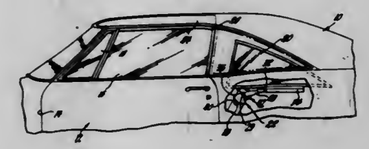
1. A plant support comprising at least three vertically aligned shallow hollow frames, said frames being rigidly spaced apart with a plurality of downwardly convergent side rods attached to the respective frames, the portions of the respective side rods between the lowest base frame and the next lowest frame immediately thereabove having a greater degree of convergency than those portions of the side rods disposed above the next lowest hollow frame, the lowest portions of said side rods below the lowest frame being substantially vertical, and a plurality of substantially vertical auxiliary ground rods attached to the plant support, said auxiliary ground rods extending downwardly from said plant support and being disposed outwardly of the lowest portions of said side rods.

3,299,570
CANOPY
Richard S. Radcliffe, 17 Babler Lane, Ladue, Mo. 64758
Filed Dec. 3, 1964, Ser. No. 415,600
3 Claims. (Cl. 49—27)



1. An extensible canopy device for a drive-up facility comprising a housing having an opening at one end constituting its front, a canopy mounted in said housing for movement from a retracted position within the housing to an extended position projecting out through said opening, a drive for the canopy comprising a pair of chains extending lengthwise of the housing and attached to the canopy, a reversible power drive for said chains, said power drive including a reversible electric motor, means for effecting operation of the motor in one direction or the other for extending and retracting the canopy, means for limiting the extension and retraction of the canopy comprising limit switches interconnected with the motor, and means for actuating the motor to effect retractive movement of the canopy in response to engagement of the canopy with an object when the canopy is being extended or engagement of the canopy by an object when the canopy is in an extended position, said means for actuating the motor comprising a sensor on the forward end of the canopy and means responsive to actuation of the sensor for timing a limited period of operation of the motor to effect a partial retraction of the canopy.

3,299,571
CLOSURE OPERATOR
Arthur J. Carpenter, Royal Oak, and Vincent D. Kaptur, Jr., Bloomfield Hills, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 12, 1965, Ser. No. 439,371
4 Claims. (Cl. 49—31)

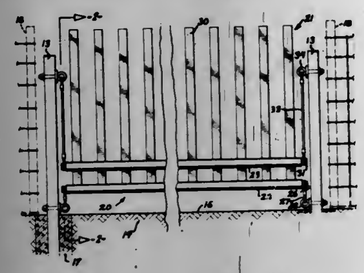


1. In a vehicle body, the combination comprising, means defining a first opening in said body, a first closure for said first opening movable between first and second positions relative thereto, means defining a second opening in said body adjacent said first opening, a second closure for said second opening movable relative thereto between a plurality of selected positions and a predetermined position, a source of power, power operated means for moving said second closure, first control means for connecting said power operated means across said source of power for moving said second closure from any one of said plurality of selected positions thereof to any other selected position thereof, second control means responsive to movement of said first closure from the first to the second position thereof for connecting said power operated means across said source of power to move said second closure from said other selected position thereof to said predetermined position thereof, memory control means connected with said source of power and operative to cause said power operated means to return said second closure from said predetermined to said other selected position thereof, and means responsive to movement of said first closure from the second to the first position thereof to cause said memory control means to connect said power operated means across said source of power to return said second closure from said predetermined to said other selected position thereof.

3,299,572
DRIVE-THROUGH LIVESTOCK GATE
John W. Wallace, 3426 Marysville Blvd., Sacramento, Calif. 95838
Filed Dec. 7, 1964, Ser. No. 416,274
5 Claims. (Cl. 49—131)

1. A drive-through livestock gate comprising:
(a) a pair of resilient gateposts;
(b) an upper anchor on each gatepost;
(c) a lower anchor on each gatepost;
(d) a cross-bar structure extending substantially across the distance between said gateposts adjacent the bottoms thereof, said cross-bar structure including ad-

jacent each end a pair of vertically spaced pivot pins located above said lower anchor;



(e) tie means for connecting each end of said cross-bar structure including said pivot pins to the adjacent of said upper and said lower anchors; and,

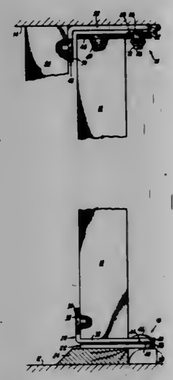
(f) a plurality of battens upstanding from said cross-bar structure.

3,299,573

SWINGING DOOR AND HARDWARE FOR MOUNTING THE SAME

Norman F. Gustafson, West Hartford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut

Filed Mar. 31, 1965, Ser. No. 444,170
3 Claims. (Cl. 49—388)



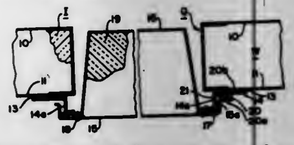
1. In combination, a doorway frame including floor and ceiling surfaces defining a bottom and top of a doorway, a door for closing the doorway, and mounting means adjacent top and bottom corners of one side edge of the door for pivotally mounting the door to the doorway frame for swinging movement relative to the doorway, the mounting means including an upper pivot hinge having first and second hinge leaves fixed on the top edge of the door and the ceiling surfaces respectively, the first hinge leaf having a lug outwardly disposed from the plane of the door, the second hinge leaf lying flat against the ceiling surface in direct abutting engagement therewith and having a vertical pivot pin freely extending downwardly through an opening formed in the lug of the first hinge leaf for accommodating variations in the height of the doorway relative to the door, the pivot pin having a lower projecting end positioned below the first hinge leaf in underlying relation thereto providing a detachable pivot connection for the first and second hinge leaves facilitating installation and removal of a floor to ceiling door.

3,299,574

VAPOR-TIGHT THERMAL INSULATING DOOR

Alexander V. Alexeff, Cleveland, and Milan Zobenica, Parma, Ohio, assignors to Industrial Ovens, Incorporated, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 7, 1964, Ser. No. 402,095
6 Claims. (Cl. 49—401)



1. An explosion-proof door structure for an opening in a metal wall comprising,

a door frame for bordering the wall opening on the outer side of the wall and having a frame flange extending outwardly from the wall,

a door comprising a rectangular first door pan of relatively thick sheet metal and having an outer door flange defining an inside corner and extending inwardly toward the wall in the closed position of the door, said door flange being receivable in surrounding relationship over said frame flange in the closed position of the door,

gasket means continuously extending along the inside corner of said first door pan, an element of said gasket means sealingly receiving the outer edge of said frame flange when the door is closed,

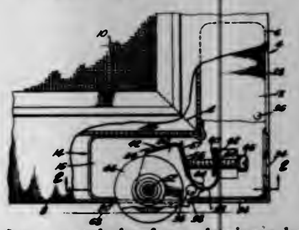
and a second door pan of relatively thin sheet metal extending from the inside bottom wall of said first door pan into the wall opening in the closed position of the door, said pan containing heat insulating material and being spaced by an element of said gasket means from face-to-face heat-transferring contact with the first door pan.

3,299,575

COMBINED CORNER AND ROLLER FOR SCREEN FRAMES

Ray N. Du Shane, Fullerton, Calif., assignor to Universal Molding Co., a corporation of California

Filed Sept. 7, 1965, Ser. No. 485,395
1 Claim. (Cl. 49—420)



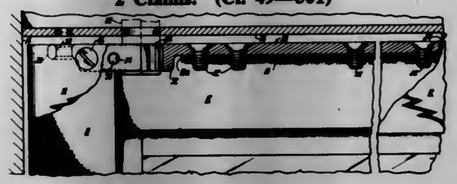
In a screen frame, a tubular frame having a horizontal section and a vertical section meeting at an angle, the horizontal section having a vertically facing aperture, an angled corner member having legs with spaced side walls and seated in one each of said tubular frame sections, a roller bracket movably carried by said corner member between said side walls and inwardly from the ends of said legs, a roller being rotatably supported by said roller bracket between said side walls and movable vertically with the bracket as a unit relative to said tubular frame and said vertically facing aperture, means carried by said frame for adjustably positioning said roller bracket and roller relative to said vertically facing aperture, and a spring interposed between said corner member and said roller bracket and biasing the bracket and roller away from said means for adjustably positioning said roller and in the direction of said vertically facing aperture.

3,299,576

POWER-ACTUATED DOOR ASSEMBLY

Louis G. Bobrowski, Berlin, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut

Filed July 14, 1964, Ser. No. 382,606
2 Claims. (Cl. 49—501)



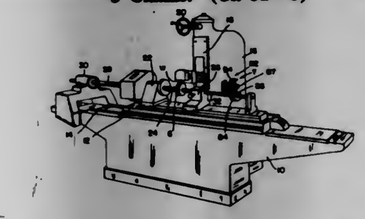
1. In combination with a power-actuated door assembly wherein a rotatable drive spindle vertically extending from a door operator provides a pivotal axis for a door which includes a frame having a stile and cross rail connected thereto adapted to receive the spindle adjacent the stile, the cross rail including a longitudinally extending U-shaped recess formed by a horizontal mounting plate and upright walls, a door arm for pivotally connecting the door to the spindle comprising an elongated rectangular body received within the cross rail, the body having a pivoted end disposed within the adjoining stile adjacent a pivoted side of the door and an opposite swinging end extending toward a latch side of the door, the body having a spindle aperture proximate its pivoted end, a clamping boss formed on the body around the aperture and longitudinally extending substantially in alignment with the sides of the body to thereby engage the spindle and the stile, and fastening means fixing the body to the mounting plate and the clamping boss to the stile thereby reinforcing the connection between the cross rail and its adjoining stile adjacent the pivotal axis.

3,299,577

METHOD AND APPARATUS FOR TRIMMING GRINDING WHEELS

Frank Pernack, Birmingham, Stewart F. Miller, Roseville, Edward Z. Krygier, Royal Oak, and Axel B. Abrahamsson, Warren, Mich., assignors to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan

Filed Apr. 14, 1964, Ser. No. 359,686
5 Claims. (Cl. 51—5)



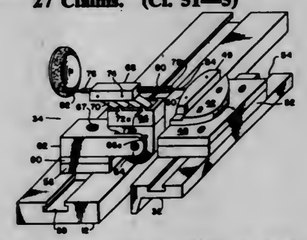
1. A gear grinder comprising a base, a work slide on said base, means for reciprocating said slide, a rotary work support on said slide having its axis of rotation parallel to the direction of reciprocation thereof, means for rotating said work support in timed relation to axial movement thereof, a wheel support, means on said wheel support mounting a wheel for rotation about its axis and for angular adjustment about an axis radial of the work support axis, a trimmer, means mounting said trimmer on said slide for movement therewith parallel to the axis of said slide and for rotation about the axis of rotation of said work support, means for rotating said trimmer in timed relation to movement of said slide parallel to the axis of said work support, said trimmer comprising a templet, a follower movable over the templet, a diamond connected to said follower and movable in a path similar to the path of said follower, means for moving said follower and diamond to cause said diamond to move over a peripheral portion of the wheel in a direction generally radial thereof, and means for effecting limited movement of said trimmer along and around the axis of rotation of said work support to trace an imaginary helicoidal surface identical to the required tooth surface and thus to form the peripheral portion of said wheel to a radial cross-section different from the cross-section of a gear tooth in a plane perpendicular to the axis of the gear but which is thus automatically shaped to produce the correct form on the gear tooth.

3,299,578

APPARATUS FOR TRIMMING GRINDING WHEELS

Benjamin F. Bregi, Grosse Pointe Shores, and Donald P. Bush and Edward Z. Krygier, Royal Oak, Mich., assignors to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan

Filed Aug. 17, 1964, Ser. No. 389,879
27 Claims. (Cl. 51—5)



11. A grinder comprising a frame, a slide movable rectilinearly on said frame, a work support on said slide including means for supporting a work piece having a helicoidal surface for rotation about the axis of said helicoidal surface with its axis of rotation parallel to the direction of reciprocation, means responsive to movement of said slide to rotate the work piece, a rotary grinding wheel, means mounting said wheel on said frame for angular adjustment about an axis perpendicular to and intersecting the axis of said wheel and the axis of rotation of a work piece on said work support, means for driving the wheel in rotation, a template on said frame having a helicoidal guide surface geometrically similar to the portion of a helicoidal surface of a work piece at and adjacent the zone of contact with said wheel, said template being fixed to said frame with its guide surface confronting the work contacting zone of the wheel, a trimmer device mounted on said slide for movement therewith into and out of a trimming position interposed between the guide surface of said template and the work contacting zone of the wheel, said trimmer device comprising a follower element movable over the guide surface of said template, a trimming element movable in trimming relation relative to the work contacting zone of said wheel, and means connecting said follower and trimming elements to cause said trimming element to trace out an area geometrically similar to the guide surface of said template.

3,299,579

GRINDING MACHINE

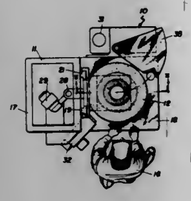
Alden H. Jacobson, Paxton, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware

Filed Jan. 17, 1964, Ser. No. 338,507
10 Claims. (Cl. 51—115)

1. A grinding machine for finishing opposite parallel flat surfaces of a workpiece, comprising

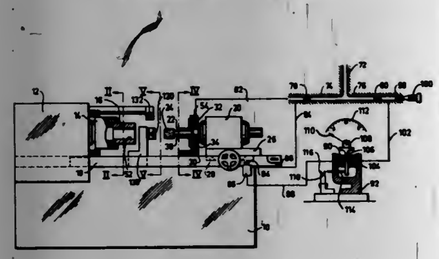
(a) a base,

(b) a spindle rotatably mounted in the base and having a passage therethrough capable of receiving workpieces seriatim with their flat surfaces perpendicular to the axis of the spindle,
(c) a first abrasive wheel mounted on one end of the spindle and having a grinding face generally perpendicular to the spindle axis,
(d) a second abrasive wheel rotatably mounted on the base and having a grinding face spaced from and



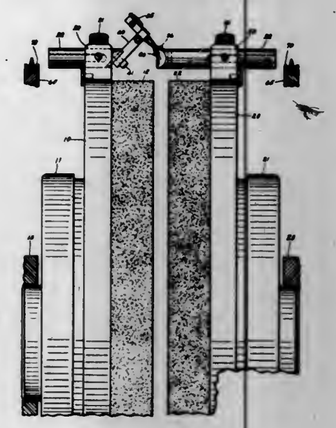
in opposition to the grinding face of the first abrasive wheel,
(e) means for driving the abrasive wheels, and
(f) a feed arm movable in a plane between the faces of the wheels to carry the workpiece on a path between the said passage in the spindle and the outer peripheries of the wheels at a controlled rate, whereby the said passage serves as a feed for movement of the workpieces relative to said path.

3,299,580
INTERNAL GRINDING MACHINES
Gerszon Gluchowicz, Stockholm, Sweden, assignor to Ulvsunda Verkstader Aktiebolag, Bromma, Sweden, a corporation of Sweden
Filed Apr. 22, 1964, Ser. No. 361,648
Claims priority, application Sweden, Apr. 24, 1963, 4,497/63
11 Claims. (Cl. 51—165)



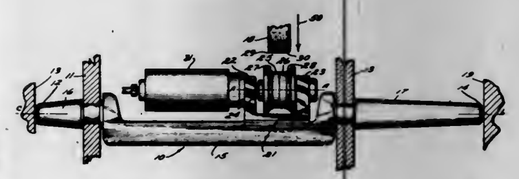
1. An internal grinding machine comprising a support, a chuck for carrying a work-piece, and a grinding wheel mounted on a spindle in a bracket, both said chuck and said grinding wheel being mounted on said support to be rotatable and relatively reciprocally displaceable axially as well as radially for grinding an internal face of the work piece, a sharpening tool adapted to dress the grinding wheel at predetermined intervals, and a pneumatic measuring instrument provided with a gauge head having outlet nozzles for a pressure medium, said head being axially reciprocable in and out of the work-piece with a gap between the head and said internal face affecting the pressure of said pressure medium, the improvement that the measuring instrument is disposed between said grinding wheel and said bracket with the gauge head partially embracing the spindle.

3,299,581
SPINDLE ALIGNING INDICATOR
Ralph E. Price, Waynesboro, Pa., and Elman R. Dunn, Roscoe, Ill., assignors to Landis Tool Company, Waynesboro, Pa.
Filed Aug. 20, 1964, Ser. No. 390,915
7 Claims. (Cl. 51—165)



1. In a double disc grinding machine having
(a) a pair of spindle housings,
(b) a spindle rotatably mounted in each of said housings,
(c) an abrasive disc mounting plate on each of said spindles,
(d) a spindle aligning indicator device comprising
(e) an indicator bar,
(f) means for attaching said indicator bar to one of said mounting plates,
(g) an indicator mounted on said indicator bar,
(h) and an indicator actuating bar mounted on said other mounting plate.

3,299,582
CRANKSHAFT-SIMULATING DRESSER
Arthur T. Kohlstrunk, Detroit, Mich., assignor to Wheel Trueing Tool Company, Detroit, Mich., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,831
7 Claims. (Cl. 51—262)



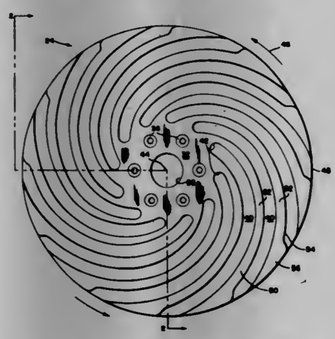
1. In a crankshaft pin grinding assembly including a pin offset fixture driving head clamp and a tail stock clamp for mounting the crankshaft and a driven grinding wheel mounted for linear feed of said wheel toward and away from a pin on said crankshaft for grinding said pin, an offset dresser bar mounted in place of a crankshaft in said pin offset fixture, means on said dresser bar for mounting a form dressing wheel with its axis in a plane including the axis of said grinding wheel, and means for revolving said form dressing wheel about its axis without driving said pin offset fixture.

3,299,583
METHOD OF MAKING A CONVEX SPHERICAL SURFACE ON A BEARING RING OR THE LIKE
Franklin S. Atwater, New Britain, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn.
Filed Apr. 30, 1964, Ser. No. 363,889
8 Claims. (Cl. 51—289)



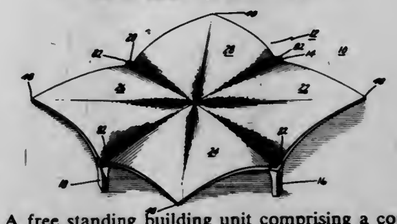
1. The method of finishing a bearing ring having an internal elongated bore and a truncated spherical outer surface centered on the bore axis with parallel end faces connecting the ends of the bore with said surface, which comprises forming an integral mass of solid matter in the bore and beaded over both said end faces, whereby the solid matter is retained in the bore to define with said bearing ring a ball-like unitary structure, finishing said unitary structure with standard spherical ball-finishing techniques using opposed grooved relatively moving plates, said ball-like structure being supported by and between corresponding walls of opposed grooves, and removing the solid matter after completion of ball-finishing operations.

3,299,584
VACUUM HEADS FOR DISC GRINDERS, SANDERS AND THE LIKE
Mark H. Landis, 228 Philadelphia Ave., Waynesboro, Pa. 17268
Filed July 22, 1964, Ser. No. 384,324
19 Claims. (Cl. 51—362)



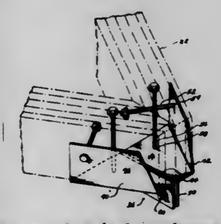
1. A rotatable head for a disc grinder or sander or the like, comprising: an abrasive disc and a backing plate assembly including a backing plate having a generally flat face for supporting said disc, cooperating means fixed to said disc and formed in said backing plate assembly for centering said disc relative to said backing plate, and means for holding said disc against said backing plate and for preventing relative rotation between said disc and said plate consisting solely of a series of uniformly arranged spiral grooves formed in and opening onto the face of said backing plate, said grooves being concentric with the center of said plate and extending to at least adjacent its periphery and means establishing communication between the peripheral terminus of each groove and the ambient atmosphere, whereby said grooves and said disc cooperate to form channels closed at their inner ends and communicating with the ambient atmosphere at their outer ends from which air is exhausted by the rotation of said head to thereby cause the ambient air pressure to hold said disc against the backing plate.

3,299,585
BUILDING CONSTRUCTION
Arnold H. Wilkins, 2002 Kem Road, Marion, Ind. 46952
Filed May 14, 1963, Ser. No. 280,289
10 Claims. (Cl. 52—13)



1. A free standing building unit comprising a continuous, monolithic, self-supporting, extended area roof member formed of cementitious material and having four perimetral sides respectively lying in vertical planes which define a quadrangle, said roof member being outwardly arched about a straight axis extending between a first two diagonally opposite corners thereof, and two spaced apart pillar members respectively having upper ends supporting the other two diagonally opposite corners of said roof member at substantially equal distances above a ground plane, said pillar members being the sole vertical support for said roof member, said first corners being spaced from said ground plane by distances greater than said other corners, said roof member including reinforcing means therein and forming therewith an arched crown beam extending continuously between and into said pillar members for providing cantilever support for said first corners.

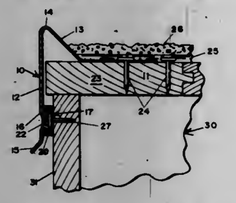
3,299,586
CROSSARM ASSEMBLY
Edmund E. Hockaday, St. Paul, Minn., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Continuation of application Ser. No. 196,033, May 15, 1962. This application Oct. 22, 1965, Ser. No. 510,435
4 Claims. (Cl. 52—40)



1. A support for an electrical conductor comprising
an upright structure;
a pair of opposed and aligned curved relatively nonconducting crossarms fastened to said upright structure, said crossarms extending outwardly from said structure on at least one side of said structure,
the outer ends of said arms meeting at a miter joint;
a member fastened to each of said arms for holding said arms together at said miter joint and for supporting said electrical conductor,
said member having
a side plate extending along the outer side face of said crossarm,

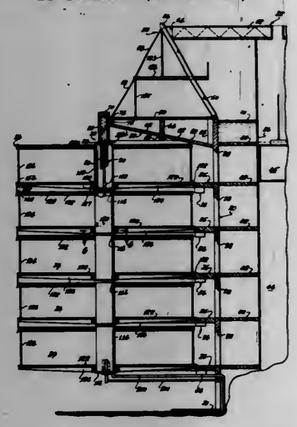
a base plate extending along the lower face of said cross-arm, and
a downwardly extending suspension plate; and
means fastening said suspension plates together, said means supporting said electrical conductor.

3,299,587
FLASHING
Walter M. Puto, Jr., 1035 NE. 127th St., North Miami, Fla. 33161
Filed Feb. 26, 1964, Ser. No. 347,539
1 Claim. (Cl. 52—58)



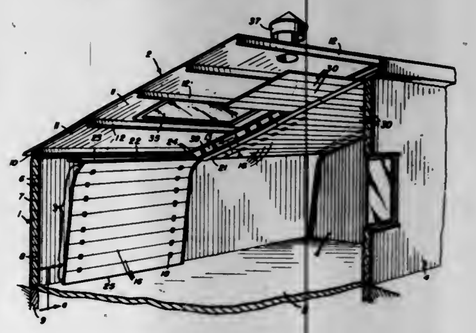
A flashing for building structures comprising a substantially horizontally disposed roof engaging portion, a facia portion lying at substantially right angle thereto, an arcuate portion joining said facia portion and said roof engaging portion, said arcuate portion extending upwardly of said roof engaging portion, said facia portion having a plurality of aligned bores and a plurality of fastener receiving means secured to the inner surface of said facia portion, each of said fastener receiving means having a wall portion in spaced relation to said inner surface of said facia portion and an opening in said wall portion smaller than said bores receiving a fastening member therethrough for securing said facia portion to said building structure, side walls extending from said wall portion and fastened to said inner surface of said facia portion forming a chamber receiving caulking compound for preventing the ingress of moisture therein.

3,299,588
MULTILEVEL BUILDING STRUCTURE WITH PLURAL SUSPENDED REVOLVING COMPARTMENT UNITS AND METHOD OF MAKING SAME
Lloyd L. Arnold, 1540 Simms St., Lakewood, Colo. 80215
Filed July 10, 1963, Ser. No. 293,967
18 Claims. (Cl. 52—65)



3. A building structure comprising a vertical central core member, a superstructure mounted on the top of said core member, said superstructure extending radially outwardly beyond the extent of said core member, a parapet formed at the perimeter of said superstructure, a plurality of decks mounted on said core member externally thereof below said superstructure and extending horizontally outwardly therefrom, said decks being spaced vertically from one another, the outer perimeter of each of said decks being of scalloped form, the scallops of the various decks being one above the other, a plurality of self-contained compartment units, said compartment units being arranged in a plurality of vertical stacks, with a compartment positioned with the lower level thereof engaged in each of said scallops, and means suspending each of said stacks from said parapet.

3,299,589
APPARATUS FOR MODULATING THE TEMPERATURE WITHIN ENCLOSURES
Harold R. Hay, 795 Roble, Menlo Park, Calif. 94025
Filed Aug. 16, 1965, Ser. No. 482,027
16 Claims. (Cl. 52—71)

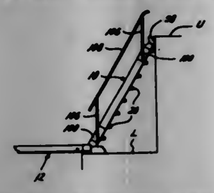


1. An enclosure having:
(a) an exterior surface enclosing at least one compartment;
(b) a first portion of said enclosure being constructed at least partially of material having high thermal storage characteristics;
(c) a second portion of said enclosure being constructed at least partially of material having low thermal storage and high heat transfer characteristics;
(d) a movable thermal barrier means adjacent to said enclosure;
(e) means interconnecting said thermal barrier means to said enclosure for alternately moving said thermal barrier means from a first position close to said first portion to a second position more directly influencing heat transfer through said second portion without substantially changing the surface area of said movable thermal barrier means, wherein heat flow through said first and second portions is controlled by the positioning of the thermal barrier means.

3,299,590
PREFABRICATED, ADJUSTABLE STAIRWAY, RAMP OR BRIDGE
Lavoy Carter, 811 Isabella, Houston, Tex. 77002
Filed June 1, 1964, Ser. No. 371,466
5 Claims. (Cl. 52—183)

1. In a stairway, spaced apart parallel stringers of generally channel shape extending at an angle to the horizontal between upper and lower floors, with the flanges of one stringer extending away from the flanges of the other stringer, plate means secured to the flanges of each stringer and providing flat plate portions, positioned parallel to the webs of and spaced longitudinally along the stringers, each of said plate portions having an arcuate

row of perforations and an opening spaced radially from said perforations, an upright for each of said plate portions having a lower end opening through which a bolt is extended through said opening of the plate portion, and



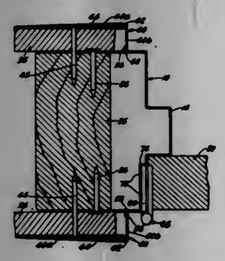
an opening positioned above said lower end opening for registration with a selected one of said perforations and through which a bolt is extended through said selected perforation to hold the upright vertical.

3,299,591
DOUBLE-PANE WINDOWS
Hubert Woelk, Porz-Zundorf, Germany, assignor to Spiegetglaswerke Germania Aktiengesellschaft, Porz-Urbach, Germany
Filed May 18, 1964, Ser. No. 368,108
Claims priority, application Germany, May 20, 1963, S 85,288
3 Claims. (Cl. 52—203)



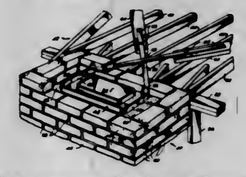
2. A casement window including a first glass pane, a second glass pane having a first sealant web secured to surface portions adjacent the outer edges thereof, said second glass pane mounted in overlying relation to said first glass pane and spaced from said first glass pane a distance determined by the depth of said first sealant web, the outer edges of said second glass pane being positioned inwardly of the outer edges of said first glass pane, a second sealant web being secured to the outer surface of said first sealant web and the adjacent surface of said first glass pane, whereby said first and second panes are secured in fixed relative relation, and wherein said first and second sealant webs are epoxy resins.

3,299,592
BUILDING STRUCTURE
Daniel K. Cable, Lakewood, Calif., assignor to Angeles Metal Trim Company, Los Angeles, Calif., a corporation of California
Filed June 25, 1964, Ser. No. 378,003
5 Claims. (Cl. 52—213)



1. In a frame structure for a doorway through a wall of a building, comprising spaced upstanding studs defining said doorway, each of said studs being in the form of a channeled metal structural frame member having sides facing in opposite directions from said doorway;
interconnected header and jamb elements;
said jamb elements being in the form of channeled metal members corresponding respectively to said studs, said jamb element having door stops;
each jamb element having flanges lying flat upon the sides of the corresponding stud and being secured directly to said corresponding stud;
wallboards overlying said flanges around said doorway and being secured to said flanges and said studs;
separate metal trim strips, each having an outer leg portion and an edge portion, said outer leg portions of said trim strips being disposed upon and substantially parallel to the outer surface of said wallboards and being secured to said wallboards, said edge portions engaging said flanges of said metal jamb elements, said trim strips being disposed at an angle to one another with end portions thereof in engagement with one another at a corner of said structure; and
joint cement overlying said outer leg portions of said trim strips and adjacent portions of said wallboard.

3,299,593
CHIMNEY ANCHOR STRAP
Jesse Avila, 2394 9th St., Riverside, Calif. 92507
Filed Mar. 23, 1964, Ser. No. 353,822
1 Claim. (Cl. 52—219)



In a building structure having a frame including exterior walls and ceiling joists, and an exterior masonry chimney located contiguous to said outer wall and including a concrete bond beam and a mortar joint at the approximate level of said ceiling joists, a bond beam anchor comprising, in combination:
a metal anchor strap having wide side faces and narrower edge faces, said anchor strap being bent to provide an intermediate, generally U-shaped portion and converging end portions which cross one another intermediate their ends;
said U-shaped portion being adapted to be embedded in said bond beam, and said end portions being adapted to extend through said mortar joint and over said ceiling joists;
said U-shaped portion being disposed with said side faces vertical, and said end portions being twisted 90 degrees at the point where they join the sides of said U-shaped portion, whereby said end portions have their side faces horizontal so as to pass freely through said mortar joint; and
means for securing said end portions to said ceiling joists.

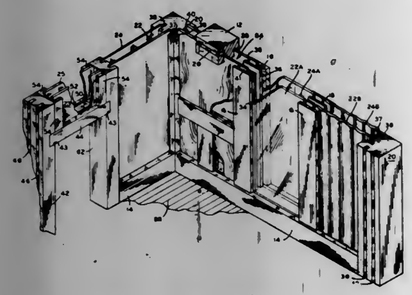
3,299,594
MULTI-WALLED STRUCTURE AND METHOD OF ASSEMBLY
Paul H. Kellert, Mannford, Okla. 74044
Filed Dec. 16, 1963, Ser. No. 330,912
5 Claims. (Cl. 52—262)

1. A building construction for use in forming a multi-walled structure said construction comprising:
a plurality of bottom beams attached in end-to-end relation and laid out in the outline of the walls of said structure, each of said bottom beams provided on its upper surface with parallel longitudinal upwardly opening interior and exterior grooves;

a plurality of top beams attached in end-to-end relation and spaced vertically above said bottom beams, in the same outline as said bottom beams, each of said top beams provided on its lower surface with parallel longitudinal downwardly opening interior and exterior grooves and provided on one of its side surfaces with a longitudinal horizontally opening groove, said interior and exterior grooves in said top beams being deeper than said interior and exterior grooves in said bottom beams;

a plurality of spaced apart vertical interior wall elements attached at their upper ends to said top beams and attached at their lower ends to said bottom beams, each of said interior wall elements provided with two oppositely opening longitudinal grooves and provided on the upper and lower ends thereof with longitudinally extending lips that are received within the interior grooves of said top and bottom beams respectively;

a plurality of spaced apart vertical exterior wall elements attached at their upper ends to said top beams and at their lower ends to said bottom beams, said exterior wall elements being spaced exteriorly from said interior wall elements and each of said exterior wall elements provided with two oppositely opening longitudinal grooves and provided on the upper and lower ends thereof with longitudinally extending lips



that are received within the exterior grooves of said top and bottom beams, respectively;

a vertical corner element located at each corner of said structure, attached at its upper end to said top beam and attached at its lower end to said bottom beam, each of said corner elements provided on at least one side surface with parallel longitudinal interior and exterior grooves;

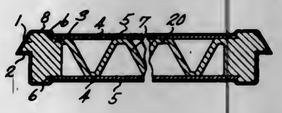
an interior wall panel located in each of the substantially planar spaces bounded by said bottom beams, said top beams, said corner elements and adjacent inner wall elements with the peripheral edge portions of said interior panel received within said interior grooves within said bottom beams, said top beams and said corner elements and said grooves in said interior wall elements;

an exterior wall panel located in each of the planar spaces bounded by said bottom beams, said top beams, said corner elements and adjacent exterior wall elements with the peripheral edge portions of said exterior panel received within said exterior grooves in said bottom beams, said top beams and said corner elements and said grooves in said exterior wall elements;

a plurality of substantially parallel spaced apart ceiling beams, each ceiling beam provided on each of its two opposite ends with a longitudinally extending lip that is received in said horizontally opening grooves provided in the side surfaces of two opposite top beams, each of said ceiling beams provided with two oppositely and horizontally opening longitudinal grooves;

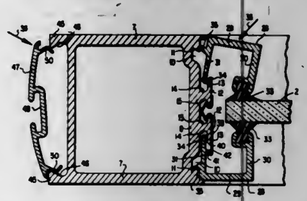
at least one ceiling panel located in each of the planar spaces bounded by said top beams and adjacent ceiling beams with the peripheral edge portions of said ceiling panel received within said horizontally opening grooves in said top beams and said celing beams.

3,299,595
COMPOUND DOOR
Edmund Munk, Wurttemberg, Germany, assignor to Furnier- und Sperrholzwerk J. F. Werz Jr. KG., Werzalit-Pressholzwerk, Oberstenfeld, Wurttemberg, Germany
Filed July 12, 1963, Ser. No. 294,573
Claims priority, application Germany, July 18, 1962, F 37,346
4 Claims. (Cl. 52—309)



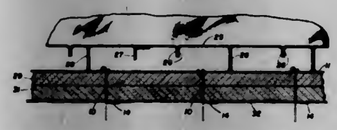
1. A compound door, comprising: molded spaced apart frame members and integrally connected molded internal structure spanning the space between said frame members; said frame members and internal structure being molded from a mixture of comminuted organic fibrous material and a thermosetting plastic; a recess molded into the opposite sides of each of said frame members; paneling members adhered to each side of said internal structure and completely covering the opposite sides thereof and secured to said frame members by extending the lateral edges thereof into said recesses; and a coating of sheet material containing a thermosetting plastic molded to and completely covering all outer parts of said frame members up to the lateral edges of said paneling members.

3,299,596
DOOR
Harry B. Neal and Raymond P. Brown, Atlanta, Ga., assignors to Anaconda Aluminum Company, Louisville, Ky., a corporation of Montana
Filed Dec. 17, 1964, Ser. No. 418,961
11 Claims. (Cl. 52—476)



1. A frame unit for use in a door structure having a glass panel supported by a rectangular frame structure surrounding the peripheral edges of the panel, said frame unit comprising a hollow structural member of generally rectangular cross-section and including a pair of opposed side faces joined by inner and outer webs, panel stop mounting means on the inner web of said hollow structural member, each mounting means including a pair of grooves each having an undercut outer side wall formed in the face of said inner web and extending the length thereof one adjacent each side edge thereof and a pair of projections located between said grooves and extending the length of said inner web in parallel spaced relation, said projections defining together with said inner web a pair of channels directed one toward each of said grooves, a pair of elongated generally channel-shaped panel stops positioned on the inner web of said hollow structural member, each panel stop having a central web portion, a first arm extending therefrom and carrying a resilient glazing strip, and a second arm extending therefrom and engaging an undercut side wall of one of said grooves and one of said projections of said mounting means to position said glass stop on said inner web, each pair of glass stops, when so positioned, defining a panel receiving groove at the inner periphery of said frame unit with the glazing strips of said pair of glass stops engaging the associated peripheral panel edge portion to clamp said panel therebetween and support said panel with respect to said frame unit, the reaction force of said panel acting through said glazing strips cooperating with said glass stop mounting means to releasably retain said glass stops in position on said inner web, each glazing strip being sufficiently resilient to permit the glass stop on which it is carried to be forced inwardly transversely of said inner web to disengage the glass stop second arm from said mounting means to permit removal of the stop.

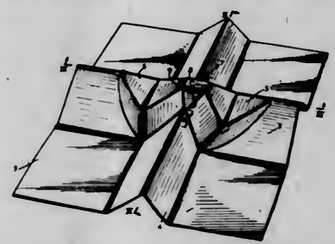
3,299,597
FURNACE WALL
Gerald F. Davey, Holden, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 311,063, Sept. 24, 1963. This application Nov. 9, 1964, Ser. No. 411,181
2 Claims. (Cl. 52—483)



1. A furnace wall, comprising a mesh having rods which intersect at right angles, layers of insulation overlying the mesh, a cover material extending over the insulation on the side opposite the mesh, a fastener comprising an elongated straight portion adapted to extend perpendicular to the plane of the mesh and through the insulation, a first U-shaped portion having one leg connected to the straight portion and adapted to extend under one of the rods adjacent an intersection on one side of the other rod, a second U-shaped portion having one leg connected to the other leg of the first U-shaped portion and adapted to extend over the other rod adjacent the intersection on one side of the said rod, a third U-shaped portion having one leg connecting to the other leg of the second U-shaped portion and extending under the said one of the rods adjacent the intersection on the other side of the said other rod, the elongated straight portion being bent into the plane of the said cover material to lock the mesh insulation and cover to the mesh.

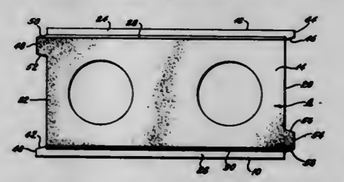
3,299,598
CORRUGATED SHEET-LIKE YIELDABLE WALL ELEMENT
Jean Alleaume, Saint-Cloud, France, assignor to Technigaz, Paris, France, a corporation of France
Filed June 10, 1964, Ser. No. 374,042
Claims priority, application France, June 27, 1963, 939,618
8 Claims. (Cl. 52—573)

1. A sheet-like metal plate element at least a portion of which is formed with at least two sets of integral channel-like corrugations having their raised convex wave-like portions all projecting from a same side of said plate element, the corrugations of each set intersecting each one of the corrugations of the other set, thereby defining therebetween substantially smooth uncorrugated areas located in the initial sheet surface of said plate element, each corrugation having a substantially uniform cross-section throughout its length except in the intersecting regions, the corrugations of one set having at least their ridge portions extending continuously across said plate element, whereas each corrugation of the other set is discontinuous and separated into substantially aligned wave sections by the continuous corrugations of said one set and raises to a wave height smaller than that of said continuous corrugations a third set of corrugations being disposed in a direction substantially at right angles with respect to the wave section of at least one of said corrugations, each one of at least some of said continuous corrugations being formed, adjacent to each one of at least some of its intersections with said discontinuous corrugations and on either side of the latter, with one



depression in the shape of a substantially cylindrical recess impressed into and extending transversely of at least the crest portion of said continuous corrugation, in substantially parallel relation to said discontinuous corrugation, each depression forming a transverse rib across and inside the trough-like concave portion of said continuous corrugation and protruding by its outline sidewise in opposite directions, from said continuous corrugation, thereby forming a lateral bulge therein, two successive depressions adjacent to two successive intersections, respectively, on a same continuous corrugation, being connected by a continuous section of continuous corrugation extending between said intersections, so that the length of any adjacent uncorrugated area in a direction parallel to said continuous corrugation is longer than that of any one of said depressions.

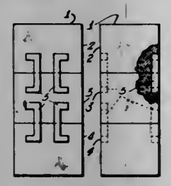
3,299,599
CONSTRUCTION UNITS
Stefan H. Zachar, 924 Lincoln Road, Miami Beach, Fla. 33139
Continuation of application Ser. No. 191,125, Apr. 30, 1962. This application Mar. 11, 1966, Ser. No. 540,786
1 Claim. (Cl. 52—595)



An improved construction unit adapted to be produced in accordance with conventional molding technique, said unit having a generally rectangular central body portion, a pair of grooves along diagonally opposite corners, said grooves extending vertically of said unit for substantially its full height; a pair of tongue-like portions depending from the two other corners of said unit, said tongue-like portions having a size and shape such as to be substantially complementary of said grooves and extending vertically of said unit substantially its

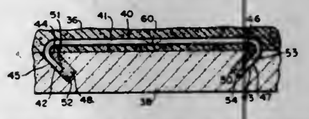
entire height; a further pair of grooves horizontally along the edges of the top portion of said unit, said last grooves extending lengthwise and on opposite sides of said unit, the last said grooves defining therebetween an elevated portion centrally of and extending for substantially the length of said unit, said last grooves having substantially similar configuration to said vertical grooves; each of said horizontally extending grooves connecting at one end with the vertical groove respectively adjacent thereto, each of said horizontal and vertical grooves being defined by two planar surfaces joining along a line extending lengthwise of their construction and having their interiorly disposed walls inclined at an angle up to about 45° from their respective and relative perpendicular planes; a groove in the bottom surface of said unit having a configuration complementary to the aforesaid elevated surface on the top side of said unit, said last groove extending for the length of the unit between the side walls thereof, and said groove in said bottom having its sidewalls inclined complementarily to the said interiorly disposed walls of said horizontally extending grooves, the edges of said interiorly disposed walls of each connected oppositely disposed pair of vertical and horizontal grooves lying in a common plane extending vertically of said unit, said plane also passing thru the line of joining of the sidewall and its associated bottom wall of said groove in the bottom portion of said unit; whereby said units may be laid up in a series of courses, each unit interfitting with adjacent units along their abutting end surfaces in the area of said grooves and tongue-like portions, and interfitting with units above and below in the area of said elevated portions and said groove in said bottom surface.

3,299,600
SPALLING-RESISTANT REFRACTORY BRICK
George R. Rigby, Lachute, Quebec, Canada, assignor to Canadian Refractories Limited, Montreal, Quebec, Canada
Filed Jan. 13, 1964, Ser. No. 337,437
9 Claims. (Cl. 52—596)



1. A spalling resistant refractory brick having a hot end face, a cold end face, and a longitudinal axis extending from one of said faces to the other and constituting the major dimension of said brick, said brick comprising at least three sections arranged in superposed relation along said axis, said sections being mutually separable and of generally rectangular form, each said section having a first end face and a second end face in opposed relation to said first end face, each said section having its said first end face in melting engagement with said second end face of an adjoining one of said sections along a planar line of abutment transversely intersecting said axis to provide a barrier to longitudinal migration of mobile material in said brick, the longitudinal dimension of each said section extending from said line of abutment being not more than four nor less than two inches and less than one-half the length of said brick, said second end face of one of said sections being plane and uninterrupted, each of said meeting end faces having a recess therein, a pair of said recesses of adjoining ones of said sections being in communication across said line of abutment, and means holding said sections together comprising an independent member seated in each said communicating pair of recesses and having end portions in each of said pair of recesses preventing longitudinal displacement of said sections.

3,299,601
SLAB ANCHOR
John W. Chiville, Greenbelt, Md., assignor to Tecfab Incorporated, Beltsville, Md., a corporation of Maryland
Filed Jan. 22, 1964, Ser. No. 339,401
4 Claims. (Cl. 52—597)



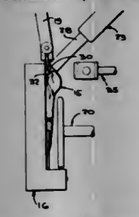
1. In combination, a slab-like facing member and an anchor for fixing said facing member to a cementitious backing, said facing member having at least one pair of spaced, inwardly converging openings in one face thereof, each of said openings having spaced inner and outermost wall parts, the innermost wall parts of said pair of openings being adjacent each other and the outermost wall parts of said pair of openings being remote from each other, said anchor comprising an elongated body part of resilient wire-like construction having in-turned end parts integral with said body part and converging toward each other at substantially the same degree of angularity as as said pair of openings and received therein, said in-turned end parts having inner and outer wall parts, the body part member having a dimension with respect to the spacing between the outermost wall parts of said pair of openings that the outermost wall parts of said in-turned end parts engage the outermost wall parts of said pair of openings in a position to space the body part of said anchor away from said one face of said slab like member.

3,299,602
STRUCTURAL PANEL
Dirk Evert Blok, Zwijndrecht, Netherlands, assignor to Hunter Douglas International (Quebec) Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed June 12, 1963, Ser. No. 287,447
Claims priority, application Netherlands, June 12, 1962, 279,613, 279,618
7 Claims. (Cl. 52—478)



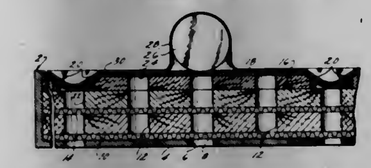
1. A structural panel for a wall, roof, awning, wall cladding and the like, comprising substantially U-shaped stringers having alternate flanged projections and recesses for clampingly supporting channel elements having curved rims, said stringers extending transversely to said channel elements and being provided on either side of said channel elements, the channels in the recesses of each stringer opening in one direction and those on the projections opening in the opposite direction, the projections and recesses of each stringer located at one side of the channel elements being arranged staggered relative to the projections and recesses respectively of each stringer located at the other side of the channel elements.

3,299,603
METHOD OF FILLING POUCHES
Fred B. Shaw, Mount Vernon, Ohio, assignor to Continental Can Company, Inc., New York, N..Y., a corporation of New York
Original application Mar. 12, 1962, Ser. No. 179,048, now Patent No. 3,245,200, dated Apr. 12, 1966. Divided and this application Sept. 11, 1963, Ser. No. 308,176
32 Claims. (Cl. 53—22)



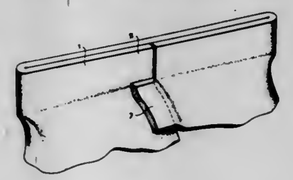
1. The method of filling a sealed pre-sterilized pouch, said pouch pre-sterilized by introduction of a volatile alkylene oxide prior to the sealing thereof and retaining the alkylene oxide for a time period sufficient to kill all microorganisms, comprising the steps of supporting a pouch in a position to be filled, inflating a portion of said pouch utilizing the gases inherently sealed therein, moving a filler member through one wall of said pouch within said inflated portion for communication with the interior of said pouch, introducing flowable material into said pouch through said filler member while simultaneously removing the gases trapped within said pouch, and completely sealing off the puncture formed by said filler member from the rest of the pouch.

3,299,604
METHOD OF PACKAGING
Herman G. Kraut, New Britain, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Nov. 19, 1963, Ser. No. 324,684
13 Claims. (Cl. 53—22)



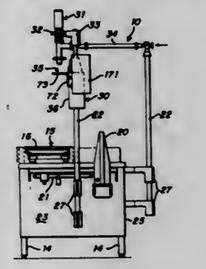
1. In the method of skin-packaging articles between a substrate and a thermoplastic film to form a composite package, the steps comprising: moistening one surface of an air-pervious fibrous substrate placing said moistened substrate upon the upper surface of an air-pervious support member with its moistened surface adjacent said upper surface, said upper surface of said support member having a support portion extending substantially in a single plane and a molding portion extending away from said plane, said support member being pervious to air at both of said surface portions and said substrate overlying both of said surface portions; placing an article to be packaged upon the upper surface of said substrate overlying said support portion of said support member; supporting a length of synthetic thermoplastic film adjacent the margins thereof in a position overlying said substrate and article; heating said thermoplastic film to deformability; drawing suction through said support member and substrate while supporting the deformably heated film in a position closely overlying said substrate and article to draw said film into a sheath about said article and into laminar contact and bonding engagement with the upper surface of said substrate about said article, said suction drawing said bonded substrate and film into general conformity with said molding portion of said support member upper surface to effect substantially a permanent contour in the bonded substrate and film of the composite package produced thereby.

3,299,605
METHOD OF MAKING PACKAGES FROM A WEB OF MATERIAL
Harald Georg Swede, Malmo, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a company
Filed Feb. 13, 1964, Ser. No. 344,589
Claims priority, application Sweden, Feb. 14, 1963, 1,601/63
2 Claims. (Cl. 53—28)



1. A method of making packages from a web of material comprising both reducing the thickness of the web material at longitudinally spaced areas along one margin of the web and shaping the web into a tube having a longitudinal overlapping joint, transversely sealing said tube along narrow zones through said longitudinally spaced areas of reduced thickness, and transversely cutting said tube through said narrow transversely sealed zones to form individual package units.

3,299,606
AUTOMATIC FILLING MACHINE
Roy J. Welkert, Covington, Ohio, assignor to General Films, Inc., Covington, Ohio, a corporation of Ohio
Filed May 21, 1964, Ser. No. 369,175
11 Claims. (Cl. 53—37)

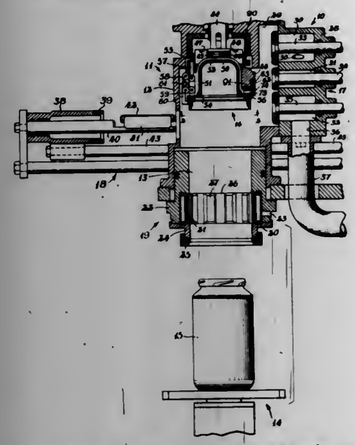


2. A method of filling a milk container having a plastic liner bag therein with a retainer secured thereto defining a liquid inlet and a resilient cap removably held on the retainer comprising, the steps of temporarily securing said retainer to a bracket having a fixed position, engaging a radial flange on said cap by moving a pivot tool about a first axis parallel to and offset laterally from the axis of said retainer, removing said cap from said retainer by pivoting said tool about a second axis perpendicular to the axis of said retainer and offset laterally therefrom, filling said liner, replacing said cap by moving said tool with said cap thereon to a position above said retainer and then pivoting said tool downwardly to engage said cap with said retainer, and then removing said tool from said cap by moving the same about said first axis.

3,299,607
FILTER AND CAPPING HEAD

David S. Dopp, Chicago, and Peter R. Mucibabich, Schiller Park, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 3, 1963, Ser. No. 327,620
18 Claims. (Cl. 53—87)

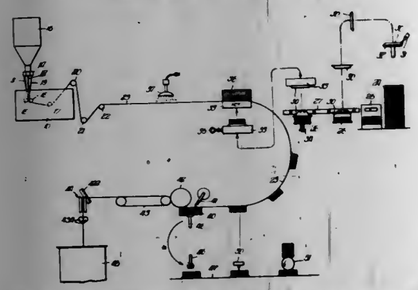


1. In a vacuum capping machine wherein containers filled with particulate material are subjected to evacuation and subsequent capping, the provision of a combination filter and cap application unit adapted to cover a container during evacuatin thereof to prevent displacement of said material therefrom and thereafter apply a cap to said container to seal the same, said filter and cap application unit comprising an inverted cup-like filter member presenting an uninterrupted porous filtering area throughout, filter mounting means supporting said filter member in unobstructing relation throughout at least substantially the entire filtering area thereof, cap gripping means at least partially carried by said filter mounting means and associated with the bottom marginal area of said filter member to engage a cap across a mouth portion of said filter member, and means mounting said filter and cap application unit for reciprocation into and out of association with a container for container evacuation and cap transfer.

3,299,608
PACKAGING MACHINE

Daniel L. Orloff, Madison, Wis., Raymond J. Keating, Bettendorf, Iowa, and James S. Hu, Madison, Wis., assignors to Oscar Mayer & Company, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 29, 1963, Ser. No. 305,324
36 Claims. (Cl. 53—112)

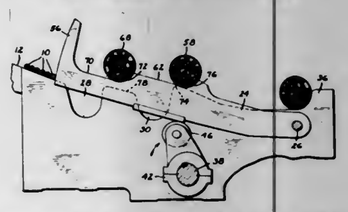


25. In combination, a package forming means including an outer surface portion against which a packaging film is to be received, a package forming cavity in said surface portion adapted to receive film therein and a product, vacuum means in communication with said cavity to draw said film therein and in communication with port means on said surface spaced from said cavity, product delivery means in the form of cavity closure plate means adapted to support a product thereon and insert the same into said cavity in sealing engagement with said surface, said plate means including projecting finger means to engage said port means, said finger means and plate means having internal passages for communication with said port means to evacuate an assembled package in said cavity, and drive means for said delivery means to move said plate means into and out of register with said cavity.

3,299,609
ROD BUNDLING MACHINE

William J. Hill, Holden, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts

Filed July 31, 1964, Ser. No. 386,575
10 Claims. (Cl. 53—167)



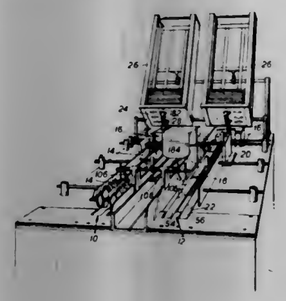
1. Apparatus for bundling and weighing elongated elements comprising the combination of: means for successively delivering laterally aligned elongated elements to a collecting station; tying means operable when a predetermined number of said elements have collected at said collecting station for tying said collected elements into a newly strapped bundle; a bundle weighing station adjacent said collecting station for weighing a previously strapped bundle transferred thereto from said tying station; bundle transfer means operatively positioned adjacent said collecting and bundle weighing stations for pivotal movement in relation thereto about a common axis; and means for pivoting said bundle transfer means following operation of said tying means and the weighing of said previously strapped bundle at said weighing station in order to first transfer said previously strapped bundle from said weighing station to an adjacent accumulation surface before transferring said newly strapped bundle from said collecting station to said weighing station.

3,299,610
APPARATUS FOR FILLING SLEEVE PACKAGE

James Webster, Waterloo, Liverpool, England, assignor to Tillotsons (Liverpool) Limited, Bolton, Lancashire, England

Filed Dec. 24, 1963, Ser. No. 333,091
Claims priority, application Great Britain, July 4, 1962, 25,575/62
20 Claims. (Cl. 53—169)

1. In apparatus for inserting packages into carton members open at at least one end thereof: the combination comprising a track including means for moving the packages sequentially through a sleeving station; a magazine for containing a stack of carton members in a flattened condition; at least one suction cup; means supporting said suction cup for movement from said magazine to said sleeving station; reciprocatory drive means for said supporting means for withdrawal of the carton members by said suction cup one at a time from the magazine and holding the withdrawn carton member stationary at said sleeving station; fixed means for engaging said carton members as they are moved from said magazine to said sleeving station to erect the withdrawn carton member so that said open end thereof is directed along said track to receive a package therein when the withdrawn carton member is held stationary at the sleeving station; a pneumatic system connected to said suction cup; control means for said pneumatic system for applying suction to said suction cup as it is moved from the magazine to the

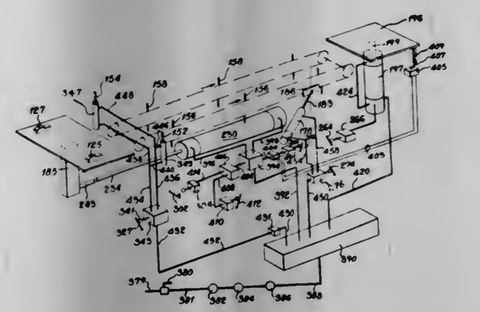


sleeving station and whilst a package enters the erected carton member; guide means disposed at opposite sides of said track in advance of said sleeving station; means supporting said guide means for movement into said open end of said carton member when held erect at said sleeving station to guide a package into said carton member; and means for synchronizing said control means, said reciprocatory drive means and said package moving means.

3,299,611
PACKAGING MACHINE

David L. Hendrick, Commack, and John V. Crowder, Bethpage, N.Y., assignors, by mesne assignments, to Consolidated Foods Corporation, Chicago, Ill., a corporation of Maryland, doing business as Joe Lowe Company, Englewood, N.J.

Filed Oct. 24, 1963, Ser. No. 318,681
9 Claims. (Cl. 53—186)

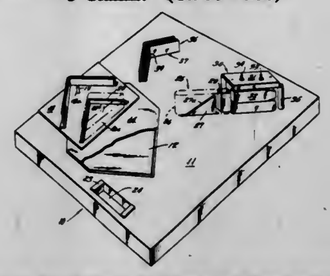


1. A carton feeding, erecting, filling, closing and sealing machine of the class described, in which the power means for moving a carton through the machine comprises a single air cylinder having a reciprocating piston rod, whereby the collapsed carton is selected and removed from a carton magazine on one stroke of said rod and the carton is erected and moved from station to station by means of a chain conveyor which is moved intermittently on the other stroke of said piston rod, and means for restarting the machine upon completion of each cycle thereof.

3,299,612
SANDWICH WRAPPER-SEALER

Daniel Bernhardt, 95 Bluff Road, Palisade, N.J. 07650

Original application Sept. 6, 1963, Ser. No. 307,184, now Patent No. 3,216,831 Divided and this application Oct. 1, 1965, Ser. No. 510,130
3 Claims. (Cl. 53—210)

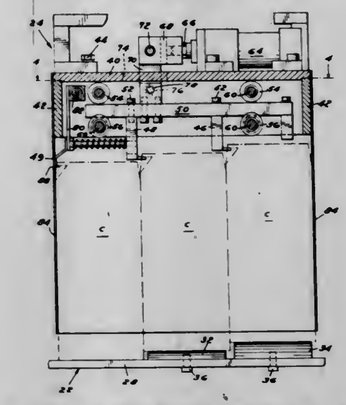


1. Means for folding and heat sealing sandwiches and the like in sanitary wrappers comprising first means for storing and feeding individual sandwich wrappers; second means positioned immediately above said first means for positioning the sandwich item to be wrapped; said second means comprising a platform covering approximately one-half of said first means; folding means for folding the marginal edges of said wrapper against one side of said food item positioned in close proximity to said first and second means; heating means for heat sealing the folds of said wrapper to completely seal said food item within the wrapper; said heating means being positioned in tandem with said folding means to perform the heat sealing operation before completion of the folding operation; said first means comprising a spring mounted platform means for supporting a stack of sanitary wrappers; said platform means being biased in the direction of said second means; said spring mounted platform having a pin projecting upwardly toward said second means and protruding through said stack of wrappers to retain said wrappers in a neat stack.

3,299,613
CARTON CARRIER

Joseph F. Cella, Northampton, Mass., assignor to Cesco Container Mfg. Corp., Northampton, Mass., a corporation of Massachusetts

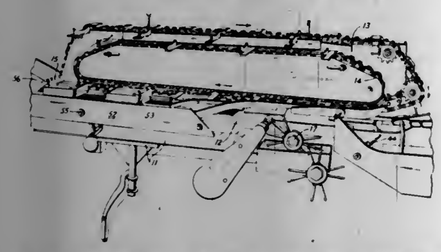
Filed Nov. 6, 1963, Ser. No. 321,912
6 Claims. (Cl. 53—247)



1. In a carton carrier for transferring a caseload of cartons into a case, a frame, a plurality of finger members depending from the frame arranged in rows and spaced apart along the rows and transversely of the

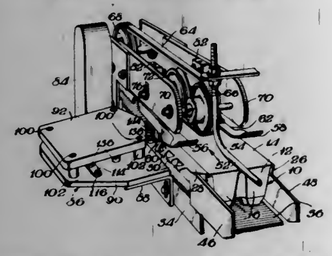
rows, said fingers being mounted for conjoint movement toward and away from a respective carton, each finger having a lower end portion projecting substantially laterally to engage a carton side wall recess, mechanism coupled to the fingers to move the same, and retaining means coupled to the frame and extending downwardly therefrom on opposite sides of the caseload of cartons to engage the carton side walls compacting the rows of cartons together and preventing lateral tipping of the cartons during transfer movement thereof by the carrier.

3,299,614
FOLDING BOX MACHINES
Thomas B. Brickson, Palo Alto, Calif., assignor, by mesne assignments, to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 3, 1964, Ser. No. 408,636
13 Claims. (Cl. 53—376)



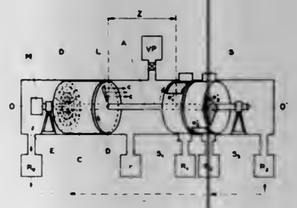
1. A folding box handling machine comprising, in combination, means forming a substantially horizontal track for boxes to be moved along said track; a pair of endless conveyors, said conveyors being disposed upright and one inside the other alongside said track; a first set of forward box engaging elements; a second set of rearward box engaging elements, said two sets of elements forming compartments above said track for enclosure of boxes within said compartments as they move along said track, the forward elements being adapted to engage the leading wall of boxes, the rearward elements being adapted to engage the trailing wall of boxes, an element of the first set being paired with an element of the second set to form a particular compartment, the first set of forward elements being laterally attached to one of said pair of conveyors so as to move above said track, the second set of rearward elements being laterally attached to the other of said pair of conveyors so as to move above said track; and drive means for moving both conveyors in the same direction and at the same linear velocity.

3,299,615
CARTON CLOSING APPARATUS
Max E. Singer, Mattapan, Mass., assignor to Keyes Fibre Company, a corporation of Maine
Filed May 1, 1964, Ser. No. 364,075
10 Claims. (Cl. 53—376)



1. Machinery for closing cartons having adjacent wall portions one of which has latching apertures and the other of which has latching members to be inserted in the latching apertures to latch the portions together comprising power driven means for conveying cartons along a predetermined path past a latching station, latching member inserting means at the latching station shiftable adjacent the predetermined path and in the same direction as passing cartons, carton engaging means connected to shift the latching member inserting means at a speed correlated to the speed of passing cartons, and means connected to extend the latching member inserting means laterally into the path of passing cartons to insert latching members in latching apertures.

3,299,616
MOLECULAR SEPARATION OF GASEOUS MIXTURES
René Lucas, Paris, France, assignor to Etablissement Public: Centre National de la Recherche Scientifique, Paris, France, a corporation of France
Filed Mar. 11, 1964, Ser. No. 351,155
Claims priority, application France, Mar. 14, 1963, 927,982
6 Claims. (Cl. 55—17)

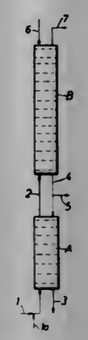


1. A process for separation, through fractionation, of a gaseous mixture of molecules of different weights and translation speeds in a state of thermodynamic equilibium comprising propelling said mixture as a gas jet through a defined mobile opening free of contact with a mobile surface, said gas jet being initially rectangularly shaped and rotated about an axis parallel to the longest dimension of said jet, whereby the action of the rotation effects a scattering of the outgoing gaseous mixture along planes perpendicular to said axis of rotation into enriched fractions, and separately trapping said fractions of the mixture directly from said gas jet.

3,299,617
METHOD OF REMOVING ENTRAPPED GAS FROM AN ION EXCHANGE RESIN BED
Edward W. Dunklin, Milwaukee, Wis., assignor, by mesne assignments, to Culligan Inc., North Brook, Ill., a corporation of Delaware
No Drawing. Filed Apr. 9, 1964, Ser. No. 358,630
4 Claims. (Cl. 55—37)

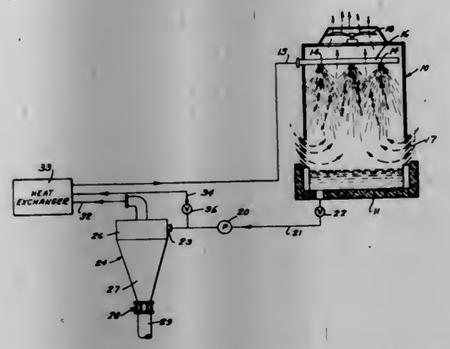
1. A method of removing entrapped gas from an ion exchange resin bed, comprising the steps of introducing an organic wetting agent into contact with the ion exchange resin bed to wet the surface of the resin particles and release gas entrapped within the particles in the bed, and rinsing the ion exchange resin bed to remove the wetting agent with the entrapped gas being released during rinsing in the form of fine bubbles.

3,299,618
PROCESS FOR SEPARATING ACRYLONITRILE AND ACETONITRILE
Heinrich Kunze, Cologne-Stammheim, Arnold Hausweiler, Cologne-Flittard, and Bernhard Scherhag and Rudolf Haupt, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
Filed Dec. 18, 1963, Ser. No. 331,582
Claims priority, application Germany, Dec. 19, 1962, F 38,598; July 4, 1963, F 40,152
8 Claims. (Cl. 55—85)



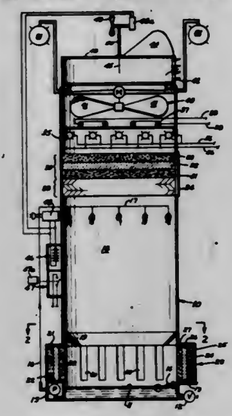
1. Process for separating acrylonitrile and acetonitrile from a gas mixture containing both these components, which comprises scrubbing such gas mixture with a first water wash to absorb selectively thereby in said first water wash substantially all of said acetonitrile without absorbing substantially any of said acrylonitrile, and scrubbing the first washed residual gas mixture with a second water wash to absorb thereby in said second water wash substantially all of said acrylonitrile, recovering the absorbed acrylonitrile from one portion of said second water wash and using the remaining portion of said second water wash containing absorbed acrylonitrile therein as said first water wash for initially scrubbing said gas mixture containing both said components to achieve thereby the selective absorption of said acetonitrile therein.

3,299,619
REMOVAL OF FOULANTS FROM COOLING WATER
Lewis I. Terry, Chicago, Ill., assignor, by mesne assignments, to W. R. Grace & Co., New York N.Y., a corporation of Connecticut
Filed Feb. 25, 1965, Ser. No. 435,262
1 Claim. (Cl. 55—85)



In a method of operating an open evaporative recirculating cooling system which comprises contacting a relatively hot water stream with atmospheric air to cool said stream, collecting the resulting cooled water, reheating the water, and again contacting the stream with air, the improvement which comprises passing at least a portion of the circulating water to a liquid cyclone separator to separate the foulants therein in the form of a more concentrated suspension, and discharging said suspension from said cyclone separator.

3,299,620
GAS TREATMENT DEVICE
Charles E. Hollingworth, 1167 S. Orange Grove Blvd., Pasadena, Calif. 91105
Filed Mar. 9, 1964, Ser. No. 350,200
10 Claims. (Cl. 55—126)

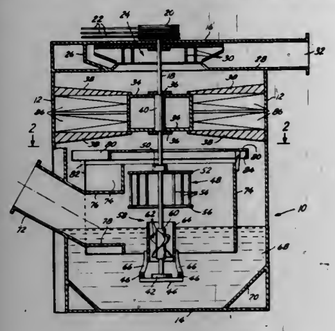


1. A gas treatment device comprising: an upright housing having a cavity therein, and a lower inlet and upper outlet through the housing into the cavity; a reservoir inside the housing and beneath the level of the inlet; a spray header inside the housing and above the reservoir and level of the inlet, a recirculation, bleeder and make-up system for withdrawing fluid from the reservoir, discharging it from the spray header countercurrent to gas flow from inlet to outlet, bleeding off fluid from the reservoir, and making it up; a plurality of first filters in the inlet, at least one of said first filters comprising a solid-contaminant type, and at least one of the other said first filters comprising an electrostatic type; eliminator means inside the cavity and above the spray header for entrapping fluid particles from an upward gas current; a plurality of second filters in the cavity and above the eliminator means, at least one of said second filters comprising an adsorbent type, and at least one other of said second filters comprising a reactive type; a fan in the cavity above the second filters; motive means for driving the fan; and a wind-responsive cap in which the outlet is formed, said cap being revolvably supported so as to pivot with the wind to direct the discharge from the device downstream.

3,299,621
ROTARY FLOW GAS WASHER
Nicholas J. Panzica and Robert M. Jamison, Detroit, Emil Umbricht, Northville, and Orlan M. Arnold, Grosse Pointe Park, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Filed June 15, 1964, Ser. No. 375,034
3 Claims. (Cl. 55—223)

1. An improved gas washing device having a vertical cylindrical housing with an inlet and at a higher elevation an outlet and a washing liquid reservoir in its base, blower means for flowing a gas to be washed through a spray zone in said housing, rotary spray generating means

for comminuting a flow of washing liquid and hurling it generally tangentially outwardly in a spray of high velocity droplets in said zone, and means for feeding liquid from said reservoir to said spray generating means, said



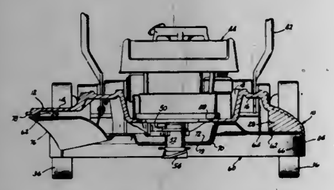
device being characterized by said inlet being tangential to said housing and by having a baffle extending tangentially from the inside of said housing around said spray generating means for swirling said gas flow along its line of flow through said spray zone.

3,299,622

ROTARY DISC MOWER WITH SEPARATE FRAME AND BLADE HOUSING STRUCTURE

Rudolph A. Hanson and Frank J. Deptula, Jackson, Mich., assignors to Yard-Man, Inc., Jackson, Mich., a corporation of Michigan

Filed Sept. 3, 1965, Ser. No. 484,848
9 Claims. (Cl. 56—25.4)



1. A rotary lawn mower comprising, in combination,
(a) a frame having a front, a rear and including a deck,
(b) ground wheels rotatably mounted upon said frame for the support thereof,
(c) a motor mounted upon said frame,
(d) a blade-supporting shaft rotatably mounted on said frame having a lower end extending below said deck,
(e) a cutting blade mounted on said shaft lower end,
(f) a blade housing affixed to said frame and located below said deck, said blade housing including an upper wall and a downwardly extending wall depending from said upper wall terminating in a lower edge, said upper wall projecting over the area of blade movement and said downwardly extending wall substantially encompassing said blade in the plane of blade rotation,
(g) an air-guiding channel defined in said blade housing upper wall, and
(h) a discharge opening defined in said blade housing communicating with said air-guiding channel.

ERRATUM

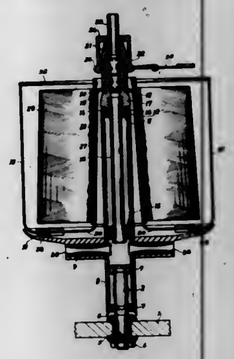
For Class 56—400.16 see:
Patent No. 3,299,545

3,299,623

TWO-FOR-ONE TWISTING SPINDLE WITH ROTATABLY JOURNALLED HOLLOW SHANK

Johann Jacob Keyser, Grabenallee 16, Aarau, Switzerland

Filed June 28, 1965, Ser. No. 467,271
Claims priority, application Germany, July 2, 1964, K 53,370
13 Claims. (Cl. 57—58.84)



1. A two-for-one spindle, which includes: a rotatable hollow shank having an upper end portion and a lower end portion, a thread storage disc fitted to said hollow shank between said upper end portion and said lower end portion, a bobbin carrier adapted to be held at a standstill with regard to said hollow shank, and bearing means arranged at the upper end portion of said hollow shank and supporting said bobbin carrier, said bobbin carrier extending downwardly into an area near said thread storage disc and surrounding said hollow shank with radial play.

10. A bobbin carrier basket for use in connection with a two-for-one twisting spindle, which comprises: a first annular member, a plurality of leg means supported by said annular member, a plurality of leg means supported by said annular member, each of said leg means comprising a first resilient arm having one end connected to said annular member and extending in the direction of the central axis of said annular member, each of said leg means also comprising a radial arm having one end portion connected to said first arm, each of said leg means further comprising an additional arm having one end connected to the other end portion of the respective adjacent radial arm and forming with said radial arm and said first arm a U-shaped leg, and a second annular member substantially coaxial with said first annular member but having a considerably greater diameter than said first annular member, the free end of said additional arms being connected to said second annular member.

3,299,624

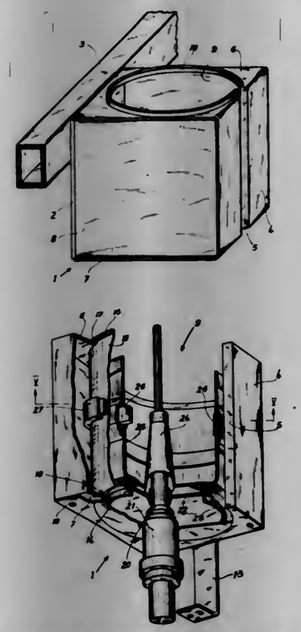
BALLOON-CONFINING APPARATUS FOR SPINNING AND TWISTING MACHINES

Klaus Nimtz, Krefeld, Germany, assignor to Palitex Project Company G.m.b.H., Krefeld, Germany

Filed Sept. 1, 1965, Ser. No. 484,227
Claims priority, application Germany, Sept. 10, 1964, P 35,037
13 Claims. (Cl. 57—108)

1. A balloon-confining unit for spinning and twisting machines, which includes: a tubular balloon-confining foil, and a box-shaped casing housing said balloon-confining foil and having a top and bottom wall and also a front and rear wall and two side walls, said top wall having an opening therethrough for selective insertion of said foil into and its withdrawal from the interior of said casing,

one of said walls being provided with means for removably supporting said foil, said bottom wall being provided with a passage for permitting the passage there-



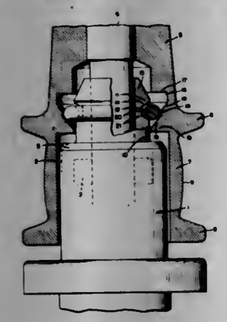
through of spindle means, and said front wall having a longitudinal passage therethrough for permitting threading a yarn through said passage.

3,299,625

DEVICE FOR SECURING A SPINDLE ROTOR TO BEARING MEANS

Karl Beerli, Zurich, Switzerland, assignor to Spindel-, Motoren- und Maschinenfabrik A.G., Uster, Switzerland

Filed May 20, 1964, Ser. No. 368,957
Claims priority, application Switzerland, May 22, 1963, 6,414/63
2 Claims. (Cl. 57—132)



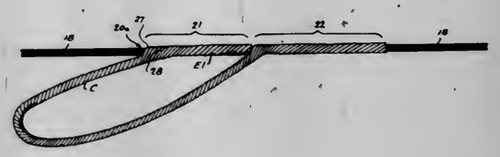
1. In a textile machine comprising a non-rotatable bearing assembly and a rotatable spindle assembly supported thereat, one of said two assemblies comprising the inner one and the other comprising the outer one of a pair of coaxial members having mutually facing circumferential surfaces and axially displaceable in relation to each other, means for preventing unintended axial separation of the said two assemblies, which comprises an annular ridge in each of the said mutually facing circumferential surfaces of the said coaxial members, an annular groove in each of the said surfaces at the rear of the respective annular ridge, a ring of resilient material interposed between the said surfaces of the coaxial members and simultaneously engaging the said annular grooves in the said surfaces of both of the said members, the forward surface of the said ridge of one of the said members forming a smaller angle with the axis of that member than the rearward surface of that ridge forwardly bounding the annular groove of the said one member and the surface rearwardly bounding the annular groove of the other of the said members forming a greater angle with the axis of the said other member than the surface forwardly bounding that annular groove of the said other member, whereby the axial force required for causing the said ring when lodged in the last mentioned annular groove of the said other member to pass over the said ridge of the said one member and into the said annular groove thereof on axial displacement of the said members into each other is smaller than the force required for causing the said ring to pass from the said annular groove of the said one member over the said ridge thereof on axial displacement of the said members out of each other.

3,299,626

CABLE ATTACHMENT DEVICE AND METHOD

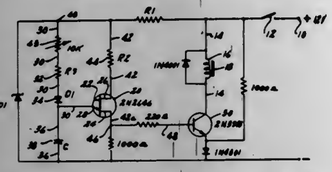
Rodolphe Leo Payer and Frances C. Payer, both of Nicolet, Quebec, Canada

Filed Aug. 22, 1963, Ser. No. 303,778
8 Claims. (Cl. 57—145)



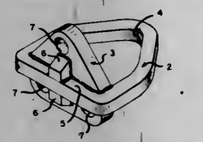
1. A method of securing a closed attachment loop to a cable comprising
(a) taking a pair of complementary pre-formed elongated helical members each constituting substantially a half-lay,
(b) and assembling said members with the cable by the following steps,
(i) intertwisting said members with each other intermediate their ends to form substantially a central whole-lay portion,
(ii) bending said central portion to form a loop,
(iii) wrapping first end portions of said members projecting beyond one end of said central whole-lay portion in tight intertwisted relationship around a first length of the cable,
(iv) and wrapping second end portions of said members projecting beyond the other end of said central whole-lay portion in tight intertwisted relationship around a second length of the cable,
(c) said assembly steps being carried out in any sequence provided step (ii) precedes the second performed of steps (iii) and (iv), wherein
(d) said central portion is bent back on itself,
(e) said first end portions are wrapped along the first cable length in a selected direction away from the central portion,
(f) and the second end portions are wrapped along the second cable length in the same direction away from the central portion commencing substantially adjacent the ends of the first end portions.

3,299,627
ELAPSED TIME METER
Atlee S. Hart, Oak Park, and Lawrence George Mallett, Walled Lake, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 431,057
2 Claims. (Cl. 58—145)



1. An elapsed time meter comprising a uni-junction transistor having an emitter and a base 2–base 1 circuit; an electrical pulse counter; means for periodically developing an emitter potential sufficient to generate pulses in the base 2–base 1 circuit; and means for amplifying the pulses and delivering same to the pulse counter; the aforementioned potential-developing means comprising a chargeable capacitor, a charging circuit for said capacitor and a diode located in said charging circuit to maintain a substantially constant charging time for the capacitor irrespective of substantial variations in ambient temperature.

3,299,628
MASTER LINK FOR SUSPENSION DEVICE AND MANUFACTURE THEREOF
Paul E. Chisler, York Township, York County, Pa., assignor to The McKay Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1964, Ser. No. 359,644
11 Claims. (Cl. 59—84)



1. A master link for a suspension device comprising a base portion adapted to carry suspension elements such as chains, the master link having a substantially flat face spaced substantially below the base portion upon which the master link is adapted to be set down and a portion having therein an opening constituting an eye adapted to receive a crane hook, the second mentioned portion being disposed substantially perpendicular to said substantially flat face of the master link so that when the master link is set down on said substantially flat face the second mentioned portion extends upwardly with its eye in generally upright position to be adapted to receive a crane hook solely through manipulation by the crane operator without the necessity of introduction of the crane hook into the eye of the master link by a workman on the ground.

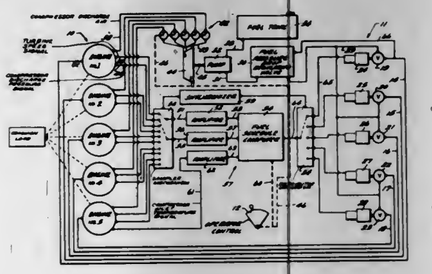
3,299,629
ENGINE INTAKE MANIFOLD AIR DRIVEN COMPRESSOR
Constant L. Bouchard, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 22, 1964, Ser. No. 420,305
2 Claims. (Cl. 60—30)

1. Compressed air supply means, comprising, in combination, an internal combustion engine having an air-fuel mixture carburetor, an intake manifold receiving said mixture during operation of said engine, and conduit means connecting said carburetor and manifold, said conduit means having a turbine-compressor unit therein, said turbine-compressor unit comprising a rotatable member having a set of turbine blades and a set of compressor blades rotatable with said member, means enclosing said member and dividing said sets of blades into separate sealed turbine and compressor compartments, said conduit means including a first conduit means connecting said air-fuel mixture to said turbine compartment to act



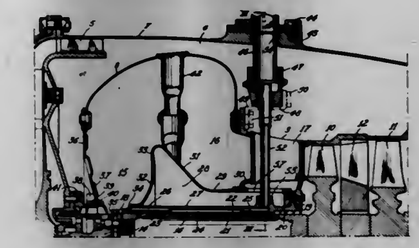
against and rotate the blades and member therein and said compressor blades connected to said member, a second conduit means connecting the mixture discharged from said turbine blades to said intake manifold, a source of fresh air, said compressor compartment having an inlet connected to said source, an outlet for the discharge of air therethrough compressed by said compressor blades, and control means for adjusting the size of said turbine chamber to control the velocity of said mixture and thereby control the speed of rotation of said turbine.

3,299,630
MULTIPLE GAS TURBINE ENGINE FUEL CONTROL
Stanley Alper, Springdale, Conn., assignor to General Electric Company, a corporation of New York
Filed Mar. 20, 1964, Ser. No. 353,535
6 Claims. (Cl. 60—39.15)



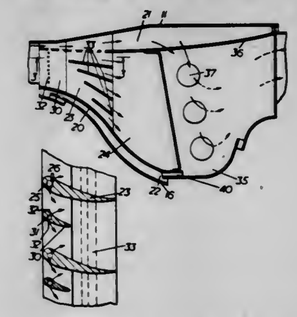
1. A multiple engine control comprisng,
sampling means for deriving an operating parameter signal from each engine and sequentially providing each parametric signal as an output therefrom,
a computer, connected to the output of said sampling means, for generating a control signal as a function of each parametric signal thereto,
means for controlling operation of each engine as a function of its control signal when applied thereto, and
distributing means for sequentially applying the control signal generated by said computer as a function of a parametric signal of each given engine to the means controlling operation of that engine.

3,299,631
GAS TURBINES AND APPLICATIONS THEREOF
Joseph Szydlowski, Usine Turbomeca, Bordes, France
Filed Apr. 3, 1964, Ser. No. 357,201
Claims priority, application France, May 3, 1963, 933,581, Patent 1,363,418
8 Claims. (Cl. 60—39.28)



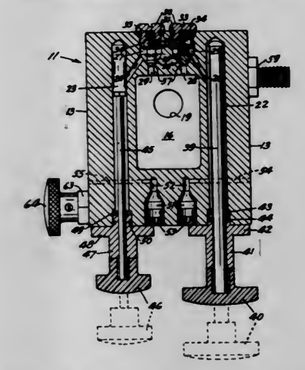
1. A gas turbine comprising a fixed outer casing, a turbine member within said casing, means defining a fixed annular combustion chamber within said casing, an air compressor, a hollow shaft connecting the compressor and the turbine member, said combustion chamber having a radial cavity adapted for receiving compressed air from the compressor and in which combustion proper is effected and an axially disposed annular cavity extending rearwardly towards the turbine member for supplying the latter with combustion gas, said combustion chamber defining an annular space with the casing for the passage of principal air flow from the compressor, means for supplying said radial cavity of the combustion chamber with liquid fuel from a source of liquid fuel by rotary radial injection into said radial cavity of streams of said liquid fuel through openings provided in said hollow shaft, a distributor between said annular cavity and the turbine member and having hollow vanes around which the combustion gas flows as it passes from the combustion chamber to the turbine member, said hollow vanes opening into said annular space to receive air which flows in a stream from said annular space to the radial cavity while first cooling the combustion gases flowing to the turbine member, means for directing the air in said annular space into said radial cavity as a further stream such that said air streams are admitted into the radial cavity on either side of the liquid fuel supply openings, said combustion chamber having an opening in communication with said annular space to permit direct introduction therein of dilution air for lowering the temperature of the combustion gases, a source of natural gaseous fuel, means for supplying said radial cavity of the annular combustion chamber with streams of natural gaseous fuel which intersect the streams of liquid fuel supplied to said cavity by radial injection, the gaseous fuel supply means comprising a labyrinth seal surrounding the hollow shaft adjacent the turbine member and constituted by a double-walled cylindrical case defining a series of separate interconnected chambers some of which are in communication with the hollow vanes of the distributor while the others are in communication with said radial cavity through a series of gaseous fuel injection holes which are disposed at the level of the liquid fuel injection openings, a plurality of substantially radial tubes extending through said hollow vanes and connected to said other chambers of the labyrinth seal, a manifold accommodated in the annular space between the annular cavity of the combustion chamber and the outer casing and connected to said radial tubes, a gaseous fuel line extending through said casing and interconnecting said manifold and the source of natural gaseous fuel, regulating means connected to said gaseous fuel source and to the source of liquid fuel for regulating the quantity of both said fuels to be admitted into said radial cavity, and a tachometric adjusting device interconnecting, on the one hand, said regulating means and, on the other hand, said gaseous fuel supply means and the liquid fuel feed device for adjusting the amount of said fuels delivered to said radial cavity to maintain at a constant value the rotational working speed of the turbine member.

3,299,632
COMBUSTION CHAMBER FOR A GAS TURBINE ENGINE
Geoffrey Light Wilde and Arthur Bill, Derby, and John Frederick Coplin, Littleover, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Apr. 28 1965, Ser. No. 451,407
Claims priority, application Great Britain, May 8, 1964, 19,404/64
10 Claims. (Cl. 60—39.74)



1. A combustion chamber for a gas turbine engine comprising a casing structure, a flame tube which is mounted within and spaced from the casing structure, said flame tube having a combustion zone therein, a plurality of angularly spaced apart inlet guide vanes which are mounted wholly within the flame tube upstream of the combustion zone therein and which are adapted to direct compressed air from the engine compressor towards the said combustion zone, and fuel supply means disposed adjacent the upstream ends of said inlet guide vanes for injecting fuel into the compressed air flowing between the upstream ends of the inlet guide vanes.

3,299,633
HYDRAULIC PUMP
Lester E. Cass, 731 Cross, Anoka, Minn. 55303
Filed Apr. 22 1965, Ser. No. 450,044
3 Claims. (Cl. 60—52)



1. A variable displacement pump device for use in variously controlling a hydraulic cylinder and piston actua-

tor units connected with a conventional outboard motor for tilting the same relative to its mounting about a horizontal transverse axis, said device comprising:

a housing structure having a reservoir chamber therein adapted to contain a predetermined amount of hydraulic fluid,

a first recess in said housing defining a low pressure large volume displacement chamber,

a second recess in said housing of substantially smaller volumetric space than said first recess and defining a high-pressure, low-volume displacement chamber,

a pair of manually operable elongate displacement pistons each being reciprocable within one of said displacement chambers, said displacement piston within said low-pressure, high-volume chamber being substantially larger than the piston within the high-pressure, low-volume chamber, each of said pistons having one end thereof projecting exteriorly of the housing structure, a pair of actuating members each being secured to one of said exteriorly projecting ends of the pistons, each piston being substantially smaller in cross-sectional size than the associated displacement chamber,

a pair of passages in said housing, each interconnecting said reservoir chamber and one of said displacement chambers,

a pair of substantially identical pressure responsive valve members each normally closing one of said passages, and opening its associated passage in response to a reduction of fluid pressure in the associated displacement chamber,

a discharge port in said housing connectible in communicating relation with cylinder and piston actuator units which are connected to the outboard motor for adjustably tilting the same about a transverse horizontal axis,

a transfer passage in said housing interconnected in communicating relation with said displacement chambers and being interconnected in communicating relation with said discharge port, whereby fluid introduced into a selected displacement chamber during the retraction stroke of the associated piston will be directed through the discharge port during the return stroke of said last mentioned piston,

a pair of similar expansion chambers each being interposed between and interconnected to one of said displacement chambers and said transfer passage,

a return passage in said housing interconnecting said transfer passage in communicating relation with said reservoir chamber,

and an adjustable valve interposed in flow controlling relation between said transfer and return passages for selectively closing and opening said return passage with respect to said transfer passage.

3,299,634

FLUID PRESSURE OPERABLE DEVICE AND CONTROL DEVICE

Ralph R. Roemer, 2100 Vega Ave., Cleveland, Ohio 44113

Filed May 5, 1965, Ser. No. 453,447
10 Claims. (Cl. 60—52)

1. A fluid pressure operable drive device for driving a pair of members relative to each other and comprising

a cylinder adapted for connection to one member;

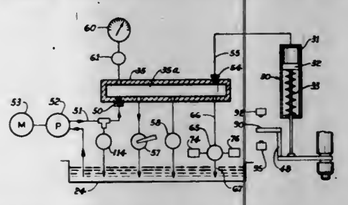
a piston reciprocable in the cylinder and adapted for connection to the other member, a continuously driven pump;

a hydraulic fluid pressure conducting circuit connected to the cylinder at one side of the piston and connected to the discharge side of the pump for transmitting to said side of the piston fluid at operating pressure for driving the piston in one direction relative to the cylinder on its power driving stroke;

a control valve connected in said circuit and operable when open to discharge pressure fluid therefrom and thereby cause the pressure in said one end of the cylinder to fall below operating pressure, and operable when driven a predetermined distance in the closing direction to cause the pressure in said one end to increase to operating pressure;

control means operatively connected to the piston and driven thereby when the piston moves in said one direction;

valve operating means render operative by operation of said control means when the piston has moved to



a predetermined position in said one direction on its power stroke to open said valve sufficiently to reduce pressure below operating pressure;

and means to return the piston to its starting position when the pressure falls below operating pressure;

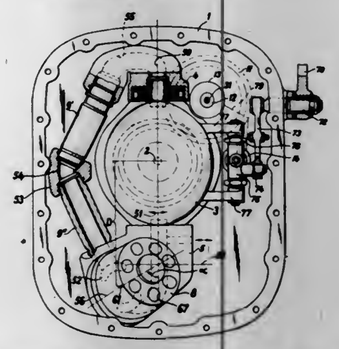
said valve operating means comprises a power driven means drivingly connected to the valve for opening the valve when the power driven means is connected to a source of power, a control device operable to connect and disconnect the power driven means to the source of power and rendered operative by the control means to connect the power driven means to said source when the piston has moved to said predetermined position.

3,299,635

ADJUSTABLE HYDROSTATIC DRIVE

Franz Forster, Karlstadt, and Karl Stolz, Strassbessenbach, Germany, assignors to Linde Aktiengesellschaft, a corporation of Germany

Filed Apr. 26, 1965, Ser. No. 450,913
Claims priority, application Germany, Apr. 24, 1964, G 40,447
4 Claims. (Cl. 60—53)



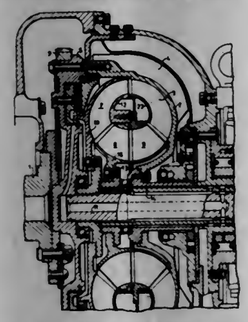
1. A hydrostatic-drive assembly comprising a housing forming an enclosure; a hydrostatic pump member in said enclosure having an input shaft extending therefrom; a hydrostatic motor member in said enclosure connected with said pump member for fluid operation thereby, said motor member having an output shaft extending from said enclosure for connection to a load, at least one of said members being swingably mounted on said housing for continuous adjustment of this torque ratio between said shafts; an auxiliary pump in said enclosure for hydraulic fluid; auxiliary shaft means journaled in said housing and operatively connected to said auxiliary pump while being coupled with said input shaft for driving said auxiliary pump, said housing having an opening aligned with said auxiliary shaft means; and a mechanism externally of said enclosure driven by said auxiliary shaft means through said opening operating a further load, said housing comprising a main housing portion and a cover removably mounted thereon, said input shaft and said auxiliary shaft means being journaled in a wall of said main housing portion, said opening being provided in a wall of said cover opposite said wall of said main housing portion, said mechanism being attachable to said cover.

3,299,636

APPARATUS FOR HYDRODYNAMIC TORQUE TRANSMISSION

Sven-Olof Kronogård, Gothenburg, Sweden, assignor to Aktiebolaget Volvo, Gothenburg, Sweden, a company of Sweden

Filed Apr. 19, 1965, Ser. No. 449,018
2 Claims. (Cl. 60—54)



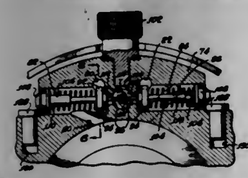
1. An apparatus for hydrodynamic torque transmission including a basic structure comprising an impeller member and a turbine member, the exit of the impeller member and the entrance of the turbine member being located in the radially outer portion of a substantially circular flow path, and at least one exchangeable element, such as a reactor member, a reactor member and a turbine member, two reactor members or an unbladed shroud member, being provided in the radially inner portion of said flow path, whereby to obtain, in combination with said basic structure, different characteristics as to torque conversions or torque absorbed by the turbine member.

3,299,637

FLUID SYSTEM VENTING AND FILLING

Charles U. Ballard, 4253 W. Lennox, Inglewood, Calif. 90304

Original application Nov. 26, 1962, Ser. No. 240,033, now Patent No. 3,258,923, dated July 5, 1966. Divided and this application Apr. 8, 1966, Ser. No. 541,377
3 Claims. (Cl. 60—54.5)



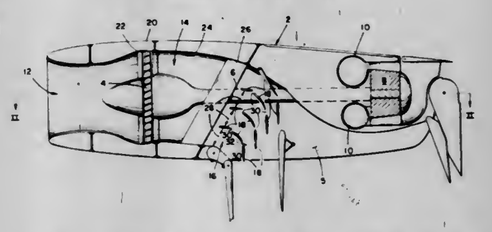
1. In a fluid power transmission system, a cylinder having pressure flow conduit means communicating with opposite end portions thereof, a piston movable axially in said cylinder between said end portions, a servicing conduit flow connected to said system and having a normally closed exterior communication inlet, a pair of valves independently biased to seat toward each other in said servicing conduit at opposite sides of said exterior communication inlet, said valves, when open, providing an air venting and fluid filling passage between said exterior communication inlet and said system, and a common actuator disposed between said valves and engageable with the valves to open them simultaneously upon movement of said actuator.

3,299,638

VARIABLE FLOW DEFLECTION MEANS

Jesse J. Santamaria, Dallas, and Byron R. Winborn, Irving, Tex., assignors to LTV Aerospace Corporation, Dallas, Tex., a corporation of Delaware

Filed Mar. 12, 1965, Ser. No. 439,161
9 Claims. (Cl. 60—204)



1. The method of vectoring the outflow from a shrouded turbofan having a plurality of groups of movable vane members positioned to receive the outflow from said turbofan, said method comprising the steps of:

diffusing said outflow to minimize losses during deflection of said outflow,

moving said groups at a common rate between a minimum loss position and a 45-degree deflection position, and

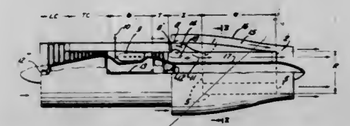
moving one of said groups more rapidly than a second of said groups between said 45-degree deflection position to cause said outflow to converge to provide maximum thrust.

3,299,639

TURBOFAN ENGINE

Ernest Lagelbauer, 410 E. 13th St., New York, N.Y. 10009

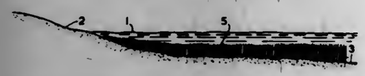
Filed Dec. 24, 1963, Ser. No. 333,799
7 Claims. (Cl. 60—226)



1. A turbofan engine comprising a casing having an inlet and an outlet; a fan receiving air from said inlet; primary duct means and secondary duct means receiving air compressed by said fan; said primary duct means and said secondary duct means being disposed in flow parallel; said primary duct means having in flow series a compressor, a combustion chamber, a turbine for driving said fan and said compressor, a plurality of first heat exchanger passages and isentropic expansion nozzles formed at the upstream end of said first passages; said secondary duct mean having in flow series second heat exchanger passages, said second heat exchanger passages being parallel

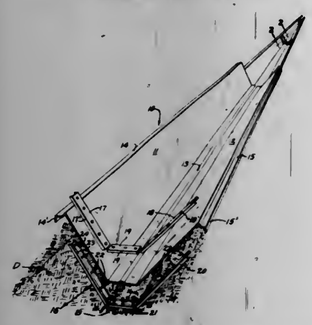
to and disposed adjacent said first heat exchanger passages to be in heat exchange relation thereto around an annulus upstream of said casing outlet; and second isentropic expansion nozzles formed at the downstream end of said second passages.

3,299,640
MEANS FOR INFLUENCING THE SUB-MARINE MIGRATION OF MATERIAL
Peter Søren Nielsen, Frederikshavn, Denmark, assignor to A/S Roblon, Frederikshavn, Denmark, a company of Denmark
Filed Dec. 31, 1963, Ser. No. 334,738
Claims priority, application Denmark, Jan. 14, 1963, 165
19 Claims. (Cl. 61—3)



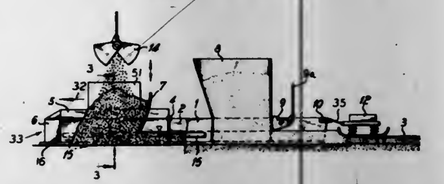
1. A device for influencing the migration of material at the shore of a body of water, said device comprising anchoring means anchored in the bottom of said body of water and spaced from said shore; and a plurality of slender elongated members each having one end fixedly secured to said anchoring means; said members being flexible and buoyant along their entire length and consisting of synthetic nonwater absorbent material, each member extending generally upwardly and terminating in a freely floating end opposite to said fixed end, said members being grouped in a closely spaced unattached relationship along their length above said anchoring means.

3,299,641
DITCH LINER
Richard B. Heagler, Florissant, and Matt S. Wilson, Des Peres, Mo., assignors to Granite City Steel Company, Granite City, Ill., a corporation of Delaware
Filed July 22, 1964, Ser. No. 384,421
2 Claims. (Cl. 61—7)



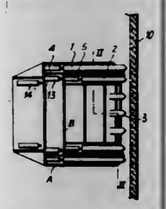
1. An irrigation ditch liner assembly comprising a plurality of liner sections each having transverse end lips and longitudinal side flanges, said liner sections being positionable in an irrigation ditch in alignment with said end lips spaced apart, said side flanges having margins engaged in the surface along the irrigation ditch to seal the sides of said liner section against wind lift effects, bottom batten means in the ditch in position to support adjacent end lips, said bottom batten means being a channel having spaced marginal flanges directed to engage in the irrigation ditch, top batten means engaged upon adjacent end lips, means connecting said top and bottom batten means together to clamp said end lips therebetween, and means to seal the connection between said batten means and said end lips against seepage of irrigation fluid through the connection.

3,299,642
ERECTION OF A DAM HAVING AN INTERNAL APRON
Alfred Feiner, Porz-Westhofen, and Rudolf Hamann and Clemens Schopf, Cologne-Poll, Germany, assignors to Strabag Bau-A.G., Cologne-Deutz, Germany
Filed May 3, 1963, Ser. No. 277,809
Claims priority, application Germany, Nov. 14, 1962, St 19,964
5 Claims. (Cl. 61—31)



1. Method for the erection of dams with an internal sealing apron which comprises advancing in the direction of the length of the dam over the course on which the apron is to be laid a pair of vertically extending partition walls spaced to provide a form for the transverse cross-section of the apron, said walls being shorter in length than said dam, progressively and simultaneously with said advancing depositing material in a plastic state between the walls for forming the apron, and depositing fill material adjacent and on the outerside of each of the walls to substantially the level of the deposited apron material whereby as the walls advance over the course, the apron material and the fill material provide upright confronting surfaces side by side behind the walls, and while the apron material is still in plastic state compacting the apron material and the fill material on each side of the apron material, behind the walls, thereby interlocking the apron material and fill material at the confronting surfaces thereof.

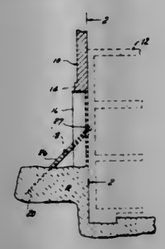
3,299,643
SINKING OF SHAFTS AND GALLERIES IN SAND AND WATER-BEARING GROUND
Maurice Mauclet, 9 Rue Aristad Briand, Meru, France
Filed Mar. 26, 1964, Ser. No. 354,875
Claims priority, application France, Apr. 5, 1963, 930,560
2 Claims. (Cl. 61—36)



1. Apparatus for driving a gallery into unstable soil by stabilizing a substantially tubular shell of the soil laterally embracing the gallery or shaft to be excavated and having a closed forward end, said apparatus comprising, in combination, at least two tubular caissons, the inner one slidably telescoped within the outer one, the caissons having dual lateral walls defining respective annular enclosures; a removable shield at the forward end of said apparatus; first relatively elongated soil piercing devices disposed within the annular enclosure of the outer caisson and projecting forwardly of the latter; second relatively elongated soil piercing devices disposed within the annular enclosure of the inner casing and projecting forwardly of the latter, and disposed within the inner casing and projecting forwardly through said shield; said

piercing devices being longitudinally displaceable relative to the associated caissons and said shield; first jack means engaged between the rear end of said outer casing and said first piercing devices; second jack means disposed between the rear end of said inner casing and said second piercing devices; said jack means being operable initially to project said piercing devices for substantially their full lengths forwardly of said casing and said shield; means, including said piercing devices, operable to solidify the soil along the full projected lengths of said first piercing devices and around only a shorter forward projected length of said second piercing devices, to stabilize said shell; whereby said shield may be removed and the soil within the solidified shell and along the rearward projected lengths of said second piercing devices may be extracted and evacuated; third jack means engaged between the rear ends of said inner and outer caissons and operable to advance said inner caisson, relative to said outer caisson, into the evacuated portion of the solidified shell, with said piercing devices remaining anchored within the solidified shell; and fourth jack means operable to advance said outer caisson into flush relation with said inner caisson with said piercing devices remaining so anchored, for repetition of the cycle.

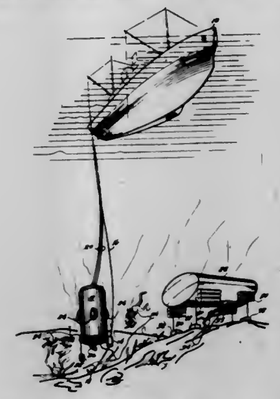
3,299,644
UNDERPINNING SYSTEM AND METHOD OF CONSTRUCTING SAME
Robert E. White, Larchmont, N.Y., assignor to Spencer, White and Prentis, Inc., New York, N.Y.,
Filed Aug. 27, 1965, Ser. No. 483,262
4 Claims. (Cl. 61—51)



1. An underpinning pier system for supporting undisturbed and in place a structure located above a rock layer, said system comprising a supporting pier positioned beneath and supporting the structure and extending to the rock layer, connecting means extending from the pier downwardly at an angle from the pier to the rock layer and inwardly beneath the structure, a rock socket drilled into the rock layer and a post-tensioned tendon extending through the connecting means, said tendon anchored in the rock socket and joined to the pier whereby the pier is stabilized and held against overturning when the area adjacent to the pier and the structure is excavated.

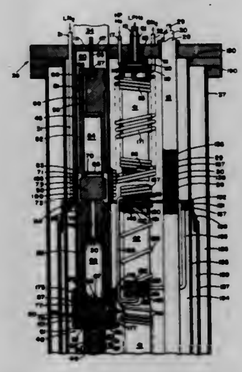
3,299,645
UNDERWATER CAPSULE
Edwin A. Link, Binghamton, N.Y., assignor, by mesne assignments, to Ocean Systems, Inc., New York, N.Y., a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,251
5 Claims. (Cl. 61—69)

1. An underwater capsule for providing support for an operator beneath the sea comprising,
(a) a submerged inflated housing member of sufficient size for inhabitation by at least one human operator;
(b) anchoring means on the sea water floor secured to said housing member for positioning such member in the submerged state;
(c) adjustable pressurizing means for inflating the submerged housing member and maintaining same



at pressure greater than the pressure of the surrounding sea water;
(d) a normally opened hatch device located in the lower wall of said housing member to provide human ingress and egress to said housing member; and
(e) a source of breathing mixture attached to said housing member.

3,299,646
CRYOGENIC JOULE-THOMSON HELIUM LIQUEFIER WITH CASCADE HELIUM AND NITROGEN REFRIGERATION CIRCUITS
Robert W. Stuart, Wakefield, Fred F. Chellis, Manchester, and Walter H. Hogan, Wayland, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed June 17, 1964, Ser. No. 375,854
10 Claims. (Cl. 62—40)



1. A cryogenic liquefier, comprising in combination
(a) an active refrigerator in which refrigeration is developed by initially cooling a high-pressure fluid and then expanding and further cooling it, and including first, second and third heat stations adapted to effect out-of-contact heat exchange with said fluid in said refrigerator;
(b) a Joule-Thomson loop comprised of first and second primary out-of-contact heat exchangers adapted to effect heat exchange between incoming high-pressure fluid and discharging low-pressure fluid, and first and second secondary out-of-contact heat exchangers

adapted to effect heat exchange between said high-pressure fluid and said second and third heat stations of said active refrigerator;

(c) a transfer tube in fluid communication with said second primary heat exchanger, characterized by having an inner high-pressure passage, an intermediate low-pressure channel and an outer insulation, and extending externally of said liquefier;

(d) a Joule-Thomson expansion valve terminating said transfer tube adapted to expand and liquefy said high-pressure fluid and to return said low-pressure fluid in said Joule-Thomson loop;

(e) a purifier adapted to remove contaminants from said fluid prior to introduction into said active refrigerator and said Joule-Thomson loop and comprising means for removing said contaminants through solidification and absorption;

(f) radiation shielding means surrounding the colder end of said active refrigerator, said Joule-Thomson loop, and said purifier;

(g) heat exchange means adapted to circulate an externally supplied refrigerant in out-of-contact heat exchange with said first heat station of said active refrigerator, said radiation shielding means, said purifier, and said first primary heat exchanger of said Joule-Thomson loop; and

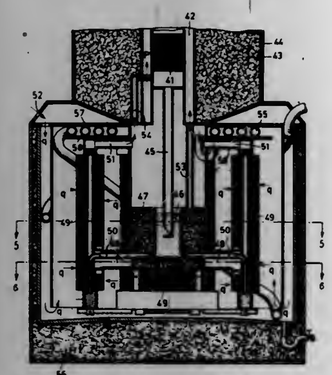
(h) housing means enclosing said active refrigerator, said Joule-Thomson loop, a portion of said transfer tube, and said purifier.

3,299,647

DEVICE FOR SEPARATING IN A SOLID STATE COMPONENTS FROM A GAS MIXTURE BY COOLING AND GAS SEPARATING PLANT PROVIDED WITH ONE OR MORE OF THESE DEVICES

Klaas Roozendaal and Johannes van der Ster, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 11, 1962, Ser. No. 222,860
Claims priority, application Netherlands, Sept. 20, 1961, 269,432
4 Claims. (Cl. 62—42)



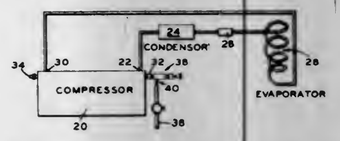
1. An apparatus for separating out in a solid state by cooling components from a gaseous mixture comprising a plurality of pipes having a very low boiling point liquid conducted therethrough, a plurality of layers of gas permeable material located on opposite side of said pipes and in heat conducting relationship therewith, said layers of gas permeable material being at a temperature that is higher than the temperature of said pipes, the gaseous mixture to be cleaned flowing through said layers of gas permeable material and past said pipes, a gas exit channel for the purified gaseous mixture flowing through said layers of gas permeable material and separating out said components in a solid state thereon, and a liquid supply duct for said pipes located within at least a part of said gas exit channel.

3,299,648

PRESSURE SYSTEM CHARGING TOOL AND METHOD

Richard B. White, Royal Oak, Mich., and Junior L. Fritch, Edgerton, Ohio, assignors to Kent-Moore Organization, Inc., Warren, Mich., a corporation of Michigan

Filed May 20, 1965, Ser. No. 457,443
6 Claims. (Cl. 62—77)



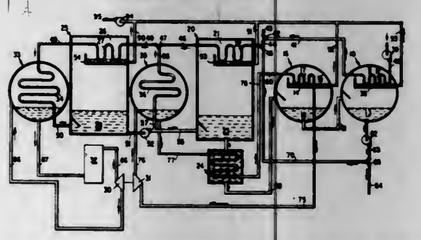
1. An evacuating and charging tool for use with a refrigeration system having a threaded port provided with a removable threaded Schrader valve core comprising; a body member having a sealed elongated chamber opening at one end for sealed communication with said threaded port, said body member having a laterally extending port for communication with evacuating and charging lines, and an operating shaft extending through and supported by the chamber wall opposite said opening, said operating shaft having a Schrader valve core grappling means located within said chamber at its inner end, a control means located outside of said chamber, said grappling means rotatably and axially shiftable within said chamber in response to said control means and having a bifurcated end received over said Schrader valve core to frictionally retain said core to effect unthreading of said valve core on rotation, and withdrawal of said valve core in response to axial motion of said control means to a position within said sealed chamber between said laterally extending port and said chamber wall opposite said opening where it does not restrict the flow passage between said ports during evacuating and charging of said compressor, said grappling means also shiftable within said chamber in response to said operating means to rethread and tighten said valve core within said threaded port after the evacuating and charging operations.

3,299,649

SEPARATION SYSTEMS

William L. McGrath and Stanley J. Rachfal, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 524,335
10 Claims. (Cl. 62—79)



8. A method of separating a solvent from a solution in an apparatus including a refrigerant evaporator, a high temperature evaporator having a condensing section and an evaporating section, a low temperature evaporator having a condensing section and an evaporating section, a refrigerant compressor driven by a prime mover, a power cycle heat exchanger, and a refrigerant condenser; which comprises the steps of:

(a) heating solution by passing it in heat exchange relation with solvent vapor in the condensing section of said low temperature evaporator, thereby condensing solvent;

(b) splitting solution from said low temperature evaporator into two portions;

(c) further heating one portion of said solution from said low temperature evaporator by passing said one portion of it in heat exchange relation with solvent vapor in the condensing section of said high temperature evaporator, thereby condensing additional solvent;

(d) further heating said one portion of solution by subsequently passing it from said low temperature evaporator into heat exchange relation with heat rejected from said prime mover in the power cycle heat exchanger;

(e) evaporating solvent from said one portion of solution in the evaporating section of said high temperature evaporator;

(f) further heating the other portion of said solution from said low temperature evaporator by passing it in heat exchange relation with refrigerant vapor in said refrigerant condenser, thereby condensing refrigerant and heating said other portion of solution to a temperature lower than that of the solution leaving said power cycle heat exchanger;

(g) evaporating solvent from both of said portions of solution in the evaporating section of said low temperature evaporator;

(h) evaporating refrigerant by passing it in heat exchange relation with a suitable source of heat;

(i) withdrawing evaporated refrigerant from the condensing section of said refrigerant evaporator, compressing said refrigerant in said compressor, passing compressed refrigerant to said refrigerant condenser, and passing condensed refrigerant to said refrigerant evaporator; and

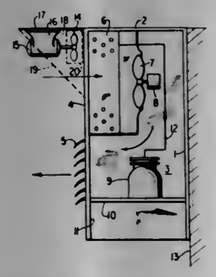
(j) collecting condensed solvent from the condensing sections of said evaporators, and withdrawing and discharging solution from the evaporating section of said low temperature evaporator.

3,299,650

AIR COOLED CONDENSER FAN ARRANGEMENT FOR CONTROL OF HEAD PRESSURE IN A REFRIGERATION OR AIR CONDITIONING SYSTEM AND METHOD OF INSTALLING THE SAME

Israel Kramer, Trenton, N.J., assignor to Kramer Trenton Co., Trenton, N.J., a corporation of New Jersey

Filed June 4, 1965, Ser. No. 461,365
12 Claims. (Cl. 62—89)



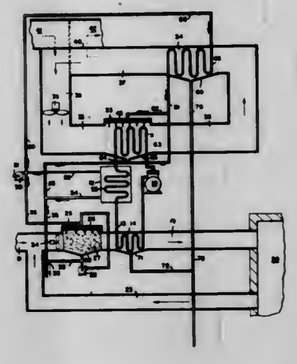
11. A method of installing an air cooled condenser fan arrangement for control of head pressure in a refrigeration or air conditioning system having a main fan or fans which method includes the step of operatively attaching at least one auxiliary fan at the face of the condenser opposite to the main fan or fans.

3,299,651

SYSTEM FOR PROVIDING AIR CONDITIONING AND PRODUCING FRESH WATER

William L. McGrath, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Oct. 24, 1965, Ser. No. 504,505
18 Claims. (Cl. 62—93)



11. A method of simultaneously providing air conditioning and water separation by operation of a system which includes a refrigeration system comprising a refrigerant evaporator and a refrigerant condenser; said method comprising the steps of:

(a) evaporating water from an aqueous solution by condensing refrigerant vapor in said refrigeration system in heat exchange relation with said aqueous solution, thereby supplying heat to said aqueous solution to evaporate water therefrom;

(b) condensing and collecting fresh water product from the water vapor formed by heat exchange with condensing refrigerant vapor, by passing said water vapor in heat exchange relation with a cooling medium;

(c) saturating a quantity of air being conditioned with water vapor by contacting said air with an aqueous solution, thereby evaporating water vapor into said air; and

(d) condensing and collecting additional fresh water product from said air being conditioned by evaporating liquid refrigerant in said refrigeration system in heat exchange relation with said air.

3,299,652

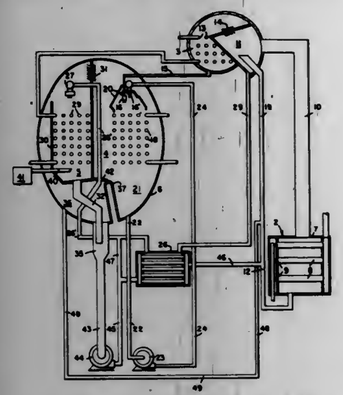
ABSORPTION REFRIGERATION SYSTEMS

Keith V. Elsberg, Camillus, and Joseph R. Bourne, Dewitt, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

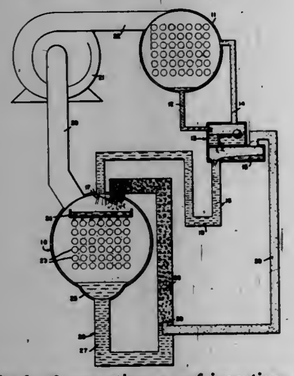
Filed Apr. 14, 1965, Ser. No. 448,132
10 Claims. (Cl. 62—101)

1. In a method of operation of an absorption refrigeration system including a generator, a condenser, an evaporator, an absorber, a pump to forward weak solution from the absorber to the generator and means to supply strong solution from the generator to the absorber, the steps which consist in, at start-up, supplying a heat exchange medium to the generator to boil solution therein, passing weak solution in a path about the absorber while subject-

ing solution in the generator to pressure of solution in said path, and, upon substantial boiling of solution in the generator, discontinuing substantial flow of weak solution in said path and supplying the weak solution to the generator.



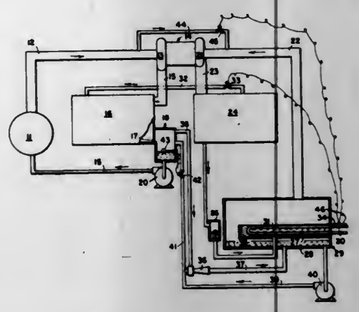
3,299,653
REFRIGERATION SYSTEM
William T. Osborne, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,815
4 Claims. (Cl. 62—115)



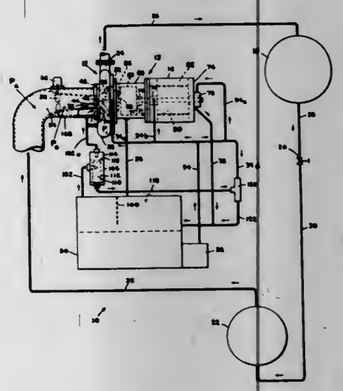
1. A method of operating a refrigeration system including a first portion adapted to contain liquid refrigerant and a second portion at a higher elevation adapted to receive the refrigerant comprising dispersing gas in a portion of said liquid refrigerant to form a mixture having a substantially lower density than the liquid refrigerant, and applying the head pressure of said liquid refrigerant in said first portion to said gas and liquid mixture to raise said portion of gas and liquid to said second portion.

3,299,654
METHOD OF PREVENTING SURGE IN THE COMPRESSOR OF A REFRIGERATION SYSTEM
Louis H. Leonard, Jr., Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 429,036
6 Claims. (Cl. 62—116)

1. A method of effectively preventing surge in a system having a centrifugal compressor for compressing a first gas, comprising the steps of operating the compressor to compress the first gas, providing a second gas having a relatively high specific volume, sensing approach of the compressor to surge condition and responsive thereto passing said second gas through the compressor with the first gas thereby effectively preventing surge.



3,299,655
OIL LUBRICATION SYSTEM FOR REFRIGERATION APPARATUS
Raymond E. Rayner, Colonia, and Wilbur C. Smith, North Caldwell, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed June 1, 1965, Ser. No. 460,227
11 Claims. (Cl. 62—193)



1. An oil lubrication system for refrigeration apparatus which has a centrifugal compressor driven by a motive means, a condenser, an expansion device and an evaporator, connected to each other in an operative refrigeration loop, said system comprising:

(a) an oil reservoir having a gaseous portion and an oil portion,

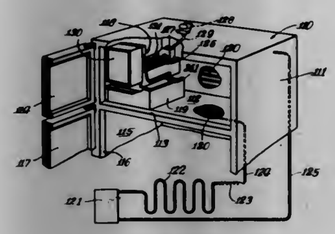
(b) an oil pump in communication with the oil portion of the oil reservoir for delivering oil lubricant to the compressor and motive means,

(c) pressure equalization line means connected between the oil reservoir, the compressor and the motive means to equalize the pressure in the oil reservoir,

(d) oil separation means disposed in the pressure equalization line means to collect oil therein and limit the flow of oil from the oil reservoir to the compressor,

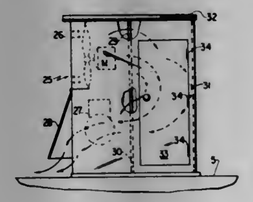
(e) a flow inducing means in communication with the oil separator to induce the flow of collected oil therein for return to the oil reservoir.

3,299,656
ICE MAKER APPARATUS
William J. Linstromberg and Edwin H. Frohbieter, Evansville, Ind., assignors to Whirlpool Corporation, a corporation of Delaware
Filed June 24, 1965, Ser. No. 466,637
18 Claims. (Cl. 62—233)



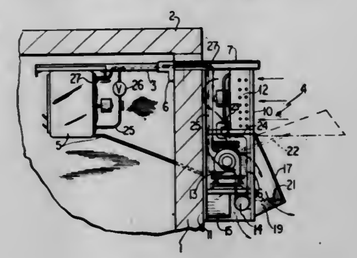
11. In an ice maker apparatus having means defining a refrigerated chamber, means defining a mold cavity in said chamber, and means for delivering water to said cavity for forming an ice body therein, control means in said chamber for causing cyclical operation of the apparatus to form seriatim a plurality of ice bodies in said cavity including means for controlling the quantity of water delivered to said cavity by said delivery means, a housing substantially enclosing said control means, and mechanical means for adjusting the water delivery controlling means from exteriorly of the housing for varying varying the quantity of water delivered to the mold cavity during each cycle.

3,299,657
ALL-WEATHER HIGH SIDE UNIT FOR REFRIGERATING AND AIR CONDITIONING SYSTEMS
Hyman Malkoff, Levittown, Pa., and Israel Kramer, Trenton, N.J., assignors to Kramer Trenton Co., Trenton, N.J., a corporation of New Jersey
Filed Nov. 13, 1964, Ser. No. 410,846
8 Claims. (Cl. 62—259)



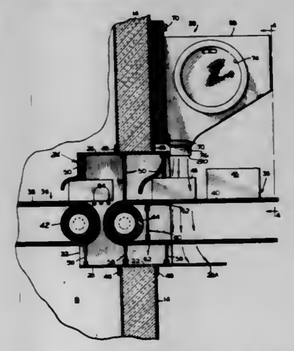
1. A high side unit for a refrigerating or air conditioning system designed and adapted for installation in operative connection with a building exposed after installation to weather conditions prevailing in any season or climate, said unit comprising at least compressor and condenser housed within a casing having a back with at least one opening therein to permit servicing, a movable closure for at least one of said openings, the condenser being air-cooled and elevated with relation to the compressor, the casing having a front provided with at least one opening to facilitate the flow of an air current through the condenser and thence downwardly around the compressor, and the unit being constructed with a sheltered servicing space for entry and protection of an attendant.

3,299,658
AIR CONDITIONING OR REFRIGERATION SYSTEM WITH MEANS FOR COOLING THE COMPRESSOR AND CONTROLS
Israel Kramer, Trenton, N.J., assignor to Kramer Trenton Co., Trenton, N.J., a corporation of New Jersey
Filed Mar. 12, 1965, Ser. No. 439,146
5 Claims. (Cl. 62—263)



1. In an air conditioning or refrigeration system, a high side unit designed and adapted for outdoor installation in permanent connection with a building, said unit comprising, a housing, condenser and compressor within the housing, the former being positioned higher than the latter, means for generating an essentially horizontal air stream through the condenser, means for deflecting the stream downwardly to blast the upper portion of the compressor, and means for causing the stream to follow a path further downward consisting of a swingable hood secured at its upper portion to the housing adjacent the bottom of the condenser and extending downwardly therefrom.

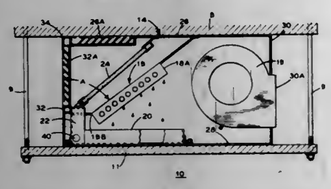
3,299,659
FLUID SEAL FOR FREEZING CHAMBER OPENINGS
Moshe Y. Dreksler, Waynesboro, and Thomas F. Sloan, Zullinger, Pa., assignors to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Apr. 1, 1965, Ser. No. 444,712
8 Claims. (Cl. 62—266)



1. In a freezing chamber defined by wall means having at least one opening in said wall means communicating the chamber with the ambient atmosphere and having a foraminous conveyor extending into said opening to transport material through the opening; the combination of a mechanical seal means comprising, a plurality of spaced flexible walls disposed within the opening and engaging the conveyor and said material transported by the conveyor to provide at least a partial sealing of the opening, and a fluid seal means comprising blower means for discharging a stream of gaseous fluid across said opening so as to impinge said conveyor and the material on said conveyor and thereby create a static fluid pressure

adjacent said opening to prevent passage of air through the opening, and a baffle means disposed adjacent said opening on the side of the foraminous conveyor opposite from the blower means and projecting from the chamber wall means so that the fluid stream passing through the foraminous conveyor impinges thereon to create a fluid static pressure adjacent the opening on the side of the conveyor opposite from the blower means.

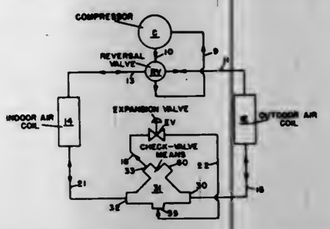
3,299,660
AIR CONDITIONER
Alfred D. Sullivan, Dearborn, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed July 19, 1965, Ser. No. 473,040
2 Claims. (Cl. 62—285)



1. A blower-evaporator unit for horizontal and vertical installation comprising a housing including bottom, top, a pair of end walls and a pair of side walls, said top wall and one of said end walls being provided with air inlets in portions thereof adjacent a common edge, each of said openings extending from said common edge and terminating at an intermediate region of the associated wall, a blower in said housing adjacent the other of said end walls, said blower having an outlet, said other end wall being provided with an air outlet for transferring air delivered by the outlet of said blower to the region outside said housing, a flat evaporator means, in said housing, said evaporator being angularly disposed so as to angularly face the opening in said one end wall and to angularly face the opening in said top wall, means for guiding all the air moving from said inlets to said outlets through said evaporator, a first trough in said housing and disposed on said bottom wall to encompass the projection of the entire evaporator means on said bottom wall so that when said unit is horizontally supported along said bottom wall all condensate dripping from any portion of said evaporator is collected by said first trough, a second trough in said housing, said second trough being disposed parallel to said one end wall and extending from said bottom wall to just beyond the edge portion of said evaporator means closest said one end wall so as to be opposite only the unopen portion of said one end wall so that when said unit is vertically supported along said end wall condensate dripping from said edge portion is collected in said second trough, and a common drain means at the junction of said first and second trough means.

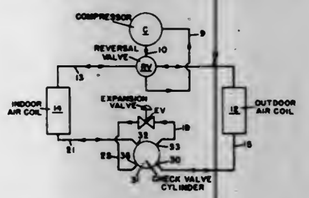
3,299,661
CHECK VALVE MANIFOLDS FOR HEAT PUMPS
James R. Harnish and Robert W. Ayling, Staunton, Va., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 18, 1965, Ser. No. 497,128
10 Claims. (Cl. 62—324)

1. In a heat pump having a refrigerant compressor; an outdoor heat exchanger; an indoor heat exchanger, reversal valve means connected to said compressor and to said exchangers for routing discharge gas from said compressor into said outdoor exchanger to operate said outdoor exchanger as a condenser, and for routing suction gas from said indoor exchanger operating as an evaporator to said compressor, or for routing discharge gas from said compressor into said indoor exchanger to operate said indoor exchanger as a condenser, and for routing suction gas from said outdoor exchanger operating as an evaporator to said compressor; and an expansion valve; the combination of a manifold having a first port connected to said outdoor exchanger, having a second port connected to said indoor exchanger, having a third port connected to the outlet of said expansion valve, and having a fourth port connected to the inlet of said expansion valve; means within said manifold including means responsive to the flow of refrigerant through said first port when said outdoor exchanger



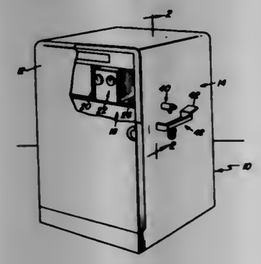
is operating as a condenser for routing the refrigerant to said fourth port and preventing the refrigerant from flowing to said second and third ports, including means responsive to the flow of refrigerant through said second port when said indoor exchanger is operating as a condenser for routing the refrigerant to said fourth port and preventing the refrigerant from flowing to said first and third ports, and including means responsive to the flow of expanded refrigerant through said third port for routing the expanded refrigerant to said second port when said outdoor exchanger is operating as a condenser, and for routing the expanded refrigerant to said first port when said indoor exchanger is operating as a condenser.

3,299,662
CHECK VALVE MEANS FOR HEAT PUMPS
James R. Harnish, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 12, 1965, Ser. No. 507,397
10 Claims. (Cl. 62—324)



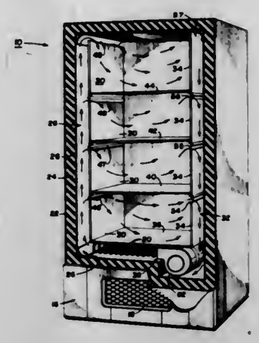
1. In a heat pump having a refrigerant compressor; an outdoor heat exchanger; an indoor heat exchanger; reversal valve means connected to said compressor and to said exchangers for routing discharge gas from said compressor into said outdoor exchanger to operate said outdoor exchanger as a condenser and for routing suction gas from said indoor exchanger operating as an evaporator to said compressor when cooling is required, or for routing discharge gas from said compressor into said indoor exchanger to operate said indoor exchanger as a condenser and for routing suction gas from said outdoor exchanger operating as an evaporator to said compressor when heating is required; and an expansion valve; the combination of a valve cylinder having a first port connected to said outdoor exchanger, having a second port connected to said indoor exchanger, having a third port connected to the outlet of said expansion valve, and having a fourth port connected to the inlet of said expansion valve; a piston slidably axially within said cylinder to first and second positions, said piston having first and second passages, said first passage connecting said first and fourth ports and said second passage connecting said second and third ports when said piston is in said first position, said piston having third and fourth passages, said third passage connecting said second and fourth ports and said fourth passage connecting said first and third ports when said piston is in said second position; and means for moving said piston to said first position when said reversal valve means operates said outdoor exchanger as a condenser, and for moving said piston to said second position when said reversal valve means operates said indoor exchanger as a condenser.

3,299,663
REFRIGERATOR MOUNTED COLD WATER SYSTEM
Troy Butcher, Bay Saint Louis, Miss., assignor of ten percent to Cornelius J. Ladner, Bay Saint Louis, Miss., ten percent to Alvin E. Moore, Waveland, Miss., and seven and one-half percent to Joe B. Burrow, Sr., Bay Saint Louis, Miss.
Filed June 14, 1965, Ser. No. 463,693
4 Claims. (Cl. 62—339)



1. In combination with a refrigerator having insulated walls, a cooling chamber and means for cooling the air in said chamber below the temperature of the air outside the refrigerator:
- a sealed, fluid-tight water tank having walls of thin material which readily permits the transfer of heat thru the walls, said tank constructed and arranged to hold more than a quart of water under a selected, substantially constant pressure above that of the atmosphere;
- means for supporting said tank from said insulating walls in a location closely adjacent to said cooling means;
- a gauge for indicating the pressure of the water in the tank;
- water-supplying means flow-connected with said tank and connectible with a source of high-pressure water, for withdrawing water under high pressure from said source and supplying pressurized water to the tank;
- an adjustable pressure regulating device, for controllably reducing the pressure of said high-pressure water to a selected, substantially constant pressure that is considerably greater than that of the atmosphere and is indicated by said gauge;
- faucet means for supplying cooled water from said tank; and
- water-conducting means for connecting said tank and faucet means.

3,299,664
FORCED DRAFT REFRIGERATOR
John S. Booth, 1400 S. Haskell, Dallas, Tex. 75223
Filed Sept. 23, 1965, Ser. No. 489,506
3 Claims. (Cl. 62—419)

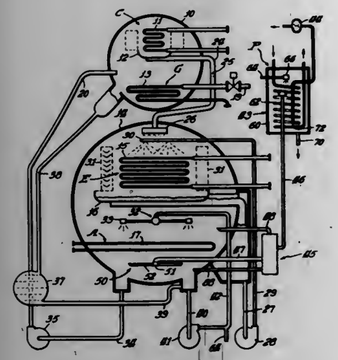


1. A forced air refrigerator comprising:
- an insulated box having an access door and opposite interior side walls,
- a plurality of substantially solid shelves extending horizontally across the interior of the box between the side walls and dividing the box into a plurality of vertically-stacked compartments,
- an air blower disposed adjacent the bottom of the box,
- a first air duct extending from the output side of the blower upwardly along one of said interior walls and communicating with each of the compartments through a separate inlet orifice formed in said one interior wall which orifice increases in area from bottom to top,
- a second air duct communicating with each of the compartments through a return flow orifice, the return flow orifices decreasing in area from bottom to top, and extending downwardly along the other of said interior walls to the intake side of the blower, and
- a refrigeration system having a cooling coil disposed in the air path for cooling the air as it is circulated from the blower through the first duct, through the inlet orifices, across the compartments, through the return flow orifices, and through the second air duct to the input of the blower.

3,299,665
PURGE SYSTEM FOR REFRIGERATION APPARATUS
Leonard A. Rezin, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 30, 1965, Ser. No. 491,678
4 Claims. (Cl. 62—475)

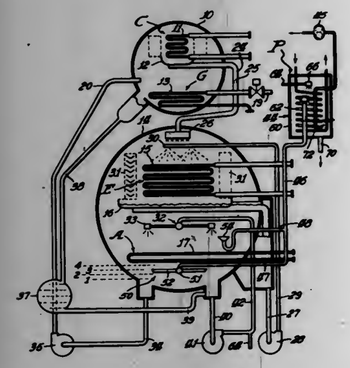
1. A purge system for exhausting non-condensible gases from the absorber in an absorption refrigeration machine, said purge system comprising a vacuum source operative to induce non-condensible gases from said absorber; a first conduit connecting said vacuum source to a zone above the minimum capacity solution level in said absorber, but below the short-term shut-down solution level; second conduit means connecting said vacuum source to a zone in said absorber above the long-term shut-down solution level; valve means for controlling flow of non-condensible gases through said second conduit means; and means for operating said valve means

in response to changes in the solution level in said absorber to permit the flow of non-condensible gases



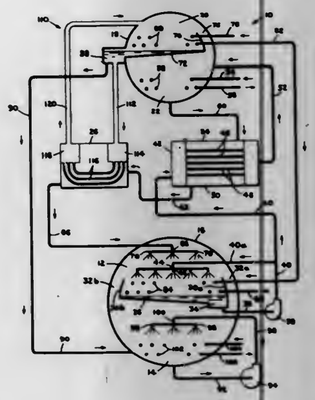
through said second conduit means only during periods when said first conduit means is inoperative.

3,299,666
PURGE SYSTEM FOR ABSORPTION REFRIGERATION APPARATUS
Neil E. Hopkins and William L. Osborn, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 30, 1965, Ser. No. 491,679
3 Claims. (Cl. 62—475)



1. A purge system for exhausting non-condensible gases from the absorber in an absorption refrigeration machine, said purge system comprising a vacuum source operative to induce non-condensible gases from said absorber; a first conduit connecting said vacuum source to a zone above the minimum capacity solution level in said absorber, but below the short-term shut-down solution level; second conduit means connecting said vacuum source to a zone in said absorber above the long-term shut-down solution level; and means for blocking flow of non-condensible gases through said second conduit means only during periods when said absorption refrigeration machine is in operation, said means including a liquid trap in said second conduit means, said trap having an aperture formed therein to drain liquid from said trap to said absorber at a predetermined rate, and means for supplying liquid to said second conduit means and said trap, while said absorption machine is operating, at a rate exceeding the drainage rate from said trap.

3,299,667
SOLUTION COOLER FOR AN ABSORPTION REFRIGERATION SYSTEM
David Aronson, Upper Montclair, and Bradford F. Harris, Murray Hill, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 512,989
6 Claims. (Cl. 62—476)

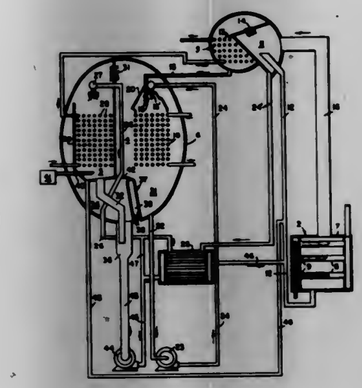


1. An absorption refrigeration system in which an absorbent solution in varying concentration and a refrigerant are circulated comprising:
(a) a generator concentrating the absorbent solution and passing off vaporous refrigerant,
(b) an absorber receiving absorbent solution from the generator and returning dilute absorbent solution thereto,
(c) a condenser receiving vaporous refrigerant from the generator and condensing it therein,
(d) an evaporator receiving a portion of the condensed refrigerant for circulation therein and passing the evaporated refrigerant to the absorber for absorption in the absorbent solution,
(e) a cooler means disposed below the condenser and having the concentrated solution from the generator passing therethrough, and receiving by gravity flow a portion of the liquid refrigerant to pass in indirect heat exchange relation with the concentrated solution to be partially evaporated in said cooler to establish a thermal loop to return the partially evaporated refrigerant to the condenser as a mixture of vapor and entrained liquid droplets.

3,299,668
ABSORPTION REFRIGERATION SYSTEMS
Keith V. Elsberg, Syracuse, and Joseph R. Bourne, Dewitt, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,528
5 Claims. (Cl. 62—476)

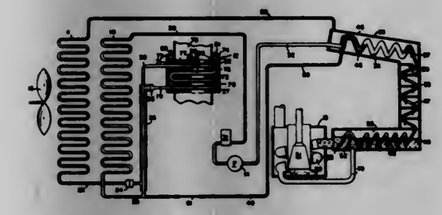
1. In an absorption refrigeration system, the combination of a unitary shell, a fluid evaporating region in said shell adapted to contain fluid at a substantially predetermined temperature, a second region in said shell adapted to contain a second fluid at a temperature different from the temperature of the first fluid, the second region being open to the first region to permit evaporated fluid to flow from the first region to the second region, and means constituting a part of the shell forming an air space open to the ambient and sealed from said regions, those

portions of the shell forming the air space being spaced from one another and separating the fluids from one



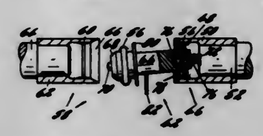
another, the air space preventing substantial heat exchange between the fluids.

3,299,669
ABSORPTION REFRIGERATION
Richard H. Merrick, Indianapolis, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed July 26, 1965, Ser. No. 474,834
13 Claims. (Cl. 62—476)



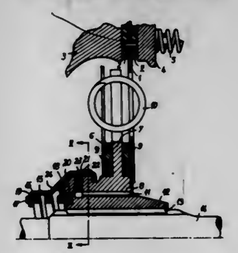
1. An absorption refrigeration system comprising:
(A) an absorber for absorbing refrigerant vapor;
(B) a generator for concentrating weak absorbent solution and forming vapor therefrom;
(C) a condenser for condensing refrigerant vaporized in said generator; and
(D) an evaporator for evaporating a refrigerant to provide cooling, said evaporator comprising:
(1) an evaporator passage including an evaporator tube connected to receive liquid refrigerant from said condenser and to discharge vaporized refrigerant to said absorber;
(2) a heat exchange tube enclosing at least a portion of said evaporator tube;
(3) a liquid medium filling the region between said evaporator tube and said heat exchange tube; and
(4) a passage means for passing any refrigerant leaking from said evaporator tube into said liquid medium to a desired location.

3,299,670
ENGAGEABLE AND DISENGAGEABLE TORQUE-TRANSMITTING CONNECTIONS
Ernest Needham Allbeson, Sheffield, and Samuel Robert Skelton, Chapeltown, near Sheffield, England, assignors to The Brightside Foundry & Engineering Company Limited, Ecclesfield, Sheffield, England
Filed Aug. 27, 1964, Ser. No. 392,500
Claims priority, application Great Britain, Sept. 6, 1963, 35,315/63
2 Claims. (Cl. 64—8)



1. An engageable and disengageable articulated torque-transmitting connection for drivably coupling a rolling mill roll to a pinion for driving said roll, said connection comprising a torque-transmitting shaft; a gear-type articulable coupling at one end of said shaft forming a permanent driving connection with said pinion; barrelled teeth formed adjacent the other end of said shaft and constituting a driving element of an engageable and disengageable gear-type articulable coupling, a driving sleeve carried by the roll; an internal gear formed within said driving sleeve and constituting a driven element of the engageable and disengageable gear-type articulable coupling; a "bell-mouth" portion formed at an open end of the driving sleeve; a tapered end portion formed on the shaft for cooperation with said "bell-mouth" portion so as to facilitate the entry of the driving element of the engageable and disengageable coupling into the driving sleeve thereof from a position in which the lowermost barrelled teeth are disposed at a lower level than the outer diameter of the "bell-mouth" portion; and a spring within the gear-type articulable coupling forming the permanent driving connection, said spring acting to maintain the barrelled teeth of the engageable and disengageable coupling in engagement with the internal gear of the driving sleeve when a driving connection been established.

3,299,671
DEVICES FOR DAMPING ANGULAR VELOCITY FLUCTUATIONS BETWEEN TWO ROTATING COMPONENTS, ONE OF WHICH DRIVES THE OTHER
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, French works under the control and the authority of the French Government
Filed Dec. 28, 1964, Ser. No. 421,346
Claims priority, application France, Jan. 9, 1964, 959,778, Patent 1,389,604
7 Claims. (Cl. 64—27)



1. A device for damping angular velocity fluctuations between a first rotating member and a second rotating member which are coaxial, in which said first member

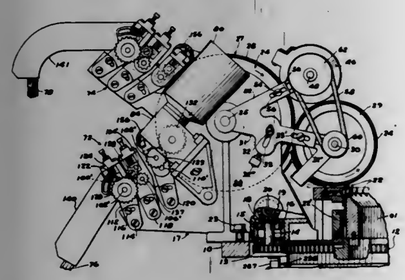
drives said second member, said device comprising three parallel couplings provided between said two members, the first of said couplings being in the form of mutually engageable splines provided with an angular backlash of a few degrees; the second of said couplings being in the form of a pre-loaded coil spring, the axis of which coincides with that of said rotating members and the two ends of which are so fixed respectively to said two members that one extremity be angularly rigid with one of said members and the other extremity with the other member to continuously urge one of said members into a given direction of rotation relative to the other; the third coupling being in the form of a friction-type torque limiter which comprises two facing parallel circular surfaces, one of said surfaces being provided on the extremity of said first member and the other on a flanged portion of said second member, and friction means extending between said two surfaces; said coil spring urging said surfaces towards each other.

3,299,672

METHOD AND APPARATUS FOR PRODUCING KNIT PILE FABRIC

Arnold W. Schmidt, 1500 Bay View Drive, Sarasota, Fla. 33577

Filed Dec. 20, 1963, Ser. No. 332,227
11 Claims. (Cl. 66—9)



2. Apparatus for making a knit pile fabric comprising carding means, a plurality of roving feeding means for feeding a plurality of rovings independently of one another into said carding means whereby said rovings are carded in said cardings means, variable speed electric drive means, means drivingly connected to one of said feeding means for varying the rate of feed of one of said rovings into and relative to the speed of said carding means to thereby vary the quantity of fibers in said carding means derived from said one roving and means for knitting a base fabric including means for removing the carded fibers from the carding means and incorporating said removed fibers into the base fabric as it is being knitted.

9. A method of making knit pile fabric comprising the steps of:

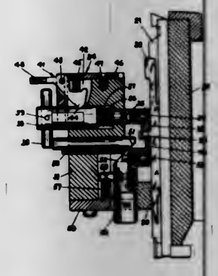
(1) independently feeding at least two individual streams of pile fibers with one of said streams containing pile fibers of a first characteristic and the other of said streams containing fibers of a second characteristic differing from said first characteristic,
(2) causing said streams to converge and at least partially intermix into a single stream by carding said streams in a carding area,
(3) directing said single stream of intermixed pile fibers toward a knitting area,
(4) knitting a base fabric at a predetermined speed in said knitting area,
(5) collecting and removing bundles of pile fibers consecutively from said single stream of intermixed fibers in said knitting area,
(6) incorporating said bundles of fibers as pile consecutively coursewise in the base fabric as it is knit and
(7) varying the rate of flow of said first characteristic fibers in said one stream relative to the rate of flow of said second characteristic fibers in said other stream prior to said convergence of said individual streams in a predetermined manner correlated with the speed of knitting of the base fabric so as to form a changing blend pattern of pile fibers in the resulting knit pile fabric.

3,299,673

CAM CONTROL MEANS FOR KNITTING MACHINES

George H. Noll, Philadelphia, Pa., assignor to Wildman Jacquard Co., Norristown, Pa., a corporation of Pennsylvania

Filed Jan. 7, 1964, Ser. No. 336,215
3 Claims. (Cl. 66—57)



3. In an independent needle knitting machine the combination of knitting instrumentalities having butts, cams defining differentiating pathways within which said butts may be guided selectively, there being relative movements between said cams and instrumentalities, a guide unit having first and second gate cam members for changing the path of the butts from one pathway to another, first and second slidable plunger members affixed to said first and second gate cams, respectively, and restrained for simultaneous movement within said guide unit, control cam means for effecting movement of said first plunger member and gate cam attached thereto in a plane disposed at a right angle to the plane of movement of said instrumentalities, and a further cam means cooperating with said first plunger member and gate cam for effecting movement of said second plunger member and gate cam attached thereto in a plane perpendicular to the movement of said first cam and plunger member.

3,299,674

WARP KNIT TUBULAR NETTING

Walter H. Scheibe, Im Kobener 13, Oberursel, Taunus, Germany

Filed Aug. 10, 1965, Ser. No. 478,643
Claims priority, application, Germany, May 19, 1962, K 46,785
11 Claims. (Cl. 66—195)

1. A tubular net comprising, in combination:

(a) a plurality of elongated threads;
(b) each thread having a plurality of first longitudinal portions;
(c) each first longitudinal thread portion constituting a section of a chain of warp stitches, said section extending walewise over a plurality of courses;
(d) each chain including a plurality of said sections successively arranged in a walewise direction;

(e) said chains being normally juxtaposed transversely of said direction;
(f) each thread further having a plurality of second longitudinal portions respectively interposed between two adjacent ones of said first portions of said thread;
(g) each second portion extending in a coursewise direction from at least one of said adjacent first portions and the warp chain section constituted thereby, and being interengaged with a portion of a thread constituting a section of a chain juxtaposed to the warp chain section constituted by said one adjacent first portion;
(h) said second longitudinal thread portions integrally connecting said warp chains in a coursewise direction into a tubular structure having an axis extending in a normally walewise direction.

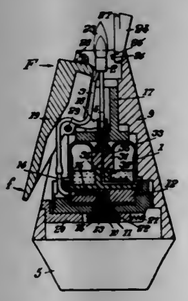


3,299,675

FLINTLESS GAS-FUELED LIGHTER

Paul Laffitte, Ralph Delbourgo and Marcel Quercia, Paris, France, assignors to Flaminaire Marcel Quercia, Paris, France, a company

Filed July 22, 1964, Ser. No. 384,300
Claims priority, application France, Aug. 2, 1963, 943,665, Patent 1,372,046
14 Claims. (Cl. 67—7)



1. A lighting device for use with a source of combustible gas, comprising:

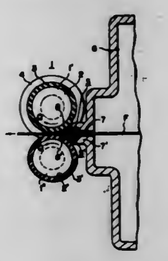
(a) casing means having an interior cavity;
(b) a source of peroxide disposed in said cavity;
(c) a catalytical mass for exothermically decomposing said peroxide, said mass being supported in a position where it can be in communication with the region outside said casing;
(d) conduit means connected between said source and said catalytical mass for conducting said peroxide into contact with said mass; and
(e) actuating means mounted on said casing for inducing a flow of peroxide through said conduit means.

3,299,676

APPARATUS FOR CONTINUOUSLY LEADING TEXTILES INTO OR OUT OF A PRESSURE-TREATING CHAMBER

Seitaro Fujihashi, Minami-ku, Kyoto, Japan, assignor to Kyoto Machinery Company Ltd., Kyoto, Japan, a corporation of Japan

Filed Jan. 29, 1965, Ser. No. 429,102
Claims priority, application Japan, May 18, 1964, 39/38,345
2 Claims. (Cl. 68—5)



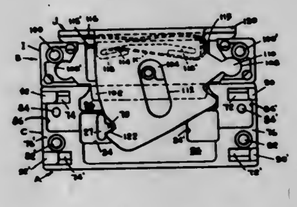
1. An apparatus for continuously leading textiles into or out of a pressure-treating chamber comprising a feeding roll device set in front of an orifice of the pressure-treating chamber and comprising two rolls provided with flanges respectively at one end of one roll and at the other end of the other roll and pressed against each other and a truncated tapered fluid tight tube made of a soft elastic substance, connected at the base end to said orifice and having the peripheral wall at the free end pressed against the opposed peripheral surfaces of both rolls of said feeding roll device and against the inside surfaces of both flanges of said rolls by the fluid pressure in said pressure-treating chamber so that the textile may be led into or out of said pressure-treating chamber by moving as held between both rolls of said feeding roll device through the orifice of said pressure-treating chamber and through said fluid-tight tube.

3,299,677

LATCHING AND LOCKING MEANS FOR LUGGAGE CASES AND LIKE RECEPTACLES

Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York

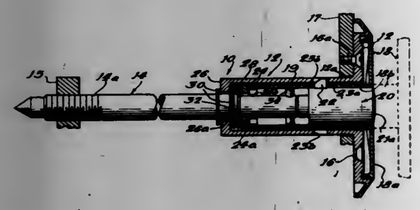
Filed Jan. 29, 1965, Ser. No. 428,930
11 Claims. (Cl. 70—69)



1. A latching assembly cooperable with a hasp assembly having a manipulatable, pivotally and resiliently mounted hasp plate, said latching assembly comprising a latch body, the outer face of the latch body having an outwardly and end-wise open transverse guideway, a manipulatable latching slide member connected to the latch body and longitudinally movable in said guideway, a latching lug integral with the latching slide member extending from the underside thereof, an aperture in said latch body, said latching lug extending through the aperture and exposed on the underside of the latch body,

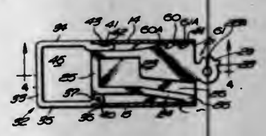
spring means intermediate the latch body and the latching slide member to resiliently urge the latching slide member to latched position, and a back plate connected to the underside of the latch body, said back plate and the underside of the latch body providing an intermediate opening for entry of a hasp plate to directly engage said latching lug.

3,299,678
LOCK DEVICE FOR VENDING MACHINE OR THE LIKE
Elbert M. Spencer, Wildwood, Ill., assignor to Illinois Lock Co., a corporation of Illinois
Filed July 8, 1964, Ser. No. 380,999
1 Claim. (Cl. 70—208)



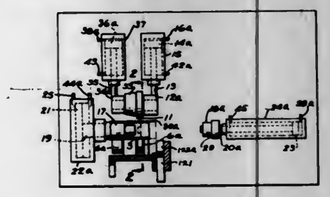
A draw lock device for securing a cabinet door to a cabinet, comprising: a lock housing secured to said cabinet door and having a cylindrical neck portion; a shaft extending through the neck portion of said lock housing and projecting from the door toward the interior of said cabinet, said shaft being mounted in said neck portion for rotation relative to said housing; a handle mounted in said housing by means permitting longitudinal movement of said handle relative to the housing and the shaft from a position wherein said shaft and handle are conjointly rotatable relative to the housing to a position wherein said handle is free to rotate relative to said housing and said shaft; a pin loosely positioned in said shaft generally transverse to the axis thereof, said handle mounting means including a sleeve on said handle telescopically received within the said housing over said shaft, a plurality of radial and circumferentially spaced slots including slots transverse to each other at the distal end of said sleeve each for closely receiving said loosely positioned pin at a plurality of different rotationally indexed connecting positions to provide easy connection with said shaft at each connecting position for said shaft and handle; a spring urging said handle, longitudinally of said housing and relative to said shaft for connecting the handle with said shaft at any of said connecting positions for rotation of said shaft and handle relative to said housing, said slots receiving said pin in each position and blocking said handle from free rotation in either direction relative to said shaft; means for securing said handle in said housing against rotation relative to said housing and in complete disconnection from said shaft; and means operable after disconnection of said handle relative to said shaft for guiding said handle into locking engagement in said housing without moving said shaft, said means including a plurality of generally longitudinally extending slots in said housing bore and a plurality of generally longitudinally extending ribs on said handle sleeve, said ribs being spaced from said housing slots when said shaft and handle are in operable engagement a distance greater than movement of said handle longitudinally of said housing and said shaft to disconnect said handle from said shaft so that, after said disconnecting movement of said handle, said handle may be rotated relative to said housing and said shaft to align said ribs with said housing slots to permit axial insertion of said handle into said housing.

3,299,679
DUAL KEY CLASP
Olof Verner Anderson, North Kingston, R.I., assignor to Anson, Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 23, 1965, Ser. No. 434,582
6 Claims. (Cl. 70—459)



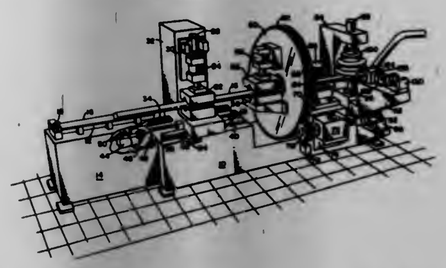
6. A dual key clasp consisting of a casing, a locking insert and a loop, said casing being of tubular form and defining a cavity having two open ends, latch element means between said loop and said casing to removably secure said loop within said casing through one of said two open ends, a locking insert consisting of a body having two legs connected to a base, there being a slot to separate said two legs for relative movement therebetween, said locking insert slidable into and out of said cavity through the other of said two open ends, said body having releasable locking means for releasably retaining said body within said casing, said body releasably engaging said loop in latched position within said casing to assist said latch element means in retaining said loop within said casing.

3,299,680
ROLLING MACHINE FOR FORMING TUBULAR WORKPIECES
Earl A. Thompson, 1300 Hilton Road, Bloomfield Hills, Mich. 48220
Continuation of application Ser. No. 71,758, Nov. 25, 1960. This application June 10, 1965, Ser. No. 467,811
3 Claims. (Cl. 72—6)



1. A machine for forming a predetermined configuration on the inner surface of a generally tubular walled work piece which initially has an unfinished internal surface dimensionally greater than said predetermined configuration comprising a rotatable finishing arbor of a configuration corresponding to said predetermined configuration, spindle means for rotatably supporting the work piece in concentric telescoped relation about the arbor, means forming a plurality of transversely shiftable roller supports, a form roller journalled on each support for conjoint rotation with the work piece, a plurality of individual hydraulic motors, one for each of the supports, connected to shift the supports to and fro, a plurality of rotary cam powered and controlled liquid column type motion transfer devices, one for each of the hydraulic motors, connected to operate the hydraulic motors, and common camshaft means for driving the transfer devices in unison to synchronously shift the roller supports transversely to roll the work piece wall progressively inwardly between the plurality of form rollers and to terminate the transverse shifting just after the internal surface of the work piece wall makes complete peripheral contact with the arbor but before any noticeable thinning of the work piece wall takes place.

3,299,681
PROGRAM CONTROLLED TUBE BENDER
Charles F. Hautau, Oxford, Ohio, assignor, by mesne assignments, to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 22, 1960, Ser. No. 16,846
15 Claims. (Cl. 72—7)



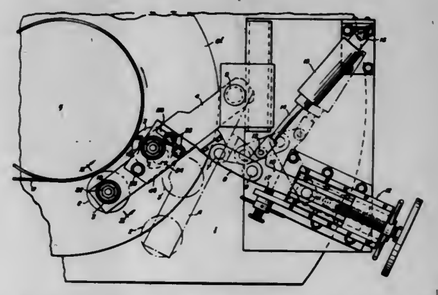
1. A machine for forming a plurality of bends along a length of tubing, comprising: clamping means for said tubing operative to translate said tubing along its axis and rotate it about its axis; a plurality of circular bending forms disposed about a common axis which extends perpendicularly to the direction of translation of said clamping means; means for moving said stack of forms along its axis; a bending wing rotatable about the axis of said forms; means for moving said bending wing toward and away from the axis of said forms in order to capture tubing between the two; a support for said stack of forms and said bending wing movable in a direction perpendicular to both the direction of translation of said clamping means and the extension of the common axis of said forms; a record containing coded information relating to a plurality of bends to be formed along a length of tubing; and a control system operative to establish electrical representations of particular items of information contained on said record and to use said representations to control the position of moving parts of said machines so as to move said stack of bending forms along its axis to position a particular form with respect to said wing, to move said form and wing support so as to position a particular form in operating position with respect to said tubing, to rotate and translate said tubing so as to position a particular point with respect to the bending form so selected, and to move said bending wing through a particular arc.

3,299,682
APPARATUS FOR MANUFACTURING TREATED GRINDING RODS
Albert L. Bard and Wayne B. Weed, Independence, Mo., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Application Sept. 16, 1964, Ser. No. 396,848, which is a division of application Ser. No. 145,251, Oct. 16, 1961, now Patent No. 3,170,641, dated Feb. 23, 1965. Divided and this application Dec. 30, 1965, Ser. No. 517,667
4 Claims. (Cl. 72—100)



1. Apparatus for producing abrasion resistant rod for rod mills, comprising a plurality of pairs of interdigitated rollers disposed along a line and positioned to form an elongated two-point support for a rod, all of said rollers being mounted on axes which are skewed in relation to said line, means for driving all of said rollers in the same sense whereby to cause a rod supported thereon concurrently to be moved axially along said line and rotated about said axis, and a third roller for each of said pairs disposed to ride on top of said rod directly over the respective pairs, and means to press each of said third rollers against said rod to enforce upon said rod during its movement a straight condition, and a plurality of annular nozzles for a quenching medium disposed along said path between said pairs of rollers, and means for supplying a quenching medium to said nozzles.

3,299,683
END BENDER FOR WIRE DRAWING BLOCK
Gerald L. Fisher, Zion, and Raymond A. Rasmussen, Waukegan, Ill., assignors to United States Steel Corporation, a corporation of Delaware
Filed Oct. 27, 1964, Ser. No. 406,788
5 Claims. (Cl. 72—155)



1. A wire-end bending attachment for a wire-drawing block comprising means for contacting the wire to conform it to the periphery of the block, means for supporting said wire contacting means, said means comprising an arm pivoted to a rigid base, means for maintaining pressure on said arm, said means comprising a pair of links pivotally connected to permit a hinging movement thereof, the remote end of the first of which links being pivotally connected to said arm and the remote end of the second of which links being pivotally connected to a rigid base, said links being adapted to be brought into alignment, with their pivots in a generally straight line, to maintain pressure on said arm, means on one side of said links to stop hinging motion thereof in a position no more than slightly over center, and means for hingeably actuating said links to alternately maintain pressure on said arm and to release pressure thereon.

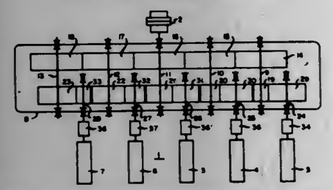
3,299,684
ROLLING MILL
George Knap, 4408 Wildwood Crescent, South Burnaby, British Columbia, Canada
Filed Oct. 28, 1963, Ser. No. 319,132
2 Claims. (Cl. 72—198)



1. A rolling mill to reduce the cross sectional area of malleable metallic stock comprising at least a pair of driven, axially parallel rolls, a first axially extending, helically wound groove formed in each of the rolls, said

grooves having equal and opposite pitch and tapering in the same direction, a second axially extending, helically wound groove formed in each of the rolls parallel to the first groove therein and tapering in an opposite direction to said first groove, said rolls being rotatably positioned relative to each other so that the said first and second grooves in one of said rolls is mated with the corresponding first and second grooves in the other roll, at the line of pass, whereby upon rotation of the rolls in one direction, the first grooves present, from one side of the mill, a series of passes moving longitudinally of the rolls in steadily decreasing cross sectional area and upon reversing the direction of rotation of the rolls the second grooves present, from the other side of the mill, a similar series of longitudinally moving passes.

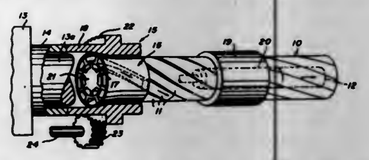
3,299,685
DRIVE FOR A MULTIPLE-STAND ROLLING MILL
Friedrich Kocks and Helmut Holthoff, both of Dusseldorf, Germany, assignors to Kommanditgesellschaft Friedrich Kocks, Dusseldorf, Germany, a corporation of Germany
Filed Dec. 4, 1963, Ser. No. 327,991
Claims priority, application Germany, Mar. 26, 1963, K 49,298
5 Claims. (Cl. 72—249)



1. A drive for a multiple-stand rolling mill comprising generally parallel shafts driving the mill rolls, a number of planar gears arranged in sequence along the mill, separate generally parallel shafts on which the planar gears are respectively mounted, the planar gears being sequentially in mesh with one another so as to form a continuous gear train along the mill, means for driving such continuous gear train, of the planar gears numbered consecutively along the mill all the odd numbered gears having the same number of teeth and all the even numbered gears having the same number of teeth, and separate planar gear drives from the shafts on which the first mentioned planar gears are respectively mounted to the shafts driving the mill rolls, the transmission ratios of the separate planar gear drives being such that the speeds of rotation of the mill rolls increase in the direction of passage through the mill of material being rolled, the axes of the generally parallel shafts driving the mill rolls and the axes of the generally parallel shafts on which the planar gears are respectively mounted being all disposed in the same plane.

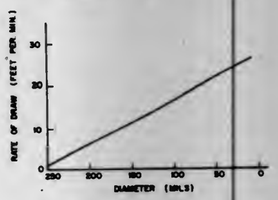
3,299,686
STRAND EXTRUDER
Roger J. Lemieux, Dollard des Ormeaux, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Jan. 13, 1964, Ser. No. 337,364
16 Claims. (Cl. 72—261)

1. An apparatus for producing a flexible cable comprising extrusion means for simultaneously producing a plurality of metal strands in the approximate configuration which the strands assume in the finished cable, said extrusion means being adapted to produce each strand in the same shape and dimensions as desired in the finished cable, and closing means for drawing said strands together to form said flexible cable, said extrusion means including an extrusion die comprising a die housing having a bore, said bore having an inlet end and an outlet end, a die insert having a plurality of longitudinal fins projecting radially therefrom, said die insert being adapted to be inserted into the bore of the die housing through



said inlet end with said radially extending fins engaging corresponding grooves in the inner surface of the die housing, each of said fins in corresponding grooves tapering in width toward said outlet end of said bores such that said die insert is wedged in said bore in operative position whereby extrusion passages are formed between the die housing and the die insert.

3,299,687
METALLURGY
George D. Kneip, Jr., Concord, Mass., and William F. Spain, Houston, Tex., assignors to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 15, 1964, Ser. No. 396,501
2 Claims. (Cl. 72—278)

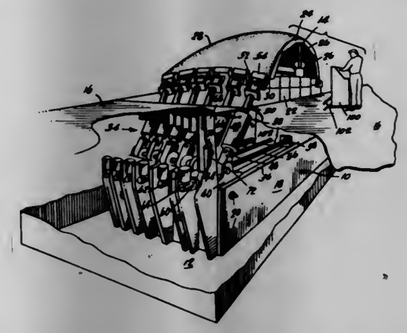


1. A method of cold drawing wire of an alloy comprising, by weight, from about 25 to 33% zirconium, the sum total of oxygen, nitrogen, carbon and hydrogen ranging between about 0.03 and 0.05%, at least 50% of said sum total being oxygen, and the balance niobium, said wire having a diameter of between about 150 and 350 mils, which comprises cold drawing said alloy wire through a plurality of dies to reduce the diameter thereof to between about 70 and 115 mils, the area of said wire on passing through each of said dies being reduced between about 15 and 19%, and thereafter cold drawing said alloy wire through another plurality of dies to reduce the diameter thereof below about 15 mils, the reduction taken in the area of said alloy wire on passing through these dies being gradually decreased to between about 5 and 9%.

3,299,688
SHEET METAL STRETCH FORMING APPARATUS AND METHOD
Landon R. Gray, 24701 Crenshaw Blvd., Torrance, Calif. 90505
Filed June 15, 1964, Ser. No. 374,944
8 Claims. (Cl. 72—296)

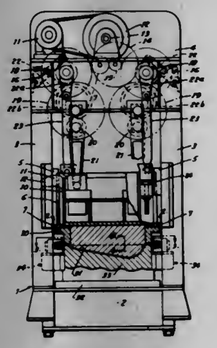
1. Apparatus for stretch forming a sheet metal blank to a concavo-convex shape, comprising: an elongate base; a die mounted on an intermediate portion of said base and having an upwardly directed convex forming face; a stretching complex mounted on each end portion of said base at opposed sides of said die and adapted to grip opposed marginal edges of a metal blank to stretch and form it on the forming face of said die; each complex including a plurality of discrete, independent, elongate stretch units; each stretch unit including an independent

anchor, a jack device pivotally connected at one end to said anchor for vertical and horizontal swinging, and a gripper pivotally connected to the other end of the jack device for rotation and lateral swinging and provided with a jaw to grip a portion of the margin of a metal blank; a plurality of elongate, substantially parallel track means at each end of said base and extending generally longitudinally of the base; said anchors having portions slidably interengaging with said track means; and sep-



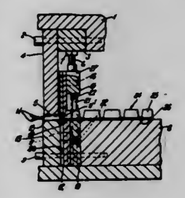
arate servo actuators carried by the base and connected to respective anchors to independently move them longitudinally on said tracks toward and away from said die to provide varied predetermined settings of the stretch units with respect to each other and to the die and blank; the jack devices of the various stretch units being individually operable to control their total retraction and the consequent percentage of elongation of various portions of the blank in accordance with a predetermined pattern.

3,299,689
METHOD AND APPARATUS FOR COMBINED STRETCH FORMING AND DIE DRAWING
Stanley M. Dolney, Parma, and Robert A. Mackenzie, Chagrin Falls, Ohio, assignors to The Cyril Bath Company, Cleveland, Ohio, a corporation of Ohio
Filed May 18, 1964, Ser. No. 368,014
18 Claims. (Cl. 72—297)



1. In a combined stretch forming and die drawing apparatus,
a ram member,
a bed member,
power means for moving the members relatively toward and away from each other,
complementary male and female drawing dies carried by the members, respectively, for movement thereby to closed and open positions, for drawing sheet metal stock therebetween upon closure,
power operated stretch forming means including stock gripping heads at two opposite sides of the path of the dies for gripping two opposite margins of the stock and for stretching the stock endwise prior to movement of the dies to closed position,
power driven restraining means at the other two opposite limits of the die path and operable, independently of the dies and stretch forming means, after the stretching operation and prior to said movement of the dies to closed position for gripping opposite faces of the stock at the lateral margins and for holding the margins gripped with predetermined holding pressure, during movement of the dies to closed position, for controlling the lateral draw in of the stock by the dies during die closure.

3,299,690
CRIMPING PRESSES FOR CRIMPING CONNECTOR ELEMENTS ONTO CONDUCTOR MEANS AND THE METHOD THEREFOR
Jean-Bernard Guerout, Chatou, and Maurice Lafond, Puteaux, France, assignors to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 31, 1964, Ser. No. 356,274
Claims priority, application France, Apr. 1, 1963, 929,950
16 Claims. (Cl. 72—330)

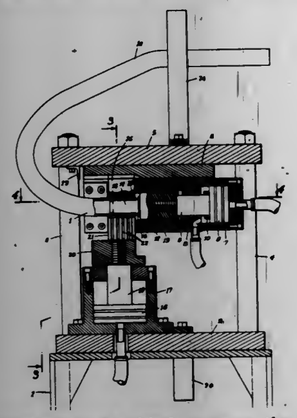


1. A method of crimping connectors of a strip of electrical connectors to wires, each connector comprising a conductor means receiving crimping ferrule and being joined to the next adjacent connector of the strip by a metal slug extending directly from the crimping ferrule, the method comprising the steps of advancing the strip towards a crimping anvil to locate the crimping ferrule of the leading connector of the strip upon the anvil, inserting an electrical conductor means into the crimping ferrule of the leading connector, bringing a movable crimping die into engagement with the crimping ferrule of the leading connector to crimp the ferrule to the conductor means, moving a laminar shear blade in the same sense as the crimping die and in parallel adjacent relationship thereto with a surface of said shear blade facing a surface of said crimping die to shear the metal slug from between the leading and the next adjacent connector of the strip, and effecting relative movement between the shear blade and the crimping die to eject particulate material produced by the shearing operation from between the crimping die and the shear blade.

3,299,691
SWITCH ARM GROOVING AND FLARING MACHINE
John G. Pahl, 1624 E. Alpine Ave., Stockton, Calif. 95204, and Emil F. Pahl, 1025 Edan Ave., Stockton, Calif. 95207
Filed Dec. 8, 1964, Ser. No. 416,788
10 Claims. (Cl. 72—464)

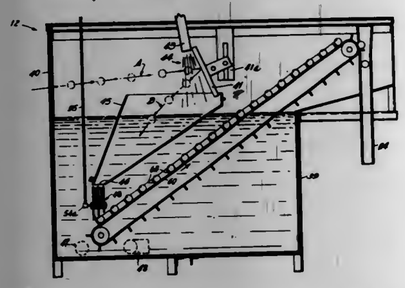
1. A machine, for tangentially grooving a tubular arm-end of a switch arm, comprising supporting and locating means for such arm-end, grooving chisels disposed in

parallel relation on opposite sides of the supported arm-end tangential thereto and normally spaced therefrom, and



means connected to the chisels to move the same tangentially of the arm-end into and out of groove-cutting relation with the outer face of said arm-end.

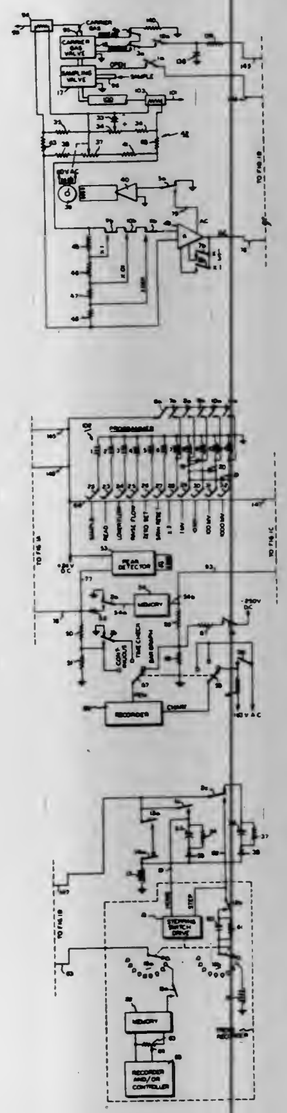
3,299,692
VELOCITY MEASURING AND SEGREGATING DEVICE FOR PROPELLED ARTICLES
Theodore C. Mizejewski, Springfield, Mass., assignor to A. G. Spalding & Bros., Inc., Chicopee, Mass., a corporation of Delaware
Filed Mar. 19, 1964, Ser. No. 353,104
8 Claims. (Cl. 73—13)



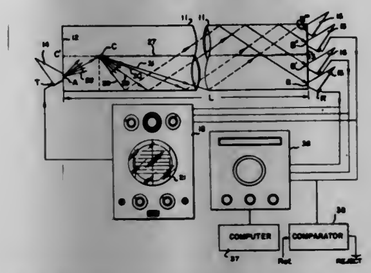
4. In a golf ball testing device, means for striking a ball with a predetermined force to propel the ball through a predetermined path to a receiver unit, and velocity measuring means disposed in said path to measure the velocity of the ball, said receiver unit having a downwardly and rearwardly inclined rebound plate against which the propelled balls impinge and rebound and a stream of water flowing downwardly across the path of the ball to intercept the ball prior to its contact with said plate to reduce the velocity thereof, said stream also being in position to engage and carry the rebound ball in the direction of rebound.

3,299,693
GAS CHROMATOGRAPHIC ANALYSIS CONTROL APPARATUS
Richard Kieselbach, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 4, 1963, Ser. No. 327,987
4 Claims. (Cl. 73—23.1)

1. A control apparatus for a chromatographic analyzer provided with means for regulating elution rates comprising, in combination, an analysis programming device effectuating the sample chromatographic analysis cycle in progression from sample input through elution stripping of segregated components, an electrical read-out circuit responsive to the column effluent concentration detector of said chromatographic analyzer having, in series connection with said concentration detector, a signal span selection network, a voltage amplifier, a peak detector and a peak waveform recorder parallel-connected with said peak detector, and means responsive to said peak detector superposing application by said programming device of a programmed corrective action regulating the rate of said elution stripping to maintain disposition of a chosen analysis peak as time-synchronizing reference within predetermined time bounds with respect to the operational cycle of said electrical read-out circuit.

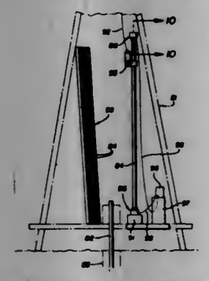


3,299,694
METHOD AND APPARATUS FOR DETECTING FLAWS USING ULTRASONIC HELICAL WAVES
Ben Wade Oakes Dickinson III, 3290 Jackson St., San Francisco, Calif. 94118
Filed Mar. 26, 1963, Ser. No. 268,091
22 Claims. (Cl. 73—67.5)



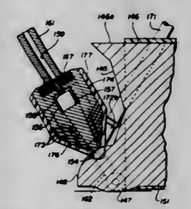
1. In a method for investigating flaws in a member, introducing at least one ultrasonic wave train at a predetermined group velocity into the member, a portion of the wave train being deflected by a flaw to provide at least two deflected wave trains travelling in directions differing from the direction in which the ultrasonic wave train is introduced into the member, measuring the difference in time of travel of the two deflected wave trains to predetermined points, and determining at least one of the coordinates of the flaw utilizing said differences in time.

3,299,695
ULTRASONIC TESTING APPARATUS
Ben Wade Oakes Dickinson III, 3290 Jackson St., San Francisco, Calif. 94118
Filed Mar. 26, 1963, Ser. No. 268,204
3 Claims. (Cl. 73—67.5)



1. In apparatus for the ultrasonic non-destructive testing of lengths of pipe having accessible ends to determine the existence of flaws therein, first and second wave director assemblies adapted for engaging opposite ends of the pipe, each of said wave director assemblies including a plurality of wave directors, each of said wave directors comprising a body having an output surface adapted to engage the end of the pipe and an input surface spaced from the output surface, the body of each of said wave directors having an attenuating portion adjoining the region between the input and output surfaces, a transducer for each wave director, each of the transducers mounted to pass ultrasonic wave trains through the body of the wave director and through the input surface, the wave directors being further constructed so that each wave director transmits or receives ultrasonic wave trains at a substantial angle to the output surface, each of said first and second wave director assemblies having means for mounting the wave directors in an array in which the output surfaces lie facing in a single direction and are adapted to conform to the shape of the end of the pipe, the wave directors in the array being arranged so that the output surfaces thereof are spaced apart and therefore adapted to engage spaced apart portions about the end of the pipe, the wave directors within each array being similarly positioned with respect to the wall of the pipe, the tangent to the wall of the pipe being taken as a reference, the wave directors of one assembly transmitting or receiving ultrasonic wave trains through the pipe in helical direction opposite to that of the other assembly, means for energizing the transducers on one of said assemblies for generating ultrasonic wave trains which are introduced into the pipe and travel in helical paths, flaws in the pipe reflecting some wave trains into an opposite direction and therefore receivable by one of the wave directors of said other wave director assembly, means for providing an indication when any of said other wave directors receive such reflected helical wave trains.

3,299,696
APPARATUS FOR GENERATING, DIRECTING AND RECEIVING ULTRASONIC WAVE TRAINS
Ben Wade Oakes Dickinson III, 3290 Jackson St., San Francisco, Calif. 94118
Filed Apr. 5, 1965, Ser. No. 445,503
27 Claims. (Cl. 73—71.5)

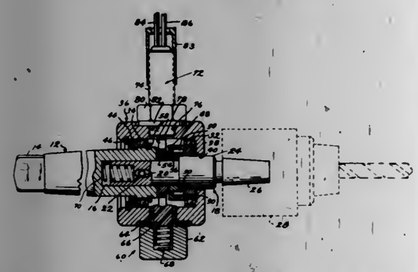


1. In an ultrasonic wave director for use in the non-destructive testing of objects utilizing an ultrasonic generator, a body formed of material capable of carrying ultrasonic wave trains, said body having an input surface for ultrasonic communication with an ultrasonic wave generator and having an output surface adapted to be placed in communication with the test object for transmitting and receiving ultrasonic wave trains therefrom, the region of said body between the input and output surfaces defining ultrasound paths through said body, the portions of said body adjacent at least one side of said paths being provided with a plurality of spaced slots, said slots making a substantial angle to said paths, said output surface having a surface area generally commensurate with the area of contact between the ultrasonic generator and the input surface, said input surface, said output surface and said path being in general alignment and cooperating to direct ultrasonic wave trains from said input surface through the body and to and from said output surface, said body further including a portion adjacent said paths for attenuating and delaying received ultrasonic wave trains which travel in directions other than along said paths.

26. In an ultrasonic wave director assembly for non-destructive testing of objects using an ultrasonic transducer, a body formed of material capable of carrying ultrasonic wave trains, said body having an output surface adapted to be placed in ultrasonic communication with the test objection for transmitting and receiving ultrasonic waves therefrom, the body having a curved input surface, said input surface having a radius of curvature intersecting the output surface, the region of said body between the input and output surfaces defining ultrasound paths through said body, said body further including a portion adjacent said paths for attenuating and delaying received ultrasonic wave trains which travel in directions other than along said paths, and a movable

transducer holder mounted on said body, said movable transducer holder including a surface in intimate contact with the input surface of said body and including a second surface for receiving ultrasonic wave trains from a transducer, said second surface being spaced apart from said surface in intimate contact with the transmit input surface of the body, means for pivotally mounting said movable transducer holder so that the holder is capable of being moved along the input surface while maintaining intimate contact therewith, power means carried by the body, and means connected to said transducer holder at points lying on a line passing through the area of contact between the transducer holder and the input surface of the body for transmitting forces supplied by said power means to said transducer holder for moving the same.

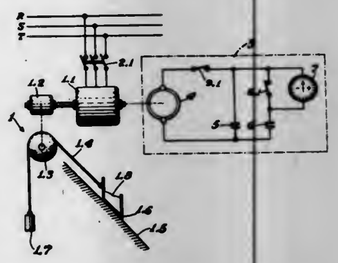
3,299,697
TOOL CONDITION DETECTOR
Russell W. Sparling, West Warwick, R.I., assignor to Taco, Inc., Cranston, R.I., a corporation of New York
Filed Sept. 20, 1963, Ser. No. 310,220
12 Claims. (Cl. 73—104)



2. A detector for detecting the condition of a rotary cutting tool comprising a first member adapted to be mounted on a machine tool for rotation and axial advancement thereby, a second tool supporting member mounted on said first member for rotation therewith and limited axial movement relative thereto, a rotatable element rotatably mounted on one of said members for rotation relative thereto through 360 degrees, clutch means on said members for engaging said rotatable element when the members are urged axially toward one another in response to a predetermined axial reactive force on the cutting tool so as to cause said element to rotate with said members, and sensing means for sensing rotation of said rotatable element.

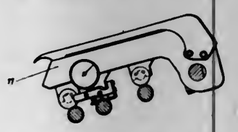
3,299,698
APPARATUS FOR MEASURING THE LOAD TORQUE ON DRIVE SYSTEMS, ESPECIALLY ON CONVEYING SYSTEMS
Gustav Spiess, Geissmattstr. 21, and Anton Rufli, Wesemlinstr. 69, both of Lucerne, Switzerland
Filed Oct. 16, 1963, Ser. No. 316,691
Claims priority, application Switzerland, Oct. 18, 1962, 12,331/62
2 Claims. (Cl. 73—136)

1. An apparatus for measuring the torque of a load on a shaft comprising, in combination:
(a) drive means for rotating said shaft while connected to said load;
(b) shut-off means for deenergizing said drive means; and
(c) measuring means for measuring the rate of speed change of said shaft in response to said deenergizing; said measuring means including
(1) tachometer means connected to said shaft for generating a voltage proportional to the rotary speed of the shaft;
(2) two capacitors;
(3) switch means for respectively connecting said



capacitors to said tachometer for predetermined periods at a predetermined interval; and
(4) indicator means for indicating the difference in the charges of said capacitors.

3,299,699
DEVICE FOR MEASURING THE LOAD ON THE PRESSURE ROLLERS OF A DRAWING MECHANISM
Hans Stahlecker, Sussen, Wurttemberg, and Sigmund Kemmler, Geislingen an der Steige, Wurttemberg, Germany, assignors to Wilhelm Stahlecker G.m.b.H., Wurttemberg, Germany
Filed Dec. 21, 1964, Ser. No. 419,884
Claims priority, application Germany, Dec. 21, 1963, St 21,493
20 Claims. (Cl. 73—141)

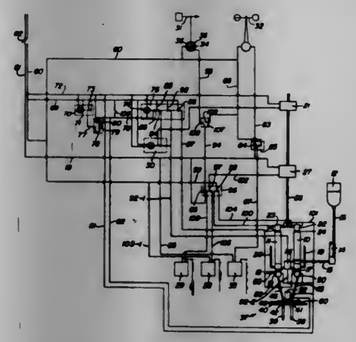


2. A device for measuring the pressures which are exerted by the supporting and loading arm of a drawing mechanism of a spinning or similar machine essentially upon the twin pressure rollers of said mechanism comprising a supporting rod adapted to be mounted on said supporting and loading arm in place of the pressure roller the pressure of which is to be measured, bracing means for bracing said supporting rod near both ends thereof on a fixed support, said bracing means near one end of said supporting rod forming the measuring side of said device, said last-named means comprising a member connected to said one end of said supporting rod and a resilient element supported on said member and adapted to be braced on said fixed support, and a measuring instrument supported on said member, said instrument comprising a movable measuring element, and a sensing member in driving connection therewith, said sensing member being movably responsive to the deflection of said resilient element.

3,299,700
DIRECTIONAL AIR SAMPLER
Allison B. Stout, Jr., Salt Lake County, Utah, assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Apr. 2, 1964, Ser. No. 356,823
6 Claims. (Cl. 73—170)

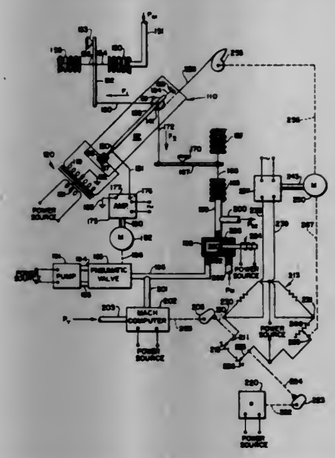
4. A directional air sampler, comprising a plurality of containers for liquid reagent adapted to absorb impurities from an air sample, each container having an air inlet and an air outlet; a wind direction indicator; means to selectively control flow of atmospheric air through reagent in the containers in accordance with the position

of the wind direction indicator; valve means for periodically discharging spent reagent from the containers; power circuit means responsive to completion of a sampling operation to operate said valve means to discharge said spent reagent and to prepare said containers for receiving additional reagent; and means for segregating from one another the periodic discharges of spent reagent, the segregating means including
a rack; a plurality of rows of sample tubes supported by said rack, one row being provided for each of



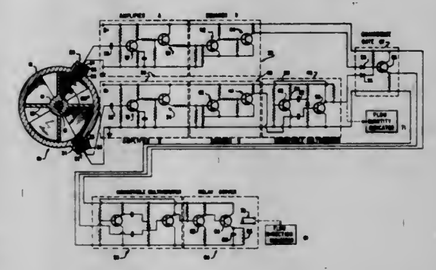
said containers; discharge means having a plurality of discharge ports corresponding in number with said rows of tubes, said discharge means being movable over said rows so that said discharge ports come into registry sequentially with respective sample tubes in respective rows; means for holding said discharge means in position during passage of reagent from the containers concerned into the sample tubes concerned; and means for periodically moving said discharge means to different sample tubes.

3,299,701
PRESSURE CONTROL APPARATUS
Theodore C. Scarlett, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 22, 1958, Ser. No. 782,194
19 Claims. (Cl. 73—178)



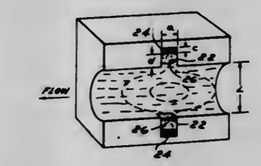
1. Apparatus of the class described comprising, in combination: mechanical force ratio apparatus having a pair of force inputs, a member whose angular position is indicative of the ratio of the inputs and means connected to said member to provide an electrical output which varies with change in the ratio of the inputs, a first of the inputs variable in accordance with a variable condition and the second of the inputs variable in accordance with a controlled condition; means responsive to the electrical output; condition controlling means operable by said last named means to control the controlled condition; and further means operable in accordance with the controlled condition to position the member.

3,299,702
FLUID FLOW DIRECTION INDICATOR
Jack R. Hulme, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Nov. 19, 1963, Ser. No. 324,799
7 Claims. (Cl. 73—188)



1. An apparatus for determining the direction of fluid flow in a conduit comprising:
(a) a vaned rotor axially disposed within a conduit,
(b) first and second sensing means mounted adjacent said rotor for producing first and second electrical signals, at a relative phase angle of between 10 and 170 electrical degrees in response to the passage of each rotor vane past said means, and
(c) coincidence means for determining the relative time precedence of each first and second signal, whereby one order of precedence indicates a first fluid flow direction and a reverse order of precedence indicates a second, reverse fluid flow direction.

3,299,703
ELECTROMAGNETIC FLOWMETER
Alex D. Colvin, Livonia, and Alan Warnick, Oak Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,584
7 Claims. (Cl. 73—194)

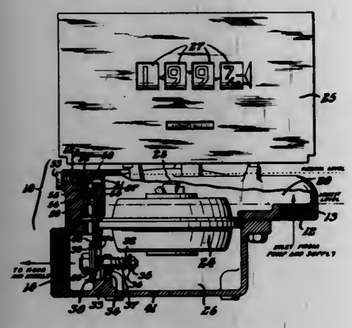


1. In a flowmeter, the combination comprising a conduit for carrying a moving conductive liquid, a magnetic means for applying a magnetic field across said conduit, a pair of contacts placed in recesses formed in the internal wall of said conduit and oriented at an angle to the magnetic field produced by said magnetic means and a wetting agent placed in said recesses between said contacts and said liquid.

3,299,704
APPARATUS TO PREVENT LIQUID METER FROM RECORDING GAS

Ronald M. Wilson, Ambler, Pa., assignor to William M. Wilson's Sons, Inc., Lansdale, Pa., a corporation of Pennsylvania

Filed Aug. 31, 1964, Ser. No. 393,042
4 Claims. (Cl. 73—200)



1. Apparatus for measuring the quantity of liquid flowing through a conduit and preventing false measuring of vapor, the combination comprising

a casing having an intake opening and a discharge opening interconnected within a liquid flow conduit for flow of liquid to be measured,

an upper separation chamber and a lower discharge chamber formed within the casing and separated by a liquid displacement meter so that liquid flowing into the casing passes first into the separation chamber, then through the meter so as to be measured and lastly into the discharge chamber,

a pressure responsive valve located between the discharge chamber and the discharge opening of the casing, said valve being biased toward the closed position to prevent a flow of liquid from the discharge chamber upon a reduction in pressure in the liquid in the discharge chamber below a predetermined flow pressure,

a by-pass conduit extending from a point located at substantially the uppermost level of said separation chamber to a point adjacent the discharge opening of the casing downstream of the pressure responsive valve, said conduit allowing a predetermined quantity of liquid to pass therethrough to accurately calibrate the meter when only liquid is passing through the casing and when vapor is present in the uppermost part of the separation chamber, allowing the vapor to flow out of the separation chamber so as to reduce the pressure in both chambers, thereby causing the pressure responsive valve to close preventing a flow of liquid or vapor through the meter and thereby preventing the meter from recording while said pressure is thus reduced.

3,299,705
TEMPERATURE COMPENSATOR

Robert L. Shallenberg, Wheaton, and Otto Handwerk, Libertyville, Ill., assignors to Liquid Controls Corporation, North Chicago, Ill., a corporation of Illinois

Filed Sept. 27, 1963, Ser. No. 312,080
6 Claims. (Cl. 73—233)

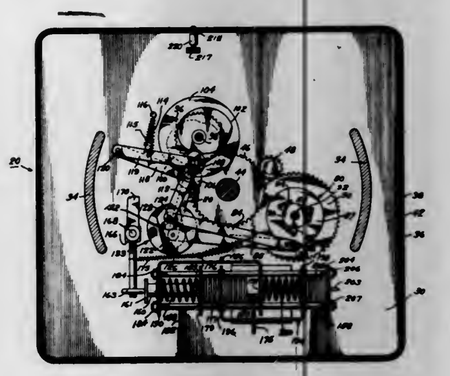
1. A temperature coupling device for varying the velocity of rotation of an output shaft by an amount continuously dependent on the temperature of a fluid being metered, comprising

an input means connected to be driven at an angular velocity dependent on the volume of the fluid being metered,

one way clutch means having a plurality of inputs and an output shaft,

a plurality of reciprocable linkage means respectively connected to said plurality of inputs,

means drivingly connected between said linkage means and said input means for alternately reciprocating said linkage means such that the driving stroke of



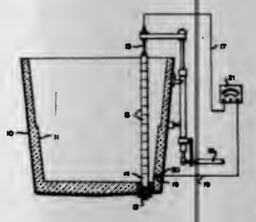
each of said linkage means overlaps the driving stroke of another whereby one or more of said linkage means is at all times moving in the driving direction such that said output shaft is continuously driven by said linkages, and

temperature responsive means for varying the length of the said stroke of said linkages to control the velocity of rotation of said output shaft.

3,299,706
APPARATUS FOR MEASURING MOLTEN METAL LEVELS IN LADLES

Gilbert R. Bailey, Ligonier, and Alex Simkovich, Latrobe, Pa., assignors to Latrobe Steel Company, a corporation of Pennsylvania

Filed Apr. 3, 1964, Ser. No. 357,117
1 Claim. (Cl. 73—304)

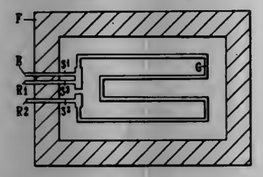


In a vessel for holding and transferring molten metal covered with slag or other material having a different conductivity than metal and having a discharge nozzle and stopper rod for controlling the flow of metal through the nozzle, the improvement comprising a conductor member situated in the ladle wall at a predetermined level adjacent the discharge nozzle, a conductor stopper head on the stopper rod, an electrical circuit connecting said conductive stopper head and said conductor member, means for applying an electrical potential to said circuit, and signal means indicating a change in the electrical characteristics of said circuit.

3,299,707
METHOD OF MEASURING TEMPERATURES

Yvon-Pol Noel, Pery, Trooz, Belgium, assignor to Centre National de Recherches Metallurgiques, Liege, Belgium

Filed May 25, 1964, Ser. No. 369,787
Claims priority, application Belgium, May 31, 1963, 633,157
1 Claim. (Cl. 73—339)

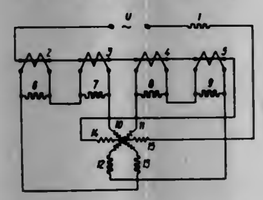


An apparatus for determining temperature comprising material whose temperature is to be measured and an enclosure containing the material; an elongated guide in contact with the material whose temperature is to be measured; three connecting pieces of which two are connected with one end of the guide and pass through the enclosure so as to form a U-shape while the other connecting piece is connected with the other end of the guide and passes through the enclosure; and an emitter connected with the outer end of one of the connecting pieces forming of the U-shape; and two sound receivers connected with the two outer ends of the other two connecting pieces.

3,299,708
DEVICE FOR MEASURING THE RATIO OF DROPS IN NON-ELECTRIC VALUES, USING RESISTANCE PICKUPS

Vladimir Ivanovich Lakh, Kozaka Str. 16b, Apt. 12; Bogdan Ivanovich Stadnyk, Turgeneva Str. 15, Apt. 1; and Ivan Filippovich Paljanytsa, Zavodskaja Str. 40, Apt. 11; all of L'vov, U.S.S.R.

Filed Mar. 4, 1964, Ser. No. 349,343
6 Claims. (Cl. 73—342)



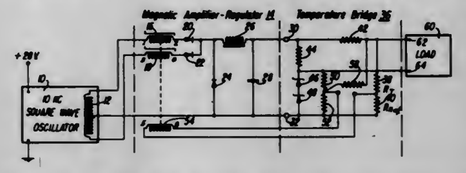
1. Apparatus for measuring and indicating the ratio of two differences between non-electric quantities comprising a plurality of current transformers including primaries coupled in series and secondaries interconnected in series-opposition in pairs, an A.C. source connected in series with said primaries, a plurality of resistance type transducers measuring a non-electric quantity and connected respectively in parallel with each of the secondaries of said transformers to produce output voltage signals proportional respectively one to each of the two non-electric differences, and means responsive to the ratio of said voltage signals.

3,299,709
RESISTANCE THERMOMETER SYSTEM

George A. O'Sullivan, New Fairfield, Conn., assignor to Consolidated Controls Corporation, Bethel, Conn., a corporation of New Mexico

Filed Aug. 27, 1963, Ser. No. 304,868
11 Claims. (Cl. 73—362)

8. A resistance thermometer system comprising a first resistance element having a resistivity which varies with temperature over a predetermined range, a second resistance element having the same resistance as said first element at a predetermined temperature and having a substantially zero temperature coefficient of resistivity, a variable voltage source, a fixed voltage source, means connecting said first and second resistance elements in series across said variable voltage source, third and fourth resistance elements connected across said fixed voltage source and each having a substantially zero temperature coefficient of resistivity, means for comparing the voltage

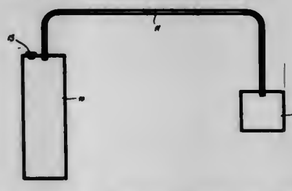


produced across said second and fourth resistance elements and for employing any difference therebetween to control said variable voltage source to maintaitn the current through said second element substantially constant, means for supplying a current to said fourth resistance element proportional to the voltage developed across the series combination of said first and second elements, a load circuit, and means connecting said load circuit between said first and third resistance elements.

3,299,710
TEMPERATURE SENSING SYSTEM

Jude A. Paull, Florissant, and Richard Willner, St. Louis, Mo., assignors to Alco Valve Company, St. Louis, Mo., a corporation of Missouri

Continuation of application Ser. No. 856,129, Nov. 30, 1959. This application Mar. 4, 1963, Ser. No. 263,382
6 Claims. (Cl. 73—368.2)



5. In a temperature sensing system including a bulb interconnected by a tube with a chamber having pressure responsive means in the chamber, the method of sizing the bulb, tube, and chamber so that the volume of the bulb is greater than the combined volumes of the tube and chamber, locating the bulb and chamber at places where sometimes the temperature of the chamber is lower than the temperature at the bulb, charging the system with a temperature responsive volatile fluid, the maximum volume of liquid phase of the charge being less than the combined volumes of the chamber and tube, and preventing pumping of all the expandable fluid from the bulb when the temperature at the chamber is below the temperature at the bulb.

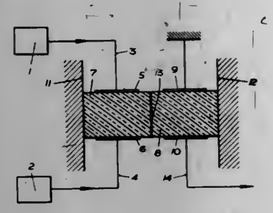
3,299,711
METHOD FOR THE DIRECT MEASUREMENT OF PRESSURE DIFFERENCES

Rudolf Hatschek, Vienna, Austria, assignor to Hans List, Graz, Austria

Filed Aug. 20, 1963, Ser. No. 303,296
Claims priority, application Austria, Aug. 24, 1962, A 6,817/62
4 Claims. (Cl. 73—398)

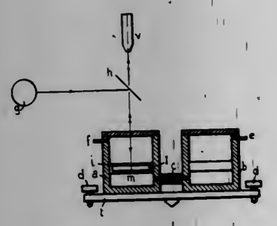
1. A method for directly measuring pressure differences, wherein piezoelectric transducers are provided, comprising, measuring the individual pressures by two

homopolar piezoelectric transducers transmitting output signals corresponding to the individual pressures, transforming the output signals of the said transducers by elec-



trostrictive means into mechanical impulses corresponding to the pressure difference, transforming the said impulses into an electric signal corresponding to the pressure difference.

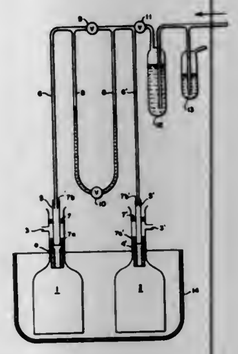
3,299,712
DIFFERENTIAL PRESSURE GAUGE DEVICE
Jean L. Peube, 6 Villa Desire Filleaud, Clamart, France
Filed June 29, 1964, Ser. No. 378,543
Claims priority, application France, July 8, 1963, Patent 1,362,334
9 Claims. (Cl. 73—401)



1. A differential pressure indicating device comprising a base; a pair of tanks on the base; means interconnecting the tanks near the bottom thereof; means for applying different pressures to the respective tanks near the top thereof; a body of liquid partly filling both tanks; a strip secured across one of said tanks having a surface located just below the surface of said liquid and slightly inclined with respect thereto to define a thin film of variable thickness with respect to the surface of the liquid; means creating a set of interference fringes in said thin film; and means indicating a shift in said fringes as a measure of the variation in one of said pressures.

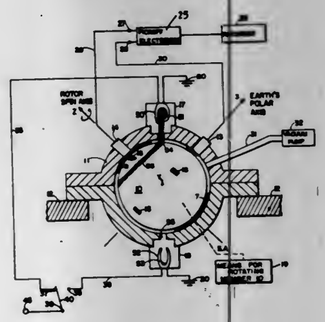
3,299,713
METHOD AND APPARATUS FOR DETERMINING THE SURFACE AREA OF FINELY DIVIDED SUBSTANCES BY GAS ADSORPTION
Robert Haul, Bonn, and Gerd Dümbgen, Ludwigshafen, Friesenheim, Germany, assignors to Ströhlein & Co., Dusseldorf, Germany, a corporation of Germany
Filed June 22, 1964, Ser. No. 376,707
3 Claims. (Cl. 73—432)

1. Apparatus for the determination of the surface area of finely divided materials by gas adsorption comprising two vessels of substantially the same volume, one of which containing the specimen the other serving for comparative purposes, said vessels being provided with sealing means and being connected to a tube system by means of respective capillaries closely fitting into the neck portions of each of said vessels, said tube system provided with a valve for separating it from the ambient atmosphere and comprising a differential manometer connected in a symmetrical arrangement between said two vessels, said differential manometer comprising a U-shaped tube con-



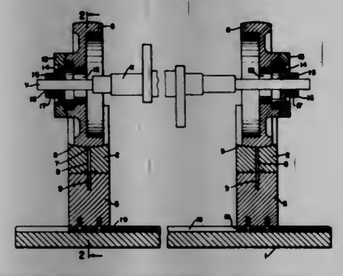
taining a liquid of sufficient low vapour pressure, a conduit connected between the two legs of said U-shaped tube above the level of the liquid, and valve means in said conduit for alternatively blocking and providing communication between said two legs and said vessels.

3,299,714
BALANCING APPARATUS
Howard J. Thompson, Stillwater, and Harold D. West, St. Louis Park, Minn., assignors to Honeywell Inc., a corporation of Delaware
Filed Jan. 15, 1964, Ser. No. 337,861
5 Claims. (Cl. 73—468)



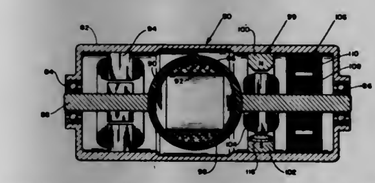
1. An apparatus for fine-balancing the inertial member for a gyroscope, said apparatus comprising:
a housing enclosing a hermetically sealed chamber;
a vacuum pump attached to said housing and adapted to keep said chamber at a high vacuum level;
support means within said housing;
a substantially spherically shaped member, having an upper and a lower hemisphere positioned on said support means within said housing for rotation about a spin axis passing through the central point of each of said hemispheres;
means for rotating said member about said spin axis;
means for measuring the axial mass unbalance of said member;
a source of electric potential;
a first vapor deposition element mounted adjacent said housing and being capable when energized of depositing metallic vapor on said upper hemisphere of said member;
a second vapor deposition element mounted adjacent said housing and being capable when energized of depositing metallic vapor on said lower hemisphere of said member; and
means connecting said first and said second vapor deposition elements to receive signals from said electric potential source when said measuring means indicates mass unbalance, energizing said first element when said measuring means indicates a deficiency of mass in said upper hemisphere and energizing said second element when said measuring means indicates a deficiency of mass in said lower hemisphere.

3,299,715
STATIC BALANCING APPARATUS
Raldo E. Shipman, Sunbury, Pa., assignor to Forgflo Corporation, Sunbury, Pa., a corporation of Pennsylvania
Filed Sept. 12, 1963, Ser. No. 308,549
6 Claims. (Cl. 73—480)



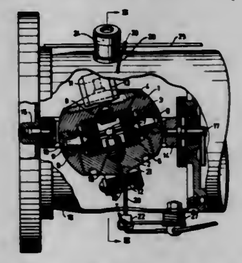
1. Static balancing apparatus comprising a pair of horizontally spaced supports, each support having at its upper end a concave seat formed with a spherical inner surface, a rotatable member associated with each concave seat, said member having a peripheral surface in the form of a spherical zone symmetrically disposed about a central transverse plane, said spherical zone matching and resting directly on the spherical inner surface of said seat throughout its entire area, said rotatable members being mounted to rotate about a common axis, means concentrically carried by said rotatable members for fixedly receiving the ends of a shaft extending between said members and on which the mass to be balanced is mounted, and means for introducing a film of air under pressure between each of said pairs of matching spherical surfaces, thus providing fluid bearings in which said rotatable members may turn.

3,299,716
FLUID ROTOR GYRO
John C. Stiles, Morristown, and Walter M. Carow, West Orange, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Sept. 18, 1962, Ser. No. 224,458
11 Claims. (Cl. 74—5.6)



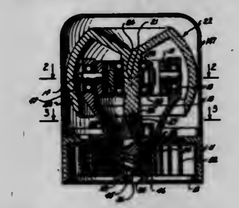
1. A gyroscope comprising a rotatable body having a cavity therein partly filled with a fluid, said fluid forming an annulus within said cavity when said body is rotated, said annulus having axially-spaced, circular, circumferential edges defined by the junction of the internal and external surfaces of the annulus, and electrical pickoff means coacting with the circumferential edges of the annulus to indicate displacement between the spin axis of said body and the spin axis of said annulus.

3,299,717
GYROSCOPIC DEVICE
Nils Ingvar Emanuel Gustafsson and Axel Odelberg, Karlskoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a Swedish company
Filed Sept. 18, 1964, Ser. No. 397,516
Claims priority, application Sweden, Oct. 11, 1963, 11,186/63
4 Claims. (Cl. 74—5.7)



1. In a device for guiding missiles and similar devices, a gyroscope having a rotor, means supporting said rotor for rotation about a spin axis, pivot means pivotally supporting said gyroscope, a pyrotechnical charge for starting rotation of said rotor about said spin axis, an electric igniter for igniting said charge, wire conductors for supplying ignition current to said igniter, a wire holder mounted spaced apart from the spin axis support, said pivot means having a bore therethrough and said wires being extended through said bore to said wire holder, whereby said wire conductors are broken between said bore of the spin axis support and said wire holder when the gyroscope begins to rotate about said spin axis, said holder being movable from said spaced apart first position into a second position farther away from the pivot means, means urging the wire holder into said second position, locking means releasably retaining the holder in the first position, and release means for releasing said locking means to free said holder for movement into said second position whereby the holder withdraws broken-off wire portions held by it from the rotational path of the gyroscope.

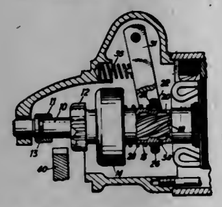
3,299,718
GYROSCOPE
George F. East, Whittier, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed July 11, 1963, Ser. No. 294,444
8 Claims. (Cl. 74—5.12)



1. A gyroscope device comprising a rotor having a first coupling part, means supporting said rotor for rotation about a spin axis and for movement about mutually

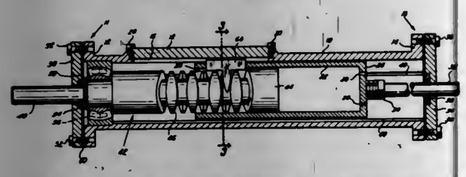
perpendicular axes, a stationary nut member, a screw member threaded in said nut member, said screw member having a second coupling part initially coupled to said first coupling part, a sleeve over said screw member, spring means for rotating said sleeve about the axis of said screw member, means drivingly connecting said sleeve to said screw member, said last mentioned means preventing relative rotation and permitting axial movement of said screw member relative to said sleeve, and means preventing axial movement of said sleeve relative to said nut member, said screw member being effective upon rotation thereof by said sleeve to subsequently uncouple said coupling parts.

3,299,719
STARTER DRIVE FOR INTERNAL COMBUSTION ENGINE
Pierre Toulier, Ville d'Avray, France, assignor to Societe Anonyme D.B.A., Paris, France, a company of France
Filed Apr. 6, 1965, Ser. No. 446,028
Claims priority, application France, Apr. 8, 1964, 970,204
12 Claims. (Cl. 74—7)



1. A starter drive for starting an internal combustion engine comprising a driving motor having a shaft, and a body, a sleeve member threaded on said shaft, a driving pinion adapted to mesh with an engine flywheel, a unidirectional clutch arranged to transmit torque from said sleeve member to said pinion, resilient returning means biasing said pinion, clutch and sleeve member axially away from said toothed wheel, friction means acting upon said sleeve member to oppose rotation of said sleeve member with said shaft, the torque applied by said friction means to said sleeve member being large enough to cause said pinion to be maintained in meshed engagement with said toothed wheel even when said clutch is in its de-clutched state.

3,299,720
PISTON PUMP WITH TRANSVERSE THREAD ACTUATOR
Henry Andrew Schudalla, Sr., and Henry Andrew Schudalla, Jr., Shreveport, La., assignors, by mesne assignments, to Mid-Continent Steel Casting Corporation, a corporation of Louisiana
Filed July 20, 1964, Ser. No. 383,756
11 Claims. (Cl. 74—57)



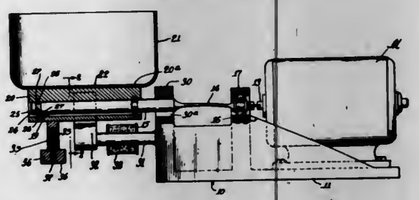
1. A piston pump mechanism for converting rotary motion into reciprocating motion, comprising:
a cylindrical housing having a drive end and a working end,
removable flange caps for each end of said housing, said housing provided with a slot intermediate said ends,
a removable cover over said slot,
a sleeve slidably journalled in said housing,
a piston rod carried by said sleeve and slidably extended through the cap on said working end,
said sleeve having an opening adapted to register with said slot,
a drive rod in said housing having one end rotatably journalled in said sleeve and the other end extended through the cap on said drive end for attachment to a source of power to impart a rotary motion thereto about its longitudinal axis,
transverse threads on said drive rod within said housing,
a cam follower disposed through said slot and said opening for tracking engagement with said transverse threads,
a head on said cam follower engageable with and slidable in said slot and adapted to impart reciprocal motion to said sleeve upon rotation of said drive rod; and
said cam follower also serving to prevent rotary motion of said sleeve.

3,299,721
WINDSHIELD WIPER DRIVE AND UNIVERSAL JOINT THEREFOR
Eugene R. Ziegler, Spencerport, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,487
2 Claims. (Cl. 74—75)



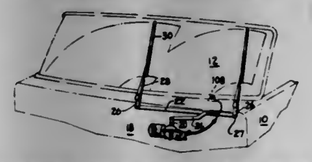
1. A universal joint connection for a windshield wiper linkage including, a first socket part of nonferrous metal having a hemispherical recess with an entrance opening, a second socket part of nonferrous metal having a hemispherical recess with an entrance opening and aligned with said first socket part to define a spherical recess, a ball stud having a ball end of a diameter larger than the diameter of said spherical recess in the socket parts and disposed therein, and engaging means integral to said first and second socket parts for attaching the socket parts to each other, said first and second socket parts resiliently engaging said ball stud to automatically compensate for wear in the universal joint.

3,299,722
MECHANICAL SONIC VIBRATION GENERATOR WITH FREQUENCY STEP-UP CHARACTERISTIC
Albert G. Bodine, Jr., Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif. 91406)
Filed Oct. 8, 1964, Ser. No. 402,474
7 Claims. (Cl. 74—87)



1. In a sonic vibration system, the combination of: an elastically vibratory system comprised of a resonator having a resonant frequency range and a portion free to vibrate in said resonant frequency range, and sonic vibration generating means for generating vibration in said system in said resonant frequency range comprised of a bearing means fixed to said free portion of said elastically vibratory resonator to vibrate therewith, an inertia rotor guided by said bearing means for turning in an orbital path in engagement with said bearing means, said inertia rotor being drivable around said path to vibrate said resonator at a frequency in the region of the resonant frequency, said inertia rotor having a bearing surface which rolls around a closed path defined by said bearing means so that the periodic force reaction of said inertia rotor in its orbit is delivered to said elastically vibratory resonator via said bearing means, the relative circumferential path dimensions of said bearing means and said bearing surface being different but of similar order of magnitude such that said inertia rotor describes more than one cycle around said bearing means while said inertia rotor turns once relative to its own axis and to roll around said bearing surface, and a rotating drive shaft means for rotating said rotor relative to its own axis, all in such manner that said rotating shaft means causes more than one revolution of said inertia rotor and a corresponding number of elastic vibration cycles in said elastically vibratory system for each revolution of said shaft means, and thereby accomplishing a step-up in frequency from said shaft means to said vibratory system, whereby said drive means experiences reduced angular reaction and enhanced rotational stability in relation to torque pulses transmitted by back reaction from said rotor..

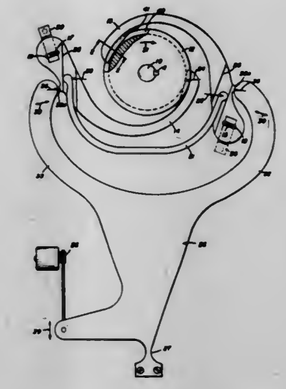
3,299,723
INTERMITTENT DWELL WINDSHIELD WIPER SYSTEM
Martin Bitzer, Kenmore, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed June 24, 1964, Ser. No. 377,596
5 Claims. (Cl. 74—125.5)



1. A windshield wiper power transmission assembly for converting rotary motion to intermittent rotary motion, having operator selectable dwell period durations and operator selectable continuous rotary motion output comprising a rotating wheel adapted to be driven by a source of rotary motion, an output shaft, a first clutch element fixed for rotation with said rotating wheel, a second clutch element engageable with said first clutch element fixed for rotation with said output shaft, clutch actuating means indexed by said rotating wheel for automatically effecting periodic disengagement of said first and second clutch elements and operator actuated, axially movable cam control means for selecting the duration of the period of disengagement of said first and second clutch elements.

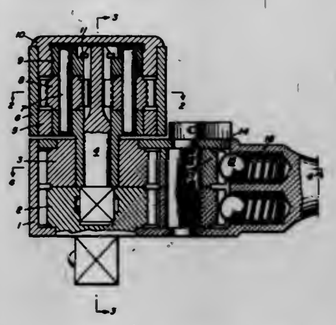
3,299,724
CONTINUOUS TENDENCY DRIVE ARRANGEMENT
Jasper S. Chandler, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 9, 1964, Ser. No. 402,809
8 Claims. (Cl. 74—143)

1. A tendency drive arrangement comprising:
a drive disk;
a pair of arcuate drive shoes each positioned to produce selective rolling action against said disk and to have one end of each engage a separate portion of the surface of said disk;
means for pivotably supporting said pair;
spring means coupled between said pair at points spaced from said pivot support means to bias said pair against said disk and in a given tangential direction relative thereto, thereby to tend to rotate said disk in said given direction;



a bifurcated rocker arm drivable to engage each one of said pair sequentially to counteract the spring bias respectively and to move said one end thereof to a new position on said disk to the extent said disk has rotated since a last engagement of said rocker arm on said one; and
means for driving said arm in a vibrating motion.

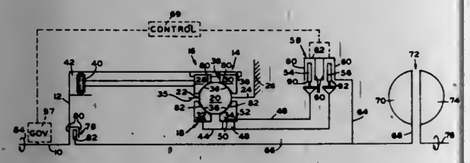
3,299,725
QUICK ACTING TOOL FOR THREADED FASTENERS
Vladislav Gewirc, Kiriat Ono, Israel (19339 Schaefer, Detroit, Mich. 48235); and Mosheh Shachter, 58 Blum, Holon, Israel
Filed Sept. 12, 1963, Ser. No. 309,374
1 Claim. (Cl. 74—157)



A wrench comprising an elongated handle having an opening at one end, two coaxial ratchet members mounted in said opening, ratchet pawls pivotally mounted in said elongated handle adjacent said ratchet members for engagement therewith, control means for selectively pivoting the ratchet pawls into engagement with the ratchet members; and a planetary transmission mounted coaxially with the ratchet members comprising a housing, a sun gear whose axis of rotation coincides with that of the ratchet members and which is operatively connected to one of said ratchet members, at least two rotatably

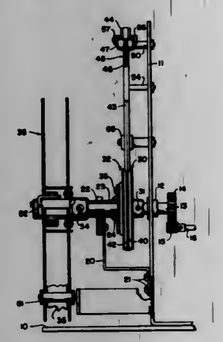
mounted planet-gears in meshing engagement with the sun gear and with an internal ring gear which is integral with said housing, and a planet carrier for mounting said planet-gears which is operatively connected to the other of said ratchet members.

3,299,726
INFINITELY VARIABLE SPEED TRANSMISSION
Thomas R. Stockton, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 22, 1964, Ser. No. 420,304
6 Claims. (Cl. 74—190.5)



1. A ball drive transmission comprising, drive and driven annular spaced races each having axially spaced and movable race portions, a radially adjustable rotatable idler ball member between and frictionally engaging said races, said ball member being movable radially upon axial relative movement of the spaced portions of said races to change the drive ratio through said transmission, means clamping said races and ball member together to transmit a drive therebetween, and means operably connected to said driven race for controlling the drive ratio of said transmission, said latter means including means mounting said inner race portions for relative rotation therebetween, and means responsive to a relative rotation between said portions for axially moving one of said portions to effect a change in the drive ratio through said transmission.

3,299,727
SPLIT PULLEY CLUTCH
Jerome L. De Boo, Barrington, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,274
7 Claims. (Cl. 74—192)



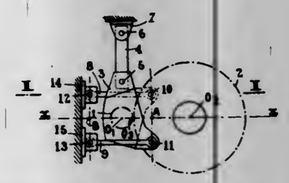
1. A clutch comprising:
rotatable input means,
a driving member axially fixed with respect to the input means and mounted for rotation by the input means;
a driven member axially fixed with respect to the driving member and coaxial therewith;
a belt movable to a position to couple the driven member to the driving member;
output means for rotation with the input means when the driven member is coupled to the driving member; and
feedback means responsive to a first predetermined condition of the output means for moving the belt into its coupling position thereby coupling the driving member to the driven member and causing the output means to rotate with the input means and responsive to a second predetermined condition of the output means to uncouple the driving member from the driven member.

3,299,728
OPEN-END POWER TRANSMISSION BELT
William A. Williams, 316 E. Wadsworth St., Philadelphia, Pa. 19119
Filed Sept. 18, 1964, Ser. No. 397,544
13 Claims. (Cl. 74—235)



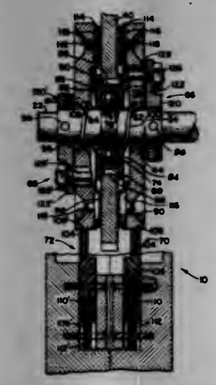
1. An open-end power transmission belt comprising a plurality of links each link comprising a plurality of pairs of flexible tension-transmitting strands, the strands of each pair being arranged divergently with respect to each other, a plurality of transversely extending retaining pins spaced longitudinally of said belt at uniform distances, the distances apart of said pins defining a pitch of said belt, and one of said pairs of strands starting at each of said pins and extending through more than one pitch of the belt, said strands having enlargements at the locations of said pins, said enlargements having transversely extending openings through which said respective pins extend, said openings being of smaller diameter than said pins whereby said enlargements are bound on said pins against articulation relative thereto, said strands being of relatively small cross section between said enlargements of said strands to promote flexure in between said enlargements in operation.

3,299,729
TRANSMISSION MECHANISMS
Francois Durand, 108 Blvd. Carnot, Le Vesinet, France
Filed Oct. 7, 1964, Ser. No. 402,133
Claims priority, application France, Oct. 11, 1963, 950,309
7 Claims. (Cl. 74—411)



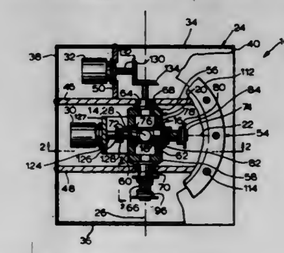
1. A mechanism for transmitting motion to a toothed gear having peripheral teeth and mounted on a fixed frame structure, which comprises, in combination, a driving pinion meshing with the teeth of said gear; a mounting separate from said fixed frame structure, said pinion being rotatably mounted in said mounting; an anchor rod connecting said mounting to a fixed point of said frame structure and adapted to hold said mounting in the tangential direction with respect to said gear, said rod having its ends pivotally attached to said fixed point and said mounting, respectively; a pair of bearing bars connecting said mounting to a pair of fixed points on said frame structure, said bars being disposed on either side of a plane containing the axis of said pinion and the axis of said gear, the ends of said bearing bars being pivoted respectively on said mounting and on the two corresponding points of said frame structure; the pivot points of said pair of bearing bars on said mounting being so disposed that the theoretical junction line between said two pivot points intersects the perpendicular common to said pinion axis and said gear axis, said perpendicular being substantially contained in the median plane of the teeth of said pinion and gear, the point of intersection of said two lines being disposed on the same side as the gear axis with respect to the meshing points of said pinion and gear teeth.

3,299,730
ROTARY DRIVE APPARATUS FOR REWIND MECHANISMS
Arthur Barsam, Sr., and Arthur Barsam, Jr., Los Angeles, Calif., assignors to Cinex Inc., a corporation of California
Filed June 22, 1964, Ser. No. 376,706
14 Claims. (Cl. 74—421)



13. A rewind mechanism, comprising:
a housing;
a drive shaft supported by said housing for rotary movement about its longitudinal axis;
a hand crank coupled to said drive shaft for rotating said drive shaft;
a driven shaft supported by said housing in a plane substantially parallel to said drive shaft for rotary movement about its longitudinal axis, said driven shaft being adapted to support a reel;
a drive gear supported by said drive shaft for substantially free rotary movement around said drive shaft;
a driven gear coupled for rotation with said driven shaft, said driven gear mating with said drive gear such that rotation of said drive gear rotates said driven gear and driven shaft;
a first drive member supported by said shaft adjacent one side of said drive gear;
a second drive member supported by said drive shaft adjacent an opposite side of said drive gear;
first cooperative means on said drive shaft and said first drive means for moving said first drive member along said drive shaft to engage said one side of said drive gear in response to rotary movement of said hand crank and drive shaft in one direction and for moving said first drive member away from said drive gear in response to rotary movement of said hand crank and drive shaft in an opposite direction such that rotary movement in said one direction is imparted to said drive gear when said first drive member engages said drive gear;
second cooperative means on said drive shaft for moving said second drive member along said drive shaft to engage said opposite side of said drive gear in response to rotary movement of said drive shaft in said opposite direction and for moving said second drive member away from said drive gear in response to rotary movement of said drive shaft in said one direction such that rotary movement in said opposite direction is imparted to said drive gear when said second drive member engages said drive gear;
friction means supported by said housing for inhibiting rotation of said first and second drive members;
and means supported by said drive shaft for limiting movement of said first and second drive members away from said drive gear.

3,299,731
GIMBAL-TYPE JOYSTICK
Howard Russell, Jr., Arcadia, Los Angeles, Calif., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Apr. 7, 1964, Ser. No. 357,868
3 Claims. (Cl. 74—471)

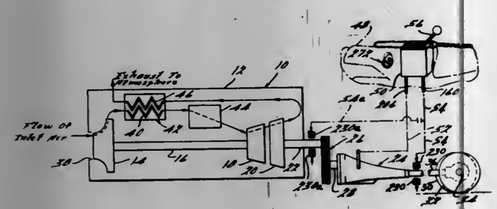


1. A joystick unit comprising:
a support structure;
an outer gimbal member journaled in said support structure for angular displacement about a first axis;
an inner gimbal member journaled in said outer gimbal member for angular displacement about a second axis orthogonal to said first axis;
a control lever rigidly projecting from said inner gimbal member along a third axis orthogonal to, and passing through the intersection of, said first and second axes;
an abutment member fixedly mounted with respect to said support structure;
centering spring means and a projection on said outer gimbal member coacting with said abutment member to bias the outer gimbal member resiliently to a first position of zero angular displacement about said first axis;
a second abutment member fixedly mounted with respect to said outer gimbal member; and
second centering spring means and a projection on said inner gimbal member coacting with said second abutment member to bias the inner gimbal member resiliently to a position of zero angular displacement about said second axis.

3,299,732
CONTROL LINKAGE ARRANGEMENT FOR TURBINE TRANSMISSION
Alan G. Loofbourrow, Bloomfield Hills, and James R. McCordic, Royal Oak, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,651
5 Claims. (Cl. 74—472)

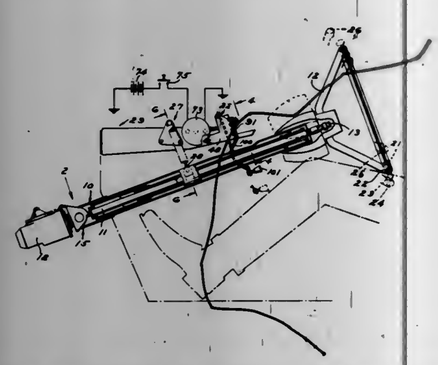
3. In a vehicle having a passenger compartment containing spaced side-by-side seats therein, ground contacting driving wheels, a multiple speed power transmission

having an output shaft operatively connected to said wheels, a gas turbine engine having a power turbine with an output shaft operatively connected to an input shaft of said transmission for providing driving power to said wheels, a console formed between said spaced seats and containing a manually operable gear shift control mechanism for said transmission, said mechanism comprising



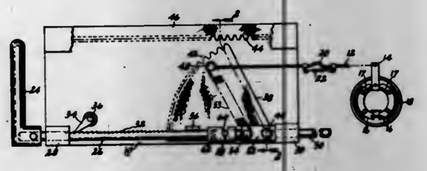
manually operable lever means for selecting any one of a plurality of transmission operating conditions including forward drive, reverse drive, idle and park, and a plurality of separate braking means actuated in response to said lever means being placed in said park condition for respectively retarding rotation of said power turbine and said transmission output shaft.

3,299,733
VEHICULAR MOVABLE STEERING COLUMN
Jerome J. Felts, Birmingham, and Alfred J. Gott, Belleville, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Continuation of application Ser. No. 224,738, Sept. 19, 1962. This application Feb. 12, 1965, Ser. No. 438,165
15 Claims. (Cl. 74—493)



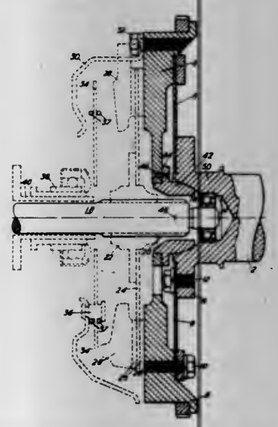
1. In a motor vehicle, a support structure, a steering column, means supporting said steering column on said support structure for movement among a plurality of operative positions and to a displaced position, selector means for locating said steering column in one of said plurality of operative positions upon manual movement of said steering column, latch means for releasably latching said steering column in said one of said plurality of operative positions, means coupled to said support structure and said steering column for moving said steering column from said one of said plurality of operative positions to said displaced position when said latch means is released, said selector means including means for locating said steering column in said one of said operative positions when said steering column is moved from said displaced position toward said operative positions.

3,299,734
CANE TYPE HAND BRAKE
Jack P. Castellana, Churchville, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,445
6 Claims. (Cl. 74—503)



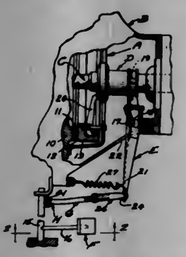
1. A vehicle parking brake actuating mechanism for a vehicle braking system having a hydraulic and mechanical operation capability, said actuating mechanism comprising: a cable adapted to actuate the vehicle brakes by mechanical means, said cable having a slack portion arranged to follow the vehicle brakes during hydraulic operation; actuator means slidably disposed on a fixed portion of the vehicle; force multiplying means carried by said actuator means and including a floating pivot lever for taking up the slack in the cable and to draw the cable tight to actuate the vehicle brakes, said actuator means having a portion adapted for hand gripping whereby a manual pull will draw the cable tight and actuate the vehicle brakes; and holding means to maintain the actuator means in one extreme of sliding movement after the vehicle brakes have been actuated, said actuator means being axially rotatable to disengage the holding means to allow the actuator means to return to a poised position at another extreme of sliding movement.

3,299,735
FLYWHEEL ASSEMBLIES
Thomas Charles Felix Stott, Harpenden, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,940
Claims priority, application Great Britain, Aug. 24, 1963, 33,603/63
7 Claims. (Cl. 74—572)



1. A flywheel assembly comprising a flywheel mass, spring means in the form of a flexible annulus attached to the flywheel mass and adapted, on attachment to the end portion of an internal combustion engine crankshaft, to provide a mounting which permits limited tilting and axial movement of the flywheel mass relatively to the crankshaft, and a spherically surfaced member made of a polyamide material and secured to the flywheel mass, said member being adapted, on cooperation with a complementary spherically surfaced member at the end portion of the crankshaft, to permit the limited tilting of the flywheel mass but restrict the axial movement.

3,299,736
CLUTCH LINK
Stanley V. Puidokas, Kenosha, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Nov. 12, 1964, Ser. No. 410,680
3 Claims. (Cl. 74—586)



1. For use with a clutch mounted within a clutch housing and including a clutch throw-out lever pivotally mounted for rocking movement to effect disengagement of the clutch and an actuating lever for initiating actuation of the throw-out lever, the improved apparatus comprising:

(a) a pin mounted on the actuating lever,

(b) a link interposed between the actuating lever and the throw-out lever for transmitting reciprocatory motion imparted thereto by the actuating lever to one end of the throw-out lever, said link including:

(1) an actuating portion in the form of a continuous wire having threads at one end, an unclosed eye at the other end and a shank interconnecting the eye and the threads,

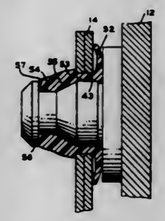
(2) a cap carried on the threads and having a bearing surface engaging the throw-out lever,

(3) adjustment means on the threads for coacting with the cap,

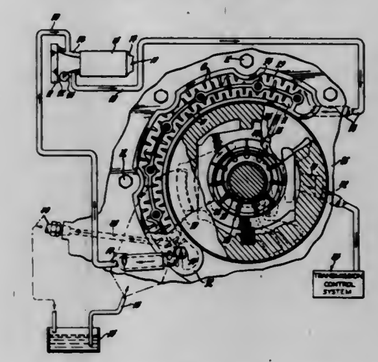
(c) said eye encircling a major portion of the circumference of the pin and having a bearing surface engaged by the pin, the shank portion of the link having a section thereof bent outwardly so as to project laterally beyond a diametric line drawn through the pin and continuing along the axis of the threads and then re-bent inwardly so as to be substantially aligned with such line.

3,299,737
RETAINER BUSHING
Kenneth P. Hurlin, Farmington, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 30, 1964, Ser. No. 400,538
2 Claims. (Cl. 74—595)

1. A linkage system comprising a first link, a second link adapted to move freely in a plane parallel to the plane of movement of said first link, said second link having an aperture positioned therein, said first link having a pin extending substantially perpendicularly to the direction of movement of said first link into said aperture in said second link, said pin having a peripheral shoulder positioned at the end thereof opposite said first link, a single piece self-locking bushing constructed of a self-lubricating flexible material rotatably coupling said first and said second link, said single piece self-locking bushing having a generally cylindrical body portion with a bore positioned therein, said generally cylindrical body portion terminating at one end in a plurality of radially inwardly extending flexible lips, said pin of said first link rotatably journaled in said bore in said generally cylindrical body portion with said plurality of radially inwardly extending lips engaging said shoulder on said pin, the outer surface of said single piece self-locking bushing having a radially extending shoulder facing the end opposite said plurality of inwardly extending lips, said end having radially extending lips deformable in an axial direction of said pin and said single piece self-locking bushing, said single piece self-locking bushing being positioned in said aperture in said second link with said shoulder engaging one side of said second link, said end of said single piece self-locking bushing engaging said first link about said pin and said deformable lip engaging the other side of said second link and being deformed to provide an axial force on said pin and linkage assembly.



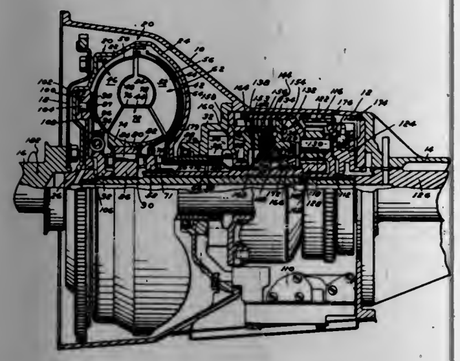
3,299,738
COOLANT SYSTEM
Darrel R. Sand, Plymouth, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,317
1 Claim. (Cl. 74—606)



In an automatic transmission for an engine driven vehicle, the combination of a transmission housing adapted to be secured to an engine, drive transmitting means housed in said transmission housing, a transmission control system operable to control the operation of said drive transmitting means utilizing fluid under pressure as a working medium, said transmission housing providing a pump casing, a pump housed in said pump casing operable to receive fluid from a source and deliver this fluid under pressure to a pump delivery port, fluid passage means in said pump casing for delivering fluid from said delivery port to said transmission control system and also for bypassing fluid directly to said source, said fluid

passage means including a bypass passage extending at least partially about the periphery of said pump and continuously connected by a fixed flow control orifice to said pump delivery port so that a predetermined portion of the fluid pumped by said pump is continuously bypassed directly to said source, an engine coolant system, and a transmission coolant system including a coolant passage provided in said pump casing adjacent said bypass passage for receiving and returning coolant from and to said engine coolant system to cool the pump and the fluid being continuously bypassed by said bypass passage.

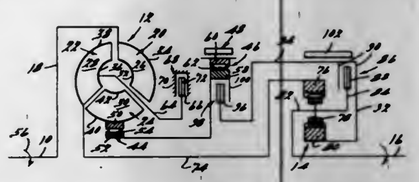
3,299,739
TRANSMISSION
Thomas R. Stockton, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,261
8 Claims. (Cl. 74—677)



1. A transmission comprising, power input and output shafts, a fluid drive device of the fill and empty type having a plurality of rotatable elements one of which is connected to said input shaft, a planetary gearset having rotatable members at least one of which is connected to said output shaft, means for driving a second of said members from another element of said drive device when filled while holding a third of said members stationary to establish one drive, means connecting said third member to said input shaft while holding said second member stationary when said device is emptied of fluid to establish another drive, and means for driving said third member from said input shaft of said drive device while holding said another element and second member stationary during a filled condition of said drive device to provide a third drive to said output shaft.

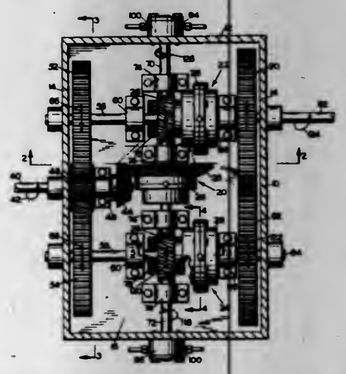
3,299,740
TRANSMISSION
Thomas R. Stockton, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,286
3 Claims. (Cl. 74—677)

1. A transmission having power input and output shafts, and means connecting said shafts providing a plurality of drives therebetween, said means including a hydraulic torque converter and a planetary gearset, said converter having a pump connected to said input shaft, and a turbine and a stator, said gearset having drive, driven and reaction members, means connecting said turbine to said drive member, means connecting said driven member to said output shaft, a plurality of overrunning brake means arranged in series holding stator against rotation in one direction of rotation to establish a torque multiplying phase of operation of said converter, selectively operable clutch means when operable locking up said gearset for a direct drive therethrough, and selectively engageable fluid pressure actuated coupling means when engaged connecting said reaction member to said stator through said brake means to prevent relative rotation therebetween in one direction, the normal start up drive of said output shaft be-



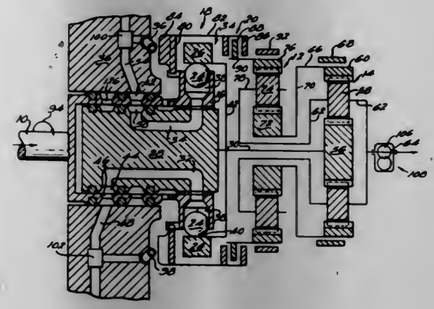
ing provided by the engagement of said clutch means to operate said converter in a torque multiplying phase with said gearset in a locked up condition, performance range of operation being provided by the disengagement of said clutch means and engagement of said engageable means to condition said gearset for a reduction drive therethrough in one direction, a subsequent drive range being provided by the subsequent re-engagement of said clutch means to condition said transmission substantially for a direct drive therethrough.

3,299,741
VARIABLE SPEED TRANSMISSION
Fred W. Twiford, Apa 1423, Guadalajara, Jalisco, Mexico
Filed Oct. 16, 1964, Ser. No. 404,356
11 Claims. (Cl. 74—682)



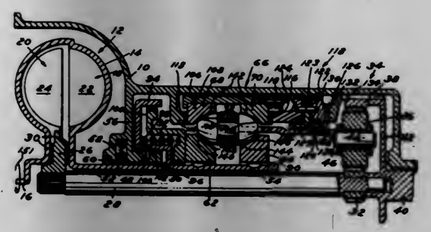
1. A transmission comprising a drive shaft, a first differential mechanism driven by said drive shaft and having input and output shafts and differentiating mechanism therebetween, second and third differential mechanisms having input and output shafts and differentiating mechanisms therebetween, means drivingly connecting the input shafts of said second and third differentials with said drive shaft, means connecting the input and output shafts of said first differential mechanism with the differentiating mechanism of the second and third differential mechanisms, respectively, means drivingly connecting the output shafts of said second and third differential mechanisms together, one of the latter output shafts comprising a driven shaft of the transmission, and brake means operative on the input and output shafts of said first differential mechanism to control operation of the differentials and vary the speed and direction of the driven shaft.

3,299,742
TRANSMISSION
Norman T. General, Orchard Lake, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,200
6 Claims. (Cl. 74—687)



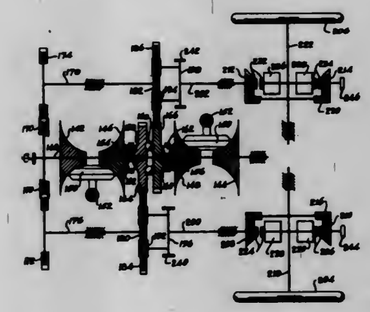
1. A transmission having power input and output shafts, and gear means connecting said shafts providing a drive therebetween, said gear means having a plurality of drive members and driven and reaction members, means operably connecting said drive and driven members to said input and output shafts respectively, and means in said connections for variably controlling the drive to said drive members, said latter means comprising hydraulic pump means having relatively rotatable drive and reaction elements operably connected respectively to said input shaft and one of said drive members and having a fluid outlet capable of being opened or variably closed to vary the differential speed of rotation between said elements, means for connecting said drive element to another of said drive members to provide a different drive through said transmission, and means responsive to the fluid pressure output of said pump means for imparting a torque to said drive element supplemental to the torque input thereto by said input shaft.

3,299,743
INFINITELY VARIABLE SPEED TRANSMISSION
Thomas R. Stockton, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 426,465
16 Claims. (Cl. 74—690)



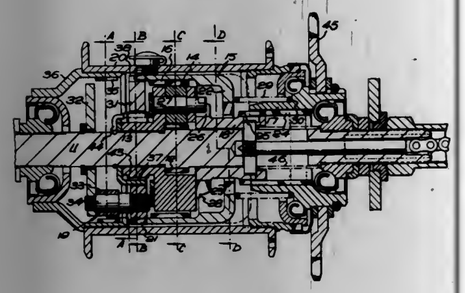
1. A transmission having power input and output shafts, and a plurality of torque transmitting devices connecting said shafts for providing a plurality of drives therebetween, said devices including a mechanical infinitely variable speed friction drive unit and a hydrodynamic drive unit and a planetary gearset, said mechanical unit having rolling elements frictionally engaging inner and outer races and supported in a carrier member, said hydrodynamic unit including a pump and a turbine, said gearset having rotatable members including a driven member, first means connecting one of said races and said pump in parallel to said input shaft, second means separately connecting said turbine and carrier member to rotatable members of said gearset, means connecting said gearset driven member to said output shaft, and means for holding the other of said races stationary to provide a reduction drive from the said one race to said rolling element carrier member and gearset, said units having different torque capacities providing a regenerative drive of said friction drive unit through said connections.

3,299,744
TOROIDAL-TYPE TRANSMISSION
Charles E. Kraus, Franklin Lakes, N.J., assignor to Excelermatic, Inc., a corporation of New York
Filed Sept. 4, 1963, Ser. No. 306,561
3 Claims. (Cl. 74—720.5)



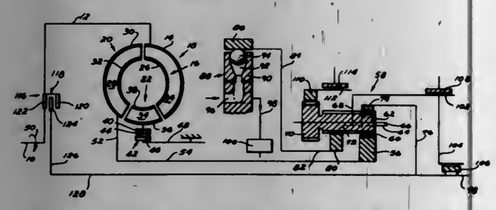
1. A variable speed transmission comprising input means and output means; a pair of input toroidal disc members fixed to said input means; a pair of output toroidal disc members separately rotatable with respect to said input means and operably connected to said input means with each output toroidal disc member having a toric surface facing a toric surface on one of said input toroidal disc members; a plurality of circumferentially-spaced rollers disposed between said facing toric surfaces and in contact with said surfaces for transmitting torque from said pair of input toroidal disc members to said pair of output toroidal disc members, said toroidal disc members exerting a tractive force on each roller during rotation of said toroidal disc members; supporting means for each roller including pivot means providing for speed-ratio-changing movement of said rollers across said toric surfaces, each roller support means also including means providing form movement of its roller in a second mode such that in response to movement of said roller in said second mode speed-ratio-changing movement of said roller is initiated; a planetary gear system comprising a pair of planetary gear sets, each planetary gear set including a first gear member for one of said output toroidal disc members, a second gear member drivingly connected to one of a pair of input shafts of said input means, and a plurality of planet pinion gears meshing with said first and second gear members and drivingly connected to one of a pair of output shafts of said output means; and means including a variable hydraulic control pressure source for applying an equal hydraulic force on each roller for producing movement of said rollers in said second mode in response to changes in the relative magnitude of said traction forces so that each of said output shafts will rotate in accordance with the relative speeds of its associated first and second gear members.

3,299,745
EPICYCLIC GEAR ASSEMBLIES
John Geoffrey Toplis, Beeston, Nottingham, England, assignor to Raleigh Industries Limited, a company of Great Britain, Northern Ireland, and the Isle of Man
Filed May 8, 1964, Ser. No. 365,895
Claims priority, application Great Britain, May 17, 1963, 19,619/63
17 Claims. (Cl. 74—750)



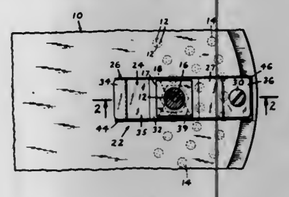
1. An epicyclic change speed gear hub including fixed sun gear, a plurality of planet gears rotatable about said fixed gear, a planet cage in which said planet gears are supported, a gear ring disposed radially outwardly of said planet gears and in engagement therewith a driver adapted, selectively, to be coupled with said gear ring or said planet cage, an axially movable selector sleeve adapted to effect such coupling, a ratchet assembly adapted to transmit the motion of said planet cage or gear ring to a hub shell, said gear ring being axially displaceable into or out of engagement with said ratchet assembly and a unidirectional clutch means is provided between the planet cage and the ratchet assembly, the said clutch means being adapted to transmit a drive from the planet cage to the ratchet assembly when the gear ring is operatively disengaged from such assembly but to be inoperative in transmitting a drive when the gear ring is in operative engagement with the said assembly.

3,299,746
MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM WITH LOCKUP CLUTCH
Eugene Walter Konrad, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 299,777
6 Claims. (Cl. 74—758)



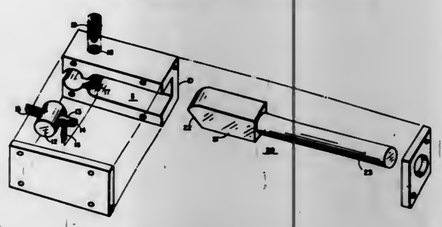
1. A transmission gear train comprising a forwardly rotating power input shaft and an output shaft, and a planetary gearset connecting said shafts providing a plurality of different drives therebetween, said gearset having a plurality of sun and ring gear members intermeshing with planet pinion gear members mounted on a rotatable carrier member and including a stepped planet pinion gear member, means connecting one of said sun gear members and said input shaft, means connecting one of said ring gear members to said output shaft, said ring gear members meshing with different stepped portions of said pinion gear, and a plurality of selectively engageable brake means for holding different ones of said members stationary at different times to provide forward and reverse drives through said gearset.

3,299,747
DEVICE FOR RELEASING CUTTING TOOL
Calvin L. Martin, Richmond, and John C. Bolger, Waynesboro, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Mar. 12, 1965, Ser. No. 439,233
3 Claims. (Cl. 77—55)



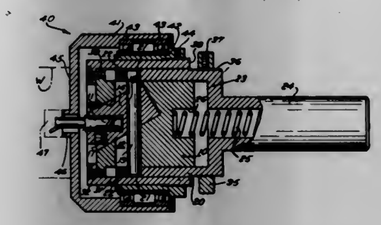
1. A device for releasing a cutting tool from a material to be serviced while simultaneously preventing movement of said material which comprises a U-shaped member adapted to overlie the material to be serviced, said U-shaped member having a cut-out portion at its center being positioned to permit passage of said cutting tool, said U-shaped portion having outwardly extending members at the upper portion thereof and means associated with said outwardly extending portions for releasing said cutting tool from the material to be serviced while simultaneously applying a downward force to said U-shaped portion.

3,299,748
DRILLING TOOLS
Sven L. Moller, 13312 Springdale, Westminster, Calif. 92683
Filed Mar. 22, 1965, Ser. No. 441,599
4 Claims. (Cl. 77—58)



1. Means for drilling a hole comprising
A rigid longitudinal member adapted for rotation about an axis of rotation, one extremity of which member comprises a cutting tool having a cutting edge laterally displaced relative to said axis of rotation, the other extremity of which is torsionally spring loaded against rotation of said member about an axis transverse of said axis of rotation, said tool being axially spring loaded against axial motion perpendicular to said transverse axis; and
Longitudinal guide means of limited longitudinal extent for laterally restraining said rigid member,
Means responsive to a axially compresive force applied parallel to said axis of rotation for succesively axially moving said rigid member free of said lateral restraint and then applying a torque upon said spring loaded member for angularly inclining said longitudinal member relative to said axis of rotation.

3,299,749
RECESSING TOOL
Eldo K. Koppelmann, Cumberland, R.I., assignor to Madison Industries, Inc., a corporation of Rhode Island
Filed Aug. 9, 1965, Ser. No. 478,302
4 Claims. (Cl. 77—58)



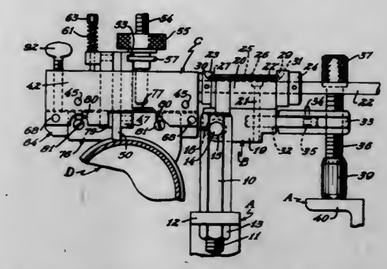
1. A recessing tool comprising a pilot, an elongated body rotatably mounted with reference to said pilot, said body having a bore formed therein from one end of the body at an angle to the axis of the body and a slot extending diametrically across the body and intersecting said bore, a block slidable in said bore for carrying a tool to engage a work piece, a pin slidably engaging said block and extending through said slot and beyond the body and means engaging the ends of said pin to slide it in said slot toward and from said pilot and urge the block outwardly from the body at an angle to the axis of the body.

3,299,750
SOCKET WRENCH
Dominic Campanile, Holden, and Henry S. Cummings, Jr., Worcester, Mass., assignors to Lowell Wrench Company, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 22, 1965, Ser. No. 441,506
3 Claims. (Cl. 81—62)



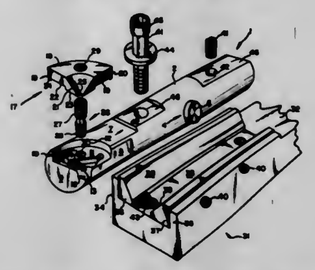
1. A socket wrench, comprising
(a) a body having a handle extending therefrom, the body having a bore therethrough and a recess located laterally of the bore on one side of the body,
(b) a socket element having a ratchet wheel which resides in the bore and having a grooved neck extending from the ratchet wheel,
(c) a pair of spring-biased pawls mounted in the recess for selective engagement with the ratchet wheel,
(d) a plate mounted on the body to cover the recess, the plate having an aperture located over the bore through which the said neck extends, the plate consisting of three layers of thin sheet fastened together, the intermediate layer having an aperture slightly larger than the other two to provide the plate with a groove in its aperture to provide the plate with a groove, and
(e) a retaining ring mounted in the groove in the plate and engaging the said neck to lock the socket element in place.

3,299,751
PISTON GROOVE CUTTING TOOL
William A. Conlnx, 273 W. 5th St., St. Paul, Minn. 55110
Filed Dec. 29, 1964, Ser. No. 421,945
14 Claims. (Cl. 82—4)



1. A piston groove cutting tool adapted to be used to cut grooves in an axially rotated piston comprising:
(a) a groove cutting tool,
(b) alignment means to position said cutting tool means in continuous alignment with a piston groove to be regrooved, said alignment means including a guide blade adapted to engage within a segment of one piston groove to position the groove cutting tool in alignment with a second piston groove,
(c) means to support said cutting tool in cutting relation to an axially rotated piston and supporting said tool and blade for free sliding movement parallel to the piston axis,
(d) means to move said cutting tool toward and away from cutting engagement with a said axially rotated piston.

3,299,752
TOOL HOLDER CONSTRUCTION
Robert W. Cashman, Saginaw, Mich., assignor to Saginaw Machine & Tool Company, Saginaw, Mich., a corporation of Michigan
Filed Sept. 8, 1964, Ser. No. 394,993
15 Claims. (Cl. 82—36)



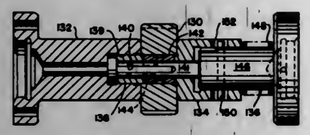
1. A tool holder comprising a base having a pair of substantially parallel, spaced apart, upstanding rails thereon; a pair of generally triangular in cross-section support members located on said base, one adjacent each of said rails, and so arranged that their confronting sides converge in a direction toward said base along lines that intersect between said members; a body member having a shank portion interposed between and supported on said support members; adjustable anchor means reacting between said base and said body member for releasably securing the latter thereto; and adjustable means reacting between at least one of said rails and the adjacent support member for shifting the latter relatively to the other support member, whereby the position of said body member relative to said base may be adjusted.

3,299,753
EXPANDING ARBORS

Russel W. Anthony, Detroit, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan

Original application June 28, 1965, Ser. No. 467,239. Divided and this application Oct. 23, 1965, Ser. No. 511,276

4 Claims. (Cl. 82—44)



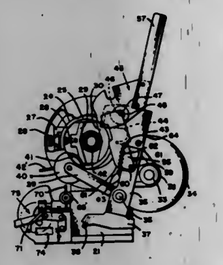
1. An expanding arbor comprising a first body having a piloting recess opening into one end thereof, a second body, a sleeve slidable on said second body and having an end portion slidable in said piloting recess, resilient means interposed between said second body and sleeve urging said sleeve toward said first body, stop means between said sleeve and second body, said second body having a portion slidably received in the end portion of said sleeve and provided therein with a plurality of tapered grooves, slots in the end portion of said sleeve in registration with said tapered grooves, keys extending through said slots and having inclined bottom surfaces received in said grooves, and means for moving said first and second bodies in approach and separation such that upon approach said sleeve presses a work gear supported on the end portion thereof against a locating surface on said first body and thereafter continued approach results in sliding movement of the end portion of said second body in the end portion of said sleeve to cam said keys radially outwardly into clamping engagement with a workpiece supported on the end portion of said sleeve.

3,299,754
CUTTER FOR A METAL WINDOW SHADE ROLLER

Hermann Steingass and John P. Steyer, Baltimore, Md., assignors to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland

Filed Jan. 29, 1965, Ser. No. 429,020

11 Claims. (Cl. 82—98)



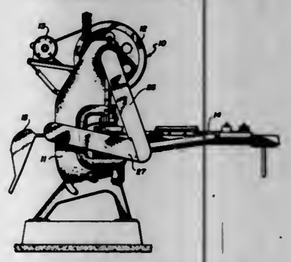
1. In a window shade cutting machine, the combination comprising a frame; a tailstock mounted on said frame and adapted adjustably to be fixed to said frame at any point therealong; a rotatable chuck mounted on a base that is fixed to one end of said frame; said chuck being in line with said tailstock so that a window shade wound on a roller may be mounted between said tailstock and said chuck; means for rotating said chuck; a bracket pivotally mounted on said base; roller backup means mounted on said bracket; roller piercing means pivotally mounted on said roller backup means; friction producing means for resisting relative movement between said roller backup and said roller piercing means; and a handle attached to said roller piercing means whereby said roller backup means is moved into operative position before said roller piercing means is moved relative to said backup means into operative position.

3,299,755
CARD CUTTING MACHINE

Malcolm C. Russell, Leicester, Mass., assignor to Russell Mfg. Company, Leicester, Mass., a corporation of Massachusetts

Filed Aug. 25, 1965, Ser. No. 482,637

13 Claims. (Cl. 83—94)



5. A card cutting machine, comprising

(a) a frame having a table with a horizontal surface,

(b) a die member mounted in the frame and capable of vertical reciprocatory motion, the member carrying card-shaped dies and moving them toward engagement with a card sheet lying on the table surface and engagement with card-shaped apertures formed in the table, the apertures being arranged side-by-side in a line extending across the table,

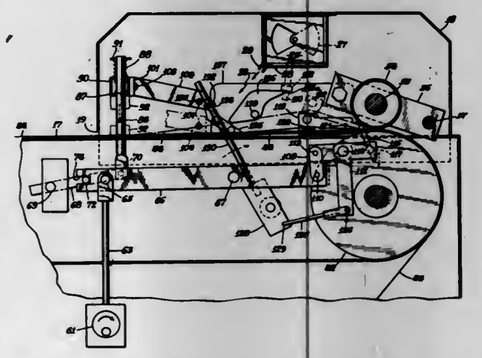
(c) a collating chute underlying the table and having a track with an end located under each aperture, the tracks all terminating in a collecting box, the upper ends of the tracks being arranged side-by-side under the apertures, the lower ends of the tracks being arranged in a row at a right angle to the line of apertures to move cards originating in the apertures from side-by-side relationship to selected collated relationship.

3,299,756
WEB SEVERING DEVICE HAVING MEANS TO BLOW WEB MATERIAL CLEAR OF SEVERING MEANS

Harry Rosenthal, 3825 Greenwood, Skokie, Ill. 60076

Filed Mar. 30, 1965, Ser. No. 443,894

5 Claims. (Cl. 83—98)



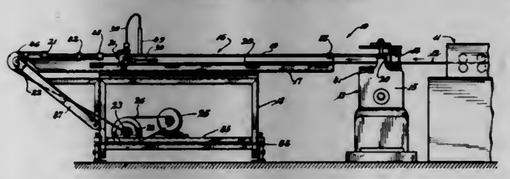
5. An air blower for use in a machine for feeding and cutting plastic film material which includes conveyor means adapted to support and draw the material, means for raising the film material from the conveyor means, and a cutting wire which is engageable with the raised material for cutting the same, said blower including in combination, a blower structure mounted to the machine and having an air intake and an output, an air duct connected to said output, said duct having a discharge vent for directing a stream of air from a point above the conveyor means downward to the point where the cutting wire engages the material, so that the stream of air blows the cut film material clear of the cutting wire, and returns to the conveyor means the portion of the film material from which a portion is cut.

3,299,757
APPARATUS FOR THE OPERATION OF FLYING CUT-OFF DEVICES

William J. Schumacher, Chicago, Richard D. Hill, Glen Ellyn, and Maurice Hill, Elmhurst, Ill., assignors to Hill Tool and Engineering Co., a partnership

Filed Dec. 24, 1959, Ser. No. 861,793

2 Claims. (Cl. 83—293)



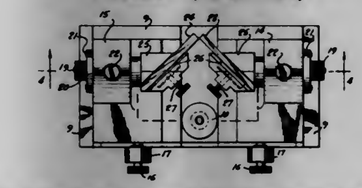
1. Apparatus for cutting-off travelling work, comprising: a cut-off die juxtaposed to the path of travel of the work and movable parallel to said path between a starting position and a final position; powered means for moving the die from the starting position to a transfer position short of the final position, said powered means comprising a cylinder, flexible means connecting the die to a portion of the cylinder, and means for rotating the cylinder to wind the flexible means onto the cylinder and draw the die in the direction of travel of the work for accelerating the die slowly away from the starting position to have a speed at the transfer position slightly different from the speed of travel of the work; means for moving the die from the transfer position to the final position directly with the work; and means for operating the die to cut through the work substantially only during the movement from the transfer position to the final position.

3,299,758
MICROTOME

John R. McCulloch, 427 Via Del Piano, Novato, Calif. 94947

Filed Nov. 12, 1964, Ser. No. 410,836

7 Claims. (Cl. 83—410)



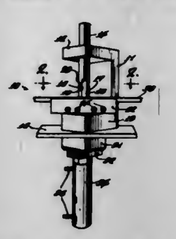
1. In a microtome having specimen cutting means and means for advancing the specimen toward the cutting means in fixed increments, and wherein said specimen is movable in a plurality of directions relative to said cutting means, an improvement in the cutting means comprising a knife-holding stage having two knives, the cutting surfaces of which are in different planes, whereby as said specimen is passed over each knife cutting surface, specimen sections are obtained through different planes of the specimen.

3,299,759
MITER CUTTER

Donald E. Johnson, Kenosha, Wis., and Hashem Gharaibeh, Chicago, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware

Filed July 20, 1965, Ser. No. 473,428

8 Claims. (Cl. 83—581)



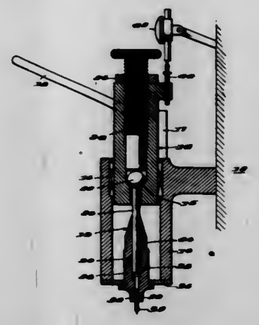
1. A device for cutting and notching a plastic strip comprising, a frame, a plunger mounted for reciprocation on said frame, a pair of cutters mounted on said plunger, and a notching tool located on said plunger between said cutters and having its lowermost surface at a distance above said cutters to operate on the strip after said cutters.

3,299,760
COOPERATING GUIDE MEANS AND RECIPROCABLE TOOL HOLDER

James Stanley Cobb, Jr., Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 5, 1965, Ser. No. 423,510

3 Claims. (Cl. 83—635)



1. In a punch press including a stationary guide block and a tool holder mounted therein for sliding movement through a working stroke, a punch tool comprising a shaft, a ball at one end of the shaft and a punch member at its opposite end, said holder having a socket mounting said ball for pivotal and rotational movements, said block and said tool having cooperable means thereon for guiding and thereby preventing pivotal movement of the tool during the initial portion of said working stroke.

3,299,761
PUNCH ASSEMBLY

Rubin Goldman, 22 Park Drive, Newton Highlands, Mass. 02161

Filed Nov. 6, 1964, Ser. No. 409,415

15 Claims. (Cl. 83—639)

1. A punch assembly comprising

a frame having a pneumatic cylinder holder, a punch holder and a die holder,

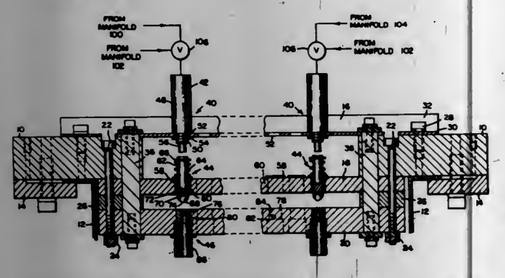
a die mounted on the die holder and a punch mounted in its holder,

a pneumatic cylinder mounted on the pneumatic cylin-

der holder and when energized driving the punch toward the die holder, said die, punch and cylinder forming a punch unit,

a spring return mounted on the punch for returning the punch to a position away from the die holder when the cylinder is deenergized,

a passage for connecting the cylinder to a compressed air source,



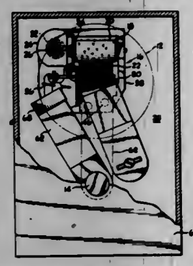
an impulse valve in the passage and having an inlet and a control inlet,

means for maintaining the inlet of the impulse valve in communication with the source,

means including a second passage connecting the control inlet to a compressed air source, said control inlet when connected to the source opening the impulse valve to connect the inlet of the valve to the cylinder for energizing the cylinder,

and a control valve in the second passage for opening and closing the passage.

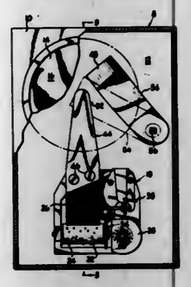
3,299,762
MUSIC BOX
Marvin I. Glass, Carl Ayala, and Gordon A. Barlow, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Oct. 22, 1965, Ser. No. 500,845
4 Claims. (Cl. 84—95)



1. A musical instrument which comprises a supporting frame structure, a plurality of spaced-apart elongated vibratable tines fixed at one end to said frame and having the other end free, means carried by said frame and operable to engage said free ends and vibrate said tines, and additional means movable relative to a position of engagement with intermediate portions of said tines to thereby change the sounds produced when said tines are vibrated.

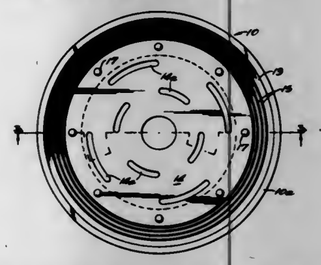
3,299,763
MUSIC BOX
Marvin I. Glass, Carl Ayala, and Gordon A. Barlow, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Oct. 22, 1965, Ser. No. 500,969
6 Claims. (Cl. 84—95)

1. A musical instrument which comprises a supporting frame structure, a plurality of spaced-apart elongated vibratable tines fixed at one end to said frame and having the other end free, means securing said one end of said tines to said frame including a metal plate portion, means



for vibrating said tines, and a sound amplifying cone fixed in position with the apex thereof in contact with said metal plate portion.

3,299,764
MUTE FOR HORN-TYPE MUSICAL INSTRUMENTS
Bernard F. Ventura, 665 Ave. E, Bayonne, N.J. 07002
Filed Feb. 10, 1966, Ser. No. 526,511
4 Claims. (Cl. 84—400)



1. A mute attachment for a horn-type musical instrument comprising a coupling body adapted to fit telescopically over the bell of the instrument, said body having a wall with a tapering inner surface to provide a tapering bell-receiving socket which has a mouth that opens axially inwardly and is of gradually decreasing diameter away from the mouth, and sound-attenuating means carried by said body at a position spaced axially outwardly from said mouth.

3,299,765
MUSICAL INSTRUMENT STAND
John A. Rochon, 9221 S. Kilpatrick Ave., Oaklawn, Ill. 60453
Filed June 24, 1965, Ser. No. 466,741
9 Claims. (Cl. 84—422)

1. A high-hat stand having a stationary and a movable cymbol thereon, comprising a base, a plurality of legs pivotally connected to said base, a frame mounted on said base and having two vertically spaced side members and an upper and lower cross member connected to the upper and lower ends of said vertical members, a hollow vertical shaft connected at its lower end to said upper cross member of said frame, a reciprocating shaft in said hollow shaft for operating said movable cymbal, two rods having pointed lower ends mounted vertically in said frame in spaced relation to one another and movable therein, thumb screws for securing said rods in various adjusted positions, a bar having spaced holes therein for receiving the lower ends of said rods, a bar extending rearwardly from said first bar, a pedal mounted on the free end of said second bar, a compression spring disposed in said

hollow shaft around said reciproating shaft, a means forming an abutment for the upper end of said spring, a sleeve forming an abutment for the lower end of said spring, a screw extending upwardly through said upper



cross member and being threadedly received in said sleeve for adjusting said sleeve upwardly and downwardly in said hollow shaft to vary the compression of said spring, and a linkage connecting said reciprocating shaft with said pedal.

3,299,766
SEALING ELEMENT FOR FASTENER DEVICES
William Gould and Charna Gould, both of 93 Sagamore Road, Millburn, N.J. 07041
Continuation of application Ser. No. 861,497, Dec. 23, 1959. This application Apr. 30, 1964, Ser. No. 365,560
12 Claims. (Cl. 85—1)



1. A fastener with a shank and a head and having frictionally mounted on said shank adjacent said head a preformed, thin walled device made of a plastic material having substantially the cold-flow, memory and physical characteristics of FM–10001 nylon, the end of said device adjacent said fastener head being rolled over on itself with the transverse edge of said end being contiguous to the wall of said device intermediate of its ends for forming a double thickness annular flange along a plane parallel to the longitudinal axis of said fastener shank, said double thickness of flange being separated, said flange being permanently extrudable in place toward said body portion to form a custom-fitted, permanently fluid-tight seal with said fastener in response to said fastener being operatively actuated.

3,299,767
RELEASABLE SECURING MEANS
Thurber W. Royer, Arcadia, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Nov. 6, 1964, Ser. No. 409,385
2 Claims. (Cl. 85—32)

1. A nut cooperatively acting with a bolt to secure at least two elements together and for substantially simultaneously effecting separation of the elements, comprising:

a sleeve member having its internal bore provided with threads for being received upon the bolt in securing relation,

the bore threads being modified to provide at least one longitudinally extending groove in communication with the opening through the sleeve wall and serving to define a closed expansion manifold into which the gaseous explosion products move on detonation of the charge;

the wall portions of the sleeve defining an opening directed generally transversely of the main bore and provided with threads;

a member including a hollow chamber and having a

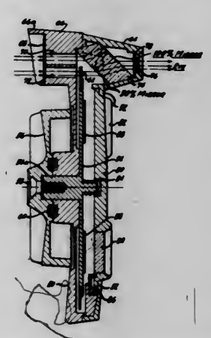


threaded portion for being securingly received within the opening in the wall portion of the sleeve member;

an explosive charge for being contained within the chamber of the member and detonatable from without;

whereby detonation of the charge effects fragmentation of the sleeve member walls forming the nut effecting release of the nut and bolt and consequently the joined elements.

3,299,768
OPTICAL RANGE FINDER WITH VARIABLE-ANGLE EXPONENTIAL PRISM
Luis W. Alvarez, Berkeley, Calif., assignor to Optical Research and Development Corp., Oakland, Calif., a corporation of California
Filed Aug. 16, 1962, Ser. No. 217,386
5 Claims. (Cl. 88—2.4)



1. An optical range finder for determining distance to an observed object having a known dimension and adapted to be held to the eye of a viewer, the range finder comprising

(a) a prism having an angle between its faces that varies as an exponential function of distance along an edge of the prism, such angle being oriented substantially perpendicular to such edge,

(b) a sight of limited opening arranged in alignment with such edge for viewing the observed object through a portion of said prism and simultaneously viewing the same object without the intervention of said prism, the sight being movable with respect to the prism along a direction in which the angle of the prism varies,

(c) a pair of cooperating logarithmic scales, movable with respect to each other, relating distance to the known dimension of the observed object, in accord-

ance with a ratio that varies with the position of one scale relative to the other, and

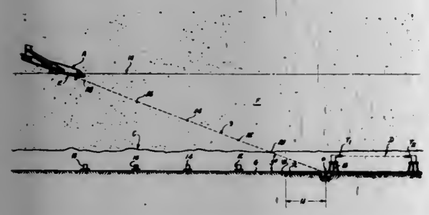
(d) means connecting one scale to said prism and one scale to said sight for relative scale movement with the movement of said sight relative to said prism.

3,299,769

METHOD AND MEANS FOR ASCERTAINING VISIBILITY CONDITIONS

Donald J. Byers, Falls Church, Va.
(9517 St. Charles Place, Fairfax, Va. 22030)

Filed Mar. 8, 1963, Ser. No. 263,775
2 Claims. (Cl. 88—14)



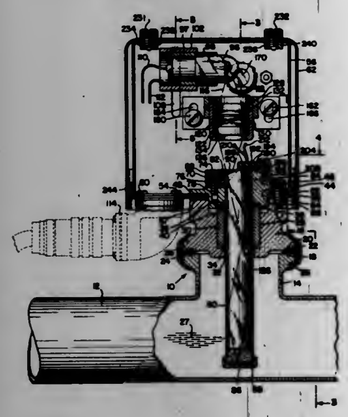
1. Method for measuring atmospheric visibility conditions for the information of airborne aircraft prior to touchdown, comprising projecting a directed beam of radiant energy through the space extending substantially from the intersection of the glide slope of said aircraft with the minimum altitude level to the point of touchdown, and taking a series of observations, of several points progressively spaced along said slope within said space, of the scattered reradiated energy from said beam, passing through said space, said observations being taken at an angle to the direction of said beam.

3,299,770

LIGHT TO ELECTRICAL ENERGY TRANSFORMING APPARATUS FOR CONTINUOUSLY INDICATING THE INDEX OF REFRACTION

Walter Witt, Philadelphia, and Robert Mayer, Ardmore, Pa., assignors to Honeywell Inc., a corporation of Delaware

Filed Sept. 22, 1961, Ser. No. 140,050
7 Claims. (Cl. 88—14)



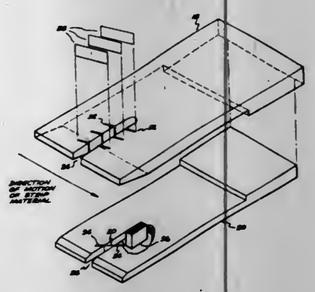
1. A light to electrical energy transforming apparatus for continuously indicating the index of refraction of a fluid stream, comprising the combination of a solid, transparent, light transmitting rod, a light emitting optical means, a light responsive means and an index of refraction indicator operably connected to the responsive means, said rod being comprised of a flat coated light reflecting surface at one end thereof, an inclosure forming a fluid tight chamber about the coated end of the rod, a light emitting flat end surface portion and a chamfered surface portion forming an opposite end of the rod, said light responsive means being positioned to cover the entire light emitting flat end surface portion of the rod to receive substantially all of the light emitted therethrough, the light emitting optical means comprising a light source, lenses and an aperture formed by the surface of a beveled-shaped wall operably positioned to focus light rays substantially in the form of an elliptical-shaped bundle against said chamfered surface into the rod and thence at a preselected critical angle of incidence against peripheral side wall portions thereof that form an interface with said fluid stream, said light transmitting rod structure affording substantially no refraction of light from said rod to said fluid stream when the index of refraction of said fluid stream is at a value which is greater than said preselected value, said structure further affording a partial loss in light refracted through the side wall of said rod to the fluid stream when the index of refraction of the fluid stream is at a value which is greater than said preselected value, and an electrical conductor means connecting the light responsive means in circuit with the index of refraction indicator for transmitting thereto an electrical signal that is proportional to the magnitude of the index of refraction of the fluid stream.

3,299,771

SHUTTER FOR PINHOLE DETECTORS

Paul W. Caulier and Corbin Dixon, Waynesboro, Va., assignors to General Electric Company, a corporation of New York

Filed May 17, 1963, Ser. No. 281,305
4 Claims. (Cl. 88—14)



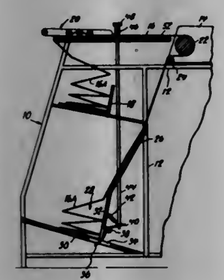
1. In apparatus for inspecting strip material that moves along a path, improved shutters for preventing stray light from passing around the edges of said material, each shutter comprising an upper plate and a lower plate arranged to form a substantially U-shaped throat for receiving an edge of said material in said path at the corresponding open ends of said plates, said upper and lower plates having respective slits therethrough that extend in from said open ends in the same direction, at least one light obstructing vane extending across said slit in said upper plate, at least one light obstructing vane extending across said slit in said light obstructing lower plate, said vanes lying in planes which are substantially perpendicular to said throat, and a light trap formed of a chamber fastened to one of said plates at the surface away from said throat, said chamber opening into said throat for trapping stray light.

3,299,772

DOCUMENT FEEDER FOR PHOTOGRAPHIC COPIER

Gerard O. Walter, Westbury, and Emil A. Scordato, Bronxville, N.Y., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 19, 1963, Ser. No. 274,269
6 Claims. (Cl. 88—24)



1. Mechanism for feeding continuous strip documents in fanfold form through a photographic copier which includes transport means for imparting driven movement to said strip document, said mechanism comprising, a mounting stand, a photographic copier mounted on said stand, a feed bin mounted on said stand for holding the stacked fanfold document strip to be copied, a feed table horizontally mounted on said stand in position for supporting said document strip as it approaches said copier in being driven from said feed bin to said copier by said transport means, document tensioning means mounted on said stand for tensioning said document strip as it is fed to said copier to present an unwrinkled strip thereto, a restack bin disposed below said copier, a guide chute mounted on said stand in position for guiding said document strip as it exists from said copier to said restack bin, said chute and restack bin being positioned with respect to each other and configurated to cause, under conditions where said document folds are orientated in a first manner, automatic resacking of said document in said restack bin, and document guiding means selectively operative for engaging the leading edge of the fanfold document strip as said leading edge arrives at said restack bin and directing said leading edge in a predetermined direction to cause automatic restacking of said document according to a second fold orientation, said document guiding means including at least one guide finger manually actuatable into said restack bin into the path of the leading edge of the fanfold document strip as said leading edge falls into said restack bin.

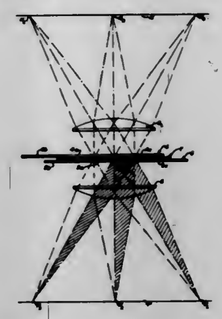
3,299,773

LENS FOR COLOR PHOTOGRAPHY

Jan Jasny, Franciszka Hynka St. 7/56, Warsaw, Poland

Filed Mar. 11, 1964, Ser. No. 351,129
Claims priority, application Poland, Mar. 14, 1963, 101,010
5 Claims. (Cl. 88—24)

1. A lens system for use in color photography comprising at least two spaced lens elements, a diaphragm plate having an opening and a filtering system adjacent said diaphragm plate, said diaphragm and filtering system being disposed between said spaced lens elements, said filtering system being constituted by two plates slidably mounted on opposite sides of the diaphragm plate in immediate proximate relation therewith, each of said plates including a colorless central part and two colored parts located on both sides of said central parts, said colors being the three basic colors characteristic for the subtractive method of mixing colors, one of said basic colors being in both said filtering plates, a rack mechanism for displacement of each of the filtering plates, a gear engaging each rack mechanism to drive the same and engaging means coupled to each of said gears to operate the same, each said engaging means being provided with a scale corresponding to the density of color of the light



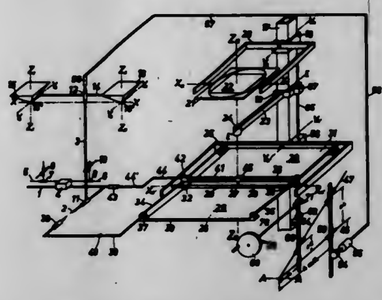
passing through the lens, illumination means movable between operative and inoperative positions, said illumination means in the operative position being in the path of the light rays passing through the lens for diverting light to illuminate said scales, whereas in said inoperative position, the illumination means is out of the path of the light rays.

3,299,774

RECTIFIERS FOR DIFFERENTIAL STRIP-BY-STRIP RECTIFICATION OF AERIAL PHOTOGRAPHS

Horst Schoeler and Otto Weibrecht, Jena, Gera, Germany, assignors to VEB Carl Zeiss Jena, Jena, Gera, Germany

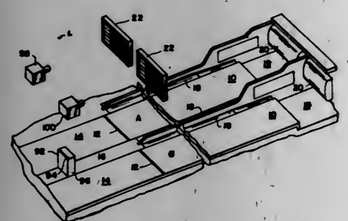
Filed May 21, 1964, Ser. No. 369,329
2 Claims. (Cl. 88—24)



1. A rectifier for differential strip-by-strip rectification of aerial photographs, comprising at least one column, a projection system connected to said column and consisting of an image plane, a projection objective and a projection plane, at least two of said parts of said projection system being displaceable relatively to each other along said column and inclinable to each other about two axes at right angles to each other, one of said axes of said two parts being at right angles to said column, first means for displacing said two parts, two blinds parallel to said projection plane and in close vicinity thereto, the one of said blinds being fixed to a projection table and extending parallel to said one axis and at right angles to said column and forming a first slit extending at right angles to said one axis, the other of said blinds being fixed to said one blind and covering said first slit and forming a second slit parallel to said one axis, a system of cross-slides for displacing said second slit parallel to said projection table and parallel and at right angles to said one axis, a bevel

protractor, the one leg of said bevel protractor being stationary, the other leg of said bevel protractor being mounted on the said one leg for rotation about an axis at right angles thereto, a first rod at right angles to and engaging said one leg, said first rod being displaceable on said one leg at a distance from the axis of rotation of said other leg, said distance depending on the photographic focal length and the image inclination, a second rod parallel to said first rod, said second rod being displaceable along said one leg at a distance equal to the rectification focal length and being connected to said other leg, second means for transmitting the horizontal displacements from said stereoplotter to said system of cross-slides, and third means for transmitting vertical displacement from a stereoplotter to said first rod, said second rod acting on said first means.

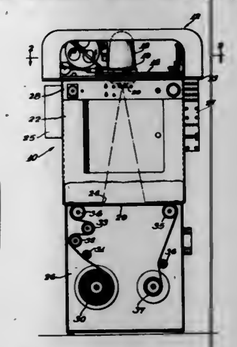
3,299,775
APPARATUS FOR PRODUCING A PERMANENT RECORD OF BOWLING GAME SCORES ENTERED ON A VISUAL SCOREBOARD
Robert L. Miller, Olmsted Falls, Ohio, assignor to Cleveland Trust Company, Cleveland, Ohio, trustee
Filed Aug. 27, 1964, Ser. No. 392,458
3 Claims. (Cl. 88—24)



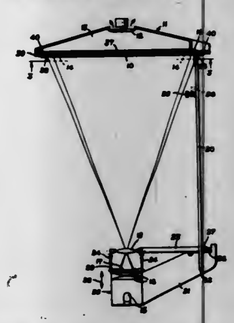
1. In apparatus for visually displaying scores achieved in a bowling game and for producing a permanent record of the frame-to-frame scores; the combination of a scoreboard having a front face simulating a bowling game score sheet and having frame score boxes thereon, means for visually entering the scores in their respective boxes on said front face as each frame is played in a game, and stationary means spaced from the front face of the scoreboard for photographically reproducing the visual image of the entire front face of the scoreboard on a single stationary photosensitive film surface at the completion of a bowling game with the scores entered thereon to produce a permanent record of the same.

3,299,776
MACHINE FOR ENLARGING OF PRINTED MICROPHOTOGRAPHS
Alexander L. Baptie, La Crosse, and Lyle G. Miles, West Salem, Wis., assignors to The Microcard Corporation, a corporation of Wisconsin
Filed Nov. 2, 1964, Ser. No. 408,287
7 Claims. (Cl. 88—24)

1. A machine for enlarging and printing individual frames in a preselected sequence from a microfiche containing a plurality of frames in a prearranged pattern comprising, in combination; frame means, means on said frame means for supporting sensitized paper upon which the enlarged frames are to be sequentially exposed at a print station, enlarging lens mechanism supported on said frame means in spaced relationship to the working surface of said sensitized paper, lamp means on said frame means for illuminating and exposing a preselected frame from said microfiche on said sensitized paper, holder means for supporting a microfiche for movement between said lamp means and said lens mechanism, and carriage means for supporting said holder means for movement in a plane parallel to the plane of the working surface of said sensitized paper, said carriage means comprising a first carriage assembly movable linearly with respect to said working surface, and a second carriage assembly movable linearly and transversely with respect to said working surface and in a predetermined sequence with respect to movement of said first carriage assembly, power means for moving each of said carriage assemblies comprising a first drive mechanism for said first carriage assembly including a frame advance drive motor operatively connected to said first carriage assembly, a frame return drive motor operatively connected to said first carriage assembly, and a second drive mechanism for said second carriage assembly including a line advance drive motor operatively connected to said second carriage assembly and a line return drive motor operatively connected to said second carriage assembly, and drive means coordinated with movement of said carriage means and exposure of an enlarged image on said sensitized paper for moving an unexposed working surface of said sensitized paper into position at said print station.

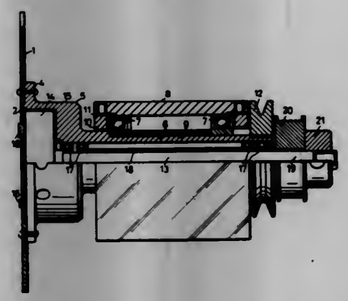


3,299,777
WEB REGISTER MECHANISM
Francis Hunstiger, Parma Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 14, 1965, Ser. No. 463,754
14 Claims. (Cl. 88—24)



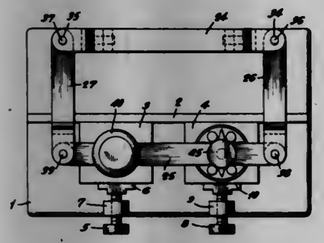
1. In a machine for exposing a light image onto a moving photoconductive web during passage of said web along a path through said machine, means for maintaining a section of said web in a predetermined, relatively flat plane during exposure, an image-bearing transparency having register mark means thereon, a holder for mounting said transparency for exposure to said web, means located on the side of said holder remote from said web for projecting an image on to said web, means for detecting the position of the side edge of said web and sensing any lateral deviation of said side edge from a normal position, means responsive to the movement of said detecting means for laterally shifting said projected image in accordance with the lateral deviation of said web from a normal position, machine register mark indicia in the approximate plane of said web, means for adjustably positioning the register mark means of said transparency with respect to said register mark indicia, and said register mark indicia having a predetermined relationship with respect to the detecting means when in position to detect the side edge of the web in its normal path and with respect to said projection means.

3,299,778
CIRCULAR SAWS
Hans Amacher, Lettenweg 76, Allschwil, Basel-Land, Switzerland
Filed Aug. 9, 1965, Ser. No. 478,038
Claims priority, application Switzerland, Aug. 31, 1964, 11,361/64
5 Claims. (Cl. 90—11)



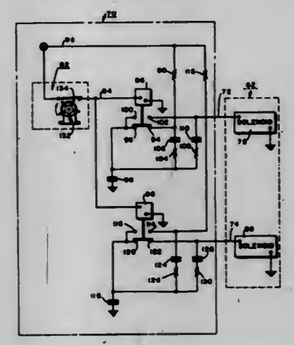
1. A circular saw comprising a rotatable saw blade with a central aperture, and an adjustable cutting block arranged in said aperture, and means connected to the saw blade and the block with the block rotatable at a higher speed than said saw blade.

3,299,779
TOY FOR THREE DIMENSIONAL CARVING
Tobin Wolf, Bloomfield, N.J., assignor to Deluxe Reading Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed Apr. 28, 1965, Ser. No. 451,525
5 Claims. (Cl. 90—13.1)



1. A three dimensional toy carving device comprising a support having a plurality of arms pivotally connected together to form a rectangular frame, a rectangular base, means adjacent one edge of the base mounting one of said arms on a face of the base for pivotal movement about parallel spaced axes, means mounting a cutting tool and a tracer on another arm of the frame parallel to said one of said arms, and clamping means adjacent the opposite edge of the base for clamping a work piece under the cutting tool and an object to be traced under the tracer on said face of the base, the means pivotally mounting said one arm comprising an ear extending laterally from said arm adjacent each end thereof, a support secured to said face of the base, and link means pivotally connected to said ears and support, the pivotal connection of said one arm with adjacent arms comprising spaced ears extending in opposite directions from the opposite ends of said one arm and pivot pins extending through said ears and the adjacent arms.

3,299,780
YARN TEXTURING APPARATUS
Homer W. Goodner, Pensacola, Fla., assignor to Monsanto Company, a corporation of Delaware
Filed Oct. 1, 1963, Ser. No. 313,092
6 Claims. (Cl. 91—35)

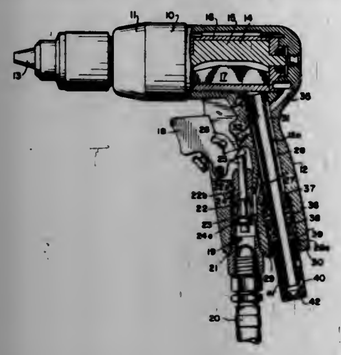


1. A control circuit for alternately actuating first and second mechanisms, comprising in combination:
(a) first and second capacitors,
(b) and control means for repetitively and alternately during successive time periods:
(1) charging said first capacitor while discharging said second capacitor through said second mechanism,
(2) and charging said second capacitor while discharging said first capacitor through said first mechanism,
(c) said control means including means for independently selecting the duration and timing of said successive time periods.

3,299,781
AIR INLET AND EXHAUST MANIFOLD
John P. Law, Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 4, 1964, Ser. No. 415,982
6 Claims. (Cl. 91—58)

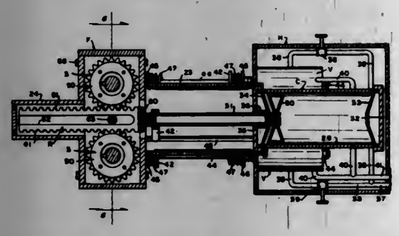
1. In a hand tool comprising a casing formed to include a barrel and a handle connected to said barrel, and having a pneumatically operated motor carried by said barrel, the combination of:
said handle including a bore;
means disposed within said bore dividing said bore into an inner fluid passage and an outer fluid passage extending peripherally around said inner fluid passage;
said bore dividing means comprising a member internally including said inner fluid passage and disposed within said bore such that said outer fluid passage surrounds said member within said bore;
means for connecting said outer fluid passage with a source of pressurized air and with said motor such

that pressurized air supplied from said source to said motor passes through said outer fluid passage; and means for connecting said inner fluid passage with said



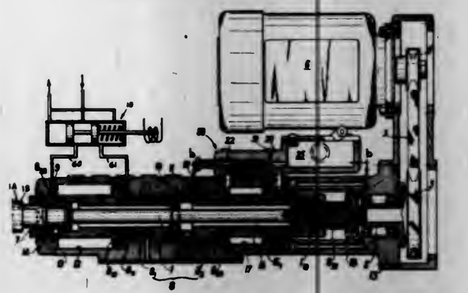
motor and with the atmosphere such that exhaust air discharged from said motor passes through said inner fluid passage to the atmosphere.

3,299,782
RACK DRIVE FLUID ENGINE
Howard R. Sunday, P.O. Box 7, Eads, Colo. 81036
Filed Jan. 21, 1965, Ser. No. 427,036
7 Claims. (Cl. 91—189)



1. A fluid engine comprising:
a cylinder having a piston reciprocatively carried therewithin and a piston rod extending from one end of the cylinder;
a double-gear rack attached to the piston to form a longitudinal extension thereof and having opposed longitudinal slots on opposite sides;
a pair of spaced, parallel drive shafts straddling, and lying transversely of, the gear rack, and at opposing positions within the reciprocative reach of the rack movements;
a gear mounted upon each drive shaft meshing with one of the said gear racks and being adapted to rotate clockwise and counterclockwise responsive to reciprocative movements of the rack;
a framework on which said gears are mounted;
a roller mounted upon said framework on each side of said rack between said gears extending into the respective longitudinal slot, with the edge of the respective roller engaging a side of the corresponding slot to hold the rack in position; and
ratchet means associated with each gear and shaft adapted to lock the gear with the shaft with the gear rotation in one direction and to free the gear from the shaft with the gear rotation in the opposite direction, whereby the clockwise and counterclockwise movements of the gear rotates the shaft in a selected direction and said shaft is adapted to rotate continously in said direction.

3,299,783
FLUID OPERATED MACHINE TOOL SPINDLE
Jack Louis Pierre Mazue, Bourgneuf-Val-d'Or, France, assignor to Societe d'Etude et de Construction de Machines-Outils, S.E.C.M.O., Saone and Loire, France, a company of France
Filed June 26, 1964, Ser. No. 378,360
Claims priority, application France, July 5, 1963, 940,479
11 Claims. (Cl. 91—355)



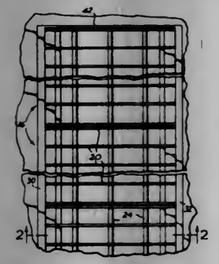
1. In a machine-tool, an arrangement comprising in combination a casing; an axially elongated spindle; means rotatably mounting said spindle within said casing to permit said spindle to rotate about its axis of elongation; said spindle including means at one end thereof for attaching a rotatable tool coaxially with said spindle axis of elongation; said spindle being axially displaceable relative to the casing between a retracted and an advanced position; a first cylinder chamber in the casing; a first piston member coaxial with and connected for axial displacement with the spindle and displaceable in the first chamber; pressure fluid means associated with said first chamber including valve means selectively operable for admitting pressure fluid into either end of said first chamber to reciprocate said first piston member therein; a second cylinder chamber in the casing; a second piston member coaxial with and axially displaceable relative to said first piston member and spindle and displaceable in said second chamber; a speed-restricting fluid circuit connected with opposite ends of said second chamber and flow-restricting means in said circuit; and cooperating stop means on said first and second piston members for limiting the extent of relative displacement therebetween to an amount less than the total displacement of said first member and spindle relative to the casing, whereby said second member will be axially displaced bodily with the first member and spindle over part of said total displacement thereof and will restrict the speed of displacement of said first member and spindle over said part, to a valve determined by said flow restricting means.

3,299,784
APPARATUS FOR OPENING COLLAPSED BOX BLANKS
Chester L. Goode, Rte. 3, Morris, Ill. 60450
Filed Apr. 27, 1964, Ser. No. 362,753
5 Claims. (Cl. 93—53)



1. Apparatus for opening a collapsed box blank having an upper ply and a lower ply which are unconnected at opposite ends of the blank, said apparatus comprising the combination of means for advancing the box blank horizontally with one pair of unconnected ply edges at the leading end of the blank and the other pair of unconnected ply edges at the trailing end of the blank, means for splitting the two plies apart at the leading end of the advancing blank, a substantially stationary tapered former adapted to wedge between the split apart plies of the advancing blank and to gradually open the blank as it is advanced over the former with the lower ply passing beneath the former and the upper ply passing over the former, means for restraining the former against movement so as to maintain the former in a substantially stationary position as the box blank is passed thereover, the restraining means permitting free withdrawal of said blank from said former.

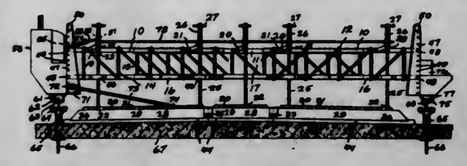
3,299,785
GRATING FOR WASTE TRENCHES
Arthur M. James, Rte. 2, Box 46, Beaverton, Oreg. 97005
Filed Apr. 20, 1964, Ser. No. 360,834
3 Claims. (Cl. 94—33)



3. The combination of
a trench,
a grate in covering relation over said trench,
plural, substantially parallel rails in said grate spaced laterally from each other having free, unjoined ends defining opposed side margins of the grate,
bars in said grate joining said rails at points disposed inwardly from the free ends of said rails,
multiple edges defining the free end of each of said rails,
said multiple edges including an upper edge that inclines from a vertical plane inwardly toward the middle of the grate progressing downwardly from the top of the grate, and a lower edge joining with the base of said upper edge which inclines from a vertical plane inwardly toward the middle of the grate progressing in a downward direction at a greater angle than does said upper edge, and
opposed ledge elements separable from the grate mounted along opposite sides of the trench,
said ledge elements being anchored in place,
each of said ledge elements including an upper seating surface that has an incline complementing the incline of said upper edge defining the free end of a rail, and a lower seating surface that has an incline complementing the incline of said lower edge defining the free end of a rail,
said upper seating surfaces of the opposed ledge elements seating by directly supporting the free ends of said rails with said free ends wedged into place.

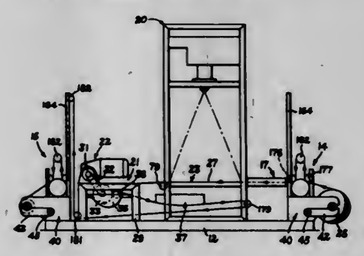
3,299,786
BRIDGE DECK FINISHER
Harold W. Godbersen, Ida Grove, Iowa 51445
Filed July 13, 1964, Ser. No. 382,045
4 Claims. (Cl. 94—45)

1. A bridge deck finisher adapted to be supported on rails, a bridge deck finisher member mounted for movement along said rails and comprising a transversely positioned framework, lower screed members secured to said framework and suspended therefrom, said screed members being of various lengths and being articulated with respect to each other whereby said screed members will conform to an upper concrete surface, said screed members including housings, lower screed concrete finishing portions resiliently suspended from said housings, and including adjustable bolts suspended from said housings, springs receiving said bolts, said springs being in abutment with said housings and said lower screed concrete



finishing portions, means for adjustably positioning said screed housings including a plurality of vertically positioned rods attached to said framework, means for adjustably positioning said rods vertically, said means including collars receiving said vertically positioned rods, arms pivotally attached to said collars, and to said framework, transverse shafts pivotally attached to said collars, further arms attached to said transverse shafts, means for rotating said shafts to vertically raise and lower said rods, said rotating means including a longitudinally positioned further rod pivotally attached to said further arms, means for moving said further rod.

3,299,787
ELECTROPHOTOGRAPHIC MICRO-COPY PRINTER
Edwin R. Kolb, University Heights, James I. Richardson, Warrensville Heights, and Francis Hunstiger, Parma Heights, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Nov. 27, 1962, Ser. No. 240,253
5 Claims. (Cl. 95—1.7)



1. An apparatus for producing prints on electrophotographic paper and the like by electrostatic photography comprising means for supporting a web of paper having an electrophotographic surface, delivery means spaced from said means for receiving said paper, means to advance said web along a predetermined path of travel between said support and delivery means, means for maintaining said web of paper under controlled tension during travel thereof, charging means positioned along the path of web travel between said support and delivery means for depositing a substantially uniform charge on the electrophotographic surface of said web, said charging means including a plurality of fine wires supported to deposit a charge on at least said surface of said web, said wires being arranged parallel to each other in a plane and diagonal to the path of web travel, exposure means positioned along the path of web travel between said charging means and said delivery means for exposing the elec-

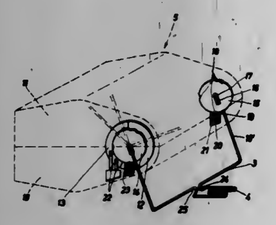
trophotographic surface of said web to a pattern of light forming on said surface an electrostatic latent image of the original to be reproduced, a developing station located in the path of web travel between said exposure means and said delivery means receiving said paper with said latent image thereon, receptacle means included in said developing station for receiving a liquid developer including an electrically insulating liquid vehicle having dispersed therethrough marking particles capable of being deposited on said surface as controlled by said latent image and substantially adhering to said electrophotographic surface, driven developer drum means positioned transversely of the path of web travel and partially immersed in the developer in said receptacle means, said web being positioned in driving contact around the outer periphery of said drum with the electrophotographic surface facing outwardly whereby successive portions of the web are brought beneath the level of the developer, roller means positioned transversely of the path of travel and out of contact with said developer and in contact with the surface bearing the developed image for removing substantially all of the vehicle adhering to said web while leaving said deposited marking particles adhered to the electrophotographic surface of said web and cleaner means contacting said roller means to remove therefrom any marking particles deposited thereon.

3,299,788

LIGHTING DEVICE

Karl Ackermann, Berlin-Charlottenburg, and Rudolf Socha, Berlin-Lichterfelde, Germany, assignors to Robert Bosch Elektronik G.m.b.H., Berlin-Wilmersdorf, Germany

Filed Aug. 31, 1964, Ser. No. 393,089
Claims priority, application Germany, Nov. 28, 1963, B 74,438
14 Claims. (Cl. 95—11)



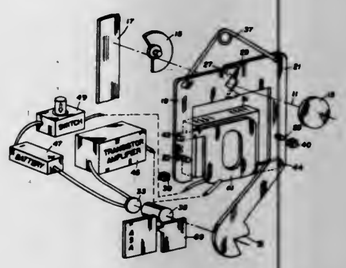
1. In a unitary electronic flash device, the improvement comprising, in combination:
- a housing for the flash device;
- a bracket extending around the housing and pivotally connected to opposite sides thereof, at least a first end of the bracket extending through the housing into its interior;
- a foot attached to the central portion of the bracket for insertion in the mounting shoe of a photographic camera;
- a movable contact carrier mounted on the first bracket end to rotate with the bracket; and
- a pair of contacts mounted on the housing and arranged to contact the movable contact carrier to form a switch, so that when the foot and bracket are pivoted about the housing, in at least one position the switch is closed or actuated, and in at least one other position, in which said foot is spaced from said housing, the switch is open or de-actuated.

3,299,789

AUTOMATIC EXPOSURE CONTROL SYSTEM

Jasper S. Chandler, Rochester, and Harvey O. Hoadley, Penfield, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 5, 1964, Ser. No. 373,022
8 Claims. (Cl. 95—64)



1. In a camera having a picture-taking aperture and a photoresponsive element illuminatable by scene light, an exposure regulating means comprising: masking means normally biased to a first position and movable through a range of positions for varying the amount of light entering said picture-taking aperture and for varying the illumination of said photoresponsive element; a coil wound about an axis in a relatively flat manner in which the inside diameter of the coil is much larger than its axial dimension, said coil being supported only by said masking means and movable therewith; amplifying means responsive to said photoresponsive element for energizing said coil as a function of the illumination of said photoresponsive element; and magnet means mounted adjacent said coil and oriented so that its magnetic field induces said coil to move perpendicularly to its axis whenever said coil is energized by said amplifying means; said coil being so moved whenever its energization is sufficient to overcome the bias applied to said masking means to position said masking means as a function of the intensity of said scene light.

3,299,790

FILM PROCESS MAGAZINE

Harry N. Dieffenbach, Fremont, Calif., assignor to Mark Systems, Inc., Santa Clara, Calif.

Filed Oct. 10, 1963, Ser. No. 315,147
5 Claims. (Cl. 95—89)



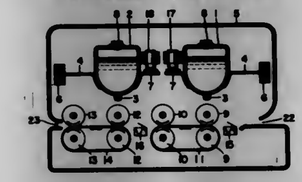
5. A mechanism for simultaneous processing of a photographic film of the type having a photographic film with an emulsion side adapted to create a latent image when exposed to light and a mat film having a developing solution impregnated within an emulsion side of the mat film and in which development of the latent image on the film is caused by action of the developer carried by the mat when an intimate contact between the emulsion of the film and the emulsion of the mat is effected, said mechanism comprising a roll of mat film and an adjacent roll receiving the mat's film from said first roll together with the photographic film, means urging the first roll of material against said second roll of material with the two rolls compressed together in tangential relationship, said photographic film and said mat film being rolled onto said second reel with their emulsion sides in face-to-face relationship.

3,299,791

DEVICE FOR DEVELOPING COPYING PAPER

Susumu Fukuda, Kobe, Japan, assignor to Fuji Photo Film Company Limited, Kanagawa-ken, Japan

Filed May 15, 1964, Ser. No. 367,765
Claims priority, application Japan, May 27, 1963, 38/27,348
6 Claims. (Cl. 95—89)



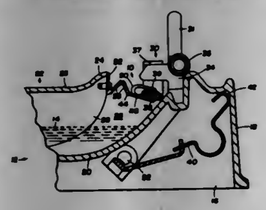
1. Copying paper developing apparatus comprising, in combination, at least one horizontally extending elastic support; means fixedly supporting one end of said support; electromagnetic vibrating means operatively associated with the free end of said support and operable, when energized, to vibrate said support in a vertical direction; a treatment liquid tank supported on said support for vibration thereby, said tank having a bottom wall formed with a transversely extending vent; a pair of liquid applying rollers arranged in parallel superposed relation below and in alignment with said vent, the cylindrical surface of the upper one of said rollers being spaced from said vent; driving means operable, when energized, to rotate said rollers to draw copying paper therebetween; a normally opened switch positioned in advance of said rollers in the path of the copying paper for closure by the latter as it is fed to said rollers; and an energizing circuit for said electromagnetic vibrating means including, in series with the latter, a source of potential and said switch; whereby as copying paper is fed to said liquid applying rollers, said treatment liquid tank is vibrated vertically to discharge liquid therefrom through said vent onto the cylindrical surface of the upper one of said rollers for application to the copying paper.

3,299,792

TRAY CLOSURE MECHANISM FOR A PHOTOGRAPHIC PROCESSING APPARATUS

Anthony J. Nardone and Robert F. Blattner, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 5, 1964, Ser. No. 373,021
7 Claims. (Cl. 95—89)



1. In a closure mechanism for a tray containing a processing solution and having walls thereof forming a mouth through which access may be had to a photosensitive material introduced into said solution, the combination comprising:

movable means mounted in and extending across the full length of said mouth for movement between an operative position in engagement with a first one of said walls, and an inoperative position removed therefrom to provide an opening between said movable means and first wall through which a photosensitive material may be introduced into said processing solution; and

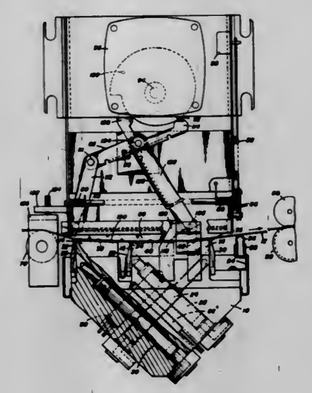
a bridging member extending across the full length of said mouth and having one edge thereof in engagement with a second wall opposite said first wall, and said opposite edge connected to said movable means and movable therewith so that said mouth is completely closed off when said movable means is moved to its operative position.

3,299,793

PROCESSING APPARATUS FOR PHOTOSENSITIVE FILM

Harold D. Lowry, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 15, 1964, Ser. No. 375,023
5 Claims. (Cl. 95—94)

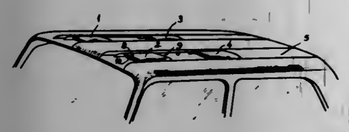


1. In an apparatus having a processing solution zone and a rinsing zone for processing a strip of exposed photosensitive material which is transported past said zones in succession, the combination comprising:

means for positioning in and transporting a strip of exposed photosensitive material through a non-processing position in which said strip is out of surface contact with said processing solution and rinsing zones;

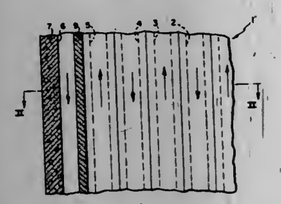
strip moving means comprising a shoe having a strip engaging surface conforming substantially to the surfaces of said processing solution zone and said rinsing zone movable between an inoperative position, in which said strip remains in its non-processing position, and an operative position in which said strip is located in a processing position with the photosensitive surface of said strip in contact with said processing solution and rinsing zones, and including means for controlling the movement of said strip moving means to move said photosensitive surface of said strip sequentially into surface contact with said rinsing zone and then said processing solution zone during movement of said strip moving means to its operative position, and to retract said photosensitive surface of said strip sequentially from surface contact with said processing solution zone and then said rinsing zone during movement of said strip moving means to its inoperative position.

3,299,794
VEHICLE VENTILATION DEVICES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Feb. 8, 1965, Ser. No. 431,005
Claims priority, application France, Feb. 12, 1964, 963,482, Patent 1,393,501
2 Claims. (Cl. 98—2)



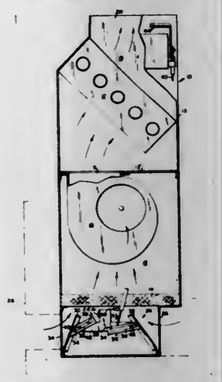
1. A ventilation device for automobile vehicles comprising an opening in the roof of said vehicle, a protective cowl mounted above said opening and provided with forward and rearward orifices therein, a cock-plug rotatable within a housing mounted in said opening and protruding slightly therefrom, a plurality of orifices formed over part of the circumference of the upper portion of said cock-plug, a plurality of deflecting vanes arranged across the lower portion of said cock-plug, said cock-plug being manually orientatable by rotation thereof so that one direction corresponds to that of the dynamic air pressure to permit outside air to penetrate the vehicle body and another direction corresponds to a negative pressure created by the vehicle to exert an extraction effort of the air within the vehicle.

3,299,795
ROOM AIR CONDITIONING ARRANGEMENT WITH POROUS WALLS
José Miguel Araújo Teixeira, Lisbon, Portugal, assignor to Construcoes Continental, Lda., Lisbon, Portugal, a corporation of Portugal
Filed Mar. 11, 1965, Ser. No. 438,877
Claims priority, application Germany, Mar. 12, 1964, C 32,401
3 Claims. (Cl. 98—31)



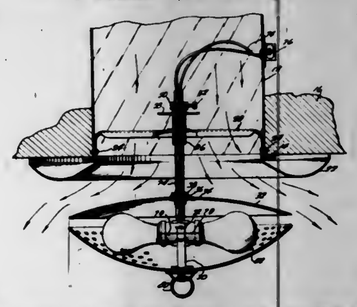
1. A room air conditioning arrangement for use in a building structure having walls defining a room, parallel ducts formed in said walls for passage of air therethrough, the wall region between said ducts and the outside of said building structure being of poor heat-conducting material, the wall region between said room and said ducts being of good heat-conducting and porous material permitting limited equalization of pressure of the air in the room and the ducts; and air of predetermined temperature being circulated in said ducts, the circulation of the air in adjacent ducts being in opposite direction and the exchange of air from said ducts to said rooms being only through said porous wall, whereby the temperature in said room will be affected by the radiation of heat from or into the wall and will be determined by temperature of the air being circulated in said ducts in opposite direction.

3,299,796
AIR CONDITIONING UNIT
Walter B. Toper and David F. Bryans, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Nov. 17, 1964, Ser. No. 411,876
4 Claims. (Cl. 98—36)



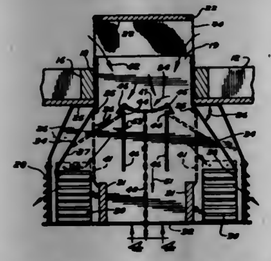
1. In a room air conditioner, the combination of a casing having a first inlet, a second inlet and an outlet, a fan in said casing, conditioning means in said casing for air passing through the casing, said fan inducing air into the casing through said inlets and directing at least a portion of the induced air through the conditioning means for discharge through the outlet, a first damper pivotally mounted adjacent its lower edge placed adjacent the first inlet, a second damper pivotally mounted adjacent its lower edge placed adjacent the second inlet, each damper having a bracket containing a slot therein, the slot including an offset portion, a rotatable control arm pivotally mounted in said casing, pins carried on said control arm adjacent its opposite ends, the pins being slidably received in the bracket slots, and means for rotating said control arm to slide pins in said slots in opposite directions thereby moving said dampers inversely, movement of one pin to a position engaging the offset portion of its co-operating slot locking the corresponding damper in fully closed position while movement of a second pin in the opposite direction in the co-operating slot of the corresponding damper moving the corresponding damper to a fully open position.

3,299,797
COMBINED AIR DIFFUSER AND LIGHTING FIXTURE
John P. Dry, Box 427, Winters, Tex. 79567
Filed Sept. 2, 1964, Ser. No. 393,942
3 Claims. (Cl. 98—40)



1. A combination light fixture and air diffuser comprising a duct opening into a room and having a flared terminal portion thereof, a spider mounted in said duct inwardly from the flared terminal portion thereof and having a hub centrally disposed thereof, a stem perpendicularly disposed to said spider and extending through an opening thereof in mounted relation with respect to said hub, a light reflecting shell mutually flared and mounted from a lower portion of said stem and tangentially disposed to the terminal portion of the duct for closing the air passage through the duct when they are mutually contacting each other, and a holding pin disposed to provide positive adjustment of said stem in any one of several positions that may engage one side of said holding pin, said stem capable of being positively adjusted along its axis for increasing the air flow through said duct, a light bulb and socket arrangement centrally disposed and mounted in said light reflecting shell, an apertured light diffuser encompassing said light bulb and socket, and wherein light power to objects positioned below said light bulb receive increased light power upon lowering of the light reflector shell.

3,299,798
AIR OPERATED FRESH AIR VENTILATOR
Marvin Nabben, 3521 4th Ave. S., Minneapolis, Minn. 55406
Filed Mar. 10, 1965, Ser. No. 438,607
2 Claims. (Cl. 98—119)



1. An air ventilator comprising a duct adapted to receive fresh air and having a portion thereof protruding into a building, said duct having a substantially upright axis, an intake opening open out of said duct, a flap type valve to cover said opening, said flap type valve being suspended from a substantially horizontal axis and movable from a first gravity held position wherein it substantially closes off air flow from said duct to a second position wherein it permits air flow from said duct, said flap type valve having a lower end portion bent out of the plane of the main portion of the valve and toward the direction of incoming air flow, and means to move said valve to and hold it in said second position, said means including a stop member pivotally mounted in spaced relation to said flap valve at the air inlet side thereof for movement from a first location spaced from said flap valve to a second location wherein an outer end of said stop member bears against said flap valve to move it and hold it in said second flap valve position, a control lever integral with said stop member, and manually operable means operative on said control lever to cause said stop member to move between said first and second locations.

3,299,799
PUFFING GUN
Wolfgang Heiland, Trevose, Pa., assignor to the United States of America as represented by the Secretary of Agriculture
Filed Feb. 11, 1965, Ser. No. 432,024
3 Claims. (Cl. 99—238)

1. A puffing gun for the explosive puffing of comestibles comprising

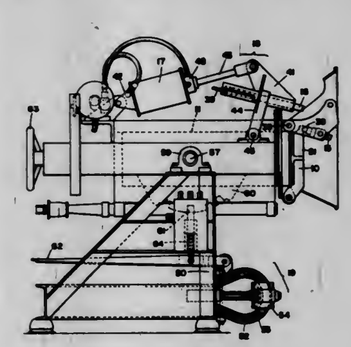
(a) a stationary support member;

(b) an elongated hollow member, forming a gun barrel for heating a comestible to be puffed, rotatably mounted on said support member, said gun barrel having a circular opening at one end thereof;

(c) an annular flange secured to the gun barrel having a face disposed in the plane of said opening, said face being provided with a groove and a ring-seal in said groove;

(d) closure means adapted to cover said opening and engage the ring-seal;

(e) a hinge assembly secured to the gun barrel and provided with a hinge pin adapted for both rotatory and lateral movement in said hinge, said hinge assembly comprising a pair of hinge-arms substantially parallel with each other and integral with the lid extending laterally for pivotally mounting said lid, a hinge-pin, a bushing, a locking pin, a ball serving as a locking key to reversibly secure the hinge-pin and bushing, and a hinge support, said hinge-pin having axially aligned ends, an eccentrically located cylindrical portion intermediate said aligned ends, an axially centered hollow core adapted to receive said locking pin through an opening in one of said aligned ends, and an opening in said cylindrical portion to said hollow core adapted to receive said ball, the ball having a diameter greater than the depth of the opening in the cylindrical portion, a sloping recess in said locking pin adapted to receive a portion of said ball, an eccentrically located bore in said bushing adapted to rotatably receive said bushing, means for securing said bushing in said hinge support, bearings adapted to mount said aligned ends in said hinge-arms, means for securing said bearings, means for rotating said hinge-pin, means for rotating said bushing, and means for activating said locking pin,



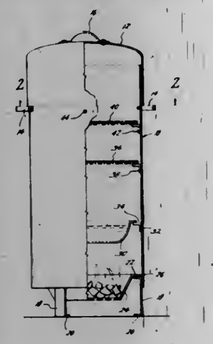
(f) rigid means connecting the closure means with the hinge pin;

(g) a toggle locking assembly mounted on the gun barrel having pressure-applying means adapted to engage the closure means at a point opposite the point of connection of the rigid connecting means to the closure means, whereby pressure applied to the closure is transmitted through the rigid connecting means of the hinge pin causing said pin to move laterally in said hinge and causing said closure to engage the ring-seal with uniform pressure around its entire circumference;

(h) a lock actuating means adapted to reversibly engage the toggle locking assembly, and

(i) resilient bumper means mounted on the stationary support member positioned to absorb and stop the movement of the closure means after release of the locking means.

3,299,800
BROILING AND ROASTING APPARATUS
Nicholas C. Angelo, 585 Castleton Ave., Staten Island, N.Y. 10301
Continuation of application Ser. No. 213,201, July 30, 1962. This application Mar. 22, 1965, Ser. No. 454,229
3 Claims. (Cl. 99—417)
(Filed under Rule 47(b) and 35 U. S. C. 118)



1. A cooking apparatus for precooking food items under moist-atmospheric conditions and final cooking under dry-atmospheric conditions, comprising

a cylindrically shaped body of substantially uniform internal dimension along its elongated axis,

legs of channel shape in cross-section positioned within and extending downwardly from the lower end of the body and attached to the wall of the body with the flanges of the channels extending radially inwardly of the body, to support the body in an upright position with the lower end of the body spaced above the ground,

at least two vertically spaced sets of angle-shaped support elements in the body above the legs the elements of each set being peripherally spaced with flanges thereof extending radially inwardly of the body in a common horizontal plane,

a fuel support adapted to be removably disposed in the body on any of the upper flanges of the legs and the angle-shaped support elements in inwardly spaced relation to the internal surface of the body to provide space between the body and fuel support through which air may flow upwardly into the body,

a receptacle for water adapted to be removably disposed in the body on the inwardly extending flanges of any of the angle-shaped support elements above the fuel support in inwardly spaced relation to the internal surface of the body to provide space between the receptacle and body through which air may flow upwardly in the body about the receptacle,

a grid adapted to be removably disposed in the body on the inwardly extending flanges of any of the angle-shaped support elements not supporting the fuel support and the receptacle, and

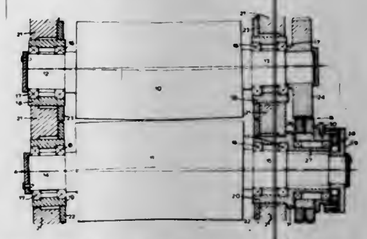
said receptacle effectively isolating the fuel support from said grid thereby preventing flames from flaming up against said grid,

a cover removably positioned over the upper end of the body to close the same,

said body having an opening through which air may flow out of the body when the upper end is closed,

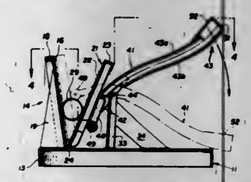
said receptacle being removable when the food items have been precooked under moist-atmospheric conditions to allow the receptacle to be removed and to allow the grid and the fuel support to be repositioned on any of the flanges of the legs and angle-shaped support elements for final cooking under dry-atmospheric conditions.

3,299,801
APPARATUS FOR TREATING BLANKS OR WEBS OF MATERIAL
Thomas Desmond Bishop, Solihull, England, assignor to The Deritend Engineering Company Limited, Birmingham, England, a British company
Filed Apr. 2, 1965, Ser. No. 445,177
Claims priority, application Great Britain, Nov. 28, 1964, 48,448/64
4 Claims. (Cl. 100—168)



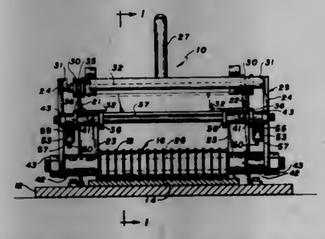
1. Apparatus for treating blanks or webs of material, comprising a pair of rolls each of which has a coaxial portion at each end of the roll, each coaxial portion being journaled in a pair of axially spaced bearings, at least one such pair of bearings being mounted in the opposite ends of a bush, a machine frame in which one end of such bush is mounted for rotation on its axis, and an eccentric in which the other end of such bush is mounted and which in turn is rotatably mounted in such frame so that angular movement of the eccentric laterally displaces such other end of the bush while twisting of the bush is relieved by rotation of the bush in the machine frame.

3,299,802
DEVICE FOR FLATTENING CANS
John W. Black, Jr., 5616 Jewell Road, Paradise, Calif. 95969
Filed Apr. 8, 1965, Ser. No. 446,539
3 Claims. (Cl. 100—233)



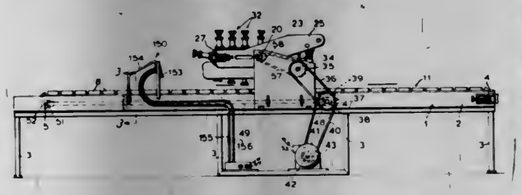
1. A device for flattening cans and the like comprising an elongate base adapted to rest upon a horizontal supporting surface, a fixed jaw mounted in upstanding relation at one end of the base, a movable jaw, pivot means carried on the base for mounting said movable jaw for movement between open and closed positions with respect to said fixed jaw, said pivot means being positioned immediately adjacent said fixed jaw so that as the surfaces of the fixed and movable jaws generally face each other and substantially abut along their entire surfaces when the jaws are closed, the jaws forming an upwardly V-shaped opening for receiving a can when the jaws are opened, the surfaces of the jaws having a plurality of spaced parallel tooth-like ridges formed thereon and parallel to the axis defined by the pivot means, said ridges serving as a can gripping means for preventing slippage of the can out of the jaws as they are closed, a generally vertical fulcrum post secured to an intermediate portion of the base, a rigid lever, means pivotally mounting said lever on said fulcrum post for movement in a plane intersecting the axis of said first named pivot means at substantially right angles thereto, said lever having an inner end extending towards said movable jaw, and an outer end extending away from the movable jaw and adapted to be engaged by a hand or foot for downward operating movement, and a single roller rotatably mounted on said inner end of the lever and engaging the movable jaw whereby as the outer end of the lever is moved downwardly, the inner end of the lever with the roller thereon moves upwardly in an arc which approaches the fixed jaw and rolls along the movable jaw to push the movable jaw toward the fixed jaw.

3,299,803
ENGRAVING APPARATUS FOR MAKING MODEL BUILDING MATERIALS
James C. Taylor, 1594 Pleasant Hill Road, Lafayette, Calif. 94549
Filed May 3, 1965, Ser. No. 452,835
5 Claims. (Cl. 101—5)



2. Engraving roller apparatus for preparing materials for use in model building comprising: a smooth flat elongate base for receiving a sheet of material to be engraved; guide rail means spaced above said base along its longitudinal axis; means mounting said guide rail means on said base; a cylindrical engraving roller having outwardly extending portions for contacting said sheet of material to be engraved; means supporting said engraving roller on said guide rail transversely of said base so that the roller is spaced above and adjacent thereto, and movable back and forth over said base; said support means being adapted for adjusting the space between said roller and base and the pressure applied by the roller to a sheet of material which is on said base for engraving.

3,299,804
ARTICLE HANDLING AND ELECTROSTATIC IMPRINTING APPARATUS AND METHOD
Marlin A. Schueler, Danville, Calif., assignor to Unimark Corporation, a corporation of California
Filed May 13, 1964, Ser. No. 366,981
11 Claims. (Cl. 101—35)



1. Apparatus for marking articles comprising:

(a) a row of article supports, each adapted to support thereon an article to be marked;

(b) a row of powder supports, each adapted to contain a body of marking powder;

(c) row supporting means respectively supporting said rows for movement longitudinally thereof in separate paths of travel, and means connected with said rows for so moving them;

(d) guide means for successively guiding such article support and each powder support into registration with each other, at a point in said paths;

(e) each powder support including a stencil screen on which each body of powder is adapted to be supported and which screen is in spaced opposed relation to each article support when they are in registration with each other at said point;

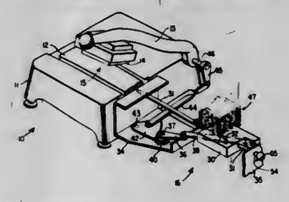
(f) an electrical circuit in which said article and powder supports are operatively connected at said point for establishing an electrical potential therebetween;

(g) powder spreading means supported on each powder support for movement into engagement with the powder to be supported on the latter and with each screen and across the latter for substantially uniformly distributing such powder on said screen and for forcing the powder through the mesh openings in said screen;

(h) driving means including driving and driven elements movable from an inoperative position out of driving relation to each other to an operative position in which said driving and driven means are in driving relation, and vice versa, for so moving said powder spreading means when said driving and driven means are in said operative position and for discontinuing said movement when said driving and driven means are in said inoperative position;

(i) said driven means being responsive to movement into said operative position only under the influence of an article on an article support at said point as said article support moves past said point whereby said powder spreading means will be inoperative in the absence of an article on an article support at said point.

3,299,805
PLATE FEED MEANS IN ADDRESS PRINTERS
James E. Mulreed, Stamford, and Alfreds Orlens, Cos Cob, Conn., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed July 17, 1964, Ser. No. 383,369
7 Claims. (Cl. 101—65)



1. In an addresser printer:

a frame;

a printing plate guide track mounted on said frame;

a printing plate hopper mounted on said frame adjacent one end of said plate track;

a printing platen mounted on said frame for movement relative to said track;

an actuating linkage for said platen;

means responsive to the movement of the platen actuating linkage for advancing individual printing plates from said hopper and along said track;

said means including a slide rail mounted on said frame;

a plate feed block slidably mounted on said rail;

a crank arm rotatably mounted on said frame;

link means articulately interconnecting the outer end of said crank arm to said feed block;

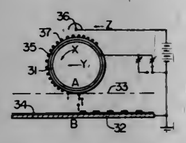
a gear coupled for rotation with said crank arm;

a gear segment pivotally mounted on said frame and meshing with said gear;

means connected to said printing platen actuating linkage for oscillating said gear segment to an extent such that said crank arm is pivoted through substantially one half revolution during each operative stroke of said platen; and

means for mounting said rail for pivotal movement between two positions on said frame so that in one position of the rail said block is operative to advance plates from said hopper and along said track and in the other position of said rail said block is inoperative to so advance said plates.

3,299,806
ELECTROSTATIC PRINTING APPARATUS WITH INKING MEANS BETWEEN ELECTRODES
Hiroomi Sawada, Kenji Takahashi, Keizo Kobayashi, and Shigeru Kasu, Tokyo, Japan, assignors to Dainippon Ink and Chemicals, Incorporated, Itabashi-ku, Tokyo, Japan
Filed Feb. 16, 1965, Ser. No. 432,989
Claims priority, application Japan, Feb. 20, 1964, 39/8,805; Oct. 23, 1964, 39/59,914
3 Claims. (Cl. 101—114)



1. An electrostatic printing method which comprises positioning a material to be imprinted on one side of an uncharged stencil, placing an electrode plate adjacent the side of the said material to be imprinted remote from said stencil, bringing into contact with the stencil a powdered ink carrying member capable of moving past said stencil, providing another electrode on the opposite side of the ink carrying member from the stencil and which is electrically insulated from the said carrying member in the neighborhood of the point where the said carrying member comes into contact with the stencil in a position such that the electrode is opposed to the electrode plate beneath the material to be imprinted with the stencil and the material to be imprinted between the electrode and electrode plate, establishing a potential difference between the electrode and the electrode plate, supplying a powdered ink to the said carrying member, electrically charging the powdered ink on the said carrying member by applying a corona discharge thereto, bringing the said charged powdered ink onto the stencil by moving the said carrying member, and passing the said powdered ink through openings of the stencil by means of an electrostatic force which acts between said powdered ink and said material to be imprinted, whereby the said ink is adhered to the said material in accordance with the pattern of the stencil.

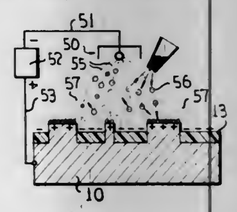
3,299,807
DIRECT IMAGING OF OFFSET PLATES
Thomas J. Evensen, Maplewood Village, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Feb. 14, 1966, Ser. No. 537,590
5 Claims. (Cl. 101—149.2)

5. In the imaging of an offset plate having a strongly hydrophilic face coating comprising a hydrophilic binder, a hydrophilic filler powder, and a discontinuous phase of high molecular weight synthetic organophilic polymer latex particles, the latex being characterized as forming a fragile water-receptive and ink-repellent dried film which becomes water-repellent and ink-receptive on being heated, the process comprising imparting a desired preferentially radiation-absorptive image to a transfer sheet having a face coating comprising a volatilizable transfer material which causes gross swelling of said polymer on absorption thereby, placing the face coating of the imaged transfer sheet against the face coating of said offset plate, and briefly exposing the imaged surface of the transfer sheet to intense radiation to cause heating at said image and transfer of said volatilizable transfer material to said face coating of said offset plate to provide an ink-receptive pattern corresponding to said image.

3,299,808
CORRECTION FLUID
Arthur Zitt, 81 Woodview Road, West Hempstead, N.Y. 11552
No Drawing. Filed Aug. 12, 1965, Ser. No. 479,305
9 Claims. (Cl. 101—149.4)

1. A process for correcting an error on a spirit master sheet represented by dye and dye vehicle which comprises applying to the dye and dye vehicle a correction fluid comprising a borohydride which is an alkali metal borohydride, a tetraalkyl ammonium borohydride or morpholine borane and a solvent to provide a clean, even surface without any trace of dye and dye vehicle.

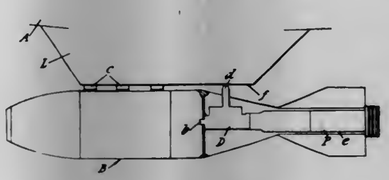
3,299,809
ELECTROSTATIC PRINTING PROCESS FOR USE WITH PRINTING PLATE HAVING PLURAL LEVELS
Laszlo J. Javorik, Chicago, and Edward D. Higgins, Palos Heights, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 5, 1964, Ser. No. 409,209
9 Claims. (Cl. 101—426)



1. The method of electrostatic printing, which comprises preparing a printing plate of conductive material having raised image areas and recessed background or nonprinting areas, holding the plate at one polarity and applying to both the raised image areas and recessed background areas a toner comprising particles charged to the opposite polarity, bringing a substrate to be printed to a position opposite to the raised and recessed areas of the plate, and applying a potential difference between the substrate and the plate which establishes forces upon the toner particles on raised areas of the plate adequate to cause the particles to leave the same, said potential difference being selected to be too low to establish forces upon the toner particles on recessed areas of the plate adequate to cause the latter toner particles to leave the recessed areas.

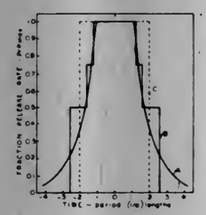
3,299,810
DEVICES FOR THE CONTROL OF AN AERIAL BOMB OPERATION
Roger Aimé Robert, 33 Blvd. d'Angleterre, Le Vesinet, France
Filed July 30, 1964, Ser. No. 386,279
Claims priority, application France, Aug. 5, 1963, 943,777
21 Claims. (Cl. 102—4)

1. A device for an aerial bomb equipped with a parachute, comprising: means for releasably attaching an aerial bomb to an airplane, a parachute container on said bomb at the rear end thereof, a parachute in said container, a sliding mechanism connecting the bomb and the parachute, locking means engageable with the sliding mechanism to selectively lock the same and means secured to the bomb for contacting the airplane when the bomb is attached thereto and for being free of the airplane with the bomb released, the latter means being



coupled to the locking means to cause locking of the sliding mechanism when the bomb is released from the airplane and to unlock the sliding mechanism when the bomb is attached to the airplane.

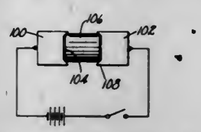
3,299,811
MINIMAL GAS PRODUCING LOW DETONATION RATE EXPLOSIVE AND DETONATION SOURCES
Robert W. Gates, Menlo Park, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 2, 1964, Ser. No. 401,281
16 Claims. (Cl. 102—24)



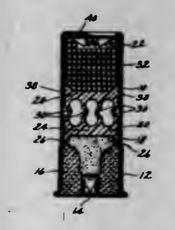
13. A source for producing relatively long duration explosive events with minimal gas production comprising an elongated tubular closed casing member, a compacted intimate admixed composite explosive including a high explosive selected from the group consisting of PETN, HMX, RDX and tetryl in an amount in the range of about 10 to 30% by weight, about 15 to 35% by weight of a perchlorate of a metal ion of at least divalency and productive of a chloride reaction product of said metal having a low vapor pressure, about 40 to 60% by weight of finely-divided leaf-like particles of aluminum metal disposed in said casing, and detonator means disposed in contact with said explosive in said casing.

3,299,812
ELECTRIC IGNITION CARTRIDGES
Nam P. Suh, Magnolia, and George C. Fuller, Wellesley, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey
Filed Jan. 29, 1965, Ser. No. 428,921
4 Claims. (Cl. 102—39)

1. In combination, a pellet of deflagrating explosive having a longitudinal axis and a maximum diameter of at least about 3/16" and provided with a surface coating of metal not more than about 0.0006" thick and occupying intermediate the ends of said pellet not more than about 2% of the maximum cross-sectional area thereof together with means, comprising a pair of mutually insulated electrodes engaging said coating at spaced locations, for connecting a source of electric current to said coating for igniting said explosive.



3,299,813
WATER SEALING SHOT CONTAINER FOR SHOTSHELLS
Edward A. Rickey, Stratford, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 419,242
1 Claim. (Cl. 102—42)

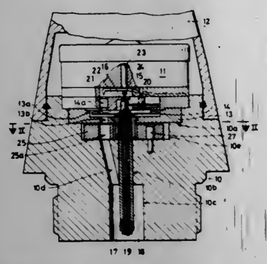


In a shotshell having a tubular body casing having propellant means positioned at the head end thereof and a charge of shot pellets positioned at the mouth end thereof, the improvement comprising a combination wad column shot container, said combination wad column comprising a cushioning section at the rear thereof in direct engagement with said propellant means, gas sealing means at the rear of said cushioning section to prevent explosive gases from blowing past the cushioning section, a shot containing portion at the forward end of said combination wad column containing said shot charge therein and adapted to protect the shot pellets while being explosively projected through the associated gun barrel, water sealing means positioned to the rear of said shot containing portion on said wad column extending radialy therefrom to form at least one continuous ring around the periphery of the wad column, connecting means underlying said shot pellets, said connecting means being of water-tight construction so as to prevent any moisture within said shot containing portion of said combination wad to pass through the cushioning section in to the propellant means, said water sealing ring being sufficiently flexible to permit the ring to fold to form a cupped water barrier upon insertion of the plastic wad column into the tubular body casing.

3,299,814
CLOCKWORK FUZE
Helmut Junghans, Schramberg-Sulgen, and Paul Kaiser, Schramberg, Wurttemberg, Germany, assignors to Gebruder Junghans Aktiengesellschaft, Schramberg, Wurttemberg, Germany, a corporation of Germany
Filed Feb. 21, 1964, Ser. No. 346,496
1 Claim. (Cl. 102—84)

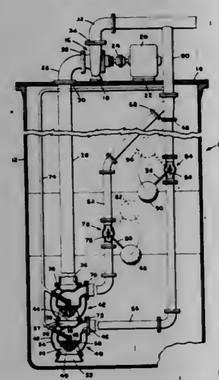
Clockwork fuze for projectiles comprising a base member, a clockwork mechanism mounted on the base member and having a bottom plate, a guide tube secured to

the bottom plate and extending axially away from the clockwork mechanism into the base member, and a tor-



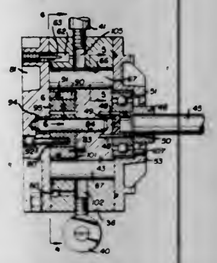
sion spring connected at one end in the clockwise mechanism and the other end extending into the guide tube.

3,299,815
MULTISTAGE, TURBINE DRIVEN BOOSTER PUMP SYSTEM
Charles H. Thaw, Morristown, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed June 17, 1965, Ser. No. 464,691
7 Claims. (Cl. 103—5)



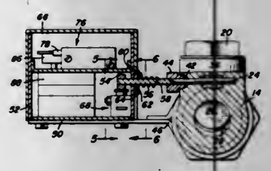
1. A pumping system for the pumping of a liquid with bad cavitation characteristics comprising:
(a) a container for the liquid to be pumped;
(b) main pump means disposed above the liquid to be pumped;
(c) a first stage turbine driven booster pump means of the rotary type disposed below the main pump means;
(d) the inlet of the first stage turbine driven booster pump means disposed in the liquid to be pumped;
(e) second stage turbine driven booster pump means of the rotary type disposed below the main pump means connected in series with the first stage turbine driven booster pump means;
(f) the outlet of the second stage turbine driven booster pump means connected to the main pump means to supply liquid to be pumped thereto;
(g) by-pass conduit means comprising:
(1) a main by-pass conduit extending from the main pump;
(2) a first branch conduit connecting the main by-pass conduit to the inlet of the first stage booster pump means;
(3) a second branch conduit extending from the main by-pass conduit to the inlet of the second stage booster pump means;
(h) control valve means cooperatively associated with the by-pass conduit means and responsive to the level of the liquid to be pumped within the container therefor to control the flow of the liquid by-passed from the main pump means to drive the first and the second stage booster pump means; and
(i) the first and the second stage booster pump means constructed and arranged to operate at different speeds and with different discharge heads while pumping the same quantities of liquid to prevent cavitation and liquid vaporization of the liquid pumped.

3,299,816
PUMP
Milan Momchilovich, Akron, and Wallace F. Rhodes, Summit, Ohio, assignors to The Falls Stamping and Welding Company, Cuyahoga Falls, Ohio, a corporation of Ohio
Original application Nov. 9, 1962, Ser. No. 236,481. Divided and this application May 18, 1965, Ser. No. 456,766
4 Claims. (Cl. 103—6)



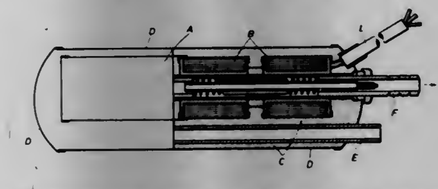
1. A pump which comprises two rotary pump units within a housing, one for air and the other for oil, each of said units comprising two elements, namely (1) an impeller with vane means adapted to be reciprocated with respect to the same, and (2) a fluid chamber in which the impeller is located, the fluid chamber of the air unit being defined solely by the impeller within it and the housing, the fluid chamber of the oil unit being defined solely by said housing and both impellers, the impellers being side-by-side with oil from the oil unit lubricating the air unit, a drive shaft, the two elements of each unit being relatively rotatable by virtue of the fact that the drive shaft is operatively connected with one element of each unit, and fluid inlet and outlet means for each fluid chamber.

3,299,817
ABOVE GROUND LIQUID LEVEL CONTROL
William R. Walters, 1300 Sunset, Pawhuska, Okla. 74056, and William D. Conner, Pawhuska, Okla. (3689 Virginia Ave., Lynwood, Calif. 90363)
Filed Apr. 28, 1964, Ser. No. 363,189
3 Claims. (Cl. 103—25)



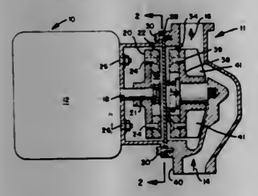
1. In combination with a pump motor, a device for controlling operation of the pump motor in accordance with liquid flow conditions in a flow line comprising, flow responsive valve means in said line displaceable between a flow blocking and open position, a timer motor, intermittent switch means driven by the timer motor for periodically deenergizing the pump means in response to energization of the timer motor, cam operated switch means actuated by the flow valve means for deenergizing the timer motor in response to movement of the flow responsive valve to said open position, and means biasing the flow responsive valve means to the flow blocking position for energizing the timer motor and blocking the flow line in the absence of liquid flow through the flow line, said cam operated switch means being mounted adjacent to the flow responsive valve means closely spaced from the flow line and including a normally closed switch contact, a cam element in engagement with the contact and an actuating shaft connecting the cam element to the flow responsive valve means, said flow responsive valve means including a valve body in the flow line forming an enlarged cavity, a valve seat mounted within the valve body and a flap element pivotally mounted by the valve body and connected to said actuating shaft.

3,299,818
SUBMERSIBLE PUMP
Ernst Meyer, Rodernstrasse 12, Offenbach (Main), Germany
Filed Feb. 18, 1965, Ser. No. 433,619
Claims priority, application Germany, Feb. 20, 1964, M 60,000
5 Claims. (Cl. 103—53)



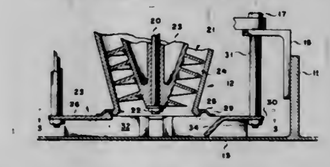
1. A submersible pump for pumping liquid from a supply of liquid, said pump comprising an operationally upright closed housing, an induction-operated suction pump assembly mounted in said housing, an intake duct for sucking liquid to be pumped into the pump housing, said intake duct having an outlet opening within said housing and an upright portion outwardly protruding at the top side of the housing and terminating in an inlet mouth for the liquid, a filter for filtering out sucked-in impurities, said filter being disposed within said housing in front of and adjacent to the outlet opening of the intake duct, an outlet duct for discharging pumped liquid from the housing, and a safety valve means at the inlet mouth of the intake duct to close said mouth when the level of the liquid to be pumped decreases below a predetermined level.

3,299,819
MAGNETIC DRIVE
Lee A. McCoy, San Mateo, Calif., assignor by direct and mesne assignments, to Flo-Mac, Inc., a corporation of California
Filed Dec. 7, 1964, Ser. No. 416,339
6 Claims. (Cl. 103—87)



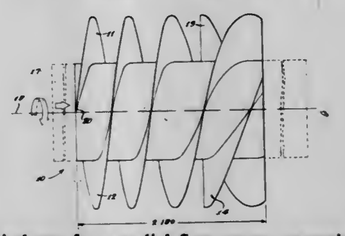
1. In a fluid-handling apparatus of the type including an electric motor and a housing having a fluid chamber, a magnetic drive comprising in combination: a rotatable driver member mounted on the shaft of said electric motor, a bearing member fixedly mounted on said housing coaxially with said shaft, a rotatably driven member mounted on said bearing member, said rotatably driven member having means for imparting motion to the fluid being handled, each of said driver and driven members comprising a plurality of wedge-shaped magnets mounted in an annular disc-type configuration with a radial air gap between adjacent magnets of each member, each of said magnets having a north and a south pole, contiguous poles of different magnets opposite-type polarity charge, a diaphragm fixedly mounted on said housing at a predetermined distance between said driver and driven members separating said coaxially mounted shaft and bearing members to keep said fluid within said fluid chamber, and a thrust bearing mounted on the shaft of said electric motor and spaced from the central portion of the disc during normal operation to prevent said diaphragm from coming in contact with said shaft while permitting unhampered rotation of said shaft.

3,299,820
FLOW CONTROLLING BAFFLE FOR SUBMERSIBLE CENTRIFUGAL PUMPS
Joe A. Campbell, Chamblee, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 16, 1965, Ser. No. 433,136
10 Claims. (Cl. 103—88)



1. The combination with a submersible centrifugal pump mounted within a container of fluid and having an inlet in spaced relation with the base wall of said container, of a flow controlling baffle adapted to be mounted in fixed position substantially traversing the space aforesaid and concentrically disposed around said inlet, said baffle comprising a plurality of radially disposed passages each extending from a predetermined point from the center of said inlet to a point beyond the edge of said inlet and each passage being divided longitudinally by a wall establishing a pair of discrete fluid inlet and fluid outlet channels occupying different relative planes with the plane of alternate channels being substantially the same.

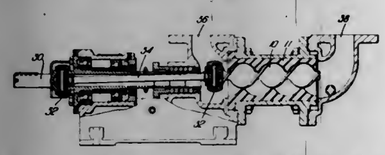
3,299,821
PUMP INDUCER
David H. Silvern, North Hollywood, Calif., assignor to Sundstrand Corporation, a corporation of Illinois
Filed Aug. 21, 1964, Ser. No. 391,118
22 Claims. (Cl. 103—89)



1. An inducer for a radial flow pump, comprising; an elongated hub member having an axis of rotation and adapted to be directly driven by said radial flow pump, at

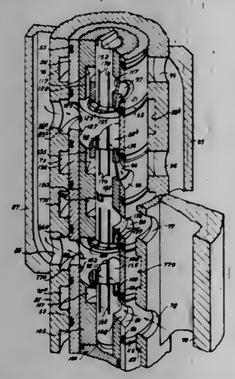
least one blade extending around and from said hub member, one axial end of said blade being the suction end thereof, the other axial end of said blade being the outlet end theerof, said blade defining blade angles with transverse planes through said axis of rotation, said blade angles increasing at a rate below a predetermined rate in a first portion of the blade extending from said suction end, said blade angles increasing at a rate above said predetermined rate in a second portion of the blade extending from said first portion toward said outlet end whereby the blades turn faster in said second portion and permit a reduction in the axial length of the inducer.

3,299,822
HELICAL GEAR PUMP
Stanley Ashbourne Eaton Payne, Transvaal, Republic of South Africa, assignor to Mono Pumps Limited, London, England
Filed Mar. 31, 1965, Ser. No. 444,285
5 Claims. (Cl. 103—117)



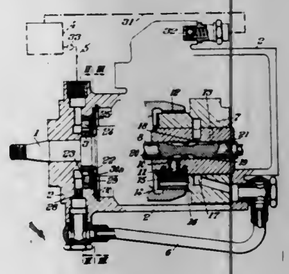
1. A helical gear pump comprising inner and outer relatively rotatable members meshing sealingly together and disposed one within the other; a single internal helical thread formed on said outer member to provide a tooth in any transverse section on said other member; two external helical threads formed on said inner member to provide teeth in any transverse section on said inner member, said external thread having the same pitch as the internal helical thread of said outer member; a shape to said internal tooth and a shape to said external teeth, said shapes being such that in any transverse section the teeth on the inner member are always in contact with the outer member and the tooth on the outer member is always in contact with the inner member.

3,299,823
PUMPS
Samuel J. E. Marshall, 2218 N. Carroll St., Dallas, Tex. 75204
Continuation of application Ser. No. 304,424, Aug. 26, 1963. This application July 5, 1966, Ser. No. 564,501
15 Claims. (Cl. 103—119)



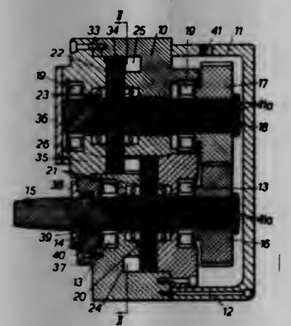
1. A motor section for use in a fluid operated pump, comprising: a housing, a motor cylinder having an ovate axial bore disposed in said housing; cylindrical supporting sleeves in said housing at opposite ends of said motor cylinder and having reduced bores axially aligned with the bore of said motor cylinder; an elongate motor rotor section rotatably mounted in said housing and having axially aligned supporting shafts at its ends disposed in the reduced bores of said supporting sleeves and an enlarged cylindrical central hub disposed in said ovate bore of said motor cylinder; a plurality of longitudinally extending radially movable vanes disposed in circumferentially spaced longitudinally extending slots formed in said hub and said shafts of said motor rotor section, said vanes being confined in said ovate bore of said motor cylinder by said supporting sleeves and movable in sealing engagement with the ovate bore of said motor cylinder, said ovate bore providing at least a pair of lobe enlargements in said bore which said vanes slidably sealingly engage; inlet port means for power fluid from the exterior of said motor section to one side of each lobe of said ovate bore of said motor cylinder; outlet port means from the opposite side of each of said lobes of said bore of said motor cylinder to the exterior of said motor housing; said vanes separating fluid flowing through said inlet port means to said lobes from fluid flowing through said outlet port means from said lobes of said motor section; flow passages in said supporting sleeves separately communicating the inlet port means and the outlet port means of said motor cylinder with the portions of the slots in the shafts of said rotor section for conducting fluid pressure from the inlet port means to the ends and inner edges of the vanes in said slots in said hub of said motor section and for conducting fluid pressure from the outlet port means to the ends and inner edges of the vanes in said slots for equalizing the pressures applied to the ends and inner edges of said vanes by the fluids passing through the lobes of the motor cylinder.

3,299,824
ROTARY LIQUID METERING PUMPS, IN PARTICULAR FOR THE FEED OF FUEL INJECTION PUMPS
Robert Gauthier, St-Germain-au-Mont-d'Or (Rhone), France, assignor to Societe Industrielle Generale de Mecanique Applique S.I.G.M.A., Paris, France
Filed July 8, 1965, Ser. No. 470,373
Claims priority, application France, July 15, 1964, 981,741
1 Claim. (Cl. 103—120)



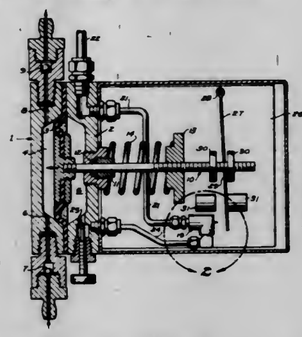
A fuel injection device which comprises, in combination,
a fuel injection pump having an inlet and delivery channels,
a check valve communicating with said inlet, and a feed pump comprising:
a rotary part movable about an axis,
a casing for said rotary part including two walls transverse to said axis and adapted to cooperate with said rotary part, which is normally slidable along said walls for limiting therewith pump chambers of cyclically varying volumes, at least one of said walls being movable away from said rotary part,
resilient means for urging said last mentioned casing wall toward said rotary part,
an inlet conduit leading to said casing,
a delivery conduit leading to said fuel injection pump inlet,
and means forming a calibrated orifice in said delivery conduit for increasing the liquid pressure upstream of said calibrated orifice and in particular in those of said pump chambers that are temporarily in communication with said delivery conduit.

3,299,825
HYDRAULIC PUMP
Øystein Bjørndal, Telavaag, Hordaland, Norway
Filed Mar. 19, 1964, Ser. No. 353,224
Claims priority, application Norway, Mar. 30, 1964, 148,144
2 Claims. (Cl. 103—126)



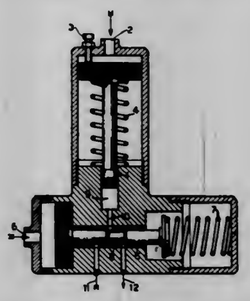
1. A hydraulic pump comprising, a housing, first and second shafts arranged side-by-side in said housing and mounted for rotation in opposite directions, a first sheave keyed to said first shaft and carrying a set of protruding segment members extending in axial direction from one side of said sheave, a second sheave keyed to the second shaft and carrying a set of protruding segment members protruding in axial direction from one side of said second sheave, said second sheave being axially spaced from the first sheave, each set of segment members being received within a respective one of two ring channels arranged within said housing so as to overlap at a portion thereof, at which portion said sets of segment members are meshing so that a segment member of the first sheave will engage into the space between two successive segment members of the second sheave, means for relieving axial pressure created against said sheaves by the pumping effect at the rotation of the shafts, said means for relieving the axial pressure consisting of arcuate recesses arranged along the side face of the sheaves opposite to the face thereof on which the segment members are located, each of said recesses extending over a peripheral distance somewhat greater than the peripheral spacing between successive segment members, the sheaves being provided with bores extending transversely through them at points between the segment members and which bores establish communication, during rotation of the sheaves, between the arcuate recesses and the ring channels.

3,299,826
DIAPHRAGM PUMP
James F. Williams, Sylmar, Calif. (% Pacific Lighting Gas Supply Co., 720 W. 8th St., Los Angeles, Calif. 90018)
Filed June 28, 1965, Ser. No. 467,498
4 Claims. (Cl. 103—152)



1. A diaphragm pump comprisng:
(a) a diaphragm;
(b) a housing structure defining therewith a pump chamber at one side of said diaphragm and a motor chamber at the other side of said diaphragm;
(c) inlet and outlet valves for said pump chamber;
(d) a motive fluid ingress-egress line communicating with said motor chamber;
(e) a spring urging said diaphragm in one direction;
(f) a control valve in said line movable between a first position for supplying motive fluid to said motor chamber and a second position for venting said fluid therefrom;
(g) a blade engageable with said valve element to move said valve element to its venting positon;
(h) means on said shaft to reciprocate said blade into and out of engagement with said valve element;
(i) and opposed magnets tending to hold said blade in its valve engaged and non-engaged positions.

3,299,827
MICROPUMP HEAD
Alsides Ferrari, Alberto Guerra, and Marco Taramasso, Milan, Italy, assignors to Snam S.p.A., Milan, Italy, a company of Italy
Filed Apr. 26, 1965, Ser. No. 451,078
Claims priority, application Italy, Apr. 29, 1964, 9,286/64
5 Claims. (Cl. 103—153)



1. A micropump for repetitive reproducible metering of volatile, very viscous and corrosive liquids comprising a housing, a piston reciprocable rectilinearly in a metering cylinder in said housing, a valve reciprocable rectilinearly in fluid-tight relation in a chamber in said housing,

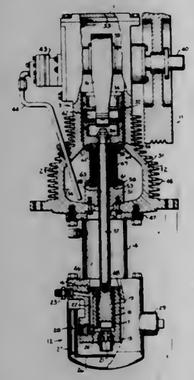
said valve being of equal cylindrical diameter adjacent its ends and of reduced diameter intermediate its ends, a supply duct for supplying liquid to said chamber, an output duct for exhausting the liquid from said chamber, a third duct connecting said chamber with one end of said cylinder, means for reciprocating said valve to move it from a first position where its reduced diameter portion registers simultaneously with said supply duct and said third duct and one larger diameter portion thereof shuts off said output duct to a second position in which its reduced diameter portion registers simultaneously with said third duct and said output duct and the other larger diameter portion shuts off said supply duct, and means for reciprocating said piston to move it in a direction to suck the liquid into said cylinder from said supply duct through said third duct when said valve is in its first position, and to pump the liquid from said cylinder out through said third and output ducts when said valve is in its second position, the means for reciprocating said piston and said valve including means for supplying compressed air at least to one end of each of said piston and valve to move each in one direction.

3,299,828

RECIPROCATING CRYOGENIC PUMP

William Josephian, Oakland, Calif., assignor to Lox Equipment Company, Livermore, Calif., a corporation of California

Filed Dec. 16, 1964, Ser. No. 418,769
4 Claims. (Cl. 103—153)



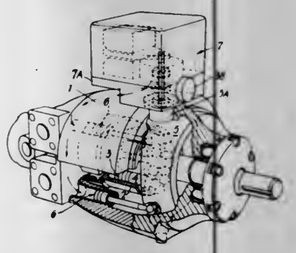
1. An improved reciprocating cryogenic pump comprising a pumping section including a head with a bore extending thereinto and a pumping piston mounted for reciprocation in said bore and defining therewith a pumping chamber for liquefied gas, a driving section including a body with a cylinder bore having a drive piston mounted for reciprocation therein and a lubricating system communicated therewith, said body having a rod accommodating bore in an end thereof coaxial with respect to said cylinder bore, a piston rod coaxially secured at its opposite ends to said drive piston and said pumping piston and extending through said rod accommodating bore, said drive piston and pumping piston and piston rod forming an integral reciprocal piston assembly, a spacer sleeve disposed in concentric outwardly spaced relation to said rod and secured at its opposite ends to said body and said head, the interior of said sleeve and clearances between said pumping piston and head bore and between said piston rod and rod accommodating bore defining a passage between interior portions of said pumping section head and driving section body, and a flexible impervious wall sealably secured between said piston assembly and a wall portion of said passage.

3,299,829

CONTROL DEVICES FOR HYDRAULIC PUMPS AND MOTORS

John Peter Jackson and Gordon Andrew Boyd, Dorset, England, assignors to Vickers-Armstrongs (Engineers) Limited, London, England, a British company

Filed Jan. 22, 1965, Ser. No. 427,430
Claims priority, application Great Britain, Jan. 24, 1964, 3,257/64
7 Claims. (Cl. 103—162)



1. A control device for a hydraulic machine of the kind having a controllable stroke and which includes a displaceable member arranged for varying the stroke and fluid-operated means having an output member connected to said displaceable member, the control device comprising a valve for connection to a source of hydraulic fluid under pressure, duct means connected with the valve for conveying fluid to and from such fluid operated means in accordance with the operative condition of the valve, an operating member for said valve, electromagnetic means having a coil unit connected to have electric current supplied thereto to cause the electromagnetic means to apply a control force to said operating member, and means for applying a restoring force to the operating member resulting from the displacement of such displaceable member, whereby, in the use of the device, operation of the means for applying a control force causes displacement of the valve operating member to cause the valve to direct fluid to the fluid operated means such that said displaceable member is displaced, thereby to alter the stroke of the hydraulic machine, such displacement causing the means for applying the restoring force to act for returning the valve operating member towards its initial position.

3,299,830

BAR-COUPLING

Karl Hora, Vienna, Austria, assignor to Firma "Canada" Tiefbohrgerate- und Maschinenfabrik Ing. S. Nadel & A. Nadel, Vienna, Austria, a corporation of Austria

Filed May 7, 1965, Ser. No. 453,953
Claims priority, application Austria, June 8, 1964, A 4,905/64
4 Claims. (Cl. 103—202)

1. A rod-coupling, particularly for deep-well pumps comprising

a longitudinal hollow body having axially disposed slots for at least part of its length and also a conical inner end face,

a pump rod connected with said longitudinal hollow body,

a pump piston,

a conical pin connected coaxially with said pump piston, said conical pin being received in said conical inner end face of said longitudinal hollow body,

the outer conical face of said conical pin and said conical inner end face of said longitudinal hollow body complementing each other to operate as a clamping wedge locking means, in order to assure



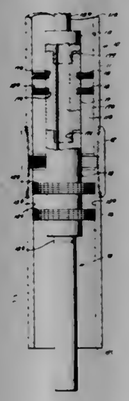
the joint rotation of said longitudinal hollow body with said pump piston.

3,299,831

SAND SHIELD-FILTER

Billy R. Watson, 1000 S. Franklin St., Monahans, Tex., 79756, and Carl E. Carter, Monahans, Tex. (4508 Dengar, Midland, Tex. 79701)

Filed Jan. 25, 1965, Ser. No. 427,740
2 Claims. (Cl. 103—220)



1. A sand shield for use in a well comprising: tubular means having an external, upwardly facing shoulder and connecting means on its upper end; first flexible means positioned on said shoulder, encircling said tubular means, and extending outwardly beyond the outer periphery of said tubular means; sleeve means encircling said tubular means and biasing said first flexible means against said shoulder; second flexible means positioned on said sleeve means, encircling said tubular means, and extending outwardly beyond the periphery of said tubular means; and tubular box means connected to said connecting means biasing said second flexible means against said sleeve means, said flexible means closing the annulus between said tubular means and the interior surface of said well when positioned therein.

3,299,832

PUMPING APPARATUS

Hugh V. Milne, Bendigo, Victoria, Australia, assignor to F. W. Milne & Son Proprietary Limited, Bendigo, Australia

Filed Nov. 9, 1964, Ser. No. 409,780
Claims priority, application Australia, Nov. 14, 1963, 37,657/63; Feb. 6, 1964, 40,601/64; Mar. 11, 1964, 41,870/64
9 Claims. (Cl. 103—234)

1. A pump including a tank to receive material to be pumped, an inlet at the top of the tank, an outlet comprising a pipe which extends into the tank and terminates adjacent the lower surface thereof, the pipe having an aperture adjacent the lower end thereof, a movable plate positioned over the end of the pipe, means to reciprocate the plate over the aperture, automatic valve means having a valve member adapted to close the inlet, a source of high pressure air which can be selectively applied to the tank, and means operated by the pressure air for operating the automatic valve means whereby the valve member closes the inlet and the tank is pressurized.

3,299,833

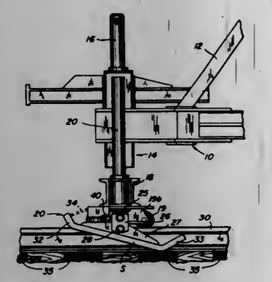
EXTERNALLY ENGAGING LIFTING JACK FRAME

John K. Stewart, 60 Ballantyne Terrace, Dorval, Quebec, Canada

Continuation of application Ser. No. 281,656, May 20, 1963, now Patent No. 3,230,895, dated Jan. 25, 1966. This application Jan. 3, 1966, Ser. No. 518,451
Claims priority, application Canada, Mar. 28, 1963, 871,989
5 Claims. (Cl. 104—7)

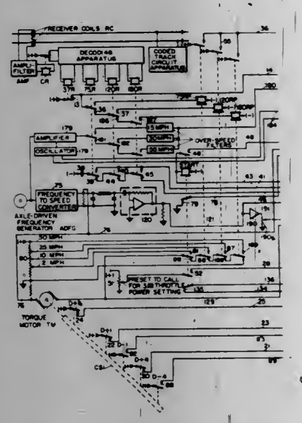
1. A railroad track jack apparatus mounted on the frame of a track working vehicle, comprising track engaging clamps, a pair of transversely spaced jacks mounted one on either side of the vehicle externally thereof, each jack having a ballast engaging member adapted to engage the ballast externally and on each side of the track rails, means for raising and lowering the ballast engaging member into and out of engagement with the ballast;

a telescopic sub-frame on the vehicle, means for mounting the jacks on the telescopic sub-frame and piston and



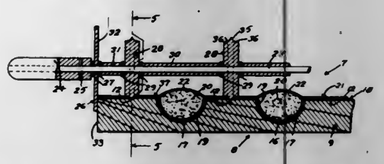
cylinder means for each jack to relatively, slidably move the jacks and vehicle frame transversely of one another.

3,299,834
CONTROL SYSTEM FOR RAILWAY TRAINS
J Donald Hughson, Rochester, N.Y., assignor to General Signal Corporation, a corporation of New York
Original application Sept. 14, 1962, Ser. No. 223,670, now Patent No. 3,240,929, dated Mar. 15, 1966. Divided and this application Jan. 13, 1966, Ser. No. 520,387
13 Claims. (Cl. 105—61)



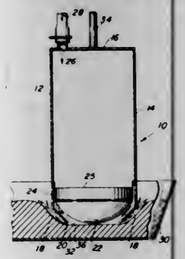
1. In a system for controlling the driving unit on a vehicle desired to travel at a predetermined desired speed, the combination of,
(a) first means for measuring the resultant of forces tending to accelerate said vehicle above said desired speed,
(b) second means measuring the resultant of forces tending to decelerate said vehicle below said desired speed,
(c) computing means responsive to said first and second measuring means for computing a signal characteristic of the horsepower required of said driving unit to make the resultant of said accelerating forces substantially equal to the resultant of said decelerating forces in order to maintain the desired speed, and
(d) means governed by the horsepower signal computed by the computing means for regulating the driving unit accordingly.

3,299,835
RAVIOLI MAKING APPARATUS
Domenick Marsili, 1343 Naranca Ave., El Cajon, Calif. 92020
Filed Apr. 10, 1964, Ser. No. 358,878
2 Claims. (Cl. 107—1)



1. A ravioli making apparatus comprising a square base member having a top surface adapted to support two superimposed sheets of dough, said base member having edge walls surrounding the top surface and disposed perpendicular thereto, said base member having a plurality of depressions formed in said top surface adapted to receive portions of the bottom dough sheet and ravioli fillings disposed between the dough sheets for positioning the fillings in predetermined spaced relation to one another and to the edge walls, a manually actuated cutting unit including a shaft, handles fixed to the ends of said shaft, guide wheels journaled on the shaft between and adjacent said handles for simultaneously engaging parallel ones of the edge walls, and a plurality of cutting wheels journaled on said shaft between the guide wheels and in spaced apart relation thereto and to one another for cutting the dough sheets on opposite sides of rows of said fillings which are disposed parallel to said last mentioned edge walls when the cutting unit is manually propelled across the base member, each of said wheels including a beveled peripheral cutting edge and beveled fluted crimping edges straddling the cutting edge and of smaller diameter than said cutting edge for simultaneously cutting and crimping the dough sheets.

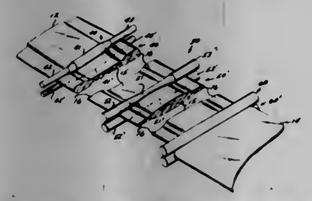
3,299,836
TAMPING DEVICE
Stanley J. Winton, Wilmette, Ill., assignor to Kitchens of Sara Lee, Inc., Chicago, Ill., a corporation of Maryland
Filed Apr. 6, 1964, Ser. No. 357,708
1 Claim. (Cl. 107—7)



A tamping device for a sheet of dough or the like comprising:
an elongated cylinder having a closed top wall and a tapering bottom wall,
said bottom wall converging to afford an annular seat and a reduced diameter annular bottom opening,
a generally hemi-spherical valve-tamping member loosely positioned in said cylinder and having a maximum diameter greater than the diameter of said bottom opening but smaller than the internal diameter of said cylinder,
said seat accommodating said member therein so that portions thereof project out of said bottom opening to provide an airtight seal thereof,

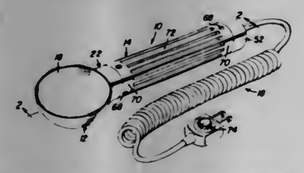
said top wall being formed with a gas inlet therein,
means communicating with said gas inlet for admitting gas under pressure into said cylinder to yieldably urge said member into airtight seating engagement, and
means for reciprocating said device into contact with said sheet for forming an impression therein,
said gas flowing out through said bottom opening when the contact pressure exceeds the pressure of the gas in said cylinder whereby the flow of said gas breaks the clinging bond between said sheet and said tamping device and simultaneously cleans said bottom wall and said member of adhering particles.

3,299,837
DOUGH SHEETER
Joseph M. Lind, 400 N. Sycamore St., Los Angeles, Calif. 90036
Filed Nov. 27, 1963, Ser. No. 326,542
8 Claims. (Cl. 107—12)



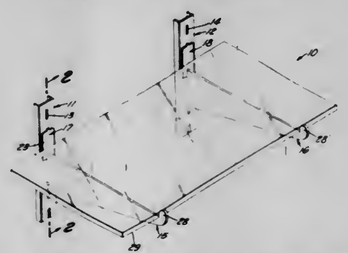
1. A dough sheeter adapted to extend a mass of dough longitudinally and laterally without setting up substantial internal stresses comprising:
(a) a first pair of rolls having a nip formed by at least one enlarged diameter portion on each roll, said enlarged diameter portions being opposed, and at least one reduced diameter portion on each roll, said reduced diameter portions being opposed, for squeezing at least a first longitudinal strip portion of said mass of dough; and
(b) a second pair of rolls aligned with and immediately following said first pair of rolls for receiving said dough mass therefrom, said second pair of rolls having a nip formed by at least one enlarged diameter portion on each roll aligned with said reduced diameter portions on said first pair of rolls and at least one reduced diameter portion on each roll aligned with said enlarged diameter portions on said first pair of rolls for squeezing at least one additional longitudinal strip portion of said dough mass symmetrically located with respect to said first longitudinal strip portion.

3,299,838
ELECTRIC ICE CREAM DIPPER
Rudolph N. Thietje, Rte. 1, Box 170A, Kennewick, Wash. 99336
Filed Dec. 21, 1964, Ser. No. 419,837
7 Claims. (Cl. 107—48)



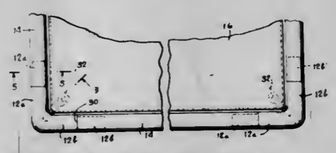
6. An ice cream dipper comprising a bowl portion and an elongated handle portion, said bowl portion defining a semi-spherical bowl and having a projecting neck, said handle portion including an elongated hollow gripping sleeve fixed at one end to said projecting neck, a heating element mounted within said neck in heat transferring relation to said bowl portion, an elongated power cord engaged with said heating element and extending therefrom through said sleeve, a hollow tubular member coaxial with said sleeve and surrounding said power cord in inwardly spaced relation to said sleeve, said sleeve comprising a pair of annular end portions interconnected solely by a plurality of elongated ribs extending between said end portions and circumferentially spaced from each other so as to define a series of elongated slots opening completely through said sleeve.

3,299,839
SHELF DEVICE
Carl Nordbak, 8508 Graham Ave., Los Angeles, Calif. 90001
Filed Oct. 14, 1965, Ser. No. 496,013
6 Claims. (Cl. 108—152)



3. In a shelf holder including a standard having a plurality of vertical slots therein and a shelf bracket having means to hook through and over one of said slots, a retainer clip to hold the bracket in place on said standard, said clip comprising: a plate having a projection at its upper end to extend into another slot in said standard above said one slot and to fit contiguous to the upper end of said other slot, said plate also having a vertical slot in the lower end thereof dividing it into two legs to straddle the upper edge of said shelf bracket the upper end of said plate slot resting on the upper edge of said shelf bracket, whereby vertical movement of said shelf bracket hook means out of said one slot is restrained by the contiguous fit of said plate between the upper edge of said shelf bracket and the upper end of said other slot.

3,299,840
FURNITURE CONNECTION
Moses Richard Schultz, Barto, Pa., assignor to Knoll Associates, Inc., New York, N.Y., a corporation of New York
Filed Nov. 8, 1965, Ser. No. 506,760
3 Claims. (Cl. 108—157)

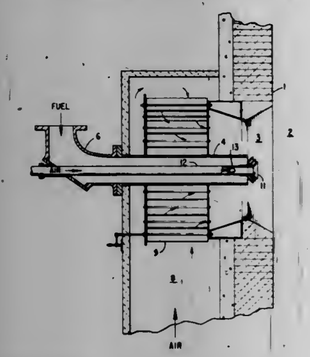


1. An article of furniture, comprising:
(a) a plurality of vertically extending furniture legs;
(b) each of said legs including a plurality of studs extending laterally toward adjacent legs;
(c) a plurality of ribs on an outside surface of each of said studs, each pair of adjacent ribs defining a groove therebetween;
(d) a plurality of stretchers each connecting together

adjacent legs, said stretchers having tubular end portions positioned over said studs with an inside surface of each tubular end portion in contact with the ribs on the corresponding stud; and

(e) an adhesive material positioned in said grooves between adjacent ribs bonding together said studs and said tubular end portions.

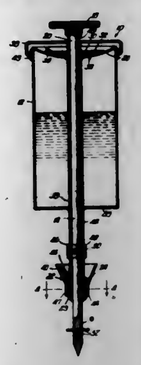
3,299,841
BURNER IMPELLER
Fritz L. Hemker, Wadsworth, and John R. McWhorter, Willoughby Hills, Ohio; said Hemker assignor to The Babcock & Wilcox Company, a corporation of New Jersey, and said McWhorter assignor to Bailey Meter Company, a corporation of Delaware
Filed Oct. 13, 1965, Ser. No. 495,461
11 Claims. (Cl. 110—28)



7. In combination:
a fuel burner including a burner nozzle;
means for supplying pulverized coal and combustion air to said burner;
an impeller pipe concentrically mounted within said burner nozzle;
a flame sensing device including a detector tube disposed within said pipe and aimed at the burner end of said impeller pipe; and
an impeller attached to the burner end of said pipe, said impeller having a series of stationary axially spaced annular vanes of progressively decreasing diameters, the innermost vane having a plurality of openings for passing undeflected a small amount of fuel for combustion in said burner, said detector tube sensitive to the radiation emitted by the burning of said undeflected amount of coal.

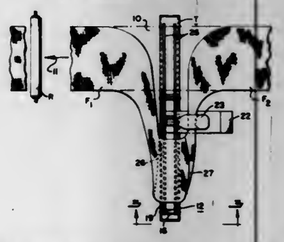
3,299,842
WEED KILLING APPARATUS
Richard Bingham, 1732 N. Park Ave., Chicago, Ill. 60650
Filed Sept. 30, 1964, Ser. No. 400,326
4 Claims. (Cl. 111—7.2)

1. A plant treatment apparatus comprising: a portable container adapted to hold a supply of liquid plant chemical solution when in a substantially vertical operating position, having upper and lower ends and a liquid outlet opening in said lower end for discharging said liquid chemical solution; an elongate rod having upper and lower extremities slidably mounted vertically through said opening in said container, projecting from the upper and lower ends of said container respectively, said lower extremity of said rod adapted to conduct liquid from said liquid outlet down the exterior thereof and having an end portion adapted to be driven beneath the soil; valve means secured to said rod for closing said liquid outlet opening comprising an annular projection from said rod adapted to conduct liquid discharged from said liquid outlet opening downwardly over the surface thereof onto said rod; said container means resting upon said valve means in said substantially vertical operating position so as to close said liquid outlet opening; and handle means mounted upon said projecting upper extremity of



said rod for forcing said rod downwardly whereby said end portion of said rod may be driven beneath the soil near a plant, said container being movable upwardly with respect to said rod to open said liquid outlet opening so that liquid flows from said container down said rod and beneath the soil at the plant root system.

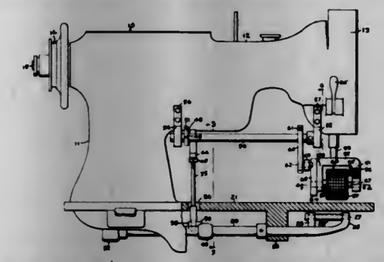
3,299,843
SPLICING METHOD AND APPARATUS
Alexander V. Alexeff, Cleveland, Ohio, assignor to Industrial Ovens, Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 21, 1964, Ser. No. 391,173
8 Claims. (Cl. 112—262)



1. In a method of splicing adjacent ends of strips moving seriatim in a normal feed path; the steps of overlapping two associated end portions of two consecutively fed strips while continuously feeding one of the strips along a normal feed path, placing the overlapped portions laterally of said feed path and beyond a splicing means, returning the overlapped portions to the feed path by passing them through the splicing means while operating said splicing means.

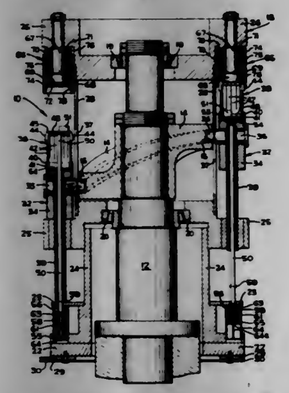
3,299,844
TOP FEED MECHANISM FOR SEWING MACHINES
James M. Feighery, Dalton, Ga., and Ollie R. Caylor, McDonald, Tenn., assignors to J. M. Feighery Company, Dalton, Ga., a corporation of Georgia
Filed May 8, 1964, Ser. No. 366,015
6 Claims. (Cl. 112—214)

5. In a sewing machine having a bed, a reciprocating needle, and a feed dog in said bed, in combination with a rock shaft connected to said feed dog to move the latter back and forth, a top feed mechanism comprising a horizontal serrated roller above said feed dog in advance of the needle and extending transversely across and beyond the line of stitching and between which roller and said feed dog material to be sewed is adapted to be moved, means including a horizontal supporting shaft for supporting said roller, a horizontal operating shaft arranged substantially above said bed, means connected between said



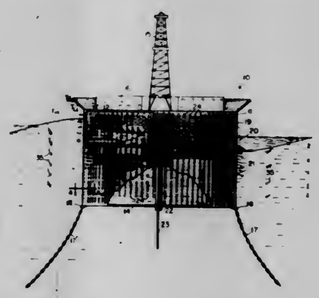
rock shaft and said operating shaft for transmitting rocking movement from the former to the latter, means for transmitting rocking movement of said operating shaft to said roller to effect rocking movement thereof in one direction, and means for preventing reverse rotation of said roller.

3,299,845
APPARATUS FOR SEAMING METALLIC CONTAINERS
Joseph A. Geiger, Vienna, Austria, and Jean Pierre Schneebeli, Santa Clara, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,816
11 Claims. (Cl. 113—30)



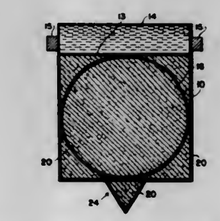
1. Apparatus for seaming a metallic closing cover to the open end of a metallic container body which body includes a radially outwardly extending narrow peripheral portion terminating in a second narrow peripheral portion extending in the direction of the axis of said container body to the peripheral edge of the container body at said open end thereof and which closing cover is placed within said container body upon said outwardly extending peripheral portion and includes a narrow peripheral edge portion contiguous with said second peripheral portion of said body, said apparatus comprising a generally tubular-shaped container supporting member, said supporting member having an inwardly extending shoulder adapted to receive said outwardly extending portion of the container body and an upwardly extending pressure resisting face adapted to engage the outer face of said second peripheral portion of the container body, a first die member relatively movable with respect to said supporting member to engage said peripheral edge of said container body at its open end to bend said second peripheral portion inwardly over said peripheral edge portion of the cover, and a second die member relatively movable with respect to said supporting member and said first die member, said second die member including an outer peripheral face for engaging the bent-over portion of said second peripheral portion of the container body to deform it into sealing engagement with the inner face of said peripheral edge portion of the cover, the radial distance between the outer peripheral face of said second die member and said pressure resisting face of the supporting member being less than the combined thicknesses of the cover and twice the container body thickness.

3,299,846
STABLE FLOATING SUPPORT COLUMNS
Gerard Eugene Jarlan, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Jan. 18, 1965, Ser. No. 426,032
13 Claims. (Cl. 114—.5)



1. A floating support of span at least sixty feet comprising an upright cup-like body of transverse dimension greater than its height but less than twice the height, said body having a shell wall about three to four feet thick, said wall being hollow and extensively perforated over its surface by a large plurality of transverse jet-guiding channels, and a transversely perforated disc bottom closing the lower end of said body.

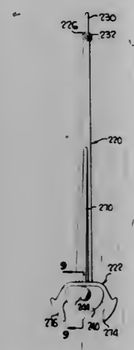
3,299,847
PONTOON STRUCTURE
Lawrence A. Bertholf, 98 Marilynn St., East Islip, Long Island, N.Y. 11730
Filed Aug. 24, 1965, Ser. No. 483,906
5 Claims. (Cl. 114—.5)



1. An integral highly maneuverable non-sinkable pontoon comprising a longitudinal rectangular tubular casing middle portion integral with a tubular prow portion, said portions having an interior bonded wall disposed parallel to and in spaced relationship to the tubular top wall to form

a unitary longitudinal gas tank, internal bracing means disposed within said middle and prow portions engaging the four sides of said tubular portions, buoyant means filling the chambers within said tubular portions, and a V-shaped keel extending the length of said middle and prow portions.

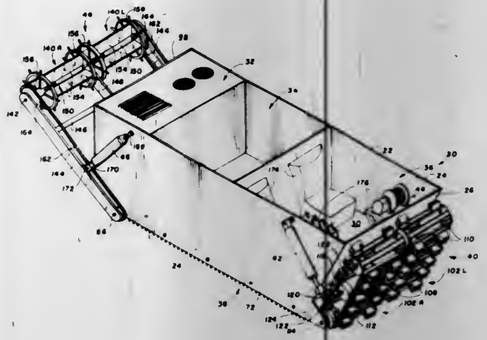
3,299,848
ANCHOR APPARATUS
Ollie K. Goodwin, Newport News, Va., assignor to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Original application Sept. 18, 1964, Ser. No. 397,381. Divided and this application June 28, 1966, Ser. No. 565,034
3 Claims. (Cl. 114—208)



1. Anchor apparatus comprising support means including an elongated shank having attaching means formed at the upper end thereof, the lower end of said shank having a head connected therewith, said head including spaced support portions, a body means including fluke means thereon and including tripping means extending therefrom, said body means including a second plurality of support portions, and link means, each of said link means having one end thereof pivotally interconnected with one of said plurality of spaced support portions and the other end of each link being pivotally interconnected with the other of said plurality of spaced support portions such that said body means is mounted for pivotal movement about two spaced independent pivot axes whereby the body means is adapted to pivot in opposite directions with respect to said support means.

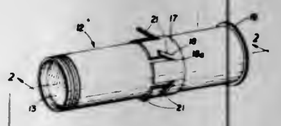
3,299,849
AMPHIBIOUS VEHICLE
Arthur H. Pitchford, 5881 Lorene Drive, Bethel Park, Pa. 15102
Filed June 10, 1965, Ser. No. 462,979
4 Claims. (Cl. 115—1)

1. An amphibious vehicle comprising, an elongated watertight body; propelling means movably connected to the rear of said vehicle for steerably moving said vehicle through a fluid in which it is floating, said propelling means having a plurality of tractive elements supported for rotation about a common axis; means for forcibly rotating said tractive elements about said common axis; means for positioning said propelling means in a first position for propelling said vehicle through said fluid and in a second position wherein said propelling means is submerged in said fluid to the point where said tractive elements embed themselves in the ground beneath said fluid to push said vehicle through said fluid; endless track means movably supported at the forward end of said vehicle for aiding in moving said vehicle out of said fluid; motor means for continuously urging said endless track means into driving engagement with the land ahead of said vehicle whereby the attitude of said endless track means relative to said vehicle changes with changes in



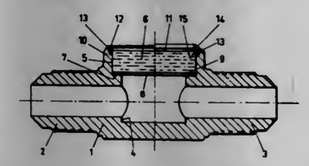
the contour of the land ahead of said vehicle; means for actuating said motor means when desired; traction means mounted beneath said vehicle for steerably moving said vehicle over land; and means for driving said endless track means and said traction means.

3,299,850
EXPLOSIVE FIRE ALARM
Gerald J. Cartier, Barrie, Ontario, Canada, assignor to Gerald J. Cartier, Thomas H. Cartier, and Bernard J. Cartier, all of Barrie, Ontario, Canada
Filed Sept. 28, 1965, Ser. No. 490,908
1 Claim. (Cl. 116—105)



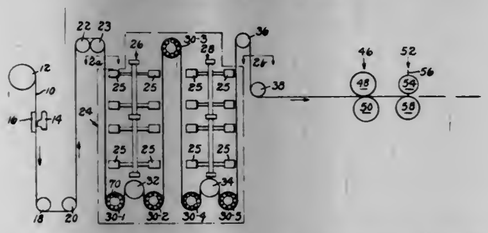
A heat sensitive audible fire alarm device of predetermined size adapted for concealment with an oversize recess having cylindrical walls strategically located in the structure, furnishings and the like of a building and comprising: a cylindrical heat conductive capsule member of predetermined length and diameter and having a sealed end and an open end; a heat sensitive explosive charge within said capsule; a capsule insert closing said open end of said self-destructive capsule and confining said charge therewithin; said insert formed of disintegrating material and being secured in closure position within said capsule by deforming inwardly portions of the capsule adjacent said insert; a cylindrical sleeve member fitting around and fastened to the exterior of said capsule member, at least two spring arm members formed integrally with said sleeve member and angularly projecting away from said capsule member toward said open end thereof containing said insert for engagement with a wall of said recess, said sleeve and arm members being of reduced length in comparison with the length of said capsule member and said arm members being dimensioned and oriented to resiliently engage the cylindrical walls of said recess, and a sleeve abutting flange on said capsule member adjacent said sealed end to prevent withdrawal of said sleeve from said capsule.

3,299,851
SIGHTGLASS CONSTRUCTION
Robert Olsen, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed July 6, 1964, Ser. No. 380,464
Claims priority, application Germany, Aug. 16, 1963, D 42,249
2 Claims. (Cl. 116—117)



1. A sightglass device for viewing flow along a flow-path, said device comprising a casing, a sightglass in said casing for viewing in operation fluid flow along said flow-path, said casing having an annular portion confining said sightglass and defining a seat for said sightglass and having a central opening for viewing fluid flow through said sightglass, said annular portion of said casing including a pressure-applying flange biasing said sightglass in a direction toward said seat, said flange being integral with said annular portion of said casing, an integral resilient ring disposed peripherally about and abutting directly against a marginal edge portion of said sightglass, said flange being inwardly bent over and pressing directly against said resilient ring thereby to urge said resilient ring directly against the marginal edge portion of the sightglass, whereby a fluidtight seal between said sightglass and said pressure-applying flange is defined.

3,299,852
SHEET PROCESSING APPARATUS
Dunham B. Seeley, Fairport, N.Y., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 29, 1963, Ser. No. 268,872
3 Claims. (Cl. 118—68)



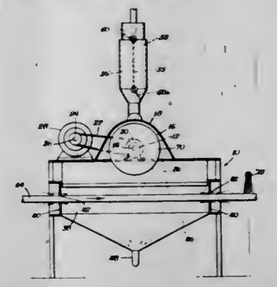
1. In high speed apparatus for continuously coating an advancing web of paper with a stripe of moisture-containing material parallel to the path of movement of the web, including rollers transverse to the path of movement of the web for supporting the web, means for inhibiting the wrinkling of the web in conjunction with the deformation of the paper in the area of the stripe due to wetting and drying as the web passes over the rollers comprising

a plurality of separate short arc surfaces disposed around the circumference of at least one of said rollers to form ribs extending parallel to the longitudinal axis of said one roller for contact with the unstriped portion of said web, said arcs having a smaller radius of curvature than said roller,

a grooved portion in each of said arc surfaces for receiving the deformed striped portion of the web, and

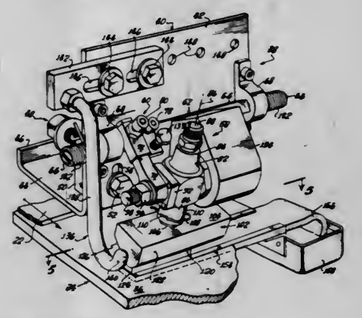
means for mounting the ribbed roller so that said short arc surfaces are successively engageable with the web as the web advances through the apparatus.

3,299,853
APPARATUS FOR COATING ELONGATED OBJECTS
Elroy G. Whitacre, Des Plaines, Ill., assignor to Amsted Industries Incorporated, a corporation of New Jersey
Filed Jan. 16, 1964, Ser. No. 338,099
3 Claims. (Cl. 118—312)



1. An arrangement for applying a powdered resin coating material to a simultaneously rotating and advancing heated elongated object, comprising a coating chamber, an applicating wheel communicating with said chamber, said wheel having a plurality of radially extending blades; means for rotating said wheel; means for feeding said powdered material to the radially inner portion of successive blades whereby said material is projected against said object and reacted upon the heat of said object to form a uniform plastic coating thereon and wherein said powdered material feeding means includes a hopper divided into two compartments, means for conveying excess material into said two compartments from said chamber, a first valve means in said feed hopper for accommodating flow of powdered material to one of said compartments while shutting off flow of material to the other compartment; and a second valve means in said hopper for preventing said one compartment from discharging its powdered material contents to said applicating wheel while said feeding means is filling said one compartment.

3,299,854
APPLICATOR FOR LIQUIDS AND SEMI-LIQUIDS
Peter J. Van Loben Sels, 11838 Cherrylee Drive, El Monte, Calif. 91732
Filed May 3, 1965, Ser. No. 452,711
12 Claims. (Cl. 118—411)



1. A liquid applicator comprising:
a mounting bracket,
means for removably mounting said bracket on a supporting frame,
a liquid dispenser including a body having a central axis and an inlet for connection to a supply of liquid to be dispensed, and a dispensing head on one end of said body having a work engaging surface

presented in one endwise direction of said body and liquid dispensing ports communicating with said inlet and opening through said surface, said dispensing head being elongated in a direction normal to said body axis and said body axis being located approximately midway between the ends of said head,

said dispensing ports being spaced along said head,

said head being rotatable on said axis relative to said body,

means mounting said dispenser on said bracket for movement in a generally end-wise direction of said body, said mounting means including first adjustment means for angularly adjusting said dispenser relative to said bracket on an axis transverse to the direction of end-wise movement of said dispenser, second adjustment means for adjusting said dispenser relative to said bracket in a transverse direction of said latter axis, and third adjustment means for adjusting said dispenser relative to said bracket in a direction parallel to said latter axis, and

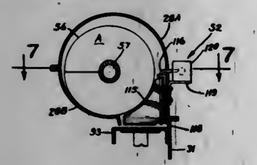
means for urging said dispenser in said one end-wise direction of said body.

3,299,855

BUNK FEEDER CONVEYOR ASSEMBLY

Floyd E. Buschbom, Long Lake, Minn., assignor to Vandale Corporation, Long Lake, Minn., a corporation of Minnesota

Original application June 8, 1962, Ser. No. 201,052, now Patent No. 3,254,798, dated June 7, 1966. Divided and this application Oct. 22, 1965, Ser. No. 500,923
7 Claims. (Cl. 119—56)



1. In a feeder, an elongated housing having a lower side feed discharge area, a cylindrical auger located in said housing, means rotating said auger for carrying feed to said feed discharge area, means for dumping feed stored in said feed discharge area, switch means operable to activate the means for dumping feed from the housing, said switch means having an actuator member, an actuator plate located in said discharge area, said actuator plate having a shape generally similar to the transverse cross-sectional shape of the discharge area and a curved portion positioned closely to said auger, hinge means mounting said plate on said feeder, said hinge means having a projection engageable with the actuator member of the switch means on outward movement of said actuator plate thereby activating the means for dumping feed from the housing.

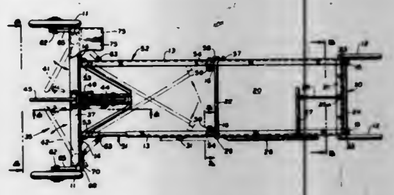
3,299,856

ANIMAL HOLDING AND SORTING PEN

Gene E. Fogle, Greensburg, Ind., assignor to Martin Mfg. Co., a corporation of Ohio

Filed Mar. 21, 1966, Ser. No. 535,771
10 Claims. (Cl. 119—99)

1. A portable animal holding and sorting pen comprising an elongated enclosure pen formed of upstanding framework walls to permit access to an animal disposed therein and having a rear inlet end and a forward outlet end controlled by selectively operable gates, wheels mounted on said pen for supporting it for movement from place-to-place, said framework walls including side walls disposed between the inlet and outlet ends and having openings controlled by side gates, each of the said side gates having a forward upstanding edge hingedly mounted to the pen and being swingable inwardly to expose the



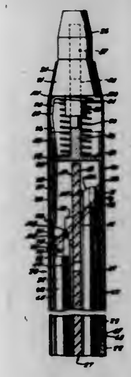
respective opening which it controls and to block forward access through the pen to said outlet end and to direct an animal outwardly and forwardly to the side through said opening.

3,299,857

PEN WITH INK CARTRIDGE EXTENSION AND RETRACTION MECHANISM

Hartley M. Sears, Laguna Beach, Calif., assignor to The Hartley Co., Costa Mesa, Calif., a corporation of California

Filed Aug. 6, 1965, Ser. No. 477,741
16 Claims. (Cl. 120—42.13)



1. A project-retract mechanism for a pen having an elongated tubular housing having a cap end and a tip end, an ink cartridge means in said housing, said cartridge means having an ink dispensing end and being movable axially between a retracted position in which said end is withdrawn into said housing and an extended position in which said end projects from said tip end of said housing, comprising

surface means on the opposite end of said cartridge means, said surface means being convergent axially outwardly with respect to said cartridge means to an apical portion laterally inward of the wall of said housing,

an actuating means for moving said cartridge means to said extended position,

said actuating means including an arm movable longitudinally of said housing

from a first outer position

to a second inner position,

said arm having an end engageable with said surface means at said opposite end of said cartridge means,

said arm including resilient means biasing said end of said arm toward one side of said apical portion,

guide means for preventing said arm from moving to said one side of said apical portion until said arm has been positioned longitudinally relatively adjacent said second inner position,

whereby when said cartridge means is in said retracted position advancement of said arm inwardly from said first outer position will cause said end of said arm to engage said surface means of said cartridge means on the opposite side of said apical portion,

and when said cartridge means is in said extended position advancement of said actuating arm inwardly from said first outer position will cause said end of said actuating arm to exert a lateral force component on said one side of said apical portion;

said convergent surface means of said cartridge means being inclined with respect to the axis of said cartridge means so as to cause said actuating arm to exert at lateral force component on said opposite end of said cartridge means upon such engagement therewith biasing said opposite end of said cartridge means laterally toward the side of said housing opposite from the side of said apical portion engaged by said end of said arm,

and an abutment in said housing on said one side of said apical portion,

said cartridge means including a cooperative abutment engageable with said first-mentioned abutment upon movement of said cartridge means to said extended position and in response to the lateral force component exerted by said actuating arm,

the lateral force component upon engagement by said actuating arm with said surface means of said cartridge means on said one side of said apical portion when said cartridge means is in said extended position moving said abutments out of interengagement,

whereby said cartridge means is movable to said retracted position.

3,299,858

VAPOR GENERATOR WALL CONSTRUCTION

Karl Franzmann, Oberhausen, Rhineland, Germany, assignor to Babcock & Wilcox, Limited, London, England, a corporation of Great Britain

Filed May 5, 1965, Ser. No. 453,371
11 Claims. (Cl. 122—6)



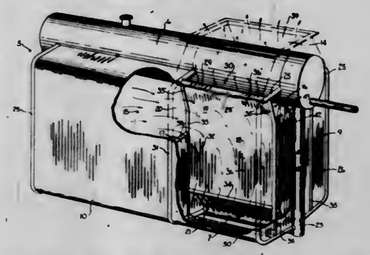
1. In a fluid heating unit, upright boundary walls forming a heating chamber confining high temperature radiant heating gases, one of said upright boundary walls including a plurality of parallel contiguous vapor generating tubes rigidly united along their lengths to form a rigid gas-tight wall panel, means for passing fluid in parallel flow relation through said tubes at a temperature substantially equal to the saturation temperature corresponding to the pressure of the fluid within said tubes, and means for shielding a substantial portion of said one boundary wall from radiation within said furnace chamber including a shielding wall disposed on the gas side of said boundary wall and comprising a plurality of shielding tubes arranged in side-by-side relation, and means for passing fluid through said shielding tubes.

3,299,859

STEAM BOILER AND HOT WATER GENERATOR

David Dalin, Rue des Cordiers 2, Geneva, Switzerland

Filed July 23, 1964, Ser. No. 384,644
13 Claims. (Cl. 122—328)



1. In a water tube boiler having upper and lower elongated parallel header means, laterally adjacent water tubes connecting the upper and lower header means and arranged to form the boiler enclosure, said enclosure having inlet means through which fuel for combustion may enter the enclosure, and outlet means for spent gases, and other water tubes inside said enclosure connecting the upper and lower header means and arranged to form a partition which divides the interior of the enclosure into a combustion chamber to which the inlet means leads and a convection chamber from the upper portion of which the outlet means leads, said partition being formed with passage means in the bottom portion thereof through which the two chambers are communicated so that combustion gases entering the convection chamber from the combustion chamber flow upwardly in the convection chamber, the improvement which comprises:

a bank of water tubes with extended surface thereon also connected with both header means and uniformly distributed in the convection chamber above said passage means in the partition to provide convection surface for the boiler,

all of the tubes in said bank being vertical so as to be parallel to the flow of gases through the convection chamber, and the extended surface on said tubes consisting of a multiplicity of individual elements of metal having relatively good heat conductivity, secured to and projecting substantially perpendicularly from the tubes so as to be transverse to the gas flow in the convection chamber.

3,299,860

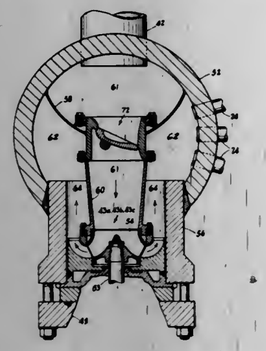
CIRCULATING SYSTEM FOR FORCED CIRCULATION STEAM GENERATOR

Konrad S. Svendsen, Bloomfield, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 14, 1964, Ser. No. 418,131
2 Claims. (Cl. 122—406)

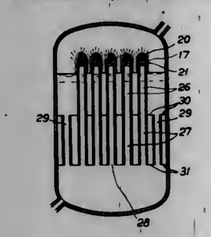
1. In a forced circulation boiler, in combination a circulation drum having a division wall dividing the drum into a suction manifold and a discharge manifold;

a multiplicity of steam generating tubes located exteriorly of said drum; a multiplicity of circulation pumps being integral parts of the wall of said drum and having suction sides and discharge sides effectively located within said discharge manifold; said suction manifold having a plurality of inlet openings and a plurality of outlet openings; first conduit means for connecting the inlet openings of said suction manifold with the outlets of said tubes; second conduit means for connecting each of the outlet openings of said suction manifold with the suction side of one of said circulation pumps; said discharge mani-



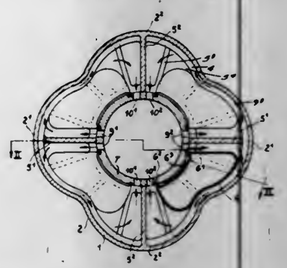
fold having a plurality of outlet openings and a plurality of inlet openings, with the inlet openings of said discharge manifold being identical with the outlet openings of said suction manifold, third conduit means for connecting said discharge manifold outlet openings with the inlet openings of said tubes; fourth conduit means for connecting the discharge sides of said circulation pumps with the outlet openings of said discharge manifold; and check valves included in said second conduit means organized to shut off reverse flow through any pump which may be inoperative.

3,299,861
ARRANGEMENT FOR INCREASING THE SURFACE OF A BOILING SOLUTION SURFACE
Olle Lindstrom, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Feb. 26, 1963, Ser. No. 261,091
4 Claims. (Cl. 122—501)



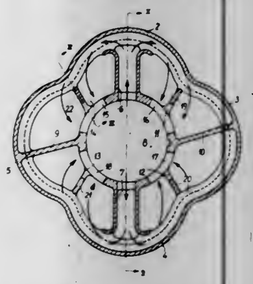
1. A boiler element tube for a heterogeneous boiling nuclear reactor, means providing a boiling coolant in said element tube, said boiler element tube having a top, said boiling coolant passing through the top of the tube, said top being provided with a screen extending over substantially the whole open cross-section of the top, said screen having a wall and hole distributed over said wall, said holes rendering said wall pervious to the boiling coolant, said screen having a base and a top and a hollow interior communicating with the interior of the tube, the cross-sectional circumference of the top of the screen being smaller than the cross-sectional circumference of the base of the screen, the boiling coolant substantially filling the interior of the screen.

3,299,862
LOBED ROTORS OF ROTARY ENGINES
Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works
Filed June 25, 1964, Ser. No. 377,961
Claims priority, application France, Aug. 9, 1963, 944,326, Patent 1,372,462
7 Claims. (Cl. 123—8)



1. A lobed rotor for rotary engines having internal liquid cooling, said rotor comprising an annular shaped housing having an outer peripheral wall, a pair of lateral faces and a central annular open portion; a hub disposed in said open portion, and secured in said housing; a plurality of partition members disposed in said housing, extending radially outward from said hub and defining a plurality of open cavities; and a plurality of leak tight box members disposed in spaced relation relative to the cavity surfaces, the outer surfaces of said box members cooperating with said partition memebers and said wall to define a plurality of radial and peripheral cooling passages.

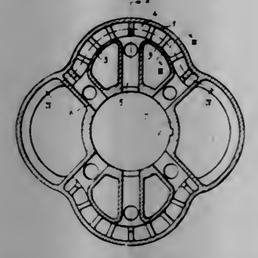
3,299,863
ROTORS OF ROTARY ENGINES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Mar. 31, 1965, Ser. No. 444,134
Claims priority, application France, Apr. 4, 1964, 969,796, Patent 1,398,965
1 Claim. (Cl. 123—8)



A rotor for a rotary engine of the type having a stator and a rotor, five working chambers in said stator and four lobes in said rotor, two of said lobes working as hot lobes, the other two as cold lobes, said rotor comprising an annular surface, side plates and a hub with an internal surface, in which said rotor is provided with a cooling system constituted by two hollow radial arms, each extending between said hub and the summit of one of said hot lobes, passages being provided close to the

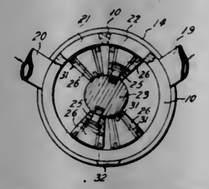
periphery between said arms and the adjacent chambers formed between the hub and the periphery, said arms and intermediate internal partitions, the circulation of cooling liquid taking place first through said arms, then through the chambers and returning through openings into the interior of said hub.

3,299,864
ROTARY-ENGINE ROTORS
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Oct. 4, 1965, Ser. No. 492,621
Claims priority, application France, Nov. 13, 1964, 994,904, Patent 1,422,344
1 Claim. (Cl. 123—8)



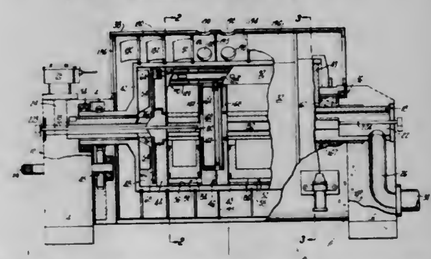
A rotary-engine rotor comprising a peripheral passage which is formed by the rotor rim and an inner wall connected thereto by lateral walls and through which flows a cooling fluid, characterized in that the inner rim surface forming the outer wall of said passage is connected to said inner wall by staggered columns, it being possible for said columns to be replaced locally by spikes at points where said inner wall is absent.

3,299,865
ROTARY COMBUSTION ENGINE
Thomas Joe Moyer, Laramie, Wyo. (581 N. 11th St., Newark, Ohio 43055)
Filed Feb. 25, 1965, Ser. No. 435,123
4 Claims. (Cl. 123—8)



1. In a valveless rotary engine of the kind described having suitable cooling and lubrication means comprising a central casing having an internal cylindrical surface disposed about an axis, end plates attached to the axially spaced ends of said casing to form a closed chamber, two pairs of vanes attached to independent shafts, one of said shafts being concentrically arranged inside the other of said shafts and being disposed along the axis of said central casing, each vane of each pair of vanes being intermediate the other pair of vanes and said vanes being disposed in said closed chamber and dividing same into four working chambers whose volumes are regulated and altered continuously, each vane having suitable seals to prevent leakage between said vanes and said central casing, said central casing having inlet and exhaust port means and ignition means disposed therein, a fixed pair of cam plates carrying cam grooves and axially spaced on the axis of said central casing, said shafts extending from central casing to a point intermediate said fixed cam plates, each of said shafts having an arm fixed thereto, cam follower means carried in the cam grooves of said fixed cam plates, a pair of link means attached to each of said cam followers, one of said link means to each pair being connected at its free end to the arm fixed on one of said shafts and the other of said link means of each pair being similarly connected to the arm fixed to the other of said shafts whereby said shafts will have relative movement in addition to rotary movement, and power-take-off means comprising a pair of rotatable cam plates intermediate said fixed cam plates, said rotatable cam plates having radial guide slots engaged by said cam followers, and a power-take-off shaft fixed to said rotatable cam plates and extending outward along said central casing axis.

3,299,866
ROTARY INTERNAL COMBUSTION ENGINE
Ted W. Birk, P.O. Box 865, Berlin, N.Y. 12022
Filed June 15, 1964, Ser. No. 374,897
24 Claims. (Cl. 123—17)

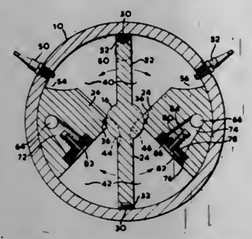


1. In an internal combustion engine of the type having separate charge and power chambers, pistons operable within the charge and power chambers for compressing a fuel-air charge and for converting the thermal energy of combustion of the charge into mechanical energy respectively, and valve means operable in synchronism with the pistons for timely transferring a compressed work charge from the charge chamber to the power chamber, the improvement wherein: the valve means comprises a valve chamber, a first valve chamber port in communication with the charge chamber, a second valve chamber port in communication with the power chamber, and a valve operable in the valve chamber between open and closed positions in synchronism with the pistons, said first and second ports being located so that the valve operates to first close off the first port and thereafter force a work charge portion remaining in the valve chamber through the second port.

3,299,867
VANE TYPE INTERNAL COMBUSTION ENGINES
Sandor Ficsur, Toronto, Ontario, Canada, and Lorne P. Winters, 44 Dunfield Ave., Toronto, Ontario, Canada; said Ficsur assignor to said Winters
Filed Oct. 22, 1964, Ser. No. 405,709
3 Claims. (Cl. 123—18)

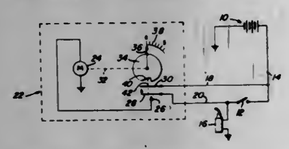
1. An internal combustion engine producing power output in the form of cyclical rotation of an output shaft, comprising, a cylindrical casing having end walls, a shaft extending coaxially through the casing and mounted for rotation in bearings carried by said end walls, said shaft being extended beyond at least one of said end walls for connection to a power take-oc assembly, a pair of vanes fixed to said shaft within said casing, said vanes being in sealing sliding engagement within the inside surfaces of said casing and end walls, a pair of block members extending inwardly from the inside surface of the casing to said shaft and dividing the interior of said casing into two chambers, longitudinally extending recesses formed in said block members and defining compression chambers

at opposite sides of one of said chambers, means for igniting fuel mixtures in said compression chambers, exhaust means for removing products of combustion from said one chamber, and fuel inlet means for introducing fuel to said one chamber, said fuel inlet means consisting of a pair of fuel passages through said block members,



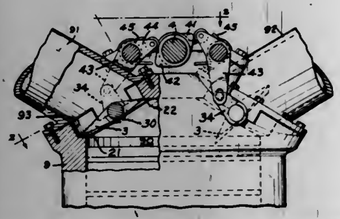
with the inner ends of said passages terminating in the other of said chambers, the outer ends of said passages terminating at connections to a source of gaseous fuel, said fuel inlet means further including grooves formed in the outer surface of said shaft, said grooves being shaped and sized to interconnect said two chambers.

3,299,868
AUTOMATIC IDLER
Lowell Dean Henke, Box 616, Hobson, Mont. 59452
Filed Sept. 17, 1965, Ser. No. 488,223
9 Claims. (Cl. 123—41.15)



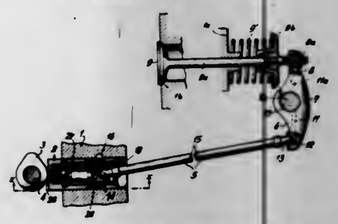
1. In combination with an internal combustion engine having electrically operated combustion sustaining means, a source of electrical energy and a shutdown switch connecting the source to the electrically operated means, an idle control mechanism comprising, interval control means connected to said source of electrical energy in parallel with said switch for maintaining the electrically operated means energized upon opening of the switch, and selectively operated means connecting the electrically operated means to the interval control means for rendering the same operative during a predetermined idle period initiated by said opening of the switch to permit gradual cooling of the engine while running under no load conditions.

3,299,869
VALVE FOR INTERNAL COMBUSTION ENGINES
Donald L. Sicklesteel, 120 S. Wall, Mount Vernon, Wash. 98273
Filed Jan. 10, 1966, Ser. No. 519,572
5 Claims. (Cl. 123—90)



1. An internal combustion engine comprising an engine block formed with cylinders, and a cylinder head closing one end of the cylinders and formed with intake and exhaust ports, valve means for closing such ports, at least one set of said valve means comprising a plate of a size and shape to close its port, means supporting said plate for oscillation along a line transversely across the opening and intermediate opposite edges of the plate, but adjacent the general plane of the opening, between a closed position and an open position, in which open position the plate lies in a plane generally aligned with the flow of gas through the port, the edges of the port at opposite sides of the axis of oscillation, for engagement by opposite surfaces of the plate, being formed as seats, and the complemental edges of the plate being formed to seat thereon, and means to oscillate the valve plates in predetermined sequence.

3,299,870
VALVE-OPERATING MECHANISM FOR INTERNAL COMBUSTION ENGINES
Richard Bertsch, Asperg, and Josef Heinzelmann, Ablach, near Sigmaringen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Jan. 21, 1966, Ser. No. 522,217
Claims priority, application Germany, Feb. 6, 1965, B 80,405
9 Claims. (Cl. 123—90)

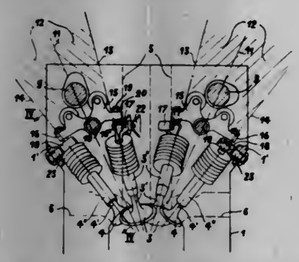


1. In a valve-operating mechanism for internal combustion engines, a driven cam; a housing adjacent to said cam and having a guide bore therein and an oil supply channel communicating with said bore; a valve tappet including a hollow body reciprocably received in said bore and having an end wall in motion-receiving engagement with said cam, a lash-eliminating plunger reciprocably received in said body and defining with said end wall a compensating chamber, said plunger further having a second chamber communicating with said compensating chamber and a cup defining a socket facing away from said end wall, and one-way valve means provided between said chambers for admitting oil to said compensating chamber; and a push rod having an end portion extending into said socket and arranged to bias said plunger in a direction toward said end wall, said body and said plunger defining a first passage permanently connecting said channel with said second chamber and a second passage for admitting oil from said channel to said socket, said second passage being in permanent communication with said socket and in intermittent communication with said channel in response to reciprocation of said body.

3,299,871
VALVE CONTROL FOR INTERNAL COMBUSTION ENGINES
Ludwig Apfelbeck, Munich, Germany, assignor to Bayerische Motoren Werke A.G., Munich, Germany
Filed Apr. 1, 1966, Ser. No. 539,392
Claims priority, application Germany, Apr. 3, 1965, B 18,299
19 Claims. (Cl. 123—90)

1. A valve control for internal combustion engines having at least one cylinder row, which include per cylinder four overhead valves radially arranged in V-formation with two inlet and exhaust valves each disposed mutually opposite one another, comprising four valve means per

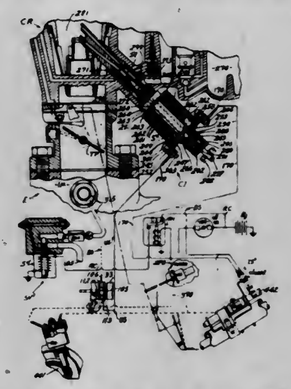
cylinder each including stem means, the planes determined by the axes of oppositely disposed valve means being rotated with respect to the longitudinal center plane by a predetermined angle, separate cam shaft means for the valve means disposed on respective sides of the longitudinal center plane, rocker arm means abutting against respective cam shaft and valve means for actuating the valve means from the corresponding cam shaft means, the cam shaft means being arranged within the angular



spaces which are defined by the longitudinal center planes determined by the inlet valve stem means, on the one hand, and the outlet valve stem means on the other of the valve means actuated by the corresponding cam shaft means, and common bearing shaft means for the valve means actuated by a respective cam shaft means and arranged within the same angular space but closer to the apex of the angle thereof than the corresponding cam shaft means for supporting thereon the rocker arm means.

3,299,872
AUTOMATIC CARBURETION INTERRUPTER FOR INTERNAL-COMBUSTION ENGINES
Glenn T. Randol, 3 E. 2nd Ave., Loch Lynn, Mountain Lake Park, Md. 21550
Original application Sept. 21, 1962, Ser. No. 225,426, now Patent No. 3,272,028, dated Sept. 13, 1966. Divided and this application Oct. 22, 1965, Ser. No. 502,151
11 Claims. (Cl. 123—102)

1. In a carburetor having a hollow body provided with a fuel compartment and a venturi passage with an actuatable throttle-valve therein for controlling the speed defining the torque output of an internal-combustion engine, the latter being provided with an inlet-manifold and accelerator mechanism adapted to actuate said throttle-valve from normal engine-idling position of control to wide-open throttle for maximum engine speed, the improvement which comprises: a throttle shaft mounted on the carburetor body and spanning said venturi passage, and on which said throttle-valve is mounted for co-rotation therewith to control the quantity of fuel-mixture drawn through the venturi passage into the engine inlet-manifold; a throttle lever fast at one end on one of the exterior ends of said throttle shaft; linkage interconnecting the free end of said throttle lever with the accelerator treadle; a normally compressed spring reacting between a portion of the accelerator treadle and a fixed portion associated with the engine to bias the accelerator treadle toward normal engine-idling position; an abutment-engaging element mounted on the carburetor body for engagement by said throttle lever to establish the idling position of said throttle-valve; a main jet fuel-supplying passage in said carburetor body and which continuously communicates at its inner end with said venturi passage; a fuel chamber; a tapered orifice defining the outer end portion of said jet passage; a solenoid having an energizable sleeve-type winding contained in a casing mounted coaxially with respect to the fuel chamber and outer end of said jet passage; an axially-bored armature movably disposed in said winding, the inner end of said armature projecting into said fuel chamber; a manually-adjustable needle-valve projecting through the axially-bored armature in threaded engagement therewith to move as a unit; a conical portion defining the inner end of said needle-valve and which is adapted to cooperate with said tapered orifice to establish the quantity of fuel drawn through the jet passage from said fuel compartment; an externally threaded portion defining the outer exposed end of said axially-bored armature; an internally threaded cup-like lock-nut adapted to engage said threaded portion on the axially-bored armature to lock said needle-valve in its axially adjusted position with respect to said armature; a control hole through the end wall of said lock-nut accommodating the outer end of said needle-valve to project to the exterior thereof whereby manual rotation of said needle-valve is provided when said lock-nut is loosened, enabling said relative axial adjustment thereof; an annular abutment element spaced from the inner end of said axially-bored armature and which normally engages the inner end face of the mounting for said solenoid to define the normal relationship between the conical end of the needle-valve and cooperating tapered orifice; another normally compressed spring reacting between the casing of said solenoid

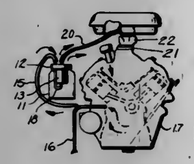


and axially-bored armature therein to establish the latter and needle-valve carried thereby in their respective normal fully retracted positions wherein the annular abutment element is engaged with its cooperating inner end face of the mounting for said solenoid when the latter is de-energized; a circular valve seat defining the outer enlarged end of the tapered orifice which communicates with said fuel chamber; a complemental valve face defining the inner end of said axially-bored armature, and which is adapted to engage said valve seat to block flow of fuel from the fuel chamber into said orifice of the jet passage when said solenoid is energized thereby interrupting normal fuel-mixing function of the carburetor under throttle-valve control with resultant reduction in the speed of the engine, said conical portion on the needle-valve projecting farther into said tapered orifice substantially closing the same; a synchronizing switch having two positions of control with one of said positions connected to said solenoid aforesaid to energize and de-energize the winding thereof in response to changes in the speed of the engine in accelerating and de-celerating ranges, respectively.

3,299,873
POSITIVE CRANKCASE VENTILATION SYSTEM
Robert P. Bruenn, 3226 NE. Glisan St., Portland, Oreg. 97232
Filed May 13, 1966, Ser. No. 549,872
5 Claims. (Cl. 123—119)

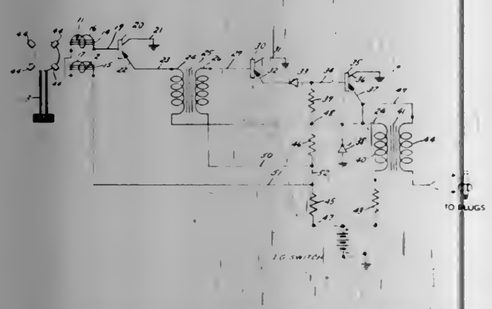
1. A crankcase ventilation system for internal combustion engines comprising, a container having an opening therein, a lid removably secured to said container, a hol-

low cylindrical can having a plurality of spaced apart openings to the upper portion thereof, said can being secured to the cover portion of said lid and being positioned within said container, a first metallic and J-shaped configurated tube passing through said cover portion of said lid, a first flexible tube extending from the crankcase of said engine, the other end of said metallic tube positioned in close proximity to the bottom portion of said can so that when the hot fumes are transgressed through the flexible and metallic tubes to said can the heavier substances of the fumes settle down to the bottom



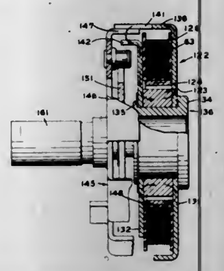
portion of said container and the lighter, gaseous fumes enter said can through said plurality of openings therethrough, the second metallic tube of elongated configuration passing through said cover of said lid and being positioned within said can, the end extremity of said second tube being in close proximity with the bottom portion of said can, securing means for securing both metallic tubes to said can, second flexible tube secured through the other end of said second metallic tube for transgressing gaseous fumes from said can and said second metallic tube to the intake manifold of said carburator of said engine.

3,299,874
TRANSISTOR IGNITION
Philip Elkind, Bronx, N.Y., assignor of one-fourth to Richard Guarino, Bronx, N.Y.
Filed May 15, 1964, Ser. No. 367,707
1 Claim. (Cl. 123—148)



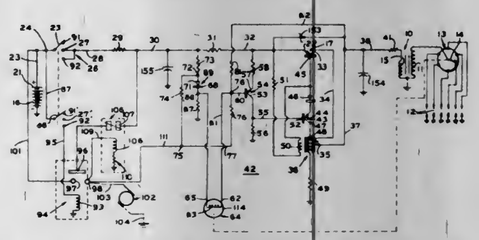
In a transistorized ignition, first and second signal pick-up elements connected in series, distributor shaft driving means operating said signal pick-up elements, a first transistor receiving the output of said signal pick-up elements, a second transistor, transformer means interconnecting said first and second transistors, a third transistor, silicon diode rectifier means interconnecting said second and third transistors, said third transistor being connected to the primary winding of an ignition coil; feed back means interconnected the secondary winding of said ignition coil with said transformer and said pick-up elements for regulating the operating level of said first and second transistors, and zener diode means regulating the safe operating voltage of said third transistors.

3,299,875
IGNITION SYSTEM
Frank Skay, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,264
9 Claims. (Cl. 123—148)



1. An electrical generator for use in an ignition system of an automotive vehicle comprising, a housing, a shaft rotatably mounted in said housing, a rotor mounted on said shaft and having an annular flange with a plurality of spaced teeth positioned therein, a stator positioned in said housing about said shaft, said stator comprising a bottom plate having a flange with a plurality of spaced teeth positioned therein, a top plate having a flange with a plurality of spaced teeth positioned therein, an annular permanent magnet positioned in said housing about said shaft between and in engagement with said top and bottom plates, an annular output winding positioned in spaced relationship radially outwardly of and about said annular permanent magnet and between said top and bottom plates, said annular flange of said rotor positioned between said flange of said top plate and said flange of said bottom plate whereby rotation of said rotor induces a periodically varying voltage in said output winding.

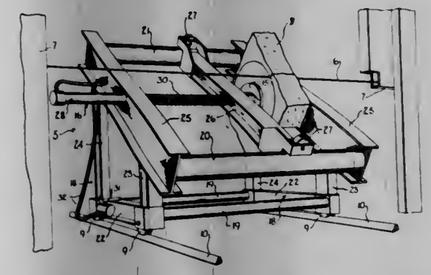
3,299,876
IGNITION SYSTEM
Laurence F. Mieras, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 387,003
6 Claims. (Cl. 123—148)



1. A transistorized ignition system for an internal combustion engine comprising, an ignition coil having a primary winding and a secondary winding, a plurality of spark plugs, a distributor operated in timed synchronism with the engine for sequentially connecting said secondary winding of said ignition coil with said spark plugs, a transistorized circuit coupled to said source of electrical energy and including a first transistor connected in series with said source of electrical energy and said primary winding of said ignition coil, a second transistor, means coupling said first and said second transistors for causing conduction of said first transistor when said second transistor is in a nonconducting state and for causing nonconduction of said first transistor when said second transistor

is in a conducting state, a biasing means coupled to said source of electrical energy and said transistorized circuit for applying a bias to said second transistor of a polarity to cause said second transistor to be normally conducting and said first transistor to be normally nonconducting, an electrical generator operated in timed synchronism with the engine and having an output winding producing an alternating output voltage coupled to said second transistor, the alternating output voltage from said output winding switching said second transistor to a nonconducting state and said first transistor to a conducting state when the portion of the wave form of the opposite polarity to said bias reaches a magnitude equal to or greater than said bias and switching said second transistor to a conducting state and said first transistor to a nonconducting state when the magnitude of said portion of said wave form falls below the level of said bias, a starting circuit for said engine coupled to said source of electrical energy and to said transistorized circuit during engine starting operations for applying a bias to said second transistor of a polarity opposite to the polarity of said first mentioned bias whereby said second transistor will be normally conducting and said first transistor will be normally conducting during starting operations, the alternating output voltage from said output winding switching said second transistor to a conducting state and said first transistor to a nonconducting state when the portion of the wave form of opposite polarity to said last mentioned bias reaches a magnitude equal to or greater than said bias, whereby the ignition timing of said ignition system will be retarded during starting operations when low voltages are being generated in said output winding of said generator and the slope of the output voltage wave form decreases in the region of the magnitude of said bias voltage.

3,299,877
APPARATUS FOR CUTTING CYLINDRICAL BLOCKS OF STONE
Casper R. Grage, Escondido, Calif., assignor to Continental Granite Corp., Escondido, Calif., a corporation of California
Filed Aug. 24, 1964, Ser. No. 391,504
3 Claims. (Cl. 125—21)



1. Apparatus for cutting slabs of stone into cylindrical blocks by means of a driven endless flexible sawing wire having a horizontal cutting stretch, said apparatus comprising:

(A) a carriage mounted for horizontal motion in opposite directions transverse to said cutting stretch of the wire;

(B) a pair of opposite upright side members on said carriage disposed in spaced apart planes normal to said cutting stretch, said side members having their upper edges inclined forwardly and downwardly and substantially above the level of the cutting stretch at the rear of the carriage and below said level at the front of the carriage;

(C) a pair of rails carried by and spanning said side members near their upper edges and extending parallel to the cutting stretch of the wire, one of said rails being near the front of the carriage and the other near its rear;

(D) a tailstock carrier;

(E) means mounting said tailstock carrier on the rails for translatory motion along the rails;

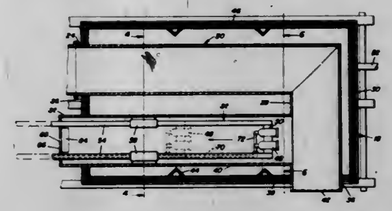
(F) a driving head on one of said pair of side members, at the side thereof facing the tailstock carrier, said driving head being rotatable on a fixed axis intermediate the rails and parallel to them;

(G) power drive means on the carriage for rotatably driving said driving head;

(H) a tailstock mounted on the tailstock carrier, at the side thereof facing the driving head, and constrained to translatory motion with the tailstock carrier and to rotation on an axis coinciding with that of the driving head; and

(I) force exerting means reacting between the other side member and the tailstock carrier for exerting force against the tailstock carrier in the direction to urge it toward the driving head, so that a slab of stone to be cut can be clampingly confined between the driving head and the tailstock for rotation with the driving head.

3,299,878
AIR AND WATER HEATER
Ernest R. Muckelrath, Tioga, N. Dak., assignor to Air Heaters, Inc., a corporation of North Dakota
Filed Dec. 30, 1965, Ser. No. 517,624
8 Claims. (Cl. 126—101)

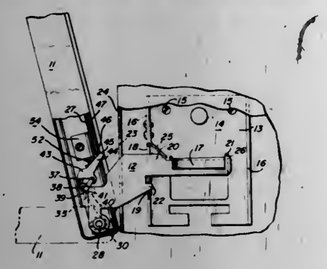


1. A heater assembly comprising an elongated heat-conveying duct means, said duct means including a first inlet end, a second outlet end, a primary air intake formed in said duct means at the first inlet end, a secondary air intake to said duct formed between the inlet end and the outlet in substantial spaced relation to both, blower means mounted adjacent the duct means outlet end and communicated therewith for drawing heated air from the duct means, fuel injection means disposed within said duct means between the inlet end and the secondary air intake, and means mounting said fuel injection means for longitudinal adjustment within said duct means between the inlet end and the secondary air intake.

3,299,879
DOOR STOP MECHANISM
John T. Doner, Marion, Ohio, assignor to Whirlpool Corporation, a corporation of Delaware
Filed July 20, 1965, Ser. No. 473,429
9 Claims. (Cl. 126—194)

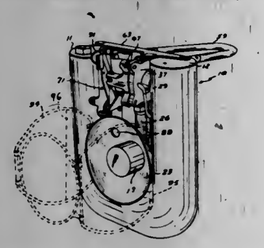
1. In an oven apparatus including an oven cooking cavity and a door movable between open and closed positions relative to said cavity, the improvement of a stop mechanism comprising: a crank member mounted on said door for limited arcuate movement between first and second positions relative to said door; yieldable means biasing said crank member toward said first position and,

through said crank member, said door toward closed position; and stationary stop means positioned to engage said crank member when in said first position and when said door is in a partially open position between said open and closed positions for retaining said door in said



partially open position, said crank member being movable against the bias of said yieldable means into said second position wherein said crank member is free of said stationary stop means and may be moved into said closed position.

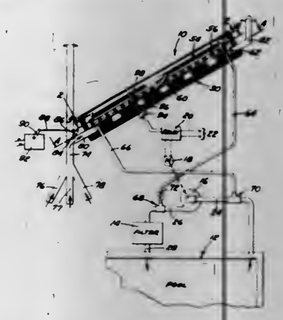
3,299,880
SURVIVAL HEATER
Ewald J. Kimm, Dayton, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed June 30, 1965, Ser. No. 468,317
11 Claims. (Cl. 126—208)



1. A portable heater for personal use, including a fuel storage tank having opposite ends, a burner and a valve controlling flow of fuel from said tank to said burner, said valve being biased to a closed position, and manipulative means movable from a normal to an operated position to move said valve to an open position, said manipulative means being biased to a normal position releasing said valve for biasing to a closed position, said manipulative means being made large as a handle to be readily moved to and held in an operated position, said handle assuming an attitude in an operated position substantially at right angles to the body proper of the heater, said handle being pivotally connected to said tank near one end thereof, the opposite end of the tank being broad for stable contact with a supporting surface.

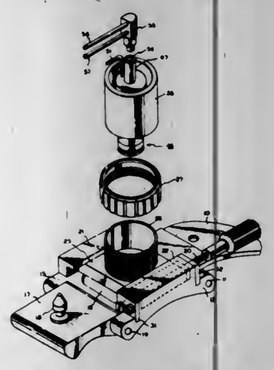
3,299,881
WATER HEATER
Alexander W. Koch, 5677 McKinley Ave., San Bernardino, Calif. 92404
Filed Oct. 26, 1964, Ser. No. 406,450
4 Claims. (Cl. 126—271)

1. A water heater utilizing solar heat and the waste heat in exhaust gas from gas burning appliances, said water heater comprising:
an insulated, open-top box of relatively shallow depth and considerable area;
a transparent lid covering the open top of said box;
a pipe of considerable length winding around in the interior of said box, at least a portion of said pipe being dark-colored and arranged so that it is exposed to solar radiation passing through said transparent lid;
an exhaust flue adapted to be connected to said gas-burning appliances;
conduit means connected to said flue and to the interior of said box;



a vent opening from the interior of said box to the atmosphere;
means for by-passing hot exhaust gas from said flue through said conduit means and into the interior of said box; and
means for circulating water through said pipes, said water being heated by solar radiation and by heat from the hot exhaust gases entering said box through said conduit means.

3,299,882
PHYSIOLOGIC FLUID PRESSURE SENSOR MOUNT
John A. Masino, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 25, 1963, Ser. No. 318,897
3 Claims. (Cl. 128—2.05)



1. A mount for a physiologic fluid pressure sensor comprising, in combination, a rigid housing provided with a through-going bore, a physiologic fluid pressure sensor terminating in a substantially flat presser face formed at right angles to the longitudinal axis of said sensor adapted to contact the body member within which physiologic fluid pressure measurement is to be effected, said sensor incorporating as fluid pressure sensing element a nozzle supplied with fluid at substantially constant pressure, said nozzle at the open outboard end being disposed

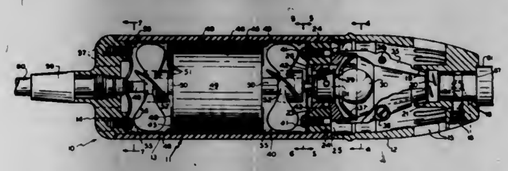
concentric within a circular flow-throttling aperture discharging to exhaust cut through said flat presser face, and a gimbal ring sensor retainer disposed intermediate said bore and said sensor journaled transverse said bore on the outer gimbal axis, with the inner gimbal axis, reserved to sensor retention, oriented perpendicularly to said outer gimbal axis, said gimbal ring sensor retainer spacing said sensor radially with respect to said bore in the plane of said outer gimbal axis.

3,299,883
GYNECOLOGIC INSTRUMENT
Harry S. Rubens, Massapequa, N.Y., assignor to Engelhard Hanovia, Inc., Newark, N.J., a corporation of New Jersey
Filed Nov. 8, 1963, Ser. No. 322,414
5 Claims. (Cl. 128—4)



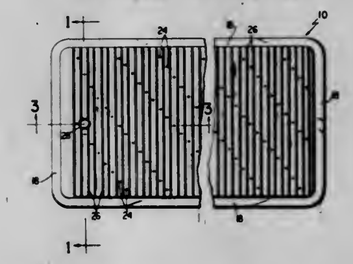
1. A gynecologic instrument comprising a block member, a main cannula having one end portion mounted on the block, a U-shaped rail means having legs mounted on the block, rider means slidably mounted on each of the legs, a pair of laterally spaced cannulae each mounted at one end thereof on one of the rider means, a fulcrum means mounted on the main cannula a short distance from its free end, the main cannula passing longitudinally between the pair of cannulae, the pair of cannulae converging toward each other in the direction of their free ends and being pivoted at the fulcrum.

3,299,884
AIR COOLED LAMP HANDLE AND DIAGNOSTIC INSTRUMENT COMBINATION
William C. Moore, Skaneateles, and John D. Connors, Auburn, N.Y., assignors to Welch Allyn, Inc., Skaneateles, N.Y., a corporation of New York
Filed Sept. 16, 1963, Ser. No. 309,094
7 Claims. (Cl. 128—23)



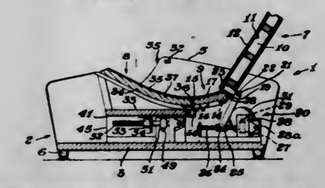
1. In combination, a hollow handle housing and a diagnostic instrument, said instrument having light conducting means therein for transmitting light to the distal end of the instrument, the instrument having a polygonal stem projecting therefrom for supporting the instrument and enclosing the proximal end of the light transmitting means, the light-receiving surface of said means being exposed at the end of the stem, said housing having a socket receiving and releasably securing said stem within the housing, the socket having a polygonal cross-sectional configuration corresponding to that of the stem for orienting the instrument in the housing, an electrically powered lamp secured within the housing adjacent said socket, the housing having a continuous light passage between the lamp and the socket for illumination of said exposed surface when the stem is in the socket, and an electrically powered fan in said housing for drawing air over said stem and through said housing to prevent heating of the instrument housing; the socket and stem having cooperating spring biased detent means for detachably securing the stem in the socket.

3,299,885
HYDROTHERAPEUTIC MAT WITH AIR INLET MEANS AND MEANS FACILITATING ROLLING INTO A CYLINDER
Lloyd Edward Wessel, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 19, 1963, Ser. No. 310,056
2 Claims. (Cl. 128—66)



1. A hydrotherapeutic treatment mat comprising a body portion formed entirely of rubber-like material which may be readily flexed, folded or rolled to assume various shapes, said mat body portion comprising coextensive separated top and bottom layers which are substantially integrally joined at narrow marginal areas only around the entire marginal edge of the mat, a multiplicity of uniformly spaced substantially parallel narrow upstanding ribs on the top face of said top layer extending substantially for the entire width of the mat in one direction and rendering the mat easy to roll up into a cylinder whose axis is parallel to said ribs, said top layer having a multiplicity of small air outlet openings arranged between said ribs in a pattern which extends over the major portion of the area of the mat, said top layer also having a relatively large air inlet opening formed therein adapted for connection with a suitable hose, and a multiplicity of spacer elements arranged between said top and bottom layers in fixed relation thereto and being widely spaced between said layers so as not to obstruct free circulation of air between said layers, said spacer elements maintaining said layers spaced apart a relatively small and uniform distance over substantially the entire area of the mat.

3,299,886
TRACTION METHODS AND APPARATUS
Venzel R. Mikan, 1320 Fisher Drive, Saginaw, Mich. 48601
Filed Mar. 9, 1964, Ser. No. 350,322
19 Claims. (Cl. 128—71)



1. A chair construction for supporting the body of a person, said construction comprising frame means having forward and rearward ends; an upwardly and rearwardly inclined back supporting member; means mounting said back supporting member on said frame means; an upwardly concave seat supporting member, and means

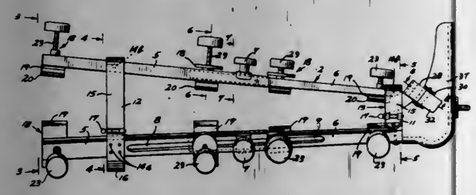
mounting said seat member on said frame means for reciprocating movements relative to and toward and away from said back member.

3,299,887
ULNAR DRIFT SPLINT
Lawrence Czap, Ypsilanti, Mich.
(3456 Shattuck Road, Columbus, Ohio 43221)
Filed Dec. 9, 1963, Ser. No. 329,029
3 Claims. (Cl. 128—77)



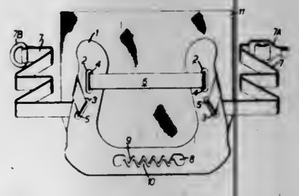
1. An ulnar drift splint for a human hand comprising;
a generally U-shaped base member formed to fit snugly around the lateral edge of said hand,
strap means for releasably securing said base member to said hand,
an extension member pivotally attached to said base member by a screw extending inwardly through apertures in said extension member and base member, respectively, and threadably engaged with an internally threaded annular boss mounted upon the inner surface of said base member,
and a pair of wings at the forward end of said extension member, said wings being bent into a generally U-shaped configuration arranged to contact, to fit snugly around, and to press radially inward against the lateral edge of the little finger of said hand.

3,299,888
FRACTURE SETTING DEVICE
Frederick H. Muckinhaupt, 87 Main St. Extension, Meadville, Pa. 16335
Filed Oct. 18, 1965, Ser. No. 496,840
7 Claims. (Cl. 128—87)



1. A device of the class described comprising:
a plurality of elongated spaced-apart rigid members, each of said rigid members consisting of at least two tubular members telescopically interengaged relative to one another so that the length thereof may be adjusted,
adjustable screw means carried by the opposed interengaged ends of said tubular members for holding the same in their adjusted position,
an annular member consisting of at least two parts arranged at least adjacent each end of said rigid members which is adapted to encircle the limb of a patient and to which said rigid members are attached for holding the same in spaced-apart relation,
means releasably attaching said two parts one to the other so that the tubular members may be moved relative to one another whereby the device may assume an open position,
means carried by each of said annular members to which each of the respective rigid members is hingedly attached,
a substantially foot-shaped housing member attached to the end of at least one of said rigid members which is adapted to receive the foot of a patient,
an adjustable strap-like member carried by said last member for holding the foot in position therein, and
a plurality of spaced-apart adjustable leg clamping members carried by each of said rigid members on the inner side thereof.

3,299,889
SANITARY MASKS
Frederic Reginald Stanley, Wembley, Middlesex, England, assignor, by mesne assignments, to The Martindale Electric Company, Cleveland, Ohio, a company of Ohio
Filed July 29, 1964, Ser. No. 385,923
Claims priority, application Great Britain, July 30, 1963, 30,238/63
5 Claims. (Cl. 128—146)



1. A sanitary mask comprising a supporting plate and a pad of filtering material supported thereon against one face thereof, wherein the supporting plate is provided with a nose recess in its upper edge and is also formed with at least one opening, the margin of which has serrations therealong extending partially across said opening substantially in the plane of said plate, and through which opening a portion of the pad of filtering medium is passed and is engaged and held by the said serrations.

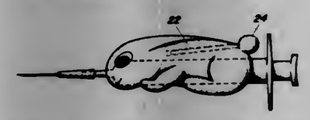
3,299,890
SURGICAL BANDAGE, DRESSING AND THE LIKE
Leon O. Parker, San Francisco, Calif., assignor to San Francisco Research Corporation, San Francisco, Calif., a corporation of California
Filed June 11, 1963, Ser. No. 287,029
48 Claims. (Cl. 128—156)



1. A non-adhesive surgical bandage having firmness and closed-mesh characteristics similar to a closely-woven cloth bandage during application while enabling lateral expansion to open the meshes and to provide shearing action during removal, and consisting essentially of an adhesive-free thread-type cloth fabric having numerous thread intersections, the threads being arranged to enable at least 25% extension in one dimension by movement of the threads at said intersections relative to each other with complementary contraction in its transverse dimension, extended to substantially its maximum length with threads drawn together substantially closing the meshes,

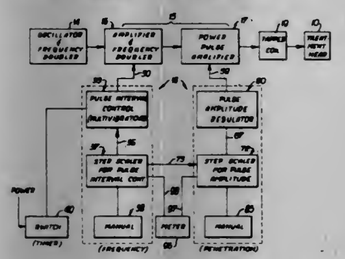
and means retaining said fabric in its extended closed-mesh condition against self-recovery therefrom by the conformation and stiffness of the intersecting threads, the bandage being non-stretching lengthwise during application with substantially closed meshes which can be opened and enlarged readily by lateral pull.

3,299,891
HYPODERMIC SYRINGES AND ATTACHMENTS THERETO PLEASING TO CHILDREN
Robert L. Smeton, 6345 Split Rock Ave., Twentynine Palms, Calif. 92277
Filed Dec. 9, 1963, Ser. No. 329,173
8 Claims. (Cl. 128—218)



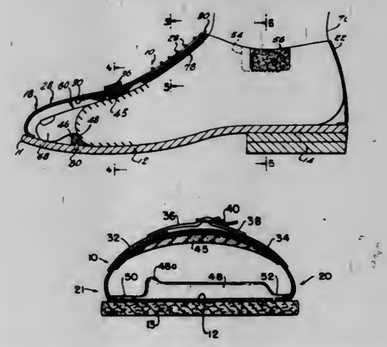
1. A disposable hypodermic syringe comprising a barrel with a longitudinal bore and having its outer circumference formed into the shape of an object pleasing to children, said barrel having a longitudinal cavity shaped to receive a stick member having its outer end covered with an absorbent swab, and a plunger insertable in said bore and slidable longitudinally up and down in said barrel.

3,299,892
THERAPEUTIC PULSE GENERATION, CONTROL AND TRANSMISSION CIRCUIT
William Denis Kendall and Frank A. Yarger, Los Angeles, Calif., assignors to Dynapower Systems Corporation, Los Angeles, Calif., a corporation of Delaware
Filed July 15, 1963, Ser. No. 294,822
2 Claims. (Cl. 128—421)



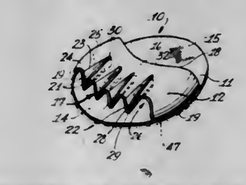
1. In electrotherapeutic apparatus, a power radiating head including a primary coil, a power radiating secondary coil having multiple turns connected in a spiral, and a condenser electrically connected across the secondary coil, and input circuit means connected to transmit power pulses to said primary coil, said input circuit means including oscillator, amplifier and control means for creating and transmitting to the head a sequence of high frequency pulses and for controlling the selected amplitude of said pulses and the intervals therebetween, said oscillator means providing a high frequency signal, said amplifier means including first amplifier means and power amplifier means connected in series sequence with said oscillator means, said control means including pulse interval control means connected with said first amplifier means to intermittently interrupt transmission of said signal to said power amplifier means, said control means also including pulse amplitude control means connected with said power amplifier means to provide amplitude selection of power pulses transmitted to said head, said input circuit means including a coil having an adjustable tap connected in series between the power amplifier means and one end terminal of the primary coil and adjusted to effect maximum energy transfer to the head for radiation by the secondary coil accompanied by a null voltage remaining localized substantially half way along the spiral length of the secondary coil and for different selected pulse intervals and amplitudes.

3,299,893
MEANS FOR STOPPING THE FORWARD MOVEMENTS OF THE FOOT IN A SHOE
Alberto Collina, Westwood, N.J. 07675
Filed Oct. 8, 1962, Ser. No. 229,525
7 Claims. (Cl. 128—581)



3. Means for stopping forward movement of a foot in a shoe having an inner surface underlying and downwardly spaced from the toe portion and forward portion of the upper and comprising ridge stopper means for extending transversely of said inner surface and for positioning rearwardly of the foremost point of the toe portion for underlying and extending into the hollow of the foot forwardly of the front wall of the ball of the foot, a rearward wall of said ridge stopper means being shaped to conform to the shape of the front wall of the ball of the foot and for extending upwardly sufficiently relative to the forward portion of the upper so that the space between said ridge stopper means and the overlying surfaces of said upper vertically confine the foot and forward movement of the foot is thereby impeded, said ridge stopper means protruding upwardly adjacent its end underlying that portion of the hollow of the foot beneath the large toe and next adjacent toe, the protrusion formed thereby extending between the large toe and next adjacent toe and providing additional vertical contact between said ridge stopper means and the foot.

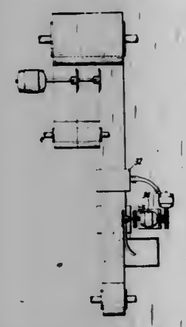
3,299,894
PODIATRICAL APPLIANCE
Joseph N. A. Charlebois, 31 Sherbrooke St., Ottawa, Ontario, Canada
Filed July 8, 1964, Ser. No. 381,179
5 Claims. (Cl. 128—581)



1. A disposable foot appliance having a lower sole receiving member and a separately formed upper member secured thereto, said members comprising of a moisture absorbent soft paper tissue material, said upper

member having an undulated front end portion and an uninterrupted foot receiving rear portion, a plurality of longitudinal extending loops and depressions in said upper member providing separate toe receiving compartments, said depressions extending from said undulated front end portion toward said rear end portion of said upper member and terminating therebetween to form webbed portions said webbed portions to be received in the area of the foot between each toe member to absorb excess moisture and means in said upper member to provide a circulation of air to the toe area.

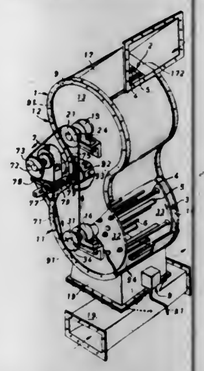
3,299,895
CIGARETTE OR CIGAR MAKING MACHINE AND METHOD
George Dearsley, Richmond, Va., assignor to American Machine & Foundry Company, a corporation of New Jersey
Original application Mar. 8, 1962, Ser. No. 179,288, now Patent No. 3,230,958, dated Jan. 25, 1966. Divided and this application Nov. 16, 1964, Ser. No. 411,255
20 Claims. (Cl. 131—20)



1. A method of making smokable tobacco articles of any cross section which comprises the following steps, in the following order:
(1) Transporting homogenized tobacco material in the form of at least one flat web of continuous indefinite length which has a greater total mass per unit length than that of the finished article;
(2) Measuring the mass per unit length of said material during said transporting;
(3) Reducing the mass per unit length responsive to said measuring; and
(4) Forming said flat web of tobacco material directly into said article during said transporting.

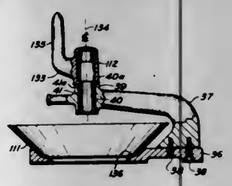
3,299,896
APPARATUS FOR LOOSENING OR OPENING TOBACCO
Hippocrate Sabbaides, Thessaloniki, and Hans Sommer, Athens, Greece, assignors to Hauni-Werke Korber and Co. K.G., Hamburg-Bergedorf, Germany
Original application July 27, 1962, Ser. No. 212,899. Divided and this application Oct. 22, 1965, Ser. No. 500,668
Claims priority, application Greece, July 27, 1961, 22,131; May 12, 1962, 23,483; Great Britain, May 23, 1962, 19,826/62
17 Claims. (Cl. 131—149)

1. Apparatus for loosening up and opening tobacco, such as tobacco growers' bales, having means effectively forming a conveyance path for the tobacco along which the cohering tobacco leaves are to be loosened, comprising vibratory means extending into said conveyance path and having loosely fitted tubular casings supported by spindles, means for moving said spindles substantially in the direction of the conveyance path for the tobacco feed, the tubular casings of said vibratory means rolling freely on said spindles in the absence of any external influence and said tubular casings carrying out on said spindles radial and other composite movements with respect to said



spindles by engagement with the conveyed tobacco, and elastic means loosely interposed between a respective tubular casing and a corresponding spindle and operable to oppose the external influences by the tobacco parts.

3,299,897
PIPE SMOKER'S DEVICE
Millard A. Rhoads, 1411 Lake Blvd., St. Joseph, Mich. 49085
Filed Oct. 9, 1964, Ser. No. 402,721
3 Claims. (Cl. 131—232)



1. An apparatus for cleaning ashes and unburned tobacco from the bowl portion of a smoker's pipe, comprising: receptacle means having upwardly extending side walls for receiving said ashes and unburned tobacco; a horizontal base member having well means for removably receiving said receptacle means; arm means attached to said base member and extending adjacent and above said receptacle means, said arm means having a hub portion with a vertical bore therethrough positioned above and centrally of said side walls; and elongate means having shaft means positioned in said vertical bore for rotation therein whereby cleaning of said bowl portion is effected upon placing said bowl portion over said elongate means and rotating said elongate means relative to said bowl portion thereby dislodging said ashes and unburned tobacco for direct disposal into said receptacle means.

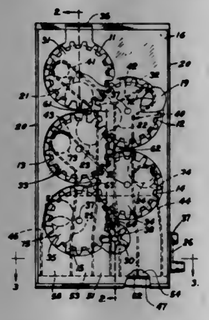
3,299,898
PIPE CLEANER
Sumas Payne, 8522 S. Maryland, Chicago, Ill. 60619
Filed Aug. 27, 1964, Ser. No. 392,447
1 Claim. (Cl. 131—246)

A two piece smoke pipe cleaner assembled axially in a common plane comprising, an elongated wooden handle and a reamer removably secured together by a close friction tight fit, said handle having a concave elongated handle gripping portion adapted to be grasped by the user, said handle having a rounded free rear end portion at one end of said gripping portion thereof, said handle having a disc portion at the opposite end of said hand gripping portion having an outer free side, said disc portion being of a diameter substantially the same as the largest transverse diameter of the handle, a step-portion of smaller diameter than said disc portion integral with the free side of said disc portion, and a tenon carried by and spaced axially from the hand gripping portion of said handle by said step-portion and said disc portion, said tenon being a truncated conical head member integrally formed with said step-portion, said disc portion and said hand gripping portion of said handle, and with its smaller end portion extending axially in a direction away from said step-portion, said reamer having a body of substantially ellipsoidal form with a convex surface, a flat exterior front wall and a flat ex-



terior rear end wall, whereby the front end portion of said body may be inserted downwardly into the bowl of a pipe, the front end portion of said body being smaller than the rear end portion thereof, the rear end portion of said body being hollow and the interior walls providing a truncated conical socket of approximately the same shape as that of said truncated conical tenon and having an interior flat base wall and conical side wall, the interior side wall of said body adapted to receive said truncated conical tenon in a tight frictional fit when assembled together and spaced a short distance from the interior flat base wall, the forward and portion of said reamer body being substatially solid, and said reamer body formed with a series of external elongated grooves in its convex surface providing a plurality of helical convex rigid cutters adapted to cut foreign matter from the bowl of a pipe when inserted and turned therein.

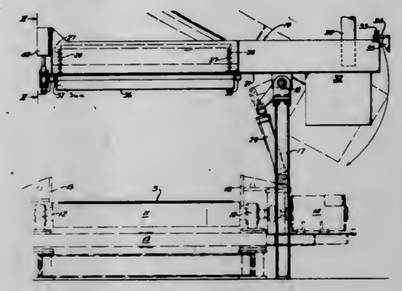
3,299,899
COIN TRANSFER BANK
John D. Nadherny, Northlake, Ill., assignor to Harold Spector and Raymond B. Spector, a partnership, doing business as Superior Toy & Manufacturing Co.
Filed Apr. 4, 1966, Ser. No. 539,874
9 Claims. (Cl. 133—3)



1. In a coin transfer bank, a series of successively meshing gears arranged in a plane at an angle to the vertical, each gear having a coin carrying disc provided with a notch to receive any one of a plurality of coins of different denominations, the peripheries of successive discs being adjacent each other and their notches matching each other during rotation of said gears and discs, said gears and discs being arranged in said plane at progressively

lower altitudes whereby a coin will be transferred by gravity from the notch of one disc to the notch of the next lower disc during such rotation, a plurality of coin-receiving pockets for coins of different demoninations, a coin chute assembly leading thereto and having a branch for each coin size, said branches having coin-receiving openings for each coin size and each cooperating with one of said discs and its coin-receiving notch to receive a coin corresponding to its respective opening size.

3,299,900
STRIP COOLING SYSTEM
Morris D. Stone and Clark H. Johnson, Pittsburgh, Pa., assignors to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 25, 1965, Ser. No. 442,670
2 Claims. (Cl. 134—122)

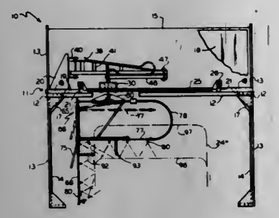


1. An apparatus for controlling the application of coolant onto a passing workpiece by diverting its direction of flow, comprising:
coolant discharge means positioned at a spaced distance from the workpiece for delivering coolant onto the workpiece,
coolant supply means for delivering coolant to said discharge means,
a U shaped coolant diverter pan selectively positionable intermediate said discharge means and the workpiece and adjacent to said discharge means for diverting coolant delivered from said discharge means so as not to allow the coolant to contact the workpiece,
said coolant diverter pan having its open side arranged to receive coolant from said discharge means and having one of its ends closed so as not to allow coolant to escape from the closed end thereof, and
power means connected to said coolant diverting pan for quickly positioning said diverter pan in a first position in which coolant delivered from said discharge means will flow into said diverter pan, and in a second position in which the coolant delivered from said coolant discharge means will flow onto said workpiece.

3,299,901
CAR WASHING APPARATUS
Daniel E. Axe, Fayetteville, and David W. Remick, Camillus, N.Y., assignors to O. M. Edwards Company, Inc., Syracuse, N.Y., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,331
9 Claims. (Cl. 134—123)

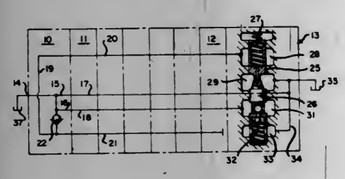
1. Car wash apparatus comprising a supporting frame, a cantilever arm hingedly supported on the frame and swingable in a horizontal plane above the car, a horizontally swingable extension arm hingedly secured to the end of the cantilever arm, and a spray unit rotatably

supported at the end of the extension arm and having a horizontal leg and a vertical leg, said arms carrying liquid conduit means for supplying liquid under pressure to the spray unit, said legs being provided with means



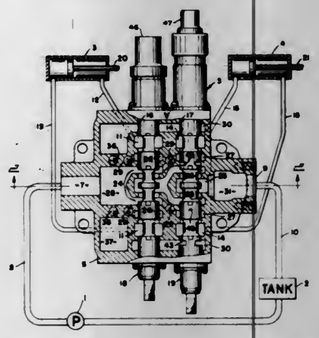
for directing jets of liquid at the sides and top of the car, said horizontal leg being adjustable up and down with respect to the vertical leg whereby the horizontal leg can follow the contour of the upper surface of the car.

3,299,902
FLUID CONTROL VALVES
Arthur J. Williams, Hubbard, Ohio, assignor to Commercial Shearing & Stamping Company, a corporation of Ohio
Filed Oct. 11, 1963, Ser. No. 315,499
5 Claims. (Cl. 137—117)



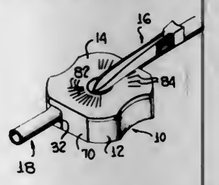
1. In a circuit of fluid control valves having a pair of parallel fluid inlet passages and a fluid exhaust passage the improvement comprising an inlet section comprising an inlet port continuously connecting the parallel inlet passages to a source of pressure fluid and check valve means connecting the exhaust passage to the two fluid inlet passages and adapted to permit flow from the exhaust passage to the inlet passages when the pressure in the exhaust exceeds that in the inlet passages and an outlet section comprising a housing, a bore in said housing, a valve element slidable in said bore, resilient means normally biasing the valve toward one end of said bore, a first chamber adjacent the resilient means intersecting the bore and communicating with the exhaust passage of the fluid control valves, an outlet chamber intersecting the bore and connected to an exhaust port at the exterior of the housing, said chamber communicating through the bore with the first chamber when the valve element is moved against the resilient biasing means, and a high pressure chamber receiving fluid from the parallel fluid passages of preceding valves, whereby the valve element is moved to overcome the biasing effect of the resilient means when the pressure of inlet fluid is at a preselected level permitting exhaust fluid to flow through the first chamber, the bore and the outlet chamber to be discharged from the valve and when the pressure is below the preselected level causing valve element to close the bore and force the exhaust fluid through the inlet section check to supplement the input fluid.

3,299,903
FLUID SYSTEM AND VALVE ASSEMBLY THEREFOR
Hugh J. Stacey, Chesterland, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 26, 1964, Ser. No. 355,010
4 Claims. (Cl. 137—118)



1. In combination, a directional control valve and a flow control valve, said directional control valve comprising a housing having an inlet port for communication with a fluid pressure source, a return port, a pair of bores, and a pair of motor ports associated with each bore, said bores being intersected axially therealong by passages communicating with said inlet, return, and motor ports, a valve spool in each bore movable to operating positions whereat communication is established selectively between said inlet passage and one of its associated motor ports while the other associated motor port is communicated with said return passage, and mean including a check valve operative to permit flow of fluid from said return passage to said inlet port when the pressure in said inlet port is lower than the pressure in said return passage to supplement the fluid in said inlet port which is already being supplied by said fluid pressure source; said flow control valve comprising a valve means located in said return passage downstream of both of said valve spools operative to block return flow from said motor ports through said return passage to said return port when the pressure in said inlet port drops below a predetermined value to cause a buildup of the pressure in said return passage, whereby the discharge from all of said motor ports will be directed to said inlet port to provide makeup flow for said directional control valve when the pressure in said inlet passage drops below such predetermined value.

3,299,904
TUBE COMPRESSOR HAVING INCREMENTAL STEPS OF FLOW ADJUSTMENT
George K. Burke, Bethlehem, Pa., assignor to Burron Medical Products, Inc., Bethlehem, Pa., a corporation of Pennsylvania
Filed Apr. 23, 1964, Ser. No. 362,126
9 Claims. (Cl. 137—315)

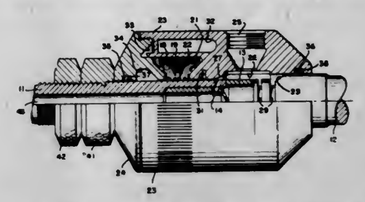


9. Flow regulating apparatus comprising a body means formed of a pair of separate body portions which are adapted to be snapped together and locked in operative

relationship, a first body portion including a central support portion, said first body portion having an inwardly extending tapered projection formed thereon engaging one side of a flexible tube operatively associated therewith, said first body portion having areas formed therein for receiving a flexible tube, said first body portion having spaced first and second limit stop means formed thereon, said first body portion having a plurality of projections extending therefrom to serve as aligning means, said first body portion having oppositely disposed sloping cam surfaces formed thereon and having lock shoulders disposed adjacent said cam surfaces, a second body portion having a central hole formed therein for receiving an operating means, said second body portion including locking arm portions having cam surfaces formed on the inner surfaces thereof and having laterally extending lock portions at one end thereof engaging said lock shoulders and retaining said second body portion in operative relationship with respect to said first body portion, said second body portion having areas formed therein receiving said flexible tube extending through the body means, said second body portion having a plurality of aligning means formed thereon to cooperate with the aligning means formed on the first body portion to ensure that the two body portions are assembled in the correct relationship, said second body portion having indicating means formed thereon and including detent lock means formed in one surface thereof, an operating means including a boss portion journalled on said central support portion of the first body portion, said operating means extending through the central hole in said second body portion and including an elongated handle portion adapted to be manually engaged, said elongated handle portion having detent means formed thereon positioned to cooperate with the detent lock means formed on the second body portion for locking the operating means in a desired operative position, said operating means having tube engaging means formed thereon and disposed within said body means and contacting the opposite side of the tube, said tube engaging means comprising a plurality of separate tooth members each of which has an engaging outer end portion positioned for engaging said tube and to clamp said tube between such engaging end portion and said inwardly extending projection formed on said first body portion, said operating means being mounted for rotation about an axis extending through the central support portion of said first body portion, the engaging end portions of said tooth members being disposed progressively greater distances from said axis of rotation of the operating means, and certain of said tooth members having the engaging end portions thereof defining a slope with a line extending substantially parallel with the axis of rotation of said operating means, said operating means having a pair of stop surfaces formed thereon adapted to engage the limit stop means formed on said first body portion.

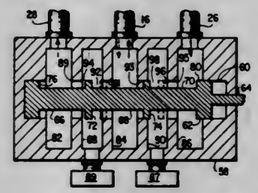
3,299,905
SOLDER VALVE
Johannes R. Smirra, Los Angeles, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Apr. 3, 1964, Ser. No. 357,112
10 Claims. (Cl. 137—341)

1. A solder valve comprising:
(a) a housing having a fluid passage therein;
(b) a movable member in said housing arranged to substantially close said passage in one position and open said passage in another position,
said housing and said movable member having contiguous surfaces providing a leakage path in the closed position of said valve;
(c) a porous sealing element positioned on one of said surfaces adjacent said leakage path,
said sealing element having its pores filled with a fusible material; heating means adapted to melt



said fusible material whereby said material may be melted and form a fluid tight seal on solidification to prevent leakage between said surfaces.

3,299,906
PEAKING VALVE SYSTEM
Robert T. Smith, Jr., Hatboro, and Trevor D. Reader, King of Prussia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 20, 1964, Ser. No. 353,676
16 Claims. (Cl. 137—593)

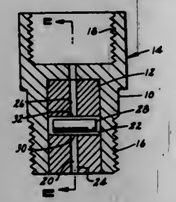


1. A fluid pressure peaking system which comprises:
(a) a fluid utilization chamber restrictively communicating with fluid of a predetermined first pressure value;
(b) a source of fluid having a substantially constant second pressure value different from said first pressure value;
(c) a fluid storage chamber having a first opening connected with said fluid source and a second opening connected with said utilization chamber; and
(d) fluid flow regulating means selectively actuable to either a first or a second state to permit either full or restricted fluid flow through said first opening, respectively, and either no or full fluid flow through said second opening, respectively, with the volumes of said storage chamber and said utilization chamber relative to the magnitudes of said full and restricted fluid flows being such that said storage chamber temporarily acts as a source for said utilization chamber of fluid at substantially said second pressure value when said fluid flow regulating means is initially actuated from its said first to its said second state until such time as when the pressure in said utilization chamber at least reaches a predetermined threshold pressure value, after which said storage chamber finally acts as a source for said utilization chamber of fluid at substantially a steady state pressure value which is different from said second pressure value.

3,299,907
PULSATION DAMPENER
David Ames Wolcott, Henrietta, N.Y., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,931
5 Claims. (Cl. 138—26)

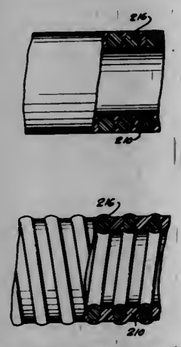
1. A pulsation dampener comprising a passageway having two relatively small passage sections and an enlarged pressure chamber therebetween; said chamber

forming two spaced seating surfaces at its junctures with the passage sections; and a flow-restricting element floatably disposed in the chamber for movements back and forth between the passage sections; said chamber and restricting element being dimensioned so that the element has substantially no restricting action when in an intermediate position, but has a progressively increasing restricting action as it moves incrementally from the inter-



mediate position toward either passage section; the distance between seating surfaces being only slightly greater than the corresponding dimension of the flow-restricting element whereby the element moves only a minor fraction of its dimension; the seating surface contour in each case being flatter than the surface contour of the flow-restricting element whereby the element is incapable of fully closing either passage section.

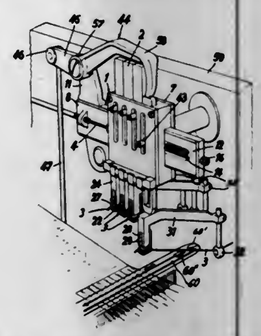
3,299,908
HOLLOW REINFORCED SEAMLESS TUBULAR ARTICLES
Aristovoulos George Petzetakis, Thessalonikis and Chandri Sts., Moscaton, Piraeus, Greece
Original application Aug. 29, 1962, Ser. No. 220,291, now Patent No. 3,246,751, dated Apr. 19, 1966. Divided and this application Dec. 18, 1963, Ser. No. 337,692
Claims priority, application Greece, Sept. 5, 1961, 24,307
13 Claims. (Cl. 138—122)



1. A hollow seamless tube comprising a tubular wall formed of a first synthetic resin material, and a reinforcing spiral of a second synthetic resin material extending throughout the length of said tube, similar to, but stronger than, said first resin material, fully embedded within said wall and intimately and inseparately bonded thereto so as to be integral with said wall.

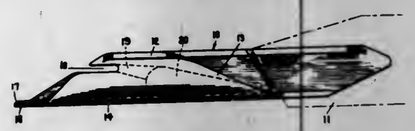
3,299,909
SELECTIVE WEFT PRESENTING DEVICE
Ramon Balaguer Golobart, Calle Caspe 86, Barcelona, Spain
Filed Sept. 16, 1964, Ser. No. 396,942
Claims priority, application Spain, Sept. 19, 1963, 291,994
7 Claims. (Cl. 139—122)

1. A weft selecting device for looms comprising stationary support means for attachment to the frame of the loom, a horizontally slidable carriage guided on said support means, a cable and spring means positioning said carriage, stop means provided at said support means for limiting the travel of said carriage, weft presenting slide members provided with horizontally bent ends carried in



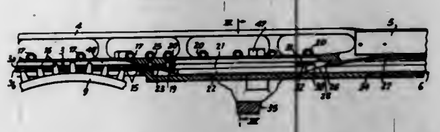
said carriage for vertical sliding movement through said carriage, striking means pushing a selected one of said slide members downwardly into weft presenting position, cam means actuating said striking means, and spring means holding the slide members not acturated by said striking means in inoperative raised position.

3,299,910
FILLING INSERTING CARRIER
Maurice R. Flamand, Lonsdale, R.I., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Oct. 19, 1964, Ser. No. 404,682
3 Claims. (Cl. 139—122)



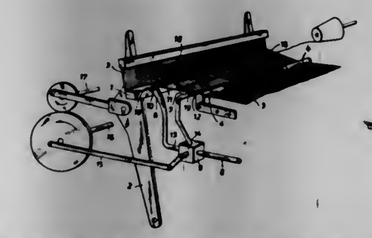
1. A filling inserting carrier for shuttleless looms, said carrier being formed of continuous flat sheet material of uniform cross section and comprising a terminal upper vertically extending portion, in continuation thereof an upper horizontal surface, a horizontal lower surface disposed in spaced and vertical alignment with said upper surface with a front vertical surface formed integral with and interconnecting both said upper and lower horizontal surfaces whereby a carrier structure is defined having an open rear side that extends along the complete extent thereof.

3,299,911
WEAVING MACHINE WITH UNINTERRUPTED WEFT SUPPLY
Raymond Dewas, 120 Blvd. de Saint Quentin, Amiens, France
Filed Jan. 15, 1965, Ser. No. 425,779
Claims priority, application France, Jan. 17, 1964, 960,733
11 Claims. (Cl. 139—123)



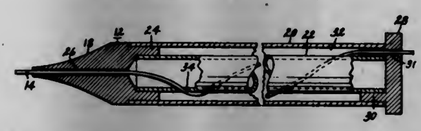
1. A weaving machine with uninterrupted weft supply having at least one needle consisting of a flexible band of rectangular cross-section to one end of which is secured a needle body having a head; a slay; and guiding means carried by said slay for guiding said needle; said guiding means comprising a plurality of guides, a slideway and a bow-shaped part, said weaving machine being characterized in that said needle has a sole formed with a guiding element having the same cross-section as that of said band and a reinforcing element forming a longitudinal rib underneath the lower face of said guiding element.

3,299,912
SUCTION SYSTEM FOR TENSIONING WEFT
Josef Birmans and August Wirz, Arbon, Thurgau, Switzerland, assignors to Adolph Saurer Ltd., Arbon, Thurgau, Switzerland
Filed Sept. 11, 1964, Ser. No. 395,703
Claims priority, application Switzerland, Sept. 12, 1963, 11,322/63
3 Claims. (Cl. 139—194)



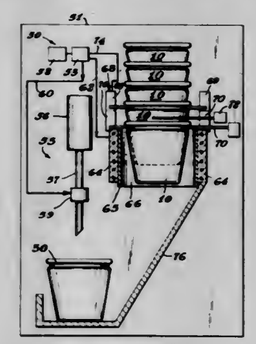
1. In a loom including a drive for imparting reciprocating rotary motion by means of shafts connected thereto, a shed, a lay arranged for back and forth displacement from rear dead center to closure of said shed, a reed associated with said lay, a spreader and a weft inserting member in which there is provided no bobbin for inserting the weft for storage into the shed, a vacuum tensioning device comprising in combination: a first suction nozzle which is mounted on the lay and which is operatively connected to a vacuum source so that when the lay moves from rear dead center to closure of said shed the weft is tensioned in this first movement; a second suction nozzle which is mounted on said spreader and which is operatively connected to the vacuum source for effecting the closure of said shed to the impact of said reed; a common source of vacuum to which said first and second suction nozzles are connected, said vacuum source including common valve means for connecting said vacuum source to said first and second suction nozzles; said common valve means being operatively controlled by said reciprocating rotary drive, whereby the weft ends are held by said first suction nozzle to maintain the weft in tensioned condition and are surrendered to said second suction nozzle.

3,299,913
ADJUSTABLE TENSION WIRE GUIDE
Joseph A. Fischer and Henry G. Dombrowski, Hales Corners, Wis., granted to National Aeronautics and Space Administration under the provision of 42 U.S.C. 2457(d)
Filed July 31, 1963, Ser. No. 299,042
10 Claims. (Cl. 140—123)



1. An adjustable tension wire guide comprising, a tubular member having an outer cylindrical surface, said tubular member having an opening in one wall thereof which forms a feed-through opening for wire that is adapted to be applied to a coil form, and a member adjustable relative to said tubular member, said adjustable member having a slot means for receiving wire that is fed through said wire guide, said adjustable member being capable of winding or unwinding turns of wire on the outer surface of said tubular member to vary the tension of wire being fed through said wire guide, said wire guide having an outlet opening aligned with the interior of said tubular member for receiving wire passing through said opening in said wall of said tubular member.

3,299,914
APPARATUS FOR DISPENSING LIQUIDS EMPLOYING A CUP HAVING A FOAMABLE COATING THEREON
Thomas O. Harmon, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 20, 1964, Ser. No. 346,140
3 Claims. (Cl. 141—82)

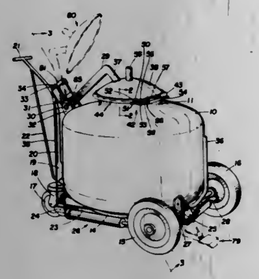


1. In an apparatus for the dispensing of beverages comprising in cooperative combination a mechanism activating means, a heating and dispensing mechanism comprising a heated supply chamber and a delivery conduit, a valving means to control the flow of the liquid being dispensed, a cup dispensing and positioning mechanism including cups whereby nested or stacked cups are individually dispensed one at a time and positioned beneath the delivery conduit to receive a predetermined quantity of the beverage controlled by a sequence control mechanism, the improvement which comprises the cups having a heat expandable coating on at least a portion of their external surface and, means to heat the expandable coating to an expanding temperature, operated and controlled by the sequence control mechanism.

3,299,915
APPARATUS FOR THE SANITARY AND EFFICIENT TRANSFER OF MILK
Frank Nelson Clark, 2 Eastpark Blvd., Scarborough, Ontario, Canada
Filed Apr. 13, 1964, Ser. No. 359,217
4 Claims. (Cl. 141—231)

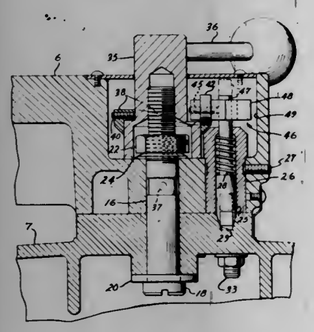
1. Apparatus for the transfer of milk comprising in combination; a vessel for the preliminary storage of milk, said vessel embodying an opening therein; support means for said vessel; means on said support means enabling the conveyance of said support means and said vessel; retractable closure means in association with said vessel of a size and configuration enabling said closure means, when disposed in overlying relationship with said opening, completely to cover the latter; a lever member pivotally mounted on said vessel with said closure means depending from one end thereof, said lever member being so mounted

that said closure means can be moved to open and closed positions with respect to said opening; actuating means communicating with said lever member and mounted on said support means, said actuating means being operable to cause said lever member and said closure means to be moved relative to said opening to effect said open and



closed positions; inlet nozzle means in association with said vessel and communicating with the interior of said vessel, said inlet nozzle means being communicable with a source of pressure; and outlet structure in association with said vessel communicating with the interior thereof and communicable with a storage receptacle.

3,299,916
RADIAL ARM SAW ADJUSTMENT MEANS
Alfred R. Packard and William H. Cunningham, Springfield, Mass., assignors to Toolkraft Corporation, Springfield, Mass., a corporation of Massachusetts
Filed July 23, 1964, Ser. No. 384,755
4 Claims. (Cl. 143—6)



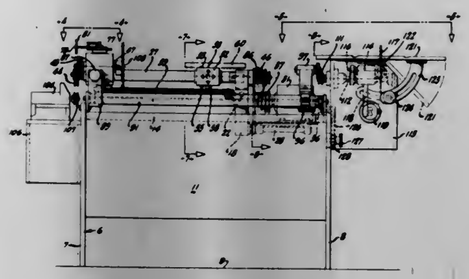
1. In a tool of the type having a radial arm, a lower arm mounted therebeneath and at the outer end thereof to receive a saw carriage for reciprocable movement thereon, a stud projecting upwardly through said lower arm and received by a bore in said upper arm to provide a pivotal connection between said radial arm and said lower arm, a nut and spring washer assembly threaded onto said stud and holding the radial arm and lower arm in assembled relation, a set screw threaded through said radial arm and engaging said stud to prevent rotation relative to said radial arm, detent means for establishing predetermined angular positions to which said lower arm may be swung about said stud, said detent means comprising a plunger slidably mounted in said radially arm and notches formed in said lower arm and arranged to receive said plunger when the lower arm is in an angular position established thereby, spring means yieldingly urging said plunger towards said notches, a clamping nut threaded onto the upper end of said stud and engageable with said radial arm to draw said stud upwardly and firmly clamp or lock the lower arm relative to said radial arm, a cam member initially rotatable about the axis of said nut and secured thereto, said cam member having a cam surface on an upper face thereof disposed radially of said nut, a follower carried by said detent plunger and overlying said cam surface, means preventing substantial rotation of said plunger, a hand lever extending laterally of said clamping nut to provide means for the rotation thereof, said cam surface being so formed that said detent plunger is free to be seated in said detent notches when the clamping nut locks the lower arm relative to the radial arm and as the hand lever is first moved to loosen the clamping nut, said cam surface then being engageable with said follower to raise said plunger above the level of said detent notches upon further rotation of the hand lever through a total angular movement of approximately 120° whereby the lower arm may be freely swung to any desired angular position relative to the upper arm and further whereby upon reverse movement of hand lever the cam surface first lowers the detent plunger for yielding engagement with said notches and then locks the clamping nut upon continued movement of the hand lever.

3,299,917
CIRCULAR SAW
Harry C. Pearson, Portland, Oreg., assignor to Portland Iron Works, Portland, Oreg., a corporation of Oregon
Filed Oct. 12, 1964, Ser. No. 403,185
6 Claims. (Cl. 143—133)



1. A circular saw comprising
a saw blade with opposite faces, having cutting teeth distributed peripherally on the blade, and a central eye,
said teeth comprising tips mounted on the saw blade, having cutting edges protruding beyond each of the opposite faces of the saw blade, operating on running of the saw to produce a kerf having a width W, where W exceeds the thickness of the saw blade, and
multiple side cutters mounted on the saw blade presenting over each face of the saw blade multiple cutting edges which terminate the side cutters over such face and which are spaced laterally outwardly of such face but are located inwardly of the cutting edges of the tips protruding beyond the same face of the saw blade,
said side cutters on running of the saw moving in adjacent paths, and operating to produce a substantially continuous cutting action extending from the base of said tips to adjacent the eye of the saw blade, which cutting action is in a region having a width smaller than the width W of the kerf confined within the kerf produced on running of the saw.

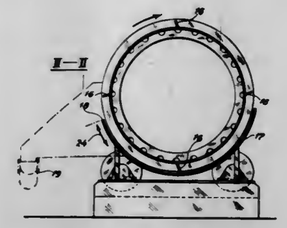
3,299,918
MACHINE SHOP COMBINATION
Thomas L. Howey, 1629 Sherman Ave., Chico, Calif. 95926
Filed Aug. 14, 1964, Ser. No. 389,726
7 Claims. (Cl. 144—1)



1. A machine shop combination comprising:
(a) a main frame including a pair of parallel horizontal frame rails;
(b) a tool frame including a pair of parallel tubes;
(c) means for mounting said tool frame on said main frame for pivotal movement about a transverse axis located between the ends of said tool frame and dividing said tool frame into major and minor portions;
(d) an electric motor mounted on said minor portion of said tool frame;
(e) a tool head mounted on said major portion of said tool frame;
(f) a drive shaft journalled in one of said parallel tubes and extending from the ends thereof and through said tool head;
(g) pulleys on the extending ends of said drive shaft;
(h) means for connecting said electric motor to one of said pulleys;
(i) a tool support journalled in said tool head;
(j) means for connecting said tool support to the other of said pulleys;
(k) means for releasably fastening said tool frame in a horizontal position on said main frame;
(l) means for releasably fastening said tool frame in a vertical position on said main frame;
(m) a carriage slidable along said parallel tubes;
(n) a chain mechanism secured to said carriage and extending between said tool frame and said tool head for sliding said carriage along said parallel tubes;
(o) means mounted in said tool head for actuating said chain mechanism; and,
(p) means on said tool head for locking said chain mechanism to prevent sliding of said carriage along said parallel tubes.

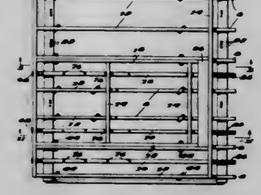
3,299,919
ARRANGEMENT IN DRUMS WITH UNPERFORATED MANTLE
Teuvo (Teodor) Saresvuo, Warkaus, Finland, assignor to A. Ahlstrom Osakeyhtio, a corporation of Finland
Filed Jan. 6, 1965, Ser. No. 423,805
Claims priority, application Sweden, Jan. 9, 1964, 236/64
2 Claims. (Cl. 144—208)

1. In barking apparatus having a barking drum with unperforated mantle, the discharge end of the drum being provided with bark discharge slots evenly distributed around the periphery of the drum, with bark removal blades fitted around the outer periphery of the drum, and with a bark discharge trough partly embracing the drum, the improvement which comprises stationary face plates at the feed and discharge ends of the drum, said face plates being of a height corresponding to the maximum permissible height of the water level in the drum, means



for tightening the plates against the drum in a manner permitting the drum to rotate freely with respect to the plates, and means for selectively raising and lowering at least one edge of the discharge trough so as to regulate the height of the water level in the drum.

3,299,920
APPARATUS FOR FABRICATING WOOD BUILDING COMPONENTS
Gerald A. Koenigshof, Kensington, Md., assignor to Timber Engineering Company, Washington, D.C., a corporation of Delaware
Filed Oct. 30, 1963, Ser. No. 320,129
18 Claims. (Cl. 144—288)



1. An assembly fixture for wood frames comprising a table, a plurality of elongated bars, means for temporarily clamping the bars to the table, said bars extending across the table in substantially parallel relation to each other, at least one of said bars having means thereon for supporting a wood frame member extending along the bar, at least one other of said bars having means thereon for supporting a wood frame member extending transversely of the bar, and means on at least one of the bars for clamping the wood members together to form a wood frame.

3,299,921
SINGLE CUTTER BOARD STRAIGHTENER AND METHOD OF STRAIGHTENING
William Carl Jones, P.O. Box 167, Nacogdoches, Tex. 75961
Filed Aug. 9, 1965, Ser. No. 478,370
5 Claims. (Cl. 144—323)

1. An edge straightening device for reducing the bow in the concave side of a bowed board comprising:
a substantially straight guide wall including an elongate movable section followed by a fixed straight section, said fixed section being substantially shorter than the movable section,

cutting means aligned with the guide wall between the movable section and the fixed section the cutting edge of the cutting means being in the same plane as the guide wall,

feed means for moving said board parallel to said guide wall,

means yieldably urging the movable section toward the feed means and in alignment with the guide wall for normally keeping the board beyond said guide wall, and,



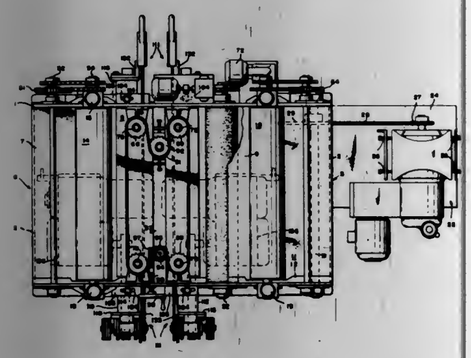
means adjacent the fixed section for transversely pressing the leading edge of the board against said fixed section thereby transversely pressing the concave portion of the board towards said guide wall so that any portion of the board extending across the guide wall will depress the movable section in proportion to the amount of crook in the board to engage and be cut off by the cutting means.

3,299,922

MACHINE AND METHOD FOR PRODUCING DECORATIVE WOOD SURFACES

Herbert Vonhof, Shelton, Wash., assignor to Simpson Timber Company, Seattle, Wash., a corporation of Washington

Filed Dec. 18, 1964, Ser. No. 419,303
10 Claims. (Cl. 144—326)



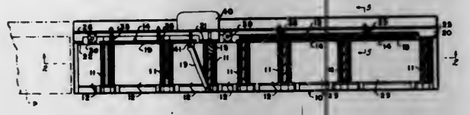
6. A wood surface finishing machine comprising in combination: means for supporting and moving a wood panel in a given direction in a horizontal plane, fixed backup means for contacting one surface of said panel, means for applying a constant pressure to the other surface of said panel at spaced points opposite said backup means, a plurality of chain saw units located adjacent said points, each of said chain saw units including a continuous saw chain, mounting means for supporting said chain saw units independently with one run of each of said chains in contact with said other surface of said panel, means for driving each of said chains in a direction of travel transverse to the direction of travel of said panel, and means for adjusting said backup means relative to said saw chains, whereby a portion only of said other side of said panel is removed by each chain.

3,299,923

EDGE STRAIGHTENING METHOD

William Carl Jones, Nacogdoches, Tex., assignor of fifty percent to Temple Industries, Inc., a corporation of Texas

Original application May 9, 1963, Ser. No. 279,150, now Patent No. 3,211,197, dated Oct. 12, 1965. Divided and this application Feb. 10, 1965, Ser. No. 438,151
12 Claims. (Cl. 144—316)



4. The method of straightening the concave side of a bowed board including the steps of placing the concave portion of the board adjacent a guide wall, longitudinally moving said board parallel to the guide wall, transversely pressing one portion of the board toward the guide wall, preventing the portion of the board being pressed from extending across said guide wall, yieldably allowing the portion of the board spaced from the point of transverse pressure to extend across the guide wall in proportion to the amount of bow in the board, and cutting off the portions of said board that project past said guide wall thereby straightening the concave side of said board.

3,299,924

ROTATING COMMINUTING ATTACHMENT FOR USE WITH PORTABLE KITCHEN APPLIANCES OF THE ELECTRIC MIXER-TYPE

Rudolf Hanschitz, Siegenbergstrasse 11, Reichenbach, Fils, Wurttemberg, Germany

Filed Feb. 10, 1964, Ser. No. 343,753
Claims priority, application Germany, Feb. 12, 1963, E 24,321
7 Claims. (Cl. 146—68)



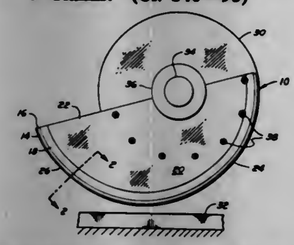
1. A rotating comminuting attachment for use with portable kitchen appliances, of the electric mixer-type and including an electric motor driving an output coupling through reduction gearing, said attachment comprising, in combination, a drive shaft arranged at its upper end for coupling to the output coupling of such appliance, for rotating at an angular velocity substantially less than that of the motor armature; a knife blade secured to the lower end of said shaft and including radially extending wings having first cutting edges at their radially outer ends; and a stationary downwardly opening bell surrounding said knife blade and formed with counter cutting edges cooperable with said first cutting edges to comminute the material to be cut; the lower edges of said blade wings being formed as cutting edges to pre-cut the material to be comminuted; said bell including a substantially cylindrical wall in the zone of said knife blade; said wings being bent in a trailing direction with respect to radii of said cylindrical bell wall, whereby to form acute angles with said cylindrical bell wall.

3,299,925

BLADE DESIGN

William J. McBrady and Fred H. Dickow, Hazelcrest, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed July 16, 1964, Ser. No. 383,045
9 Claims. (Cl. 146—95)



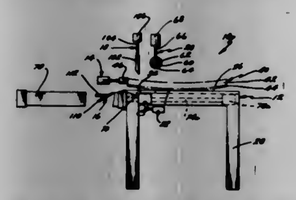
1. An improved blade for slicing meat in semifrozen condition at about 25–29° F., said blade comprising: a metal plate member having a flat side; and a cutting edge thereon formed of three contiguous beveled surfaces, each of said beveled surfaces being at successively smaller acute angles to said flat side and planes parallel to said side, respectively, in order of succession from said flat side.

3,299,926

SKINNING MACHINE AND METHOD

Robert J. Broersma, Spring Lake, and Ernest M. Reimer, New Era, Mich., assignors to Wolverine Shoe & Tanning Corporation, Rockford, Mich., a corporation of Michigan

Filed Mar. 16, 1964, Ser. No. 352,124
9 Claims. (Cl. 146—241)



8. The method of skinning an animal side, comprising the steps of: positioning a side of meat, having meat and attached skin, in overlapping relationship of an edge of a support, with the skin side adjacent the support; providing at said edge a flat guide surface at an angle to said support; and passing cutting means through the meat generally parallel to said guide surface and at a slight spacing therefrom, causing the skin to bend around the edge and against said surface and remain unsevered while the meat is sliced therefrom; positioning a skinning blade adjacent said support; gripping said flap of skin, and pulling said side from said support and past the skinning blade to sever the skin from the meat.

3,299,927

ENVELOPE BAG WITH FILLING NECK AND MEANS FOR CLOSING THE SAME

Giacomo Clarizio, Chicago, Ill., assignor to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York

Filed Sept. 22, 1965, Ser. No. 489,352
11 Claims. (Cl. 150—2.2)

1. In a plastic sheet bag,

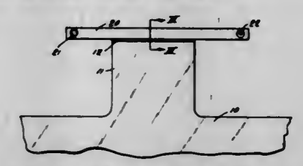
a single tubular sheet of folded thermoplastic material defining a bag body and an open-ended neck extending therefrom,

a heat seal seam defining a closed edge at each end of the bag including the side of the neck, the top portion outwardly thereof and the edge of the body,

each end edge at the neck and the bottom of the body being defined only by a fold in the sheet,

the sides of the bag being multi-ply,

one side of said neck extending outwardly beyond the other to facilitate filling the bag,



a strip of material stiffer and thicker than said tubular sheet secured across the inner face of the extended side of the neck above the other side and extending in both directions beyond the neck, and

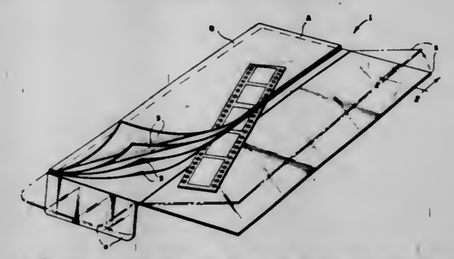
complemental snap fastener elements carried respectively by said strip adjacent the ends thereof for engagement with each other after said neck has been wound around said strip down to the bag body.

3,299,928

PROTECTIVE WALLET FOR PHOTOGRAPHIC FILMS

Deforest Edwards Inkley, Pittsford, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 28, 1965, Ser. No. 505,514
2 Claims. (Cl. 150—39)



1. A protective packet for strip material comprising a cover adapted to be folded into front and rear portions, said cover having a plastic coating on the inside surface thereof, a plurality of dividers adapted to be heat sealed in superposed relationship along at least two adjacent edges to said plastic coating on said rear portion, said dividers forming pockets through the open edges of which said strip material may be inserted, and an end flap attached to said cover and adapted to be folded over a portion of said open edges, said front portion adapted to be folded over the remaining portion of said open edges and over the face of said dividers.

3,299,929

WALLET INSERT

Terry Michael Shagin, Los Angeles, Calif. (5259 Sepulveda 6, Van Nuys, Calif. 91401), and Edward J. Fishman, 6210 Goodland Place, North Hollywood, Calif. 91606

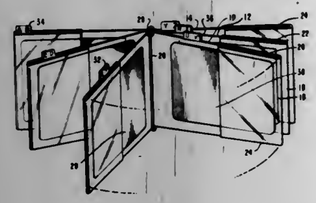
Filed Dec. 17, 1965, Ser. No. 514,539
1 Claim. (Cl. 150—39)

A wallet insert for holding and displaying a plurality of credit cards or the like, said insert comprising:

at least one rectangular member defined by a first pair of spaced parallel peripheral edges and a second pair of spaced parallel peripheral edges, said first and second pairs being disposed in substantially perpendicular relation with each other;

tab means extending integrally from one of said edges for carrying indicia thereupon;

at least one sheet of transparent plastic material being interfolded to form card holding pockets;
said sheet being centrally folded in half, with said central fold line portion being disposed in abutting contact with one of said edges of said first pair, and with said sheet halfs extending on opposite sides of said member to substantially the center thereof;
said sheet further including side edge portions extending along at least one of said edges of said second pair;



said side edge portions being heat sealed to said edge of said second pair to thereby convert the same into a pocket having an opening between said first pair of edges;
said insert being operative to hold a credit card which can be introduced into said pocket by digitally directing the same between said member and a sheet half and pushing the same toward said fold line.

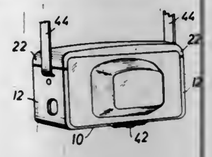
3,299,930
KEY CASE
Louis Schumer, 5402 Beverly Road, Brooklyn, N.Y., 11203
Filed Aug. 3, 1964, Ser. No. 386,856
5 Claims. (Cl. 150—40)



1. A compact key case molded from a single sheet of resilient plastic material comprising two panels of substantially similar outline joined together along one longitudinal edge by an integral hinge means, key retaining means for pivotally supporting keys and locking means, all formed as an integral unit, said key retaining means consisting essentially of a post protruding from the inner surface of one panel and terminating in a poppit which engages a recess disposed on the inner surface of the opposing panel, said locking means comprising a flap extending from the outer longitudinal edge of one panel and containing an opening therein which engages a peg protruding from the outer surface of the opposing panel.

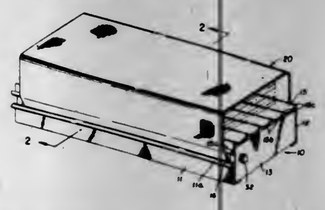
3,299,931
CAMERA CASE
Wolfgang Kritzler, Kolnerstrasse 146, Derschlag, Germany
Filed May 10, 1965, Ser. No. 454,269
Claims priority, application Germany, May 15, 1964, L 37,149
11 Claims. (Cl. 150—52)

1. A camera case comprising a base member having front and back edges and upwardly extending end walls, a front member connected to said front edge by a hinge, a back member releasably connected to said base member, a top cover member having opposite sides connected to said front and back members respectively by strap



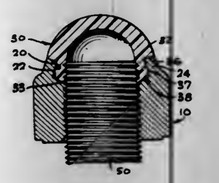
hinges and having opposite ends terminating in narrow downwardly directed flanges engaging said end walls under closed conditions of said case.

3,299,932
STAND WITH RETRACTABLE COVER
John F. Stolfo, 2239 19th St., Cuyahoga Falls, Ohio 44223
Filed Oct. 23, 1965, Ser. No. 502,992
6 Claims. (Cl. 150—52)



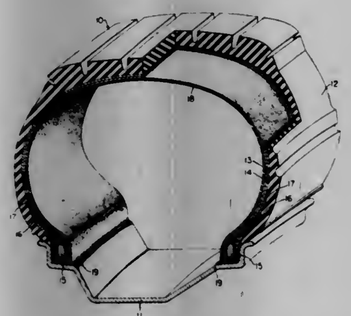
1. A protective stand of the character described, comprising:
(A) a base having
(1) opposed parallel side walls with one of said side walls having an elongate opening therein,
(2) opposed parallel end walls interconnecting said side walls and
(3) a top surface;
(B) a flexible retractable cover
(1) suspended between said end walls beneath said top surface and
(2) having one end projecting through said opening in said side wall and
(3) being adapted to be drawn into covering relationship with said top surface of said base.

3,299,933
CAP NUT
Robert Akashi, Gardena, Calif., assignor to Franklin S. Briles, Inc., El Segundo, Calif., a corporation of California
Filed Mar. 23, 1965, Ser. No. 442,048
5 Claims. (Cl. 151—7)



5. A cap nut which comprises: a body member having a wrenching surface having a through, threaded bore, and having a counterbore at one end thereof, the bottom of the counterbore tapering downwardly at an obtuse angle relative to the bore; an annular, substantially axially extending flange on the body member, the inner surface of the flange being defined by the counterbore; a hollow cap member of softer material than the material of the body member, said cap member having a closed hemispherical dome section and a cylindrical body section, the inside diameter of the body section being substantially equivalent to the minimum thread diameter of the bore, and said cap member having a bevelled base, the bevel of the base corresponding to the obtuse angle of the bottom of the counterbore; and a bevelled shoulder spaced from the base and facing in the direction of the body member, said shoulder being defined by an annular recess in the outer surface of the body section of the cap member adjacent the base, the cap member being positioned in the counterbore with the base seated on the floor thereof and with the shoulder abutting the free end of the flange, the flange being crimped inwardly into tight engagement with the annular side wall of the recess on the cap member, the wall thickness of the flange and the radial depth of the recess being substantially equal, whereby the external surfaces of the flange and the dome section are substantially flush, so that when the assembled nut is mounted on a bolt and torqued home, the threads of the bolt will bite into the body section of the cap member, and the material of the cap member will be under compression in the area between the bolt and the crimped flange.

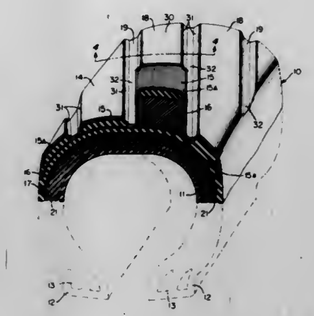
3,299,934
LINER FOR PNEUMATIC TIRE
Henry A. Pace, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Apr. 1, 1964, Ser. No. 356,606
2 Claims. (Cl. 152—354)



1. A vehicular load support assembly comprising a tire member, a tube member positioned within said tire, and a flap member interposed between the internal surface of the tire and the external surface of the tube, said members having adhered to the external surfaces thereof a coating of soluble polyurethane thereby protecting said surfaces form the harmful effects of oil and ozone.

3,299,935
TIRE
Charles F. Bush, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Apr. 19, 1965, Ser. No. 452,044
8 Claims. (Cl. 152—356)

1. A pneumatic tire having laterally-spaced bead portions, a generally toroidal carcass portion connecting said bead portions, and a peripheral tread portion of tread rubber bonded to said carcass portion, a plurality of parallel molded grooves extending at an acute angle relative to the centerline of the tread and forming intervening traction elements in the tread, and a radially outer tread reinforcing ply comprising a plurality of ply segments each respectively disposed in one of said traction elements, each segment comprising parallel cords extending parallel



to the respectively associated traction element and each extending parallel to the overlying portion of the outer surface of said tread.

3,299,936
REPAIR PLASTER FOR A MOTOR-CAR TIRE
Jan van den Berg, Bussum, Netherlands, assignor to Tyresoles Nederland N.V., Bussum, Netherlands
Continuation of application Ser. No. 298,036, July 29, 1963. This application Mar. 17, 1966, Ser. No. 536,942
Claims priority, application Netherlands, July 31, 1962, 281,587
2 Claims. (Cl. 152—367)

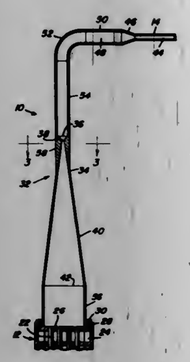


1. A repair plaster for a motor-car tire, consisting of; a single thin layer of elastic rubberlike material and a reinforcement cord entirely embedded and anchored in said layer, said cord being uninterrupted and extending along a zig-zag path over the length of said plaster with the turning points thereof located adjacent the transverse edges of said plaster.

3,299,937
FEED LIQUID INLET FLOW DEVICE
Ralph W. Cook, 311 Main St., Dunedin, Fla. 33528
Filed Apr. 8, 1965, Ser. No. 446,544
7 Claims. (Cl. 159—2)

1. In combination with a tube type evaporator having a plurality of vertical heat transfer tubes and an upper inlet end adapted to receive a liquid-vapor mixture derived from a source of flowing liquid at a relatively higher temperature and pressure, expansion inlet means communicating with said heat transfer tubes at the inlet end of the evaporator and connected to said source of liquid comprising, a downwardly discharging De Laval type nozzle having a throat dimensioned to freely pass said liquid-vapor mixture and a divergent outlet end equal in flow area and shape to the inlet end of the evaporator, volumetric expansion means connected to said source of liquid for converting said liquid into the liquid-vapor mix-

ture in response to expansion thereof, energy dissipating means connecting said expansion means to the De Laval type nozzle for reducing the kinetic energy of the liquid-vapor mixture and turbulence produced by said expan-

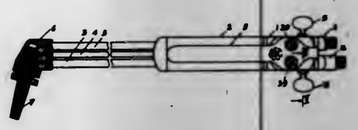


sion of the liquid, and vertical conduit means connecting said divergent outlet end to the inlet end of the evaporator for allowing the liquid-vapor mixture to fully expand to the flow area of the inlet end of the evaporator.

3,299,938
GAS-FIRED RADIANT BURNER
Alexander O. Bally and David J. S. Wardale, both of Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 29, 1965, Ser. No. 443,472
9 Claims. (Cl. 158—7.5)

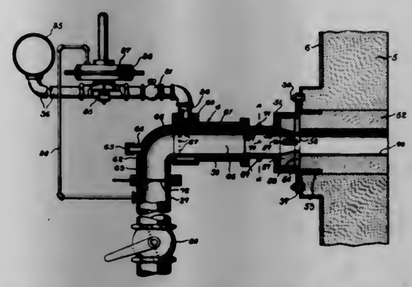
1. A radiant gas burner comprising
walls forming a plenum chamber,
means for injecting combustible gas into said plenum chamber,
a porous radiating plate in communication with said plenum chamber capable of being heated to a temperature at which it becomes a radiator of infrared energy,
walls forming a combustion chamber, one wall of said combustion chamber being formed at least in part by said radiating plate,
an auxiliary porous radiating plate capable of being heated to a temperature at which it becomes a radiator of infrared energy forming at least a portion of a wall of said combustion chamber, and
exhaust means for exhausting gases from said combustion chamber through said auxiliary radiating plate,
said combustion chamber having an outer wall having the ability to transfer heat energy from said burner.

3,299,939
METAL CUTTING TORCH
Daniel A. Marra, Sr., 641 E. Elm St., Palmyra, Pa. 17078
Filed Oct. 21, 1965, Ser. No. 499,300
4 Claims. (Cl. 158—27.4)



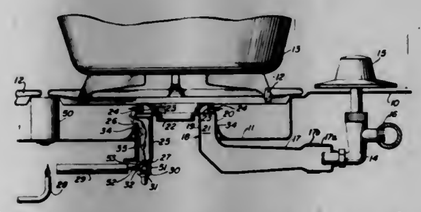
1. In a cutting torch of the character described including a valve chest, a body portion attached to said chest, fuel and oxygen tubes connecting said chest with a torch head and a replaceable torch tip received in said torch head, the combination of
(1) a plurality of recessed openings in a longitudinal face of said valve chest for reception of valves for transmission of oxygen in preheating and cutting volumes and fuel gas in torch ignition volumes, respectively, inlet openings in an end wall of said valve chest for admission of oxygen and fuel gases,
(2) a recessed opening in each chest side wall adjacent said end wall inlet openings,
(3) a control valve received in each said chest side wall openings and each provided with an inlet opening sized to admit to the valve a pre-selected constant volume of fuel or oxygen gas under all degrees of opening movements of the valve,
(4) a first channel extending longitudinally within the valve chest and opening into the said recessed opening receiving the valve for passage of oxygen in metal cuting volumes,
(5) a second channel extending longitudinally within the valve chest and opening at one end into the recessed opening receiving the valve for passage of fuel gas for ignition of the torch,
(6) a channel within the valve chest connecting the valve chest end wall opening for admitting oxygen to with said chest first channel opening,
(7) a channel in the valve chest connecting the valve chest end wall opening for admitting fuel gas to said body with said chest second channel,
(8) valve means in each of said valve chest side wall openings including a moveable valve stem and a spring loaded steel ball controlling passage of the respective gases through said valve means,
(9) channels in said valve chest connecting said chest side wall valve means with the adjacent recessed openings in the valve chest end wall,
(10) channels in said valve chest connecting said chest side wall openings with two of the adjacent said recessed openings in the longitudinal face of said chest,
(11) a connection between the third of said recessed openings in the longitudinal face of the chest and the said first channel extending longitudinally of the chest,
(12) valve means in each said recessed openings in the longitudinal face of said chest for respectively continuously supplying fuel gas and oxygen from said chest side wall valves to said torch tip for ignition purposes and intermittently supplying oxygen to said torch tip for metal preheating and cutting purposes, and
(13) moveable valve actuating means on said torch overlying said latter valve means for selectively actuating the valve means from normally closed to open position for performance of their functions.

3,299,940
BURNER STRUCTURE
Albert J. Phillips, Plainfield, and Richard Baier, New Brunswick, N.J., assignors to American Smelting and Refining Company, New York, N.Y., a corporation of New Jersey
Original application June 22, 1963, Ser. No. 288,413, now Patent No. 3,199,977, dated Aug. 10, 1965. Divided and this application June 9, 1965, Ser. No. 462,665
2 Claims. (Cl. 158—109)



1. In a burner body, a burner section, a uniting section open at two opposite ends for uniting a stream of fuel and a stream of an oxygen containing gas and delivering the united stream to the burner section, one of said two streams to be united in said uniting section being larger than the other, said uniting section being attached at one of its open ends to said burner section, a bend section open at each end for delivering to the uniting section the larger of the two streams to be united therein, said bend section being attached at one open end to said uniting section, an orifice plate having an orifice therein for delivering the larger of said two streams into said bend section, said orifice plate being movably mounted in the other end of said bend section for shifting the position of said orifice, means for delivering the smaller of said two streams into said uniting section about the periphery thereof adjacent said bend section.

3,299,941
BURNER
Harold L. Frick, Marion, Ohio, assignor to Whirlpool Corporation, a corporation of Delaware
Filed Jan. 11, 1965, Ser. No. 424,493
4 Claims. (Cl. 158—115)

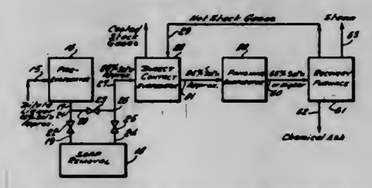


1. A fuel burner, comprising: a burner head having fuel supply means including wall means defining a fuel chamber in said head having an upper and lower end and fuel ports for projecting fuel from said head adjacent said upper end; an igniter tube located within said wall means and having an upper flame exit opening adjacent one of said ports and a bottom flame entrance opening spaced from said flame exit opening; means for supplying fuel to said igniter tube; means for igniting fuel at said flame entrance opening, thereby projecting flame through said igniter tube and igniting fuel emerging from said one port; and a surface member having lateral length and breadth through which said burner head extends with said fuel ports being above said surface member and said flame entrance opening and said means for igniting fuel located beneath and hidden by said surface member.

ERRATUM

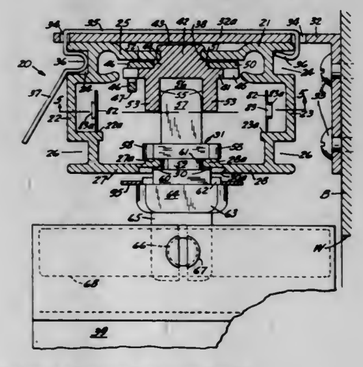
For Class 159—2 see:
Patent No. 3,299,937

3,299,942
METHOD AND APPARATUS FOR THE CONCENTRATION OF LIQUIDS
Harold E. Jacoby, % Jacoby Process Equipment Co., Inc., 97 Shepherds Lane, Roslyn Heights, N.Y. 11577
Filed June 29, 1964, Ser. No. 378,520
7 Claims. (Cl. 159—17)



1. The method of concentrating dilute liquor in order to burn the same in an independent recovery furnace for the recovery of heat and usable chemicals therefrom, which comprises, initially concentrating said dilute liquor to an initial substantially dilute stage in an indirect contact evaporator by heat transfer through a heating surface, thereafter bringing said thus produced initial substantially dilute liquor into direct contact with hot flue gases from said recovery furnace and thereby evaporating said initially concentrated liquor to a further stage of intermediate concentration, thereafter, evaporating in an indirect contact evaporator said thus produced liquor of intermediate concentration in a finishing stage, which follows said stage of intermediate concentration, and on completion of said finishing stage burning said finally concentrated liquor in said independent recovery furnace for the recovery of heat and chemicals therefrom.

3,299,943
VERTICAL LOUVER BLIND APPARATUS
Ralph M. Poe, 1047 Wealthy St. SE., Grand Rapids, Mich. 49504
Filed July 23, 1964, Ser. No. 384,611
19 Claims. (Cl. 160—176)



18. A vertical louver window blind,
comprising a plurality of elongate and parallel louvers extending vertically across the window opening, each of said louvers having a stiff upper end portion with an aperture therein,

an elongate frame member to be mounted across the upper portion of the window opening opposite the upper ends of said louvers,

a plurality of gears each having a vertical axis extending to a respective louver means connecting said gears together and revolving said gears in coordinated relation with each other,

means connecting said gears with the upper ends of said louvers and including a plurality of pins each extending transversely of the respective gear rotation axis and through the aperture in the stiff upper end of the corresponding louver, said pins being resiliently deformable to be readily removable from the louvers, thereby facilitating demounting of the louvers.

3,299,944
WINDOW SHADE HAVING TELESCOPING ROLLER

Robert C. Gossling and Lawrence S. Wilcoxon, Cincinnati, Ohio, assignors to Clopay Corporation, Cincinnati, Ohio, a corporation of Maryland

Original application Feb. 12, 1963, Ser. No. 257,996, now Patent No. 3,203,468, dated Aug. 31, 1965. Divided and this application Aug. 16, 1965, Ser. No. 479,972
2 Claims. (Cl. 160—263)



2. A window shade and roller combination comprising,

a hollow metal roller section,

an inner roller section mounted in telescoping relation in metal roller section and having a portion projecting beyond said metal roller section,

and a sheet of shade material adhesively secured along one edge to said metal roller section only,

said sheet being wrapped about said metal roller section and adhesively secured to itself across its width, thereby providing a tube of shade material secured only to said metal roller section,

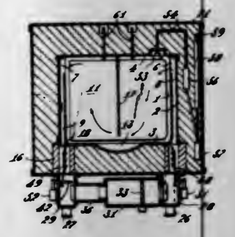
said tube securing the remainder of said shade material to said roller while permitting said inner section to slide axially with respect to said metal section, said tube further preventing droop of that portion of the shade material overlying said projecting portion of said inner roller section.

3,299,945
HEAT-STORAGE APPARATUS

Richard E. Rice, Arlington, and William E. Whitney, Belmont, Mass., assignors to Comstock & Wescott, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Aug. 24, 1964, Ser. No. 391,676
4 Claims. (Cl. 165—4)

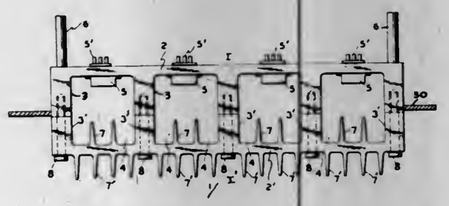
4. Apparatus comprising an enclosure containing heat-storage means with a passageway through the enclosure, characterized in that the enclosure comprises four concentric cylinders, namely, a first outer cylinder extending to the top of the enclosure, a second cylinder spaced inwardly of the first cylinder and extending from the bottom of the enclosure, a third cylinder formed of heat-storage material spaced inwardly of the second cylinder and extending from the top of the enclosure to a point above the bottom of the enclosure, and a fourth cylinder spaced inwardly from the third cylinder and extending from the bottom of the enclosure to a point below the top of the enclosure, said cylinders together with the bottom and top of the enclosure forming a passage leading from an opening at the bottom of the first cylinder through a path upwardly between the first and second cylinders, thence downwardly between the second and third cylinders, thence upwardly between the third and fourth cylinders and then downwardly in the fourth cylinder to an opening at the bottom of the fourth cylinder.



3,299,946
MOUNTING AND HEAT SINK DEVICE FOR ELECTRICAL COMPONENTS

Daniel R. von Recklinghausen, Arlington, Mass., assignor to H. H. Scott, Inc., Maynard, Mass., a corporation of Massachusetts

Filed June 4, 1965, Ser. No. 461,429
3 Claims. (Cl. 165—80)

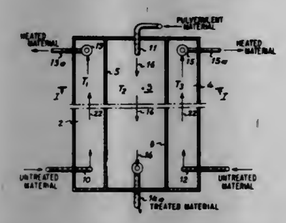


1. Heat sink apparatus having, in combination, a first substantially planar heat-dissipative sheet provided with a plurality of heat-dissipative projections extending substantially orthogonally from one side of the sheet at spaced locations therealong to define a plurality of juxtaposed open cells, means for mounting heat sources such as semi-conductor means and the like on the said one side of the sheet within each cell, electrical terminal means disposed on the opposite side of the sheet from the semi-conductor mounting means and the like for establishing electrical connections therewith, a second heat-dissipative sheet provided with a second similar plurality of substantially orthogonally extending heat-dissipative projections for mating with the projections from the first sheet, means for detachably securing in heat-conductive contact the projections of the sheets in such mating relationship to close off the cells and thus cover the semi-conductor mounting means and the like, the second sheet having a plurality of heat-radiating fins extending therefrom to effect further dissipation of heat generated within the cells and external thereto, and means for enabling the securing of the apparatus to an outside wall of a chassis and the like to permit the mounting of a semi-conductor means and associated electrical terminals and connections within a chassis and the like while exposing the said fins to air circulation external to a chassis and the like and enabling external access to said semi-conductor mounting means and the like upon detachment of the said second sheet.

3,299,947
HEAT TRANSFER APPARATUS

Michel Boucraut, Metz, and Imre Toth, Hy-Metz, France, assignors to Institut de Recherches de la Siderurgie Francaise, Saint Germain-en-Laye, France, a French professional institution

Filed May 11, 1964, Ser. No. 366,327
Claims priority, application France, May 14, 1963, 934,749, Patent 1,364,710
9 Claims. (Cl. 165—104)

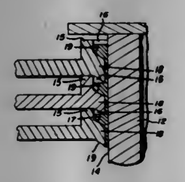


6. Apparatus for transferring heat between pulverulent materials which are to be maintained out of contact, said apparatus comprising enclosure means; thermally conductive fluid-tight partition means provided in and subdividing the interior of said enclosure means into at least two adjacent compartments; feed means communicating with said enclosure means for introducing pulverulent materials into said compartments; withdrawing means communicating with the individual compartments spaced from said feed means for receiving fluidized material therefrom; and fluidizing means operatively connected with said enclosure means and including means for passing a gas through the pulverulent material in at least one of said compartments for fluidizing said material therein and for causing the thus fluidized material to flow in said one compartment toward the respective withdrawing means along said partition means, and means for passing a gas through the pulverulent material in the other compartment for fluidizing the material therein and causing the thus fluidized material to flow toward the respective withdrawing means and along said partition means in counterflow to the material in said one compartment, whereby said thus fluidized materials exchange heat with one another through the intermediary of said thermally conductive partition means when the two fluidized materials in said compartments are at different temperatures.

3,299,948
COOLING DEVICE HAVING A PLURALITY OF ANNULAR PARALLEL DISCS FORMING COMPARTMENTS ADJACENT THE HEATED ELEMENT

Andrew Kudola, Jr., Stamford, Conn., assignor to Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut

Filed Feb. 27, 1962, Ser. No. 176,012
6 Claims. (Cl. 165—185)

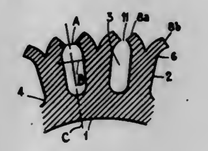


1. A device for cooling a heated element comprising a radiator embodying a plurality of substantially parallel annular discs located in substantially concentric relation around the heated element, the inner peripheral edges of the discs being affixed to the surface of the element, the discs each having an annular flange on one side thereof in abutment with an adjacent disc whereby said discs are spaced apart from receiving fluid coolant therebetween, said flanges each being outwardly spaced from the inner peripheral edge of its respective disc providing an annular compartment adjacent the surface of the heated element and between the respective disc and the adjacent disc, and brazing material in each compartment occupying the space therein and between the inner peripheral edge of the disc and the adjacent surface of the heated element whereby there is provided a continuous seal throughout substantially the length of the radiator.

3,299,949
DEVICE FOR EVAPORATIVE COOLING OF BODIES, AND PARTICULARLY POWER VACUUM TUBES

Charles A. E. Beurtheret, Saint-Germain-en-Laye, France, assignor to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France

Original application Apr. 29, 1960, Ser. No. 25,794. Divided and this application Dec. 14, 1965, Ser. No. 513,738
Claims priority, application France, Oct. 13, 1959, 807,348, 807,349
11 Claims. (Cl. 165—185)



1. An evaporative cooling arrangement for a body having a high thermal flux comprising a radiator surrounding said body in thermal contact therewith, said radiator being adapted for immersion in a liquid within a container, said radiator having elongated protuberances, the dimensions of which are large in relation to the vapor bubbles formed on their surface by boiling of said liquid; adjacent protuberances defining flow channels extending substantially throughout the length of the radiator; said protuberances being formed with outer end portions, adjacent ones extending towards and facing each other without closing off said channels in an outward direction to provide communication of said flow channels laterally outwardly therefrom through openings of lesser dimension than the width of said channels.

3,299,950
PIPE LINE CONNECTOR

Howard L. Shatto, Jr., Palos Verdes, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

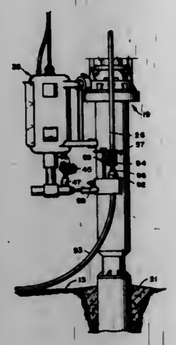
Filed June 20, 1963, Ser. No. 289,233
8 Claims. (Cl. 166—.5)

1. Pipe aligning and connecting apparatus for use with a manipulator device having prime mover means with a power connection extending therefrom, said apparatus comprising:

(a) a body member adapted to be secured to a manipulator device for movement therewith;

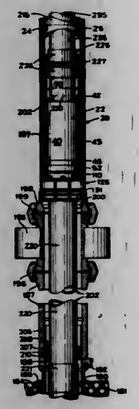
(b) first and second pipe-engaging arm means axially spaced along a substantially common axis and carried by said body member for separately engaging pipe sections to be connected to each other, at least one of said arm means being movable toward the other of said arm means along said axis when both are in pipe-engaging position; and,

(c) arm-actuating means carried by said body member and operatively engaging said movable arm means, said arm-actuating means adapted to be independ-



ently operatively connected to said power connection of said prime mover means of said manipulator device.

3,299,951
METHOD AND APPARATUS FOR HANGING WELL PIPE
William L. Todd, Houston, Tex., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 11, 1963, Ser. No. 272,313
26 Claims. (Cl. 166—.5)



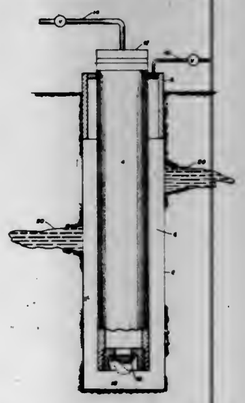
1. In a method for hanging pipe in a head by using a mandrel hanger or a slip hanger if the mandrel hanger cannot be landed, the steps of installing in said head a hanger bushing adapted to seat either a mandrel hanger or a slip hanger; running pipe through said bushing in said head and into a borehole therebelow; attaching a mandrel hanger to an upper end of the pipe; continuing to run the pipe into the borehole whereby said mandrel hanger is moved closer to said hanger bushing; landing a slip hanger in said hanger bushing about said pipe; supporting said pipe in said slip hanger; and cutting off said pipe above said bushing.

4. In a tool for supporting a casing engaging member in an annulus between an inner casing and an outer conductor and for moving said engaging member into contact with said inner casing, a tubular support adapted to project into said annulus, means mounting said engaging member on said support for movement along a path extending transversely of said support from a retracted position to a casing engaging position spaced radially inward of said retracted position, first means yieldably urging said engaging member toward its engaging position, a retainer positioned within said support and being movable axially thereof between a retaining position in said path of radial movement of said engaging member and a retracted position out of said path, said first urging means being capable of moving said engaging member into its engaging position when said retainer is retracted, second means yieldably urging said retainer toward its retracted position, and releasable means holding said retainer in its retaining position but being releasable to permit said second urging means to move said retainer into its retracted position.

3,299,952
USE OF VISCOELASTIC LIQUIDS FOR CEMENTING WELLS IN SUBTERRANEAN FORMATIONS
Joseph G. Savins, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed June 18, 1964, Ser. No. 376,212
15 Claims. (Cl. 166—22)

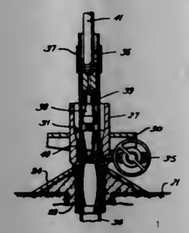
1. In a method for cementing a well in the earth wherein cement is passed into said well, said well having been drilled employing a drilling mud containing a liquid phase and a solid constituent and a cake of gelled drilling mud remains in said well, the step comprising passing into said well prior to said cement a composition comprising (a) water, (b) polyvinyl alcohol having a molecular weight such that a 4 percent by weight aqueous solution has a viscosity at 20° C. of from 3 to 65 centipoises, and (c) borate ions, the particular amount of polyvinyl alcohol and the particular amount of borate ions being selected such that the composition possesses viscoelastic shear thickening properties, whereby said cake of said gelled drilling mud is displaced within said well.

3,299,953
METHOD OF USING A FOAMING AGENT IN A CEMENTING PROCESS
George G. Bernard, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed July 24, 1964, Ser. No. 384,924
13 Claims. (Cl. 166—29)



1. In the cementing of wells wherein an annulus is formed by the well bore and the well casing the improvement which comprises disposing a foam in the annulus of the well zone to be cemented prior to circulating a volume of cementitious material into the well to the well zone to be cemented.

3,299,954
METHOD AND APPARATUS FOR HANGING A WELL CASING IN A WELL BORE
Leonard E. Williams and Louis M. Regan, Houston, Tex., assignors to Cameron Iron Works, Inc., Houston, Tex., a corporation of Texas
Filed May 28, 1963, Ser. No. 283,780
18 Claims. (Cl. 166—35)

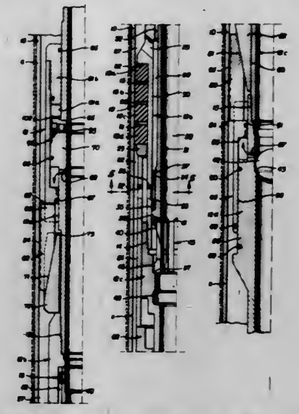


1. A method of hanging a casing from a seat within a casing head at the lower end of the bore through a wellhead including a blowout preventer, comprising the steps of severing the casing at a level above the seat and beneath the casing collar next above the seat, removing the severed portion of the casing from within the wellhead bore, then lowering a slip assembly through the bore of the blowout preventer and and into a landed position on the seat and about the portion of the casing remaining after removal of the severed portion, pulling a strain on the casing and then relieving same to cause the slip assembly to grip and thereby suspend the casing from said seat, and establishing a seal between the bore and the remaining portion of the casing.

8. Apparatus for use in hanging a casing from a seat within a casing head at the lower end of a bore through a wellhead, comprising a slip assembly including a unitary annular body having a surface on its outer side for landing upon the casing head seat and carrying slips on its inner side for movement into gripping engagement with the casing when the slip assembly body is lowered through the bore and onto the seat in the casing head and about the casing, means for lowering the body into landed position comprising an elongate tubular member having an inner diameter adapted to move downwardly over the casing within the bore and means on its lower end for releasable connection with the slip assembly body, means for lowering the tubular member within the bore of the wellhead and releasing its connection with the slip assembly body when said body is landed on the seat, and additional means on the upper end of the slip assembly body for anchoring an annular seal assembly thereto upon lowering of said seal assembly through the bore and over the casing.

3,299,955
WELL TOOL APPARATUS
John S. Page, Jr., Long Beach, Calif., assignor to John S. Page, Sr.
Filed Jan. 17, 1964, Ser. No. 338,331
33 Claims. (Cl. 166—48)

20. In the method of controlling a well into which a string of production tubing is run, the string supporting slip, packer and valve assemblies characterized as operable respectively to anchor the string to the casing, to pack-off between the string and casing and to control vertical by-passing around the packer of fluid in the annular space between the string and casing, the valve assembly also characterized as fluid pressure operable, the steps that include running the string into the well with the valve assembly in open condition, then introducing sufficient fluid pressure into the string for communication to said assemblies to operate the slips for anchoring the string to the casing, to operate the packer for packing off between the string and casing, and to operate the valve to shunt off by-passing communication around the packer, and including the further step of introduc-



ing sufficient fluid pressure into the well to operate the valve opening up by-passing communication around the packer.

3,299,956
SUPERPOSED WELL TUBING ASSEMBLY OF SEPARATE TUBING STRINGS AND METHOD OF SUPPORTING SAME
Charles P. Howe, 220 E. Elm St., P.O. Box 49, Albion, Ill. 62806
Filed July 8, 1964, Ser. No. 381,092
10 Claims. (Cl. 166—49)

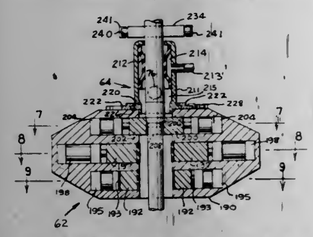


1. A well pumping assembly comprising a well casing, a plurality of superposed individually separate strings of tubing sealingly engaging each other inside said casing, the joining ends of said strings providing a mating sealed joint readily and non-rotatably separable in a vertical direction, and means for supporting each tubing string at its bottom, said means including means on each string, except the topmost string, engageable with the well casing for supporting the weight of the individual string thereabove.

8. The method of reducing the pumping load in a deep well comprising extending a well casing to below the pay zone, the casing having oil entrance perforations below the pay zone, vertically and non-rotatably inserting separate, joinable tubing strings having contacting and sealing mating string ends into the inserted wall casing, resting the lowermost string on the well bottom, the lowermost string having oil entrance perforation means adjacent its

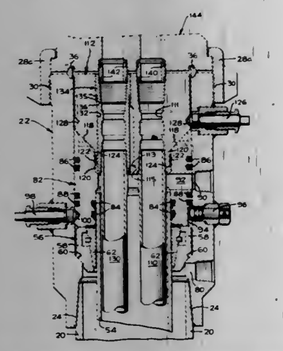
bottom, anchoring the top of each string except the topmost string to the well casing to thereby support the separate string thereabove on the well casing wall, providing a pumping string as the topmost string, and sealing the topmost string to the well casing wall at a point adjacent the top of such topmost string, thereby preserving the bottom hole pressure in the well to build up pressure between the well casing and the tubing and thus cause such pressure to lift oil within the tubing to the pumping string tubing.

3,299,957
DRILL STRING SUSPENSION ARRANGEMENT
Joseph V. O'Neill, Inkster, and George Homanick, Livonia, Mich., assignors to Leyman Corporation, Cincinnati, Ohio
Original application Aug. 26, 1960, Ser. No. 52,274, now Patent No. 3,158,213, dated Nov. 24, 1964. Divided and this application Aug. 14, 1964, Ser. No. 394,097
3 Claims. (Cl. 166—77.5)



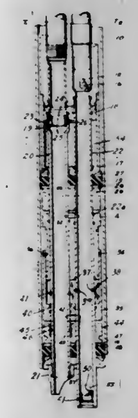
1. In a well drilling apparatus having a drill string; string suspension means comprising a fixed housing, pair of opposed jaws mounted in said housing for movement radially into and out of gripping engagement with said drill string, said jaws having cooperating overlapping portions disposed in overlapping relationship with each other when said jaws are in said gripping position, pin means movable through the overlapping portions of said jaws when said jaws are in said gripping position to lock the jaws in said gripping position, and power means coupled to said pin means for moving said pin means into and out of locking relationship with said jaws.

3,299,958
UNITIZED WELL HEAD
William L. Todd, Pasadena, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of California
Continuation of abandoned application Ser. No. 170,090, Jan. 31, 1962. This application Apr. 2, 1965, Ser. No. 446,788
18 Claims. (Cl. 166—89)



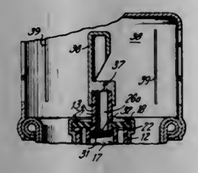
15. A well head apparatus comprising a tubular head having a bore and an internal wall extending around the bore, an assembly including first hanger means supported in the bore of the head and a first pipe hanging from said first hanger means, said internal wall projecting above said assembly, to an upper end portion of the head; well control means coupled to said upper end portion of the head, said well control means having a bore communicating with the bore in said head, said assembly having an upper annular portion projecting upward from said first hanger means and surrounder by and circumferentially spaced from said internal wall; pack-off bushing means supported in the bore in said head between said upper portion and said internal wall; means sealing between said upper portion and said bushing means and between said internal wall of the head and said bushing means; second hanger means supported in the bore in said head; and a second pipe hanging from said second hanger means and projecting into said bushing means and first pipe.

3,299,959
MULTIPLE STRING WELL PACKER
Cicero C. Brown, 8490 Katy Road, Houston, Tex. 77007
Filed Sept. 30, 1963, Ser. No. 312,724
9 Claims. (Cl. 166—120)



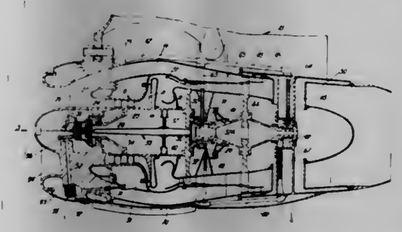
9. A multi-string well packer assembly for connection in a well tubing string within a well bore including,
a head member,
a first mandrel,
a second mandrel secured to said head member in side-by-side parallel relationship to said first mandrel,
a piston secured to said first mandrel,
a cylinder secured to said head member,
said piston and said cylinder being connected for limited longitudinal movement relative to each other,
an external abutment on the lower end of said first mandrel,
means locking said piston and said cylinder in a predetermined position relative to each other with said external abutment spaced from said cylinder,
an upper packing element and anchoring unit for supporting the assembly against downward movement in the well bore monuted on said mandrels and located adjacent said cylinder,
a lower packing element and anchoring unit for supporting the assembly against upward movement in the well bore and located adjacent said external abutment,
hydraulically-actuated means on said first and second mandrels between said upper packing element and anchoring unit and said lower packing element and anchoring unit for moving the elements and units into set position confined by said cylinder and said external abutment, and
means co-acting with said locking means and said piston and cylinder for releasing the locking means to permit movement of said piston and said first mandrel relative to said cylinder and said head member to thereby move said external abutment away from said lower packing element and anchoring unit whereby said packing elements and anchoring units are moved to an unset position.

3,299,960
VALVE
Gottfried F. Steru, 7 Broadview Road, Woodstock, N.Y. 12498
Filed Oct. 30, 1964, Ser. No. 407,646
17 Claims. (Cl. 169—23)



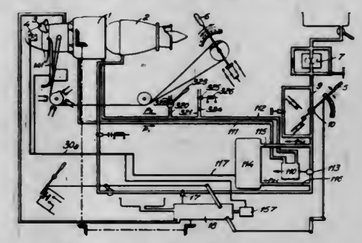
1. A valve for a container having therein a normally gaseous liquid, said valve having means for permitting the discharge of at least part of the contents of said container through said valve to dispense said material from said container as desired, said valve having a portion having a microscopic perforation impermeable to discharge of the contents of the container through said perforation under the normal pressures in said container but permeable to discharge through said perforation when the pressure in the container exceeds said normal pressure and approaches a level at which rupture of said container occurs.

3,299,961
HELICOPTER ROTOR
John Frederick Coplin, Paul Alfred Taylor, James Alexander Petrie, and Kenneth Edward George Bracey, all of Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed May 5, 1965, Ser. No. 453,285
Claims priority, application Great Britain, June 8, 1964, 23,736/64
6 Claims. (Cl. 170—135.4)



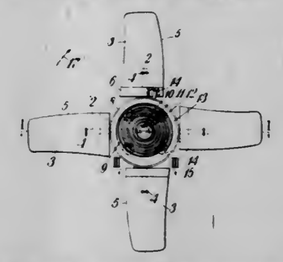
1. A helicopter rotor having a plurality of angularly spaced apart blades and a plurality of gas turbine engines, one on the tip of each blade, each gas turbine engine having a first shafting, a compressor and a turbine mounted thereon, a second shafting axially spaced from the first shafting, and a free turbine mounted thereon and driven by the gases passing through the engine, the said gases driving the first and second shaftings in opposite angular senses.

3,299,962
TURBINE ENGINE REGULATING EQUIPMENT
Joseph Szydlowski, Usines Turbomeca, Bordes, France
Filed Apr. 14, 1965, Ser. No. 448,025
Claims priority, application France, Apr. 21, 1964, 971,626, Patent 1,401,328
5 Claims. (Cl. 170—135.74)



1. A method for regulating turbine engines driving a compressor and a propelling device having blades the pitch angle of which is variable as a function of the percentage value represented by the engine thermal load with respect to the maximum permissible thermal load thereon as determined by the air pressure differential (P_2—P_1) across the outlet and inlet of said compressor, consisting in successively determining the actual thermal load, automatically operating on the value of the maximum thermal load on the turbine whereby, on one part, to cause said turbine to operate at reduced power when said actual thermal load ranges from zero to the bottom threshold of its maximum permissible value, on a second part, to cause said trubine to operate at normal power when said actual thermal load lies in the range between the bottom and upper thresholds of said maximum permissible value, said bottom threshold being included in said range, and on a third part, to cause said turbine to operate at reduced power when said actual thermal load is at least equal to said upper threshold of said maximum permissible value.

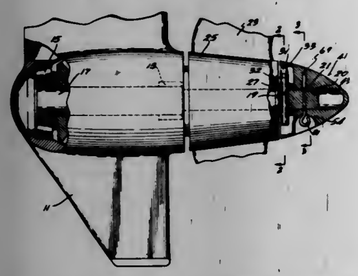
3,299,963
VARIABLE-PITCH FAN
Kenneth Stanley Lowe, Maidenhead, England, assignor to Kenlowe Accessories and Company Limited, Maidenhead, England, a British company
Filed Oct. 11, 1965, Ser. No. 494,494
Claims priority, application Great Britain, Oct. 19, 1964, 42,545/64; Oct. 20, 1964, 42,636/64; Apr. 21, 1965, 16,685/65; May 19, 1965, 21,111/65; May 31, 1965, 22,964/65
5 Claims. (Cl. 170—160.13)



1. A variable pitch cooling fan comprising a driven member, a plurality of fan blades, radially positioned pins rotatably supporting said fan blades upon the driven member for changing the pitch of the fan blades, a pitch controlling member positioned coaxially with respect to the axis of rotation of the fan and rotatable with respect to the driven member, a plurality of finger-like members equal in number to the fan blades positioned radially about the pitch controlling member, and the root of each

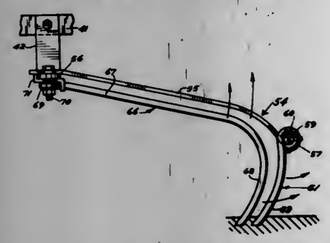
fan blade having a pair of slots arranged at an angle to one another and defining equal angles to the surface of the fan blade engageable alternatively by the cooperating finger-like member when the fan blades are assembled upon the driven member to adapt the position of the fan blades for the motion of air in the desired axial direction for the same direction of rotation.

3,299,964
PROPELLER RETENTION MEANS
Leslie W. Foster, Lake Bluff, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,430
6 Claims. (Cl. 170—173)



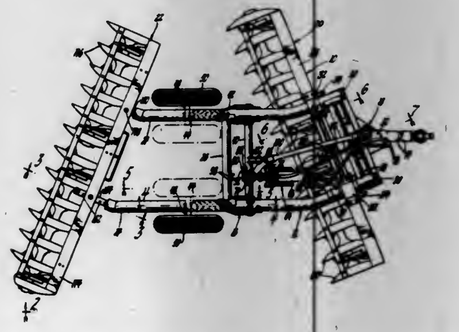
1. The combination of a propeller shaft, a drive pin including a portion extending transversely of and from said shaft, a propeller retaining cap including a bore receiving the end of said propeller shaft, and a recess adapted for receiving said pin portion and extending transversely of and from said bore, said recess being defined, at least in part, by surfaces engaged by the sides of said pin portion, whereby said cap is rotatably driven by said shaft, and a keeper engaged with said cap and said shaft to prevent axial displacement of said cap relative to said shaft, thereby retaining said cap on said shaft and said pin in rotative driving engagement with said recess.

3,299,965
SOIL CONDITIONING APPARATUS
Edward Sokolik, 5601 Dupont Ave. N., Minneapolis, Minn. 55430
Filed June 24, 1964, Ser. No. 377,683
3 Claims. (Cl. 172—160)



1. In apparatus of the class above described, the combination comprising; a frame, wheels adapted to support the frame in predetermined relationship with the surface of the ground over which it may be drawn, a plurality of draw bar units laterally disposed beneath said frame, each of said draw bar units being pivotally connected to said frame for rotation about a horizontal axis transverse to the intended direction of travel of the apparatus and including a plurality of laterally extending support arm members; means on said frame for raising and lowering the rear ends of said draw bar units relative to said frame; a plurality of soil conditioning devices disposed at predetermined locations on the support arm members of said draw bar units, said soil conditioning devices being comprised of a leaf spring member connected at one end to the support arm members on said draw bar units and including a transversely extending support member at the other end thereof and a binary coil spring non-rotatably disposed on said transverse support member, said binary coil spring having a pair of free end portions adapted to engage the surface of the earth and extending downwardly from the transverse support member on said leaf spring, disposed at a downward angle from the support arms on said draw bar units.

3,299,966
DISK HARROW HAVING ADJUSTABLE DISK GANGS
Peter J. Clifford, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Original application Oct. 15, 1962, Ser. No. 230,452, now Patent No. 3,216,509, dated Nov. 9, 1965. Divided and this application June 1, 1965, Ser. No. 473,261
5 Claims. (Cl. 172—582)

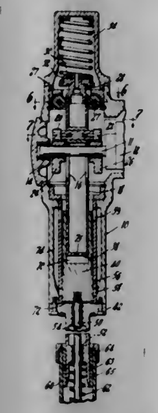


1. In a disk harrow of the type including a carrier frame and a disk gang extending transversely thereof; the improvement comprising means supporting said disk gang on said carrier frame for slidable adjustment transversely thereof, a pair of spaced support members fixed relative to said carrier frame, a tongue member fixed to said disk gang and extending between said support members, and stop means adjustably mountable along and between said support member in the path of travel of said tongue member as said disk gang is adjusted along said carrier frame, said stop means being engageable with said tongue member to limit slidable adjustment of said gang frame to a selected position relative to said carrier frame.

3,299,967
POWER IMPACT HAMMER
Philip D. Cabot and Robert D. Lowry, Winchester, Mass., assignors to Lowry Development Corporation, Winchester, Mass., a corporation of Massachusetts
Filed July 16, 1964, Ser. No. 383,031
9 Claims. (Cl. 173—116)

1. A power impact hammer comprising
a housing having a forward barrel leading into a coaxial enlarged bore,
a work-engaging impact rod mounted for reciprocation in said barrel and having an inner head disposed within said bore,
a captive projectile contained within said bore for reciprocation with respect to said housing behind said head with a maximum stroke of less length than the maximum length of the path of reciprocation of said head,

power means for cyclically propelling said projectile towards said head,
and the adjacent ends of said projectile and said head co-operating to form an intervening always unvented air chamber causing cyclical inertial overtravel of said head away from said projectile as said



projectile decelerates on its forward stroke expanding and lowering the air pressure in said unvented chamber and causing cyclical vacuum transmission of retroaction motion of said projectile to said head causing said head to recover its said overtravel as said unvented chamber contracts during retraction of said projectile.

3,299,968
PERCUSSION DEVICE
Wesley B. Cunningham, 2 Morris St., Charleston, W. Va. 25301
Filed Oct. 2, 1964, Ser. No. 400,978
4 Claims. (Cl. 173—135)



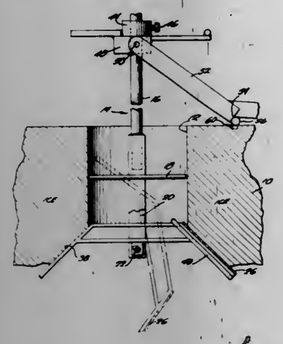
3. A hammering device actuated from a fluid pump source, the hammering device comprising:
an elongated, substantially tubular casing including a casing wall defining a casing interior;
impact transmission means secured to the casing including a work contacting outward portion and an inward portion within said casing interior;
conduit means with portions connected to the casing at two spaced apart locations;
the conduit means being in fluid communication with the fluid pump source and the portions being in communication with the casing interior;
temporary piston holding means mounted in the casing at a location remote from the impact transmission means and above both of said portions of the conduit means;
normally closed relief valve means on said casing adjacent to and above said temporary piston holding means;
a piston mounted for reciprocation within the casing interior between the holding means and the inward portion;
valve means operated in response to piston reciprocation to alternatively open and close each of the portions of the conduit means to create pressure differentials on opposite sides of said piston effecting said reciprocation; and
the holding means restraining the piston from movement during pumping until a pressure differential of sufficient magnitude to overcome the holding means is created thereby causing the piston to be forcibly driven against the impact transmission means.

3,299,969
SEDIMENT CORER
Anton L. Inderbitzen, San Diego, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 1, 1963, Ser. No. 299,405
4 Claims. (Cl. 175—5)



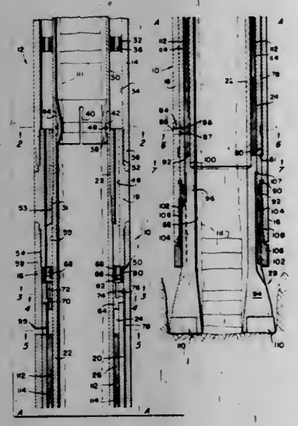
2. A sediment corer for collecting sediment samples comprising:
(a) a first body member;
(b) a second body member removably connected to said first body member and wherein said second body member comprises;
a coupling member having groove means at one end and an annular flange at its other end;
a plastic tubular member having an annular flange at one end abutting said flange on said coupling member;
clamp means encompassing said flanges to clamp together said cutter means to the other end of said plastic tubular member;
(c) cutter means connected to said second body at an end opposite to said second body;
(d) means for creating a vacuum within said second body member wherein said vacuum creating means comprises a piston slideably mounted in said plastic tube;
(e) a piston stop member depending from said annular flange on said coupling member and extending into said plastic tube; and
(f) means for holding said piston stationary when said cutter means penetrates the sediment.

3,299,970
ICE HOLE REAMER AND LIFTER
Marvin M. Anderson, South Shore, S. Dak. 57263
Filed Aug. 5, 1964, Ser. No. 387,616
5 Claims. (Cl. 175—18)



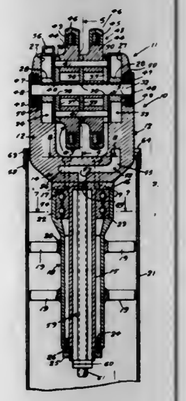
4. An ice hole reamer for enlarging and funnel-shaping holes in ice for ice fishing, comprising a rod having a guide ring for insertion into an ice hole, a collar adjustably secured to said rod and mounted thereon at an intermediate portion between an upper end thereof and said guide ring, a U-shaped bar provided to bear against said collar, said U-shaped bar pivotally engaging a lifter bar and said lifter bar having a fulcrum point intermediate the ends thereof to provide lift means in removing the ice hole reamer from said ice hole, a crank handle secured on an upper end of said rod for turning the rod about its vertical axis, and a peg bar mounted transversely of said lifter bar to support the lifter bar securely from bearing directly upon the surface of said ice.

3,299,971
CORE DRILL
Samuel P. Lewis, Phillipsburg, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 6, 1964, Ser. No. 387,936
11 Claims. (Cl. 175—92)



1. A core drill comprising:
an elongated casing;
a drill bit mounted within one end of said casing for rotation with said casing and limited axial movement relative to said casing;
said casing being dimensioned to follow said drill bit down a hole being drilled;
tubular means mounted within said casing to provide a continuously unobstructed passage between the drill bit and the top of said casing and dimensioned to be spaced from said casing to define an annular space;
piston means mounted for axial movement within said annular space;
passage means for delivering pressurized fluid to said piston means; and
annular valve means disposed within said annular space for controlling the flow of pressurized fluid to opposite sides of said piston means to cause said piston means to deliver an impact to said drill bit.

3,299,972
PULVERIZING EARTH AND ROCK DRILLING HEAD
Stanley A. Karlsen, 106 E. B St., Sparks, Nev. 89431
Filed May 21, 1964, Ser. No. 369,128
5 Claims. (Cl. 175—107)

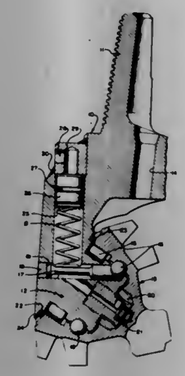


5. A drill comprising an elongated head, journal means supporting the head for rotation about the longitudinal axis thereof, a shaft journaled in the head and crosswise thereof, a plurality of bits, means supporting the bits concentrically around the shaft and radially spaced therefrom, a turbine mounted in the head including a wheel fixed to the shaft, and means supplying a fluid under pressure to the turbine for revolving the shaft and drill bits, said drill bits being offset from the longitudinal axis of the head whereby the leverage exerted by the bits in striking a formation being drilled will revolve the head about its longitudinal axis.

3,299,973
LUBRICATION AND SEALING OF WELL DRILLING BIT
Kenneth H. Swart and William P. Robinson, Compton, Calif., assignors to Smith Industries International, Inc., Compton, Calif., a corporation of California
Filed July 27, 1964, Ser. No. 387,268
8 Claims. (Cl. 175—371)

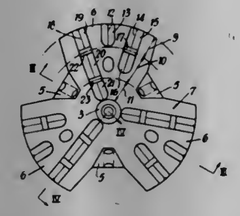
2. In a roller cutter well drilling bit, a body part having a journal and a cutter part rotatably mounted thereon, one of said parts having an annular tapered surface tapering towrd the other and disposed adjacent a face on the other, and an annular elastic sealing ring stretched onto said surface on said part which by reason of its contraction will crowd itself toward the other to form sealing

engagement therewith, and means for causing a differential in hydrostatic pressure to exist between the exterior of the bit and the interior of the cutter part with the greater pressure



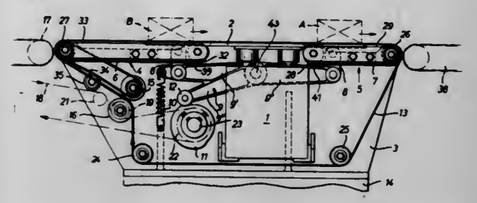
on the interior of the cutter when the bit is in operation and surrounded by drilling fluid, which differential in pressure is effective on the exterior of the sealing ring to urge the sealing ring against the mentioned face.

3,299,974
PERCUSSIVE DRILL BITS
Raymond John Clemmow, Dronfield, England, assignor to P. & V. (Mining & Engineering) Limited, Dronfield, England, a British company
Filed Sept. 24, 1964, Ser. No. 399,057
Claims priority, application Great Britain Oct. 1, 1963, 38,569/63
4 Claims. (Cl. 175—410)



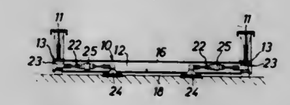
4. In a percussive drill bit having a working surface of winged shape and divided notionally into inner, central and outer concentric cutting regions, said surface having radial recesses therein, a plurality of radial inserts disposed within said recesses and each insert having a cutting edge disposed radially and exposed from said working surface, said inserts constituting a first line extending across the width of said outer region in each wing, a second line constituted by two such inserts extending across the width of said outer region and the width of said central region in each wing and having a gap between said inserts, which gap is located at the border of said outer and central regions and a third line constituted by three such inserts extending across the width of said outer, central and inner regions in each wing and having a gap between each said insert, one said gap being located at the border of said outer and central regions and the other said gap being located at the border of said central and inner regions.

3,299,975
CONVEYOR CONTROL WEIGHING APPARATUS
Adolf Stambera and Bruno Cap, both of Stuttgart-Bad Cannstatt, Germany; said Stambera assignor to Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany, a corporation of Germany
Filed Sept. 16, 1964, Ser. No. 396,924
Claims priority, application Germany, Oct. 21, 1963, H 50,601
5 Claims. (Cl. 177—52)



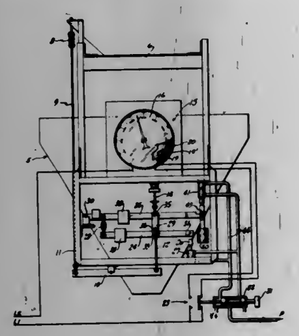
1. A control weigher comprising a main frame, a weighing mechanism mounted on said main frame, a weighing table operatively associated with said weighing mechanism, main conveyor means running over said table for the transport of objects along this table with simultaneous weighing thereof, means for driving said main conveyor means, feed and discharge devices mounted on said main frame and having parts overlapping the respective ends of said table and movable relatively to the latter, and a control mechanism coupled to said feed and discharge devices and operable to cause the alternate lifting of at least the said overlapping part of one of the said feed and discharge devices whilst causing the lowering of at least the said overlapping part of the other of said devices, whereby one object to be weighed can be lowered on to the table and conveyor means, for weighing whilst a preceding and weighed object is lifted off the same and removed.

3,299,976
COMPACT VEHICLE WEIGHBRIDGE WITH TRANSVERSE AND HORIZONTAL RESTRAINTS
Campbell Dean Boadle, Caerleon, and Dagwell James Morgan, Borrowash, England, assignors to Girling Limited, Birmingham, England, a British company
Filed Oct. 20, 1964, Ser. No. 405,118
6 Claims. (Cl. 177—134)



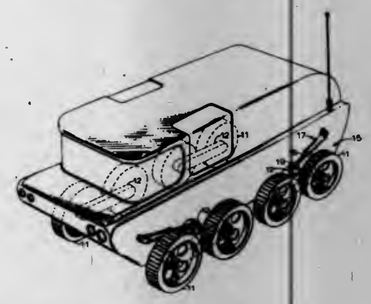
1. A weighbridge comprising a weighing deck suspended from support beams, weight responsive means operatively associated with said support beams and comprising four load cells spaced in rectangular fashion on which the weighbridge is carried, the weighbridge acting on each of at least two of the load cells near one end of the weighbridge through an axially disposed strut arranged in compression between the weighbridge and the load cell, and a number of horizontal restraint means arranged longitudinally and transversely of the weighbridge and each comprising an adjustable tie-rod pivotally mounted at one end to the weighbridge and at the other end to a fixed pivotal mounting, longitudinally arranged tie-rods being provided only in the region of the end of the weighbridge remote from said one end.

3,299,977
DUAL RANGE WEIGHING SCALE
Warren A. Melendy, Waukesha, Wis., assignor to Butler Bin Company, Waukesha, Wis., a corporation of Wisconsin
Filed Apr. 7, 1965, Ser. No. 446,334
10 Claims. (Cl. 177—158)



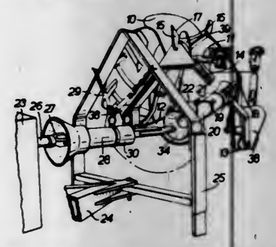
1. In a weighting scale having a force transmitting member connected with a movable load receiving element to partake of motion of the latter in response to variations in load thereon, and an indicator having a stationary element and a cooperating movable element adapted to respond to motion of the force transmitting member, one of said elements of the indicator being calibrated in terms of weights for indicating the values of loads on the load receiving element:
(A) first motion transmitting means providing a connection between the force transmitting member and the movable element of the indicator having one predetermined mechanical advantage, so that calibrations on the indicator are correctly readable in terms of one set of values, said first motion transmitting means comprising
(1) lever means having a predetermined fulcrum point,
(2) means providing a first pivotal connection between the force transmitting member and said lever means at a first connection point spaced along the length of the lever means from said fulcrum point, and
(3) means providing a second pivotal connection between the movable element of the indicator means and the lever means at a point spaced along the length of the lever means from the fulcrum point and from the first connection point;
(B) second motion transmitting means providing a connection between the force transmitting member and the movable element of the indicator that has a different predetermined mechanical advantage so that calibrations on the indicator are correctly readable in terms of a second set of values that are a predetermined multiple of the values of the first set; and
(C) means for selectively and alternatively rendering one or the other of said motion transmitting means operative, said last named means comprising
(1) fulcrum means, and
(2) means mounting said fulcrum means for movement between an operative position of engagement with the lever means at the fulcrum point, to render operative the first motion transmitting means, and an inoperative position, disengaged from the lever means, to render operative the second motion transmitting means.

3,299,978
SURFACE VEHICLE HAVING SELECTIVELY POSITIONABLE PLURAL WALKING BEAM RUNNING GEAR MEANS
William B. Sponsler, Rolling Hills, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed July 30, 1964, Ser. No. 386,241
5 Claims. (Cl. 180—9.52)



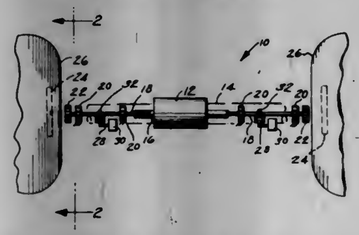
1. A surface vehicle comprising
a rigid one-piece chassis,
at least four pairs of wheels,
a walking beam for supporting each pair of said wheels for rotation about axes parallel to each other with one wheel of each pair near one end of its associated beam and the other wheel of each pair near the opposite end thereof, said support beams being arranged symmetrically on opposite sides of said chassis,
means for supporting each of said beams at substantially the center thereof on said chassis for rotation about axes substantially parallel to the rotation axes of said wheels,
means for separately positioning each of said beams about its associated rotation axis,
means for sensing and indicating the rotational position of each of said walking beams, and
means for alternatively either rigidly locking each of said beams in any preselected position, constraining each of said beams in a damped manner in any preselected position, or permitting said beams rotational freedom about their associated rotation axes.

3,299,979
POWER COUPLINGS
George Restall, Sutton Coldfield, England, assignor to Rubery, Owen and Company Limited, Darlaston, England, a British company
Filed June 30, 1964, Ser. No. 379,206
8 Claims. (Cl. 180—14)



1. In an automatic power coupling for a tractor having hitching means, a linkage movable in a generally up and down direction by operation of power means on the tractor and a power take-off shaft, and an implement having hitching means for co-operation with the tractor hitching means and a power drive shaft, the combination of a first shaft assembly adapted to be connected to said power take-off shaft through a first universal joint, a second shaft assembly for slidable coupling engagement with said first shaft assembly and adapted to be connected to said power drive shaft through a second universal joint, a suspension device comprising frame means mounted on said tractor linkage and movable with said linkage on operation of said power means, and resilient means suspending said first shaft assembly from said frame being so constructed and arranged that said first shaft assembly is movable in a generally up and down direction with said frame means to bring it into substantial alignment with said second shaft assembly prior to engagement of said shaft assemblies and that said first shaft assembly is permitted a free and unrestricted movement with said second shaft assembly when said shaft assemblies are in engagement, and means for maintaining said second shaft assembly in substantial alignment with said power drive shaft prior to engagement of said shaft assemblies.

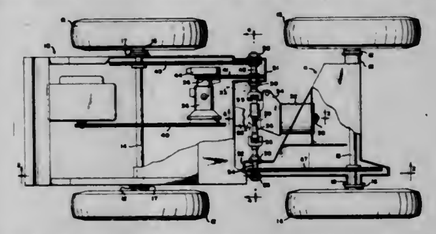
3,299,980
TRAILER POWER UNIT
Fred F. Haefner, R.D. 2, Evans City, Pa. 16033
Filed Dec. 7, 1964, Ser. No. 416,548
6 Claims. (Cl. 180—14)



1. A trailer power unit comprising, in combination, a drive motor and transmission providing power means for rotating the wheels of a trailer in a tractor-trailer combination, a hollow and internally land and grooved shaft carried by said combination drive motor and transmission providing a means for slidably receiving a splined end shaft on either end of said combination drive motor and transmission, a plurality of bearings providing support means for said splined shafts, a pair of spaced apart drive gears carried by said splined shafts, a pair of driven gears secured to the brake drums of the wheels of the trailer, a pair of solenoids and switch means providing a means for extending said splined shafts to engage said drive gears with said driven gears to rotate the wheels of said trailer, a rheostat and polarity reversing means for said combination drive motor transmission providing means for increasing or decreasing the speed and also providing means for reversing the brush or field polarity of the combination drive motor and transmission of said trailer power unit.

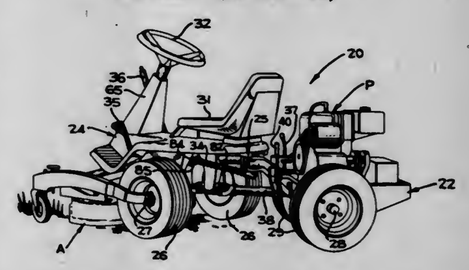
3,299,981
CHAIN-DRIVEN ARTICULATING FRAME VEHICLE
Dwight A. Garrett, Enumclaw, Wash., assignor to Garrett Enumclaw Co., Enumclaw, Wash., a corporation of Washington
Filed Feb. 25, 1966, Ser. No. 530,134
11 Claims. (Cl. 180—51)

1. A steerable vehicle comprising: a 2-wheeled front frame section providing at its rear end a pair of vertically spaced arms pointing rearwardly on the longitudinal median line of the section, a 2-wheeled rear frame section, the two wheels of each frame section being carried by the section, one wheel at each of the two sides of the related section, for rotation about a coinciding transverse horizontal axis which is fixed in relation to the concerned frame section, a yoke providing an upright cross-arm connecting two vertically spaced horizontal tongues and occupying an intervening position between the frame sections with its two tongues pointing forwardly, co-axial upper and lower king pins each hingedly connecting a respective tongue to a respective one of said arms of the front frame section for swing movement about a vertical axis, a connection between the cross-arm of the yoke and the rear frame section permitting the rear frame section to swivel relative to the yoke about a horizontal axis extending longitudinally of the rear frame section but precluding relative motion in any other direction, jack-



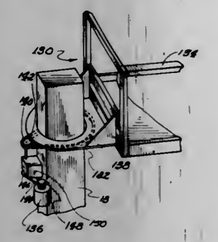
shafts, one for each frame section, journaled at the inner ends of the frame sections for rotation about transverse horizontal axes which traverse said vertical axis of the king pins and coincide when the longitudinal median lines of the frame sections are in an in-line relation, said jack-shatfs having their inner ends spaced apart, a drive shaft extending between and coupled by universals with said inner ends of the jack-shafts, a power plant carried by one of the frame sections, a driving connection from the power plant to the jack-shaft of the related frame section, and a respective driving connection from each jack-shaft to the ground wheels of the related section.

3,299,982
ARTICULATED VEHICLE WITH PIVOTABLE FRAME STEERING
Roger J. Bacon, Port Washington, Wis., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 14, 1964, Ser. No. 396,255
8 Claims. (Cl. 180—52)



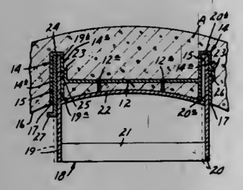
1. An articulated vehicle comprising a two-wheeled front section and a rear pushing section, a joint connecting said sections for relative pivotal movement of said sections in a horizontal plane about a vertical axis and for pivotal movement of one section relative to the other about a longitudinal horizontal axis, means for limiting the relative pivotal movement of said sections about the vertical axis to a predetermined angular range from the normal aligned position of said sections, and means for uniformly progressively decreasing the permissible amount of pivotal movement of one section relative to the other about said longitudinal horizontal axis throughout said predetermined angular range in accordance with the decreasing of the angle between the sections in the horizontal plane.

3,299,983
OVERHEAD MAINTENANCE APPARATUS
John S. Hubbard, R.R., Parker, Ind. 47368
Original application Oct. 31, 1963, Ser. No. 320,329, now Patent No. 3,224,528, dated Dec. 21, 1965. Divided and this application June 28, 1965, Ser. No. 476,226
10 Claims. (Cl. 182—63)



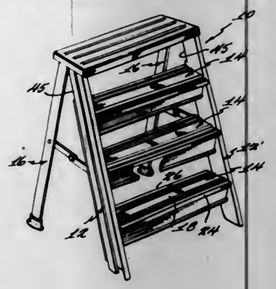
1. Overhead maintenance apparatus comprising: a mobile base; an extensible mast mounted on said base; means for actuating the mast upward and downward; a platform assembly having a support mounted on said mast and rotatable about said mast in a horizontal plane and a platform rigidly connected to one side of said support and rotatable therewith.

3,299,984
STEP INSERT FOR CONCRETE PIPE SECTIONS
Clifford L. Svedahl, 2116 3rd Ave. S., Minneapolis, Minn. 55404
Filed Jan. 2, 1964, Ser. No. 335,257
1 Claim. (Cl. 182—92)



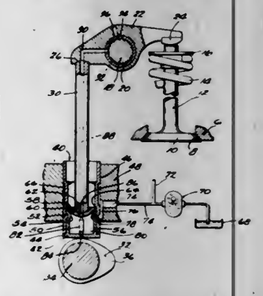
In a device of the class described,
(a) an elongated horizontally extended anchoring plate imbedded in the wall of a concrete pipe section in spaced relation to the inner peripheral surface thereof,
(b) opposite end portions of said plate having affixed thereto generally radially extending socket-forming ear elements which are adapted to open inwardly through said inner peripheral surface,
(c) a pair of laterally spaced arms rigidly secured together adjacent their radially inner ends by step-forming tread members and having radially outer end arm elements which are simultaneously receivable within the sockets defined by said ear elements,
(d) said arm elements being received within said sockets for limited lateral movements in a generally horizontal plane,
(e) a pair of laterally projecting latch dogs, one each on an intermediate portion of one each of said arm elements and receivable within cooperating latch detents formed in the adjacent walls of said sockets and receiving said latch dogs when said arm elements are fully received within said sockets, and
(f) shim means insertable in one of said sockets whereby to detachably lock said latch dogs within their cooperating latch detents, said shim means extending the length of said socket with a portion thereof extending outside of said socket to facilitate grasping.

3,299,985
STEPLADDER CONSTRUCTION
Henry Harrison, Frost Creek Drive, Locust Valley, N.Y. 11560
Filed Nov. 7, 1962, Ser. No. 236,031
19 Claims. (Cl. 182—194)



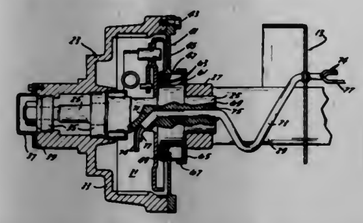
1. In a stepladder, spaced apart side rails and vertically spaced steps joined to their opposite ends to said side rails, each of said steps including a base portion, transversely extending legs integrally formed with said base and joined to one another at their free ends to thereby form a closed and hollow triangular configuration defined by the intersection of said legs with said base portion and with one another, each of said steps also including integral studs formed at the opposite ends of said steps, said studs being positioned at the intersection of said legs with said base portion and with one another, said opposed side rails having cooperatively spaced apart holes therein for receiving said integral studs.

3,299,986
VALVE OPERATING LIFTER AND VALVE TRAIN LUBRICATOR
Stephen F. Briggs, P.O. Box 1617, and Joseph F. Nemechek, 940 5th St. S., both of Naples, Fla. 33940
Filed Jan. 25, 1965, Ser. No. 427,683
8 Claims. (Cl. 184—6)



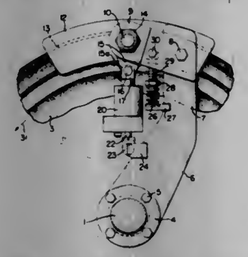
1. A valve actuator which includes a cam follower shoe, guide sleeve, and push rod thrust member, said actuator comprising, in integral combination, a shoe having the form of a shallow cup with a bottom cam follower surface, an annular shoulder above said surface, and an annular side wall with a channel intermediate its ends and having an upper rim and an internal chamber, a thrust disk having a central push rod bearing and peripherally seated directly on the upper rim of the side wall, and said guide sleeve having a lower end portion engaging the shoulder, said sleeve embracing the side wall and extending above the disk, said sleeve having an integral rib engaged in the channel of the side wall of the shoe and interlocking the sleeve with the shoe and further having an inwardly deformed portion overlying the disk and holding the disk to the side wall.

3,299,987
TRAILER BRAKE
John H. Koerber, McHenry, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Oct. 29, 1964, Ser. No. 407,397
4 Claims. (Cl. 188—2)



1. A trailer comprising a bed, an axle supported by said bed, brake means including a sealed brake housing rotatably supported on said axle, and a cable connected to said brake means, said cable extending from said sealed housing and including a single vent line communicating with the interior of said brake housing and being directly open to the atmosphere at a point remote from said axle.

3,299,988
DRAG BLOCK BRAKE
Albert W. Cook, Tallmadge, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Jan. 6, 1965, Ser. No. 423,797
4 Claims. (Cl. 188—29)



1. In combination, a fixed axle, a pneumatic tire having a relatively small bead diameter, hub means rotatably mounting the tire on the axle, a torque arm fixed to the axle and extending substantially radially of the side of the tire, a brake shoe having a contour complemental to an arcuate portion of the outer periphery of the tire, link means pivotally secured at one end of the torque arm but at a radius less than the tire periphery, pivot means secured in cantilever fashion to the brake shoe and to the other end of the link means, a hydraulic pressure cylinder pivotally connected to the torque arm and to the said other end of the link means to draw, when actuated, the brake shoe against the outer periphery of the tire, and adjustable pressure spring means positioned between the torque arm and the link means for moving the brake shoe away from the tire upon the release of the pressure to the hydraulic cylinder.

3,299,989
CHOCKING MECHANISM
James W. Santosuosso, 54 Shearns St., Malden, Mass. 02148
Filed Dec. 17, 1964, Ser. No. 419,101
4 Claims. (Cl. 188—32)

1. A device for chocking a load supported on a platform having at least one indent formed therein comprising
(a) a chock,
(b) a telescopic spring loaded rod connected at one end to said chock,
(c) an arm one end of which is pivotally connected to the opposite end of said rod at a point generally corresponding to the distance between said indent and



said chock and the other end of said arm is engageable with said indent whereby biasing of said arm towards said chock will telescope said rod under compression and
(d) locking means for holding said arm to said rod in a biased position to urge said chock against said load.

3,299,990
CONSTANT LOAD EXTENSION DEVICE
Arnold Ratcliffe, 74 Manchester Road, Haslingden, England
Filed June 18, 1965, Ser. No. 464,975
Claims priority, application Great Britain, June 19, 1964, 25,365/64
11 Claims. (Cl. 188—67)



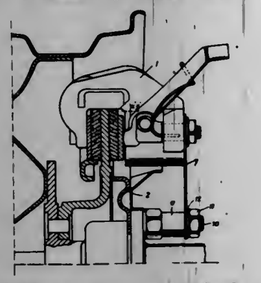
1. A substantially constant load extension device for use between two relatively movable parts of a machine comprising a cylinder, a rod extending within said cylinder and projecting out of said cylinder at one end thereof, gland means at said one end of said cylinder, said gland means permitting axial movement of said rod relatively to said cylinder, each of said rod and said cylinder being adapted for attachment to parts of a machine, a free piston within said cylinder and surrounding said rod, said piston making substantially fluid-tight sealing engagement with said cylinder, but having freedom for axial movement within said cylinder and relative to said rod, an abutment on said rod, resilient means mounted between said abutment and said piston said resilient means opposing movement of said rod out of said cylinder, means providing a fluid passage from one side of said piston to the other and valve means within said passage, said valve means being controlled on its opening movement by relative movement between said rod and said piston, whereby said piston can yield towards said one end of said cylinder when said passage is opened, said valve means comprising an annular rigid ring, and a resilient ring engaging one face of said rigid ring, a shoulder on said piston engaging part of the opposite face of said rigid ring to that engaged by said resilient ring, and a shoulder on said rod also engaging said opposite face of said rigid ring and loading means within said cylinder, said loading means

ensuring maintenance of fluid pressure on said one end of said piston on movement of said rod inwardly of said cylinder.

3,299,991
DISC BRAKES

Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed Oct. 5, 1964, Ser. No. 401,353
Claims priority, application France, Oct. 8, 1963, 949,995, Patent 1,379,032
1 Claim. (Cl. 188—73)

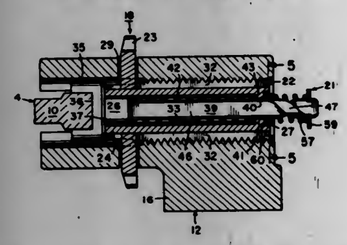


A disc-type brake structure used to brake rotary wheels in which a brake stirrup straddles a disc which is integrally connected to a rotary wheel suitably mounted on a wheel-supporting structure, said stirrup comprising brake linings adapted to press against opposite sides of said disc, said stirrup being seated upon guide elements which allow sidewise and oscillating movements relative to the disc, means adapted to prevent said stirrup from rocking about an axis parallel to a chord of the disc along which the linings are aligned, said means comprising a spring-steel plate mounted substantially parallel to the disc plane and having at least one attachment point on the stirrup and one attachment point on the wheel-supporting structure, a tube-shaped piece mounted on the end of said steel plate adjacent the wheel-supporting structure, a resilient block mounted in said tube shaped piece forming an assembly therewith, said assembly being slidingly fitted over a stud fixing the spring-steel plate on the wheel-supporting structure, whereby the translation movement of the stirrup is permitted and a rotation movement about said axis is prevented.

3,299,992
AUTOMATIC ADJUSTING MECHANISM

Patrick S. Stella, Olivette, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed Dec. 24, 1964, Ser. No. 420,884
9 Claims. (Cl. 188—79.5)

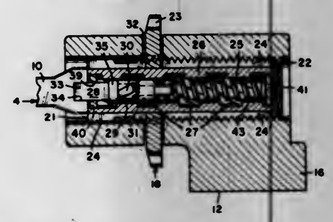


8. In a friction device having a friction member displaceable from a retracted position toward frictional engagement with a coacting member, means adjustably movable on said friction device and defining a retracted position for said friction member, a friction connection for frictional driving engagement with said first named means to effect the adjusting movement thereof, follower means movable relative to said first named means for following engagement with said friction member, said follower means and friction connection respectively including means responsive to the movement of said follower means to urge said friction connection into frictional driving engagement with said first named means and to thereafter translate the movement of said follower means into adjusting movement of said first named means to redefine the retracted position for said friction member.

3,299,993
AUTOMATIC ADJUSTING MECHANISM

Patrick S. Stella, Olivette, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed Dec. 24, 1964, Ser. No. 420,885
12 Claims. (Cl. 188—79.5)

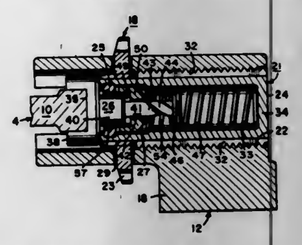


12. In a friction device having a friction member movable between a retracted position and a displaced position for frictional engagement with a coacting member, means adjustably movable on said friction device relative to said friction member and defining a retracted position for said friction member, a bore in said first named means, follower means movable in said bore for following engagement with said friction member, and motion translating means including drivingly engaged means respectively defined on the side wall of said bore and on said follower means for translating the friction member following movement of said follower means into adjusting movement of said first named means to redefine the retracted position for said friction member.

3,299,994
AUTOMATIC ADJUSTING MECHANISM

Jerry T. Parks, St. Charles, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed Dec. 24, 1964, Ser. No. 420,886
7 Claims. (Cl. 188—79.5)

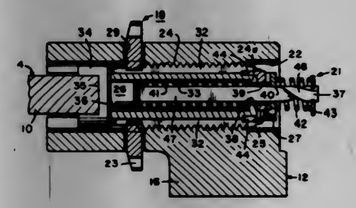


1. In a friction device having a friction member for movement between a retracted position and a displaced position for frictional engagement with a coacting member, adjustable means supported on said friction device for rotational and linear movement relative thereto and defining a retracted position for said friction member, a bore in said adjustable means, and motion translating means including rotatable drive means enclosed within said bore and drivingly engaged with said adjustable means to effect the rotational and linear movement thereof, follower means movable relative to said adjustable means for following engagement with said friction member, and other means movable relative to said rotatable drive means for driving engagement therewith to translate the following movement of said last named means into adjustable rotation of said rotatable drive means and adjustable means, said adjustable means being linearly movable relative to said friction device in response to the adjusting rotation thereof to redefine the retracted position for said friction member.

3,299,995
AUTOMATIC ADJUSTING MECHANISM

Patrick S. Stella, Olivette, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed Dec. 24, 1964, Ser. No. 420,887
12 Claims. (Cl. 188—79.5)



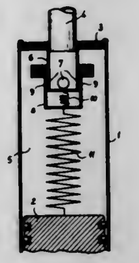
12. In a friction device having a friction member for movement between a retracted position and a displaced position for frictional engagement with a coacting member, adjustable means supported on said friction device for rotational and linear movement relative thereto and defining a retracted position for said friction member, and motion translating means including rotatable drive means drivingly engaged with said adjustable means to effect the rotational and linear movement thereof, means linearly movable relative to said adjustable means for following engagement with said friction member, and other means movable relative to and drivingly engaged with said rotatable drive means to translate the linear following movement of said last named means into adjustable rotation of said rotatable drive means and adjustable means, said adjustable means being linearly movable relative to said friction device to adjust its retracted position in response to the adjusting rotation thereof.

3,299,996
SHOCK-ABSORBERS FOR VEHICLE SUSPENSIONS

Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed Feb. 8, 1965, Ser. No. 431,008
Claims priority, application France, Feb. 18, 1964, 964,217, Patent 1,394,180; Dec. 24, 1964, 1, Patent 87,129
2 Claims. (Cl. 188—88)

1. A fluid-type shock absorber for a vehicle wheel suspension, comprising a cylinder and a piston forming a chamber provided with a passage for the flow of the fluid displaced by the relative movement of the cylinder and the piston, the said passage being provided with a control valve, wherein the said control valve comprises two parts respectively coupled to the two elements, cylinder and piston, of the shock-absorber so as to follow their relative movements, the said two parts having corresponding passages which are located in coincidence in the mean position of rest of the cylinder-piston unit, so that the section of passage of the fluid becomes smaller as the cylinder-piston unit moves away from the said mean position of rest, one of the said parts of the control valve being rigidly coupled to one of the said elements while the second part is elastically coupled to both said elements by two spring

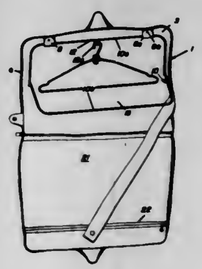


connections, the flexibilities of which are in a ratio close to that of the respective oscillation amplitudes provided for said second part and for the second of the said elements.

3,299,997
CARRYING CASE AND GARMENT HANGER

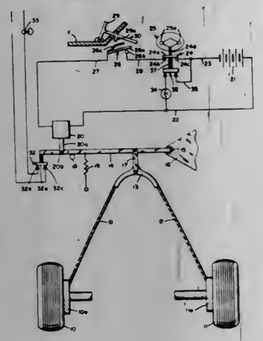
Kurt P. Herz, 2 Woodland Place, Great Neck, N.Y. 11021

Filed Jan. 13, 1965, Ser. No. 425,228
5 Claims. (Cl. 190—43)



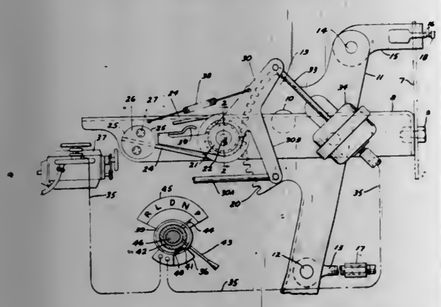
1. A garment carrier and hanger comprising a substantially rectangular body member foldable along its transverse centerline; a pair of cooperative carrying handles secured to the opposite ends of said substantially rectangular body member; a zipper fastener for closing and securing the meeting edges of said substantially rectangular body member when the garment carrier and hanger is in its transversely folded carrying position; a substantially rectangular frame adapted for disposition in said garment carrier and hanger; the length of said substantially rectangular frame being greater than the width of a standard size coat hanger but materially less than the width of said substantially rectangular frame being materially greater than the overall depth of a standard size coat hanger but less than one-half the length of said substantially rectangular body member; each of the shorter side members of said substantially rectangular frame including an intermediately disposed hinged joint whereby the lower half of said substantially rectangular frame may be raised and lowered with respect to the upper half thereof; means on one of the longer members of said substantially rectangular frame for supporting the hook of a coat hanger; and means extending inwardly from one of the ends of said substantially rectangular body member for supporting the immediately aforementioned longer member of said substantially rectangular frame.

3,299,998
ACCELERATOR AND SPEED CONTROLLED BRAKE
Arnold J. Douberly, 3945 Elcam Blvd. SE., St. Petersburg, Fla. 33705
Filed Oct. 30, 1964, Ser. No. 407,759
3 Claims. (Cl. 192—3)



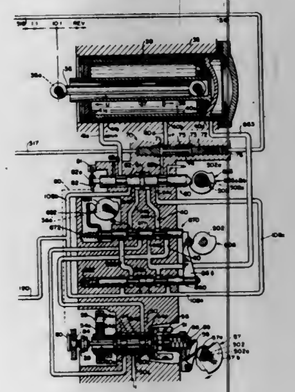
1. A control system for an engine driven vehicle having a throttle controlling member movable through a range of movement including a substantially fully open throttle position at one end of said range of movement for controlling the throttle of said engine, safety means for stopping said vehicle, control means for said safety means responsive to movement of said throttle controlling member substantially to said full open throttle position for actuating said safety means for stopping said vehicle, said control means being inoperative to actuate said safety means during movement of said throttle controlling member throughout the remainder of said range of movement thereof, and means responsive to a predetermined relatively low speed of said vehicle for rendering said control means inoperative to actuate said safety means.

3,299,999
SINGLE LEVER SERVICE AND EMERGENCY BRAKE SYSTEM
Joseph F. Martin, Detroit, Mich., assignor to Joseph F. Martin and Mabel M. Martin, as tenants by the entireties, with rights of survivorship
Filed July 19, 1965, Ser. No. 472,866
6 Claims. (Cl. 192—4)



1. In a motor vehicle having a service brake mechanism, an emergency brake mechanism and a transmission range selector mechanism, the combination of a common brake lever pivoted near its center and having means near its lower end for actuating the said service brake mechanism, means at its upper end for actuating said emergency brake mechanism and means associated therewith for simultaneously locking both said brake mechanisms against movement when said range selector mechanism is set at a non-driving position, and for unlocking both said brake mechanism when said range selector mechanism is set at any driving position.

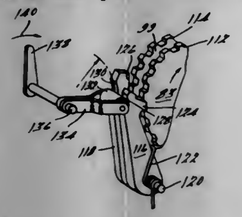
3,300,000
CONTROL SYSTEM FOR INFINITELY VARIABLE TRANSMISSION
Ludwig T. Stoyke, West Islip, N.Y., assignor to Fairchild Hiller Corporation, a corporation of Maryland
Filed July 9, 1965, Ser. No. 470,759
15 Claims. (Cl. 192—09)



1. In a control system for an infinitely variable hydrostatic transmission of the type having pump and motor units with interconnecting fluid pressure and return conduits and an associated prime mover the combination comprising:
- a speed governor driven by the prime mover at a speed proportional to the prime mover speed, said governor having a pair of output ports to produce a pressure gradient signal at the output ports which varies as a function of prime mover speed,
- actuator means for connection to the pump and motor units to vary the fluid displacement thereof and thereby change the ratio of the transmission,
- amplifier valve means connected between said governor and said actuator means and responsive to the pressure gradient signal to produce a signal to change the ratio of the transmission,
- and means connected between said actuator means and said speed governor means for applying a feedback signal to said governor of a character to cause said governor to produce a pressure gradient signal opposite in character to the pressure gradient signal producing the ratio change of the transmission.

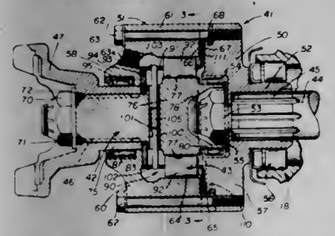
3,300,001
TRANSMISSION BRAKING ARRANGEMENT
Thomas R. Stockton, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,149
7 Claims. (Cl. 192—4)

1. A transmission, comprising, power input and output shafts, planetary gear means connecting said shafts to provide a plurality of drives therebetween, said gear means having a plurality of rotatable members at least a pair of which are formed with teeth thereon in addition to the gear teeth, a pair of non-rotating pivotally movable parking brake pawl means, movable means movable sequentially and cumulatively into engagement with eacn of said pawl means for the sequential and cumulative pivotal movement of said pawl means into engagement with said additional teeth of said pair of rotatable members for



braking the rotation of said output shaft, and means moving said movable means.

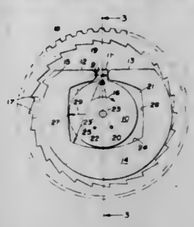
3,300,002
BI-DIRECTIONAL ROLLER CLUTCH WITH DIFFERENTIAL SPEED RESPONSIVE PILOT CLUTCH
Daniel W. Roper, Rochester, Mich., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 27, 1964, Ser. No. 347,837
10 Claims. (Cl. 192—35)



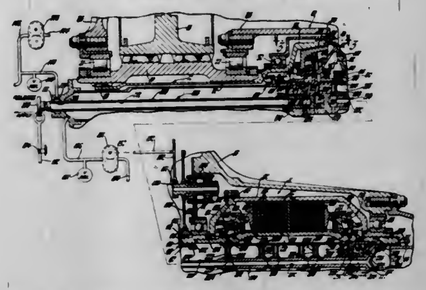
1. A drive comprising first and second relatively rotatable members, first and second shaft members connected to said first and second members, respectively, for independently rotating said members, double overrunning clutch means carried by said first member for rotation therewith and operatively associated with said first and second members and operable between a first position providing for free wheeling of one of said members relative to the other member and a second position wherein said clutch means drivingly connects the first and second members, means for biasing said clutch means toward its said first position and fluid actuating means operatively associated with said first and second members and said clutch means and responsive to a predetermined differential in the speed between said first and second members to overcome said biasing means and move said clutch means to its said second position, said actuating means including a flange member on said clutch means extending toward a surface of said second member and a viscous fluid associated with said flange member and said surface and having a resistance to motion between said flange member and said surface which increases to said predetermined differential in speed and overcomes said biasing means at said predetermined speed.

3,300,003
UNIDIRECTIONAL CLUTCH MECHANISM
Dean M. Peterson, Charles E. Pickering, and William Windle, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 25, 1964, Ser. No. 413,700
2 Claims. (Cl. 192—46)

1. A unidirectional clutch comprising:
- a rotatable drive shaft having a drive key extending therefrom;
- a gear coaxial with said shaft and having ratchet teeth on its inner periphery; and
- a substantially U-shaped washer pawl substantially surrounding said drive shaft and having an outwardly extending pawl tooth, said pawl having its ends spaced to form a split portion in the region of said key for receiving said key, said outer periphery of said pawl opposite said split portion being unsupported at all times, said pawl having inner surfaces relatively positioned to the outer periphery of said shaft allowing limited radial movement therebetween such that the pawl tooth will conditionally engage one of said ratchet teeth during rotation of said drive shaft in one direction and is completely withdrawn from said ratchet teeth during rotation in the opposite direction.



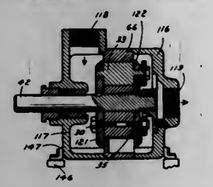
3,300,004
SEQUENTIALLY ENGAGED CLUTCHES CONNECTED IN SERIES AND COOLING MEANS THEREFOR
Victor W. Peterson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,764
19 Claims. (Cl. 192—48)



1. In a drive transmitting device,
- (a) drive transmitting means having first clutch means and second clutch means operatively connected in series,
- (b) said first clutch means being normally disengaged and operable when engaged to provide a power path for transmitting drive to said second clutch means having a power capacity which increases with increasing output speed of said first clutch means,
- (c) lockup means operable to lock up said first clutch means subsequent to slipping engagement in said first clutch means,
- (d) and said second clutch means having a larger rated power capacity than said first clutch means and being normally disengaged and having clutch operating means operable to automatically engage said second clutch means subsequent to said first clutch means being locked up and provide said second clutch means with a power capacity which increases with increasing output speed of said second clutch means.

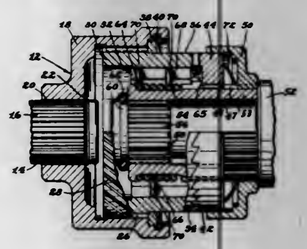
15. A drive transmitting assembly comprising,
(a) first clutch means, operating means operable to engage and disengage said first clutch means, lockup means operable to lockup said first clutch means,
(b) second clutch means of larger rated power capacity than said first clutch means including driving means operatively connected to said first clutch means and driven means frictionally engageable with said driving means, fluid motor means for operating on said driving and driven means to engage and disengage said second clutch means,
(c) a fluid control system for controlling said fluid motor means including a source of fluid under pressure, a clutch control valve operatively connected to said lockup means operable to connect said fluid source to said fluid motor means only when said first clutch means is locked up,
(d) and lubricant and coolant control means including a coolant control valve operable to deliver fluid from said fluid source to lubricate and cool said second clutch means at a slow delivery rate in a first position and at a fast delivery rate in a second position, said coolant control valve having control motor means operatively connected to said fluid source and in fluid communication with the fluid delivered by said clutch control valve to said fluid motor means and fixed for rotation with said driven means, said control motor means operable during disengagement of said second clutch means to hold said coolant control valve in said first position, said control motor means operable only during engagement of said second clutch means to hold said coolant control valve in said second position until the speed of said driven means at least approaches the speed of said driving means and thereafter position said coolant control valve in said first position.

3,300,005
POWER TRANSMISSION APPARATUS
Arthur L. Good, 1549 Cone St., Elkhart, Ind. 62634
Original application Oct. 2, 1964, Ser. No. 401,074, now Patent No. 3,251,443, dated May 17, 1966. Divided and this application Jan. 3, 1966, Ser. No. 535,627
7 Claims. (Cl. 192—61)



1. In a fluid power apparatus comprising first and second assemblages of members, the combination including:
a stationary mounted apertured member of predetermined length associated with the second assemblage wherein the aperture is defined, in part, by at least one arcuate surface concentric with the axis of rotation of the apertured member, and in part, by at least one arcuate surface nonconcentric with the axis of rotation of the apertured member, the concentric and nonconcentric surfaces intercepting one another longitudinally of the aperture;
a first fluid-conveying duct system in the second assemblage communicating with a first fluid port located at least partially in one end of a nonconcentric arcuate surface adjacent to a concentric surface;
a second fluid-conveying duct system in the second assemblage communicating with a second fluid port located in the opposite end of the same nonconcentric surface adjacent to a concentric surface;
a rotor of generally cylindrical configuration associated with the first assemblage having a length essentially equal to that of the aperture of the apertured member and having a radius essentially equal to that of the concentric arcuate surface, the rotor being located within the aperture of the apertured member and being rotatable relative to the apertured member with its exterior surface in substantially fluid-tight relationship with the concentric arcuate surface, but spaced from the nonconcentric arcuate surface by a predetermined distance to define a fluid-forwarding chamber between the rotor and the nonconcentric arcuate surface;
a rotor vane chamber of incomplete cylindrical contour with a radius less than that of the rotor inset into the cylindrical surface of, and axially parallel with, the rotor with a side opening through the rotor surface facing the wall of the aperture in the apertured member;
a rotor vane having a length essentially equal to that of the aperture of the apertured member located rotatively in the rotor vane chamber with its rotational axis coincident with the radial center of the rotor vane chamber and formed with at least two vane tips each extending parallel with the rotational axis of the vane and distant therefrom by a distance essentially equal to the radius of the rotor vane chamber;
means to close both ends of the aperture of the apertured member to prevent essentially the flow of fluid from the ends of the aperture during rotation of the first assemblage with respect to the second assemblage;
and vane rotating means responsive to the rotation of the first assemblage with respect to the second assemblage to cause rotation of the rotor vane within the rotor vane chamber to cause one of its tips to wipe the surface of the rotor vane chamber, the parts being dimensioned to cause another of its tips to wipe simultaneously a nonconcentric arcuate surface.

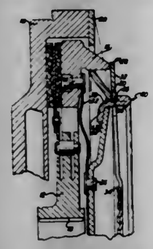
3,300,006
STARTER DRIVE
James J. Digby, Elmira, N.Y., assignor to The Bendix Corporation, Elmira, N.Y., a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 428,993
11 Claims. (Cl. 192—63)



1. A starter drive device comprising:
a drive shaft having a first axially-extending spline formed thereon;
a driving case member having a second axially-extending spline mutually engaging said first spline, said driving case having a cylindrical collar with a first helical spline formed on its inner surface;
a cylindrical driving member having a second helical spline formed on its outer surface operatively engaging said first helical spline and said member having first clutch teeth formed on one end thereof;
a driven member having second clutch teeth formed on one end thereof;

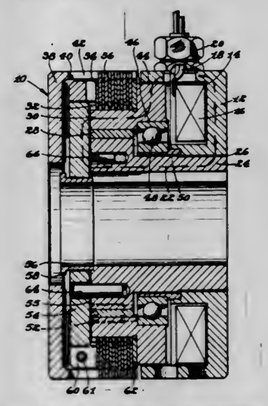
driven shaft means concentrically disposed within said driven member and splined thereto to permit axially-slidable movement of said driven member;
a driven case slidably connected to said driven shaft means;
said driving member having axially-extending slots formed in the inner diametrical surface thereof;
said driven shaft means extending within said driving member, said driven shaft means having a reduced diameter radially inward of said axially-extending slots;
a plurality of spring retarder rings operative to frictionally engage said reduced diameter extension of said driven shaft means, each of said plurality of springs having a tang extending radially outwardly, said retarder spring tangs engaging said slots in said driving member to thereby frictional resist rotation of said driving member; and
an annular mesh enforcing spring mounted co-axially with said driven shaft means between the said driven case and the said driven member, said mesh enforcing spring being extensible along the axis of the said driven member and driven case to provide limited axial movement in the event of tooth abutment, thereby causing tooth engagement.

3,300,007
DISK CLUTCH PARTICULARLY FOR MOTOR VEHICLES
Alfons Motsch, Cologne-Nippes, Germany, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,613
Claims priority, application Germany, Jan. 16, 1964, F 41,760
1 Claim. (Cl. 192—68)



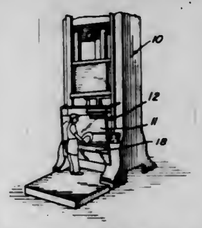
A clutch assembly having a pressure plate,
a cover plate,
means connecting said plates constructed for axial movement of said pressure plate with respect to said cover plate while maintaining said plates in coaxial relationship,
said means comprising a disk connected to said plates and having a series of radially spaced apart circumferential corrugations,
a disk type spring having a circumferential band with a series of circumferentially spaced apart tongues extending radially inwardly therefrom,
said cover plate being contoured to provide a fulcrum edge for said spring near the inner edge of said band,
said cover plate being disposed between said pressure plate and said spring,
said cover plate having at least one aperture and said pressure plate having a protruding portion extending through said aperture,
said spring pressing against said protruding portion of said pressure plate near the outer edge of said spring,
a clamping ring having a series of tongues extending through both said spring and said cover plate,
said clamping ring tongues being bent over to engage said cover plate,
said ring having a folded over fulcrum edge engaging said spring in axial alignment with the fulcrum edge of said cover plate,
the distance between the two fulcrum edges being substantially equal to the thickness of said disk spring.

3,300,008
ELECTROMAGNETIC CLUTCH
Charles A. Mendenhall, Horseheads, N.Y., assignor to The Bendix Corporation, Elmira, N.Y., a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 428,911
8 Claims. (Cl. 192—84)



5. An electromagnetic clutch comprising:
first and second power transmitting members;
clutch means associated with at least one of said power transmitting members for selectively interconnecting said power transmitting members;
one of said power transmitting members having an alternating sandwich type construction of flux and non-flux conducting materials disposed radially inwardly of said clutch means;
said clutch means including an axially movable armature means;
a non-rotatable coil member at least axially separated from said axially movable armature means by one of said power transmitting members; and
said power transmitting member having the sandwich type construction operative to conduct substantially all flux generated by said stationary coil only radially inwardly of said clutch means.

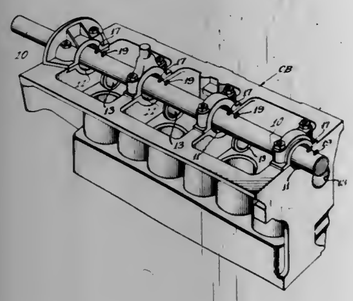
3,300,009
PRESS GUARD
Kenneth G. Hess, Sheboygan, Wis., assignor to Polar Ware Company, a corporation of Wisconsin
Filed May 19, 1965, Ser. No. 456,990
7 Claims. (Cl. 192—130)



1. An automatic control for a press, comprising: a guard door; means for moving said door between open and closed positions; press control means actuated by said

door when in its closed position whereby the closing of said door effects a cycle of said press; timer means associated with said first named means for opening said door after a portion of the cycle of the press; and a time delay relay for periodically restarting the cyclic movement of said door whereby said door repetitiously moves between opened and closed positions to effect a repeating continuous operation of said press upon each closing of said door.

3,300,010
ROTATIONAL POSITIONING MEANS
Meral Calvin Irish, Richmond, Ind., assignor to National Automatic Tool Company, Inc., Richmond, Ind., a corporation of Indiana
Filed Jan. 25, 1965, Ser. No. 427,689
9 Claims. (Cl. 192—142)



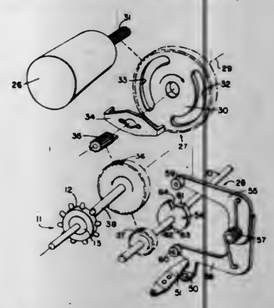
9. In combination, a rotary member, a motor for rotating said rotary member at a relatively high speed during operating periods thereof, and means for rotatably positioning said rotatable member following an operating period comprising a positioning motor for slowly rotating said rotary member, a clutch for operatively connecting said positioning motor to said rotary member, and automatic control means for energizing said clutch after said first mentioned motor is de-energized following an operating period and upon said rotary member coasting to a predetermined slow speed substantially the same as that at which said positioning motor rotates said rotary member, whereupon said positioning motor further rotates said rotary member through said clutch, said automatic control means being thereupon responsive to a predetermined position of said rotary member while it is being rotated by said positioning motor to disengage said clutch.

3,300,011
TUNING SHAFT POSITIONING SYSTEM
Donald F. Willmann, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,258
5 Claims. (Cl. 192—142)

4. In a positioning system of the type which includes driving means, electrical means for giving a positional order and sensing compliance with said order, and braking means set up on compliance with said order to arrest the driving means upon actuation, the improvement which comprises, in combination:

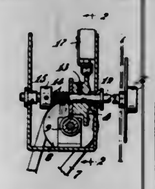
a rotatably mounted cam constituting the driven element to be positioned, said cam having a plurality of spaced actuating and positioning surfaces comprising a leading portion of such contour as to be driven by the cam follower and a trailing portion of such contour as to define a precise rotational position of said cam;

a cam follower for exerting thrust against said surfaces and moving radially to actuate said braking means and precisely to position said cam;



and means for introducing mechanical play between the driving means and said cam to make the precise positioning independent of the driving means.

3,300,012
ADJUSTABLE RECYCLING APPARATUS
Kenneth J. White, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Continuation of application Ser. No. 302,938, Aug. 19, 1963. This application Nov. 17, 1965, Ser. No. 508,347
6 Claims. (Cl. 192—142)

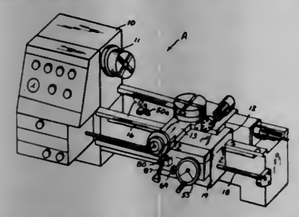


1. For stopping a machine after one or more cycles of operation, apparatus comprising a controller movable back and forth between ON and OFF positions, a rotor for actuating the controller, cooperating controller and rotor parts to cause the controller to assume OFF position when the rotor is in one of its angular positions, means adapted to interconnect said rotor with a machine for turning the rotor synchronously with the machine, and a handle connected to said rotor for turning the rotor in either direction to the position corresponding to any desired number of cycles, said rotor part being free for movement in either direction from said one position in response to turning of said handle, said controller part being movable from OFF position to ON position in response to either of said movements and being free to return to OFF position after being moved to ON position by either of said movements, said turning means including a slip driver which permits the rotor to be turned in either direction to any position, whereby operation of said machine for the selected number of cycles returns said rotor to OFF position thereby causing the controller to stop the machine.

3,300,013
MACHINE TOOL SLIDE MEMBER WITH CLUTCH AND STOP
John Fisher, Aurora, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed June 1, 1964, Ser. No. 371,527
11 Claims. (Cl. 192—150)

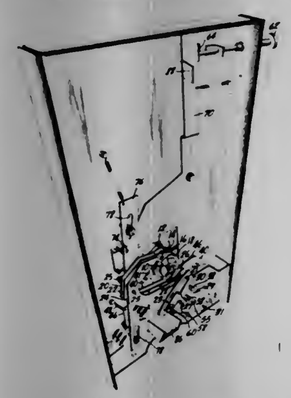
1. In a machine tool, a slide member movable between predetermined positions, a rotatable drive member operatively connected with said slide member to effect

movement of said slide member upon rotation thereof, a one-way power transmitting mechanism having a rotatable input member and a rotatable output member operatively connected to said drive member to rotate said drive member and means for transmitting power to said output member on rotation of said input member and operable to lock said output member against rotation to drive said input member, and drive means for driving said



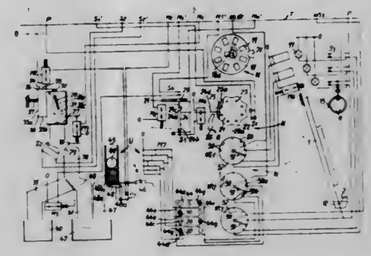
input member and including disconnect means operable to disconnect said drive means to said input member, said drive means comprises a clutch biased to a disengaged position and latch means for holding said clutch against said bias in an engaged position for transmitting power therethrough and said disconnect means comprises a knockoff member operatively associated with said latch means and movable to release said latch means.

3,300,014
MULTI-PRICE VENDING MACHINE
John Schendorf, Metuchen, N.J., and Irving Goldbert, Mountainside, N.J. (P.O. Box 231, North Ave., Garwood, N.J. 07027); said Schendorf assignor to said Goldbert
Filed Dec. 30, 1965, Ser. No. 517,611
10 Claims. (Cl. 194—1)



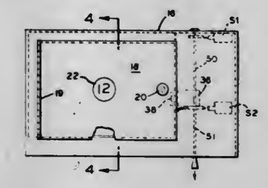
1. In a vending machine having operating members adapted to selectively operate delivery members, in combination with a coin counter mechanism driving a control member through successive increments as successive coins are received, a plurality of cams on said control member each having alternate humps and notches staggered with respect to the other cams, stop members having apertures through which said delivery members pass, said stop members having tracks provided with catch pockets intermediate the ends thereof, and detent members having pins riding in said tracks, said detents being adapted to engage humps on said cams when a proper number of coins have been received so as to hold said pins out of said catch pockets, and thereby to permit said delivery members to move said stop members forward with the tracks thereof passing over said pins for the completion of the delivery stroke, said detents being adapted to enter respective notches in said cams when the proper coins have not been received, to cause said pins to enter said catch pockets to prevent completion of the stroke of said delivery members.

3,300,015
VENDING MACHINE FOR THREAD SPOOLS AND OTHER SUBSTANTIALLY SPOOL-LIKE ARTICLES
Hans Bolliger, Rorschacherberg, Switzerland, assignor to E. Mettler-Muller A.G., a corporation of Switzerland
Filed June 11, 1965, Ser. No. 463,164
Claims priority, application Austria, June 16, 1964, A 5,135/64
25 Claims. (Cl. 194—2)



24. In a vending machine for automatic dispensing of a selected article from an assortment of stored articles after insertion of proper coin amount, the combination, comprising a coin-insert slot, a displaceable closure member normally closing said coin insert slot and movable into an ineffectual position where said coin insert slot is opened, adjustable selector mechanism for carrying out selection of a desired article from the assortment of stored articles, means responsive to setting of said adjustable selector mechanism for moving with a certain time-delay said closure member into its ineffectual position.

3,300,016
SERVICE COMPARTMENT
Luther G. Simjian, Greenwich, Conn., assignor to General Research, Inc., Greenwich, Conn., a corporation of Connecticut
Filed June 24, 1965, Ser. No. 466,705
10 Claims. (Cl. 194—4)



1. A device of the type described comprising:

a compartment;

a closure mounted for providing access to said compartment when said closure is open and for preventing access when said closure is locked;

a lock means, operable by a check means, for locking said closure mounted in cooperative relation with said compartment and closure;

sensing means disposed for sensing the presence of an article in said compartment;

gate means for precluding the insertion of said check means into said lock means;

means for retaining said check means subsequent to the operation of said lock means;

control means for causing operation of said gate means in response to said sensing means sensing the presence of an article in said compartment whereby to condition said lock means for the acceptance of said check means, and upon said lock means being operated by said check means to cause said means for retaining said check means to retain such check means while said sensing means senses the presence of an article in said compartment, and

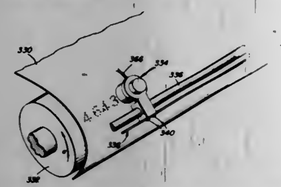
said control means causing said means for retaining the check means to release the check means responsive to said sensing means sensing the absence of an article in said compartment.

3,300,017

ELECTROSENSITIVE PRINTING APPARATUS WITH PRINT HEAD CONTINUOUSLY MOVED ACROSS PAPER

Zaven Yazejian, Mahopac, N.Y., and Jerome R. Fuld, Trumbull, and Walter V. Benkler, East Norwalk, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 30, 1965, Ser. No. 452,273
16 Claims. (Cl. 197—1)



1. In a printer for printing electrically on electrosensitive record material by means of a print head traversing said record material in a continuous movement in a reciprocating manner,

print head means including a print head,

guide shaft means for supporting said print head adjacent said record material for reciprocal movement thereof across the width of said material,

driving means for driving said print head from one end of said guide shaft means to the other at an essentially constant rate,

motor means for energizing said driving means,

clutch means and actuating means therefor for connecting said motor means to said driving means in response to a control signal, said clutch means comprising a shaft driven by said motor means, a first hub affixed to said shaft, a second hub rotatably mounted on said shaft, and means responsive to said actuating means for coupling said first and second hubs for conjoint rotation about said shaft under conditions where said driving means is driving said print head,

means for deactivating said clutch means automatically in response to said print head being moved to and occupying said other end of said guide shaft means, said deactivating means operatively connected to said responsive means to decouple said hubs regardless of shaft rotation.

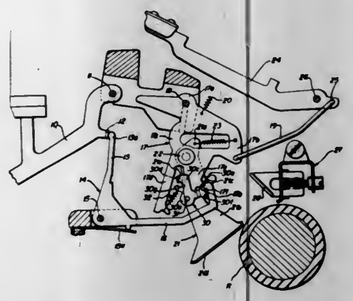
3,300,018

TYPE BAR ACTION HAVING COMBINED CAM LATCHING AND DRIVING LEVER

Leo P. Frechette, West Hartford, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 4, 1963, Ser. No. 285,322
3 Claims. (Cl. 197—17)

1. In a type bar action for an electric typewriter including a power driven roll, a frame, a key lever pivotally mounted on said frame, a type bar pivotally mounted for movement from a rest position to a print position, a movable power arm pivotally mounted on said frame, a link connecting said type bar with said power arm, a return spring biasing said power arm and type bar to rest position, an eccentric cam oscillatably mounted on said power arm adapted when engaged with said roll to drive said power arm and type bar to print position, a spring connected between said power arm and cam normally biasing said cam from engagement with said power driven roll, and a bell crank pivotally mounted on said frame and adapted to be rocked by said key lever when the latter is depressed, the improvement comprising:



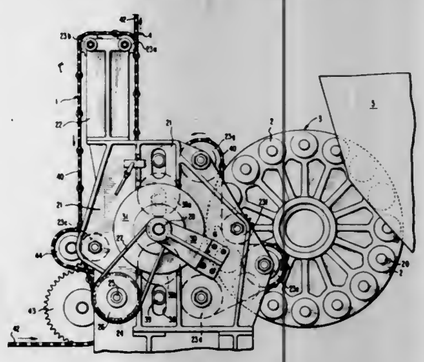
a cam latching element pivotally mounted on said power arm and spring biased to positively latch said cam from accidental engagement with said power roll, said element including an operating lug normally positioned to be engaged by said bell crank thereby to rock and unlatch said cam when said bell crank is rocked, said element further including a cam drive lug positioned to positively engage and rock said unlatched cam into power roll engagement as said element is rocked beyond its cam latching position.

3,300,019

TRANSFER ASSEMBLY FOR USE WITH HIGH SPEED CAN DECORATING MACHINES

Ward E. Brigham and Robert L. Eckert, Rutherford, N.J., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 26, 1965, Ser. No. 435,645
9 Claims. (Cl. 198—25)



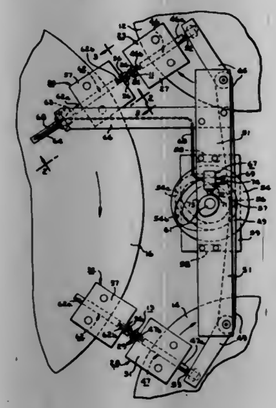
1. A spindle turret of the character described for use in high speed can decorating machines comprising, a rotatable shaft, a disc secured to one end of said shaft, a plurality of spindles secured to said disc, a transfer mechanism positioned adjacent to the spindle turret, piston means slidably mounted on each spindle, and compressed air means operatively connected to each spindle for sliding said piston means outwardly from the spindle for urging each can onto the transfer mechanism.

3,300,020

ARTICLE TRANSFER APPARATUS

Gary G. Seaman, Omaha, and James A. Trenerry, Millard, Nebr., assignors to Western Electric Company, Incorporated, New York, N.Y., a corpration of New York

Filed May 28, 1965, Ser. No. 459,790
6 Claims. (Cl. 198—25)



1. Apparatus for transferring an article from a first support to a second support without disturbing the orientation of the article about a preselected axis, which comprises:

an article holding mechanism on the first support including spaced opposed jaws for gripping the article;

an article receiving mechanism on the second support including spaced opposed jaws for receiving the article therebetween from said article holding mechanism;

a pusher member movable between the jaws of said article holding mechanism into engagement with the article to push the article from said article holding mechanism;

a retarding member mounted between the jaws of said article receiving mechanism for movement between advanced and retracted positions;

advancing means for moving said retarding member from its retracted position to its advanced position between the jaws of said article receiving mechanism and substantially into engagement with the article in said article holding mechanism;

operating means for moving said pusher member between the jaws of said article holding mechanism after said retarding member has been moved to its advanced position by said advancing means, to transfer the article from said article holding mechanism to said article receiving mechanism and to push said retarding member to its retracted position against the action of said advancing means such that said retarding member and said pusher member frictionally engage the article to prevent rotation of the article about the preselected axis; and

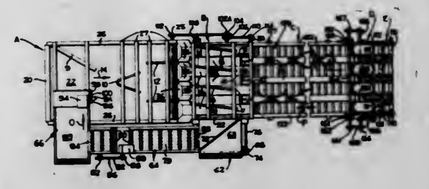
means for rendering said advancing means inoperative after said retarding member has been returned to its retracted position, to preclude ejection of the article from said article receiving mechanism by said retarding member.

3,300,021

METHOD AND APPARATUS FOR HANDLING ARTICLES

Jack H. Holmes, Yakima, Wash., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Aug. 29, 1963, Ser. No. 305,289
15 Claims. (Cl. 198—33)



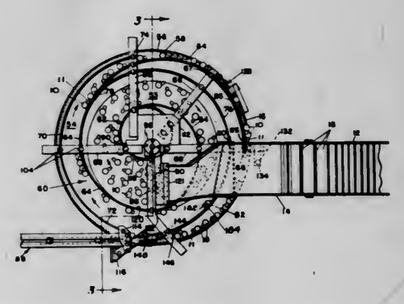
1. An apparatus for arranging generally ellipsoidal articles comprising means for conveying and arranging the articles in longitudinal files, longitudinally coextensive transversely spaced conveyors each of which is in longitudinal alignment with each of the files, means for operating said last mentioned conveyors at a higher speed than said first mentioned conveying means to increase the longitudinal distance between the articles, means extending partially diagonally across the upper run of each conveyor for orienting the major axis of each article to lie substantially in the direction of movement and for discarding certain of the articles over the edge of each conveyor to thereby form files of single longitudinally spaced articles oriented in the mentioned manner.

3,300,022

CLOSURE HANDLING APPARATUS

Walter S. Sterling, Quincy, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts

Filed Jan. 7, 1965, Ser. No. 423,911
20 Claims. (Cl. 198—33)

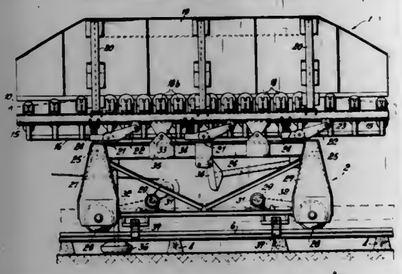


1. Apparatus for handling hollow closures open at one end comprising, in combination, a rotary carrier disk notched along its peripheral edge to provide spaced lands, and stationary rails disposed above the disk for guiding outwardly randomly arranged closures placed on the disk to a position wherein a portion of each closure extends beyond the edge of the disk, those closures assuming an open end up position being supported between adjacent lands to maintain their balance on the disk, and those closures assuming an open end down position dropping over the lands to be overbalanced and rejected from the disk.

3,300,023
TRANSPORTING CARRIAGE FOR CONVEYER SYSTEM

Reinhold Creutzmann, Allrath, and Hans Wullschlaeger, Wevelinghoven, Germany, assignors to Maschinenfabrik Buckau R. Wolf Aktiengesellschaft, Grevenbroich, Germany

Filed May 10, 1965, Ser. No. 454,390
Claims priority, application Germany, May 8, 1964, M 60,919
14 Claims. (Cl. 198—36)

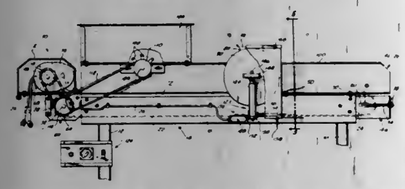


1. In a conveyer system, particularly for use in surface mining, in combination, a substantially horizontal first track; an inclined second track having a lower end adjacent to and located at a level above said first track; and a conveyance comprising a mobile truck mounted for travel along said first track, a dolly mounted on said truck and adapted to travel along said second track, said dolly comprising a chute and a belt supporting assembly disposed below said chute so that a belt supported by such assembly may receive material which passes through said chute, and coupling means detachably securing said dolly to said truck so that, when the truck is moved along said first track to a position adjacent the lower end of said second track and is detached from said dolly, the latter may be advanced along said second track and back onto said truck.

3,300,024
METERING DEVICE

Theodore H. Grau, Rembrandt, Iowa (2104 24th St., Columbus, Nebr. 68601)

Filed Apr. 9, 1964, Ser. No. 358,507
9 Claims. (Cl. 198—39)

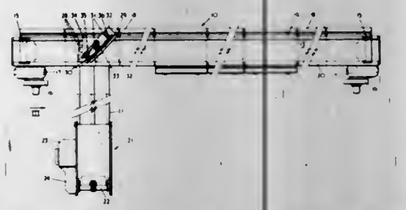


1. In a metering device for silage, grain and the like, the combination of:
- an elongated frame,
- a horizontal belt conveyor carried by said frame,
- an electric motor for running said conveyor,
- an electric counter of the type being selectively settable from a zero setting for a fixed number of actuations back to said zero position at which point it is adapted to act on any desired switch means,
- said counter being operatively connected to said motor for deactuating the same at said zero setting,
- a microswitch electrically connected to said counter,
- a shaft disposed transversely of said conveyor belt,
- a gauge wheel on said shaft,
- means supporting said shaft to permit vertical movement thereof in relation to the thickness of material moving on said conveyor belt beneath said gauge wheel,
- said motor operatively connected to said shaft for rotating said gauge wheel when said conveyor belt is running
- a disk wheel on one end of said shaft for rotation therewith,
- a second shaft,
- means on said frame rotatably supporting said second shaft in a vertical plane adjacent said disk wheel,
- a cam on the lower end of said second shaft disposed to intermittently act upon said microswitch,
- a drive wheel on the upper end of said second shaft in peripheral engagement with the face of said disk wheel, and
- the vertical movement of said disk wheel with said shaft effecting a change of the contact point of said drive wheel on said disk wheel on a radial line from the axis of said disk wheel toward the perimeter thereof whereby the greater the thickness of material moving on said conveyor, the higher said gauge wheel and disk wheel is moved and the closer to the perimeter of said disk wheel is the contact with said drive wheel so said cam acts on said microswitch progressively faster to correspondingly speed the return of said counter to zero position.

3,300,025
CONVEYORS

Thomas C. Paul, David Edwards, and Gordon B. Dawson, all of Worcester, England, assignors to Coal Industry (Patents) Limited, London, England, a company of Great Britain

Filed Oct. 22, 1965, Ser. No. 501,235
Claims priority, application Great Britain, Oct. 29, 1964, 44,074/64
4 Claims. (Cl. 198—102)

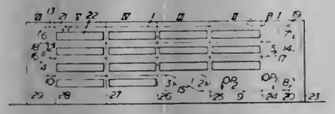


1. A conveyor assembly for removing cut mineral from a longwall face comprising: a face conveyor of the endless scraper chain type having an upper conveying strand slidably supported upon a deck plate, a lower return strand extending below the said deck plate, and a drive section for driving the endless conveyor chains, said face conveyor having secured to each side a longitudinally extending slideway arranged to slidably engage and support a corresponding slide on a mining machine operable along and above the said face conveyor, each slideway extending from one extreme end of the face conveyor to the other including over the said drive section and each slideway being arranged throughout its whole length to support the mining machine at a constant height above the said face conveyor; and a stage loader extending transverse to said face conveyor and having a receiving section arranged to receive debris discharged from said face conveyor, said stage loader being of an endless conveyor type and having an upper conveying strand and a lower return strand extending beneath the conveying strand, the said receiving section being located intermediate the ends of the said face conveyor and beneath the deck plate of the face conveyor, the said deck plate being apertured immediately above the said receiving section to define a discharge opening for the transfer of mineral from the face conveyor onto the stage loader, said receiving section including guide means arranged to train the conveying and return strands of the said stage loader respectively above and below the return strand of the said face conveyor and said receiving section being accommodated wholly within the height of the said face conveyor.

3,300,026
TRANSPORTING DEVICE

Georges Xavier Lens, Evere, Josephus Evaristus Firminus Vanhentenrijk, Mortsel, and Constant Lodewijk De Mol, Wilrijk, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 25, 1965, Ser. No. 428,177
8 Claims. (Cl. 198—143)

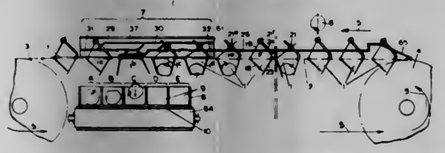


1. Transporting device for letters and similar flat objects, more particularly for a letter sorting machine, said transporting device comprising an endless conveyor which is constituted by a pair of parallel endless belts or chains having at least one straight portion and at least one curved portion, a plurality of letter holders being arranged between said pair of parallel endless belts or chains and being each secured thereto by a shaft which is rotatably mounted in two opposite points of said belts or chains, a lever arm being rigidly secured at one end to one end of said shaft and being guided at its other end by guiding means mounted in a plane parallel to the planes of said endless chains or belts and ensuring that the associated letter holder maintains its position in space, characterized in that said guiding means include a first straight guide (86) and a second straight guide (85) which are parallel to said straight portion of said pair of chains or belts, that said lever arm carries at said other end roller means which are freely rotatable about an axle (82) parallel to said shaft (37) and which are guided between said first and second straight guides and that said guiding means further include a curved guide (99) and a freely rotatable element having indentations (97) in one of which said roller means are engaged when they leave said straight portion, said curved guide preventing said roller means to be disengaged out of an indentation while being carried by said rotatable element.

3,300,027
INSTALLATION FOR UNLOADING A NUMBER OF HOLDERS

Jan Geert Boolj, Dordrecht, Netherlands, assignor to Aviolanda Maatschapplj voor Vliegtuigbouw N.V., Papendrecht, Netherlands, a Dutch manufacturing company

Filed Apr. 2, 1965, Ser. No. 444,969
Claims priority, application Netherlands, Apr. 3, 1964, 6403551
10 Claims. (Cl. 198—143)



1. Apparatus for successively unloading holders at a series of unloading points, comprising
- (a) a plurality of holders each including at least two parts connected to move relatively to one another so as to achieve a first and second condition in which the bottom of the holder is respectively closed for moving a load and open for delivering a load and a third condition in which the top of the holder is open and the bottom is closed for receiving a load,
- (b) gravity operable means on said movable parts to drive a holder from its third, empty condition to its first and closed condition by the weight of a load introduced into the holder,
- (c) means for moving said holders along a path toward and past an unloading station including said series of unloading points,
- (d) actuating means for closing and opening each holder carried by and coupled to one of said parts and movable with the holders along first, second and third tracks parallel to said path and corresponding to said three conditions of the holders,
- (e) and a regulator element including control means for each unloading point operative to move the regulator element to an obstructing position across the first track to engage and displace the actuating means of a bottom closed holder into said second track so as to open the bottom of the holder when the unloading point is empty and requires a load,
- (f) said control means being operative to move said regulator element away from said first track to an unobstructing position in which all three tracks are clear when the unloading point is filled.
- (g) and said third track being spaced from said regulator elements in both their obstructing and unobstructing positions so as to maintain a holder in empty, top open condition as it passes either an empty or filled unloading point.

3,300,028
ELEVATOR CONVEYOR

Francis X. Landrey, 14 Delano Park, Cape Elizabeth, Maine 04107, and Raymond L. Snell, 19 Bristol St., Portland, Maine 04102

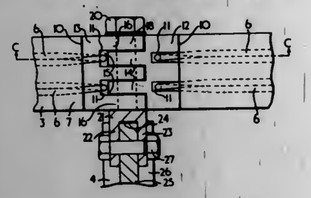
Filed Mar. 25, 1965, Ser. No. 442,608
10 Claims. (Cl. 198—160)



1. An elevator for conveying a series of generally flat articles comprising an elongated frame supported in an upright position and forming a shaft for said elevator, a pair of opposed conveyors mounted in said shaft, said conveyors being spaced to define a feed path for said articles, each of said conveyors comprising spaced rigid side frame members and a plurality of transverse idler rollers mounted between said frame members of each conveyor, one of said conveyors being a nondriven idler conveyor, one of said conveyors being a power conveyor having an endless belt positioned in engagement with said rollers along said feed path, drive means for driving said belt, and resilient mounting means for one of said

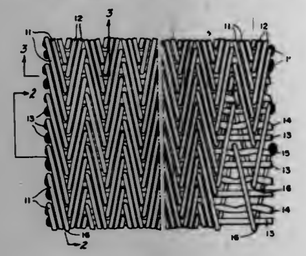
conveyors for urging said conveyor as a whole toward the opposed conveyor whereby said articles along said feed path are clamped in driving engagement with said belt.

3,300,029
CONVEYORS
Peter J. Jenkins, Burscough, England, assignor to Dunlop Rubber Company Limited, London, England, a British company
Filed Apr. 14, 1965, Ser. No. 448,180
Claims priority, application Great Britain, May 2, 1964, 18,330/64
8 Claims. (Cl. 198—168)



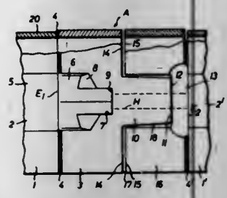
1. A segmental scraper conveyor assembly comprising a plurality of transverse scraper members; a pair of segmental longitudinal members between which the scraper members are attached, said longitudinal members being in spaced parallel relationship, and each segment thereof having at least one metal cable embedded in a flexible polymeric composition and extending longitudinally throughout the length of each segment, each cable having at least one loop at each end of each longitudinal segment; and a metal component formed on each end of said longitudinal segments to join adjacent segments, the metal components of adjacent longitudinal segments being complementary and being hinged together, each metal component engaging at least one of said loops of the metal cable of its corresponding longitudinal segment at a position spaced longitudinally from the axis about which the metal component is hinged.

3,300,030
CONVEYOR BELT
Otto Carl Scherfel, Philadelphia, Pa., assignor to Manganese Steel Forge Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1965, Ser. No. 432,976
5 Claims. (Cl. 198—193)



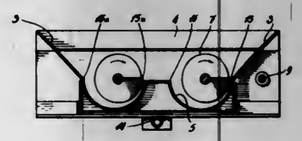
1. A cord-type conveyor belt comprising a plurality of helical wires of righthand twist, a plurality of helical wires of lefthand twist closely interspersed with said righthand twist wires on parallel axes, a plurality of straight cross rods extending along axes parallel to the axes of the helical wires, a plurality of crimped cross rods extending along axes parallel to the axes of the helical wires, said straight and crimped cross rods being arranged in alternate fashion so that the rods are locked in place against lateral movement, and welds separately securing the ends of each wire to the ends of one of the cross rods.

3,300,031
COUPLING DEVICE FOR JOINING MINING CONVEYOR TROUGH SECTIONS
Günther Dommann, Wethmar, near Lunen, Westphalia, and Helmut Temme, Lunen, Westphalia, Germany, assignors to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany
Filed June 15, 1965, Ser. No. 464,167
Claims priority, application Germany, Nov. 19, 1964, G 42,054
3 Claims. (Cl. 198—204)



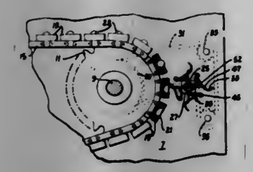
1. A coupling device for joining mining conveyor trough sections in end-to-end adjacent relation, which comprises a first coupling member disposed for connection to an end portion of a first conveyor trough section, a second coupling member disposed for connection to an opposite end portion of a second conveyor trough section disposed in endwise adjacent relation to said first conveyor section, said first coupling member having a tenon disposed for operative engagement with a mortise in said second coupling member, and a fastening member extending through said mortise and tenon to urge same together into mutual engagement to join said first and second conveyor trough sections together in end-to-end adjacent relation, said first and second coupling members each having a first bearing surface and a second bearing surface, said first bearing surfaces being disposed in opposite relation to each other and said second bearing surfaces being also disposed in opposite relation to each other, the second bearing surface of said first coupling member being located on the free end of the tenon thereof, and the second bearing surface of said second coupling member being located at the bottom of the mortise thereof, said tenon having an effective length greater than the effective depth of said mortise by an amount selected in relation to the normal operating compressive stresses transmitted between said second bearing surfaces on the tenon and mortise to accommodate the relative plastic deformation therebetween resulting from such stresses until the first bearing surfaces of said coupling members are positioned in bearing engagement with each other.

3,300,032
FORAGE HOPPER WITH AUGER MEANS
Lucien Dion, 26 Morris St., Ste. Therese de Blainville, Quebec, Canada
Filed Oct. 16, 1964, Ser. No. 404,328
1 Claim. (Cl. 198—213)



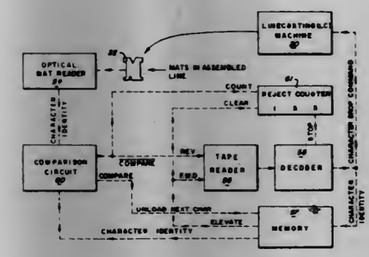
In a forage hopper with substantially semi-cylindrical troughs and auger means rotatably mounted therein, the forage charged into the hopper being drawn by said auger means at one side of the trough and expelled at the other during the rotation of the auger means, the improvement whereby the trough comprises at the drawing side thereof a short protruding portion and the auger means is so off-centered as to nearly touch said portion with its edge.

3,300,033
CHERRY CHUCK CLEAN-OUT DEVICE
Robert G. Ellis, Richmond, Calif., assignor to Atlas Pacific Engineering Company, a corporation of California
Filed Feb. 5, 1965, Ser. No. 430,691
4 Claims. (Cl. 198—229)



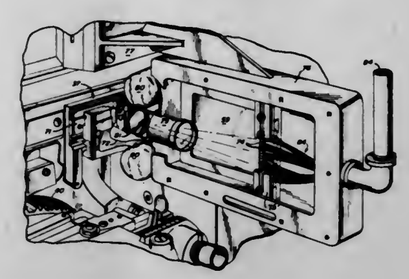
1. In a fruit pitter or the like, wherein individual fruits are carried in substantially hemispherical cups, said cups being mounted on an endless conveyor, whereby successive cups pass a given point, the improvement comprising:
(a) a clean-out mechanism mounted adjacent said conveyor, said clean-out mechanism having a finger element having an end substantially conforming in configuration to the bottom of the cups;
(b) means for moving said finger element in the same direction but at a higher rate of speed than the conveyor; and
(c) means for moving said finger element into the trailing edge of a cup and moving the finger element substantially to follow the profile of the cup and withdrawing the finger element at the leading edge of the cup.

3,300,034
LINECASTING CONTROL SYSTEM
John E. Kleboe, Chicago, and Martin E. Runyan, Riverdale, Ill., assignors to R. R. Donnelley & Sons Company, a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,070
37 Claims. (Cl. 199—11)



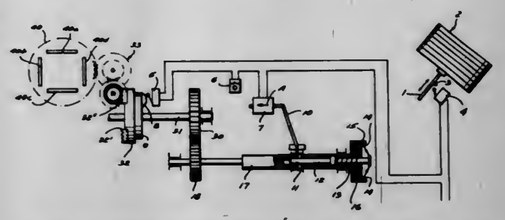
1. In a line casting machine having matrixes carrying castable characters: control means for assembling selected matrixes and casting a slug of type from said selected matrixes; indicia means on each matrix in addition to said castable characters; means for developing a signal representative of said indicia; and means responsive to said signal for modifying the operation of said control means.

3,300,035
LINECASTING CONTROL SYSTEM
Charles B. Funke, Dolton, John E. Kleboe, Chicago, and Martin E. Runyan, Riverdale, Ill., assignors to R. R. Donnelley & Sons Company, a corporation of Delaware
Original application July 12, 1965, Ser. No. 471,070. Divided and this application Sept. 15, 1966, Ser. No. 579,749
8 Claims. (Cl. 199—11)



1. In a linecasting machine having a storage area for matrixes representative of characters and means for releasing a matrix from said storage area in response to the selection of a character, a control system comprising: means for comparing the actual character of the released matrix with the selected character; and error means responsive to said comparison means for developing an error signal when the character of the released matrix is different from said selected character.

3,300,036
MOLD WHEEL INDEXING MECHANISM
Harry Greiner, Offenbach, Bieber, Germany, assignor to Linotype G.m.b.H., Frankfurt am Main, Germany
Filed June 16, 1965, Ser. No. 464,383
Claims priority, application Germany, June 18, 1964, L 48,076
10 Claims. (Cl. 199—13)



1. In a matrix setting and line casting machine for casting lines of types of either large or small size, in combination, a movable mold for casting said line of types, said mold being movable between a casting position for casting a line of types therein and an ejecting position for ejecting the cast line of types; magazine means containing matrices of different size corresponding to cast lines of types of different size, said matrices being adapted to be transferred into casting position to said mold so that a line of types of desired size may be cast in said mold and ejected after casting; time delay means being automatically activated when a magazine containing large size matrices is transferred into casting position; moving means for moving said mold in timed sequence from said casting position after a line of types has been cast therein to said ejecting position and back to said casting position; and means connected with said moving means and cooperating with said time delay means for delaying

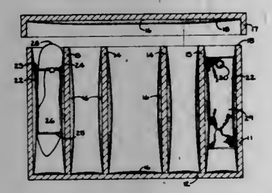
movement of said mold from said casting to said ejecting position when large size matrices have been transferred to said mold for casting a line of large size types.

3,300,037
RUPTURABLE CONTAINERS
Vincent J. De Santis, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 7, 1961, Ser. No. 122,487
12 Claims. (Cl. 206—.4)



11. A hermetically sealed metal container containing a fluid to be released at elevated temperatures, and a dissimilar metal attached to the outer surface of an imperforate wall portion of said container to provide upon heating an alloy with the metal of said container, said alloy having a melting point lower than the melting point of any constituent thereof, the melting of said alloy causing release of fluid from said container.

3,300,038
SHOE STORAGE AND TRANSPORTATION CONTAINER
Germaine Theberge and Fernand Theberge, both of 202—939 19th St. SW., Calgary, Alberta, Canada
Filed May 28, 1965, Ser. No. 459,869
7 Claims. (Cl. 206—7)



1. A shoe storage and transportation container comprising in combination a substantially cylindrical outer enclosing wall and a base panel spanning said wall, at least one cylindrical inner wall concentrically situated within said container and extending upwardly from said base to adjacent the upper end of said outer wall, said outer wall and said inner wall defining a shoe carrying channel, a plurality of shoe hanging elements spanning said channel and a lid for said container, and padding material upon the inner surface of said outer wall, the outer surface of said inner wall, the inner surface of said base, and the inner surface of said lid.

3,300,039
MULTI-USE CONTOUR DISPLAY CARTON
Nicholas J. Pilger, Thousand Oaks, Calif., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 11, 1965, Ser. No. 478,815
5 Claims. (Cl. 206—45.31)

5. A multi-use merchandising and display carton comprising

relatively wide and elongated front and rear walls, connected along their longitudinal margins by narrow side walls and provided with infolded end flaps at each end of said front and rear walls,

said front wall having thereon a plurality of spaced panes integrally formed with said front wall and bearing respectively differing product-information indicia thereon,

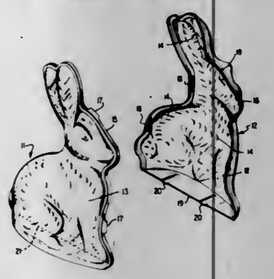
each said indicia pane being peripherally defined by a line of separation forming a closed loop to permit removal from said front wall of all indicia panes other than a pane bearing selected product-information specifically related to the carton contents and prior to merchandising of said carton,



said separation lines associated with unwanted indicia panes defining after rupture viewing apertures through said front wall for contents inspection,

said carton end flaps each being connected to the adjacent wall by inwardly arcuate fold lines and each terminating in an outwardly arcuate edge in engagement with the other wall to impart to said front and rear walls outwardly bowed configurations to rigidify said carton including said front wall notwithstanding the plurality of view apertures therein.

3,300,040
TOY CONTAINER
John Robert Ferguson, 104 Orchard Ave., Belle Vernon, Pa. 15012
Filed Apr. 13, 1964, Ser. No. 359,044
1 Claim. (Cl. 206—46)

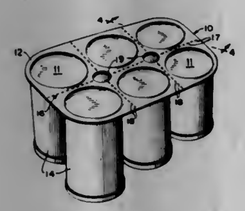


A combined molding and container device formed to resemble a figure and capable of being used as a toy, comprising two transparent mating sections having relatively smooth outer surfaces and having the over-all configuration of the shape of said figure when fitted together, each of said sections containing a flange member around its periphery, means disposed on said flange members adapted to secure said sections together, the inner surfaces of said sections formed with integral intricate design configurations which define the more intricate design of said figure, and a colored material molded on said inner surface and removably contained and viewable within said device having the over-all shape of the figure and having said design configurations imprinted on its surface.

3,300,041
MULTI-CAN PACKAGE
Ray A. Fuller, 2776 Kennedy Blvd., Jersey City, N.J. 07306
Filed Dec. 10, 1965, Ser. No. 512,957
1 Claim. (Cl. 206—65)

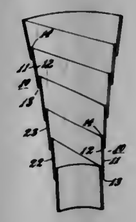
A holder for a plurality of similar cylindrical cans, each of which is provided with a depressed flat top within an annular bead disposed about the upper end thereof, said holder being adapted to secure said cans together in

spaced parallel longitudinally and transversely extending rows and comprising; a thin flat sheet of relatively stiff material; a plurality of similar saucer shaped depressions which are formed in said sheet and are arranged in spaced parallel longitudinally and transversely extending rows, said depressions being adapted to be seated within the beads about the upper ends of said cans with the bottom surface of said depressions in engagement with the flat tops of said cans and the bottom surface of said sheet between said depressions in contact with the upper edge of said beads; the bottom surface of said depressions being provided with a strong adhesive by which the tops of said cans are securely bonded to the bottom surface of said depressions; said sheet being provided with a



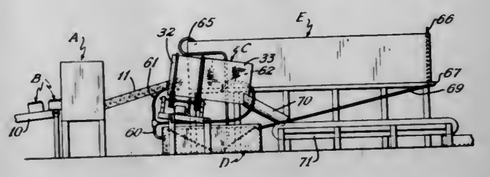
longitudinally extending perforated score line between contiguous longitudinal rows of depressions and transversely extending perforated score lines between contiguous transversely extending rows of depressions whereby individual sections of said sheet may be separated from said sheet together with a can secured thereto and used as a coaster for the said can secured thereto; and a pair of longitudinally spaced apertures in said sheet one of which is disposed at the intersections of said longitudinally extending score line and one of said transversely extending score lines and the other of which is disposed at the intersection of said longitudinally extending score line and another of said transversely extending score lines, said apertures constituting finger grips for carrying the plurality of cans secured to said sheet.

3,300,042
RESILIENT UNITS
Henry D. Gordon, 6601 Marsden St., Philadelphia, Pa. 19135
Filed July 30, 1964, Ser. No. 386,339
16 Claims. (Cl. 207—62)



1. A resilient unit comprising in its entirety a one-piece ribbon of resilient material coiled upon itself and forming a generally frusto-conical hollow body having an axis and formed of end turns connected by generally helical axially overlapping turns, one at least of said helical turns having an angle between diametrically opposite internal faces different from the angle between diametrically opposite internal faces of a contiguous turn, one of said end turns comprising a substantial cylinder.

3,300,043
APPARATUS FOR SEPARATING CRUSHED BATTERY PARTICLES
Frank D. Adsit, 1834 Orange Ave. E., St. Paul, Minn. 55119
Filed Nov. 26, 1965, Ser. No. 509,960
6 Claims. (Cl. 209—10)



1. A lead recovery apparatus for use in recovering the lead from prebroken storage batteries, the apparatus including:

an inclined rotatable cylinder having an imperforate upper end and a perforate lower end,

a spiral rib within said imperforate cylindrical portion and operable upon rotation of said cylinder to move heavy lead portions toward and through the upper end of said cylinder, feed means extending into said cylinder for depositing the prebroken batteries intermediate the ends of the imperforate portion of said cylinder,

an oppositely spiraled rib within said perforate cylindrical portion designed to direct material from the lower end of said cylinder upon rotation thereof,

a spray within said cylinder to wash smaller pieces of lead through said perforate cylinder portion, and

a tank beneath said cylinder to receive liquid and small particles of lead therefrom.

3,300,044
METHOD OF AND APPARATUS FOR SORTING COILED ARTICLES
Mieczyslaw Budzich, Dundalk, and Edwin C. Hardesty, Perry Hall, Md., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 3, 1964, Ser. No. 415,696
14 Claims. (Cl. 209—81)

1. A system for sorting defective spring cords from nondefective spring cords as the cords advance past successive system stations, each cord being formed with coils and having two ends which include connected pairs of cord terminals, the system comprising:

a conveyor moveable past the stations in one path, clamping mechanism mounted on said conveyor for selectively clamping and releasing connected terminals of a cord, said clamping mechanism being composed of an electrically conductive material so that an electrical connection is provided between said clamping mechanism and the terminals held thereby,

signal means mounted on said clamping mechanism and actuatable to provide a signal indicating the presence of a defect in a cord carried by said clamping mechanism,

means at a first station moveable to intercept and extend the coils of a cord while the cord advances, the extension of the cord tensioning the terminals held by said clamping mechanism and facilitating a visual examination of the cord for defects,

means for holding the cord extended during further advancement of the cord from the first station for a predetermined distance in the direction of cord advancement,

means for driving said conveyor and said means for holding the cord extended at substantially the same velocity and in the same direction,

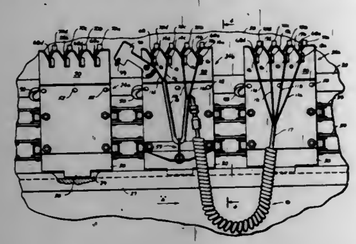
means at a second station located adjacent said one path for monitoring said signal means and producing a first signal in response to the actuation of said signal means, said signal means having been actuated when a defective cord is observed,

means at the second station located adjacent said second path and responsive to said first signal for releasing the said means for holding the cord extended so that the cord hangs freely suspended by the terminals thereof,

means at the second station operated by the last-mentioned means for producing a second signal when the cord loop is released,

clamping release mechanism located at the second station responsive to the second signal and located adjacent said one path for actuating said clamping mechanism so that a cord having an observed defect is released,

means at a third station adjacent said one path for testing the electrical continuity between connected terminals held tensioned by said clamping mechanism



and producing a third signal when a lack of electrical continuity between connected cord terminals is detected,

means connected to the last-mentioned means for actuating said signal means in response to said third signal,

second clamping release mechanism at a third station located further in the direction of advancement than said predetermined distance so that said means for holding a cord extended releases the loop after the continuity test is performed thereon whereby the cord hangs freely suspended by the terminals thereof, said second clamping release mechanism being responsive to the actuation of said indicator means for actuating said clamping mechanism so that a cord lacking electrical continuity between the connected terminals thereof is released, and

means at a fourth station located adjacent said one path for automatically actuating said clamping release mechanism so that the cord terminals of a nondefective cord are released.

3,300,045
CHARACTER READER DOCUMENT SORTER
John P. Beltz, Willingboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,499
5 Claims. (Cl. 209—111.7)

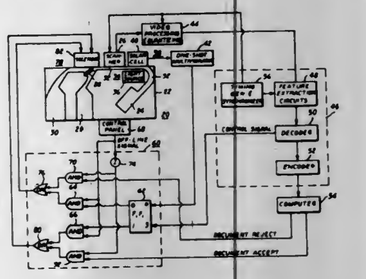
2. A character reader for reading characters printed on a document, the characters on all of said documents including printed control indicia, comprising in combination,

a transport mechanism for successively conveying said documents from an input feed station to a plurality of output stations,

said documents including selected ones having said control indicia marked so as to render said control indicia unrecognizable by said character reader,

a scanner mounted on said transport mechanism intermediate of said input and output stations for scanning the characters printed on said document to derive character feature signals and control indicia signals,

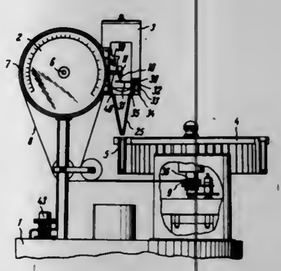
character recognition means coupled to said scanner for generating a recognition signal when said control indicia is recognized on a document and a nonrecognition signal when said control indicia is unrecognizable, and



gate means mounted on said document transport for directing into a first output receive station documents for which a recognition signal is generated and into a second output receive station documents for which a nonrecognition signal is generated,

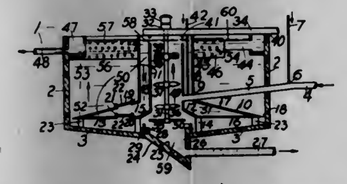
whereby the printed documents are sorted into two groups by rendering the control indicia on selected documents unrecognizable.

3,300,046
DEVICE FOR GRADING LOOSE-MATERIAL GRANULES BY WEIGHT
Avraam Moiseevich Zarkhin and Galina Vasiljevna Judina, Moscow, U.S.S.R., assignors to Uesojuzny Nauchno-Issledovateljsky Institute Burovoi Tekhniki, Moscow, U.S.S.R.
Filed July 8, 1964, Ser. No. 381,266
4 Claims. (Cl. 209—121)



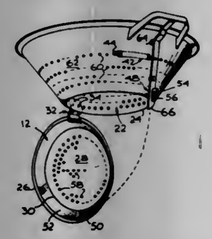
1. A device for grading granules according to their weight, said device comprising a torsion balance for weighing each granule separately, pneumatic feed means for feeding granules to said torsion balance one-by-one, means for acting on said torsion balance to discharge a granule therefrom after such granule is weighed, a rotatable table positioned beneath the torsion balance for receiving granules therefrom one-by-one, said table having separate compartments therein for the classification of granules according to their weight and means for rotating the table in correspondence with measurement of the weight of a granule in the torsion balance to position that compartment of the table corresponding to the weight of the weighed granule beneath the torsion balance.

3,300,047
TRULY VERTICAL FLOW UPFLOW TANK WITH COMPLETE VOLUMETRIC TRANSIT FOR WATER AND WASTE TREATMENT
Abraham Adler Hirsch, 141 Norwood St., Shreveport, La. 71105
Filed May 5, 1966, Ser. No. 547,902
10 Claims. (Cl. 210—197)



1. An upflow treatment-settling tank combination for water or other liquids arranged for truly vertical currents within its settling zone and uniform distribution of stream lines over the entire cross section thereof comprising an outside wall, a sloping floor, a sump at the center of said floor, curbs on the top of said sump, a desludging pipe connected to the bottom of said sump, a central riser tube which receives influent near its bottom, agitators and impellers suspended in said riser tube on a drive shaft, a flare at the bottom of said riser, ports near the top of said riser tube for passage of the mixture of the liquid and recirculated slurry into an annular space between said riser and a downdraft duct surrounding the riser tube, an outwardly sloping skirt at the bottom of said downdraft duct and extending to near the periphery of said tank, distributing means in said sloping skirt for equalizing the upflow of liquid into a sludge release zone immediately thereabove, a false floor underneath said sloping skirt extending to said flare of said riser tube, selective means in said false floor to regulate relative amounts of liquid-slurry mixture passing through said sloping skirt and said false floor for recirculation, piers under the intersection of said skirt with said false floor for support, piers under the intersection of said false floor with said flare of said riser for support thereof, removable manways in said skirt and said false floor for purpose of inspection, means to collect clear effluent at the top of said tank, inclined V-shaped orificed effluent baffle means under said effluent collection means to train currents within said settling zone and a circumferential manifold to gather effluent from said effluent collection means and drain the same through an effluent conduit.

3,300,048
COLANDER
Samuel Pollock, Los Angeles, Calif. (12941 Correnti St., Pacoima, Calif. 91331)
Filed Apr. 8, 1964, Ser. No. 358,267
5 Claims. (Cl. 210—232)



1. A colander comprising:

a tapered main body member having top and bottom rims defining concentric circular top and bottom openings and provided with manually graspable handle means adjacent said top rim, said top opening being relatively large for receiving therethrough a mixture of liquid and solid contents, said bottom opening being substantially smaller than said top opening, said body member being provided with a plurality of holes for liquid filtering;

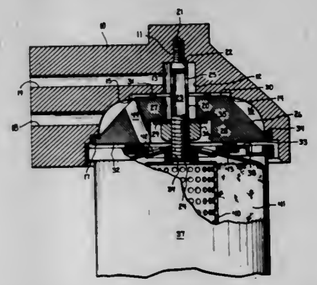
a base closure member having a circular base rim of sufficient diameter for stable support and a flat circular upper surface plate portion, said surface plate portion having a diameter substantially the same as said bottom opening for closed engagement therewith and being provided with a plurality of holes for liquid filtering;

hinge means pivotally securing one side of said base closure member to said main body member;

latch means pivotally mounted on said main body member in normally retained engagement with another side of said base closure member and selectively manually actuatable for release of said base closure member, said latch means comprising a lever arm member having an upper end thereof adjacent said handle means for manual operation and a lower end thereof provided with a shoulder, said base closure member having a slot for receiving said shoulder in interference retention of said base closure member; and

spring means attached between said body member and said lever arm member for normally urging and maintaining said shoulder in such interference retention of said base closure member.

3,300,049
OIL FILTER ADAPTER KIT
William E. Hardcastle, 11 W. Main St., Mooresville, Ind. 46158
Filed Oct. 14, 1964, Ser. No. 403,734
2 Claims. (Cl. 210—232)



2. In combination with an engine part formed to provide a threaded socket, a pocket coaxially communicating with said socket and having a diameter larger than that of said socket, a counterbore coaxially communicating with that end of said pocket remote from said socket to define a floor for a radially enlarged cavity opening away from said pocket, and an outwardly facing shoulder circumscribing the mouth of said cavity, said engine part further being formed with a first passage communicating with said pocket and with a second passage communicating with said cavity; a filter kit comprising a stud having a body whose diameter is less than that of said pocket and having a reduced, threaded extension at one end threadedly seated in said socket, said stud being formed with an axial bore opening through the other end of said stud and further being formed with a lateral port communicating with said pocket, a frusto-conical block having an axial bore therethrough, said block being positioned in said cavity with its smaller end facing said cavity

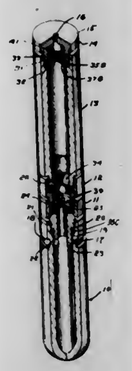
floor, gasket means disposed between said floor and said smaller end of said block and circumscribing said pocket and said block bore, said block bore being internally provided with a shoulder facing the larger end of said block, said stud extending through said block bore and beyond the larger end of said block and being threaded, a gasket sleeved on said stud, a nut threadedly mounted on said stud and pressing said gasket sealingly against said internal shoulder, further sealing means gripped between the larger end of said block and said outwardly facing shoulder, a disposable filter unit having an end wall provided with an axial, threaded port and with an eccentric port, said threaded port receiving the extending end of said stud to mount said filter unit with said end wall in facing relation to the larger end of said block, and a further gasket means sealingly disposed between said larger end of said block and said filter unit end wall and circumscribing said filter unit end wall ports, said block further being formed with a passage opening through the frusto-conical wall of said block into communication with said cavity and through the larger end of said block into communication with said filter unit end wall eccentric port within the region circumscribed by said further gasket means.

3,300,050
FILTER UNIT
Albert N. Perry, Gastonia, N.C., assignor to Wix Corporation, Gastonia, N.C., a corporation of North Carolina
Filed Aug. 23, 1965, Ser. No. 486,257
6 Claims. (Cl. 210—234)



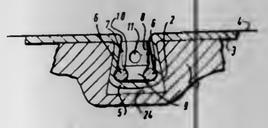
1. A filter unit for fuel dispensing apparatus, the apparatus having a pump, a discharge conduit connected to the pump, and a flow controlling valve at the outlet of the discharge conduit, said unit comprising a housing for disposal between the discharge conduit and the flow controlling valve, the housing having end portions, a removable filter media receivable in the filter housing for filtering contaminants from the fuel flowing therethrough, the filter media having end caps thereon, one end cap having a depression therein, valve means within the housing comprising a plate adjacent one end portion and having flow openings therein, a valve closing the flow openings of the plate, the plate having another opening therein inwardly of the flow openings, the valve having a stem secured thereto, the stem extending through the other opening of the plate and being guided thereby, the stem being engaged by the depression of the end cap when the filter media is in the housing to maintain the valve open thus allowing the flow of the fuel through the housing and the flow-controlling valve.

3,300,051
FILTER TUBE FOR USE IN A CENTRIFUGE
David F. Mitchell, Tewksbury, Mass., assignor to International Equipment Co., Needham Heights, Mass., a corporation of Massachusetts
Filed Sept. 26, 1963, Ser. No. 311,731
8 Claims. (Cl. 210—339)



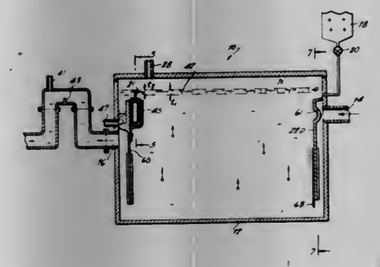
6. A filter tube for use in a centrifuge, said tube comprising a receiver section, a reservoir section having an air inlet and at least two intermediate filter sections, the outlet ends of said filter and reservoir sections each including threaded portions of reduced diameter, the outlet end of the filter section that is proximate to the receiver section also including an end portion dimensioned to fit freely and extend into said receiver section, the inlet ends of said receiver and filter sections being of increased inside diameter and threaded to receive the appropriate threaded portion and to provide an internal, annular shoulder, said receiver section being closed at its bottom end and having a laterally opening vent adjacent its shoulder beyond which said filter end portion extends, and a filtering and sealing unit clamped against each filter shoulder by the appropriate outlet portion.

3,300,052
FILTER APPARATUS
Georg Andreas Steintvelt, Eitrheim, Odda, Norway, assignor to Porritts & Spencer Limited, Helmshore, Rossendale, Lancashire, England, a British company
Filed Feb. 25, 1964, Ser. No. 347,221
7 Claims. (Cl. 210—402)



1. A perforate filter drum of the type which is clothed externally with flexible filter sheet material comprising a drum provided with circumferentially spaced axial grooves of outwardly converging dovetail cross-section, a pair of rods in each of said grooves holding the filter sheet material therein and spacers between the rods of each pair to hold the rods apart at opposite sides of the groove, said spacers being notched to receive the rods at opposite sides thereof.

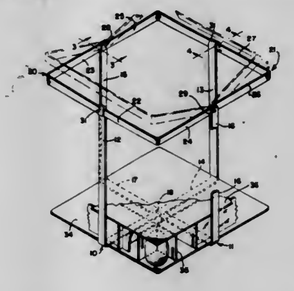
3,300,053
FLUID SEPARATING DEVICE
Melville F. Peters, 29 Northridge Road, Livingston, N.J. 07039
Filed Apr. 8, 1964, Ser. No. 358,212
6 Claims. (Cl. 210—519)



1. A fluid separator for separating a lighter fluid from a heavier fluid comprising, a tank to receive said fluids for a time interval to permit the lighter fluid to rise above the heavier fluid to form a top layer, an inlet conduit connected to the tank for conveying fluid mixtures into the tank, baffle means adjacent to the inlet conduit to direct the mixture of fluids toward the bottom of the tank, a first outlet conduit connected to the tank for conveying the heavier fluid from the tank, said outlet conduit being connected to the tank at a point below the predetermined operating level of the heavier fluid, baffle means adjacent to the first outlet conduit to admit fluid to the outlet conduit only from the bottom portion of the tank, a second outlet conduit adjacent to the top of the tank for conveying the lighter fluid from the tank, a first horizontal barrier in said first outlet conduit which passes the heavier fluid only when the height of the heavier fluid within the tank is above the first barrier level, a second adjustable horizontal barrier in the tank and adjacent to the second outlet conduit which passes the lighter fluid into the second outlet conduit only when the lighter fluid level is above the second barrier level, said first horizontal barrier being disposed at a level below the second horizontal barrier, said barriers being spaced from one another a vertical distance within which the bottom surface of the lighter fluid rests on the top surface of the heavier fluid when the levels of the fluids are at their predetermined operating heights, and means for adjusting the height of said second adjustable horizontal barrier in a vertical direction comprising an elastic container connected by a tube to a source of variable pressure external of the tank, said elastic container being adapted to raise and lower the second barrier in response to the pressure within the container.

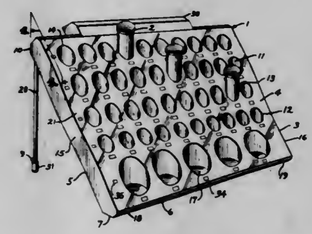
3,300,054
EGG RACK
James E. Halverson, Dallas, Wis. 54733
Filed Apr. 22, 1965, Ser. No. 450,047
4 Claims. (Cl. 211—14)

1. An egg rack comprising:
(a) two U-shaped vertical frames each having
(b) spaced vertical uprights with
(c) horizontal cross bars between the lower ends thereof,
(d) pivot means between the cross bars of said frames guiding said frames for movement from a nested position to an extended position,
(e) the cross bar of one of said frames being shorter than the cross bar of the other frame to accommodate nesting of the frames,
(f) two U-shaped horizontal frames having
(g) spaced horizontal legs with
(h) connecting portions between corresponding ends of said horizontal legs,
(i) the connecting portion of one of said horizontal frames being shorter than the connecting portion of the other frame to accommodate nesting of the horizontal frames,



(j) pivot means between the inner ends of the horizontal legs and the upper ends of the uprights of one of said vertical frames and
(k) egg supporting means carried by said horizontal cross bars of said vertical frames.

3,300,055
RACK
Joseph H. Rohr, 6115 Martway, Mission, Kans. 66202
Filed Dec. 14, 1964, Ser. No. 418,221
2 Claims. (Cl. 211—74)

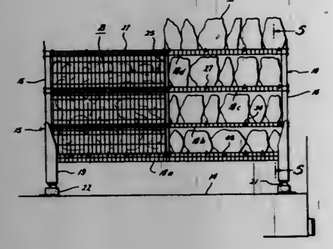


1. A support rack for vials positioning same for ready visibility and accessibility comprising,
(a) a platform having a substantially flat upper surface and a plurality of open top vial receiving cavities extending into said platform at an angle to said upper surface, said cavities terminating in a bottom surface spaced below said platform upper surface,
(b) said platform being generally rectangular with opposed ends and opposed sides with said cavities being arranged in rows with a plurality in each row and a plurality of rows extending across said platform generally parallel with the sides thereof,
(c) said platform having elongate recesses extending substantially from side to side and spaced between the platform end and adjacent cavities,
(d) leg members in said recesses with one end of each pivotally connected to the platform adjacent one side with the other end of the legs adapted to swing downwardly and engage a supporting surface to hold said platform with the upper surface inclined and the legs extend from the platform generally at the angle of the cavities relative to the upper surface whereby the inclination of the platform positions the bottom of the cavities in horizontal planes and the cavities arranged to hold the vials positioned therein substantially vertically, the inclined arrangement of the upper surface of the platform positioning the rows of cavities at different elevations whereby the

next adjacent rearward row of vials is at a higher elevation than the next forward row for visibility and accessibility of the vials,

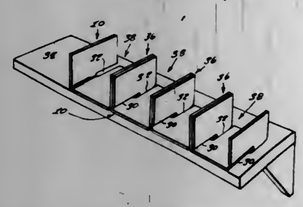
(e) and resilient clip members in each recess adjacent said one side of the platform for engaging the respective leg when in a downwardly swung position to retain the leg in its platform supporting position.

3,300,056
MULTI-SHELF RACK
Arthur H. Kaspar, % Kaspar Wire Works, Shiner, Tex. 77984
Filed Mar. 29, 1965, Ser. No. 443,414
12 Claims. (Cl. 211—134)



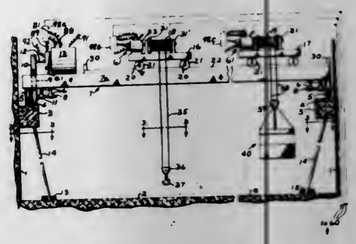
1. A multi-shelf rack, comprising an upright frame having spaced side walls and a means connecting the side walls, a generally horizontal lower wall connected to the frame for extension laterally between the side walls to provide a lower shelf, at least one additional wall extendible laterally between the side walls for movement between a position in which it is generally horizontal and spaced above the next lower wall and another position in which it depends across the front of the frame above said next lower wall, and means for alternately releasably maintaining each said additional wall in its generally horizontal position to provide an upper shelf and locating it in its depending position so as to close said front of the frame.

3,300,057
SHELF ORGANIZER
John A. Wheaton, R.F.D. 3, Huntington, N.Y. 11743
Filed Apr. 13, 1965, Ser. No. 447,698
1 Claim. (Cl. 211—184)



In a shelf organizer, the combination of a plurality of units, said units having means for being interfitted along a linear plane to form a singular assembly and each of said units having upstanding transverse extending walls to form dividing partitions for a shelf upon which said assembly of units is adapted to be placed, each of said units comprising a U-shaped body member having parallel spaced apart flat upstanding end walls and an interconnecting wall therebetween, a right angle bend between each of said walls, each of said end walls having a top edge, a front vertical edge and a rear vertical edge, said interconnecting wall having a horizontal front edge and rear edge, each of said bends having a slot along the apex of said bend, one of said slots extending from a rear edge and the other of said slots extending from a front edge, and both said slots extending to a midpoint between said front and rear edges to provide a means for interfitting said units.

3,300,058
CRANE CONSTRUCTION
Ray Wilson, Rte. 1, West Alexandria, Ohio 45381
Filed Nov. 13, 1964, Ser. No. 410,892
4 Claims. (Cl. 212—10)



1. In combination with a traveling crane having supporting means movable back and forth in a first direction: track means mounted on said supporting means for movement therewith in said first direction and extending in a direction transverse to said first direction, first and second separate carriage means movable on said track means, load engaging means suspended from said first carriage means, an operator's cab suspended from said second carriage means, first motor means for moving said first carriage means back and forth on said track means and for lifting and lowering said load engaging means suspended therefrom, and second motor means for moving said second carriage means back and forth on said track means and for lifting and lowering said cab, said first and second motor means being independent of each other so as to permit independent movement of said two carriage means relative to each other on said track means and to permit independent movement of said load engaging means and said cab relative to each other in vertical direction and separate control means for said motor means located in said cab, so that an operator may maneuver his cab and load to bring his cab into proximity to the load engaging means and in the most advantageous position for control of the load engaging means.

3,300,059
BALE STACKING MACHINE
Donald M. Grey, Fresno, Calif.
(12739 S. Bethel, Selma, Calif. 93662)
Filed Apr. 12, 1965, Ser. No. 447,576
12 Claims. (Cl. 212—35)

8. An extensible boom comprising:

(a) an elongated outer sleeve;

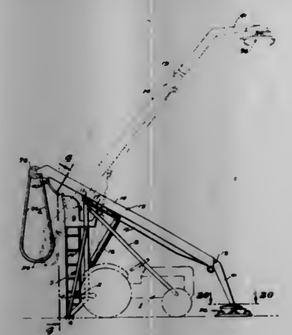
(b) an elongated inner sleeve telescopable within the outer sleeve;

(c) a hydraulic cylinder and a shaft extensible from said cylinder and secured to said inner sleeve to extend and retract said inner sleeve, said cylinder secured to one end of said outer sleeve and extending to the other end thereof within said inner sleeve;

(d) bearing means at the extended end of said cylinder movable on the inner surface of said inner sleeve to permit extension and retraction of said inner sleeve;

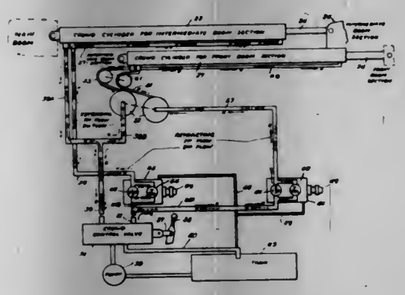
(e) other bearing means longitudinally movable on said shaft and also longitudinally movable within said inner sleeve, said bearing means forming a support for said shaft to restrain said shaft against buckling;

(f) and means for limiting movement of said other bearing means to



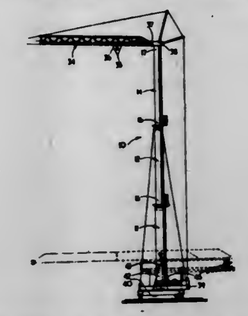
occupy a position at the midportion of said shaft when said inner sleeve is fully extended.

3,300,060
BOOMS WITH SEQUENTIAL HYDRAULIC EXTENSION
William J. Lado, Rome, N.Y., assignor to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 3, 1965, Ser. No. 430,221
6 Claims. (Cl. 212—55)



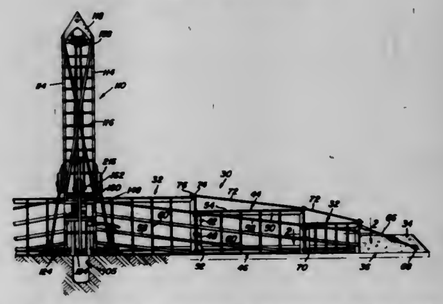
1. A telescopic boom including a forward telescopic boom section which telescopes within a stronger rearward telescopic boom section. both telescoping within a still stronger main boom; and a hydraulic boom-crowd system including a manually operable control valve, a first hydraulic cylinder means connected between the main boom and the rearward telescopic boom section, a second hydraulic cylinder means connected between the forward boom section and the boom section immediately rearward of it, both hydraulically connected by a hydraulic conduit system to the said valve to be controlled by the valve in one of its positions to extend the cylinder means and their respective boom sections, and by the valve in another of its positions to retract the same; and sequence valve means in said hydraulic conduit system to cause the second hydraulic cylinder means to remain retracted until the first hydraulic means is fully extended, and to cause the first cylinder means to remain extended until the second cylinder means is fully retracted; said sequence valve means automatically confining the flow for said cylinder means to flow to and from the first hydraulic cylinder means, generally except when said first hydraulic cylinder means is fully extended.

3,300,061
MAST
Joseph C. Bamford, Uttoxeter, England, assignor to J. C. Bamford (Excavators) Limited, Lakeside, Rocester, England, a British company
Filed July 20, 1965, Ser. No. 473,461
Claims priority, application Great Britain, July 23, 1964, 29,637/64
2 Claims. (Cl. 212—144)



1. A tower mast for a crane comprising a lower tubular section closed at its lower end, an intermediate tubular section open at both ends and slidable telescopically within the lower section, an upper tubular section closed at its top end and slidable telescopically within the intermediate section, means for supplying compressed air into the interior of the mast, a first annular sealing ring secured to the lower end of the intermediate section and having air tight sealing engagement with the interior of the lower section, a second annular sealing ring secured to the lower end of the upper section and having air tight sealing engagement with the interior of the intermediate section, there being an annular space between the lower and intermediate sections and between the intermediate and upper sections, and locking means for locking each two adjacent sections rigidly together located in said annular spaces, each such locking means comprising a set of locking plates secured in spaced apart circumferential relationship to the exterior of the inner tubular section of the two and a corresponding set of locking pieces slidably mounted in spaced apart circumferential relationship on the outer section of the two, each such locking plate having a recess engageable with one of said locking pieces.

3,300,062
LIFTING APPARATUS
Wilbur V. Myer, Rte. 4, Box 2, Sallisaw, Okla. 74955
Filed Jan. 25, 1965, Ser. No. 427,579
25 Claims. (Cl. 214—1)



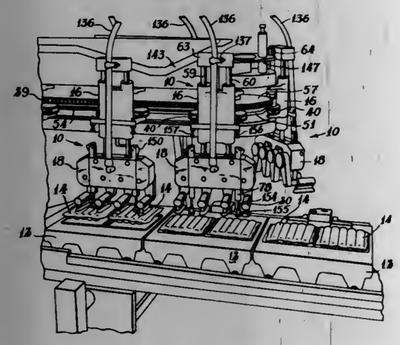
1. Apparatus for tilting up preformed walls from a horizontal position to a vertical erected position, said apparatus including a weight spreader unit and a cooperating lifting unit, said weight spreader unit comprising a plu-

rality of elongated generally planar vertically orientated sections, means for releasably interlocking said sections in longitudinal alignment with each other, said sections being positionable against a first edge of the horizontally positioned wall which corresponds to the top of the erected wall, means for fixing the lower portion of said sections to said first edge, and a vertically extending lift column rigidly fixed between adjacent sections at approximately the center of the spreader unit, said lift column including means adjacent the lower end thereof selectively engageable by the lifting unit for effecting a tilting up of the wall through a distribution of the lifting force throughout the length of the wall by the spreader unit.

3,300,063
VACUUM GRIPPING APPARATUS

Hans A. Jensen and Augustus H. Eberman, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 25, 1965, Ser. No. 427,875
15 Claims. (Cl. 214—1)



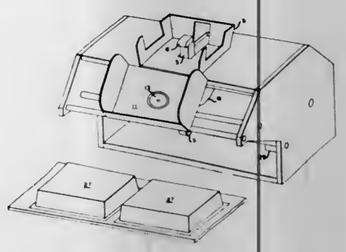
1. A vacuum gripping apparatus comprising in combination, a carriage and an associated head mounted for movement to and away from the carriage, a vacuum gripping pad mounted on said head, which paid is adapted and arranged to communicate with a source of vacuum, a slide valve movable in said head and adapted in a first positional relationship therewith for closing communication between said pad and the vacuum source and adapted in a second positional relationship with the head to establish communication between said pad and the vacuum source, an actuator engaged with said slide valve and arranged for physical contact with a surface to be gripped thereby to establish said second relationship of the slide valve with the head upon contact of the actuator with a surface to be gripped followed by contact of the pad with the surface, and means operable upon relative movement between said carriage and said head to disengage said actuator from said slide valve thereby to establish said first relationship of the slide valve with the head.

3,300,064
CONTAINER INVERTER

Herman W. Baer, Rochelle Park, N.J., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 31, 1965, Ser. No. 444,248
11 Claims. (Cl. 214—1)

6. An apparatus for inverting an open top container comprising means for pushing a container onto the platform, means for holding said container on said platform with suction, means for rotating said platform around one of its ends to invert said container, said rotating means comprising a reciprocatable member slidably attached to a first shaft, a cam surface attached to said first shaft to actuate the movement of said reciprocatable member, a cam follower attached to said reciprocatable member to follow said cam surface and actuate said reciprocatable member, an arm rotatably attached at one end of said reciprocatable member and rigidly attached on the other end to a second shaft so that reciprocating motion of said

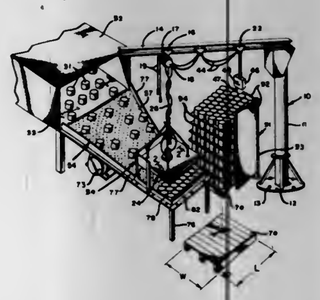


reciprocatable member is transferred to reciprocating rotatable motion of said second shaft, means operably connected to said second shaft for rotating said platform about one of its ends, and means for releasing suction on said container.

3,300,065
MEANS FOR MATERIAL HANDLING

Clinton Clark Witmer, San Jose, Calif., assignor to Tri-Valley Growers, San Francisco, Calif., a corporation of California

Filed July 18, 1963, Ser. No. 296,046
11 Claims. (Cl. 214—6)

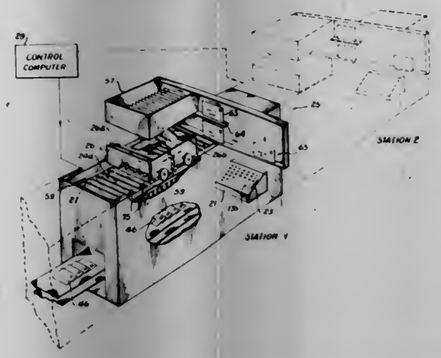


1. Apparatus for forming a plurality of objects such as cans or the like into a pattern in preparation for stacking in layers on a pallet, or the like, the apparatus comprising a plenum chamber having an inclined flat top plate formed with a plurality of holes therethrough, means pressurizing the plenum chamber to provide streams of air from the holes for the support of the objects on an air cushion, the top plate being of sufficient width and length to accommodate a plurality of objects thereacross and therealong, respectively, the slope of the top plate being sufficiently steep for sliding of the objects downwardly therealong on the air cushion but insufficiently steep for sliding of the objects therealong when the plenum chamber is not pressurized, means forming the objects into a substantially stationary pattern on the top plate at the lower end thereof, and means for feeding objects onto the top plate at the elevated end thereof, said objects being free to move across and down the top plate under the force of gravity and into a substantially stationary pattern at the lower end of the top plate in preparation for removal therefrom.

3,300,066
SORTING MACHINE PROVIDING SELF-OPTIMIZING INVENTORY REDUCTION

Seymour Henig, Kensington, and Ervin C. Palasky, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of Commerce

Filed June 21, 1963, Ser. No. 289,761
24 Claims. (Cl. 214—11)

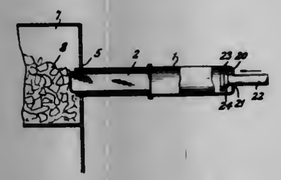


1. A machine for sorting articles randomly positioned in a supply source, each article being in a respective one of a plurality of categories, comprising: a plurality of sorting slots, means for generating a category code representing the category of each of said articles, means for depositing each article in a respective one of said slots, means for storing each category code, means for keeping a running inventory of each category code in the storing means, means for selecting a category code contained in the storing means in dependency upon said inventory, and means for discharging from said slots the articles related to the selected category code.

3,300,067
METHOD AND DEVICE FOR LOADING WASHING MACHINES

Lars O. E. Johansson, Alingsas, and Gustav Bertil Öström, Solna, Sweden, assignors to Forsvarets Fabriksstyrelse, Stockholm, Sweden

Filed Dec. 18, 1964, Ser. No. 419,453
Claims priority, application Sweden, Jan. 7, 1964, 98/64
7 Claims. (Cl. 214—17)

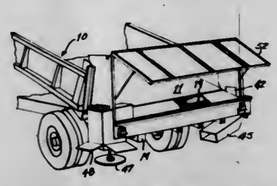


3. A device for loading a washing machine comprising a tube open at one end for insertion into the filling hole of a washing machine, a sack secured inside of the tube, said sack having an open end facing the open end of the tube and being closed at its opposite end, the tube having a fluid inlet at its rear end behind the closed end of the sack and through which inlet air or water under pressure is forced to thereby exert pressure on the closed end of the sack and on the clothes therein to consequently turn the sack inside out and cause the clothes to be ejected out of the sack and out of the tube and into the washing machine.

3,300,068
TAIL GATE ATTACHMENT

Fred K. Tarrant, Sr., 4 Excelsior Spring Ave., Saratoga Springs, N.Y. 12866

Filed Dec. 24, 1964, Ser. No. 421,045
1 Claim. (Cl. 214—83.36)

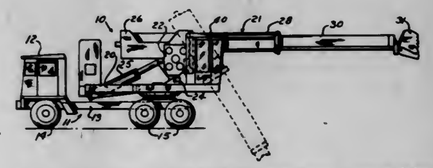


In combination a truck, a material conveying and spreading attachment, means eccentrically pivoting the attachment to the rear end of the truck at the bottom of the truck body, said attachment comprising a chute disposed transversely of the truck below the level of the truck platform, said chute having an apron at the bottom thereof, an endless conveyor in the chute having cross bars movable above the apron at the bottom of the chute and means in the chute including V-shaped bars on the apron extending longitudinally thereof for spacing the conveyor cross bars above the apron.

3,300,069
EARTH MOVING MATERIAL HANDLING MACHINE

Lester H. Kline, Dover, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 18, 1965, Ser. No. 440,751
12 Claims. (Cl. 214—141)



1. A mobile material handling machine comprising a carrier, a support platform carried by said carrier, a boom structure supported on said support platform and adapted to support a tool on the outermost end thereof means for moving at least a part of said boom structure in a predetermined path, and operator's cab supported on said support platform adjacent said boom structure, and means supporting said said operator's cab for movement from a first traveling position in which a part thereof is located in said path whereby said operator's cab interferes with the extent of movement of said boom structure to a second working position in which said operator's cab is located in a non-interfering relation with the movement of said boom structure.

3,300,070
VEHICLE FOR HANDLING BULK MATERIALS

Thomas Schwartz, 69 Bedford Place, Yardley, Pa. 19067

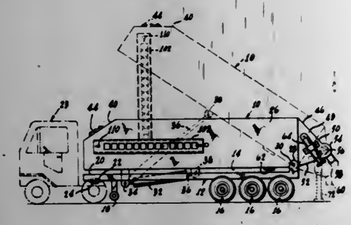
Filed Nov. 25, 1964, Ser. No. 413,878
3 Claims. (Cl. 214—508)

2. A wheeled container of the trailer type for transporting comminuted materials in bulk form, comprising:

(a) a wheeled chassis including a forepart adapted for connection to a tractor;

(b) a closed container body extending longitudinally of and supported upon the chassis, said body having a rear end portion provided with a discharge opening and a front end portion having a filler opening,

the body including a top wall the front end of which has an inclined surface in which said filler opening is formed, said body being pivoted on the chassis for movement between raised and lowered positions, said surface lying in a substantially horizontal plane as the highest part of the body in the raised position thereof;



(c) extensible supports mounted on the body rearwardly from its pivot axis and operable to extend downwardly into contact with the ground surface in the raised position of the container body; and

(d) means connected between the container body and chassis for moving the body between said positions thereof.

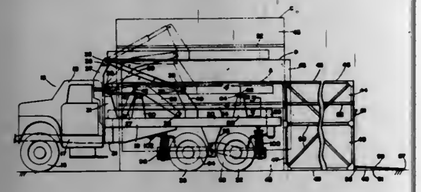
3,300,071

DETACHABLE CARGO BODY AND VEHICLE WITH ELEVATING MECHANISM FOR SAME

Harold Isaacs, University Heights, Ohio, assignor to Edith Isaacs, University Heights, Ohio

Original application Nov. 21, 1961, Ser. No. 153,975, now Patent No. 3,244,310, dated Apr. 5, 1966. Divided and this application Oct. 21, 1965, Ser. No. 500,059

6 Claims. (Cl. 214—390)



1. In a land vehicle, the combination of a detachable cargo body, a horizontally disposed U-shaped main support frame for said body, a horizontally disposed U-shaped lifting frame carried by said support frame and vertically movable relatively thereto, said frames having longitudinal side members defining an open end for passing said cargo body at ground level, means on said lifting frame for engaging said cargo body to effect vertical movement thereof, power means for actuating vertical movement of said lifting frame relatively to said main frame, ground-engaging wheels arranged in tandem wholly below said main frame within the marginal limits of each of the side members thereof and exteriorly of the marginal limits of said cargo body, a journal bracket depending from each side member of said main frame, a rear wheel beam pivotally secured at one end thereof to said bracket and extending rearwardly therefrom to connection with a rear shock-absorbing assembly, a front wheel beam pivotally secured at one end thereof to said bracket and extending forwardly therefrom to connection with a front shock-absorbing assembly, means rotatably securing one of said tandem wheels to said rear wheel beam intermediate its ends, and means rotatably securing the other of said tandem wheels to said front wheel beam intermediate the ends thereof, whereby each of said wheels is independently suspended, said wheels and said suspension means on each side of said vehicle being wholly below said main frame and within the marginal limits of a side member of said main frame.

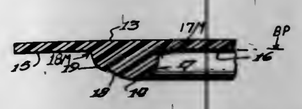
3,300,072

SEALING OF CROWN CAP BOTTLES

Enzo Caviglia, Crawfordsville, Ind., assignor to Hoosier Crown Corporation, a corporation of Indiana

Filed Oct. 21, 1965, Ser. No. 499,418

13 Claims. (Cl. 215—40)



1. A sealing liner for a crown cap for a narrow mouthed standard crown bottle which comprises a thin generally disc-shaped unitary element made of polyethylene having a tensile modulus from about 5,000 to about 40,000 pounds per square inch and a Shore-durometer hardness between about 20 and about 50, said element having a circular ridge on one surface thereof, spaced from the periphery of said disc-shaped element, said ridge having a slope on its inner surface which is steeper than the slope on its outer surface, and at least one shoulder on the outer surface of said ridge, said shoulder being of lesser height than said first-named ridge.

3,300,073

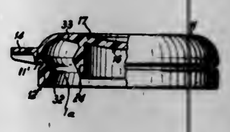
ELASTIC CLOSURE FOR A CONTAINER OPENING

Erwin Benz, Schillerstrasse 32, Neuhofen, Pfalz, Germany

Filed Dec. 3, 1964, Ser. No. 415,688

Claims priority, application Germany, Dec. 5, 1963, B 74,537; Mar. 13, 1964, B 75,890; Nov. 21, 1964, B 79,438

3 Claims. (Cl. 215—42)



1. A container closure of elastic material having an internal plug stopper portion for a container having a mouth with a peripheral groove adjacent said mouth comprising

(a) an initially sealable, removable and later reuseable cap part,

(b) a separable tamperproof guard ring part below said cap part having upper outer and lower outer edges,

(c) a weakened, inwardly recessed peripheral part interconnecting said cap and guard ring parts, said peripheral part having a wall strength substantially weaker than the strengths of the walls of said cap and guard ring parts,

(d) an annular bead on the inner wall of said peripheral part and extending into said cap and guard ring parts, said bead being adapted to sealably engage the deepest recess in a peripheral groove of a container sealable with a crown-cap and said bead dividing when said guard ring is separated from the cap part to leave part of the entire bead of the closure attached to the cap part,

(e) an opening lug integral with the periphery of said cap part and adapted so that when the lug is forced away from the container mouth the weakened peripheral part of the stopper tears, the guard ring part separates from the cap part, and the cap is removed from the mouth of the container.

3,300,074

BOTTLE CLOSURE

Walter Heubl, Wolfgangstrasse 89, Augsburg, Germany

Filed Feb. 15, 1965, Ser. No. 432,669

Claims priority, application Germany, Feb. 19, 1964, H 51,754

6 Claims. (Cl. 215—90)



1. An implement for opening and reclosing capped bottles, comprising:

a plug carrier having a pair of arms defining a bifurcate handle portion;

a sheet-metal covering rigidly engaging said arms and forming an extension of said handle portion;

and a terminal member integral with said covering, said member having an extremity adapted to bear upon a bottle cap and a projection located intermediate said extremity and said plug carrier, said projection being engageable with the lower rim of said cap for lifting same off its bottle upon a pivoting of said member about said extremity.

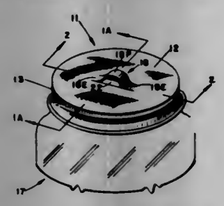
3,300,075

SUPPORTING CLOSURE COVER FOR A CONTAINER

Frank L. Dahl, 5248 W. 119th Place, Inglewood, Calif. 90304

Continuation of application Ser. No. 380,493, July 6, 1964. This application Dec. 1, 1965, Ser. No. 510,871

7 Claims. (Cl. 215—100)



1. A supporting closure cover for a container, comprising: a container closure cover having a top portion of thin-sheet deformable material and having container engagement means cooperable for engagement with respect to a container, said top portion being provided with a forcibly deformed and upwardly extending supporting means integral therewith and formed of said thin-sheet material of said top portion and cooperable for supported engagement with respect to an auxiliary substantially horizontally projecting cantilever-mounted supporting member whereby to support the container closure cover and a container adapted to be engaged therewith and to do so in a controllably removable manner with respect to an auxiliary substantially horizontally projecting cantilever-mounted supporting member, said upwardly extending supporting means integral with and formed of said thin-sheet material of said top portion of said container closure cover being positioned substantially vertically aligned with the vertical center of gravity line of said container closure cover and of a container when engaged therewith and removably supported thereunder, said upwardly extending supporting means having an intermediate projecting portion defining a substantially horizontally directed short through-passage extending from one side thereof to the opposite side thereof, said upwardly extending supporting means being shorter in the substantially horizontal direction of said through-passage than in a substantially horizontal direction transverse thereto so as to be capable of being easily threadedly moved onto and off of one end of an auxiliary substantially horizontally projecting cantilever-mounted supporting member with any tendency toward frictional binding produced by slight misalignment being substantially prevented by reason of the extremely short length of said through-passage.

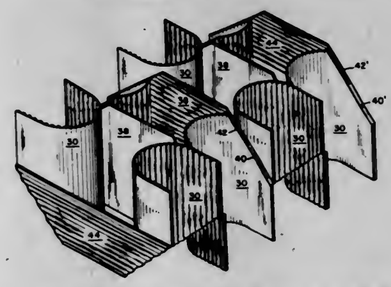
3,300,076

PARTITIVE STRUCTURAL UNIT

Kurt A. Wohl, Elmira, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Mar. 4, 1965, Ser. No. 437,108

22 Claims. (Cl. 217—23)



1. A one-piece blank adapted to form a spacer insert comprising, a plurality of panels arranged in oppositely oriented pairs transversely across said blank; parallel hexagonal sections intermediate said oppositely oriented panels; trapezoidal sections formed at each end of said blank; scorelines foldably connecting said trapezoidal sections and said hexagonal sections to said pairs of panels; and cut lines and scorelines separating portions of said hexagonal sections and said trapezoidal sections from said panels.

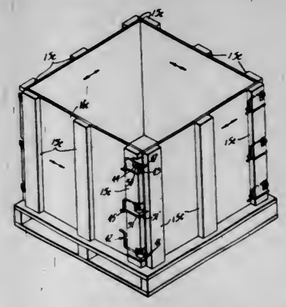
3,300,077

PALLET ENCLOSURE

David Rawle, Berwyn, Pa., assignor to Clinch-Tite Corporation, Berwyn, Pa., a corporation of Delaware

Filed Feb. 18, 1965, Ser. No. 433,738

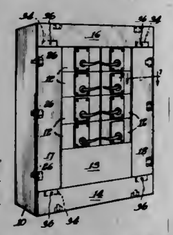
5 Claims. (Cl. 217—65)



1. In a pallet enclosure, a corner construction comprising a wall end and a wall face defined by adjacent first and second wall structures, said wall structures having respective connecting means adapted to interlock to bring said end and face into abutment and to rigidly define a hinging axis spaced in at least one predetermined sense from at least a portion of said end-to-face abutment, said axis and said end-to-face abutment co-

operating to lock said wall structures against hinging motion in the sense opposite to said predetermined sense, one of said connecting means comprising a rotatable member having a supporting shaft journaled in said wall structure and a locking portion at one end of said shaft, adapted to interlock with a corresponding locking portion of the other of said connecting means, said rotatable member being adapted to be rotated about said shaft between a locked position in which said locking portion of said rotatable member is interlocked with said corresponding locking portion and an unlocked position in which said locking portion can be removed from said corresponding locking portion.

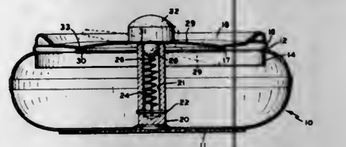
3,300,078
ENCLOSURE FOR ELECTRICAL PANELBOARDS AND THE LIKE
Harris I. Stanback, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Sept. 5, 1963, Ser. No. 306,890
6 Claims. (Cl. 220—4)



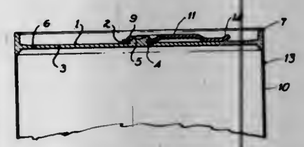
1. An enclosure for electrical panelboards and the like, said enclosure comprising an open-front box having a rear wall portion, a pair of opposed wall portions extending generally perpendicularly to said rear wall portion, and a front flange on one of said opposed wall portions, said flange being generally parallel to said rear wall portion and extending from a front edge portion of said one of said opposed wall portions toward the other of said opposed wall portions, and a self-clamping front trim panel removably securable to said flange merely by the placing of said front trim panel in assembled relationship with said flange, said front trim panel including a generally flat panel member, a bracket fixedly secured to an inner surface of said panel member, and an elongated resiliently deformable clamping strip member pivotally mounted between opposite ends thereof in said bracket, the placing of said front trim panel in assembled relationship with said flange resiliently deforming said clamping strip member and positioning a portion of said inner surface of said panel member in engagement with an outer surface of said flange, and one end portion of said clamping strip member bearing against an inner surface of said one of said opposed wall portions and the other end portion of said clamping strip member bearing against an inner surface of said flange when said front trim panel and flange are in assembled relationship, whereby said flange is clamped between said other end portion of said clamping strip member and said panel member.

3,300,079
ASH RECEIVER
Martin Berliner, Forest Hills, N.Y. (100 Water St., Brooklyn, N.Y. 11375)
Filed May 10, 1965, Ser. No. 454,363
2 Claims. (Cl. 220—20.5)

1. An ash receptacle including a bowl, a top plate with a central opening mounted on the bowl, a tiltable, self-centering dome-shaped closure plate within said opening and positioned in substantially the same plane as the opening and provided with lively means for restoring the plate to a horizontal position after tilting, said means including a hollow post mounted centrally in the bowl and formed with a flat annular horizontal seat at its upper end, a pilot element secured to the plate and closely fitting the bore in the post and a tension spring secured to the pilot element and also at the lower end of the bore to yieldingly clamp the plate against the flat annular seat of the post in a horizontal position.

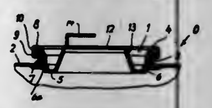


3,300,080
CONTAINER AND METHOD OF MAKING SAME
Frederick J. Close, Pittsburgh, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1964, Ser. No. 403,108
4 Claims. (Cl. 220—54)



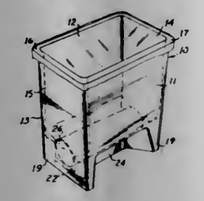
4. An impact extruded aluminum container, comprising:
a body having an integral side wall and end wall, said end wall provided with a score line to define a tear-out section,
an apertured opening tab attached to the said tear-out section by a solid headed rivet integral with the said end wall, and
an outwardly extending circumferential solid chime integral with the end wall and side wall, said chime being substantially perpendicular to the plane of the end wall and extending above the attached opening tab.

3,300,081
TEAR STRIP ARRANGEMENT FOR A CUP-SHAPED CLOSURE LID FOR CONTAINERS OF SYNTHETIC PLASTIC MATERIAL
Friedrich Muhlhoff, Arnimstrasse 105, Cologne-Bickendorf, Germany
Filed Sept. 8, 1964, Ser. No. 425,370
Claims priority, application Germany, Sept. 13, 1963, M 58,185
4 Claims. (Cl. 220—54)



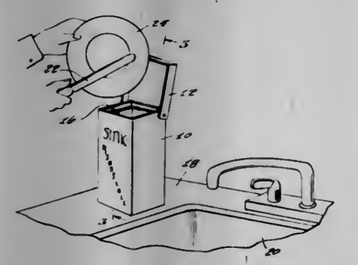
1. A container of synthetic material, particularly a container for oil, comprising a body having a top wall, means defining a filling opening in the top wall and a permanent cup-shaped closure lid for closing the filling opening after the container has been closed, said closure having a top wall, a tear-means for said top wall defined by a single circular groove in the wall, a tear strip on the top wall located adjacent said groove and a slit adjacent said tear strip communicating with said groove and extending inwardly toward the center of the top wall to permit the tear strip to be separated from the top wall for providing a pouring opening.

3,300,082
WASTE RECEPTACLE
Charles M. Patterson, 2411 Burnt Creek Road, Decatur, Ga. 30033
Filed Feb. 15, 1965, Ser. No. 432,632
6 Claims. (Cl. 220—65)



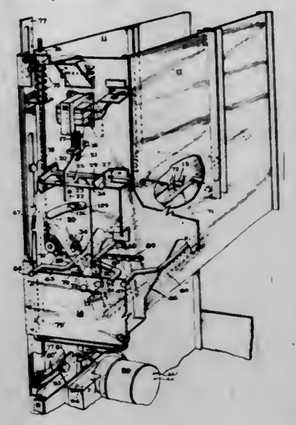
1. A waste receptacle comprising a container having an open end, a rim extending around said open end and generally rectangular side walls and end walls, said end walls forming a base at their ends remote from said rim, said side walls converging toward each other at their ends remote from said rim to form an interior bottom portion of said container, a compartment in the bottom portion of said container having a bottom wall generally parallel with the base of said end walls and side walls generally parallel with the side walls of said container, said compartment extending from one end wall to the other end wall, a plurality of bags having side wall portions approximately equal in breadth to the breadth of said container side walls and connecting pieces between said side wall portions approximately equal in breadth to the breadth of said container end walls, each said bag being of a height slightly larger than the length of a side wall of said container, said bags being connected in a series on a roll and said roll being positioned within said compartment.

3,300,083
GARBAGE DISPOSAL DEVICE
Charles Melvin Wright, 17 Rochelle Place, Staten Island, N.Y. 10312
Filed Mar. 22, 1965, Ser. No. 441,432
5 Claims. (Cl. 220—65)



1. A device for disposing of garbage comprising (1) a hollow rectangular container open at one end and including a front panel and a back panel with the front panel being appreciably lower than the back panel at said open end and further including side panels sloping upwardly, at their upper edges, from the front panel to the back panel, (2) a cover hinged to said container at the open end thereof in such manner that the cover can be moved into and out of open and closed positions, and (3) a carton hollow and open at one end placed removably in said container, the open end of said carton being positioned adjacent but below said cover with the edge of the carton whereat its open end is defined being higher than the edge of the front panel of said container at the open end of said container.

3,300,084
DISPENSING MECHANISM FOR ARTICLES IN FRONT TO BACK STAGGERED STACKS
Harry R. Payne, Chattanooga, Tenn., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,674
8 Claims. (Cl. 221—15)



1. In a mechanism for dispensing a single can at a time from two front to back staggered stacks of cans in a bin, two opposed can supports adjacent the lower end of the bin for said stacks mounted for downward rotary movement from an upper normal position to can releasing position and supporting in turn the lowermost cans of the stacks of cans in the bin, latch means for the supports mounted for oscillatory movement and engaging and holding the support engaged by the lowermost cans in the stacks of cans against downward rotation when the mechanism is in stand-by condition, two notches in said latch means, a latch normally engaged in one of said notches locking said latch means against movement, solenoid means for raising said latch from said notches and thereby releasing said latch means whereby the weight of the cans rotates the support beneath said two lowermost cans in the stacks downward toward can releasing position and moves said latch means beneath the other can support preventing downward rotation thereof, said latch then re-entering said one of said notches, a regulator for control of releasing said cans disposed beneath all of said supports in stand-by position for engagement by said supports, means actuated with the release of said latch for controlled movement of said regulator in the paths of movement of said supports while maintaining engagement between the rotating support and said regulator, means carried by said latch means for retaining one of said released cans in the mechanism, said other released can being dispensed, and said solenoid means releasing the retained can for dispensing when next energized, said latch being raised and then entering the other of said notches.

3,300,085
DISPENSER FOR FLEXIBLE STRIPS
George G. Simor, 4619 August St., Los Angeles, Calif. 90008
Filed Oct. 22, 1965, Ser. No. 501,380
12 Claims. (Cl. 221—41)

1. A dispenser for strip material comprising
an elongated housing adapted to receive a plurality of superimposd flexible strips,
an actuating member movable toward one end of said housing, said housing having support means opposite said actuating member for supporting said superim-

posed flexible strips, said support means defining a recess therein,

said actuating member being engageable with the uppermost one of said superimposed strips for moving said uppermost strip therewith toward said end of said housing, and deflecting said superimposed strips into said recess for bending said strips to facilitate the separation of said uppermost strip from the remainder of said strips,

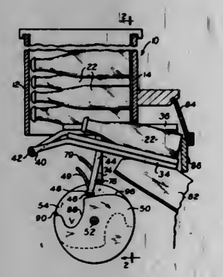


said housing having an outlet opening at said end, an inclined surface at said end leading to said opening,

whereby upon said movement of said actuating member said uppermost strip is brought into engagement with said inclined surface and directed to said opening,

and guide means at said opening for imparting an arcuate contour to said uppermost strip at said opening for thereby increasing the rigidity of said uppermost strip.

3,300,086
VENDING MACHINE WITH COORDINATED PACKAGE HOLDERS
Leonard J. Wood, 135 Patricia Place, Clifton, N.J. 07012
Filed Nov. 5, 1964, Ser. No. 409,132
8 Claims. (Cl. 221—67)



1. In a vending machine having

(a) a feed column container wider than packages that are to be dispensed by the machine whereby the packages are in staggered relation in the column container,

(b) feed mechanism at the bottom of the column container in position to receive the lowermost package from the column,

(c) a delivery chute,

(d) the feed mechanism including two package holders, one under each of the staggered portions of the column, and each movable between a raised position for supporting the column of packages, and a lowered position that locates the lowermost package on the holder at the delivery chute,

(e) a different actuator for each of the package holders,

the improvement which comprises,

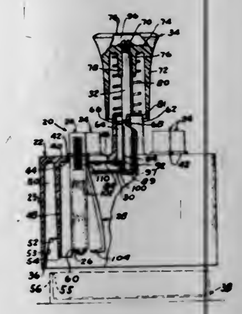
(f) each of the actuators including a displacement device that gently moves the column-supporting holder downward until the column rests on the other holder and that continues the downward movement of the lowermost package to an escrow position, and that then moves the lowermost package at a rapid rate to lowered position at the delivery chute,

(g) an abutment forward of the lower end of the feed column container for retaining a package in escrow position against movement into the delivery chute,

(h) a normal position of the machine being with one holder supporting the lowermost package in escrow position and the other holder supporting the rest of the packages,

(i) and cycling means for moving, on each operation of said cycling means, one holder from escrow position to lowered position and back to raised position while the other holder moves from raised to escrow position.

3,300,087
ARTICLE DISPENSING MAGAZINE AND A DISPENSER WITH REMOVABLE MAGAZINES
Norbert T. Kuypers, Warren, Mich., assignor to Difco Laboratories, Incorporated, Detroit, Mich., a corporation of Michigan
Filed May 4, 1965, Ser. No. 453,058
24 Claims. (Cl. 221—93)

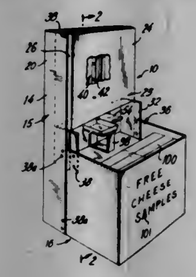


1. A multiple-disc dispenser comprising a stand, a plurality of hollow guides supported in an upright position by said stand, each said guide having an opening, an ejector carried by each said guide for movement thereon, means for retaining a stack of discs in each said guide with the outermost disc positioned adjacent the opening thereof, a manually operable actuator movably supported by said stand, said actuator being movable to move said ejectors across said openings to displace the outermost discs from said stacks, each of said guides comprising a tube and said ejector for each said tube comprising a lever extending longitudinally of the tube, said actuator including a member supported by said stand for movement longitudinally of said tubes and means operably connected to said member for moving the same to move the ejector levers.

3,300,088
MERCHANDISING DISPLAY WITH SAMPLE DISPENSING MEANS
Anshel Steier, David Steier, and Meyer Steier, all % Hickory Smoked Cheese Corp., 41 Harrison St., Brooklyn, N.Y. 11213
Filed Nov. 27, 1964, Ser. No. 414,179
9 Claims. (Cl. 221—97)

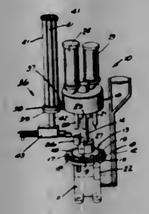
1. A merchandising display comprising a base and a hollow riser, said base including a tray for temporarily storing and exhibiting articles of merchandise, and hand operable sample dispensing means, said dispensing means having a vertically elongated chute, said riser having walls within which the chute is located so as to be concealed from view, said chute being arranged to store a quantity

of merchandise, a dispensing slide, a bridge having spaced parallel legs standing in the tray, and means mounting the slide on the bridge for reciprocal movement across the



bottom of the chute so as to dispense a predetermined portion of the quantity of merchandise from the chute upon each reciprocation.

3,300,089
SHOTGUN SHELL WAD DISPENSER ASSEMBLY
Gary E. Clute, 459 W. Territorial Road, Battle Creek, Mich. 49015
Filed June 7, 1965, Ser. No. 461,696
16 Claims. (Cl. 221—220)



1. A wad dispensing assembly for use with an assembling machine having a wad loading station comprising

(a) said dispensing assembly having a wad receiving tube assembly,

(b) means to put wads in one end of said wad receiving tube assembly,

(c) a wad receiving chamber connected to one end of said wad receiving tube assembly and having an actuator means,

(d) said actuator means having a wad transferring unit to receive wads from said wad receiving tube assembly at a wad receiving position,

(e) leaf springs as part of said wad transferring unit,

(f) said actuator means to move said wad transferring unit from said wad receiving position to said wad loading station,

(g) means to make said leaf springs grip said wad when said wad transferring unit moves from said wad receiving position,

(h) means to release said leaf springs from said wad when said wad transferring unit moves to said wad loading station,

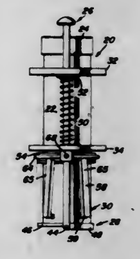
(i) a support block is connected to said actuator means and holds said leaf springs,

(j) said leaf springs have cam dogs substantially adjacent to said support block,

(k) a bottom member is secured to said wad receiving chamber to receive a wad from said wad receiving tube assembly, and

(l) said bottom member has cam surfaces to act with said cam dogs separating said leaf springs to permit the bottom member to receive the wads.

3,300,090
TABLET AND CAPSULE DISPENSER
Columbus Heard Carden, P.O. Box 1481, Harlingen, Tex. 78550
Filed Mar. 24, 1965, Ser. No. 442,354
8 Claims. (Cl. 221—281)



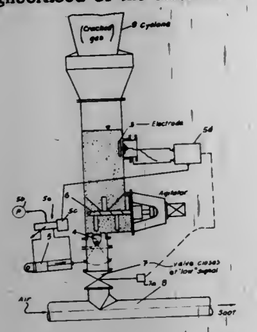
1. An article container and dispenser for tablets, capsules and the like comprising a body, said body including an upright generally tubular member adapted to accommodate therein a plurality of said articles in stacked columnar relationship, a bottom closure member movably supported from said container for movement between a first position closing the bottom of said container and a second open position allowing the bottommost article disposed in said container to fall outwardly therefrom, movable catch means carried by said body and operable to releasably engage and support the next to the bottom article in said container, and dispensing means including a single actuator movably supported from said container and operatively connected between said catch means and said bottom closure member for simultaneous catching and supporting the next to the bottom article and moving said closure member from said first position toward said second position and then moving said closure member back toward said first position and releasing said next to the bottom article, said bottom closure member comprising a member pivotally secured to said actuator, said closure member being unbalanced whereby movement of said actuator toward said second position will cause said unbalanced closure member to tip about its pivotal connection under the influence of gravity in the direction of the unbalance so as to facilitate release of the bottommost article.

3,300,091
APPARATUS FOR REGULATING THE LEVEL OF SOOT
Gerhard Wondrak and Günther Strohrmann, Marl, Germany, assignors to Chemische Werke Hüls Aktiengesellschaft, Marl, Germany, a corporation of Germany
Filed Apr. 1, 1965, Ser. No. 444,622
Claims priority, application Germany, Apr. 16, 1964, C 32,649
6 Claims. (Cl. 222—1)

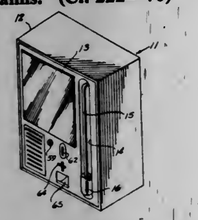
1. The method of regulating soot flow from the discharge opening at the bottom of a container having soot supplied thereto at the top which comprises; measuring the electrical conductivity of the soot at a predetermined level in the container which is beneath the normal level of the soot in the container, and modulatingly varying the rate of soot flow through said opening in response to the varying electrical conductivity to maintain the level of the soot therein substantially constant.

3. An apparatus for continuously and automatically regulating the height of soot in a container while soot is being delivered into the container, said apparatus comprising an electrode mounted in a fixed position in the container for contacting the soot, a modulating valve at the bottom of the container for continuously regulating the discharge of soot from the container, and electrically

actuated means for connecting the electrode with the valve and responsive to the electric conductivity of the soot in the neighborhood of the electrode for automatically and modulatingly controlling the position of the valve in accordance with the depth of the electrode in the soot.



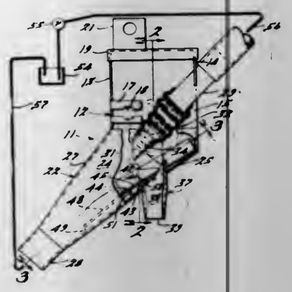
3,300,092
COIN-CONTROLLED HAIR SPRAY
Betty C. Williams, 6410 E. Julia, Tucson, Ariz. 85710
Filed May 7, 1965, Ser. No. 453,927
5 Claims. (Cl. 222—70)



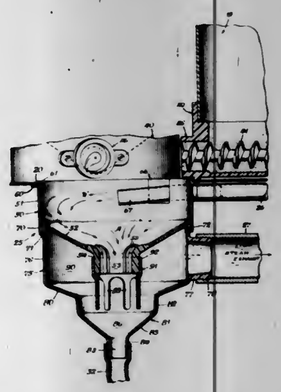
1. A liquid dispensing device comprising a supply reservoir containing liquid under pressure, a spray discharge nozzle, conduit means connecting said nozzle to said reservoir and including an electrically-operated normally closed control valve, an energizing circuit, first relay means, circuit means connecting said energizing circuit to said control valve responsive to energization of said first relay means, a holding circuit for said first relay means closed responsive to the energization of said first relay means, second relay means, means opening said holding circuit responsive to energization of said second relay means, means to energize said first relay means, and means to energize said second relay means responsive to a predetermined time period of energization of said first relay means, whereby to open said holding circuit.

3,300,093
DISPENSER HEAD
Henry I. Keves and Melvin E. Leverenz, St. Clair, Mich., assignors to Diamond Crystal Salt Co., St. Clair, Mich., a corporation of Michigan
Filed Jan. 25, 1965, Ser. No. 427,558
6 Claims. (Cl. 222—109)

1. A dispensing head for selectively delivering accurately measured quantities of a liquid comprising a housing having a dispensing outlet and a by-pass return outlet, a nozzle supported within said housing at a spaced location from said outlets and adapted to discharge a continuous stream of liquid in said housing, means supporting said nozzle for selective movement between first and second positions, said nozzle being in registry with said dispensing outlet in said first position for discharging a stream of liquid from said dispensing outlet and being adapted to deliver substantially all of its liquid flow to said by-pass return outlet when in its second position, and means for establishing a pressure differential between said dispensing outlet and a point contiguous to said by-pass return outlet during at least a portion of the movement of said nozzle from said first to said second position for collecting liquid droplets from said dispensing outlet and returning them to said bypass return outlet.

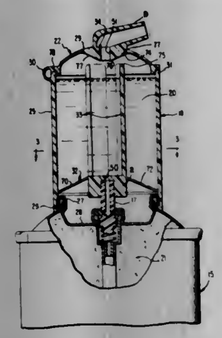


3,300,094
MIXING DEVICE
Donald C. Rockola, Chicago, Ill., assignor to Rock-Ola Manufacturing Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 328,691, Dec. 6, 1963. This application Nov. 23, 1965, Ser. No. 522,803
10 Claims. (Cl. 222—129.4)



6. In a beverage vending machine, a device for intermixing hot liquid and dry beverage forming ingredients comprising an upper receptacle having an open top and a lower discharge opening, a lower receptacle having an open top and a lower discharge opening, means supporting the lower receptacle adjacently beneath the upper receptacle whereby the open top of the lower receptacle is covered over by the upper receptacle to form a substantially enclosed chamber within the lower receptacle, means for introducing dry beverage forming ingredients into the upper receptacle, means for introducing hot liquid into the upper receptacle for mixing with said dry ingredients, and means communicating with the interior of the lower receptacle for exhausting the atmosphere of the said chamber therewithin.

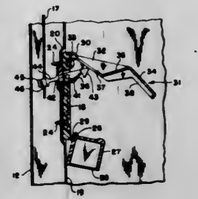
3,300,095
PLURAL SOURCE HEATED FLUID MIXING HEAD
Leonard L. Maraffino, 1824 NW. 36th Court, Oakland Park, Fort Lauderdale, Fla. 33309
Filed Jan. 21, 1965, Ser. No. 426,720
6 Claims. (Cl. 222—146)



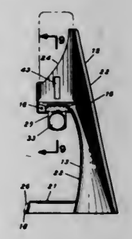
1. A mixing head for use with a pressurized primary fluid container having a movable discharge valve of the type which is normally biased to a closed condition, said mixing head comprising a housing having a spout at its upper portion and a socket at its lower portion for snugly receiving and actuating said valve, moving means operatively arranged for moving said socket to actuate said valve, said housing being adapted to contain a hot secondary fluid for heating and blending with the primary fluid of the container, said socket having a pin-hole size orifice in fluid communication with the valve and the housing and said spout having an inner opening communicating with said housing about four to eight times larger than said orifice to cause the cold stream of primary fluid discharging from said valve to agitate and contact a significant portion of the secondary fluid to cause heat transfer and also to entrain and mix with a portion of the secondary fluid to produce a combined stream for discharge through said spout, said housing including flexible hinge means extending inwardly and upwardly from said housing to said socket to align and position said socket on the valve and to enable vertical movement of said socket by said moving means for valve actuating, said housing including a main member having a lower peripheral edge for attachment to the container and a top removably connected to its top peripheral edge, said spout opening being positioned in said top, said top having a bearing means surrounding said opening, peripherally spaced legs connected to and extending from said socket toward said bearing means and terminating above said top peripheral edge, said top being distortable downwardly within its elastic limits to cause opening movement of said valve through the bearing means, spaced legs and socket.

3,300,096
GRANULAR DETERGENT DISPENSER
Richard L. Perl, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed Sept. 10, 1965, Ser. No. 486,424
4 Claims. (Cl. 222—166)

1. A dispenser for granular detergent and the like, comprising a boxlike container for granules having a discharge opening at one side and being otherwise closed, support means for the container including a pivot mounting thereof which is below and displaced laterally from the center of gravity of the container in a first operative position thereof, the open side of the container being substantially vertical and outermost with respect to such support mounting in said first operative position, cover means for closing the discharge opening and releasably holding the container in said first position, and actuator means for withdrawing the cover means thereby to cause the container to pivot by its own weight from the first position to a relatively rotated second operative position, such rotation bringing the discharge opening from an upper side to the bottom for dumping of granules in the container.



3,300,097
MOLDED DISPENSING STAND
Eugene G. Castagna, Clark, N.J., assignor to Chevron Research Corporation, a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,440
3 Claims. (Cl. 222—185)

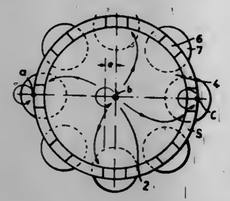


1. A molded dispensing stand for flexible plastics material comprising a base portion, a support member molded to said base portion, a container holder molded to said support member, a reinforcing rib molded to said support member and said container holder, and a metering cup mounted on the base of said container holder to provide a control for a passage extending from said container holder toward said base member, said dispensing stand being initially molded in two half sections with a thin section flexible hinge of said plastics material joining mating half sections of said reinforcing rib and attaching said two half sections to each other and providing a hinge surface for the alignment of the half sections.

3,300,098
DEVICE FOR DISPENSING LOOSE MATERIALS TO A NUMBER OF USER POINTS
Karl Wilhelm Quester, Cologne-Lindenthal, and Helmut Lieten, Cologne-Hohenhaus, Germany, assignors to Wilh Quester, Cologne-Sulz, Germany, a firm
Filed Oct. 22, 1965, Ser. No. 502,098
Claims priority, application Germany, Nov. 24, 1964, Q 805
7 Claims. (Cl. 222—196)

1. A device for dispensing loose material comprising an overhead hopper for directing material vertically downwardly, a table beneath said hopper for forming a fleece of rotating material, a cone portion disposed between said table and said hopper, said table having a plurality of closable openings to direct said fleece to a plurality

of user points, and said table being eccentrically rotatable whereby the material is forcibly urged into flow paths



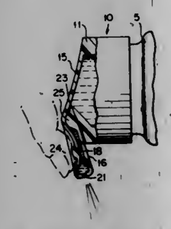
which terminate in circular path portions whereby upon the opening of said closable openings said material is immediately dispensed to said user points.

3,300,099

METERING DISPENSER FOR LIQUIDS

Robert N. Marona, Scarsdale, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

Filed May 18, 1965, Ser. No. 456,676
12 Claims. (Cl. 222—207)



12. A device for dispensing liquids in metered amounts from a liquid container, said device being formed of a resilient, semirigid material rendering the device flexible under manually applied force and comprising, a base adapted for attachment to the discharge opening of said container, said base including an annular wall the interior surface of which is shaped to engage in a liquid-tight seal with the finish of said container, the interior area of said base being in free communication with the interior area of said container, and an elongated upstanding nozzle supported on said base and defined by top, bottom and side walls merging with the wall of said base, said nozzle having a longitudinal axis inclined at an acute angle relative to the axis of said base and including an end wall formed to provide a dispensing orifice, said orifice being of a constant dimension predetermined in relation to the viscosity of said liquid to prevent gravity flow of liquid through the orifice in the absence of manually forced displacement of liquid from said nozzle, said bottom wall being formed with a sharp curve providing a fixed flexure axis about which said nozzle will yieldably bend inwardly relative to said base in response to manual application of force on said top wall, the interior area of said nozzle being normally in free communication with the interior of said base, said communication being interrupted by the bending of said nozzle to the extent of bringing said top and bottom walls into sealing contact to thereby create a volumetric measuring chamber defined in part by said end wall, said top wall being inwardly flexed incident to the bending of said nozzle to displace liquid from said chamber through said orifice in amounts corresponding to the amount of force applied to said top wall, said bottom wall at said sharp curve being thinner than said top wall to induce the bending of said nozzle about said flexure axis prior to the inward flexure of said top wall upon manual application of force thereto, said base serving as a limit to the bending of said nozzle about said flexure axis to facilitate the inward flexure of said top wall to the maximum extent.

3,300,100

AXIALLY-OPERATED HAND GREASE GUN

Edwin P. Sundholm, Albert City, Iowa 50510

Filed Mar. 31, 1965, Ser. No. 444,156
4 Claims. (Cl. 222—260)



1. In a hand grease gun for use with cartridge-packaged of pressure-filled grease, said gun including an elongated cylindrical grease container, a plunger rod axially disposed within said container for axial reciprocation therein, said rod having a rearward portion slidably projecting through said rear cap to a point rewardly thereof, an access cap removably mounted on the front end of said container, a high pressure cylinder mounted on said access cap providing a rearwardly opening bore aligned with the axis of said cylinder, a piston guide secured to said high pressure cylinder and forming a rearward extension thereof, said guide providing a bore aligned with the bore of said cylinder, piston means provided on the forward end of said plunger rod for reciprocation in said guide and cylinder, the combination therewith of:

(a) a stationary hand grip mounted on the outside of said closure cap and extending laterally therefrom without interfering with the sliding action of rearward portion of said rod which extends through the cap;

(b) movable hand grip means pivotally connected to the projecting rear end of said rod for cooperation with said stationary hand grip to reciprocate said rod within said piston guide and high pressure cylinder,

said movable hand grip comprising the only means for moving and reciprocating said rod; and

(c) grease plunger means slidably mounted on said rod for urging grease toward the forward end of said grease container,

said plunger means being slidably retractable on said rod to the rearward portion of said container by the introduction of a cartridge of grease or of pressure-filled bulk grease into the forward portion thereof while said rod remains stationary.

3,300,101

TONER DISPENSER

John W. Wagner, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed July 1, 1965, Ser. No. 468,849
3 Claims. (Cl. 222—310)

1. A toner dispenser including:

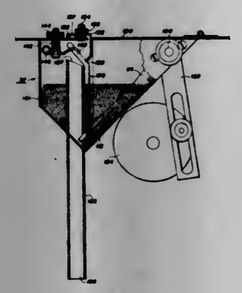
a housing suitable for holding a quantity of toner material,

an escape chute having an opening at the top thereof and an opening at the bottom thereof extending through the bottom of the housing with the top of the chute located adjacent the top of the housing,

a dispensing wire extending across the length of the housing and movable in the housing,

means for guiding said wire,

said wire being movable in said guide means from a lower portion of the housing to an upper portion of the housing above the opening in the chute whereby said wire agitates the toner in the housing during the movement thereof and accumulates a quantity of toner thereon,



means for lifting the wire, and

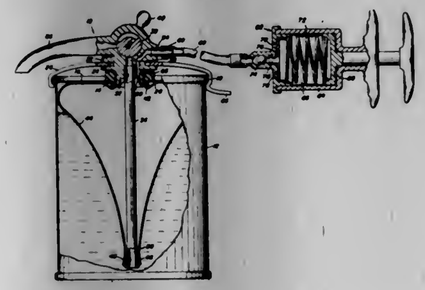
a dispensing scraper mounted above the chute for scraping the toner accumulated on the wire into the escape chute.

3,300,102

INFLATABLE BAG FLUID DISPENSING DEVICE

Tadeusz Budzich, Moreland Hills, Ohio,
(80 Murwood Drive, Chagrin Falls, Ohio 44022)

Filed Mar. 12, 1965, Ser. No. 439,276
8 Claims. (Cl. 222—386.5)



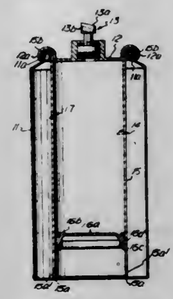
1. A liquid dispensing device adapted to pump liquid from a container by pumping fluid into inflatable bag means immersed in the liquid in the container comprising, means for detachably mounting said dispensing device on the container, liquid conducting means disposed to communicate with a liquid within the container when the dispensing device is mounted on the container, means to mount the inflatable bag means for immersion within the liquid in the container, means maintaining the bag means in a prefolded condition during insertion into the liquid, said bag means being formed of a substantially non-elastic material, and fluid pressurizing means disposed to communicate with said inflatable bag means when the bag means is immersed in the liquid, whereby fluid supplied to the bag means from said pressurizing means will cause the bag to expand and displace the liquid from the container to the liquid conducting means.

3,300,103

AEROSOL DISPENSER WITH INNER CONTAINER

Charles B. Featherstone, Sale, and Brian F. Hawtin, Radlett, England, assignors to Richmond Aerosols Limited, Withington, England

Filed June 8, 1965, Ser. No. 462,310
Claims priority, application Great Britain, June 10, 1964, 24,007/64
1 Claim. (Cl. 222—389)



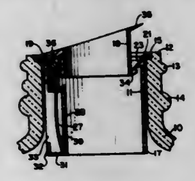
A dispenser comprising inner and outer containers with an annular space having therebetween, a propellant in said annular space, the wall of the inner container being flanged outwardly over the wall of the outer container, and including a cover having a rim which fits over the flanged portion of the inner container to seal the inner and outer containers so that any leakage of propellant must be to the outer atmosphere, a piston within the inner container, material to be expelled located in the inner container above said piston, said piston serving as a thrust member for the material to be expelled, means providing access between said annular space and the underside of said piston, and valve means in the cover and associated with the inner container to allow the exit of said material from the inner container when required, said piston being provided with a circular recess in the top thereof spaced slightly from the peripheral wall and extending about half the depth of the piston thereby forming a central portion within the recess, a resilient upper beaded edge thin enough to be urged against the wall of the inner container by the pressure of the material to be dispensed a lower beaded edge and the surface of the peripheral wall between said upper and lower beaded edges being outwardly convex.

3,300,104

POURING ADAPTER FOR LIQUID CONTAINERS

Robert V. Burt, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

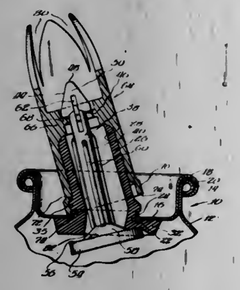
Filed July 9, 1965, Ser. No. 470,803
5 Claims. (Cl. 222—482)



1. A pouring adapter for use with a liquid container having a dispensing opening and sealing surface comprising an outer sleeve member having sealing means on its outer diameter, said sealing means being fitted in frictional engagement within the dispensing opening in said container, an inwardly projecting ledge located intermediate

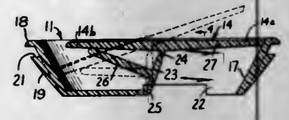
the ends of said outer sleeve member, an inner spout member having a sharp pouring lip at one end, an outwardly projecting stop element surrounding the other end of said inner spout member, said outer sleeve member and said inner spout member being molded integrally with a strap joining said members at their upper ends, said strap being notched in close proximity to said outer sleeve member, the inner spout member being pivoted on said strap to a position inside of said outer sleeve so that said inner spout member and said outer sleeve member are substantially coaxial, means for biasing the inner spout member upwardly to its pouring position, said stop element bearing against the inwardly projecting ledge to limit outward movement of said inner spout member caused by said biasing means, and a vent opening alongside said strap member, said vent opening being located opposite the highest point of said pouring lip of said inner spout member, said vent opening being provided to permit smooth pouring of liquid through said inner spout member.

3,300,105
DISPENSER VALVE STRUCTURE
Joseph L. Rosen, 4101 N. Rockwell St., Glencoe, Ill. 60022
Filed Nov. 6, 1964, Ser. No. 409,404
2 Claims. (Cl. 222—517)



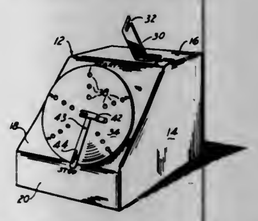
1. In combination with a container closure having an opening therethrough, a resilient tubular plug extending through said opening and having a flange engaging the inner surface of said closure and an annular outwardly extending shoulder above said flange with the underside of said shoulder engaging the container closure to secure said plug to said closure, said plug being provided with a valve seat on its inner side, said plug having a tubular portion with an outside diameter less than the outside diameter of said shoulder, a rigid valve stem of lesser diameter than the internal diameter of said tubular plug, said valve stem being integrally formed of a plastic material and being provided at its inner end with a valve head adapted to engage said seat and being provided at its outer end with a generally shaped spearhead comprising preformed engaging surfaces extending laterally of said stem, said spearhead having a slot therein permitting compression of said spearhead, a separate nozzle positioned on said tubular plug, said nozzle having an inner shoulder adapted to be engaged by said engaging surfaces, said nozzle having an enlarged skirt portion having an inside diameter greater than the inside diameter of the body of the nozzle, said skirt provided with a lower edge, said lower edge adapted to engage the container closure to limit the angular inclination of said nozzle plug and valve stem when actuated, the lower end of the skirt portion being free of locking engagement with the plug adjacent to said skirt portion to permit the skirt to move relative to the shoulder when the valve stem is actuated.

3,300,106
POURING SPOUT
John F. Chmela, Franklin Park, Ill., assignor to Anfinsen Plastic Molding, Inc., Aurora, Ill., a corporation of Illinois
Filed Mar. 21, 1966, Ser. No. 536,160
6 Claims. (Cl. 222—517)



1. A pouring spout comprising a substantially cup-shaped body having a bottom wall and a pouring opening in said bottom wall, a manually manipulatble closure element overlying said opening, an articulate hinge connecting one end of said closure element with one edge of said opening, and a finger engageable portion integral with the hingedly connected end of said closure element movable downwardly into the cup-shaped body for moving the closure element into an open position.

3,300,107
APPARATUS FOR MAKING ORNAMENTAL ARTICLES
Francis M. Koch, 2502 Sumner St., Lincoln, Nebr. 65802
Substituted for abandoned application Ser. No. 333,489, Dec. 26, 1963. This application June 1, 1965, Ser. No. 473,881
3 Claims. (Cl. 223—46)

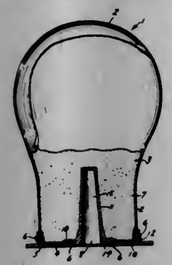


1. A device for making ornamental articles from a ribbon, comprising a base member, a dial rotatably mounted on said base member, said dial having a plurality of indices in the form of openings, an indexing pin to be removably inserted in successive openings to rotate the dial and provide a means for forming loops, and means at the center of said dial for releasably holding a fastening element for said ribbon, said means comprising a resilient retaining member having one end affixed to said dial, the other end projecting over the center of the dial and having a slot in the projecting end, and a releasing lever member projecting over the center of the dial and having a slot in the projecting end, alignable with the slot in said resilient member to accommodate a fastening element, the pin carrying the ribbon with the dial as the dial is rotated to draw out the ribbon and form loops whose size and position is determined by the indexing and pin placement as the dial is rotated.

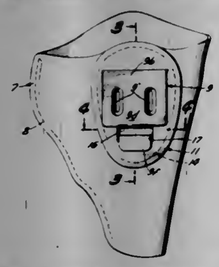
3,300,108
HEAD BLOCK FOR WIGS
Louis Schumer, 5402 Beverly Road, Brooklyn, N.Y. 11203
Filed June 9, 1966, Ser. No. 556,345
4 Claims. (Cl. 223—66)

1. A self-supporting head block for dressing and displaying wigs comprising a block shaped to the contour of the human head and terminating in a neck shaped portion to which is secured a molded plastic supporting base

comprising essentially a circular plate of larger circumference than said neck portion, a centrally located integral tube which extends into the body of said block, and an integral upwardly turned flange shaped to fit around the neck portion thereof as an annular band.



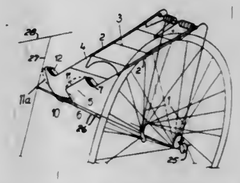
3,300,109
CLAMPING MEANS FOR INSIDE GUN HOLSTER
Earl J. Clark, Los Angeles, Calif., assignor to Bucheimer-Clark Leather Goods Corp., Los Angeles, Calif., a corporation of California
Filed Jan. 19, 1966, Ser. No. 521,640
10 Claims. (Cl. 224—2)



1. A clamp for holding a holster inside the top of trousers of the user, comprising: a U-shaped resilient clamping member; means forming on the holster a pocket including stitching securing said pocket forming means to said holster; said pocket forming means having a slot therein affording access to said pocket; said slot being spaced inwardly from said stitching and all of the margins of said pocket forming means; said clamping means having one leg extended through said slot into said pocket so that the other leg is on the outer side of said pocket forming means in position to clamp against the outer side of the material of the trousers when the holster is positioned inside the trousers; and said pocket forming means having thereon a shoulder below said slot and against which said other leg will clamp the trouser material to hold said holster in place.

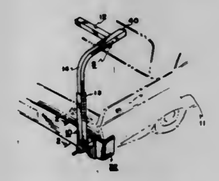
3,300,110
CARRIER FOR CYCLES, FOR EXAMPLE BICYCLES
Emil Zurmuhlen, Brackwede, Germany, assignor to ESGE Marby G.m.b.H. & Co., Brake, near Bielefeld, Germany, a limited-liability company of Germany
Filed July 21, 1965, Ser. No. 473,673
Claims priority, application Germany, July 23, 1964, E 20,272
6 Claims. (Cl. 224—39)

1. An article carrier for cycles comprising a pair of parallel bars adapted to extend lengthwise over the rear wheel of the cycle; stop means at the rear of said bars; a pair of attachment braces, one brace each being connected to a bar at adjacent first ends of said bars and extending downwardly for connection at its other end to the cycle; said bars having a flat article support region and a projecting article counter stop region at the other end of said bars; said article counter stop region comprising an inverted U-shaped bend formed in each said bar, the legs of the U being spaced from each other and parallel to each other and connected by an extended top portion having a length approximately the length of the leg



to form a spacer for a brake mechanism therebeneath; a cross piece; the leg in each U-shaped bend remote from said article support region being integrally joined together at their lower ends by said cross piece; and means for connecting said cross piece to the cycle frame adjacent the cycle seat, the article support region being spaced from said attachment region by said extended top portion.

3,300,111
BUMPER MOUNTS FOR CARRYING LOADS IMPOSED ABOVE VEHICLES
Edward B. Hedgepeth, 432 East 2700 South, Apt. 38, Salt Lake City, Utah 84104
Filed Jan. 29, 1965, Ser. No. 428,974
8 Claims. (Cl. 224—42.07)

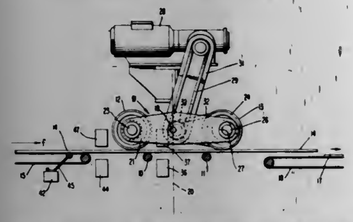


3. A bumper mount for supporting a load thereabove, said bumper mount including, in combination, hook means for hooking over the top edge of an external vehicle bumper, an elongate body member pivotally secured to said hook means, a saddle member constructed for disposition over said elongate body member, said saddle member having depending reaction means for thrusting against said bumper under the loading of said elongate body member, pin means disposed transversely through said saddle member and under said elongate body member for locking said elongate body member in place within said saddle member, cushioning means disposed between said bumper and said reaction means, means for securing external load-carrying means affixed to said saddle member, and means connected to said body member, in engagement with the rear of said saddle member, and reacting against said saddle member for tension loading said elongate body member and thereby thrusting said saddle member toward said bumper, and wherein said bumper mount includes additional hook means for hooking under the bottom of said bumper, elongate means affixed to said additional hook means, and tension means engaging said pin means for tensioning said elongate means, and wherein said tension means includes a threaded hook means, said pin means including a head provided with an aperture, said aperture receiving said threaded hook means, and nut means for tightening said hook means and said elongate means to which it is connected.

3,300,112
MACHINE FOR SEVERING GLASS

André Tailleur, Paris, and Jacques Le Gras, Sartrouville, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, Seine, France

Filed Aug. 9, 1965, Ser. No. 478,265
Claims priority, application France, Aug. 11, 1964, 984,822
12 Claims. (Cl. 225—93)

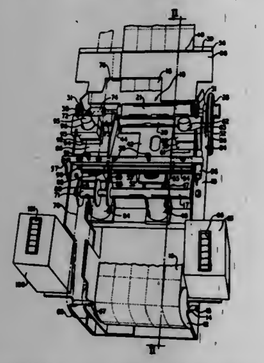


1. A machine for severing sheets of glass comprising a first pair of parallel rollers to support a sheet of glass, a second pair of parallel rollers parallel to the first pair, said pairs being spaced apart for a sheet of glass to pass between, the rollers of one pair being astride the rollers of the other pair and means to bring the sheet of glass into pressing engagement against one pair in an equilibrated manner through the other pair thereby bending said sheet to sever it.

3,300,113
ELECTRIC STAMP ISSUING MECHANISM

Ronald George Lane, Billingshurst, England, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Oct. 19, 1964, Ser. No. 404,856
Claims priority, application Great Britain, Oct. 21, 1963, 41,450/63
9 Claims. (Cl. 226—110)

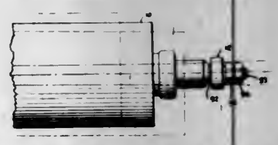


1. In a machine for dispensing stamps in accordance with a monetary value, the combination including
(a) a first electronic counter including a series of flip-flops arranged to operate as a binary counter for storing electrical pulses representing a monetary value in binary form;
(b) a second electronic counter including a series of flip-flops arranged to operate as a binary counter for counting the number of stamps dispensed;
(c) a plurality of key members each representing a monetary value;
(d) a first circuit means controlled by operation of any of said key members for generating and storing in said first electronic counter electrical pulses representing in binary form the monetary value of the key member operated;
(e) means controlled by operation of any of said key members for feeding stamps of the same denomination from the machine;
(f) means for generating a control pulse in response to the feeding of a predetermined number of stamps by said feeding means, said control pulse operating said first electronic counter to count towards a predetermined count and said second electronic counter to count the number of stamps dispensed;
(g) and means controlled by said first electronic counter for stopping the feeding of stamps by said feeding means when said counter reaches the predetermined count.

3,300,114
THREE DIMENSIONAL WEB SHIFTING APPARATUS

Paul W. Jacobsen, Kiel, Wis., assignor to H. G. Weber and Company, Inc., Kiel, Wis., a corporation of Wisconsin

Filed Aug. 12, 1964, Ser. No. 389,011
4 Claims. (Cl. 226—180)

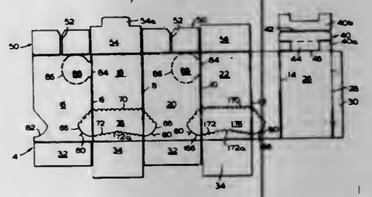


3. In combination in web control apparatus, web guide means for receiving a moving web in contact therewith and for controlling the lateral position of the web by lateral shifting movement thereof, and means mounting said web guide means for shifting movement in a lateral direction to shift the lateral position of the web and for shifting in a different direction a distance approximately equal to the distance of said lateral direction to reduce the tension of the web near the limit of lateral shifting movement of the web guide means.

3,300,115
COMPARTMENTED DISPENSING CARTON FORMED FROM A SINGLE BLANK

Marvin L. Schauer, Spokane, Wash., assignor to Boise Cascade Corporation, Boise, Idaho, a corporation of Delaware

Filed Apr. 5, 1965, Ser. No. 445,399
5 Claims. (Cl. 229—27)

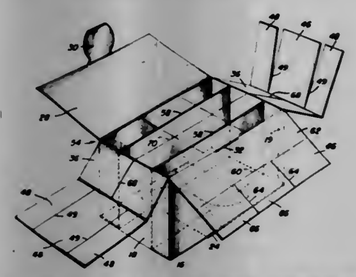


1. A unitary paperboard blank for forming a compartmented dispensing carton, comprising
a vertical rectangular body portion containing five horizontally spaced vertical fold lines defining, successively, a first end panel, a first side panel, a second end panel, a second side panel, an intermediate panel, and a divider panel, said side panels having equal widths and said divider panel having a width no greater than that of said side panels, said end panels also having equal widths, said intermediate panel having a width equal to approximately one half the width of said end panels;
said panels being foldable about said vertical fold lines to positions in which the side and end panels are parallel with each other, respectively, to define therebetween a rectangular space, in which said intermediate panel is parallel with and in contiguous engagement with substantially one half of the inner surface of said first end panel adjacent the free edge thereof, and in which said divider panel is between, parallel with said spaced from said side panels;
said blank including also top and bottom flaps connected with the upper and lower horizontal edges of at least some of said panels and foldable to horizontal positions closing the upper and lower ends of said rectangular space, respectively;
said blank containing means defining a removable discharge section in the lower portion of at least one of said side panels, comprising first and second slots contained in the lower portions of those companion panels connected with the vertical edges of said one side panel, respectively, and a pair of vertically-spaced generally horizontal weakened lines extending completely across said one side panel and partially across said companion panels, said weakened lines communicating at opposite ends with the opposite ends of said first and second slots, respectively.

3,300,116
MULTIPLE COMPARTMENT SINGLE PIECE BLANK CARTON AND SINGLE PIECE BLANK THEREFOR

Albert A. Grashege, 1213 Vine St., West Des Moines, Iowa 50265

Filed May 21, 1964, Ser. No. 369,166
20 Claims. (Cl. 229—28)



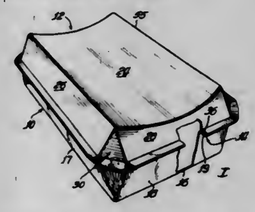
17. A multiple compartment carton comprising a one piece blank, said blank providing four linearly extending carton side walls folded into rectangular relationship, said side walls being secured together in end-to-end relationship, interlocking bottom walls foldably extending from two opposite side walls, a compartment bottom and intermediate divider wall foldably extending upwardly in parallel relationship from each of the alternate side walls, and a cover member extending from the top edge of one of said opposite side walls, said upwardly extending parallel divider walls being spaced from each other, thereby providing three compartments.

3,300,117
DOMED COVER TWO PIECE CARTON

Dennis J. Kossnar, West Chicago, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Illinois

Filed Apr. 8, 1965, Ser. No. 446,507
5 Claims. (Cl. 229—32)

1. A carton, comprising in combination:
(a) opposing dish-shaped tray and cover members joined together medially of the carton by a flanged connection;
(b) the tray member having
(i) a bottom wall and a peripheral side wall upstanding therefrom;
(ii) a peripheral flange section at the upper edge of the side wall extending parallel to the bottom wall;
(c) the cover member including:
(i) a top panel;
(ii) side panels hinged to the top panel about the periphery thereof and folded at a sharp angle thereto;
(iii) overlapping inner and outer triangular corner panels hinged to the end edges of the side panels along corresponding edges meeting at a common point at the top panel;



(iv) a flange section coextensive with the peripheral flange section of the tray and including:
(1) a flange hinged to the lower edge of each of the side panels and folded at a sharp angle thereto;
(2) a flange hinged along the edge of each outer triangular panel opposite the top panel thereof;
(v) the triangular panels being separated from each other in the flattened blank by a continuous cut line diverging from the common point at the corner of the top panel;
(d) means for securing the flanged sections together.

3,300,118
EASY OPENING CONTAINER CONSTRUCTION

Emert E. Owens, Lemay, Mo., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

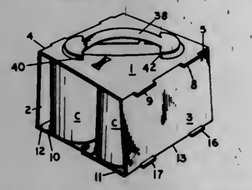
Filed Jan. 21, 1966, Ser. No. 522,064
5 Claims. (Cl. 229—51)



1. An easy to open container comprising: a tubular fiber body having opposite open ends and a plurality of adhesively bonded plies convolutely wound from an internal starting end to an external terminal end, the innermost plies of said body extending from said internal starting end having a circumferential line of severance more closely adjacent one end of said body than the other and forming an innermost cut in the body terminating at an axially directed cut, and the outermost plies of said body extending from said axially directed cut to said terminal end having a circumferential line of severance forming an outermost cut in the body, said outermost cut being spaced from said innermost cut and the circumferentially extending space between said axially spaced cuts forming a band substantially adhesive free; a ply of sealant material on the inner surfaces of said body and extending over said innermost cut line and internal starting end; a label ply

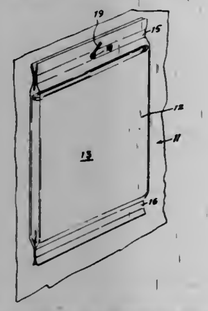
adhesively secured to the outside of said body in convolutely wound position to form a structural connection between the body portions on opposite sides of said lines of severance, said label ply having a tab projecting from one end in circumferential alignment with said adhesive free band and a corresponding recess in its opposite end, and said label end with the projecting tab being externally lapped over the opposite end by at least the length of said recess and adhesively secured in said lapped position; a container opening tear means having a starting end underlying said projecting tab and extending circumferentially under said label ply and about the body to said recess, said tear means on being pulled acting to sever said label ply circumferentially substantially at said outermost cut in said body and break the structural connection between the body portions; and means to close the opposite ends of said body, one said closure means being initially mounted on one body end.

3,300,119
ARTICLE CARRIER
Jean Chaussadas, Paris, France, assignor to The Mead Corporation, a corporation of Ohio
Filed Oct. 4, 1965, Ser. No. 492,803
4 Claims. (Cl. 229—52)



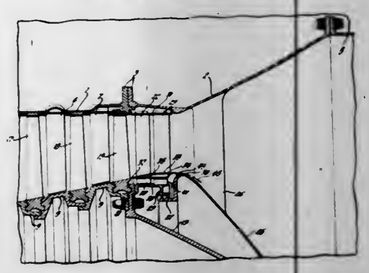
1. A sleeve type article carrier comprising spaced top, bottom and side panels, an elongated handle strap diagonally struck from the top panel and having transversely disposed projections at its ends, an elevator tab hingedly connected with each of said projections and hingedly connected with said top panel along individual hinge lines, and an article positioning tab struck from said to panel immediately adjacent one edge of said handle strap from an area thereof which is medially disposed in said top panel, said positioning tab including a horizontal portion interposed between adjacent articles and a vertical portion for positioning said horizontal portion downwardly from said top panel.

3,300,120
CONTAINER
Arnold J. McColgan, Pointe Claire, Quebec, Canada, assignor to W. Ralston & Co. (Canada) Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed Apr. 2, 1965, Ser. No. 445,136
2 Claims. (Cl. 229—55)



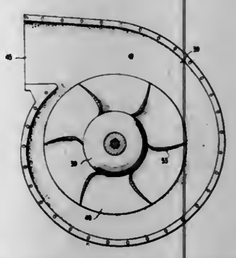
1. An integral container of thermoplastic material comprising a tubular hollow body having a front face and a rear face therewithin, a transversely extending top portion and a transversely extending heat sealed closed bottom portion upon said body, an inturned doubled portion within said top portion intervening said front face and said rear face, said front face, rear face and intervening doubled portion being heat sealably connected to one another, said heat sealably connected portion provided with an opening therewithin, so that said container may be hung upon a nail or peg and subjected to a shearing force without tearing the portion adjacent said opening.

3,300,121
AXIAL-FLOW COMPRESSOR
Douglas Johnson, Indianapolis, Ind., assignor to General Motors Company, a corporation of New York
Filed Feb. 24, 1965, Ser. No. 434,835
4 Claims. (Cl. 230—122)



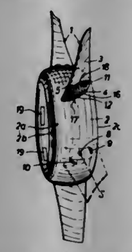
1. In combination, an axial-flow compressor having an outlet and a diffusing passage extending downstream from the outlet defined by outer and inner annular walls, one of said walls diverging sharply from the axial direction adjacent the outlet; the compressor including outlet guide vanes having an annular shroud adjacent said one wall separating an annular auxiliary air passage from the compressor outlet, the upstream end of the auxiliary air passage having an inlet connecting with and supplied from the compressor adjacent the outlet of the compressor; and an additional compressor stage, including a rotating blade stage, disposed in said auxiliary air passage; the auxiliary air passage terminating in an annular discharge passage disposed to blow a sheet of air energized by said rotating blade stage over said one wall to energize the boundary layer thereon.

3,300,122
VENTILATOR
Andrew D. Bowles, 1301 S. Owyhee St., Boise, Idaho 83704, and Paul W. Wise, 3917 Kootenai St., Boise, Idaho 83705
Filed Apr. 18, 1963, Ser. No. 273,950
6 Claims. (Cl. 230—127)



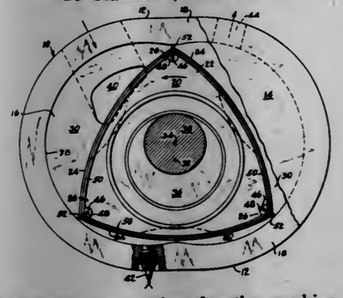
1. A fallout shelter ventilator comprising a bicycle frame having a pedal-driven sprocket wheel, an air pump having a rotary impeller, a shaft on which the impeller is mounted, means on the shaft spaced a substantial distance from the impeller for driving a generator, and means drivingly interconnecting the sprocket wheel and the shaft at a point on the shaft between the impeller and the generator drive means.

3,300,123
VANE FOR AN AXIAL VENTILATOR AND METHOD FOR PRODUCING THE SAME
Helmut Freyholdt and Alfred Aebischer, Stafa, Zurich, Switzerland, assignors to Ventilator A.-G., Stafa, Switzerland
Filed May 24, 1965, Ser. No. 458,341
Claims priority, application Switzerland, May 29, 1964, 7,012/64
5 Claims. (Cl. 230—134)



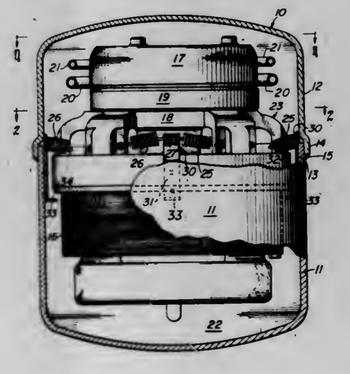
1. In combination, an axial flow impeller having an annular hub with an outer spherical shaped surface portion, a plurality of vane means mounted on the spherical shaped hub portion, each vane means comprising a folded sheet metal strip incorporating a vane portion and a base portion, said base portion having a substantially spherical shaped surface corresponding to that of said spherical shaped surface portion, means adjustably securing the base portion of said vanes to the spherical shaped surface portion, said means comprising a central centering means and a pair of clamp fasteners engaging slots in the spherical shaped hub surface portion whereby said vane means on the release of the securing means may be pivoted about the central centering means.

3,300,124
SEAL CONSTRUCTION FOR ROTARY MECHANISMS
Charles Jones, Hillsdale, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Apr. 14, 1966, Ser. No. 542,630
10 Claims. (Cl. 230—145)



1. A sealing construction for the working chambers of a rotary mechanism having an outer body including a cavity; a rotor disposed in said cavity for relative rotation with said outer body, said rotor and said outer body defining a plurality of working chambers therebetween which vary in volume during relative rotation of said rotor, said rotor including a plurality of grooves with each groove containing a sealing construction therein; said sealing construction comprising a multi-piece seal structure moveably disposed in each groove in said rotor for sealing engagement with the walls of said outer body cavity, said multi-peace seal member including a first seal piece extending substantially from one end face of said rotor to the other, said first seal piece having at least one end face inclined in a direction toward its associated rotor end face; a second seal piece having an inclined face disposed for mating relative sliding engagement with the inclined end face of said first seal piece such that the axial dimensions of said multi-piece seal member may vary during relative sliding movement between said first and second seal pieces; and said first seal piece being composed of a non-metallic material having relatively low friction characteristics at least at its cavity wall engaging surfaces and including its inclined end face, and said first seal piece having a protective shield structure supported on its groove wall engaging surfaces for protecting said first seal piece during movement in said groove.

3,300,125
COMPRESSOR
Claude D. Winkler, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 22, 1965, Ser. No. 449,968
8 Claims. (Cl. 230—235)

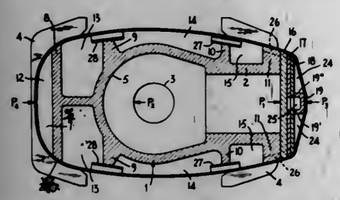


1. In a rotary compressor apparatus for use with a volatile refrigerant and the like, apparatus comprising: a housing; a motorized compressor therein; and spring means constituting the sole support of said compressor in said housing, said spring means comprising a plurality of elongated helical coil springs spaced around said compressor and substantially tangential thereto and having one end of each attached to said housing and the other end attached to said compressor, the weight of the compressor causing each spring to be inclined slightly downwardly from the horizontal.

3,300,126
CYLINDER AND CYLINDER HEAD ASSEMBLY AND METHOD OF MANUFACTURING SAID ASSEMBLY
Arne F. Enemark, Sonderborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed June 1, 1965, Ser. No. 460,269
Claims priority, application Germany, June 1, 1964, D 44,581
8 Claims. (Cl. 230—238)

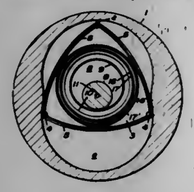
1. Cylinder and cylinder head assembly comprising a cylinder portion; a cylinder head portion; projections formed on at least one of said portions; a band encircling said cylinder portion and said head portion and bearing

against said projections, said band being under tension, and, conjointly with the side wall of one of said portions



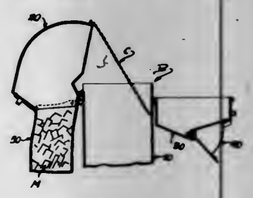
and said projection defining a chamber closed off against the outside of said assembly.

3,300,127
ROTARY PISTON AND SEAL THEREFOR
Kenichi Yamamoto and Sunao Osakada, both of Hiroshima-shi, Japan, assignors to Toyo Kogyo Company Limited, Hiroshima-ken, Japan
Filed Feb. 18, 1965, Ser. No. 433,584
Claims priority, application Japan Feb. 26, 1964, 39/14,814, 39/14,815; Feb. 28, 1964, 39/10,930
9 Claims. (Cl. 230—145)



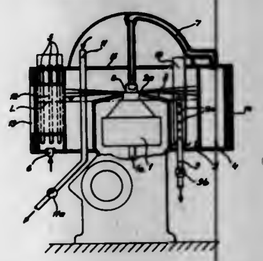
1. A rotary piston and sealing means for a rotary piston internal combustion engine having an annular casing with a trochoidal shaped internal peripheral wall and a crankshaft within said casing for eccentrically rotating a rotary piston within the casing, and the crankshaft having cooling oil bores therethrough for supplying cooling oil to a rotary piston, and the casing having end walls on the ends thereof with substantially flat internal faces, said rotary piston and sealing means comprising a triangular shaped rotary piston having substantially flat end faces adapted to be eccentrically mounted on the crankshaft for rotation within the annular casing, sealing means at the apexes of said rotary piston and along the outer edges of the piston end faces adapted to seal against the internal peripheral wall of the annular casing and the flat internal faces of the end walls for sealing off the combustion chambers and compressing chambers from the space between the end faces of the piston and the end walls, said piston having annular chambers around the crankshaft and opening out of each of the end faces of the piston and adapted to receive cooling oil from the bores in the crankshaft, and said piston having two circular grooves in each end face intermediate the annular oil chamber and the sealing means, said grooves each being defined by opposed radially facing surfaces and a laterally facing bottom surface, a sealing ring in each said circular groove, the sealing ring in the outermost circular groove being in sealing engagement with the outwardly radially facing surface of said groove and being spaced from the inwardly radially facing surface and bottom surface of said outermost groove, and the sealing ring in the innermost circular groove being in sealing engagement with the inwardly radially facing surface of said groove and being spaced from the outwardly radially facing surface and bottom surface of said innermost groove, and spring means in each of the spaces between the circular sealing rings and the bottom surfaces of said grooves and urging said rings out of said grooves against the internal face of the end wall adjacent the end face of the piston.

3,300,128
MAIL DEPOSIT BOX
Edward Jasinski, 275 Reisman St., Sloan, N.Y. 12160, and Edward Jasinski, Jr., 19 Pine Ridge Terrace, Cheektowaga, N.Y. 14225
Filed Oct. 22, 1965, Ser. No. 501,463
10 Claims. (Cl. 232—17)



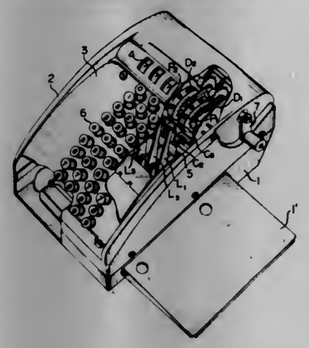
1. A mail deposit box comprising an upwardly open hollow base adapted to rest upon a supporting surface such as the ground and being of such height as to permit not only the convenient deposit of mail into the upper end of said box but also the attachment of an upright mail bag adjacent thereto for the convenient emptying of mail from said box into the bag, and an upwardly open mail receiving container having means adjacent its upper end for detachably retaining the open end of the bag and being pivoted to said base adjacent its upper end for movement between an upright position within said base for receiving mail to an inverted position outside said base for emptying mail into the bag.

3,300,129
CENTRIFUGAL SEPARATOR OF VACUUM TYPE
Enrico Brunati, Milan, Italy, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 20, 1964, Ser. No. 338,973
Claims priority, application Sweden, Jan. 21, 1963, 624/63
7 Claims. (Cl. 233—1)



1. In a centrifuge operating under vacuum for separating from a liquid certain substances which are more volatile than the liquid, the combination of a centrifugal rotor having a rotation axis and also having an inlet for the liquid and an outlet for centrifugally separated liquid, a housing surrounding the rotor and forming a chamber extending around the rotor and said axis for collecting liquid discharged through said outlet, a suction line leading from said collecting chamber for maintaining a partial vacuum therein, a discharge line leading from said collecting chamber for withdrawing liquid therefrom, said housing forming an outer wall of the collecting chamber located at a distance from said axis which is substantially greater than the radius of the rotor, and a heating device disposed around said outer wall.

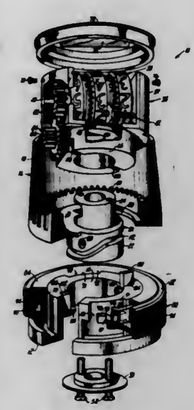
3,300,130
TOY CALCULATING MACHINE
Shigeaki Kuramochi, 10—10 3-chome, Kohinata, Bunkyo-ku, Tokyo, Japan
Filed Dec. 6, 1965, Ser. No. 511,858
3 Claims. (Cl. 235—62)



1. A toy calculating machine comprising a casing having an upper panel and a pair of side plates, a plurality of digit cylinders rotatably mounted between said two side plates, a plurality of ratchets corresponding in number to the digit cylinders and mounted between said side plates for rotational movement and movement toward and away from said digit cylinders to engage with or be disengaged from said digit cylinders, pivotal levers coupled to said ratchets for turning said ratchets, driving means which engage with and give pivotal motion to said levers, place carrying means for each of said digit cylinders subsequent to the digit cylinder corresponding to the unit digits and consisting essentially of a single member rotatably mounted in said casing and having one extension normally blocking movement of the corresponding one of said levers and having another extension engageably movable by a digit cylinder next adjacent a digit cylinder corresponding to the respective place carrying member a distance which allows movement of the respective pivotal lever corresponding to the place carrying means a distance equal to a rotation of the ratchet sufficient to move a digit cylinder one digit, and means for blocking the range of pivotal motion of said levers depending on the amount of rotation of the ratchet wheel necessary to bring a desired digit up on a digit cylinder.

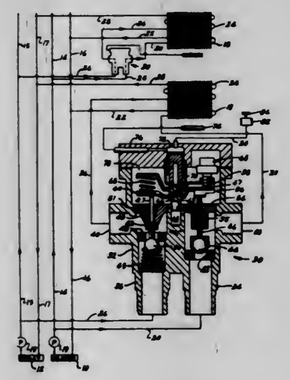
3,300,131
INDICATING DEVICE
Michael S. Juhas, Torrington, Conn., assignor to Veeder Industries Inc., a corporation of Connecticut
Filed Aug. 14, 1964, Ser. No. 389,615
8 Claims. (Cl. 235—103)

7. An indicating device comprising a base with an axial opening therein; a knob having a rim, a central hub with an inner axial end rotatably mounted within the axial opening of the base and an outer axial end, and a radial web intermediate the inner and outer axial ends connecting the rim and the hub; a counting module having a counting mechanism and a counting mechanism support rotatably mounted on the outer axial end of the hub; drive means connecting the knob and the counting mechanism; and locking means for locking the counting module to the base including axially extending slots in the base angularly spaced around said axial opening, axially extending recesses in the counting module support in alignment therewith respectively, and locking fingers reciprocable in the slots between extended positions received within the recesses and retracted positions withdrawn from the recesses; said knob web having an angular slot for sequentially receiving the locking fingers in their extended positions as the knob is rotated, said inner axial end of the hub having a peripheral cam groove and said locking fingers having followers received in the cam groove for



timely and sequential extension of the locking fingers through the angular slot and into the support recesses and withdrawal of the locking fingers to their retracted positions.

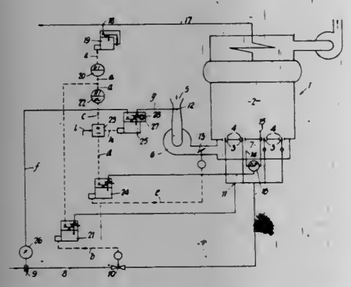
3,300,132
AIR CONDITIONING SYSTEM AND VALVE USED THEREIN
Darwin R. Grahl, Lincoln Park, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,509
2 Claims. (Cl. 236—1)



1. An air conditioner valve comprising a housing having a hot liquid inlet and outlet defining a first flow path therebetween, a cold liquid inlet and outlet defining a second flow path therebetween; partition means within the housing completely isolating the first and second flow paths from one another, and cooperating with the housing in defining an operator chamber; a hot valve seat located in the first flow path; a cold valve seat located in the second flow path; a first valve element registering with the hot seat; a second valve element registering with the cold seat; a first stem extending from the first valve element through the partition means into the operator chamber; a second stem extending from the second valve

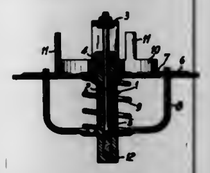
element through the partition means into the operator chamber; an annular seal in the partition means surrounding at least one of the stems; temperature-responsive power means located to respond to the demand for hot or cold fluid, said power means having an output member movably located in the operator chamber; and a lever operator disposed in the operator chamber with its intermediate portion engaged with the output member and its opposite end portions engaged with respective ones of the valve element stems; said cold valve element being disposed between the cold inlet and cold seat, said cold valve element being spring-urged toward the cold seat, whereby the second stem acts as a fulcrum for the lever operator during movement of the hot valve element; said hot valve element being disposed between the hot valve seat and hot outlet, whereby the hot seat constitutes an abutment for causing the first stem to act as a fulcrum for the lever operator during movement of the cold valve element.

3,300,133
CONTROL OF STEAM GENERATORS
Charles Edward Dines, Lewisham, London, England, assignor to Elliott Brothers (London) Limited, a company of Great Britain
Filed Apr. 5, 1965, Ser. No. 445,444
Claims priority, application Great Britain, Apr. 7, 1964, 14,347/64
3 Claims. (Cl. 236—14)



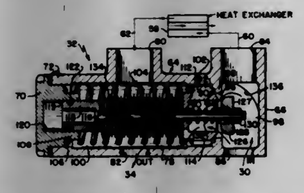
1. In combination with an oil-fired steam generator having oil-supply and air supply passages, and a steam-delivery passage, apparatus for the control of the said generator comprising pressure-responsive oil-flow and air-flow measuring devices in said oil-supply and air-supply passages, respectively, to the said generator, said generator having oil burners with associated air-ports, pressure-responsive means for measuring the oil flow and air flow at said burners and said associated air-ports, respectively, means for controlling the oil-flow and the air-flow in said respective supply passages, an automatic oil-pressure controller operatively connected between the said oil-flow measuring means and the said oil-flow controlling means, an automatic air pressure controller operatively connected between the said air-flow measuring means and the said air-flow control means, a third automatic controller connected to said steam-delivery passage of the generator and responsive to the pressure therein and connected to said oil-pressure and air-pressure controllers for supplying a control signal thereto, a flow-ratio setting device and a flow-ratio correcting device connected between said third controller and said air-pressure controller, a signal source, means influenced by boiler load conditions connected to said signal source for rendering the said ratio-connecting device operative for correcting the ratio set by said setting device over a limited range of high-load conditions, and for rendering the said correcting device inoperative below the said range, and a fourth automatic controller connected between the said oil-flow and air-flow measuring devices on the one hand and the ratio-correcting device on the other hand, whereby the ratio of the oil and air flows is influenced automatically, over the said high-load range, from the said oil-flow and air-flow measuring devices through the intermediary of the said fourth controller and ratio-correcting device and, below the said range, from the said oil-flow and air-flow measuring means at the value set by the ratio-setting device without the intervention of the said fourth controller and ratio-correcting device.

3,300,134
THERMOSTATIC CONTROL VALVE
Dieter Wahler, Esslingen am Neckar, Germany, assignor to Gustav Wahler, Esslingen am Neckar, Germany
Filed Oct. 20, 1964, Ser. No. 405,177
Claims priority, application Germany, Oct. 23, 1963, W 35,492
8 Claims. (Cl. 236—34)



1. A thermostatic control valve for the control of a fluid, comprising a feeler unit having two parts consisting of a tubular feeler element with a closed end and completely filled with a quantity of thermally expansible material subject to diminution by accidental loss thereof, said material being subject to the assumption of a contracted, solid state thereof in response to a predetermined low temperature of said fluid, said material being further subject to the assumption of an expanded liquid state in response to an increase of temperature of said fluid above said predetermined low temperature, and a feeler pin projecting into said feeler element and surrounded for a substantial portion of its length by said thermally expansible material, a stationary mounting plate having a valve opening therein, means for fixedly securing said feeler pin relative to said mounting plate, valve means fixedly secured to said feeler element and movable therewith, said valve means being adapted to open and close said valve opening, spring means operatively connected to said valve means and to said feeler element, said spring means exerting a force tending to move said valve means and said feeler element in one direction from a closed position of said valve means to an open position, the mutual coaction of said feeler pin and of said expansible material in said contracted solid state being effective to neutralize said force and thereby to maintain said valve means in said closed position, the mutual coaction of said feeler pin and said expansible material in said expanded liquid state thereof in response to said increase of temperature of said fluid being effective to move said feeler element and said valve means in a direction opposite to said one direction to said open position and compress said spring means, said spring means being effective to move said valve means in said opposite direction to return said valve means to said closed position upon a return of said expansible material to its contracted solid condition in response to the return of said fluid to said predetermined low temperature, said spring means being further effective to move said valve means in said opposite direction beyond said closed position to an extent such as to open said valve opening upon said diminution of said quantity of said thermally expansible material by said accidental loss and the consequent diminution of said mutual coaction of said feeler pin and said expansible material.

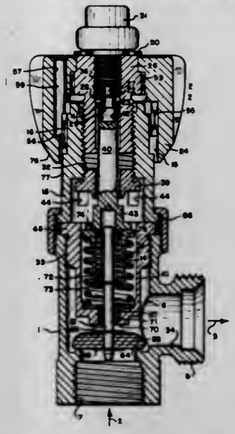
3,300,135
THERMAL BYPASS VALVE WITH BIMETALLIC CONTROL
George E. Slater, Willoughby Hills, and Don W. James, Kirtland, Ohio, assignors to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,239
4 Claims. (Cl. 236—34.5)



3. For use in a system for supplying lubricating oil under pressure to a device, said system including a reservoir, said device, a heat exchanger, and pump means: a valve assembly for selectively delivering oil from said device to said heat exchanger or returning the oil to said reservoir, said valve assembly comprising a body having a first chamber having an inlet connected to receive oil from said device and an outlet connected to deliver oil to said heat exchanger and second chamber having an inlet connected to receive oil from said heat exchanger and an outlet connected to deliver oil to said reservoir, an apertured wall separating said chambers, the aperture in said wall forming a by-pass connection through said valve assembly, an apertured valve member adapted to seal against a seat around the aperture in said wall, spring means for urging said apertured valve member against said seat, a second valve member adapted to seal the aperture in said apertured valve, member and temperature responsive means operatively connected at its opposite ends to said valve members and operable to move said second valve against said apertured valve member when the temperature of said oil exceeds a predetermined value to close said by-pass passage, and said valve members being movable together against the resistance of said spring means to open said by-pass passage when the pressure differential between said first and second chambers exceeds a predetermined value.

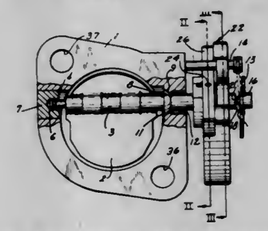
3,300,136
THERMOSTATIC FLOW REGULATING VALVE
Marcel Wilhelm Züblin, London, England, assignor to Sulzer Bros. Inc., New York, N.Y., a corporation of New York
Filed July 23, 1964, Ser. No. 404,197
Claims priority, application Switzerland, July 23, 1963, 9,192/63
4 Claims. (Cl. 236—99)

1. A thermostatically operated valve comprising upper and lower valve body sections, a valve seat in said lower section, a movable valve closing member adapted in one position to close said valve at said seat, an adjusting member movably supported in said upper body section, a thermostat supported by said adjusting member, a spindle affixed to said closing member, guide means for said spindle fixed in said lower body section, an abutment on said spindle, an annular member disposed about said spindle and engageable against said abutment for valve-opening movement of said spindle, a first spring engaged between said guide and annular member urging said annular member in valve-opening direction, a second spring engaged between said annular member and abutment urging said annular member against said abutment, a spindle connection member engaged between said thermostat and annular member, and a reversible element engageable in one position between said spindle connection member and said thermostat, and engageable in the opposite position



between said spindle connection member and said adjusting member.

3,300,137
MANIFOLD HEAT CONTROL VALVE
Terrance James Murphy, Detroit, Mich., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 6, 1964, Ser. No. 387,914
13 Claims. (Cl. 236—101)

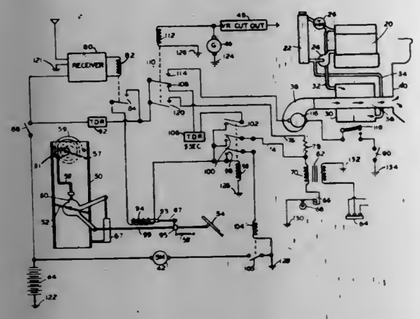


1. A fluid flow control valve comprising in combination:
- a valve body having a fluid flow opening therethrough;
- a shaft opening extending through a wall of said valve body and having an inwardly facing seat provided therein;
- a shaft extending through said opening and carrying fixed with respect thereto a bearing element having a bearing surface axially opposed to said seat;
- resilient means anchored fixedly with respect to said valve body located outside of said seat and bearing longitudinally onto said shaft for urging said bearing surface and said seat together;
- a valve closure fixed to said shaft and means on said shaft for opening and closing said valve.

3,300,138
MOTOR VEHICLE PREHEATER
Vincent P. McKilligan, R.D. 1, Unadilla, N.Y. 13474
Filed May 14, 1964, Ser. No. 367,407
7 Claims. (Cl. 237—8)

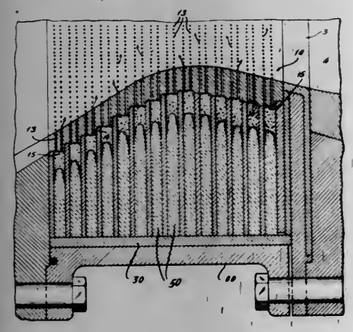
1. A motor vehicle body preheater having an internal combustion engine and means to heat the body of said vehicle from waste heat of said engine, said engine having a starting motor and a fuel and air mixture device with a throttle to control the speed of said engine, and a thermostatically actuated choke to enrich the mixture for

starting, said choke having means to prevent the throttle from closing once opened when cold to provide a fast idle, a solenoid device for opening said throttle from closed position, a coded radio signal receiver having a relay energized by reception of a coded signal transmitted



from without the vehicle, and means for energizing said starting motor and for energizing said solenoid device for to open said throttle and means responsive to engine starting for deenergizing said starting motor and said throttle actuating solenoid device.

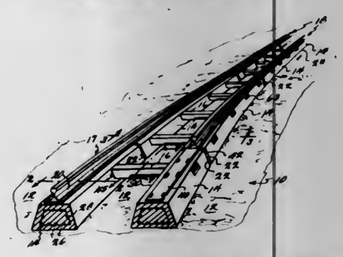
3,300,139
THERMAL-STRUCTURAL SYSTEM
Rubin Feldman, Creve Coeur, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Oct. 26, 1964, Ser. No. 406,280
8 Claims. (Cl. 239—127.3)



2. A thermal-structural system comprising a gas-permeable liner, a cellular load and heat transmitting skeleton selectively mountable and demountable on said liner, said skeleton being made up of a plurality of self-supporting wedge shaped, open faced sections in side by side relationship circumferentially and face to back relationship axially, the cells of each of said sections being defined by radially extending ribs projecting axially from a flat face, each of said cells communicating with said liner; a thermal element including a heat-conductive matrix and a sublimating composition within the cells of said skeleton, said heat-conductive matrix being distributed throughout said thermal element, engaging the walls of the cells, and being substantially stable dimensionally in use, said sublimating composition subliming at a temperature lower than the expected temperature to be attained by the said skeleton adjacent the liner, to form a gaseous sublimate which decomposes endothermically at a temperature lower than that expected to be reached by said liner; and a load-carrying structure backing said skeleton.

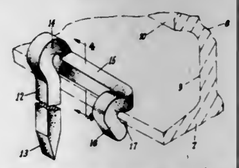
3. The system of claim 2 wherein the liner is cylindrical in transverse cross section; the sections of skeleton are segments of a circle and the ends thereof are staggered with respect to contiguous segments axially of the liner.

3,300,140
BEAMS FOR RAILROAD TRACK STRUCTURE
Nelson K. Moses, Ashtabula, Ohio, and Robert A. McClung, West Palm Beach, Fla., assignors to Railroad Permanent Way Products Corp., Ashtabula, Ohio, a corporation of Ohio
Filed Dec. 7, 1965, Ser. No. 512,124
21 Claims. (Cl. 238—25)



1. In a rail track construction for supporting spaced rows of traction rails on a road bed, the combination comprising: spaced rows of elongated precast reinforced concrete beams supported on the road bed, each of said elongated beams having a flat upper surface with side walls depending therefrom and opposite squared off ends, each of the elongated beams having recessed means in the side walls thereof to receive a cross beam end, each of the rows having the elongated beams therein arranged in abutting end-to-end relationship; a plurality of precast concrete cross beams, each of the cross beams having oppositely disposed squared off ends, said cross beams being spaced from each other and each extending between and having its ends received in oppositely disposed recessed means of the spaced rows of elongated beams; tie bar means for connecting each cross beam to the oppositely disposed elongated beams; and continuous resilient rail seat means for supporting a traction rail on the upper surface of the elongated concrete beams of each row.

3,300,141
RAIL SPIKE AND ANCHOR DEVICE
Richard W. Purdy, Cleveland, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Aug. 17, 1964, Ser. No. 389,904
7 Claims. (Cl. 238—315)

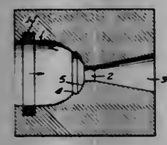


1. A rail spike and anchor device for use with a rail having a head, a web, and a lower flange, and a tie, said device having an elongated body portion to be driven into said tie, a head portion by means of which driving force may be applied to the body portion, a one piece lateral extension on said head portion adapted to lie along the upper surface of said flange in a position substantially parallel to an edge thereof, and a hook-shaped spur at the end of said extension remote from said head to extend over said edge of said flange and engage beneath the lower surface thereof.

ERRATUM

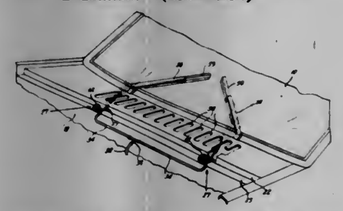
For Class 239—127.3 see:
Patent No. 3,300,139

3,300,142
ROCKET NOZZLE CAPABLE OF INDUCING FLOW SEPARATION
John F. Brown, Del Mar, Calif., assignor to Whittaker Corporation, a corporation of California
Filed June 25, 1963, Ser. No. 290,472
2 Claims. (Cl. 239—265.15)



1. A rocket nozzle comprising an ablative material having a convergent inlet section adapted to direct incoming gases substantially radially inwardly so as to induce flow separation, said nozzle being provided with a sacrificial barrier means upstream of said inlet section for generating gases to promote flow separation.

3,300,143
NOZZLE FOR WINDSHIELD CLEARING SYSTEM
Charles T. Lawson, Cookeville, Tenn., assignor, by mesne assignments, to The Delman Company, a corporation of Tennessee
Filed Feb. 3, 1965, Ser. No. 430,070
2 Claims. (239—284)



1. A fluid discharge nozzle unit for use in a windshield clearing system for an automobile having a windshield and a ledge portion located forwardly thereof, comprising:

(a) a one-piece tubular body member having a pair of axially aligned sections and a laterally extended bracket section located between the inner adjacent ends of said aligned sections,

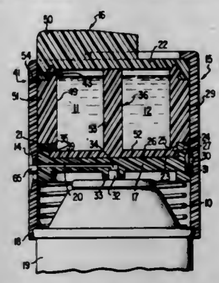
(b) said bracket section including a base portion of a U-shape having the legs thereof terminating in laterally inclined parallel extensions joined with corresponding ones of the inner adjacent ends of said aligned sections,

(c) the outer end of one of said aligned sections terminating in a discharge portion, and the outer end of the other one of said aligned sections terminating in an inlet portion,

(d) said base portion located in a plane parallel to a plane extended through the axes of said aligned sections, and

(e) means extended between and engageable with the legs of said base portion and attachable to said ledge for securing the nozzle unit to said ledge.

3,300,144
MIXING HEAD
Leonard L. Marraffino, 1824 NW. 36th Court, Oakland Park, Fort Lauderdale, Fla. 33311
Filed Feb. 4, 1965, Ser. No. 430,294
6 Claims. (Cl. 239—307)



1. A spray head for containing a plurality of additive fluids and adapted for use with a propellant container of the aerosol bomb type having a discharge nipple for the propellant fluid adapted to be opened upon relative displacement between said container and nipple, said nipple being biased to a closed position,

said spray head comprising a housing and a piston mounted for movement therein between an up closed position and a down discharge position, said housing having a sidewall with a spray aperture therein,

said piston including a base having a propellant port for discharging said propellant fluid and an additive port juxtaposed said main port for discharging said additive fluid, and a cap movably attached to said base,

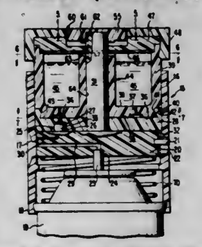
said base being operatively anchored with respect to the housing sidewall to restrict movement of said base relative to said sidewall to vertical movement only and vertically to align said propellant port and said additive port with said spray aperture,

said base having a socket for snugly receiving said nipple, a propellant duct extending from said socket to said propellant port and an additive duct extending from said additive port to said cap,

said cap having wall means forming a plurality of compartments for holding additive fluids, each compartment having an opening which upon movement of said cap relative to said base is movable from a sealed position with said base to a discharge position with its opening in fluid communication with said additive duct,

and vent means providing a venting flow path to the selected compartment when in said discharge position.

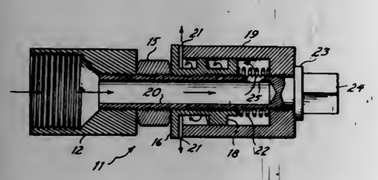
3,300,145
MIXING HEAD
Leonard L. Marraffino, 1824 NW. 36th Court, Oakland Park, Fort Lauderdale, Fla. 33311
Filed Feb. 4, 1965, Ser. No. 430,295
5 Claims. (Cl. 239—307)



1. A spray head for containing a plurality of additive fluids and adapted for use with a propellant container

of the aerosol bomb type having a discharge valve biased to a closed position for the propellant fluid, said spray head including a housing having a vertical sidewall with a spray aperture in its lower portion and attaching means for rigid attachment to said container, valve means mounted for vertical movement only in the lower portion of said housing at said spray aperture and having a bottom socket for snugly receiving said valve and having top seal means, said valve means having a propellant duct extending from said socket to said spray aperture and a first additive duct extending from said top seal means to said spray aperture, a seal disk mounted in a fixed position in said housing having a top surface and a bottom seal means vertically aligned for sealing engagement with said top seal means and having a second additive duct extending from said bottom seal means to said top surface, a cup mounted for non-vertical movement only in the upper portion of said housing and having wall means defining a plurality of discrete additive fluid compartments in said cup, each compartment having a bottom wall with an additive opening therethrough, said seal disk and said cup being mounted in said housing to enable movement of a selected additive opening to a discharge position with said second additive duct and to provide a fluid seal between the top surface of said seal disk and the bottom wall of the cup, and vent means providing a venting flow path to the selected compartment when in said discharge position.

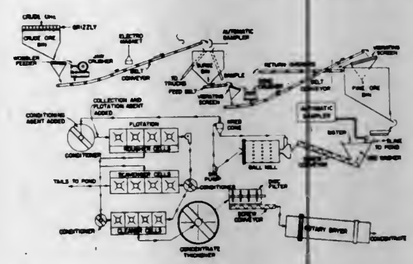
3,300,146
FUEL OIL JET
Walter S. Oppenheimer, 1445 70th Ave., Philadelphia, Pa. 19126
Filed Aug. 10, 1964, Ser. No. 388,607
7 Claims. (Cl. 239—487)



1. In a fuel oil jet, a housing open at one end and having a threaded bore at the opposite end, a fuel tube threaded thereinto and extending therethrough, the fuel tube being open and protruding from the open end and being closed and protruding from the opposite end and communicating therebetween with the interior of the housing, an end plate threaded onto the protruding open end of the fuel tube into juxtaposition with the open end of the housing but spaced therefrom for flow of oil therebetween to the exterior, and means threaded onto the open end of the fuel tube to retain the assembly together.

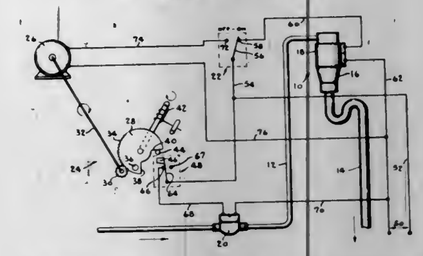
3,300,147
CONCENTRATION OF BERYLLIUM ORES
Theodore L. Johnston, Manitou Springs, Colo., assignor to Mineral Concentrates and Chemical Company, Inc., Denver, Colo., a corporation of Colorado
Filed Nov. 8, 1963, Ser. No. 322,333
14 Claims. (Cl. 241—20)

2. A process for the concentration of beryllium minerals from an ore containing them along with gangue materials which comprises: comminuting the ore to a particle size between about minus 50 and minus 100 mesh; forming an aqueous pulp of the ore having a solids content from about 15 to about 60 percent; thoroughly mixing the pulp with from about 4 to about 6 pounds per ton of ore of an alkaline conditioning agent selected from the group consisting of alkali metal hydroxides, alkali metal carbonates and alkali metal sulfides at a pH between about 9.5 and 11 at a temperature between about 55° C. to 90° C.; adding a higher



fatty acid collection and flotation agent to the conditioned pulp in an amount not in excess of about 25 grams per ton of ore; and froth floating the beryllium minerals from the gangue materials.

3,300,148
FLUSHING CONTROL FOR WASTE DISPOSAL SYSTEMS
Richard K. Engholdt, Wauwatosa, Wis., asssignor to Erie Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 3, 1964, Ser. No. 335,637
3 Claims. (Cl. 241—33)



2. A disposal system having a motor driven disposal unit with a water supply line and a drain line connected thereto comprising:

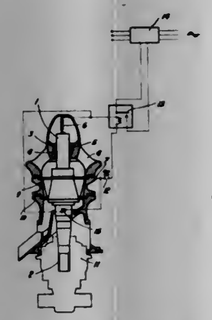
water valve means in said water supply line to control flow to said disposal unit;

motor operated control means for said water valve means, said control means including a timer motor operatively connected to said water valve means to cause said water valve means to close at a given interval after said timer motor has been energized, said timer motor being of the type which can be stalled without damage; and

switch means for alternately energizing and deenergizing the disposal drive motor and said motor operated control means.

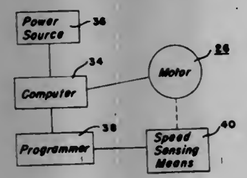
3,300,149
ELECTRIC STRESS SENSING DEVICES FOR CRUSHING MACHINES
Claude Yves Lucien Lemardeley, Paris, and Paul Marcel Emile Barrot, Clichy, France, assignors to Societe Anonyme: Babbitless, Paris, France, a corporation of France
Filed Dec. 2, 1963, Ser. No. 327,183
Claims priority, application France, May 17, 1963, 935,293
7 Claims. (Cl. 241—36)

1. In a gyratory crusher having a framework and an oscillatory carrier shaft supported on the framework and integral with the mobile crushing core member of the machine, an electrical sensing device for detecting abnormal stresses, comprising a low-voltage power supply, means for electrically isolating said carrier shaft from said crusher framework, an electrical circuit connecting said power supply source on one hand to said carrier shaft and on the other hand to said crusher framework,



a servo-member in said electrical circuit operative upon an accidental electrical contact being established between the assembly formed by the carrier shaft and the crushing core member, on one hand, and the crusher framework, on the other, and means integral with said servo-member effective to initiate stopping of the crusher.

3,300,150
GARBAGE DISPOSAL SPEED CONTROL
William L. Sones, Dayton, James O. Elliott, Xenia, and George A. Neyhouse, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,204
7 Claims. (Cl. 241—36)



1. In a garbage disposal unit, the combination of, means for grinding material, A.C. induction motor means for operating said grinding means, solid state semiconductor computer means including switch means for regulating the average voltage to said A.C. induction motor, and means for sensing a plurality of operating conditions of said unit and adapted for producing plural signals to said computer means, and means in said computer means for simultaneously processing said signals for varying the speed of said motor means to produce an optimum grinding action.

3,300,151
VORTEX GRINDING MILL
Lothar Robert Zifferer, R.D. 3, Glen Rock, Pa. 17327
Filed Jan. 9, 1964, Ser. No. 336,771
24 Claims. (Cl. 241—257)

1. A grinding mill for reducing friable material to a desired range of fine sizes comprising in combination,

(a) a substantially flat table member mounted for rotation within a horizontal plane about a substantially vertical axis,

(b) means to drive said table member rotatably about said axis at desired speeds,

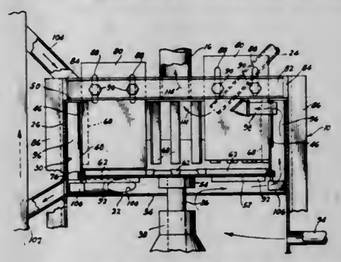
(c) substantially radial impeller means carried by the horizontal upper surface of said table member for

movement therewith to induce rotary movement of material within the mill,

(d) stationary substantially circular peripheral wall means extending upwardly from said table member adjacent the periphery thereof to confine and retain a semi-static layer of material against the same and means supporting said peripheral wall means with the lower edge of said wall spaced above the periphery of said table member to provide an annular discharge space of predetermined uniform width for ground material to pass therethrough from the interior of the mill,

(e) a plurality of barrier plates,

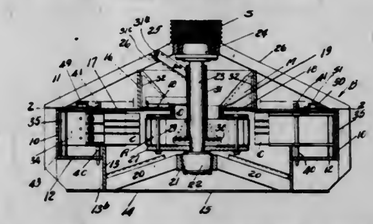
(f) means supporting said barrier plates stationarily within said circular wall means at circumferentially spaced locations and said plates extending radially inward therefrom, the lower edges of said barrier plates



being spaced vertically above said impeller means on said table in shearing relationship thereto and said barrier plates also being positioned in the path of the masses of material being moved in a partial circular path as impelled by said radial impeller means on said table to cause the lower portions of said mass to be sheared and crushed between said lower edge of said barrier plates and said impeller means while the upper portions of said masses abruptly encounter said barrier plates, thereby causing said upper portions to change direction of movement and generate different velocities between contiguous layers of material resulting in autogenous grinding of the said material, and

(g) feed means positioned to deliver raw material to the upper surface of said table member while rotating.

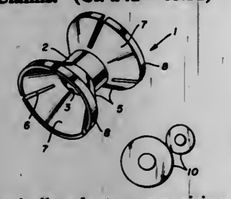
3,300,152
CRUSHER APPARATUS
George W. Behnke and Hans A. Wirth, Durand, Mich., assignors to Simplicity Engineering Company, Durand, Mich., a corporation of Michigan
Continuation of application Ser. No. 80,053, Jan. 3, 1961. This application Dec. 16, 1963, Ser. No. 330,996
2 Claims. (Cl. 241—275)



1. A centrifugal crushing apparatus comprising: a bowl; a vertically disposed driven shaft means for said bowl; centrifugal slinger means mounted on said shaft means within said bowl; means for feeding the material to be crushed to said slinger means; a plurality of circumferentially spaced, impact surface means disposed in a substantially horizontal plane in said bowl around said

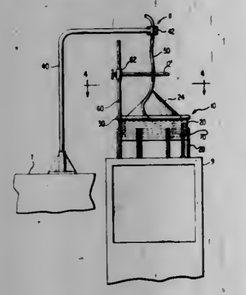
slinger means and against which the material being processed is flung; fixed guide means supporting the impact surface means for movement substantially linearly inwardly toward the slinger means; and means for holding said impact surface means in various substantially linearly inwardly adjusted positions, said guide means comprising a plurality of circumferentially spaced backer plate means extending generally radially inwardly from said bowl.

3,300,153
BOBBIN INSERT
Joe D. Fenn, Atlanta, Ga., assignor to Monsanto Company, a corporation of Delaware
Filed Dec. 10, 1964, Ser. No. 417,271
4 Claims. (Cl. 242—46.21)



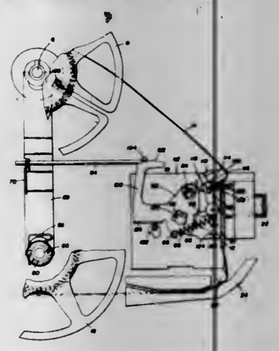
1. A bobbin-to-spindle adaptor comprising,
a central portion having a bore defined therethrough for mounting said insert in tight relation on a spindle,
oppositely disposed coaxial, resilient end portions joined to respective ends of said central portion,
each of said end portions having conical inner guide surfaces joining with said defined bore and sloping outwardly therefrom,
a plurality of slot means extending inwardly from the outer edges of each of said end portions providing springy segments, and
a bobbin contacting surface formed around the outer edge of each of said end portions for engaging with and gripping the inner wall of a bobbin.

3,300,154
STOWING APPARATUS FOR WORKING CABLES AND THE LIKE
Robert N. Campbell, Jr., 19 Audubon Place, Mobile, Ala. 36606
Filed Oct. 21, 1964, Ser. No. 405,376
8 Claims. (Cl. 242—54)



1. Stowing apparatus for an elongated flexible transmission element of the class consisting of cables, hoses, wires and the like disposed in connecting relation between points fixed respectively on two stations which are movable vertically relatively to each other, one of said stations being normally above the level of the other, said apparatus comprising a stowing hopper fixed on the lower of said two stations and providing an upright cylindrical annulus formed of radially spaced apart inner and outer walls adapted to contain convolutions of the element and having means adjacent its bottom for securing the lower end portion of the element and holding it against twisting, a superjacent clamping device fixed on the upper of said two stations, movable therewith, gripping the other end portion of the element and holding it against twisting, and a guide mounted on the lower of said two stations above the hopper for passing the intervening portion of the element and guiding it back into convolutions in the hopper when the two stations move toward each other.

3,300,155
AUTOMATIC REWINDING MECHANISM FOR FILM OR THE LIKE
Robert J. Roman, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 18, 1964, Ser. No. 397,451
10 Claims. (Cl. 242—55.12)



1. In a mechanism for automatically rewinding a web after it has been transported in one direction by intermittent film pull-down means through a motion picture projector or the like having supply and take-up reels, the combination comprising:
an operating station for said web;
drive means for driving said film pull-down means for transporting said web through said operating station in one direction, and for selectively driving one of said supply and take-up reels;
shifting means movable between a normal forward position in which it couples said drive means to said take-up reel to wind up said web thereon as said web is transported through said operating station in said one direction, and a reverse position in which it couples said drive means to said supply reel for rewinding said web thereon, and
control means for moving said shifting means between its forward and reverse positions, said control means including a spring, and a latch for releasably holding said shifting means in its normal forward position against the bias of said spring, and in response to said web after it has completed its travel in said one direction for releasing said shifting means for movement by said control means to its reverse position for automatically rewinding said web onto said supply reel.

3,300,156
FILM SCROLL INCLUDING AN END FASTENER
Archie J. Tucker, Lawrence A. Ulmschneider, and Nell S. White, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New York
Filed Feb. 24, 1965, Ser. No. 434,927
9 Claims. (Cl. 242—74.1)

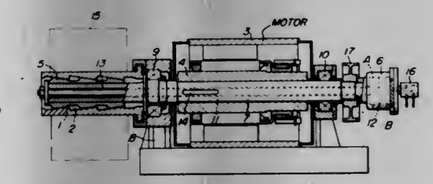
1. A scroll-like film supply comprising:
a coreless roll of film having a leader portion extending therefrom;

a spool having at least one annular winding support surface and a trough portion of relatively smaller radius; and



staking tabs securing the leader portion in the trough portion, said staking tabs being entirely below said support surface whereby they do not engage film layers supported thereon.

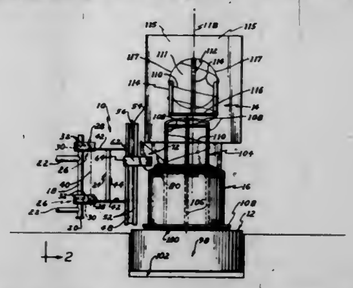
3,300,157
COMBINATION COILING AND UNCOILING APPARATUS
Yasuki, Koreishi, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan
Filed Mar. 5, 1965, Ser. No. 437,518
Claims priority, application Japan, Mar. 6, 1964, 39/12,306
2 Claims. (Cl. 242—78.1)



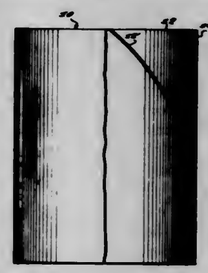
1. A combination coiling and uncoiling apparatus for use in connection with a rolling mill or the like, comprising an electric motor, a drum drive shaft extending in both directions through said motor for rotation thereby, a drum mounted on one end of said drive shaft for taking up thereon a hoop in the form of coil and paying off the coiled hoop therefrom, said drum being axially split into a plurality of drum segments arranged for movement in the radial direction of said drum, and said drum being directly coupled to said motor with a bearing interposed therebetween, a rotary cylinder mounted on the other end of said drive shaft in a manner to be directly coupled to said motor with a bearing interposed therebetween, a piston movably disposed in said rotary cylinder and having its piston rod passed through an axial bore in said drive shaft to terminate at said one end of said drive shaft, and means provided in said drum and operatively connected with said piston rod so as to cause in response to axially advancing and retracting movement of said piston rod corresponding radial movement of said drum segments to thereby cause contraction and expansion of the outside diameter of said drum.

3,300,158
WIRE COILING DEVICE
Grant F. Strong, Rockford, Ill., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 429,103
7 Claims. (Cl. 242—83)

1. In an apparatus for producing a relatively dense and tangle free coil of wire the combination of a rotatable cage means and a coil hold down device disposed adjacent said cage means, said cage means being adapted to receive loops of wire fed from above to and stacked upon said cage means, said hold down device including a floating shoe means overlying said cage means and adapted to loosely engage and rest upon each loop of wire as it is initially disposed upon said cage means to thereby maintain all of the loops of wire forming the coil in a densely stacked together tangle free condition.

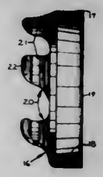


3,300,159
SMOOTH-SURFACED PAPER BODY AND METHOD OF FORMING SAME
Herbert P. Johnson and Lawrence R. Wilkes, Cedartown, Ga., assignors to Textile Paper Products, Inc., Cedartown, Ga., a corporation of Georgia
Filed July 24, 1963, Ser. No. 297,459
18 Claims. (Cl. 242—118.32)



4. A tubular paper body characterized by an exceptionally hard and smooth outer surface, said paper body being formed of laminated multiple plies and having at least the outer ply thereof impregnated with sulfur and the exposed surface of said impregnated ply burnished smooth.

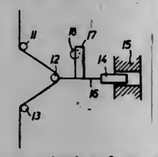
3,300,160
THREAD ATTACHING MEANS FOR BOBBINS
Paul C. Consoletti, Hopedale, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Sept. 8, 1964, Ser. No. 394,903
2 Claims. (Cl. 242—125.1)



1. A bobbin for automatic bobbin changing looms upon which filling thread is adapted to be wound including a cylindrical butt portion and an integrally formed barrel portion of lesser diameter than said butt portion and extending axially therefrom, said butt portion including a stepped portion contiguous with said barrel portion, a cylindrical band member adapted to be constrictingly attached to said stepped portion, having a first side abutting

said butt portion and a second side having a plurality of outwardly directed projections, said projections having an outer and inner surface defining a web, said outer surface being disposed at an angle to the axis of said bobbin and said inner surface extending in a plane substantially parallel to the axis of the bobbin, said web terminating in a bulbous rib with a portion thereof extending inwardly beyond the limits of said inner surface, thereby providing a means for capturing and retaining the free end of said filling to initiate winding of a filling package on said bobbin.

3,300,161
CONTROL DEVICE
Peter Hermanns, Cologne, Germany, assignor to Frau Sigrid Heim nee Krukenberg, Cologne-Zollstock, Germany
Filed Sept. 21, 1964, Ser. No. 398,001
Claims priority, application Germany, Sept. 21, 1963, H 50,326; Mar. 20, 1964, H 52,108
10 Claims. (Cl. 242—154)



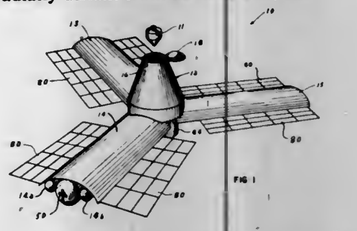
1. A yarn tensioning device for textile machines comprising in combination: yarn guide means including a plurality of elements arranged to form a triangle and through which yarn passes, one of said elements being movable in a direction at right angles to the yarn path to be moved by a component of yarn pull in said direction so that there is a first force on said movable element in said direction; electromagnetic means connected to said movable element for providing a second force opposite to said first force; the curve of the path-pulling force relationship of said electromagnetic means being balanced with the curve of the path-pulling force relationship of the yarn guide means so that the two curves and thus the oppositely effective forces are congruent along a certain minimum path of the adjusting region of the device and an equilibrium of the forces is maintained at positions along this region with the yarn pull remaining the same; electrical means coupled with said movable yarn guide element so that when said movable element moves, a proportional change of an electrical value of said electrical means takes place; a yarn tensioning assembly; and an electrical circuit connected to control said assembly and connected to receive a signal from said electrical means which is significant of the change of the electrical value and which is a setting value for said assembly.

3,300,162
RADIAL MODULE SPACE STATION
Owen E. Maynard, Friendswood, Willard M. Taub, Houston, David Brown, La Porte, Edward H. Olling, Seabrook, and Robert M. Mason, Pasadena, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 20, 1964, Ser. No. 339,040
11 Claims. (Cl. 244—1)

11. A space station structure adaptable to being disposed as the payload of a launch rocket and launched into a near-earth orbit for use as a manned space station, said space station comprising:

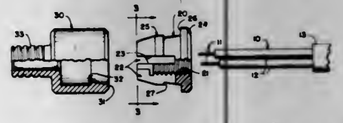
a central hub structure;

a plurality of elongate modular structures, each in the form of a cylindrical pressure vessel having a plurality of transverse partitions rigidly connected to the inner wall of the vessel and dividing the vessel into a number of cylindrical compartments adaptable to individual pressurization for use as living compartments, said transverse partitions each having a uniform curvature providing a cylindrical deck surface which is equiradially distant from the hub axis; and



access means communicating each compartment of said modular structures with said hub structure whereby personnel may move between the compartments of the modular structures and said hub structure.

3,300,163
COLLET FOR ELONGATED MEMBERS
John E. Randolph, Palatine, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Mar. 14, 1966, Ser. No. 534,234
6 Claims. (Cl. 248—56)



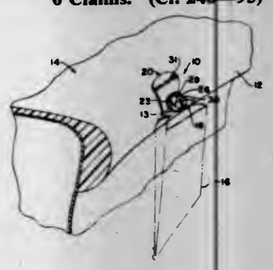
1. A collet for elongated members having a flexible covering including:

a resilient gripping member of tubular shape having threads formed on its inner surface for engaging and gripping a flexible covering on an elongated member and having a ridge formed on its outer surface;

a rigid housing member having means for surrounding the gripping member and for deforming the gripping member into a smaller size radially with respect to the elongated member thereby causing the gripping member to grip the flexible covering of the elongated member more securely; and

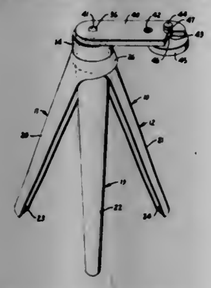
a ridge on the housing member for cooperation with the ridge on the gripping member to fix the position of the gripping member within the housing member and to prevent withdrawal of the gripping member from the housing member.

3,300,164
SUPPORTING DEVICE
Theodore W. Welles, Shaker Heights, Ohio (3049 E. 55th St., Cleveland, Ohio 44127)
Filed Aug. 31, 1964, Ser. No. 393,126
6 Claims. (Cl. 248—95)



1. A support device for adhesive application to a surface and comprising a relatively thin walled flexible sheet member having an adhesive coating on one side to facilitate adhesion of said member to a surface, and a resilient support member secured to said sheet member so as to make at least narrow surface contact therewith to permit sufficient flexibility of said sheet member to allow mounting of said sheet member on an irregular surface, said support member taking the form of a split ring defining first and second leg portions, said first leg portion extending outwardly and upwardly from said sheet member to receive and support an object.

3,300,165
TRIPOD
Richard H. O'Kane, 16045 Highway 128, Calistoga, Calif. 94515
Filed July 27, 1965, Ser. No. 475,149
15 Claims. (Cl. 248—168)



7. A collapsible support, comprising:

(a) a plurality of elements disposed one above the other in overlapping engagement, said elements having concentric mating surfaces of substantially frusto-spherical configuration to provide for universal movement therebetween;

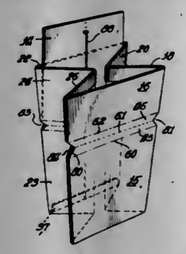
(b) a plurality of legs, each of which is fixed to one of said respective elements and extends downwardly therefrom;

(c) a table received on the upper exterior surface of the upper of said elements, said table being adapted to support articles thereon;

(d) retainer means mating with the lower of said elements for universal movement with respect thereto; and,

(e) means to selectively pull said table and retainer towards each other to clamp said elements therebetween.

3,300,166
COLLAPSIBLE AUTOMATICALLY SET UP DISPLAY CONTAINER
Walter P. Wojciechowski, Hazlet, N.J., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed June 14, 1965, Ser. No. 463,822
9 Claims. (Cl. 248—174)



1. A collapsible, automatically set up display container, formed of foldable sheet material such as paperboard,

for holding a plurality of articles arranged haphazardly, comprising the combination of:

(a) a base formed of opposed pairs of interconnected vertical walls hinged together at their opposite side edges along vertical hinge lines to form a tubular structure;

(b) a bin formed of opposed pairs of interconnected vertical panels hinged together at their opposite side edges along vertical hinge lines to form a tubular structure;

(c) the bin tubular structure being disposed above the base tubular structure, and being connected thereto by a hinged connection;

(d) the hinged connection including upper and lower transverse panels between each adjacent vertical wall and panel of the base and bin, the transverse panels being hinged together at their inboard edges and being hinged at the outboard edges, respectively, to the lower horizontal edge of the bin vertical panel and the upper horizontal edge of the base vertical wall;

(e) the end edges of the transverse panels being trimmed so that the transverse panels diverge from the shortest dimension adjacent their inboard edges to the longest dimension adjacent the outboard edges and so that the end edges abut one another, whereby the transverse panels define between the base and bin a transverse ledge disposed at the lower edge of the bin vertical panels;

(f) a bottom wall, for closing the lower end of the bin tubular structure, adapted to be supported by the transverse ledge and being shaped substantially the same as the cross section of the bin tubular structure, and having edge dimensions slightly less than the lengths of the adjacent respective bin vertical panels;

(g) the bottom wall being secured at one edge to one of the lower transverse panels of the hinged connection, and being adapted to pivot from the position across the lower end of the bin to a position adjacent the vertical panel of the bin immediately above the one transverse panel in the collapsed condition of the bin;

(h) the vertical walls of the base, the vertical panels of the bin, and the upper and lower transverse panels adjacent the one transverse panel being hinged medially thereof and adapted to fold inwardly between into the tubular structures of the base and bin in the collapsed condition of the bin;

(i) elastic means such as a rubber band, connected to the bottom wall at a location spaced from the hinged connection and to the base on the one vertical panel operable to bias the bottom wall from the vertical position to the transverse position for automatic set up of the bin.

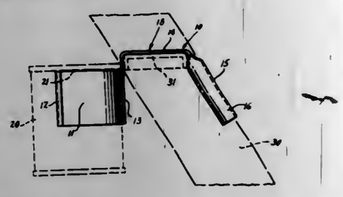
3,300,167
CAN HOLDER HAVING MEANS TO GRASP A HORIZONTAL MEMBER OF A LADDER
Robert C. Malicoat, Carmichael, Calif. (3405 Concetta Way, Sacramento, Calif. 95821)
Filed Nov. 19, 1964, Ser. No. 412,403
4 Claims. (Cl. 248—210)

1. A unitary can holder comprising:

a holder formed from a strip of material configured as a major portion of a circle, the strip being of sufficient strength to support a can and of sufficient resiliency to receive a can;

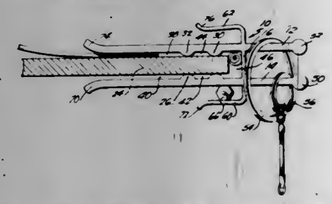
a strap type support securely affixed to the holder intermediate the ends thereof and extending away therefrom, the support being configured to grasp a horizontal support of a ladder and thereby retain the can holder on the ladder, the support including

a first upstanding segment adjacent the holder adapted to abut the leading edge of a ladder step;
a second generally horizontal segment, secured to the first segment, adapted to overlie the load receiving portion of the step; and



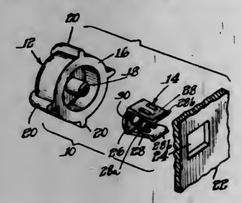
a third depending segment, secured to the second segment and spaced from the first segment, adapted to abut the trailing edge of the step; and
a handle on the support opposite from the holder.

3,300,168
VISOR CLIP
Orlando A. Gaudino, 315 Center Ave., Butler, Pa. 16002
Filed Sept. 15, 1965, Ser. No. 487,383
2 Claims. (Cl. 248—229)



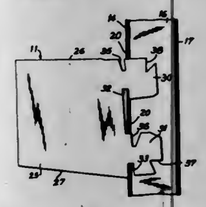
1. A visor clip of molded plastic comprising a pair of spatially disposed flat members having a web spacer disposed therebetween to form a clip for attachment to a visor or the like, said flat members having nub elements symmetrically disposed thereon to provide retaining means, a short intermediately disposed angled member extending in alignment with said web spacer and secured to each of the outer surfaces of the flat members for retaining pencils, cigarettes, and like shaped objects therein, the ends of said flat members and said angled members having outwardly generally extending flared ends, and pairs of segment configured ridged extensions on the inner side of each of the flat members to assure secure mounting of the clip on the visor and disposed sufficiently apart on the respective surface of the flat member to retain paper articles and the like therebetween in secure relation.

3,300,169
SUPPORT ASSEMBLY FOR SHELVES
Julian V. Fisher, Carpentersville, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,577
12 Claims. (Cl. 248—239)



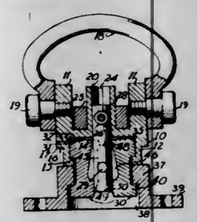
1. A support assembly for shelves and the like, said assembly including a shank section of noncircular cross-section for initial insertion within a complementary noncircular work aperture, said shank section having expandable work interlocking means, a rotatable support member for shelves and the like having means rotatably engageable with said shank section to relatively shift said member and shank section axially toward each other, and means associated with said shank section engageable with said anchor member as an incident to relative rotation of said support member and shank, whereby to expand said shank section into locking engagement with the walls defining a complementary work aperture.

3,300,170
SHELF CONSTRUCTION WITH ADJUSTABLE BRACKET
Charles Raffa, 4701 Avenue K, Brooklyn, N.Y. 11234
Filed Apr. 26, 1965, Ser. No. 450,810
6 Claims. (Cl. 248—242)



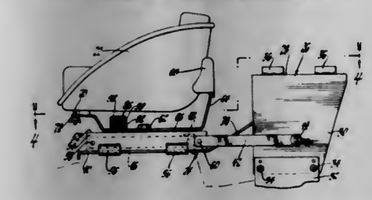
1. In a shelf construction, the combination comprising a hollow standard having a pair of vertically spaced slots, and a bracket having a pair of vertically spaced lugs removably insertable in said slots, said lugs having lower notches removably receiving the lower edges of said slots when said lugs are engaged in said slots to retain said bracket with its supporting upper edge in one predetermined inclination, and said lugs having upper notches removably receiving the lower slot edges when said bracket is inverted and said lugs are inserted in said slots to retain the bracket with its formerly lower edge in an upper supporting position of another predetermined inclination.

3,300,171
QUICK-RELEASE HOLD-DOWN DEVICE
Max Welton Watts, Clayton, Ga., assignor to The Aid Corporation, Clayton, Ga., a corporation of Georgia
Filed Apr. 14, 1965, Ser. No. 448,133
8 Claims. (Cl. 248—361)



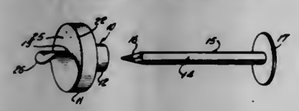
1. A hold down device including a body defining an internal cylindrical chamber having an opening through the bottom of the body, a pair of identical semi-cylindrical arms pivotally engaged within said chamber and extending through the open bottom of said chamber, protruding retaining lugs on said arms externally of said body, means movable with respect to said body to pivotally move said arms to extend and retract said lugs, said means including an axially movable operating shank movable between said arms, and means for manually moving said shank and for releasably securing said shank in fixed position.

3,300,172
MULTIPLE POSITION SEAT FOR MATERIAL HANDLING EQUIPMENT
Fred W. Noller, Farmington, and Roy E. Hauff, St. Clair Shores, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich.
Filed Mar. 18, 1965, Ser. No. 440,738
3 Claims. (Cl. 248—425)



1. A vehicle seat assembly comprising: a frame having horizontally spaced upper and lower supports, a pair of parallel links having their lower ends pivotally connected at spaced points to said frame, a base member carried by the upper ends of said parallel links for movement between a first position in which said base member rests on said lower support with said parallel links disposed substantially horizontally along said frame and a second position in which said base member rests on said upper support with said parallel links inclined upwardly and toward said upper support such that the upper ends of said links must initially move upwardly about their lower ends upon return movement of said base from said upper support toward said lower support, a seat supporting frame mounted on said base member for selective rotational movement about a vertical axis between oppositely facing positions, and guide means on said upper and lower supports engageable with the base member to prevent lateral shifting of the base member on said supports.

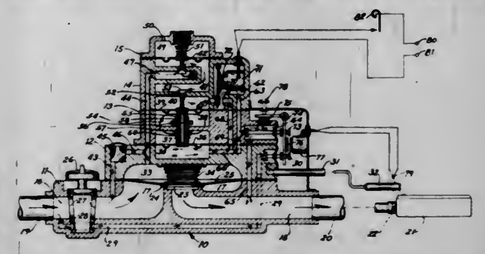
3,300,173
PICTURE HANGERS AND NAIL WITHDRAWAL TOOLS FOR USE IN CONNECTION THEREWITH
Merritt T. Kennedy, Jr., 16 Winthrop Road, Port Washington, N.Y. 11050
Filed May 11, 1965, Ser. No. 454,930
8 Claims. (Cl. 248—467)



1. A picture hanger comprising a nail jig in the form of a collar having a hole and presenting a flat surface at one end, a nail passing through said collar with a snug slide fit and having a head at one end, said nail being adapted to be hammered into a wall with said surface facing the wall and with the nail passing through said collar, and means forming a recess between said nail head and part of said jig for the support therein of a picture support, when said nail is hammered into said wall.

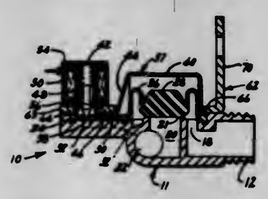
3,300,174
GAS VALVE
Donald C. Urban, Florissant, and Carl A. Smith, Lemay, Mo., assignors, by mesne assignments, to Emerson Electric Co., a corporation of Missouri
Filed May 10, 1963, Ser. No. 279,490
2 Claims. (Cl. 251—29)

1. In a gas valve, a valve body having an inlet passage, an outlet passage, and a valve chamber therebetween, a biased closed valve in said chamber controlling the flow from said inlet to outlet passage including a pressure responsive actuator operative to move said valve openward when greater fluid pressure is applied to one side thereof than to the other, means providing communication between said inlet passage and one side of said actuator, means providing relatively restricted communication between said inlet passage and said other side of said actuator, a bleed passage providing relatively unrestricted communication between said other side of said actuator and said outlet passage, a control valve movable to open and close said bleed passage, two pressure regulating



valves arranged in series in said bleed passage, one of which is operative to maintain a higher fluid pressure on said other side of said actuator than the other, pressure responsive means in communication with said outlet passage and operative in response to an increase in pressure in said outlet passage to move said one pressure regulating valve to an inoperative position, and said communication between said pressure responsive means and said outlet passage comprising a highly restricted passage whereby the response to said pressure responsive means to an increase in pressure in said outlet passage is delayed.

3,300,175
PILOT-OPERATED VALVE
James A. Kozel, Franklin, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,217
4 Claims. (Cl. 251—30)

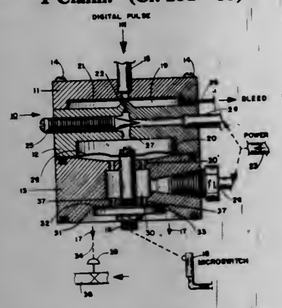


2. In combination: a valve body having an inlet chamber including a first passage terminating at one face of the body, an outlet chamber including a second passage initiating at said face whereby to cooperate with the first passage in defining a main valve seat; a pilot flow groove formed in said one face in communication with said outlet chamber; an elastomeric element having a first generally flat seal portion overlying the flow groove, and a second diaphragm portion overlying the valve seat; a bleed passage arranged to feed pilot fluid from the first passage to the face of the diaphragm remote from the valve seat, and a pilot port formed in the seal portion of the elastomeric element to admit fluid to the flow groove; a hollow peripherally flanged cover overlying the elastomeric element with its flange seated on the peripheral face area of the element; a cover retainer plate clamped to the valve body with portions thereof overlying the cover flange; an armature disposed within the cover in registry with the pilot port; and a solenoid coil disposed on the cover to operate the armature.

3,300,176
DIGITAL OPERATOR

Richard W. Hatch, Jr., Norwell, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts

Filed June 24, 1964, Ser. No. 377,611
1 Claim. (Cl. 251—33)



A digital fluid operator wherein on-off operation of a fluid power stream is accomplished by fully snap-acting diaphragm-nozzle means responding to fluid pulse input to activate a power valve,

said operator comprising, in combination,

a pulse signal input, a snap-acting diaphragm against one side of which said input pulse is applied, a nozzle chamber in which said diaphragm moves in its snap action, a nozzle directed into said nozzle chamber on the other side of said snap-acting diaphragm and positioned and located to be restricted by said snap-acting diaphragm as the diaphragm is so moved in response to said input pulse, a bleed vent from said nozzle chamber to atmosphere,

a fluid power supply passage to said nozzle whereby a continuous fluid flow is provided through said supply passage to said nozzle and from said nozzle into said nozzle chamber and to atmosphere through said vent,

a variable restrictor in said nozzle power supply passage,

a valve operating chamber, a fluid passage operating connection from said valve chamber to said nozzle power supply passage past said variable restrictor, whereby adjustment of said variable restrictor simultaneously changes the fluid supply to said nozzle and to said valve chamber,

a flexible diaphragm across said valve chamber such that said nozzle fluid supply is applied to one side of said flexible diaphragm, with movement producing effect on said flexible diaphragm from back pressure from said nozzle when said nozzle is restricted by said snap-acting diaphragm,

a shaft secured to said flexible diaphragm and extending therefrom on the other side of said flexible diaphragm, a valve closure on said shaft, a valve seat for said closure,

a power fluid chamber about said shaft, fluid passages from said power fluid chamber to said valve operating chamber on said other side of said flexible diaphragm, further fluid passages from said power fluid chamber to said valve closure when said closure is resting on said valve seat,

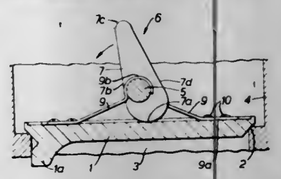
a fluid power supply passage to said power fluid chamber, and a power fluid exit chamber containing said valve seat and said valve closure,

whereby power fluid flow is produced from said last named fluid power passage, through said power fluid chamber, through said further fluid passages and into said exit chamber, when said valve is actuated in response to restriction of said nozzle by said snap-acting diaphragm.

3,300,177
VALVES FOR CONTROLLING FLUID FLOW

Alan Eric Topham, 207 Queengate Extension, and Cedric Henry Topham, Woodlands Views, Grindale Road, both of Bridlington, England

Filed Feb. 18, 1964, Ser. No. 345,722
Claims priority, application Great Britain, Apr. 9, 1963, 14,042/63
2 Claims. (Cl. 251—158)

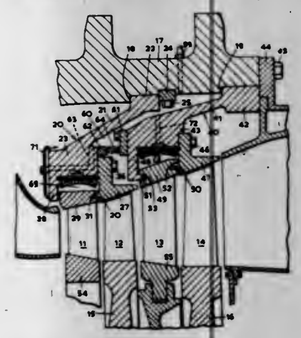


1. A valve of the character described comprising a valve body having an annular seating co-axially disposed in a bore thereof; a disc-like stopper in said bore and co-operating with said seating; an operating spindle rotatably carried by said valve body and extending across the bore thereof and across the back of the stopper; cam means rotationally fast with the operating spindle and arranged for co-action with the back of the stopper, said cam means being of elongated taper form from an eccentric rounded heel portion at one end to a minimum thickness at the other end of a flat extending from said heel portion for a substantially greater distance from the spindle than the said heel portion, which flat co-acts with the back of the stopper for imparting opening and closing swinging movement to the latter on corresponding rotation of the operating spindle whilst the heel portion co-acts with the back of the stopper for effecting initial opening lifting movement of said stopper and final closing seating movement thereof; and leaf springs extending laterally in opposite directions from pivotal anchorage about the operating spindle alongside the cam means and secured at their outer ends to the back of the stopper for balanced spring loading of the latter against the cam means.

3,300,178
TURBINES

Waheeb Rizk and Clifford Arthur Keer, both of Whetstone, England, assignors to The English Electric Company Limited, London, England, a British company

Filed Sept. 16, 1965, Ser. No. 487,761
Claims priority, application Great Britain, Sept. 24, 1964, 38,974/64
4 Claims. (Cl. 253—39.1)



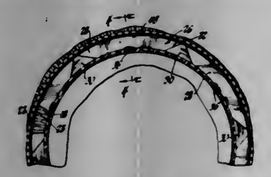
1. A turbine including casing means forming a circumferentially-extending inwardly-facing annular channel, means locating the outer platforms of a row of stator blades in the mouth of said channel, an annular groove formed in the base of said channel, means to feed cooling

air into said groove, and an axially-corrugated circumferential strip located against the base of said channel, with clearance from the sides thereof, so arranged that air fed into said groove is caused to flow to each axially-spaced side of the channel by said corrugated strip, to be delivered into said channel along the axially-spaced walls thereof, to cool them.

3,300,179
BLADE STALK COVER PLATE

Reuben C. Gooderum, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Michigan

Filed Apr. 22, 1966, Ser. No. 544,468
9 Claims. (Cl. 253—77)



1. A bladed rotor comprising in combination:

a rotor having a rim with a plurality of circumferentially spaced generally axial fir tree grooves,

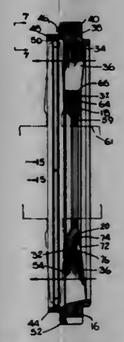
a plurality of blades having fir tree roots mounted in said grooves, each of said blades having a radially inwardly opening groove spaced radially outwardly of its root,

an axially extending circumferential flange on said rim spaced inwardly of said mounting grooves, an annular cover plate mounted on said rotor and having its outer margin disposed in said blade grooves and its inner edge adjacent said flange, said cover plate comprising a plurality of arcuate segments, each of said segments having end surfaces abutting end surfaces on adjacent segments to form a continuous annulus, at least one of said end surfaces on each of said segments being skewed with respect to the radius of said rotor and abutting a mating skewed end surface on an adjustment segment whereby said cover plate accommodates differential thermal growth between said cover plate and said rotor and blades.

3,300,180
SEGMENTED DIAPHRAGM ASSEMBLY

Alan H. Tuttle, Andover, and William W. Browning, Wellsville, N.Y., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Nov. 17, 1964, Ser. No. 411,821
12 Claims. (Cl. 253—78)

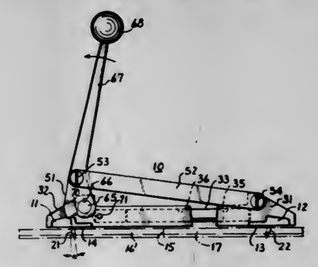


1. In a diaphragm assembly for use in turbines, outer retaining means, inner disc means spaced from said outer retaining means, a plurality of nozzle blade segments each of which comprises at least one nozzle blade, said nozzle blade segments extending between said spaced outer retaining means and said inner disc means, respectively, means for attaching said nozzle blade segments to said outer retaining means, said inner disc means comprising a plurality of arcuate segments, and guide and support means for supporting said arcuate segments from said nozzle blade segments with freedom for relative movement therebetween and for guiding said nozzle blade segments and said inner disc segments during such movement.

3,300,181
CARPET TOOL FOR DRAWING SEAM EDGES TOGETHER BY SINGLE THROW LEVER MEANS

James L. Spann, Chicago, Ill., assignor to Kinkead Industries Incorporated, Chicago, Ill., a corporation of Illinois

Filed Aug. 19, 1965, Ser. No. 481,052
4 Claims. (Cl. 254—62)

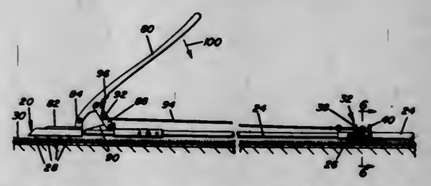


2. A carpet repair tool for straddling a seam in a carpet during the repair thereof comprising, in combination, first and second longitudinal members laterally spaced from one another and each having on the underside a generally flat carpet engaging surface, each longitudinal member having a set of sharpened downwardly-projecting pins spaced along its underside, said sets of pins being angled mutually inwardly from the vertical by a shallow angle, bridging means at the respective ends of the longitudinal members spaced to provide an open rectangular working are including linkages for adjusting the spacing of the respective ends of the longitudinal members, and means including a manual operator for operating the two linkages simultaneously for drawing the longitudinal members inwardly in parallel relation to a working position, and means for locking the linkages with the longitudinal members in such working position, the longitudinal members being substantially elongated in the direction of the seam so that the force exerted by the pins is distributed over a substantial length of carpet material.

3,300,182
STRETCHER POLE ATTACHMENT

Gerald M. Bussard, 727 E. Harrison St., Springfield, Mo. 65806

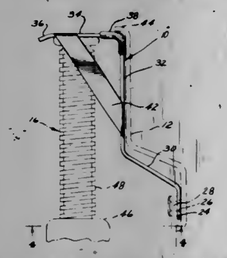
Filed Oct. 22, 1965, Ser. No. 500,813
8 Claims. (Cl. 254—62)



1. In a carpet stretcher including a stretcher pole, a wall-abutting head on one end of said pole, and a stretcher

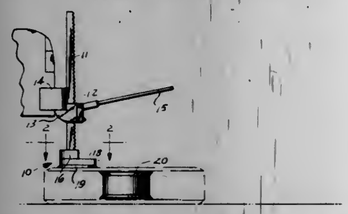
head on the other end of said pole, the improvement comprising, attachment means mounted on said stretcher pole intermediate said wall-abutting head and said stretcher head for preventing buckling of said stretcher pole when the carpet is stretched, said attachment means including selectively operable carpet gripping means therein, and control means for actuating said carpet gripping means, said control means being located remotely from said attachment means.

3,300,183
WHEEL JACK BRACKET
George C. Marshall, Jr., 2876 Sumner Ave., Pomona, Calif. 91767
Filed Oct. 22, 1965, Ser. No. 501,176
13 Claims. (Cl. 254—133)



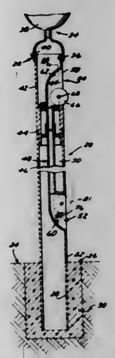
1. A bracket for engagement by a jack to raise a vehicle road wheel assembly having spaced circularly arranged studs, comprising
an anchor portion having a stud-receiving opening positioned for securement to the uppermost stud of said circularly arranged wheel studs,
an upright portion connected with the anchor portion and extending radially of the wheel to the rim thereof,
a shoulder at the upper end of said upright bracket portion and adapted to engage the outer rim portion of the wheel to transmit load thereto,
and a jack arm extending perpendicularly outward relative to the upright portion and adapted to engage a jack.

3,300,184
COMBINATION JACK AND TIRE BREAKER
John Ragolio, 818 Bengies Road, Baltimore, Md. 21220
Filed Oct. 23, 1965, Ser. No. 503,103
1 Claim. (Cl. 254—133)



A combination jack and tire breaker for motor vehicles comprising an upright jack post, a jack mechanism adapted to move vertically on said jack post, means on said jack mechanism for engaging the bumper of said motor vehicle, said jack being provided adjacent to its lower extremity with a supporting base provided with a dependent collar, the lower extremity of said jack post being arranged to project into the collar, an arcuate wing-shaped combination tire bead breaking member and jack base having a lower planar face removably supporting said collar and said jack post, said arcuate wing-shaped combination tire bead breaking member and jack base further including a curvilinear area provided with a lip portion adapted to be positioned between the rim of an automobile wheel and the peripheral edge of said tire so that when motion is transmitted to the jack mechanism and therethrough into the bumper of the motor vehicle, the tire will be broken away from the rim of the automobile wheel.

3,300,185
FLAGPOLE ROPE THREADER
Reece U. Metzger and Lillie Sue Metzger, both of 16272 Cedarlane Drive, La Puente, Calif. 91745
Filed Sept. 10, 1965, Ser. No. 486,297
11 Claims. (Cl. 254—134.3)

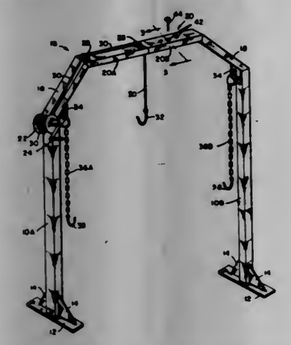


1. A flagpole rope threader comprising: a longitudinal flagpole having a lower end adapted to be rigidly fastened and mounted with respect to an auxiliary supporting member in projecting relationship with respect thereto, and having a remote top end longitudinally remotely spaced from said lower end of said flagpole; longitudinal threading conduit means carried by said longitudinal flagpole substantially along the complete length thereof from a lower entry location adjacent to said lower end of said flagpole to an upper exit location below and adjacent to said remote top end of said flagpole; and at least one pulley sheave rotatively mounted adjacent to but slightly below said remote top end of said flagpole; said threading conduit means having an entry opening at a lower end thereof and having an exit opening at a remote top end thereof, with said entry opening being accessible from the exterior of said flagpole adjacent to said lower end thereof and with said exit opening being in effective communication with the region exterior of said remote top end of said flagpole in a manner such as to direct the egress therefrom of the head end of an auxiliary threading member over said pulley sheave means and then downwardly, under the action of gravity, back toward said lower end of said flagpole for temporary threading connection to a flagpole rope and for the subsequent application of tension, by way of said auxiliary threading member, to the flagpole rope for drawing same upwardly toward the remote top end of said flagpole and into overlying rollable engagement with respect to said pulley sheave means, with remote ends of said flagpole rope adjacent to said lower end of said flagpole being then connected to each other adjacent to said entry opening.

3,300,186
LIFTING FRAMES FOR REINFORCING COLUMNS
Clifford S. Lee, Everman, Tex., assignor of twenty-five percent to Charley Warren, Tulsa, Okla.
Filed Aug. 13, 1964, Ser. No. 389,331
1 Claim. (Cl. 254—143)

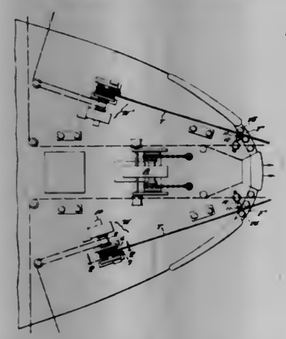
A reinforcing bar assembly lifting frame comprising: a pair of spaced apart vertical legs;

a base plate affixed to the lower end of each of the legs;
a horizontal header member supported at each end by the legs;
a winch supported to one of the legs adjacent the upper end thereof, the winch having a handle for rotation thereof;
a pulley affixed to the header member intermediate the legs;
a cable having the free end extending over the pulley



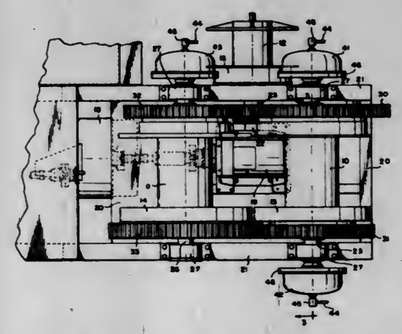
and having the other end windably received by the winch;
a hook on the free end of the cable;
a plate member affixed to the upper end of each leg, said plates extending in the plane of said header member and towards each other;
a vertically hanging chain supported at the upper end to each of said plates, said chains being of length less than said legs; and
a hook affixed to each chain at the lower end thereof adaptable to removably receive a reinforcing bar assembly supporting rod therebetween.

3,300,187
SEMI-AUTOMATIC WARPING AND MOORING ARRANGEMENT
Ludvig Saxe and Ivar Krogstad, Arendal, Norway, assignors to A/S Pusnes Mek. Verksted, Arendal, Norway
Filed Nov. 6, 1964, Ser. No. 409,478
Claims priority, application Norway, Nov. 7, 1963, 150,729
5 Claims. (Cl. 254—172)



1. Apparatus for mooring and warping a ship with hawser and the like, said ship having a fairlead and at least one mooring winch; said apparatus comprising: a first and second hawser pull drum, said second drum having an axis parallel to said first drum, spaced therefrom and adjacent thereto, each of said drums having a plurality of grooves about the periphery thereof to permit hawser to be passed therearound, and drive means to impart rotation to said drums to pay-out hawser wrapped upon said drums upon rotation thereof in one direction and to pull-in hawser upon rotation in the other direction; a hawser storage drum positioned realtive to said grooved drums to store hawser thereon; drive means connected to said storage drum for imparting uni-directional rotation thereto at a substantially constant torque and independently of the direction of rotation of said pull drums; said storage drum drive means imparting less torque to said storage drum than said pull drum drive means imparts to said pull drums; a pair of rollers approximate said fairlead to receive and engage hawser therebetween, at least one of said rollers having drive means connected thereto for imparting motion to said hawser, said one driven roller having a direction of rotation to pay out hawser engaged between said rollers.

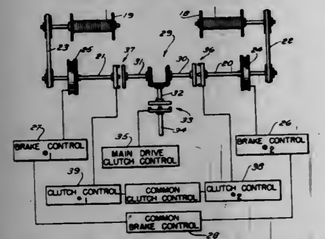
3,300,188
INTERLOCKING YARDER
James R. Thompson, Seattle, Wash., assignor to Washington Iron Works, Seattle, Wash., a corporation of Washington
Filed Sept. 22, 1964, Ser. No. 398,191
12 Claims. (Cl. 254—184)



1. A yarder for use with a tail block for spooling the two ends of a cable strung through said block, comprising: a respective spooling drum for each of said cable ends having a capacity so related to the length of the cable that when one of said drums holds a given minimal number of wraps and the other drum a given maximal number of wraps the runs of the cable between the yarder and the tail block are free of slack, and normally inactive drive means, adapted to be activated when the wrap conditions of said drums are said minimal and said maximal, operating when activated to power both spooling drums so that one pays out while the other winds in at rotational speeds having a fixed ratio, one drum to the other drum, pre-established such that the line speeds of both runs of the cable are the same, and manually controlled means for activating said drive means, the two drums being located one alongside the other, the drive means comprising a power plant, a drive pinion driven from the power plant, and a pair of meshed gear wheels, one for each of the two drums, disposed at one end of the drums with each gear wheel journaled for rotation about an axis coinciding with the rotary axis of a related one of the drums, the relative number of teeth as between the gear wheel related to the drum having the maximal wrap and that related to the drum having the minimal when said drive means is adapted to be activated being in inverse ratio to the diameters of the drums when they hold said maximal and said minimal number of wraps, the drive pinion being in mesh with one of said gear wheels,

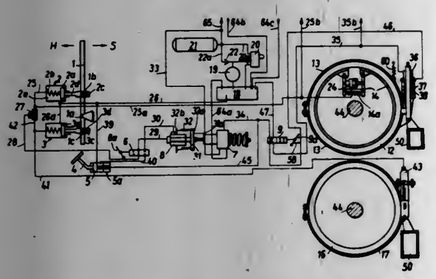
the manually controlled activating means comprising respective clutches for coupling each gear wheel to the related drum.

3,300,189
CONTROL FOR TRAWLER WINCHES
Luther H. Blount, Poppasquash Road, Bristol, R.I. 02809
Filed May 17, 1965, Ser. No. 456,420
4 Claims. (Cl. 254—185)



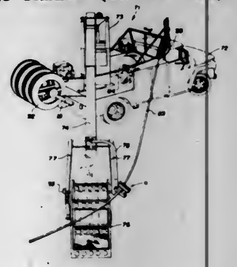
1. A control for trawler winches comprising two separate winch drums, a separate drive shaft for each drum spaced from each drum and coupled thereto said shafts being arranged in coaxial relation, a common drive for said shafts, clutch means to connect each shaft to said common drive, individual controls for each clutch and a common control for both clutches coupled to each drum, a brake for each separate drive shaft, a separate control for each brake and a common control for both brakes when the winches are locked together whereby the cables on both drums may be let off with the same braking action by the common control or individually by the separate controls.

3,300,190
CONTROL ARRANGEMENT
Helmut Blase, Dortmund-Derne, Germany, assignor to Rheinstahl Union Bruckenbau A.G., Dortmund, Germany
Filed Nov. 17, 1965, Ser. No. 508,195
Claims priority, application Germany, Nov. 17, 1964, R 39,269
17 Claims. (Cl. 254—187)



1. In a machine of the character described, particularly in a mobile crane, a winch comprising a cable drum: a braking device for said cable drum including a brake drum operatively connected with said cable drum, a brake band surrounding said brake drum and having a fixed end portion and a second end portion, and an operating unit for moving said second end portion toward and away from said fixed end portion to thereby apply or disengage said band from said brake drum, said operating unit comprising a double-acting cylinder coupled to said second end portion, fixed piston means received in said cylinder, spring means for normally biasing said cylinder in a direction to apply said band, and releasable locking means for said spring means; and a fluid-operated control arrangement for regulating the operation of said unit including a circuit having a pair of feed conduits connected with said cylinder, a source of pressure fluid installed in said circuit, actuating means for selectively operating said locking means, and control means for selectively admitting pressure fluid through said feed conduits so as to apply the band by the action of said spring means when said locking means is idle, to disengage said band when one of said feed conduits admits pressure fluid into said cylinder, and to apply said band when the other feed conduit admits fluid into said cylinder while said locking means is operative.

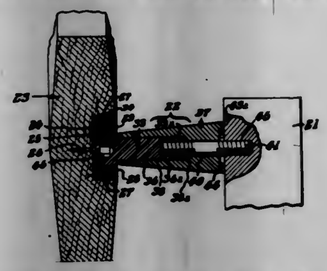
3,300,191
CABLE GUIDING DEVICE
Bertram J. Leigh, Redwood City, Calif., assignor to Telsta Corporation, San Carlos, Calif., a corporation of California
Filed Apr. 30, 1965, Ser. No. 452,316
13 Claims. (Cl. 254—190)



1. In a cable guiding device, a support element, a pair of spaced substantially parallel rollers rotatably mounted on said support element, an additional pair of spaced substantially parallel rollers disposed on opposite sides of said first named rollers and extending between said first named pair of rollers adjacent one end thereof in a direction at substantially right angles to said first named pairs of rollers, said first named and additional pairs of rollers having overlapping portions, means rotatably mounting said additional pair of rollers on said support element and for free pivotal movement on said support element about an axis parallel to the axis of rotation of said additional rollers and at substantially right angles to the axis of rotation of the first named pair of rollers, a single additional roller, and means mounting said single additional roller on said support element for movement between an open position in which the cable can be inserted between the first named pair of rollers and placed upon the additional pair of rollers and a closed position in which said single additional roller extends between the first named pair of rollers adjacent the other end thereof and in a direction at right angles to the axis of rotation of the first named pair of rollers and being spaced from and substantially parallel to the additional pair of rollers, portions of said single additional roller overlapping the first named pair of rollers.

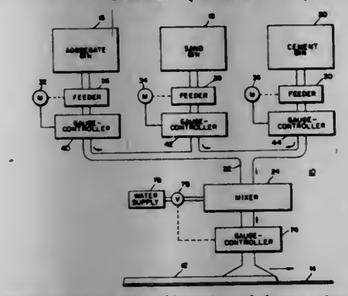
3,300,192
ORNAMENTAL RAILING STRUCTURE
Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa.
Filed Oct. 30, 1964, Ser. No. 407,842
3 Claims. (Cl. 256—65)

1. In an ornamental rail structure, the combination comprising a post, a stud extending laterally from said post, a sleeve with one end portion fitted over said stud and abutting said post, an elongated pivot member with one end fitted into the other end portion of said sleeve and threaded onto said stud, said pivot member being operative to clamp said sleeve against said post, a radially outwardly extending integral flange on the other end of said pivot member disposed in spaced relation to said sleeve, an externally threaded nut fitted over said pivot member and disposed between said sleeve and flange, and a railing



having a longitudinally extending channel therein with parallel threads on opposed walls thereof, said nut being threaded into said channel and thereby positioned for clamping said flange against the base wall of said channel.

3,300,193
CONTROL APPARATUS FOR MATERIAL MIXERS
Charles O. Badgett, Columbus, Ohio, assignor to the Industrial Nucleonics Corporation, a corporation of Ohio
Continuation of application Ser. No. 168,346, Jan. 24, 1962. This application July 12, 1965, Ser. No. 475,304
9 Claims. (Cl. 259—154)



1. The method of uniformly mixing a plurality of separate ingredients to make concrete, comprising the steps of:

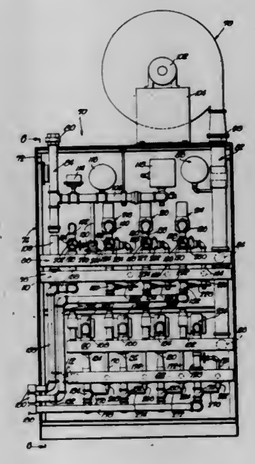
continuously conveying each of said ingredients at a predetermined, controllable rate toward a concrete mixer unit to produce a predetermined concrete mix,

measuring the mass flow of each of said conveyed ingredients, and

controlling the rate of conveyance of each of said ingredients in accordance with said respective measured mass flow to maintain the mass flow of each ingredient into said concrete mixer substantially constant to produce a continuous flow of said concrete mix from said mixer.

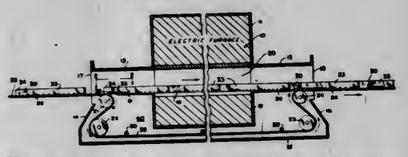
3,300,194
CONTROL FOR MULTIPLE GAS BURNER INSTALLATION
John H. Flynn, 234 Elk Ave., New Rochelle, N.Y. 10804
Filed July 2, 1964, Ser. No. 379,799
13 Claims. (Cl. 263—6)

1. A service unit for a plurality of gas burners disposed along a production line for parts to be contacted by the burner flames, comprising a condensed frame; air and gas manifold elements; venturi-type air-gas mixer elements equal in number to said burners, with each mixer element having air and gas inlets and an outlet; air and gas conduit elements connected at one end with said air and gas manifold elements, respectively, and having at their other ends releasable conduit connector means; air line elements connecting said air manifold element with said air inlets of said mixer elements, respectively; gas line elements connecting said gas manifold element with said gas inlets of said mixer elements, respectively; zero-pressure gas valve elements interposed in said gas line elements, respectively; gas and air shut-off valve elements interposed in said gas conduit element and in said air line elements, respectively; a control for simultaneously opening and closing said



shut-off valve elements; and burner-supplying conduit elements connected at one end with said outlets of said mixer elements, respectively, and having at their other ends releasable conduit connector means, all of said elements being mounted on said frame and forming therewith a self-contained unit, with all of said elements and releasable conduit connector means being arranged in sufficiently close proximity to each other to be individually accessible but removed from the burners they are adapted to serve substantially as far as said frame is removed from the burners.

3,300,195
HIGH TEMPERATURE FURNACE CONVEYOR SYSTEM
Daniel R. Donovan and James A. Murphy, both % C M Manufacturing and Machine Co., 103 Dewey St., Bloomfield, N.J. 07003
Filed June 3, 1964, Ser. No. 372,176
8 Claims. (Cl. 263—8)

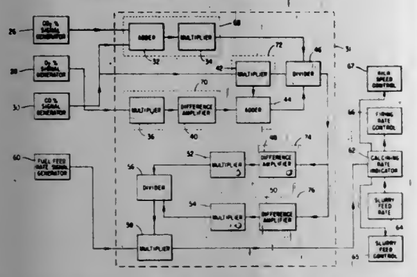


1. Heat treating apparatus comprising a furnace having a casing provided with inlet and outlet openings at opposite sides of a relatively stationary hearth, work conveyor means having spaced flights passing through said openings, means for transferring work from the conveyor flight at said inlet to the furnace hearth, means for transferring work from the furnace hearth to said conveyor flight at the casing exit, and means within the casing for directing said conveyor means in bypass relation to said hearth between said flights.

3,300,196
METHOD AND APPARATUS FOR ROTARY KILN CONTROL WITH A CALCINING RATE METER

Wilfred R. Bendy, St. Louis, Mo., assignor to Bendy Engineering Company, a corporation of Missouri

Filed Mar. 2, 1964, Ser. No. 348,671
23 Claims. (Cl. 263—32)

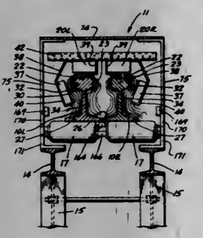


20. The method of operating a kiln into which a calcareous material is fed and chemically changed from a carbonate to an oxide through the application of heat generated by the combustion of a fuel with air in the kiln comprising the steps of analyzing the waste gases in the kiln, generating a signal from said waste gas analysis proportional to the theoretical carbon dioxide of the waste gas, generating a signal proportional to the fuel rate to said kiln, combining the waste gas signal with the fuel rate signal thereby developing a signal corresponding to the rate of chemical change and adjusting kiln operation in a direction tending to maintain said last named signal at a predetermined value.

3,300,197
SURFACE HARDENING APPARATUS

David A. Rutherford and Robert J. McWilliams, Pueblo, Colo., assignors to Abex Corporation, a corporation of Delaware

Filed Oct. 30, 1963, Ser. No. 320,193
9 Claims. (Cl. 266—4)

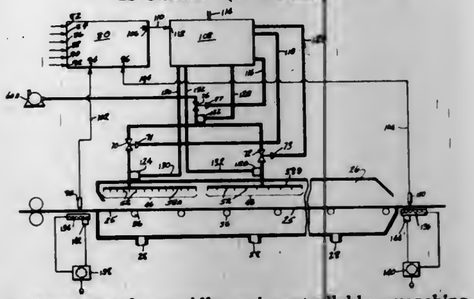


1. In a surface hardening machine for surface hardening the top portion of a rail and for heating the web and base of a rail to minimize the distortion in the rail due to an uneven expansion and contraction of different portions of the rail while undergoing surface hardening, a frame means; means for moving said rail through a surface hardening station; a heating means supported by said frame means at said surface hardening station for directing heat against the top portion of a rail to heat the top portion of said rail; deflector means on said frame means for deflecting heat along the web of said rail and onto the base of said rail to heat and expand the web and the base of the rail; and an air-blowing means at said surface hardening station for blowing said heat downwardly and forwardly of said surface hardening station and into engagement with the rail prior to entry of the rail into the surface hardening station so as to preheat the rail.

3,300,198
APPARATUS FOR QUENCHING METAL

Joseph A. Clumpner, Bethany, and James E. Dore, Milford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Dec. 27, 1963, Ser. No. 333,980
18 Claims. (Cl. 266—6)



1. Apparatus for rapidly and controllably quenching metal sheet or strip material comprising:

A. an elongate partially open ended enclosure,

B. means mounted in said enclosure for supporting and conveying said sheet or strip material through said enclosure,

C. spray quenching means mounted in said enclosure, said quenching means being divided into a plurality of zones through which said sheet or strip material is adapted to pass serially,

(1) said spray quenching means in a first zone comprising high impact nozzles which deliver a spray having a relatively small impact area but high density spray pattern,

(2) said spray quenching means in a second zone comprising medium impact nozzles which deliver a spray having a larger impact area but lower density spray pattern than that of said spray nozzles of said first zone,

D. means for supplying a liquid coolant under pressure to said spray quenching means, and

E. control means for independently varying the extent of application of said liquid coolant to said sheet or strip material by said spray quenching means whereby a predetermined amount of heat is removed from said sheet or strip material during passage through said enclosure.

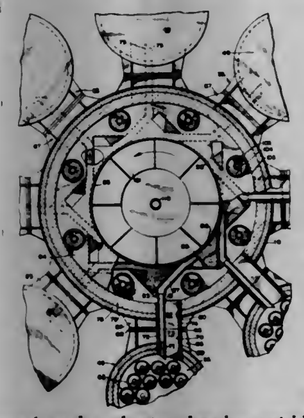
3,300,199
APPARATUS FOR THE HEAT TREATMENT OF FINELY DIVIDED MATERIALS

Axel Brix Andersen, Larchmont, N.Y., assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware

Filed May 1, 1964, Ser. No. 364,117
19 Claims. (Cl. 266—9)

1. An apparatus for the heat treatment of finely divided material which comprises a generally cylindrical shell mounted for rotation on its longitudinal axis with that axis substantially horizontal, means for rotating the shell, means at one end of the shell defining a feed chamber for the introduction of raw material and the discharge of combusion gas and a discharge chamber for treated material, the chambers being telescoped and coaxial, means at the other end of the shell defining a combustion chamber, a plurality of preheater chambers mounted on the outside of the shell in planetary arrangement between the telescoped chambers and the combustion chamber, connections through the shell wall between the feed and discharge chambers and each preheater chamber at one end of the latter for the travel of raw material to and combustion gas from the preheater chamber and for the travel of treated material from the preheater chamber,

respectively, connections through the shell wall between the combustion chamber and each preheater chamber at the other end of the latter for the travel of raw material to and combustion gas from the combustion chamber and for the travel of treated material from the combustion chamber, respectively, means in each preheater chamber defining passages for the countercurrent travel of the raw material and gas, the treated material traveling

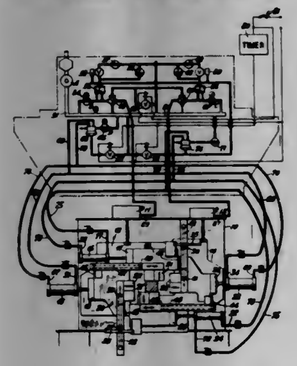


in bulk through each preheater chamber outside the passages countercurrent to the raw material and in indirect heat exchange relation thereto, means in the combustion chamber defining passages for the travel of treated material back through the chamber from the outer end thereof, the raw material traveling in bulk through the combustion chamber outside the passages toward the outer end of the chamber, and means for introducing a reducing fuel mixture into the combustion chamber.

3,300,200
SELF-SIZING THERMOCHEMICAL SCARFING

Stewart Allan, Livingston, and William C. Weidner, Summit, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed May 3, 1965, Ser. No. 456,886
7 Claims. (Cl. 266—23)

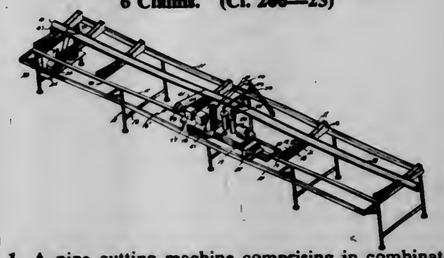


1. An automatic self-sizing thermochemical scarfing apparatus for scarfing successive rectagnular metal workpieces having different cross-sectional dimensions, although such dimensions are not known to the scarfing machine operator, said apparatus having top, first side, bottom and second side scarfing units, each of said units being adapted for scarfing a corresponding surface of a metal workpiece; a gas selector valve assembly associated with each of said scarfing units for opening and closing off gas ports along the respective working surface thereof; means for lowering the top and first side scarfing units simultaneously, until the top scarfing unit contacts the top surface of the workpiece; means operating concurrently therewith for raising the bottom and second side scarfing units simultaneously, until the bottom scarfing unit contacts the bottom surface of the workpiece; means responsive to such vertical movement for adjusting the pieces having different cross-sectional dimensions, algas selector valves associated with said first side and second side scarfing units so that their operating width corresponds to the thickness of the workpiece; means for laterally moving said first side scarfing unit and said top scarfing unit until the first side scarfing unit contacts a side of the workpiece; means operating concurrently therewith for laterally moving said second side scarfing unit and said bottom scarfing unit simultaneously until the second side scarfing unit contacts the opposite side of the workpiece; and means responsive to such lateral movement for adjusting the gas selector valve assemblies associated with said top and bottom scarfing units so that their operating width corresponds to the width of the workpiece.

3,300,201
PIPE CUTTING DEVICE

Robert F. Atkinson, Winnipeg, Manitoba, Canada, assignor, by direct and mesne assignments, to Plumbing & Heating Ltd., Winnipeg, Manitoba, Canada, a corporation of Canada

Filed Oct. 25, 1963, Ser. No. 318,959
6 Claims. (Cl. 266—23)



1. A pipe cutting machine comprising in combination a longitudinally extending supporting framework, means for supporting a length of pipe for rotation thereon, means to rotate said pipe, means on one end of said framework for eliminating endwise movement of said rotating pipe, and a cutting torch assembly adjustably positioned on said framework, said means to rotate said pipe comprising a source of power in said framework, and a drive belt extending from said source of power, and around said pipe, said means for eliminating endwise movement of said pipe comprising in conjunction with said drive belt, a transverse roller journalled for rotation across said supporting framework and adjacent one end thereof, said transverse roller being adjustable within limits upwardly and downwardly and adapted to contact said rotating pipe, one side of said belt passing over said transverse roller and rotating same in a direction to urge said pipe towards one end of said supporting framework, a vertically adjustable thrust roller secured to said one end, the perimeter of said thrust roller being engageable with the adjacent end of said pipe.

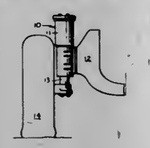
3,300,202
VEHICLE SUSPENSION STRUT

David S. Vinton, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Feb. 3, 1965, Ser. No. 429,996
4 Claims. (Cl. 267—1)

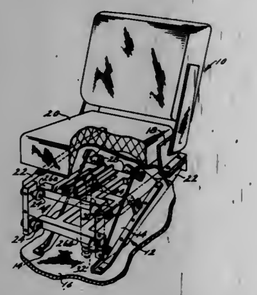
1. In a suspension strut of the kind which includes a telescoping piston and cylinder containing a compressible fluid, a seal for preventing escape of said fluid, said seal

being disposed about midway between the ends of the cylinder to encircle the piston in sliding contact there-



with in an area that does not extend beyond the end of the cylinder during normal telescoping movement.

3,300,203
HYDROPNEUMATIC SEAT SUSPENSION
John W. Carter, Peoria, and Jackson C. Medley and James P. Mueller, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 12, 1965, Ser. No. 477,495
6 Claims. (Cl. 267—1)



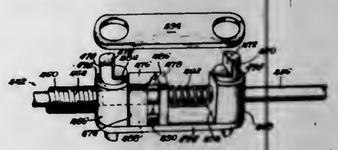
1. A hydropneumatic seat suspension strut comprising a first member secured to a rigid surface which is subjected to bouncing motion, a second member reciprocably mounted in said first member, said members being formed to provide at least one chamber which is connectible to a source of pressure fluid, cooperable means on said members for admitting and discharging pressure fluid to and from said one chamber respectively, means including an expansible chamber containing a gaseous fluid under pressure, said last mentioned means being connected to said one chamber by a conduit, and a valve mechanism in said conduit being operable to establish different values of flow rate of the pressure fluid from said one chamber to said last mentioned means, such valves of flow rate being dependent upon the rate of relative movement between said members.

ERRATUM

For Class 267—62 see:
Patent No. 3,300,042

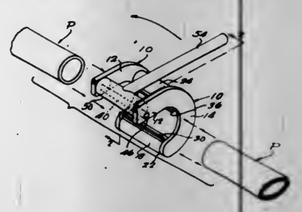
3,300,204
QUICK ACTING CLAMP MEANS
Carl W. Ahmer, 1321 Hillside Road, Northbrook, Ill. 60062
Original application June 5, 1961, Ser. No. 114,977, now Patent No. 3,239,941, dated Mar. 15, 1966. Divided and this application Mar. 29, 1965, Ser. No. 453,237
5 Claims. (Cl. 269—93)

5. Clamp means comprising a pair of end members having interfacing flat surfaces and having reduced extensions at opposite ends of each, the reduced extensions also having interfacing flat surfaces, a first end member having a tapped aperture, a sleeve threadingly mounted in said aperture, a central clamp rod freely slidable in said sleeve and in a reduced aperture in the second end member, a pressure block having a central aperture slidably receiving said clamp rod and having a rear surface perpendicular to said central aperture thereof and engageable with said flat surface of the said first end member and said sleeve, and the pressure block having a forward face inclined to the rear surface, said pressure block also having additional apertures therethrough parallel with its central aperture, pins in said additional apertures and freely slidable therein, a jam plate having a central aperture receiving said clamp rod and engaging said pins and said forward face at the thick side of the pressure block, said pins being substantially the same length as the longitudinal dimension of the



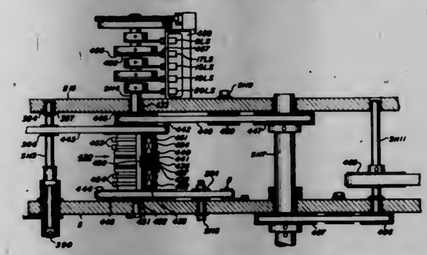
thick side of the pressure block, a compression spring interposed between the jam plate and the second end member, and links having end apertures receiving the reduced extensions on the end members and when so assembled with the end members engaging the pressure block and jam plate and constraining them against rotation about the axis of the clamp rod, said sleeve being threadable through the tapped aperture in the first end member and thereby operable for engaging and advancing the pressure block whereupon as the rear face of the latter separates from the flat surface on said first end member and the pins remain in engagement with that flat surface under the action of the jam plate and spring, the jam plate thereupon being operative for cocking relative to the clamp rod and producing a clamping action on the clamp rod.

3,300,205
PIPE ALIGNING TOOL
Walter H. Fitzpatrick, R.R. 7, Box 665, Terre Haute, Ind. 47805
Filed Nov. 6, 1964, Ser. No. 409,437
9 Claims. (Cl. 269—154)



7. A portable pipe aligning tool comprising a pair of parallel spaced jaws, said jaws being J-shaped and having straight shanks and arcuate crooks, said crooks having concave semi-circular edges larger in diameter than pipes to be accommodated in the crooks, a first cross member extending between and fixed to the free ends of the crooks, a second cross member extending between and fixed to the crooks, said second cross member being circumferentially spaced around the crooks from said first cross member, said cross members having longitudinally elongated pipe guiding ribs fixed thereto, and a pipe positioning and clamping assembly extending between and pivoted on the jaw shanks at their free ends.

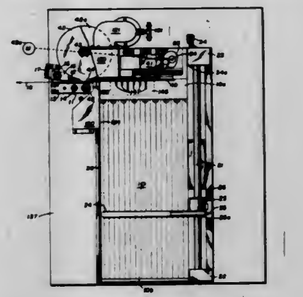
3,300,206
ELECTRICALLY ENERGIZED CLUTCH FOR SHEET FEED CONTROL MECHANISM
James R. Cassano, Rochester, and Lyman H. Turner, Pittsford, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,700
1 Claim. (Cl. 271—16)



In a sheet feeding apparatus, the combination of a frame, a feed tray mounted on said frame to support a stack of sheets, feed rollers journaled in said frame in position to receive a sheet from said feed tray, separator means operatively connected to said frame in position to feed sheets seriatim from said feed tray to said feed rollers, a drive shaft, means for continuously driving said shaft, a first clutch element operatively connected to said separator means, and a second clutch element operatively connected to said feed rollers, said first clutch element and said second clutch element being mounted in spaced relation on said drive shaft for rotation relative to said shaft, an armature connected to said drive shaft for rotation therewith and positioned between said first clutch element and said second clutch element for axial movement therebetween, a cam device mounted on said shaft for rotation therewith, a circuit connected to a source of electric power, switching means in said circuit normally held in one of its controlling positions being actuatable into its other controlling position by said cam device during rotation of said shaft, said switch means being adapted to produce energization of said first clutch element while in said one controlling position and to produce energization of said other clutch element while in said other controlling position whereby said armature will move into driving engagement with said first clutch element to actuate said separator means to feed a sheet to said feed rollers and then into driving engagement with said second clutch element to actuate said feed rollers.

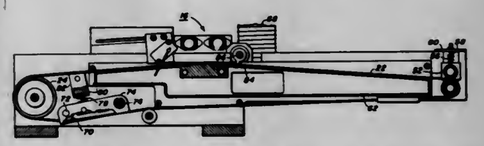
3,300,207
VACUUM ACTUATED DOCUMENT FEEDER
George W. Childs, Edgar R. Pitcher, Jr., and Ernest L. Staples, Jr., Dallas, Tex., assignors to Recognition Equipment Incorporated, a corporation of Delaware
Filed Dec. 18, 1964, Ser. No. 419,510
9 Claims. (Cl. 271—26)

1. A system for feeding documents from the end of a stack into a conveyer which comprises:
- (a) a tray unit having a bottom, an open corner formed by one side and one end, and a movable member for urging said stack toward said end,
- (b) a suction plenum adjacent said end,
- (c) a compound window in said end having perforations communicating with said plenum and slidable toward and away from said corner,
- (d) a driven wheel forming part of said conveyer located adjacent said corner,
- (e) a timing cam rotatable periodically to engage said wheel, and
- (f) drive means for reciprocating elements of said compound window in synchronism with said cam to open said perforations as said window moves toward said corner and to close said perforations with impending reversal of movement to move documents



successively from said tray unit through said corner between said cam and said wheel for delivery from said tray unit.

3,300,208
CARD POSITIONING APPARATUS AND METHOD
Gerard C. Wright, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 1, 1965, Ser. No. 435,802
3 Claims. (Cl. 271—46)

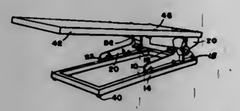


1. Apparatus for positioning objects on a moving conveyor of the type wherein a plurality of spaced conveyor belts move through a path of movement past a fixed position including:
- a shaft rotatably mounted adjacent to the conveyor and extending across the path of movement of the conveyor at a point ahead of the fixed position,
- a plurality of blades secured to the shaft and extending between the conveyor belts to a point beneath the surface of the belts during a portion of their rotation with the shaft,
- and means to rotate the shaft so that the blades, when extending through the conveyor belts, travel in the same direction as the belts,
- the blades being of a length such that the instantaneous movement of the blade tips in the direction of belt movement is the same as the movement of the belt at the points where the blades intersect the path of movement of the conveyor belts,
- the position of the shaft relative to the conveyor being such that the tips of the blades first intersect the path of movement of the conveyor ahead of each object on the conveyor and then intersect the path of the conveyor at the point where the object should be positioned on the conveyor.

3,300,209
SPRING CONTROLLED AND CUSHIONED SPRINGBOARD DEVICES
Carsten Friis, Minneapolis, Minn., assignor to Central Machine Works Company, Minneapolis, Minn.
Filed Feb. 27, 1964, Ser. No. 347,903
2 Claims. (Cl. 272—66)

1. A diving board assembly adapted to be mounted adjacent a body of water, the assembly comprising a load

supporting base, a load carrying frame extending above and substantially parallel to said base, a diving board mounted on said frame, means operatively attaching said frame and said base at their rear ends, said means comprising a spring bracket removably attached to the base, a spring receiving pocket on said spring bracket, a stub shaft in said spring bracket and substantially in line with the center of said spring receiving pocket, a pivotal bracket removably attached to the frame, said pivotal bracking having a stub shaft receiving opening therein, the stub shaft on the spring bracket extending into the stub shaft receiving opening in the pivotal bracket, a sec-



ond spring bracket removably attached to the frame, a second spring receiving pocket on the said second spring bracket, a second stub shaft on the said second spring bracket and substantially in line with the second spring receiving pocket, a second removable pivotal bracket attached to the base, said second pivotal bracket having a stub shaft receiving opening therein, the stub shaft on the second spring bracket extending into the stub shaft opening in the second pivotal bracket, a spring member having its ends in the spring receiving pockets, said spring member extending substantially at right angles to the axis of the frame, and removable means for securing the base spring member in said pockets.

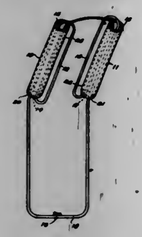
3,300,210

SELF-ADJUSTING ROPE EXERCISER

James V. Melchiona, 6724 Menz Lane, Cincinnati, Ohio 45238

Filed July 22, 1963, Ser. No. 296,853

4 Claims. (Cl. 272—79)



4. In combination, a flexible rope exercising device, a hand grip to be manually held in selected positions along the length of said rope comprising a tubular, form retaining handle member open at both ends, a loop formed in the rope by twice passing the rope through the handle member from the same end and longitudinally of the handle member, said loop having two rope strands disposed within the handle member and extending through both ends thereof and a single rope strand disposed exteriorally and alongside the handle member whereby the handle member is adapted to be freely moved in either longitudinal direction along the length of the rope and is locked in adjusted positions by manual pressure of the single rope strand against the handle member when the latter is gripped.

3,300,211

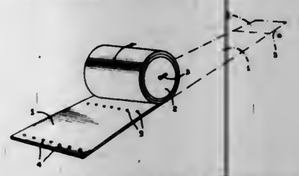
REMOVABLE SURFACE COVERINGS

Aafko Maring, Konstanz, Germany, assignor to L. Stromeyer & Co. G.m.b.H., Konstanz, Germany

Filed Aug. 21, 1964, Ser. No. 391,270

Claims priority, application Germany, Aug. 24, 1963, St 21,010

4 Claims. (Cl. 273—27)



1. A surface covering comprising a flexible web having an elastic airtight member at one end thereof capable of being inflated to a cylindrical shape to serve as a wrapping drum when in inflated condition for rolling said web thereon.

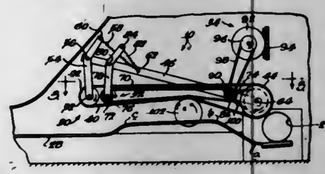
3,300,212

BALL SPEED CONTROL MECHANISM

William D. Cornell, Grand Haven, Mich., assignor to Brunswick Corporation, a corporation of Delaware

Filed Dec. 6, 1963, Ser. No. 328,648

23 Claims. (Cl. 273—49)



7. A ball speed-control mechanism, comprising: a ball track; a first means for moving a ball, said means being adjacent the track and spaced a distance less than the diameter of the ball from said track; a second means for moving a ball, said second means being engageable by said first means only after the contact of the ball with said first means; and means for driving said second means to cause relative travel of said first and second ball moving means.

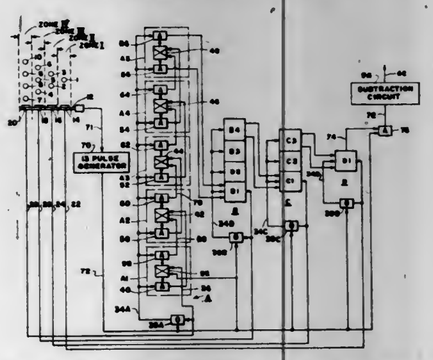
3,300,213

PINFALL DETECTING APPARATUS WITH SHIFT REGISTER STORAGE MEANS

Robert L. Miller, Olmsted Falls, Ohio, assignor to Cleveland Trust Company, Cleveland, Ohio, as trustee

Filed Nov. 21, 1963, Ser. No. 325,371

4 Claims. (Cl. 273—54)



1. In apparatus for producing a number of electrical pulses equal to the number of standing pins on a bowling alley pin deck, the combination of a plurality of pin detecting devices each adapted to detect pins within a predetermined zoned area of the pin deck and to produce a number of discrete electrical pulses equal to the number of standing pins in its associated zoned area, a plurality of shift register devices each of which is coupled to an associated one of said pin detecting devices, means for coupling said shift register devices in series, and means including an external source of shift pulses for deriving output pulses equal in number to the number of standing pins from the last of said series-connected shift register devices.

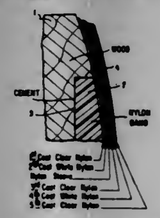
3,300,214

BOWLING PIN WITH HOMOGENEOUS NYLON CASING INCLUDING AN INTERIOR FILAMENTARY STRUCTURE

Edgar B. Nichols, 325 W. Main St., Moorestown, N.J. 08057

Filed Aug. 15, 1963, Ser. No. 302,299

4 Claims. (Cl. 273—82)



1. A bowling pin comprising a solid body of wood and a multi-coating of nylon film layers covering the surface of said pin, said coating including, between the inner and outer layers thereof, a tubular sleeve of nylon filaments, said coating having a bond between said film layers and between said layers and said sleeve, said bond having structural characteristics resulting from having been formed by fusing together the contacting surfaces between said layers and between said layers and said sleeve, the degree of fusing of said sleeve to adjacent layers being restricted so as to retain in said sleeve an interior filamentary structure, whereby there is formed a unitary coating structure of homogeneous composition.

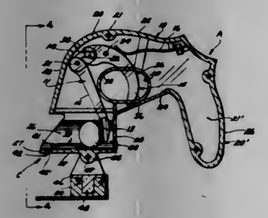
3,300,215

MARBLE CATAPULT AND GAME BOARD CONSTRUCTION

Francis T. Coffey, Sr., 3809 S. Hill St., Los Angeles Calif. 90037

Filed Oct. 24, 1965, Ser. No. 504,460

14 Claims. (Cl. 273—101)



3. A marble catapult of the character referred to including an elongate body having a central portion, a rear hand-grip portion and a longitudinally disposed, forwardly opening elongate cylindrical lower portion, a bell crank pivotally mounted on a transverse axis in the central portion of the body and having an elongate, normally downwardly and rearwardly projecting caster arm terminating in the rear end of the cylindrical portion of the body, and a normally upwardly and rearwardly projecting lever arm, a trigger pivotally mounted on a transverse axis in the central portion of the body rearward of the bell crank and having a downwardly extending, finger-engaging portion, and a forwardly extending lever arm engaging portion, and a forwardly disposed marble-engaging saddle at the lower end of the caster arm within the lower cylindrical portion of the body and to engage a marble arranged within the said cylindrical portion.

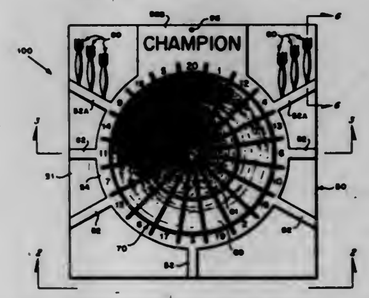
3,300,216

DARTBOARD WITH EXPANDED PLASTIC BASE

Ernest Haecker, 8014 Bridle Road, Philadelphia, Pa. 19111

Filed Sept. 4, 1964, Ser. No. 394,555

10 Claims. (Cl. 273—102)



1. A dartboard comprising (a) a generally planar expanded plastic base, said base having (1) a circular aperture therein, generally centrally positioned on said base, (2) a support aperture near one edge of said base, (3) a plurality of ribs on said base, at least one of said ribs also comprising dart holding means, (4) a raised inner rim portion surrounding said circular aperture; and (b) a thin circular rolled paper target disk firmly fitted into said circular aperture.

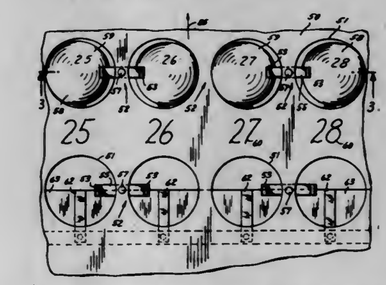
3,300,217

BALL-HOLDING ELECTRIC RECEPTACLE BOARD

Sidney Franklin, Lawrence, N.Y., assignor to Metro Game Manufacturing Corp., Long Island City, N.Y., a corporation of New York

Filed Dec. 19, 1963, Ser. No. 331,686

10 Claims. (Cl. 273—135)



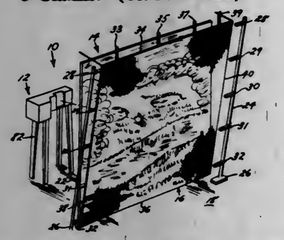
1. An automatic numbered Ping-pong ball electric receptacle board for bingo games of the type having numbered Ping-pong balls and having an auxiliary elevated illuminated scoreboard and connecting circuitry between the receptacle board and the illuminated scoreboard, said receptacle board having a top plate with transversely aligned rows of numbered openings into which the numbered Ping-pong balls are to be inserted, switches within said receptacle board and accessible through said openings, said switches including switch elements acting as

bottom stops for the inserted Ping-pong balls, said receptacle board further including resilient means to hold said balls against the switch elements and maintain said switches in closed position, and release means to release the balls from the resilient means and switch elements when the game has been played.

3,300,218
GOLF BALL IMAGE PROJECTING SYSTEM FOR GOLF GAMES

Maximilian Richard Speiser, 17 W. 60th St., New York, N.Y. 10023

Filed Dec. 23, 1963, Ser. No. 332,475
5 Claims. (Cl. 273—185)



1. Apparatus to provide a golf ball image-projection for a computer type golf game, comprising: a scanning projector having a light source and projection lens, first input means providing a horizontal signal to said projector, second input means providing a vertical signal to said projector, masking means in said scanning projector between said light source and said lens, said masking means being activated by said second input means, and image scanning means in said projector including a horizontal positioning member and actuated by said first input means and a vertical positioning member actuated by said second input means.

3,300,219
GOLFER'S STANCE TRAINING DEVICE

Steve G. Sipos, 154 Idabelle Ave., Elm Grove, W. Va. 26003

Filed Jan. 22, 1965, Ser. No. 427,279
2 Claims. (Cl. 273—187)



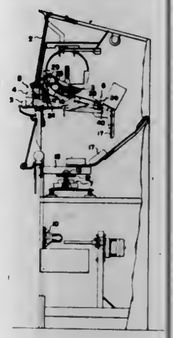
1. A training device for golfers comprising a straight base, an elongated straight leg joined to and extending normal from said base and having a longitudinal series of spaced apart openings therein, a golf ball tee having a stem insertable in any one of said leg openings for positioning said tee on said leg, and a pair of shoe guides each joined to an opposite end of said base and diverging from one another, each of said shoe guides having an interior opening defined by a wall of said guide having the configuration of the sole of a shoe.

3,300,220
MUSIC BOX

Katsujiro Harada, 96 Nishitakaido 1-chome, Tokyo, Japan

Filed Dec. 20, 1963, Ser. No. 332,029
Claims priority, application Japan, Dec. 25, 1962, 37/58,763; July 1, 1963 (utility model), 38/48,671
4 Claims. (Cl. 274—10)

1. In a music box, the combination comprising
a turn table and automatic record playing means therefor,
a row of phonograph records,
means for supporting the row of phonograph records,
push means for selecting a record by pushing it out from the supported row of phonograph records including latched lever means and push button means to release said lever means which pushes out a selected record,
lateral pick-up means for picking up the selected record,
guide means receiving the selected record from said

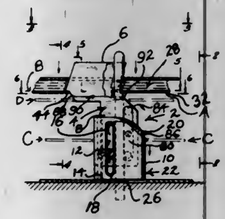


lateral pick-up means and guiding it onto said turn table for playing thereon,
discharging-guide means for discharging a played record from said turn table,
a trough operatively disposed relative to said discharging-guide means for receiving the played record therefrom,
an elevator mechanism including gripping means engaging the played record and returning it to said supporting means.

3,300,221
SPINDLE ADAPTER

Gerald Shirley, 111 Lake Ave., Tuckahoe, N.Y. 10707

Filed Sept. 22, 1965, Ser. No. 489,225
9 Claims. (Cl. 274—10)

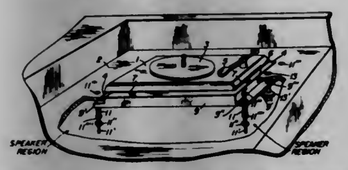


1. An adapter for a record player spindle to adapt said record player to play enlarged center hole records comprising:
(1) a slide for movable mounting on a spindle, said slide having
(a) an upper horizontally extending stacking member, and
(b) a lower vertically extending channel member for slidably receiving a spindle,
(2) foot means adjustably secured to said channel shaped member for supporting said adapter and engaging said spindle to limit the position of said adapter relative to a spindle, and
(3) a casing surrounding said channel shaped member adjustably secured to said channel shaped member for receiving records thereon to center the records, said stacking member including shelf means for holding a record in a horizontal position offset from said casing so that records can be stacked on said shelf means, and subsequently, in a step by step manner be horizontally moved into alignment with said casing.

3,300,222
METHOD OF AND APPARATUS FOR PHONOGRAPH SUSPENSION AND LOW FREQUENCY IMPROVEMENT

Hermon H. Scott, Grasshopper Lane, Lincoln, Mass. 01773

Filed June 18, 1964, Ser. No. 376,166
12 Claims. (Cl. 274—39)

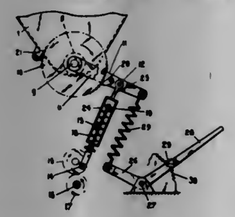


1. In phonograph-reproducing apparatus proximal to a source of low-frequency vibrations, the combination of turntable apparatus carrying a vibration-sensitive tone arm, a mass frame of weight at least comparable to that of the turntable apparatus, a supporting cabinet provided with an aperture for receiving the frame, means for resiliently mounting the frame to the cabinet and within the said aperture, and further means for resiliently mounting the turntable apparatus upon the frame in order to minimize vibration coupling from the said cabinet to the tone arm.

3,300,223
APPARATUS FOR SPREADING OR SOWING GRANULAR MATERIALS

Herbert Vissers, Nieuw Vennep, Netherlands, assignor to Landbouwwerktuigen- en Machinefabriek H. Vissers N.V., Nieuw Vennep, Netherlands, a company of the Netherlands

Filed Aug. 3, 1964, Ser. No. 387,050
Claims priority, application Netherlands, Oct. 18, 1963, 299,423/63
2 Claims. (Cl. 275—8)

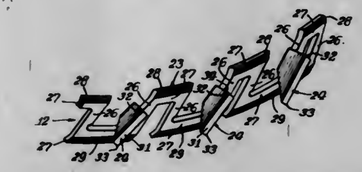


1. An apparatus for spreading or sowing granular material, comprising a trough-shaped storage hopper supported by a travelling frame, said hopper having an outlet in the bottom thereof, a spreading member movable under said outlet, a shaft with a conveying screw for feeding material to the hopper outlet, and means for driving said shaft and including a toothed ratchet wheel secured to said conveying screw shaft, an arm having one end rotatable on said shaft, a pawl pivoted on said arm in driving engagement with the teeth of the ratchet wheel, driving means including a crank pin pivotally connected to a driving rod, means pivotally connecting said rod to said arm including means slideably guiding the rod transversely of the arm, a first spring supported by a collar on said rod and urging said arm and pawl in the driving direction of the ratchet wheel, a second spring also urging the arm in said driving direction, means pivotally connecting the second spring at one end directly to said arm and at the other end to said frame, both said springs being adapted to take up the movement of the crank pin dependent upon the resistance of the conveying screw, and a second pawl pivotally mounted in fixed position and engaging said ratchet wheel to prevent reverse rotation thereof.

3,300,224
SPACER-EXPANDER FOR PISTON RING ASSEMBLY

Robert F. Games, Hagerstown, Ind., assignor, by mesne assignments, to Dana Corporation, Toledo, Ohio, a corporation of Virginia

Filed June 14, 1963, Ser. No. 288,031
12 Claims. (Cl. 277—139)

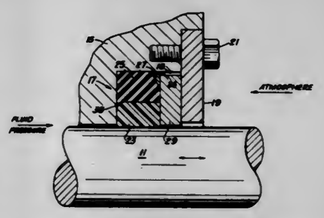


11. A spacer-expander for a piston ring assembly including a pair of annular rails, said assembly being adapted to be installed in an annular groove formed in a piston of an internal combustion engine, said spacer-expander comprising a generally cylindrical, circumferentially expansible spring structure extending circumferentially at the inner periphery of the spacer-expander, the upper and lower edges of said structure lying in generally parallel radial planes, and a plurality of tabs joined at their radially inner ends with said spring structure and extending radially outward from said spring structure to terminate in radially outer ends, each of said radially extending tabs lying in a plane extending obliquely to said parallel radial planes and being wider at its said radially outer end than at its said radially inner end to provide upper and lower corners on said outer end thereof, said corners being spaced inwardly from said parallel radial planes, said spring structure being adapted to engage the inner peripheries of said rails to force them outwardly and the upper and lower corners on said tabs being adapted to engage the inner sides of said rails to hold them axially spaced.

3,300,225
EXTRUSION PROTECTED RESILIENT ROD SEAL

Paul R. Shepler, Towson, Md., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Oct. 20, 1964, Ser. No. 405,124
1 Claim. (Cl. 277—165)



A seal assembly for the cavity surrounding a shaft comprising:
a rubber ring of generally rectangular cross-section and having an outer diameter smaller than said cavity and an inner diameter larger than said shaft,
a band of tetraflouroethylene having an inner diameter of a size to fit said shaft and an outer diameter slightly larger than the inner diameter of said rubber

ring, said band disposed between said shaft and said rubber ring,

a metallic ring of generally triangular cross-section engaging said rubber ring at an outer corner thereof to decrease extrusion flow of the latter,

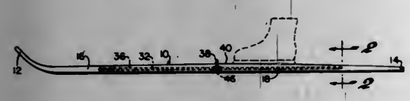
a retainer ring engaging said rubber ring, said metallic ring and said band forcing the ring and band into said cavity whereby the rubber ring is deformed to bear against the cavity and the band, and the band is forced against the shaft thereby effectively sealing the shaft.

3,300,226

SKI CONSTRUCTION AND METHOD FOR VARYING THE FLEXIBILITY THEREOF

Charles L. Reed, Jr., 8225 Spooky Hollow Road, Cincinnati, Ohio 45242

Filed Sept. 28, 1964, Ser. No. 399,525
15 Claims. (Cl. 280—11.13)



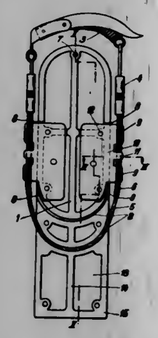
1. In combination, an elongate substantially flat body possessed of inherent bendability mainly in one direction only, an elongate stiffener including an elongate substantially flat member possessed of inherent bendability mainly in one direction only, and means carried by said body for supporting said member for rotational adjustment, said member extending longitudinally of said body.

3,300,227

SKI SOLE PLATE AND BINDING MEANS FOR MOUNTING ON THE SURFACE OF A SKI

Paul Unger, Zirndarferweg 1, Altenberg, near Nurnberg, Germany

Filed Dec. 23, 1963, Ser. No. 332,451
Claims priority, application Germany, Dec. 24, 1962, U 9,478; Dec. 4, 1963, U 10,319
8 Claims. (Cl. 280—11.35)



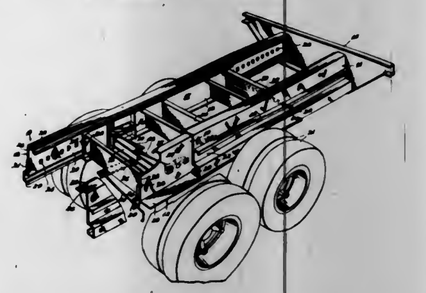
1. Sole plate and ski binding mounting means, said sole plate being adapted to be fixedly mounted to the upper surface of a ski and having a top side presenting an unobstructed plane surface and a bottom side provided with a plurality of recessed configurations, and said mounting means including said plurality of configurations and a plurality of binding components received therein, said sole plate constituting a clamping plate secured to a ski and clamping said plurality of binding components between said configurations and the upper ski surface.

3,300,228

APPARATUS FOR SELECTIVELY POSITIONING VEHICLE SUSPENSION

William A. Bertolini and James J. A. Hall, Cincinnati, Ohio, assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Dec. 24, 1964, Ser. No. 421,023
8 Claims. (Cl. 280—81)



1. Roadway vehicle apparatus comprising,

a chassis including a pair of laterally spaced longitudinally extending rails, said rails having longitudinally spaced transversely aligned holes,

a suspension including a frame slidably mounted on said rails, springs on said frame, at least one axle mounted on said springs and wheels mounted on said axles,

a pawl pivoted at each side of said frame,

each said pawl having a lock dog on each side of its pivot axis and selectively engageable with holes in said rail,

each said dog having a sloped face and a transverse face permitting said dog respectively to ride out of or lock into a hole as said frame is urged in a longitudinal direction with respect to said rails,

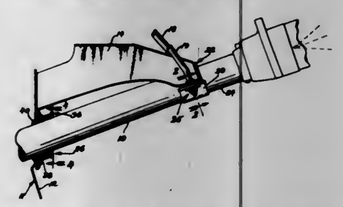
and spring means selectively biasing one of said dogs toward said holes.

3,300,229

STEERING COLUMN ARRANGEMENT

Floyd Richard Kishline, Kenosha, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland

Filed May 24, 1965, Ser. No. 457,948
9 Claims. (Cl. 280—87)



1. A steering column arrangement for a vehicle comprising:

(a) a vehicle steering column;

(b) an upper support means for connecting said column to the vehicle in the area of the instrument panel of the vehicle;

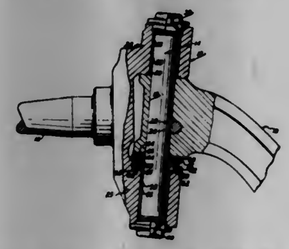
(c) a lower resilient support means for connecting said column to the vehicle in the area of the toeboard of the vehicle, said lower means having a passage therethrough for the positioning in said passage of said column, said passage being defined by an inner peripheral flange presenting an innermost surface and a pair of generally oppositely facing side surfaces, at least one of said side surfaces being joined at its outer end with an annular surface extending away from said flange and surrounding said passage, said flange contacting and supporting said column and being adapted to provide controlled flexibility to lower the natural frequency of a pitching mode of said column from the natural frequency of the vehicle and said lower means being adapted to provide high stiffness when said annular surface is contacted by said column.

3,300,230

INTEGRAL THRUST BEARING AND KINGPIN BUSHING SEAL

Robert E. Spencer, Taylor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,691
5 Claims. (Cl. 280—96.1)



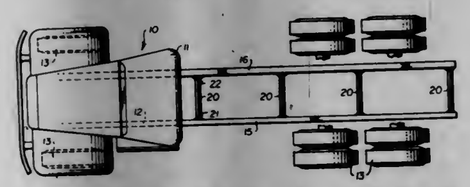
1. A vehicle construction comprising an axle, a kingpin secured to said axle and having portions extending therefrom in a generally vertical direction, a steering knuckle adapted to rotatably support a road wheel and having a bifurcated portion pivotally engaging the extending portions of said kingpin, a bushing interposed between each of the extending portions of said kingpin and said steering knuckle, an integral thrust bearing and kingpin bushing seal assembly surrounding said kingpin and interposed between a portion of said steering knuckle and a portion of said axle, said assembly comprising a pair of rotatably connected casing members, one of said casing members having an axially extending portion surrounding said kingpin and holding said one casing member in sealed engagement with a portion of said steering knuckle, an O-ring sealing the junction between the other casing member and said kingpin, said casing members containing a plurality of thrust bearing components rotatably related to one another.

3,300,231

VEHICLE FRAME

Walter L. Lull, Kent, and Warren J. Young, Parma Heights, Ohio, assignors to White Motor Corporation, a corporation of Ohio

Filed Aug. 27, 1964, Ser. No. 392,557
8 Claims. (Cl. 280—106)



1. In a vehicle frame structure, the combination of:

(a) a pair of spaced generally parallel beams;

(b) an elongated tubular cross member extending substantially from one of said beams to the other;

(c) first and second brackets fixed to said first and second beams respectively;

(d) each of said brackets including an endless portion in telescopic relationship with an end portion of said tubular cross member and forming respectively first and second connections of said cross member to said first and second brackets;

(e) said cross member end portions being deformed circumferentially and radially toward the bracket portion of the same connection into tight frictional abutment therewith, the metal in said deformed portion being compressed and more dense than the remaining metal in the cross member;

(f) parts of said cross member at each side of each of said deformed portions overlying both ends of one bracket portion to prevent relative axial movement of the brackets and cross member in both directions; and,

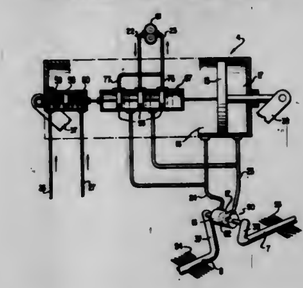
(g) means securing the bracket and cross member against relative rotation without creating areas of stress concentration in said cross member inboard of said brackets.

3,300,232

CURVE STABILIZATION OF MOTOR VEHICLES

Friedrich H. Van Winsen, Kirchheim (Teck), and Klaus Bauer, Stuttgart-Unterturkheim, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Sept. 8, 1964, Ser. No. 394,801
4 Claims. (Cl. 280—112)



1. A curve stabilization system for the vehicle body of the motor vehicle, having front and rear axles with wheel suspension means and in which respective wheel suspension means are operatively coupled with each other by interrupted torsion rod stabilizer means, comprising:

torsion rod stabilizer means for each axle including two interrupted torsion rod stabilizer parts connected at the outer ends thereof with a respective wheel suspension means, and forward and rear hydraulic adjusting motor means each operatively connecting with each other the inner ends of the two parts of a respective interrupted torsion rod stabilizer means,

said forward and rear adjusting motor means each having a piston defining chambers receiving working fluid,

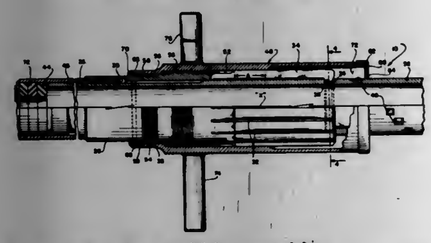
working circuit means for selectively supplying to and discharging from said chambers working fluid to actuate said piston and twist the inner ends of the two parts of a respective torsion rod stabilizer means relative to one another so as to oppose the tilting of the vehicle body,

and control circuit means for controlling the selective supply and discharge of working fluid to and from said chambers including control slide valve means operatively interconnected into said working circuit means for control thereof including a chamber member and a valve slide member in said chamber, and hydraulic means responsive to the drive of the vehicle through a curve connected to one of said members of said control slide valve means for selectively actu-

ating said control slide valve means to selectively valve the supply and discharge of the working fluid to and from said chambers of the adjusting motor means in dependence on the drive of the vehicle through a right or left hand curve, the other of said members of said control slide valve means being connected to one of said pistons, and said hydraulic means and said control slide valve means being positioned within one of the chambers of one of said adjusting motor means,

and said working circuit means including line means operatively connecting with each other the corresponding chambers of the forward and rear adjusting motor means.

3,300,233
TOWBAR
David C. Olson, Burbank, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 19, 1965, Ser. No. 433,945
12 Claims. (Cl. 280—453)



12. A towbar for a vehicle comprising:

a first hollow shaft formed with a series of flexible fingers extending around the shaft at one end,

a second shaft extending within the first shaft and including an annular groove,

the first shaft flexed fingers each including a tooth extending within the second shaft groove such that the first shaft is linked to the second shaft,

a collar threaded on and rotatable relative to the first shaft and including a surface which mates with the flexible fingers and rotation of the collar on the first shaft changes the portion of the fingers which are flexible,

a series of spacers disposed between the collar and the first stop to act as a stop for the collar and which permit removal to form a variable stop for the collar,

the second shaft has a plurality of cavities on opposite sides of the annular groove and aligned with the shaft fingers and the cavities are used to generate a noise in the event the shafts telescope, and

a plurality of resilient discs disposed in the first shaft for cushioning the second shaft when the shafts telescope toward each other;

whereby the two shafts move as a unit until a predetermined force against the shafts forces the tapered teeth on the flexible fingers out of the annular groove and thereby permits the shafts to telescope relative to each other.

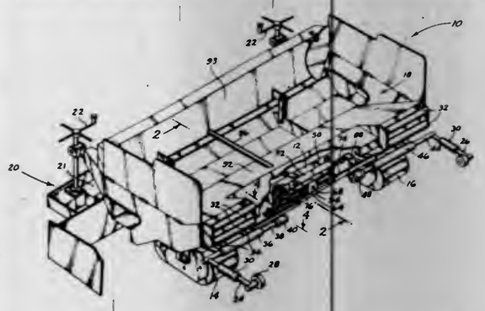
3,300,234
APPARATUS FOR ATTACHING TRAILING AND LEAD VEHICLES
Jack D. Layton, Salem, Oreg., assignor to Layton Manufacturing Co., Salem, Oreg., a corporation of Oregon
Filed Aug. 4, 1964, Ser. No. 387,298
6 Claims. (Cl. 280—460)

1. Apparatus for attaching trailing and lead vehicles where the lead vehicle is supported by rear wheel assemblies comprising

a pair of attaching arms disposed adjacent opposite sides of the trailing vehicle, said arms having rear ends adjacent the trailing vehicle and forward ends projecting forwardly of the trailing vehicle, said forward ends having wheel engaging means for engaging the rear wheel assemblies of the lead vehicle,

elongated, extensible-contractible means extending transversely of the trailing vehicle, with opposite ends of said extensible-contractible means connected to said rear ends of said arms, said extensible-contractible means including mechanically operated mechanism actuatable to extend or to contract the means with such producing relative movement of the arms toward and away from each other,

guide means mounted on the trailing vehicle mounting

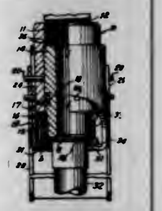


said extensible-contractible means and arms, and accommodating movement of the extensible-contractible means and arms as a unit laterally of the trailing vehicle,

actuating means for actuating said mechanism mounted on the trailing vehicle, and

means connecting the actuating means and mechanically operated mechanism of the extensible-contractible means whereby operation of the actuating means produces operation of the mechanically operated mechanism, said connecting means including a flexible joint accommodating relative movement of the extensible-contractible means in a direction extending laterally of the trailing vehicle.

3,300,235
HOSE COUPLING DEVICE
Roy N. Blackwell, Jr., 9450 Highedge, Dallas, Tex. 75238
Filed May 13, 1964, Ser. No. 367,116
5 Claims. (Cl. 285—312)



1. A detachable coupler for water hose, in combination with a faucet having a hose bib and a section of hose, a cylindrical body having an internal threaded portion on one end, a cylindrical sleeve arranged concentrically of said body and lost motion means connecting said body and said sleeve permitting limited longitudinal movement of said sleeve within said body, the said sleeve having a portion reduced in diameter extending beyond the end of said body opposite the internal threaded portion thereof to be embraced by the female coupling of said section of hose, and a cylindrical shell slidably connected to said body and embracing the reduced portion of said sleeve and having an opening in one end and an opening in the cylindrical wall adjacent said end whereby to receive said female hose coupling in concentric alignment with said sleeve, said shell having an internal flange formed about a portion of said one end to engage said hose coupling, and cam means interconnecting said shell and said body for moving said shell axially.

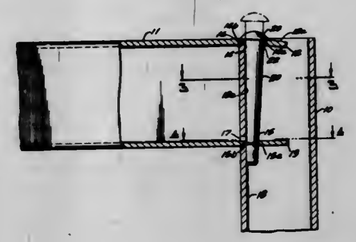
3,300,236
LOCK FOR SECTIONAL SCAFFOLDING
Clyde Sauls, 824 Hertel Ave., Buffalo, N.Y. 14216
Filed June 9, 1964, Ser. No. 373,757
5 Claims. (Cl. 287—53.5)



1. In a scaffold having an upright and a diagonal brace bar provided with a hole through one end thereof; the combination therewith of a latch for releasably locking said end of said diagonal brace to said upright, comprising an upper stud fixed to and projecting generally horizontally from said upright and provided with a longitudinal slot extending vertically therethrough and having generally parallel flat vertical longitudinal side faces, an abutment across and terminating the outboard end of said slot, a lower stud fixed to and projecting generally horizontally from said upright in spaced generally parallel relation directly below said upper stud and provided with a longitudinal slot extending vertically therethrough in vertical alinement with said slot through said upper stud, an abutment across and terminating the outboard end of said slot through said lower stud, said end of said diagonal brace bar fitting on said lower stud with said lower stud projecting through and beyond the hole therethrough, a wedge plate fitting in both of said slots in closely fitted relation to said side faces of said slot through said upper stud and having a first edge adapted to be brought into pressure contact with said end of said brace bar fitted on said lower stud, and having a second edge extending upwardly from the lower end of said first edge at an acute included angle relative thereto and in pressure contact with said abutment of said lower stud, said second edge also engaging said abutment of said upper stud, and a protuberance on the lower end of said wedge plate projecting horizontally therefrom and rendering said wedge plate larger, in a horizontal direction, than the corresponding dimension of said slot through said upper stud but less than the corresponding dimension of said slot through said lower stud whereby said wedge plate can be withdrawn upwardly from said lower stud but cannot be withdrawn upwardly from said upper stud.

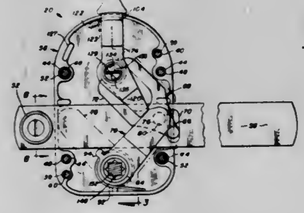
3,300,237
CONNECTED COLUMN AND BEAM CONSTRUCTION
Carl R. Rolen, Rte. 3, Pataskala, Ohio 43062
Filed May 21, 1964, Ser. No. 369,233
4 Claims. (Cl. 287—189.36)

4. In combination, an upright column of hollow wall cross section, a horizontal beam of hollow closed box-like cross section with upper and lower webs and connecting side webs and having an end abutting a wall of said column, vertically spaced connector tongues which are continuations of said upper and lower webs extending through correspondingly vertically spaced apertures in said wall into the interior of said column and bearing on said wall at said apertures, and a locking pin extending



through pin-receiving openings in said tongues and wedging against the interior of said wall, said openings being positioned mainly beyond an inner surface of said wall but having outer edges disposed behind said surface, said openings being larger than the portions of the pin finally positioned therein respectively.

3,300,238
GARAGE DOOR LATCH
Lyle J. Fleskes, Portland, Oreg., assignor to Pacific Spring & Hardware Manufacturing Corporation, Portland, Oreg., a corporation of Oregon
Filed Feb. 17, 1965, Ser. No. 433,443
8 Claims. (Cl. 292—173)



2. In a garage door latch,

a latching bar having first coupling means,

means guiding the latching bar between a latching position and a releasing position,

means urging the bar toward its releasing position,

a latch lever mounted pivotally on a first fixed axis and having second coupling means spaced from the fixed axis thereof,

a throw-multiplying slide arm having third coupling means drivingly engaged with the second coupling means of the latch lever,

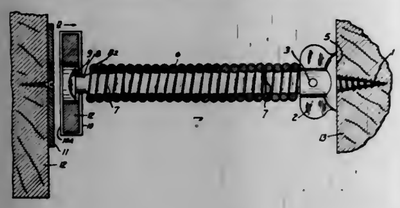
the slide arm also having fourth coupling means drivingly engaged with the first coupling means of the latching bar and spaced along the slide arm from the third coupling means and the slide arm also being provided with a slotted portion,

and a lock arm having a shaft mounted pivotally on a second fixed axis parallel to the first fixed axis and extending through the slotted portion of the slide arm,

the lock arm also having an arm urged into engagement with the latch lever to hold the latch lever in

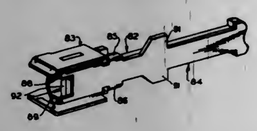
its latching position and movable manually away from the latch lever.

3,300,239
STOP AND MAGNETIC HOLDER FOR RELATIVELY MOVEABLE ELEMENTS
Leon W. Dinkin, 100 Font Blvd., San Francisco, Calif. 94132
Filed Nov. 30, 1964, Ser. No. 414,568
2 Claims. (Cl. 292—251.5)



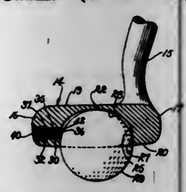
1. A stop for holding one of two relatively movable members in adjusted position comprising an elongated element having mounting means at one end for securing said device to one of said relatively moveable members, and having a magnetic unit at the other end for coaction with a keeper on the other of said relatively moveable members, said magnetic unit comprising a headed element secured to said elongated element and rockably retaining, by said head, an enclosing housing in which is disposed a magnet; said housing having an apertured wall loosely receiving a stem portion of said headed element, and having a keeper-engaging surface opposite said opening; said magnet having a central opening of a size to permit rockable adjustment of said magnetic unit about the head portion of said headed element.

3,300,240
LATCH EXTENSION DEVICE
John A. Tornoe, Redwood City, and Ralph E. Neary and Lizandro Fernandez-Castro, San Francisco, Calif., assignors to Schlage Lock Company, a corporation
Filed Sept. 21, 1964, Ser. No. 397,760
8 Claims. (Cl. 292—337)



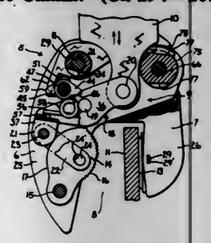
4. A backset extension device comprising:
an elongated housing adapted to be interposed between the cooperating latchbolt actuating unit and the latchbolt unit of a standard lockset,
a pair of elongated links reciprocally supported for axial movement alongside each other in said housing,
said each links being formed at one of their corresponding ends for connection to a retractor slide of said actuating unit to permit said slide to pull said pair in unison away from said latchbolt unit,
one of said links being formed at its other end for connection with the latchbar of said latchbolt unit to permit said latchbar to be pulled by said one link to retracted position,
the other of said links being formed at its other end to provide an axially facing surface positioned to be abutted by the inner end of said latchbar upon depression of the associated latchbolt.

3,300,241
GOLFBALL RETRIEVING DEVICE
Francis D. Eberwein, 1821 Calaveras, Fresno, Calif. 93721, and Edward J. Derderian, 4514 N. Wilson, Fresno, Calif. 93704
Filed Sept. 17, 1963, Ser. No. 309,479
2 Claims. (Cl. 294—19)



1. A ball retrieving device comprising an elongated shaft having an upper handle end and an opposite lower end; a substantially rectangular head having a top surface and an opposite sole surface, said upper surface having an integral shank portion extended therefrom for connecting the head to said lower end of the shaft, said sole surface having a circular pocket therein including a continuous circular wall circumscribing the pocket and being of a diameter somewhat larger than the major diameter of a golf ball and of a depth less than the major diameter of a golf ball, the head having an elongated bore opening into said pocket; a spring disposed within the bore having an inner end extended inwardly of the pocket; and a ball gripping member mounted on said inner end of the spring for frictional engagement with a golf ball positioned within the pocket and being retractable inwardly of the bore whereby said spring provides a reaction force through the gripping member to hold the golf ball within the pocket with a portion of the golf ball extended outwardly from said sole surface of the head for removal of the golf ball from said pocket incident to the application of a force tangentially against said extended portion of the golf ball.

3,300,242
PLATE LIFTING CLAMPS
Lester C. Renfroe, deceased, late of Jacksonville, Fla., by Mary Elizabeth T. Renfroe, administratrix, Jacksonville, Fla., assignor to Safety Clamps, Inc., Jacksonville, Fla., a corporation of Florida
Continuation of abandoned application Ser. No. 400,598, Sept. 30, 1964, which is a continuation of abandoned application Ser. No. 173,998, Feb. 19, 1962. This application May 27, 1966, Ser. No. 553,580
20 Claims. (Cl. 294—101)



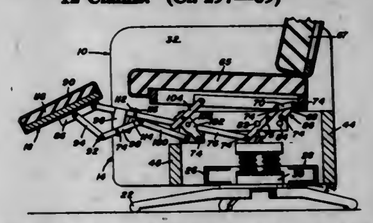
1. A plate-lifting clamp comprising a substantially flat body structure defining:
(A) a plate-receiving mouth having spaced apart jaws projecting from and substantially coplanar with a bight portion,
with the inner opposing faces of the jaws at opposite sides of a median plane perpendicular to and passing through the bight portion;
(B) means on one of said jaws defining a semi-cylindrically bottomed socket opening to the inner face of the jaw with the axis of its curved bottom parallel to said median plane and perpendicular to the general plane of the body structure,
the bottom of the socket having an elongated slot therethrough disposed transversely of the axis of the curved bottom;
(C) a semi-cylindrical friction pad having a substantially flat side and an opposite convexly curved side, said friction pad being seated in the socket with its convexly curved side in mating sliding engagement with the curved bottom of the socket;
(D) retaining means extending from the convexly curved side of the friction pad and into said slot in the bottom of the socket, to hold the pad in the socket while allowing the pad to rock about the axis of the semi-cylindrical bottom of the socket;
(E) frictional gripping means on the flat side of the friction pad projecting beyond the adjacent inner face of the jaw to engage one side of a plate received in the mouth of the clamp;
(F) a self-energizing gripping cam pivotally mounted on the other jaw to swing between an extended operative position in which it coacts with the friction pad to grip a plate therebetween, and a retracted inoperative position;
(G) a pivot pin on the bight portion of the body structure near its junction with the jaw on which the gripping cam is mounted;
(H) a cam actuating lever medially journalled on said pivot pin and having one end portion thereof projecting over the inner closed end of the mouth and its other end portion projecting toward the pivot axis of the gripping cam and extending far enough in said direction to have a portion of the gripping cam disposed between it and the friction pad,
said lever being operable to effect motion of the cam to its extended operative position in consequence of rocking motion of the lever in one direction; and
(I) a shackle pivotally connected to said first named end portion of the actuating lever, with the axis of the pivotal connection therebetween substantially on said median plane,
the weight of the clamp when suspended by the shackle automatically causing the actuating lever to rock in the direction to effect movement of the gripping cam towards its extended operative position.

3,300,243
RECLINING CHAIR FIXTURE
Ned W. Mizelle, 902 Sedgewick Lane, High Point, N.C. 27260
Filed Nov. 13, 1964, Ser. No. 412,585
23 Claims. (Cl. 297—85)



1. In a reclining chair having a seat, a back and a leg rest supported by a fixture on a stationary base for movement between a normal upright position in which said seat and back are angularly disposed to subtend an upright seating angle with said seat generally horizontal and said leg rest retracted onto said base, a fully reclined position in which said back is reclined rearwardly relative to said seat to subtend a substantially greater angle than said upright seating angle with said seat tilted rearwardly relative to said base and said leg rest extended ahead of and generally in line with said seat in a leg supporting position, and an intermediate position in which said seat and back are angularly disposed to subtend said normal upright seating angle with said seat rearwardly reclined relative to said base at an angle less than in said fully reclined position and said leg rest extended in said leg supporting relationship, said fixture comprising:
a base member affixable to the base,
a seat link member affixable to the seat,
a first front support link pivotally connected at one end to the forward end portion of said seat link,
a second front support link pivotally connected to the front portion of said base and to the other end portion of said first support link,
a constraining link pivotally mounted intermediate its ends on said base member,
a front control link pivotally connected between one end of said constraining link and one of said front support links,
a rear control link pivotally connected between the other end of said constraining link and the rear portion of said seat link member,
a rear support link pivotally connected at one end to said base member and at the other end to said rear control link,
said constraining link and control links establishing a fully constrained, pivotal, swinging motion of said seat link member and continuous pivotal motion of said support links while moving between said normal and fully reclined positions,
a leg rest supporting link means affixed to the leg rest and pivotally connecting said leg rest to one of said front support links and one of said members for movement of said leg rest between said retracted and forward leg supporting positions on relative motion between said front support links and said one member,
a back link affixable to the back and pivotally connected to the rear end portion of said seat link member,
a lever having a fulcrum,
means pivotally connecting said fulcrum with said base member for rotational movement of said lever and said base member,
and means connecting two other points, respectively, on said lever spaced from said fulcrum with said seat link member and with said back link at a point spaced from the pivotal connection between said back link and said seat link member, whereby the movement of said back link relative to said seat link member transmitted through said lever and connecting means pivotally moves said seat link angularly relative to said base member concurrently with the pivoting motion of said back link.

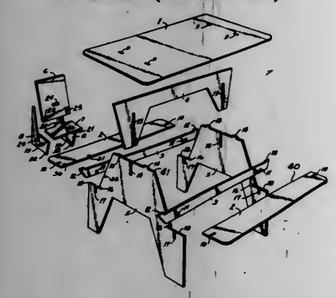
3,300,244
RECLINING CHAIR
Claude A. Hughes, 1644 Westchester Drive, High Point, N.C. 27260
Filed Jan. 6, 1966, Ser. No. 519,130
12 Claims. (Cl. 297—89)



1. A reclining chair comprising ground engaging supporting base means, a chair body supporting frame, means

for swivelly mounting said chair body supporting frame on said base means, means mounting said frame on said base means for rocking said frame thereon, a chair body supported by said frame for movement between reclined positions, a leg rest, control means for supporting said leg rest, said control means operably connected between one end of said chair body and said leg rest and responsive to movement of said chair body for controlling the movement of said leg rest, lock means on said control means for releasably retaining said chair body in substantially upright position when said reclining chair is unoccupied, said control means comprising a main linkage member, said leg rest pivotally mounted on the forward end of said main linkage member, and a linkage assembly pivotally mounted on said chair body supporting frame, said linkage assembly operatively connecting said chair body to said main linkage member whereby movement of said chair body will impart movement to said main linkage member and hence to said leg rest, said linkage assembly including a cross-linkage member pivotally mounted on said support frame, said main linkage member connected to said cross-linkage member, said control means further including linkage assembly means for tilting said leg rest in response to movement of said main linkage member, and a pair of stop pins on said supporting frame adjacent said cross-linkage member for limiting the rotational movement thereof.

3,300,245
PICNIC TABLE
Fenton J. Rumble, 106 122nd Ave. W., Tampa, Fla. 33612
Filed Jan. 21, 1966, Ser. No. 522,293
7 Claims. (Cl. 297—157)



1. A table-bench combination of knock-down construction comprising: a pair of spaced table-bench legs, each having an upper table top support surface and an intermediate ledge extending outwardly from at least one side thereof, a table support and at least one bench support, said supports and said legs having slots which engage slots in said legs to maintain said legs in a fixed spaced parallel position; a table top resting on and supported by the upper table support surface of said legs and the upper edge of said table support and at least one bench top resting on and supported by the upper edges of the intermediate ledge of said legs and the upper edge of said bench support, and tabs on said bench support which engage slots in said bench.

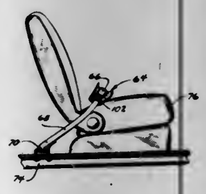
3,300,246
BENCH
Walter J. Bouche, 1020 Hickory Hill Drive, Green Bay, Wis. 54304
Filed Feb. 3, 1966, Ser. No. 525,798
5 Claims. (Cl. 297—232)

1. A bench comprising, in combination, a pair of side frames adapted to provide armrest means for the occupants seated at the ends of said bench, a rectangular base member carried by said side frames providing ground rest means for said bench, a rectangular upper rear panel supported by said side frames, a rectangular lower rear panel supported between said side frames in cooperation with said upper rear panel adapted to provide support means for said bench, a plurality of headrests and a plurality of backrests supported on said bench, a plurality of pivotable seat members interposed between said side frames of said bench, an I-beam cross-member providing support means for said pivotable seat members, a pair of slotted support members carried by said side frames adapted to support the ends of said I-beam a pair of telescoping knee rests members adapted to provide knee and feet rest means for said bench, said knee rest members



are adapted to be removed from said bench during the cleaning operations, said knee rest members being laterally adjacent to each other and having a plurality of U-shaped members of their underside supported on a telescoping sleeve unit, and at least one portable armrest member adapted to be removably secured between said backrests, said armrest member including a flexible strip having a substantially resilient cushion thereon for positioning arms and hands of the persons sitting on said bench, a hook member for the top portion of each said strip for securing said strip to the top portion of said backrest, the other end of said strip being provided with a slotted securing member for affixing the other end of said strip to said I-beam.

3,300,247
PROTECTIVE ABDOMINAL PLATE FOR USE WITH VEHICLE SAFETY BELTS
William J. Marks, 5348 Lazy Heart St., Tucson, Ariz. 85713
Filed Mar. 12, 1965, Ser. No. 444,898
2 Claims. (Cl. 297—385)



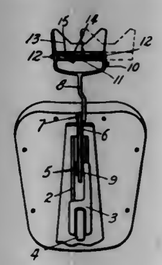
1. In a protective abdominal plate for use with vehicle safety belts, comprising,
an elongated channel member curved along its length to conform to the shape of the wearer's abdominal area,
said channel member adapted to be positioned between a seat belt and the wearer's abdomen,
said channel member including a base portion,
said base portion having first and second substantially vertically disposed openings extending therethrough adjacent at least one of its ends,
said first and second openings adapted to receive a strap means extending therethrough,
said strap means having fastening means at its ends to enable said strap means and said channel member to be selectively detachably secured to a seat belt.

3,300,248
FOLDING SEAT BELT RETRACTOR
Andrew P. Nakolan, New Baltimore, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 530,207
6 Claims. (Cl. 297—388)



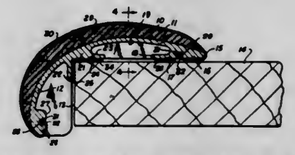
1. A take-up device for retracting a belt comprising:
a fixed first member;
a second member pivotally connected to said first member;
a plurality of pins parallel to said pivotal connection and spaced alternately on said first and second members;
said belt being laced between said alternating pins so as to be retracted into bights upon the pivoting of said second member relative to said first member.

3,300,249
HEADREST FOR DENTAL OPERATING CHAIR
Leopold M. Schneider, Karlsruhe-Ruppurr, Germany, assignor to Ritter Pfaudler Corporation, a corporation of New York
Filed Oct. 4, 1965, Ser. No. 492,501
Claims priority, application Germany, Oct. 15, 1964, R 39,010
7 Claims. (Cl. 297—408)



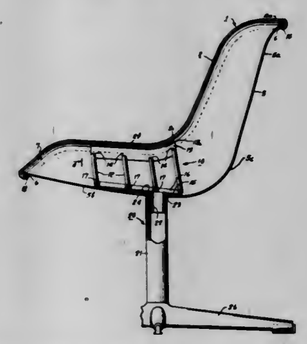
1. In combination with an operating chair or the like:
(a) a headrest support bracket mounted substantially at the top of said chair;
(b) a headrest laterally slidably mounted on said support for lateral adjustment thereon;
(c) means intermediate said headrest and bracket for locking said headrest in selected ajusted positions laterally of said bracket including a locking element mounted in asymmetrical lateral relationship on said headrest.

3,300,250
ARM REST FOR DESK AND BENCH WORKERS
Robert W. Dollgener, 3000 Commerce St., Dallas, Tex. 75226; Clifford O. Henry, 516 Riggs Circle, Mesquite, Tex. 75149; and Tince Abbott, 1722 Houghton, Dallas, Tex. 75217
Filed Oct. 23, 1965, Ser. No. 502,819
3 Claims. (Cl. 297—411)



1. In an arm rest for bench and desk workers, an elongated base member attached to the edge of a work surface adjacent to the operator and curved transversely to extend over a portion of said work surface and depend along the adjacent edge thereof, a first seating element formed along the lower forward edge of said base member and engaging said work surface, a second seating member formed rearwardly of said first seating member and having right-angular engaging surfaces for engagement with the said work surface and the adjacent edge thereof, a cushion arranged over the contoured surface of said base, a cover coextensive with said cushion, and means at each end of said base for retaining said cover thereon.

3,300,251
UPHOLSTERY COVER-FRAME CONNECTION
Charles Robert Helms, Old Zionsville, Pa., assignor to Knoll Associates, Inc., New York, N.Y., a corporation of New York
Filed June 10, 1965, Ser. No. 462,868
13 Claims. (Cl. 297—445)

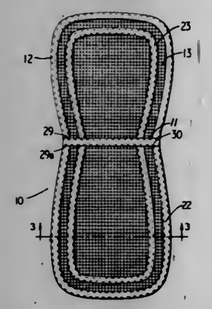


1. A connection for securing sheet-like material to a rigid frame of an article of furniture, said connection comprising:
(a) an elongated connector strip of resilient material including a web and a barb, said barb being formed integrally with said web along a first longitudinal edge of said strip and extending outwardly therefrom,
(b) said strip including a recess in a marginal portion thereof adjacent said first longitudinal edge and underlying said barb, strip material underlying said recess, said recess being of a size such that when the barb is forced into the recess the thickness of the strip at the barb adjacent to the web is substantially the same as the thickness of the strip at the web adjacent to the barb,
(c) said web being secured to said sheet-like material along a second longitudinal edge thereof,

(d) said rigid frame including an elongated channel having a restricted opening at the surface of said frame, and

(e) said barb being compressible inwardly of said recess for insertion through said restricted opening and being resiliently expansible to move into locking engagement within said channel for securing said sheet-like material to said rigid frame.

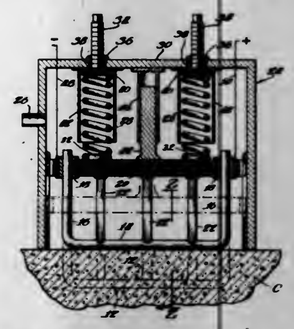
3,300,252
VENTILATING CUSHION
Gilbert Blechman, 130 Sandringham Drive, Toronto, Ontario, Canada
Filed Dec. 27, 1965, Ser. No. 516,256
Claims priority, application Canada, Oct. 15, 1965, 942,983
13 Claims. (Cl. 297—453)



1. A ventilating cushion comprisingly hingedly connected seat and back-rest portions at least one of said seat and back-rest portions comprising a four-sided wire frame one side of which is substantially parallel to its hinged connection, a first plurality of coil spring sections extending between a pair of opposite sides of said wire frame and anchored to said opposite sides, a second plurality of coil spring sections extending between and anchored to the other sides of said wire frame and intersecting the coil spring sections of said first plurality, an outer coil spring spaced outwardly of said frame and encircling the sides of said frame other than the side parallel to the hinged connection, said coil spring being in the same plane as the intersecting coil spring sections, upper and lower layers of open mesh fabric providing the front and back respectively of the cushion, a first connecting means joining the upper and lower layers of fabric adjacent to the sides of said wire frame to provide a pocket to receive said wire frame and associated intersecting spring sections, a second connecting means joining the upper and lower layers of fabric along the portions of the periphery of the fabric adjacent to the outer coil spring, said first and second connecting means and the fabric therebetween defining a sleeve to receive said outer coil.

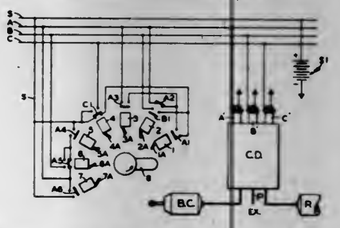
3,300,253
RESISTANCE HEATING DEVICE AND METHOD FOR MELTING CONCRETE
Peter J. Hylak, Chicago, Ill., assignor to Institute of Gas Technology, a corporation of Illinois
Filed Nov. 29, 1963, Ser. No. 326,729
5 Claims. (Cl. 299—14)

4. A method for electrically melting pavement to provide an elongated cut therein, said method comprising the steps of passing an electrical current through an elongated narrow conductor of tungsten and molybdenum in order to raise the temperature of said conductor to about 5,000° F., placing said conductor against said pavement, forcing said heated conductor through said pavement to effect the melting of said concrete to provide the desired elongated cut, and performing said melting



and cutting in a substantially oxygen free and enclosed space.

3,300,254
ELECTRO-PNEUMATIC BRAKE SYSTEM
John W. G. Kershaw, Arthur W. Simmons, and Edmund J. Page, all of London, England, assignors to Westinghouse Brake & Signal Company, Ltd., London, England
Filed July 17, 1964, Ser. No. 383,357
Claims priority, application Great Britain, July 30, 1963, 30,145/63
4 Claims. (Cl. 303—20)



1. A switch controller device comprising a plurality of switch devices disposed in a circular pattern about a central axis, each having a snap-acting operating arm extending therefrom toward said central axis movable from a first operating position to a second operating position and from said second operating position to said first operating position to effect corresponding snap-action operation of the switch devices, and a manually operated rotatable selector arm extending from said central axis radially toward said circular pattern in a manner to engage each of said operating arms individually and in succession to move said operating arms from a first operating position to a second operating position with a snap action when the selector arm is rotated in one direction and from said second operating position to said first operating position with a snap action when the selector arm is rotated in a reverse direction.

3,300,255
FLUID PRESSURE BRAKE CONTROL APPARATUS WITH EMPTY AND LOAD CHANGE-OVER
Francis R. Racki, Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1965, Ser. No. 436,039
9 Claims. (Cl. 303—22)

1. A load compensating brake system for a railway car comprising:

(a) a brake pipe,

(b) brake cylinder means for effecting a brake application,

(c) a first source of fluid under pressure,

(d) a second source of fluid under pressure,

(e) conduit means,

(f) brake control valve means responsive to a reduction of fluid pressure in said brake pipe to effect supply of pressurized fluid from said first source to said conduit means and responsive to subsequent increase of fluid pressure in said brake pipe to effect release of fluid pressure from said conduit means,

(g) relay valve means including:

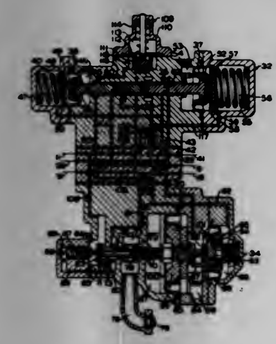
(i) a casing,

(ii) a pair of passageways, one of which is connected to said second source of fluid under pressure and the other of which is connected to said brake cylinder means,

(iii) a valve member normally biased to a seated position connecting said one passageway to said other passageway of said pair and being operable to an unseated position connecting said one passageway to said other passageway,

(iv) valve-operating piston means including a pair of axially-spaced pistons of different effective pressure areas and having a lost-motion connection therebetween,

(v) said pistons cooperating with said casing to define a plurality of chambers including a control member chamber and an outer chamber,

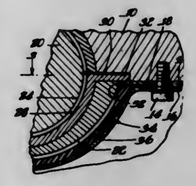


said control chamber being constantly open to said conduit means, one of said pistons being movable in one direction responsively to pressurization of said control chamber via said conduit means for effecting operation of said valve member to its said unseated position, the other of said pistons, which is interposed between said control chamber and said outer chamber, being movable out of a normal fixed position in a direction opposite to said one direction responsively to pressurization of said control chamber at a pressure in excess of a predetermined low pressure for reducing the effective force of fluid pressure in said control chamber acting on said one piston, to the extent permitted by said lost-motion connection and to a degree corresponding to the relationship of the respective effective areas of said pistons,

(h) selector valve means operable to one position, in which communication between said outer chamber and said conduit means is cut off, and being operable to a different position in which communication between said outer chamber and said conduit means is open for pressurizing said outer chamber with fluid pressure acting on and effective for maintaining said other piston in its said fixed position notwithstanding the degree of pressure in said control chamber, and

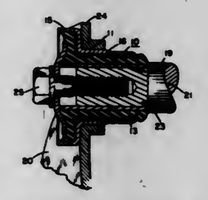
(i) means for effecting movement of said selector valve means to its said one position and its said different position.

3,300,256
OIL PAN-TO-BEARING CAP SEAL
Joseph M. Liebig, Wheaton, Ill., assignor to Illinois Milling, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 7, 1963, Ser. No. 314,419
4 Claims. (Cl. 308—23)



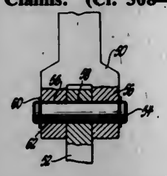
1. In combination with an engine having a block, a bearing cap, an oil pan having a peripheral flange thereon including an arcuate lip positioned adjacent said bearing cap, and an oil pan gasket between said flange and said block; an oil pan-to-bearing cap seal comprising an arcuate body positioned between said lip and said bearing cap, a pair of radially extending ears connected to opposite ends of said arcuate body for compressively engaging said oil pan gasket, and a main bearing seal having a pair of radially extending arms extending between said bearing cap and said block, said radially extending arms, said oil pan gasket, and said ears compressively engaging one another.

3,300,257
LUBRICATED RUBBER BEARING
Milton L. Selker, Shaker Heights, and Paschal P. Zapponi, Cleveland, Ohio, assignors to Clevite Harris Products, Inc., a corporation of Ohio
Filed Nov. 7, 1962, Ser. No. 235,974
3 Claims. (Cl. 308—36.1)



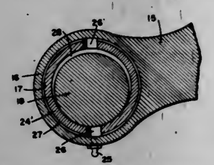
1. A bearing structure comprising a relatively hard tubular member formed of polymer coated randomly distributed fibers defining pores between the said polymer coated fibers, a relatively soft tubular elastomeric supporting member connected directly against the inside back face of said relatively hard member, the relatively hard member incorporating a lubricant in the pores between the polymer coated fibers, the front face of said relatively hard member engaging a companion bearing surface of a member which is harder than said relatively hard member for relative motion in respect thereto, an inner tubular member bonded to the inside back face of said elastomeric member, said elastomeric member including at its ends means for sealing said lubricant between said relatively hard member and the member having the companion bearing surface.

3,300,258
BEARING AND METHOD FOR MAKING SAME
Andrew J. Kompanek, Jr., Lansdale, and John W. Sanderford, Neshaminy, Pa., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Mar. 5, 1964, Ser. No. 349,591
11 Claims. (Cl. 308—78)



1. A bearing assembly comprising first and second bearing members respectively having contacting surfaces, each of said bearing members including a metal member, at least one of said metal members having bonded thereto a solid dry lubricant film including an inorganic material forming the contacting surface of said bearing member, the contacting surface of one of said bearing members being surrounded by and in closely mated contact with the contacting surface of the other of said bearing members, and said film being formed to its final closely mated shape by press fitting one of said bearing members into the other of said bearing members.

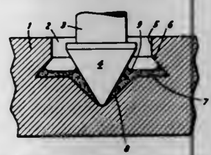
3,300,259
SHAFT BUSHINGS
William J. Howard, P.O. Box 573, Wilson, N.C. 27893
Continuation of application Ser. No. 320,367, Oct. 31, 1963. This application Oct. 20, 1965, Ser. No. 502,771
2 Claims. (Cl. 308—121)



1. In a brake operating mechanism having a brake cam shaft extending through a bore in a support which has a circumferentially continuous cylindrical inner surface and a grease aperture opening into said bore, a bushing of polymer plastic material press-fitted in said bore, said bushing having a circumferentially continuous cylindrical outer surface with a circumferential groove about the exterior periphery and a circumferentially continuous cylindrical inner surface and at least two openings in opposite sides of the bushing leading from said groove to the interior of the bushing, said groove being spaced substantially the same distance from one end of the bushing as the grease aperture is from the corresponding end of the bore in the support, so that when said bushing is pressed into said bore with its end substantially flush with the end of the bore, the groove will register with the grease aperture and will convey grease to said openings and grease will reach the interior of the bushing and the shaft therein through at least one opening if one of said openings is obstructed.

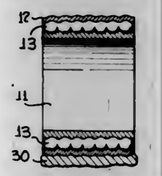
3,300,260
BEARING FOR A STAFF WITH POINTED END
Albert Stern, Granges, Switzerland, assignor to Ebosa S.A., Granges, Switzerland, a limited company
Filed Feb. 12, 1964, Ser. No. 344,341
Claims priority, application Switzerland, Feb. 14, 1963, 1,868/63
3 Claims. (Cl. 308—159)

1. In combination with a staff having a generally pointed end; a bearing including a body having a recess including a conical portion receiving the pointed end of the shaft; said conical recess portion being defined by side surfaces extending upwardly and outwardly and forming an angle greater than the angle formed by opposite portions of said pointed end, said body including a first annular surface surrounding said conical recess portion, means including a second annular surface overlying said first annular surface and extending at an acute angle to said first annular surface to define therewith a capillary reservoir, the diameter of an upper portion of said recess



above said conical recess portion being such that when the pointed end of the shaft is at the level of said first annular surface and the lateral face of said shaft end is against the upper edge of said upper portion of the recess, the pointed end will be at the entrance of the conical recess portion, and a lubricating substance located in said conical recess portion and said reservoir with the reservoir serving to maintain a predetermined sufficient amount of the lubricating substance in said conical recess portion for lubricating said pointed end of said shaft.

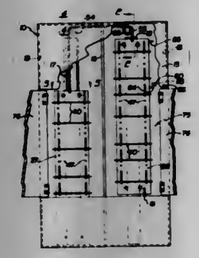
3,300,261
FULL COMPLEMENT ROLLER RADIAL THRUST BEARING
Carl F. Benson, Torrington, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed Mar. 3, 1964, Ser. No. 349,124
1 Claim. (Cl. 308—212)



A full complement roller radial thrust bearing assembly comprising an outer race and an inner race, a full complement of beaded rollers disposed between said outer and inner races, said inner race having an outer surface with grooves formed therein for cooperating with said beaded rollers, said outer race having an inner surface with grooves formed therein for cooperating with said beaded rollers, said outer race comprising a thin malleable metal shell circumscribing said full complement of beaded rollers, said rollers including a plurality of uniformly spaced nodes, said nodes being disposed in said grooves in said outer race whereby said bearing assembly supports radial and axial loads, said outer race having an outer surface which is uniformly undulating along its longitudinal extent so as to conform in profile to said uniformly spaced nodes of said rollers.

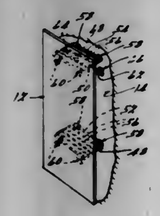
3,300,262
STORAGE CABINET
Carl G. Stephenson, 2052 Paulus Crescent, North Burnaby, British Columbia, Canada
Filed Apr. 6, 1965, Ser. No. 445,934
3 Claims. (Cl. 312—223)

1. A storage cabinet comprising a vertically elongated housing having a back and front wall, said front wall having a centrally located opening formed therein, a pair of elongated vertically extending U-shaped guideway members secured in side by side relationship to the housing adjacent the back wall, each of said guideways being provided with an opposed pair of vertically elongated laterally extending flange elements, an elongated vertically disposed shelf supporting member arranged adjacent each guideway, rollers secured to the supporting members arranged to extend behind the flange elements



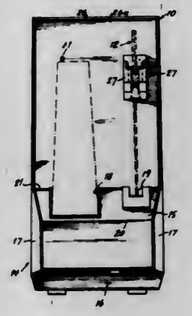
of the guideways so as to slidably connect the former to the latter for vertical movement thereon, a plurality of shelf members, means for releasably and adjustably connecting the shelf members to the shelf supporting members, hoisting means located adjacent the back wall and connected to said supporting members to move the latter, said hoisting means being controllable to permit selective positioning of any shelf at the opening.

3,300,263
WALL WARDROBE
Hugh C. Acton, 588 Brookside Drive, Birmingham, Mich. 48009
Filed Oct. 6, 1964, Ser. No. 401,951
8 Claims. (Cl. 312—245)



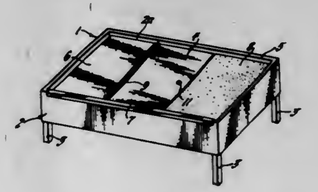
1. In a wall wardrobe for containing apparel and the like and adapted to be mounted on the wall or similar structure, a substantially vertically extending cover panel disposed adjacent the wall, apparel supporting means interposed between the wall and said panel frame means extending between and pivotably connected along its opposite edges to said panel and the wall for supporting said panel for movement between a first position wherein said panel is spaced from and substantially parallel to the wall and a second position wherein said panel is parallel to and substantially adjacent the wall, and means selectively engageable with said frame means adapted to limit pivotal movement of said frame means beyond a position wherein said apparel supporting means assumes a generally horizontal configuration between said panel and the wall, the area of said panel being sufficiently large with respect to said frame means, whereby said frame means and said apparel supporting means are entirely concealed behind said panel in each of said positions when said panel is viewed in front horizontal elevation.

3,300,264
ELECTRIC KNIFE SUPPORT
John F. Daniels and David R. Locke, Bridgeport, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 2, 1965, Ser. No. 469,247
6 Claims. (Cl. 312—279)



1. An appliance storage and display unit for housing a power operated knife handle, blades, and a carving board thereon comprising
(a) a base of said unit having spaced recessed portions formed therein and of sufficient depth to accommodate ends of a power operated knife handle and blades to hold same but yet providing for visual display of the handle and blades,
(b) a vertically disposed wall extending from said base,
(c) blade holding means arranged on said wall for holding the other ends of the blades, and
(d) a compartment formed in said wall and extending into said base for accommodating a carving board.

3,300,265
TUB FILE
Rudolph H. Wilmer and William J. Machingo, Youngstown, Ohio, assignors to The General Fireproofing Company, Youngstown, Ohio, a corporation of Ohio
Filed July 29, 1965, Ser. No. 475,763
10 Claims. (Cl. 312—303)



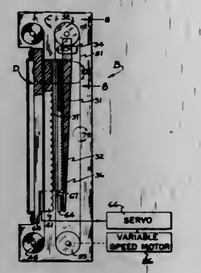
1. In a file apparatus, a cabinet body having a top opening, cover means within said top opening including a plurality of pivotally connected coplanar segments which when in a closed position enclose said top opening, means within said top opening for supporting said cover means, and one of said segments provided with bearing means engaging said supporting means, whereby said plurality of segments may be folded in a stacked arrangement upon said segment having said bearing means to provide an open position and to expose said top opening, and the stacked segments may be moved as a unit upon said supporting means across said top opening.

3,300,266
APPARATUS FOR PRODUCING PARALLEL LIGHT

Iben Browning, Sunnyvale, Calif.
(745 Distel Drive, Los Altos, Calif. 94022)

Original application Mar. 4, 1963, Ser. No. 262,562. Divided and this application Mar. 24, 1966, Ser. No. 537,059

1 Claim. (Cl. 350—96)

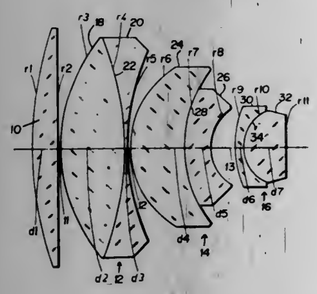


Apparatus for producing parallel light comprising in combination: a solid wedge of transparent material having a thick end and a thin end and having two substantially flat plane faces extending between said ends and inclined at a slight angle with respect to one another, means for directing light into said wedge at said thick end thereof, and a transparent light directing plate having one surface positioned against one of said flat faces of said wedge, said one surface of said directing plate provided with a plurality of substantially identical grooves aligned substantially parallel to the line of intersection between the planes of said wedge faces, one side of said grooves being substantially perpendicular to said one flat face of said wedge and the other side of said grooves inclined at an angle of substantially 45° to said one wedge face with said grooves tapering inwardly in said light directing plate and in a direction toward said thin end of said wedge.

3,300,267
HIGH-SPEED PHOTOGRAPHIC LENS SYSTEM

Karl-Heinz Pennig, Munich, Germany, assignor to Optische Werke G. Rodenstock, Munich, Germany

Filed Mar. 20, 1963, Ser. No. 266,601
Claims priority, application Germany, Mar. 28, 1962, O 8,652
1 Claim. (Cl. 350—223)



A photographic system comprising a single collective lens, a collecting meniscus including two sections joined along a cemented scattering surface and optically following said collective lens, a scattering meniscus including two sections joined along a cemented collecting surface, and a collecting system including two sections joined along a cemented collecting surface, said single collective lens having an outer surface facing the long focal intercept of the system and an inner surface respectively having radii r_1 and r_2, one of the sections of the collecting meniscus being a bi-convex element having an outer surface facing the collective lens and having a radius r_3 and an inner surface having a radius r_4, the other section of the collecting meniscus being a bi-concave element having an inner surface with a radius r_4 and an outer surface having a radius r_5, the scattering meniscus including a convex-concave element having an outer surface facing the collecting meniscus and having a radius r_6 and an inner surface having a radius r_7 and a second convex-concave element having an inner surface with radius r_7 and an outer surface having a radius r_8, the collective lens including a convex-concave element having an outer surface facing the scattering meniscus and of a radius r_9 and an inner surface of a radius r_{10}, the collective lens system including a second element having an inner surface having radius r_{10} and an outer surface having a radius r_{11} and wherein:

[Overall focal length = f = 100 mm.; aperture ratio = 1:0.75]

		Refractive Index/ Abbé Index
$r_1 = +206.0$	$d_1 = 14.5$	1.6044/54.6
$r_2 = +83.90$	$l_1 = 0.2$	
$r_3 = +98.95$	$d_2 = 36.4$	1.6725/44.7
$r_4 = -165.4$	$d_3 = 2.43$	1.7343/28.4
$r_5 = +130.0$	$l_2 = 0.2$	
$r_6 = +52.40$	$d_4 = 30.7$	1.6044/54.6
$r_7 = +71.7$	$d_5 = 14.50$	1.7343/28.4
$r_8 = +24.19$	$l_3 = 13.42$	
$r_9 = +57.5$	$d_6 = 5.44$	1.624 /36.1
$r_{10} = +21.70$	$d_7 = 30.0$	1.7922/50.2
$r_{11} = \infty$		$s' = 7.12$ for $s = \infty$

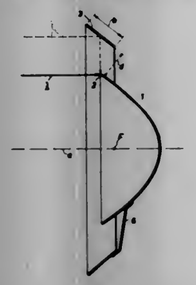
all dimensions being in millimeters, s' being the back focal length, s the object distance, d_1–d_7 the axial thicknesses of the lens elements from the front to the rear and l_1, l_2 and l_3 are the air spaces respectively between the collective lens and the collecting meniscus; the collecting meniscus and the scattering meniscus; and the scattering meniscus and the collecting system.

3,300,268
MEANS FOR ELIMINATING INTERFERING DIFFRACTION EFFECTS ORIGINATING AT THE EDGES OF A MIRROR

Lothar Straub, 41 Gartenstrasse, Tubingen, Germany

Filed Dec. 10, 1962, Ser. No. 243,232
Claims priority, application Switzerland, Mar. 22, 1962, 3,441/62
4 Claims. (Cl. 350—296)

1. Apparatus for improving the fidelity of images transmitted by waves along an optical axis and passing through the aperture of image-forming means of a wave transmitting system and with equal intensity over the entire area of the aperture, by eliminating or reducing the diffraction effects, adversely affecting the fidelity of the transmitting system and caused by diffracted waves originating at the edges of an aperture, said apparatus comprising, in combination, image producing means having a wave transmitting aperture on said optical axis; a wave deflecting band positioned symmetrically relative to the optical axis and in operative relation with the edges of the aperture; the axial spacing of said band from the aperture and the direction of wave deflection thereof relative to the aperture being such as to produce, from the transmitted waves, coherent compensating waves displaced in phase relative to the diffracted waves by an odd multiple of one half the wave length (λ) of the diffracted

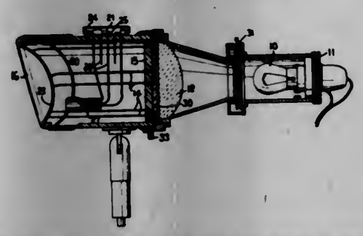


waves and to direct said coherent phase-displaced compensating waves in a direction such as to superpose the latter on said diffracted waves substantially at the point of origin of the latter; the image producing means being a parabolic mirror having an interfering diffraction producing edge, said wave deflecting band being formed by an annular member arranged coaxially with the mirror and having a width from 2 to 5λ, the distance of said annular wave deflecting band from the paraboloidal surface of the mirror being between $+\lambda/2$ and $5\lambda/2$.

3,300,269
FIBRE-OPTICS TIME RESOLVED PERIMETER FOR TESTING PERIPHERAL VISION

Donald H. Schultz, Glen Osmond, South Australia, Australia, assignor to Laubman & Pank Proprietary Limited, Adelaide, South Australia, Australia

Filed Oct. 9, 1962, Ser. No. 229,321
Claims priority, application Australia, Oct. 13, 1961, 10,202/61
6 Claims. (Cl. 351—24)

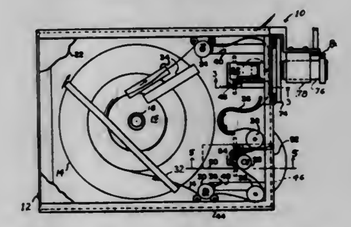


1. A fibre-optics time resolved perimeter comprising a casing, a peripheral field light source in one end of the casing, a base support in the other end of the casing, the base support being concave and of such dimension as to shield the field of vision of a patient's eye when positioned in front thereof, a pattern of apertures each extending through the base support, an opaque fibre end support member in the casing between the base support and the light source, a pattern of apertures each extending through the fibre end support member, a series of optical fibres within the casing each terminating at its one end in a said aperture in the base support and terminating at its other end in a said aperture in the fibre end support member, an opaque coding member movably secured to the casing and disposed contiguous with the fibre end support member but between the fibre end support member and the light source, and a pattern of apertures each extending through the coding member selectively alignable with the apertures through the fibre end support member in different groups of not more than four upon movement of the coding member, said light source illuminating fibres which terminate in the base support in the peripheral field of vision of an eye when positioned adjacent to and in front of the base support.

3,300,270
MAGAZINE-LOADED PROJECTOR FOR MOTION PICTURES

John A. Finnerty, Waban, Mass., assignor to See-Sonics, Inc., Brockton, Mass, a corporation of Massachusetts

Filed Dec. 8, 1964, Ser. No. 416,704
4 Claims. (Cl. 352—29)



1. A magazine-loaded projector for motion pictures comprising, in combination:

a magazine having a general form of a rectangular parallelepiped, having a plane side surface, and a forward wall and parallel edge surfaces each extending transversely to said side surface; said housing defining an enclosure for an endless coil of film, and having a first opening said side surface rearwardly of said forward wall; said forward wall being provided with a projection aperture, and extending continuously between said edge surfaces and enclosing said film against mechanical damage; said magazine further including means for feeding the film past said aperture and entirely interiorly of said housing;

and a projector including a reproducing element for cooperation with said film, and drive means for said film-feeding means; said projector being formed with a plane guide surface terminating at a forward end in abutment means protruding upwardly therefrom; said guide surface terminating laterally in parallel guide channels to receive the edge surfaces of said magazine for rectilinear sliding movement of said magazine longitudinally over said guide surface to and from an assembled position for film projection, in which said forward wall abuts said abutment means;

said guide surface being formed with a second opening aligned with said first opening in the assembled position of said magazine; said reproducing element being pivotally mounted in said second opening, for advancement to an extended position protruding from said second opening and said guide surface and extending interiorly of said magazine through said first opening for cooperation with said film, and for withdrawal to a retracted position in said second opening clearing obstruction of the plane of said guide surface to permit disassembly of said magazine for the projector;

means biasing said reproducing element to the retracted position and linkage means drivingly connected with said reproducing element and normally extending into the assembly path of said magazine for actuation by a complete movement of said magazine to the assembled position, to extend said

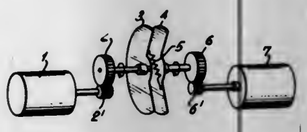
reproducing element from said second opening through said first opening into the magazine; said linkage means being constructed and arranged to release said reproducing element for retraction by said biasing means upon initial movement of said magazine from the assembled position.

3,300,271
SHUTTER MECHANISM FOR A MOTION PICTURE CAMERA

Masaru Yamamoto, Otaku, Tokyo, Japan, assignor to Yashica Co., Ltd., a corporation of Japan

Filed Oct. 1, 1964, Ser. No. 400,863
7 Claims. (Cl. 352—214)

1. A motion picture camera shutter mechanism comprising a pair of first and second longitudinally aligned shutter blades rotatable about a longitudinal axis, means normally resiliently urging said blades to a predetermined mutual angular relationship, first and second electric drive motors coupled to said first and second shutter blades re-



spectively to drive said shutter blades in a common direction, means connecting said first motor to a source of electric current and means including a variable impedance connecting said second motor to a source of current.

CHEMICAL

3,300,272
PROCESS FOR THE PREPARATION OF DYEABLE ACRYLONITRILE POLYMER FIBERS AND COMPOSITIONS THEREOF

Horace M. Robinson, Cary, N.C., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 14, 1963, Ser. No. 258,631
11 Claims. (Cl. 8—100)

1. A new composition of matter comprising an acrylonitrile polymer fiber and from .05 to 3 percent by weight of an alkyl aryl sulfonate selected from the group consisting of sodium dodecylbenzene sulfonate, sodium 2-isopropylnaphthalene-6-sulfonate, sodium 2-butylnaphthalene-6-sulfonate and the isopropylamine salt of dodecylbenzene sulfonate.

6. A process for the preparation of dyeable acrylonitrile polymer fibers comprising contacting the fiber with from 0.1 to 5 percent, based on the weight of the solution, of a solution of an alkyl aryl sulfonate selected from the group consisting of sodium dodecylbenzene sulfonate, sodium 2-isopropylnaphthalene-6-sulfonate, sodium 2-butylnaphthalene-6-sulfonate and the isopropylamine salt of dodecylbenzene sulfonate, and drying the resultant alkyl aryl sulfonate containing acrylonitrile fiber.

3,300,273
PRODUCTION OF CELLULOSIC MATERIALS WITH OXIDIZING POWER

Russell M. H. Kullman, Metairie, and Robert M. Reinhardt and John G. Frick, Jr., New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed June 24, 1963, Ser. No. 290,263
8 Claims. (Cl. 8—116.3)

1. A process for preparing a chemically modified cellulosic textile that exhibits oxidizing power and resists autodegradation comprising:

(a) phosphonomethylating the cellulosic textile to etherify the cellulose hydroxyl groups to a degree of substitution of about from 0.03 to 0.1 phosphonomethyl group per anhydroglucose unit of the cellulose;

(b) resin-treating the resulting phosphonomethylated cellulosic textile with an amide-formaldehyde condensate which retains chlorine when treated with a chlorinating agent, by impregnating the phosphonomethylated cellulosic textile with an aqueous solution containing a sufficient quantity of the amide-formaldehyde condensate to give a 0.1% to 3.0% nitrogen content on the phosphonomethylated cellulosic textile, followed by heating the impregnated cellulosic textile to dry and cure it;

(c) converting the phosphonic acid radicals of the phosphonomethyl groups of the resin-treated, phosphonomethylated cellulosic textile to the alkali metal salt form by washing the textile with an alkaline solution containing an alkali metal base; and

(d) treating the resulting cellulosic textile with a chlorinating agent selected from the group consisting of an alkali metal hypochlorite, an organic hypochlorite, and a chloramine which introduces positive chlorine into the amide-formaldehyde condensate.

5. A process for preparing a chemically modified cellulosic textile that exhibits oxidizing power and resists autodegradation comprising:

(a) phosphonomethylating the cellulosic textile to etherify the cellulose hydroxyl groups to a degree of substitution of about from 0.01 to 0.1 phosphonomethyl group per anhydroglucose unit of the cellulose;

(b) resin-treating the resulting phosphonomethylated cellulosic textile by impregnating it with an aqueous solution containing a quantity of an amide-formaldehyde condensate, which retains chlorine when treated with a chlorinating agent, sufficient to give a 0.1% to 3.0% nitrogen content in the phosphonomethylated cellulosic textile, followed by heating the impregnated cellulosic textile to dry and cure it; and

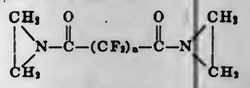
(c) treating the resin-treated, phosphonomethylated cellulosic textile with an alkaline solution containing an alkali metal hypochlorite which thereby converts the phosphonic acid radicals of the phosphonomethyl groups of the resin-treated, phosphonomethylated cellulosic textile to the alkali metal salt form and introduces positive chlorine into the amide-formaldehyde condensate.

3,300,274
PROCESS OF TREATING TEXTILES WITH PERFLUOROACYL BIS-(1-AZIRIDINE) COMPOUNDS AND RESULTING TEXTILE PRODUCTS

Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Oct. 22, 1963, Ser. No. 318,130
8 Claims. (Cl. 8—127.6)

1. A process of treating textile material to improve its shrinkage and repellancy properties which comprises impregnating textile material with a perfluoroacyl bis (1-aziridine) of the structure:

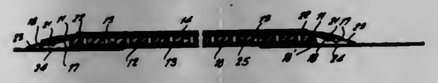


wherein n is an integer from 3 to 10, dispersed in an inert liquid, and polymerizing said aziridine compound on the textile material.

3,300,275
GERMICIDAL HOSPITAL MAT

Alfred F. Lorman, 303 W. 105th St., New York, N.Y. 10025

Filed Dec. 23, 1963, Ser. No. 332,433
4 Claims. (Cl. 21—61)



1. A germicidal mat comprising:

(a) a shallow tray for the reception of a liquid germicide composed of a rectangular bottom and an upstanding sidewall around said bottom terminating in flanges extending laterally outwardly and inclined downwardly,

(b) a sponge rubber pad of the same area as the tray bottom and of a thickness substantially equal to the tray sidewall height, said pad having a plurality of spaced vertical apertures extending therethrough,

(c) a linoleum-like surface layer of the same area as the pad disposed on said pad and having apertures therethrough registering with the apertures in the pad,

(d) a quadrangular frame resting on marginal portions of said surface layer and having outwardly and downwardly extending portions forming inclined ramps and in part overlying said tray flanges, and

(e) means for removably holding said flanges and ramps together to maintain (a), (b), (c) and (d) in assembled relationship.

3,300,276
PROCESS FOR SOLUBILIZING VANADIUM VALUES

Günther Bretschneider, Gelnhausen, and Fritz Sperr, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Apr. 24, 1964, Ser. No. 362,480
Claims priority, application Germany, Apr. 26, 1963, D 41,439
1 Claim. (Cl. 23—15)

A method of recovering vanadium values from material containing difficultly soluble vanadium values selected from the group consisting of vanadium containing slags, residues from processing vanadium containing ores and vanadium containing catalysts and vanadium containing residues and fly ash produced in petrochemical processes, each of said vanadium containing materials containing the vanadium in at least one form selected from the group consisting of pentavalent vanadium, and quadrivalent vanadium, said material also containing aluminum values and silicon values, the content of said aluminum values being in excess of that of the silicon values calculated with reference to alkali metal aluminum silicate, which comprises admixing silica with said vanadium containing material to provide sufficient silica to be able to react with said excess aluminum values and contacting said vanadium containing material with a melt essentially consisting of an alkali metal carbonate and an alkali metal chloride in proportions between 0.1:1 and 1:0.5 by weight under oxidizing conditions at a temperature between about 600 and 700° C. until at least a substantial portion of the vanadium values in such material have been converted to alkali metal vanadate, cooling the resulting mixture and extracting such mixture with water to produce an aqueous solution containing vanadium values.

3,300,277
HYDRATED MAGNESIUM ALUMINATE AND PROCESS FOR PREPARING SAME

Remsen Ten Eyck Schenck, Bangor, Pa., assignor to Keystone Chemurgic Corporation, Bethlehem, Pa., a corporation of Pennsylvania

No Drawing. Original application Oct. 29, 1963, Ser. No. 319,644. Divided and this application Oct. 21, 1965, Ser. No. 512,252
16 Claims. (Cl. 23—52)

1. As a new composition of matter, the compound $MgO \cdot Al_2O_3 \cdot xH_2O$, wherein x is an integer from 8 to 12 inclusive, and which is soluble in dilute acids.

2. The process for preparing hydrated magnesium aluminate wherein a solution of an alkali metal aluminate is mixed with a solution of a soluble salt of magnesium selected from the group consisting of magnesium chloride and magnesium acetate, in the proportions of at least ½ gram-atom of Mg per gram-atom of Al used, with the simultaneous introduction into the mixture of a dilute solution of an acid selected from the group consisting of hydrochloric acid and acetic acid at a rate such that the mixture at all times is maintained at a pH between 6 and 10, thereby obtaining as a precipitate hydrated magnesium aluminate.

8. The process of preparing hydrated magnesium aluminate wherein freshly-precipitated aluminum hydroxide gel is heated under super-atmospheric pressure with a solution containing magnesium bicarbonate, in the proportions of at least one-half gram-atom of magnesium per gram-atom of aluminum used, and an excess of carbon dioxide, whereby a precipitate of basic aluminum magnesium carbonate is formed and then boiling the precipitate with water in an open vessel after completion of the reaction under pressure thereby liberating carbon dioxide, and recovering hydrated magnesium aluminate in the form of an insoluble salt.

9. The process of preparing hydrated magnesium aluminate wherein aluminum isopropoxide is mixed with a solution of magnesium bicarbonate, in the proportions of at least one-half gram-atom of magnesium per gram-atom of aluminum used, in the presence of an excess of carbon dioxide whereby a precipitate of basic aluminum magnesium carbonate is formed and then boiling the precipitate with water in an open vessel after addition is complete thereby liberating carbon dioxide and recovering hydrated magnesium aluminate in the form of an insoluble salt.

3,300,278
CRYSTALLINE SODIUM METABORATE TETRAHYDRATE AND PROCESS FOR PRODUCTION THEREOF

Nelson P. Nies, Laguna Beach, and Paul F. Jacobs, Orange, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

Filed Jan. 30, 1963, Ser. No. 255,428
11 Claims. (Cl. 23—59)

1. Crystalline sodium metaborate tetrahydrate, said crystals being characterized by a plate-like habit and hexagonal shape, a majority of which are at least about 1 mm. in length, and being substantially free from needle-like crystals.

2. The process for producing crystalline sodium metaborate tetrahydrate which comprises the steps:

(a) forming an aqueous solution of sodium metaborate containing from about 38 to about 55 percent by weight $Na_2B_2O_4$ by combining in an aqueous medium sodium tetraborate and sodium hydroxide in a molar ratio of about 1:2 and heating the combination to a temperature of from at least about 80° C. to the boiling point of said solution,

(b) agitating and cooling the resultant solution to a temperature in the range of from about 54° to about 80° C., and maintaining said agitated solution

at a temperature in the range of from about 54° to about 80° C. for at least about 3 days, thereby forming large, plate-like crystals of sodium metaborate tetrahydrate,

(c) separating said crystals from said solution at a temperature in the range of from about 54° to about 80° C., and

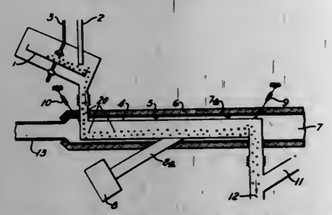
(d) drying said crystals to give sodium metaborate tetrahydrate.

3,300,279

PROCESS FOR PRODUCTION OF HYDROFLUORIC ACID FROM SULPHURIC ACID, FLUORSPAR AND ANHYDRITE

Gerard Parisot, Lyon, France, assignor to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a corporation of France

Filed Jan. 27, 1964, Ser. No. 340,149
Claims priority, application France, Jan. 30, 1963, 923,109; Dec. 26, 1963, 958,456
11 Claims. (Cl. 23—153)



1. A process for production of hydrofluoric acid by reaction by concentrated sulphuric acid and fluorspar comprising making a solid mixture of balls of concentrated sulphuric acid, fluorspar and anhydrite by mixing crushed fluorspar, concentrated sulphuric acid and crushed anhydrite and forming said balls from the mixed fluorspar, sulphuric acid and anhydrite, said mixing being carried out at a temperautre lower than 50° C., said concentrated sulphuric acid and said fluorspar being in substantially stoichiometric proportions, and said anhydrite being between substantially 85% and 260% by weight of the calcium fluoride in said mixture, feeding said mixture into a reactor and subjecting said mixture to a temperature between substantially 150° C. and 300° C. to obtain gaseous hydrofluoric acid, and recovering said gaseous hydrofluoric acid, said anhydrite imparting strength to said balls sufficient to permit their introduction into said reactor and to substantially maintain their exterior shape in traversing through said reactor, each said ball being an independent homogeneous reactor which evolves gaseous hydrofluoric acid and maintaining substantially its external shape during said traversing while undergoing internal structure changes and increasing in internal porosity during the acid emission reaction.

3,300,280

CATALYST COMPOSITION AND PROCESS FOR THE RECOVERY OF SULFUR COMPOUNDS FROM GAS MIXTURES

René Terminet, Mourenx, France, assignor to Societe anonyme dite: Societe Nationale des Petroles d'Aquitaine, Paris, France

No Drawing. Filed Feb. 6, 1964, Ser. No. 343,107
Claims priority, application France, Feb. 11, 1963, 924,321
5 Claims. (Cl. 23—175)

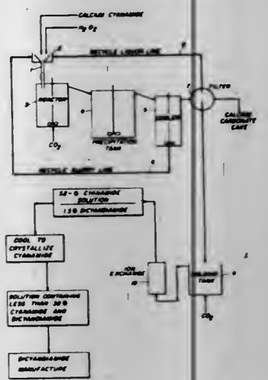
1. A process of treating combustion gases for the recovery of gaseous sulfur compounds therefrom, comprising the steps of passing the gases over a catalyst consisting essentially of alumina, vanadium pentoxide and potassium oxide at a temperature ranging from room temperature to about 150° C. to adsorb sulfur constituents in said gases on said alumina, passing an oxygen-containing gas over the catalyst to desorb and oxidize said constituents to sulfur dioxide, and then elevating the temperature to a temperature sufficient to oxidize the dioxide to sulfur trioxide in the presence of the said catalyst.

3,300,281

METHOD FOR MANUFACTURE OF CYANAMIDE

Donald R. May, Niagara Falls, Canada, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Aug. 6, 1965, Ser. No. 477,905
3 Claims. (Cl. 23—190)



1. A continuous process for preparing concentrated solutions of cyanamide, crystalline cyanamide and dicyandiamide, which comprises continuously preparing an aqueous cyanamide solution having a cyanamide solids content greater than 38% and having a dicyandiamide concentration below its solubility level in the eutectic composition by reacting calcium cyanamide with carbon dioxide in the presence of an aqueous recycled cyanamide solution containing suspended calcium carbonate and at a pH within the range of about 6 to about 7.5, reducing the temperature to about the eutectic point of the composition to precipitate out substantially pure crystalline cyanamide, recovering said crystalline cyanamide, and dimerizing the cyanamide in the resulting cyanamide solution, which solution contains substantially all of the dicyandiamide resulting from the cyanamide manufacture, to dicyandiamide and recovering said dicyandiamide.

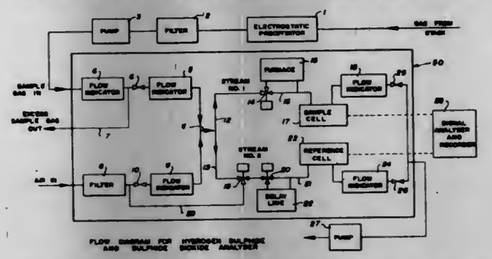
3,300,282

METHOD AND APPARATUS FOR HYDROGEN SULFIDE DETERMINATION

James B. Risk, Vancouver, British Columbia, and Francis E. Murray, Ladner, British Columbia, Canada, assignors to British Columbia Research Council, Vancouver, British Columbia, Canada

Filed Sept. 16, 1963, Ser. No. 308,938
9 Claims. (Cl. 23—232)

1. A method for the continuous determination of the proportion of hydrogen sulfide contained in a stack gas containing hydrogen sulfide and sulfur dioxide, which comprises removing any soilds from the stack gas, diluting said stack gas with air, dividing the stream of the air-gas mixture into a first and second stream, subjecting said first stream to catalytic oxidation in a furnace to convert the hydrogen sulfide to sulfur dioxide, irradiating said oxidized first stream with ultraviolet light at a wavelength of approximately 2850 A. and measuring the amount of radiation absorbed, irradiating said second stream with the same ultraviolet light and measuring the amount of radiation absorbed by said second stream, and determining the concentration of hydrogen sulfide in said gas from the



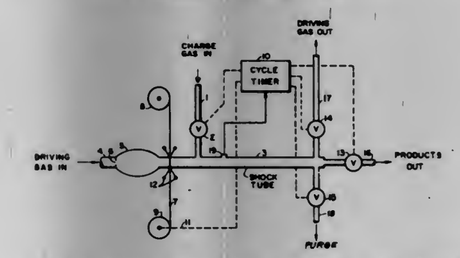
difference in the amount of radiation absorbed by the two streams.

3,300,283

CONTROLLED WAVE REACTOR EMPLOYING RUPTURABLE MEANS

James L. Lauer, Penn Wynne, and William B. Hansel, Media, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Apr. 24, 1964, Ser. No. 362,336
3 Claims. (Cl. 23—284)



1. In a wave engine, an elongated reaction tube, means for supplying a charge gas thereto, a frangible closure sealing one end of said tube, means supplying a driving gas under pressure to the outer surface of said closure to rupture such closure, the rupture thereof causing driving gas to enter said tube to create a shock wave therein; means operable selectively to remove gaseous reaction products or to remove driving gas from the other end of said tube, timing means for operating the last-mentioned means, thereby to effect the selection on a basis of elapsed time from a reference instant, and means responsive to the passage of the shock wave past a certain point along the length of said tube to trigger said timing means, thereby to establish said reference instant.

3,300,284

PREPARATION OF ACTINIDE METAL CARBIDE MICROSPHERES

Roger L. Pilloton and Robert L. Hamner, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,148
5 Claims. (Cl. 23—345)

1. A process for converting dense actinide oxide microspheres having a density of at least 97% of theoretical to correspondingly dense carbide microspheres comprising heating without melting said oxide microspheres in a bed of carbon to a temperature sufficient to convert in situ substantially all of said oxide microspheres to carbide microspheres.

2. A process for preparing dense actinide carbide fuel microspheres comprising contacting actinide oxide fuel microspheres having a density of at least 97% of theoretical with carbon in a rotary chamber at a temperature sufficient to convert in situ without melting substantially all of said oxide to correspondingly sized carbide microspheres while simultaneously rotating said chamber at a peripheral speed of approximately 311 in./min.

3,300,285

POWDER-METALLURGICAL TUNGSTEN-BASE ALLOY AND METHODS OF MAKING SAME

John W. Pugh, Gates Mills, Lutfi H. Amra, Cleveland, and Dallas T. Hurd, Gates Mills, Ohio, assignors to General Electric Company, a corporation of New York

Filed Dec. 21, 1964, Ser. No. 420,040
10 Claims. (Cl. 29—182)

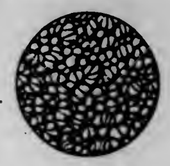
1. A powder-metallurgical, sintered, tungsten-base alloy consisting essentially of, by weight, from a small but effective amount to enhance sintering to about 5% manganese, from zero to about 0.3% sulfur, from zero to about 0.2% yttrium, and from zero to a small but effective amount of additives to promote grain growth, the balance tungsten and incidental impurities.

3,300,286

COMPOSITE METALLIC ROLL OR OTHER MEMBER AND METHOD OF MAKING SAME

Thomas E. Nalband and Eugene R. Nalband, Cheshire, and Ronald T. Delaney, Watertown, Conn., assignors to The Mirror Polishing and Plating Company, Inc., Waterbury, Conn., a corporation of Connecticut

Filed July 10, 1964, Ser. No. 381,863
13 Claims. (Cl. 29—183.5)



1. A composite metallic roll or other member comprising a body formed of a base metal receptive to chromium plate and having a surface which includes a multitude of small depressions per square inch which are between .0001 inch and .010 inch in average depth and which in number, size and depth are at least of the order of depressions which result from grit blasting such a surface with grit in the range 16 to 120, and a chromium plate between .0005 inch and .010 inch in thickness disposed over said body surface, said plate having a surface including a multitude of small substantially flat plateaus and depressions in each square inch thereof, and said last mentioned surface having at least a polished finish.

3,300,287

PETROLEUM FUELS CONTAINING ANTIBIOTIC COMBINATIONS

George M. Savage, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Sept. 12, 1963, Ser. No. 308,375
5 Claims. (Cl. 44—50)

1. A composition comprising a petroleum distillate fuel and a microbicidal amount of an antibiotic combination selected from the group consisting of novobiocin sodium and neomycin salicylidene, novobiocin and circulin sulfate, porfiromycin and neomycin salicylidene, and porfiromycin and circulin sulfate.

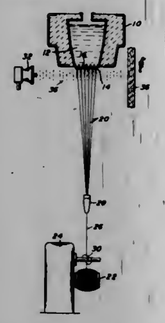
ERRATUM

For Class 48—196 see:
Patent No. 3,300,324

3,300,288
METHOD FOR THE PRODUCTION OF GLASS FIBERS

Jack R. Matthews, Allison Park, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 22, 1965, Ser. No. 502,220
4 Claims. (Cl. 65—2)

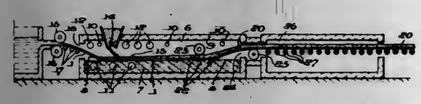


1. In the method of producing glass fibers from a body of molten glass wherein a portion of said molten glass is within an electrically heated bushing having orifices therein through which said molten glass flows and forms inverted molten glass cones, the glass fibers being drawn from the inverted molten glass cones, said molten glass cones being surrounded by a fluid medium in heat exchange relation therewith, said fluid medium adjacent said molten glass cones being in a relatively quiescent state, the improvement comprising, subjecting said fluid medium surrounding said molten glass cones to periodic vibrations, said vibrations being of predetermined frequency between 16,000 and 45,000 cycles per second and an intensity of 136 decibels and above to impart controlled turbulence to said fluid medium surrounding said molten glass cones, said controlled turbulence increasing the rate of heat transfer between said molten glass cones and said fluid medium.

3,300,289
CONTINUOUS METHOD OF MAKING A GLASS SHEET

Bernard Long, Paris, France, assignor to Pittsburgh Corning Corporation, Port Allegany, Pa., a corporation of Pennsylvania

Filed Apr. 29, 1964, Ser. No. 363,517
Claims priority, application France, May 16, 1963, 935,102
5 Claims. (Cl. 65—22)

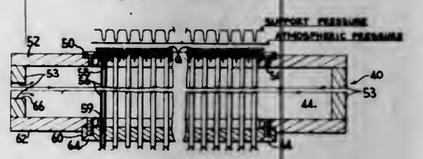


1. A method of making a glass product comprising:
positioning a sheet of glass on the surface of a bath of molten metal in heat exchange relation with said surface,
forming a layer of an admixture of finely divided glass particles and a cellulating agent on a surface of said sheet of glass while said sheet is maintained on the surface of said bath of molten metal,
heating said layer of said admixture until said finely divided glass particles soften and coalesce and said cellulating agent reacts to cellulate said admixture into a layer of multicellular glass and to fuse said layer of multicellular glass to the surface of said glass sheet, and
thereafter passing said glass sheet with said fused layer of multicellular glass into a cooling chamber and slowly cooling said glass sheet with said layer of multicellular glass fused thereto to form a glass product.

3,300,290
METHOD AND APPARATUS FOR CONVEYING AND HEATING GLASS ON A FLUID SUPPORT BED

George W. Misson, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 16, 1963, Ser. No. 251,850
6 Claims. (Cl. 65—25)



1. In apparatus for conveying a glass sheet upon a gas support, a porous bed providing a path along which the glass sheet may move, said bed having a plurality of small pores which provide a plurality of paths through the porous bed, means to supply hot gas to the under side of said bed under a pressure sufficient to force the hot gas through the porous bed and to provide a gas support for glass sheet disposed over the bed, means to heat the gas so supplied, and passageways large with respect to the pores extending through said bed and communicating between the area immediately above the bed and an exhaust area, said passageways being disposed in central areas of the path, said passageways being enclosed by the porous bed and spaced from other such passageways both in the direction of the path and in a direction transversely of the path.

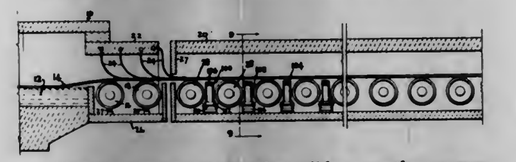
5. In a method of conveying hot glass at a deformation temperature upon a gas support, the improvement which comprises heating a gas to a temperature sufficient to maintain said glass at its deformation temperature, flowing said heated gas through the pores of a porous bed to the upper surface thereof, defining a path of movement for the glass, disposing glass on said path, feeding the gas through the porous bed under pressure sufficient to support the glass disposed over the path, said glass being at a glass deformation temperature, and exhausting the gas downwardly from the upper surface of the bed and beneath the glass sheet through a plurality of spaced, centrally located zones which are enclosed by the bed and which are spaced from other such zones both in the direction of the path and in a direction transversely thereof, and moving the glass over the path.

3,300,291
APPARATUS FOR PRODUCING SHEET GLASS

George W. Mission, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 11, 1964, Ser. No. 374,408
1 Claim. (Cl. 65—159)

Apparatus for producing sheet glass comprising,
a liquid bath for supporting a glass ribbon,
a container for the liquid of the bath,
means for maintaining the supported glass ribbon at an elevated temperature and for a sufficient length of time to achieve a desired surface finish and means for cooling the glass ribbon after it has achieved the desired surface finish so that it can be removed from the bath and from the container,
means for removing the finished glass ribbon from the bath and container, and
means for conveying the removed glass ribbon after removal from the bath and container, said conveying means including
a series of spaced conveying rolls contacted by the glass ribbon to provide tractive force to the glass ribbon,
means between adjacent pairs of conveying rolls to discharge a gas against the glass ribbon to at least partially support the glass ribbon and reduce the



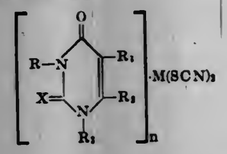
contact pressure of the glass ribbon on the conveying rolls, and
means to supply the glass to said last-named means,
said means between adjacent pairs of conveying rolls including an elongated box-like movable member having a series of openings in its top wall opposite the glass ribbon and through which gas is discharged, and
means mounting said box-like means for movement to its operating position between adjacent pairs of conveying rolls and to an inoperative position removed from between said pairs of adjacent rolls.

3,300,292
HERBICIDAL COMPOSITIONS CONTAINING URACIL THIOCYANATE ADDITION COMPOUNDS

Raymond W. Luckenbaugh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 1, 1965, Ser. No. 468,956
4 Claims. (Cl. 71—2.5)

1. A herbicidal composition comprising an adjuvant and, in an amount sufficient to exert herbicidal action, a compound of the formula



where
R is selected from the group consisting of alkyl of 1 through 10 carbon atoms,
substituted alkyl of 1 through 8 carbon atoms, wherein said substituent is selected from the group consisting of bromide, chlorine, hydroxy, alkoxy, alkoxycarbonyl, dialkylamino, and cyano,
aryl of 5 through 10 carbon atoms,
substituted cycloalkyl of 3 through 12 carbon atoms, wherein said substituent is selected from the group consisting of chlorine, bromine, fluorine, phenylalkyl of 1 through 6 carbon atoms, chloroalkoxy of 1 through 5 carbon atoms, trifluoromethyl, 1,2-tetramethylene, and 1,2-trimethylenylene,
arylalkyl of 5 through 13 carbon atoms,
substituted arylalkyl of 5 through 13 carbon atoms, wherein said substituent is selected from the group consisting of chlorine, nitro, alkyl and alkoxy,
alkenyl of 3 through 8 carbon atoms,
alkynyl of 3 through 8 carbon atoms,
cycloalkyl of 3 through 12 carbon atoms,
substituted cycloalkyl of 3 through 12 carbons atoms, wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl,
cycloalkenyl of 4 through 12 carbon atoms,
substituted cycloalkenyl of 3 through 12 carbon atoms wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl,
cycloalkyl alkyl of 4 through 13 carbon atoms,
(substituted cycloalkyl)alkyl of 4 through 13 carbon atoms, wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy and alkyl,
cycloalkenyl of 5 through 13 carbon atoms,
(substituted cycloalkenyl)alkyl of 5 through 14 carbon atoms, wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy and alkyl;
R_1 is selected from the group consisting of hydrogen, halogen, nitro, hydroxymethyl, alkyl of 1 through 6 carbon atoms, and alkoxymethyl wherein the alkoxy portion thereof contains 1 through 4 carbon atoms;
R_2 is selected from the group consisting of hydrogen, methyl, chloromethyl, and bromomethyl;
R_3 is selected from the group consisting of hydrogen and alkyl of 1 through 4 carbon atoms;
X is selected from the group consisting of oxygen and sulfur;
M is selected from the group consisting of magnesium, calcium, strontium and barium; and
n is selected from the group consisting of 1 and 2.

3,300,293
SLOW RELEASE FERTILIZER COMPRISING A DISPERSION OF UREA-WAX ADDUCT IN WAX, AND METHOD OF MAKING

Andrew J. Bozzelli, Springfield, Pa., Steven G. Belak, Claymont, Del., and Robert H. Campbell, Brookhaven, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,087
11 Claims. (Cl. 71—28)

1. A particulate slow release fertilizer composition which comprises a dispersion of a urea-paraffin wax adduct in petroleum wax, the amount of the last-mentioned wax being sufficient to improve the water resistance of said adduct.

6. Method of preparing a slow release fertilizer which comprises reacting solid urea with molten paraffin wax until a urea-paraffin wax adduct is obtained and cooling the reaction product mixture to a temperature below the melting point of said paraffin wax, whereby a dispersion of a urea-paraffin wax adduct in solid paraffin wax is obtained, the amount of the first-mentioned molten paraffin wax being 0.33–10.84 parts per part of said solid urea.

3,300,294
SLOW RELEASE FERTILIZER COMPOSITION COMPRISING DISPERSION OF UREA-WAX ADDUCT IN WAX-POLYMER BLEND

Elmer J. Hollstein, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed May 27, 1964, Ser. No. 370,693
7 Claims. (Cl. 71—28)

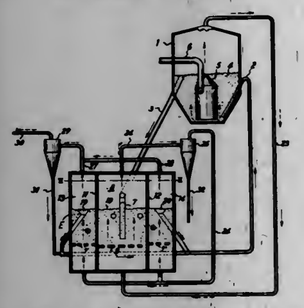
1. A particulate slow release fertilizer composition comprising a dispersion of a urea-paraffin wax adduct in a homogeneous blend of petroleum wax and a wax-soluble polymer having a molecular weight of at least 4000 and which is selected from the group consisting of atactic polypropylene, polybutene, and polyisobutylene, the amount of both said blend and said polymer being sufficient to improve the water resistance of the composition.

3,300,295

METHOD AND APPARATUS FOR ROASTING ORES

Michel Boucraut, Metz, and Imre Toth, Hy-Metz, France, assignors to Institut de Recherches de la Siderurgie, Francaise, Saint Germain-en-Laye, France

Filed May 11, 1964, Ser. No. 366,263
Claims priority, application France, May 14, 1963, 934,748, Patent 1,364,709
15 Claims. (Cl. 75—1)



1. In a method of roasting pulverulent ore, the steps of: establishing at least a first, a second and a third bed of pulverulent ore separate from each other; providing for separation between said first and third bed by a partition wall therebetween; introducing a continuous stream of hot gas successively into each of said beds for fluidizing and heating the pulverulent ore in said beds and for causing a flow of fluidized pulverulent ore at least in said first and third bed in substantially horizontal direction along said partition wall; causing heat exchange between said first and third beds across said partition wall; producing said stream of hot gas by at least partial combustion of a fuel at a predetermined point within the second one of said beds; and causing said fluidized pulverulent ore to flow from said first bed to said second bed and from said second bed to said third bed while introducing raw pulverulent ore into said first bed and removing roasted pulverulent ore from said third bed.

3,300,296

METHOD OF PRODUCING A LIGHTWEIGHT FOAMED METAL

Paul Wilson Hardy and Glenn William Peisker, Barrington, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed July 31, 1963, Ser. No. 299,071
29 Claims. (Cl. 75—20)

1. A method of producing foamed metal wherein gaseous bubbles are retained within a mass of molten metal during the foaming, comprising the steps of:

heating a fusible metal and particles of a siliceous non-metallic aggregate above the solidus temperature of said metal, but below the liquidus temperature of said metal, whereby said solid aggregate dispersed within the molten metal decreases the normal fluidity of said molten metal;

introducing a substance which produces a gas when heated to the temperature of the melt into said melt;

mixing said substances substantially throughout the melt, thereby producing a plurality of gas bubbles throughout said melt and forming a foamed melt, said gas being retained within said melt due principally to the high viscosity of said melt resulting from said dispersed aggregate particles; and

cooling said foamed melt below the solidus temperature of said melt to form a foamed metal having a plurality of closed cells and particles of said non-metallic aggregate dispersed within a matrix of said fusible metal.

27. A metal foam body, comprising:

a metal matrix having dispersed therethrough a plurality of completely closed cells substantially filled with gas;

and solid non-metallic siliceous particles dispersed within said matrix wherein said solid non-metallic siliceous particles comprise less than 50 weight percent of said foam body.

3,300,297

BENEFICIATION OF TANTALUM- AND COLUMBIUM-BEARING TIN SLAGS

Reuben T. Fields, Bally, Pa., assignor to Kawecki Chemical Company, Boyertown, Pa., a corporation of Pennsylvania

No Drawing. Filed May 26, 1964, Ser. No. 370,357
3 Claims. (Cl. 75—24)

1. The method of upgrading the tantalum and columbium oxide components of a silica-containing tin smelting slag which comprises digesting the slag in an aqueous sulfuric acid solution initially containing between about 0.5% and 6% H_2SO_4 at a temperature of at least about 50° C. so as to put the silica into colloidal solution and to dissolve the acid-soluble components of the slag, the stoichiometric ratio of sulfuric acid to slag being within the range of about 0.5 to 3.0, and separating the resulting relatively insoluble tantalum oxide- and columbium oxide-containing residue from the resulting liquor.

3,300,298

TRANSFER OF MOLTEN MAGNESIUM ALONG FERROUS METAL SURFACE WITHOUT HALIDE FLUX CREEPAGE

John N. Reding, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 9, 1963, Ser. No. 250,212
8 Claims. (Cl. 75—67)

3. A method of transferring molten magnesium from a halide flux protected body thereof contained in ferrous metal equipment without flux contamination through creepage along a ferrous metal surface of a melt-transferring device at the interface between it and the molten magnesium which comprises, contacting the molten magnesium of the flux protected body with the ferrous metal melt-transferring device, a portion of whose surface, which is intended to form an interface with the molten magnesium having been initially adherently coated with a coating metal selected from the group consisting of cadmium, copper, nickel, tin and zinc, said coated portion being located between the supply of molten magnesium and the destination thereof so that all the magnesium passing from the flux protected body to the destination must traverse the coated portion, and continuing the contact of the molten magnesium with the said portion for a sufficient duration to dissolve the adherent coating by moving the molten magnesium past the said portion toward its destination thereby allowing direct contact of molten magnesium with clean ferrous metal thereby exposed to the magnesium as the molten magnesium dissolves the coating metal, the direct contact so obtained preventing flux creepage and resulting contamination in the molten magnesium transferred.

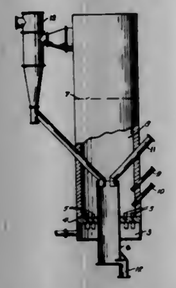
3,300,299

SEGREGATION PROCESS

Noel Plint, Nchanga, Northern Rhodesia, assignor to Anglo American Corporation of South Africa Limited, Johannesburg, Transvaal, Republic of South Africa

Filed Oct. 1, 1964, Ser. No. 400,754
Claims priority, application Southern Rhodesia, Oct. 7, 1963, 561/63
9 Claims. (Cl. 75—72)

1. In a segregation process in which a metal compound-containing material is heated to a predetermined temperature and a halide-containing material and a reducing agent are added to the heated mass so that the metal segregates in the mass in metallic form, the improvement comprising fluidizing the metal compound-containing material while heating the same, withdrawing heated material from the



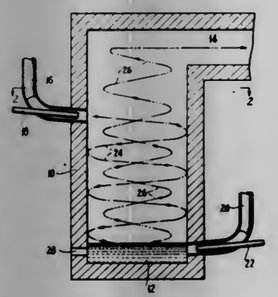
fluidized mass, establishing material thus withdrawn in the form of a continuous sealed plug, moving said plug at a predetermined rate over a predetermined distance, and adding at least said halide-containing material to the last-formed portion of the plug.

3,300,300

METHOD FOR THE TREATMENT OF ZINCIFEROUS METALLURGICAL SLAGS AND APPARATUS THEREFOR

Ronald Francis Blanks and Donald Reginald Blaskett, Port Pirie, South Australia, Australia, assignors to The Broken Hill Associated Smelters Proprietary Limited, Victoria, Australia, a corporation of Australia

Filed Nov. 7, 1963, Ser. No. 322,116
Claims priority, application Australia, Nov. 13, 1962, 24,227/62
5 Claims. (Cl. 75—77)



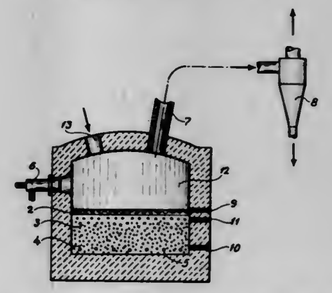
1. The method of separating zinc, by reduction and volatilization from zinciferous metallurgical slags which comprises continuously directing secondary combustion air and discrete zinciferous slag into an intermediate part in the height of a substantially vertical and generally cylindrical chamber in such a manner that said slag descends in the chamber while whirling in contact with or adjacent to the inner surface of the wall thereof; continuously supplying fuel and primary combustion air to and igniting same in a lower part of said chamber and discharging the burnt gases from the upper end thereof, whereby said slag is progressively heated and melted as it descends in counter flow to the burnt and burning gases; and maintaining a reducing zone within the lower part of said chamber by supplying said primary air at a rate which is insufficient for the complete combustion of the fuel, whereby a reducing zone is maintained in the lower part of the chamber, reducing the zinc compounds in the slag in said reducing zone, and volatilizing the zinc metal, and wherein the amount of said secondary air is sufficient to complete the combustion of the fuel, and to maintain an oxidizing zone, within the upper part of the chamber.

3,300,301

PROCESS FOR THE PRODUCTION OF METALLIC LEAD FROM MATERIALS CONTAINING LEAD OXIDE

Rolf Einar Malmström, Pori, Finland, assignor to Outokumpu Osakeyhtio, Helsinki, Finland, a company of Finland

Filed Dec. 6, 1963, Ser. No. 328,647
Claims priority, application Sweden, Dec. 14, 1962, 13,489/62
6 Claims. (Cl. 75—77)



1. A process for the production of metallic lead from materials containing lead oxide, comprising establishing a molten charge in a furnace chamber, said molten charge containing molten lead oxide, said molten charge having in the recited order in the direction from the bottom of the furnace chamber upwardly a first layer of molten lead, a second layer of molten matte overlying the layer of molten lead, said molten matte layer containing sulphides including lead sulphide, and a third layer of molten slag containing lead oxide overlying the layer of molten matte, adding sulphur containing material as a reduction agent to the second, matte layer through the third layer of molten slag, reducing the lead oxide in the slag by the sulphides in the matte layer, collecting the thus reduced lead into the matte layer and thence into the metallic lead layer, maintaining a temperature gradient in the molten charge from its surface toward its bottom so that the bottom part of the charge is kept cooler than the surface of the molten charge, and separately withdrawing from the furnace chamber slag from the third, slag layer and metallic lead from the cooler first, metallic lead layer.

3,300,302

PROCESS FOR THE PRODUCTION OF EXTRA LOW CARBON STAINLESS STEEL

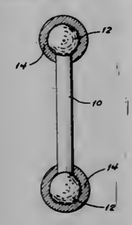
William Bleloch, Parktown, Johannesburg, Transvaal, Republic of South Africa, assignor to Rand Mines Limited, Johannesburg, Transvaal, Republic of South Africa

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,895
Claims priority, application Republic of South Africa, Apr. 1, 1963, 63/1,393
6 Claims. (Cl. 75—130.5)

1. A process for the production of extra low carbon stainless steel comprising the reaction of a reductant with an iron ore slag by the simultaneous introduction into a ladle of a solid crushed silicon reductant alloy having a silicon content of between about 45 percent to about 75 percent by weight and having a carbon content of less than approximately 0.04% carbon and a molten superheated basic iron ore lime slag comprising lime in the amount of at least .4 by weight of the iron ore, the ladle contents being thereafter reladled to bring the reaction to

completion, separating the steel so formed from the slag and including in this steel the necessary alloying elements to yield a stainless steel of desired composition.

3,300,303
COMPOSITE ARTICLE AND METHOD OF MAKING THE SAME
John M. Leach, Box 350, Port Jefferson, N.Y. 11777
Filed June 16, 1964, Ser. No. 375,597
2 Claims. (Cl. 75—208)



1. The method of producing a mechanical load carrying, stress resistant, composite article which in its finished state will have at least one surface area which conforms accurately in both shape and dimensions to predetermined specifications and which surface area would normally be produced by machining, comprising selecting a metallic starting blank of desired size and configuration, roughly working at least a part of the blank into a preliminary shape which is not dimensionally accurate but generally relates to the final desired specified shape and dimensions and is sufficiently large to predominantly occupy the volume of the final desired shape and provide a strong reinforcing base for the same but is smaller by a definite volumetric amount throughout than the final desired shape, placing the roughly formed reinforcing base into a die which has an interior shape and dimensions which accurately conform to the final desired shape and dimensions of the said area on the final composite article, filling into said die and around said roughly formed reinforcing base an accurately predetermined quantity of powdered metal which when compressed will form a shell over the roughly formed reinforcing base, said shell having a thickness which is sufficient to coat said roughened surface and leave a thin, smooth outer coating on said base which will have the accurate outer shape and dimensions specified, compressing said powdered metal to form such shell over the predominating, rough but strong reinforcing base, and sintering to thus produce an accurately formed final shape without machining which is capable of carrying a substantial mechanical load without failure or excessive wear.

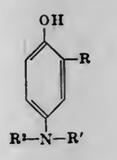
3,300,304
ELECTROPHOTOGRAPHIC MATERIAL AND PROCESS
Horst Kosche, Duren, Rhineland, Germany, assignor to Firma Renker-Belipa G.m.b.H., Lendersdorf-Krauthausen, near Duren, Rhineland, Germany
No Drawing. Filed Oct. 2, 1961, Ser. No. 146,398
Claims priority, application Germany, Oct. 3, 1960, R 28,834
20 Claims. (Cl. 96—1.5)

1. In a photographic reproduction process which comprises exposing an electrostatically charged, supported photoconductive layer to light under a master to discharge the layer at the exposed portions and developing the resulting image with an electroscopic material, the improvement which comprises employing as the photoconductive layer a reaction product of (A) an organic photoconductive compound containing groups that carry active hydrogens reactive with isocyanates and (B) an organic compound containing at least two reactive isocyanate groups.

3,300,305
COLOR DEVELOPERS CONTAINING COMPETING DEVELOPING AGENTS
Edward T. Pesch and Remsen S. Vaughn, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 25, 1962, Ser. No. 233,048
17 Claims. (Cl. 96—22)

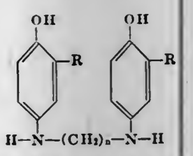
12. In the color reversal development of a multilayer, multicolor photographic element after exposure to light through an original image, said element comprising a supported coated with differently sensitive silver halide emulsion layers, one of said layers being red-sensitive, one of said layers being green-sensitive and one of said layers being blue-sensitive, in which the said exposed element is given a negative black-and-white development, selective re-exposure of said red-sensitive layer with red light, treatment of said element with a cyan color developer, selective re-exposure of the said blue-sensitive layer with blue light, treatment of said element with a yellow color developer, fogging the unexposed silver halide in the green-sensitive layer, treating the said element with a magenta color developer, treating said developed element in a ferricyanide-bromide bleach and then in a fixing bath, to leave in said element a color reproduction of said original image, the improvement in the said process comprising the use, in at least one of said color developers, of a water-soluble non-color-forming competing developing agent selected from those having the formula:

(I)



and

(II)



wherein R and R' each represent groups selected from the class consisting of the hydrogen atom, and an alkyl group; R^2 represents a group selected from the class consisting of the hydrogen atom, and an aminoalkyl group, such that when R^2 is the hydrogen atom, R' is an alkyl group; and n is an integer of from 1 to 8, such that in compounds having Formula I, the total number of carbon atoms in the groups R, R' and R^2 taken together is at least 2 and not more than 8, and such that in compounds having Formula II, the total number of carbon atoms in the two R groups and in the $-(CH_2)_n-$ group is at least 2 and not more than 8.

3,300,306
PROCESS FOR THE MANUFACTURE OF PRINTING PLATES
Gerard Michiel Sevens, Wilrijk-Antwerp, and Albert Petrus Wagemans, Edegem-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed Oct. 14, 1959, Ser. No. 846,256
Claims priority, application Great Britain, Jan. 19, 1959, 1,932/59
16 Claims. (Cl. 96—29)

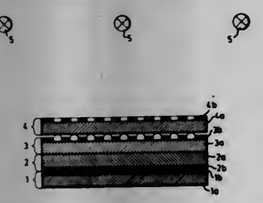
1. In a process for the manufacture of a silver image bearing aluminum plate for printing purposes by application of the silver halide diffusion transfer process, the steps of treating a photographic material containing a light-sensitive silver halide emulsion layer having exposed

and non-exposed areas with a silver halide developing solution and contacting the side of the photographic material bearing the at least partially developed silver halide layer with a substantially oxide-free aluminum surface of an aluminum plate in the presence of a silver halide solvent and of an adherence promoter for the transferred silver, said adherence promoter being at least initially contained in said photographic material and being a salt of a metal selected from the group consisting of water soluble cadmium and zinc salts, whereby said adherence promoter and the undeveloped silver halide in the emulsion layer at least partially dissolves and said undeveloped silver halide diffuses from said emulsion layer to said aluminum plate where reduction of said undeveloped silver halide is initiated by said aluminum surface of said plate and a silver image is deposited that firmly adheres to the surface of said aluminum plate.

3,300,307
PHOTOGRAPHIC DEVELOPER COMPOSITION
Albert C. Smith, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 18, 1963, Ser. No. 252,340
6 Claims. (Cl. 96—36)

1. A process for providing a relief image comprising developing an exposed silver halide emulsion comprising a substantially unhardened gelatin vehicle and dispersed in said vehicle silver halide and a tanning developing agent comprising gentisic acid and a 3-pyrazolidone silver halide developing agent by imbibing into the gelatin vehicle an aqueous alkaline solution and removing the undeveloped silver halide containing vehicle.

3,300,308
METHOD OF MAKING HALFTONE REPRODUCTIONS
Anton Wilhelm Jemseby, 29 Allfarvagen, Taby, Sweden
Filed Oct. 16, 1962, Ser. No. 230,837
3 Claims. (Cl. 96—45)



1. A method of making a halftone reproduction for printing, comprising the steps of

exposing a photosensitive layer by light impinging on said layer at different angles and emerging from a plurality of spaced light source means for a certain total period of time, with a transparency superposed on said layer between said layer and said light source means,

screening said light for at least part of said total period of time through a plurality of superposed screen means between said transparency and said light source means having opaque and light transmitting screen elements with at least one screen means having light transmitting screen elements with a lenticular effect at least within their areas adjoining the opaque screen elements,

screening said light for all of said total period of time through at least one of said screen means,

removing all of said screen means and said transparency from said photosensitive exposed layer,

and developing said exposed layer after removal of said screen means and said transparency for obtaining on said layer a visually distinct halftone image in which the halftone dots are of different sizes in a specific highlight area corresponding to a specific tone value of said transparency.

3,300,309
MOISTURE-RESISTANT PLANOGRAPHIC PLATES AND METHODS OF PRODUCING SAME
Simon L. Chu, New York, N.Y., assignor to Polychrome Corporation, Yonkers, N.Y.
No Drawing. Filed Sept. 6, 1963, Ser. No. 307,025
18 Claims. (Cl. 96—75)

1. A moisture-resistant planographic plate which comprises a base member having coated thereon a light-sensitive, moisture-resistant compound that is the reaction product of a light-sensitive diazonium compound and a phenolic hydroxyl-containing aromatic coupling agent formed in a medium having a pH of less than about 7.5 substantially to prevent resinification.

3,300,310
X-RAY INTENSIFYING SCREENS EMPLOYING AQUEOUS ETHYL ALCOHOL-SOLUBLE NYLON BINDERS
Kenneth C. Kennard and Albert E. Anderson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 1, 1964, Ser. No. 364,244
9 Claims. (Cl. 96—82)

1. An X-ray intensifying screen composed of a support having a layer thereon coated from aqueous solution, said layer comprising an active ingredient selected from the group consisting of phosphors, metallic lead and lead compounds dispersed in aqueous ethyl alcohol-soluble nylon binder, the weight ratio of active ingredient to binder being at least 1:1.

3,300,311
X-RAY INTENSIFYING SCREENS EMPLOYING A WATER SOLUBLE COPOLYMER OF ALKYL ACRYLATE AND ACRYLIC ACID
Kenneth C. Kennard and Albert E. Anderson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 1, 1964, Ser. No. 364,245
12 Claims. (Cl. 96—82)

1. An X-ray intensifying screen composed of a support having a layer thereon comprising a compound selected from the group consisting of phosphors, metallic lead and lead compounds dispersed in a water soluble copolymer composed of 50 to 90 mole percent alkyl acrylate and 50 to 10 mole percent acrylic acid, said layer being coated from aqueous solution.

3,300,312
PHOTOGRAPHIC MATERIAL
Jozef Frans Willems, Wilrijk-Antwerp, and Joseph Louis de Munck, Heide-Kalmthout, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a company of Belgium
Claims priority, application Belgium, Sept. 26, 1962, 41,992, Patent No. 622,859
No Drawing. Filed Sept. 16, 1963, Ser. No. 309,281
5 Claims. (Cl. 96—85)

1. Photographic light-sensitive material comprising a support, at least one light-sensitive silver halide emulsion layer and in effective contact with said emulsion layer a member selected from the group consisting of sulfosalicylic acid and at least one water-soluble salt of sulfosalicylic acid.

3,300,313
NON-CURLING MULTILAYER MATERIAL

Marcel Nicolas Vrancken, Berchem-Antwerp, Daniël Aloïs Claeys, Mortsel-Antwerp, August Jean Van Paesschen, Hove, and Jan Bernard Lambrechts, Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a company of Belgium

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,667
4 Claims. (Cl. 96—87)

1. Photographic material comprising a supporting film of synthetic polymer, said film carrying on one side at least one silver halide emulsion layer and on the other side a backing layer, said backing layer comprising a water-permeable colloid binding agent substantially insoluble in the photographic processing solutions for said material and a finely divided macromolecular compound dispersed in said binding agent in the amount of at least 1 gm. per square meter of film area and sufficient that the collective tensile forces acting on the two sides of said material are substantially equalized before photographic processing, said macromolecular material having an intrinsic viscosity of not more than about 0.3 dl./gm. and being a polymer of alpha,beta-ethylenically unsaturated monomers which polymer is soluble in a processing solution for said material and thereby dissolves during such processing to substantially equalize the collective tensile forces acting on the material sides after processing.

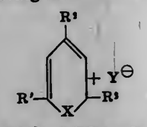
3,300,314
NONSILVER, LIGHT-SENSITIVE PHOTOGRAPHIC ELEMENTS

Frederick J. Rauner and Conrad G. Houle, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 1, 1963, Ser. No. 255,691
20 Claims. (Cl. 96—89)

1. A light-sensitive photographic element comprising a support having coated thereon at least one layer comprising a mixture of:

(1) at least one image-forming compound selected from those having the formula:



wherein R', R^2 and R^3 each represent a group selected from the class consisting of an aliphatic group, an alkoxy group, and an aryl group; X is a heteroatom selected from the class consisting of the oxygen atom, the sulfur atom and the selenium atom; and Y is an anionic function;

(2) at least one sensitizing compound that contains a group selected from the class consisting of thiocarbonyl, mercapto, carbonyl peroxide and thioether; and

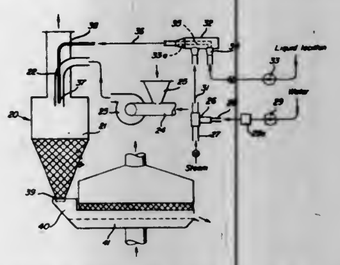
(3) a water-insoluble water-permeable organic colloidal binder material.

3,300,315
METHOD FOR THE MANUFACTURE OF DRY MILK PRODUCTS

Louis J. Nava, Redwood City, Jerry T. Hutton, Novato, John B. Shields, Sunnyvale, and Clayton A. Kempf, Berkeley, Calif., assignors to Foremost Dairies, Inc., San Francisco, Calif., a corporation of New York

Filed Mar. 20, 1963, Ser. No. 266,595
6 Claims. (Cl. 99—56)

1. In a method for the manufacture of instantized fat-containing milk, the steps of spray drying fat-containing milk concentrate to form discrete moist particles of milk products having a moisture content of the order of from 6 to 12.5%, rapidly heating such moist particles while dispersed to a temperature level of about from 130 to 160° F., said heating being by virtue of subjecting the particles to a premixed atmosphere of steam and liquid droplets containing lecithin finely dispersed therein, whereby the moist particles are heated by the steam and



caused to become sticky and caused to adhere together in the form of moist aggregates with lecithin incorporated thereon, the amount of lecithin used being such as to provide a lecithin content of from 0.1 to 1% in the final product and thereafter removing excess moisture from the aggregates.

3,300,316
METHOD OF PREPARING FRUIT PIES

Noel R. Cooper, William C. Hurley, David E. Larkin, and James O. Mavis, Greenville, Ill., and John W. Jones, St. Louis, Mo., assignors to Pet Milk Company, St. Louis, Mo., a corporation of Delaware

Filed Jan. 20, 1964, Ser. No. 338,742
6 Claims. (Cl. 99—92)

4. A process of continuously making a fruit pastry filling comprising the steps of preparing an aqueous slurry comprising starch, sugar and corn syrup of about 1–80% total solids, preheating the slurry to a temperature of about 50–186° F., cooking the slurry at a temperature of about 192° F. to about 240° F. for a period of time sufficient to cause about 70–98% hydration of the starch granules, spreading the hot cooked slurry on a cool surface in a layer about ⅛ to ½ inch thick, cooling the starch to less than about 140° F. to retard hydration of the starch granules, scraping cooled starch from the surface with a wiper blade without shattering the starch granules, and mixing the cooled cooked starch slurry with at least partially defrosted frozen fruits including the fruit juice.

3,300,317
METHOD OF PREPARING A FOWL PRODUCT

Leo Franklin, 1300 N. 15th St., Harrisburg, Pa. 17103

Filed Feb. 5, 1964, Ser. No. 342,728
5 Claims. (Cl. 99—107)



1. The method of preparing a fowl product including a deboned fowl breast and wing comprising the steps of: removing the bones from the wing while leaving the flesh portions thereof substantially unsevered to form a generally tubular wing portion, making an incision in the breast proximate to the juncture of the wing and breast, cutting through said incision to form a cavity within said breast, and inserting said wing end first into said breast cavity.

3,300,318
LOW CALORIE CREAM-TYPE SALAD DRESSING

Alina S. Szczesniak, Yonkers, N.Y., and Eric Engel, Winnetka, Ill., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed July 23, 1963, Ser. No. 296,937
2 Claims. (Cl. 99—144)

1. A stable low calorie cream-type salad dressing having the following formulation by weight:

	Percent
Water	50–70
Acidifying ingredient containing 5–15% edible acid	8–20
Edible vegetable oil	5–12
Sugar	5–12
Starch	3–10
Egg yolk	3–10
Salt	0.5–3
Proplyene glycol alginate	0.1–2
Glycerol	0.1–2
Flavoring ingredients	0.1–1

wherein the starch ingredient is a gelatinized starch containing less than 25% amylose.

3,300,319
SOLID SAUCE BASES

Nicholas G. Marotta, Milltown, and Kenneth S. Ronai, Ridgewood, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,618
2 Claims. (Cl. 99—144)

1. A solid sauce base composition comprising an edible lipid intimately admixed with a starch conversion product selected from the group consisting of dextrins and oxidized starches; wherein the viscosity of said dextrins is such that a 55%, by weight, aqueous dispersions of said dextrins will have a viscosity in the range of from 2,500 to 60,000 centipoises, as determined by means of the procedure described herein; wherein when one part of said dextrins is suspended in 99 parts of water, at 72° F., it will dissolve to an extent of from about 50 to 100% by weight; wherein said oxidized starches have a water fluidity value of at least 65, as determined by means of the procedure described herein; and, wherein said sauce base contains from about 25 to about 90%, by weight, of one of said starch conversion products and from 10 to about 75%, by weight, of an edible lipid.

3,300,320
PROCESS OF PRODUCING AND USING FLAVORING COMPONENTS OF CITRUS FRUIT JUICES AND PRODUCT

Adolf P. Distelkamp, 4524 S. Lois Ave., Tampa, Fla. 33611, and Omer R. McDuff, 2297 11th St. NW., Winter Haven, Fla. 33880

Filed Nov. 19, 1962, Ser. No. 238,694
9 Claims. (Cl. 99—205)

1. Process of separating and concentrating the aromatic and flavoring components of citrus fruit juices, comprising subjecting fresh, finished, citrus fruit juice, prior to any intense heat treatment, to a centrifugal separating step and thereby concentrating significant quantities of its aromatic and flavoring components in a minor part of the starting volume in the form of an aqueous emulsion enriched in but containing at most about 15% of oil, and separating said emulsion as a relatively light phase from the at least partially deoiled heavier juice phase.

3,300,321
PROCESS FOR THE MANUFACTURE OF IONIC BRIGHT-DRYING POLISH EMULSIONS AND WAXES TO BE USED IN THIS PROCESS

Guido von Rosenberg and Wolfgang Sapper, Gersthofen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,360
Claims priority, application Germany, Mar. 30, 1962, F 36,423, F 36,424
9 Claims. (Cl. 106—6)

9. An aqueous wax emulsion a layer of which forms upon evaporation of the water a bright wax film, said emulsion being obtained by adding to a boiling aqueous solution of an aminomethylpropanol present in a concentration of 1–3% by weight and an alkali metal hydroxide present in a concentration of up to 0.4% by weight, 10–15% by weight of a wax having an acid number between 60 and 110 and a melting point below the boiling temperature of said aqueous solution.

3,300,322
HOT TOP

Hans Holmar De Geer, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,167
Claims priority, application Sweden, Oct. 27, 1962, 11,562/62
9 Claims. (Cl. 106—38.35)

1. Hot top for ingot and similar casting molds for casting steel and other metals consisting of from 3 to 15% of an organic fibrous material, up to 10% of a refractory fibrous material, up to 12% of an organic glue and from 82 to 94% of a fine grained refractory material substantially all of which will pass a screen with mesh openings of 1.0 mm., at least 50% of which will pass a screen with mesh openings of 0.84 mm., at least 20% and at most 90% of which will pass a screen with mesh openings of 0.105 mm. and at most 60% of which will pass a screen with mesh openings of 0.053 mm.

3,300,323
GRAY GLASS COMPOSITION

Emile Plumat, Gilly, and Maurice Jaupain, Mont-sur-Marchienne, Belgium, assignors to Glaverbel S.A., Brussels, Belgium

Filed June 11, 1965, Ser. No. 463,131
Claims priority, application Luxembourg, June 29, 1964, 46,426
5 Claims. (Cl. 106—52)

1. In the manufacture of gray colored glass from a soda-lime glass composition the improvement comprising the addition to said soda-lime glass composition of 2 to 6% titanium dioxide, less than 2% manganese dioxide, 0.05 to 0.5% ferric oxide and 0.005 to 0.010% cobalt oxide.

3,300,324
HYDROGEN SULFIDE DETECTION METHOD AND CONTROL SYSTEM

James C. Fails, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed May 20, 1963, Ser. No. 281,738
8 Claims. (Cl. 48—196)

8. A hydrogen sulfide control system comprising:

(a) a natural gas stream from a source of sour gas carrying unacceptable amounts of hydrogen sulfide,

(b) sweetening means for removing hydrogen sulfide from said natural gas stream and providing into a gas conduit a treated natural gas stream with a reduced hydrogen sulfide content for a first period of time, and thereafter for a second period of time, a

treated natural gas stream with an unacceptable larger amount of hydrogen sulfide,

(c) a fluid transfer member to control the flow through said gas conduit of the treated natural gas, and

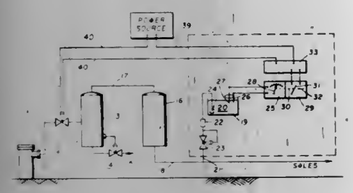
(d) a detector comprising

(1) a reservoir adapted to contain liquids,

(2) a water solution of a metal ion producing by reaction with hydrogen sulfide an insoluble precipitate and excess hydrogen ions, said water solution residing in the reservoir,

(3) inlet means connected to the gas conduit for passing a portion of the treated natural gas from the gas conduit into said water solution,

(4) the metal ion being adjusted at a concentration in said solution that acceptable amounts of hydrogen sulfide in the portion of said treated natural gas passed into the solution in said first period of time are nonreactive to produce a certain amount of excess hydrogen ions in the water



solution and that an increase to unacceptable amounts of hydrogen sulfide in a following portion of said treated natural gas passed into the solution in said second period of time are reactive to produce the certain amount of excess hydrogen ions in said water solution,

(5) monitoring means in contact with said water solution for producing an electrometric function which function varies with the amount of excess hydrogen ions in said water solution,

(6) signal means connected to the monitoring means for producing a signal function upon the electrometric function reflecting the certain amount of excess hydrogen ions in said water solution, and

(7) a utilization device operably connected to said signal means, said device controlling the functioning of the fluid transfer members to regulate the flow of treated natural gas through the gas conduit in response to the signal function.

3,300,325

CAMOUFLAGE PAINT REFLECTING ULTRAVIOLET LIGHT FOR USE IN SNOWY COUNTRY

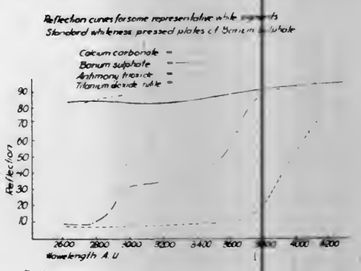
Gunnar Wilhelm Lindquist, Gamleby, Sweden, assignor to K. B. Svensk Färgindustri, Lundin & Co., a corporation of Sweden

Filed Apr. 1, 1963, Ser. No. 269,583

Claims priority, application Sweden, Apr. 3, 1962, 3,710/62

9 Claims. (Cl. 106—195)

1. A camouflage paint reflecting ultraviolet light for use in snowy country, characterized in that the paint consists essentially of a dispersion, in a suitable binder, of at least one white pigment having a high reflection factor in the range of wavelengths between 3,000 and 4,000 Angstrom units, the ratio of pigment to binder being such that after evaporation of the vaporizable components of



the paint from a layer thereof individual particles of pigment protrude above the surface of the paint layer.

3,300,326

KAOLIN CLAY COATED WITH NEUTRALIZED MONOMERIC N,N-DIALLYLMELAMINE AND POLYESTER RESINS CONTAINING THE SAME

Thomas H. Ferrigno, Metuchen, N.J., assignor to Mineral & Chemical Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed Jan. 17, 1962, Ser. No. 166,909

5 Claims. (Cl. 106—308)

1. Naturally occurring Georgia kaolin clay having an average equivalent spherical diameter within the range of about 1.5 to about 15 microns,

the particles of said clay being uniformly coated with about ½ percent to about 5 percent by weight of monomeric N,N-diallylmelamine which has been neutralized with an acid to the equivalence point.

3,300,327

COATING TO PREVENT HEAT SEALING OF POLYOLEFIN SURFACES

Richard L. Smith and Ronald K. Johnston, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,435

10 Claims. (Cl. 117—44)

1. An article comprising a structure having a polyolefin surface with a coating thereon comprising a cellulose derivative selected from the group consisting of the lower fatty acid esters of cellulose, ethyl cellulose, ethyl hydroxyethyl cellulose and nitrocellulose, crosslinked with hexamethoxymethylmelamine.

3,300,328

ELECTROLESS PLATING OF GOLD

Betty M. Luce, Willowick, Ohio, assignor to Clevite Corporation, a corporation of Ohio

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,127

15 Claims. (Cl. 117—47)

1. An electroless gold plating bath consisting essentially of an aqueous solution of a complexing agent selected from the group consisting of alkali metal sulphites, ammonium sulphite, alkali metal meta-bisulphites and ammonium meta-bisulphite, a water soluble source of gold ions, a reducing agent selected from the group consisting of hydrazine, alkyl hydrazines in which the alkyl group contains from 1 to 3 carbon atoms, hydroxylamine, and alkyl hydroxylamines in which the alkyl group contains from 1 to 3 carbon atoms, and a cycloaliphatic amine stabilizing agent.

15. The process of autocatalytically plating gold on a non-metallic substrate which comprises sensitizing said substrate by depositing a film of a metal selected from the group consisting of nickel, cobalt, copper, silver, rhodium, gold, platinum, and palladium on said non-metallic substrate, and thereafter contacting the sensitized non-metal substrate with a solution according to claim 1.

3,300,329

METAL-POLYOLEFIN COMPOSITIONS AND PROCESS FOR MAKING SAME

Joseph A. Orsino, Mountain Lakes, and Daniel F. Herman, Orange, N.J., and Jack J. Brancato, New Hyde Park, N.Y., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 26, 1960, Ser. No. 58,169

The portion of the term of the patent subsequent to Feb. 18, 1981, has been disclaimed

19 Claims. (Cl. 117—49)

1. A process for forming a casing of polymer on particles of metal so that each particle is substantially encased in a shell of the polymer comprising treating metal particles with the components of a multi-component catalyst system before said components have fully reacted with each other and polymerizing an aliphatic 1-olefin containing less than six carbon atoms on said particles by bringing the catalyst treated particles into contact with said olefin for a sufficient length of time and under conditions to form a shell of polymer thereon.

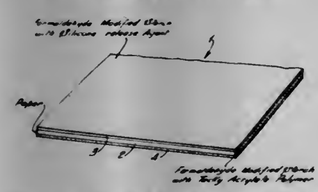
3,300,330

CARRIER SHEET CONTAINING ON OPPOSITE SIDES A FORMALDEHYDE MODIFIED STARCH RELEASE COATING AND A FORMALDEHYDE MODIFIED STARCH TACKY COATING

Bruno Vassel, Vinibalda Furtner, and Hans Israel Feige, Sao Paulo, Brazil, assignors to Johnson & Johnson, a corporation of New Jersey

Filed Oct. 9, 1962, Ser. No. 229,474

2 Claims. (Cl. 117—68.5)



1. A carrier sheet for use in the manufacture of film back pressure-sensitive adhesive sheets and adapted to be rolled up as an interliner for the same, comprising a fibrous substrate containing on one side thereof a plasticized coating adapted to release readily from pressure-sensitive adhesives and consisting essentially of a formaldehyde modified starch and a silicone emulsion release agent and containing on the opposite side thereof a plasticized coating adapted to adhere to film backings and consisting essentially of a formaldehyde modified starch and a substance which is tacky with respect to said films.

3,300,331

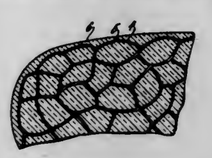
COMPOSITE METAL-CERAMIC ARTICLE AND METHOD FOR MAKING SAME

Glenn A. Collins, Jr., North Wales, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,477

4 Claims. (Cl. 117—99)

1. An article of manufacture comprising an open metal sponge having its cell walls covered with a material formed by applying to said sponge a mixture of inorganic solid particulate material having a grain size less than 325 mesh in an aqueous solution, the solute of said solution consisting essentially of a combination of inorganic compounds from the group consisting of phosphoric acid, chromic acid, and the metal salts of said acids, the combination of compounds in said solution being such as will provide at least 1 mol per liter dissolved phosphate, at least .3 mol per liter dissolved material from the group consisting of chromate and molybdate, and at least .3 mol



per liter dissolved metal, said solid particulate material being substantially insoluble in said solution and being present in an amount of at least 300 grams per liter of said solution and then drying and heat curing said mixture to water insolubility.

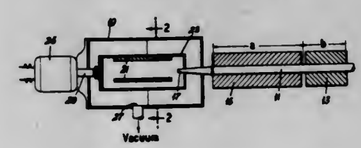
3,300,332

COATED PARTICULATE MATERIAL AND METHOD FOR PRODUCING SAME

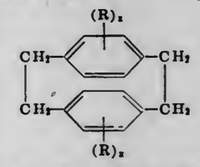
William F. Gorham, Berkeley Heights, N.J., and Harry L. Willard, Chappaqua, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed Feb. 7, 1966, Ser. No. 525,550

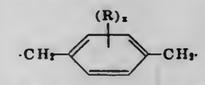
22 Claims. (Cl. 117—100)



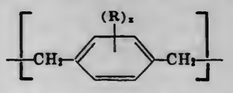
1. Method for the encapsulation of particulate materials which comprises pyrolyzing a cyclic di-p-xylylene having the general structure



wherein R is an aromatic nuclear substituent group and x is a number from 0 to 3, at a temperature between about 450° to 700° C. thus forming reactive diradicals having the general structure



wherein R and x are as defined above, and thereafter contacting the outer surface of the particles with said diradicals while maintaining the particles in constant motion and continually exposing fresh surfaces to said diradicals, said particles being maintained at a temperature below 200° C., and below the condensation temperature of the reactive diradical whereby the reactive diradicals condense and polymerize, thereby coating said particulate material with a continuous polymeric film of a p-xylylene polymer having the general repeating unit:



wherein R and x are as defined above.

3,300,333

METHOD OF AND MEANS FOR APPLYING CORROSION INHIBITING COATING

Mary Anne Page, Minneapolis, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed May 27, 1963, Ser. No. 283,564
6 Claims. (Cl. 117—120)

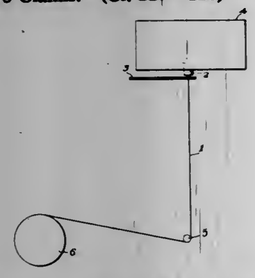
1. The method of imparting corrosion-resistance to the surface of a normally corrodible cupreous metal which comprises contacting said surface with the working face of a rapidly rotating resilient rubbing element while maintaining both said face and said surface in dry condition, said element comprising a porous structure formed from organic fibers uniformly provided at its working face and for a substantial distance inwardly therefrom with a substance selected from the class consisting of organic compounds which are capable of being bound to cupreous metal by chemisorption and which inhibit the corrosion of cupreous metal when applied to the surface thereof, the working face of said element containing on the order of 0.005 to 0.1 part of said substance per part of fiber, whereby said substance is frictionally transferred to said surface to provide a uniform coating having a thickness significantly less than the wave length of visible light.

3,300,334

COATING PROCESS FOR GLASS FIBERS AND PRODUCT

Rex B. Gosnell, San Diego, Calif., assignor to Whittaker Corporation, a corporation of California

Filed Jan. 21, 1963, Ser. No. 252,802
8 Claims. (Cl. 117—126)



1. A process for coating glass fibers comprising bringing a glass fiber into contact with a fusible solid polybenzimidazole while said glass fiber is in the semi-molten state, said polybenzimidazole being sufficiently fusible to effectively coat said fiber, allowing said semi-molten fiber to remain in sliding contact with said polybenzimidazole for sufficient time to allow said fiber to transfer sufficient heat to said polybenzimidazole for said polybenzimidazole to fuse and coat said fiber, and removing said fiber from said polybenzimidazole.

6. An article comprising a glass fiber coated with a polybenzimidazole prepared by condensing an aromatic tetramine and a diphenyl ester of an aromatic dicarboxylic acid, said glass fiber and said polybenzimidazole being in abutting relation.

3,300,335

ELECTROLESS METAL PLATING WITH FOAM

Jack W. Horvath, Angleton, and Arthur C. Doumas, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 20, 1963, Ser. No. 325,127
9 Claims. (Cl. 117—130)

1. In a method wherein a basis material is plated with metal by contacting said basis material with an electroless plating solution, the improvement which comprises adding to said plating solution an amount of a foaming agent sufficient to permit foaming, foaming said solution, contacting the basis material with said foam, and removing spent solution from contact with the basis material.

3,300,336

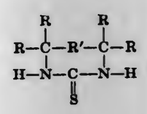
METAL CONTAINING COMPOSITIONS, PROCESSES AND PRODUCTS

Domenick Donald Gagliardi and Fred Boswell Shippee, East Greenwich, R.I., assignors to Scientific Chemicals Inc., Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,317
20 Claims. (Cl. 117—138.5)

1. A microbiocidal composition adapted, when deposited upon fibrous substrates and cured at elevated temperature, to render said substrates durably resistant to attack by fungus and bacteria consisting essentially of:

(a) organo-metallic coordination complex of a biocidal metal having coordination properties with heterocyclic compound having the formula:



wherein R is a radical selected from the group consisting of hydrogen, hydoxyl and alkyl, alkoxy and alkoxyalkyl radicals containing from 1–6 carbon atoms, and R′ is selected from the group consisting of a linking bond and the divalent methylene radical; and

(b) compound containing a plurality of functional groups capable of reacting with the —NH— groups of said complex to produce a water-insoluble reaction product.

3,300,337

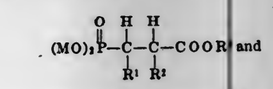
ANTI-STATIC COATED TEXTILE FIBER

Robert S. Cooper, Park Forest, Ill., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

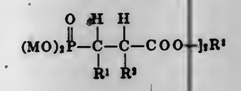
No Drawing. Original application Oct. 6, 1960, Ser. No. 60,788. Divided and this application Sept. 30, 1963, Ser. No. 312,326
11 Claims. (Cl. 117—139.5)

1. A static electricity resistant fiber comprising a fiber selected from the group consisting of cotton, cellulose acetate, polyethylene terephthalate, and acrylonitrile polymer having deposited upon the surface thereof from about 0.5% to about 3% by weight of a compound selected from the group consisting of

(a) a compound of the formula:



(b) a compound of the formula:



wherein R^1 is selected from the group consisting of H, CH_3, and $COOR^4$; R^2 is selected from the group consisting of H, CH_3, and CH_2COOR^4; R^4 is an alkyl radical containing from 1 to 18 carbon atoms; R^5 is a lower alkylene radical; and M is selected from the group consisting of hydrogen, alkali metal, ammonium, alkyl amine and alkanol amine.

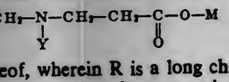
3,300,338

PROCESS FOR TREATING WASHABLE LEATHER

Martin L. Fein, Philadelphia, Samuel J. Viola, Norristown, and Edward M. Filachione, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,355
12 Claims. (Cl. 117—142)

1. A process for imparting softness and smoothness to washable leather comprising impregnating said leather with an aqueous solution of a compound of the formula



and mixtures thereof, wherein R is a long chain aliphatic radical having from 11 to 17 carbon atoms inclusive, M is selected from the group consisting of hydrogen and a water-soluble salt-forming cation, and Y is selected from the group consisting of hydrogen and $—CH_2CH_2COOM$ wherein M is as previously recited, separating the impregnated leather from the solution and drying the leather.

3,300,339

METHOD OF COVERING THE SURFACES OF OBJECTS WITH PROTECTIVE GLASS JACKETS AND THE OBJECTS PRODUCED THEREBY

John A. Perri, Jacob Riseman, and Rudy L. Ruggles, Jr., Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,530
15 Claims. (Cl. 117—215)



5. The method of covering a surface of a device with a protective glass jacket comprising:

coating said surface with a layer of an oxide selected from the group consisting of lead oxide and bismuth trioxide;

covering said oxide layer with a layer of powdered borosilicate glass, said glass and the material of said device having thermal coefficients of expansion in the same general range; and

heating said layers to a temperature sufficient to cause said glass to flow and coat said surface of said device with a continuous layer of glass, said oxide layer functioning to improve the spreading and the smoothness of said glass layer at said temperature, which temperature is lower than that temperature required to cover said surface in the absence of said oxide layer.

3,300,340

BONDED CONTACTS FOR GOLD-IMPREGNATED SEMICONDUCTOR DEVICES

Nicola A. Calandrello, Andover, and John Hill and John Royan, Wakefield, Mass., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Feb. 6, 1963, Ser. No. 256,631
5 Claims. (Cl. 117—217)

1. A method for forming a contact to a silicon semiconductor wafer whose minority carrier lifetime has been reduced by impregnation with gold, comprising the steps of:

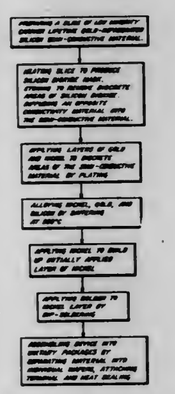
applying a coating of gold to a surface of said wafer;

applying a coating of a conductive metal atop said gold coating,

said metal being capable of alloying with gold at temperatures within a predetermined range,

said metal exhibiting substantial gettering of gold in silicon at temperatures in excess of a particular threshold value; and

sintering said coatings together at a temperature within said predetermined range and not exceeding said threshold value thereby to preclude gettering of gold



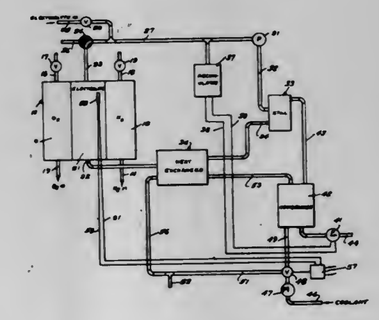
by said metal from said impregnated wafer, thus preserving the reduced minority carrier lifetime of said wafer.

3,300,341

FUEL CELL HEAT AND WATER REMOVAL SYSTEM USING ELECTROLYTE CIRCULATION

John W. Gregory, Parma Heights, Charles W. Fetheroff, Willowick, and John M. Fuscoe, Cleveland, Ohio, assignors to TRW Inc., a corporation of Ohio

Filed June 22, 1962, Ser. No. 204,437
7 Claims. (Cl. 136—86)



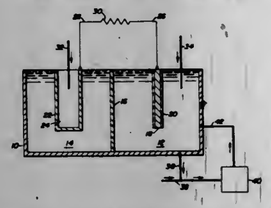
1. A fuel cell assembly comprising a fuel cell including electrodes, an inlet for a fuel gas and an inlet for an oxidizing gas, inlet means for introducing a liquid electrolyte into said fuel cell, outlet means for withdrawing electrolyte from said fuel cell, pump means for continuously passing electrolyte from said inlet means through said fuel cell and into said outlet means, a vapor-liquid separator receiving electrolyte from said fuel cell, said fuel cell, inlet means, outlet means, pump means, and vapor-liquid separator forming a closed loop for the circulation of electrolyte therethrough and a sensing means responsive to dilution of said electrolyte in said closed loop and controlling the operation of said vapor-liquid separator to remove excess water vapor which would tend to dilute the concentration of the circulating electrolyte.

3,300,342

APPARATUS AND METHOD FOR ELECTROCHEMICALLY GENERATING ELECTRICITY WITH POLYHYDRIC PHENOL POLYMER

Donald L. Klass, Barrington, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Aug. 2, 1962, Ser. No. 214,378
10 Claims. (Cl. 136—86)



1. An apparatus for electrochemically generating electricity comprising a cell vessel containing an aqueous alkaline electrolyte compartment, an oxygen electrode and a fuel electrode disposed in spaced relationship in said electrolyte compartment, said electrolyte compartment being adapted to receive a sodium hydrosulfite fuel and containing oxidizing means comprising the oxidized form of a polymer of a polyhydric phenol selected from the group consisting of hydroquinone and pyrogallol for oxidizing said fuel under conditions to convert the oxidized form of said polymer to the reduced form, said polymer being insoluble in said electrolyte and electrically connected to said fuel electrode, means for introducing free oxygen into said electrolyte compartment in effective proximity to said oxygen electrode and means for withdrawing electrical energy from said electrodes.

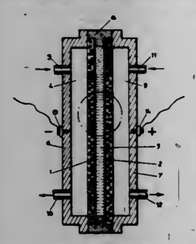
6. An electrochemical process for generating electricity comprising disposing an oxygen electrode and a fuel electrode in spaced relationship in an aqueous alkaline electrolyte solution, disposing in said electrolyte an electrolyte-insoluble reversibly-oxidizable pyrogallol-formaldehyde polymer and electrically connected to said fuel electrode, contacting said electrolyte in effective proximity to said oxygen electrode with free oxygen, introducing in said electrolyte in effective proximity to said polymer a sodium hydrosulfite fuel oxidizable by the oxidized form of said polymer under conditions to convert the oxidized form of said polymer to the reduced form, and withdrawing electrical energy from said electrodes.

3,300,343

FUEL CELL INCLUDING ELECTRODES HAVING TWO DISSIMILAR SURFACES

Harry Huber and Raymond Le Bihan, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed Jan. 16, 1962, Ser. No. 166,654
Claims priority, application France, Jan. 31, 1961, 851,202
3 Claims. (Cl. 136—86)



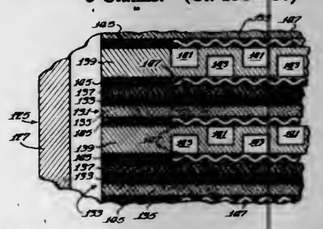
1. A fuel cell comprising a pair of porous electrodes, a liquid electrolyte confined between said electrodes and in contact with one side of each of said electrodes, means for supplying gaseous fuel to the other side of one electrode and for supplying oxidizing gas to the other side of the other electrode, each electrode having two dissimilar surfaces, the surface of said electrode which is disposed adjacent to the liquid electrolyte being made of a material that is resistant to attack by said electrolyte liquid and the other surface of said electrode being made of a material which acts as catalyst for the chemical reaction that takes place on that electrode, one of said electrodes being a hydrogen electrode in which the surface adjacent to the electrolyte consists of silver while the other surface thereof is a material selected from the group consisting of nickel and platinum.

3,300,344

FUEL CELL HAVING ZIRCONIA-CONTAINING ELECTROLYTE AND CERAMIC ELECTRODES

Donald T. Bray, La Jolla, Lee D. La Grange, San Diego, Ulrich Merten, Solana Beach, and Charles D. Park, San Diego, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed June 27, 1962, Ser. No. 205,670
3 Claims. (Cl. 136—86)



2. A solid electrolyte high temperature fuel cell comprising, a solid gas impervious ceramic electrolyte consisting of zirconia having in solid solution therewith a sufficient amount of a compound selected from the group consisting of alkaline earth oxides, rare earth oxides, yttria, scandia and mixtures thereof to provide oxide vacancies in the crystal structure of said zirconia, said electrolyte being disposed between and in intimate contact with a solid gas porous anode and a solid gas porous cathode, said anode including a porous non-conductive ceramic matrix having dispersed therein an electrically conductive catalytic material selected from the group consisting of nickel, cobalt, chromium, platinum, titanium oxide and mixtures thereof in an amount sufficient to effect electrical conduction through said anode, said cathode including a porous non-conductive ceramic matrix having dispersed therein an electrically conductive catalytic material selected from the group consisting of manganese oxide, copper oxide, cobalt oxide, nickel oxide, platinum, silver, silver-copper alloys and mixtures thereof in an amount sufficient to effect electrical conduction through said cathode, at least one of said anode and said cathode being bonded to said electrolyte for providing mechanical support thereto, and having a coefficient of expansion substantially the same as the coefficient of expansion of said electrolyte, means for supplying a fuel gas to said anode, means for supplying an oxidizing gas to said cathode, and means for electrically connecting a load across said anode and cathode.

3,300,345

ELECTROLYTIC CELL FOR PRODUCING ELECTRICITY AND METHOD OF OPERATING THE CELL

Ernest H. Lyons, Jr., Box 37, Elsah, Ill. 62028

Filed Sept. 3, 1964, Ser. No. 396,462
8 Claims. (Cl. 136—86)

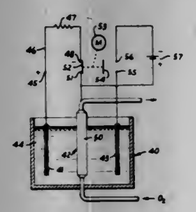
1. A method of operating an electrolytic cell having an anode, an electrolyte, and a cathode, at least one of said anode and cathode being a gas electrode wherein gas is supplied to the cell at a solid electrode member having a catalytic surface, said cell being used for causing current to flow externally through a load circuit connecting the anode and cathode and wherein the cell voltage is lowered by continuous operation,

characterized by

periodically disconnecting said cathode from said anode exteriorly of the cell at a frequency rapid enough to pass current at a voltage substantially higher than that obtained upon continuous operation, and

anodizing the catalytic surface of said gas electrode during at least a portion of the time when said cathode is disconnected from said anode exteriorly of the cell.

4. Electrical apparatus of the type having a cell with an anode, and a main cathode, and an auxiliary cathode, at least one of said anode and main cathode being a gas electrode, and an electrolyte, said cell causing current



to flow externally through a load circuit, and wherein activation polarization of the cell tends to reduce the cell voltage a substantial amount below the theoretical voltage obtainable,

characterized by

means for periodically disconnecting said gas electrode from said load circuit exteriorly of the cell, at a frequency rapid enough to pass current at a voltage substantially higher than that obtained upon continuous operation,

a secondary source of direct current, and

means for connecting said auxiliary cathode to the negative side of said secondary source and for connecting the positive side thereof to each said gas electrode during at least part of the time when said gas electrode is disconnected from said load circuit, to anodize said gas electrode and thereby substantially diminish the activation polarization of the cell.

3,300,346

RUST PROOFING PROCESS

Samuel Craig, Epping, New South Wales, Australia, assignor to S. Craig Investments Pty. Limited, Greenacre, New South Wales, Australia, a corporation of Australia

No Drawing. Filed Mar. 13, 1963, Ser. No. 264,762
Claims priority, application Australia, Apr. 4, 1962, 16,191/62
4 Claims. (Cl. 148—6.16)

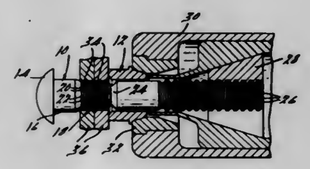
1. A method of rust-proofing articles selected from the group consisting of articles made from ferrous metals and articles made from ferrous alloys comprising soaking the said articles in a solution of sodium chloride of strength 0.4 to 15.0% by weight at a temperature of 80°–150° F., washing with water, treating them uniformly with a cyanide selected from the group of cyanides consisting of sodium cyanide and potassium cyanide in aqueous solution of strength 0.4 to 10.0% by weight at a temperature of 40°–150° F., washing with water, pickling them uniformly, treating them uniformly with a phosphate solution of strength 2.5 to 20% by weight at a temperature 188°–220° F. and again washing them with water.

3,300,347

FASTENING DEVICE AND METHOD OF MAKING SAME

Carl J. Kasza, Livonia, and Walter J. Smith, Dearborn, Mich., assignors to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan

Filed May 7, 1964, Ser. No. 365,735
4 Claims. (Cl. 148—12.3)



1. A method of making a temperature and corrosion resistant fastening device which comprises the steps of providing a metal blank of a stainless-steel alloy having a composition expressed in terms of percentages by weight as follows—

Constituent:	Percent by weight
Carbon	Max. 0.15
Manganese	0.5 to 3.0
Silicon	Up to 1.5
Chrominum	About 5 to about 22
Nickel	7 to 50
Titanium	0.5 to 3.5
Molybdenum	0.25 to 4.0
Vanadium	0.1 to 1.5
Tungsten	Up to 4.0
Cobalt	Up to 25.0
Columbium plus tantalum	Up to 1.0
Aluminum	Up to 2.5
Boron	Up to 0.06
Impurities (nitrogen, phosphorus, sulfur, etc.)	Up to about .1
Iron	Balance

cold forming said blank into a pin comprising a head portion and a shank portion formed with a plurality of longitudinally spaced grooves therearound and a break-neck groove having a greater depth than the first-mentioned said grooves, heat treating said pin at a temperature of about 1050° F. to about 1150° F. for a period of at least about one hour up to about 7 hours and thereafter heat treating said pin at a temperature of about 1275° F. to about 1325° F. for a period of at least about two hours up to about four hours, and cooling said pin.

3,300,348

EXPLOSIVE CONITRATES AND PROCESS FOR PREPARING THE SAME

George L. Griffith, Coopersburg, Pa., assignor to Trojan Powder Company, Allentown, Pa., a corporation of New York

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,019
14 Claims. (Cl. 149—93)

1. A homogeneous nonsegregating particulate conitrate consisting essentially of particles of about 10% to about 90% of conitrated nitrostarch and from about 10% to about 90% conitrated nitric acid alcohol ester having a melting point of at least 100° F., said conitrate having a high detonator sensitivity.

3,300,349
CHEMICAL MILLING PROCESS AND RELATED SOLUTIONS FOR ALUMINUM

John Alfred Tershin, South Seattle, and Earl Howells, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,123
10 Claims. (Cl. 156—22)

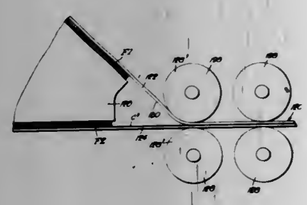
1. A chemical milling solution substantially comprised of the following components:

	Oz./gal.
(a) A strong alkali selected from the group consisting of sodium hydroxide and potassium hydroxide and mixtures thereof	10.00 to 30.00
(b) An alkaline cyanide selected from the group consisting of sodium cyanide and potassium cyanide and mixtures thereof	2.00 to 15.00
(c) A hydrophilic film forming agent selected from the group consisting of potassium carboxymethylcellulose, sodium carboxymethylcellulose, ammonium carboxymethylcellulose, gum tragacanth, gelatin, gum arabic, agar, agar-agar, cherry gum, wheat gluten and locust bean gum	0.25 to 2.00
(d) A wetting agent of sulfonated castor oil	0.10 to 0.40
(e) Aluminum (in solution)	1.00 to 18.00
(f) Water	the balance.

3,300,350
METHOD OF MAKING JOINTED POLYOLEFIN-COATED PAPERBOARD PRODUCTS

John H. Flynn, 234 Elk Ave., New Rochelle, N.Y. 10804

Filed Mar. 11, 1963, Ser. No. 264,452
2 Claims. (Cl. 156—82)



1. A method of laminating webs of paperboard stock of which one face of one web has a polyolefin coating oxidized from its prior extrusion onto the web, which comprises impinging non-oxidizing flame on the coating to bring it above its melting point heating the other web at one face thereof; and while the coating is still molten and said one face of said other web still hot, superposing the webs with the coating confronting said hot face of said other web and pressing the webs together.

3,300,351
ASSEMBLIES OF GLASS SHEETS

Ronald E. Richardson, Oshawa, Ontario, Canada, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa.

Filed Sept. 13, 1960, Ser. No. 55,741
Claims priority, application Canada, June 7, 1960, 802,082
3 Claims. (Cl. 156—102)

1. A method of producing an assembly of two bent glass sheets having a compound bend comprising supporting a first flat glass sheet upon a shaping surface of skeleton outline adapted to impart said compound bend to said first glass sheet, said first glass sheet having a composition consisting essentially of:

	Percent
SiO_2	69–74
Na_2O	11–15
CaO	9–13
MgO	0.1–5
Fe_2O_3	0.01–0.15
Al_2O_3	0.1–1.3
SO_3	0.1–0.5
Co_3O_4	0–0.002

superimposing on said first glass sheet a second flat glass sheet in immediate adjacency thereto consisting of glass having a greater heat absorptivity than the glass of which said first sheet consists, said second glass sheet having a composition consisting essentially of:

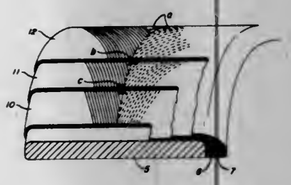
	Percent
SiO_2	69–74
Na_2O	11–15
CaO	9–13
MgO	0.1–5
Fe_2O_3	0.3–0.7
Al_2O_3	0.1–1.3
SO_3	0.1–0.5
Co_3O_4	0–0.002

simultaneously heating the glass sheets to bending temperature while so supported and allowing the heated sheets to sag downwardly under the influence of gravity until they conform to said shaping surface and have acquired a curvature including said compound bend.

3,300,352
METHOD OF BUILDING MULTIPLE-BEAD TIRES

Thomas R. Williams, 2415 Brice Road, Akron, Ohio 44313

Filed Aug. 31, 1965, Ser. No. 486,596
2 Claims. (Cl. 156—133)

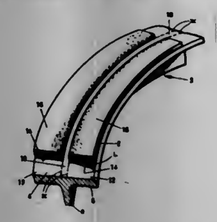


1. The method of building a multiple-bead tire on a flat, low-profile drum which extends substantially from the beads on one side of the tire to the beads on the opposite side of the tire using cord plies having different cord angles of less than 90° and criss-crossing the plies, which method comprises using first a ply of the greatest cord angle, with the cord angle of each succeeding ply no greater than that of the preceding ply, and using last a ply of the smallest cord angle, and extending the edges of the respective plies downwardly over the ends of the drum but not inwardly under the drum and then locking different bead cores in the edges of different plies which have been so extended; and then expanding the tire with pronounced shifting of the cord plies adjacent to the bead cores so that the angle between the cords and the centerline of the tire is increased until there is a spread of at least ten degrees between the angles of the cords in the first and last plies and until the cords of all the plies are under substantially the same tension, and then curing the tire.

3,300,353
BRAKE SHOES

Jack F. Hernick, 6 Carousel Court, Toronto, Ontario, Canada

Continuation of application Ser. No. 109,368, May 11, 1961. This application Feb. 10, 1964, Ser. No. 343,897
6 Claims. (Cl. 156—154)



1. In the process of lining a brake shoe having a pressure plate with a defined axial zone the steps of:

Securing to said pressure plate a friction lining with an outer frictional surface for engagement with a brake drum and an inner surface by which it is secured to said pressure plate;

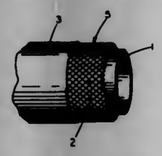
Said lining having a relieved portion in register with said axial zone and extending from said inner surface to a level between said inner and outer surfaces, and

Separating said friction lining into two parts by the removal of a longitudinal strip thereof overlying said relieved portion after the lining is secured to said pressure plate.

3,300,354
METHOD OF MAKING A FILAMENT WOUND SANDWICH CORE

Buddy L. Duft, San Diego, Calif., assignor to Whittaker Corporation, a corporation of California

Filed Apr. 18, 1962, Ser. No. 188,361
1 Claim. (Cl. 156—169)



The method of making a composite, homogeneous, load bearing and lightweight cylindrical structure having an inner layer, an outer layer and a honeycomb core structure interposed between said inner and outer layer, comprising

coating a single, continuous filament with a curable adhesive,

winding the continuous filament about a cylindrical mandrel in a circumferential manner to form an inner layer,

winding the continuous filament over the inner layer in a spiral fashion in a first direction along the length of the inner layer to form a first spiral layer,

winding the continuous filament over the inner layer in a spiral fashion in a second direction along the length of the inner layer, said first direction being directly opposite said second direction,

winding the continuous filament in a spiral fashion in said first direction along the length of the inner layer to form a third spiral layer, said third spiral layer being positioned above and in line with said first spiral layer,

winding the continuous filament in a spiral fashion in said second direction along the length of the inner layer to form a fourth spiral layer, said fourth spiral layer being positioned above and in line with said second spiral layer,

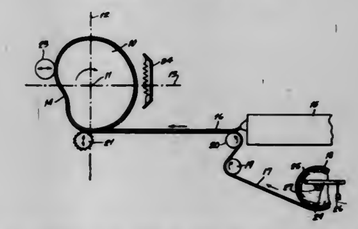
repeating the spiral winding until a plurality of aligned spiral layers are built up, whereby a honeycomb core is formed,

winding the continuous filament about the honeycomb core in a circumferential manner to form an outer layer, and curing the adhesive to form a solid, composite structure.

3,300,355
METHOD OF MAKING IRREGULARLY SHAPED HOLLOW PLASTIC BODIES

William E. Adams, New Providence, N.J. (502 High St., Sterling, N.J. 07980)

Filed June 20, 1963, Ser. No. 289,251
12 Claims. (Cl. 156—189)

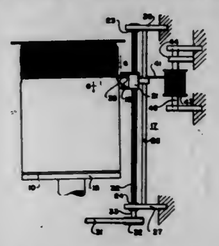


1. In a method for producing an irregularity shaped hollow plastic body which comprises providing a mandrel having a plurality of longitudinal slots in the surface thereof, rotating the mandrel on a longitudinal axis, feeding a web of fabric so as to deliver said web in position to be wound onto the mandrel when rotated about its longitudinal axis, extruding a molten thermoplastic resinous substance onto the web, forcing the press block into the slots at each turn of the mandrel carrying the press block circumferentially with the mandrel for a small angle, releasing the block and returning it to a position to enter the next longitudinal slot, introducing reinforcing elements in the longitudinal slots at an intermediate point in the winding and winding the thermoplastic coated web over the slots to incorporate the reinforcing elements into the plastic body.

3,300,356
METHOD AND APPARATUS FOR FORMING LAMINATED, CYLINDRICAL WALL STRUCTURES

Elmer P. Warnken, Cincinnati, and Milton Korelitz, Golf Manor, Ohio, assignors to Studebaker Corporation, South Bend, Ind., a corporation of Michigan

Filed Aug. 16, 1965, Ser. No. 480,087
6 Claims. (Cl. 156—189)



1. A method of forming an annular wall which comprises forming a body of annularly extending resin-impregnated laminations on a mandrel, compressing selected sections of the laminations along a helical path extending circumferentially of and along the laminations, wrapping a continuous band on the laminations along the helical

path as the laminations are compressed, the band having a plurality of convolutions, and curing the resin while held by said band.

3,300,357
HEADLINER CONSTRUCTION AND METHOD OF MAKING SAME

Ralph G. Doerfling, Walled Lake, Mich., assignor to Detroit Gasket and Manufacturing Company, New York, N.Y., a corporation of Delaware

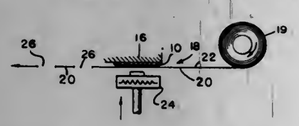
Filed Sept. 23, 1964, Ser. No. 398,583
4 Claims. (Cl. 156—211)

2. The method of making an integral prestressed and preshaped vehicle headliner which comprises the steps of providing a substantially flat panel of a resilient material, cutting said panel to a preselected shape, cutting a series of V-shaped slots at preselected intervals along the peripheral edge of said panel with the apexes of said slots extending inwardly toward the center portion of said panel, positioning a stretchable facing sheet over one surface of said panel and interposing an adhesive between said panel and said facing sheet, concurrently deforming said panel and said facing sheet under an exteriorly applied stress to a preselected contour wherein the edges defining each of said slots are disposed in aligned contiguous relationship and adhesively securing said facing sheet to said panel, securing the opposed slot-defining edges together while maintaining said panel in the deformed condition, and thereafter releasing the exteriorly applied stress on said panel and said facing sheet adhesively secured to the concave surface of said panel.

3,300,358
FABRICATING DECORATIVE ARTICLES

Amedee Jean Fournier, 10 Rue Rosa Bonheur, Paris, France

Filed Jan. 17, 1966, Ser. No. 523,837
2 Claims. (Cl. 156—219)



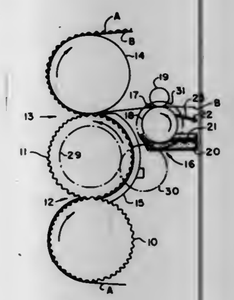
1. A process of fabricating a decorative article comprising the steps of positioning an elongated strip of material having a coating of sizing on one side thereof adjacent a base sheet, simultaneously cutting a figure out of said strip with a heated die and applying said cutout figure with the sizing on said figure contacting said base sheet and applying thereafter heat at a range of temperature from 230 degrees Fahrenheit to 270 degrees Fahrenheit and pressure on said figure and said base sheet to make an impression on said sheet and to laminate said figure on said sheet, thereafter applying pressure from the underside of both said sheet and figure to emboss said sheet and figure from the underside thereof to define raised portions and thus provide a three-dimensional configuration for said embossed figure, and then die printing on said embossed figure with carbon impregnated sheets along said raised portions to form raised printed portions to further emphasize said raised portions.

3,300,359
METHOD AND APPARATUS FOR MAKING CORRUGATED BOARD

Willem A. Nikkel, 729 Greenbrier Ave., Covington, Va. 24426

Filed Feb. 6, 1962, Ser. No. 171,790
14 Claims. (Cl. 156—292)

1. In a method of making paperboard comprising the steps of contacting a liner with the outer periphery of a rotating applicator roll, applying rows of spaced droplets of an adhesive bonding agent to the liner from rows of discrete cells on the applicator roll in a manner so that the rows extend transversely across the liner, forming a line of bonding agent from each row by combining the



spaced droplets in each row while the droplets are on the liner, then contacting each line of bonding agent with the peak of a flute on a corrugated medium, and then curing the bonding agent to form a bond between the flute peaks and the liner.

3,300,360
PROCESS FOR THE MANUFACTURE OF CORRUGATED BOARD

Robert H. Williams, New Brunswick, and Lawrence J. Hickey, Livingston, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,787
4 Claims. (Cl. 156—292)

1. In the process of preparing corrugated paperboard by adhesively bonding at least one liner to the tips of the corrugations of a corrugated paper strip, the steps which comprise applying, at an elevated temperature to the protruding tips on at least one surface of said corrugated paper strip, an adhesive comprising a hot aqueous high solids dispersion of a starch product, said hot aqueous dispersion when applied being at an elevated temperature of at least about 170° F.; said starch solids being in a major proportion of the total solids in said dispersion being in the order of from about 32% to 60% by weight of the dispersion; said dispersion having a total solids content of at least 35%, by weight; a viscosity, when measured at about 180° F., of at least about 100 centipoises; and a viscosity, when cooled to about 100° F., of at least about 300 centipoises; and applying at least one liner to the adhesive coated tips of said corrugated strip, the adhesive bond between said liner and said corrugated strip being formed during the cooling of said adhesive from its elevated temperature.

3,300,361
METHOD FOR OVERLAYING WOOD PARTICLE BOARD

Gordon E. Brown, Seattle, Wash., assignor to Monsanto Company, a corporation of Delaware

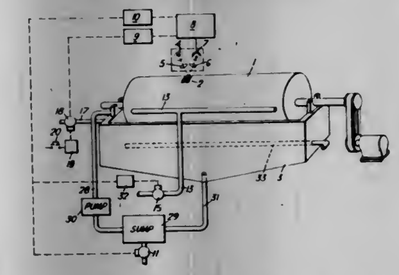
No Drawing. Filed Dec. 4, 1962, Ser. No. 242,079
4 Claims. (Cl. 156—335)

1. The process of overlaying particle board with a durable surface, comprising applying a liquid aqueous solution containing a thermosetting resin selected from the group consisting of melamine-formaldehyde resins and phenol-formaldehyde resins onto and into a fibrous porous water softenable sheet; applying said sheet to a wood particle board backing while the moisture content of the sheet is within the range of from 20 to 25% based upon the dry weight of the sheet; and pressing the assembly at 200 to 380 degrees Fahrenheit for two to twelve minutes at a pressure of 50 to 300 pounds per square inch.

3,300,362
APPARATUS FOR ETCHING OF PRINTING SURFACES

John Fothergill Crosfield, London, England, assignor to Crosfield Electronics Limited, London, England, a British company

Filed Feb. 11, 1963, Ser. No. 257,402
Claims priority, application Great Britain, Feb. 15, 1962, 5,864/62
5 Claims. (Cl. 156—345)

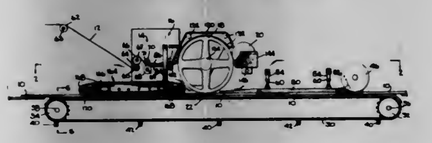


1. Apparatus for etching a printing cylinder covered with a light-sensitive acid-resist tissue which has been exposed to the image to be reproduced and to a control patch having a characteristic pattern, comprising: an etching bath; means for supporting the cylinder above said bath and driving means for rotating the cylinder so that during etching an advancing longitudinal portion of the cylinder is contacted by said bath; a photoelectric scanning head adjacent the periphery of that portion of the cylinder which carries the part of the tissue exposed to the control patch; a filter circuit connected to said scanning head to receive the signal therefrom and passing only that portion of said signal having a waveform corresponding to the characteristic pattern; and means responsive to the filtered signal to control the termination of the etching process when said filtered signal reaches a level representing a predetermined tonal value.

3,300,363
HIGH SPEED TAPING MACHINE

Edwin E. Burroughs, Pensacola, Fla., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York

Filed July 23, 1963, Ser. No. 297,134
6 Claims. (Cl. 156—521)

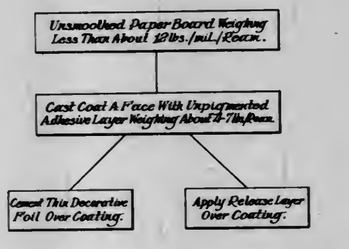


1. A taping machine, comprising a rotary tape wheel, said tape wheel being rotatable at a constant speed, means for feeding a continuous web of tape at a preselected speed onto said tape wheel periphery at a first location adjacent said tape wheel, a rotary knife substantially adjacent said first location for cutting said tape into a unit length thereof, means for driving said tape wheel at a speed in excess of said preselected speed of feed of said tape, whereby upon being cut said tape length is spaced away from the oncoming continuous web of tape, means for retaining said tape on said tape wheel periphery, means for separating said tape length from said tape wheel at a second location adjacent the periphery of said tape wheel, said means for feeding a continuous web of tape comprises a pair of tension rollers interposed between said rotary knife and said tape wheel and driven at a speed in excess of said preselected speed of feed of said tape, said tape passing between said pair of rollers.

3,300,364
PROCESS FOR SMOOTHLY LAMINATING A THIN FILM ON AN UNSMOOTHED PAPER BASE

Bruce C. Gottwald and John M. Haigh, Richmond, Va., assignors to Albemarle Paper Company, Richmond, Va., a corporation of Virginia

Filed May 5, 1964, Ser. No. 365,102
4 Claims. (Cl. 156—281)

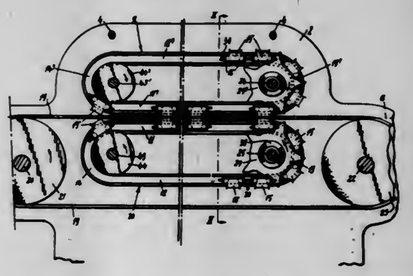


1. A process for preparing a strong paper-foil laminate in which the foil forms a very smooth surface layer, which process comprises the steps of providing an unsmoothed paper board web having a density less than about 12 pounds per mil per ream, cast coating on one face of the unsmoothed web an unpigmented layer of adhesive selected from the group starch, protein and synthetic polymers, said layer weighing about 4 to about 7 pounds per ream, and cementing a thin decorative foil over the cast coating.

3,300,365
MACHINE FOR TREATING, SUCH AS HEAT SEALING AND CUTTING, A WEB OF SHEET MATERIAL, IN PARTICULAR FOR THE MANUFACTURE OF SACKS

Dirk Godfried Johannes Roos, Amsterdam, Netherlands, assignor to Trans-Atlas A.G., Basel, Switzerland

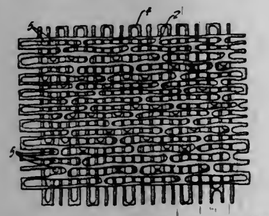
Filed Aug. 19, 1963, Ser. No. 303,070
Claims priority, application Netherlands, Aug. 23, 1962, 282,444
18 Claims. (Cl. 156—583)



1. A machine for operating on a web of sheet material, which is fed with continuous movement along a path through the machine, said machine comprising a plurality of carrier members, each having a web engaging surface and extending parallel to one another transversely of the path of travel of the web through the machine, said members being arranged in two groups, one on each side of said path of travel of the web, at least some of said

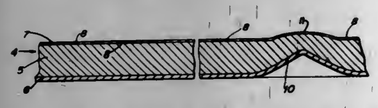
carrier members including means for operating on said web arranged at said web engaging surface; two guide track means, each for guiding the carrier members of one of said groups for movement in a closed path, each track means comprising a leading track portion and a return track portion each having forward and rear ends, the leading portions of said two track means extending parallel to each other on opposite sides of said path of travel of said web and spaced at a distance from each other for enabling two opposed carrier members of different groups when in opposed positions in said two leading track portions to clampingly engage the web between opposed web engaging surfaces; carrier feed means at the forward ends of said leading track portions for simultaneously feeding a carrier member of each group into the respective track portions; carrier return means at the rear ends of said leading track portions for returning the carrier members through their associated return track portions to said carrier feed means; and carrier driving means extending longitudinally adjacent said leading track portions for engaging each pair of opposed cooperating carrier members fed into said leading track portions by said feed means to move said carrier members through said track portions from the forward end to the rear ends thereof.

3,300,366
PERFORATED SHEET MATERIAL
Day Krolik, Jr., 5965 Lahser Road, Birmingham, Mich. 48010
Filed Mar. 19, 1964, Ser. No. 353,162
3 Claims. (Cl. 161—112)



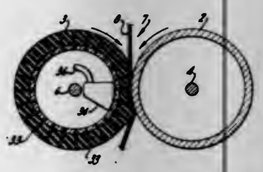
1. A sheet comprising a laminate of at least two sheets of material each having closely spaced elongated substantially parallel perforations therethrough, the perforations in one of said sheets overlapping and extending at a substantial angle to the perforations in the other of said sheets.

3,300,367
ADVERTISING DISPLAY
William M. Swartz, 195 Ivy Lane, Highland Park, Ill. 60035
Filed Apr. 29, 1964, Ser. No. 363,534
7 Claims. (Cl. 161—113)



1. An article of manufacture comprising a sheet of paper board material of the kind that is subject to shrinkage upon drying and having a moisture impervious film laminated over one surface thereof, portions of the opposite surface being exposed to the atmosphere, said article having an embossed design at the exposed film surface to a depth greater than the thickness of the film, said paper board having a moisture content at a vapor pressure above that of the surrounding atmosphere whereby the board is subject to moisture reduction by evaporation from the opposite surface of the board.

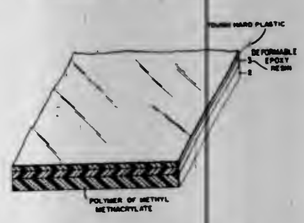
3,300,368
CREPED SHEET MATERIALS AND THE PROCESS OF PRODUCING THE SAME
Thomas G. Cooper and Robert E. Linde, Camas, Wash., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Dec. 11, 1964, Ser. No. 417,547
16 Claims. (Cl. 161—128)



1. A process of making stretchable non-woven sheet material in the substantially dry state which comprises subjecting a web of such material in said substantially dry state to an elastic mass moving in one general direction in engagement with a face of said web while simultaneously moving and pressing said web against a substantially hard surface moving in the same direction as said mass but at a greater speed to compressively crepe said web while in said substantially dry state.

9. A dry-creped sheet produced by the process of claim 1.

3,300,369
TRANSPARENT LAMINATES COMPRISING NON-RIGID, DEFORMABLE, THERMOSETTING, RESINOUS ADHESIVE INTERLAYERS
Ralph A. Burkley, Cuyahoga Falls, Donald C. Cully, Tallmadge, and John L. Folk, Akron, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,419
3 Claims. (Cl. 161—184)



1. A transparent laminate comprising a tough, hard, substantially rigid first outer skin made from a material (A) selected from the group of polymers of methylmethacrylate modified with up to 2 percent of a cross-linking agent and which polymers may be oriented; allyl di-glycol carbonate polymers; copolymers of allyl di-glycol carbonate and acrylic monomers; cured polyester resins consisting of the products of mixtures of unsaturated alkyds made by reacting unsaturated polycarboxylic acids with polyols and cross-linking materials selected from the group of styrene, vinyl toluene, diallyl phthalate, methyl methacrylate, and triallyl cyanurate; hard, rigid, cured epoxy resins which are made by curing the resinous reaction products of epichlorhydrin and bisphenol A with curing agents selected from the group consisting of polyfunctional amines, polyfunctional amides, polycarboxylic acids, polycarboxylic acid anhydrides, and Lewis acids; highly cross-linked copolymers of methylmethacrylate and up to 20 percent of a cross-linking monomer; and (B) a second tough, hard substantially rigid outer skin made from a stretched, molecularly oriented polymer of methyl methacrylate modified with up to 2 percent of a cross-linking monomer adhered together in spaced apart relationship by means of (C) a tough, non-rigid, deformable, castable, thermosetting, resinous intermediate layer at least 1/64 inch thick made in situ between said skins from one of the group of materials including cured flexible epoxy resins derived from cashew nut oil; the flexible epoxy resin obtained as the reaction product of epichlorhydrin and bisphenol A cured with a material from the group of polyamides, polyamines, Lewis acids and polycarboxylic acids and their anhydrides and including a softening additive; and mixtures of said flexible epoxy resins.

3,300,370
POLYURETHANE-POLYAMIDE ARTICLE AND METHOD OF PREPARATION
Michael Mandel Epstein, Columbus, Ohio, and Joseph Edgar Rhoads, Wilmington, Del.; said Epstein assignor, by mesne assignments, to J. E. Rhoads & Sons, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 8, 1965, Ser. No. 470,621
12 Claims. (Cl. 161—190)

1. An article of manufacture comprising a synthetic polyamide base having integrally bonded on at least one surface thereof a thermoplastic polyurethane which is soluble in solvents selected from the group consisting of tetrahydrofuran, dimethyl formamide and ketonic solvents and substantially free of cross-linkages, said polyurethane having been applied to the polyamide surface as a preformed solid by pre-softening the surface of the synthetic polyamide with a solvent mixture consisting essentially of from 10–90% by weight of a solvent softening agent for the synthetic polyamide and a balance essentially of a solvent softening agent for the polyurethane and uniting and maintaining the softened surface of the synthetic polyamide in firm contact with the polyurethane until a firm bond is effected.

3,300,371
GYPSUM PLASTER BOARD
Harry E. Hart, Hinsdale, Ill., assignor to The Celotex Corporation, a corporation of Delaware
Filed Dec. 11, 1961, Ser. No. 158,411
8 Claims. (Cl. 161—229)



1. A plaster base for receiving a face coat of plaster comprising a set gypsum core, cover sheets bonded to exposed faces of said core, each of said cover sheets being of multiple ply construction having at least one central ply, said central ply being sized with sufficient rosin and alum size to prevent tearing of the paper under tension; two plies outwardly adjacent to said central ply having an alkaline buffer therein in an effective amount to prevent migration of the rosin size beyond said two buffer plies, and two additional plies outwardly adjacent to said buffer plies, said outermost plies of each sheet containing a cationic polyamide resin dispersed therein.

3,300,372
FIRE-RESISTANT BUILDING BOARD AND PROCESS
Donald R. Bauer, St. Helens, Oreg., assignor to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington
No Drawing. Filed Aug. 23, 1963, Ser. No. 304,261
19 Claims. (Cl. 162—145)

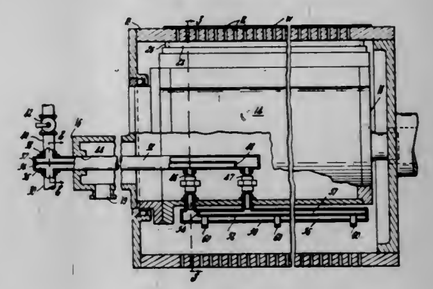
1. A self-sustaining, fibrous board consisting essentially of a major portion of synthetic mineral fibers, a minor portion of lignocellulose fibers, from 5% to 15% starch, from 10% to 30% clay, 0.5% to 4.0% sizing agent, and from 0.2% to 2.25% of cationic surface active agent.

15. Process for producing a fibrous board comprising (a) preparing a slurry of lignocellulose fibers in water, (b) separately preparing a slurry of synthetic mineral fibers and a cationic surface active agent in water, (c) admixing said two slurries together, (d) admixing with said admixture a suspension of clay and starch in water, (e) adding to said last-mentioned admixture a sizing agent, (f) then admixing therewith with gentle agitation a further amount of a cationic surface active agent, (g) introducing the resulting mixture to board-forming zone and (h) forming into board with removal of water, said lignocellulose fibers being present in minor amount and said mineral fibers being present in major amount, based on the total dry weight of the mass.

3,300,373
METHOD OF CONTROLLING GROWTH OF MICROORGANISMS IN INDUSTRIAL WATER SYSTEMS
Leonard L. Wolfson, Park Forest, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed May 10, 1965, Ser. No. 454,697
7 Claims. (Cl. 162—190)

3. The method of inhibiting the growth and reproduction of microbiological organisms in paper-making process water systems which comprises the step of treating said system with at least a microbiocidal amount of a composition which comprises 2,4-dinitrohalobenzene.

3,300,374
SUCTION ROLL WITH LUBRICATING AND WASHING SHOWERS
Donald B. Baker, Foxboro, and George L. Nelson, Westwood, Mass., assignors to Bird Machine Company, Walpole, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 275,149, Apr. 23, 1963. This application Sept. 8, 1965, Ser. No. 485,750
3 Claims. (Cl. 162—276)



1. In a suction device for paper making machines comprising a rotatable hollow roll having perforations in its periphery, a suction box in said roll having a slot therein next to said roll and sealing means for said slot slidably engaging the inside of said roll as it rotates;
that improvement for supplying lubricating water for said sealing means at one rate of flow and for supplying washing water for the inside of said roll at a greater rate of flow, comprising,
pipe means supported inside said roll,
a source of water under pressure connected to said pipe from outside said roll,

a series of nozzles carried by said pipe positioned to spray water therefrom against the inside of said roll, and

control means associated with said nozzles and operable between a first position to provide restricted nozzle openings for spraying of water from said nozzles at said one rate of flow for supplying lubricating water and a second position to provide enlarged nozzle openings for spraying of water from said nozzles at said greater rate of flow for supplying washing water.

3,300,375

PROCESS WATER TREATMENT AND METHOD OF CONTROLLING SULFATE-REDUCING BACTERIA

Donald Clifford Wehner, Fairfield, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 10, 1965, Ser. No. 478,741
8 Claims. (Cl. 167—22)

1. A method of inhibiting the growth of sulfate reducing bacteria which comprises contacting said bacteria with an effective amount of a compound selected from the group consisting of methylene bisthiocyanate and monohalomethyl thiocyanate.

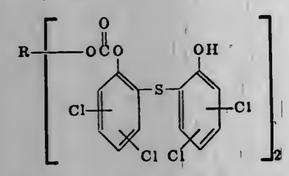
3,300,376

CONTROLLING BACTERIA WITH ALKYLENE-GLYCOL CARBONATE ESTERS OF 2,2'-THIO-BIS-(DICHLOROPHENOLS)

Robert M. Schisla, Kirkwood, and Van R. Gaertner, Ballwin, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 11, 1964, Ser. No. 395,951
4 Claims. (Cl. 167—30)

1. A method for inhibiting the growth of bacteria which comprises applying to the situs of the bacteria a bacteriostatic amount of a compound of the formula



wherein R is selected from the group consisting of bivalent alkylene and alkylene-oxy-alkylene radicals having from 2 to 4 carbon atoms in each alkylene group, and polyalkylene-oxy-alkylene radicals having from 3 to 10 alkylene groups, and from 2 to 4 carbon atoms in each alkylene group.

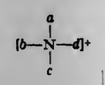
3,300,377

BIOCIDAL QUATERNARY AMMONIUM AROMATIC CYCLIC IMIDES

William J. Shibe, Jr., Riverton, N.J., and Marcus Sittenfield, Philadelphia, Pa., assignors to Hollichem Corporation, Camden, N.J., a corporation of New Jersey

No Drawing. Original application Jan. 16, 1962, Ser. No. 166,699, now Patent No. 3,133,072, dated May 12, 1964. Divided and this application Apr. 3, 1964, Ser. No. 357,269
2 Claims. (Cl. 167—33)

1. A method of inhibiting the growth of microorganisms which comprises applying to said microorganisms a biocidally effective amount of a quaternary ammonium aromatic cyclic imide wherein the quaternary ammonium cation has the formula:



wherein *a* and *b* are members of the group consisting of alkyl and cyclic constituents of pyridinium, isoquinolinium, picolinium, imidazolinium and morpholinium, *c* is a member of the group consisting of alkyl, alkylaryl, aryl and cyclic constituents of pyridinium, isoquinolinium and picolinium, *c*, when it is a cyclic constituent, being a member of the same ring as *a* and *b*, and *d* is a member of the group consisting of alkyl and alkylaryl, and wherein the aromatic cyclic imide anion is a member of the group consisting of phthalimide, naphthalimide, benzoxazolinone and benzothiazolinone, the aromatic portion of said anion being substituted by a member of the group consisting of hydrogen, halide, lower alkyl and lower alkoxy, there being a direct electro-valent linkage between the quaternary ammonium cation and the aromatic cyclic imide anion.

3,300,378

DISINFECTANT AND ANTI-INFLAMMATORY COMPOSITION AND METHOD OF USING SAME

Rudolf Fischer, Sandbuhl, Kehrsatz, near Bern, Switzerland, assignor to Dr. A. Wander, S.A., Bern, Switzerland, a Swiss corporation

No Drawing. Filed Oct. 25, 1962, Ser. No. 233,152
Claims priority, application Switzerland, Mar. 24, 1960, 3,315/60
3 Claims. (Cl. 167—65)

1. A method of preventing and combating inflamations of the skin and mucous membranes and wound infections of a living animal which comprises applying 6-chloro-1,2-benzisothiazolone locally to a living animal in a pharmaceutically acceptable form.

3,300,379

ANTIBIOTIC THERMORUBIN AND METHODS OF PREPARING THE SAME

Renato Craveri, Carolina Coronelli, and Piero Sensi, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,429
Claims priority, application Great Britain, Feb. 6, 1962, 4,557/62
4 Claims. (Cl. 167—65)

1. An antibiotic substance named thermorubin, of weak acidic character, insoluble in water, ethyl ether, petroleum ether, very poorly soluble in methanol and alcohols of low molecular weight, ethyl acetate and higher esters, benzene, chloroform, acetone; very soluble in dioxane, tetrahydrofuran, dimethylformamide, pyridine; having a decomposition point at 190° C. (darkening) and a melting point not lower than 300° C., its elemental analysis being: C, 64.15%, H, 4.74%, O, 31.50%, thus an approximate crude formula of $C_{22}H_{18}O_8$ being deduced; having a specific rotatory power of: $[\alpha]_D^{25}=+14°$ (c.=0.4 in dioxane) and an absorption spectrum in dioxane-cyclohexane with characteristic maxima at

300 mμ $E^{1\%}_{1cm.}=1041.9$; 328 mμ $E^{1\%}_{1cm.}=1066.3$; 414 mμ $E^{1\%}_{1cm.}=313.7$; 430 mμ $E^{1\%}_{1cm.}=332.6$;

showing in the infrared region of the spectrum, when crystallised from chloroform, the following bands: 3010, 2925 (Nujol), 2850 (Nujol), 1720, 1698, 1673, 1607, 1582, 1552, 1505, 1487, 1457 broad (Nujol), 1417, 1380 (Nujol), 1343, 1295, 1249, 1235, 1223, 1177, 1170, 1157, 1120, 1099, 1084, 1065, 1042, 1035, 1002, 978, 958, 942, 927, 910, 893, 881, 860, 824, 815, 801, 782, 762, 745, 727, 694, 662, 654; and, when crystallised from ethyl acetate: 2925 (Nujol), 2850 (Nujol), 1705, 1665, 1608, 1575, 1543, 1505, 1487, 1456 broad (Nujol), 1435, 1378 (Nujol), 1347, 1327, 1295, 1256, 1245, 1223, 1196, 1163, 1118, 1108, 1085, 1032, 998, 977, 964, 890, 856, 830, 822, 775, 765, 750, 725, 691.

3,300,380

DIMINISHING TOXICITY OF ANTIVIRAL N^6-(HYDROXYALKYL)ADENINES WITH 4-HYDROXY-PYRAZOLO(3,4-d)PYRIMIDINE

Jack E. Gray, Richland Township, Kalamazoo County, Gerald E. Underwood, Charleston Township, Kalamazoo County, and Kingsley M. Mann, Portage Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,658
4 Claims. (Cl. 167—65)

1. A pharmaceutical preparation for reducing toxicity and maintaining antiviral action of a member selected from the group consisting of N^6-(hydroxymethyl)adenine, N^6-(2-hydroxyethyl)adenine and the physiologically acceptable acid addition salts thereof which comprises (1) an effective amount of said member for reducing virus titers and (2) a member selected from the group consisting of 4-hydroxypyrazolo-(3,4-d)pyrimidine and the physiologically acceptable acid addition salts thereof, wherein the ratio of the former member to the latter member is from about 2.5:1 to about 20:1.

3,300,381

METHOD OF EFFECTING DIURETIC THERAPY

David A. McClure, Canoga Park, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,824
4 Claims. (Cl. 167—65)

1. A method of effecting diuretic therapy in mammals which comprises administering to a mammal an effective dose of N-(6'-di-lower alkylaminohexyl)-1,3-diketo-4,9-o-benzeno-benz[f]perhydroisoindole.

3,300,382

KALAMYCIN AND METHOD FOR PREPARATION

Malcolm E. Bergy, John H. Coats, Ladislav J. Hanka, and Le Roy E. Johnson, all of Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Apr. 1, 1966, Ser. No. 539,465
10 Claims. (Cl. 167—65)

1. A composition of matter essaying at least 1 biounit/ml. of kalamycin, a compound which

(a) is effective in inhibiting the growth of various Gram-negative and Gram-positive bacteria, and fungi; and in its essentially pure crystalline form,

(b) is soluble in ethyl acetate, amyl acetate, chloroform, methylene chloride, acetone, methyl ethyl ketone; and relatively insoluble in water;

(c) has the following elemental analyses: C, 63.80; H, 4.07; O, 31.81;

(d) has a molecular weight of 300 as determined by mass spectrometer;

(e) has a characteristic infrared absorption spectrum as shown in FIGURE 1 of the accompanying drawing; and

(f) has a characteristic papergram pattern as shown in FIGURE 11 of the accompanying drawing.

3,330,383

HIRUDINE FROM LEECHES AND PROCESS FOR RECOVERY THEREOF

Fritz Markwardt and Peter Walsmann, Erfurt, and Gerhardt Schäfer and Horst Töpfer, Radebeul, Germany, assignors to VEB Arzneimittelwerk Dresden, Radebeul, Germany

No Drawing. Filed Oct. 15, 1963, Ser. No. 316,797
4 Claims. (Cl. 167—74)

1. A process for the recovery of hirudine from leeches, which comprises

(a) dehydrating the heads of leeches with absolute ethanol and comminuting the dry heads;

(b) extracting the comminuted heads with acetone and precipitating out the proteinous ballast materials from the extract solution with half the volume of an acetone-water mixture;

(c) acidifying the diluted solution to a pH of approximately 4.5;

(d) discarding the precipitate of inactive byproducts thus formed;

(e) adjusting the pH in the remaining solution to about 6.7 and concentrating the solution to a small fraction of its volume;

(f) adjusting the pH of the concentrate to about 1.5 to 2.5;

(g) Precipitating the active ingredient by increasing the acetone content of the concentrate to at least 80%, by volume, thus recovering a raw product of increased activity;

(h) and recovering from said raw product hirudine in high purity, by repeated precipitation with an organic, water-miscible solvent, subsequent treatment of the last solution with oxycellulose, and adsorption on a weakly acid resinous cation exchanger.

3,300,384

PROCESS FOR THE PRODUCTION OF PURE PREPARATIONS OF THE KALLIKREIN INACTIVATOR

Fritz Schultz, Wuppertal-Sonnborn, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,954
Claims priority, application Germany, Apr. 11, 1963, F 39,464
2 Claims. (Cl. 167—74)

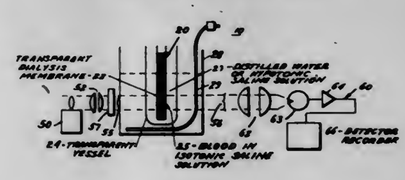
1. Process for the production of substantially pure preparations of the kallikrein inactivator that comprises, treating a less pure solution containing said kallikrein inactivator with a member selected from the group consisting of polyphosphoric acids and their water-soluble salts to effect precipitation of said inactivator, separating said precipitate from the mother liquor and decomposing said separated precipitate by treatment with a member selected from the group consisting of aqueous caustic alkali, NaCl and NH_4Cl solutions, and separating said kallikrein inactivator from the resulting solution in substantially pure form.

3,300,385

METHOD FOR MEASURING OSMOTIC FRAGILITY OF RED BLOOD CORPUSCLES

David Danon, Rehovoth, Israel, assignor to Yeda Research and Development Co., Ltd., Rehovoth, Israel, a company of Israel

Filed Apr. 27, 1962, Ser. No. 194,211
Claims priority, application Israel, Aug. 17, 1961, 15,910
7 Claims. (Cl. 167—84.5)



1. A method for automatically measuring the osmotic fragility of red blood cells, which comprises:

disposing a first isotonic salt-containing solution having a suspension of red blood cells, and a second

hypotonic solution, in a test cell on opposite sides of a dialysis membrane;

allowing a portion of the salt-containing solution to diffuse through said membrane by osmosis to render said first solution hypotonic with respect to said suspension of red blood cells and effect hemolysis from said cells to said first, now hypotonic, solution; and

concurrently, at predetermined intervals photoelectrically measuring and recording the light transmissivity of said suspension of red blood cells to determine the osmotic fragility of said cells as a function of time.

3,300,386

METHOD OF SELECTING EMULSIONS INTENDED FOR THE PREPARATION OF COSMETICS AND SKIN PRODUCTS

Robert Raymond Albert Georges Aron-Brunetiere, Paris, and Claude François Simon Alexandre Aron, Strasbourg, France, assignors of forty percent to Antoine Francois Regis Peyron, Paris, France

No Drawing. Filed July 3, 1962, Ser. No. 207,402
Claims priority, application France, July 10, 1961, 867,489
5 Claims. (Cl. 167—84.5)

1. A method of testing emulsions to determine their suitability in the treatment of dry and greasy skins comprising effecting at least one biopsy of an untreated portion of the shaven skin of an animal, applying the emulsion to be tested on another portion of the shaven skin of the animal at spaced intervals for a predetermined interval, thereafter effecting at least one biopsy of the so-treated portion, comparing said biopsies to determine the effect of the treatment of the sebaceous glands of the skin, of an emulsion for treating dry skin causing hyperplasia of the sebaceous glands and an emulsion for treating greasy skins failing to cause hyperplasia of the sebaceous glands.

3,300,387

PRESSED POWDER ANTIPERSPIRANT AND METHOD OF PREPARATION

Richard L. Kole, Milwaukee, Wis., assignor to Kolmar Laboratories, Inc., Milwaukee, Wis., a corporation of Delaware

No Drawing. Filed Oct. 2, 1962, Ser. No. 227,726
8 Claims. (Cl. 167—90)

8. A topically applied product for human use, comprising a dry pressed powder cosmetic base having dispersed therein finely divided particles of a hygroscopic antiperspirant coated with a water soluble wax-like material selected from the group consisting of polyethylene glycols having an average molecular weight in the range of 1000 to 6000; polypropylene glycols having an average molecular weight in the range of 140 to 600; methoxy propylene glycols having an average molecular weight in the range of 350 to 750; lanolin extracts; ethoxylated lanolin; fatty acid esters of polyalcohols where the fatty acid group contains from 8 to 20 carbon atoms; ethoxylated fatty acids with the fatty acid containing from 8 to 20 carbon atoms; and ethoxylated fatty alcohols with the fatty alcohols having from 8 to 20 carbon atoms.

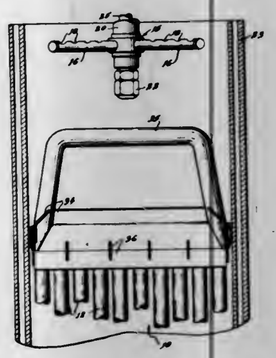
3,300,388

IN-CORE SAMPLING AND SPRAY DEVICE FOR NUCLEAR REACTORS

Ralph B. Jerman, Milwaukee, Wis., Peter F. Santoro, Hartford, Conn., and Henri F. van Kessel, Wheaton, Md., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 8, 1965, Ser. No. 485,959
3 Claims. (Cl. 176—19)

1. The combination with an assembly comprising a long casing of rectangular cross section, a plurality of long rod-like elements of nuclear fuel positioned in the casing in spaced, parallel, side-by-side relation, a plurality of grids spaced along the elements and applied thereto so as to hold them in spaced relation to one another in the casing, and a hold-down structure applied to the elements at the exit end of the assembly; of a probe comprising a plurality of tubes located beyond the exit end of the assembly and extending radially outward from a



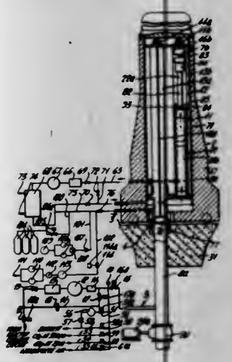
region generally on the axis of the assembly, each tube being closed at its outer end and having on its upstream side away from the assembly a plurality of openings spaced lengthwise of the tube, and a tubular line connected with the inner ends of the tubes and extending therefrom generally on the axis of the assembly away from the upstream side thereof; and a baffle extending across the four sides of the assembly at the end thereof and being inclined to the axis of the assembly.

3,300,389

REFUELLING MACHINES FOR GAS COOLED NUCLEAR REACTORS

Gordon Packman, Culcheth, Warrington, and James Leslie Kearney, Allerton, Liverpool, England, assignors to United Kingdom Atomic Energy Authority

Filed Mar. 30, 1964, Ser. No. 355,856
Claims priority, application Great Britain, Apr. 11, 1963, 14,541/63
5 Claims. (Cl. 176—32)



1. A pressurising facility for employment in conjunction with a gas-cooled nuclear reactor refuelling machine which machine is movable across the reactor charge face and has a valved nose-piece for connection in a pressure-tight manner to any one of a plurality of core access tubes of the nuclear reactor which terminate at the reactor charge face, said pressurising facility comprising a fixed tubular member remote and separate from said core access tubes and disposed with one end at charge face level so as to be accessible to said refuelling machine nose-piece, means on said accessible end of said tubular member for engagement by said nose-piece in pressure-tight manner, a fixed source of pressurised gas of the same kind as the reactor coolant gas, means, unassociated with said nose-piece, for connecting said source with the interior of said tubular member, and means for controlling the pressure of gas within said tubular member.

3,300,390

PROCESS FOR HARVEST OF SPORES FROM AERIAL MICROBIAL STRUCTURES

Jack D. Tiner, Washington, D.C., and Allen Golden, Long Beach, Calif., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,096
4 Claims. (Cl. 195—104)

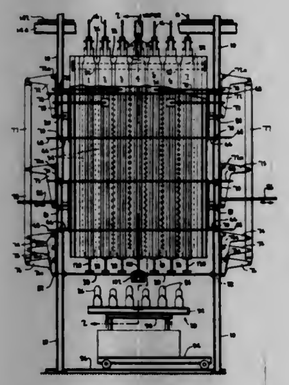
1. Method for the separation of spores from the mycelium of molds with which said spores are attached and intermingled which comprises the steps of submerging the mycelium and spores in water, removing entrapped gases from the submerged material by applying to the water and mycelium at least one vacuum treatment, subjecting the water and contained submerged material to the action of ultrasonic vibrations to liberate the spores from the mycelium, and separating the liberated spores from the desporulated mycelium.

3,300,391

MOVABLE WALL COKE OVEN

Alvin L. Bower, 1847 17th St. SW., Allentown, Pa. 18103

Filed May 1, 1964, Ser. No. 364,335
6 Claims. (Cl. 202—105)



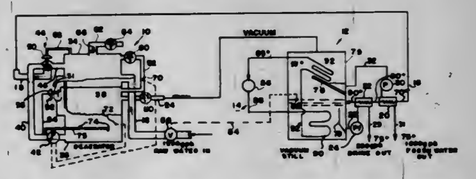
1. A movable wall coking oven comprising a rigid frame including an elevated frame portion, a plurality of vertically disposed relatively parallel oven walls suspended from said elevated frame portion at a substantial distance therebelow, said walls being in horizontal alignment and including a stationary wall and a plurality of relatively horizontally movable walls on opposite sides of said stationary wall, relatively adjoining pairs of said walls defining between them oven compartments having downwardly directed discharge openings, flexible hangers suspending said walls from said elevated frame portion, means interconnected between said frame and the stationary wall to restrain the latter against movement, selectively operative means for moving the said walls on opposite sides of said stationary wall toward and away from said wall into and from relatively closed and relatively spread positions, selectively operable means interconnecting said end walls for positively retaining said walls in their closed position against relative spreading movement, and an oven floor frame releasably carried by said stationary wall, said floor frame extending in opposite lateral directions from said stationary wall beneath all of the other said walls and having thereon a plurality of floors positioned for closing reception in the respective discharge openings, and means for releasably securing said floor frame to the stationary wall with the floors disposed in the respective openings.

3,300,392

VACUUM DISTILLATION INCLUDING PRE-DEGASIFICATION OF DISTILLAND

Gene W. Ross and David S. Ross, Lorain, Ohio, assignors to Amcodyne & Co., Lorain, Ohio, an Ohio limited partnership

Continuation of application Ser. No. 199,378, June 1, 1962. This application Apr. 5, 1966, Ser. No. 547,691
16 Claims. (Cl. 202—176)



1. Apparatus for evaporating a liquid and condensing the vapors thereof comprising:

liquid degasifying means including sealable tank means for enclosing a charge of liquid and an overlying vapor portion, vent means in communication with the interior of said tank means above the charge of liquid and including valve means for alternately sealing and unsealing said tank means, liquid pumping means operable at a high liquid level in said tank means to pump liquid out of said tank means when said tank means is sealed thereby producing degasified liquid by producing a vacuum in said tank means to cause dissolved gases to be liberated from liquid remaining in said tank means and to be collected in overlying relationship to said remaining liquid, means for intermittently introducing additional liquid into said tank means thereby displacing previously liberated gases through said vent means;

still means having a liquid receiving chamber and a vapor retaining chamber communicating therewith;

transfer means including a conduit and a valve for intermittently withdrawing said degasified liquid from said tank means and for transferring the withdrawn degasified liquid to said liquid receiving chamber;

means for continually maintaining said vapor retaining chamber under vacuum including a conduit interconnecting said vapor retaining chamber and said tank means and a valve in said conduit connected to pass gas only from said vapor retaining chamber to said tank means;

heating means associated with said liquid receiving chamber for evaporating liquid therein;

cooling means associated with said vapor retaining chamber for condensing vapor from said liquid receiving chamber;

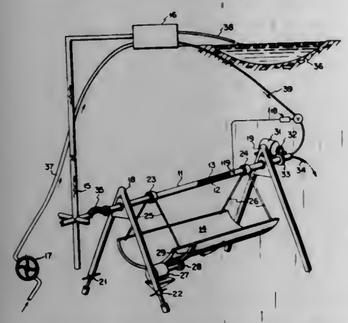
means for collecting and withdrawing condensed vapor from said vapor retaining chamber;

and means for withdrawing unvaporized liquid from said liquid receiving chamber.

3,300,393
SALINE SPRAY DISTILLATION WITHIN ROTATING SOLAR HEATER

Franklin G. Fisher, 5492 Rudy Drive, San Jose, Calif. 95124

Filed July 25, 1962, Ser. No. 212,299
5 Claims. (Cl. 203—10)



1. A method of desalinating sea water comprising the steps of:

focusing the sun's rays directly against the exterior surface of a longitudinal segment of an elongated closed chamber;

rotating the chamber continuously;

spraying sea water continuously against the interior surface of the longitudinal segment of the chamber;

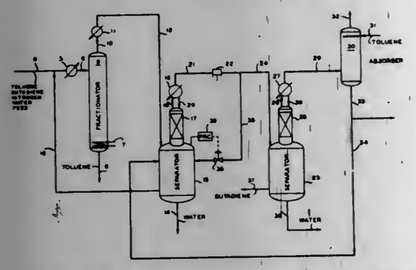
leading steam from the chamber;

continuously removing salts from the interior surface of the chamber and transporting them to an end of the chamber and discharging them from the chamber.

3,300,394
PROCESS AND APPARATUS FOR PLURAL DISTILLATION OF HYDROCARBON WATER FEED

John M. Miles, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 26, 1963, Ser. No. 304,582
9 Claims. (Cl. 203—42)



1. A process which comprises passing a hydrocarbon mixture containing water to a fractionation zone, withdrawing a vapor phase from said fractionation zone, partially condensing said withdrawn vapor phase, passing the resultant liquid-vapor mixture to a first separation zone, withdrawing a vapor phase from said separation zone and passing the said vapor phase through a first rectification zone, condensing a first hydrocarbon contained within the resultant vapor phase withdrawn from said rectification zone, passing said condensed first hydrocarbon through said first rectification zone to said first separation zone, compressing the remainder of said vapor phase withdrawn from said rectification zone, passing the resultant compressed vapors to a second separation zone, withdrawing a vapor phase from said second separation zone and passing the said vapor phase withdrawn from said second separation zone to a second rectification zone, condensing a second hydrocarbon contained within the resultant vapor phase withdrawn from said second rectification zone, passing the resultant condensed said second hydrocarbon through said second rectification zone to said second separation zone, withdrawing said second hydrocarbon from said second separation zone, passing a liquid phase from said first separation zone to said fractionation zone, withdrawing said first hydrocarbon from said fractionation zone, and withdrawing water from said first separation zone and said second separation zone.

3,300,395
NICKEL ELECTROPLATING BATHS AND PROCESSES

Gregor Michael, Dusseldorf, Herbert Frotscher, Dusseldorf-Benrath, Hans Markert, Dusseldorf, and Manfred Petzold, Dusseldorf-Hassels, Germany, assignors to Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,319
Claims priority, application Germany, Sept. 5, 1962, D 39,772; July 25, 1963, D 42,092
15 Claims. (Cl. 204—49)

2. A nickel electroplating bath for obtaining bright and level electrodeposits comprising an aqueous acidic solution containing a brightening agent, a wetting agent, nickel ions and 5 mg. to 4 g./l. of a cationic, salt-like leveling agent formed by condensing a compound selected from the group consisting of urea, thiourea, alkylureas, methyleneurea, guanidine, biuret, dicyandiamide, alkyl guanidine, melamine, melam, melem, melon, ammeline and methyldiaminotriazine and salts thereof with an oxo compound selected from the group consisting of formaldehyde, paraformaldehyde, tetraoxymethylene, methylal, formaldehyde bisulfite, acetaldehyde, crotonaldehyde, benzaldehyde, acetone, acetophenone and cyclohexanone in the presence of an acid.

8. The bath of claim 2 wherein the cationic leveling agent has further condensed therewith mononuclear phenols which may have a substituent selected from the group consisting of lower alkyl, amino and carboxylic groups.

11. The bath of claim 8 wherein the cationic compound has further condensed therewith a low molecular weight amino acid.

3,300,396
ELECTROPLATING TECHNIQUES AND ANODE ASSEMBLIES THEREFOR

Charles T. Walker, 14841 Meyers Road, Detroit, Mich. 48227

Filed Nov. 24, 1965, Ser. No. 509,537
14 Claims. (Cl. 204—49)

1. An electroplating system for plating an article with a plating metal selected from the group consisting of nickel, copper and zinc, said system comprising:

(A) a tank adapted to contain an electrolytic solution for electrolytically dissolving the selected plating metal, said solution having an acidic composition which is chemically reactive with titanium,

(B) a conductive member disposed above said tank for suspending an anode assembly in said solution,

(C) an anode assembly adapted to maintain the effective surface area of the anodic plating metal and the current distribution characteristics thereof substantially constant whereby the desired plating metal ions in solution are maintained at a substantially uniform level in the course of electroplating without contamination of the bath by foreign metal ions, said assembly comprising:

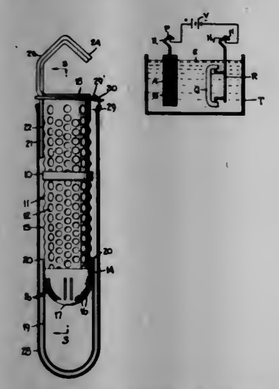
(a) an elongated open-topped basket formed of commercially pure titanium, said basket having a plurality of small, closely-spaced openings along the length thereof,

(b) a conductive hook attached to said basket for suspending the anode assembly in said electrolyte from said member and for conveying electrical current thereto,

(c) a replenishable pile of solid anodic metal pieces filling said basket and vertically stacked therein, each of said pieces being of larger dimension that the basket openings but being smaller than the open top of the basket so that additional pieces can be deposited therein to maintain the height of the pile and to hold substantially constant the effective surface area of the anodic plating metal in the course of electroplating,

(d) said anodic metal pieces being highly conductive and being selected from said group, said pieces making contact at multiple points along the inner surface of said basket distributed along the length thereof,

(D) and means to impress a voltage between an article immersed in said solution and said conductor to produce a current flow causing a non-conductive protective film to form on the surfaces of said basket which renders it inert with respect to said solution and avoids contamination thereof, said basket passing current to said pieces at said multiple points of contact therewith to maintain a substantially uniform current flow to produce a metallic coating on said article of good quality.



2. A process for electroplating an article with a coating of an anodic metal selected from the group consisting of nickel, copper and zinc, the steps comprising:

(a) immersing an open-topped apertured basket formed of titanium in an acidic electrolyte having a composition with respect to which titanium is chemically reactive,

(b) filling said basket with a pile of solid pieces of the selected anodic metal, said pieces having dimensions smaller than the open top of said basket but larger than the apertures therein,

(c) immersing said article in said electrolyte,

(d) applying a direct voltage between said article and said basket which is positive at said basket but negative at said article to cause a current flow therebetween resulting in the formation of an insulating film on the surface of said basket rendering it inert with respect to said electrolyte, said current flowing into said pieces at their points of contact with the inner surface of said basket to effect dissolution of said pieces and concurrent plating of said article, and

(e) replenishing the pieces of anodic metal to maintain the height of the pile in said basket and to hold substantially constant the effective surface area of the anodic metal in the course of plating.

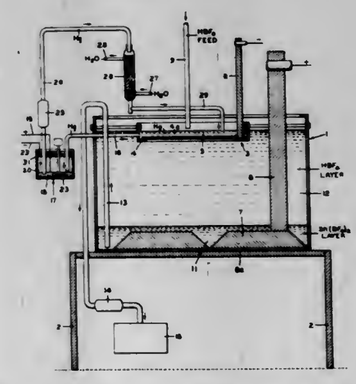
3. An anode for use in electrolytic plating baths comprising an elongated container having a hollow body, the wall of the body throughout substantially its height and circumference having a plurality of spaced apertures therethrough, a cup-shaped bottom closure at the base of said body, the body being open at its top adapted for projection thereinto of a series of anode elements, there being a series of apertures formed through said bottom closure, an upright bar extending axially along the outer wall of the body adjacent its upper open end and fixedly secured thereto, said bar extending above the body and reverse-curved thereover to form a hook adapted for hanging over the electrode rod of a plating tank, a U-shaped bail centrally aligned with and secured over said bottom closure and depending therefrom, said anode elements consisting of a plurality of balls of nickel of a diameter less than said container diameter arranged in a vertical stack in said body and resting on the bottom closure, said balls as they gradually dissolve and more progressively downwardly being retained by said bottom closure, and a sludge-collecting fabric bag loosely enclosing said body and bail and at its upper end tied adjacent the open end of said container.

4. In an anode for use in electrolytic baths for barrel plating, an elongated insoluble metallic container having a tubular body including a series of longitudinal angularly related body sections forming an arc, said body sections having longitudinally aligned imperforate rear walls extending transversely throughout less than one-half the section circumference and longitudinally aligned front walls having substantially throughout their height a plurality of apertures therethrough, a cup-shaped bottom closure of an insoluble metal secured over the end of the lowermost section, the uppermost section at its top being open and adapted for projection therethrough of a series of anode elements, there being a series of apertures formed through said bottom closure, an elongated backing bar of an insoluble metal arranged axially along said body sections centrally of their rear walls and fixedly secured thereto, said bar extending above the uppermost section and reverse-curved thereover forming a hook adapted for hanging over an electrode rod of a plating tank.

3,300,397
ELECTROLYTIC PRODUCTION OF METALLIC FLUOBORATES

Gotlibs Baltakmens, Wilmington, Del., and John P. Tourish, Swarthmore, Pa., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Mar. 14, 1963, Ser. No. 265,211
7 Claims. (Cl. 204—94)



4. A method for electrolytically producing a metallic fluoborate which comprises introducing fluoboric acid solution as electrolyte in an electrolytic cell provided

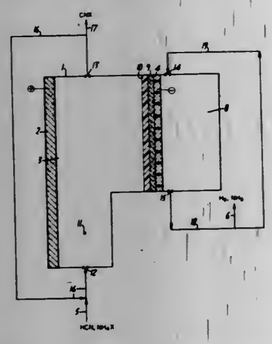
with an anode of the metal to be converted into its fluoborate near the bottom of the cell and a mercury cathode near the top of the cell, the mercury cathode being maintained in a container provided with a porous woven bottom composed of an inert material which has low resistance to the electrolytic reaction, passing an electric current through said cell, thereby forming metallic fluoborate, and withdrawing metallic fluoborate from the vicinity of the anode.

3,300,398

PROCESS FOR THE PRODUCTION OF CYANOGEN HALIDE AND APPARATUS FOR USE THEREWITH

James W. Sprague, Streetsboro, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 12, 1962, Ser. No. 230,131
12 Claims. (Cl. 204—101)



1. A process for the electrochemical production of cyanogen halide using a cell comprising an anode compartment, a cathode compartment, an anode positioned vertically at one side of the anode compartment, and a membrane positioned vertically and separating the two compartments, and positioned at the opposite side of the anode compartment, comprising subjecting an aqueous solution of hydrogen cyanide and ammonium halide to the action of a direct current in the anode compartment so that at the anode halogen is discharged and cyanogen halide formed, flowing heavy halogen-rich anolyte downwardly by gravity at the anode to the bottom of the cell, adding hydrogen cyanide to the halogen-rich anolyte and lowering its specific gravity, flowing the lighter hydrogen cyanide-enriched anolyte upwardly across the anode side of the membrane and thereby preventing halogen in the halogen-rich anolyte from reaching and attacking the membrane, and reacting the halogen therein with hydrogen cyanide to form cyanogen halide, removing cyanogen halide from the anolyte, and recycling the anolyte for further electrochemical reaction.

3,300,399

PURIFYING METAL POLYPHTHALOCYANINES

Bernard S. Wildi, Kirkwood, Mo., and Edward M. Hull, Mahopac, N.Y., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 25, 1963, Ser. No. 253,982
2 Claims. (Cl. 204—131)

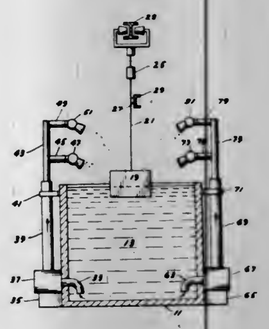
1. A method of removing excess metal which does not react readily with water from a metal polyphthalocyanine comprising electrolyzing said metal polyphthalocyanine as a positive electrode in an electrolysis system using an applied direct current voltage sufficient to cause the metal to plate out on the negative electrode.

3,300,400

ELECTROCOATING PROCESS WITH TERMINAL SHOWERING STEP

Gilbert L. Burnside, Leopold A. Madejczyk, and Gordon G. Strosberg, Oak Park, Mich., assignors to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,625
4 Claims. (Cl. 204—181)



1. In a method of coating which comprises transporting an electrically conductive object through an aqueous bath having organic film-forming material dispersed therein and a first charged electrode in contact therewith, imparting an electrical charge to said object so that said object serves while in contact with said bath as a second electrode and is of opposite polarity to said first electrode, and providing a flow of electrical energy between said first electrode and said second electrode and through said bath until a substantially water insoluble coating of said organic material is deposited upon said second electrode, the improvement which comprises showering said second electrode with said aqueous bath material as said second electrode emerges from said bath and maintaining said shower until said second electrode is out of contact with said bath.

3,300,401

PROCESS FOR DEWATERING ORGANIC SLUDGE WHICH HAS BEEN SEPARATED DURING TREATMENT OF WASTE WATER

Heinrich Sontheimer, Auf dem Seif 9, Falkenstein, Taunus, Germany, and Dieter Heinicke, Staufenstrasse 36, Frankfurt am Main, Germany

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,120
Claims priority, application Germany, Dec. 1, 1962, M 54,983
6 Claims. (Cl. 210—5)

1. A process for dewatering organic sludge which has been separated during treatment of waste water comprising:

mechanically separating a portion of the solids from the sludge in highly dewatered form, leaving a sludge-water mixture containing fine and colloidal solids,

passing said highly dewatered solids to disposal,

subjecting said sludge-water mixture to aerobic biological treatment for a period of time sufficient to oxidize a minimum of 15% of the solids,

thickening the aerobic biologically treated sludge-water mixture into a concentrated sludge-water fraction and a waste water largely freed of solids,

removing the waste water largely freed of solids from the system; and

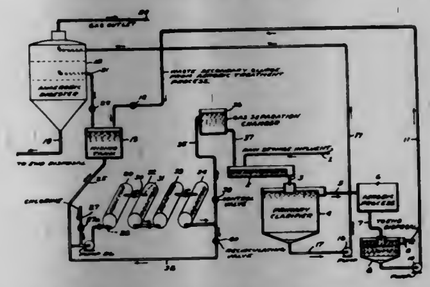
subjecting the concentrated sludge-water mixture to a further dewatering treatment.

3,300,402

PURIFICATION OF PUTRESCIBLE UNSTABLE WASTES

Edward R. Grich, Wayne, and John W. Hood, Ridgewood, N.J., assignors to Purifax, Inc., Montclair, N.J., a corporation of New Jersey

Filed Jan. 9, 1964, Ser. No. 336,716
13 Claims. (Cl. 210—6)



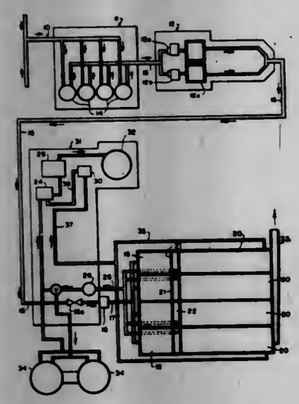
1. In a method of purifying waste material containing putrescible matter which comprises subjecting said material in a clarifying zone to conditions to cause flocculation, separating the flocculated components from the suspending liquid, treating the effluent therefrom in an aerobic treating zone wherein a sludge component is separated out from an effluent, removing the last effluent to waste, the improvement which comprises treating the separated sludge with a chemical oxidant whereby oxidization of the putrescible matter therein is effected as a result of unimpeded and rapid circulation of the sludge while maintaining all of the particles of said sludge in suspension and further maintaining said chemical oxidant in intimate contact with the said sludge being processed for a time sufficient to complete the chemical oxidation reaction, thereafter forming an effluent, said effluent having a pH value of from 2.5 to 6.5, and introducing said last effluent into the initial waste material in advance of said clarifying zone for expediting the flocculation therein.

3,300,403

SEWAGE TREATMENT

Albert J. Kehoe, 1708 Union Ave., McKeesport, Pa. 15132

Filed Oct. 20, 1964, Ser. No. 405,185
11 Claims. (Cl. 210—10)



4. In a sewage treatment process, the improvement in treating solids in the sewage which comprises,

(A) mixing raw sewage as received with powdered coal,

(B) separating the solids and liquids in the mixture of coal and sewage and removing the solids from the liquids,

(C) adding a flocculating agent to the separated solids, and

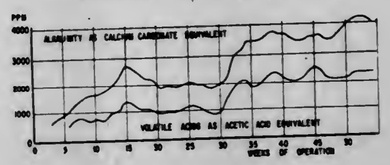
(D) filtering the solids after addition of the flocculating agent.

3,300,404

ANAEROBIC TREATMENT OF ORGANIC INDUSTRIAL WASTES IN AN ARTIFICIAL LAGOON

David O. Howe, Terre Haute, James E. Etzel, Dayton, and Archie P. Miller, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland

Filed Apr. 23, 1964, Ser. No. 362,097
5 Claims. (Cl. 210—11)



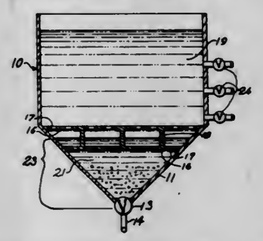
1. In a method for the biological treatment of organic industrial wastes to reduce the BOD by the action of anaerobic bacteria in an artificial lagoon having a flow path therethrough open to ambient conditions, said flow path having an area equal to about one acre for approximately each 500 pounds/day of organic loading, the improvement of inoculating said lagoon at ambient temperatures with anaerobic bacteria, feeding said industrial wastes to the inlet of said lagoon, said feed wastes at the inlet of said lagoon having a pH of about 6.5 to 7.5, substantially continuously flowing said industrial wastes through said flow path at ambient temperatures to anaerobically digest said organics and decrease the BOD thereof, and controlling the flow rate of said feed wastes to maintain the alkalinity and volatile acid relations of said lagoon expressed as calcium carbonate equivalents and acetic acid equivalents, respectively, within the range of: (alkalinity equivalents)—(0.833 volatile acid salts equivalent)=>zero, said ambient temperature being from about 25° C. to about 5° C., and thereafter removing the industrial wastes of reduced BOD from the lagoon.

3,300,405

PROCESS FOR RECLAIMING SOILED SOLVENT IN SITU

Lawrence W. Black, Irondale, Ala., assignor of twenty-four one-half percent to Joe Paradiso, and twenty-four one-half percent to Harry D. Hester, both of Birmingham, Ala.

Filed June 10, 1963, Ser. No. 286,628
6 Claims. (Cl. 210—21)



1. The process of reclaiming in situ in a cleaning container a soiled organic solvent having a specific gravity greater than water and having substantially low water

solubility and having an aqueous stratum above the same which comprises the steps of:

(a) adding to said aqueous stratum an amount of a solution of a compound selected from the group consisting of sodium hydroxide, potassium hydroxide and sodium chromate which is substantially insoluble in said solvent and will decrease soil solubility in said solvent and has a specific gravity greater than said aqueous stratum to increase the specific gravity of said aqueous stratum to a point that said aqeous stratum moves downwardly through said solvent to a position beneath said solvent whereby solvent dissolved soils are precipitated and moved with said aqueous stratum to a position beneath said solvent to the bottom of the container, and

(b) removing said aqueous stratum and said soils from the bottom of the container after they have moved to a position beneath said solvent and after a time interval of at least one and one-half hours has lapsed after introduction of said solution.

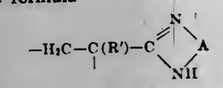
3,300,406

FLOCCULATION OF WATER-SOLUBLE ORGANIC MATERIALS

Francis X. Pollio, Philadelphia, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 18, 1964, Ser. No. 412,246
13 Claims. (Cl. 210—52)

1. A method of treating a water containing an anionic water-soluble material dissolved therein which comprises introducing into the water, from 0.01 p.p.m. to 60,000 p.p.m., based on the water, of a salt of a polymer, having a molecular weight from about 20,000 to 10,000,000 viscosity average and having an exclusively carbon-atom "backbone" chain, containing at least 40 mole percent of units of the formula



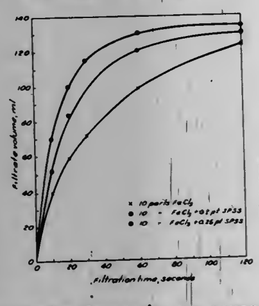
wherein A is a (C_2–C_3)-alkylene group having at least 2 carbon atoms extending in a chain between the adjoined N atoms, and R' is selected from the group consisting of H and CH_3, and then separating the sediment from the water.

3,300,407

PROCESS FOR DEWATERING AN AQUEOUS SUSPENSION OF ORGANIC WASTE SOLIDS

Charles P. Priesing and Stanley Mogelnicki, both of Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 6, 1965, Ser. No. 477,747
8 Claims. (Cl. 210—53)



1. In a process for dewatering an aqueous suspension of finely-divided organic waste solids by conditioning the aqueous suspension with chemical additives and thereafter filtering the conditioned suspension, the improvement in conditioning the aqueous suspension which consists essentially of:

(A) Intermixing with said aqueous suspension from about 0.01 to 5 parts per thousand parts waste solids of a water-soluble anionic poly(vinylaromatic sulfonate) having an average molecular weight as determined by viscosity measurements of at least 0.5 million, said polymer containing as the anionic moiety an average of at least 0.25 sulfonate groups per monomer unit; and

(B) Thereafter adding to said aqueous suspension 5 to 100 parts per thousand parts waste solids of a primary inorganic coagulant.

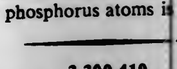
3,300,408

METHOD OF INHIBITING BACTERIA IN BRINE SYSTEMS

Daniel S. Dustin, White Bear Lake, and Jack W. Sigan, Minneapolis, Minn., assignors to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 440,020
5 Claims. (Cl. 210—64)

1. A method for treating brine containing bacteria, which comprises adding to said brine a compound of the formula:



where R is an aliphatic hydrocarbon having 8–22 carbon atoms derived from fatty acids, R' is furfuryl, R'' is selected from the group consisting of methyl and ethyl, and X is a halogen, the amount of said compound added to said brine being sufficient to inhibit the growth of said bacteria in said brine.

3,300,409

LUBRICANTS CONTAINING METAL SALTS OF MIXED PHOSPHOROTHIOIC AND PHOSPHINOTHIOIC ACIDS

Thomas A. Butler, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 3, 1964, Ser. No. 387,171
18 Claims. (Cl. 252—32.7)

1. A lubricant comprising a major proportion of a mineral lubricating oil and a minor proportion, sufficient to inhibit oxidation thereof, of a metal salt of a phosphorus acid mixture comprising (A) a dihydrocarbon phosphorothioic acid having at least 3 aliphatic carbon atoms in each hydrocarbon radical and (B) a diaryl phosphinothioic acid wherein the aryl group is selected from the class consisting of phenyl, halophenyl, and alkylphenyl having up to about 6 carbon atoms in the alkyl substituent; wherein the molar ratio of (A) to (B) is within the range of from about 1:2 to 1:0.05 and the ratio of aliphatic carbon atoms to phosphorus atoms is at least about 6.

3,300,410

CONDUCTIVE LIQUID DEVELOPER FOR XEROGRAPHIC IMAGES

Keith Meridith Oliphant, Westbourne Park, South Australia, Australia, assignor to Research Laboratories of Australia Limited, Adelaide, South Australia, Australia

Filed Feb. 23, 1962, Ser. No. 174,989
Claims priority, application Australia, Mar. 13, 1961, 2,370/61
3 Claims. (Cl. 252—62.1)

1. For developing electrostatic images, a developer consisting essentially of an electrically insulating carrier liquid having a volume resistivity in excess of 10^9 ohm cm. and a dielectric constant less than 3, film-forming resin particles suspended in said carrier liquid in the volumetric proportion of from about 0.1 to 1.5 parts of said resin to 100 parts of said carrier liquid, and an electrically conductive at least partial solvent for said resin and having a lower volume resistivity than said film-forming resin, wherein the volume resistivity of said partial solvent is below 10^9 ohm cm. and its dielectric constant is in excess of 3, said partial solvent being adsorbed onto the resin particles and being present in a quantity just sufficient to be fully adsorbed by said suspended resin particles but not sufficient to dissolve or disperse in said carrier liquid so as to lower substantially the volume resistivity thereof.

3,300,411

FLUXES FOR SINTERING LITHIUM FERRITES

Donald G. Wickham, Santa Monica, and Ho Bin Im, Los Angeles, Calif., assignors to Ampex Corporation, Culver City, Calif., a corporation of California

No Drawing. Filed Feb. 21, 1964, Ser. No. 346,399
5 Claims. (Cl. 252—62.5)

1. In the method of making lithium ferrites which includes the steps of milling compounds of iron and lithium capable of forming an oxide upon heating, mixing said compounds with binders and lubricants, pressing said mixed compounds into a desired shape, and heating said pressed compounds to a temperature sufficient to produce said lithium ferrites, the improvement comprising mixing with conventional lithium ferrite starting compounds, a flux selected from the class consisting of lithium vanadates and lithium orthovanadate hydrates.

3,300,412

PHOSPHORESCENT OPAL GLASSES

Leo A. Rogers, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,662
5 Claims. (Cl. 252—301.6)

1. A method of making a phosphorescent opal glass comprising:

firing a batch composition consisting essentially in weight percent on the oxide basis of:

	Percent
SiO_2	1–10
Al_2O_3	1–10
B_2O_3	5–25
P_2O_5	1–10
Divalent metal oxide wherein said metal is Zn or Sr	25–80
and	
Additionally S	5–25
Halogen	1–20

but not more than about 1% alkali metal oxide; said firing being at a temperature of 900–1400° C. for a time of about 0.5–2.0 hours to form in situ an activated phosphor of the sulfide of said metal in crystalline form that is homogenously dispersed in and opalizes said composition.

3,300,413

SURFACE ACTIVE COMPOSITIONS CONTAINING MIXTURES OF MONO- AND DI-ALKYLOXYMETHYL ETHERS OF SUGAR

Geoffrey R. Ames, Redhill, Surrey, England, assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Aug. 14, 1963, Ser. No. 302,218. Divided and this application July 12, 1965, Ser. No. 482,317
2 Claims. (Cl. 252—351)

1. A surface-active composition consisting essentially of about equal parts by weight of:

(I) a mono-(alkyloxymethyl) ether of a sugar and

(II) a di-(alkyloxymethyl) ether of a sugar, wherein, in each of said constitutents I and II, the sugar is a member of the group consisting of sucrose and glucose and the alkyl groups contain 6 to 12 carbon atoms.

3,300,414

PRODUCTION OF MIXTURES OF ZIRCONIUM OXIDE AND SILICIC ACID

Eugen Meyer-Simon and Artur Frey, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Nov. 7, 1962, Ser. No. 236,137
Claims priority, application Germany, Dec. 18, 1961, D 37,712
1 Claim. (Cl. 252—454)

A process for the production of a mixture of zirconium oxide and silicic acid from a sodium zirconium silicate which comprises heating a dry mixture of such sodium zirconium silicate with an amount of an ammonium salt selected from the group consisting of ammonium sulfate and ammonium chloride which is at least equivalent to the alkali metal content of the sodium zirconium silicate to a temperature between 650 and 950° C., and washing out the reaction product with water.

3,300,415

EPOXY DIOXANES AND CURED POLYMERS OBTAINED THEREFROM

Calvin F. Ward, Carmichael, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,442
13 Claims. (Cl. 260—2)

1. Epoxy-dioxanyl ethers of from 10 to 350 carbon atoms characterized by the presence of an oxirane group and a 1,4-dioxane ring in the molecule, each epoxy group and each dioxane group being linked to a different ether-oxygen atom via a carbon atom or chain of carbon atoms.

10. The polymer obtained by mixing the glycidyl 1,4-dioxan-2-ylmethyl ether of polypropylene glycol with an amine curing agent.

3,300,416

EXCHANGE RESINS FROM VINYLBENZYL SULFONIUM RESINS AND METHOD FOR MAKING SAME

Melvin J. Hatch, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 16, 1961, Ser. No. 89,647
20 Claims. (Cl. 260—2.1)

1. A method for making an exchange resin by reacting in substantially stoichiometric proportions at a reaction temperature of 50°–100° C. a vinylbenzylic sulfonium anion exchange resin with an ionizable nucleophilic reagent of the group consisting of those which have one or more exchanging moieties and those which have one or more ester, amide, nitrile or alkanol moieties which can be converted to exchanging moieties by hydrolysis or oxidation reactions, respectively, and is soluble to the extent of at least 5% by weight in a member of the group consisting of water and aliphatic liquid alcohols having from 1 to 10 carbon atoms in the molecule, said reagent being one having a property of reacting in stoichiometric proportions with benzyl chloride at 20° to 100° C. to displace at least 5 mole percent of chloride therefrom in 48 hours, which reagent comprises a group which reacts to establish a covalent bond with the benzylic carbon atom of the resin and to yield a sulfide by-product, to give a substituted vinylbenzylic resin of the group consisting of those which possess exchanging moieties and those which have one or more ester, amide, nitrile or

alkanol groups which can be converted to have exchanging moieties by hydrolysis or oxidation reactions.

3,300,417
POLYURETHANE PLASTICS
Wilbur R. McElroy, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed July 2, 1963, Ser. No. 292,452
12 Claims. (Cl. 260—2.3)

1. A method of liquefying a solid polyurethane plastic which comprises heating said polyurethane plastic in a hot liquid capable of dissolving solid polyurethane in the presence of a metal compound catalyst selected from the group consisting of a tin compound, copper acetyl acetonate, chromium acetyl acetonate, manganese acetyl acetonate, zinc acetyl acetonate, cobalt acetyl acetonate, titanium acetyl acetonate, iron acetyl acetonate, thorium acetyl, nickel acetyl acetonate, vanadium acetyl acetonate, zirconium acetyl acetonate, aluminum acetyl acetonate, bismuth stannate, zinc nitrate, lead acetate, cobalt oxide, chromium nitrate and lead octoate until said solid polyurethane plastic is at least partially liquefied.

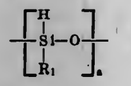
3,300,418
FOAMED MATERIALS FROM POLYEPOXY COMPOUNDS
Karl-Heinz Andres, Cologne-Flittard, Hans-Horst Steinbach, Leverkusen-Mathildenhof, and Klaus Damm, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Jan. 2, 1963, Ser. No. 248,865
Claims priority, application Germany, Jan. 13, 1962, F 35,773
4 Claims. (Cl. 260—2.5)

1. In a process for foaming and resinifying a glycidyl polyether of a polyhydric compound of the group consisting of a polyhydric alcohol and a phenol having at least two hydroxyl groups, said glycidyl polyether having an epoxy equivalency of greater than 1, using

(a) a boranate of metal selected from the group consisting of an alkali metal, an earth alkali-metal and zinc blowing agent and

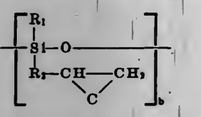
(b) a polyfunctional amine selected from the group consisting of primary and secondary polyfunctional amines as curing agent, the improvement which comprises foaming and curing the mixture of said glycidyl polyether, blowing agent and curing agent in the presence of 0.5 to 10% based on the weight of said glycidal polyether of an organopolysiloxane having

(a) chain members of the structure (I)

(I) 

and at the same time

(b) chain members of the structure (II)

(II) 

wherein in Formulae I and II R_1 represents a a member selected from the group consisting of a saturated aliphatic hydrocarbon radical having from 1 to 10 carbon atoms and a phenyl radical, wherein R_2 is a radical selected from the group consisting of

$$-CH(CH_3)-CH_2- \quad -CH_2-O-CH_2- \quad \text{and} \quad -(CH_2)_3-O-CH_2-$$

said organoploysiloxane containing as terminal group for the silicon side a member selected from the group consisting of $-OSi(CH_3)_3$ and —OH, and containing as terminal group for the oxygen side a member selected from the group consisting of $-Si(CH_3)_3$ and —H.

3,300,419
PHENOLIC RESIN CELLULAR MATERIALS AND METHOD FOR MAKING SAME
Paul N. Erickson, Birmingham, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware
No Drawing. Filed July 15, 1963, Ser. No. 295,244
12 Claims. (Cl. 260—2.5)

1. A composition for forming a self-sustaining, cellular product comprising a flowable composition including (1) an aqueous mass of the acid-curing thermosetting liquid product of partial reaction of ingredients including a phenol and an aldehyde, said mass containing at least about 55% by weight of solids, and (2) about 5% to about 35% by weight of said reaction product of ferric chloride·$6H_2O$.

3,300,420
FOAM RESINS PREPARED FROM AROMATIC ANHYDRIDES AND ISOCYANATES
Horst E. Frey, Berkeley, Calif., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Feb. 23, 1966, Ser. No. 536,517
16 Claims. (Cl. 260—2.5)

1. A process for producing a thermally stable and chemically inert resin capable of self-foaming which comprises reacting, in the liquid phase, at elevated temperature (1) an organic polyisocyanate, and (2) an aromatic anhydride having at least one additional substituent reactive with an isocyanato group selected from the group consisting of anhydride groups and groups containing Zerwitinoff hydrogens, in a ratio of isocyanato groups to moles of said anhydride of between about 2:3 to 6:1.

3,300,421
RESILIENT CELLULAR MATERIAL AND METHOD FOR MAKING SAME
Peter Merriman, Birmingham, Donald James Simcox, Sutton Coldfield, and John Leathem Matthew Newnham, Clifton, York, England, assignors to Dunlop Rubber Company Limited, London, England, a British company
No Drawing. Filed Dec. 21, 1962, Ser. No. 246,322
Claims priority, application Great Britain, Jan. 11, 1962, 1,016/62
6 Claims. (Cl. 260—2.5)

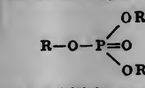
1. Resilient cellular material comprising a cellular mass of resilient organic polymer of the class consisting of natural rubber, synthetic rubber and resilient polyurethane and particles of rigid expanded material dispersed in said mass of resilient organic polymer and of dimensions in the range from 0.002 to 0.100 mm., in total amount from ¼% to 30% of the weight of the resilient organic polymer and with a bulk volume from 0.01% to 25% of the bulk volume of the resilient organic material said particles being hollow unicellular substantially spherical bodies.

3,300,422
PRODUCTION OF EXPANDED POLYAMIDES
Friedrich Bayerlein and Hans Wilhelm, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Sept. 12, 1963, Ser. No. 308,350
Claims priority, application Germany, Sept. 19, 1962, B 68,906
2 Claims. (Cl. 260—2.5)

1. In a process for production of expanded polyamides by the activated anionic polymerization of one or more lactams with 7–14 ring members at temperatures between the melting point of said lactam and 200° C. with an alkaline catalyst, a polymerization activator and a blowing agent decomposable or volatilizable at said temperatures with foaming of the polymerization mass by said blowing agent as the polymerization reaction proceeds, the improvement which comprises distributing in said lactam 0.05–5% by weight, with reference to said lactam, of calcium sulfate hemihydrate.

3,300,423
ANTIMONY OXIDE-VINYLIDENE CHLORIDE COPOLYMER EMULSIONS
Gerald H. Brown, Syracuse, N.Y., and Emil D. Mazzarella, Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y.
No Drawing. Filed Dec. 12, 1963, Ser. No. 330,010
4 Claims. (Cl. 260—17)

1. A stable aqueous emulsion of a vinylidene chloride copolymer and an antimony compound wherein the emulsifier system comprises a protective colloid, a non-ionic surfactant, and a dispersing agent selected from the group consisting of the phosphate salts of alkali and alkaline earth metals; wherein said vinylidene chloride copolymer consists of at least 60%, by weight, of vinylidene chloride; said antimony compound is selected from the group consisting of antimony trioxide, antimony trichloride, and antimony trisulfide; said non-ionic surfactant is selected from the group consisting of the alkyl esters of fatty acids, the alkyl amides of fatty acids, the sulfosuccinates, and organic phosphate esters having the structural formula



where R' is a water solubilizing group containing from 1 to 6 ethylene oxide groups and R is a medium alkyl group containing from 4 to 10 carbon atoms; wherein said protective colloid is a hydrocolloid; wherein said vinylidene chloride copolymer comprises from about 10 to about 60%, of the total weight of the emulsion; said antimony compound comprises from about 10 to about 40%, of the total weight of the emulsion; said non-ionic surfactant comprises from about 0.025 to about 1.0%, by weight of total emulsion solids; said hydrocolloid comprises from about 0.5 to about 10%, by weight of total emulsion solids; and said dispersing agent comprises from about 0.1 to about 1.0%, by weight of total emulsion solids.

3,300,424
PROCESS FOR THE PRODUCTION OF HARDENABLE PRODUCTS BY MULTIESTERIFICATION
Herbert Hoenel and Heinrich Lackner, Graz, Austria, assignors to Vianova Kunstharz Aktiengesellschaft, Vienna, Austria, a corporation of Austria
No Drawing. Filed Apr. 12, 1962, Ser. No. 187,133
Claims priority, application Austria, Apr. 12, 1961, A 2,930/61
11 Claims. (Cl. 260—21)

1. A process for producing a coating composition hardenable due to polyesterification in which process a mixture is prepared, which comprises both a simple physical mixture and a partially mutually esterified mixture which is still soluble, of (I) an additive compound prepared by substantially complete reaction of 1 part by weight of maleic anhydride with from about 3–6 parts by weight of an olefinic compound selected from the group consisting of (a) unsaturated oil fatty acids having isolated double bonds, (b) unsaturated oil fatty acids having up to two conjugated double bonds, (c) hydroxy-free polyol esters of (a) and (b), (d) natural and artificially prepared esters of (a), (b), and (c) modified with (1) saturated fatty acids, (2) glycerides of saturated fatty acids, (3) rosin or (4) polycarboxylic acids, and (II) a polyhydric compound having at least two primary hydroxy groups, the number of ester-forming groups in (I), comprising anhydride and carboxy groups, being substantially equal to the number of ester-forming groups in (II), and (III) a solvent being added.

3,300,425
HALOGEN-CONTAINING THERMOPLASTIC COMPOSITIONS FOR THE PRODUCTION OF CURED PRODUCTS SUITABLE FOR ARTIFICIAL LEATHERS, SHEETS, COATINGS AND IMPREGNATIONS
Rudolf Nagelschmidt, Hanau am Main, and Max Goecke, Bad Homburg vor der Hohe, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Apr. 6, 1964, Ser. No. 357,770
Claims priority, application Germany, Mar. 3, 1959, D 30,103, D 30,105
5 Claims. (Cl. 260—29.1)

1. A halogenated thermoplastic composition comprising

(A) a thermoplastic halogen-containing polymeric component composed of at least one thermoplastic halogen-containing polymer obtained from a halogenated organic monomer in which the halogen is selected from the group consisting of chlorine and fluorine,

(B) 0.01 to 8% by weight of at least one organic oligo isocyanate having 2–5 functional —N=CO groups and

(C) 0.01 to 15% by weight of at least one nitrogen containing organic compound selected from the group consisting of

(1) oligo Schiff's bases having 2–5 functional >C=N— groups,

(2) oligo methylols of oligo amines with an average of not more than one methylol group on any individual nitrogen atom having 2–5 functional $-CH_2OH$ groups and

(3) oligo methylols of oligo carboxylic acid amides with an average of not more than one methylol group on any individual nitrogen atom having 2–5 functional $-CH_2OH$ groups,

all percentages being with reference to the themoplastic halogen-containing polymeric component.

3,300,426
ADHESIVE COMPOSITION COMPRISING MIXTURE OF A PHENOL-FORMALDEHYDE RESIN AND A POLYBUTADIENE RUBBER LATEX
Eugene R. Hunsucker, Mogadore, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 5, 1963, Ser. No. 300,057
1 Claim. (Cl. 260—29.3)

An adhesive composition comprising a water-soluble heat-convertible resinous reaction product of formaldehyde and a phenol selected from the group consisting of phenol and resorcinol, the mol ratio of the phenol to formaldehyde ranging from 1:0.5 to 1:1.5, and a polybutadiene rubber latex, the polybutadiene rubber latex is of a cis-1,4 configuration in an amount of about 94%, the ratio of resinous reaction product to polybutadiene rubber latex being 1:10 to 2.5:10.

3,300,427
WATER-DILUTABLE RESOLE RESIN COMPOSITION CONTAINING A SULFO-ACID SALT SURFACTANT
Norman T. Hebert, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 8, 1962, Ser. No. 215,520
20 Claims. (Cl. 260—29.3)

1. A composition consisting essentially of an aqueous solution of a resole resin containing, as a stabilizer against

precipitation, a small but effective amount of an anionic surfactant which is a sulfo-acid salt, said solution containing not more than 25% by weight of resin solids, said solids being of such concentration and molecular weight that in the absence of said stabilizer they would precipitate from the solution.

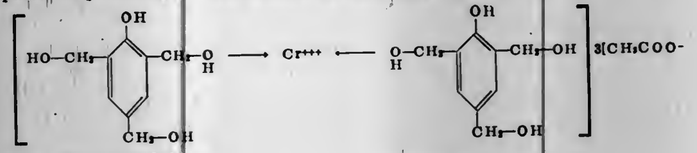
3,300,428

HAMMER FINISH FROM AQUEOUS COMPOSITION CONTAINING NON-LEAFING ALUMINUM PARTICLES

George Hans Schmidt, Norwalk, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation of application Ser. No. 788,787, Jan. 26, 1959. This application Nov. 4, 1964, Ser. No. 408,758
14 Claims. (Cl. 260—29.4)

1. A composition of matter capable of producing a



continuous film on a sub-strata with a hammer finish effect comprising an aqueous dispersion of a mixture of (1) 50% to 10% by weight of a water-soluble potentially thermosetting polymethyl ether of a polymethylol melamine, (2) 50% to 90% by weight of a water-soluble ammonium salt of a copolymer comprising (*a*) 5% to 50% by weight of an ethylenically unsaturated carboxylic acid and (*b*) 50% to 95% by weight of an alkyl ester of an alpha,beta-ethylenically unsaturated monocarboxylic acid, and (3) from about 1% to about 10% by weight based on the total weight of (1) and (2) of a non-leafing aluminum particle.

3,300,429

AQUEOUS POLYMERIC BLENDS CONTAINING UREIDO MONOMER

Frank J. Glavis and William J. Keighley, Philadelphia, and Thomas H. Haag, Feasterville, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 17, 1963, Ser. No. 288,527
7 Claims. (Cl. 260—29.6)

1. A composition adapted to form flexible, tough, adherent, coating and impregnant films comprising an aqueous dispersion of (1) a water-insoluble addition polymer selected from the group consisting of vinyl ester polymers, acrylic ester polymers, and vinylhydrocarbon polymers, and (2) a water-soluble ammonium salt of a copolymer, having relatively low molecular weight, of monoethylenically unsaturated molecules comprising 2 to 15% by weight of an α,β-ethylenically unsaturated carboxylic acid, and (3) 2.5 to 11% by weight, based on the total weight of components (1) and (2) of at least one surfactant selected from the group consisting of anionic and nonionic surfactants, at least one of components (1) and (2) comprising at least ¼%, based on the weight of the respective component, of polymerized monomer units containing a ureido group, the polymeric components (1) and (2) being compatible to form an adherent film on a substrate, component (1) being present in an amount of 15 to 65% by weight based on the total weight of components (1) and (2), and the relative amounts of components (1) and (2) being predetermined to provide from ¼ to 15% by weight, based on the total weight of (1) and (2), of polymerized monomer units containing the aforesaid ureido group.

3,300,430

CHROMIC ACETATE-2,4,6-TRIMETHYLPHENOL REACTION PRODUCT AS WATERPROOFING ADDITIVE FOR VINYL ACETATE POLYMERS

Walter B. Armour, Plainfield, N.J., and Richard A. Fass, Brooklyn, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 15, 1964, Ser. No. 367,896
8 Claims. (Cl. 260—29.6)

3. An adhesive composition capable of yielding adhesive bonds displaying improved water resistance, said composition comprising an aqueous emulsion of a vinyl acetate polymer having blended therewith, as a waterproofing additive, a reaction product of chromic acetate and 2,4,6-trimethylol phenol; the proportions of the latter reagents being in the range of from about 0.38 to 0.64 part by weight, of chrome acetate per 1.0 part by weight, of 2,4,6-trimethylol phenol with said reaction product corresponding to the formula:

3,300,431

NON-WOVEN FABRIC AND ADHESIVE COMPOSITION THEREFOR

Kenzo Ueno, Murazi Kamichika, Yukio Sato, and Takuji Kabata, Osaka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,271
Claims priority, application Japan, Apr. 20, 1963, 38/20,640
15 Claims. (Cl. 260—29.6)

1. Adhesive composition for preparing non-woven fabric, which comprises (a) an aqueous dispersion containing polymer consisting of 1–30% by weight of carboxylic acid having polymerizable double bond and 99–70% by weight of compound having polymerizable double bond, the content of free carboxyl groups being at least 0.3% by weight relative to the polymer, and (b) blocked polyfunctional isocyanate in approximately 1–50% by weight, the ratio of blocked polyfunctional isocyanate relative to polymer being approximately 0.01–2.5 by weight.

3,300,432

METHYLISOCYANATE POLYMER AND PROCESS THEREFOR

James A. Tarricone, Newark, Del., Clifton R. Neumoyer, Newport, Tenn., and William P. ter Horst, Rehoboth Beach, Del., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 5, 1964, Ser. No. 409,292
9 Claims. (Cl. 260—29.6)

1. A process for catalytically polymerizing methylisocyanate comprising treating methylisocyanate monomer with a catalytic amount of hexamethylenetetramine.

3,300,433

XANTHOGEN DISULFIDE AND AMINE PREPARATION OF POLYCHLOROPRENE

David Apotheker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,122
5 Claims. (Cl. 260—29.7)

1. A process for preparing a prevulcanized chloroprene polymer latex from which films of high tensile strength may be produced, said process being carried out by (1) polymerizing chloroprene in aqueous emulsion in the presence of about 0.05 to 2 parts, by weight, per 100 parts of monomer, of a dialkyl xanthogen disulfide, the alkyl group of said disulfide containing 1 to 8 carbon atoms, said polymerization being carried out to the maximum monomer conversion at which only sol polymer is obtained, followed by (2) adding to the resulting latex at least 0.005 mole, per 100 parts of said polymer, of a member selected from the group consisting of hydrazine, an aliphatic primary monoamine and an aliphatic primary polyamine, and then (3) subjecting the latex to a temperature within the range of about 10° C. to 100° C. until the sol polymer contained in the emulsion is converted to gel polymer, the treatment with said amine being carried out at a pH greater than 10 and in an inert atmosphere.

3,300,434

N-ACYL DERIVATIVES OF CYCLIC IMINES

Evald L. Skau, Robert R. Mod, and Frank C. Magne, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Nov. 8, 1963, Ser. No. 322,542, now Patent No. 3,219,614, dated Nov. 23, 1965. Divided and this application Sept. 7, 1965, Ser. No. 517,162
4 Claims. (Cl. 260—30.2)

1. A plastic composition comprising a major portion of a mixture of vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride and ethylenically unsaturated monomers copolymerizable therewith, the vinyl chloride being in predominant proportions by weight, and a plasticizer therefor, said plasticizer being ethyl 2,2-dimethyl-3-(4 - n - nonylpiperidino) carbonylcyclobutaneacetate.

2. A plastic composition comprising a major portion of a mixture of a vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride and ethylenically unsaturated monomers copolymerizable therewith, the vinyl chloride being in predominant proportions by weight, and a plasticizer therefor, said plasticizer being a mixture of from 15 to 30% by weight of the piperidide of linoleic acid with from 90 to 60% by weight of the piperidide of oleic acid.

3,300,435

PRINTING INK FOR VINYLIDENE CHLORIDE COPOLYMER PRODUCTS

Kazuo Ueda, Nakoso, and Shiro Kawamukai, Higami Gun, Japan, assignors to Kureha Chemical Industry Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,272
Claims priority, application Japan, Apr. 24, 1963, 38/21,457
5 Claims. (Cl. 260—30.4)

1. A printing ink for vinylidene chloride copolymer products capable of providing prints having high adherence to the polyvinylidene copolymer products, which consists essentially of 80 to 99.5% by weight of terpolymer obtained by polymerizing a monomer mixture comprising 50 to 80 parts by weight of vinyl chloride, 15 to 45 parts by weight of vinylidene chloride and another highly polarized monomer copolymerizable with said chloride monomers selected from the group consisting of maleic acid anhydride, acrylonitrile and vinylidene cyanamide in an amount effective to increase adherence of the prints to the polyvinylidene copolymer products which is less than 10%, and 20.0 to 0.5% by weight of plasticizer, admixed with a solution comprising at least one solvent selected from the group consisting of ketones aliphatic acid esters and aromatic compounds which have respectively a boiling point of 60 to 120° C. and are capable of dissolving the above-mentioned terpolymer, and a pigment.

3,300,436

CASTING COMPOSITION FOR LIGHT POLARIZING FILM

Alvin M. Marks and Mortimer M. Marks, both of 153—16 10th Ave., Whitestone, N.Y. 11357

No Drawing. Filed Dec. 11, 1962, Ser. No. 243,752
2 Claims. (Cl. 260—31.2)

1. A casting composition for prodncing light polarizing film consisting essentially of a linear high polymer vinyl resin having the property of crystallizing when oriented by stretch, and iodine a material having the property of imparting light-polarizing properties to oriented vinyl resins which comprises a total solution of 10,000 parts of the order of (a) 1400 parts temporary plasticizer (b) 920 parts vinyl resin (c) 200 parts iodine and 10 parts lithium iodide a crosslinking agent: the temporary plasticizer having a vapor pressure at 20° C. between about 0.1 mm. and about 10 mm. of mercury, said temporary plasticizer being present in amount from 60 to 120% by weight of the total solids in said solution; and (d) a volatile solvent having a vapor pressure of 20° C. in excess of 10 mm. of mercury, said volatile solvent comprising the balance of said solution.

3,300,437

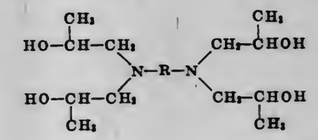
TREATED EXPANDABLE BEADS AND COMPOSITION THEREFOR

Thomas H. Ferrigno, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,821
4 Claims. (Cl. 260—32.6)

2. A free-flowing composition comprising a normally solid nonporous foamable styrene polymer in the form of beads which when expanded by heating are normally susceptible to agglomeration of particles one to each other, and uniformly coated on the surface of said beads as an agent to prevent said agglomeration, from ¼% to 2%, based on the weight of said beads, of an adherent coating consisting of

minus 44 micron particles of kaolin clay having an average particle size within the range of 0.5 to 5.0 microns, the surfaces of which are uniformly coated with from about 3% to 10%, based on the weight of said clay, of a totally hydroxypropylated alkylene diamine of the formula:



wherein: R is an alkylene radical containing from 2 to 6 carbon atoms.

3,300,438

POLYVINYL CHLORIDE PLASTICIZED WITH METHYL SUBSTITUTED BENZOPHENONE

Howard F. Reeves, Jr., Raymond W. Ingwalson, and Glendon D. Kyker, Chattanooga, Tenn., assignors, by mesne assignments, to Velsicol Chemical Corporation, a corporation of Tennessee

No Drawing. Filed June 27, 1963, Ser. No. 290,930
4 Claims. (Cl. 260—32.8)

1. A plasticized composition comprising polyvinyl chloride resin plasticized with methyl substituted benzophenone wherein the substitution is on a single benzene ring thereof, said substituted benzophenone containing from one to three methyl groups.

3,300,439
SOLVENT SOLUTION OF AN ALKYLOL ETHYLENICALLY UNSATURATED AMIDE COPOLYMER HAVING AT LEAST A PORTION OF SAID ALKYLOL GROUPS ETHERIFIED WITH A MIXTURE OF A MONOHYDRIC ALCOHOL AND A POLYHYDRIC ALCOHOL

Le Roy A. Chloupek, Prospect Heights, and Kazys Sekmakas, Chicago, Ill., assignors to De Soto Chemical Coatings, Inc. Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 1, 1963, Ser. No. 277,095
5 Claims. (Cl. 260—33.4)

1. An organic solvent solution comprising an organic solvent including aromatic hydrocarbon solvent, saturated aliphatic monohydric alcohol, and saturated aliphatic polyhydric alcohol having dissolved therein a heat-hardening, non-gelled interpolymer comprising:

(A) 2–50% by weight based on the weight of the interpolymer, of an amide of ethylenically unsaturated carboxylic acid; and

(B) other ethylenically unsaturated material copolymerizable with said amide;

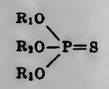
said interpolymer having at least some amido-hydrogen atoms replaced with alkylol groups and at least some of said alkylol groups being etherified with a mixture of saturated aliphatic monohydric alcohol and saturated aliphatic polyhydric alcohol forming part of said organic solvent.

3,300,440
POLYESTER RESINS STABILIZED WITH THIOPHOSPHATE ESTERS

Dusan C. Prevorsek, Princeton, N.J., assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,865
7 Claims. (Cl. 260—45.7)

1. A process for improving the stability of highly polymeric condensation polyesters derived from a dicarboxylic acid and a glycol which comprises incorporating in the polyester resin from 0.01 to 0.5 percent by weight based on the condensation polyester of a thiophosphate compound which has the formula



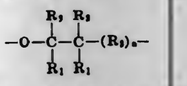
in which R_1 is selected from the group consisting of alkyl, halo substituted alkyl, cycloalkyl, halo substituted cycloalkyl, aralkyl, halo substituted aralkyl, aryl, halo substituted aryl, alkaryl and halo substituted alkaryl, and R_2 and R_3 are selected from the group consisting of hydrogen, alkyl, halo substituted alkyl, cycloalkyl, halo substituted cycloalkyl, aralkyl, halo substituted aralkyl, aryl, halo substituted aryl, alkaryl and halo substituted alkaryl radicals.

3,300,441
POLYACETALS STABILIZED WITH PHENOXYPROPIONITRILES

Heinz Schmidt, Günther Roos, and Otto Mauz, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 26, 1963, Ser. No. 290,625
Claims priority, application Germany, June 27, 1962, F 37,167
18 Claims. (Cl. 260—45.8)

1. A copolymeric polyacetal stabilized with at least one substituted phenoxypropionitrile selected from the group consisting of mono-phenoxypropionitriles and bis-phenoxypropionitrile alkanes having at least one aliphatic hydrocarbon radical having 1 to 7 carbon atoms, a phenylethyl radical, or an isobornyl radical as a substituent thereon, said copolymeric polyacetal having structural units consisting essentially of —O—CH_2— groups and



groups, wherein each R_1 and R_2 is hydrogen, lower alkyl, or halogen-substituted lower alkly, R_3 is methylene, oxymethylene, lower alkyl-substituted methylene, haloalkyl-substituted methylene, lower alkyl-substituted oxymethylene, or haloalkyl-substituted oxymethylene, and n is an integer from zero to three.

7. A stabilized copolymeric polyacetal as in claim 1 which additionally contains a costabilizer selected from the group consisting of dicyandiamide, biguanide, formamide, and melamine.

3,300,442
METAL PHOSPHITE AND BENZOPHENONE STABILIZED RESIN COMPOSITION

Joseph R. Darby, Webster Groves, and Paul R. Graham, Richmond Heights, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 17, 1963, Ser. No. 252,044
5 Claims. (Cl. 260—45.75)

1. A light stabilized polymer composition comprising polyvinyl chloride, from 0.01 to 10 parts by weight per 100 parts by weight of said polymer of 2-hydroxy-4-methoxybenzophenone and from 0.1 to 10 parts by weight per 100 parts by weight of said polymer of a basic metal phosphite in which the metal is selected from the group consisting of lead and cadmium.

3,300,443
POLYAMIDES STABILIZED WITH MANGANOUS SILICATE AND PROCESS FOR PRODUCING SAME

Luigi Ciceri, Como, and Pierluigi Perazzoni, Palazzolo Milanese, Italy, assignors to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy

No Drawing. Filed June 14, 1963, Ser. No. 287,767
Claims priority, application Italy, June 20, 1962, 12,428/62
10 Claims. (Cl. 260—45.75)

1. A light-stabilized, substantially color-free, substantially light-fast yarn comprising a fiber-forming polyamide and containing from .005 to .05 percent by weight of manganous silicate, calculated as metallic manganese, evenly incorporated therein and consisting of crushed particles of diameter less than 10 microns.

3,300,444
POLYMERIC POLYCARBOXYLIC ACIDS

Sylvan O. Greenlee, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.

No Drawing. Filed Oct. 3, 1955, Ser. No. 538,245
14 Claims. (Cl. 260—47)

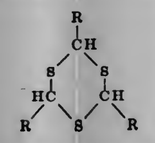
1. A resinous polycarboxylic acid ether having aliphatic chains alternating with and connected by ether oxygen to residues of a pentanoic acid obtained by the removal of the phenolic hydroxyl, said pentanoic acid consisting essentially of 4,4-bis(4-hydroxyaryl)-pentanoic acid wherein the hydroxyaryl radical is hydroxyphenyl and is free from substituents other than alkyl groups of from 1–5 carbon atoms, said aliphatic chains being selected from the group consisting of hydrocarbon, oxyhydrocarbon, β-hydroxyl substituted hydrocarbon, and β-hydroxyl substituted oxahydrocarbon radicals of 2–10 carbon atoms, said β-position being relative to said ether oxygen.

3,300,445
COPOLYMERS OF FORMALDEHYDE AND s-TRITHIANES

Henri Sidi, Paramus, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed July 9, 1963, Ser. No. 293,844
2 Claims. (Cl. 260—67)

1. A normally solid, high molecular weight copolymer of formaldehyde and an s-trithiane comprising the acylated polymerization product formed by (a) contacting substantially anhydrous monomer formaldehyde and from about 0.1 to about 50 percent by weight, based on the weight of the formaldehyde which undergoes reaction, of an s-trithiane having the structural formula



in which each R represents a monovalent radical selected from the group consisting of hydrogen, alkyl groups containing from 1 to 4 carbon atoms, phenyl, alkylphenyl, alkoxyphenyl, aminophenyl, nitrophenyl, halophenyl, and hydroxyphenyl groups, with a polymerization initiator in the presence of an alkylene dicarboxylate at a temperature in the range from about 0° C. to about 80° C. under substantially anhydrous conditions, and (b) heating the polymerization product until all of its terminal groups are substantially completely acylated.

3,300,446
AMPHOTERIC RESINS PREPARED BY CONDENSING ALKALI METAL SALTS OF SULFOMETHYL DICYANDIAMIDE WITH FORMALDEHYDE

Lucien Sellet, Saddle River, N.J., assignor to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Original application Oct. 5, 1960, Ser. No. 60,576, now Patent No. 3,223,751, dated Dec. 14, 1965. Divided and this application Feb. 23, 1965, Ser. No. 434,638
1 Claim. (Cl. 260—69)

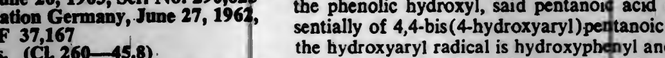
Amphoteric aminoplast resins consisting essentially of condensates of alkali metal salts of sulfomethyl dicyandiamide and from one to three mols of formaldehyde.

3,300,447
PROCESS FOR REDUCING THE ACID NUMBER OF POLYESTERS

Wilhelm Thoma, Cologne-Flittard, and Heinrich Rinke, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 17, 1962, Ser. No. 188,272
Claims priority, application Germany, Apr. 25, 1961, F 33,748
5 Claims. (Cl. 260—75)

1. The method of reducing the acidity of polyesters having an acid number greater than about 1 and less than about 5 to an acid number below about 1 which comprises heating said polyester to a temperature within the range of from about 20° C. to about 150° C. with sufficient of a compound having the formula



wherein R is a lower alkyl radical, R′ is selected from the group consisting of alkylene, arylene, aralkylene and alkylene and arylene radicals interrupted by ether atoms selected from the group consisting of oxygen and sulfur and n is an integer of 1 to 3 to reduce the acidity of said polyester to an acid number below about 1.

3,300,448
POLYAMIDE OF ENHANCED DYEABILITY CONTAINING PHENYL PHOSPHONIC ACID AND N-AMINO ETHYL PIPERAZINE

Roger A. Gauthier, Jr., Pensacola, and Rupert J. Snooks, Jr., Gulf Breeze, Fla., assignors to Monsanto Company, a corporation of Delaware

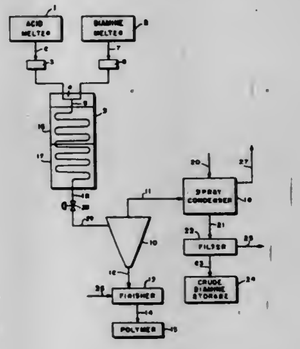
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,321
4 Claims. (Cl. 260—78)

1. A polyhexamethylene adipamide filament made more deeply dyeable by having incorporated therein on a weight basis about 0.2–1.0 percent phenylphosphinic acid and about 0.2–1.0 percent N-(2-aminoethyl) piperazine.

3,300,449
PROCESS FOR PRODUCTION OF POLYCARBONAMIDES

Edmond P. Brignac, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation of application Ser. No. 228,496, Oct. 4, 1962. This application Oct. 19, 1964, Ser. No. 406,216
1 Claim. (Cl. 260—78)



A continuous substantially solventless process for the manufacture of linear polycarbonamides characterized by high molecular weight from hexamethylenediamine and adipic acid which comprises the steps of:

(a) melting separating substantially pure adipic acid at a temperature of 160° C. to 180° C. and substantially atmospheric pressure;

(b) melting separately refined hexamethylenediamine at a temperature of 20° C. to 50° C. and substantially atmospheric pressure;

(c) combining continuously at a temperature of 250° C. to 400° C. and a pressure of 1000 p.s.i. to 2500 p.s.i substantially equal quantities of melted said adipic acid and melted said hexamethylenediamine under the rheological condition of turbulence defined by a Reynolds number of at least 5000;

(d) permitting combined said melted adipic acid and said melted hexamethylenediamine to movingly reside in a preheating and reaction zone at a temperature of 250° C. to 400° C. and a pressure of 1000 pounds per square inch to 2500 pounds per square inch for a period of 10 minutes to 120 minutes;

(e) continuously subjecting material exiting the preheating and reaction zones to a pressure reduction zone operated at a pressure of atmospheric to 25 pounds per square inch, and thereafter;

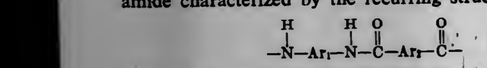
(f) continuously polymerizing in a finisher the liquid material exiting the pressure reduction zone at a temperature of 260° C. to 300° C. and substantially atmospheric pressure for a period of ten minutes to three hours.

3,300,450
STABILIZED AROMATIC POLYAMIDE FILAMENTS

William R. Clay, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 149,518, Nov. 2, 1961. This application Apr. 12, 1966, Ser. No. 541,977
4 Claims. (Cl. 260—78)

3. Filamentary products of a wholly aromatic polyamide characterized by the recurring structural unit,



wherein Ar_1 and Ar_2 are divalent aromatic carbocyclic rings in which the chain extending bonds, connecting Ar_1 and Ar_2 to nitrogen atoms and carboxy groups, respectively, are attached to non-adjacent carbon atoms in the said aromatic rings, said polymer having an inherent viscosity of at least 0.6 in concentrated sulfuric acid at 30° C. at a concentration of 0.5% by weight, said filamentary wholly aromatic carbocyclic polyamide containing a member selected from the group consisting of residual chloride salt and residual bromide salt from the preparation of the said polyamide in an amount of from a trace to no more than 0.0028 gm.-atom of the halogen per 100 grams of the polyamide.

3,300,451
CHLORINATED PIVALOLACTONES AND POLYMERS THEREOF

Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 7, 1964, Ser. No. 336,129
21 Claims. (Cl. 260—78.3)

1. Chlorinated pivalolactone containing from one to three chlorine atoms and containing a radical selected from the group consisting of $—CH_3$ and $—CHCl_2$.

7. The process for preparing the composition of claim 1 comprising contacting pivalolactone with chlorine at from about 0 to about 80° C. in the presence of a chlorination promoter wherein the pivalolactone is solubilized with a solvent substantially inert to chlorine, and wherein sufficient water is present to reduce the concentration of HCl in the chloropivalolactone phase and hence the tendency of the chloropivalolactone to hydrolyze, and wherein $CaCO_3$ is dispersed in the reaction medium to neutralize HCl formed.

3,300,452
THERMOSETTING ETHYLENE COPOLYMERS

George E. Waples, Jr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No 321,684
7 Claims. (Cl. 260—86.7)

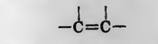
1. A thermosettable copolymer of free-radical polymerized monomers consisting essentially of from about 65 percent to about 99 percent by weight of ethylene and from about 1 percent to about 35 percent by weight of a β-hydroxyalkyl ester selected from the group consisting of β-hydroxyethyl acrylate and β-hydroxyethyl methacrylate.

3,300,453
INTERPOLYMERS COMPRISING ACRYLONITRILE AND CYANOALLYLOXYBENZENESULFONIC ACID OR ITS SALTS

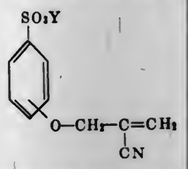
James C. Masson, Chapel Hill, N.C., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 30, 1964, Ser. No. 386,374
4 Claims. (Cl. 260—79.3)

1. A random interpolymer comprising at least about 80 percent by weight of acrylonitrile and up to about 20 percent by weight of a different copolymerizable monomer containing the aliphatic radical



and having from about 0.25 percent to about 10 percent by weight of the monomer having the formula



wherein Y is a cation selected from the group consisting of H and an alkali metal incorporated in the polymer chain.

3,300,454
CATALYTIC OXIDE PROCESS

Stephen W. Osborn, Yardley, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,722
20 Claims. (Cl. 260—79.7)

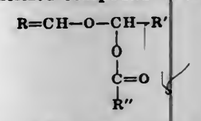
1. A process comprising polymerizing at least one vicinal episulfide monomer under substantially non-alkaline conditions by contacting the monomer with, as a catalyst, at least one metal oxide in which the metal has a valence not greater than four and which metal is selected from those which fall within Groups I–A, II–A and III–A of period 3; Groups I–A, II–A and VIII of period 4; Groups II–A, IV–A and V–A of period 5 and Groups II–A, IV–A and V–A of period 6 of the periodic table of the elements.

3,300,455
POLYMERS OF VINYL CHLORIDE AND CERTAIN POLYMERIZABLE ALIPHATIC ETHERS CONTAINING ESTER GROUPS

Jay A. Gervasi, Raleigh, N.C., and Lucian W. McTeer, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 1, 1962, Ser. No. 213,853
6 Claims. (Cl. 260—87.1)

1. The solid polymer consisting essentially of from about 70 to about 90 percent by weight of polymerized vinyl chloride and from about 1 to about 30 percent by weight of a polymerized compound of the formula:



wherein R is selected from the group consisting of the alkylidene and alkoxyalkylidene radicals containing from 1 to 8 carbon atoms, and R' and R'' are selected from the group consisting of the alkyl and alkoxyalkyl radicals containing from 1 to 8 carbon atoms.

3,300,456
POLYMERIC ACETYLENES AND PROCESS FOR PRODUCING THE SAME

Allan S. Hay, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Nov. 21, 1962, Ser. No. 239,315
16 Claims. (Cl. 260—88.2)

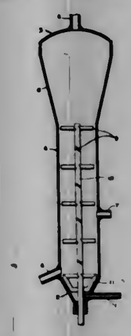
1. The process of oxidatively coupling acetylenic compounds which comprises reacting oxygen with a compound having at least two HC≡C— groups, using as the oxygen-carrying intermediate, a solution of an amine-basic cupric salt complex in which said acetylenic compound is soluble.

3,300,457
PROCESS AND APPARATUS FOR THE POLYMERIZATION OF MONOOLEFINES

Karl Schmid, Ludwigshafen (Rhine), Joachim Stedefeder, Frankenthal, Pfalz, Guenther John, Ludwigshafen (Rhine), Manfred Haeberle, Mannheim, Hans Lautenschlager, Ludwigshafen (Rhine), and Hans Georg Trieschmann, Hambach, Weinstrasse, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed May 9, 1963, Ser. No. 279,222
Claims priority, application Germany, May 11, 1962, B 67,195
2 Claims. (Cl. 260—88.2)

1. In a process for the production of poly-α-monoolefins by polymerization of α-monoolefins containing from 2 to 6 carbon atoms in a reactor at a temperature of from 20 to 170° C. and a pressure of from atmospheric to 100 atmospheres wherein a catalyst selected from the group consisting of chromium oxides and mixtures of (a) alkylaluminum compounds and alkylberyllium compounds containing from 1 to 10 carbon atoms and (b) compounds of metals of Groups IV–B to VII–B and VIII of the periodic chart of the elements is used and a fluidized bed is formed by the catalyst and the poly-α-monoolefins and the flow velocity of the α-monoolefins is from 5 to 15 cm./sec., the improvement which comprises using a



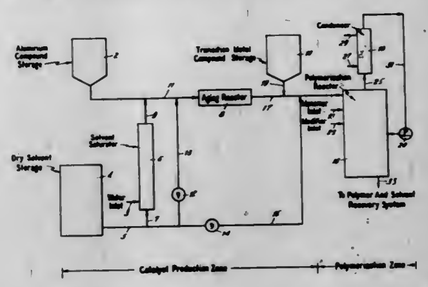
fluidized bed having a ratio of diameter to height of from 1:1 to 1:8 and agitating said fluidized bed by means of an agitator which has attached to its shaft a plurality of agitating members arranged at a vertical distance from each other and which rotates at a speed of from 20 to 250 r.p.m., said members covering substantially all of a given section within said reactor, whereby the formed polymer particles and the particles of catalyst are moved in the direction of flow of the monoolefins.

3,300,458
CONTINUOUS PROCESSES FOR THE PRODUCTION OF ETHYLENE POLYMERS AND CATALYSTS SUITABLE THEREFOR

Robert M. Manyik, St. Albans, and Wellington E. Walker and Thomas P. Wilson, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed Aug. 19, 1963, Ser. No. 302,951
34 Claims. (Cl. 260—88.2)

11. A continuous process for the production of solid ethylene polymer which comprises continuously preparing a catalyst complex by (1) introducing a first stream of a liquid, dry, inert, hydrocarbon solvent to a first reaction zone containing water wherein said first stream becomes wetted with water, (2) introducing said water-containing first stream and a second stream of a solution of a hydrocarbylaluminum compound in a liquid, dry, inert, hydrocarbon solvent to a second reaction zone wherein the hydrocarbylaluminum compound and water react and produce a hydrocarbon solvent solution of poly(hydrocarbylaluminum oxide, (3) aging said solution and adding thereto a transition metal compound whereby the preparation of said catalyst complex is complete, and (4) contacting said catalyst complex with an ethylene feed charge in a third reaction zone, therein catalytically

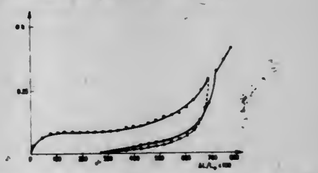


polymerizing a portion of said ethylene to dimers and trimers thereof and simultaneously catalytically copolymerizing said produced dimers and trimers and said ethylene and producing said solid ethylene polymer.

3,300,459
ELASTOMERIC COPOLYMERS OF ETHYLENE AND PROPYLENE

Giulio Natta, Giorgio Mazzanti, and Giorgio Boschi, all of Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

Filed Aug. 11, 1966, Ser. No. 575,484
Claims priority, application Italy, Dec. 23, 1955, 18,119/55
2 Claims. (Cl. 260—88.2)



1. Amorphous, elastomeric, linear copolymers of ethylene and propylene containing from 20% to about 70% by weight of ethylene in the macromolecule, characterized in that the infra-red spectra thereof show, in the 13 to 14 micron region, absorptions at 13.6 microns and at 13.85 microns, and show, in the 10 to 11 micron region, absorptions at 10.67 microns and at 10.3 microns, and further characterized in being substantially free of homopolymers, and in having a molecular weight above 20,000, as determined by viscosity measurements in tetralin at 135° C. and calculated by the formula

$$[\eta]=1.18\times10^{-3}\times M^{0.65}$$

in which $[\eta]$ represents intrinsic viscosity and M represents molecular weight.

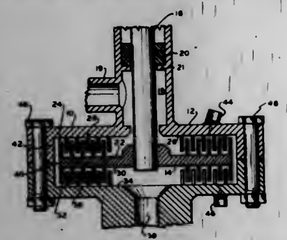
3,300,460
PROCESS FOR MIXING POLYVINYL ACETATE WITH SAPONIFICATION CATALYST

Alphonse J. Vacca, Somerset, N.J., assignor, by mesne assignments, to Cumberland Chemical Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 24, 1962, Ser. No. 232,708
5 Claims. (Cl. 260—89.1)

1. A process for mixing polyvinyl acetate with an alkaline saponification catalyst under a high rate of shearing stress which comprises continuously introducing a stream of polyvinyl acetate in a lower alkanol solvent in a concentration of 5–30% by weight into a mixing zone, directing said stream against a rotating surface having a plurality of projections thereon in said mixing zone, pass-

ing said stream radially outwardly between said rotating surface and a stationary surface having a plurality of projections thereon and thence radially inwardly between a second rotating surface and a second stationary surface, both having projections thereon, introducing a solution of said saponification catalyst into said mixing zone, agitating the resultant mixture of polyvinyl acetate and



saponification catalyst for 3 to about 60 seconds by moving said rotating surface relatively to said stationary surface generally at a rate of about 1000 to 2000 r.p.m. such that the temperature rise in said mixture in said mixing zone is 15° F. to 40° F., and withdrawing the sheared mixture resulting from said treatment of polyvinyl acetate, saponification catalyst, and lower alkanol solvent from said mixing zone.

3,300,461

ORGANIC PHOSPHIDE CATALYSTS IN ALPHA-OLEFIN POLYMERIZATION PROCESSES

Salvador Olivé and Gisela Olivé-Henrici, Zurich, Switzerland, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 10, 1962, Ser. No. 193,862
Claims priority, application Switzerland, May 12, 1961, 5,616/61
7 Claims. (Cl. 260—89.5)

1. In a polymerization process wherein a monomer selected from the class consisting of α-olefinic compounds and ketones having not more than 35 carbon atoms and olefin oxides, lactones and aldehydes having not more than 18 carbon atoms is contacted at polymerizing temperatures with a polymerization catalyst to provide a polymeric product, the improved catalyst for the polymerization reaction which is a phosphide selected from the class consisting of compounds of the formulas

$$R_nPM_{3-n} \text{ and } M_{2-a}(R_a)P{-}R'{-}P(R_a)M_{2-a}$$

wherein R and R' are hydrocarbon radicals free of non-benzenoid unsaturation, R has not more than 18 carbon atoms, R' has not more than 8 carbon atoms, M is selected from the class consisting of sodium, potassium and lithium, n is an integer of 1 to 2, and a is an integer from 0 to 1.

3,300,462

PROCESS FOR THE DEPOLYMERIZATION OF STYRENE POLYMERS

Giuseppe Guzzetta, Milan, Franco Sabbioni, Castellanza, Varese, and Giovanni B. Gechele, Mestre, Venezia, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Original application Jan. 29, 1958, Ser. No. 736,423, now Patent No. 3,143,536, dated Aug. 4, 1964. Divided and this application Sept. 27, 1963, Ser. No. 312,016
11 Claims. (Cl. 260—93.5)

1. A process for depolymerizing isotactic polystyrene having a molecular weight in excess of 1,000,000 in a regular, non-random manner to obtain polystyrene having a desired molecular weight ranging from about 50,000 to 1,000,000 while substantially inhibiting the formation of branches and cross-linked chains, said process consisting essentially of mixing the polystyrene with approximately 0.1 to 5.0% by weight of at least one organic compound selected from the group consisting of:

2,2,4-trimethyl-1,2-dihydroquinoline,
6-ethoxy-2,2,4-trimethyl-1,2-dihydroquinoline,
2,2'-methylene-bis(4-methyl-6-tert. butyl phenol),
hydroquinone-monobenzyl ether,
2,5-di-tert. butylhydroquinone,
N,N'-diphenyl ethylene diamine,
p,p'-methylene dianiline, and
p-(p-tolylsulfonyl amide) diphenylamine

and effecting the depolymerization by maintaining the mixture, in a substantially dry condition, at a temperature ranging from about 200° C. to approximately 250° C. until the desired depolymerization is obtained.

3,300,463

POLYMERIZATION CATALYSTS AND PROCESS

Harold E. De La Mare, El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 13, 1962, Ser. No. 244,266
8 Claims. (Cl. 260—93.7)

2. A catalytic composition comprising a Group VI–B metal compound having the general configuration

$$M(O\overset{O}{\overset{\|}{C}}{-}R_1)_x(OR_2)_y$$

wherein M is a Group VI–B transition metal having a valence of 4–6; x and y are integers, the sum of which is equal to the valence of M, each of said integers being at least 1 and R_1 and R_2 are independently selected hydrocarbyl radicals and an organo metal compound of the group consisting of lithium alkyls, lithium aluminum alkyls, and alkyl aluminum halides having the general configuration

$$R_{x_1}AlX_{y_1}$$

wherein R is an alkyl radical, X is a halogen and the sum of the integers x_1 and y_1 is equal to the valence of aluminum.

4. A method for polymerizing an aliphatic hydrocarbon having 1–2 olefinic linkages and 2–8 carbon atoms per molecule of the group consisting of alpha olefins and conjugated dienes which comprises contacting the olefin with a catalytic composition according to claim 2 in an inert atmosphere at 0–75° C.

3,300,464

REMOVAL OF CATALYST RESIDUES FROM POLYMERS

Richard E. Dietz, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 30, 1963, Ser. No. 305,869
17 Claims. (Cl. 260—93.7)

5. In a process for the removal of catalyst residues from polymers wherein a mono-1-olefin is contacted with a catalyst comprising an organometal compound and a metal halide under polymerization conditions so as to form solid polymer in particle form and wherein an effluent containing solid polymer, catalyst residues, and olefin is recovered from said polymerization; the improvement which comprises introducing said effluent into a contact zone; mixing said effluent in said contact zone with a treating agent comprising an alkylene halohydrin selected from the group consisting of 1-chloro-2-ethanol, 1-chloro-2-propanol, 2-chloro-1-propanol, 1-chloro-3-propanol, 1-bromo-2-propanol, 2-bromo-1-propanol, 1-bromo-3-propanol, 1-fluoro-2-propanol, 2-fluoro-1-propanol, 1-fluoro-3-propanol, 1-chloro-2-butanol, 2-chloro-1-butanol, 1-chloro-3-butanol, 1,3-dichloro-2,4-dihydroxybutane, 1-chloro-2-pentanol, 2-chloro-1-pentanol, 1-chloro-3-pentanol, 1,3-dichloro-2,4-dihydroxypentane, 1-chloro-2-hexanol, 2-chloro-1-hexanol, 1-chloro-3-hexanol, 1,3,5-tribromo-2,4,6-trihydroxyhexane, 2-fluoro-3-heptanol, 3-bromo-5-heptanol, 1,3,5-trichloro-2,4,6-trihydroxyheptane, 1-chloro-4-octanol, 1,3-dichloro-5,6-dihydroxyoctane, 1,3,5,7-tetrachloro-2,4,6,8-tetrahydroxyoctane, 2,3-dichloro-2-hydroxymethyl-4-hydroxybutane, 1,3-dichloro-2,4-dihydroxy-2-ethylpentane, 2-chloro-2-cyclohexylethanol, 3-chlorocyclohexanol, 1,3-dihydroxy-2,4-dibromo-5-ethylcyclopentane, 3-chlorophenol, 1,3,5-trifluoro-2,4,6-trihydroxybenzene, and 2,3-dimethyl-4-chlorophenol; and an alkylene oxide having from two to eight carbon atoms under conditions such that said olefin remains in liquid phase; recovering the thus treated effluent; washing said treated effluent by contacting same in countercurrent flow with a hydrocarbon having from 3 to 7 carbon atoms under conditions such that said hydrocarbon and said olefin remain in liquid phase; and thereafter recovering a solid polymer substantially free of catalyst residues.

3,300,465

POLYMERIZATION CATALYST CONTAINING AN ORGANOSILAZANE

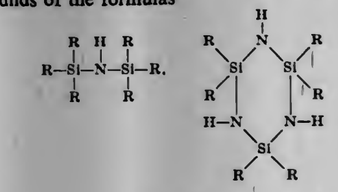
John W. Bayer, Perrysburg, and Edgardo Santiago, Toledo, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,360
29 Claims. (Cl. 260—93.7)

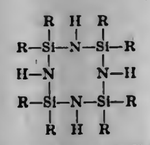
20. A method of polymerization which comprises contacting an organic monomer containing an ethylenic linkage with a catalyst which consists essentially of:

(A) a compound of the formula TiX_n, where X represents a halogen atom with atomic number greater than 16, and n is 2, 3, or 4; and

(B) a compound selected from the group of compounds of the formulas



and

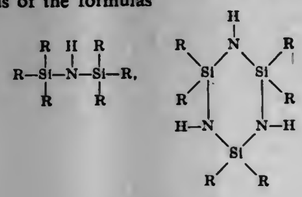


where each R represents a radical independently selected from the group which consists of alkyl radicals with less than five carbon atoms.

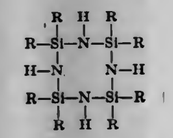
25. A method of polymerization which comprises contacting an organic monomer containing an ethylenic linkage with a catalyst which consists essentially of:

(A) a compound of the formula TiX_n, where X represents a halogen atom with atomic number greater than 16, and n is 2, 3, or 4;

(B) a compound selected from the group of compounds of the formulas

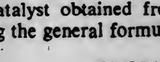


and



where each R represents a radical independently selected from the group which consists of alkyl radicals with less than five carbon atoms; and

(C) a compound of the formula



where each R represents a radical independently selected from the group which consists of alkyl radicals with less than five carbon atoms, and X represents a halogen atom with atomic number greater than 16.

3,300,466

PROCESS OF PRODUCING CRYSTALLINE SYNDYOTACTIC 1,2-POLYBUTADIENE

Gerlando Marullo, Umberto Maffezzoni, and Ermanno Susa, all of Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

Filed Nov. 15, 1960, Ser. No. 69,412
The portion of the term of the patent subsequent to May 4, 1982, has been disclaimed
13 Claims. (Cl. 260—94.3)

1. A process for producing crystalline polybutadiene having predominantly syndyotactic-1,2 structure, which comprises polymerizing 1,3-butadiene in the presence of a catalyst consisting essentially of (1) a halogen-free cobalt compound selected from the group consisting of cobalt-stearate-pyridine complex, cobalt acetylacetonate, cobalt phosphate and cobalt sulfate and (2) a mixture of compounds of the formulae AlR_3 and AlR'_2X in an AlR_3/AlR'_2X molar ratio of AlR'_2X is from about 10 to about 50% based on the total mols of organometallic component in the catalyst mixture wherein R and R' each represents an alkyl group containing from 1 to 5 carbon atoms and X represents a halogen atom, the molar ratio of aluminum to halogen-free cobalt compound being from 0.3 to 500.

3,300,467

PRODUCTION OF CRYSTALLINE ISOTACTIC CIS-1,4-POLYPENTADIENE WITH A $Ti(OR)_4$-AlR_3 CATALYST

Giulio Natta, Lido Porri, Gianfranco Stoppa, and Antonio Carbonaro, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

Filed Feb. 11, 1963, Ser. No. 257,665
Claims priority, application Italy, Feb. 12, 1962, 2,683/62, 22,654/62
10 Claims. (Cl. 260—94.3)

1. A process for preparing cis-1,4 unsubstituted polypentadienes in which essentially all the cis-1,4 units have an isotactic configuration and which show at the X-rays crystallinity due exclusively to isotactic structure which comprises homopolymerizing 1,3-pentadiene in the presence of a catalyst obtained from (a) a titanium compound having the general formula:

$$Ti(OR)_4$$

wherein R represents a member selected from the group consisting of alkyl, aryl, alkylaryl and cycloalkyl groups and (b) an organo aluminum compound having the formula:



wherein R_2 and R_3 each represents a member selected from the group consisting of alkyl, alkylaryl and cycloalkyl groups and R_1 represents a member selected from the group consisting of hydrogen atoms, alkyl, alkylaryl and cycloalkyl groups.

3,300,468

OCTADECAPEPTIDES AND INTERMEDIATES IN THE PREPARATION THEREOF

Robert Schwyzer and Beat Iselin, Riehen, Heini Kappeler, Bettingen, Bernhard Riniker, Reinach, Basel Land, and Werner Rittel, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 13, 1964, Ser. No. 367,189
Claims priority, application Switzerland, May 20, 1963, 6,279/63
4 Claims. (Cl. 260—112.5)

4. Tertiary butyloxycarbonyl-β-tertiary butyl-L-asparagyl-L-seryl-glycyl-L-prolyl-L-tyrosyl-tertiary butyloxycarbonyl-L-lysyl-L-methionine-γ-tertiary butyl-L-glutamyl-L-histidyl-L-phenylalanyl-L-arginyl - L-tryptophyl-glycyl-L-seryl-L-prolyl-L-prolyl-tertiary butyloxycarbonyl-L-lysyl-L-aspartic acid di-tertiary butyl ester.

3,300,469

L-LYSYL-L-PHENYLALANYL-L-ISOLEUCYL-GLYCYL-L-LEUCYL-L-METHIONINAMIDE, DERIVATIVES THEREOF AND INTERMEDIATES IN THE PREPARATION THEREOF

Luigi Bernardi and Roberto de Castiglione, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed May 15, 1964, Ser. No. 367,875
Claims priority, application Italy, May 17, 1963, 10,265/63
6 Claims. (Cl. 260—112.5)

1. The protected hexapeptide having the structure L-lysyl-L-phenylalanyl-L - isoleucyl - glycyl - L - leucyl - L-methioninamide wherein the two amino groups of lysine are blocked by a protecting group selected from the group consisting of trityl, tosyl, phthalyl, carbobenzyloxy, carbo-t. butoxy, trifluoroacetyl, and formyl.

3,300,470

REACTION PRODUCTS OF PROTEIN WITH CYANAMIDE UNDER ACIDIC CONDITIONS

Harland H. Young, Western Springs, and Stewart B. Luce, La Grange, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 4, 1963, Ser. No. 313,746
8 Claims. (Cl. 260—117)

1. A process for modifying and upgrading water-soluble proteinaceous materials which comprises reacting a water-soluble proteinaceous material selected from the group consisting of glue and gelatin with cyanamide under acidic conditions of a pH of between about 2 and 7 and at a temperature of less than about 100° C.

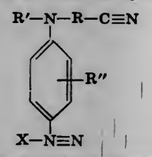
3,300,471

p-(N-CYANOALKYL-N-HYDROCARBYLAMINO)-BENZENEDIAZONIUM CHLORIDES

Joseph T. Arrigo, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,384
10 Claims. (Cl. 260—142)

1. A compound of the following formula



where R is an alkylene radical containing from 1 to 10 carbon atoms, R′ is selected from the group consisting of hydrogen, alkyl of from 1 to 20 carbon atoms, cycloalkyl of from 4 to 20 carbon atoms and hydroxyalkyl of from 1 to 20 carbon atoms, R″ is selected from the group consisting of hydrogen, hydroxy, alkoxy of from 1 to 10 carbon atoms and alkyl of from 1 to 12 carbon atoms, and X is selected from the group consisting of halogen, sulfate, phosphate and fluoborate.

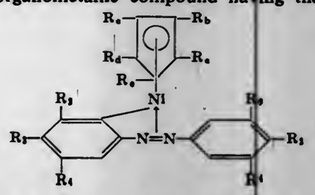
3,300,472

CYCLOPENTADIENYL NICKEL AZOBENZENE COMPOUNDS

Joseph P. Kleiman, Oak Park, and Michael Dubeck, Royal Oak, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

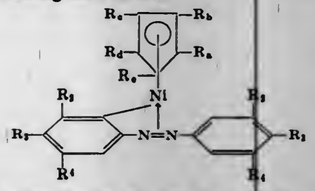
No Drawing. Filed Jan. 29, 1964, Ser. No. 341,111
11 Claims. (Cl. 260—149)

1. An organometallic compound having the formula



wherein R_a, R_b, R_c, R_d, R_e, R_2, R_3, and R_4 are independently selected from the class consisting of hydrogen and hydrocarbon radicals having from 1 to about 8 carbon atoms, said hydrocarbon radicals being selected from the class consisting of alkyl, cycloalkyl, aryl, alkaryl, and aralkyl radicals; such that the cyclopentadienyl radical has from 5 to about 13 carbon atoms, and each phenyl radical has from 6 to about 14 carbon atoms.

3. Process for the preparation of an organometallic compound having the formula



wherein R_a, R_b, R_c, R_d, R_e, R_2, R_3, and R_4 are selected from the class consisting of hydrogen and hydrocarbon radicals having from one to about 8 carbon atoms, said hydrocarbon radicals being selected from the class consisting of alkyl, cycloalkyl, aryl, alkaryl, and aralkyl radicals; such that the cyclopentadienyl radical has from 5 to about 13 carbon atoms, and each phenyl radical has from six to about 14 carbon atoms; said process comprising reacting the corresponding symmetrical azobenzene with the corresponding symmetrical nickelocene at a temperature of from about 50° C. to about 300° C..

3,300,473

PREPARATION OF MODIFIED PRODUCTS OF GALACTOMANNANES, POLYURONIC ACIDS AND SIMILAR HIGH-MOLECULAR NATURAL SUBSTANCES

Cla Christoffel and Eric A. Borel, Waedenswil, and Artur Blumenthal, Zurich, Switzerland, assignors to Blattmann & Co., Waedenswil, Switzerland, a company of Switzerland

No Drawing. Filed Aug. 16, 1963, Ser. No. 302,728
Claims priority, application Switzerland, Aug. 21, 1962, 9,975/62; May 29, 1963, 6,796/63
9 Claims. (Cl. 260—209)

1. A process for producing a modification product of a natural substance of high molecular weight selected from the group consisting of galactomannanes, polyuronic acids and galactanes and mixtures containing any of the same, which comprises dehydrating under vacuum, at gradually increasing temperatures below 110° C. and insufficient to cause pasting in the mass, a finely divided mass of said substance containing free moisture, until the mass is so dehydrated that practically no moisture will evaporate from it in the ensuing treatment; then, while excluding oxygen from the mass, heating it at a higher temperature not exceeding 180° C. but effective to modify said substance chemically, until a desired degree of modification is attained; and then cooling the mass while excluding oxygen from it.

3,300,474

SUCROSE ETHER COPOLYMERIZATES

Per Gustaf Magnus Flodin, Perstorp, and Björn Gustaf-Adolf Ingelman, Uppsala, Sweden, assignors to Aktiebolaget Pharmacia, a company of Sweden

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,258
2 Claims. (Cl. 260—209)

1. An agent for making aqueous colloid solutions of high density and low viscosity consisting of a copolymerizate built up of sucrose residues bonded together by ether bridges of the general type —S—O—R—O—S—, wherein the symbols S each represent a sucrose residue and R is an alkyl radical, containing from 3 to 10, inclusive, carbon atoms, the average molecular weight ($\overline{M}_w$) of said copolymerizate being in the range of from 5,000 to 1,000,000.

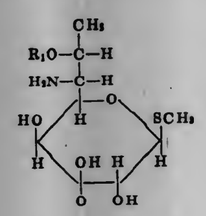
3,300,475

LINCOSAMINE AND CELESTOSAMINE DERIVATIVES AND PROCESS FOR PREPARING SAME

Brian Bannister, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 30, 1965, Ser. No. 468,617
25 Claims. (Cl. 260—210)

1. A compound of the formula



wherein R_1 is selected from the group consisting of hydrogen and methyl.

3,300,476

DEOXYRIBONUCLEASE BLOCKING AGENTS

Rudolf K. Zahn and Richard E. Tiesler, Frankfurt am Main, and Willi W. Hanske, Illertissen, Bavaria, Germany, assignors to Heinrich Mack Nachf, Illertissen, Bavaria, Germany

No Drawing. Filed May 21, 1964, Ser. No. 369,308
Claims priority, application Germany, May 24, 1963, M 56,951
13 Claims. (Cl. 260—211.5)

1. The process of making a deoxyribonuclease blocking agent which comprises contacting under substantially anhydrous conditions deoxyribonucleic acid with a compound having a polyfunctional group reactive with at least one of the nucleotides present in deoxyribonucleic acid under conditions of temperature and time such that a reaction takes place and the deoxyribonucleic acid is cross-linked.

3,300,477

ISOLATION OF 5′-GUANYLIC ACID BY FORMATION OF 5′-GUANYLIC ACID DIOXANATE

Thedore A. Jacob, Westfield, Ronald A. Vitali, Ridgefield, and John W. Rothrock, Watchung, N.J., and Edward S. Inamine, Pleasant Hill, Calif., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 11, 1964, Ser. No. 374,253
7 Claims. (Cl. 260—211.5)

1. A crystalline compound which consists of one mole of 5′-guanylic acid, one mole of water and one mole of 1,4-dioxane.

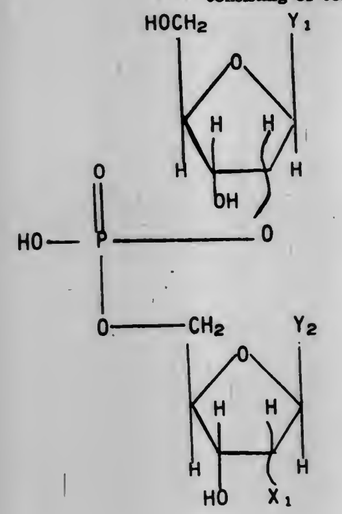
3,300,478

ARABINOFURANOSYL 2′,5′- AND 3′-5′-DINUCLEOSIDE PHOSPHATES AND PROCESS THEREFOR

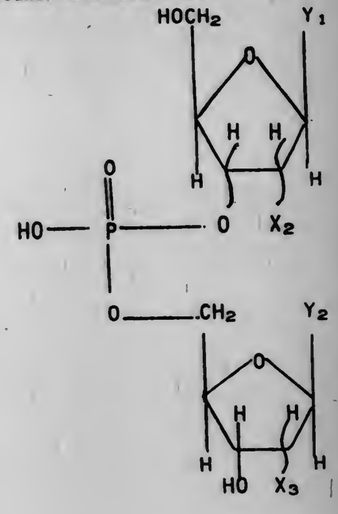
William J. Wechter, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,553
25 Claims. (Cl. 260—211.5)

1. A dinucleoside phosphate selected from the group consisting of compounds of the structures:



(XI)



(XII)

wherein X_1 is selected from the group consisting of hydrogen, α-hydroxy and β-hydroxy with the proviso that

only one of the furanose rings in the same compound can be a ribofuranose, wherein the combination X_2 and X_3 is selected from the group of combinations consisting of H, α-OH; H, β-OH; α-OH, β-OH; β-OH, α-OH; and β-OH, β-OH; and wherein Y_1 and Y_2 are selected from the group consisting of cytosin-1-yl, uracil-1-yl, thymin-1-yl, adenin-9-yl, guanin-9-yl, 6-mercaptopurin-9-yl, uracil-3-yl, 5-fluorouracil-1-yl, 5-chlorouracil-1-yl, 5-bromouracil-1-yl, 5-iodouracil-1-yl, 5-trifluoromethyluracil-1-yl, hypoxanthin-9-yl, xanthin-9-yl, 5-methylcytosin-1-yl, and 3-methylcytosin-1-yl, and the pharmaceutically acceptable salt thereof.

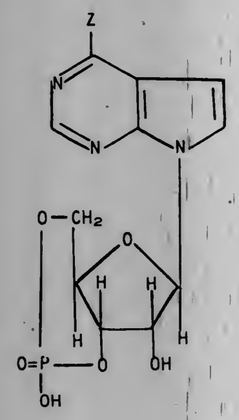
3,300,479

DEAZAPURINE RIBOSIDE CYCLIC 3',5'-PHOSPHATES AND PROCESS THEREFOR

Arthur R. Hanze, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,580
5 Claims. (Cl. 260—211.5)

1. A 9-β-D-ribofuranosyl-7-deazapurine cyclic 3',5'-phosphate:



wherein Z is selected from the group consisting of hydrogen, hydroxy, amino, acylamino in which the acyl group has from 2 to 12 carbon atoms, inclusive, mercapto and alkylmercapto in which the alkyl group has from 1 to 4 carbon atoms, inclusive.

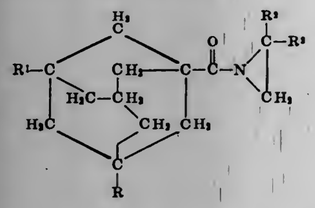
3,300,480

CERTAIN ADAMANTANE AZIRIDIDES

Venkatachala L. Narayanan, North Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 26, 1966, Ser. No. 567,845
8 Claims. (Cl. 260—239)

1. A compound of the formula



wherein R and R^1 each is hydrogen, halo, lower alkyl, phenyl, R-phenyl, hydroxy, or lower alkoxy and each R^2 is hydrogen or lower alkyl.

3,300,481

PROCESS FOR THE PREPARATION OF 5-THIENYL-1,3-DIHYDRO-2H-1,4-BENZODIAZEPIN-2-ONE-4-OXIDES

Stanley C. Bell and Scott J. Childress, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,917
1 Claim. (Cl. 260—239.3)

The process which comprises treating with a member of the group consisting of ammonia and primary aliphatic amines a compound selected from the group consisting of 2-halomethyl-4-(2-thienyl)quinazoline 3-oxide and 2-halomethyl-4-(3-thienyl)quinazoline 3-oxide to form the corresponding 2-methylamino-3H-1,4-benzodiazepine 4-oxide compound, acylating said compound with an acyl anhydride to form the corresponding 2-alkylacylamino compound, and treating said latter compound with acid to form the corresponding 1,3-dihydro-2H-2-one compound.

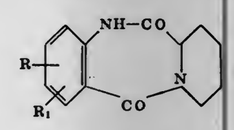
3,300,482

CERTAIN PYRIDOBENZODIAZEPINE DERIVATIVES

Karl J. Doebel, Ossining, and Heinz A. Pfenninger, Dobbs Ferry, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,064
10 Claims. (Cl. 260—239.3)

1. A pyridobenzodiazepine of the formula



wherein R and R_1 are members selected from the group consisting of hydrogen, halogen, trifluoromethyl, cyano, lower alkyl, lower alkoxy and methylenedioxy.

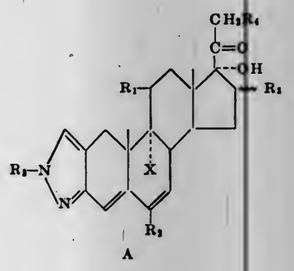
3,300,483

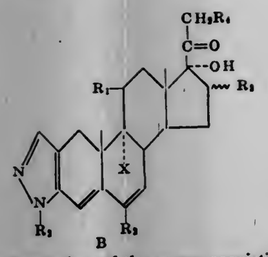
4,6-PREGNADIENO-[3,2-c]PYRAZOLES AND PROCESSES OF PREPARING THEM

Max Tishler, Westfield, N.J., Nathan G. Steinberg, Brooklyn, N.Y., and Ralph F. Hirschmann, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application Dec. 1, 1961, Ser. No. 156,478, now Patent No. 3,067,194, dated Dec. 4, 1962. Divided and this application July 2, 1962, Ser. No. 207,079
1 Claim. (Cl. 260—239.5)

A compound selected from the group of compounds having structural formulas A and B:





wherein R_1 is a member of the group consisting of β-halogen, β-hydroxy and keto, but β-halogen is present at R_1 only when X is halogen, R_2 is a member of the group consisting of hydrogen, fluoro and methyl, R_3 is a member of the group consisting of hydrogen, α-methyl, β-methyl and methylene when R_1 is β-halogen, but R_3 must be methylene when R_1 is β-hydroxy or keto, R_4 is a member of the group consisting of hydrogen, hydroxy, lower hydrocarbon carboxylic acyloxy, fluoro, iodo, the dihydrogen phosphate and the alkali metal salts of said dihydrogen phosphate, and the methylsulfonyloxy-radical, R_5 is a member of the group consisting of hydrogen, alkyl, aralkyl, aryl and lower hydrocarbon carboxylic acyl, and X is a member of the group consisting of hydrogen and halogen, and salts of the foregoing compounds.

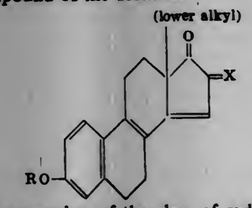
3,300,484

PROCESS AND INTERMEDIATES FOR MANUFACTURE OF 13 - ALKYL - 3,17 - BISOXYGENATED GONA-1,3,5(10)-TRIENES

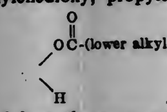
Raphael Pappo, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,657
18 Claims. (Cl. 260—239.5)

14. A compound of the formula

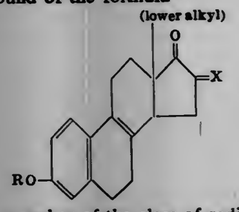


wherein X is a member of the class of radicals consisting of hydrazono, carbethoxyhydrazono, semicarbazono, hydroxyimino, ethylenedioxy, propylenedithio, oxo and

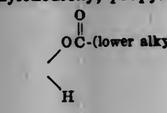


and R is selected from the group consisting of hydrogen, lower alkyl, and tetrahydropyran-2-yl.

15. A compound of the formula



wherein X is a member of the class of radicals consisting of hydrazono, carbethoxyhydrazono, semicarbazono, hydroxyimino, ethylenedioxy, propylenedithio, oxo and



and R is selected from the group consisting of hydrogen, lower alkyl, and tetrahydropyran-2-yl.

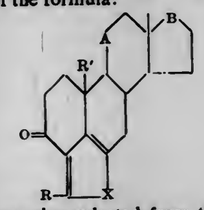
3,300,485

3-OXO-Δ^5-THIENO OR FURO[4',3',2'-4,5,6]STEROIDS AND PROCESS FOR THE PRODUCTION THEREOF

Taichiro Komeno, Osaka-shi, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,662
Claims priority, application Japan, Apr. 3, 1962, 37/13,418
25 Claims. (Cl. 260—239.5)

2. A steroid of the formula:



wherein R is a member selected from the group consisting of hydrogen and lower alkyl, R' is a member selected from the group consisting of hydrogen and methyl, X is a member selected from the group consisting of sulfur and oxygen, A is a member selected from the group consisting of methylene, carbonyl and hydroxymethylene and B is a member selected from the group consisting of carbonyl, 17,20,20,21-bismethylenedioxy and a group of the formula:



in which R'' is a member selected from the group consisting of hydroxy, lower alkanoyloxy, acetyl, hydroxyacetyl and lower alkanoyloxyacetyl and R''' is a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkynyl, hydroxy and lower alkanoyloxy.

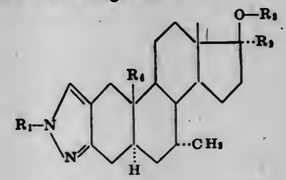
3,300,486

ANDROSTANO-PYRAZOLES

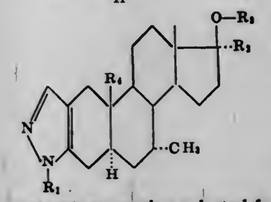
Georg Anner and Jaroslav Kalvoda, both of Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 4, 1964, Ser. No. 372,705
Claims priority, application Switzerland, July 5, 1963, 8,426/63
3 Claims. (Cl. 260—239.5)

1. A member selected from the group consisting of androstano-pyrazoles having the formulae



and



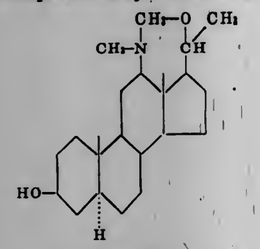
in which R_1 represents a member selected from the group consisting of hydrogen, and lower alkyl, R_2 represents lower alkyl, R_3 represents a member selected from the group consisting of hydrogen, the acyl group of a carboxylic acid with up to 18 carbon atoms and the acyl group of a sulfonic acid with up to 18 carbon atoms, and R_4 represents methyl, and acid addition salts thereof.

3,300,487
OXAZEPINE DERIVATIVE OF 12β-AMINO-5α-PREGNANE-3β·20β-DIOL

Kanzo Sasaki, Osaka-shi, and Junichi Kawanami, Toyonaka-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,925
1 Claim. (Cl. 260—239.55)

A compound represented by the formula:

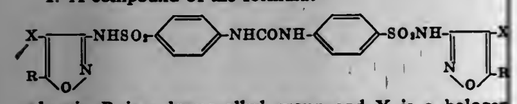


3,300,488
N,N'-BIS[4-(4-HALOGENATED-5-ALKYL-3-ISOXAZOLYLSULFAMOYL)-PHENYL]-UREAS

Hiroshi Onoue, Nishinomiya-shi, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,754
Claims priority, application Japan, Dec. 23, 1963, 38/69,570
2 Claims. (Cl. 260—239.9)

1. A compound of the formula:



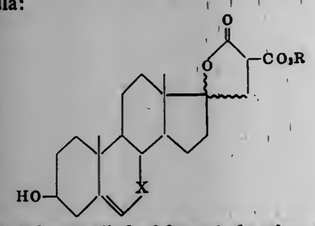
wherein R is a lower alkyl group and X is a halogen atom.

3,300,489
STEROIDAL C–17 SPIROLACTONES AND PROCESSES AND INTERMEDIATES USED IN THE PREPARATION THEREOF

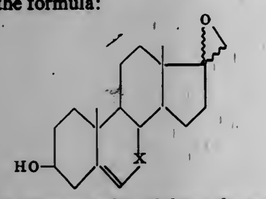
Kenneth G. Holden, Stratford, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 24, 1964, Ser. No. 385,042
14 Claims. (Cl. 260—239.57)

1. The method of preparing steroidal spirolactones of the formula:

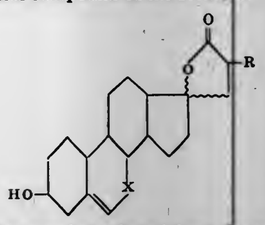


in which R is lower alkyl of from 1–6 carbon atoms and X is a member selected from the group consisting of a single C—C bond and methylene; comprising reacting a compound of the formula:



in which X is a member selected from the group consisting of a single C—C bond and methylene, with a lower alkyl malonate ester in the presence of a condensing agent selected from the group consisting of an alkali metal hydride, methylate, ethylate and amide.

3. A chemical compound of the formula:



in which X is a member selected from the group consisting of a single C—C bond and methylene, and R is a member selected from the group consisting of lower carbalkoxy and carboxy.

3,300,490
PROCESS FOR THE PREPARATION OF CRYSTALLINE TRIGLYCIDYL ISOCYANURATE

Manfred Budnowski, Dusseldorf-Holthausen, Germany, assignor to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed June 25, 1965, Ser. No. 467,140
Claims priority, application Germany, July 16, 1964, H 53,271
10 Claims. (Cl. 260—248)

1. In the process for the preparation of crystalline triglycidyl isocyanurate by the steps of:

(a) reacting about 1 mol of cyanuric acid with from about 3 to about 15 mols of epichlorohydrin in the presence of a catalyst at elevated temperatures, to produce a chlorohydrin ester,

(b) dehydrohalogenating the chlorohydrin ester obtained by the action of an alkaline reacting compound,

(c) admixing the dehydrohalogenated product with a crystallization solvent selected from the group consisting of methanol, ethylene glycol monomethyl ether and ethylene glycol monoethyl ether; and

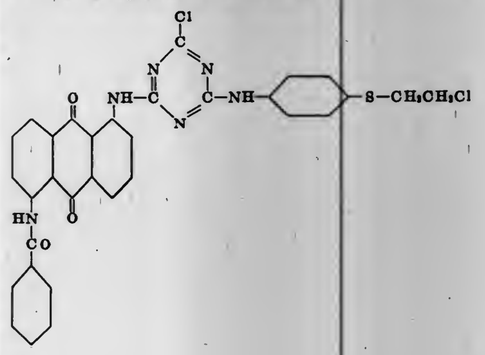
(d) separating and recovering said crystalline triglycidyl isocyanurate from the crystallization mother liquor, the improvement which comprises utilizing as said catalyst in step (a) at least 50% of the mother liquor from a previous crystallization step (d) and conducting said dehydrohalogenating step (b) at a pH of below about 13 for the dehydrohalogenating mixture.

3,300,491
VAT DYESTUFFS

Walter Jenny, Istvan Harl, Max Staeubie, and Kurt Weber, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed May 21, 1962, Ser. No. 196,433
Claims priority, application Switzerland, June 2, 1961, 6,485/61; Apr. 2, 1962, 3,967/62
6 Claims. (Cl. 260—249)

1. The vat dyestuff of the formula



3,300,492
VAPORIZING UREA IN THE PRODUCTION OF MELAMINE

Guenther Hamprecht, Limburgerhof, Pfalz, Ludwig Vogel, Frankenthal, Pfalz, Matthias Schwarzmann, Limburgerhof, Pfalz, and Rudolf Mohr, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,175
Claims priority, application Germany, Mar. 28, 1964, B 76,108
6 Claims. (Cl. 260—249.7)

1. A process for vaporizing urea for the production of melamine by the thermal cracking of urea at temperatures of from 350° to 550° C. in a first stage, reaction of the cracked gas in a second stage in the presence of a catalyst at a temperature of 330° to 450° C. and separating melamine from the off-gas, wherein the urea is vaporized in the first stage in a finely divided form by direct heat exchange with cracked gas from the first stage heated up to a temperature of 350° to 550° C.

3,300,493
PRODUCTION OF MELAMINE

Guenther Hamprecht, Limburgerhof, Pfalz, Hermann Dieter Fromm, Ludwigshafen (Rhine), Matthias Schwarzmann, Limburgerhof, Pfalz, and Eberhard Rother, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,177
Claims priority, application Germany, Mar. 28, 1964, B 76,107
11 Claims. (Cl. 260—249.7)

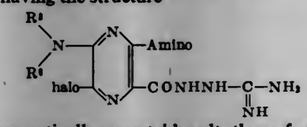
1. A process for the production of melamine by heating urea at temperatures above 280° C. in two stages in the presence of catalysts and ammonia wherein the urea is vaporized at a temperature of from 370° to 450° C. in a first stage and the gas and vapor is then introduced into a second stage at a temperature of from 330° to 370° C., the catalysts in the first and second stages being at least partly exchanged during the reaction.

3,300,494
PYRAZINAMIDOGUANIDINE PRODUCTS

Edward J. Cragoe, Jr., Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 27,1963, Ser. No. 311,291
26 Claims. (Cl. 260—250)

3. A compound selected from the group consisting of a product having the structure



and pharmaceutically acceptable salts thereof wherein

R^5 is selected from the group consisting of
hydrogen,
lower alkyl, and
lower alkenyl; and

R^6 is selected from the group consisting of
hydrogen,
lower-alkyl,
lower-cycloalkyl,
hydroxy-lower-alkyl,
halo-lower-alkyl,
lower-(cycloalkylalkyl),
phenyl-lower-alkyl,
lower-(alkylphenalkyl),
halophenyl-lower-alkyl,
lower alkoxy,
furyl-lower-alkyl,
pyridyl-lower-alkyl,
amino-lower-alkyl, and
lower-(alkylaminoalkyl-; and

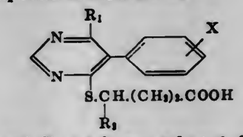
R^5 and R^6 can be linked together to form, with the nitrogen atom to which they are attached a heterocyclic structure selected from the group consisting of
1-pyrrolidinyl,
hexahydro-1-azepinyl and
4-methyl-1-piperizinyl.

3,300,495
4 - CARBOXYALKYLMERCAPTO-5-ARYL PYRIMIDINES AND METHOD OF PREPARING SAME

Zdenek Perina, Viktor Bydzovsky, Zdenek Budesinsky, and Jaroslav Sluka, all of Prague, Czechoslovakia, assignors to Spofa Sdružení podniků pro zdravotnickou výrobu, Prague, Czechoslovakia

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,644
Claims priority, application Czechoslovakia, Jan. 3, 1963, 17/63
12 Claims. (Cl. 260—251)

1. The compound of the formula



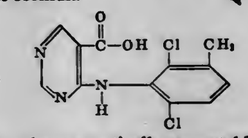
wherein R_1 and R_2 each are selected from the group consisting of a hydrogen atom, straight alkyl with 1–4 carbon atoms and branched alkyl with 1–4 carbon atoms, X is selected from the group consisting of a hydrogen atom, a halogen atom, the amino group and the nitro group, and *n* denotes an integral number from 0 to 5.

3,300,496
DERIVATIVES OF PYRIMIDINE-5-CARBOXYLIC ACID

Peter F. Juby, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,664
2 Claims. (Cl. 260—256.4)

1. A member selected from the group consisting of the acid of the formula



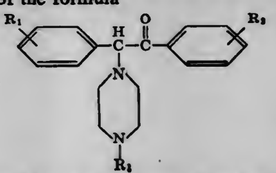
and nontoxic, pharmaceutically acceptable salts thereof.

3,300,497
2-ARYL-2-PIPERAZINYLACETOPHENONES

Vsevolod Gruenman, Montclair, and Max Hoffer, Nutley, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 19, 1964, Ser. No. 390,742
7 Claims. (Cl. 260—268)

1. A member selected from the group consisting of compounds of the formula



wherein R_1 and R_2 each represent a member independently selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy; and R_3 represents a member selected from the group consisting of formyl and lower alkanoyl

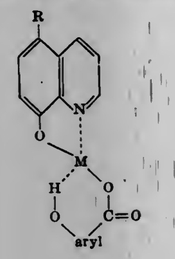
and pharmaceutically acceptable acid addition salts thereof.

3,300,498
8-HYDROXYQUINOLINE METAL CHELATES

Herman Gershon, North Bergen, and Walter J. Nickerson, Princeton, N.J., assignors, by mesne assignments, to Herman Gershon, Yonkers, N.Y.

No Drawing. Filed May 8, 1962, Ser. No. 193,296
8 Claims. (Cl. 260—270)

1. A metal chelate having the formula:



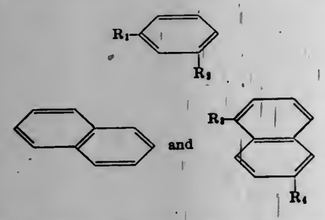
in which the



and the



are positioned on adjacent carbon atoms of the aryl nucleus M is selected from the group consisting of bivalent copper, cadmium, cobalt, lead, manganese, mercury, zinc, and iron; aryl is selected from the group consisting of



and

in which R is selected from the group consisting of hydrogen, chlorine and iodine; R_1 is selected from the group consisting of hydrogen, chlorine and iodine; R_2 is selected from the group consisting of hydrogen, chlorine and iodine; R_3 is selected from the group consisting of hydrogen, chlorine and bromine; and R_4 is selected from the group consisting of hydrogen and bromine and the bonds to the aryl group are attached to adjacent carbon atoms in ortho position in respect to each other.

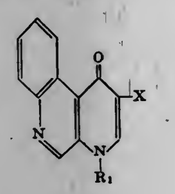
2. 8-hydroxyquinolinium salicylate copper chelate.

3,300,499
4-ALKYL (OR ALKENYL) - 1,4 - DIHYDRO - 1 - OXO-BENZO[f][1,7]NAPHTHYRIDINE 2-CARBOXYLIC ACID DERIVATIVES

George Y. Lesher, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,522
16 Claims. (Cl. 260—287)

1. A compound of the formula



where X is a member selected from the group consisting of carboxy and lower-carbalkoxy, and R_1 is a member selected from the group consisting of lower-alkyl and lower-alkenyl.

3,300,500
6-ALKYLMORPHINAN DERIVATIVES AND PRODUCTION THEREOF

Yoshiro Sawa and Shin Maeda, Hyogo Prefecture, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Apr. 4, 1963, Ser. No. 270,559
Claims priority, application Japan, Apr. 9, 1962, 37/14,251
5 Claims. (Cl. 260—285)

3. 3-lower alkoxy-6,N-di(lower)alkyl-14-hydroxy-Δ^5-morphinan.

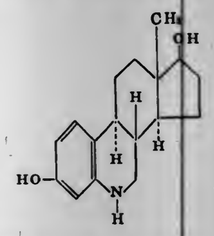
5. (—) - 3-methoxy-6-hydroxy-6,N-dimethylmorphinan (cis).

3,300,501
6-AZASTEROIDS

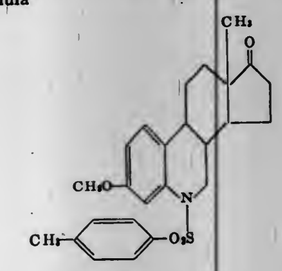
Joseph H. Burckhalter, Ann Arbor, Mich., assignor to The Regents of the University of Michigan, Ann Arbor, Mich., a corporation of Michigan

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,618
5 Claims. (Cl. 260—289)

1. 6-azaestradiol of the formula



5. N-tosyl-6-aza-8(9)-dehydroestrone 3-methyl ether of the formula

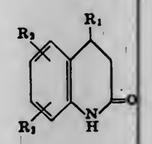


3,300,502
SUBSTITUTED 2-OXO-1,2,3,4-TETRAHYDROQUINOLINES AND THEIR TAUTOMERS

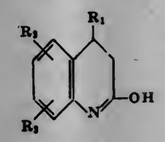
Ernst Seeger, Biberach an der Riss, Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,701
Claims priority, application Germany, July 27, 1962, T 22,518
14 Claims. (Cl. 260—289)

1. A compound selected from the group consisting of substituted 2 - oxo - 1,2,3,4 - tetrahydroquinolines of the formula



and their tautomers of the formula



wherein

R_1 is selected from the group consisting of hydrogen and alkyl of 1 to 3 carbon atoms,
R_2 is halogen, and
R_3 is alkyl of 1 to 3 carbon atoms.

3,300,503
NITROGEN-CONTAINING FLUOROPHOSPHORANES

Reinhard Schmutzler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 19, 1963, Ser. No. 310,128
11 Claims. (Cl. 260—293)

1. A compound selected from the group consisting of $(R_a^1NH_2)^+(RPF_5)^-$ and $(R_a^1N)_aPF_c$, wherein R is an aromatic, aliphatic and alicyclic radical having up to 8 carbon atoms and a divalent radical both valences of which are attached to the nitrogen forming a heterocyclic ring having up to 8 carbon atoms and R^1 is an aliphatic and alicyclic radical having up to 5 carbon atoms, *a* is 1 through 2, and the sum of *a* and *c* is 5.

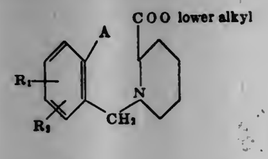
6. $(C^5H_{10}NH_2)^+(C_6H_5PF_5)^-$.

3,300,504
LOWER ALKYL ESTERS OF (SUBSTITUTED) BENZYL PIPECOLINIC ACID AND DERIVATIVES THEREOF

Karl J. Doebel, Ossining, and Heinz A. Pfenninger, Dobbs Ferry, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,045
26 Claims. (Cl. 260—294.3)

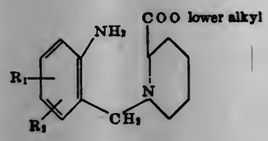
1. A compound of the formula



wherein

R_1 and R_2 are members selected from the group consisting of hydrogen, halogen, trifluoromethyl, cyano, lower alkyl, lower alkoxy and methylenedioxy; and
A is chosen from the group consisting of nitro and amino.

2. A compound of the formula



wherein

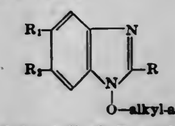
R_1 and R_2 are members selected from the group consisting of hydrogen, halogen, trifluoromethyl, cyano, lower alkyl, lower alkoxy and methylenedioxy.

3,300,505
ETHER-2-R-SUBSTITUTED BENZIMIDAZOLES AND DERIVATIVES AND ACID ADDITION SALTS THEREOF

George de Stevens, Summit, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,433
15 Claims. (Cl. 260—294.8)

1. A member selected from the group consisting of a compound of the formula



in which each of the radicals R_1 and R_2 stands for a member selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, halogen, trifluoromethyl, nitro, amino, di-lower alkyl-amino and lower alkanoyl, and R stands for a member selected from the group consisting of lower alkyl, lower alkenyl, cycloalkyl and cycloalkyl-lower alkyl with 3 to 8 ring carbon atoms, cycloalkenyl and cycloalkenyl-lower alkyl with 5 to 8 ring carbon atoms, aryl-lower alkyl and aryl in which aryl is selected from the group consisting of phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl, (trifluoromethyl)-phenyl, (amino)-phenyl, (di-lower alkylamino)-phenyl, (lower alkanoyl)-phenyl, pyridyl and (lower alkyl)-pyridyl, the substituent on said aryl being in a position other than ortho, an N-oxide and acid addition salts of these compounds.

3,300,506
1-INDOLYL SUBSTITUTED-2-PYRIDYL-ETHANES

Chester John Cavallito and Allan Poe Gray, Decatur, Ill., assignors to Neisler Laboratories, Inc., Decatur, Ill., a corporation of Delaware

No Drawing. Filed Oct. 16, 1959, Ser. No. 846,810
5 Claims. (Cl. 260—296)

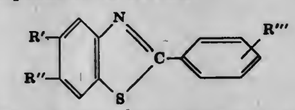
1. 4-(3-indolylethyl)-pyridine.

3,300,507
BENZOTHIAZOLYLBENZENE AMIDES

Christopher James Sharpe and Francis Frederick Stephens, Harrow, England, assignors to The Crookes Laboratories Limited, London, England, a British company

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,132
8 Claims. (Cl. 260—304)

1. A compound of the formula:



in which R' and R'' represent hydrogen, halogen or a lower alkyl group and R' and R'' may be the same or different and in which R''' represents —CORR or

$$—SO_2RR$$

and in which R represents hydrogen or a lower alkyl group.

3,300,508
2-[N'-(PANTOYL)-2'-AMINOETHYL]-2-THIAZOLINE

Masao Shimizu, Genkichi Ohta, and Osamu Nagase, Tokyo, Seizaburo Okada, Chiba, and Yasuhiro Hosokawa, Tokyo, Japan, assignors to Daiichi Seiyaku Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,625
Claims priority, application Japan, Sept. 8, 1962, 37/38,760; Sept. 11, 1962, 37/39,117
1 Claim. (Cl. 260—306.7)

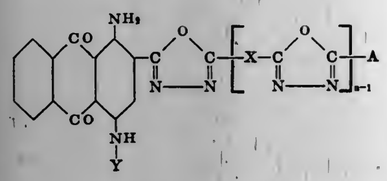
2-[N'-(pantoyl)-2'-aminoethyl]-2-thiazoline.

3,300,509
ANTHRAQUINONE VAT DYESTUFFS CONTAINING SULFOHALIDE GROUPS

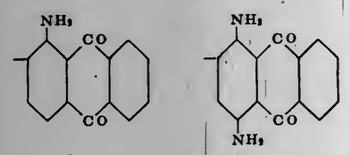
Kurt Weber, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,528
Claims priority, application Switzerland, Feb. 10, 1961, 1,582/61; Dec. 19, 1961, 14,711/61
13 Claims. (Cl. 260—307.5)

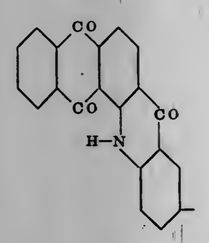
1. A vat dyestuff of the formula



in which X represents a member selected from the group consisting of a direct bond, phenylene and biphenylene, *n* is a whole number up to 2, A represents an anthraquinone radical selected from the group consisting of



and



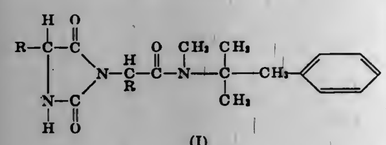
and Y represents an at most bicyclic member selected from the group consisting of thenoyl-, furnane-2-CO-, naphthoyl- and benzoyl- containing a sulfohalide group.

3,300,510
HYDANTOINS

Harvey E. Alburn, West Chester, Donald E. Clark, Norristown, and Norman H. Grant, Wynnewood, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,118
5 Claims. (Cl. 260—309.5)

1. A compound of the formula:



(I)

wherein R is selected from the group consisting of hydrogen, alkyl having up to 6 carbon atoms in the chain, phenyl, halophenyl, (lower)alkylphenyl, nitrophenyl, halo(lower)alkylphenyl and indolealkyl in which the alkyl moiety has from one to three carbon atoms in the chain.

3,300,511
2-(2',4',6'-TRIMETHYLBENZYL)-IMIDAZOLINE AND SALTS

Karl Zeile, Karl Heinz Hauptmann, and Helmut Stahle, Ingelheim (Rhine), Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed July 7, 1965, Ser. No. 470,221
Claims priority, application Germany, Nov. 30, 1961, B 64,998
7 Claims. (Cl. 260—309.6)

1. A compound selected from the group consisting of 2-(2',4',6'-trimethylbenzyl)-imidazoline and its nontoxic, pharmacologically acceptable acid addition salts.

3,300,512
SYNTHESIS OF METAL-CONTAINING PHTHALOCYANINES

Herman Gerson, New York, N.Y., and William E. Bachman, North Haledon, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 12, 1965, Ser. No. 479,341
13 Claims. (Cl. 260—314.5)

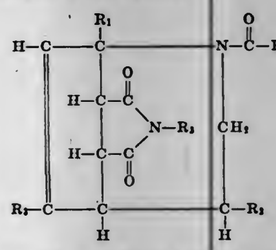
1. In a process for preparing a metal phthalocyanine by heating a reaction mixture containing a phthalocyanine intermediate, a nitrogen donor, a metal donor and a catalyst, the improvement which comprises incorporating sulfur trioxide in the reaction mixture in amount at least sufficient to improve the yield of metal phthalocyanine as compared with the yield obtained from the reaction mixture without the sulfur trioxide.

3,300,513
2-ACYL-2-AZABICYCLO[3.2.2]-6-NONENES

Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application July 24, 1963, Ser. No. 297,217, now Patent No. 3,268,553, dated Aug. 23, 1966. Divided and this application Feb. 3, 1966, Ser. No. 559,345
2 Claims. (Cl. 260—326)

1. A compound of the formula:



wherein R_1 and R_2 are alkyl of 1 to 4 carbon atoms, inclusive wherein R_3 and R_7 are selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive, and wherein R_5 is selected from the group consisting of lower alkyl, phenyl, lower-alkylphenyl, and di-lower-alkylphenyl.

3,300,514
METHOD OF PREPARING 5-ALKYL-2-PYRROLIDONES

Gennady Ivanovich Nikishin, Moscow, and Ramis Ibragim Ogly Mustafaev, Baku, U.S.S.R., assignors to Institute Organicheskoi Khimii im. N.D. Zelinskogo, Moscow, U.S.S.R.

No Drawing. Filed Oct. 23, 1964, Ser. No. 406,168
1 Claim. (Cl. 260—326.5)

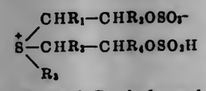
A method of preparing 5-alkyl-2-pyrrolidones which comprises reacting methyl acrylate with a primary alkylamine at a temperature of between 130 to 180° C. in the presence of tert-butyl peroxide as a catalyst, the methyl acrylate, alkylamine and tert-butyl peroxide being present in a molar ratio of 10 to 15:1:0.25 respectively, and thereafter recovering the obtained product.

3,300,515
STABILIZED BIS- AND TRIS-(β-SULFATOALKYL) SULFONIUM INNER SALTS

William Baird, deceased, late of Manchester, England, by Ida Baird, executrix, Bury, England, and Alexander Parkinson, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,562
Claims priority, application Great Britain, Nov. 2, 1962, 41,528/62
12 Claims. (Cl. 260—327)

1. Aqueous solutions of sulphonium inner salts of the formula



wherein R_1, R_2, R_3 and R_4 independently represent a member selected from the class consisting of hydrogen atoms and lower alkyl groups containing from 1 to 3 carbon atoms, and R_5 represents a member selected from the class consisting of the group

$(CHR_3CHR_4OSO_3H)$

alkyl groups containing from 1 to 22 carbon atoms, vinyl, methylvinyl, allyl, phenyl, naphthyl, benzyl, cyclohexyl, pyridyl and quinolyl groups, said solutions being maintained at a pH within the range 2.0 to 3.5 by means of a buffer system comprising a mixture of at least one weak acid with at least one compound selected from the class consisting of the ammonia, alkali metal and alkaline earth metal salts of weak acids.

3,300,516
OXIDATION OF AN AROMATIC COMPOUND

Theodore Vrbaški, Harvey, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,158
5 Claims. (Cl. 260—346.4)

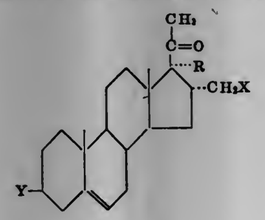
1. A process for the catalytic vapor phase oxidation of an ortho-(di-lower alkyl) benzene to the corresponding anhydride which comprises reacting said ortho-(di-lower alkyl) benzene in the vapor phase at a temperature from about 300 to 600° C. with molecular oxygen in the presence of a fused vanadium pentoxide oxidation catalyst, said cataylst being provided with a promotional amount of an oxide of a Group V*b* metal having an atomic number in the range of 41 to 73.

3,300,517
HALOMETHYL PREGNENES

Riccardo Villotti and Albert Bowers, both of Mexico City, Mexico, assignors to Syntex Corporation, a corporation of Panama

No Drawing. Filed Apr. 13, 1962, Ser. No. 187,224
12 Claims. (Cl. 260—397.3)

1. A compound of the following formula:



wherein X is selected from the group consisting of chlorine, bromine and iodine; Y is selected from the group consisting of fluorine, chlorine and bromine; and R is selected from the group consisting of hydrogen, hydroxy and an hydrocarbon carboxylic acyloxy group of less than 12 carbon atoms.

3,300,518
17α-TRIFLUOROVINYL ANDROSTENES

John Fried, Plainfield, Thomas S. Bry, Linden, and Arthur A. Patchett, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 4, 1961, Ser. No. 142,776
9 Claims. (Cl. 260—397.4)

1. A compound selected from the group consisting of 3-lower alkoxy 17α-trifluorovinyl-19-nor-3,5-androstadiene-17β-ol and the 17β-alkanoyl esters thereof.

3,300,519
6β-THIOCYANATO PREGNANE DERIVATIVES

Taichiro Komeno, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,631
Claims priority, application Japan, Jan. 9, 1963, 38/885
1 Claim. (Cl. 260—397.4)

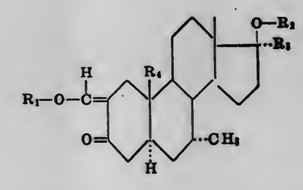
5α-hydroxy-6β-thiocyanatopregnane-3,20-dione.

3,300,520
2-HYDROXY-METHYLENE-7α-METHYL ANDROSTANES

Georg Anner and Jaroslav Kalvoda, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 4, 1964, Ser. No. 372,667
Claims priority, application Switzerland, July 5, 1963, 8,425/63
5 Claims. (Cl. 260—397.4)

1. Methyl-androstanes of the formula



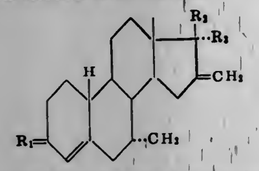
in which R_1 represents a member selected from the group consisting of hydrogen, an alkali metal, an alkaline earth metal, the acyl group of a carboxylic acid with up to 18 carbon atoms and the acyl group of a sulfonic acid with up to 18 carbon atoms, R_2 represents a member selected from the group consisting of hydrogen, the acyl group of a carboxylic acid with up to 18 carbon atoms and the acyl group of a sulfonic acid with up to 18 carbon atoms, R_3 represents a member selected from the group consisting of lower alkyl, lower alkenyl and lower alkynyl and R_4 represents a member selected from the group consisting of hydrogen and methyl.

3,300,521
7-METHYL-16-METHYLENE-Δ^4-ESTRENE DERIVATIVES

Georg Anner and Peter Wieland, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,753
Claims priority, application Switzerland, Sept. 11, 1963, 11,223/63; June 9, 1964, 7,528/64
7 Claims. (Cl. 260—397.4)

1. Methylene-steroids of the formula



in which R_1 stands for a member selected from the group consisting of hydrogen and oxo, R_2 for a member selected from the group consisting of hydroxy, acyloxy of carboxylic acids with up to 20 carbon atoms, tetrahydropyranyloxy lower alkoxy, lower alkoxy-lower alkoxy, lower α-alkoxy-cycloalkoxy in which cycloalkyl has 5 to 6 ring carbon atoms, lower α-alkenyloxy, lower α-cycloalkenyloxy in which cycloalkenyl has 5 to 6 ring carbon atoms, lower α-hydroxy-β-halogenalkoxy, and lower alkanoyloxy-β-halogen-lower alkoxy and R_3 for a member selected from the group consisting of hydrogen and a lower aliphatic hydrocarbon radical.

3,300,522
PROCESS FOR THE PREPARATION OF 17α-HYDROXY-16,20-DIKETO PREGNANES

Patrick A. Diassi, Westfield, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,669
5 Claims. (Cl. 260—397.4)

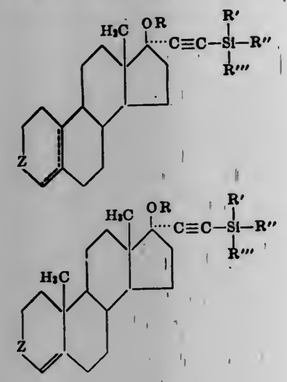
1. A process for preparing a 17α-hydroxy-16,20-diketo steroid of the pregnane series which comprises interacting a 17-unsubstituted 16,20-diketo steroid of the pregnane series with a peracid.

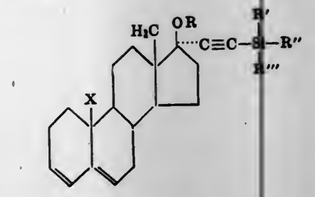
3,300,523
3 - OXYGENATED 17β-OXY-17α-PREGNEN-20-YN-21 - YLTRI(ALKYL/ARYL)SILANES AND CONGENERIC 3-DESOXY-3,5-DIENES

Edward A. Brown, Wilmette, and Richard A. Mikulec, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

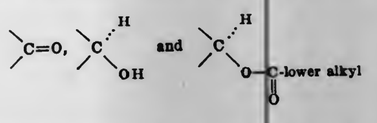
No Drawing. Filed Apr. 21, 1965, Ser. No. 449,871
8 Claims. (Cl. 260—397.4)

1. A compound selected from the group consisting of compounds of the formulas

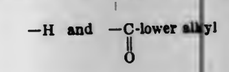




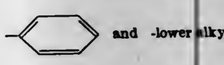
wherein Z represents a member of the group consisting of



R represents a member of the group consisting of



R′, R″, and R‴ represent a member of the group consisting of



X represents a member of the group consisting of

—H and —CH_3

and the dotted line designates a double bond in a position selected from the group consisting of 4(5) and 5(10).

3,300,524
INHIBITION OF HYDROLYSIS OF FATS

Frank A. Norris, La Grange, and Donald P. Grettie, Chicago, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Jan. 14, 1963, Ser. No. 251,007
8 Claims. (Cl. 260—398.5)

1. A process for inhibiting the hydrolysis of fats derived from oil bearing fruits to free fatty acids, comprising: treating the fats with an aqueous solution of an active chlorine-containing material.

3,300,525
PROCESS FOR THE SULFONATION OF PEROXIDIZED, DEPEROXIDIZED UNSATURATED FATTY ACID ESTERS AND PRODUCT

Jürgen Plapper, Dusseldorf, and Horst-Jürgen Krause, Dusseldorf-Benrath, Germany, assignors to Bohme Fettchemie G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed July 29, 1963, Ser. No. 298,422
Claims priority, application Germany, Aug. 7, 1962, B 68,335
10 Claims. (Cl. 260—400)

1. A process for the production of sulfonated fatting agents from unsaturated hydroxyl group free fatty materials selected from the group consisting of natural and synthetic fats and oils, which comprises the steps,

(a) peroxidizing said fatty materials by treatment with oxygen containing gases at temperatures of from 65 to 100° C.,

(b) deperoxidizing by heat treatment at temperatures of 110 to 160° C.,

(c) and thereafter sulfonating by reaction with 5 to 15% of sulfur trioxide at temperatures from 0 to 20° C.,

(d) bleaching said sulfonated products with hydrogen peroxide,

(e) and neutralizing said bleached products.

3,300,526
PREPARATION OF NITRILES

Kurt Kirsch, Dossenheim, Germany, assignor to Lonza Ltd., Gampel, Switzerland

No Drawing. Filed June 5, 1964, Ser. No. 373,066
Claims priority, application Germany, June 7, 1963, T 24,114
1 Claim. (Cl. 260—465.2)

A process for the preparation of malononitrile comprising heating cyanoacetamide in the presence of a dehydrating agent selected from the group consisting of phosphorus oxychloride, phosphorus pentoxide, phosphorus pentachloride, and mixtures thereof, and in the presence of a metal halide selected from the group consisting of aluminium chloride and zinc chloride, at a temperature in the range of 60 to 100° C. in acetonitrile as reaction medium, the weight ratio of acetonitrile to cyanoacetamide being in the range of 5:1 to 2:1.

3,300,527
ACRYLONITRILE SYNTHESIS

Thomas C. Bissot, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,515
2 Claims. (Cl. 260—465.3)

1. The process for making acrylonitrile comprising passing hydrogen cyanide and an excess of acetylene into an anhydrous catalyst composition consisting essentially of from 45% to 65% by weight of an admixture of cuprous chloride and cuprous cyanide, wherein the ratio of cuprous chloride to cuprous cyanide is in a range of from 1.5:1 to 4:1, dissolved in acrylonitrile; said catalyst composition being maintained on the acid side by addition of hydrochloric acid and in a temperature range of from 65 to 85° C.

3,300,528
VAPOR PHASE PROCESS FOR PREPARING VINYL ACETATE BY THE OXIDATION OF ETHYLENE WITH A GROUP VIII NOBLE METAL PLUS COPPER OR IRON

Ryoichi Wakasa, Naoya Kominami, and Kanji Ishii, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,872
Claims priority, application Japan, Oct. 11, 1962, 37/43,780; Oct. 15, 1962, 37/44,690; Nov. 12, 1962, 37/49,705; Nov. 27, 1962, 37/52,039; Feb. 6, 1963, 38/4,724, 38/4,725
2 Claims. (Cl. 260—497)

1. A process which comprises passing a gaseous mixture of acetic acid, ethylene and a molecular oxygen containing gas in a reaction zone over a catalyst consisting of at least one member selected from the group consisting of palladium, platinum, rhodium, ruthenium and iridium, together with copper.

2. A process which comprises passing a gaseous mixture of acetic acid, ethylene and a molecular oxygen containing gas in a reaction zone over a catalyst consisting of at least one member selected from the group consisting of palladium, platinum, rhodium, ruthenium and iridium, together with iron.

3,300,529
ALKYLENESULFONAMIDES AND METHOD OF PREPARING SAME

Gerald Berkelhammer, Trenton, N.J., and Richard W. Young, Wellesley Hills, Mass., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,127
15 Claims. (Cl. 260—556)

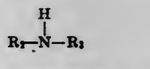
1. A method which comprises reacting a β-halo-ethanesulfonyl halide with one molar equivalent of a member selected from the group consisting of alkyl amine having from 1 to 20 carbon atoms, di-alkyl amine in which each alkyl has from 2 to 20 carbon atoms, alkenyl amine having from 3 to 20 carbon atoms, di-alkenyl amine in which each alkenyl has from 3 to 20 carbon atoms, and benzylamine at a temperature in the range of 40° C. to —80° C. and in the presence of an amine hydrohalide acceptor, and recovering the resulting corresponding ethylenesulfonamide.

3,300,530
PROCESS FOR PREPARING TRIS(N-ALKYL-ARYLAMINO)BORINES FROM N-ARYL AMIDES

Charles H. Mack and Samuel E. Ellzey, Jr., New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed July 30, 1963, Ser. No. 298,794
5 Claims. (Cl. 260—551)

1. A process for the preparation of tris(N-alkyl-arylamino)borines of the formula $(R_1R_2N)_3B$, wherein R_1 is a radical selected from the group consisting of lower alkyl and benzyl and R_2 is a member selected from the group consisting of phenyl and hydroxy-substituted phenyl, which comprises reacting an N-arylamide of the formula



wherein R_2 has the same meaning as above and R_3 is the acyl moiety of an acid selected from the group consisting of a lower alkanoic acid and benzoic acid, with sodium borohydride in an anhydrous inert solvent at a temperature of from 90° to 220° C., the mole ratio of N-arylamide to sodium borohydride in the reaction mixture being about from 1:1 to 1:2, respectively.

3,300,531
PROCESS FOR PREPARING DIMETHYLACETAMIDE

John A. James, Jr., and Charles J. Kramis, Houston, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 4, 1963, Ser. No. 320,946
1 Claim. (Cl. 260—561)

In a process for preparing dimethylacetamide by reacting a compound selected from the group consisting of acetic acid and acetic anhydride with an amount of dimethylamine in excess of the stoichiometric requirement and then separating the resulting dimethylacetamide from the reaction byproducts and unreacted reactants by sequential fractional distillation, the steps of conducting the reaction in the presence of monomethylamine and monomethylacetamide at a temperature of from 180° C. to 235° C. and a pressure of 500 to 700 p.s.i.g. for a period of from ½ to 1 hour, withdrawing a stream from the reaction zone containing dimethylacetamide, monomethylacetamide, reaction byproducts, and unreacted reactants, introducing said stream into the distillation zone, and recycling the unreacted acetic acid separated during said distillation to the reaction zone as its maximum boiling ternary azeotrope with dimethylacetamide and monomethylacetamide.

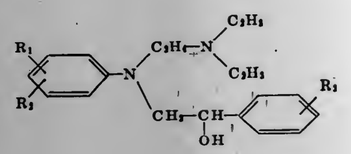
3,300,532

N-(β-DIETHYLAMINO ETHYL)-N-[β-HYDROXY-β-(PHENYL) ETHYL] ANILINES AND SALTS THEREOF

Hugo Zellner, Linz (Danube), Austria, assignor to Donau-Pharmazie Gesellschaft m.b.H., Linz (Danube), Austria, a corporation of Austria

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,707
Claims priority, application Austria, June 26, 1959, A 4,719/59
4 Claims. (Cl. 260—570.5)

1. The compound selected from the group consisting of the N-(β-diethylamino ethyl)-N-[β-hydroxy-β-(phenyl) ethyl] aniline compound of the formula



wherein

R_1 and R_2 are members selected from the group consisting of hydrogen, halogen, and methoxy, while R_3 is a member selected from the group consisting of hydrogen and methoxy,

and their salts with therapeutically acceptable acids.

3,300,533

METHOD FOR MAKING 1-CHLORO-2-PHENYL-3-LOWER ALKOXY-1-PROPENE

Willis C. Keith, Lansing, and Robert P. Zmitrovis, Park Forest, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 20, 1961, Ser. No. 153,671
1 Claim. (Cl. 260—611)

A method for making 1-chloro-2-phenyl-3-lower alkoxy-1-propene which comprises refluxing a mixture of 1,2,3-trichloro-2-phenyl propane with a dilute solution of alkaline metal hydroxide in a lower alkanol.

3,300,534

PROCESS FOR PREPARING PHENOLIC COMPOUNDS

Howard M. Rue, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Original application Jan. 4, 1961, Ser. No. 80,557, now Patent No. 3,123,561, dated Mar. 3, 1964. Divided and this application Aug. 26, 1963, Ser. No. 304,613
2 Claims. (Cl. 260—613)

1. Process for preparing phenolic compounds whch comprises

(a) contacting an alkali metal salt of polyalkylene glycol having the general formula $MO(C_nH_{2n}O)_mM$, wherein M is an alkali metal, n is an integer from 2 to 3, and m is an interger from 2 to 30, with an alkali metal salt of halophenol,

(b) separating the inorganic salt from the organic product of the reaction between said glycol salt and said halophenol salt;

(c) acidifying said organic product of reaction with an aqueous inorganic acid to obtain an aqueous phase containing inorganic salt and an organic liquid phase; and

(d) separating said phases.

3,300,535

PRODUCTION OF POLYOXYMETHYLENE GLYCOLS

Harry Yakimik, Jr., and Kenneth T. Sloan, Garfield, N.J., assignors, by mesne assignments, to Tenneco Chemicals Inc., a corporation of Delaware

No Drawing. Filed Mar. 19, 1963, Ser. No. 266,191
5 Claims. (Cl. 260—615.5)

1. The process for producing a low molecular weight polyoxymethylene glycol suitable for depolymerization to gaseous monomeric formaldehyde which comprises (i) preparing an aqueous solution containing from about 30 to about 60 percent by weight of formaldehyde and from about 0.001 to about 0.05 mole of alkali per mole of formaldehyde, (ii) adjusting the temperature of the aqueous alkaline solution to a temperature in excess of the precipitation temperature of paraformaldehyde, (iii) slowly cooling the adjusted solution at a rate of about 3° C. to about 15° C. per hour to a temperature in the range between 20° C. and 30° C., thereby selectively crystallizing a low molecular weight polyoxymethylene glycol containing not more than 0.05 percent by weight of water, and (iv) drying the resultant crystallized polyoxymethylene glycol under vacuum.

3,300,536

PREPARATION OF 2,2'-DIHYDROXY-1,1'-BINAPHTHYL

Edward J. McNelis, Wallingford, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,665
4 Claims. (Cl. 260—620)

1. Method for preparing 2,2'-dihydroxy-1,1'-binaphthyl which comprises heating 2-naphthol in the presence of activated manganese dioxide at a temperature between 20° C. and the decomposition temperature of 2-naphthol for a period of time ranging between 5 minutes and 25 hours and thereafter recovering said 2,2'-dihydroxy-1,1'-binaphthyl.

3,300,537

FLUORINATION OF PERHALOCOMPOUNDS

Royston Henry Bennett and George Fuller, Avonmouth, England, assignors to The National Smelting Company Limited, London, England, a British company

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,805
Claims priority, application Great Britain, Oct. 23, 1962, 40,028/62
11 Claims. (Cl. 260—649)

1. A process for the production of aromatic perhalogenocarbons containing fluorine atoms attached to the aromatic nucleus in which an aromatic compound containing carbon and halogen atoms only including at least one halogen atom other than fluorine is heated under pressure with at least one dry essentially anhydrous solid monovalent alkali metal fluoride in the absence of solvents and at a temperature between 300 and 750° C.

3,300,538

PURIFICATION OF PERFLUOROOLEFINS AND CHLOROPERFLUOROOLEFINS

Yutaka Kometani, Tatsuo Sueyoshi, and Masayoshi Tatemoto, Osaka, Japan, assignors, by mesne assignments, to Thiokol Chemical Corporation, Trenton, N.J., a corporation of Delaware

No Drawing. Filed Mar. 6, 1963, Ser. No. 263,121
7 Claims. (Cl. 260—653.3)

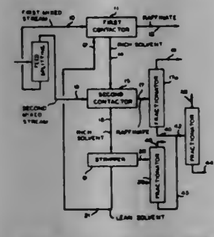
1. A process for purifying a fluoroolefin monomer of the group consisting of perfluoroolefins and chloroperfluoroolefins of the minute traces of olefinic impurities which are characterized by at least one hydrogen atom on one of the unsaturated carbon atoms and contain no elements other than carbon, fluorine, chlorine and hydrogen, and which tend to decrease the thermal stability of any polymer produced from such fluoroolefin monomer, which comprises treating the monomer with from about 2 to about 10 percent by wegiht of a sulfuric anhydride selected from the group consisting of sulfur trioxide, fuming sulfuric acid, and the alkali metal pyrosulfates, at a temperature in the range from ambient room temperatures to about 150° C. for a period of time in the range from about 10 seconds to about 30 minutes to absorb from the monomer substantially all of such olefinic impurities without substantially absorbing the monomer in the sulfuric anhydride, thereby removing substantially all olefinic impurities from the fluoroolefin monomer.

3,300,539

ISOOLEFIN RECOVERY

Fred T. Sherk, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 18, 1963, Ser. No. 317,873
6 Claims. (Cl. 260—677)



1. A process for recovering isoolefins which comprises contacting a stream containing relatively high molecular weight olefins with sulfuric acid to obtain an olefin raffinate and an isoolefin-rich acid, contacting said isoolefin-rich acid with a stream containing relatively low molecular weight olefins separable by distillation from said high molecular weight olefins to obtain a raffinate containing relatively high molecular weight isoolefins in relatively low molecular weight olefin and a relatively low molecular weight isoolefin-rich acid, stripping said relatively low molecular weight isoolefin-rich acid to obtain lean acid and relatively low molecular weight isoolefin, separating said relatively high molecular weight isoolefin from said raffinate containing relatively high molecular weight isoolefin and relatively low molecular weight olefin.

3,300,540

PREPARATION OF ALLENES

Donald B. Miller, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Apr. 8, 1964, Ser. No. 358,364
16 Claims. (Cl. 260—680)

1. A process for the preparation of an allene which process comprises:

reacting a haloaliphatic compound having at least 3 carbon atoms, an acetylenic bond at the 1 position and a halogen at the 3-position; and a hydrocarbon-aluminum compound having 3 hydrocarbon groups.

3,300,541

VULCANISABLE MIXTURES AND PRODUCTS OBTAINABLE THEREFROM

Cyril X. G. Latty, Saint-Cloud, France, assignor to Nobel-Bozel, Paris, France, a company of France

No Drawing. Filed Feb. 23, 1960, Ser. No. 10,062
Claims priority, application France, Mar. 2, 1959, 788,123
6 Claims. (Cl. 260—740)

1. A rubber composition consisting essentially of a rubber selected from the group consisting of natural rubber, and synthetic rubbery polymers of at least one compound selected from the group consisting of conjugated diolefins and chloroprene; about 1 to 1.5% by weight of the rubber of at least one organic peroxide; at least one vulcanizing agent selected from the group consisting of sulfur, tetra-lower-alkyl thiuram bisulphides, and mixtures thereof, the amount of said vulcanizing agent being from about 0.2 to 0.6% by weight of the rubber; said composition being substantially free of water, zinc, plasticing oils, carbon black, silica, and chalk fillers.

5. The mixture of claim 1, said rubber comprising a compound of rubber, protein and aldehyde prepared from latex.

6. Process for vulcanizing the composition of claim 1, which comprises the steps of heating the composition in a press at a temperature of from about 143° C. to about 145° C. for a period of less than an hour, to effect partial vulcanization thereof, then autoclaving said composition in low pressure live steam to complete the vulcanization thereof.

3,300,542

FOOD RELEASE COATING

Ronald O. Hadlock, Greensboro, N.C., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed May 19, 1964, Ser. No. 368,696
6 Claims. (Cl. 260—825)

1. A composition consisting essentially of a mixture of

(1) from 10 to 35 percent by weight of a fluid methylpolysiloxane of the unit formula $(CH_3)_nSiO_{4-n/2}$ in which n is an integer from 1 to 3 inclusive and having a silicon-bonded hydroxyl content of at least 2 percent by weight,

(2) from 65 to 90 percent by weight of a phenylpolysiloxane resin having a silicon-bonded hydroxyl content of at least 3 percent by weight and having a phenyl to silicon ratio of at least .2 and a total hydrocarbon to silicon ratio of from 1.2 to 1.7, and

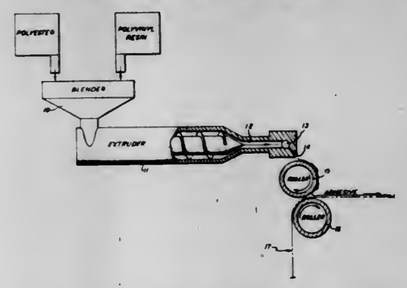
(3) as a catalyst a stannous salt of a carboxylic acid compatible with (1) and (2) in amount of at least 1 part tin per 150 parts of the combined weights of (1) and (2).

3,300,543

STABILIZED PRESSURE SENSITIVE ADHESIVE CONSISTING OF SATURATED POLYESTER AND VINYL CHLORIDE POLYMER

Stanley Turner, Costa Mesa, Calif., assignor, by mesne assignments, to Avery Products Corporation, San Marino, Calif., a corporation of California

Filed Aug. 17, 1961, Ser. No. 136,126
17 Claims. (Cl. 260—835)



1. A pressure sensitive adhesive which consists essentially of the product obtained by reacting at a temperature in the range from 140° C. to 220° C. a saturated polyester of an organic acid selected from the group consisting of saturated monocarboxylic and dicarboxylic acids and a polyhydric alcohol, said polyester having a molecular weight greater than about 1000, with a poly-

vinyl resin selected from the group consisting of homopolymers of vinyl chloride and copolymers having at least 50% vinyl chloride, the balance comprising components selected from the group consisting of esters and vinyl alcohol, the reaction mixture containing by weight from about 60% to 90% polyester and from about 10% to 40% polyvinyl resin, said product including a stabilizing compound that is an acceptor for hydrogen chloride evolved from the polyvinyl resin.

5. A pressure sensitive adhesive which consists essentially of the product obtained by first reacting a saturated polyester of an organic acid selected from the group consisting of saturated monocarboxylic and dicarboxylic acids and a polyhydric alcohol with an epoxy compound to form an epoxy polyester, said polyester having a molecular weight greater than about 1000, and by then reacting the polyester at a temperature in the range from 140° C. to 220° C. with a polyvinyl resin selected from the group consisting of homopolymers of vinyl chloride and copolymers having at least 50% vinyl chloride, the balance comprising components selected from the group consisting of esters and vinyl alcohol, the second reaction mixture containing by weight from about 60% to 90% polyester and from about 10% to 40% polyvinyl resin.

3,300,544
1,4 NAPHTHOQUINONE AS POLYMERIZATION CONTROLLER IN B-STAGING UNSATURATED POLYESTER

Phillip H. Parker, Jr., San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Apr. 6, 1965, Ser. No. 446,081
7 Claims. (Cl. 260—866)

1. A process for producing a stable B-staged form of a copolymerized unsaturated polyester ethylenically unsaturated monomer composition which comprises forming a fluid mixture of an unsaturated polyester and 5 to 75% by weight, based on said mixture, of an ethylenically unsaturated copolymerizable monomer, incorporating in said mixture 0.005 to 5.0% by weight of an organic peroxide free radical initiator which is capable of activation at temperatures below about 65° C. and an amount of 1,4-naphthoquinone such that the mol ratio of 1,4-naphthoquinone to initiator ranges between 1:2.5 to 2.5:1 and thereafter activating said initiator at a temperature below about 65° C.

3,300,545
BLENDS OF POLYSTYRENE AND A GRAFT COPOLYMER OF A STYRENE-METHYL METHACRYLATE TYPE MIXTURE ON A RUBBERY POLYMER OF A CONJUGATED 1,3-DIENE

Massimo Baer, Longmeadow, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 13, 1962, Ser. No. 216,282
3 Claims. (Cl. 260—876)

1. An intimate physical admixture of polymeric components consisting of (A) polystyrene and (B) a graft copolymer prepared by polymerizing about 25–100 parts by weight of a monomer mixture consisting essentially of 20–80% by weight of styrene and, correspondingly, 80–20% by weight of methyl methacrylate in an aqueous dispersion of 100 parts by weight of rubbery polymer having a second order transition temperature not higher than about 0° centigrade, as determined by ASTM Test D746–52T, selected from the group consisting of polybutadiene, polyisoprene, interpolymers of 50–95 weight percent of butadiene and 50–5 weight percent of styrene and interpolymers of 50–95 weight percent of isoprene and 50–5 weight percent of styrene; said polystyrene and graft copolymer being combined in such proportions that the graft copolymer substrate constitutes 5–40% by weight of the admixture.

3,300,546
WATER SOLUBLE ENVELOPE PREPARED FROM A GRAFT POLYMER OF ALKYL ACRYLATE ON A POLYVINYL ALCOHOL/POLYVINYL ACETATE CO-POLYMER

Robert L. Baechtold, Cranford, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 5, 1965, Ser. No. 493,242
6 Claims. (Cl. 260—876)

1. A sealed envelope composed of a self-supporting film of a dry, water-soluble, water- and heat-sealable film of a normally water-soluble linear polymer substantially composed of $—CH_2CH(OH)—$ and $—CH_2CH(OOCCH_3)—$ linkages in molar ratio between 95:5 and 80:20 having a weight average molecular weight between 15,000 and 150,000, toughened and permanently plasticized by a minor grafted content of an ester of acrylic acid with an aliphatic alcohol which is more than 5% soluble in water at 20° C.

3,300,547
ADHESIVE ANAEROBIC COMPOSITION AND METHOD OF PRODUCING SAME

Jeremy W. Gorman, West Hartford, Conn., and Birger W. Nordlander, Schenectady, N.Y., assignors to Loctite Corporation, Newington, Conn., a corporation of Connecticut

No Drawing. Filed Mar. 5, 1964, Ser. No. 349,755
5 Claims. (Cl. 260—885)

1. A liquid adhesive composition capable of producing between smooth steel surfaces a pipe adhering bond having a tensile strength greater than 1,000 p.s.i., said composition having extended shelf life in the presence of oxygen and being capable of rapidly polymerizing upon the exclusion of oxygen comprising an anaerobic curing composition containing a polyacrylate monomer and a hydroperoxide catalyst, and at least 0.5 percent by weight of an adhesive imparting material characterized by its compatability with the other components of the anaerobic composition, said adhesive imparting material comprising a styrene-acrylic copolymer soluble in the monomer and having a molecular weight of 2,000 to 40,000.

3,300,548
POLYOLEFINS CONTAINING COPOLYMERS OF ETHYLENE AND N-VINYL-N-HYDROCARBYL ACETAMIDES

Bernard O. Baum, Plainfield, N.J., and George M. Bryant, South Charleston, and Nathan L. Zutty, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 2, 1961, Ser. No. 149,541
15 Claims. (Cl. 260—897)

1. A composition comprising a blend of (A) from about 20 to 99 percent by weight of a polyolefin and (B) from about 1 to 80 percent by weight of a copolymer of ethylene and a member selected from the group consisting of the N-hydrocarbyl-N-vinyl acetamides, said copolymer containing in the copolymer molecule from about 0.5 to 50 percent by weight of said N - hydrocarbyl - N-vinyl acetamide copolymerized therein.

3,300,549
METHODS OF PRODUCING PROPELLANT GRAIN ADAPTED FOR SINGLE STAGE ROCKETS

Hideo Matsubara, 1213 2-chome, Kamishakujii, Tokyo, Japan

Original application Sept. 28, 1964, Ser. No. 399,634. Divided and this application June 22, 1966, Ser. No. 559,529
Claims priority, application Japan, Oct. 1, 1963, 38/53,089; Apr. 13, 1964, 39/20,689
10 Claims. (Cl. 264—3)

1. A method of producing a propellant grain comprising forming an axial hole in a succession of propellant masses, inserting an explosive stick of relatively high-burning-rate into each said hole, bonding all the propellant masses together to form a cylindrical grain in which the sticks are arranged axially in at least one row in

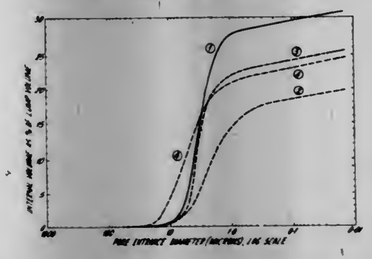


spaced relation with one another, placing the cylindrical grain upright in the center of a cylindrical vessel-like restrictor, filling the space between said cylindrical grain and said restrictor with liquid-propellant suspension which solidifies to provide an integral bond.

3,300,550
METHOD OF FORMING GRAPHITE ARTICLES

Raymond Leslie Bond, Chessington, Frank James Pinchin, Ewell, and Mansel John Jenkins, Culcheth, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Jan. 25, 1965, Ser. No. 427,626
Claims priority, application Great Britain, Feb. 3, 1964, 4,575/64
2 Claims. (Cl. 264—29)

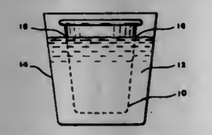


1. A method of manufacturing a graphite article comprising the steps of mixing a coke grist with a chloroform extract of coal to form a hot, formable mass, forming the mass to the desired shape and baking and graphitizing the mass.

3,300,551
PROCESS FOR SELECTIVELY FOAMING SURFACE AREAS ON A PLASTIC ARTICLE

Richard K. Shelby, Downers Grove, Ill., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 407,101
4 Claims. (Cl. 264—45)



1. The process for selectively foaming predetermined surface areas on a plastic article which comprises exposing a surface of a plastic article to a primary liquid substance which is absorbable by the plastic and which will form a constant boiling mixture, when combined with a secondary liquid substance, having a boiling point temperature above the boiling point temperature of the primary liquid substance, selectively steeping at least a portion of said exposed surface in said secondary liquid substance and subjecting said exposed surface to a temperature which is between the boiling point temperature of said primary liquid substance and the boiling point temperature of said constant boiling mixture.

3,300,552
PROCESS FOR SELECTIVELY FOAMING SURFACE AREAS ON A PLASTIC ARTICLE

Richard K. Shelby, Downers Grove, Ill., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 407,102
4 Claims. (Cl. 264—45)

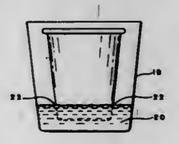


1. The process for selectively foaming predetermined surface areas on a plastic article which comprises exposing a surface of a plastic article to a primary liquid substance which is absorbable by the plastic and which will form a constant boiling mixture when combined with a secondary liquid substance, having a boiling point temperature below the boiling point temperature of said primary liquid substance, selectively steeping at least a portion of said exposed surface in said secondary liquid substance, subjecting said exposed surface initially to a temperature level which will cause a substantial quantity of the primary and secondary liquid mixture absorbed within the portion of the surface which was exposed to the primary liquid substance and steeped in the secondary liquid substance to diffuse from the plastic and then secondarily to a temperature level above the boiling point temperature of said primary liquid substance.

3,300,553
PROCESS FOR SELECTIVELY FOAMING SURFACE AREAS ON A PLASTIC ARTICLE

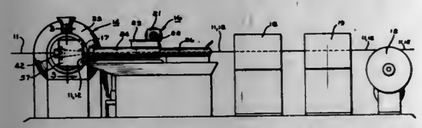
Richard K. Shelby, Downers Grove, Ill., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 407,118
5 Claims. (Cl. 264—45)



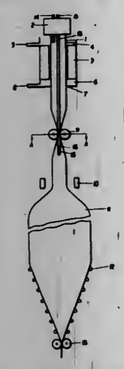
1. The process for selectively foaming predetermined surface areas on a plastic article which comprises exposing a surface of a plastic article to a medium which is absorbable by the plastic, selectively steeping at least a part of said exposed surface in a liquid diluent having a higher boiling point temperature than the medium and subjecting said exposed surface to a temperature which is between the boiling point temperature of said medium and the boiling point temperature of said liquid diluent.

3,300,554
METHOD OF MAKING CELLULAR ARTICLES
Benson F. Bachus, Omaha, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 27, 1963, Ser. No. 312,098
7 Claims. (Cl. 264—47)



1. The method of producing an article having at least a portion thereof of cellular construction, which comprises:
working material and a heat decomposable blowing agent for expanding the material in an extrusion apparatus by an extrusion screw under heat and pressure to liquefy the material and to decompose the blowing agent while advancing the material by the screw to a pressure type extrusion die for extruding the material;
maintaining the temperature of the material at the discharge end of the screw and the entrance to the die substantially constant, with the temperature of at least a portion of the material between the discharge end of the screw and the entrance to the die at least equal to the decomposition temperature of the blowing agent; maintaining a pressure drop between the discharge end of the screw and the entrance to the die substantially constant at a value such that the major portion of the total expansion of the material which takes place occurs between the discharge end of the screw and the entrance to the die.

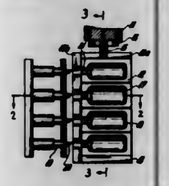
3,300,555
MANUFACTURE OF PLASTIC TUBES
Frederick Bild, Highgate, London, and William Robinson, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Nov. 12, 1963, Ser. No. 322,888
Claims priority, application Great Britain, Dec. 3, 1962, 45,467/62
20 Claims. (Cl. 264—95)



1. A method of continuously passing a resilient tube of thermoplastic material between nip rollers, which comprises internally supporting at least one edge of the tube while the tube passes between the nip and is thereby reduced to a substantially flattened condition, the support being provided by means of at least one stationary probe within the tube, which probe is located at the side of and outside the nip, so that the tendency of the tube to be creased at that edge is reduced.

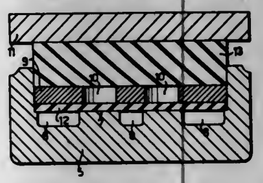
10. Apparatus suitable for continuously passing a resilient tube of thermoplastic material between nip rollers so that the tendency of the tube to be creased at one of its edges is reduced, comprising a pair of substantially parallel nip rollers spaced apart to such an extent that a tube is flattened when it is passed therebetween, and at least one stationary probe located at the side of and outside the line of the nip, said probe lying substantially in a plane perpendicular to the plane of the axes of the nip rollers and along a line perpendicular to the line of the nip.

3,300,556
METHOD OF PRODUCING HOLLOW BODIES IN A BLOWING PROCESS
Werner Battenfeld, Lindenstrasse, and Erhard Langecker, Hobbuschener Weg, both of Meinerzhagen, Germany
Filed July 7, 1964, Ser. No. 380,774
Claims priority, application Germany, July 8, 1963, B 72,591
1 Claim. (Cl. 264—98)



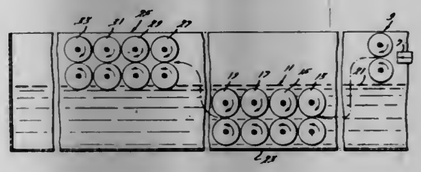
A method of producing hollow bodies in a blowing process from hose-shaped starting products, wherein the longitudinal axis of the hose-shaped starting product deviates from the axis of the opening of the hollow bodies to be produced, comprising the steps of
sealing, in a first step, a hose-shaped starting product about a blowing nozzle and blowing up the starting product therewith to form a partly blown up intermediate hollow body in a mold while the mold is not in its completely closed position,
closing said mold completely in a second step,
piercing said partly blown-up intermediate hollow body in a direction crosswise to the longitudinal axis of said hose-shaped starting product to form an opening in said intermediate hollow body, and
feeding a pressure medium through said opening to blow up said intermediate hollow body to a finished hollow body and displacing and widening said hose-shaped starting product outwardly due to the pressure above atmospheric pressure within the range of the point of piercing, thereby creating an enlarged neck opening crosswise to said longitudinal axis at the region of piercing and calibrating said enlarged neck opening.

3,300,557
MANUFACTURING RUBBER SHEETS PROVIDED WITH A RELIEF PATTERN
Luciano Valentini, Milan, Italy, assignor to Valentini-gomma S.p.A., Turin, Italy
Filed Jan. 3, 1964, Ser. No. 335,474
Claims priority, application Italy, Jan. 11, 1963, 807/63
2 Claims. (Cl. 264—163)



1. Method of manufacturing a sheet of a heat-curable material having a relief pattern on one of its faces, comprising sandwiching a relatively rigid apertured stencil plate between a first layer of heat-curable material and a second layer of heat-curable material differing from the first mentioned material, impressing said second layer into the apertures in the stencil plate while applying a backing pressure to the first layer thereby to punch-out a patch from said second layer into each of said apertures and into contact with the material of said first layer in said apertures, and applying curing heat to said patches and first layer to bond them together.

3,300,558
METHOD OF REMOVING THE CELL WALLS OF A RESILIENT CELLULAR FILTER MATERIAL
Robert F. Grant, Milwaukee, and Richard V. Jensen, Racine, Wis., assignors to Walker Manufacturing Company, a corporation of Delaware
Filed July 19, 1963, Ser. No. 296,258
8 Claims. (Cl. 264—321)



1. The method of removing cell walls from columns in resilient cellular filter material, said material having ruptured cell walls so that the cells can be filled with water, which comprises filling all the cells of the material with water and simultaneously stretching and compressing the cells by passing the material in strip form through a set of rolls so as to materially raise the pressure of the water in the columns of the cells and thereby shear and tear the cell walls from the filter material.

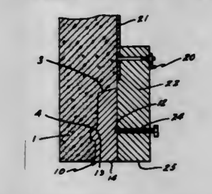
3,300,559
METHOD FOR FORMING PLASTIC TUBE BOTTOMS
Michel Baehr, 108 Rue de Flandre, Paris, France
Filed July 8, 1963, Ser. No. 293,370
Claims priority, application France, May 28, 1962, 898,951, Patent 1,334,991
3 Claims. (Cl. 264—323)

1. Method of manufacturing from an open-ended plastic tube a plastic tube having a bottom and an open end without using additional material for forming the bottom, which consists of, providing an open-ended tube of deformable, thermoplastic material, and simultaneously bending and shaping a free end portion of the open-ended tube inwardly toward the axis of said tube, and integrating the inwardly bent material into a whole defining said bottom by inserting said open end portion into an open mouth of a shaping cup having a heated bottom having a thin cross section and of high heat transfer coefficient and applying relative movement and pressure between the inner surfaces of said cup comprising a heated bottom inner surface of the shaping cup and said



open end portion of said tube for substantially instantaneously shaping and heating said plastic material to integrate it into said whole, rapidly cooling said cup bottom subsequent to the tube shaping and integrating operation while still in contact with said shaped material, and relatively separating said plastic tube and said cup to a position where said plastic tube is free of said cup.

3,300,560
METHOD FOR MAKING CONCRETE PIPE
Donald L. Welling, 519 S. 7th, Grand Haven, Mich. 49417
Filed Nov. 29, 1963, Ser. No. 326,733
7 Claims. (Cl. 264—336)

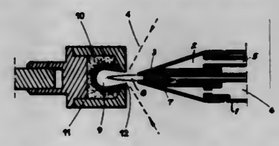


1. A method of fabricating a concrete pipe with a shaped end consisting in the steps of providing an outer pipe form and an inner pipe form, providing a die capable of being split apart and fastened together by dowels and removably affixing said die within an end of said outer form, aligning the bottoms of said die and said outer form in a common plane, building the pipe within said outer form, removing said outer form from said pipe and said die, positioning said pipe for primary support on said die, and splitting said die and removing said die from said pipe is capable of supporting itself.

ELECTRICAL

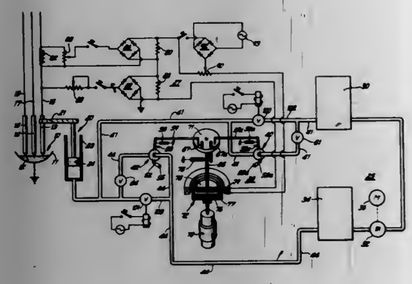
3,300,561
METHODS AND DEVICES FOR HEATING SUBSTANCES BY MEANS OF RADIANT ENERGY AND PLASMA HEAT SOURCES
Marc Foex, Paris, France, assignor to Centre National de la Recherche Scientifique, Paris, France, a society of France
Filed Sept. 25, 1963, Ser. No. 311,421
Claims priority, application France, Sept. 29, 1962, 910,820; Apr. 11, 1963, 931,314
8 Claims. (Cl. 13—3)

3. A high temperature furnace comprising a chamber to contain a non-gaseous substance to be heated, a plasma generator positioned to subject said substance in said chamber to the action thereof, a calorific radiation-emitting source operable independently of said plasma, and means



to concentrate the radiations emitted from said source on said substance, said plasma having a greater amount of energy than said concentrated radiation energy.

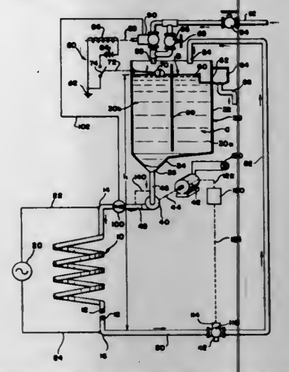
3,300,562
ARC FURNACE ELECTRODE CONTROL APPARATUS
James W. Moore, Pittsburgh, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 337,289
13 Claims. (Cl. 13—13)



1. In an electric arc furnace, the combination of a furnace body and an electrode, a hydraulic motor connected to said electrode, a hydraulic pressure system, valve means operable in one manner to connect said hydraulic motor to said pressure system in an electrode raising relation and in another manner to connect said hydraulic motor to said pressure system in an electrode lowering relation, continuously operable electric motor means, electromagnetic clutch means coupled to said electric motor means and operatively associated with said valve means, a first electrical signal source coupled to said electrode for producing a first signal functionally related to the current in said electrode, said first signal source also being connected to said clutch means for operating said valve means in said one manner so that said electrode will be raised when the current therein rises above a desired value, and a second electrical signal source coupled to said electrode for producing a second signal functionally related to the voltage in said electrode, said second signal means also being connected to said clutch means for operating said valve means in said another manner so that said electrode will be lowered when its voltage rises above a desired value.

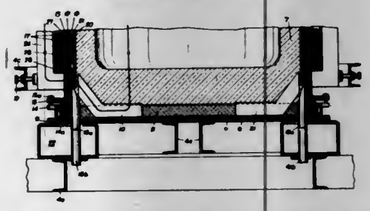
3,300,563
APPARATUS AND METHOD FOR PROTECTING THE COIL OF AN INDUCTION MELTING FURNACE
Robert J. Kasper, Seven Hills, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 9, 1964, Ser. No. 350,440
8 Claims. (Cl. 13—26)

1. In an induction melting furnace comprising a coil with a central coolant receiving passageway and a first and second access opening, a power source for imposing an alternating current across said coil, a coolant circulating pump having an inlet and an outlet, a tank for supplying coolant to said pump inlet, first conduit means for communicating said pump outlet with said first access opening, second conduit means for communicating said second access opening with said tank and means for maintaining a given level of coolant in said tank, the improvement comprising: means for by-passing water around said pump when it is stopped, a drain communicated with said second access opening, said given level being substantially above said coil, said drain being substantially below said level to establish a coolant pressure head on said drain, and valve means for selectively opening said drain as said pump is stopped whereby said coolant will



flow by gravity from said tank, through said coil, and out said drain.

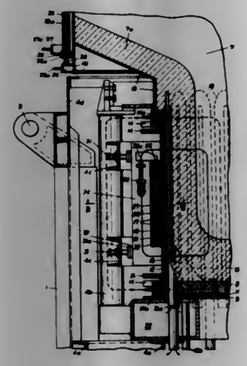
3,300,564
VACUUM INDUCTION FURNACE
Otto Junker, Lammersdorf uber Aachen, Germany
Filed June 15, 1964, Ser. No. 375,165
Claims priority, application Germany, June 20, 1963, J 23,901
8 Claims. (Cl. 13—27)



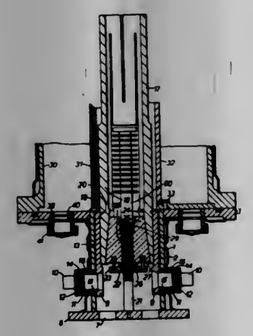
1. In a coreless induction furnace for large capacity charges, the combination of, a crucible, a primary induction coil adapted to be fed from an electric source surrounding said crucible, vacuum sealing means comprising a furnace housing, a sleeve including gas impermeable material having low electric and magnetic conductivity characteristics disposed between said coil and said crucible, and gastight upper and lower closure means operable for airtightly closing the upper and, respectively, the lower ends of said vacuum sealing means and defining a vacuum chamber housing said crucible, and cooling means for said sleeve disposed adjacent the inner surface of at least a portion of said sleeve, said sealing means comprising upper and lower sealing devices between the furnace housing and said sleeve each sealing device comprising an adjustable stuffing box including a packing, and a pressure ring surrounding a portion of said sleeve and exerting pressure on said packing for sealing said sleeve portion and being free from eddy currents, the remaining parts of the stuffing box for the packing being composed of material having low eddy current characteristics.

3,300,565
VACUUM INDUCTION FURNACE
Otto Junker, Lammersdorf uber Aachen, Germany
Filed June 15, 1964, Ser. No. 375,166
Claims priority, application Germany, June 20, 1963, J 23,903
10 Claims. (Cl. 13—27)

1. In a coreless induction furnace for large capacity charges, the combination of, a crucible, a primary induction coil adapted to be fed from an electric source surrounding said crucible, vacuum sealing means comprising a sleeve including gas impermeable material having low electric and magnetic conductivity characteristics disposed between said coil and said crucible and gastight upper and lower closure means operable for airtightly closing the upper end, respectively, the lower ends of said vacuum sealing means and defining a vacuum chamber housing said crucible, and cooling means for said sleeve disposed adjacent the inner surface of at least a portion of said sleeve, said upper closure means comprising at least one inner cover composed of refractory material and disposed within said vacuum chamber and surmounting said crucible to close the crucible, and at least one outer gas impermeable lid closing said vacuum chamber including said crucible gastightly.

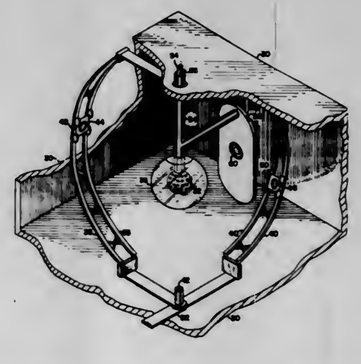


3,300,566
ELECTRIC FURNACES
Alan John Walker, Chatham, Kent, England, assignor to Spembly Limited
Filed Dec. 6, 1963, Ser. No. 328,586
Claims priority, application Great Britain, Dec. 8, 1962, 46,421/62
13 Claims. (Cl. 13—32)



1. An electric furnace comprising a tubular resistance element subdivided to provide a path for the passage of heating current in excess of the length of the element, said element having at one end a plurality of angularly spaced axially extended apertured arcuate portions constituting supporting legs for the element, a tubular water jacket, a plurality of current feeders of arcuate cross section, each lying longitudinally of the jacket between the jacket and one of said leg portions closely adjacent thereto, insulation means interposed between an inner surface portion of the water jacket and the current feeders, whereby the current feeders are in heat-conducting relationship with said jacket but electrically insulated therefrom, and in electrically conducting relationship with the outer surface of said one leg portion of the heating element, and releasable clamping means operable to press said leg portions against the current feeders and the current feeders against the jacket in a manner such that a substantially uniform pressure is exerted over the respective surfaces through which heat transfer and the flow of current occur.

3,300,567
SONAR SIMULATOR APPARATUS
Arthur W. Sear, Arcadia, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 9, 1964, Ser. No. 402,882
5 Claims. (Cl. 35—10.4)



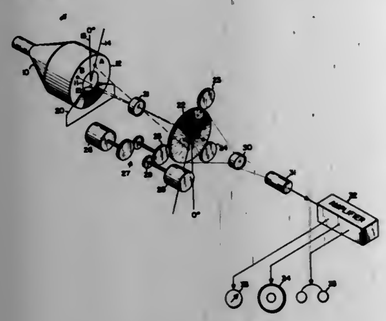
1. In a training device for simulating sonar operation, in combination:
a transducer array for receiving acoustical signals and determining the direction thereof; and
a plurality of acoustical speakers moveably supported about said transducer array and operable to generate sonar-like signals from any direction thereto.

3,300,568
SONAR SIMULATION APPARATUS
Arthur W. Sear, Arcadia, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 9, 1965, Ser. No. 486,039
12 Claims. (Cl. 35—10.4)

1. A simulator for passive sonar apparatus, comprising:
(a) a cathode ray tube having a polar display and including means for producing a spot of light;
(b) means for moving the spot of light on the face of said tube to simulate a target, said spot being moved to simulate the relative bearing of the target with respect to own ship located at the center of said tube face;
(c) means for modulating the intensity of said spot of light through a predetermined range to simulate the noise characteristics of the target;
(d) a rotatable variable density optical filter characterized to simulate the receiving beam pattern of own ship's sonar mounted in front of said tube;

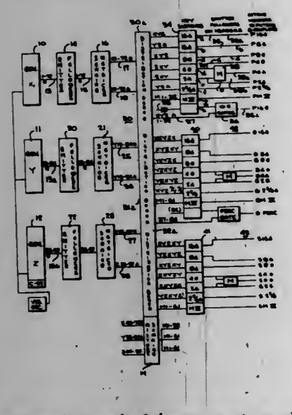
(e) a first projection lens mounted between said tube and said filter to project an image of said tube face on said filter;

(f) a phototube mounted opposite said filter from said first lens; and



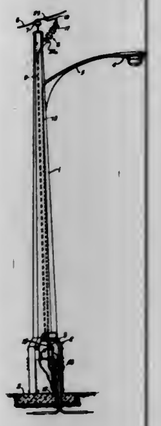
(g) a second projection lens mounted between said filter and said phototube to project said filtered image on said phototube, said phototube providing an output signal corresponding to the noise characteristics of said target as attenuated by said filter.

3,300,569
ELECTRONIC ORGAN
Thomas W. Cunningham, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 1, 1963, Ser. No. 291,662
21 Claims. (Cl. 84—1.22)



1. In an electronic musical instrument, a plurality of tone generators, each tone generator providing a gamut of musical tones, the separate gamuts including plural tones of common nomenclature, means permutatively selecting *groups* of tones from all said gamuts to form a set of musically different coherent tone gamuts well ordered in the chromatic scale, whereby each of said coherent tone gamuts consist of an ordered array of tones selected from all of said plurality of tone generators, key switches for selecting related tones from each of said coherent tone gamuts, said sets being selectable in order and combination of selection by said key switches, separate tone color filter sections having input circuits connected to said key switches and each arranged to receive a different one of said *groups* of tones, and an acoustic output system connected to said tone color filters, wherein each group includes at least one tone.

3,300,570
POWER DISTRIBUTION CONNECTION APPARATUS
Stanley J. Spiece, Milwaukee, Wis., and Richard J. Lang, Grand Rapids, Mich., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 19, 1963, Ser. No. 266,315
6 Claims. (Cl. 174—38)



6. In combination with a high voltage line and an oil-filled transformer unit having a tap cable opening and filled with oil to a selected level, a tap cable unit, which comprises,

(a) a sheathed cable having an inner conductor enclosed in a solid insulation insoluble in the oil of said transformer unit covered by a semi-conductive tape and an outer conducting sheath adapted and designed to be connected to ground, said cable having the ends pencilled to bare the conductor and having the sheath and tape stripped from the bared ends for a selected length, said sheath being stripped slightly further than said tape at each end of the cable to establish partial resistive potential grading at the ends of the sheath, one end of the sheath being belled to form a cone and extending downwardly through the cable opening in the transformer unit,

(b) a line termination unit secured to the end of the cable opposite the belled end and including,

(1) a single-piece tubular porcelain shroud coaxially mounted about a bared end of the cable in axially spaced relation to the adjacent end of the sheath,

(2) a terminal in the end of the shroud connected to the bared conductor and to the high voltage line,

(3) a grading cone having a narrow tubular neck telescoped over the outer end of the sheath in firm electrical engagement therewith and projecting axially and radially therefrom into engagement with the adjacent portion of the shroud,

(4) a high dielectric constant epoxy resin completely filling the space between the cable and said shroud and cone,

(c) means connected to said transformer unit and cable and supporting the belled end of the cable with the grading cone below the cold oil level of the oil in the transformer unit and to seal the cable opening,

(d) means electrically connecting the inner conductor to the transformer unit and constructed and arranged to have a selected flashover voltage, and

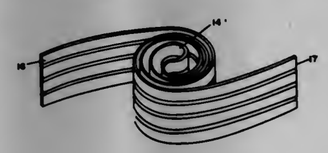
(e) said line termination unit being constructed and arranged to have a flashover voltage below said selected flashover voltage.

3,300,571
VACUUM CLEANER HOSE HAVING ELECTRICAL CONDUCTORS
David F. Downey, Stamford, and John J. Moughty, Old Greenwich, Conn., assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed May 18, 1965, Ser. No. 456,655
5 Claims. (Cl. 174—47)



1. In a suction hose having per unit length a given number of turns of reinforcing wire at a given pitch the improvement comprising at least three coaxially arranged multi-turn helical reinforcing coils haivng said given number of turns per unit length of hose and extending the length of said hose, each said helical coil having its turns serially interspersed with the turns of the other helical coils thereby defining adjacent coaxially arranged turns of reinforcing wire having an apparent pitch substantially equal to said given pitch, an airtight carcass surrounding said helical coils, said carcass extending radially inwardly between the adjacent individual reinforcing wires for forming on the outside of the hose carcass a series of discrete coaxially arranged helical grooves, said grooves having a pitch which is greater than said apparent pitch by a multiple equal to the number of said reinforcing wires, a plurality of electric conductors, each conductor of said plurality being located in a different one of said helical grooves, the number of said conductors being less than the number of said grooves.

3,300,572
EXTENSIBLE AND RETRACTABLE FLEXIBLE CIRCUIT CABLE
Victor F. Dahlgren, Chelmsford, Mass., and Sidney K. Tally, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Continuation of application Ser. No. 58,024, Sept. 23, 1960. This application Dec. 18, 1963, Ser. No. 333,256
6 Claims. (Cl. 174—69)



1. A flexible, extensible and retractable circuit cable consisting of:

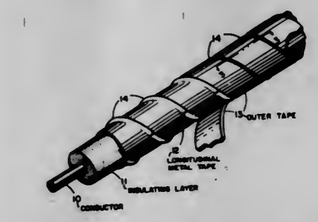
(a) a plurality of electrical conductors spaced apart in the thermoplastic material forming a ribbon type self-supporting cable, said thermoplastic material having a plastic memory characteristic,

(b) said cable being of a reversed wound coil configuration having a center of revolution and having a prestressed elasticity to permit elongation thereof by the unwinding of the said coil about said center of revolution; said ribbon type cable having a spring-like quality to return it to its original prestressed coil configuration upon release thereof, said spring-like quality being imparted thereto by the prestressed memory characteristic of said thermoplastic material,

(c) said cable being reversed at a point intermediate its ends with both ends thereof being coiled in the same rotational direction, and

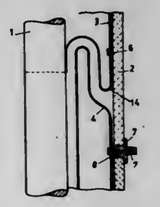
(d) said cable being adapted for for mounting between relatively movable components.

3,300,573
COMPOSITE SHIELD FOR ELECTRIC CABLES
Ulrich Paul Ronald, Roxboro, Quebec, and Roger J. Lemieux, Ormeaux, Quebec, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed June 3, 1965, Ser. No. 461,085
9 Claims. (Cl. 174—106)



1. An electric cable comprising an elongated conductor, a layer of insulating material surrounding the conductor, a continuous metal tube surrounding the layer of insulating material, and a succession of turns of strip material encompassing the tube with a discontinuity between the adjacent turns of the strip material, said strip material being under sufficient tension to form an upstanding ridge in the tube along said discontinuity.

3,300,574
LEAD-THROUGH INSULATOR, PARTICULARLY FOR HIGH VOLTAGE MERCURY VAPOUR TUBES
Max-Josef Schönhuber, Zurich, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Feb. 21, 1966, Ser. No. 528,704
Claims priority, application Switzerland, Mar. 3, 1965, 2,965/65
9 Claims. (Cl. 174—142)

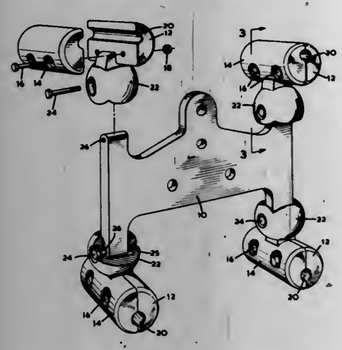


1. A lead-through insulator having a conductor passing through the insulator and intermediate electrodes interposed between the conductor and the remaining parts of the insulator for potential control, said electrodes at least partly surrounding the conductor and being sheets of which all are fixed along the insulator wall and at least some are bent back on themselves and then are bent again in their original direction in such a way that the distance between adjacent sheets is substantially constant except where the sheets are bent to pass along the insulator wall.

3,300,575
CONDUCTOR SUSPENSION ASSEMBLY

Herbert Douglass Short, Newmarket, Ontario, Canada, assignor to Lacal Industries Limited, Newmarket, Ontario, Canada

Filed Oct. 23, 1965, Ser. No. 503,764
3 Claims. (Cl. 174—144)



1. A high voltage conductor suspension assembly for a bundle of conductors of a single phase comprising a suspension plate, a plurality of conductor clamps, each having jaws with a jaw axis adapted to align with the axis of a conductor in use, and a spheroidal corona shielding link members between each clamp and said conductor plate having a spheroidal interconnecting part electrically connecting each of said conductor clamps to said suspension plate with the jaw axis of each of said conductor clamps substantially parallel to the jaw axis of each of the other of said plurality of conductor clamps.

3,300,576
AERIAL CABLE SPACER AND TIE APPARATUS

William L. Hendrix, Amherst, James P. Markham, Milford, and Thomas Ralph Hunnicutt, Bedford, N.H., assignors to Hendrix Wire & Cable Corporation, Milford, N.H., a corporation of New Hampshire

Filed May 23, 1966, Ser. No. 559,674
8 Claims. (Cl. 174—146)

1. A spacer for aerial cable of the class having lightly insulated phase conductors and an elevated supporting messenger,

the spacer characterized by a surface impedance sufficiently high in relation to the impedance of the conductor insulation to prevent voltage breakdown and resultant cable failure under all normal outdoor overhead operating conditions of weather and atmosphere, and comprising

a rigid integral body presenting seats for the conductors of the cable, and formed also for engaging to the cable messenger,

said body constructed and arranged for equilateral triangular spacing of said conductor seats and for suitably balanced surface leakage paths from the phase conductors individually to ground,

said spacer body formed in the leakage paths intermediate the conductor seats with portions having minimum upfacing and downfacing weather exposed surfaces and maximum sidefacing water shedding surfaces,

whereby the surfaces of said spacer body portions in said leakage paths are water shedding and are thereby self-maintained in washed clean condition,

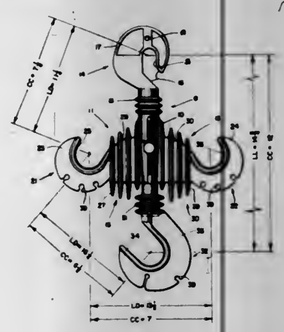
said body portions integrally formed also with a plurality of laterally spaced vertically disposed fins projecting from said water shedding surfaces at the opposite sides of the body portions,

said fins intersecting and extending the leakage paths between the phase conductors and provided in proportion and plurality such that the leakage distance measured over the spacer surface between the phase conductors is at least about 150% of the leakage distance measured along the air gap between the phase conductors,

said spacer body fabricated from an insulating synthetic plastic material which is of suitable tensile and flexural strength and impact resistance, which has a hydrophobic surface characteristic, which is impervious to water, which is track-resistant, which is not readily vaporized by electrical dischargers, and which is moldable with a smooth polished surface,

and said spacer body material having a dielectric constant which, in combination with said material properties and constructional features, accords the spacer a high electrical surface resistance under all normal weather conditions,

said spacer, by said all-weather high electrical surface resistance, attaining and maintaining an impedance which protects said aerial cable conductors from harmful voltage stresses, leakage currents and corona discharges, and which thereby preserves the conductor insulation intact and the aerial cable storm-resistant, in and throughout prolonged outdoor overhead operating service.



6. In an aerial spacer cable

a spacer having means for securing it to the cable messenger and open seats in which the cable conductors may be deposited when the spacer is installed on the messenger,

tie-engaging formations provided on said spacer behind said open conductor seats,

tie means for holding the conductors to said seats, said tie means of flexible, elastic, track-resistant, ozone-resistant, corona-discharge-resistant, and weather-resistant material,

the tie means passed across and to close over said open conductor seats and engaging said spacer formations behind said seats to releasably secure different sizes of said conductors,

said elastic tie means stretched in passing across said conductor seats whereby they are in tensioned engagement with said cable conductors and with said spacer formations behind said seats, and

manipulating elements provided on the tie means, said manipulating elements projecting when said means are in said tensioned engagement and also adapted to be grasped and subjected to push-pull, tie-engaging and disengaging manipulation by insulated tools as well as with insulated gloves, whereby the cable conductors may be repaired and the cable spacer replaced without interruption of electrical service.

3,300,577
FENCE POST INSULATOR

Richard J. Bastz, Laverne, Minn. 56156

Filed May 27, 1965, Ser. No. 459,264
1 Claim. (Cl. 174—163)

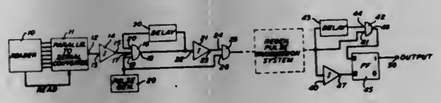


In combination with a T-shaped-in-cross-section fence post including a flat forward portion having lugs projecting therefrom, and further including a flange extending perpendicularly from said flat portion and at the opposite side of said lugs, and a charged wire supported by said fence post, an insulator including a curled portion receiving a portion of the outer edge of said flange, an integral side insulating portion extending from said curled portion and including a bent portion passing about a portion of the side edge of said post flat portion, a flat insulating further integral portion extending from said bent portion and lying against said post flat portion, and including a further curled portion receiving the opposite side edge of said post flat portion, a pair of spaced bosses attached to said flat insulating portion and receiving said charged wire therebetween, said insulator being positioned between said lugs, a wire securing member attached to said charged wire at either side of said insulator and passing about said fence post and engaging said curled portion.

3,300,578
DATA TRANSMISSION

Claude G. Davis, Colts Neck Township, Monmouth County, Eric E. Sumner, North Caldwell, and Lewis C. Thomas, North Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 12, 1963, Ser. No. 287,281
4 Claims. (Cl. 178—3)

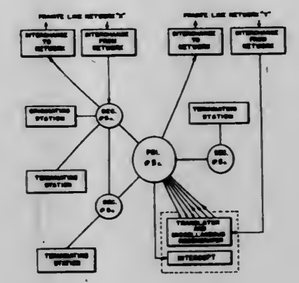


1. In combination. a synchronous regenerative pulse transmission system for transmitting marking pulses and marking spaces in time slots and employing self-timed repeaters, a source of binary data having a pulse repetition rate which is nonsynchronous with respect to the pulse repetition rate of said synchronous transmission system, means connected between the input of said transmission system and said source to begin to generate before the lapse of a time interval equal to the time duration of a time slot of said transmission system a pulse train of a first pulse signal pattern in response to the generation of a data marking pulse by said source and a pulse train of a second pulse signal pattern in response to the generation of a data marking space by said source, and means at the output of said transmission system to generate before the lapse of a time interval greater than the time duration of a time slot of said transmission system a data marking pulse in response to the reception of said first pulse signal pattern and a data marking space in response to the reception of said second pulse signal pattern.

3,300,579
LINE SWITCHING SYSTEM FOR SIMULTANEOUSLY TRANSMITTING TELEGRAPH MESSAGES TO MULTIPLE ADDRESSES

Dale A. Nonnemacher, Morton Grove, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed July 15, 1963, Ser. No. 294,893
17 Claims. (Cl. 178—4)



1. In a printing telegraph line switching message transmission system operable under control of a code storage medium containing stored data representative of the addresses of stations on the system to which a message is to be sent and also containing stored data representative of the message to be transmitted to said stations,

(a) a plurality of subscribers sets each having a single line access to a line switching network,

(b) means for rendering said sets operative in a predetermined sequence,

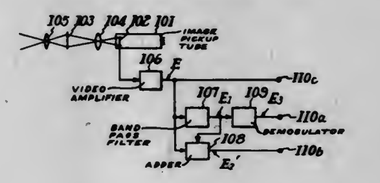
(c) means controlled by said storage medium for attempting to complete connections in said sequence through said sets to separate stations the addresses of which are stored in said medium, and

(d) means for simultaneously transmitting the message stored in said medium to those stations to which connections have been completed.

3,300,580
COLOR VIDEO SIGNAL GENERATING APPARATUS

Toshihiko Takagi and Shusaku Nagahara, Kawasaki, Japan, assignors to Nippon Columbia Kabushikikaisha (Nippon Columbia Co., Ltd.), Kawasaki, Japan, a corporation of Japan

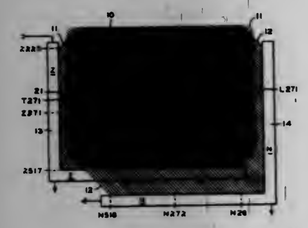
Filed Dec. 26, 1963, Ser. No. 333,397
Claims priority, application Japan, Dec. 27, 1962, 37/59,021
24 Claims. (Cl. 178—5.4)



1. A color video signal generating apparatus comprising an image pickup tube provided with a photoelectro conversion layer, means for essentially intercepting in stripes at least one of colors from an object to be reproduced and projecting the stripe-pattern to said photoelectro conversion layer in a manner so that said stripe-pattern periodically intersects the scanning direction of said image

pickup tube, said means being positioned in an optical path, said image pickup tube producing a composite video signal composed of a non-modulated video signal and a moduated video signal, said modulated video signal corresponding to said intercepted color, a band-pass filter for separating said modulated video signal from said composite video signal, a demodulator connected to the output side of said band pass filter, means connected to the output side of said image pickup tube for separating said non-modulated video signal from said composite video signal by combining said modulated video signal, which has not yet been demodulated by said demodulator, with said composite video signal, and means connected to the output side of said demodulator and the last mentioned means for obtaining color video signal from said demodulated video signal and said non-modulated video signal.

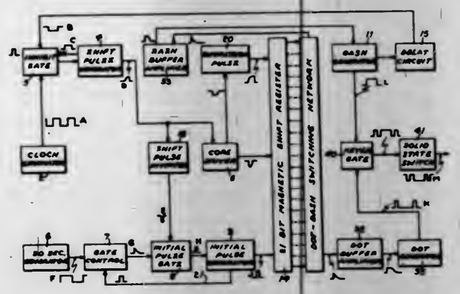
3,300,581
FLAT SCREEN ELECTROLUMINESCENT X-Y DISPLAY
Don J. Steinmeyer, 3803 Kosciusko St., St. Louis, Mo. 63118
Filed Mar. 16, 1964, Ser. No. 352,126
5 Claims. (Cl. 178—7.5)



1. In an electroluminescent display device of the type described, the combination of:
a first set of conductors,
a second set of conductors, disposed at right angles to said first set of conductors, an electroluminescent film disposed between and contacting said two sets of conductors,
an electromagnetic delay line associated with said first set of conductors,
an electromagnetic delay line associated with said second set of conductors, and
a scanning circuit, said first and second set of conductors being individually and sequentially energized momentarily through said delay lines by the scanning circuit such that scan lines are produced along parallel paths which are angularly disposed with respect to both sets of conductors.

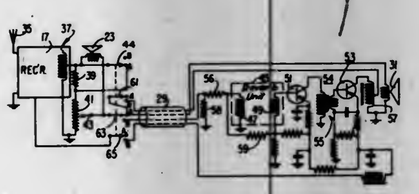
3,300,582
SOLID STATE IDENTIFICATION KEYER
Don I. Himes, Nutley, and Robert M. Aughey, Dover, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed June 10, 1963, Ser. No. 286,528
7 Claims. (Cl. 178—79)

1. An automatic keying apparatus comprising:
first clock means to generate starting pulses;
second clock means to generate shift pulses;
a shift register having a plurality of outputs;
first coupling means coupling the outputs of said first clock means and said second clock means to said shift register;
a plurality of switching means adapted to be set according to a preselected code;
second coupling means coupling each said output of said shift register to a corresponding one of said plurality of switching means;
dash symbol generating means;
dot symbol generating means;
said first coupling means including an inhibiting means coupled between said second clock means and said



shift register and responsive to signals from said dash generator for inhibiting the application of shift pulses from said second clock means to said shift register during the generation of a dash symbol; and
third coupling means coupling the outputs of each of said switching means to said dash symbol generating means or to said dot symbol generating means according to said preselected code.

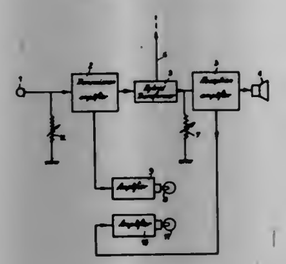
3,300,583
AUTOMOBILE SPEAKER SYSTEM WITH REVERBERATION
Anthony R. Mikelevicius, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 13, 1963, Ser. No. 279,727
11 Claims. (Cl. 179—1)



1. A sound reproduction system for use in an automobile having front and rear interior portions, said system including in combination, an audio signal source mounted in the automobile, first and second speakers mounted respectively in the front and rear interior portions of the automobile, a reverberation device for producing a delayed signal of decaying amplitude, circuit means interconnecting said first and second speakers and said audio signal source and said reverberation device, said circuit means including a plurality of switches and conductor means providing a pair of circuit configurations according to the setting of said switches, with the first circuit configuration providing unreverberated sound from said first and second speakers and controlling the relative outputs thereof and with the second circuit configuration

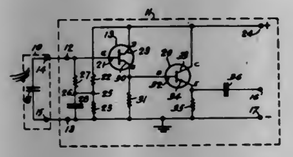
providing reverberated sound from said second speaker and controlling the relative outputs of unreverberated sound from said first speaker and reverberated sound from said second speaker.

3,300,584
TWO-WAY TELEPHONE COMMUNICATION SYSTEM
Pierre Jeanlin, Lesmureaux, France, assignor to Neophone France, a corporation of France
Filed Apr. 3, 1963, Ser. No. 270,261
Claims priority, application France, Apr. 11, 1962, 894,172
5 Claims. (Cl. 179—1)



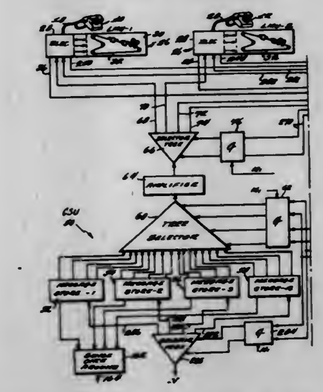
1. A two-way telephone communication system comprising: a transmission set; a transmission amplifier having an input connected to said transmission set; a first photoconductive cell connected in parallel across said input; a telephone line, said transmission amplifier connecting said transmission set to said telephone line; a reception set; a reception amplifier having an input; a second photoconductive cell connected in parallel across the input of the reception amplifier, said reception amplifier connecting the telephone line to said reception set; first and second light sources respectively positioned for directing their light on said first and second photoconductive cells; means, connected to said reception amplifier, for controlling the operation of said first light source; means, connected to said transmission amplifier, for controlling the operation of said second light source.

3,300,585
SELF-POLARIZED ELECTROSTATIC MICROPHONE - SEMICONDUCTOR AMPLIFIER COMBINATION
Cornelis Wilfred Reedyk and Peter Fatovic, Ottawa, Ontario, Canada, assignors to Northern Electric Company, Limited, Montreal, Quebec, Canada
Filed Oct. 1, 1963, Ser. No. 313,021
20 Claims. (Cl. 179—1)



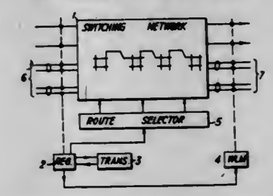
1. In combination, a self-polarized electrostatic microphone and a semiconductor amplifier having its input electrically coupled to said microphone, said microphone being arranged to have its electrical impedance, and said amplifier being arranged to have its input impedance, of such values so as to produce effective electrical coupling therebetween.

3,300,586
CONVERSATION MACHINE
David H. Shepard, Rye, N.Y., assignor to Cognitronics Corporation, Briarcliff Manor, N.Y., a corporation of New York
Filed Nov. 5, 1963, Ser. No. 321,584
20 Claims. (Cl. 179—6)



1. Equipment for conversing with at least one person whose verbal statements are received by the equipment over a link, comprising:
means for distinguishing between at least two of said statements which respectively correctly convey the contents intended by the person conversing with said equipment and for providing at least two unique output signals which respectively correspond to said two statements,
means for selectively supplying at least one of a plurality of audio messages to said person via said link in accordance with said output signals.

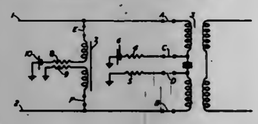
3,300,587
AUTOMATIC TELECOMMUNICATION EXCHANGES
Ronald George Knight and Maurice Charles Branch, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 5, 1963, Ser. No. 292,887
Claims priority, application Great Britain, July 19, 1962, 27,783/62
7 Claims. (Cl. 179—18)



1. An automatic telecommunications system comprising a switching network having a plurality of inlets and outlets with crosspoints therebetween, means for selectively operating said crosspoints to interconnect selected inlets and outlets, a plurality of two wire circuits connected to some of said inlets, a plurality of four wire circuits connected to others of said inlets, route selector means for setting up paths from any inlet through any available crosspoints in said network to any outlet, and means for operating said route selector means to complete a single path from two wire circuit inlets through said network and to complete a pair of parallel paths from said four

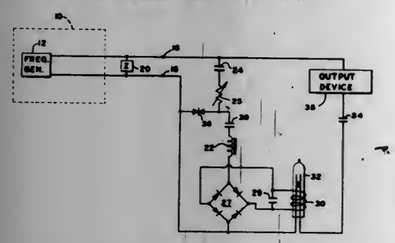
wire circuit inlets through said network to a selected outlet, said pair of said paths being selected independently of each other so that said pair of paths are not directly associated with each other except during any given call.

3,300,588
LINE CIRCUITS FOR SUBSCRIBERS' TELEPHONES
Thomas Harold Flowers, London, England, assignor to Her Majesty's Postmaster General, London, England
Filed Dec. 27, 1963, Ser. No. 333,806
Claims priority, application Great Britain, Jan. 3, 1963, 408/63
4 Claims. (Cl. 179—70)



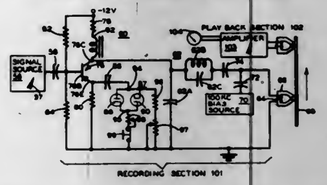
1. A line circuit for a subscriber's telephone instrument comprising in combination first and second line conductors, a subscriber's line transformer, an input winding on said transformer in series connection with said first and second conductors, a first source of line feed current, connection from said first source to said input winding to provide feed current through said input winding to said conductors, a second source of line feed current, and connection means of high impedance to currents of speech frequency connecting the said second source across said first and second conductors in parallel connection with said input winding to provide feed current direct to said first and second conductors.

3,300,589
TELEPHONE RINGING CIRCUITS
Charles W. Carter, Charlottesville, Va., assignor to Stromberg-Carlson Corporation, a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,087
3 Claims. (Cl. 179—87)



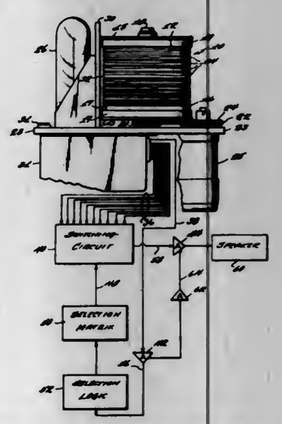
1. A telephone ringing circuit for use in a multi-frequency system of selective signalling providing a set of low voltage ringing signals of different individual frequencies comprising in combination, a pair of telephone line conductors, a tuned series resonant circuit coupled between the lines tuned to a single of said ringing signals, limiting means connected in shunt with the resonant circuit, means coupled in series with said resonant circuit to rectify current flowing through said resonant circuit during the presence of one of the frequencies on the line at its resonant frequency, magnetic reed relay means including a coil operable to close a set of contacts by D.C. current flow therethrough coupled for closing said set of contacts by said D.C. current flow derived from said resonant circuit during the presence of said rectified current produced by said means coupled to rectify current and an audible output device coupled to said line for energization when said contacts are closed.

3,300,590
MAGNETIC TAPE SIGNAL TRANSFER COMPENSATION SYSTEM
Daniel Cronin, 345 W. 58th St., New York, N.Y. 10019
Filed Jan. 3, 1963, Ser. No. 249,208
9 Claims. (Cl. 179—100.2)



1. A linear magnetic recording system comprising: a source of signals; a magnetic recording head adapted for operation with a magnetic record medium movable past said magnetic recording head, said magnetic record medium having a flux density versus magnetization force applied characteristic which is nonlinear in a first direction for amplitudes of magnetization force below a first amplitude, linear for amplitudes of magnetization force from said first amplitude to a second and greater amplitude and nonlinear in a second and opposite direction for amplitudes greater than said second amplitude; an alternating-current high-frequency biasing source connected to said magnetic recording head to remove the nonlinearity in said first direction; and a predistortion signal amplifier for coupling said source of signals to said magnetic recording head, said predistortion signal amplifier having a nonlinear transfer characteristic in said first direction for compensation for the nonlinearity in said second direction in the characteristic of said magnetic record medium.

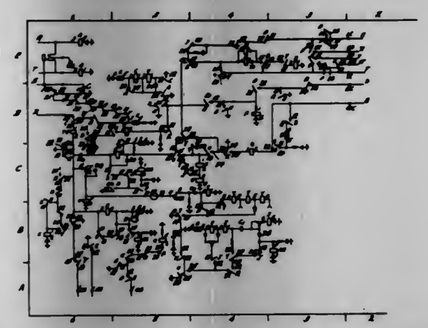
3,300,591
AUDIO PLAYBACK UNIT
Edward J. Gushue, Bedford Hills, and David A. Goldman, Yorktown Heights, N.Y., assignors to Cognitronics Corporation, Briarcliff Manor, N.Y., a corporation of New York
Filed Oct. 30, 1963, Ser. No. 320,117
6 Claims. (Cl. 179—100.3)



1. Audio playback equipment comprising:
a film cylinder having fixed around its periphery a plurality of sound tracks containing optical signals representing audio messages capable of being transduced into audible form, each of said optical signal messages ending at a predetermined point on its associated track,
means for developing an electrical reference signal indicating the end of said sound tracks,

means for rotating said cylinder and thereby rotating all said tracks simultaneously,
means including a plurality of stationary optical transducers respectively disposed adjacent said tracks, for providing, during rotation of said cylinder in the same direction, simultaneously occurring, respective outputs representing a conversion of said optical signals into electrical sound signals,
means for amplifying said electrical sound signals,
means for transducing said amplified electrical sound signals into audible messages, and
automatic means using said electrical reference signal and including a switching circuit for selecting any desired one of said simultaneously occurring optical transducer outputs while said cylinder is rotating in said same direction and when said switching circuit is operatively associated with one of said message ending points and tacitly switching the corresponding electrical sound signals to said amplifying means for playback in audio form by said transducing means.

3,300,592
TELEPHONE TEST CIRCUIT
Oliver C. Hall, Charlottesville, Va., assignor to Stromberg-Carlson Corporation, a corporation of Delaware
Filed Jan. 21, 1963, Ser. No. 252,729
2 Claims. (Cl. 179—175.2)



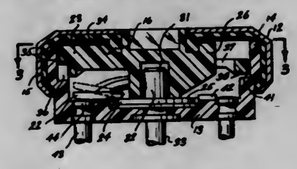
1. In a telephone system for testing a subscriber's telephone, the subscriber loop and the central office selectors, the combination comprising means for storing the pulse train corresponding to numbers dialed by said subscriber's telephone, means for reading out said pulse train into said selectors after said telephone is disconnected from said loop, whereby said selectors respond to said pulse train and cause ringing current to be transmitted to the telephone corresponding to the number dialed and an electronic secretary for recording a message dictated from said subscriber's telephone.

3,300,593
ELECTRICAL BUS BAR HEATER SYSTEM
Alfred J. Luberts, Seattle, Wash., assignor to Insul-8 Corp., San Carlos, Calif., a corporation of California
Filed Oct. 14, 1963, Ser. No. 316,058
8 Claims. (Cl. 191—27)



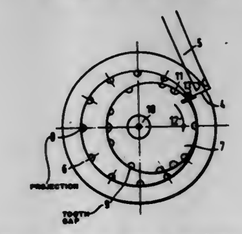
7. An elongated electrical bus bar adapted to be aerially fixedly supported as a trolley electrification system and having a longitudinal contact surface for engagement by a traveling current collector;
the bus bar having a cross-sectional configuration which includes a cavity;
an elongated insulating sheath covering a major portion of the bus bar exterior and leaving the longitudinal contact surface accessibly exposed; and
a heater wire having an electrically insulative covering the outside diameter of which is substantially less than the inside diameter of said cavity extending along within said cavity and in contact with surfaces defining said cavity.

3,300,594
ELECTRIC SWITCH HAVING A ROTOR WITH A RESILIENTLY DEFORMABLE DETENT BEAM MEMBER
Bud A. Paine, San Gabriel, and George Soulakis, Jr., Pasadena, Calif., assignors to Spectrol Electronics Corporation, San Gabriel, Calif., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,313
4 Claims. (Cl. 200—11)



1. A miniature rotary switch comprising:
(A) housing means defining a cavity and including
(1) a base having a plurality of stationary contacts thereon,
(2) a side wall having inwardly directed detent cams, and
(3) a cover defining an opening therethrough,
(B) unitary rotor means centrally positioned within said cavity and formed of electrically non-conductive molded plastic material, said unitary rotor means including
(1) a central body portion having a shaft extending through said cover for actuation thereof,
(2) a resiliently deformable beam affixed at each end to said central body portion and having a radially outwardly extending thickened portion forming a detent, said detent extending into engagement with said detent cams, and
(3) a plurality of pad means extending outwardly from said central body portion;
(C) a movable electrical contact member secured to one of said pad means and extending into engagement with said stationary contacts.

3,300,595
DEVICE FOR MAKING A MOMENTARY CONTACT
Walter Holzer, Drosteweg 19, Meersburg (Bodensee), Germany
Filed Nov. 12, 1964, Ser. No. 410,404
Claims priority, application Germany, Nov. 15, 1963, H 50,852
6 Claims. (Cl. 200—19)



1. A device for making a momentary contact comprising contacts, at least two discs, one disc connected to a continuous drive and driving the other disc, said discs

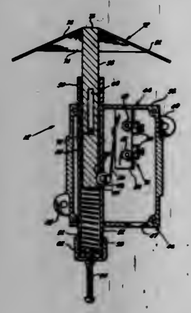
being eccentrically journalled within each other, the inner disc eccentrically journalled to its shaft, each of said discs having radial recesses therein, such that rotation of said discs causes periodic registration of said recesses, a spring biased radially displaceable switching member having a front edge which, upon registration of said recesses of said discs, will engage said recesses, thus causing operation of said contacts.

3,300,596
CHARACTER GENERATION MATRIX
James A. Johnsen, Niles, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,225
6 Claims. (Cl. 200—46)



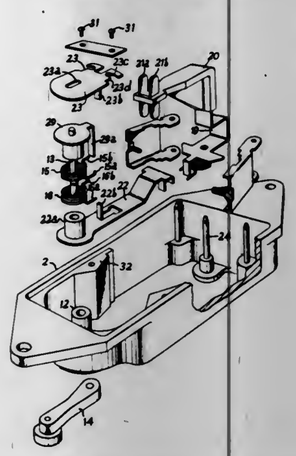
1. A character generation device including:
a plurality of electrical connectors each forming an output for an individual bit in the characters to be generated;
at least one matrix card having a common bus strip and a plurality of code strips each individual to a particular bit in the characters to be generated, each of the connectors being in electrical contact with one of the code strips and being out of electrical contact with the common bus strip;
a plurality of means for connecting selected ones of the code strips to the common bus strip thereby connecting the bus strip to the connectors which are in contact with the selected code strips and changing the bits individual to the connected code strips from one state to another; and
means for positioning each of the connecting means in individual association with one of the code strips and for enabling each of the connecting means for individual movement into and out of electrical connection with its associated code strip so that each of the bits in the character to be generated can be changed from one state to another.

3,300,597
LIMIT SWITCH
Willis G. Hewett, 233 Ave. G, Fort Dodge, Iowa 50501
Filed Nov. 23, 1964, Ser. No. 412,973
3 Claims. (Cl. 200—47)



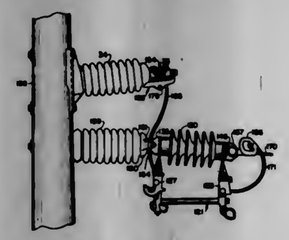
3. In a limit switch, the combination of:
a casing,
a normally open electric switch in said casing designed for connection in an electric circuit,
said electrical switch having a spring load actuating arm movable to a closed position,
an elongated enclosed housing in said casing having an open end terminating exteriorly of said casing,
said housing having a sidewall aperture disposed within said casing,
a spring loaded plunger reciprocally mounted within said housing so that one of said plunger in its neutral position projects beyond the open end of said housing,
the other end of said plunger being provided with a notch adapted to register with said aperture in neutral position,
a contact cap on the projected end of said plunger, said cap having radially inclined sides extending downwardly and outwardly from an apex point so that contact against said cap from any transverse direction will effect movement of said plunger into said housing,
one end of said arm being disposed within said aperture and said notch when said plunger is in neutral position whereby said electric switch is open,
movement of said plunger into said housing by a contact force against said contact cap causes said arm to be cammed out of said notch to engage the widest diameter of said plunger whereby said arm is moved sufficiently to close said electric switch, and
means automatically positioning said plunger at its neutral position when any contact force against said plunger is released.

3,300,598
ELECTRICAL LIMIT SWITCHES
Harold Richard Scott, Eltham, London, Louis Allan Davis, Swindon, and Peter John Fogaty, Ashburton, England, assignors to The Birmingham Small Arms Company Limited, Birmingham, England, a British company
Filed Mar. 10, 1965, Ser. No. 438,586
Claims priority, application Great Britain, Mar. 19, 1964, 11,700/64
2 Claims. (Cl. 200—47)



1. In an electric limit switch, the combination comprising: a housing have a support surface; a switch-operating shaft mounted in the housing for pivotal movement about an axis perpendicular to said surface and having a dog connected thereto, at a radial distance from this axis, for common pivotal movement therewith; a bias plate having an aperture for the passage of the shaft and at least two edge portions approximately tangential to a circle about the said axis and angularly displaced thereabout, said plate being supported adjacent to said edge portions on said support surface with the shaft passing through said aperture; two clamping screw-and-nut means, whose screws project from the support surface of the housing adjacent respectively to said edge portions of the plate so as to permit pivotal movement of the bias plate about the shaft said screw-and-nut means having clamping surfaces engageable with the surface of the bias plate adjacent to said edge portions to lock the bias plate against such pivotal movement, the bias plate further having a dog portion spaced radially from said aperture and alignable in the direction of said axis with said dog of the operating shaft, and clasping spring means jointly embracing said dog and dog portion and urging them into mutual alignment, the aperture of the bias plate being elongated to permit the plate to be moved in a direction corresponding to the radius extending through said dog portion to permit, when said screws are slackened and the plate is in a predetermined position, displacement of said plate in the direction of said radius to withdraw said dog portion from engagement with said clasping spring means, said bias plate including a portion having a width approximately equal to the distance between said screw members and extending from said edge portions in the direction of said radius in a radially inward direction.

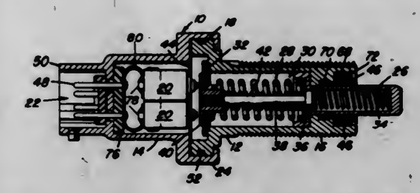
3,300,599
LINE TENSION CIRCUIT INTERRUPTER
William Austin Lankford, Birmingham, Ala., assignor to USCO Power Equipment Corporation, Birmingham, Ala., a corporation of Alabama
Filed Dec. 18, 1964, Ser. No. 419,339
12 Claims. (Cl. 200—48)



1. A circuit interrupter comprising:
(a) a strain insulator;
(b) a line insulator;
(c) means on a first end of said strain insulator for connecting said first end of said strain insulator to a conductor line;
(d) pivotal means on the other end of said strain insulator connecting said other end to said line insulator for rotation of said strain insulator solely in a vertical plane;
(e) means on said other end of said strain insulator for connecting said other end of said strain insulator to a conductor line;
(f) and a circiut interrupting device fixedly attached to the ends of said strain insulator and including means for connecting it to the ends of the conductor line.

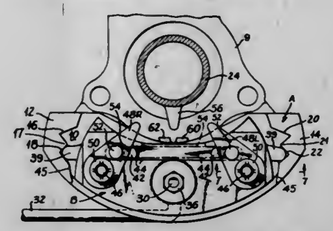
3,300,600
MINIATURE INTERLOCK SWITCH
Arthur G. Blomquist, Rte. 2, Box 822, Wayzata, Minn. 55391, Ludolph Larsen, 1812 Spring Valley Circle, Minneapolis, Minn. 55422, Milton C. Neuman, 8520 Rose Manor, Minneapolis, Minn. 55427, and Palmer G. Wermager, 4529 Abbott Ave. N., Minneapolis, Minn. 55422
Filed Mar. 8, 1965, Ser. No. 446,762
6 Claims. (Cl. 200—50)

1. An interlock switch comprising structure defining a housing having electrical connectors communicating between the interior and exterior thereof, at least one electrical switch element positioned within said housing and electrically connected to said electrical connectors, an elongated member reciprocately mounted within said housing and having one end for contacting and thereby actuating said switch element upon reciprocation of said elongated member in one direction, a reciprocately mounted plunger in tandem with said elongated member, first spring means positioned at the opposite end of said elongated member in tandem therewith and engaging said plunger for transmitting the reciprocation of said plunger in one direction to the opposite end of said



elongated member to reciprocate it in said first mentioned one direction, second spring means encompassing said elongated member and mounted to reciprocate with said elongated member for transmitting said reciprocation of said plunger to said one end of said elongated member, third spring means encompassing said second spring means and said elongated member and in engagement with said plunger and said housing for biasing said plunger in the opposite direction, a bowed flexible printed circuit connecting said electrical switch element to said electrical connector, and a resilient member secured to said housing positioning of said switch element.

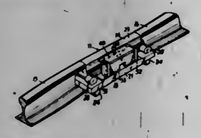
3,300,601
TURN SIGNAL
Gideon A. Du Rocher, Mount Clemens, and Chester T. Hill, Birmingham, Mich., assignors to Essex Wire Corporation
Filed Feb. 15, 1965, Ser. No. 432,768
9 Claims. (Cl. 200—61.34)



1. In a turn signal, the combination of a steering shaft having a turn signal release cam, a stationary member, a rock shaft journaled therein, a movable member mounted on said rock shaft for rocking movement relative to said stationary member, means operable to normally center said movable member in neutral position relative to said stationary member, latch means for said movable member in any of three positions, namely, neutral, left turn indicating and right turn indicating positions, said latch means comprising a pair of detents slidably carried by and movable axially relative to said movable member, said stationary member having a pair of notches to receive said pair of detents in neutral position, a third notch for receiving one of said detents in left turn indicating position and a fourth notch for receiving the other of said detents in right turn indicating position, spring means biasing said detents to slide into engagement with said notches, a cancel finger for each of said detents and pivotally mounted on said movable member, said mov-

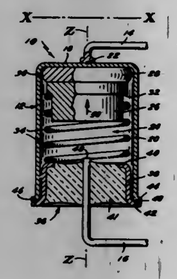
able member, when rocked for a left turn indication, positioning the left turn cancel finger only in the path of said release cam, and when rocked for a right turn indication, positioning the right turn cancel finger only in the path of said release cam, each of said cancel fingers cooperating with its respective detent to slidably retract it from its turn indicating position whereupon said means operable to normally center said movable member relative to said stationary member returns said movable member to neutral position.

3,300,602
POSITION INDICATING SWITCH MEANS
Seymour H. Raskin, 4242 Lomo Alto, Dallas, Tex. 75219
Filed Sept. 4, 1963, Ser. No. 306,574
6 Claims. (Cl. 200—61.41)



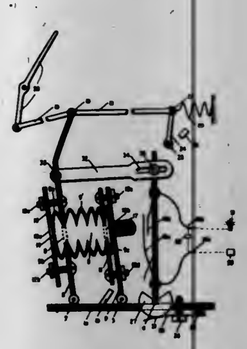
1. A position indicating device including a support means; a plate mounted on said support means for pivotal movement about an axis substantially parallel to the path of movement of an object, said plate having a surface engaged by the object as the object moves past the plate and moves it out of its path of movement; and operator means carried by said plate and extending past said surface for engagement by said object when the object is at a predetermined position in its path of movement and relative to said plate, said operator means when engaged by the object indicating the position of the object.

3,300,603
INERTIA OPERATED HERMETICALLY SEALED SWITCH
Wilbur T. Wakely, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,089
1 Claim. (Cl. 200—61.45)



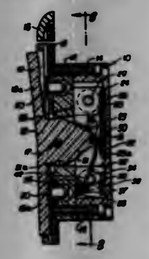
A normally open electric switch comprising:
(a) an electrically conductive cup-shaped housing having a closed end and an open end and forming a chamber therein;
(b) an outwardly radially extending annular flange formed on the open end;
(c) a header mounted in the open end having a frame with an outwardly, radially extending annular flange on one end of the frame mating with the flange on the housing and hermetically connected thereto and an inwardly extending annular flange formed on another end of the frame;
(d) two electrical leads;
one lead electrically connected to the closed end of the housing, the other lead mounted in the header frame and electrically isolated therefrom;
(e) glass insulation mounting the other lead in the header and forming a hermetic seal of the open end of the housing;
(f) the other lead extending into the chamber slightly beyond the inwardly extending flange of the header frame;
(g) an electrically conductive movable mass slidably mounted in the chamber adapted to move to and from the other lead and formed with an annular spring seating shoulder in alignment with the inwardly extending flange of the header frame;
(h) an electrically conductive spring contacting the inwardly extending flange of the header frame and the annular spring seating shoulder of the mass and biasing the mass away from the other lead; and
(i) guide means attached to and guiding the mass means in the chamber during its movement to and from the other lead;
whereby force of a predetermined magnitude to overcome the bias of the spring and acting in a direction urging the mass toward the other lead will cause the mass to contact the other lead closing a circuit from the one lead, through the housing, the frame, the spring, the mass to the other lead.

3,300,604
STOP LIGHT SWITCH FOR VEHICLES
Carl Straub, Zurich, Switzerland, assignor to Brevetti Omnitec, Milan, Italy
Filed Apr. 26, 1965, Ser. No. 450,762
Claims priority, application Switzerland, Apr. 27, 1964, 5,502/64
10 Claims. (Cl. 200—61.89)



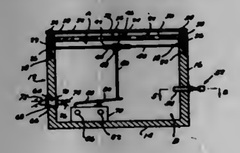
1. Stop-light control for automobiles, including: a housing portion; a first support the position of which is responsive to the movement of the accelerator pedal of the automobile and which is mounted for movement with respect to said housing portion; a second support spaced from said first support in the direction of movement of said first support when the accelerator is released and which is mounted for movement with respect to said housing portion; entraining means connecting together said first and second supports for permitting a degree of relative movement therebetween and to cause one support to move in response to the other once the degree of relative movement has been exceeded; adjustable brake means for providing an adjustable constant resistance to movement of said second support; a switch associated with said second support and located between said first and second supports, for series connection in the stop-light circuit of the automobile; pneumatic means of variable length located intermediate said first and second supports, one end of said pneumatic means being fixed to said first support and the other end facing said switch, said pneumatic means at least indirectly causing closing of said switch upon sufficient movement of said first support towards said second support.

3,300,605
ELECTRICAL TOGGLE SWITCH
Robert E. V. Ramsing, Whittier, and Francis K. Bourbenne, Lawndale, Calif., assignors to Sierra Electric Corporation, Gardena, Calif., a corporation of California
Filed Nov. 23, 1964, Ser. No. 413,127
5 Claims. (Cl. 200—67)



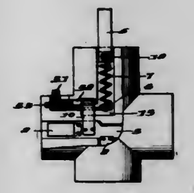
1. An electrical switch comprising an insulative body and cover, a conductor leaf spring within and terminally supported by the body, an actuating lever extending through the cover and having an oscillatory projection in opposed spaced relation to said spring, a conductive fulcrum piece interposed between said projection and spring and urged by the spring tension against the projection so that said piece oscillates on the spring in response to oscillations of the lever projection, a stationary contact, and a conductive arm carried by said fulcrum piece and having a terminal contact movable into and out of engagement with said stationary contact by oscillation of said arm with the fulcrum piece, said fulcrum piece being accommodated for oscillation within recesses in the spring and lever projection, the fulcrum piece being essentially blade-shaped and extending transversely of the spring in edge engagement therewith and with the lever projection.

3,300,606
RATE RESPONSIVE PRESSURE CONTROL SYSTEM
Robert L. Starer, Rydal, Pa., and Morris Dean, Hayward, Calif., assignors to Stephen L. Snyder, Philadelphia, Pa.
Filed Feb. 19, 1965, Ser. No. 433,881
6 Claims. (Cl. 200—83)



1. A rate-responsive pressure-control system operable in response to the translation of said system in a fluid media having a pressure constantly varying in one direction, said system comprising a substantially hollow housing having an open end, a flexible diaphragm fixedly-secured to said housing and extending transversely across said open end to establish a closed chamber in said housing, bleeder valve means on said housing including a transversely-extending opening having ends of which one end opens directly into said chamber and another end thereof opens externally of said housing and directly into said fluid media at one side of said diaphragm, means for converting a dynamic pressure flow of said fluid media as such system is translated therethrough to one of a changing static condition comprising an impervious baffle plate and a closure wall, said baffle plate being fixedly-secured on said housing at said one end thereof, said baffle plate being proximate to and extending transversely of said diaphragm in spaced relation relative thereto and at that side thereof remotely-located with respect to said bleeder valve means, said closure wall extending transversely across said open end of said housing intermediate said baffle plate and said diaphragm and in spaced relation relative to each of the latter, said closure wall having a plurality of openings extending transversely therethrough the total area of which is greater than the transverse cross-sectional area of said bleeder valve opening, and work-effecting means connected on said diaphragm and movable therewith as said diaphragm is deflected while said system is translated through said fluid media.

3,300,607
ELECTRICAL CONNECTOR WITH A HELICAL CONDUCTOR OVERLOAD CIRCUIT BREAKER
Kenneth M. Delafrange, 96 Washington Ave., Westwood, N.J. 07675
Filed Nov. 29, 1965, Ser. No. 510,266
5 Claims. (Cl. 200—115.5)



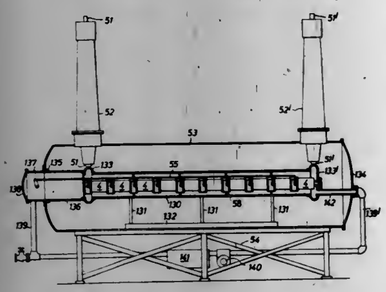
1. In combination with multiple terminal conductors of an electric power input circuit, a current overload control connector device connected with said conductors and having attachment plug receiving contacts adapted for separable connection with associated attachment plug contacts in a power consuming output circuit extension, said connector having an insulating housing and separate electric current conductive assemblies including said plug receiving contacts therein, one of said conductive assemblies having directly embodied therein a thermal circuit breaker comprising a fixed contact and a movable contact normally engaged therewith and mounted on a free end of a helical spring form conductor fixed at its other end against movement, said helical spring form conductor normally maintaining the contacts in engagement within a predetermined normal load current flow range but subject to linear expansion to separate the contacts under heat generated in the helical conductor by flow therein of an overload current above said range, and means for controlling reclosing of the breaker contacts after separation under overload, said means including a movable insulator member normally pressed edgewise against a side portion of the movable contact in its closed contact position to be automatically projected between the breaker contacts when opened and having an extension outwardly of the connector for manually retracting said member to permit closure of the contacts.

3,300,608
HIGH POWER FUSE WITH CERAMIC CASING
Erich Werner Rath, Hersbruckerstrasse 22, Lauf, Pegnitz, Germany
Filed Oct. 13, 1965, Ser. No. 495,592
Claims priority, application Germany, June 15, 1965, St 23,980
9 Claims. (Cl. 200—131)



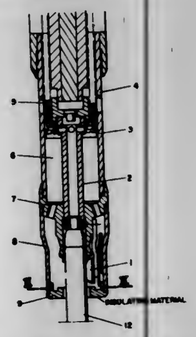
1. An electrical fuse comprising a tubular casing; a pair of cover means, each closing a respective end of said casing; a pair of terminal elements, each element extending from a respective end of said casing and beyond a respective cover means; fusible strip means inside said casing conductively connecting said terminal elements; said casing enveloping and being spaced from said fusible strip means; said casing being composed essentially of cordierite to withstand overload heating without developing cracks.

3,300,609
SWITCHGEAR FOR HIGH VOLTAGE POWER CIRCUITS WITH REMOVABLE VACUUM SWITCH UNITS
Cedric Harald Flurscheim, Hale, and Albert Roxburgh, Stanmore, Middlesex, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed May 11, 1964, Ser. No. 366,324
Claims priority, application Great Britain, May 15, 1963, 19,362/63; Jan. 22, 1964, 2,796/64
5 Claims. (Cl. 200—145)



1. A high voltage power switch gear comprising at least two contact pairs individually enclosed in separate series connected units which are evacuated and virtually free of fluid, said units being enclosed in a first, sealed inner container which is supported in, and electrically insulated from a second, sealed outer metal container which encloses said first container, said containers having aligned openings, the edge of the opening of the outer container being sealed to the wall of the first container, said openings being dimensioned to allow passage of the said units therethrough, a removable covering being provided for the opening of the inner container, insulating fluids filling, at least partly, the free spaces between the said containers, and within the inner container, terminal conductors extending through and insulated from a wall of the outer container, the inner container having a wall portion of non-conducting material separating and insulating a pair of end terminals from each other, said terminals being detachably connected to said terminal conductors and to end terminals of the series connected units.

3,300,610
ANTI-RESTRIKING OIL CIRCUIT BREAKER HAVING AN ANTI-CAVITATION DEVICE
Adrien W. Roth, Aarau, Switzerland, and Albert Catella and Gilbert Nicoud, Lyon, France, assignors to Compagnie Generale d'Electricite, Paris, France, a corporation of France
Filed June 15, 1961, Ser. No. 117,363
Claims priority, application France, June 21, 1960, 830,668
21 Claims. (Cl. 200—150)



1. A high-voltage, small-oil-volume circuit-breaker comprising stationary contact means having fixed contact fingers, movable contact means cooperating with said stationary contact means, housing means effectively forming an oil injection pot and including spark-arrester cover means, said movable contact means and the fixed contact fingers of said stationary contact means being disposed on the inside of said oil injection pot in the closing position thereof, and control means within said oil injection pot for controlling the opening movement of said movable contact means including means for aiding in imparting at the beginning of the opening movement a very high speed to said movable contact means and injecting on said movable contact means an anti-cavitation oil current in the direction of movement of said movable contact means substantially free of swirling movements during substantially the entire duration of possible restriking with capacitive interruptions.

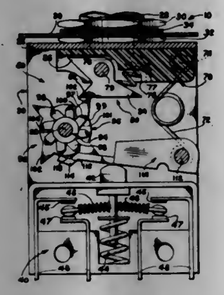
3,300,611
ALTERNATE ACTION/OPERATION MECHANISM
George J. Bury, Antioch, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 443,554
14 Claims. (Cl. 200—156)

12. An alternate action mechanism positioned between a reciprocable plunger means and a spring loaded actuator button which controls the movement of contact members associated therewith comprising,

(a) lever means yieldably urged toward said plunger means for cooperative engagement therewith when said plunger means is displaced in a first direction,

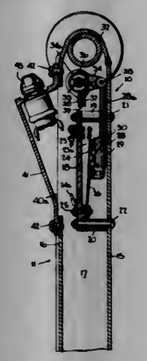
(b) a pawl member pivotally mounted to said lever adjacent one end thereof and extending away from said lever in a direction generally opposite to that in which the lever is yieldably urged, said pawl member having portions thereof extending on opposite sides of its pivot axis and being restrained from movement toward said lever on one side of said pivot axis while being resiliently urged away from said lever on the other side of said pivot axis, and

(c) unitary cam-ratchet means rotatably mounted for simultaneous operative engagement with said pawl member and said spring with said pawl member on the side thereof restrained from movement when said lever is moved by said reciprocating plunger means for rotating said cam means alternately into and out



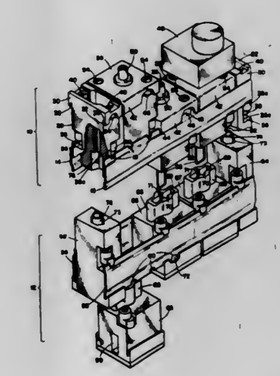
of operative engagement with said spring loaded actuator button, the return of said lever to its initial position upon movement of said reciprocating plunger means in a second direction causing said pawl member to be moved toward said lever on the other side of its pivot axis to permit disengagement from said ratchet means.

3,300,612
HANDLE MOUNTED CONTROLLER ASSEMBLY FOR MOTORIZED HAND TRUCK
George F. Quayle, Philadelphia, Pa., assignor to Eaton Yale & Towne, Inc., a corporation of Ohio
Filed Aug. 17, 1964, Ser. No. 390,071
7 Claims. (Cl. 200—157)



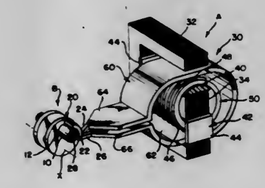
1. A controller assembly for an elongated steering handle on a motorized hand truck, said handle comprising longitudinally extending walls that form a narrow chamber within said handle, a fingerpiece mounted for movement on an end portion of said elongated handle, a contact panel arranged in a longitudinally displaced relation to said fingerpiece in said narrow chamber, said panel being equipped with movable switch contacts, means mounting said panel and its contacts in a spaced relation to the inner surface of a wall of said chamber, a cam extending longitudinally in the space between said wall of the narrow chamber and said panel and in sliding engagement with said wall, said cam having portions for moving the switch contacts on the panel, and means connected to the fingerpiece and movable in the narrow chamber of the handle for sliding said cam when said fingerpiece is actuated.

3,300,613
MOUNTING ARRANGEMENT HAVING MEANS FOR ACCURATELY LOCATING A PLURALITY OF SWITCHING DEVICES
John A. Cox, Jr., Freeport, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,925
7 Claims. (Cl. 200—168)



7. A mounting arrangement for accurately locating one device with respect to another comprising: a first plurality of comparable actuator devices accurately located with respect to each other; and an assembly including mounting means and a second plurality of comparable actuated devices secured to said mounting means and accurately located with respect thereto by locating means provided therebetween, said first devices fixedly disposed above and with respect to said assembly and with each of said first devices located with respect to a corresponding one of said second devices to thereby allow an interacting relationship to be set up therebetween.

3,300,614
POWER TRANSFORMER FOR INDUSTRIAL HEATING APPARATUS
Phillips N. Sorensen, Bedford, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 17, 1964, Ser. No. 360,514
8 Claims. (Cl. 219—10.43)

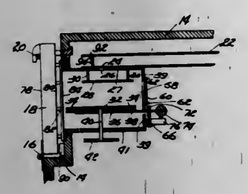


8. In a power transformer comprising a primary winding, a secondary winding and a stationary core having a leg and inductively coupled to both of said windings, the improvement comprising: said secondary winding having an elongated central opening, a wear resistant guide means mounted on said leg and surrounded by said secondary winding, said guide means contacting said opening and contoured to allow reciprocal and oscillating movement of said secondary winding with respect to said leg.

3,300,615
ELECTRONIC OVENS

Peter H. Smith, Maidenhead, England, assignor to J. Lyons & Company, Limited, London, England, a corporation of England

Filed July 9, 1963, Ser. No. 293,688
7 Claims. (Cl. 219—10.55)

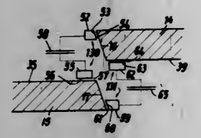


1. An electronic oven comprising a source of microwave energy, an oven compartment, and a wave guide having a closed end interconnecting said source and said compartment, said source being connected to said wave guide at a location spaced from said closed end thereof, a first aperture disposed in said wave guide between said location and said closed end of said wave guide, means for directing a stream of air against said wave guide in the vicinity of said first aperture to cause a stream of air to flow through said aperture into said wave guide past said source, and a second aperture disposed in said wave guide on the side of said location remote from said first aperture for allowing said stream of air to flow out of said wave guide.

3,300,616
APPARATUS FOR THE RESISTANCE WELDING OF TUBES HELICALLY WOUND FROM METALLIC BANDS

Adalbert Sablotny, Hagen im Westphalia, and Werner Wennemann, Dortmund-Kirchhorde, Germany, assignors to Hoesch Aktiengesellschaft, Dortmund, Germany

Filed May 10, 1966, Ser. No. 549,609
Claims priority, application Germany, May 15, 1965, H 56,038
6 Claims. (Cl. 219—62)

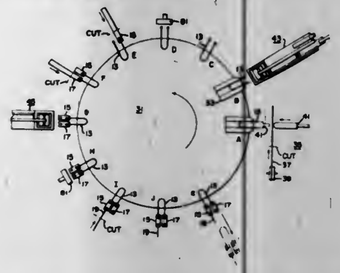


1. In an apparatus for resistance welding the helical seam of a metal band helically wound into tubular shape the improvement comprising in combination means continuously helically winding a metal band having a top face, a bottom face and two narrow longitudinal side faces forming a top edge with said top face and a bottom edge with said bottom face; at least two electrical contacts for an alternating welding current of radio frequency, each contact touching the band near one of the approaching side faces at a distance from their meeting in the welding zone; first means branching off part of the welding current at a point intermediate said welding zone and at least one of said contacts; and second means transforming the thus branched off current into a capacity current and carrying the current thus branched off near one side face to the other side face.

3,300,617
METHOD FOR METALS JOINING

Richard M. Buck, Bloomfield, and Isaac S. Goodman, Livingston, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 12, 1963, Ser. No. 272,677
5 Claims. (Cl. 219—117)



1. The method of metallurgically bonding a first tungsten or molybdenum part to a second tungsten or molybdenum part, which method comprises:

(a) depositing on at least one of said parts, in the region where it is to be bonded to said other part, a slurry of finely divided bonding metal suspended in a vehicle, the finely divided bonding metal of said slurry being one or more of tantalum, palladium, niobium and zirconium, the vehicle of said slurry being a volatile organic liquid which wets both said finely divided bonding metal and said part to which it is applied, and said slurry also including a thermally decomposable organic binder dissolved in said vehicle;

(b) drying said deposited slurry to leave on said one part residual slurry which includes said finely divided bonding metal and said binder;

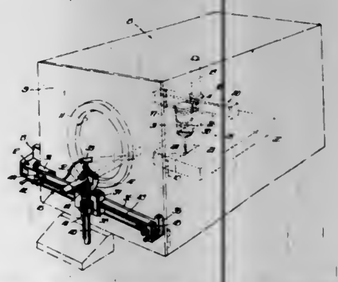
(c) bringing said other part to be joined into contact with said one part in the region where it is to be welded with the residual slurry between said parts; and

(d) passing sufficient electrical current through said parts and said residual slurry to melt said finely divided bonding metal, decompose and volatilize said binder, and bond said parts together.

3,300,618
OPTICAL VIEWING SYSTEM FOR ELECTRON BEAM WELDERS

David Sciaky, Chicago, Ill., assignor to Welding Research, Inc., Chicago, Ill., a corporation of Illinois

Filed Dec. 26, 1963, Ser. No. 333,493
5 Claims. (Cl. 219—121)

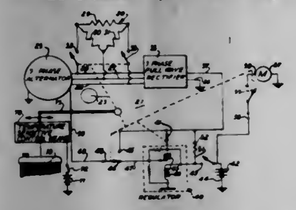


5. In welding apparatus employing an electron beam gun, the combination with a vacuum chamber within which said gun is mounted for adjustable movement in vertical and horizontal directions, said vacuum chamber having a pivoted front door and which is provided with a glass window, means also located within the vacuum chamber for supporting workpieces for movement horizontally and in a direction parallel to the seam as formed by the workpieces and which seam is to be welded, of an optical system for viewing the workpieces and thus the seam from outside the vacuum chamber, said optical system including a mirror carrier by the gun and mounted thereon at an angle of approximately forty-five degrees, said mirror having an aperture therein whereby to permit the passage of the electron beam projected by the gun during the welding operation, and said optical system also including a viewing device mounted exteriorly on the vacuum chamber and having such association with the vacuum chamber and with the door that the seam can be viewed before the welding operation with the door open and can also be viewed through the window during and following the welding operation with the door closed.

3,300,619
HEATING SYSTEM FOR AN AUTOMOTIVE VEHICLE

Ole K. Nilssen, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Continuation of application Ser. No. 192,790, May 7, 1962. This application Mar. 4, 1964, Ser. No. 350,142
18 Claims. (Cl. 219—279)
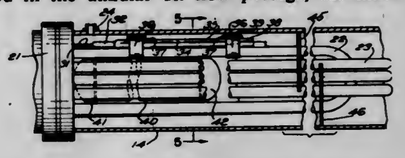


9. In an automotive vehicle, a passenger compartment, a heating system including a primary heating means, a ventilation system for supplying the heat of said primary heating means to said passenger compartment, an electrical system including an electrical generator having a field, an electrical storage battery and a regulator circuit connected in circuit, said regulator circuit normally limiting the amount of electrical energy applied to the field of said electrical generator, an electric quick heat means operatively placed in said ventilation system to supply heat to the passenger compartment and coupled to said electrical generator, a sensing means for sensing when said primary heating means has reached a given operating temperature, and a control circuit means for reducing the effectiveness of said regulator circuit to limit the electrical energy applied to said field when said sensing means senses a temperature below said operating temperature and for returning the regulator circuit to normal operation when said sensing means senses a temperature above said given operating temperature, said control circuit means connected to said sensing means to be operated by said sensing means.

3,300,620
FUEL OIL PREHEATER

Charles A. Ellis, Marion, Mass., assignor to General Fittings Company, a corporation of Rhode Island

Filed June 19, 1964, Ser. No. 376,457
3 Claims. (Cl. 219—331)

1. A fuel oil preheater comprising a hollow casing having generally a horizontal axis and an oil inlet and an oil outlet located at opposite ends of the casing through which the oil to be heated passes, axially extending heater elements suspended in said casing between the inlet and outlet for contacting the oil to be heated, a horizontally extending baffle within said casing, said baffle having side and end walls creating an area free of oil, said baffle forming with the casing walls a generally annular oil flow passage and located adjacent the oil outlet, the portion of said heater elements adjacent the oil outlet being located in the annular oil flow passage, the inner end

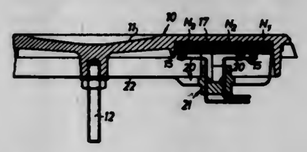


of said baffle distant from the oil outlet being also spaced from the oil inlet, and elongated temperature sensing means in said casing substantially coextensive with said baffle and disposed substantially about said baffle, said sensing means being the primary control for activating or deactivating said heater elements.

3,300,621
ELECTRIC HOTPLATE AND METHOD OF MAKING SAME

Karl Fischer, Am Gansberg 1, Oberderdingen-Wurttemberg, Germany

Filed Apr. 22, 1964, Ser. No. 361,644
6 Claims. (Cl. 219—457)



1. An electric hotplate for an electric cooking range or the like, comprising a plate body having grooves in the underside thereof, heating elements embedded in an insulating compound material adapted to be received in said grooves, said heating elements consisting of wire coils having terminal windings, short connecting parts attached directly to the ends of said heating elements, said connecting parts consisting of solid pins being pushed into said terminal windings of said wire coils and being secured thereto, each one of said connecting parts having a bent-off end portion projecting from said insulating compound material, a second insulating member underneath said plate body, a cover shell of said plate body fitting over said second insulating member, and non-insulated conductor pieces secured to said bent-off end portions, said conductor pieces passing through said second insulating member fitted into said cover shell of said plate body, said conductor pieces providing for connections with power lines of an electric current source.

3,300,622
ELECTRICAL SENSING DEVICE

Charles Gardner Swain, Arlington, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed June 19, 1964, Ser. No. 376,419
14 Claims. (Cl. 219—497)

1. An electrical sensing device capable of evaluating a physical property of a system compared with a reference standard, comprising in combination

(a) a reference circuit comprising

(1) a reference capacitor,

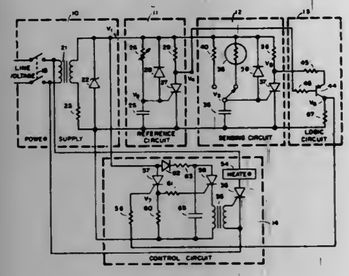
(2) a reference resistor in series with said reference capacitor whereby pulsed voltage supplied to said reference circuit develops therein a standard reference pulsed pattern, and

(3) a reference switch responsive to a predetermined voltage level in said reference circuit;

(b) a sensing circuit associated with said system comprising

(1) a sensing capacitor,

(2) a sensing resistor in series with said sensing capacitor the combination of which is responsive to said property whereby pulsed voltage supplied to said sensing circuit develops therein a pulsed pattern determined by said physical property,

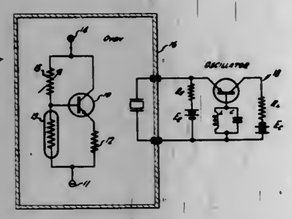


(3) a sensing switch responsive to a predetermined voltage level in said sensing circuit equal to said predetermined level in said reference circuit;

(c) power supply means adapted to deliver pulsating direct current to said reference circuit and said sensing circuit; and

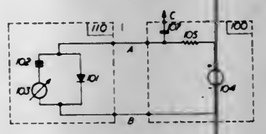
(d) a logic circuit connected to said reference and sensing switches and adapted to be electrically responsive only when a predetermined one of said switches closes first.

3,300,623
CRYSTAL OVEN HEATING AND CONTROL SYSTEM
Gus J. Smyrnos, Sunnyvale, Calif., assignor, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed May 27, 1959, Ser. No. 816,200
7 Claims. (Cl. 219—501)



1. A system for maintaining the ambient temperature in a crystal oven at or below a preselected level comprising, in combination, a principal heat source with said oven, said heat source consisting essentially of cascaded switching and power transistors biased for amplifier operation, means to maintain the emitter of said power transistor at substantially constant potential, means to set the saturation point of said switching transistor, and means including the leakage current flowing in said switching transistor responsive to the tendency of the temperature in oven to exceed a preselected temperature level to drive said switching transistor to cut off thereby interrupting the current flowing through the transistor heat source system.

3,300,624
DATA STORAGE SYSTEM
Janine Nicole Louise Bézaguet, Sceaux, Seine, and André Jacques Judeinstein, Antony, Seine, France, assignors to International Standard Electric Corporation, New N.Y., a corporation of Delaware
Filed Feb. 13, 1963, Ser. No. 258,323
Claims priority, application France, Feb. 20, 1962, 888,560, Patent 1,325,653
8 Claims. (Cl. 235—92)



1. A storage unit cell comprising a tunnel diode and a normal diode having a potential drop, for a direct current I, equal to the valley voltage V_V of the tunnel diode, said cell comprising:

means for connecting together respectively the anodes and the cathodes of said diodes;

supply means of this storage cell comprising a direct current source delivering a bias current I lower than the peak current of the tunnel diode, said tunnel diode presenting one of two stable states of operation, the **1** state characterized by the fact that the current flowing through said diode is equal to the current I and the **0** state characterized by the fact that the current which flows through it is equal to the valley current, these two states being also characterized by the presence, at the terminals of the cell, respectively of a low potential difference VI and a high potential difference VO;

means acting under the action of a clearing signal in order to set up a bias current I_O higher than the peak current I_P of the tunnel diode, so that said diode is reset in the **0** state and that, after suppression of said signal, the current flowing through the tunnel diode is the valley current;

means for modifying the voltage applied to one of the terminals of the tunnel diode by the application, in series with said voltage, of a control voltage of such a polarity that the potential difference between the terminals of said tunnel diode be decreased, said control voltage being either a write voltage VE for controlling the writing of a **1** and of such an amplitude that, after its suppression, the current flowing through the tunnel diode is the current I or a read voltage of amplitude VI such as, after its suppression, the state of the cell is not modified, the read-out voltage collected across the terminals of the cell being very small for the read out of a **0** and equal to VL for the read-out of a **1**;

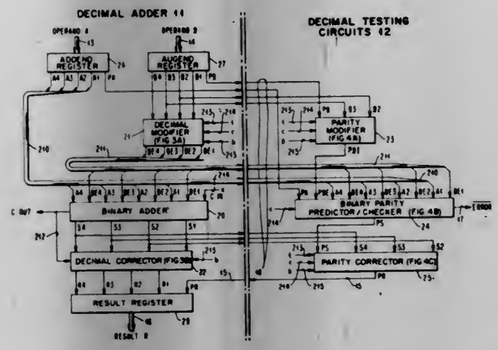
the direct current source being a constant current source characterized by an open circuit voltage U, a short-circuit current $I=U/R$, R being the equivalent internal resistance of the source which is very high with respect to the equivalent impedance I/VI or I/VO of a storage cell comprising:

means for setting up the current I to a value lower than the peak current of the tunnel diode;

means acting under the action of a clearing signal in order to reduce the internal resistance of the source of a value R' so that its short-circuit $I'o=U/R'$ is higher than the peak current of the tunnel diode; and

alternative means acting under the action of a clearing signal in order to increase the open circuit voltage of the source to a value U' so that its short-circuit current $I''o=U'/R$ is higher than the peak current of the tunnel diode.

3,300,625
APPARATUS FOR TESTING BINARY-CODED DECIMAL ARITHMETIC DIGITS BY BINARY PARITY CHECKING CIRCUITS
Niann-Chyung Deng and Sydney L. Lindauer, Wappingers Falls, and Gerard T. Paul, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 4, 1963, Ser. No. 327,915
16 Claims. (Cl. 235—153)



1. In combination:

a first source of binary-coded decimal plural-bit numeric operands each associated with a corresponding parity bit;

a second source of binary-coded decimal plural-bit numeric operands each associated with a corresponding parity bit;

a decimal modifier connected to said first source, operable to modify the numeric operands from said first source;

a binary adder, having a first input connected to said decimal modifier, a second input connected to the second source, a carry input, a plural-bit binary sum output and a carry output, operable to form binary sums and high-order carry outputs as a function of numeric bits at its inputs;

a decimal corrector, connected to said binary adder binary sum output and carry output, for adjusting the binary sum outputs as a function of the carry output, to form binary-coded decimal results which are functions of the binary-coded decimal numeric operands from said first and second sources;

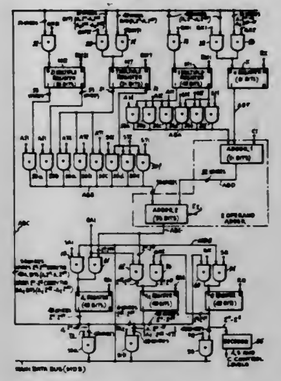
a parity modifier, connected to said first source for generating as modified parity bits corresponding to the modified numeric operands from said decimal modifier as functions of the parity bits and predetermined numeric bits from said first source;

a binary parity checker and parity predictor, connected to said second source, to said decimal modifier, and to the parity modifier, for generating error indications, and for generating parity bits corresponding to binary sums from said binary adder, as functions of the operands and parity bits from said second source and the modified operands and modified parity bits;

a parity corrector, connected to the binary parity predictor and to the binary adder, for generating corrected decimal parity bits corresponding to the binary-coded decimal results from the decimal corrector; and

output means, connected to said decimal corrector, and to said parity corrector for recording the decimal results and the corrected decimal parity bits.

3,300,626
MULTIPLIER FOR BINARY OCTAL CODED NUMBERS
Andrew Te-an Ling, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,718
3 Claims. (Cl. 235—156)



2. A system for obtaining the product of binary octal coded multiplicand and multiplier numbers comprising, in combination:

(a) means for shifting the multiplicand one place to the left to obtain the 2 multiple thereof, two places to the left to obtain the 4 multiple thereof, and for adding the multiplicand and its 2 and 4 multiples to obtain the 7 multiple of the multiplicand;

(b) means for shifting the 7 multiple of the multiplicand one place to the left to obtain the 16_8 multiple of the multiplicand and for adding the 7 and 16_8 multiples to obtain the 25_8 multiple of the multiplicand;

(c) three registers for storing the 1, 7 and 25_8 multiples of the multiplicand, respectively and for producing and storing the complements of the 1, 7 and 25_8 multiples of the multiplicand;

(d) means responsive to the two least significant octal characters of the multiplier for selectively adding the stored multiples and the complements of the stored multiples of the multiplicand, and the shifted stored multiples and shifted complements of the stored multiples of the multiplicand, to obtain the partial product of said two octal multiplier characters and the multiplicand;

(e) means for adding the partial product obtained by the means of (d) above with any previously obtained partial products, when the latter are present;

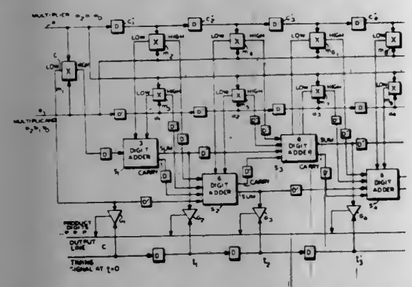
(f) means for removing the two least significant octal multiplier characters and for shifting the next two octal multiplier characters to the position of the two least significant multiplier characters; and

(g) means coupled to the means (d), (e) and (f) above for causing them to continue to operate until the final product is obtained.

3,300,627
APPARATUS FOR REAL-TIME MULTIPLICATION
Dean N. Arden, Lexington, Mass., assignor of one-third to Robert H. Rines, Belmont, Mass.
Filed Nov. 30, 1962, Ser. No. 241,359
30 Claims. (Cl. 235—160)

19. Apparatus for multiplying a pair of sets of signals representing, respectively, a multiplicand a_3, a_2, a_1, a_0 and a multiplier b_3, b_2, b_1, b_0, that comprises, means for monitoring the signals corresponding to a_0 and b_0 and means for multiplying the same to produce a product signal p_0 and

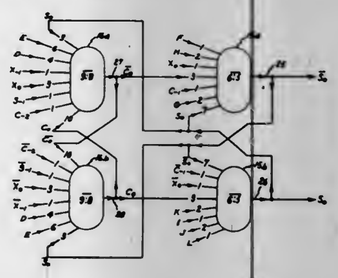
possibly a carry signal c_0; means for monitoring the signals corresponding to a_1 and b_1, means for multiplying the same, means for storing the resulting signal corresponding to $a_1.b_1$, and means for multiplying the said a_1 signal by the said b_0 signal and the said a_0 signal by the said b_1 signal and means for adding thereto the carry signal c_0 to produce a second product signal p_1 and possibly a second carry signal c_1; means for monitoring the signals corresponding to a_2 and b_2, means for multiplying the same, means for storing the resulting signal corresponding to $a_2.b_2$, means for multiplying the a_2 signal by the b_1 signal and the a_1 signal by the b_2 signal, means for storing the resulting signal corresponding to $a_2.b_1$ and $a_1.b_2$, means for multiplying the a_2 signal by the b_0 signal and the a_0 signal by the b_2 signal and means for adding the said stored $a_1.b_1$ signal thereto and the said second carry signal c_1 to produce a third product signal p_2 and possibly a third carry signal c_2; means for monitoring the signals corresponding to a_3 and b_3, means for multiplying the same, means for storing the resulting signal corresponding to $a_3.b_3$, means for multiplying the a_3 signal by



the b_3 signal and the a_3 signal by the b_2 signal, means for storing the resulting signal corresponding to $a_3.b_2$ and $a_2.b_3$, means for multiplying the a_3 signal by the b_1 signal and the a_1 signal by the b_3 signal, means for storing the resulting signal corresponding to $a_3.b_1$ and $a_1.b_3$, means for multiplying the a_0 signal by the b_3 signal and the a_3 signal by the b_0 signal and means for adding thereto the said stored $a_2.b_1$ and $a_1.b_2$ signals and the said third carry signal c_2 to produce a fourth product signal p_3 and possibly a fourth carry signal c_3; means for adding the said stored signals $a_2.b_2$, $a_1.b_3$ and $a_3.b_1$ together with the said fourth carry signal c_3 to produce a fifth product signal p_4 and possibly a fifth carry signal c_4; means for adding the said stored signals $a_2.b_3$ and $a_3.b_2$ to the said fifth carry signal c_4 to produce a sixth product signal p_5 and possibly a sixth carry signal c_5; means for adding the said stored signal $a_3.b_3$ to the said sixth carry signal c_5 to produce a further product signal p_6 and possibly an additional product signal p_7; and means for responding to the said produced product signals p_7, p_6, p_5, p_4, p_3, p_2, p_1, p_0 to obtain the product of the first-named multiplicand and multiplier sets of signals.
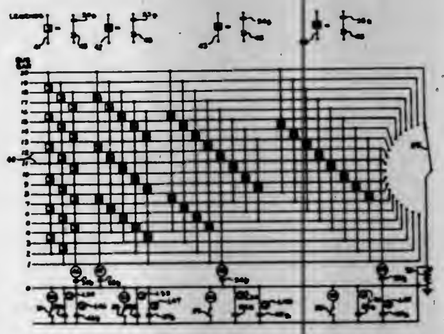
3,300,628
ACCUMULATOR
Clarence L. Coates, Jr., Austin, Tex., and Philip M. Lewis II, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Nov. 8, 1963, Ser. No. 322,285
12 Claims. (Cl. 235—173)

3. A digital accumulator comprising first and second banks of bistable circuits and including a bistable circuit from each bank corresponding to each digit position of the accumulator, said bistable circuits comprising cross-connected threshold gates having input connections and feedback connections for weighting amplitude of each individual signal applied thereto and summing the weighted amplitudes of said individual signals, said feedback connections receiving sufficient weight at the input of each said threshold gate to individually actuate said gate in the presence of a feedback signal, each bistable circuit from the first bank providing outputs for application to each gate of the second bank bistable circuit in the same digit



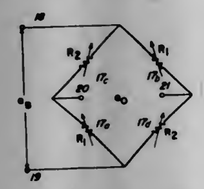
position, means cross-connecting complementary outputs of bistable circuits in the second bank to the threshold gates forming the first bank bistable circuit in the same digit position, and means coupling an input of threshold gates forming the bistable circuit in the second bank to complementary outputs of a bistable circuit of the first bank in the next lower digit position.

3,300,629
LENGTH AND AREA PARTITIONING METHODS AND APPARATUS
William F. Galey, Saxonburg, Joseph A. Gulotta, New Kensington, and Forrest K. Umbel, Verona, Pa., assignors to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania
Original application Nov. 2, 1959, Ser. No. 850,360, now Patent No. 3,246,550, dated Apr. 19, 1966. Divided and this application Oct. 15, 1964, Ser. No. 411,958
15 Claims. (Cl. 235—185)



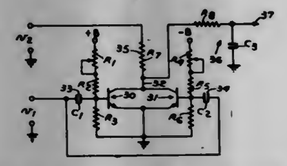
1. Means for determining the presence of a selected one of a class of given integers in a partition of a given number which comprises a consecutively ordered array of terminals equal to said given number, diode spanning links connected between each set of terminals separated by a span equal to any of said class of integers, said links being poled for conduction from higher to lower ordered terminals, means for connecting a voltage source between terminals separated by a span equal to said number to provide a directional current flow through all linked paths between said terminals, and readout means for detecting current flow through a diode link representing the selected one of said class.

3,300,630
ELECTROMECHANICAL ANALOG MULTIPLIER WHICH INCLUDES A SEMICONDUCTOR BRIDGE CIRCUIT
Raymond G. Hartenstein, 3 Greenwood Ave., Glen Burnie, Md. 21061
Filed Jan. 23, 1963, Ser. No. 253,515
2 Claims. (Cl. 235—194)



2. An analog multiplier for producing the product of a first and a second variable comprising: an electrical bridge consisting of a first, a second, a third and a fourth equal semiconductor strain gage impedances connected in series with the fourth impedance connected to the first impedance to form a closed loop; means for applying between the junction of said first and fourth impedances and the junction of said second and third impedances an electrical signal whose amplitude is proportional to said first variable; means including a cantilever beam for compressing and thereby increasing the impedance in each of said first and third impedances in amounts proportional to said second variable; and means including said cantilever beam for extending and thereby decreasing the impedance in each of said second and fourth impedances in amounts equal to the amounts that the impedance in said first and third impedances are increased whereby the signal produced between the junction of the first and second impedances and the junction of the third and fourth impedances has an amplitude proportional to the product of said first and second variables.

3,300,631
ANALOG MULTIPLIER
Lucio M. Vallese, Glen Ridge, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Apr. 17, 1963, Ser. No. 273,663
8 Claims. (Cl. 235—194)



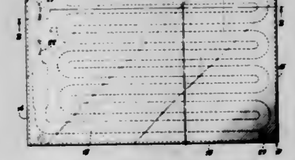
1. An analog multiplier for two electrical signals comprising:
- a transistor amplifier including two complementary symmetry transistors, each having at least base, emitter and collector electrodes;
- first means to couple a first of said signals to said base electrode of each transistor, the signal appearing at each of said base electrodes being substantially the same;
- second means to couple the second of said signals to said collector electrodes of each transistor to control the collector current of said transistors to be proportional to said second signal; and
- output means coupled to said collector electrode of each of said transistors to provide an output voltage proportional to the product of said two signals.

3,300,632
COMPACT WITH ILLUMINATED MEANS
Marion Kinn, Brooklyn, N.Y., assignor of one-half to Rose Kinn, Brooklyn, N.Y.
Filed Aug. 3, 1964, Ser. No. 386,844
7 Claims. (Cl. 240—6.45)



2. In a compact, comprising a powder tray and a mirror housing pivotally connected to said tray, means to mount a lighting circuit in said mirror housing, said circuit including a pair of spaced electrical contact elements, a mirror mounted by said housing, said mirror having a transparent portion, and switch means interposed between said mirror and said circuit, said switch means comprising a plate having an electrical contact strip, a lens and a mirror segment, said plate being movable to and from a first position in which said strip is spaced from said contact elements and said mirror segment underlies said transparent portion and a second position in which said strip bridges said contact elements and said lens underlies said transparent portion.

3,300,633
UNITARY SERPENTINE TUBULAR LIGHT SOURCE AND MOUNTING MEANS AND METHOD OF MAKING
David D. Grimes, Silver Spring, Md., assignor to The Richards Corporation, Arlington, Va., a corporation of Virginia
Filed Aug. 17, 1964, Ser. No. 390,150
9 Claims. (Cl. 240—11.4)

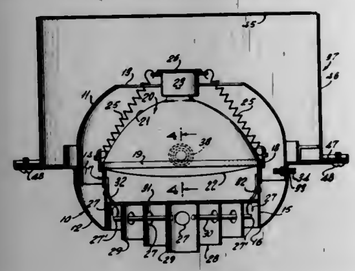


9. A unitary serpentine tubular light source and mounting means comprising a generally rectangular open top receptacle having bottom, side and end walls, a sheet of yieldable shock absorbing material secured to the upper surface of said bottom wall, a serpentine tubular light source disposed on the upper surface of said sheet, means for securing said tube in said receptacle comprising a transparent plastic compound bonded to the entire surface of said tube and to said sheet and a closure plate of transparent plastic material closing the open top of said receptacle and adhesively secured to the upper edges of said side and end walls.

3,300,634
LIGHTING FIXTURE AND MOUNT THEREFOR
Milton Liberman, 65 Sewane Road, East Rockaway, N.Y. 11518
Filed Sept. 30, 1963, Ser. No. 312,730
5 Claims. (Cl. 240—78)

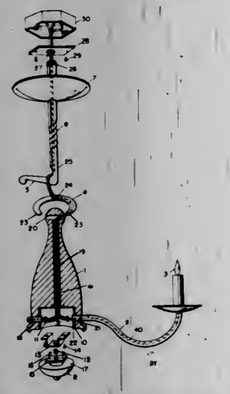
1. A light fixture adapted to receive a reflector-type lamp having an envelope tapering inwardly from a rela-

tively large rim and terminating in a relatively small neck portion carrying a base, comprising a lamp housing, a front cover removably secured to said housing, said cover having a large central opening, a cylindrical wall joined to the edge of said cover opening and extending inwardly therefrom, a light transmitting louver closing said opening, lamp rim receiving and centering means on the inner



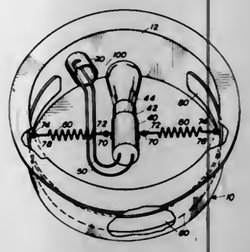
edge of said cylindrical wall, a lamp base engaging element and spring means connecting said element relative to the cover, said element and spring means securing said lamp in engagement with said lamp rim receiving and centering means, said louver being in spaced relationship to said lamp when in position on said cover and spring means carried by said cylindrical wall for holding a lens in overlying relationship with said louver.

3,300,635
CHANDELIER LIGHT FIXTURE
Joseph R. Ramsey, Jr., R.R. 1, Box 80, Chestertown, Md. 21620
Filed Nov. 23, 1964, Ser. No. 413,111
8 Claims. (Cl. 240—78)



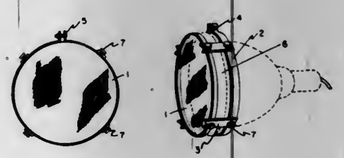
1. A chandelier light fixture comprising a hollow body member, a plurality of hollow supporting arms extending outwardly from said body member, electric light elements on the outer ends of said supporting arms, a ring having a tubular cross section and an opening thereinto connected to the upper portion of said body member and communicating with the interior thereof, a tubular rod-like element having means on the upper end thereof for securing said rod-like element to a ceiling and a hook on the lower end thereof with said ring being supported on said hook, an opening in said rod-like element, and flexible electrical conductors extending from said electric light elements through said supporting arms, said body member, said ring and the openings therein and in said rod-like element so as to be concealed from view when said chandelier light fixture is mounted in position from a ceiling.

3,300,636
AUTO LIGHT HOLDER
Leonard H. Quelland and Kathryn Elworth Quelland, both of 3044 Stone St., Omaha, Nebr. 68111
Filed Mar. 12, 1964, Ser. No. 351,494
3 Claims. (Cl. 240—90)



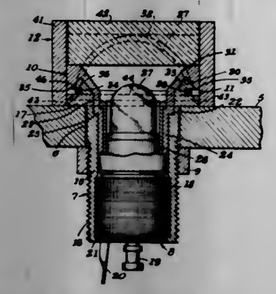
1. In combination with a wheeled vehicle of a public road traveling type, a light housing having a substantially cylindrical side wall, a suspended light socket and bulb assembly disposed in an area outlined by said side wall and spaced therefrom, at least two resilient shock absorbing members attached to said socket and extending away from said socket in sufficient directions for substantially maintaining said socket in a desired position spaced from the sides of said housing, and means for anchoring the outer ends of said resilient members to said cylindrical wall, said anchoring means having well-engaging portions pressing against said cylindrical wall at sufficient points for holding said anchoring means in place against said cylindrical wall under the circumstance of normal vibratory forces to which said cylindrical wall would be subjected during normal operation of said vehicle, and means attaching the outer ends of said resilient shock absorbing members to said anchoring means, said anchoring means being sufficiently adjustable to permit movement of its side wall engaging portions in directions away from said side wall for permitting the insertion and removal of said anchoring means into and from said housing during assembly and disassembly.

3,300,637
LIGHT BULB PROTECTOR
Theodore H. Martland, Dobbs Ferry, N.Y. (Woodbury, Conn. 06798)
Filed Apr. 7, 1964, Ser. No. 357,973
7 Claims. (Cl. 240—102)



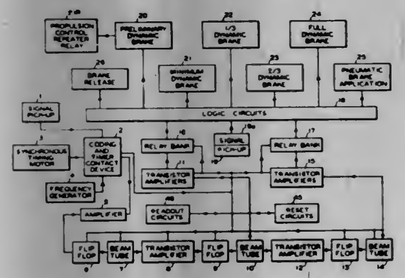
1. Protective device for flood light bulbs and spot light bulbs which comprises in combination:
(a) a substantially rigid, light transmissive, and impact-resistant shield,
(b) a flexible collar capable of being removed from and fixedly secured to the metallic fixture conventionally employed with said bulb; and
(c) a plurality of elements, connecting said shield to said collar, said elements possessing a degree of rigidity not greater than that of said shield.

3,300,638
INDICATOR LAMP
Charles S. Sloan, Burbank, Calif. (7704 San Fernando Road, Sun Valley, Calif. 91352)
Filed Dec. 21, 1964, Ser. No. 419,700
7 Claims. (Cl. 240—152)



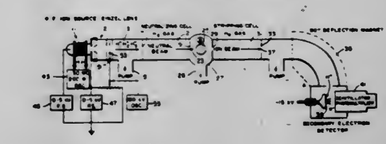
1. An indicator lamp comprising:
(a) a hollow lamp body adapted to be fixedly mounted on a support member with a portion of said body extending above the upper face of said member,
(b) a lamp bulb receptacle fitted into the hollow of said body with a portion thereof engaged with the mentioned portion of the body,
(c) a spring member comprising parallel spring legs engaged with and connecting said body and receptacle portions to hold the receptacle against longitudinal separation from the body,
(d) a shroud enclosing said engaged and connected body and receptacle portions and disposed upon the upper face of the support member, and
(e) means provided on the shroud beneath said spring legs to engage and spread said legs apart to withdraw the same from connecting engagement with the receptacle to enable removal of the shroud and expose the receptacle from above.

3,300,639
BRAKE AND PROPULSION CONTROL SYSTEM FOR AUTOMATED TRAINS
George S. Bowman, Pittsburgh, and Norman P. Erkel, Jr., Carnegie, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa.
Filed Aug. 23, 1963, Ser. No. 304,068
12 Claims. (Cl. 246—182)



1. Automatic brake and propulsion control apparatus for unmanned trains, said apparatus comprising in combination:
(a) signal pick-up means subject to influences propagated from the trackway and variously responsive depending upon the track zone entered by the train,
(b) a plurality of brake control means selectively operative to effect different degrees of a brake application,
(c) propulsion control means,
(d) pulsating voltage means providing a voltage pulsating at a frequency proportional to the speed of the train,
(e) pulsation counting means operative to count and to register the pulsation frequency of the voltage supplied by said pulsating voltage means,
(f) timing means for establishing the time interval during which the pulsation counting means counts and registers the pulsation frequency of the voltage supplied by the pulsating voltage means,
(g) and zoning means selectively responsive to control by said signal pick-up means according to the track zone entered by the train for selectively causing the timing means to vary the length of time said pulsation counting means counts the pulsation frequency of the voltage supplied by the pulsating voltage means,
(h) said pulsation counting means and said zoning means being operative cooperatively to selectively control said plurality of brake control means and said propulsion control means to control the speed of the train according to the track zone entered by the train.

3,300,640
MEANS FOR MEASURING PLASMA DENSITY BY RESONANT CHARGE TRANSFER WITH A BEAM OF NEUTRAL PARTICLES
Harold P. Eubank, Princeton, N.J., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 13, 1964, Ser. No. 367,264
8 Claims. (Cl. 250—43.5)



6. Apparatus for measuring the ion density of a magnetically confined plasma having an ion density of from 10^{13} to 10^{15} first ions per cubic centimeter, comprising ion source means for producing a pulsed beam of H_1^+, H_2^+ and H_3^+ second ions, neutralizing cell means acting on said second ions to provide and direct an atomic beam consisting of neutral particles through said plasma, stripping cell means for charging the neutral particles passing through said plasma, magnetic means for deflecting the particles charged in said stripping cell means, means producing secondary electrons from the particles deflected by said magnetic means, and photomultiplier means for detecting said secondary electrons for determining the attenuation of the atomic beam particles directed across the plasma, the atomic beam resonantly transferring charges between said first ions of said plasma and said atomic beam particles thereby to attenuate the particles in said atomic beam an amount corresponding to the ion density of said plasma whereby said plasma density is determined with said photomultiplier means.

3,300,641
GEOCHEMICAL EXPLORATION METHOD FOR DETERMINING THE PROXIMITY OF AN UNDERGROUND PETROLEUM RESERVOIR
Bennie Heinze, Freehold, N.J., assignor to Cities Service Oil Company, a corporation of Delaware
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,919
8 Claims. (Cl. 250—71)

1. A geochemical exploration method of determining the proximity of an underground petroleum reservoir in which the proximity of such a reservoir to earth samples taken from predetermined locations in an exploration zone

is determined as a function of the fluorescent constituents of the earth samples extractable in polar and non-polar solvents comprising:

(a) collecting earth samples from said exploration zone;

(b) contacting the earth sample with an organic solvent to extract organic constituentts therefrom;

(c) separating by means of solvent extraction those constituents of said earth extracts which are soluble in a non-polar solvent from those constituents which are soluble in a polar solvent;

(d) measuring the fluorescence of each extract under ultraviolet radiation; hydrocarbons predominating in those reservoir rocks in which a relatively high ratio of non-polar to polar fluorescent constituents exists whereas nonhydrocarbons predominate in those reservoir rocks in which a relatively low ratio of non-polar to polar fluorescent constituents exist;

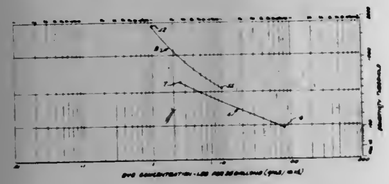
(e) correlating the ratios of the fluorescence of the constituents soluble in the non-polar solvent to that of the constituents soluble in the polar solvent for the various earth samples with the sample locations in the exploration zone.

3,300,642

METHOD FOR CHANGING AND RESTORING THE SENSITIVITY CHARACTERISTIC OF DILUTED PENETRANTS

James R. Alburger, 5007 Hillard Ave., La Canada, Calif. 91011

Filed Feb. 5, 1964, Ser. No. 342,717
10 Claims. (Cl. 250—71)



1. In a penetrant inspection process employing a relatively nonvolatile liquid inspection penetrant containing at least one sensitizer dye, a method for changing and restoring the sensitivity characteristic of said inspection penetrant to its original value, comprising the steps of diluting said liquid inspection penetrant with a relatively volatile diluent, coating the surface to be inspected with a film of said diluted penetrant liquid, and drying said film to remove excess volatile diluent from said film.

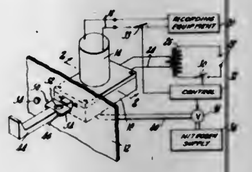
3,300,643

THERMOLUMINESCENT RADIATION DOSIMETER READOUT APPARATUS USING NITROGEN GAS IN THE READOUT CHAMBER

Richard C. McCall, Watertown, Mass., assignor to Controls for Radiation, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Dec. 13, 1963, Ser. No. 330,374
9 Claims. (Cl. 250—71.5)

7. Apparatus for reading out thermoluminescent dosimeters of lithium fluoride crystals comprising a chamber, a radiation sensor disposed in scanning relation to said chamber, a source of pure nitrogen, means coupling said source to said chamber, valve means in said coupling means for controlling the flow of nitrogen to said chamber, two sets of spaced electrical contacts in said chamber, planchet support means for positioning a high resistance



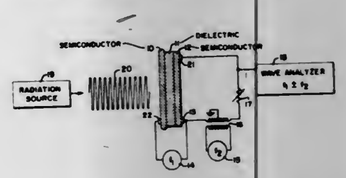
phosphor carrying element in electrical circuit between said sets of contacts, first switch means for energizing said sets of contacts, second switch means for connecting said sensor to recording circuitry and common control means for controlling the operation of said valve and said first and second switch means.

3,300,644

SELF-CHOPPING PHOTODETECTOR

Jay N. Zemel, 1010 Robroy Drive, Silver Spring, Md. 20903, and Donald E. Bode, 3617 Foothill Road, Santa Barbara, Calif. 93105

Filed Dec. 4, 1963, Ser. No. 327,944
10 Claims. (Cl. 250—211)



1. A photodector device for sampling electromagnetic radiation comprising:

capacitor means having a semiconductor material forming one plate thereof;

a second plate comprising material transparent to a predetermined bandwidth of electromagnetic radiation to be detected;

dielectric material disposed between said plates;

output circuit means connected to said semiconductor material for conducting a photo signal current having a value dependent upon the properties of said semiconductor material;

said semiconductor having a first value of the signal output dependent upon the photon energy received from incoming electromagnetic radiation and

electric field means connected to said capacitor means for modulating the surface potential of said semiconductor whereby the surface recombination rate of said semiconductor is varied in accordance with said modulation to vary said signal value about said first value.

3,300,645

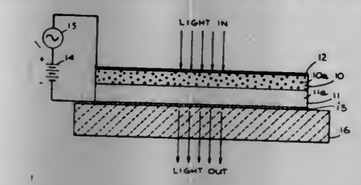
FERROELECTRIC IMAGE INTENSIFIER INCLUDING INVERSE FEEDBACK MEANS

John S. Winslow, Altadena, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif.

Filed Sept. 16, 1963, Ser. No. 309,080
9 Claims. (Cl. 250—213)

2. Image intensifier apparatus comprising: continuous layers, one upon the other, of a photoconductive material and an electroluminescent material, said photoconductive

and electroluminescent layers respectively including ferroelectric and conductive particles distributed therethroughout; transparent conducting layers on the top and bottom



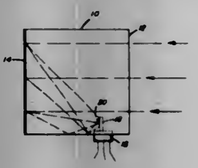
surfaces of said layer combination; and direct-current and alternating-current voltage sources connected in series between said transparent layers.

3,300,646

LIGHT INTEGRATOR USING DIFFUSE SURFACE OF A LIGHT-CONDUCTING ROD

Oran T. Casebeer, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Feb. 6, 1964, Ser. No. 342,997
5 Claims. (Cl. 250—228)



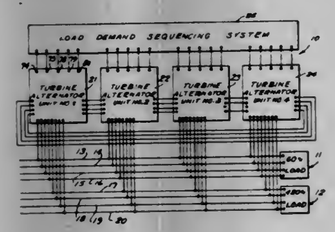
1. A light-integrating photo-responsive device comprising a light-transmitting solid with a first surface exposed to incident light and a second surface having reflective, light diffusing characteristics; and a photo-sensitive element sensitive primarily to radiant energy which has been both transmitted through said first surface and diffusely reflected by said second surface.

3,300,647

ALTERNATOR LOAD DEMAND SEQUENCING SYSTEM

Jugal K. Gogia, Cleveland Heights, William L. Hinde, Euclid, and Kurt Seidner, University Heights, Ohio, assignors to TRW Inc., a corporation of Ohio

Filed Oct. 28, 1963, Ser. No. 319,169
11 Claims. (Cl. 290—30)



1. In a system for supplying electrical power to a load,

a plurality of units each comprising:

a generator,

prime mover means for driving said generator,

control means for controlling starting and stopping of said prime mover means and electrical connection of said generator to said load,

and load sensing means for sensing the power supplied by said generator,

and a sequencing unit comprising:

means coupled to the load sensing means of all of said units for reading the load of the unit having the highest load,

means for developing a control signal in response to said coupling means when the load read by said coupling means exceeds a certain value, and

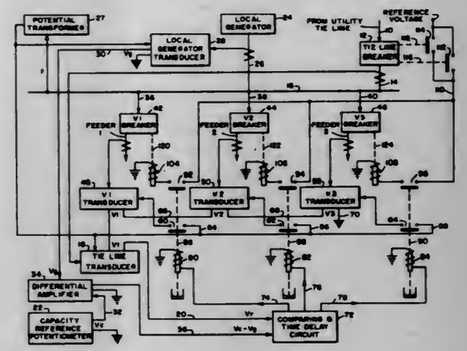
means for applying said control signal to said control means of one of said units.

3,300,648

LOAD COMPUTING AND SHEDDING APPARATUS

George D. Rockefeller, Jr., Morris Plains, and John C. Gambale, Livingston, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 15, 1963, Ser. No. 302,415
6 Claims. (Cl. 307—29)

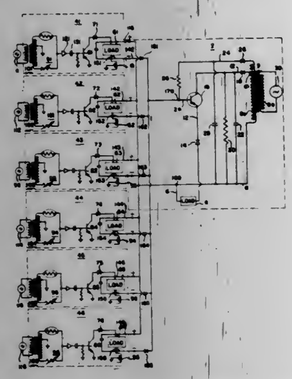


1. In load computing and shedding apparatus for use in a local system receiving power from external and internal generating sources and operative to drop circuits from the local system in case of external power interruption, the combination of: external transducer means for providing external signals indicative of the power being supplied externally; local generator transducer means for providing local signals indicative of the power being supplied locally; reference means for providing reference signals indicative of the local power supplying capacity; a circuit transducer means for providing load signals indicative of the load being carried by each of a plurality of feeder lines designated preferentially in the order to be shed in case of external power interruption; switch means selectively operative to permit said circuit transducer means to provide said load signals in response to preset signals; differencing means for providing difference signals of said external signals and the sum of selected of said load signals; comparing means to compare the difference of said reference signals and said local signals with said difference signals and provide said preset signals when said signals compared in said comparing means are of a predetermined relationship to each other; preset means to provide an indication of which circuits are to be shed in case of external power interruption in response to said preset signals; and interruption means to drop the indicated circuits from the local system when an external power interruption occurs.

3,300,649
LOWEST SIGNAL RESPONSIVE CONTROL SYSTEM

Charles F. Strawn, Arlington, Tex., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 25, 1963, Ser. No. 275,652
11 Claims. (Cl. 307—39)



1. A condition-responsive multi-channel control system, comprising

a current-responsive main load;

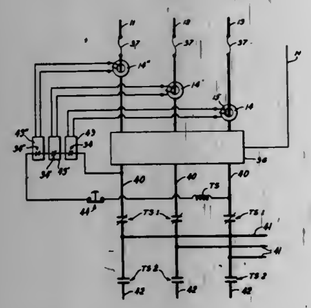
a plurality of condition-responsive means each of which is operable to generate a control voltage having a magnitude which is a proportional function of the deviation of a condition from a predetermined value, said condition-responsive means being arranged to sense different conditions;

and means proportionately energizing said main load as a function of the magnitude of the lowest of the control voltages generated by the condition-responsive means at a given time.

3,300,650
POWER LINE FAILURE DETECTION SYSTEM

Bernard B. Dalen, Suffern, N.Y., assignor to Automatic Switch Company, Florham Park, N.J., a corporation of New York

Filed Apr. 12, 1963, Ser. No. 272,748
4 Claims. (Cl. 307—66)



2. In combination,

(a) a three-phase transformer having a wye-connected primary, a secondary, and a common core for the windings of said primary and secondary,

(b) a three-phase power line supplying power to said primary, and an alternate three-phase source of power,

(c) an electric circuit connecting said secondary to a load,

(d) an electric circuit connecting said alternate source to said load,

(e) a transfer switch assembly comprising a coil, a first switch in circuit (c), and a second switch in circuit (d), said first switch being closed and said second switch open when said coil is energized,

(f) an auxiliary transformer associated with each phase conductor of said power line, said conductor serving as the primary of said auxiliary transformer, and an auxiliary secondary forming part of said auxiliary transformer,

(g) a relay having a coil and a pair of normally open contacts, a circuit connecting said relay coil to said auxiliary secondary, and means in said circuit responsive to the presence of at least exciting current in said conductor for energizing said relay coil to close said contacts, said relay coil being deenergized and said contacts opened when the current in said conductor falls below the exciting current,

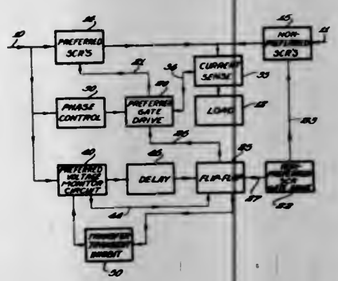
(h) a circuit including said transfer switch coil and said three pairs of relay contacts in series,

(i) whereby upon the failure of any phase of said power line, the relay contacts associated with that phase conductor will open and cause said transfer switch to disconnect said load from said transformer secondary and connect said load to said auxiliary source of power.

3,300,651
HIGH SPEED STATIC SWITCH

Arthur B. Larsen, Parma, Ohio, assignor to TRW Inc., a corporation of Ohio

Filed July 5, 1963, Ser. No. 292,881
6 Claims. (Cl. 307—66)



1. A switching system for switching from a first electric supply to a second electric supply in the event of an undesired decrease in the voltage of the first supply comprising:

first switching means for connecting the first supply to a load,

second switching means for connecting the second supply to the load,

control means for actuating one of said switching means and for simultaneously deactuating the other of said switching means,

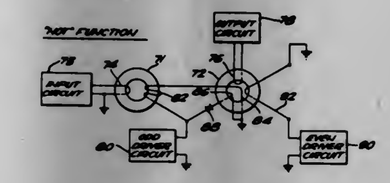
generating means for developing a phase shifted signal relative to the first supply signal, combining means for comparing the magnitude of the phase shifted signal with the first supply signal and for developing a monitor signal substantially equal to the greater of the phase shifted signal and the first supply signal, and

means for detecting decreases in the level of the monitor signal for controlling the state of activation of the control means in response thereto.

3,300,652
LOGICAL CIRCUITS

Salvadore J. Zaccaro, Los Angeles, Calif., assignor to The Ampex Corporation, Redwood City, Calif., a corporation of California

Original application May 22, 1961, Ser. No. 111,680, now Patent No. 3,145,307, dated Aug. 18, 1964. Divided and this application Oct. 12, 1962, Ser. No. 230,089
2 Claims. (Cl. 307—88)

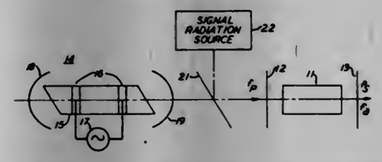


2. A logic device comprising first and second magnetic cores each having two states of magnetic remanence respectively representing zero and one, an input winding coupled to said first core, an output winding coupled to said second core, a first drive winding having two serially connected sections, one of said sections being inductively coupled to said first core and the other of said sections being coupled to said second core with a winding sense opposite to that of said first section on said first core, a second drive winding inductively coupled to said second core, a third winding connected in parallel with said first drive winding and inductively coupled to said second core, a rectifier connected in series with said third winding, and means for alternately exciting with current said first and second drive windings for respectively driving said first core from a one to a zero state of magnetic remanence and for driving said second core from a zero to a one state of magnetic remanence and for driving said second core from its one to its zero state of magnetic remanence whereby upon said first core being driven to its one state of magnetic remanence responsive to excitation of its input winding no output appears in said output winding upon the succeeding excitation of said second drive winding.

3,300,653
PHASE-MATCHED RAMAN RADIATION AMPLIFIER AND OSCILLATOR

Gary D. Boyd, Murray Hill, and Sergio P. S. Porto, North Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 19, 1965, Ser. No. 457,090
11 Claims. (Cl. 307—88.3)

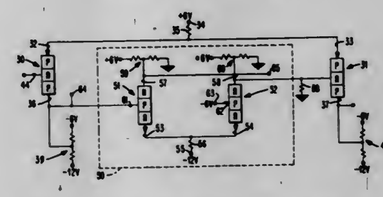


1. Apparatus comprising a body of a crystalline material in which two differing frequency quanta of Raman radiation can be stimulated by two quanta of a single-frequency polarized pumping radiation, at least one of said differing frequency quanta being polarized orthogonally to said pumping radiation quanta, said body having a crystalline anisotropy, means for directing said pumping radiation toward said body in a direction that enables phase-matched propagation of said pumping radiation and said orthogonally polarized Raman radiation in said direction, and means for colinearly resonating said pumping radiation and both of said differing-frequency Raman radiations to provide a traveling wave interaction among all of said radiations.

3,300,654
SCHMITT TRIGGER WITH ACTIVE COLLECTOR TO BASE COUPLING

Richard L. Delanoy, Endicott, and George J. Laurer, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 7, 1963, Ser. No. 263,610
5 Claims. (Cl. 307—88.5)



1. A signal translating device comprising

input and output transistors each having base, emitter and collector terminals,

means including a common emitter impedance and individual collector impedances connecting the transistors to operating potential terminals for normally maintaining the input and output transistors in a quiescent state of the device,

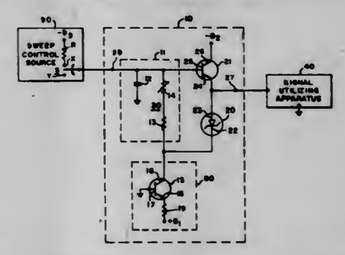
third and fourth transistors, each having base emitter and collector terminals,

means including a common emitter impedance and individual collector impedances connecting the latter transistors to operating potential terminals and including connections between the collector terminal of the input transistor and the base terminal of the third transistor and between the base and collector terminals of the fourth transistor and a reference potential and the base terminal of the output transistor respectively normally maintaining the third and fourth transistors in the quiescent state of the device, the base terminal of the input transistor being adapted to receive input signals of a magnitude and potential for switching the transistors from the quiescent state to an operating state of the device.

3,300,655
LINEAR SWEEP SIGNAL GENERATOR

William Rosenbluth, Hollis, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois

Filed Nov. 15, 1963, Ser. No. 324,127
3 Claims. (Cl. 307—88.5)



1. A linear sweep signal generator utilizing cascaded control effects to achieve increased linearity comprising:

a charging network including a resistive element and a capacitor coupled to said resistive element through which current flows to charge said capacitor;

a zener diode for maintaining the potential across the resistive elements of said charging network substantially constant, the maintenance of said charging potential being undesirably subject to variation due to changes in zener diode current flow;

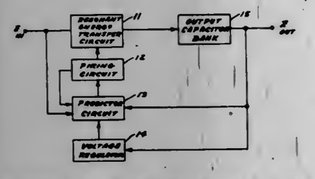
and a source of constant current, coupled to said charging network to provide a substantially constant charging current and coupled to said zener diode to stabilize zener diode current, for providing cascaded control effects with said constant current source insuring maintenance of said charging potential by said zener diode free from variations due to changes in zener diode current flow, thereby providing sweep signals of increased linearity.

3,300,656

RESONANT ENERGY VOLTAGE REGULATOR PROVIDING CONSTANT TOTAL ENERGY PULSES DEPENDENT ON, BUT NOT AFFECTED BY, LOAD REQUIREMENTS

Don E. Meier, Minneapolis, and Donald J. Rotier, Crystal, Minn., assignors to Ault Incorporated, a corporation of Minnesota

Filed Mar. 30, 1964, Ser. No. 355,737
13 Claims. (Cl. 307—88.5)



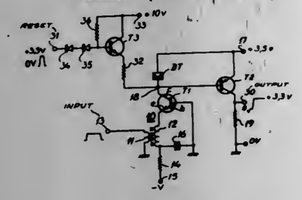
1. A circuit for providing across a load a sawtooth regulated unidirectional voltage varying between a first minimum and a second maximum voltage value, said circuit including a source of unidirectional voltage, an inductive element in series with said load, a capacitor across said load, resonant circuit means when energized first providing and then interrupting a current path from said source through said inductive element and across said capacitor, and control means for repeatedly energizing said circuit means at a rate varying as a function of the voltage across said capacitor, and between said first minimum and second maximum voltage values.

3,300,657

STORAGE CIRCUIT EMPLOYING TUNNEL DIODE, TRANSISTOR AND INPUT TRANSFORMER CONNECTED IN SERIES

Charles Antoine Marius David, Paris, France, assignor to Compagnie des Machines Bull (Societe Anonyme), Paris, France

Filed June 11, 1964, Ser. No. 374,496
Claims priority, application France, July 18, 1963, 941,835
7 Claims. (Cl. 307—88.5)



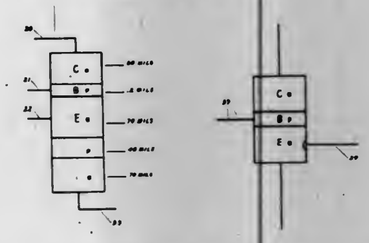
1. A storage circuit arrangement comprising in combination: voltage source means with two terminals, one of which terminals supplies a reference potential, one transistor with emitter, base and collector electrodes, the base of said transistor being directly connected to said reference potential, a tunnel diode operable in one of two states including a "high voltage" state and a "low voltage" state within a range of currents inferior to its peak current intensity, said diode being conductively connected between the other terminal of said voltage source means and the collector of said transistor, a constant direct-current source, and an input transformer having a secondary winding one terminal of which is connected to the emitter of said transistor and the other terminal of which is connected to said constant current source, whereby the collector current flowing through said tunnel diode is, at rest, lower than the peak current intensity typical of said tunnel diode and an input signal applied to said transformer causes said tunnel diode to trip into its high voltage state of conduction.

3,300,658

SEMI-CONDUCTOR AMPLIFYING DEVICE

William E. Slusher, Newton, Mass., and Stanley Karandanis, Epping, N.H., assignors, by mesne assignments, to Transitron Electronic Corporation, Wakefield, Mass., a corporation of Delaware

Original application Nov. 12, 1958, Ser. No. 773,407, now Patent No. 3,178,633. Divided and this application July 2, 1964, Ser. No. 384,571
2 Claims. (Cl. 307—88.5)



1. A semi-conductor device for amplification having an extremely low temperature coefficient comprising five layers of alternately electrically contrasting semi-conductor material including first, second and third successively adjacent layers forming respectively collector, base and emitter layers that comprise means for providing transistor action, a fourth layer forming together with a portion of said third layer a Zener diode, and a fifth layer forming together with said fourth layer a stabistor in series with said Zener diode, said third layer being sufficiently thick to effectively isolate the transistor action of the first three layers from the Zener diode action, said base and emitter layers being separated by a base-emitter junction therebetween, the potential across said base-emitter junction functionally related to temperature in a first sense, said Zener diode being poled opposite to said base-emitter rectifying junction, said stabistor being poled in the same sense as said base-emitter rectifying junction, said base-emitter rectifying junction being in series with said Zener diode and said stabistor so that current flowing across said base-emitter junction flows through said Zener diode and said stabistor, the potential across the series combination of said Zener diode and said stabistor being functionally related to temperature in a sense opposite to said first sense to maintain the potential across the series combination of said base-emitter junction, said Zener diode and said stabistor substantially constant.

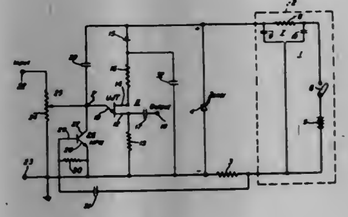
2. A semi-conductor device for amplification having an extremely low temperature coefficient comprising three layers of alternately contrasting semi-conductor material forming respectively collector, base and emitter layers that comprise means for providing transistor action, a wire of electrically contrasting material connected to said emitter layer at a point remote from said base layer whereby said wire and the portion of said emitter layer adjacent to it comprise means defining a temperature compensating Zener diode rectifying junction therebetween, said emitter layer comprising means for effectively isolating said Zener diode rectifying junction from the transistor action exhibited by said collector, base and emitter layers, said base and emitter layers being separated by a base-emitter rectifying junction, the potential across said base-emitter junction functionally related to temperature in a first sense, said Zener diode rectifying junction being in series with said base-emitter rectifying junction so that the current flowing across said base-emitter junction flows across said Zener diode rectifying junction, the potential across said Zener diode rectifying junction being functionally related to temperature in a sense opposite to said first sense to maintain the potential across the series combination of said base-emitter junction and said Zener diode rectifying junction substantially constant.

3,300,659

FAIL SAFE OVERVOLTAGE ALARM CIRCUIT

Robert L. Watters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 18, 1964, Ser. No. 368,016
5 Claims. (Cl. 307—94)



1. A voltage sensor circuit comprising:

(a) a source of electric voltage subject to failure;

(b) a constant voltage regulator that maintains a substantially constant output voltage which is less in magnitude than the normal voltage of said source over a range of current magnitude through the regulator;

(c) resistive impedance means connected in series loop circuit relationship with said source and said regulator and having a resistance value that establishes a current in said range through said regulator during normal operation of the voltage sensor circuit;

(d) a voltage magnitude sensor, having input and output means, connected to and energized from the constant voltage regulator and responsive to an input signal to said input means exceeding a predetermined fraction of the constant output voltage to provide a signal at said output means;

(e) an electronic device, including first and second primary electrodes and a control electrode, responsive to a predetermined signal supplied to said control electrode to establish a highly conductive path between said primary electrodes;

(f) conductive means connecting said primary electrodes in parallel circuit relationship with the input means of said sensor; and,

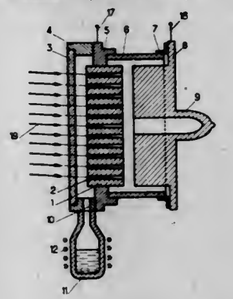
(g) means coupling said control electrode to the junction of said resistive impedance means and said source, and providing said predetermined signal to said control electrode in response to a rapid substantial drop in the voltage of said source prior to a change in the voltage of said regulator, whereby said sensor is disabled in anticipation of a failure of said source and an erroneous output signal is prevented.

3,300,660

THERMIONIC ENERGY CONVERTER WITH PHOTON IONIZATION

Jacques Bensimon, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed June 23, 1964, Ser. No. 377,238
Claims priority, application France, July 10, 1963, 941,000
4 Claims. (Cl. 310—4)



1. A thermo-electronic energy converter, comprising within an evacuated envelope: electron emissive means operative upon heating supported within said envelope, electron collecting means supporting within said envelope and electrically insulated from said electron emissive means, said electron collecting means substantially facing and spaced from said electron emissive means to define a space therebetween and made of a material having a work function lower than said electron emissive means, illumination enabling means comprising a part of said evacuated envelope, said electron emissive means being comprised of a body provided with a number of capillary channels which open at one end thereof into the space between said electron emissive means and said electron collecting means, and at the other end thereof terminate on the opposite surface of said electron emissive means and open into a second space defined by the opposite surface of said electron emissive means and said illumination enabling means, tank means containing a liquid metal having an ionizing potential lower than the work function of said electron emissive means, means interconnecting said tank means and said second space for supplying vapor from said liquid metal to the second space and thereby supply said vapor also through said channels into the space between said emissive and collecting means, said illumination enabling means serving to illuminate with visible spectrum energy the interior of said capillary channels for heating said electron emissive means to emission temperature and enhancing, by the effect of photons of said visible spectrum energy, the ionization of the atoms of said vapor.

3,300,661

THERMIONIC ENERGY CONVERTER

Mostafa E. Talaat, Towson, Md., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

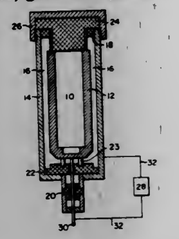
Filed Nov. 15, 1961, Ser. No. 152,506
2 Claims. (Cl. 310—4)

1. A thermionic device for converting thermal energy into electrical energy comprising:

(a) A cathode formed having an electron emitting surface selected from the group consisting of: tantalum, niobium, molybdenum, tungsten, ruthenium, ozmium, thoriated tungsten, rhenium, columbium, hafnium, and carbides of thorium, uranium, zirconium, tantalum and hafnium, and an ionizing portion formed of regularly disposed regions in contact with said emitting surface said ionizing portion being selected

from the group consisting of: tungsten, platinum, platinum-rhodium alloy, molybdenum, rhenium, rhodium, ruthenium, ozmium, tantalum, columbium, and iridium, said selected emitting surface having a lower work function than said ionizing portion work function;

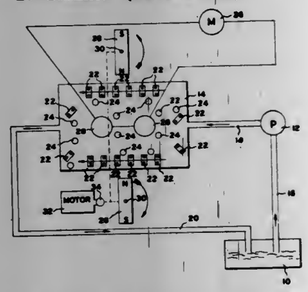
(b) An anode spaced from said cathode and having a surface work function value lower than that of said cathode, said anode being formed of a material selected from the group consisting of nickel, stainless steel, copper, gold and silver;



(c) An ionizable vapor confined between said anode and said cathode and selected from the group consisting of: barium, strontium, lanthanum and calcium; and

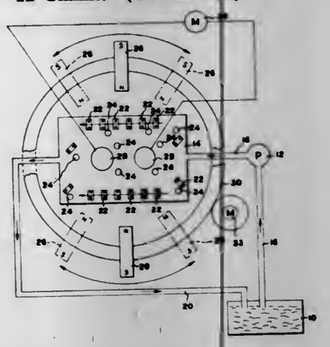
(d) Means for heating said cathode sufficiently to cause thermal emission of electrons from said electron emitting surface, said means also heating said ionizing portion to provide for contact ionization of said vapor, and said means also effecting the partial condensation of said vapor upon said cathode and anode surfaces, whereby the surface work functions of said cathode and anode are lowered by said condensate.

3,300,662
POWER TRANSFER CIRCUIT
Nils O. Rosaen, Bloomfield Hills, Mich. (1776 E. 9 Mile Road, Hazel Park, Mich. 48030)
Filed Dec. 30, 1963, Ser. No. 334,470
17 Claims. (Cl. 310—12)



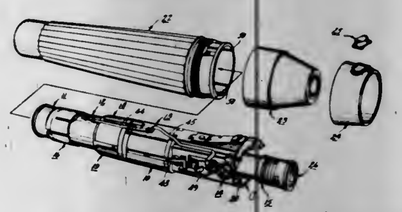
3. A current generating device comprising
(a) a housing having a fluid chamber,
(b) fluid in said chamber,
(c) means effecting unidirectional motion of said fluid in said chamber,
(d) said fluid having magnetic particles therein,
(e) means effecting molecular magnetic alignment of said particles to produce a magnetic field about each of said particles,
(f) a conductor disposed in said chamber and extending normal to the direction of movement of said fluid whereby electric current flow is induced in said conductor, and
(g) said particle alignment effecting means including means selectively operable to reverse the polarity of said particles.

3,300,663
POWER TRANSFER CIRCUITS
Nils O. Rosaen, Bloomfield Hills, Mich. (1776 E. 9 Mile Road, Hazel Park, Mich. 48030)
Filed Dec. 30, 1963, Ser. No. 334,471
12 Claims. (Cl. 310—12)



3. A current generating device comprising
(a) a housing having a fluid chamber,
(b) fluid in said chamber,
(c) means effecting unidirectional motion of said fluid in said chamber,
(d) said fluid having magnetic particles therein,
(e) means effecting molecular magnetic alignment of said particles to produce a magnetic field about each of said particles,
(f) a conductor disposed in said chamber and extending normal to the direction of movement of said fluid whereby electric current flow is induced in said conductor, and
(g) said particle alignment effecting means including means selectively operable to vary the direction of the lines of force produced by said particles.

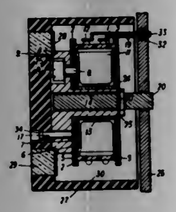
3,300,664
TOOTHBRUSH POWER HANDLE ASSEMBLY
Robert L. Boyles, Wayland, Mass., assignor to General Electric Company, a corporation of New York
Filed Apr. 2, 1964, Ser. No. 356,795
6 Claims. (Cl. 310—50)



6. In an electric toothbrush a power unit comprising:
(a) a U-shaped frame having a base and two legs, a channel being formed in each of said legs,
(b) a motor attached to said frame, said motor including a shaft and a pinion mounted on said shaft,
(c) a plunger comprising a cylindrical toothbrush-engaging portion, a pair of parallel spaced arms extending from said toothbrush-engaging portion, a pair of projections extending outwardly from each of said arms, an elongated aperture being formed in each of said arms, a pair of inwardly extending abutments formed on the sides of one of said apertures,
(d) a second shaft extending between said legs and supported thereby, said second shaft passing through said apertures,

(e) a gear and cam mounted on said second shaft for rotation together, said gear being driven by said pinion and said cam engaging said abutments for effecting reciprocating motion of said plunger with said shaft reciprocating in said apertures, the reciprocating motion of said plunger causing reciprocating motion of a toothbrush attached thereto.

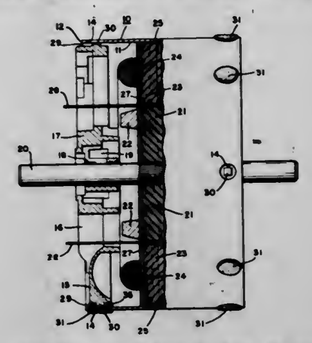
3,300,665
ROTATABLE PIEZOELECTRIC TUNING DEVICE
Roy Hilton and Frederick George Powles, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 24, 1963, Ser. No. 297,336
Claims priority, application Great Britain, Aug. 10, 1962, 30,795/62
5 Claims. (Cl. 310—9.1)



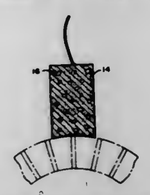
1. Radio equipment comprising:
a rotatable knob having a hollow interior;
a pair of fixed contacts extending into said hollow interior parallel to the rotational axis thereof;
a plurality of circuit elements secured within said hollow interior and disposed radially with respect to said axis, each of said elements including a pair of switch contacts for selected engagement with said fixed contacts upon rotation of said knob;
a strip of material having a shape forming at least a portion of the surface of a cylinder coaxial with said axis;
said circuit elements being mounted on the concave surface of said strip with said switch contacts extending through said strip beyond the convex surface thereof; and
a plurality of containers each enclosing one of said circuit elements, each of said containers having a cross section in the plane of a cross section through said cylinder tapered from said concave surface of said strip toward said axis.

3,300,666
END FRAME-MAIN FRAME CONNECTION
Richard D. Frazier, Dayton, and Gene L. Dafler, New Lebanon, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,355
1 Claim. (Cl. 310—42)

In a dynamoelectric machine housing assembly having an annular stator-supporting main frame and end frame means telescopically fitted radially inwardly from the main frame for journalling a rotor concentrically with the stator improvement which comprises; plural radially outwardly extending projections in isolated locations along the outer periphery of each end frame means, said projections having diametric distance less than the inner diameter of the main frame, plural radial openings through the main frame in isolated locations adjacent to axial ends of the main frame and specifically radially in alignment with said projections, and radially localized fillings of a predetermined quantity of resinous injection moldable and cured epoxy material individually disposed in the spacing between said projections and the corresponding radial openings of the main frame, said projections having juncture with the epoxy material that per se extends integrally into said radial openings exclusively assuring resilient maintenance of accurate concentricity between the rotor and the stator as well as between the telescopically fitted end frame and main frame means respectively.



3,300,667
ELECTRICALLY CONDUCTIVE SOLID LUBRICANT MEMBERS AND PROCESS AND APPARATUS EMPLOYING THEM
David J. Boes, Monroeville, and Lawrence E. Moberly, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 4, 1963, Ser. No. 321,302
4 Claims. (Cl. 310—228)



2. An electrical contact member for operating in sliding contact with a conducting surface, the contact member comprising a body of a highly electrically conductive material of at least one member selected from the group consisting of carbon and a good electrically conducting metal and an effective quantity comprising at least ½% by weight of at least one compound selected from the group consisting of tantalum diselenide and the disulfides of niobium and tantalum.

3,300,668
IMAGE CONVERTER TUBE
Wilfrid F. Niklas, Park Ridge, Ill., assignor to The Rauland Corporation, a corporation of Illinois
Filed Jan. 24, 1962, Ser. No. 168,484
4 Claims. (Cl. 313—65)

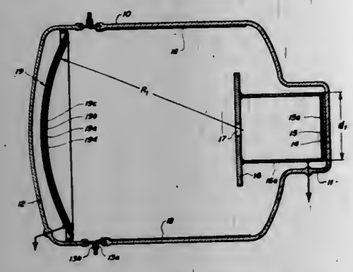
1. In an image converter tube of the type having an input element, responsive to a received radiation pattern for developing an electron image, and an output element, responsive to the received electron image as propagated from said input to said output element along a reference electron optical axis of said tube and focused on said output element, for providing a visible image constituting a replica of said radiation pattern and of the type making use of the known electron optical lens characteristics of concentric spheres in propagating and focusing said electron image thereby requiring a given axial length from input element to output element for a given low-order minification, an improved electron optical system for said tube with said given minification requiring an

axial length between said elements substantially less than said given length, said improved electron optical system consisting essentially of:

a photoemissive cathode constituting said input element and disposed transversely and coaxially of said reference axis and responsive to said radiation pattern for developing an electron image, said cathode having the configuration of an approximately spherical section of an effective radius R_1;

a viewing screen constituting said output element disposed transversely and coaxially of said reference axis and having a diameter d_1;

a planar anode, disposed transversely and coaxially of said reference axis between said cathode and said viewing screen, having a predetermined axial spacing from said cathode of less than $2R_1$ but greater than $.75R_1$, having a centrally located aperture for admitting said electron image and having its transverse dimension within the range of d_1 and $2R_1$, said



photoemissive cathode and planar anode together forming the primary electron image propagating and focusing arrangement for said tube, the electron focusing action of said arrangement being more strongly convergent in the region of said spherical cathode and less convergent in the vicinity of said planar anode than in the case of a concentric spherical anode-spherical cathode electron optical system of like axial spacing, the net effect of the focusing action of said arrangement being equivalent to a spherical anode-spherical cathode system of an axial spacing substantially greater than said predetermined axial spacing;

and secondary focus electrode means interposed between said planar anode and said photoemissive cathode and comprising at least one cylindrical electrode, said secondary focus electrode means being electrically separate from said planar anode and photoemissive cathode and having a minimum diameter at least as great as the diameter of said cathode.

3,300,669

X-RAY VIDICON HAVING A TARGET AND WINDOW ASSEMBLY WITH IMPROVED THERMAL CONDUCTIVITY

Harold O. W. Jordan, Stamford, Conn., assignor to The Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut

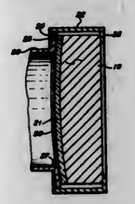
Filed Sept. 16, 1963, Ser. No. 309,043
4 Claims. (Cl. 313—65)

1. A target and window assembly for an X-ray sensitive pickup tube comprising

a metal window of material efficiently transparent to X-radiation, and having a convex surface on one side thereof,

a thin glass disc having one surface superimposed upon said convex surface of the window,

means for urging peripheral areas of the glass disc toward the window to bend the disc over the convex surface and for maintaining the disc in good thermal contact with the window,



and a layer of X-ray sensitive photoconductive material on the opposite surface of the glass disc.

3,300,670

LUMINESCENT GLASS ARTICLES AND METHOD FOR FORMING SAME

Frank Veres, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Feb. 28, 1962, Ser. No. 176,412
10 Claims. (Cl. 313—92)

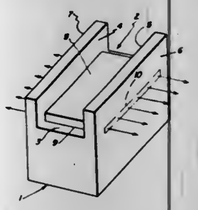
1. A glass body having an integral surface layer comprising inorganic crystals, said crystals being formed by in situ crystallization from a surface portion of the glass of said body, said glass consisting essentially of inorganic constituents, said crystals of said layer being dispersed in a glassy matrix which consists essentially of the uncrystallized portion of said surface portion of glass of said body, said crystals in said integral surface layer containing an activator rendering said crystals luminescent, said body other than said integral surface layer being an essentially vitreous, noncrystalline body of glass.

3,300,671

SURFACE-ADJACENT JUNCTION ELECTRO-LUMINESCENT DEVICE

Henry H. Woodbury, Niskayuna, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 10, 1964, Ser. No. 350,768
3 Claims. (Cl. 313—108)



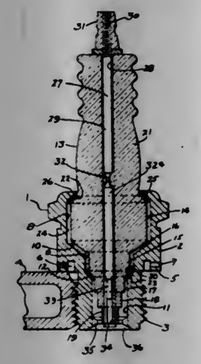
1. A surface-adjacent junction electroluminescent device for emitting a substantially parallel light beam comprising a crystal of semiconductive material of a first conductivity type; a surface-adjacent region of a second, opposing conductivity type semiconductive material forming a continuation of said crystal; a planar electroluminescent junction region between said first and said second conductivity type materials; and a transmissive layer overlying the emissive edge of said junction region and extending a distance greater than the thickness of said surface-adjacent layer beyond said junction region to permit polishing of the external surface thereof, said layer having an emisison surface lying in a plane perpendicular to said junction region and being substantially smooth to enable parallel transmission of a light beam generated in said junction region.

3,300,672

SPARK PLUG WITH ANTI-FOULING MEANS AND FIXED SPARK GAP

Bernard C. Fisher, Jersey City, N.J., assignor to Neutronic Development Corporation, Englewood, N.J.

Filed May 27, 1963, Ser. No. 283,430
1 Claim. (Cl. 313—120)



An ignition device for an internal combustion engine comprising:

(a) a tubular shell having a body portion and a threaded portion of smaller cross section than said body portion for attaching said device to an engine block, said shell having a first cylindrical bore through the threaded portion thereof and a second cylindrical bore of larger diameter than said first bore within said body portion and providing a tapered shoulder between the two bores,

(b) an insulator extending through said shell with one end of said insulator terminating near the end of the threaded portion of said shell and the other end of said insulator extending out of said body portion, said insulator within said second bore of said shell having a diameter to fit easily within said second bore and the portion of said insulator within said first bore having three portions of successively decreasing diameters providing successively greater distances between the inner wall of said shell and said insulator towards said one end of said insulator, said insulator having a tapered shoulder between the largest of said last-mentioned portions and the portion of said insulator within said second bore, the taper of said shoulder being substantially the same as that of said tapered shoulder in said shell, the portions of successively decreasing diameters having shoulders between them with sharp edges,

(c) a conductor extending through said insulator,

(d) a cup-shaped electrode set into said one end of said insulator and in contact with said conductor, with the end of said electrode substantially flush with the end of said insulator,

(e) means for providing a gas-tight connection between said shell and said insulator,

(f) a shoulder on the outer surface between said body portion of said shell and said threaded portion, said shoulder lying in a plane perpendicular to the axis of said shell,

(g) a groove in said shoulder,

(h) at least one aperture between the outer surface of said body portion and said groove, said grove being located so as to provide a communication between said groove and the helical passage around said threads when said device is secured in place in an engine block, and

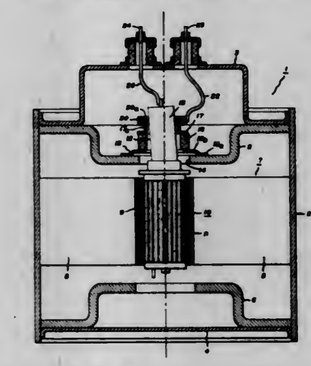
(i) at least one inwardly extending projection from the end of said threaded portion of said shell and terminating approximately .035 inch from the end of said insulator containing said cup-shaped electrode, the edges of said inwardly extending projections which are towards the adjacent end of said shell being flush axially with the end of said insulator, and the approximate spacing of the three portions of successively decreasing diameters of said insulator from said shell being respectively .010, .050, and .080 inch.

3,300,673

TOLERANCE COMPENSATING ELECTRODE SUPPORT STRUCTURE AND METHOD OF MANUFACTURING SAME

Truman P. Curtis, Schenectady, and James R. M. Vaughan, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Continuation of application Ser. No. 217,943, Aug. 20, 1962. This application May 16, 1966, Ser. No. 550,564
13 Claims. (Cl. 313—153)



1. An electric discharge device comprising an envelope, a first electrode mounted fixedly in said envelope and including a central bore, a transverse member mounted fixedly relative to said first electrode, an insulating support comprising a short cylindrical ceramic insulator and a short metal collar sealed to one end thereof, said insulator being sealed at the other end to said transverse member, the axis of said insulating support being subject to misalignment with the axis of said bore due to accumulations of manufacturing tolerances of said parts, a second electrode in accurate spaced coaxial relation to said bore and including a short tubular axial extension protruding in spaced relation through said insulating support, said tubular axial extension being subject to misalignment with the axis of said second electrode due to accumulations of manufacturing tolerances of said parts, the nominal gap between said tubular extension and said collar being greater than the maximum accumulations of said tolerances and a washer-like member closely fitted about said extensions bridging said gap and sealed to both said collar and said tubular extension, whereby all of said accumulations of tolerances are taken up and nullified.

3,300,674

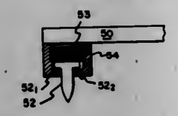
HOLDER FOR THE IGNITOR TIP IN IGNITRON RECTIFIERS

Edward H. Coxe, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 24, 1961, Ser. No. 154,432
1 Claim. (Cl. 313—237)

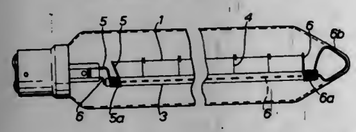
A mechanically strong ignitor tip assembly essentially free of air gaps for use in an ignitron rectifier consisting

essentially of an ignitor holder upon a terminal portion of which is affixed a plug having a base portion and external threads on the entire length, said plug being substantially cylindrical with two ends, solid, of substantially uniform diameter and having good electrical transmission characteristics, said plug having one end affixed to said ignitor holder and the other end providing said base portion; a solid electrical transmitting, generally frusto-conical shaped ignitor tip having flange-like shoulders and a contact base which is adapted to provide essentially air-gap free electrical contact with said base portion; an



open end flange member having internal threads for mating with the externl threads of said plug, said flange member engaging the flange-like shoulders of said ignitor tip and securing the contact base compressibly in a direction substantially parallel to the cylindrical axis of said plug against the plug base portion when said flange member is threaded tightly onto said plug to a position substantially in contact with said ignitor holder whereby a solid, compact, unitized ignitor tip assembly is provided essentially free of internal air gaps and through which electrical current may flow freely with minimum impedance to insure proper firing of an ignitron rectifier.

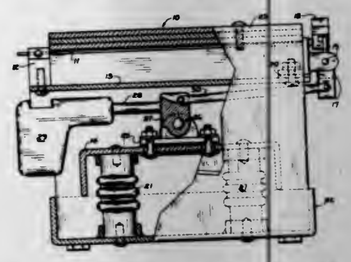
3,300,675
ELECTRIC INCANDESCENT LAMP FILAMENT SUPPORT
Zoltan Deshaw, 18 St. James Mansions, London, England
Filed Apr. 3, 1964, Ser. No. 357,211
2 Claims. (Cl. 313—274)



1. An electric incandescent lamp having a generally tubular envelope, an end cap at one end of said envelope, a filament extending along the interior of said envelope, an electrically insulating filament support comprising a tubular spine, a first electrode extending from said cap and into engagement with the nearer end of said spine so as to support such spine away from said envelope while leaving an end portion of such electrode projecting from said spine, which end portion is directly connected to one end of said filament, and a second electrode extending from said cap, along the interior of said spine, and into contact with the said envelope and the end of said spine which is remote from said end cap thereby to support that spine end away from said envelope while leaving an end portion of said second electrode which projects laterally from said spine and is directly connected to the other end of said filament.

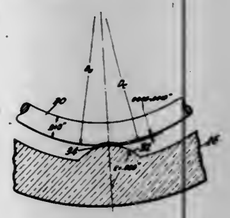
3,300,676
FILAMENT TENSIONING DEVICE FOR ELECTRON GUN STRUCTURE
Carl F. Sterzl, Alamo, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,933
4 Claims. (Cl. 313—278)

1. In an electron gun the combination of a gun housing, an elongate cathode filament length mounted within said housing, means affixing one end of said filament to said housing, a lever arm mounted on said housing, one end of said lever arm having a moment of movement in axial alignment with said filament length, the other end of said filament being attached to the one end of said lever arm and weighted means connected to the other end of the lever arm to form a weighted bias for the arm biasing the



one end of the arm away from the filament length to hold the filament length under tension said weighted means being positoned in the vertical plane containing said filament and substantially entirely within the length of said filament.

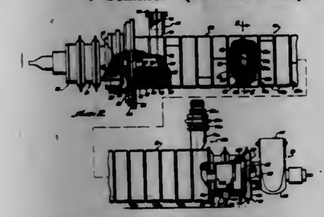
3,300,677
ELECTRODE MOUNT AND METHOD OF MANUFACTURE THEREOF
Kenneth N. Karol, Teaneck, and Earle S. Thall, West Orange, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 30, 1962, Ser. No. 183,861
15 Claims. (Cl. 315—3.5)



1. The method of bonding a refractory metal member having a given outer dimension to a plurality of external elongated parts of refractory insulating material, comprising the steps of:
(a) supporting said parts in an array having a minimum inscribed circle diameter slightly greater than said outer dimensions of said metal member;
(b) positioning said metal member within said array; and
(c) momentarily heating said member to a temperature above the minimum fusing temperature of said material, by passinng a high current through said member for only a small fraction of a second, to cause said member to expand into contact with and heat relatively small surface portions only of said parts to fusing temperature, thereby fusing said surface portions to said member without softening the major portions of said parts.

12. A traveling wave tube comprising:
(a) an envelope including an elongated tubular section of refractory insulating material having at least two integral longitudinal internal ribs; and
(b) an elongated helix of refractory metal mounted within said section;
(c) each turn of said helix being spaced from and rigidly connected to each of said ribs by a small pedestal of the material of said ribs integral with said rib and fused to said helix turn.

3,300,678
TRAVELING WAVE TUBE WITH PLURAL POLE PIECE ASSEMBLIES DEFINING A VACUUM SEALED TUBE BODY AND PARTICULAR COLLECTOR STRUCTURE
Norman E. Swensen, Reseda, Calif., assignor to Capitol Records, Inc., Los Angeles, Calif., a corporation of California
Filed May 15, 1963, Ser. No. 280,542
4 Claims. (Cl. 315—3.5)

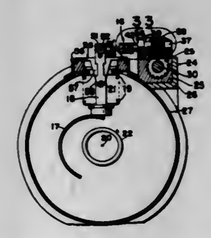


1. A traveling-wave tube including
(a) an elongated evacuated envelope,
(b) an electron gun at one end of said envelope and serving to form an electron beam,
(c) a collector at the other end of said envelope and serving to intercept said beam,
(d) a helical conductor disposed axially within said envelope,
(e) coupling means for coupling electrical energy onto and off said helical conductor, said coupling means comprising hollow cylindrical metallic portions, ceramic spacers bonded to the outer ends of said coupling means and forming hermetic seals therewith, conductors extending through said seals and connected to the ends of the helical conductors,
(f) said evacuated envelope comprising a plurality of pole piece assemblies, each pole piece assembly comprising a nonmagnetic sleeve brazed between a pair of donut-shaped magnetic disks, the disks of adjacent pole piece assemblies being bonded to each other in vacuum-tight relationship, and
(g) magnets positioned over said sleeves and between said disks.

4. A traveling-wave tube comprising
(a) a gun assembly,
(b) a slow wave device,
(c) said gun assembly having a gun alignment flange for aligning said assembly on one end of said slow wave device,
(d) a collector assembly mounted on the other end of said slow wave device, and
(e) a vacuum pump,
(f) said collector assembly having a collector plug with an offset passageway therethrough said passageway communicating between said collector assembly and said vacuum pump, and a blocking window comprising an apertured metallic plate between said collector plug and said slow wave device to trap secondary electrons emitted from said collector plug.

3,300,679
HIGH FREQUENCY ELECTRON DISCHARGE DEVICE TUNING MEANS HAVING MEANS TO CONVERT FROM ROTATIONAL TO RECIPROCATING MOTION
Jack A. Brown, Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 26, 1964, Ser. No. 392,210
9 Claims. (Cl. 315—5.47)

1. A high frequency electron discharge device having beam forming and projecting means disposed at the upstream end portion thereof and beam collector means disposed at the downstream end portion thereof and electromagnetic interaction means disposed therebetween and coupled thereto in vacuum sealed relationship to form a vacuum envelope for said device, said interaction means including flexible vacuum sealing means coupled thereto, said electromagnetic interaction means having at least one frequency tuning mechanism coupled thereto, said tuning mechanism including means for varying the frequency of electromagnetic energy along the portion of said electromagnetic interaction means to which said tuning mechanism is coupled, means for physically moving said tuning means along an arcuate path relative to said electromagnetic interaction means in pendulum type motion about a pivot point means, said means for physically moving said tuning means including a pendulum tuner shaft adapted and arranged for oscillation about said pivot point means, means for moving said pendulum shaft about said pivot point means including motion translational means adapted and arranged for converting rotational motion into reciprocating motion of a reciprocating means coupled to said pendulum shaft to thereby drive said pendulum shaft in oscillatory motion about said pivot point means, said pendulum tuner shaft having said tuning means coupled thereto at the one end portion of said shaft, said pivot point means about which said shaft oscillates in pendulum motion being located along the length of the shaft intermediate the respective ends of the shaft, said means for moving said pendulum shaft about said pivot point means being coupled to said shaft at the other end portion of said shaft, said pivot point means being located exteriorly of the evacuated region formed by said vacuum envelope, said pivot point means serving to support said pendulum shaft independently of said flexible vacuum sealing means, said reciprocating means including a ball joint.

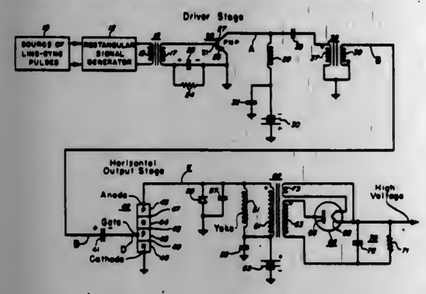


3,300,680
TELEVISION SWEEP SYSTEM WITH SEMICONDUCTOR SWITCH AND ENERGY STORAGE DEVICE FOR EXPEDITING ITS ACTIVATION
Emanuel Saudinaitis, Glencoe, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 302,518
12 Claims. (Cl. 315—29)

1. A horizontal scanning system for an image-reproducing device in a television receiver, comprising:
a bistable semiconductor switching device having first, second and control terminals and responsive to the translation of turn-on current in a predetermined direction between said control and first terminals to establish said device in a first stable operating condition in which current is translated between said first and second terminals, and responsive to a predetermined reverse current flow between said control and first terminals to establish said device in a second stable operating condition in which substantially no current is translated between said first and second terminals;
an output load, including a substantially inductive horizontal deflection yoke, coupled to said first and second terminals of said switching device;

a pulse signal source for developing periodically recurring pulses of alternating polarity;

means for utilizing the pulses of one polarity to translate turn-on current between said control and first terminals to effect substantially linearly increasing current flow through said load, and for utilizing the pulses of the other polarity to translate turn-off current between said control and first terminals;



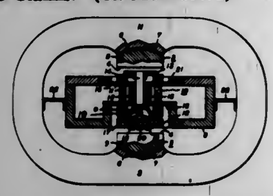
and means including an energy storage device coupled to said pulse signal source to be charged in response to said pulses of said one polarity and coupled to said switching device to be discharged in response to said pulses of said other polarity for effecting additional reverse current flow between said control and first terminals to augment said turn-off current and expedite establishment of said switching device in said second operating condition.

3,300,681

ADJUSTABLE MAGNET FOR A MAGNETRON

Michael Bessarab, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 190,753, Apr. 27, 1962. This application Oct. 22, 1965, Ser. No. 506,901
6 Claims. (Cl. 315—39.71)



1. An electron discharge apparatus comprising in combination

(a) a magnet structure,

(b) said magnet structure including oppositely spaced apart poles defining a gap therebetween and a magnetic field traversing said gap,

(c) at least one separate pole piece on one of said poles of said magnet,

(d) said separate pole piece having a surface defining an unobstructed gap with the other of said poles,

(e) an electron discharge device fixedly positioned in said gap in generally coaxial relationship with said magnetic field in said gap for operative interaction with said magnetic field,

(f) said separate pole piece being adjustably movable on said one pole so that its gap defining surface is moved to a different position with respect to concentricity with said other pole to alter the direction of the lines of force of said magnetic field through said electron discharge device,
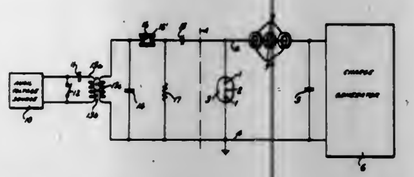
(g) and means interconnecting said separate pole piece and said one pole to fixedly attach said pole piece in its adjusted position.

3,300,682

SPARK DISCHARGE ARRANGEMENT

Frank Früngel, Hamburg-Rissen, and Gert Röder, Hamburg-Lokstedt, Germany, assignors to Impulsphysik Dr.-Ing. Frank Früngel G.m.b.H., Hamburg-Rissen, Germany

Filed Dec. 9, 1963, Ser. No. 328,959
Claims priority, application Germany, Dec. 10, 1962, J 22,805
11 Claims. (Cl. 315—171)



1. Spark discharge arrangement, comprising, in combination, spark gap means having two spaced spark electrodes; a source of electric energy; circuit means having at least a coilless portion of low inductance and connecting said spark gap means with said source of elecric energy, the low inductance portion of said circuit means being adapted to conduct high currents; storage capacitor means included in said circuit means and connected in parallel with said spark gap means, said storage capacitor means being chargeable by said source to a predetermined potential and dischargeable across said spark gap means when a sufficient predetermined conductivity is established between said two electrodes, the discharge from said storage capacitor means occurring directly through said coilless portion of low inductance and across said spark gap means; spark discharge initiator means associated with said circuit means and connected in parallel with said storage capacitor means and said spark gap means, said spark discharge initiator means being directly connected to the electrodes of said spark gap means and capable of applying to said spark gap means a steeply rising igniting impulse causing a spark-over between said electrodes so as to produce thereby said predetermined conductivity therebetween; and inductive reactance means unconnected to said circuit means and only externally surrounding at least a portion of said low inductance portion of said circuit means between said spark gap means and said capacitor means, said inductive reactance means comprising a plurality of hollow substantially annular members made of ferrite-like material and having a very high initial permeability but being magnetically saturable by comparatively low induction, so that upon application of said igniting impulse the inductive reactance of said circuit means between the charged storage capacitor means and the spark gap means is very high and the spark-over between the electrodes is produced by said impulse, while the following discharge of the storage capacitor means across the spark gap means causes a strong current flow inducing immediately full magnetic saturation of said reactance means whereby the initial permeability thereof is practically entirely eliminated.

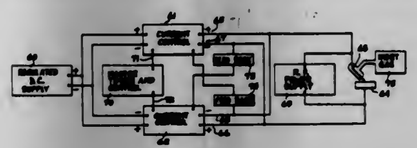
3,300,683

WELDING APPARATUS

Robert J. Welshaar, Mount Lake Terrace, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,715
4 Claims. (Cl. 315—205)

1. A welding apparatus comprising in combination: a load circuit; direct current supply means; a first current gate having a conductive and a nonconductive condition connected to said supply means and to said load circuit and adapted when in its conductive condition to provide current flow through said circuit in a first direction; a second current gate having a conductive and a nonconductive condition connected to said supply means and to said load circuit and adapted when in its conductive condition to provide current flow through said circuit in a second direction opposite to said first direction; a first feedback circuit coupled with said load circuit and with said second current gate responsive to the termination of current flow in said first direction



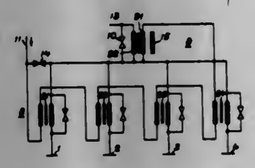
through said load circuit to render said second current gate conductive; a second feedback circuit coupled with said load circuit and with said first current gate and responsive to termination of current flow through said load circuit in said second direction to render said first current gate conductive; and control means connected to said first and second current gates adapted to alternately apply first and second control signals respectively to said first and said second current gates to alternately render said first and said second current gates nonconductive.

3,300,684

MERCURY ARC RECTIFIER FOR CURRENT CONVERTER

Carl Ingvar Boksjö, Ludvika, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed June 1, 1964, Ser. No. 371,708
Claims priority, application Sweden, June 11, 1963, 64,117/63
8 Claims. (Cl. 315—323)



1. Mercury arc rectifier for a current converter, said rectifier comprising a number of discharge paths, a current divider connecting said discharge paths in parallel, each discharge path being provided with a number of intermediate electrodes and a voltage divider connected to said intermediate electrodes; inductive means connected in series with said parallel connected discharge paths and said current divider; said voltage divider being connected in parallel with said inductive means, said current divider and said discharge paths.

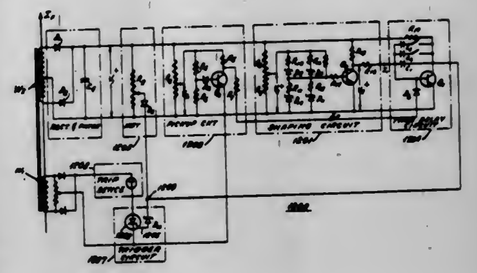
3,300,685

STATIC OVERCURRENT RELAY

Stanley E. Zocholl, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 4, 1963, Ser. No. 248,463
17 Claims. (Cl. 317—33)

1. Static overcurrent relay means for use in operating a tripping means to protect a circuit from overheating comprising feedback amplifier means having a capacitive feedback path for electronically simulating the heat equation relating temperature rise due to current flow in a conductor; first means for generating a first voltage signal linearly related to the current flowing in the circuit being protected; the output of said first means being connected to said feedback amplifier means; shaping circuit means connected between said first means and said feedback amplifier means for generating an output signal which is a non-linear function of said first voltage signal to



simulate the current term of the heat equation having the form $I^2R=(Cm)d\theta/dt+(KA/l)\theta$

where

I=the current flow through the circuit being protected;
R=the resistance of the circuit being protected
C=the thermal capacity of the circuit
m=mass of the circuit
K=thermal conductivity of the circuit
l=length of the circuit
A=area of circuit (cross-section)
θ=temperature rise above ambient;

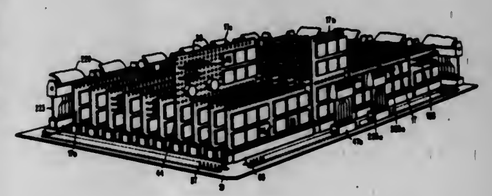
said feedback amplifier means being responsive to said first means output signal and said shaping circuit means output signal to generate a trigger voltage signal after a predetermined time delay to operate a tripping means.

3,300,686

COMPATIBLE PACKAGING OF MINIATURIZED CIRCUIT MODULES

Alfred H. Johnson, Endwell, William R. McConnell, Johnson City, and Peter R. Schulz, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 30, 1963, Ser. No. 298,603
The portion of the term of the patent subsequent to May 24, 1983, has been disclaimed
3 Claims. (Cl. 317—101)

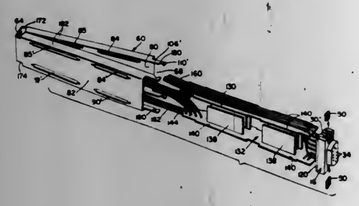


1. A high density printed circuit package suitable for mounting in desired random relationship both discrete components and solid state circuit modules, said package comprising

a multi-layered large printed circuit card,

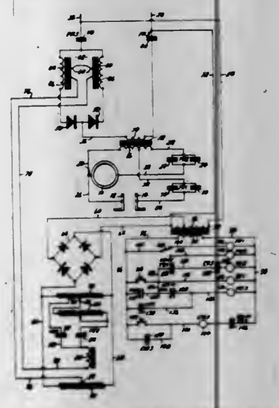
a plurality of small printed circuit cards,
said large card and small cards having external printed wiring on both their sides and also having respective rectangular grids of identically spaced plated-thru holes extending therethrough from one such side to the other,
a plurality of miniaturized solid state circuit modules each including a planar substrate and a grid pattern of terminal pins projecting from one surface thereof and into said plated-thru holes on respective small cards to mount such modules to the small cards,
discrete components having leads fastened in others of said plated-thru holes to mount such components to at least one of said small cards,
generally inverted U-shaped spring contacts fastened to both sides of each small card,
rows of conductive pins secured in selected rows of plated-thru holes in said large card and projecting beyond both sides of the large card,
a connector socket comprising an apertured insulative housing for receiving pairs of oppositely disposed spring contacts and a double row of those portions of the pins projecting from one side of said large card to retain the small card in predetermined removable right angle relation to the large card and permit transferral of electrical signals from the small card via the various spring contacts to the corresponding pins on the large card, and
the other portions of the pins projecting from the other side of the large card being available as probe points, and selected ones of these other portions being interconnected by discrete wires.

3,300,687
PACKAGE FOR AN ELECTRONIC MODULE
William M. Hennessey, Roslyn, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 7, 1965, Ser. No. 454,071
4 Claims. (Cl. 317—101)



1. An electronic module including
a socket for an electronic device,
a plurality of thin, flat printed circuit boards each carrying a plurality of lead wires coupled thereto and extending along the length of each, each of said wires having one end secured to said socket whereby said boards are electrically conected to said socket but loosely mechanically coupled thereto, and
a generally U-shaped metal housing having a rear wall and side walls, the side walls being adapted to be spread apart to receive said printed circuit boards between them and then brought together to form a closed, unitary housing, the free ends of the side walls remote from said rear wall including integral tabs which engage said socket and secure said socket and housing together as a unitary assembly,
the side walls and rear walls of said housing having apertures in which portions of said boards are seated to hold them relatively rigidly in place inside said housing.

3,300,688
MAGNETIZING AND DEMAGNETIZING CIRCUIT HAVING A CONTROLLED SATURABLE CORE REACTOR
Robert E. Callihan, Danbury, Conn., assignor to Automation Industries, Inc., El Segundo, Calif.
Continuation of application Ser. No. 3,142, Jan. 21, 1960. This application Apr. 23, 1965, Ser. No. 450,302
10 Claims. (Cl. 317—123)

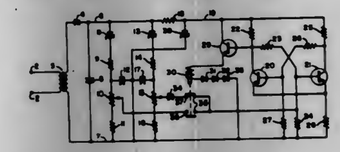


1. A magnetizing and demagnetizing apparatus comprising
a power circuit operable to magnetize an object when said circuit is energized and to leave said object residually magnetized when said power circuit is interrupted relatively rapidly and to demagnetize said object when the current in said power circuit is relatively slowly reduced to a negligible amount,
first switch means operable to interrupt said power circuit,
a variable reactance coil in said power circuit, said coil having a core with a control winding thereabout, the current allowed by said reactor to flow in said power circuit being determined by the current allowed to flow in said control winding,
a normally closed first regulating circuit operable to supply a variable current to said control winding of a magnitude that permits the flow of a controlled current in said power circuit,
a normally open second regulating circuit operable when closed to supply current to said control winding of the value necessary to reduce to a low value the current flowing in said power circuit,
second switch means operable when energized to open said first regulating circuit and close said second regulating circuit, and
operating means for selectively opening said first switch means or energizing said second switch means.

3,300,689
VOLTAGE SENSING CIRCUIT
John M. Beddoes, Ottawa, Ontario, Canada, assignor to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada
Filed Nov. 21, 1963, Ser. No. 325,317
Claims priority, application Canada, Dec. 21, 1962, 865,116
5 Claims. (Cl. 317—148.5)

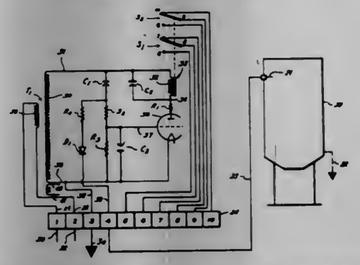
1. A voltage sensing circuit comprising input terminals adapted for connection to a source of voltage, first and second voltage dividing networks connected in circuit relation with said terminals for deriving first and second separate control voltages, respectively, which each vary with the voltage of said source, a bistable circuit including first and second emitter coupled transistors having an

input and only first and second stable operating conditions, a relay having an operating coil and contacts actuable by the energization and deenergization of the operating coil for connecting either said first network or said second network to the input of said bistable circuit to actuate said bistable circuit between said first and second operating conditions in response to said first or second control voltages, and a switching transistor connected between



said bistable circuit and the operating coil of said relay to actuate said relay in response to said first and second operating conditions to normally connect said first network to the input of said bistable circuit when the voltage of said source rises above a first predetermined value and to connect said second network to the input of said bistable circuit when the voltage of said source drops below a second predetermined value.

3,300,690
MATERIAL LEVEL DETECTION DEVICE
Bueford W. Taraba, Tucson, Ariz., assignor to Duval Corporation, Houston, Tex., a corporation of Texas
Filed Dec. 6, 1963, Ser. No. 328,690
4 Claims. (Cl. 317—149)



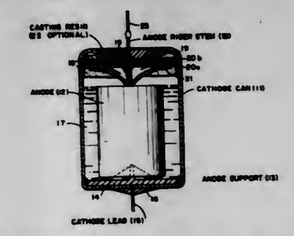
1. A material level detecting device, comprising
a triode tube,
a source of alternating current,
leads connecting the cathode and the plate of said triode tube across the potential of said source,
a voltage divider circuit connecting across said leads to the grid of said triode tube and including a capacitor and a resistor connected in series to the grid from the plate lead from said source, and a resistor and a capacitor having low capacitive reactance connected in parallel to said grid from the cathode lead from said source,
a probe,
a probe circuit connecting said probe to the grid of said triode tube and connecting said probe, when in contact with the material, through ground to the cathode of said triode tube,
said probe circuit being connected into said voltage divider circuit between said resistor and said capacitor which are connected in series between said plate lead and said grid,
a diode rectifier connected in series in said probe circuit between said probe and said grid,
a relay,
the coil of said relay being connected in series with the lead connecting from said source to said plate of said triode, and
a capacitor connected in parallel with said relay coil,
said voltage divider circuit maintaining said grid potential at a low level whereby said tube is conducting during the half cycle of said source which is positive with respect to said plate and said relay is thereby energized,
said capacitor maintaining said relay energized during the half cycle of said source which is negative with respect to said plate,
said probe being positioned whereby material reaching the level of said probe completes said probe circuit and current flow in said probe circuit negatively charges said grid preventing conduction by said triode tube and thereby de-energizes said relay.

3,300,691
ELECTROLYTIC CAPACITOR WITH A GELLED ELECTROLYTE OF AN IONOGEN AND DIMETHYLFORMAMIDE
Curtiss M. Gilbert, North Adams, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Feb. 18, 1964, Ser. No. 345,766
3 Claims. (Cl. 317—230)



1. An electrolytic capacitor comprising an anode and a cathode in contact with a gelled electrolyte comprising an ionogen and dimethylformamide gelled with a hydroxypropyl methylcellulose having a methoxyl substitution of from 1.08 to 1.42 and a hydroxypropyl substitution of from 0.1 to 0.3.

3,300,692
SEAL STRUCTURE IN ELECTROLYTIC DEVICE INCLUDING DISC-MEMBERS AND ANODE SPACER
James M. Booe, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed May 5, 1964, Ser. No. 365,002
9 Claims. (Cl. 317—230)



1. A seal for electrolytic capacitors comprising: an open ended container and an electrolyte therein, an anode immersed in the electrolyte, a terminal riser extending from the anode, two rigid disc-like plastic members with apertures therein positioned within the open end of the container and circumscribing said anode riser, a funnel-shaped anode-seal spacer disposed between the anode and

plastic members, providing a void between said electrolyte and said members, an inert adhesive sealing material filling the space between said plastic members, around said anode riser and said apertures, and a coating of said sealing material on the interior annular surface of said container in the area coinciding with the normal axial position of said plastic members, said sealing material around the anode riser, between the plastic members and on said annular surface forming a unitary body of said material, and means located on the end portion of the container for securing said plastic members in the end thereof.

3,300,693

CAPACITOR WITH LOW RESISTIVITY ELECTROLYTE AND HIGH VOLTAGE RANGE

Sidney D. Ross, Williamstown, and Rene E. Cote, Worcester, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed June 28, 1966, Ser. No. 561,115
5 Claims. (Cl. 317—230)



1. An electrolytic capacitor comprising electrodes, at least one of which is oxide coated and the electrolyte consisting essentially of the combination of (1) from about 0.01% by weight up to the maximum limit of solubility of at least one compound of the group consisting of

$$\left[\begin{array}{c} R \\ | \\ R-N-R \\ | \\ R \end{array}\right] H_yPO_4 \text{ and } [R_1R_2R_3NH]_xH_yPO_4$$

wherein:

R is a member of the group consisting of a C_1–C_{10} alkyl group, a C_2–C_{10} hydroxy substituted alkyl group, and combinations thereof;

R_1 is a member of the group consisting of a C_1–C_{10} alkyl group and a C_2–C_{10} hydroxy substituted alkyl group;

R_2 and R_3 are members of the group consisting of a C_1–C_{10} alkyl group, a C_2–C_{10} hydroxy substituted alkyl group, hydrogen and combinations thereof;

$x=1$–3

$y=0$–2

and (2) from about 0.01% to about 10% by weight orthophosphoric acid both dissolved in a liquid amide solvent represented by the general formula $R_4CONR_5R_6$ wherein: R_4 and R_5 are members of the group consisting of hydrogen and an alkyl radical and R_6 is an alkyl radical; said combination of (1) and (2) providing ionic means for maintaining the resistivity of the electrolyte below about 9000 ohm-cm. while permitting operating voltages above about 350 volts.

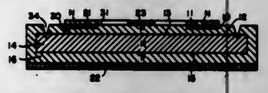
3,300,694

SEMICONDUCTOR CONTROLLED RECTIFIER WITH FIRING PIN PORTION ON EMITTER

Thomas G. Stehney, Poughkeepsie, N.Y., and Thorndike C. T. New, Hempfield Township, Westmoreland County, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 20, 1962, Ser. No. 246,046
7 Claims. (Cl. 317—235)

1. A semiconductor switching device comprising: three successive semiconductive regions of alternate semiconductivity type forming P-N junctions therebetween; a fourth region joined to the third of said successive regions capable of injecting minority carriers into said third region; the first of said successive regions serving as an emitter of said device and having a firing pin portion penetrating into the second of said successive regions a greater distance than the major portion of said emitter



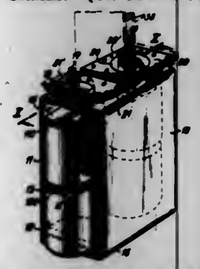
so that the breakover characteristic of said device is determined by the depth of penetration of said firing pin portion; said emitter having greater thickness in said firing pin portion than in said major portion and disposed so said emitter and said second region have coplanar surfaces.

3,300,695

HIGH VOLTAGE CAPACITOR ARRANGEMENT

Arne Cypra, Stuttgart, Friedrich Haentzschel, Stuttgart-Zuffenhausen, Erwin Munk, Esslingen, and Gerhard Winter, Stuttgart-Frauenkopf, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Apr. 13, 1961, Ser. No. 102,861
Claims priority, application Germany, Apr. 14, 1960, B 57,485
15 Claims. (Cl. 317—260)



1. A capacitor comprising, in combination, at least one condenser having connector plates at the ends thereof; a conductive case enveloping said condenser and having one end portion formed with an opening in the region of one of said connector plates, said case being insulated from said one connector plate and conductively connected to the other connector plate at the other end portion thereof; a first terminal passing through said opening and being conductively connected to said one connector plate and insulated from said case; a second terminal adjacent said first terminal spaced and insulated therefrom and being conductively connected to said one end portion of said case so that current is conducted from said one end portion of said case to said other end portion of said case; a conductive housing enveloping said case and including a first portion out of direct electrical contact with the corresponding portion of said case, and a second portion electrically connected to said case whereby the inductance is reduced.

3,300,696

TRACER CONTROL APPARATUS WITH MEANS TO CORRECT POSITION ERROR

Robert L. Fillmore, Mound, Richard C. Flom, Minneapolis, and Royal R. Hawkins, Bloomington, Minn., assignors to Honeywell Inc., a corporation of Delaware

Filed Oct. 15, 1963, Ser. No. 316,247
8 Claims. (Cl. 318—19)

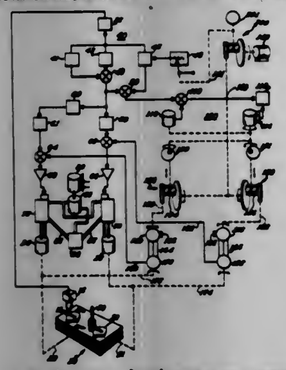
1. Tracer control apparatus for use with a machine tool having drive means to produce movement along two quadrature axes of movement, comprising;

a tracer head including a member adapted to cooperate with a templet supported for movement by the machine tool,

trace rate command means to control the required trace rate at which movement of the machine tool causes said tracer head member to trace the contour of the templet,

means including said tracer head and said trace rate command means to provide a first and a second quadrature control effect as determined by a phase relationship established by the relationship of said tracer head member to the templet and by the required trace rate,

resolving means having first input means controlled by said trace rate command means, second input means controlled by said quadrature control effects, and output means indicative of a required rate of movement of the machine tool drive means,



position control means having means connected to the output means of said resolving means and having means adapted to be connected to the machine tool drive means,

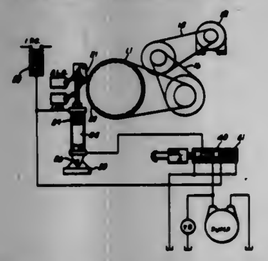
and means controlled by said position control means adapted to control the machine tool drive means in response to a combination of the output means of said resolving means and the machine tool drive means.

3,300,697

HYDRAULIC STARTING DEVICE FOR AN ELECTRIC MOTOR WHICH DRIVES HEAVY MACHINE ELEMENTS

Ernest M. Woodford, Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa.

Filed Nov. 21, 1963, Ser. No. 325,267
7 Claims. (Cl. 318—136)



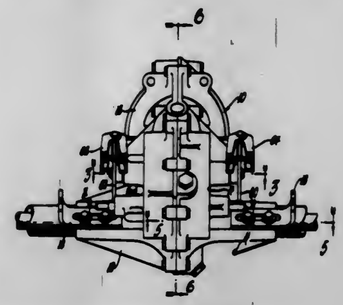
1. In a headstock for a machine tool for machining heavy workpieces in which the power required to start rotation of said workpiece is substantially greater than that required to maintain rotation, a work drive member, a motor for driving said work drive member, means for assisting said motor to initiate rotation of said work drive member comprising ratchet teeth on said work drive member, and a hydraulically operated pawl for engaging said ratchet teeth to start rotation of said work drive member, a supply of power for operating said motor, a supply of fluid under pressure, and a pressure switch operable by said fluid under pressure when applied to said hydraulically operated pawl to connect said motor with said power supply.

3,300,698

TRANSAXLE ASSEMBLY FOR ELECTRIC MOTOR AND GAS ENGINE DRIVEN GOLF CARTS

Warren G. Bopp and Theodore F. Knapp, Farmington Township, Oakland County, and Melvin L. Oliman, Detroit, Mich., assignors to Dura Corporation, Oak Park, Mich., a corporation of Michigan

Filed Dec. 16, 1963, Ser. No. 331,060
1 Claim. (Cl. 318—139)



Vehicle drive means, comprising;

a transaxle assembly including a housing having a pair of axially aligned vehicle supporting and driving axles received therein, a bull gear rotatably supported on the aligned and closely disposed ends of said axles, and having planetary gears mounted on said bull gear and bevel gears on said axles for differential drive therebetween,

clutch means and side gears provided in said housing and selectively engaged and connected to said bull gear,

angular drive means connected to said side gears and including an input shaft disposed normal to and in spaced relation over said vehicle supporting and driving axles,

a fluid torque converter provided in said transaxle housing in common with said angular drive, side gears and clutch means and operative of said input shaft,

and a compound wound D.C. motor operatively connected to the input side of said torque converter and provided in an enclosure directly connected to said common transaxle and torque converter housing in compact assembly and having an electrical control circuit operative of said motor and storage batteries and means of series and parallel connection for optional torque resistant drive thereof.

3,300,699

UNIFIED CONTROL OF INDUCTION MOTOR SPEED

Henry Leknovich, Alhambra, Calif., assignor to Tamar Electronics, Inc., Anaheim, Calif., a corporation of California

Filed Aug. 14, 1964, Ser. No. 389,569
12 Claims. (Cl. 318—212)

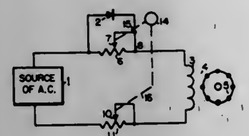
1. A speed control circuit for a motor having a field winding comprising;

(a) electrical means to rectify alternating current,

(b) first adjustable electrical means having impedance connected across said means to rectify alternating current for altering the amplitude of alternating current that is rectified by said means to rectify alternating current,

(c) means to connect said first electrical means to one end of said field winding and to a source of alternating current electric power,

(d) second adjustable means connected to the other end of said field winding and to said source of power to alter the voltage of said source of power that is impressed upon both said means to rectify alternating current and said field winding,



(e) whereby the speed of said motor is decreased upon said first adjustable means being adjusted to increase said impedance and said second adjustable means being adjusted to reduce said voltage, and

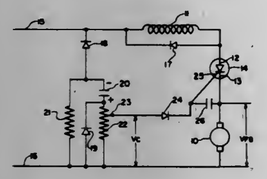
(f) means to simultaneously mechanically adjust said first adjustable electrical means and said second adjustable electrical means connected to both said means, to simultaneously increase the impedance of said first adjustable electrical means and to decrease the voltage impressed upon said means to rectify alternating current and said field winding.

3,300,700

SPEED CONTROL CIRCUIT FOR SERIES MOTORS

Jerry Wigington, Pickens, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed July 31, 1964, Ser. No. 386,578
3 Claims. (Cl. 318—246)



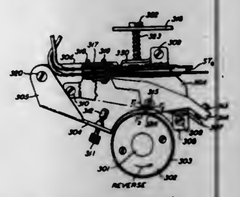
1. A circuit for controlling the speed of a commutator motor having series connected armature and field windings fed from an A.C. voltage source comprising; a solid state controlled rectifier having an anode, a cathode and a gate; means connecting the armature winding, the field winding, the anode and the cathode in series with the voltage source; a diode connected across said field winding and of a polarity to permit forward current to flow in said field winding after the controlled rectifier stops conducting to provide an armature speed voltage having an exponentially decreasing time function; a capacitor; means for charging said capacitor during negative half cycles of the source voltage to a voltage substantially equal to the peak value of the A.C. source voltage; means for discharging said capacitor during positive half cycles of the source voltage through a resistance to provide a positive control voltage having an exponentially decreasing time function; means for adjusting the level of said control voltage; means for combining the control voltage with the armature speed voltage to provide a gate firing voltage; and means for applying said gate firing voltage to the gate and cathode to control the firing of said controlled rectifier.

3,300,701

ELECTRIC MOTOR CONTROL APPARATUS

Robert A. Miller, Rumson, and Charles M. Taris, Cranford, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 29, 1963, Ser. No. 326,918
6 Claims. (Cl. 318—241)



1. Apparatus for stopping an electric motor having a shaft and a power source comprising, in combination,

a motor stop control device,

circuit means responsive to the operation of said device for shifting the direction of rotation of said motor from a forward direction to a reverse direction,

switch means for opening said circuit means thereby to disconnect said motor from said source, and

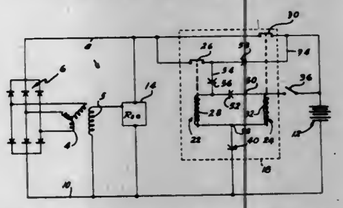
dual function cam follower means uniformly responsive to a relatively small fraction of a revolution of said shaft in said reverse direction (a) for operating said switch means and (b) for abruptly bearing against said shaft with progressively increasing force until said shaft is brought to rest.

3,300,702

PROTECTION DEVICE FOR SOLID STATE BATTERY CHARGING SYSTEMS

Ray C. Noddin, Chicopee, Mass., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Sept. 3, 1963, Ser. No. 306,173
2 Claims. (Cl. 320—25)



1. Battery charging system comprising in combination a battery, a transistorized voltage regulator, an alternating current generating source, a rectifier for converting to direct current the output of said generating source and having direct current output terminals, circuit means interconnecting the direct current terminals of said rectifier to the battery and regulator, first and second relay coils connected in parallel cross said direct current terminals and the terminals of said battery, an ignition switch in series with said first relay coil, a blocking diode in series with said relay coils poled to prevent energization of said coils if said circuit means is connected to the incorrect polarity of said battery, said circuit means including parallel circuits interconnecting one terminal of said battery to one of said direct current terminals of the rectifier, said parallel circuits containing first and second contacts controlled respectively by said first and second relay coils and each completing one of said parallel circuits between the battery and the direct current output of said rectifier when said battery is correctly connected to said circuit, a rectifier in one of said parallel circuits in series with said second relay contact and having sufficiently high impedance to cause direct current output of the rectifier to flow essentially through the other of the said parallel circuits when both said relays are closed, while providing a path for said direct current output when the first relay is not energized by said battery whereby protection against arcing is provided upon the opening of said ignition switch.

3,300,703

PRESSURE SWITCH AND APPARATUS INCORPORATING SAME

Charles M. Gold, Franklin Square, and Emanuel Cooper, New York, N.Y., assignors to Yardney International Corporation, New York, N.Y., a corporation of New York

Filed June 4, 1963, Ser. No. 285,284
10 Claims. (Cl. 320—46)



1. An electric storage cell, comprising at least one pair of electrodes of opposite polarity adapted to generate gas upon passage of an electric current between said electrodes, a fluid-pressure-retentive casing adapted to reecive said electrodes, an electrolyte at least partly surrounding said electrodes within said casing, and a snap-action switch actuatable at a slow rate mounted on said casing and connectable in a charging circuit with said electrodes for open-circuiting said electrodes upon the generation of sufficient gas thereby to elevate the fluid pressure within said casing above a predetermined level, said switch comprising: electrically nonconducting support means mounted upon said casing; an elongated resilient leaf contact secured to said support means at a first location and forming a fulcrum thereat; a countercontact mounted upon said support means and engageable by said leaf contact at a second location therealong longitudinally remote from said fulcrum, said leaf contact being magnetically permeable at least along a portion thereof intermediate said locations; magnet means on said support means intermediate said fulcrum and said countercontact and adapted to magnetically attract said permeable portion of said leaf contact for releasably holding it against said countercontact, the distance between said magnet means and said countercontact being a small fraction of the distance between said fulcrum and said countercontact, and fluid-pressure-responsive actuating means intermediate said fulcrum and said magnetic means acting directly upon said leaf contact in a sense tending to urge it opposite to the force of said magnet means.

3,300,704

REGULATED ELECTRICAL SUPPLY SYSTEM

Bobby E. McMillen, Columbus, Miss., assignor to American Bosch Arma Corporation, Columbus, Miss., a corporation of New York

Filed Sept. 18, 1964, Ser. No. 397,494
9 Claims. (Cl. 320—61)

1. A source of regulated direct voltage, comprising:

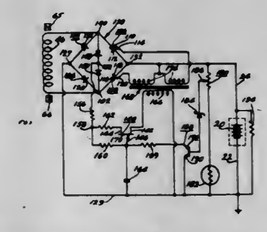
an alternator comprising a fixed stator winding and a permanent-magnet rotor for producing an alternating voltage across said winding when said rotor is rotated;

a storage battery;

a source of electrical gate-control pulses effective in the absence of a control condition to generate said pulses at a frequency high compared with that of said alternating voltage;

a gate-controlled rectifier circuit connected between said stator winding and said battery, supplied with said gate-control pulses, and effective to supply pulses of rectified power from said winding to said battery during intervals each beginning when said circuit is rendered conductive by the occurrence of one of said gate-control pulses contemporaneously with the occurrence of a value of said alternator voltage greater than the voltage across said battery and ending when said alternator voltage has fallen subtantially to said voltage across said battery;

said rectifier circuit comprising a first pair of diode rectifiers and a pair of gate-controlled rectifiers connected together in a first full-wave bridge-rectifier circuit and a second pair of diode rectifiers connected in a second full-wave bridge-rectifier circuit with said first pair of diode rectifiers, the output of said first bridge-rectifier circuit being supplied to said battery and the output of said second bridge-rectifier circuit being supplied to said source of gate-controlled pulses to provide operating power therefor;



said gate-controlled rectifier circuit also including transformer means having secondary windings connected to the gate elements of said gate-controlled rectifiers and having a primary winding supplied with said gate-control pulses for rendering said gate-controlled rectifiers intermittently conductive; and

feedback circuit means responsive to changes in voltage across said battery for producing said control condition to arrest application of said gate-control pulses to said gate-controlled rectifier circuit during times at which said voltage across said battery exceeds a predetermined level and for permitting said application of said gate-control pulses at other times, whereby the time phase in which said gate-control pulses are applied to said gate-controlled rectifier circuit is controlled to produce regulation of said direct voltage.

3,300,705

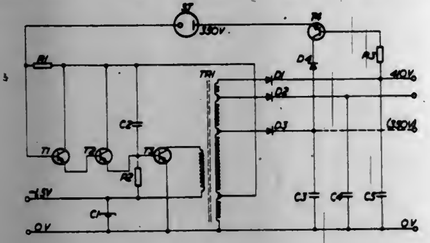
REGULATED D.C. VOLTAGE CONVERTER

Asbjorn Hunstad, Oslo, Norway, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 28, 1963, Ser. No. 305,165
Claims priority, application Norway, Aug. 30, 1962, 145,560
4 Claims. (Cl. 321—2)

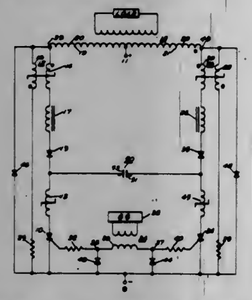
1. A voltage converter for converting low magnitude D.C. voltage to a high magnitude D.C. voltage comprising a source of D.C. voltage, a transistor oscillator coupled to said source, a transformer having a primary and secondary winding said primary winding being connected to said transistor oscillator, a plurality of output rectifying means coupled to said secondary winding at tapped points therealong, means for applying a feedback current to said transistor oscillator from said secondary winding, voltage stabilization means coupled in parallel with said means for applying a feedback current, and a current limiting transistor, the base-emitter of which is interposed between said stabilization and rectifying means,

such that said limiting transistor has a collector coupled to said output rectifying means to provide a voltage corresponding to the operating voltage of said voltage



stabilization means and a base circuit coupled to said output rectifying means at a voltage higher than said operating voltage to provide for the flow of base current.

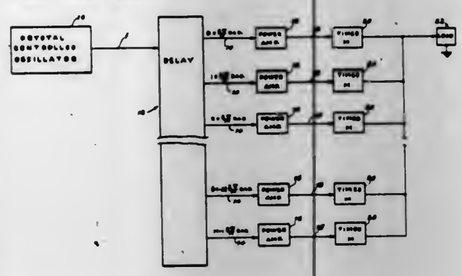
3,300,706
PROTECTION ARRANGEMENT
Armistead L. Wellford, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Dec. 6, 1962, Ser. No. 242,829
10 Claims. (Cl. 321—43)



7. An inverter circuit comprising a pair of input terminals and a center-tapped output circuit, means for connecting one of said input terminals to the center-tap of said output circuit, a control rectifier means serially connected from the other of said input terminals to each of the respective outer ends of said center-tapped output circuit, gating means for selectively gating each of said control rectifier means into conductivity, and nonresonant impedance commutating means for commutating each of said control rectifier means into nonconductivity, and a saturable magnetic means serially connected with each said control rectifier means between said other of said input terminals and the respective outer ends of said center-tapped output circuit to minimize current though a respective control rectifier means when said control rectifier means is initially gated into conductivity and to minimize reverse current flowing through a respective control rectifier means to achieve rapid turn-off of conduction of said rectifying means when said control rectifier means is gated into nonconductivity.

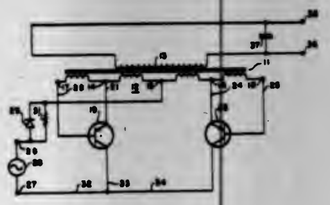
3,300,707
POLYPHASE CRYSTAL-CONTROLLED MICROWAVE POWER SOURCE
Aladdin N. Perkins, Tucson, Ariz., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Oct. 7, 1963, Ser. No. 314,227
4 Claims. (Cl. 321—69)

1. In a microwave power source, in combination,
a crystal-controlled oscillator having a low frequency output,
delay means connected to the output of said oscillator and having N outputs in which the phase angles of successive outputs differ by $2\pi/N$ radians,
power amplifier means connected to each output of said delay means,



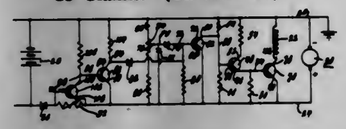
frequency multiplier means connected to the output of each amplifier means and each such amplifier means having an output N times the frequency of said oscillator,
and load means to which the outputs of said multiplier means are commonly connected.

3,300,708
POLE CHANGER TYPE FREQUENCY CONVERTER
Earl C. Rhyne, Jr., Millis, and John Contino, South Acton, Mass., assignors to Dielectric Products Engineering Co., Inc., Littleton, Mass., a corporation of Michigan
Filed July 20, 1965, Ser. No. 473,367
14 Claims. (Cl. 321—69)



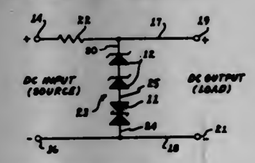
1. A frequency converter for converting an input signal having a determined frequency to an output signal having half said determined frequency, comprising
transformer means having a core, primary winding means and secondary winding means;
input means for supplying an input signal having a determined frequency of periodic waveshape;
switching means connected between said input means and selected points on the primary winding means of said transformer means, said switching means being selectively controlled by said input signal and by the magnetic condition of the core of said transformer means to provide in said primary winding means a half said determined frequency signal having only a positive portion of half cycle duration for every other full cycle of the input signal commencing with one of the first and second cycle of said input signal and only a negative portion of half cycle duration for every other full cycle of said input signal commencing with the other of the first and second cycle of said input signal; and
output means connected to the secondary winding means of said transformer means for providing said half said determined frequency signal.

3,300,709
CURRENT AND VOLTAGE REGULATOR
Brooks H. Short and George B. Shaw, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 14, 1955, Ser. No. 546,503
13 Claims. (Cl. 322—25)



7. In an electrical supply system, a direct current generator having an output terminal and a field winding, a pair of D.C. load leads connected in circuit with said output terminals, a unipolar transistor connected in series with said field across said leads and having a control junction, a rectifier and resistance connected in series across said leads, said rectifier being connected to oppose current flow from the higher voltage lead to the lower and having a breakdown voltage less than certain voltages applied to said leads by the generator, means connecting the control junction of the transistor to a point intermediate the rectifier and resistance to control the flow through the transistor in response to the voltage between said leads, and means including a resistance, a pair of transistors and a rectifier connected to said control junction and said leads for controlling the flow of current through said transistor in response to current flow in said leads.

3,300,710
VOLTAGE REFERENCE CIRCUIT WITH LOW INCREMENTAL IMPEDANCE AND LOW TEMPERATURE COEFFICIENT
Dalton L. Knauss, 248 S. Wells Fargo Ave., Scottsdale, Ariz. 85251
Filed Jan. 23, 1963, Ser. No. 253,478
3 Claims. (Cl. 323—17)



3. In a voltage regulating circuit:
(a) a clipper type semiconductor element with an intermediate thin layer of one conductivity type and two outside layers of opposite conductivity type,
(b) said intermediate layer having a thickness dimension less than the minority carrier diffusion length in the region comprising said intermediate layer to thereby provide negative incremental impedance, and
(c) a positive incremental impedance element in series with said clipper type semiconductor element to substantially exactly compensate for said negative incremental impedance and form a voltage regulating circuit of substantially zero incremental impedance, said clipper type semiconductor element and positive impedance element having substantially compensating temperature coefficients.

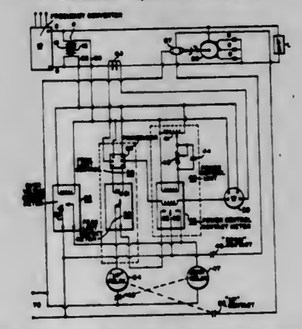
3,300,711
LAMP DIMMER
Edward T. Duncan, Westport, Conn., assignor to Product Research Associates, Incorporated, Westport, Conn., a corporation of Connecticut
Filed Feb. 13, 1963, Ser. No. 258,255
8 Claims. (Cl. 323—22)

1. A lamp dimmer socket which comprises a planar first member having a plurality of support members depending therefrom in a first direction perpendicular thereto, said first and support members being formed of heat and electrically conductive material; insulating means on said first member on the side opposite said depending support members; a lamp contact shell positioned on said insulating means; center contact means within and insulated from said screw shell, positioned to engage the



center contact of an incandescent bulb and electrically connected to said first member; dimming circuit means enclosed within said first member and said side members, said dimming circuit means including a solid state phase-controllable current controlling element mounted in heat conducting relationship with said first member; and externally controllable knob means in actuating relationship with said dimming circuit means.

3,300,712
CONTROL DEVICE FOR AUTOMATICALLY ADDING AND SUBTRACTING CAPACITORS TO MAINTAIN PRESELECTIVE POWER OUTPUT
Robert Sidney Segsworth, Warren, Ohio, assignor to Ajax Magnethermic Corporation, Warren, Ohio, a corporation of Ohio
Filed Mar. 26, 1964, Ser. No. 355,004
4 Claims. (Cl. 323—105)



2. Automatic control means for a frequency converter, a load circuit connected to said converter, said load circuit having a plurality of capacitors therein, means delivering signals to control means responsive to voltage and current in the load circuit, variable means for preselecting a desired power operating level for the load, certain of said control means responding to voltage and current in the load circuit including the preselecting means adding and subtracting capacitors in the load circuit to maintain power at a preselected level, voltmeter switching means limiting the addition of capacitors to prevent over-voltage and overriding the said first control means to subtract capacitors if "safe" voltage is exceeded, and peak limit control means overriding the said first recited control means and including a transducer to supply an output signal corresponding to the phase angle between current and voltage delivered to it from the load circuit, the said output signal being delivered to a sensitive relay which is adjustable to open contacts therein at a certain predetermined phase angle relationship between the said voltage and current, which relationship occurs at maximum tuning of the frequency converter-load circuit to prevent the addition of capacitors beyond that required

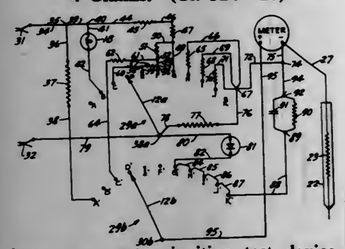
for maximum tuning of the frequency converter load circuit.

3,300,713

MULTI-PURPOSE IGNITION TEST UNIT

Robert W. Fulton, 4428 Zane Ave. N., Minneapolis, Minn. 55422

Filed July 5, 1963, Ser. No. 293,090
4 Claims. (Cl. 324—16)



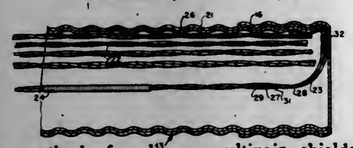
1. A battery generator ignition test device comprising: a case, a meter works secured in said case and having a dial face bearing at least three distinct scales thereon, ganged switches in said case spaced from said meter, a single knob operating said ganged switches, a plurality of electrical units interconnected with and by said ganged switches in various relationships with said meter works, a pair of clip leads interconnected with said ganged switches and said electrical units, said clip leads being distinctively marked, a test probe connected to said meter works and one of said clips via said ganged switches and combinations of said electrical units, said ganged switches having a plurality of positions to which they can be turned by the knob and at least three of which cause said clips to be interconnected by different resistances in distinct steps, said case having instructions thereon adjacent to said knob in which instructions said three positions are labelled to indicate three different grades of efficiency, and at least one other position of said knob interconnecting said clips with a fixed resistance and connecting said meter works across said fixed resistance, said one other knob position being labelled on said case to indicate a particular one of said scales as significant when said knob is in said one other position, and at least two additional positions of said knob arranging said ganged switches to interrconnect one of said clips and said test probe via one of two predetermined resistances selectively across which said meter works is connected, said two additional positions of said knob being labelled on the face of said case indicating two different tests of high voltage and designating the third of said meter scales only as significant when said knob is in either of said two additional positions.

3,300,714

METHOD OF REELING COMMUNICATION CABLES TO IDENTIFY DEFECTIVE PAIRS INCLUDING GROUNDING THE IDENTIFIED DEFECTIVE PAIRS

Robert T. Shiels, Jr., Darien, Conn., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,401
14 Claims. (Cl. 324—52)



1. The method of reeling a multipair, shielded communication cable having a leading and a trailing end and at least one defective pair, comprising the steps of:

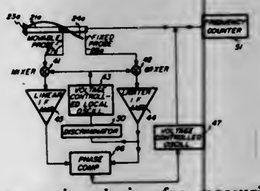
(A) winding said cable onto a reel while maintaining said leading end accessible for testing and capping,
(B) testing the individual pairs of said cable thereby locating said defective pair,
(C) grounding at least one conductor of said defective pair to the cable shield while maintaining the non-defective pairs insulated from said shield, and
(D) capping said leading and trailing ends.

3,300,715

TWO PROBE STANDING WAVE NULL DETECTOR

Carl P. Tresselt, Detroit, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware

Filed Jan. 24, 1963, Ser. No. 253,564
8 Claims. (Cl. 324—58.5)



1. Voltage measuring device for measuring standing waves in waveguide means comprising
waveguide means,
frequency generating means for effecting a standing wave in said waveguide means,
first probe means for measuring a reference voltage corresponding to a portion of the standing wave voltage in said waveguide means,
second probe means moavble relative to said first probe means and movable along the waveguide means to measure the standing wave voltage in said waveguide means,
comparing means,
said first and second probe means being connected to said comparing means to compare the reference voltage and the standing wave voltage thereby developing a signal corresponding to the relative position of said second probe means and said standing wave,
said first probe means being positioned relative to said waveguide means to measure a portion of said standing wave in said waveguide means as the reference voltage,
said second probe means being connected to and moved by an object the displacement of which is to be measured,
voltage controlled oscillator means to change the frequency of the signal in said waveguide means,
said oscillator means being connected between the output of said comparing means and said frequency generating means to change the frequency of the signal in said waveguide means until the comparing means output sends a zero signal to said oscillator means,
means to count the frequency change.
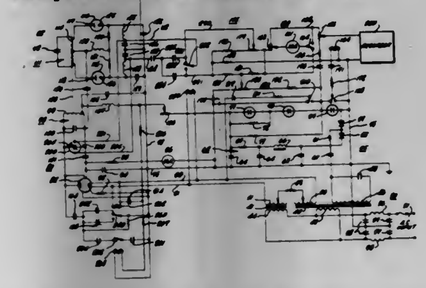
3,300,716

APPARATUS FOR MEASURING AND TESTING ELECTRICAL PROPERTIES OF NONCONDUCTIVE MATERIALS

Karl-Hans Guenther Engert, Monrovia, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California

Filed Apr. 18, 1963, Ser. No. 273,975
Claims priority, application Canada, Apr. 21, 1962, 847,322
9 Claims. (Cl. 324—61)

1. A measuring system for testing non-electroconductive materials, comprising:
(a) an oscillator for producing an electric oscillation the frequency of which varies in response to capacity variations;
(b) a discriminator for producing a direct-current signal the amplitude of which is a function of the frequency of said electric oscillation;
(c) a sensing capacitor for sensing a predetermined parameter of a non-electroconductive material under test, the sensing capacitor having a predetermined inherent capacity;
(d) a comparison capacitor having a capacity of a value substantially similar to that of the inherent capacity of the sensing capacitor;
(e) means for exposing the sensing capacitor to the material under test for causing the sensing capacitor to experience a capacity variation in accordance with said parameter of the material under test;



(f) first switching means for alternately connecting the sensing capacitor and the comparison capacitor to the oscillator for causing the discriminator to produce alternately a first direct-current signal the amplitude of which corresponds to the actual capacity of the sensing capacitor and a second direct-current signal the amplitude of which corresponds to the capacitor value of the comparison capacitor;
(g) a pair of storage capacitors;
(h) second switching means operating in substantial synchronism with the first switching means for charging one of said storage capacitors with said first direct-current signal, and for charging the other of said storage capacitors with said second direct-current signal;
(i) means for interconecting said pair of charged storage capacitors to produce a combined signal corresponding to the difference between said first and second signals; and
(j) measuring means responsive to said combined signal for indicating the parameter sensed by said sensing capacitor.

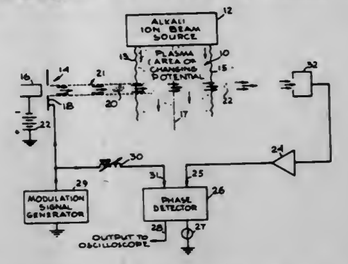
3,300,717

METHOD AND APPARATUS FOR MEASURING POTENTIALS IN PLASMAS

Robert F. Kemp, 2216 Warfield Ave., Redondo Beach, Calif. 90278; John M. Sellen, Jr., 15506 Moorpark St., Encino, Calif. 91316; and Jack C. Slattery, 20764 Hartland, Canoga Park, Calif. 91306; granted to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457(d)

Filed Oct. 5, 1962, Ser. No. 228,707
9 Claims. (Cl. 324—72)

1. A method for measuring potential gradients within a stream of ionized particles, comprising:
projecting a beam of electrons transversely through said stream;
modulating said beam at a frequency which is higher than the frequency of the potential gradient variations in said stream which are to be detected; and
measuring the phase difference between the modulation of the projected beam and that of the electron beam subsequent to passage through said stream to provide a signal which varies as a function of the stream potential relative to that of the electron beam source.

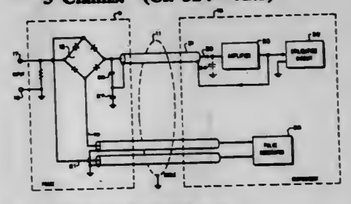


3,300,718

TEST PROBE APPARATUS EMPLOYING FEEDBACK REDUCTION OF THE DISTRIBUTED CAPACITANCE OF THE SIGNAL CABLE

James M. Umphrey, Mountain View, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Aug. 12, 1963, Ser. No. 301,321
5 Claims. (Cl. 324—72.5)



1. Signalling apparatus comprising:
an input for receiving an applied signal with respect to a reference potential;
a storage capacitor and an impedance serially connected across said input;
an amplifier having an input and an output;
a pair of signal conductors having distributed capacitance therebetween, one of said conductors connecting said storage capacitor to the input of said amplifier for applying thereto the signal appearing on said storage capacitor with respect to the reference potential;
said amplifier producing an output signal which is in phase with the signal applied to said input and which has an amplitude related to the amplitude of signal at the end of said one conductor connected to the input of said amplifier;
means including the other of the signal conductors connecting the output of said amplifier to the common connection of the serially connected storage capacitor and impedance; and
a utilization circuit connected to the output of said amplifier.

3,300,719

WIDE-RANGE COUNT RATE METER UTILIZING PLURAL COUNT RATE CIRCUITS AND A RANGE IDENTIFIER

Stanley W. Thomas, Livermore, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

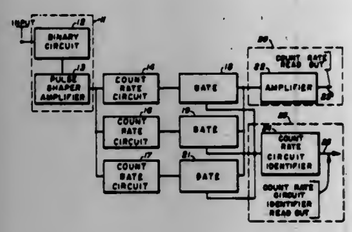
Filed Oct. 14, 1963, Ser. No. 316,193
6 Claims. (Cl. 324—78)

1. A multirange pulse rate metering device comprising:
(a) an input pulse driver stage for converting random electrical pulses into a train of uniform height elec-

trical pulses delivered at an output terminal, and having a width proportional to the time interval between consecutive random pulses;

(b) a plurality N of count rate circuits with their inputs connected in parallel to the output of said driver stage, said count rate circuits including means for converting the output pulses of said driver stage into an output voltage indicative of the number of said pulses, said count rate circuits having RC time constant input characteristics corresponding to progressively higher adjacent count rate ranges, and the maximum output voltage of each count rate circuit corresponding to the upper limit of its range;

(c) a count rate readout terminal;



(d) separate gate means, each having an input and an output, and one each connected to the outputs of said count rate circuits for passing the output voltage of its respective count rate circuit to said readout terminal and including a normally open, electronic switching means connected between the input and output terminals thereof, said gate means further including means for sensing attainment of said upper limit output voltage of its respective count rate circuit to close said switching means to terminate transmission of the count rate indicating voltage therethrough; said gate means having their outputs connected in parallel to said count rate readout terminal; and

(e) count rate circuit identifier means electrically communicative with said gate means for deriving and delivering an output voltage indicative as to which of said count rate circuits has an output signal lower than its respective upper limit.

3,300,720
SINGLE SIDEBAND TRANSCEIVER HAVING COMMON TRANSMIT AND RECEIVE APPARATUS

Gilbert J. Kowols, Chicago, Ill., assignor, by mesne assignments, to Mark Products Company, Skokie, Ill., a corporation of Illinois

Filed Nov. 20, 1963, Ser. No. 325,051
5 Claims. (Cl. 325—20)

1. A single sideband radio apparatus including a transmitter and receiver with circuit elements functionally common to each, and wherein said apparatus is operable in either the upper or the lower sideband of a frequency channel selected from a plurality of available channels, comprising in combination:

a common carrier oscillator operable at predetermined carrier frequency;

a source of modulating signal to be transmitted;

transmitter modulator means electrically interconnected with said carrier oscillator and said source and effective to produce sideband signal components thereof;

first common circuit means effective to produce one of said sidebands substantially free of the other sideband;

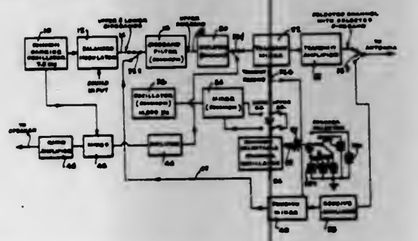
a common selectable channel oscillator having a frequency equal to the difference in frequency between the common carrier oscillator and the frequencies of said available channels, respectively, said oscillator being selectively operable at any one of a plurality of said frequencies;

second common circuit means operable to produce signal having substantially twice the frequency of said common carrier oscillator and differing therefrom by a predetermined amount in the opposite sense to the difference between said one sideband and the carrier;

common signal mixing means to mix signals from said last means and said selectable channel oscillator, thereby producing oscillations of frequency substantially equal to the sum of the selectable channel oscillator frequency and twice the carrier frequency;

first transmitter means operable to mix signal from said first circuit means and, selectively, oscillations from said selectable channel oscillator or said second circuit means, thereby selectively providing signals in either the upper or the lower sideband of the selected channel;

means for electrically interconnecting said first transmitter means, said first circuit means, said channel oscillator means, and said circuit means;



second transmitter means electrically interconnected to said first transmitter means and operative to amplify the received signals for radiation;

signal receiving means effective to receive signals in said channels;

receiving mixing means responsive to said receiving means and, selectively, the output of said common selectable channel oscillator or said common signal mixing means, whereby received signal in the upper or the lower sideband and said selected channel produces sideband components at said predetermined frequency of the common carrier oscillator;

means operable to apply signals from said receiving mixing means to said first common circuit means;

means to mix the output of said first common circuit means and the common carrier oscillator; and

modulating signal reproducing means electrically interconnected with and responsive to said last means, whereby two-way communication may be made on the selected upper or lower sideband of the selected channel with a frequency gap between said sidebands.

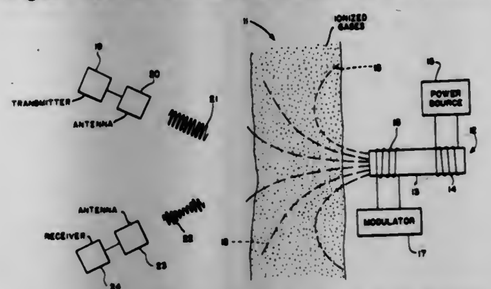
3,300,721
MEANS FOR COMMUNICATING THROUGH A LAYER OF IONIZED GASES

Stuart L. Seaton, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Apr. 29, 1964, Ser. No. 363,654
7 Claims. (Cl. 325—65)

1. An electromagnetic wave modulator comprising: a layer of ionized gases which reflects a part of any electromagnetic energy that is directed into it; means for applying an unmodulated magnetic field to said layer of ionized gases; means for modulating said magnetic field; means for generating an electromagnetic wave having a constant

frequency equal to the gyrofrequency of said unmodulated magnetic field; and means for transmitting said electro-

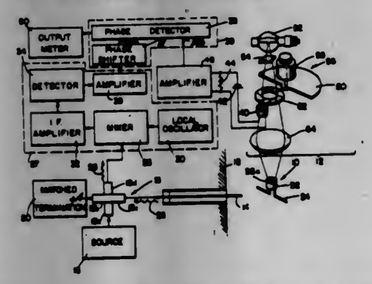


magnetic wave into said layer of ionized gases whereby the reflected electromagnetic energy contains the same modulation as said modulated magnetic field.

3,300,722
METHOD AND APPARATUS FOR MEASURING ELECTROMAGNETIC ENERGY WITH PHOTOSENSITIVE REFLECTORS

Keigo Iizuka, Somerville, Mass. (% Gordon McKay Laboratory, 9 Oxford St., Cambridge, Mass. 02138)

Filed June 18, 1963, Ser. No. 288,723
14 Claims. (Cl. 325—67)



5. In apparatus for measuring radiated radio frequency energy by sensing reflections of said energy, the combination of

(a) a remotely controllable reflector for producing said reflections, said reflector comprising

(1) photosensitive means having an electrical impedance that varies according to the intensity of optical energy incident thereon, and

(2) antenna means in circuit with said impedance of said photosensitive means,

(b) means directing amplitude modulated optical energy onto said photosensitive means, and

(c) dielectric means supporting said antenna means at a selected position relative to the source of said radio frequency energy.

11. A method for measuring radio frequency electromagnetic energy comprising the steps of

(a) intercepting said energy with a remotely controllable photosensitive reflector of radio frequency energy,

(b) illuminating said reflector with intensity modulated light,

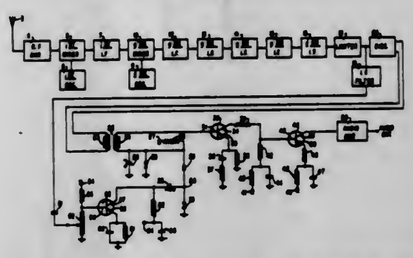
(c) modulating the radio frequency impedance of said reflector in accordance with the modulation of said light, whereby said reflector reradiates radio frequency energy responsive to said intercepted energy and amplitude-modulated according to the modulation of said light, and

(d) producing an output indication corresponding to the amplitude of said reradiated energy.

3,300,723
SQUELCH CIRCUIT

Philip J. Hansen, Chicago, Ill., assignor to Motorola Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 13, 1963, Ser. No. 301,869
4 Claims. (Cl. 325—348)

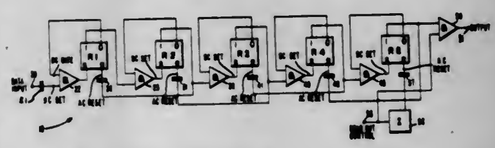


1. A squelch circuit for use in a carrier wave receiver including a first portion for receiving and translating a carrier wave signal, and an amplifier having an input circuit coupled to said first portion and adapted to be interrupted by the application of a squelch potential thereto, said squelch circuit including in combination, means coupled to said first portion for generation of a squelch potential in the absence of a carrier wave signal, capacitor means having a first terminal coupled to said amplifier input and a second terminal coupled to a reference potential, circuit means coupling said generating means to said first terminal for applying said squelch potential to said amplifying means to interrupt the same, whereby said squelch potential is impressed across said capacitor means, a diode connected across said capacitor means and poled to limit the magnitude of the squelch potential applied to said capacitor by means of the forward conduction characteristics of said diode.

3,300,724
DATA REGISTER WITH PARTICULAR INTRASTAGE FEEDBACK AND TRANSFER MEANS BETWEEN STAGES TO AUTOMATICALLY ADVANCE DATA

Alfred Cutaia, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 9, 1964, Ser. No. 350,415
8 Claims. (Cl. 328—37)



1. A data register comprising:

a plurality of bistable devices each having a D.C. gated set input and an A.C. reset input and set and reset outputs;

means connecting the reset output of each bistable device to said D.C. gated input thereof;

an input terminal connected to the D.C. set input of the first of said plurality of bistable devices;

means for connecting said set outputs of preceding bistable devices to said D.C. set inputs of succeeding bistable devices whereby when a preceding bistable device is in its set state and a succeeding bistable device is in its reset state, said succeeding bistable device is switched to its set state;

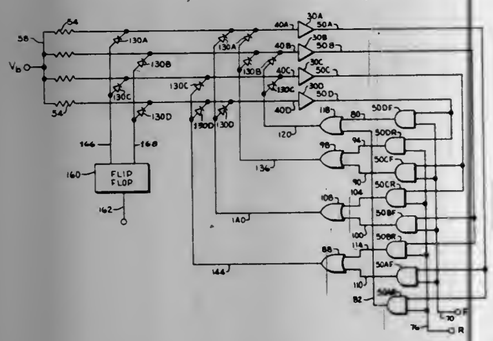
means connecting said set outputs of said succeeding bistable devices to said A.C. reset inputs of said preceding bistable devices whereby upon the setting

of said succeeding bistable devices said preceding bistable devices are reset to again be conditioned for being set;

means gating the set output of the last of said plurality of bistable devices; and

means for connecting said gating means to the A.C. reset of said last bistable device to reset the same upon said gating means going off.

3,300,725
REVERSIBLE ELECTRONIC COUNTER
William G. Klehm, Jr., Farmington, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 5, 1963, Ser. No. 270,885
2 Claims. (Cl. 328—44)



1. A reversible counter including

a plurality of counting devices A, B, C, D arrayed in a series having a forward counting direction from A to B to C to D to A to B and a reverse counting direction from D to C to B to A to D to C, etc.,

each device having an input lead and an output lead,

a plurality of two-input, one-output forward AND gates corresponding in number to said counting devices and including A, B, C, D AND gates, one forward AND gate being associated with each counting device,

a plurality of two-input, one-output reverse AND gates corresponding in number to said counting devices and including A, B, C, D AND gates, one reverse AND gate being associated with each counting device,

the output lead of each counting device being coupled to one input of its associated two-input forward AND gate and to one input of its associated two-input reverse AND gate,

a forward count control line coupled to the second input of each forward AND gate,

a reverse count control line coupled to the second input of each reverse AND gate,

a series of OR gates having two inputs and one output and corresponding in number to said counting devices,

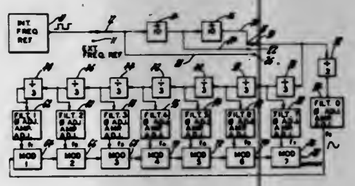
each forward AND gate and the reverse AND gate associated with the adjacent leading position having their single outputs coupled to the inputs of one OR gate so that the output of D forward and A reverse AND gates, C forward and D reverse AND gates, B foward and C reverse AND gates, and A forward and B reverse AND gates are coupled to the inputs of separate OR gates,

the single output of each OR gate being coupled through diodes to the input lead of each counting device except the counting devices which are coupled to its associated AND gates,

said diodes being oriented so that when one counting device registers a count, the potential on its output lead is used as a cut-off potential which is coupled to and renders inoperative all other devices except the device adjacent to and leading it in the selected counting direction, and

auxiliary circuit means coupled to said devices and applying cut-off potential to the counting device which is adjacent to and leading a device which is registering a count.

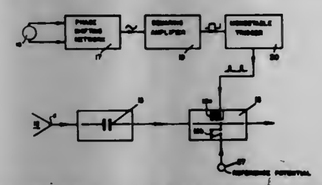
3,300,726
SINE SPECTRUM GENERATOR
Ralph P. Newman, Brookfield, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,925
17 Claims. (Cl. 328—187)



1. Apparatus for generating a complex waveform having a plurality of frequency components uniformly distributed over a desired bandwidth comprising, a source of periodically varying electrical signals, a plurality of divider means each having an input and an output and operative to produce a signal at the output at a frequency of one-third the frequency at the input, the divider means being connected in cascade with the input of the first of the plurality of divider means being connected to the source, a plurality of modulator means each having first and second inputs and an output and operative to produce a signal at the output comprising the sum and difference frequency components of the signals applied to the inputs, each of the modulator means further including means to add the signal appearing at the first input thereof to the signal at the output thereof, the plurality of modulator means being connected in cascade such that the output of each modulator means is connected to the first input of the following modulator means, means connecting the source to the first input of the first of the cascaded modulator means, and means connecting the outputs of the divider means to the second inputs of the modulator means in such order that the lowest output frequency of said divider means is connected to the second input of the first of the modulator means and successively higher frequency outputs of the divider means are connected in sequence to the following modulator means.

3,300,727
PHASE SENSITIVE DETECTORS
David Anthony Harris, Leicester, England, assignor, by mesne assignments, to The Rank Organisation Ltd., London, England, a British company
Filed Feb. 5, 1964, Ser. No. 344,522
Claims priority, application Great Britain, Feb. 15, 1963, 6,155/63
6 Claims. (Cl. 329—50)

1. A phase-sensitive detector for an input constituted by a signal superimposed upon a carrier waveform, said detector comprising means establishing from said carrier waveform a reference waveform of the same frequency as said carrier waveform, means producing from said reference waveform a series of pulses, a monostable device triggered by said pulses, means providing a reference potential and clamping means controlled by said monostable device so as to clamp said input to said reference potential once during each cycle of said carrier waveform and over only a part of each cycle of said carrier waveform.

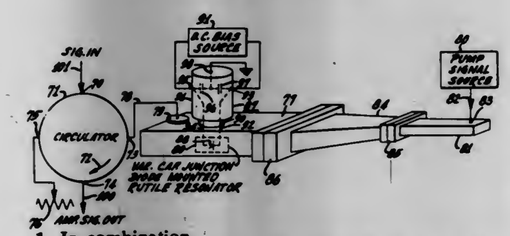


3,300,728
QUADRUPOLE PARAMETRIC AMPLIFIER WITH GRADUAL PUMP TRANSITION
Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,737
5 Claims. (Cl. 330—4.7)



1. An electron beam amplifier comprising: a cathode for projecting an electron beam along a predetermined path; means for developing a magnetic field along said path and of a predetermined strength to establish a condition of cyclotron resonance for electrons in said beam; means disposed along said path for coupling signal energy to said beam; means disposed along said path for extracting amplified signal energy from said beam; and a pump structure disposed effectively between said coupling and extracting means and which develops a periodic inhomogeneous field to which the electrons are subjected and which varies at a rate at which the electrons encounter four field reversals for at each orbit of their cyclotron motion, the strength of said inhomogeneous field increasing gradually in the direction of electron flow at least over the initial, upstream portion of said field.

3,300,729
NON-LINEAR ELEMENT MOUNTED HIGH DIELECTRIC RESONATOR USED IN PARAMETRIC AND TUNNEL DIODE AMPLIFIERS, HARMONIC GENERATORS, MIXERS AND OSCILLATORS
Kern K. N. Chang, Princeton, N.J., assignor to Radio Corporation of America, a Delaware corporation
Filed Oct. 30, 1963, Ser. No. 320,092
23 Claims. (Cl. 330—4.9)



1. In combination,

a resonator constructed of an insulating material having a dielectric constant higher than 30 and dimensioned to resonate at a desired frequency, and a non-linear element mounted outside of and immediately adjacent to said resonator in a manner to couple substantially said entire element to a strong electric field of said resonator at said frequency.

3,300,730
NEGATIVE RESISTANCE AMPLIFIER
William F. Gabriel, Annandale, Va., assignor to Keltec Industries, Inc.
Filed Sept. 3, 1963, Ser. No. 306,178
1 Claim. (Cl. 330—61)

A narrow band negative resistance amplifier circuit for operation within a frequency range centered about a selected center frequency f_o comprising

a coaxial transmission line,

input means connected to one end of said coaxial transmission line,

first load impedance means connected to the other end of said coaxial transmission line,

a hollow waveguide transmission line,

a tunnel waveguide transmission line,

a tunnel diode negative resistance amplifier device connected to one end of said hollow waveguide transmission line,

second load impedance means connected to the other end of said hollow waveguide transmission line,

first resonant cavity means tunable for operation at frequency f_o having a wall electrically connected in common with said hollow waveguide transmission means,

first dielectric tuning means threadedly mounted in said first resonant cavity means for movement along an axis of said cavity,

second resonant cavity means tunable for operation at frequency f_o having a wall electrically connected in common with said hollow waveguide transmission means,

second dielectric tuning means threadedly mounted in said second resonant cavity means for movement along an axis of said cavity,

means coupling said first and second resonant cavity means to said coaxial transmission line at points separated by $n3\lambda/4$, where n is an integer and λ is the wavelength at f_o, and

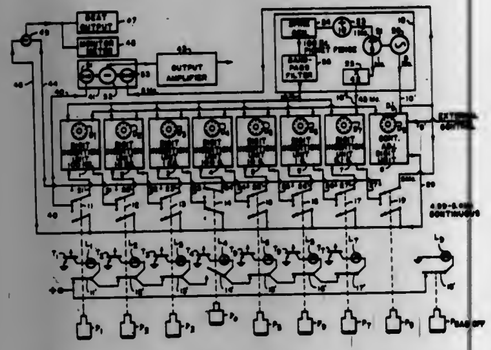
means coupling said first and second resonant cavity means to said hollow waveguide transmission line at points separated by $n\lambda/4$,

said first and second resonant cavity means and said hollow waveguide transmission line being formed from a single hollowed block structure.

3,300,731
DIGITAL FREQUENCY SYNTHESIZER HAVING A PLURALITY OF SELECTABLY CONNECTABLE PHASE-LOCKED DIGIT INSERTION UNITS

Atherton Noyes, Jr., Concord, Mass., assignor to General Radio Company, West Concord, Mass., a corporation of Massachusetts

Filed July 27, 1964, Ser. No. 385,219
17 Claims. (Cl. 331—2)



1. Synthesizing apparatus having, in combination, a source of input signal, a plurality of serially connected step-wise adjustable digit insertion units connected with the source for synthesizing a multi-digit quantity corresponding to the signal, a continuously adjustable digit unit connected with the source, means for selecting a group of successive units of the plurality of digit insertion units and disconnecting the same from the remainder of the plurality of digit insertion units, means for connecting the continuously adjustable digit unit to the said remainder of the plurality of digit insertion units, and means for beating the output of the said group of digit insertion units with the output of the continuously adjustable digit unit to compare the setting of the latter with the adjustment of the said group in order that the adjustment of the continuously adjustable digit unit may have a known relationship to the adjustment of the said group.

3,300,732
FREQUENCY SYNTHESIZING APPARATUS

Gordon Maurice West, Coventry, England, assignor to The General Electric Company Limited, London, England

Filed Mar. 23, 1964, Ser. No. 353,731
Claims priority, application Great Britain, Mar. 22, 1963, 11,431/63
4 Claims. (Cl. 331—39)

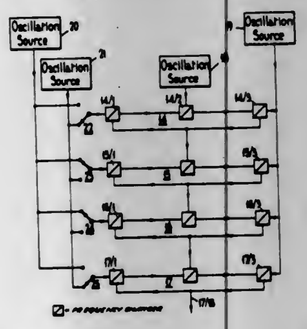
1. Apparatus for supplying electric oscillations including

(A) a plurality of like units each of which comprises
(i) first, second and third input paths,
(ii) first, second and third heterodyne frequency changers which are connected respectively to the first, second and third input paths,
(iii) means to connect the first, second and third frequency changers in a ring so that
(1) the first frequency changer supplies oscillations having a frequency eqal to the difference betwen the frequency of oscillations supplied by the third frequency changer and oscillations supplied over the first input path,
(2) the second frequency changer supplies oscillations having a frequency equal to the difference between the frequency of oscillations supplied over the second input path and the frequency of oscillations supplied by the first frequency changer, and
(3) the third frequency changer supplies oscillations having a frequency equal to the sum of the frequency of oscillations supplied by the second frequency changer and the frequency of oscillations supplied over the third input path, and
(iv) an output path connected to the third frequency changer;

(B) means to cascade-connect said units by connecting the output path of each unit other than the last to the second input path of the following unit;

(C) means to supply oscillations of frequency f_b to the second input path of the first of the cascade-connected units;

(D) means to supply oscillations having a plurality of frequencies one of which is equal to f_a;



(E) a plurality of switching means which are each associated with one of said units and which are connected between the last mentioned means and the first input path of the associated unit so as to to pass to the first frequency changer of that unit oscillations having a frequency selected from said plurality; and

(F) means to supply to the third input path of all said units oscillations having a frequency f_c which is equal to $f_b - f_a$;

(G) the arrangement being such that when said switching means are operated to supply oscillations of frequency f_a to the first frequency changer of all said units, the oscillations which are supplied over the output path of the last of said cascade-connected units and which constitute the output of the apparatus have the frequency f_b, while the frequency of the output oscillations may be changed by selective operation of said switching means.

3,300,733
RELAXATION OSCILLATOR MODULATED BY ANOTHER RELAXATION OSCILLATOR

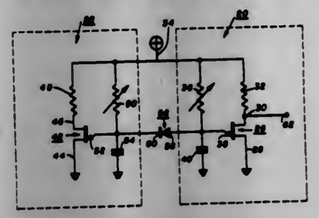
George B. Price, Pensacola, Fla., assignor to Monsanto Company, a corporation of Delaware

Filed Dec. 16, 1964, Ser. No. 418,675
2 Claims. (Cl. 331—47)

1. An interrupted-tone oscillator, comprising in combination:

(a) first and second unijunction transistor relaxation oscillators, each of said oscillators including a unijunction transistor having an emitter electrode and a timing capacitor connected between its emitter electrode and a point of fixed reference potential, said first oscillator having a higher output pulse repetition rate than said second oscillator,

(b) and a unidirectionally conducting diode having its anode connected to the emitter electrode of said first oscillator and its cathode connected to the emitter electrode of said second oscillator.



3,300,734
METHOD OF SEPARATING LIGHT ENERGY FROM SHOCK WAVE ENERGY INCLUDING THE PUMPING OF A LASER WITH AN EXPLODING WIRE

Jack De Ment, 1717 NE. 19th Ave., Portland, Oreg. 97212

Filed Jan. 7, 1963, Ser. No. 254,536
14 Claims. (Cl. 331—94.5)

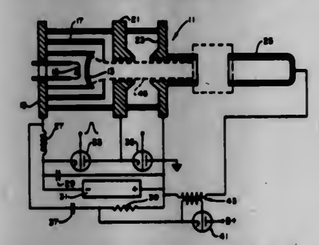


1. The method of parting light energy from shock energy created in the electrical explosion of an explodable conductor which comprises the steps of accelerating an explodable conductor to a velocity in excess of the shock energy produced by the electrical explosion of said conductor, optically coupling the said accelerating conductor with an aperture and concurrently inducing the electrical explosion of the conductor by passing electrical current therethrough, and optically uncoupling the said accelerating conductor from the said aperture by moving from the field thereof at a velocity in excess of the said shock energy, whereby light energy produced by the explosion of the conductor passes through the said aperture and shock energy is carried away from the aperture with the moving exploded conductor.

3,300,735
PHASE SHIFT BEAM TUBE NEUTRALIZER AND MODULATOR

George M. W. Badger, Menlo Park, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California

Filed Dec. 31, 1962, Ser. No. 248,499
8 Claims. (Cl. 332—7)

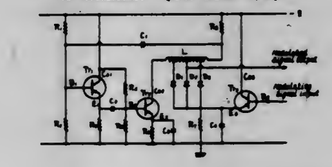


1. A circuit for eliminating phase shift due to velocity variation arising from variations in beam density in a beam tube having an accelerating means, a cathode and a collector, means for applying an accelerating voltage to said accelerating means, and feedback means responsive to the intensity of said beam connected between said collector and said accelerating means for varying said accelerating voltage in direct proportion to the said variations in beam density.

3,300,736
FREQUENCY MODULATION SYSTEM

Tomiyuki Tanaka, Tokyo, Japan, assignor to Victor Company of Japan Limited, Yokohama, Japan, a corporation of Japan

Filed Dec. 20, 1963, Ser. No. 332,027
2 Claims. (Cl. 332—30)

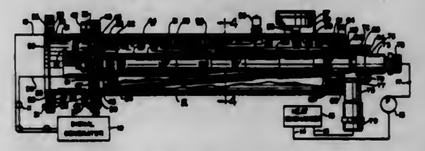


1. A frequency modulation system comprising a variable delay circuit comprising an inductor and a plurality of variable capacitors which are varied by the voltage applied thereto shunted by said inductor, means for directly supplying a voltage corresponding to an input modulating signal, including a direct current component, directly to like ends of each of said capacitors, and an oscillation circuit connected to said delay circuit which oscillates by feeding back a signal which is phase shifted by said delay circuit, the delay time of said variable delay circuit being varied by the capacity of said variable capacitors which are varied by a voltage corresponding to said input modulating signal and the oscillation frequency of said oscillation circuit being phase shifted.

3,300,737
COAXIAL ELECTRICAL LINE ATTENUATOR

Harold Ellsworth Stevens, Lyndhurst, and Leo Lesyk, Cleveland, Ohio, assignors to Bird Electronic Corporation, Solon, Ohio, a corporation of Ohio

Filed Mar. 10, 1965, Ser. No. 438,486
6 Claims. (Cl. 333—22)



3. An attenuating device for use in a high frequency coaxial electrical system, said device comprising:

an elongated, horn-shaped outer conductor;

an elongated inner conductor within and coaxial to said outer conductor, one of said conductors comprising an elongated ceramic tube having an electrically resistive means on one surface thereof and being formed of a material having a thermal conductivity of the order of at least .2 calories per second per square centimeter per centimeter per degrees centigrade;

fluid flow means disposed in fixed relation to said ceramic tube; and

conduit means connected to said fluid flow means and adapted to be connected also to a source of fluid coolant under pressure for supplying fluid to said one conductor, said fluid flow means being adapted to direct the flow of fluid supplied to said one conductor in one direction throughout said tube in a receiving run and in a reverse direction in a return-

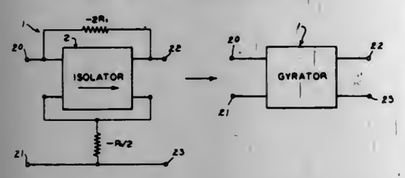
ing run said runs being concentric and within said ceramic tube, said conduit means including means spaced along said conduit means for producing turbulence in the fluid flowing in said returning run.

3,300,738

FEEDBACK ARRANGEMENTS FOR TRANSFORMING ISOLATOR AND GYRATOR CIRCUITS INTO SIMILAR OR OPPOSITE TYPE OF CIRCUIT

Heinz M. Schlicke, Fox Point, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Aug. 4, 1964, Ser. No. 387,381
8 Claims. (Cl. 333—24.1)



4. An electronic circuit for transforming the inherent electrical characteristics of an isolator network comprising, in combination:

a four pole network having a pair of input poles and a pair of output poles and which network exhibits isolator characteristics;

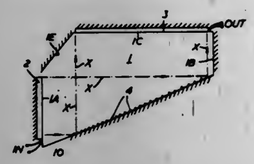
a pair of resistive paths having negative resistance values, one of the paths having a magnitude approximately four times the value of the other path, the larger path being connected between one of said input poles and one of said output poles, the smaller of said paths being connected at one end to both of the other input poles and the other output pole and providing a circuit terminus at its opposite end, said resultant circuit being a gyrator.

3,300,739

FREQUENCY-DISPERSIVE ELECTRO-MECHANICAL DELAY CELL UTILIZING GRATING

Wilfrid Sinden Mortley, Great Baddow, England, assignor to The Marconi Company Limited, a British company

Filed July 15, 1963, Ser. No. 295,099
Claims priority, application Great Britain, Aug. 3, 1962, 29,851/62
8 Claims. (Cl. 333—30)



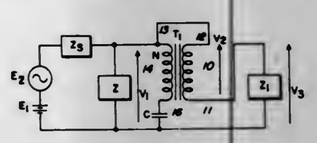
1. A dispersive delay device comprising a body of wave propagating material, input signal means coupled to said body for propagating waves of different frequencies within a predetermined range of frequencies in said body, signal output means coupled to said body and responsive to waves propagated through said body thereto, and at least one graded line grating having different parts adapted to select different frequencies for propagation to the output means, said line grating being so positioned and the graded spacings between the lines thereof being so chosen as to delay waves of different frequencies by different amounts dependent on frequency, whereby a predetermined train of swept frequencies applied to said input means will produce a relatively short pulse of said frequencies at said output means and a short pulse applied to said input means will produce said train of swept frequencies at said output means.

3,300,740

A.C. RIPPLE AND NOISE REDUCTION WITHOUT INCREASING CURRENT DRAIN

William E. Herzog, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed July 8, 1963, Ser. No. 293,445
1 Claim. (Cl. 333—79)



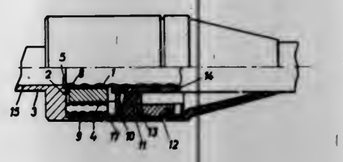
A means for removing alternating current ripple and noise from a circuit comprising a direct current source, an undesired noise and ripple source in circuit with the direct current source, a series impedance connected to the sources, a transformer with a first side of its primary connected to the series impedance, a condenser connected to the other side of the primary and to the other side of the noise source and the direct current source, a first side of the secondary of the transformer connected to the first side of the primary, a load connected to the second side of the secondary, the other side of the load connected to the noise source and the direct current sources, and a parallel impedance connected across the primary of the transformer and the capacitor.

3,300,741

WAVEGUIDE FITTING FOR COUPLING HELICAL ELLIPTICAL WAVEGUIDE

Gerhard Hirsch and Wolfgang Krank, Backnang, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm, Danube, Germany

Filed May 12, 1965, Ser. No. 455,155
Claims priority, application Germany, May 12, 1964, T 26,168
9 Claims. (Cl. 333—98)



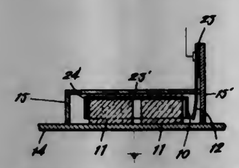
1. In a waveguide fitting for very high power, wherein a corrugated waveguide having an elliptical or ellipse-like cross-section is used and wherein the waveguide is held by positive means and/or by its shape between two appropriately shaped half shells and the flanged end of the waveguide is pressed against the end face of a plug section by a pressure edge on the half shell, the improvement wherein the plug section is provided, at the face against which the flanged end of the waveguide bears, with such a recess that the effective waveguide cross-section is enlarged in the region of the maximum longitudinal currents in the wall of the waveguide.

3,300,742

RECIPROCAL MAGNETIC SWITCH MECHANISM

Mitsuji Kawai, 26 1-chome, Kaname-cho, Toshima-ku, Tokyo, Japan

Filed Jan. 24, 1966, Ser. No. 522,585
Claims priority, application Japan, Feb. 23, 1965, 40/9,950
5 Claims. (Cl. 335—207)



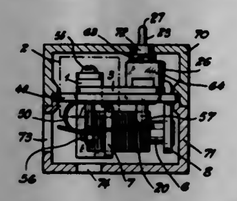
1. A switch mechanism comprising a casing having one upwardly projecting end wall, a frame member mounted in said casing for reciprocal movement and having a contact on its outer surface, a pair of permanent magnets partially embraced by said frame member for movement in unison therewith, a contact piece mounted on the inner surface of said upwardly projecting end wall and adapted to be engaged by said contact on the frame member, an actuating means, and a magnetically attractive slide member mounted on the actuating means for reciprocal movement therewith and in magnetic engagement with said pair of permanent magnets, said slide member being so arranged that as said actuating means is first operated, the slide member is caused to move in the advancing direction in which said contact makes engagement with said contact piece while pulling said permanent magnets in said direction by virtue of the magnetically attractive action of the slide member and after the contact has made engagement with the contact piece as the actuating means is further continued to operate, the slide member also continues to move in said direction independently of the permanent magnets while leaving the magnets stationary and the contact and contact piece in their engaged relation until the actuating means is returned to its inoperative position.

3,300,743

ULTRA-SENSITIVE RE-SETTING ELECTRO-MAGNETIC TRIP DEVICE

Jean Louis Alletru, Maintenon, France, assignor to Societe Anonyme: Etablissements Bresson-Faille-Marchand

Filed Dec. 28, 1964, Ser. No. 421,331
Claims priority, application France, Jan. 2, 1964, 959,164, Patent 1,390,282
2 Claims. (Cl. 335—176)



1. An ultra-sensitive re-setting trip device comprising a magnetic circuit and a blade of ferro-magnetic material, said magnetic circuit comprising a flat bar of magnetic material, a tripping coil wound on said flat bar, first and second flat pieces of ferro-magnetic material having arms arranged in L-shape, an end of one arm of the first L-shape piece being in secured engagement with said flat bar at one extremity thereof, and an end of one arm of the second L-shape piece being in engagement with said flat bar at the other extremity thereof, the free ends of the other of the arms of the two L-shape pieces facing each other with an air gap therebetween, a cylindrical magnet, a first pole piece supporting said magnet and mounted at said first extremity of said flat bar and secured to said one arm of the first L-shape piece, a second pole piece mounted on the first L-shape piece at the intersection of the arms thereof, and a hollow cylinder of ferro-magnetic material slidably mounted in said second pole piece coaxially around said permanent magnet, mounting means for said blade comprising a U-shaped plate of non-ferro-magnetic material, said L-shaped pieces being secured on said plate with said one arm of the L-shape pieces applied against the arms of the U-shaped plate and the other arms of the L-shape pieces against the cross member of the U-shaped plate which joins said arms thereof, said plate having a hole aligned at the center of said air gap, a shaft slidable in said blade in a hole therein, said shaft including an extension defining a shoulder abutting said blade, said extension passing slidably through said hole in the plate, a split ring on said shaft holding said blade with play against said shoulder so that said blade is movable along said shaft between the split ring and the shoulder, a flat spring adjacent said blade for guiding said blade in its movement, and an energy-storing spring comprising a fixing arm secured to said U-shaped plate, on open adjustment bend with a regulating screw, and a working limb in contact with said extension of said shaft.

3,300,744

BRAKING DEVICE FOR HIGH VELOCITY CONDUCTIVE MEMBERS IN DIVIDING AXIALLY SPACED OPPOSED ADJACENT MAGNETIC FIELDS

Felix Deutsch, Jerusalem, Israel, assignor to Yissum Research Development Company, Jerusalem, Israel, a company of Israel

Filed Jan. 12, 1965, Ser. No. 424,967
Claims priority, application Israel, Apr. 24, 1964, 21,245
5 Claims. (Cl. 335—268)



1. A device for braking members moving at a high linear velocity, comprising:

a path of travel for an electrically conductive member to move therethrough:

electro-magnetic means on said tubular member in a tubular member having an axial passage for defining spaced relation axially therealong for creating adjacent reserved magnetic fields; and

means for simultaneously energizing said adjacent electro magnetic means whereby the direction of current flow through consecutive electro magnet means is in opposite directions and adjacent reversed magnetic fields are produced for braking the velocity of an electrically conductive member moving through said passage.

3,300,745

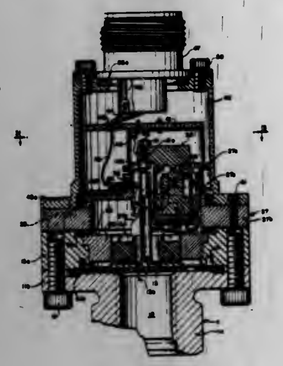
LOW PRESSURE TRANSDUCER

Richard C. Walter, Lynnwood, Wash., assignor to Standard Controls, Inc., a corporation of Washington

Filed Feb. 19, 1964, Ser. No. 345,948
7 Claims. (Cl. 338—4)

7. In a low pressure transducer, diaphragm means; and a strain gauge assembly comprising a beam connected to said diaphragm, a body having integral hinge means inter-

connecting said body and said beam such that said beam pivotally deflects about said hinge means responsive to deflection of said diaphragm, and strain responsive means including thin webs connected at opposite ends to said



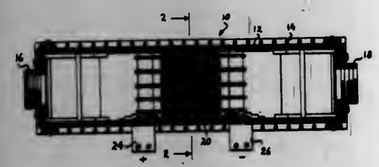
body and to said beam at opposite sides of said hinge means such that pivotal deflection of said beam substantially longitudinally stresses said strain responsive means, one in tension and the other in compression.

3,300,746

WATER COOLED SCREEN GRID RESISTOR

Joseph P. Franz, Ballston Lake, N.Y., assignor to General Electric Company, a New York corporation

Filed Oct. 30, 1963, Ser. No. 320,091
3 Claims. (Cl. 338—55)



1. A discharge resistor useful in testing power equipment having a high frequency output comprising:

a hermetically sealed container having an inlet and an outlet for a cooling fluid,

a grid resistor in said container having its opposite ends respectively terminating in first and second electric terminals mounted on the container,

said resistor comprising a multiplicity of longitudinally extending current carrying conductors and transversely extending conductor spacing members for forming a resistor of predetermined mesh,

said resistor being pleated along its length to form a compact mass of conductors,

foraminous insulation disposed between said pleats for separating the longitudinally extending conductors in one pleat from those appearing in the adjacent pleat, and forming a porous structure transversely of said pleats, and

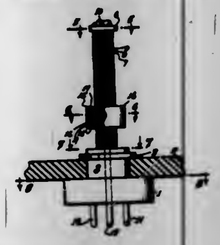
means in said container dividing the interior portion thereof into a plurality of fluid flow paths for uniformly guiding transverse to said pleats the fluid flowing to and from said screen grid resistor while traveling through the container.

3,300,747

VARIABLE ELECTRICAL RESISTANCE DEVICE

Oscar Bellar, Alhambra, Calif., assignor of thirty-five percent to Terence Dalby, Alhambra, Calif.

Filed Oct. 24, 1965, Ser. No. 504,901
9 Claims. (Cl. 338—143)



1. In a variable resistance device, a base, a resistance component carried by said base and comprising a plurality of electrical conductors and an elongated rigid supporting member of circular cross section, said conductors being disposed in side-by-side physically contacting relation in helically wound configuration upon a cylindrical surface of said supporting member with resultant formation of a cylindrical surface of said resistance component which is electrically conductive, means at opposite ends of the portion of said supporting member on which said conductors are wound operative to prevent movement of the conductors axially of said portion, said conductors having such cross sectional configuration that the outer surfaces of adjacent convolutions form a helical groove on the cylindrical surface of said resistance component formed by said conductors, the surfaces of said conductors in contact with each other and with said supporting member being electrically non-conductive, and the surface portions of said conductors which are remote from the surface of the support being electrically conductive, terminal means carried by said base affording separate connection of said conductors in an electrical circuit, and an electrically conductive brush component resiliently contacting the exterior surface of said resistance component, said brush component comprising a non-conductive ring surrounding and carrying a brush element comprising a metal spring of substantially oval configuration having a minor diameter slightly less than the outer diameter of said helically wound conductors and a major diameter sufficiently greater than said minor diameter to permit said spring to be expanded in the direction of said minor diameter to accommodate said helically wound conductors without causing said spring to be so shortened along said major diameter as to cause said spring to engage said helically wound conductors at the portions represented by said major diameter whereby relative rotation between said brush component and said conductors will effect relative movement between the brush component and said conductors axially of the helix formed by said conductors with resultant variation in the resistance imposed on a current passing through said conductors and said brush component.

3,300,748

ROTARY THUMBWHEEL VOLTAGE DIVIDER SWITCH

Henry Gabrielian, Santa Ana, Calif., assignor to Electronic Engineering Co. of California, Santa Ana, Calif., a corporation of California

Filed Mar. 4, 1964, Ser. No. 349,319
10 Claims. (Cl. 338—200)

1. An adjustable voltage divider comprising

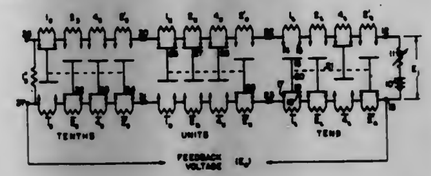
(a) a multiposition thumbwheel rotary switch having plural stationary contact tracks with each of said tracks having one rotary wiper and

(b) an additional track having plural stationary contacts, and two circumferentially spaced rotary wipers,

(c) a first group of series connected resistors which are connected to a first group of said stationary contacts, and

(d) a second group of series connected resistors which are connected to a second group of said stationary contacts and in series with said first group of resistors,

(e) means to rotate all of said rotary wipers in common,



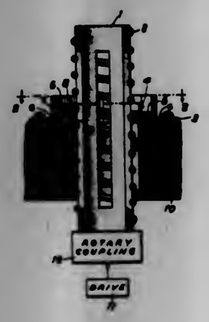
(f) whereby, upon a resistor of said first group being shorted by a first wiper coactive with said first group of stationary contacts a resistor of said second group is *un*shorted by a second wiper at a different circumferential position than that of said first wiper, said second wiper coactive with said second group of stationary contacts, to alter an output voltage obtainable from said voltage divider by altering the resistance ratio between opposite ends of said first and second groups of series connected resistors.

3,300,749

DEVICES FOR ENGAGING FOR RELATIVE MOVEMENT THE TURNS OF A HELICAL ELEMENT

Anthony J. Lombardi, Wyckoff, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Sept. 27, 1965, Ser. No. 490,480
9 Claims. (Cl. 339—9)



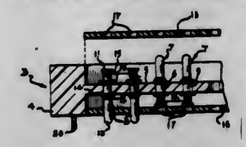
1. A device for engaging for relative movement therewith the turns of a helical element comprising in combination, a helical electrical conductor, contact means having a plurality of contact elements, a support for said contact means disposing said contact elements in a series angular arrangement corresponding to the pitch of said helical electrical conductor so that said contact elements engage said helical electrical conductor at a plurality of points spaced along said helical electrical conductor, and means cooperating with said support to apply resilient force between said contact elements and said helical electrical conductor in directions both forwardly and rearwardly of the axis of said helix formed by said helical electrical conductor.

3,300,750

REVERSIBLE PLUGBOARD PROGRAMMING PANEL

Donald Richard Harner and Michael Plaza, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed May 20, 1964, Ser. No. 368,832
6 Claims. (Cl. 339—18)



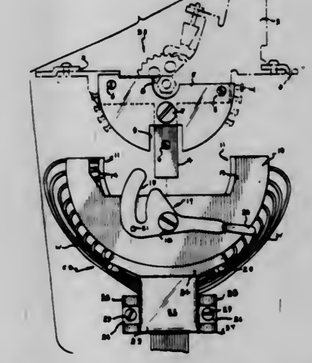
1. A plugboard comprising a panel section having apertures, contact members in some of said apertures and extending outwardly from one side of said panel, conductive means interconnecting selected ones of said contact members to define a program, further contact members in some of said apertures and extending outwardly from the other side of said panel, further conductive means interconnecting selected ones of said further contact members to define another program, said contact members having flange means, additional panel sections disposed on each side of said first mentioned panel in engagement with said flange means, said additional panel sections having apertures in alignment with the apertures of said first mentioned panel so that the contact members in these last mentioned apertures extend therethrough.

3,300,751

MULTIPLE ELECTRICAL CONNECTOR

Melvin Lawrence Fraley, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

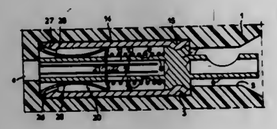
Filed Aug. 7, 1964, Ser. No. 388,159
6 Claims. (Cl. 339—91)



6. A multiple electrical connector to mate with a stepping switch, said stepping switch having an arcuate surface provided with radially extending contact elements and including means for cooperation with the multiple electrical connector to insure proper mating of the radially extending contact elements with contact members of the multiple electrical connector, said multiple electrical connector comprising plate means, dielectric means on said plate means, said dielectric means having an inner surface defining an arcuate configuration mateable with said arcuate surface of said stepping switch, said dielectric means having said connector members extending radially outwardly from said inner surface of said dielectric means and being electrically mateable with respective contact elements, a guide channel in said plate means to cooperate with said means on said stepping switch to guide said connector members into electrical

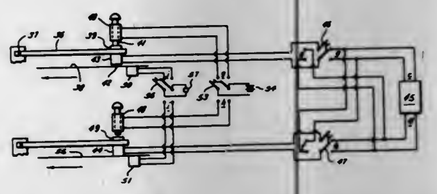
engagement with respective contact elements, and holding means on said plate means to cooperate with said stepping switch to hold said multiple electrical connector and said stepping switch together whereby said contact elements and said contact members are maintained in electrical engagement.

3,300,752
ELECTRICAL CONNECTORS
Gerard Benoit, 6 Rue du Cirque, Paris, France; Ferdy Mayer, 22 Rue Ampere, Grenoble, France; Franz Mayer, 6 Rue du Cirque, Paris, France; and Pierre Thomas, 2 Rue Charles Gounod, Grenoble, France
Filed June 2, 1964, Ser. No. 371,905
Claims priority, application France, June 24, 1963, 939,143
9 Claims. (Cl. 339—253)



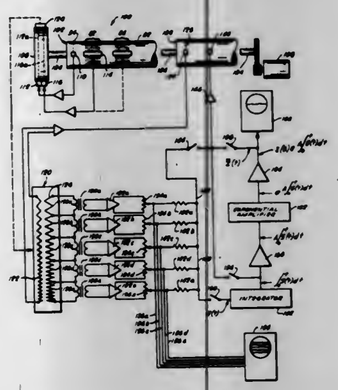
1. An electrical connector comprising, in combination:
(a) a housing having a cavity formed therein, which cavity is formed so as to be in communication with the region outside of said housing;
(b) at least one socket, which is elastically deformable in a transverse direction, disposed in said housing cavity for receiving a plug to be inserted in a longitudinal direction in said socket;
(c) elastic restoring means associated with said socket for normally maintaining it in a condition in which it offers substantially no friction resistance to the insertion of the plug;
(d) socket deforming means having a first portion which is stationary with respect to said housing and a second portion which is movable in a longitudinal direction with respect to, and in sliding contact with, said first portion, said second portion being operatively associated with said socket for elastically deforming said socket transversely into a position where it tightly grips the inserted plug;
(e) at least one control means disposed within said housing cavity and connected for longitudinal movement with said second portion of said socket deforming means, said control means being disposed in the path over which the plug will travel when it is being inserted in a longitudinal direction into said socket to be moved longitudinally by the plug at least during the latter portion of its insertion travel, this movement of said control means operating to cause said second portion of said socket deforming means to deform said socket transversely into said position where it tightly grips the plug; and
(f) locking means positioned to cooperate with said second portion of said deforming means for retaining said second portion of said deforming means in the position where it causes said socket to tightly grip the plug, and to maintain a substantially constant gripping pressure on the plug, after the plug has been fully inserted and until the plug has been substantially completely withdrawn from contact with said socket, said locking means applying to said second portion of said deforming means a longitudinal restraining force which, until the plug has been completely withdrawn from contact with said socket, is greater than the combined opposing longitudinal force exerted by said restoring means and by the plug when it is being withdrawn from said socket.

3,300,753
METHOD OF FREQUENCY DISCRIMINATION
Burton McCollum, Houston, Tex.; P. R. Rowe & Bank of the Southwest National Association, Houston, executors of said Burton McCollum, deceased
Filed May 22, 1964, Ser. No. 369,384
9 Claims. (Cl. 340—15.5)



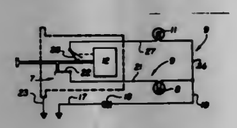
1. The method of resolving a detected vibratory signal event of known frequency mixed with noise energy comprising the steps of making a first magnetic record of the detected energy function by direct recording method, adjusting a playback head to be spaced a predetermined distance which accentuates the signal frequency and damps all other frequencies, playing back said first record through said playback head, and making a secondary record from the output of said playback head.

3,300,754
METHOD FOR PRODUCING IMPEDANCE LOGS USING SEISMOGRAPHIC TECHNIQUES
Milford R. Lee, Kenneth H. Waters, and Billy J. Heath, all of Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 325,017
13 Claims. (Cl. 340—15.5)



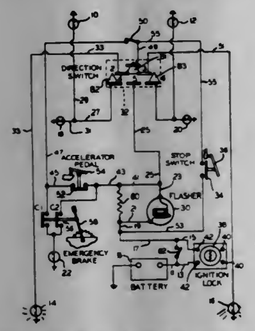
1. A method for determining the lithological geometry of the earth comprising the steps of:
inducing seismic energy in the earth having a plurality of frequency components of predetermined amplitude and predetermined phase relationship;
detecting the seismic energy reflections and recording the reflections with respect to time;
establishing zero relative phase between the frequency components of the reflected seismic energy; and,
establishing the relative amplitudes of the frequency components such that any two related octaves have substantially the same spectral power.

3,300,755
AUTOMATIC LIGHTING AND WARNING SYSTEM
Ralph Dunn, 3839 Stevely, Apt. 19, Los Angeles, Calif. 90008
Filed June 1, 1964, Ser. No. 371,570
7 Claims. (Cl. 340—52)



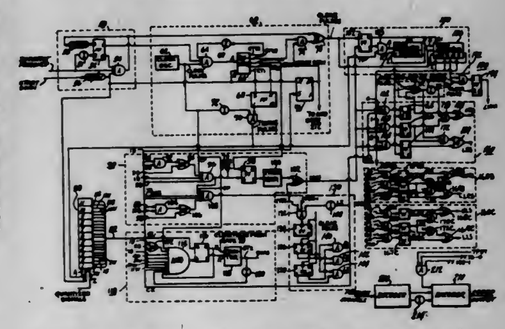
5. An automatic lighting and warning system comprising, a vehicle having a door frame and door hinged therein for opening and closing for passenger ingress and egress, a vehicle interior lighting circuit and an electric lamp therein, a warning circuit and electrically actuated warning device therein, switch means having a housing mounted in said frame and a spring biased reciprocating part carried by said housing for engagement with and reciprocation by said door upon opening and closing, first contact means mounted for opening and closing by said part upon reciprocation thereof and being connected in said interior lighting circuit for energizing and de-energizing said lighting circuit upon opening and closing of said door respectively, second contact means having an operative connection with said part for opening and closing thereby upon reciprocation of said part and being connected in said warning circuit to effect energization and de-energization thereof, and time delay means provided in said operating connection and formed for holding said second contact means closed and said warning circuit energized for a predetermined interval after the closing of said door.

3,300,756
AUTOMATIC FLASHER CAUTION SIGNAL SYSTEM FOR AUTOMOTIVE VEHICLES
Carl G. Miller, 6285 N. Leona Ave., Chicago, Ill. 60646
Filed Apr. 15, 1964, Ser. No. 359,850
7 Claims. (Cl. 340—72)



1. The combination in a motor vehicle having paired signal lamps mounted front and rear thereon, a source of energizing current for said lamps, a flasher including a pair of thermally responsive contacts connected to said source, a three-position direction switch connected to said contacts and to the signal lamps and operable in a first position to connect the flasher contacts to one pair of said signal lamps to the exclusion of the other pair of signal lamps, in a second position to connect the flasher contacts to the other pair of signal lamps to the exclusion of said one pair of signal lamps, and in a third position to disconnect the flasher contacts from both pairs of signal lamps, a depressible accelerator pedal, and an emergency brake lever; of means automatically operable under the control of said accelerator pedal for connecting the flasher contacts to the rear ones only of said signal lamps when the direction switch is in its third position, said means comprising a normally closed switch operable upon depression of the accelerator pedal to become open, said latter switch being normally connected in its closed position to the rear ones only of said signal lamps and to the flasher contacts when the direction switch is in its third position, and relay actuated switch means operable when said direction switch is moved to its first position for maintaining deenergized the rear signal lamp on the side opposite to the lamp pair normally energized when the direction switch is in said first position.

3,300,757
CHARACTER READER UTILIZING ON-THE-FLY IDENTIFICATION OF CHARACTER FEATURE SIGNALS
John P. Beltz, Willingboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 11, 1964, Ser. No. 366,273
8 Claims. (Cl. 340—146.3)

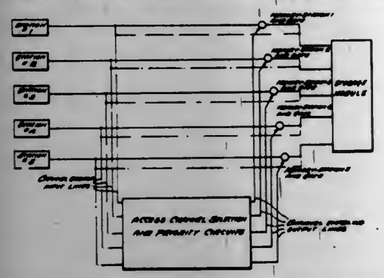


8. In a character reader for reading characters from a document, said characters being formed of one or more distinctive features including vertical strokes occurring in a plurality of zones of said characters, said system including means for scanning each character by a plurality of scanlines to derive signals serially representing the features of said character, the combination comprising,
means for detecting the vertical strokes in a character,
means for dividing said scanlines into a plurality of sections beginning at a first section when the first vertical stroke is detected in a character,
means for classifying said first vertical stroke as occurring in one zone in said character,
means for storing the scanning sections in which vertical strokes are detected in succeeding scanlines to determine the relative locations of all the vertical strokes within said character, and
means for reclassifying said first vertical stroke as occurring in a different zone when any of the other vertical strokes are detected in a predetermined section of said scanlines.

3,300,758
HIGH SPEED SCANNER AND RESERVATION SYSTEM
Charles L. Hawley, Jr., White Bear Lake, Minn., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed June 4, 1963, Ser. No. 285,469
5 Claims. (Cl. 340—147)

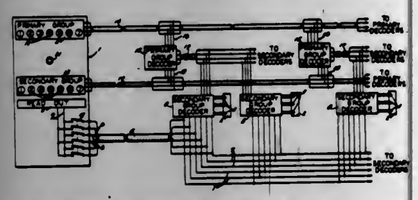
1. A high speed scanner and reservation system for selectively honoring one of a plurality of access channels, each extending between a common storage module and independent remote stations, in response to transmission requests on said access channels, comprising: first and sec-

ond electronic priority means connected to each of said access channels and means for normally locking said second priority means out of operation; said first priority means including logic circuitry responsive to a transmission request on any one of the said access channels, independently of a cyclic examination of said channels, to complete a transmission path on said one access channel between the storage module and the respective remote station while simultaneously inhibiting the first priority



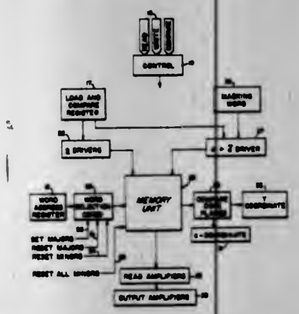
means of the remaining channels from being honored until transmission on the busy access channel is terminated; said second priority means including additional logic circuitry an the high speed scanner which cyclically examines said channels, the output from said scanner being connected to said locking means to unlock the additional logic circuitry of said second priority means in cyclic order only when transmission on a busy channel is completed and transmission requests from a plurality of other access channels are waiting to be honored.

3,300,759
BINARY LOGIC CODED CONTROL
William P. Chapman, Milwaukee, and Carleton C. Smith, Menomonee Falls, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 21, 1962, Ser. No. 218,386
11 Claims. (Cl. 340—150)



1. In a selection system, the combination:
a central station,
a primary group selection means at said central station at least one primary group decoder,
first cable means coupling said primary group selection means and said at least one primary group decoder,
secondary group selection means at said central station,
second cable means coupled to said secondary group selection means and to said at least one primary group decoder,
third cable means, at least one secondary group decoder coupled to said at least one primary decoder means via said third cable,
means in said primary group selection means for transmitting a first code having a plurality of bits in parallel to said at least one primary group decoder over said first cable means,
means in said at least one primary group decoder responsive to said first code to complete a path from said secondary group selection means through said second cable means,
means in said secondary group selection means for transmitting a second code having a plurality of bits in parallel over said second cable means,
means in said at least one secondary group decoder responsive to said second code,
condition responsive means associated with said at least one secondary group decoder,
readout means at said central station, and
fourth cable means coupled to said condition responsive means for transmitting information from said condition responsive means to said readout means upon receipt of said second code by said at least one secondary group decoder.

3,300,760
ASSOCIATIVE MEMORY SYSTEM
John T. Franks, Jr., and Gene T. Tuttle, Akron, Ohio, assignors to Goodyear Aerospace Corporation, a corporation of Delaware
Filed May 14, 1963, Ser. No. 280,391
4 Claims. (Cl. 340—172.5)

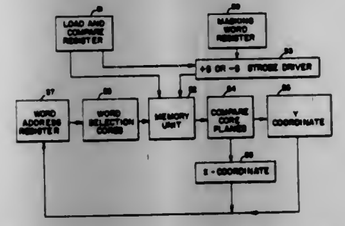


1. A digital storage system adapted for associative memory comprising a plurality of multi-apertured ferrite magnetic cores, said cores each having a major loop and two minor loops, means to set and reset flux patterns into the major loops, means to set and reset flux patterns into the minor loops, means to detect a change to the flux pattern of the minor loops during the set or reset thereof, means to apply a compare word to the system, means to store words in memory as bits of information with each bit stored in a single core, means to simultaneously compare all words stored in the system with the compare word in one current pulse time, and means to indicate the address of all stored words which correspond with the compare word.

3,300,761
ASSOCIATIVE MEMORY APPARATUS USING ELASTIC SWITCHING STORAGE ELEMENTS
Gene T. Tuttle, Akron, Ohio, assignor to Goodyear Aerospace Corporation, a corporation of Delaware
Filed May 15, 1963, Ser. No. 280,602
4 Claims. (Cl. 340—172.5)

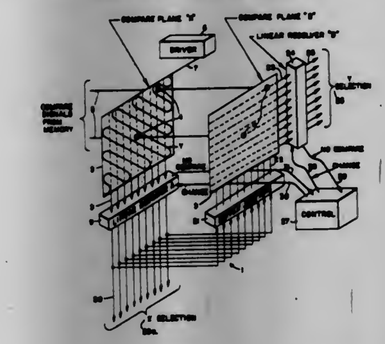
1. In a digital memory storage system adapted for associative memory the combination of a memory unit, a plurality of toroidal ferrite magnetic cores comprising the memory unit, the cores being arranged in columns with corresponding cores in each column being physically in aligned rows, a coil wrapped on each core, a single bias line passing through each core of each aligned column of cores, a single strobe line passing through each core of each aligned column of cores, a sensing means on each core, means to place a word into memory as bits of information stored as a set flux pattern in each individual core in each row of aligned cores in the memory unit, means to place a compare word into memory so that each bit of information of the compare word is aligned with

the columns of corresponding bits of the words stored in the memory unit, means to sequentially pulse each bias line with a signal of less magnitude than sufficient to switch the flux direction in the cores, means to apply said signal in such a direction so as to oppose the flux direction in each aligned compare word bit, means to sequentially, but simultaneously in time with each bias pulse, pulse each strobe line with a signal of greater magnitude than sufficient to switch the flux direction in the



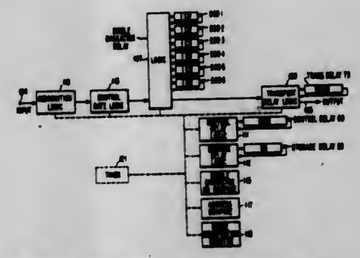
cores, but with a period of less than the time required to effect a permanent flux reversal, means to apply said signal in such a direction so as to correspond to the flux direction in each aligned compare word bit, means to measure each sensing means during the strobe pulse to determine flux changes in the core during the strobe pulse, and means to correlate information received from the sensing means to determine the address of all words stored in the memory unit which correspond to the compare word.

3,300,762
MULTIPLE RESPONSE RESOLVER APPARATUS
Kenneth E. Batcher, Champaign, Ill., assignor to Goodyear Aerospace Corporation, a corporation of Delaware
Filed June 20, 1963, Ser. No. 289,196
2 Claims. (Cl. 340—172.5)



1. In a two dimensional multiple response resolver utilized to analyze sense signals from each word stored in a digital storage system resultant from an associative memory function the combination of
a first plane containing standard toroidal cores mounted in columns and rows therein corresponding to the columns and rows of words in the digital storage system,
a second plane mounted parallel to said first plane containing standard toroidal cores mounted in columns and rows therein in alignment to each column and row in said first plane,
means to set every core in both planes to a non-compare value,
electrical winding means on each core and connecting corresponding cores in each plane in series,
means to pulse a sense signal corresponding to a word in memory indicating compare to its corresponding core in the first plane through the electrical winding means thereon to thereby set the respective cores in both planes to the proper state indicated by the sense signal,
means to simultaneously sense each column of cores in the first plane with a destructive read-out to detect which columns have cores therein indicating compare,
means to select one of the column of cores in the first plane which indicates compare,
means to destructively pulse the column of cores in the second plane corresponding to the selected column of cores in the first plane which indicates compare,
means to sense each row in the second plane at the same time as the destructive pulse from last said means to determine which rows indicate compare during the pulse from last said means, and
means to select all of the rows in the second plane which indicate compare.

3,300,763
MESSAGE EXCHANGE SYSTEM UTILIZING TIME MULTIPLEXING AND A PLURALITY OF DIFFERENT SIZED REVOLVERS
Henry G. Hoehmann, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 20, 1963, Ser. No. 303,340
9 Claims. (Cl. 340—172.5)



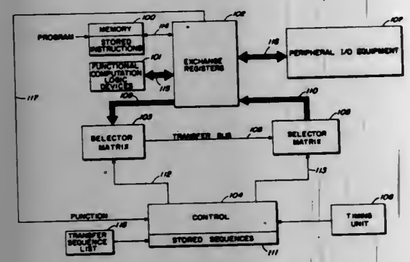
1. A message exchange system comprising
an input for receiving data characters from a plurality of stations on a time multiplex basis,
first means for supplying information indicating the desired destination of said characters,
a plurality of single character delay elements,
a transport delay element having one character position for each station,
means for storing each message character in a single character delay element and for recirculating each message character therein for one cycle of said transport delay element, and
means for transferring message characters from said single character delay elements to said transport delay element in response to said first means.

3,300,764
DATA PROCESSOR
Melvin L. Doelz, Corona del Mar, and George F. Grondin, Tustin, Calif., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Aug. 26, 1963, Ser. No. 304,407
44 Claims. (Cl. 340—172.5)

1. Data processor means comprising:
a plurality of registers, each having input terminals and output terminals, and constructed to perform predefined functions upon data transferred thereto,

transfer link switching means constructed to be controllable to connect the output terminals of a selected register of said plurality of registers as a source register to the input terminals of any oher selected one of said plurality of registers as a destination register,

transfer sequence control means comprising microprogramming means having a plurality of microprograms for controlling said transfer link switching means to cause data transfers between selected specific source registers and selected specific destination registers,

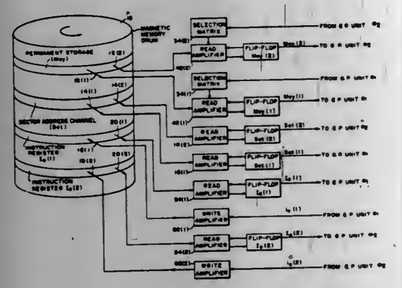


and main memory means having a plurality of instruction and data word memory locations therein with each word location having an address,

said main memory further comprising access means and constructed to supply main program instructions to said transfer link switching means in response to instruction words from said microprogramming means to select one of the microprograms contained in said transfer sequence control means,

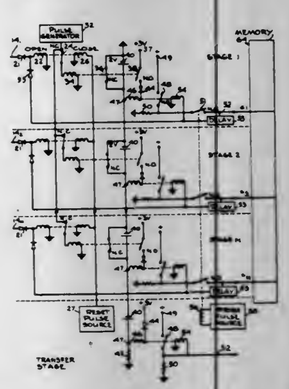
said main memory means further constructed to supply data stored therein through said transfer link switching means and to a selected one of said registers in response to instruction words from said microprogramming means.

3,300,765
DIGITAL COMPUTER SYSTEM
Arville T. Trostrud, Jr., Butler, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Continuation of application Ser. No. 221,544, Sept. 5, 1962. This application June 9, 1966, Ser. No. 562,047
3 Claims. (Cl. 340—172.5)



1. A digital computer system including: a common memory unit having a plurality of multisector information channels thereon for storing binary information representative of instructions and operands, further having an address channel thereon containing information identifying the sectors in each channel, and further having a plurality of instruction register channels thereon; a plurality of groups of read heads coupled to said information channels at different points of access thereto to derive said instructions and operands therefrom; a corresponding plurality of digital computer units connected to respective ones of said groups of read heads; a further plurality of read heads coupled to said address channel at different points of access having mutual displacements corresponding to the displacements of the heads of the aforesaid groups and connected to respective ones of said computer units; a plurality of write heads coupled to respective ones of said instruction register channels and connected to respective ones of said computer units, and a plurality of read heads coupled to respective ones of said instruction register channels at selected displacements with respect to corresponding ones of said write heads and connected to respective ones of said computer units, so that said computer units derive the same instructions from said memory unit in the same predetermined sequence but at selected time displacements and cause the same to circulate in respective ones of said instruction register channels at said selected time displacements, and so that said computer units all select the same operands from said memory unit in the same sequence at said selected time displacement and perform the same arithmetic operations thereon.

3,300,766
ASSOCIATIVE MEMORY SELECTION DEVICE
Ralph J. Koerner and Edward J. Schneberger, Los Angeles, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Ohio, a corporation of Delaware
Filed July 18, 1963, Ser. No. 296,053
18 Claims. (Cl. 340—174)



1. For use with a plurality of binary elements, respectively arbitrarily numbered 1, 2, 3, . . . N, each of which is able to independently assume either a first or second state, selection means for selecting the lowest numbered element in said first state comprising:

means associated with each of said binary elements for providing first value manifestations;

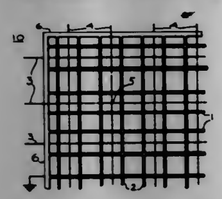
means for incrementally developing the sum of each of said first value manifestations associated with said elements in said first state;

a plurality of output circuits each of which is associated with a different one of said binary elements;

means for applying each incremental step value manifestation of said sum to a different one of said output circuits; and

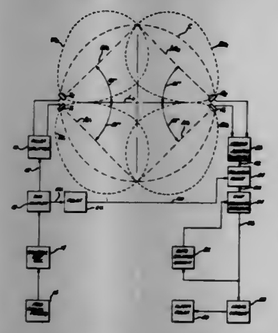
means for biasing each of said output circuits for causing a unique response to be initiated only in the output circuit associated with the lowest numbered element.

3,300,767
WOVEN SCREEN MAGNETIC STORAGE MATRIX
John S. Davis, Glendale, and Paul E. Wells, Los Angeles, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Continuation of application Ser. No. 53,008, Aug 30, 1960. This application June 29, 1964, Ser. No. 380,982
28 Claims. (Cl. 340—174)



1. A magnetic memory device comprising a screen of filamentary members interwoven in a predetermined mesh pattern, a layer of remanently magnetic material in intimate contact with each of said filamentary members to form closed loops of said material about open meshes of the screen, and means for selectively determining the magnetization states of the loops comprising insulated conductors selectively threaded through certain of said meshes.

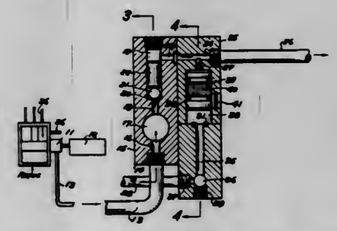
3,300,768
RADIANT ENERGY TYPE INTRUSION ALARM SYSTEM
Albin Bystrom and Robert V. Hill, Seattle, and Herbert A. Williams, Bellevue, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,349
8 Claims. (Cl. 340—258)



1. An intrusion detector system comprising directional transmitting and receiving antennae positioned on a common base line in an azimuth plane and each having a principal axis of directivity angled to said line to define a triangle therewith, means applying energy to said transmitting antenna, and detector means responsively connected to the receiving antenna, said antennae having respective field patterns defined in polar coordinates referenced to their directional axes which vary as a function of cos 2θ, where θ is the coordinate angle, within a detection region substantially including said triangle so that the received signal from an intruding subject in the azimuth plane remains substantially constant at different points of entry within such detection region.

2. An intrusion detector system comprising two pairs of directional transmitting and receiving antennae, the transmitting and receiving antennae of each pair being positioned on a common base line and each having a principal axis of directivity angled to said line to define a triangle therewith, means applying energy to the transmitting antenna of each pair, and detector means responsively connected to the receiving antennae of the two pairs, including means responsive selectively to a difference between the received signals in the two receiving antennae, said antennae in each pair having respective field patterns so shaped within a detection region substantially including said triangle that the received signal from an intruding subject in the azimuth plane remains substantially constant at different points of entry within such region, the antennae of one pair being arranged with field patterns in overlapping relationship with field patterns of the other pair.

3,300,769
OIL DEFICIENCY INDICATOR
Eugene H. Batur, Birmingham, Mich., assignor to Future Products Tool Corporation, Clawson, Mich., a corporation of Michigan
Filed Nov. 3, 1964, Ser. No. 408,627
4 Claims. (Cl. 340—270)



1. In an oil deficiency indicator for a machine tool, a body having an oil reservoir, an intermittently operable oil source including a pump connected to said reservoir;

a delivery chamber in said body having an inlet communicating with said reservoir and an outlet;

a conduit between said outlet and a part of said machine tool requiring lubrication;

an electrically insulated control chamber in said body;

a pair of spaced insulated electrical contacts at one end of said control chamber and forming a part of a normally open electrical circuit, including a signal device;

an electrically conductive piston movably positioned and sealed within said control chamber and spaced from said contacts;

a first passage communicating between said outlet and the side of said control chamber on the opposite side of said piston from said contacts;

an air passage in said body communicating with said control chamber on the same side of said piston as said contacts;

and a source of constant air pressure connected to said air passage yieldably maintaining said piston spaced from said contacts;

any blocking of said conduit to said tool cutting off or reducing flow of lubricant thereto and providing a flow of oil through said first passage to said control chamber with sufficient pressure built up for moving said piston against the bias produced by said source of constant air pressure, thereby causing said piston to bridge said contacts and close said circuit.

3,300,770
ROBBERY ALARM SYSTEM
Lucien Brousseau and Jean-Luc Brousseau, both of 336 3rd Ave. W., Orsainville, Quebec, Canada
Filed Oct. 12, 1964, Ser. No. 403,068
4 Claims. (Cl. 340—280)

1. A robbery alarm system, comprising:

(a) a cash drawer formed with at least one paper money-receiving compartment;

(b) an electrical alarm control circuit mounted beneath the bottom of one of said compartments and adapted, upon energization thereof, to cause operation of an alarm device;

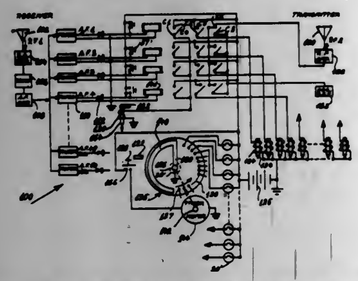
(c) a light sensitive resistance mounted to extend through said bottom to face upwardly and connected in series in said alarm control circuit; said resistance being adapted upon exposition to ambient light when the drawer is opened to allow current therethrough to energize said circuit and upon being blinded to prevent passage of current and thus open and deenergize said alarm control circuit;



(d) a plate of translucent material over said bottom and over said light sensitive resistance to hide said resistance from view, the said plate allowing light therethrough to affect the operation thereof; and

(e) a stack of paper money freely disposed over said translucent plate to blind said resistance whereby upon unauthorized removal of said paper money, said resistance becomes exposed to light to thus close and energize said alarm control circuit to cause operation of said alarm device.

3,300,771
AVIATION CONTROL LIGHT SYSTEM
Tobias Wagner, Bronx, N.Y., assignor of fifty percent to Mary T. Hanner
Filed Nov. 27, 1964, Ser. No. 414,353
10 Claims. (Cl. 340—309.1)



1. Timing apparatus for setting a time interval and monitoring expiration of the set time interval, comprising a master timing device including a panel board assembly having at least one series of first lamps, timing switch means connected in circuit with said lamps for lighting simultaneously a predetermined number of said lamps corresponding to a selected time interval, timing motor drive means operatively connected to said switch means to extinguish one lighted lamp at a time during the set time interval, a slave timing device including another panel board assembly having at least one series of other lamps, and a circuit means interconnecting said other lamps and said timing switch means with one of the other lamps connected to each of the first lamps respectively, so that the same number of other lamps are lighted when said predetermined number of first lamps are lighted, and so that the lighted other lamps go out one by one simultaneously with the lighted first lamps until all the lighted lamps are extinguished at both timing devices at the end of the set time interval, two further lamps at the panel board asemblies respectively, said further lamps being connected together, and a switch in circuit with said further lamps disposed for operation by said timing switch means at the end of said set time interval, so that the further lamps light at the end of said time interval.

5. Timing apparatus for setting a time interval and monitoring expiration of the set time interval, comprising a master timing device including a panel board assembly having at least one series of first lamps, timing switch means connected in circuit with said lamps for lighting simultaneously a predetermined number of said lamps corresponding to a selected time interval, timing motor drive means operatively connected to said switch means to extinguish one lighted lamp at a time during the set time interval, manually operable means for setting said timing switch to light said predetermined number of lamps, control switch means in circuit with said drive means for starting the timing motor when said lamps are lighted, a slave timing device including another panel board assembly having at least one series of other lamps, other timing switch means connected in circuit with said other lamps for lighting simultaneously a plurality of other lamps equal in number to said predetermined number of first lamps, other timing motor drive means operatively connected to said other timing switch means, to extinguish one of the other lighted lamps at a time during said set time interval, other control switch means in circuit with said other timing motor for starting the other timing motor after said other lamps are lighted, signal transmission means at said master timing device for transmitting a control signal corresponding to said predetermined number of first lighted lamps, receiving means at the slave timing device for receiving said control signal, and automatic switch setting means responsive to receipt of said signal and operatively connected to said other timing switch means for setting the other timing switch means automatically to light said plurality of other lamps, whereby the timing motors at both timing devices start substantially simultaneously, whereby one of the first lighted lamps at a time and one of the other lighted lamps at a time go out simultaneously until all the lighted lamps at both timing devices are extinguished at the end of the set time interval.

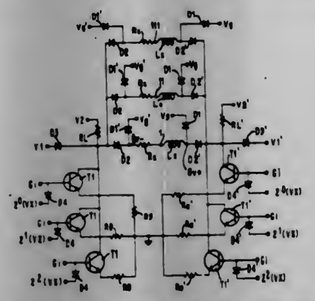
10. A timing apparatus according to claim 5, said automatic switch setting means including a rotatable gear, a longitudinally slidable rack gear meshed with the rotatable gear, solenoid operated latch, means for holding the rack gear retracted, and solenoid operated stop means for limiting travel of the rack gear when the latch means is released, said other control switch means being disposed adjacent said rack gear for automatic actuation when said rack gear is released by the latch means, so that the timing motor starts after the rack gear is released and the other timing switch is set to light said plurality of other lamps.

3,300,772
CONTROLLED CURRENT AMPLITUDE ENERGIZING SYSTEM
Albert W. Vinal, Owego, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 31, 1961, Ser. No. 99,845
18 Claims. (Cl. 340—347)

1. An energizing system comprising a conductor through which a current pulse is to be passed, an energizing voltage source, a constant current pulse amplifier, said constant current pulse amplifier having at least three elements, one of said elements functioning as an output element, another of said elements functioning as a control input element, another of said elements functioning as a common element, said output element being connected to a ground reference through a feedback resistor, means for selectively clamping said control element to a conduction voltage level for driving said amplifier into

conduction, said energizing voltage source being applied to said common element through said conductor through which a current pulse is to be passed, said conduction voltage level being selectively applied to said control element coincidentally with and following the application of said energizing voltage of said energizing voltage source to said common element, said conduction voltage level and resistance value of said resistor determining the output current level passing through said conductor to be energized.

11. An energizing system comprising a conductor through which a current is to be passed having a magnitude and a direction which is commensurate with the magnitude and sign of the analog of binary coded digital information to be converted, a first and second energizing voltage source, and first and second groups of plural constant current pulse amplifiers, each group corresponding in number to the number of orders of significance in the binary digital information to be converted, said conductor having a first and second extremity, and plural decoupling diodes, said first energizing voltage source being connected to said first extremity of said conductor through a decoupling diode, said first group of constant current pulse amplifiers being connected to said second extremity of said conductor through decoupling diodes, said second energizing voltage source being connected to said second extremity of said conductor through a decoupling diode, said second group of constance current pulse amplifiers connected to said first extremity of said



conductor through decoupling diodes, each of said constant current pulse amplifiers having at least three elements, one of said elements of each amplifier functioning as a current output element, another of said elements of each amplifier functioning as a control element, another of said elements of each amplifier functioning as a common element, said output of each amplifier being connected to a ground reference through a feedback resistor, and separate means for selectively clamping said control element of each of said amplifiers to a conduction voltage level for driving said corresponding amplifier into conduction, each of said energizing voltage sources being applied to the respective common element of each of its associated amplifiers through said conductor, each of said conduction voltage levels being selectively applied to the control element of its respective amplifier in accordance with the binary coded digital information to be converted, said selected conduction voltage levels of a said group of amplifiers being applied to the respective control inputs thereof coincidentally with and following the application of the respective energizing voltage to the respective common elements thereof through said conductor, each of said conduction voltage levels and resistance value of the feedback resistor associated with its respective amplifier determining the output current level passing through said respective amplifier in accordance with the bniary weighted order of significance associated with said respective amplifier, said conductor having the current passing therethrough equal to the sum of the currents passed through said amplifiers in accordance with the analog value of the binary coded digital information to be converted, said first energizing voltage source and said current pulse amplifiers of said first group passing the current through said conductor in a first direction and said second energizing voltage source and second current pulse amplifiers of said second group passing the current through said conductor in a second direction opposite to said first direction.

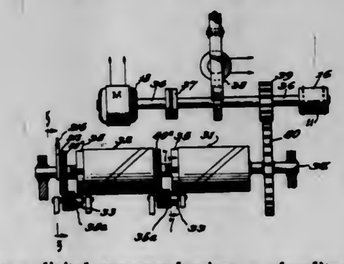
14. An energizing system comprising:

a predetermined number of conductors through which current pulses are to be selectively passed, each of said conductors having first and second terminal means;

first selectable energizing voltage source means for selectively applying a first energizing voltage to the first terminal means of said conductors; and

a predetermined number of current pulse first amplifiers, each of said amplifiers having at least three elements, one of said elements functioning as a control input element, another of said elements functioning as an output element, another of said elements functioning as a common element, said common element being coupled to the second terminal means of a preselected number of said predetermined number of conductors, said output element being coupled to a ground reference through a feedback resistor, and means for selectively clamping the control element to a conduction voltage level for driving the amplifier associated therewith into conduction, said energizing voltage being selectively applied through said preselected number of said predetermined number of conductors to said common element, and said conduction voltage level being selectively applied to said control element coincidentally with and following the application of said energizing voltage to said common element, said conduction voltage level and resistance value of said resistor determining the output current level passing through the preselected number of said predetermined number of conductors selectively energized by said energizing voltage source means and the current amplifier associated therewith.

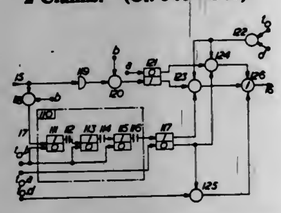
3,300,773
DIGITALIZER AND DIGITAL SERVOMECHANISM
Wright K. Gannett, Davenport, Iowa, assignor to Mast Development Company, Inc., Davenport, Iowa, a corporation of Iowa
Filed Nov. 1, 1963, Ser. No. 320,697
8 Claims. (Cl. 340—347)



1. In a digital servomechanism, a plurality of drums, each of said drums being mounted for rotation about its axis to a plurality of discrete positions with consecutive positions differing by a constant angular displacement, the consecutive discrete positions of a drum representing consecutive digits within an order of digits, each such drum representing a different order; intermittent gear means interconnecting drums of adjacent orders for causing a drum to index from one of its discrete positions to a next adjacent position on every full rotation of the

drum of immediately lower order; a rotatable shaft the angular position of which within a plurality of rotations thereof is represented by a multiple digit number, each digit of which is contained within an order represented by one of said drums; motor means for rotation of said shaft in either direction, said motor being also operatively connected to the drum of lowest order to cause said drum to rotate when said motor means is energized and indirectly to cause the indexing of drums of higher order through the agency of said intermittent gear means interconnecting said drums; commutator means carried on the surface of each of said drums, each commutator means comprising a first electrically conductive surface, and a third electrically conductive surface constituting a null strip, said three surfaces being electrically isolated from one another, the conducting surfaces of said commutator means of the drum of highest order being so arranged as to produce the selection of the direction of rotation of said drum which will cause a preselected brush to contact the null strip on said drum via the shorter path around the periphery of said drum; multiple brush means contacting said commutator means on each said drum, said brush means comprising a brush corresponding to each digit in the order represented by each said drum; circuit means including a power source, a single preselected brush from each of the multiple brush means associated with each of said drums; one of said electrically conductive commutator surfaces on the drum of highest order, control means for energizing and causing the rotation of said motor means in one direction when said first conductive surface of said drum of highest order is included in said circuit and rotation in the opposite direction when said second conductive surface is included in said circuit, the direction of rotation being such as to cause a brush on said drum of highest order to approach its null strip without making contact with the other of said first and second commutator surfaces thereon, contact of each of said preselected brushes with the null strip of its associated drum introducing into said circuit serially, starting with the drum of highest order, one of the commutator surfaces of the drum of immediately lower order, said circuit being operative to stop the rotation of said motor means when each of said preselected brushes is in electrical contact with the null strip in the commutator means of its associated drum; and selector means for inserting into said circuit means, a single selected brush in each order corresponding to a digit of a preselected number representing a desired position of said shaft.

3,300,774
BINARY CODE TRANSFORMATION SYSTEM
André Edouard Joseph Chatelon, Montrouge, and Pierre Girard, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 6, 1963, Ser. No. 328,563
Claims priority, application France, Dec. 28, 1962, 919,928, Patent 1,355,578
2 Claims. (Cl. 340—347)



1. In a data transmission system wherein said data is represented by binary code groups having each n digits transmitted in serial form, and wherein the code signals are sent from a transmitting terminal including code transformation equipment to a receiving terminal:

clock means associated with the transmitting terminal delivering, sequentially, $n+1$ digit time slot signals of equal duration $t0$, $t1$, $t2$ . . . tn, each such group of signals delimiting the time interval reserved to a code group;

counting means associated with the transmitting terminal for counting the number of code signals in each code group and delivering a minority signal which is present up to the time tn if said code group comprises less than

$$\left(\frac{n-P}{2}+1\right)$$

code signals, P being equal to zero if n is an even number, and equal 1 if n is an odd number;

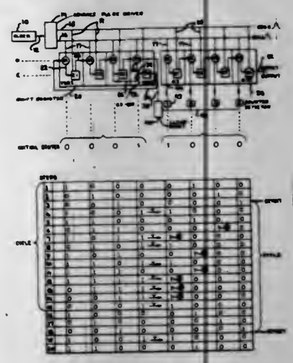
signal complementing means associated with the transmitting terminal and controlling, when activated by a minority signal, first the elaboration of a minority code signal transmitted at the digit time slot to, and second, the complementing of the n digit code group so that, whatever be the number of code signals in a code group the number of transmitted code signals is higher than

$$\frac{n-P}{2}$$

detection means associated with the receiving terminal for detecting the presence of a minority code signal, said means being activated at each time slot to delivered by the clock means of the receiving terminal and delivering, when a code signal is received during said time slot, a complementing signal which is present up to the time tn; and,

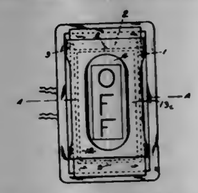
signal complementing means associated with the receiving terminal and controlling, when a complementing signal is present, the complementing of the digits received during the time slots $t1$ to tn.

3,300,775
SEQUENTIAL BIT BINARY DETECTOR CIRCUIT AND SYSTEM
Edward C. Dowling, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 6, 1963, Ser. No. 321,941
9 Claims. (Cl. 340—348)



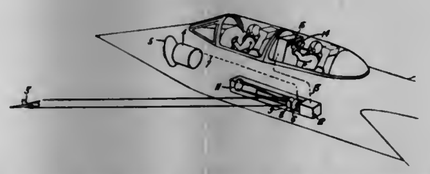
1. In a system for producing a timed output, the combination comprising a source of clock pulses, a maximal feedback shift register for generating cycles of binary codes with each code being comprised of a series of distinct binary code patterns of equal bit length and with each pattern generated responsive to a pulse from said source, a counter detector comprised of a number of bistable stages driven by said source, said counter detector including an output lead energized by the presence of a binary one in the last stage thereof, a clear reset driver connected to said maximal feedback shift register and driven thereby to prevent the presence of a binary one in the last stage of said counter detector responsive to each binary one supplied to said counter detector from said maximal feedback shift register, whereby the code patterns generated by said maximal feedback shift register drive said counter detector to produce a detect output signal once per code cycle.

3,300,776
ELECTRICAL INDICATING DEVICE
Eugene K. Fitch, Jr., Charlottesville, and Willis L. Eheart, Jr., Barboursville, Va., assignors, by mesne assignments, to Teledyne, Incorporated, Hawthorne, Calif.
Filed July 17, 1964, Ser. No. 383,452
1 Claim. (Cl. 340—373)



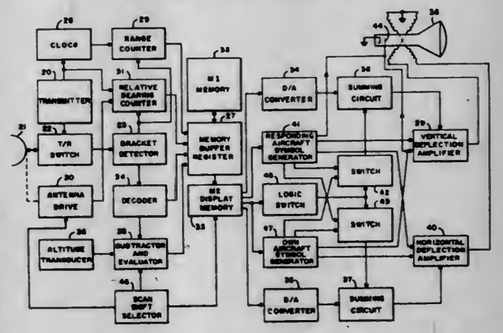
In an indicating device, a cylindrical casing having at least a transparent window therein, a cylindrical rotor within said casing coaxial therewith and mounted for rotation through a limited angle, a bar magnet in said rotor aligned generally at right angles to the axis thereof and having its poles adjacent opposite peripheral areas of said rotor, a unitary magnetizable frame surrounding said casing and comprising two spaced end bands coaxial with said rotor and including four members parallel with said axis and joining said end bands, the center lines of said joining members being spaced ninety degrees apart circumferentially, and two adjacent generally rectangular electrical windings surrounding said frame and having a common axis substantially at right angles to the axis of said rotor and casing.

3,300,777
VISUAL IDENTIFICATION OF AIRCRAFT
Richard James Clifford Tarr, Lytham St. Annes, England, assignors to British Aircraft Corporation ("E" Nominees) Limited
Filed Oct. 26, 1964, Ser. No. 406,327
Claims priority, application Great Britain, Oct. 28, 1963, 42,504/63
4 Claims. (Cl. 343—6)



3. An aircraft having an optically flat glass plate substantially flush with the surface of the aircraft body, an angularly adjustable plane reflector which is arranged to reflect radiation passing through the said glass plate, radar tracking equipment for following the course of the object to be identified, a servo mechanism controlled by the tracking equipment to steer the reflector so that radiation received from the object is reflected along a fixed path within and relative to the said aircraft body, a telescope fixed with respect to the airframe and having its optical axis coincident with the fixed path of reflected radiation established by the said reflector, the telescope including a parabolic mirror, an electronic camera tube fixed with respect to the said aircraft body and mounted with its photocathode in the focal plane of the parabolic mirror, for providing a television signal representing an image of the object, a television receiver arranged for observation within the craft, and closed circuit television link connecting the camera tube to the receiver, a manual control for centralizing the image of the object on the receiver, and manual means for controlling the electronic magnification of the image displayed by the receiver.

3,300,778
PERSPECTIVE OBJECT INDICATOR
Tirey K. Vickers, Plainfield, Ind., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed Dec. 11, 1963, Ser. No. 329,664
5 Claims. (Cl. 343—7.9)



1. A display system including a two dimensional information display surface on which the three dimensional position of an object in space is continuously displayed with respect to a known position, said system comprising:

a grid superimposed on the display surface consisting of a series of equidistant vertical lines which represent a fixed amount of bearing with respect to each other, intersected by a series of equidistant horizontal lines which represent a fixed amount of altitude with respect to each other;

means for representing the object on the display surface by an indication comprising a horizontal line and a vertical line having at least one point in common with said horizontal line;

means for representing the known position on the display surface by an indication;

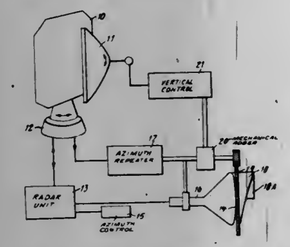
means for positioning the known position indication on the display surface at the intersection of any of said superimposed horizontal and vertical lines;

means for controlling the distance of said vertical line of the object indication on the display surface from the vertical reference line that intersects the known position indication as a function of the bearing of the object with respect to the known position, so that the distance from said vertical reference line is proportional to the bearing of the object with respect to the known position;

means for controlling the distance of said horizontal line of the object indication on the display surface from the horizontal reference line that intersects the known position indication as a function of the altitude of the object with respect to the known position so that the distance from said horizontal reference line is proportional to the altitude of the object with respect to the known position;

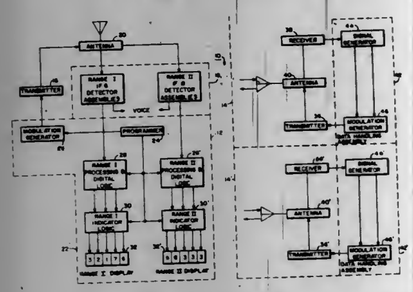
and means for controlling the length of said horizontal and vertical lines that comprise the object indication as a function of the range of the object with respect to the known position so that the length of said lines is inversely proportional to said range.

3,300,779
THREE DIMENSIONAL PICTORIAL DISPLAYS
Rafael Sirkis, Haifa, Israel, assignor of fifty percent to Technion Research and Development Foundation, Ltd., Haifa, Israel, a corporation of Israel
Filed Mar. 15, 1963, Ser. No. 265,451
Claims priority, application Israel, June 18, 1962, 17,497
13 Claims. (Cl. 343—7.9)



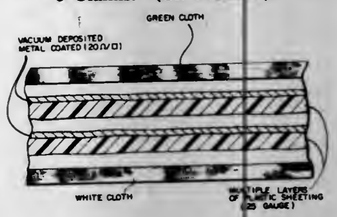
11. An apparatus for the exhibition of three-dimensional images comprising, a cathode ray tube fluorescent screen which has substantially no persistence adapted to produce a two-dimensional array of varying light values responsive to the intensity of a cathode ray beam, electrical and mechanical means for controlling the intensity and position of said beam, said means including a radar system comprising a transmitter for generating radio frequency energy, an antenna scanning means for covering a desired three-dimensional space with said radio frequency energy beam, a receiver for receiving reflected energy from objects in said three-dimensional space, said receiver controlling the intensity of said beam, and means for positioning and deflecting said cathode ray beam in synchronism with the scanning of said antenna, a three-dimensional display member rotatably mounted about the cathode ray tube axis and including a helical surface formed about said axis, optical means for transferring said light values from the screen to said helical surface, and a power means for rotating said display member at a speed which is a function of the speed at which said antenna scans said three-dimensional space.

3,300,780
ELECTRONIC SURVEYING SYSTEM
John R. Mason, Escondido, Calif., assignor to Cubic Corporation, San Diego, Calif.
Filed Jan. 19, 1965, Ser. No. 426,620
18 Claims. (Cl. 343—12)



2. In an electronic surveying system for measuring the slant range between a first station at a first location, spatially separated from a second station at a second location, the first station including means for generating and transmitting a first carrier signal, and means adapted to receive a second carrier signal, the second station including means for generating and transmitting a second carrier signal, and means adapted to receive the first carrier signal, the combination comprising:
first means at the first station for generating a first ranging signal at a frequency ω_1 and for modulating said first ranging signal upon the first carrier signal for transmission therewith;
second means at the second station for generating first and second calibrating signals at frequencies, ω_2 and ω_R/N, related by the whole integer N;
third means connected to said second means and adapted to receive and extract the transmitted first ranging signal for generating first and second composite signals at frequencies ω_2 and ω_3, respectively, where $\omega_2=\omega_1+\omega_R$ and $\omega_3=\omega_2+\omega_R/N$ in predetermined phase synchronism with the received first ranging signal;
fourth means connected to said third means for modulating said first and second composite signals on the second carrier signal for transmission to the first station;
fifth means at the first station coupled to said first means for receiving said first and second composite signals and for extracting therefrom said first and second calibrating signals;
sixth means connected to said fifth means for converting said first and second calibrating signals to a common frequency and for quantizing the phase difference existing therebetween; and
seventh means connected to said sixth means and responsive to said quantized phase difference to display a number corresponding to the spatial separation between the stations.

3,300,781
RADAR COUNTERMEASURE ARTICLE
Philip J. Clough, Reading, and Robert W. Steeves, Nahant, Mass., assignors to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed May 27, 1965, Ser. No. 459,294
6 Claims. (Cl. 343—18)

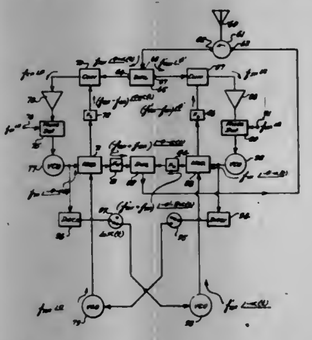


1. A radar countermeasure blanket providing an attenuation of at least 10 decibels to radar waves incident on the blanket and being essentially opaque to far infra-red radiation and comprising, in combination, at least two layers of thin plastic sheeting, each of the layers having a vacuum deposited metal coating thereon, the coating in each instance being sufficiently thin to exhibit a resistance considerably above 1 ohm per square.

3,300,782
COMMUNICATIONS REPEATER SYSTEM
Donald L. Margerum, Woodland Hills, and Andrew L. Perga, Flintridge, Calif., assignors to Electronic Specialty Co., Los Angeles, Calif., a corporation of California
Filed July 8, 1963, Ser. No. 293,499
8 Claims. (Cl. 343—100)

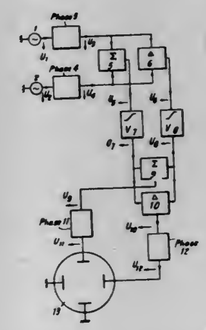
1. In an antenna module including an antenna coupled to means for the reception and radiation of radio frequency signals, a circuit comprising:
(a) IF signal generating means for generating signals of a predetermined intermediate frequency, said IF signal generating means including means responsive to an applied electrical control signal to controllably alter the phasing of signals generated by said IF signal generating means;
(b) modulator means intercoupling said antenna and said IF signal generating means for combining the output of said IF signal generating means with an RF reference signal of a predetermined radio frequency to produce upper and lower sideband outputs, one of the upper and lower sideband outputs of said modulator means being fed to said antenna for radiation thereby; and,
(c) phasing control means having its input coupled to said modulator means and to said antenna for combining the other one of said upper and lower sideband outputs of said modulator means with radio frequency signals received by said antenna to produce an output signal which varies in accordance with differences in phase between the received signal and the other one of said upper and lower sideband outputs of said modulator means, the output of said phasing control means being coupled to said means for controllably altering the phasing of signals generated by said IF signal generating means to provide the electrical control signal therefor.

3. In an antenna module including an antenna coupled to means for the reception and radiation of radio frequency energy, a circuit for transferring intelligence from RF signals of a first reception frequency received by said antenna from a first remote location to RF signals radi-



ated by said antenna on a first transmission frequency to a second remote location, and for transferring intelligence from RF signals of a second reception frequency received by said antenna from said second remote location to RF signals radiated by said antenna on a second transmission frequency to said first remote location, said circuit comprising:
(a) first signal producing means coupled to said antenna for feeding RF signals of said first transmission frequency to said antenna, said RF signals of said first transmission frequency radiated by said antenna being coherently focused on said second remote location;
(b) second signal producing means coupled to said antenna for feeding RF signals of said second transmission frequency to said antenna, said RF signals of said second transmission frequency radiated by said antenna being coherently focused on said first remote location; and,
(c) means intercoupling said first and second signal producing means for selectively transferring intelligence from signals of said first reception frequency received by said antenna to said signals of said second transmission frequency fed to said antenna by said second signal producing means and for selectively transferring intelligence from signals of said second reception frequency received by said antenna to said signals of said first transmission frequency fed to said antenna by said first signal producing means.

3,300,783
DIRECTION FINDING
Günther Ziehm, Bremen, Germany, assignor to Atlas-Werke Aktiengesellschaft
Filed Feb. 28, 1964, Ser. No. 348,009
1 Claim. (Cl. 343—119)

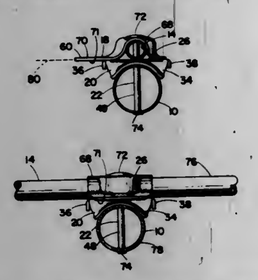


Direction finding apparatus comprising,
means defining a directional transducing system responsive to wave energy for providing a corresponding electrical signal and having dimensions which are small compared to a wavelength of the wave energy for providing first and second transduced input signals,
means for displacing the phase of said first and second signals to provide third and fourth signals displaced in phase by an electrical angle that differs by substantially 90 degrees from the relative phase between said first and second signals,
said first and second transduced signals corresponding to two spatially angularly offset field components of wave energy incident upon said transducing system,
means for cumulatively combining said third and fourth signals to provide a fifth signal that is the sum thereof,
means for differentially combining said third and fourth signals to provide a sixth signal that is the difference thereof,
means responsive to said fifth and sixth signals for providing seventh and eighth signals of substantially equal amplitude and relative phase substantially the same as that between said fifth and sixth signals,
means for providing an indication of the phase difference between said seventh and eighth signals,
and means for providing a quotient signal representative of the ratio of said sum and said difference which signal is representative of the degree of blurring present in a signal derived from said first and second transduced signals for indicating the direction of wave energy incident upon said transducing system.

3,300,784
ANTENNA WITH ELEMENTS PIVOTALLY CONNECTED TO BOOM
Johnie Lee Ervine, 727 N. 8th, Burlington, Iowa 52601
Filed Sept. 8, 1965, Ser. No. 485,707
6 Claims. (Cl. 343—882)

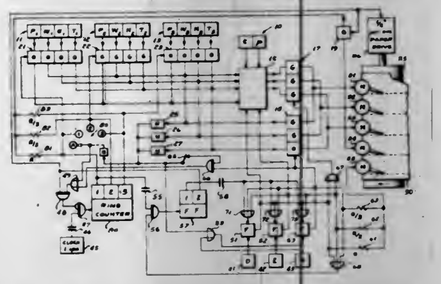
6. For use in an antenna, a base member and a cap member positioned on and pivotally connected to said base member, said base member having a flat metal plate

portion with a flat surface which faces toward said cap member, said plate portion having opposite longitudinal edges and opposite end portions, two strengthening and reinforcing flange portions integrally joined to said plate portion adjacent to said opposite edges, respectively, and extending generally perpendicularly away from said plate portion and said cap member, said flange portions having oppositely and outwardly facing camming surfaces, respectively, joining said plate surface at said longitudinal edges, said camming surfaces being rounded and smoothly merging with said flat surface and said flanges whereby said camming surfaces and said plate surface are continuous, said end portions extending generally perpendicularly away from said plate portion in the same direction and beyond said flange portions, each of said end portions having a part-cylindrical surface spaced from said plate portion, said plate portion having an indentation therein defined by oppositely facing and upstanding abutment surfaces, and pin means extending through said cap mem-



ber and base member for forcefully clamping said cap member, and said base member together and for pivotally connecting said cap member to said base member, said cap member having a resilient tongue portion, said tongue portion having oppositely facing edges, said cap member being movable from a first position in which said tongue portion of said cap member extends transversely of said base member to a second position in which said tongue portion is positioned in said indentation with said tongue edges engaged with said abutment surfaces, whereby said tongue and indentation form a detent device for holding said first and second pivotal units against rotation, said tongue portion being disposed beneath said plate surface when said cap member is in said first position whereby one of said tongue portion edges engages one of said camming surfaces of said base member and lifts said tongue portion onto said plate surface during the rotation of said cap member from said first position to said second position.

3,300,785
MULTIPLEX RECORDING APPARATUS
Donald V. Richardson, Stratford, and Joseph A. Picard, Jr., Ansonia, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,511
25 Claims. (Cl. 346—17)

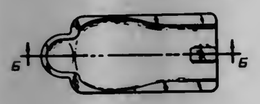


5. Time-division-multiplex recording apparatus including in combination a first sheet, means actuatable to provide a first recording on the first sheet, means for providing a second recording on the first sheet, an overlay sheet bearing a first and a second scale disposed in a common column, the overlay sheet being adapted to be superposed upon the first sheet with the first scale overlying a portion of the first recording and the second scale overlying a portion of the second recording, the overlay sheet being so constructed as to permit visual observation of the underlying two recordings in the regions adjacent the two scales, the first scale comprising a plurality of equally spaced marks having associated indicia which discretely identify the source of the information in the second recording, the second scale comprising a plurality of marks having associated indicia which indicate the values of the information in the second recording, and means responsive to the second recording means for actuating the first recording means.

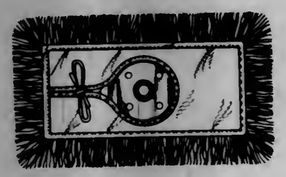
DESIGNS

JANUARY 24, 1967

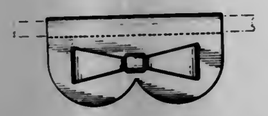
206,747
CUSHIONED BATH AID
Pansy E. Eesman, 2207 Cunningham, San Jose, Calif. 95122
Filed Oct. 1, 1965, Ser. No. 87,260
Term of patent 14 years
(Cl. D4—4)



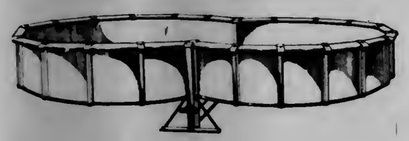
206,748
WALL WASHING MOP HEAD OR SIMILAR ARTICLE
Joseph B. Mable, 569 S. 4th St., Colwyn, Pa. 19023, and Charles H. Lodge, Jr., 1001 Hunter Ave., Swarthmore, Pa. 19081
Filed Aug. 17, 1966, Ser. No. 3,507
Term of patent 14 years
(Cl. D9—2)



206,749
DOG COLLAR ORNAMENT OR SIMILAR ARTICLE
Daniel A. Klimkiewicz, Rutherford, N.J., assignor to Ronald A. Darby, Hawthorne, N.J.
Filed Sept. 23, 1965, Ser. No. 87,129
Term of patent 14 years
(Cl. D12—2)



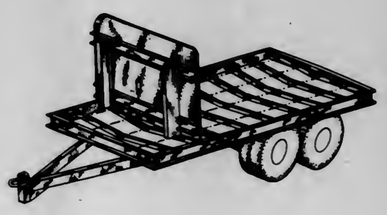
206,750
SWIMMING POOL OR THE LIKE
Joseph Diemond, Simsbury, and Melvin Y. Gershman, West Hartford, Conn., and Henry L. Sundberg, Jr., and Norbert A. Vangsness, Longmeadow, Mass., assignors to Coleco Industries, Inc., Hartford, Conn., a corporation of Connecticut
Filed Jan. 5, 1966, Ser. No. 484
Term of patent 14 years
(Cl. D13—1)



206,751
BUILDING
Meryl Lynn Stoddard, Flint, Mich. (Box 322, Scottsdale, Ariz. 85251)
Filed Mar. 16, 1966, Ser. No. 1,486
Term of patent 14 years
(Cl. D13—1)



206,752
MATERIAL HANDLING TRAILER
Jack E. Moll, New Berlin, Wis., assignor to Miller Tilt-Top Trailer, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed July 29, 1965, Ser. No. 86,350
Term of patent 14 years
(Cl. D14—3)



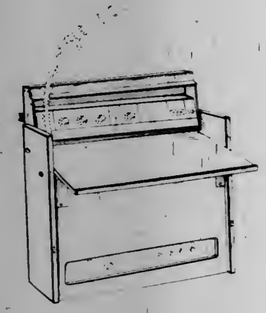
206,753
CHRISTMAS TREE ORNAMENT
George W. Richardson, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 17, 1966, Ser. No. 642
Term of patent 14 years
(Cl. D29—1)



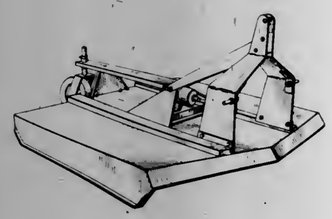
206,754
PLAQUE
Richard H. Van Den Berg, Glendale, Wis., assignor to Dimensional Products, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed June 15, 1965, Ser. No. 85,738
Term of patent 14 years
(Cl. D29—23)



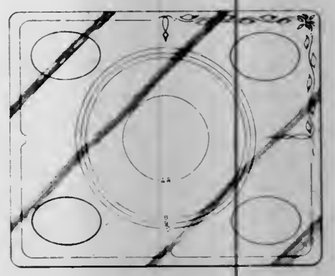
206,755
PORTABLE LECTERN
Fred C. Bolick, Jr., Atlanta, Ga., assignor to Lanier Electronics Laboratory, Atlanta, Ga., a corporation of Georgia
Filed Oct. 4, 1965, Ser. No. 87,311
Term of patent 14 years
(Cl. D33—7)



206,756
ROTARY MOWER
Warren E. Bottenberg, Holton, Kansas, assignor to B-M-B Company, Inc., Holton, Kans., a corporation of Kansas
Filed Jan. 4, 1966, Ser. No. 452
Term of patent 14 years
(Cl. D40—1)



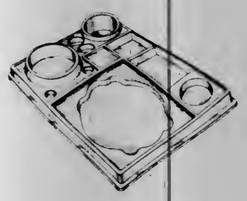
206,757
PASTRY SHEET OR THE LIKE
Elsie M. Mortland, Kissimmee, Fla., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Feb. 17, 1966, Ser. No. 1,087
Term of patent 14 years
(Cl. D44—1)



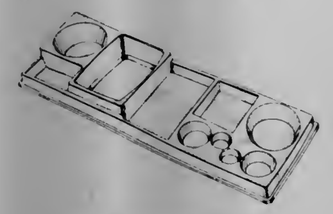
206,758
SUPPORT MEMBER FOR A CUTTING BOARD OR THE LIKE
Eldon E. Radtke, 5765 Lord Cecil, San Diego, Calif. 92122
Filed Aug. 16, 1965, Ser. No. 86,601
Term of patent 14 years
(Cl. D44—1)



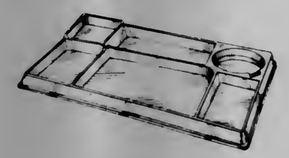
206,759
FOOD SERVING TRAY
Robert M. Kirwan, 135 N. 20th Ave., Melrose Park, Ill. 60160
Filed Jan. 12, 1966, Ser. No. 573
Term of patent 3½ years
(Cl. D44—10)



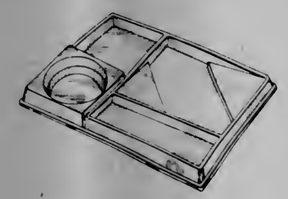
206,760
FOOD SERVING TRAY
Robert M. Kirwan, 135 N. 20th Ave., Melrose Park, Ill. 60160
Filed Jan. 12, 1966, Ser. No. 575
Term of patent 3½ years
(Cl. D44—10)



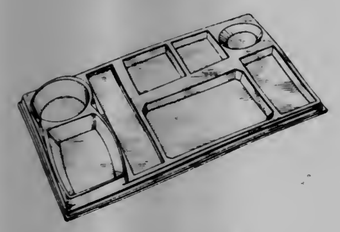
206,761
FOOD SERVING TRAY
Robert M. Kirwan, 135 N. 20th Ave., Melrose Park, Ill. 60160
Filed Jan. 12, 1966, Ser. No. 576
Term of patent 3½ years
(Cl. D44—10)



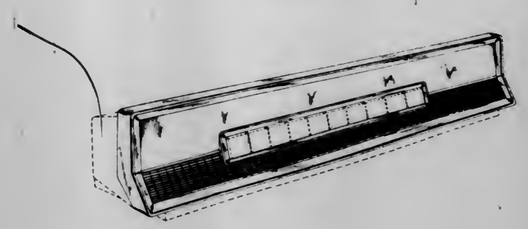
206,762
FOOD SERVING TRAY
Robert M. Kirwan, 135 N. 20th Ave., Melrose Park, Ill. 60160
Filed Jan. 12, 1966, Ser. No. 581
Term of patent 3½ years
(Cl. D44—10)



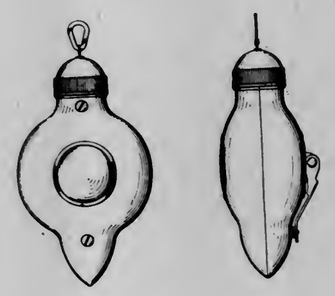
206,763
FOOD SERVING TRAY
Robert M. Kirwan, 135 N. 20th Ave., Melrose Park, Ill. 60160
Filed Jan. 12, 1966, Ser. No. 582
Term of patent 3½ years
(Cl. D44—10)



206,764
LAUNDRY APPLIANCE CONTROL PANEL
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 82,022
Term of patent 14 years
(Cl. D49—1)



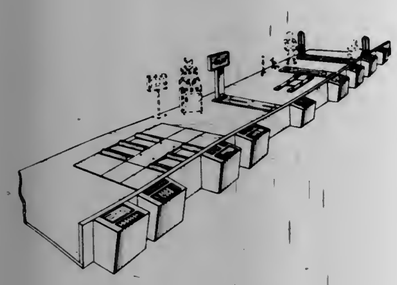
206,765
COMBINED CHALK LINE MARKER AND PLUMB LINE OR SIMILAR ARTICLE
Robert W. Heuer, North Brunswick, N.J., assignor to Evans-Aristocrat Industries, Inc., Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 8, 1966, Ser. No. 964
Term of patent 14 years
(Cl. D52—1)



206,766
COMBINED GAGE AND CLAMP
George Dewey Manville, Rte. 1, Box 526–b, 35520 Oak Glen Road, Yucaipa, Calif. 92399
Filed Aug. 3, 1965, Ser. No. 86,423
Term of patent 14 years
(Cl. D52—6)



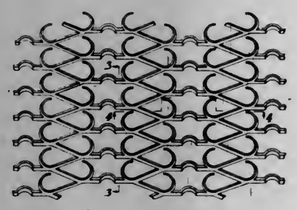
206,767
AUTOMOTIVE VEHICLE DIAGNOSTIC LANE
Charles W. MacMillan, Rock Island, Ill., assignor to Bear Manufacturing Company, Rock Island, Ill., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 87,180
Term of patent 14 years
(Cl. D52—6)



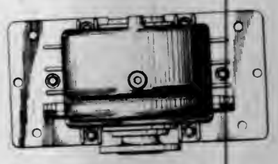
206,768
TURNS COUNTER
Hugh O. Brown, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Oct. 18, 1965, Ser. No. 87,535
Term of patent 14 years
(Cl. D52—6)

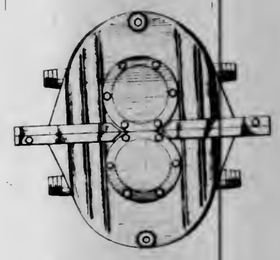


206,769
METAL SHEET
George J. Kurtts, 709 Forestwood Road, Birmingham, Ala. 35214
Continuation of design application Ser. No. 84,813, Apr. 16, 1965. This application Jan. 12, 1966, Ser. No. 2,059
Term of patent 14 years
(Cl. D54—2)

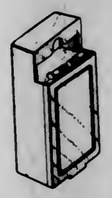


206,770
MARINE V-DRIVE
William B. Herbert, 111 Yantacaw Brook Road, Upper Montclair, N.J. 07043
Filed Oct. 21, 1965, Ser. No. 87,669
Term of patent 14 years
(Cl. D55—1)

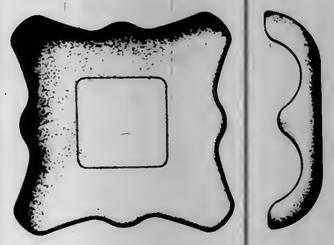




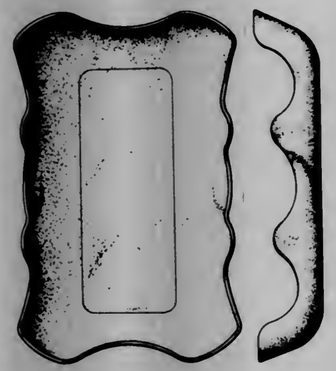
206,771
DISPLAY BOX
Stanley B. Valiulis, Rockford, Ill., assignor to TE Industries, Inc., Providence, R.I., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 82,530
Term of patent 14 years
(Cl. D58—12)



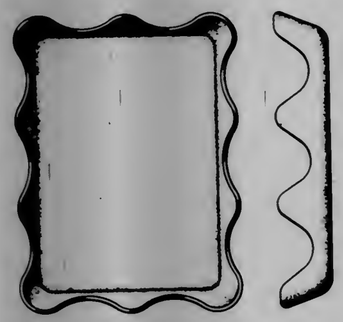
206,772
PACKAGING TRAY
Richard E. Reny, Westport, Conn., assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine
Original design application Dec. 30, 1964, Ser. No. 83,546. Divided and this application Jan. 19, 1966, Ser. No. 1,668
Term of patent 14 years
(Cl. D58—13)



206,773
PACKAGING TRAY
Richard E. Reny, Westport, Conn., assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine
Original design application Dec. 30, 1964, Ser. No. 83,546. Divided and this application Jan. 19, 1966, Ser. No. 1,821
Term of patent 14 years
(Cl. D58—13)



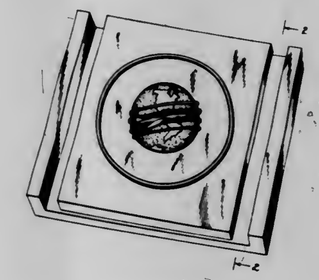
206,774
PACKAGING TRAY
Richard E. Reny, Bronxville, N.Y., assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine
Continuation of design application Ser. No. 78,023, Jan. 2, 1964. This application Dec. 30, 1964, Ser. No. 83,546
Term of patent 14 years
(Cl. D58—13)



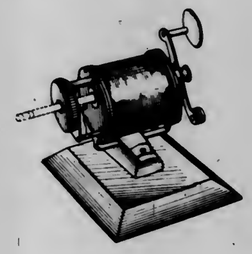
206,775
SAILBOAT
Carter Pyle, 2920 Alexander Road, Laguna Beach, Calif. 92651, and Joseph M. Quigg, 7204 W. Ocean Front, Newport Beach, Calif. 92660
Filed May 16, 1966, Ser. No. 2,303
Term of patent 14 years
(Cl. D71—1)



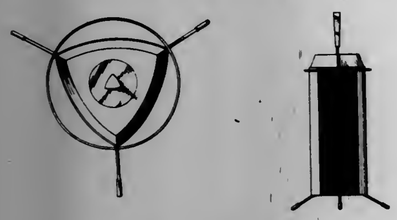
206,776
PAPERWEIGHT
Richard H. Van Den Berg, Glendale, Wis., assignor to Dimensional Products, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed June 15, 1965, Ser. No. 85,755
Term of patent 14 years
(Cl. D74—12)



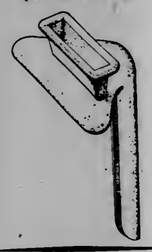
206,777
DESK MODEL PENCIL SHARPENER
Robert J. Brand, Berwyn, Ill., assignor to Apsco Products, Inc., Rockford, Ill., a corporation of Illinois
Filed Feb. 10, 1964, Ser. No. 78,582
Term of patent 14 years
(Cl. D74—21)



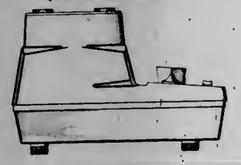
206,778
BARBECUE CADDIE
Robert A. Clark, Allentown, Pa., assignor to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1965, Ser. No. 87,512
Term of patent 14 years
(Cl. D81—10)



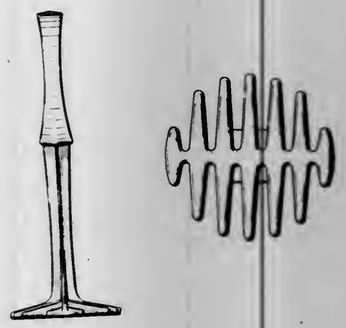
206,779
URINAL DUCT
Frank H. Gardner, Star Motel, 7th and Duquesne Road, Joplin, Mo. 64801
Filed Apr. 18, 1966, Ser. No. 1,916
Term of patent 14 years
(Cl. D83—1)



206,780
BLENDER BASE
Henry A. Dewenter, 1477 Old Mill Road, San Marino, Calif. 91108
Filed Feb. 18, 1966, Ser. No. 1,112
Term of patent 14 years
(Cl. D89—1)



206,781
POTATO MASHER
Karl J. Leufvenius, 2415 Pilot Knob Road, Minneapolis, Minn. 55421
Filed Mar. 7, 1966, Ser. No. 1,330
Term of patent 14 years
(Cl. D89—1)



206,782
HAMMER HEAD
Andrew F. Bianchini, Providence, R.I., assignor to Industrial Tool & Machine Co., Georgiaville, R.I., a corporation of Rhode Island
Filed Mar. 2, 1966, Ser. No. 1,242
Term of patent 3½ years
(Cl. D93—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF JANUARY, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Stoltz, Herbert C. Re. 26,146.
Cherry, Vonner R.: *See*—
Sizer, Phillip S., Cherry, and Wilhoit. Re. 26,149.
Cope, Geoffrey W., to Symington Wayne Corp. Draft rigging. Re. 26,143, 1-24-67, Cl. 213—72.
Corrado, Victor M.: *See*—
Robbins, Daniel H., and Corrado. Re. 26,144.
Eltra Corp.: *See*—
Robbins, Daniel H., and Corrado. Re. 26,144.
Friddell, James F., to Stewart & Stevenson Services, Inc. Method of and apparatus for converting a diesel engine to operate on natural gas. Re. 26,145, 1-24-67, Cl. 123—32.
Geyer, Paul: *See*—
Parshall, Clarence M., and Geyer. Re. 26,147.
Otis Engineering Corp.: *See*—
Sizer, Phillip S., Cherry, and Wilhoit. Re. 26,149.
Parshall, Clarence M., and P. Geyer, to United States Rubber Co. Mill. Re. 26,147, 1-24-67, Cl. 18—12.
Robbins, Daniel H., and V. M. Corrado, to Eltra Corp. Justification information computer and tape perforator for photocomposing machines. Re. 26,144, 1-24-67, Cl. 234—7.
Sizer, Phillip S., V. R. Cherry, and L. M. Wilhoit, to Otis Engineering Corp. Apparatus for controlling flow within a well. Re. 26,149, 1-24-67, Cl. 166—72.
Stewart & Stevenson Services, Inc.: *See*—
Friddell, James F. Re. 26,145.
Stoltz, Herbert C., to AMP Inc. Connector applying tool. Re. 26,146, 1-24-67, Cl. 72—397.
Symington Wayne Corp.: *See*—
Cope, Geoffrey W. Re. 26,143.
United States Rubber Co.: *See*—
Parshall, Clarence M., and Geyer. Re. 26,147.
Wayfield, David J. Swimming instruction device. Re. 26,148, 1-24-67, Cl. 35—29.
Wilhoit, Lowell M.: *See*—
Sizer, Phillip S., Cherry, and Wilhoit. Re. 26,149.

LIST OF PLANT PATENTEES

Armstrong, David L., to Armstrong Nurseries, Inc. Rose plant. 2,704, 1-24-67, Cl. 22.
Armstrong, David L., to Armstrong Nurseries, Inc. Rose plant. 2,705, 1-24-67, Cl. 20.
Armstrong Nurseries, Inc.: *See*—
Armstrong, David L. 2,704.
Armstrong, David L. 2,705.
Bergeron, Roland, to Gulf Stream Products, Inc. Mock orange (philadelphus) plant. 2,703, 1-24-67, Cl. 54.
Boerner, Eugene S., to Jackson & Perkins Co. Rose plant. 2,701, 1-24-67, Cl. 4.
Gulf Stream Products, Inc.: *See*—
Bergeron, Roland. 2,703.
Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,701.
Kordes, Reimer. 2,700.
Kordes, Reimer, to Jackson & Perkins Co. Rose plant. 2,700, 1-24-67, Cl. 28.
McDermid, Frank H., deceased, by J. A. McDermid, administrator, to Stark Bro's Nurseries & Orchards Co. Apple tree. 2,702, 1-24-67, Cl. 34.
McDermid, James A.: *See*—
McDermid, Frank H. 2,702.
Stark Bro's Nurseries & Orchards Co.: *See*—
McDermid, Frank H. 2,702.

LIST OF DESIGN PATENTEES

Apsco Products, Inc.: *See*—
Brand, Robert J. 206,777.
B-M-B Co., Inc.: *See*—
Bottenberg, Warren E. 206,756.
Bear Mfg. Co.: *See*—
MacMillan, Charles W. 206,767.
Beckman Instruments, Inc.: *See*—
Brown, Hugh O. 206,768.
Bianchini, Andrew F., to Industrial Tool & Machine Co. Hammer head. 206,782, 1-24-67, Cl. D93—4.
Bolick, Fred C., Jr., to Lanier Electronics Laboratory. Portable lectern. 206,755, 1-24-67, Cl. D33—7.
Bottenberg, Warren E., to B-M-B Co., Inc. Rotary mower. 206,756, 1-24-67, Cl. D40—1.
Brand, Robert J., to Apsco Products, Inc. Desk model pencil sharpener. 206,777, 1-24-67, Cl. D74—21.
Brown, Hugh O., to Beckman Instruments, Inc. Turns counter. 206,768, 1-24-67, Cl. D52—6.
Caloric Corp.: *See*—
Clark, Robert A. 206,778.
Clark, Robert A., to Caloric Corp. Barbecue caddie. 206,778, 1-24-67, Cl. D81—10.
Coleco Industries, Inc.: *See*—
Diemond, Joseph, Gershman, Sundberg, and Vangsness. 206,750.
Corning Glass Works: *See*—
Richardson, George W. 206,753.
Darby, Ronald A.: *See*—
Klimkiewicz, Daniel A. 206,749.
Dewenter, Henry A. Blender base. 206,780, 1-24-67, Cl. D89—1.
Diemond, Joseph, M. Y. Gershman, H. L. Sundberg, Jr., and N. A. Vangsness, to Coleco Industries, Inc. Swimming pool or the like. 206,750, 1-24-67, Cl. D13—1.
Dimensional Products, Inc.: *See*—
Van Den Berg, Richard H. 206,754.
Van Den Berg, Richard H. 206,776.
Essman, Pansy E. Cushioned bath aid. 206,747, 1-24-67, Cl. D4—4.
Evans-Aristocrat Industries, Inc.: *See*—
Heuer, Robert W. 206,765.
Gardner, Frank H. Urinal duct. 206,779, 1-24-67, Cl. D83—1.
Gershman, Melvin Y.: *See*—
Diemond, Joseph, Gershman, Sundberg, and Vangsness. 206,750.
Herbert, William B. Marine V-drive. 206,770, 1-24-67, Cl. D55—1.
Heuer, Robert W., to Evans-Aristocrat Industries, Inc. Combined chalk line marker and plumb line or similar article. 206,765, 1-24-67, Cl. D52—1.
Industrial Tool & Machine Co.: *See*—
Bianchini, Andrew F. 206,782.
Keyes Fibre Co.: *See*—
Reny, Richard E. 206,772.
Reny, Richard E. 206,773.
Reny, Richard E. 206,774.
Kirwan, Robert M. Food serving tray. 206,759, 1-24-67, Cl. D44—10.
Kirwan, Robert M. Food serving tray. 206,760, 1-24-67, Cl. D44—10.
Kirwan, Robert M. Food serving tray. 206,761, 1-24-67, Cl. D44—10.
Kirwan, Robert M. Food serving tray. 206,762, 1-24-67, Cl. D44—10.
Kirwan, Robert M. Food serving tray. 206,763, 1-24-67, Cl. D44—10.
Klimkiewicz, Daniel A., to R. A. Darby. Dog collar ornament or similar article. 206,749, 1-24-67, Cl. D12—2.
Kurtts, George J. Metal sheet. 206,769, 1-24-67, Cl. D54—2.
Lanier Electronics Laboratory: *See*—
Bolick, Fred C., Jr. 206,755.
Leufvenius, Karl J. Potato masher. 206,781, 1-24-67, Cl. D89—1.
Lodge, Charles H., Jr.: *See*—
Mable, Joseph B., and Lodge. 206,748.
Mable, Joseph B., and C. H. Lodge, Jr. Wall washing mop head or similar article. 206,748, 1-24-67, Cl. D9—2.
MacMillan, Charles W., to Bear Mfg. Co. Automotive vehicle diagnostic lane. 206,767, 1-24-67, Cl. D52—6.
Manville, George D. Combined gage and clamp. 206,766, 1-24-67, Cl. D52—6.
Maytag Co., The: *See*—
Smith, Thomas R. 206,764.
Miller Tilt-Top Trailer, Inc.: *See*—
Moll, Jack E. 206,752.
Moll, Jack E., to Miller Tilt-Top Trailer, Inc. Material handling trailer. 206,752, 1-24-67, Cl. D14—3.
Mortland, Elsie M., to Rexall Drug and Chemical Co. Pastry sheet of the like. 206,757, 1-24-67, Cl. D44—1.
Pyle, Carter, and J. M. Quigg. Sailboat. 206,775, 1-24-67, Cl. D71—1.

Quigg, Joseph M.: *See*—
Pyle, Carter, and Quigg. 206,775.
Radtke, Eldon E. Support member for a cutting board or the like. 206,758, 1–24–67, Cl. D44—1.
Reny, Richard E., to Keyes Fibre Co. Packaging tray. 206,772, 1–24–67, Cl. D58—13.
Reny, Richard E., to Keyes Fibre Co. Packaging tray. 206,773, 1–24–67, Cl. D58—13.
Reny, Richard E., to Keyes Fibre Co. Packaging tray. 206,774, 1–24–67, Cl. D58—13.
Rexall Drug and Chemical Co.: *See*—
Mortland, Elsie M. 206,757.
Richardson, George W., to Corning Glass Works. Christmas tree ornament. 206,753, 1–24–67, Cl. D29—1.
Smith, Thomas R., to The Maytag Co. Laundry appliance control panel. 206,764, 1–24–67, Cl. D49—1.
Stoddard, Meryl L. Building. 206,751, 1–24–67, Cl. D13—1.
Sundberg, Henry L., Jr.: *See*—
Diemond, Joseph, Gershman, Sundberg, and Vangsness. 206,750.
Te Industries, Inc.: *See*—
Valiulis, Stanley B. 206,771.
Valiulis, Stanley B., to Te Industries, Inc. Display box. 206,771, 1–24–67, Cl. D58—12.
Van Den Berg, Richard H., to Dimensional Products, Inc. Plaque. 206,754, 1–24–67, Cl. D29—23.
Van Den Berg, Richard H., to Dimensional Products, Inc. Paperweight. 206,776, 1–24–67, Cl. D74—12.
Vangsness, Norbert A.: *See*—
Diemond, Joseph, Gershman, Sundberg, and Vangsness. 206,750.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF JANUARY, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Dowling, Edward C. 3,200,775.
Fraley, Melvin L. 3,200,751.
Guerout, Jean-Bernard, and Lafond. 3,299,690.
Harner, Donald R., and Plaza. 3,300,750.
Abbott, Tince: *See*—
Dollgener, Robert W., Henry, and Abbot. 3,300,250.
Abex Corp.: *See*—
Rutherford, David A., and McWilliams. 3,300,197.
Abmacher, Hans. Circular saws. 3,299,778, 1–24–67, Cl. 90—11.
Abrahamsson, Axel B.: *See*—
Pernack, Frank, Miller, Krygier, and Abrahamsson. 3,299,577.
Ackermann, Karl, and R. Socha, to Robert Bosch Elektronik G.m.b.H. Lighting device. 3,299,788, 1–24–67, Cl. 95—11.
Acton, Hugh C. Wall wardrobe. 3,300,263, 1–24–67, Cl. 312—245.
Adams, William E. Method of making irregularly shaped hollow plastic bodies. 3,300,355, 1–24–67, Cl. 156—189.
Adler, Robert, to Zenith Radio Corp. Quadrupole parametric amplifier with gradual pump transition. 3,300,728, 1–24–67, Cl. 330—4.7.
Adolph Saurer Ltd.: *See*—
Birmans, Josef, and Wirz. 3,299,912.
Adsit, Frank D. Apparatus for separating crushed battery particles. 3,300,043, 1–24–67, Cl. 209—10.
Advanced Technical Products Co.: *See*—
Franks, Robert S. 3,299,537.
Aeblscher, Alfred: *See*—
Freyholdt, Helmut, and Aeblscher. 3,300,123.
Aerojet General Corp.: *See*—
Royer, Thurber W. 3,299,767.
Ahlstrom, A. Osakeyhtio: *See*—
Saresvuo, Teuvo (Teodor). 3,299,919.
Ahmer, Carl W. Quick acting clamp means. 3,300,204, 1–24–67, Cl. 269—93.
Aid Corp., The: *See*—
Watts, Max W. 3,300,171.
Air Heaters, Inc.: *See*—
Muckelrath, Ernest R. 3,299,878.
Ajax Magnethermic Corp.: *See*—
Segsworth, Robert S. 3,300,712.
Ajem Laboratories, Inc.: *See*—
Pansica, Nicholas J., Jamison, Umbricht, and Arnold. 3,299,621.
Akashi, Robert, to Franklin S. Briles, Inc. Cap nut. 3,299,933, 1–24–67, Cl. 151—7.
Aktiebolaget Pharmacia: *See*—
Flodin, Per G. M., and Ingelman. 3,300,474.
Aktiebolaget Separator: *See*—
Brunati, Enrico. 3,300,129.
Albermarle Paper Co.: *See*—
Gottwald, Bruce C., and Haigh. 3,300,364.
Alburger, James R. Method for changing and restoring the sensitivity characteristic of diluted penetrants. 3,300,642, 1–24–67, Cl. 250—71.
Alburn, Harvey E., D. E. Clark, and N. H. Grant, to American Home Products Corp. Hydantoins. 3,300,510, 1–24–67, Cl. 260—309.5.
Alco Valve Co.: *See*—
Pauli, Jude A., and Willner. 3,299,710.
Alexeff, Alexander V., and M. Zobenica, to Industrial Ovens, Inc. Vapor tight thermal insulating door. 3,299,574, 1–24–67, Cl. 49—401.
Alexeff, Alexander V., to Industrial Ovens, Inc. Splicing method and apparatus. 3,299,843, 1–24–67, Cl. 112—262.
Allan, Stewart, and W. C. Weidner, to Union Carbide Corp. Self-sizing thermochemical scarfing. 3,300,200, 1–24–67, Cl. 266—23.
Allbeson, Ernest N., and S. R. Skelton, to The Brightside Foundry & Engineering Co. Ltd. Engageable and disengageable torque-transmitting connections. 3,299,670, 1–24–67, Cl. 64—8.
Alleaume, Jean, to Technigaz. Corrugated sheet-like yieldable wall element. 3,299,598, 1–24–67, Cl. 52—573.
Allen, R. C., Business Machines, Inc.: *See*—
Huisinga, Martin. 3,299,522.
Allen-Bradley Co.: *See*—
Schlicke, Heinz M. 3,300,738.
Alletru, Jean L., to Societe Anonyme Etablissements Bresson-Faille-Marchand. Ultra-sensitive re-setting electro-magnetic trip device. 3,300,743, 124–67, Cl. 335—176.
Allied Chemical Corp.: *See*—
Baltakmens, Gotlibs, and Tourish. 3,300,397.
Gerson, Herman, and Bachman. 3,300,512.
Martin, Calvin L., and Bolger. 3,299,747.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Boksjo, Carl I. 3,300,684.
Lindstrom, Olle. 3,299,861.
Allwardt, Robert K.: *See*—
Harrington, John A., Allwardt, Porter, and Wass. 3,299,455.
Alper, Stanley, to General Electric Co. Multiple engine control. 3,299,630, 1–24–67, Cl. 60—39.15.
Aluminum Co. of America: *See*—
Close, Frederick J. 3,300,080.
Alvarez, Luis W., to Optical Research and Development. Optical range finder with variable-angle exponential prism. 3,299,768, 1–24–67, Cl. 88—2.4.
Amcodyne & Co.: *See*—
Ross, Gene W. and D. S. 3,300,392.
American Bosch Arma Corp.: *See*—
McMillen, Bobby E. 3,300,704.
American Can Co.: *See*—
Hardy, Paul W., and Peisker. 3,300,296.
American Cyanamid Co.: *See*—
Baechtold, Robert L. 3,300,546.
Berkelhammer, Gerald, and Young. 3,300,529.
May, Donald R. 3,300,281.
Schmidt, George H. 3,300,428.
Webneh, Donald C. 3,300,375.
American Home Products Corp.: *See*—
Alburn, Harvey E., Clark, and Grant. 3,300,510.
Bell, Stanley C., and Childress. 3,300,481.
American-Lincoln Corp.: *See*—
Burgoon, Jack L. 3,299,460.
American Machine & Foundry Co.: *See*—
Dearsley, George. 3,299,895.
American Monorail Co., The: *See*—
McEachern, Loyd R. 3,299,463.
American Motors Corp.: *See*—
Kishline, Floyd R. 3,300,229.
Puidokas, Stanley V. 3,299,736.
American Radiator & Standard Sanitary Corp.: *See*—
Grahl, Darwin R. 3,300,182.
Hart, Atlee S., and Mallett. 3,299,627.
Kozel, James A. 3,300,175.
Sullivan, Alfred D. 3,299,660.
Wessel, Lloyd E. 3,299,895.
Wolcott, David A. 3,299,907.
American Smelting and Refining Co.: *See*—
Phillips, Albert J., and Baier. 3,299,940.
Ames, Geoffrey R., to United States of America, Agriculture. Surface active compositions containing mixtures of mono and di-alkyloxymethyl ethers of sugar. 3,300,413, 1–24–67, Cl. 252—351.
Ametek, Inc.: *See*—
Husted, Lawrence E. 3,299,545.
Ampex Corp, The: *See*—
Wickham, Donald G., and Im. 3,300,411.
Zuccaro, Salvadore J. 3,300,652.
Amra, Lutfi H.: *See*—
Pugh, John W., Amra, and Hurd. 3,300,285.
Amsted Industries Inc.: *See*—
Whitacre, Elroy G. 3,299,853.
Woodburn, James, Jr., and Ver Halen. 3,299,480.
Anaconda Aluminum Co.: *See*—
Neal, Harry B., and Brown. 3,299,596.
Anaconda Wire and Cable Co.: *See*—
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Anderson, Albert E.: *See*—
Kennard, Kenneth C., and Anderson. 3,300,310.
Kennard, Kenneth C., and Anderson. 3,300,311.
Anderson, Axel B., to F. L. Smidth & Co. Apparatus for the heat treatment of finely divided materials. 3,300,199. 1–24–67, Cl. 266—9.
Anderson, Marvin M. Ice hole reamer and lifter. 3,299,970, 1–24–67, Cl. 175—18.
Anderson, Olof V., to Anson, Inc. Dual key clasp. 3,299,679, 1–24–67, Cl. 70—459.
Andrea, Karl-Heinz, H.-H. Steinbach, and K. Damm, to Farbenfabriken Bayer Aktiengesellschaft. Foamed materials from polyepoxy compounds. 3,300,418, 1–24–67, Cl. 260—2.5.
Anfinsen Plastic Molding, Inc.: *See*—
Chmela, John F. 3,300,106.
Angeles Metal Trim Co.: *See*—
Cable, Daniel K. 3,299,592.
Angelo, Nicholas C. Broiling and roasting apparatus. 3,299,600, 1–24–67, Cl. 99—417.
Anglo American Corp. of South Africa Ltd.: *See*—
Flint, Noel. 3,300,299.
Anner, Georg, and J. Kalvoda, to Ciba Corp. Androstanopyrazoles. 3,300,486, 1–24–67, Cl. 260—239.5.
Anner, Georg, and J. Kalvoda, to Ciba Corp. 2-hydroxymethylene-7α-methyl androstanes. 3,300,520, 1–24–67, Cl. 260—397.4.
Anner, Georg, and P. Wieland, to Ciba Corp. 7-methyl-16-methylene-Δ4-estrene derivatives. 3,300,521, 1–24–67, Cl. 260—397.4.
Anson, Inc.: *See*—
Anderson, Olof V. 3,299,679.
Anthony, Russel W.: *See*—
Motz, Carl H., and Anthony. 3,299,520.
Anthony, Russel W., to National Broach & Machine Co. Gear checker. 3,299,521, 1–24–67, Cl. 33—179.5.
Anthony, Russel W., to National Broach & Machine Co. Expanding arbors. 3,299,753, 1–24–67, Cl. 82—44.
Antoine Francois Regis Pevron: *See*—
Aron-Brunetiere, Robert R. A. G., and Aron. 3,300,386.

Apfelbeck, Ludwig, to Bayerische Motoren Werke A.G. Valve control for internal combustion engines. 3,299,871, 1–24–67, Cl 123—90

Apotheker, David, to E. I. du Pont de Nemours and Co. Xanthogen disulfide and amine preparation of polychloroprene. 3,300,433, 1–24–67, Cl. 260—29.7.

Arboladura, Pedro B. Holder for spinning top. 3,299,563, 1–24–67, Cl. 46—72.

Archer-Daniels-Midland Co.: *See*—
Dustin, Daniel S., and Sigan. 3,300,408.

Arden, Dean N., ⅓ to R. H. Rines. Apparatus for real-time multiplication. 3,300,627, 1–24–67, Cl. 235—160.

Armco Steel Corp.: *See*—
Bard, Albert L., and Weed. 3,299,682.
Purdy, Richard W. 3,300,141.

Armour, Walter B., and R. A. Fass, to National Starch and Chemical Corp. Chromic acetate-2,4,6-trimethylphenol reaction product as waterproofing additive for vinyl acetate polymers. 3,300,430, 1–24–67, Cl. 260—29.6.

Arnold, Gerald D., and A. H. Eppler. Dehydrator and method of dehydration particularly for grains. 3,299,526, 1–24–67, Cl. 34—12.

Arnold, Lloyd L. Multilevel building structure with plural suspended revolving compartment units and method of making same. 3,299,588, 1–24–67, Cl. 52—65.

Arnold Orian M.: *See*—
Panzica, Nicholas J., Jamison, Umbricht, and Arnold. 3,299,621.

Aron, Claude F. S. A.: *See*—
Aron-Brunetiere, Robert R. A. G., and Aron. 3,300,386.

Aron-Brunetiere Robert R. A. G., and C. F. S. A. Aron, 40% to Antoine Francois Regis Peyron. Method of selecting emulsions intenced for the preparation of cosmetics and skin products. 3,300,386, 1–24–67, Cl. 167—84.5.

Aronson, David, and B. F. Harris, to Worthington Corp. Solution cooler for an absorption refrigeration system. 3,299,667, 1–24–67, Cl. 62—476.

Arrigo, Joseph T. to Universal Oil Products Co. p-(N-cyanoalkyl-N-hydrocarbylamino)-benzenediazonium chlorides. 3,300,471, 1–24–67, Cl. 260—142.

Artnell Co.: *See*—
Dome, Edwin C. 3,299,447.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Wakasa, Ryoichi, Kominami, and Ishii. 3,300,528.

Ashworth-McDade, Inc.: *See*—
Ashworth, Thomas, Jr. 3,299,474.

Ashworth, Thomas, Jr., to Ashworth-McDade, Inc. Quick change apparatus for extrusion dies. 3,299,474, 1–24–67. Cl. 18—12.

Associated Electrical Industries Ltd.: *See*—
Flursheim, Cedric H., and Roxburgh. 3,300,609.

Atkinson, Robert F., to Plumbing & Heating Ltd. Pipe cutting device. 3,300,201, 1–24–67, Cl. 266—23.

Atlas Pacific Engineering Co.: *See*—
Ellis, Robert G. 3,300,033.

Atlas-Werke Aktiengesellschaft: *See*—
Ziehm, Gunther. 3,300,783.

Atwater, Franklin S., to Fafnir Bearing Co. Method of making a convex spherical surface on a bearing ring or the like. 3,299,583, 1–24–67, Cl. 51—289.

Aughey, Robert M.: *See*—
Himes, Don I., and Aughey. 3,300,582.

Ault Inc.: *See*—
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Automatic Electric Laboratories, Inc.: *See*—
Smyrnos, Gus J. 3,300,623.

Automatic Switch Co.: *See*—
Dalen Bernard B. 3,300,650.

Automation Industries, Inc.: *See*—
Callihan, Robert E. 3,300,688.

Avco Corp.: *See*—
Willmann, Donald F. 3,300,011.

Avery Products Corp.: *See*—
Turner, Stanley. 3,300,543.

Avila, Jesse. Chimney anchor strap. 3,299,593, 1–24–67, Cl. 52—219.

Aviolanda Maatschappij voor Vliegtuigbouw N.V., Papendrecht: *See*—
Booij, Jan G. 3,300,027.

Axe, Daniel E., and D. W. Remick, to O. M. Edwards Co., Inc. Car washing apparatus. 3,299,901, 1–24–67, Cl. 134—123.

Ayala, Carl: *See*—
Glass, Marvin I., Ayala, and Barlow. 3,299,762.
Glass, Marvin I., Ayala, and Barlow. 3,299,763.

Ayling, Robert W.: *See*—
Harnish, James R., and Ayling. 3,299,661.

Baatz, Richard J. Fence post insulator. 3,300,577, 1–24–67, Cl. 174—163.

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Babcock & Wilcox, Ltd.: *See*—
Franzmann, Karl. 3,299,858.

Bachman, William E.: *See*—
Gerson, Herman, and Bachman. 3,300,512.

Bachus, Benson F., to Western Electric Co., Inc. Method of making cellular articles. 3,300,554, 1–24–67, Cl. 264—47.

Bacon, Roger J., to FMC Corp. Articulated vehicle with pivotable frame steering. 3,299,982, 1–24–67, Cl. 180—52.

Badger, George M. W., to Varian Associated. Phase shift beam tube neutralizer and modulator. 3,300,735, 1–24–67, Cl. 332—7.

Badgett, Charles O., to Industrial Nucleonics Corp. Control apparatus for material mixers. 3,300,193, 1–24–67, Cl. 250—154.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
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Schmid, Karl, Stedefeder, John, Haeberle, Lautenschlager, and Trieschmann. 3,300,467.
Hamprecht, Guenther, Vogel, Schwartzmann, and Mohr. 3,300,492.
Hamprecht, Guenther, Fromm, Schwartzmann, and Rother. 3,300,493.

Baechtold, Robert L., to American Cyanamid Co. Water soluble envelope prepared from a graft polymer of alkyl acrylate on a polyvinyl alcohol/polyvinyl acetate co-polymer. 3,300,546, 1–24–67, Cl. 260—876.

Baehr, Michel. Method for forming plastic tube bottoms. 3,300,559, 1–24–67, Cl. 264—323.

Baer, Herman W., to Phillips Petroleum Co. Container inverter. 3,300,064, 1–24–67, Cl. 214—1.

Baer, Massimo, to Monsanto Co. Blends of polystyrene and a graft copolymer of a styrene-methyl methacrylate type mixture on a rubbery polymer of a conjugated 1,3-diene. 3,300,545, 1–24–67, Cl. 260—876.

Bailey, Gilbert R., and A. Simkovich, to Latrobe Steel Co. Apparatus for measuring molten metal levels in ladles. 3,299,706, 1–24–67, Cl. 73—304.

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Baird, Ida: *See*—
Baird, William, and Parkinson. 3,300,515.

Baird, William (deceased, by I. Baird, executrix), and A. Parkinson, to Imperial Chemical Industries Ltd. Stabilized bis- and tris-(B-sulfatoalkyl) sulfonium inner salts. 3,300,515, 1–24–67, Cl. 260—327.

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Baldwin-Lima-Hamilton Corp.: *See*—
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Ballard, Charles U. Fluid system venting and filling. 3,299,637, 1–24–67, Cl. 60—54.5.

Bally, Alexander O., and D. J. S. Wardale, to Corning Glass Works. Gas-fired radiant burner. 3,299,938, 1–24–67, Cl. 158—7.5.

Baltakmens, Gotlibs, and J. P. Tourish, to Allied Chemical Corp. Electrolytic production of metallic fluoborates. 3,300,397, 1–24–67, Cl. 204—94.

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Bamford, Joseph C. 3,300,061.

Bamford, Joseph C., to J. C. Bamford (Excavators) Ltd. Mast 3,300,061, 1–24–67, Cl. 212—144.

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McCollum, Burton, and Rowe. 3,300,753.

Bannister, Brian, to The Upjohn Co. Lincosamine and celestosamine derivatives and process for preparing same. 3,300,475, 1–24–67, Cl. 260—210.

Baptie, Alexander L., and G. G. Miles, to Microcard Corp. Machine for enlarging of printed microphotographs. 3,299,776, 1–24–67, Cl. 88—24.

Bard, Albert L., and W. B. Weed, to Armco Steel Corp. Apparatus for manufacturing treated grinding rods. 3,299,682, 1–24–67, Cl. 72—100.

Bard, C. R., Inc.: *See*—
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Barlow, Gordon A.: *See*—
Glass, Marvin I., Ayala, and Barlow. 3,299,762.
Glass, Marvin I., Ayala, and Barlow. 3,299,763.

Barrot, Paul M. E.: *See*—
Lemardeley, Claude Y. L., and Barrot. 3,300,149.

Barsam, Arthur, Sr., and A. Barsam, Jr., to Cinex Inc. Rotary drive apparatus for rewind mechanisms. 3,299,730, 1–24–67, Cl. 74—421.

Barsam, Arthur, Jr.: *See*—
Barsam, Arthur, Sr., and A. Barsam, Jr. 3,299,730.

Basch, Robert, G.m.b.H.: *See*—
Cypra, Arne, Haentzschel, Munk, and Winter. 3,300,695.

Batchel, Kenneth E., to Goodyear Aerospace Corp. Multiple response resolver apparatus. 3,300,762, 1–24–67, Cl. 340—172.5

Battenfeld, Werner, and E. Langecker. Method of producing hollow bodies in a blowing process. 3,300,556, 1–24–67, Cl. 264—98.

Batur, Eugene H., to Future Products Tool Corp. Oil deficiency indicator. 3,300,769, 1–24–67, Cl. 340—270.

Bauer, Donald R., to Kaiser Gypsum Co., Inc. Fire-resistant building board and process. 3,300,372, 1–24–67, Cl. 162—145.

Bauer, Klaus: *See*—
Van Winsen, Friedrich H., and Bauer. 3,300,232.

Baum, Bernard O., G. M. Bryant, and N. L. Zutty, to Union Carbide Corp. Polyolefins containing copolymers of ethylene and N-vinyl-N-hydrocarbyl acetamides. 3,300,548. 1–24–67, Cl. 260—897.

Bayer, John W., and E. Santiago, to Owens-Illinois Glass Co. Polymerization catalyst containing an organosilazane. 3,300,465, 1–24–67, Cl. 260—93.7.

Bayerische Motoren Werke A.G.: *See*—
Apfelbeck, Ludwig. 3,299,871.

Bayerlein, Friedrich, and H. Wilhelm, to Badische Anilin & Soda-Fabrik Aktiengesellschaft. Production of expanded polyamides. 3,300,422, 1–24–67, Cl. 260—2.5.

Beddoes, John M., to Canadian Westinghouse Co., Ltd. Voltage sensing circuit. 3,300,689, 1–24–67, Cl. 317—148.5.

Beerli, Karl, to Spindel-Motoren- und Maschinenfabrik A.G. Device for securing a spindle rotor to bearing means. 3,299,625, 1–24–67, Cl. 57—132.

Behnke, George W., and H. A. Wirth, to Simplicity Engineering Co. Crusher apparatus. 3,300,152, 1–24–67, Cl. 241—275.

Belak, Steven G.: *See*—
Bozzelli, Andrew J., Belak, and Campbell. 3,300,293.

Bell Aerospace Corp.: *See*—
Perkins, Alaadin N. 3,300,707.

Bell, Stanley C., and S. J. Childress, to American Home Products Corp. Process for the preparation of 5-thienyl-1,3-dihydro-2H-1,4-benzodiazepin-2-one-4-oxides. 3,300,481, 1–24–67, Cl. 260—239.3.

Bell Telephone Laboratories, Inc.: *See*—
Davis, Claude G., Sumner, and Thomas. 3,300,578.
Boyd, Gary D., and Porto. 3,300,653.
Miller, Robert A., and Taris. 3,300,701.

Bellar, Oscar, 35% to T. Dalby. Variable electrical resistance device. 3,300,747, 1–24–67, Cl. 338—148.

Beltz, John P., to Radio Corp. of America. Character reader document sorter. 3,300,045, 1–24–67, Cl. 209—111.7.

Beltz, John P., to Radio Corp. of America. Character reader utilizing on-the-fly identification of character feature signals. 3,300,757, 1–24–67, Cl. 340—146.3.

Bendy, Wilfred R., to Bendy Engineering Co. Method and apparatus for rotary kiln control with a calcining rate meter. 3,300,196, 1–24–67, Cl. 263—32.

Bendix Corp., The: *See*—
Digby, James J. 3,300,006.
Mendenhall, Charles A. 3,300,008.
Tresselt, Carl P. 3,300,715.

Bendy Engineering Co.: *See*—
Bendy, Wilfred R. 3,300,196.

Benkler, Walter V.: *See*—
Yazejian, Zaven, Fuld, and Benkler. 3,300,017.

Bennecke, David C. Fishing lure. 3,299,562, 1–24–67, Cl. 43—42.17.

Bennett, Royston H., and G. Fuller, to The National Smelting Co. Ltd. Fluorination of perhalocompounds. 3,300,537, 1–24–67, Cl. 260—649.

Benoit, Gerard, Ferdy Mayer, and Franz Mayer, and P. Thomas. Electrical connectors. 3,300,752, 1–24–67, Cl. 339—253.

Bensimon, Jacques, to CSF-Compagnie Generale de Telegraphie Sans Fil. Thermionic energy converter with photon ionization. 3,300,660, 1–24–67, Cl. 310—4.

Benson, Carl F., to The Torrington Co. Full complement roller radial thrust bearing. 3,300,261, 1–24–67, Cl. 308—212.

Benz, Erwin. Elastic closure for a container opening. 3,300,073, 1–24–67, Cl. 215—42.

Berger, Bernard A., to Northern Electric Co. Ltd. Apparatus for component assembly. 3,299,494, 1–24–67, Cl. 29—203.

Berger, Jacob: *See*—
Gottfried, Louis, and Berger. 3,299,450.

Berkelhammer, Gerald, and R. W. Young, to American Cyanamid Co. Alkylenesulfonamides and method of preparing same. 3,300,529, 1–24–67, Cl. 260—556.

Bernard, George G., to Union Oil Co. Method of using a foaming agent in a cementing process. 3,299,953, 1–24–67, Cl. 166—29.

Bernhardt Daniel. Sandwich wrapper-sealer. 3,299,612, 1–24–67, Cl. 53—210.

Bergy, Malcolm E., J. H. Coats, L. J. Hanka, and L. E. Johnson, to The Upjohn Co. Kalamycin and method for preparation. 3,300,382, 1–24–67, Cl. 167—65.

Berliner, Martin. Ash receiver. 3,300,079, 1–24–67, Cl. 220—20.5.

Bernardi, Luigi, and R. De Castiglione, to Societa Farmaceutici Italia. L-lysyl-L-phenylalanyl-L-isoleucyl-glycyl-L-leucyl-L-methioninamide. derivatives thereof and intermediates in the preparation thereof. 3,300,469, 1–24–67, Cl. 260—112.5.

Bertholf, Lawrence A. Pontoon structure. 3,299,847, 1–24–67, Cl. 114—.5.

Bertolini, William A., and J. J. A. Hall, to Pullman Inc. Apparatus for selectively positioning vehicle suspension. 3,300,228 1–24–67, Cl. 280—81.

Bertsch, Richard, and J. Heinzelmann, to Robert Bosch G.m.b.H. Valve-operating mechanism for internal combustion engines. 3,299,870, 1–24–67, Cl. 123—90.

Bessarab, Michael, to General Electric Co. Adjustable magnet for a magnetron. 3,300,681, 1–24–67, Cl. 315—39.71.

Beurtheret, Charles A. E., to Compagnie Francaise Thomson Houston-Hotchkiss Brandt. Device for evaporative cooling of bodies, and particularly power vacuum tubes. 3,299,949, 1–24–67, Cl. 165—185.

Bevington, Kenneth A. Tube chamfering and finishing device. 3,299,488, 1–24–67, Cl. 29—57.

Bezaguet, Janine N. L., and A. J. Judeinstein, to International Standard Electric Corp. Data storage system. 3,300,624, 1–24–67, Cl. 235—92.

Bild, Frederick, and W. Robinson, to Imperial Chemical Industries Ltd. Manufacture of plastic tubes. 3,300,555, 1–24–67, Cl. 264—95.

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Wilde, Geoffrey L., Bill, and Coplin. 3,299,632.

Bingham, Richard. Weed killing apparatus. 3,299,842, 1–24–67, Cl. 111—7.2.

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Stevens, Harold E., and Lesyk. 3,300,737.

Bird Machine Co.: *See*—
Baker, Donald B., and Nelson. 3,300,374.

Birk, Ted W. Rotary internal combustion engine. 3,299,866, 1–24–67, Cl. 123—17.

Birmans, Josef, and A. Wirz, to Adolph Saurer Ltd. Suction system for tensioning weft. 3,299,912, 1–24–67, Cl. 139—194.

Birmingham Small Arms Co. Ltd., The: *See*—
Scott, Harold R., Davis, and Fogaty. 3,300,598.

Bishop, Thomas D., to The Deritend Engineering Co. Ltd. Apparatus for treating blanks or webs of material. 3,299,801, 1–24–67, Cl. 100—168.

Bissot, Thomas C., to E. I. du Pont de Nemours and Co. Acrylonitrile synthesis. 3,300,527, 1–24–67, Cl. 260—465.3.

Bitzer, Martin, to Trico Products Corp. Intermittent dwell windshield wiper system. 3,299,723. 1–24–67, Cl. 74—125.5.

Bjorndal, Oystein. Hydraulic pump. 3,299,825, 1–24–67, Cl. 103—126.

Black, John W., Jr. Device for flattening cans. 3,299,802, 1–24–67, Cl. 100—233.

Black, Lawrence W., 24½% each to J. Paradiso and H. D. Hester. Process for reclaiming soiled solvent in situ. 3,300,405, 1–24–67, Cl. 210—21.

Blackwell, Roy N., Jr. Hose coupling device. 3,300,235, 1–24–67, Cl. 285—33.

Blank, William. Steam pressing iron. 3,299,549, 1–24–67, Cl. 38—77.

Blanks, Ronald F., and D. R. Blaskett, to The Broken Hill Associated Smelters Proprietary Ltd. Method for the treatment of zinciferous metallurgical slags and apparatus therefor. 3,300,300, 1–24–67, Cl. 75—77.

Blase, Helmut, to Rheinstahl Union Bruckenbau A.G. Control arrangement. 3,300,190, 1–24–67, Cl. 254—187.

Blaskett, Donald R.: *See*—
Blanks, Ronald F., and Blaskett. 3,300,300.

Blattmann & Co.: *See*—
Christoffel, Cla, Borel, and Blumenthal. 3,300,473.

Blattner, Robert F.: *See*—
Nardone, Anthony J., and Blattner. 3,299,792.

Blechman, Gilbert. Ventilating cushion. 3,300,252, 1–24–67, Cl. 297—453.

Bleloch, William, to Rand Mines Ltd. Process for the production of extra low carbon stainless steel. 3,300,302, 1–24–67, Cl. 75—130.5.

Blise, Bernard G., and W. Friedeck, to Simmons Co. Sofa bed. 3,299,446, 1–24–67, Cl. 5—22.

Blok, Dirk E., to Hunter Douglas International (Quebec) Ltd. Structural panel. 3,299,602, 1–24–67, Cl. 52—478.

Blomquist, Arthur G., L. Larsen, M. C. Neuman, and P. G. Wermager. Miniature interlock switch. 3,300,600, 1–24–67, Cl. 200—50.

Blount, Luther H. Control for trawler winches. 3,300,189, 1–24–67, Cl. 254—185.

Blum, Louis, and W. J. Horgan, Jr., to Blumcraft of Pittsburgh. Ornamental railing structure. 3,300,192, 1–24–67, Cl. 256—65.

Blumcraft of Pittsburgh: *See*—
Blum, Louis, and Horgan. 3,300,192.

Blumenthal, Artur: *See*—
Christoffel, Cla., Borel, and Blumenthal. 3,300,473.

Boadle, Campbell D., and D. J. Morgan, to Girling Ltd. Compact vehicle weighbridge with transverse and horizontal restraint. 3,299,976, 1–24–67, Cl. 177—134.

Bobrowski, Louis G., to The Stanley Works. Power-actuated door assembly. 3,299,576, 1–24–67, Cl. 49—501.

Bode, Donald E.: *See*—
Zemel, Jay N., and Bode. 3,300,644.

Bodine, Albert G., Jr. Mechanical sonic vibration generator with frequency step-up characteristic. 3,299,722, 1–24–67, Cl. 74—87.

Boehringer Ingelheim G.m.b.H.: *See*—
Seeger, Ernst. 3,300,502.
Zelle, Karl, Hauptmann, and Stahle. 3,300,511.

Boeing Co., The: *See*—
Tershin, John A., and Howells. 3,300,349.
Weishaar, Robert J. 3,300,683.
Bystrom, Albin, Hill, and Williams. 3,300,768.

Boes, David J., and L. E. Moberly, to Westinghouse Electric Corp. Electrically conductive solid lubricant members and process and apparatus employing them. 3,300,667, 1–24–67, Cl. 310—228.

Bofors, Aktiebolaget: *See*—
Gustafsson, Nils I. E., and Odelberg. 3,299,717.

Bohme Fettchemie G.m.b.H.: *See*—
Plapper, Jurgen, and Krause. 3,300,525.

Bohner, William R., to The Electric Storage Battery Co. Dust guard for spectacles. 3,299,439, 1–24–67, Cl. 2—13.

Boise Cascade Corp.: *See*—
Schauer, Marvin L. 3,300,115.

Boksjo, Carl I., to Allmanna Svenska Elektriska Aktiebolaget. Mercury arc rectifier for current converter. 3,300,684, 1–24–67, Cl. 315—323.

Bolger, John C.: *See*—
Martin, Calvin L., and Bolger. 3,299,747.

Bolliger, Hans, to E. Mettler-Muller A.G. Vending machine for thread spools and other substantially spool-like articles. 3,300,015. 1–24–67, Cl. 194—2.

Bond, Raymond L., F. J. Pinchin, and M. J. Jenkins, to United Kingdom Atomic Energy Authority. Method of forming graphite articles. 3,300,550, 1–24–67, Cl. 264—29.

Boodman, Isaac S.: *See*—
Buck, Richard M., and Boodman. 3,300,617.

Booe, James M., to P. R. Mallory & Co., Inc. Seal structure in electrolytic device including disc-members and anode spacer. 3,300,692, 1–24–67, Cl. 317—230.

Booij, Jan G., to Aviolanda Maatschappij voor Vliegtuigbouw N.V., Papendrecht. Installation for unloading a number of holders. 3,300,027, 1–24–67, Cl. 198—143.

Booth, John S. Forced draft refrigerator. 3,299,664, 1–24–67, Cl. 62—419.

Bopp, Warren G., T. F. Knapp, and M. L. Oilman, to Dura Corp. Transaxle assembly for electric motor and gas engine driven golf carts. 3,300,698, 1–24–67, Cl. 318—139.

Borel, Eric A.: *See*—
Christoffel, Cla, Borel, and Blumenthal. 3,300,473.

Borg-Warner Corp.: *See*—
Rezin, Leonard A. 3,299,665.
Hopkins, Neil E., and Osborn. 3,299,666.
Bosch, Robert, Elektronik G.m.b.H.: *See*—
Ackermann, Karl, and Socha. 3,299,788.
Bosch, Robert, G.m.b.H.: *See*—
Bertsch, Richard, and Heinzelmann. 3,299,870.
Boschi, Giorgio: *See*—
Natta, Giulio, Mazzanti, and Boschi. 3,300,459.
Bouchard, Constant L., to Ford Motor Co. Engine intake manifold air driven compressor. 3,299,629, 1-24-67, Cl. 60—30.
Bouche, Walter J. Bench. 3,300,246, 1-24-67, Cl. 297—232.
Boucraut, Michel, and I. Toth, to Institut de Recherches de la Siderurgie Francaise. Heat transfer apparatus. 3,299,947, 1-24-67, Cl. 165—104.
Boucraut, Michel, and I. Toth, to Institut de Recherches de la Siderurgie Francaise. Method and apparatus for roasting ores. 3,300,295, 1-24-67, Cl. 75—1.
Bourhenne, Francis K.: *See*—
Ramsing, Robert E. V., and Bourhenne. 3,300,605.
Bourne, Joseph R.: *See*—
Eisberg, Keith V., and Bourne. 3,299,652.
Eisberg, Keith V., and Bourne. 3,299,668.
Bower, Alvin L. Movable wall coke oven. 3,300,391, 1-24-67, Cl. 202—105.
Bowers, Albert: *See*—
Villotti, Riccardo, and Bowers. 3,300,517.
Bowles, Andrew D., and P. W. Wise. Ventilator. 3,300,122, 1-24-67, Cl. 230—127.
Bowman, George S., and N. P. Erkel, Jr., to Westinghouse Air Brake Co. Brake and propulsion control system for automated trains. 3,300,639, 1-24-67, Cl. 246—182.
Boyd, Gary D., and S. P. S. Porto, to Bell Telephone Laboratories, Inc. Phase-matched Raman radiation amplifier and oscillator. 3,300,653, 1-24-67, Cl. 307—88.3.
Boyd, Gordon A.: *See*—
Jackson, John P., and Boyd. 3,299,829.
Boyles, Robert L., to General Electric Co. Toothbrush power handle assembly. 3,300,664, 1-24-67, Cl. 310—50.
Bozzelli, Andrew J., S. G. Belak, and R. H. Campbell, to Sun Oil Co. Slow release fertilizer comprising a dispersion of urea-wax adduct in wax, and method of making. 3,300,293, 1-24-67, Cl. 71—28.
Bracey, Kenneth E. G.: *See*—
Coplin, John F., Taylor, Petrie, and Bracey. 3,299,961.
Brancato, Jack J.: *See*—
Orsino, Joseph A., Herman, and Brancato. 3,300,329.
Branch, Maurice C.: *See*—
Knight, Ronald G., and Branch. 3,300,587.
Brauchle, Herbert C.: *See*—
Ruminsky, Paul P. 3,299,499.
Bray, Donald T., L. D. La Grange, U. Merten, and C. D. Park, to General Dynamics Corp. Fuel cell having zirconia-containing electrolyte and ceramic electrodes. 3,300,344, 1-24-67, Cl. 136—86.
Bregi, Benjamin F., D. P. Bush, and E. Z. Krygier, to National Broach & Machine Co. Apparatus for trimming grinding wheels. 3,299,578, 1-24-67, Cl. 51—5.
Bretschneider, Gunther, and F. Sperr, to Deutsche Gold-und Silber-Scheideanstalt vormals Roessler. Process for solubilising vanadium values. 3,300,276, 1-24-67, Cl 23—15.
Brevetti Omnitec: *See*—
Straub, Carl. 3,300,604.
Brickson, Thomas B., to Kliklok Corp. Folding box machines. 3,299,614, 1-24-67, Cl. 53—376.
Brigante, Robert F. Dental teaching device. 3,299,512, 1-24-67, Cl. 32—71.
Briggs, Stephen F., and J. F. Nemechek. Valve operating lifter and valve train lubricator. 3,299,986, 1-24-67, Cl. 184—6.
Brigham, Ward E., and R. L. Eckert, to Sun Chemical Corp. Transfer assembly for use with high speed can decorating machines. 3,300,019, 1-24-67, Cl. 198—25.
Brightside Foundry & Engineering Co. Ltd., The: *See*—
Allbeson, Ernest N., and Skelton. 3,299,670.
Brignac, Edmond P., to Monsanto Co. Process for production of polycarbonamides. 3,300,449, 1-24-67, Cl. 260—78.
Briles, Franklin C., Inc.: *See*—
Akashi, Robert. 3,299,933.
Bristol-Myers Co.: *See*—
Juby, Peter F. 3,300,496.
British Aircraft Corp. ("E" Nominees) Ltd.: *See*—
Tarr, Richard J. C. 3,300,777.
British Columbia Research Council: *See*—
Risk, James B., and Murray. 3,300,282.
Broersma, Robert J., and E. M. Reimer, to Wolverine Shoe & Tanning Corp. Skinning machine and method. 3,299,926, 1-24-67, Cl. 146—241.
Broken Hill Associated Smelters Proprietary Ltd., The: *See*—
Blanks, Ronald F., and Blaskett. 3,300,300.
Brousseau, Jean-Luc: *See*—
Brousseau, Lucien. 3,300,770.
Brousseau, Lucien and J.-L. Robbery alarm system. 3,300,770, 1-24-67, Cl. 340—280.
Brown, Boveri & Cie Aktiengesellschaft: *See*—
Schonhuber, Max-Josef. 3,300,574.
Brown, Cicero C. Multiple string well packer. 3,299,959, 1-24-67, Cl. 166—120.
Brown, David: *See*—
Maynard, Owen E. T., Brown, Olling, and Mason. 3,300,162.
Brown, Edward A., and R. A. Mikulec, to G. D. Searle & Co. 3-oxygenated 17β-oxy-17α-pregnen-20-yn-21-yltri (alkyl/aryl) silanes and congeneric 3-desoxy-3,5-dienes. 3,300,523, 1-24-67, Cl. 260—397.4.
Brown, Gerald H., and E. D. Mazzarella, to National Starch and Chemical Corp. Antimony oxide-vinylidene chloride copolymer emulsions. 3,300,432, 1-24-67, Cl. 260—17.
Brown, Gordon E., to Monsanto Co. Method for overlaying wood particle board. 3,300,361, 1-24-67, Cl. 156—335.
Brown, Jack A., to Varian Associates. High frequency electron discharge device tuning means having means to convert from rotational to reciprocating motion. 3,300,679, 1-24-67, Cl. 315—5.47.
Brown, John F., to Whittaker Corp. Rocket nozzle capable of inducing flow separation. 3,300,142, 1-24-67, Cl. 239—265.15.
Brown, Raymond P.: *See*—
Neal, Harry B., and Brown. 3,299,596.
Browning, Iben. Apparatus for producing parallel light. 3,300,266, 1-24-67, Cl. 350—96.
Browning, William W.: *See*—
Tuttle, Alan H., and Browning. 3,300,180.
Brotzmann, Karl, to Dortmund-Horder Huttenunion Aktiengesellschaft. Continuous casting of metal melts. 3,299,481, 1-24-67, Cl. 22—200.1.
Bruenn, Robert P. Positive crankcase ventilation system. 3,299,873, 1-24-67, Cl. 123—119.
Brunati, Enrico, to Aktiebolaget Separator. Centrifugal separator of vacuum type. 3,300,129, 1-24-67, Cl. 233—1.
Brunswick Corp.: *See*—
Cornell, William D. 3,300,212.
Bry, Thomas S.: *See*—
Fried, John, Bry, and Patchett. 3,300,518.
Bryans, David F.: *See*—
Toper, Walter B., and Bryans. 3,299,796.
Bryant, George M.: *See*—
Baum, Bernard O., Bryant, and Zutty. 3,300,548.
Bucheimer-Clark Leather Goods Corp.: *See*—
Clark, Earl J. 3,300,109.
Budesinsky, Zdenek: *See*—
Perina, Zdenek, Bydzovsky, and Budesinsky. 3,300,495.
Buck, Richard M., and I. S. Boodman, to Westinghouse Electric Corp. Method for metals joining. 3,300,617, 1-24-67, Cl. 219—117.
Budnowski, Manfred, to Henkel & Cie. G.m.b.H. Process for the preparation of crystalline trigylcidyl isocyanurate. 3,300,490, 1-24-67, Cl. 260—248.
Budzich, Mieczyslaw, and E. C. Hardesty, to Western Electric Co., Inc. Method of and apparatus for sorting coiled articles. 3,300,044, 1-24-67, Cl. 209—81.
Budzich, Tadeusz. Inflatable bag fluid dispensing device. 3,300,102, 1-24-67, Cl. 222—386.5.
Bunker-Ramo Corp., The: *See*—
Koerner, Ralph J., and Schneberger. 3,300,766.
Davis, John S., and Wells. 3,300,767.
Burckhalter, Joseph H., to The Regents of the University of Michigan. 6-azasteroids. 3,300,501, 1-24-67, Cl. 260—289.
Burgoon, Jack L., to American-Lincoln Corp. Floor cleaning machine. 3,299,460, 1-24-67, Cl. 15—49.
Burke, George K., to Burron Medical Products, Inc. Tube compressor having incremental steps of flow adjustment. 3,299,904, 1-24-67, Cl. 137—315.
Burkley, Ralph A., D. C. Cully, and J. L. Folk, to Goodyear Aerospace Corp. Transparent laminates comprising nonrigid, deformable, thermosetting, resinous adhesive interlayers. 3,300,369, 1-24-67, Cl. 161—184.
Burnside, Gilbert L., L. A. Madejczyk, and G. G. Strosberg, to The Ford Motor Co. Electrocoating process with terminal showering step. 3,300,400, 1-24-67, Cl. 204—181.
Burron Medical Products, Inc.: *See*—
Burke, George K. 3,299,904.
Burroughs Corp: *See*—
Hennessey, William M. 3,300,687.
Klehm, William G., Jr. 3,300,725.
Seeley, Dunham B. 3,299,852.
Burroughs, Edwin E., to St. Regis Paper Co. High speed taping machine. 3,300,363, 1-24-67, Cl. 156—521.
Burrow, Joe B., Sr.: *See*—
Butcher, Troy. 3,299,663.
Burt, Robert V., to The Proctor & Gamble Co. Pouring adapter for liquid containers. 3,300,104, 1-24-67, Cl. 222—482.
Bury, George J., to Illinois Tool Works Inc. Alternate action/operation mechanism. 3,300,611, 1-24-67, Cl. 200—156.
Bush, Charles F., to The Goodyear Tire & Rubber Co. Tire. 3,299,935, 1-24-67, Cl. 152—356.
Bush, Donald P.: *See*—
Bregi, Benjamin F., Bush, and Krygier. 3,299,578.
Buschbom, Floyd E., to Vandale Corp. Bunk feeder conveyor assembly. 3,299,855, 1-24-67, Cl. 119—56.
Bussard, Gerald M. Stretcher pole attachment. 3,300,182, 1-24-67, Cl. 254—62.
Butcher, Troy; 10% to C. J. Ladner, 7½ to A. E. Moore, and 7½ to J. B. Burrow, Sr. Refrigerator mounted cold water system. 3,299,663, 1-24-67, Cl. 62—330.
Butler Bin Co.: *See*—
Melendy, Warren A. 3,299,977.
Butler, Thomas A., to The Lubrizol Corp. Lubricants containing metal salts of mixed phosphorothioic and phosphinothioic acids. 3,300,409, 1-24-67, Cl. 252—32.7.
Bydzovsky, Viktor: *See*—
Perina, Zdenek, Bydzovsky, and Budesinsky. 3,300,495.
Byers, Donald J. Method and means for ascertaining visibility conditions. 3,299,769, 1-24-67, Cl. 88—14.
Bystrom, Albin, R. V. Hill, and H. A. Williams, to The Boeing Co. Radiant energy type intrusion alarm system. 3,300,768, 1-24-67, Cl. 340—258.
CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Bensimon, Jacques. 3,300,660.
Huber, Harry, and Le Bihan. 3,300,843.

C.W.C. Fisheries, Inc.: *See*—
Hendrickson, Jay D., and Osterlund. 3,299,467.
Cable, Daniel K., to Angeles Metal Trim Co. Building structure. 3,299,592, 1-24-67, Cl. 52—213.
Cabot, Philip D., and R. D. Lowry, to Lowry Development Corp. Power impact hammer. 3,299,967, 1-24-67, Cl. 173—116.
Cage, Robert M.: *See*—
Tache, Arthur J., and Cage. 3,299,482.
Calandrello, Nicola A., J. Hill, and J. Royan, to International Telephone and Telegraph Corp. Bonded contacts for gold-impregnated semiconductor devices. 3,300,340, 1-24-67, Cl. 117—217.
Caldwell, John R.: *See*—
Jackson, Winston J., Jr., and Caldwell. 3,300,451.
Callihan, Robert E., to Automation Industries, Inc. Magnetizing and demagnetizing circuit having a controlled saturable core reactor. 3,300,088, 1-24-67, Cl. 317—123.
Cameron Iron Works, Inc.: *See*—
Williams, Leonard E., and Regan. 3,299,954.
Campanile, Dominic, and H. S. Cummings, Jr., to Lowell Wrench Co. Socket Wrench. 3,299,750, 124-67, Cl. 81—62.
Campbell, Joe A., to Lockheed Aircraft Corp. Flow controlling baffle for submersible centrifugal pumps. 3,299,820, 1-24-67, Cl. 103—88.
Campbell, Robert H.: *See*—
Bozzelli, Andrew J., Belak, and Campbell. 3,300,293.
Campbell, Robert N., Jr. Stowing apparatus for working cables and the like. 3,300,154, 1-24-67, Cl. 242—54.
Canadian Patents and Development Ltd.: *See*—
Jarian, Gerard E. 3,299,546.
Canadian Refractories Ltd.: *See*—
Rigby George R. 3,299,600.
Canadian Westinghouse Co., Ltd.: *See*—
Beddoes, John M. 3,300,689.
Cap, Bruno: *See*—
Stambera, Adolf, and Cap. 3,299,975.
Capitol Records, Inc.: *See*—
Swensen, Norman E. 3,300,678.
Carbonaro, Antonio: *See*—
Natta, Giulio, Porri, Stoppa, and Carbonaro. 3,300,467.
Carden, Columbus H. Tablet and capsule dispenser. 3,300,090, 1-24-67, Cl. 221—281.
Carlson, Donald W., and J. M. Cox, to General Motors Corp. Metering apparatus for an injection molding machine. 3,299,475, 1-24-67, Cl. 18—30.
Carow, Walter M.: *See*—
Stiles, John C., and Carow. 3,299,716.
Carpenter, Arthur J., and V. D. Kaptur, Jr., to General Motors Corp. Closure operator. 3,299,571, 1-24-67, Cl. 49—31.
Carrier Corp.: *See*—
McGrath, William L., and Rachfal. 3,299,649.
McGrath, William L. 3,299,651.
Eisberg, Keith V., and Bourne. 3,299,652.
Osborne, William T. 3,299,653.
Leonard, Louis H., Jr. 3,299,654.
Eisberg, Keith V., and Bourne. 3,299,668.
Merrick, Richard H. 3,299,669.
Toper, Walter B., and Bryans. 3,299,796.
Carter, Carl E.: *See*—
Watson, Billy B., and Carter. 3,299,831.
Carter, Charles W., to Stromberg-Carlson Corp. Telephone ringing circuits. 3,300,589, 1-24-67, Cl. 179—87.
Carter, John W., J. C. Medley, and J. P. Mueller, to Caterpillar Tractor Co. Hydropneumatic seat suspension. 3,300,203, 1-24-67, Cl. 267—1.
Caterpillar Tractor Co.: *See*—
Carter, John W., Medley, and Mueller. 3,300,203.
Carter, Lavoy. Prefabricated, adjustable stairway, ramp or bridge. 3,299,590, 1-24-67, Cl. 52—183.
Cartier, Bernard J.: *See*—
Cartier, Gerald J. 3,299,850.
Cartier, Gerald J.: *See*—
Cartier, Gerald J. 3,299,850.
Cartier, Gerald J., to G. H., T. H., and B. J. Cartier. Explosive fire alarm. 3,299,850, 1-24-67, Cl. 116—105.
Cartier, Thomas H.: *See*—
Cartier, Gerald J. 3,299,850.
Casebeer, Oran T., to Eastern Kodak Co. Light integrator using diffuse surface of a light-conducting rod. 3,300,646, 1-24-67, Cl. 250—228.
Cashman, Robert W., to Saginaw Machine & Tool Co. Tool holder construction. 3,299,752, 1-24-67, Cl. 82—36.
Cass, Lester E. Hydraulic pump. 3,299,833, 1-24-67, Cl. 60—52.
Cassano, James R., L. H. Turner, to Xerox Corp. Electrically energized clutch for sheet feed control mechanism. 3,300,206, 1-24-67, Cl. 271—16.
Castagna, Eugene G., to Chevron Research Corp. Molded dispensing stand. 3,300,097, 1-24-67, Cl. 222—185.
Castellana, Jack P., to General Motor Corp. Cane type hand brake. 3,299,734, 1-24-67, Cl. 74—503.
Catella, Albert: *See*—
Roth, Adrien W., Catella, and Nicoud. 3,300,610.
Caterpillar Tractor Co.: *See*—
Geen, James E., and Winters. 3,299,547.
Vinton, David S. 3,300,202.
Caulier, Paul W., and C. Dixon, to General Electric Co. Shutter for pinhole detectors. 3,299,771, 1-24-67, Cl. 88—14.
Cavallito, Chester J., and A. P. Gray, to Neisler Laboratories, Inc. 1-Indolyl substituted-2-pyridyl-ethanes. 3,300,506, 1-24-67, Cl. 260—295.
Caviglia, Enzo, to Hoosier Crown Corp. Sealing of crown cap bottles. 3,300,072, 1-24-67, Cl. 215—40.
Caylor, Ollie R.: *See*—
Feighery, James M., and Caylor. 3,299,844.
Cella, Joseph F., to Cesco Container Mfg. Corp. Carton carrier. 3,299,613, 1-24-67, Cl. 53—247.
Celotex Corp., The: *See*—
Hart, Harry E. 3,300,371.
Central Machine Works Co.: *See*—
Frlia, Carsten. 3,300,209.
Centre National de la Recherche Scientifique: *See*—
Poex, Marc. 3,300,561.
Noel, Yvon-Pol. 3,299,707.
Cesco Container Mfg. Co.: *See*—
Cella, Joseph F. 3,299,613.
Chandler, Jasper S., to Eastman Kodak Co. Continuous tenuency drive arrangement. 3,299,724, 1-24-67, Cl. 74—143.
Chandler, Jasper S., and H. O. Hoadley, to Eastman Kodak Co. Automatic exposure control system. 3,299,789, 1-24-67, Cl. 95—64.
Chang, Kern K. N., to Radio Corp. of America. Non-linear element mounted high dielectric resonator used in parametric and tunnel diode amplifiers, harmonic generators, mixers and oscillators. 3,300,729, 1-24-67, Cl. 330—4.9.
Chapman, William P., and C. C. Smith, to Johnson Service Co. Binary logic coded control. 3,300,759, 1-24-67, Cl. 340—147.
Charlebois, Joseph N. A. Podiatrical appliance. 3,299,894, 1-24-67, Cl. 128—581.
Charlton, John D., to E. I. du Pont de Nemours and Co. Melt-spinning apparatus. 3,299,469, 1-24-67, Cl. 18—8.
Chatelon, Andre E. J., and P. Girard, to International Standard Electric Corp. Binary code transformation system. 3,300,774, 1-24-67, Cl. 340—347.
Chaussadas, Jean, to The Mead Corp. Article carrier. 3,300,119, 1-24-67, Cl. 229—52.
Chellis, Fred F.: *See*—
Stuart, Robert W., Chellis, and Hogan. 3,299,646.
Chemetron Corp.: *See*—
Tarricone, James A., Neumoyer, and ter Horst. 3,300,432.
Chemische Werke Huls Aktiengesellschaft: *See*—
Wondrak, Gerhard, and Strohrmann. 3,300,091.
Chevron Research Co.: *See*—
Parker, Phillip H., Jr. 3,300,544.
Castagna, Eugene G. 3,300,097.
Childress, Scott J.: *See*—
Bell, Stanley C., and Childress. 3,300,481.
Childs, George W., E. R. Pitcher, Jr., and E. L. Staples, Jr., to Recognition Equipment Inc. Vacuum actuated document feeder. 3,300,207, 1-24-67, Cl. 271—26.
Chisler, Paul E., to The McKay Co. Master link for suspension device and manufacture thereof. 3,299,628, 1-24-67, Cl. 59—84.
Chiville, John W., to Tecfab Inc. Slab anchor. 3,299,601, 1-24-67, Cl. 52—597.
Chloupek, LeRoy A., and K. Sekmakas, to DeSoto Chemical Coatings, Inc. Solvent solution of an alkylol ethylenically unsaturated amide copolymer having at least a portion of said alkylol groups etherified with a mixture of a monohydric alcohol and a polyhydric alcohol. 3,300,439, 1-24-67, Cl. 260—33.4.
Chmela, John F., to Anfinsen Plastic Molding, Inc. Pouring spout. 3,300,106, 1-24-67, Cl. 222—517.
Chmielewski, Jerry H. Device for removing pulleys and the like from shafts. 3,299,497, 1-24-67, Cl. 29—258.
Christensen, James B. Tool for coupling hydraulic hoses. 3,299,496, 1-24-67, Cl. 29—237.
Christoffel, Cla, E. A. Borel, and A. Blumenthal, to Blattmann & Co. Preparation of modified products of galactomannanes, polyuronic acids and similar high-molecular natural substances. 3,300,473, 1-24-67, Cl. 260—209.
Chrysler Corp.: *See*—
Tache, Arthur J., and Cage. 3,299,482.
Loofbourrow, Alan G., and McCordic. 3,299,732.
Chu, Simon L., to Polychrome Corp. Moisture resistant planographic plates and methods of producing same. 3,300,309, 1-24-67, Cl. 96—75.
Ciba Corp.: *See*—
Anner, Georg, and Kalvoda. 3,300,486.
Anner, Georg, and Kalvoka. 3,3,300,520.
Anner, Georg, and Wieland. 3,300,521.
De Stevens, George. 3,300 505.
Jenny, Walter, and Hari, Staeuble, and Weber. 3,300,491.
Schwyzer, Robert, Iselin, Kappeler, Riniker, and Rittel. 3,300,468.
Weber, Kurt. 3,300,509.
Ciceri, Luigi, and P. Perazzoni, to Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A. Polyamides stabilized with manganous silicate and process for producing same. 3,300,443, 1-24-67, Cl. 260—45.75.
Cinex Inc.: *See*—
Barsam, Arthur, Sr. and A., Jr. 3,299,730.
Cities Service Oil Co.: *See*—
Heinze, Bennie. 3,300,641.
Claeys, Daniel A.: *See*—
Vrancken, Marcel N., Claeys, Van Paesschen, and Lambrechts. 3,300,313.
Clarizio, Giacomo, to The Scholl Mfg., Co., Inc. Envelope bag with filling neck and means for closing the same. 3,299 927, 1-24-67, Cl. 150—2.2.
Clark, Donald E.: *See*—
Alburn, Harvey E., Clark, and Grant. 3,300,510.
Clark, Earl J., to Bucheimer-Clark Leather Goods Corp. Clamping means for inside gun holster. 3,300,109, 1-24-67, Cl. 224—2.
Clark, Frank N. Apparatus for the sanitary and efficient transfer of milk. 3,299,915, 1-24-67, Cl. 141—231.
Clary Corp.: *See*—
East, George F. 3,299,718.
Clay, William R., to E. I. du Pont de Nemours and Co. Stabilized aromatic polyamide filaments. 3,300,450, 1-24-67, Cl. 260—78.

Clemmow, Raymond J., to P. & V. (Mining & Engineering) Ltd. Percussive drill bits. 3,299,974, 1-24-67, Cl. 175—410.

Cleveland Trust Co.: *See*—
Miller, Robert L. 3,299,775.
Miller, Robert L. 3,300,213.

Clevite Corp.: *See*—
Luce, Betty M. 3,300,328.

Clevite Harris Products, Inc.: *See*—
Selker, Milton L., and Zapponi. 3,300,257.

Clifford, Peter J., to Massey-Ferguson Inc. Disk harrow having adjustable disk gangs. 3,299,966, 1-24-67, Cl. 172—582.

Clinch-Tite Corp.: *See*—
Rawle, David. 3,300,077.

Clopay Corp.: *See*—
Gossling, Robert C., and Wilcoxon. 3,299,944.

Close, Frederick J., to Aluminum Co. of America. Container and method of making same. 3,300,080, 1-24-67, Cl. 220—54.

Clough, Philip J., and R. W. Steeves, to National Research Corp. Radar countermeasure article. 3,300,781, 1-24-67, Cl. 343—18.

Clumpner, Joseph A., and J. E. Dore, to Olin Mathieson Chemical Corp. Apparatus for quenching metal. 3,300,198, 1-24-67, Cl. 266—6.

Clute, Gary E. Shotgun shell wad dispenser assembly. 3,300,089, 1-24-67, Cl. 221—220.

Coal Industry (Patents) Ltd.: *See*—
Paul, Thomas C., Edwards, and Dawson. 3,300,025.

Coates, Clarence L., Jr., and P. M. Lewis II, to General Electric Co. Accumulator. 3,300,628, 1-24-67, Cl. 238—173.

Coats, John H.: *See*—
Bergy, Malcolm E., Coats, Hanka, and Johnson. 3,300,382.

Cobb, James S., Jr., to E. I. du Pont de Nemours and Co. Cooperating guide means and reciprocable tool holder. 3,299,760, 1-24-67, Cl. 83—635.

Coby, David: *See*—
Newman, Herman, and Coby. 3,299,552.
Newman, Herman, and Coby. 3,299,553.

Coe Mfg. Co., The: *See*—
Morris, Edward P. 3,299,533.

Coffey, Francis T., Sr. Marble catapult and game board construction. 3,300,215, 1-24-67, Cl. 273—101.

Cognitronics Corp.: *See*—
Gushue, Edward J., and Goldman. 3,300,591.
Shepard, David H. 3,300,586.

Collins, Alberto. Means for stopping the forward movements of the foot in a shoe. 3,299,893, 1-24-67, Cl. 128—581.

Collins, Glenn A., Jr., to Teleflex Inc. Composite metal-ceramic article and method for making same. 3,300,331, 1-24-67, Cl. 117—99.

Collins Radio Co.: *See*—
Herzog, William E. 3,300,740.
Doelz, Melvin L., and Grondin. 3,300,764.

Colvin, Alex D., and A. Warnick, to Ford Motor Co. Electromagnetic flowmeter. 3,299,703, 1-24-67, Cl. 73—194.

Combustion Engineering, Inc.: *See*—
Svendsen, Konrad S. 3,299,860.

Commercial Shearing & Stamping Co.: *See*—
Williams, Arthur J. 3,299,902.

Commercial Solvents Corp.: *See*—
Howe, David O., Etzel, and Miller. 3,300,404.

Compagnie de Saint-Gobain: *See*—
Tailleur, Andre and Le Gras. 3,300,112.

Compagnie des Machines Bull (Societe Anonyme): *See*—
David, Charles A. M. 3,300,657.

Compagnie Francaise Thomson Houston-Hotchkiss Brandt: *See*—
Beurtheret, Charles A. E. 3,299,949.

Compagnie General d'Electricite: *See*—
Roth, Adrien W., Catella, and Nicoud. 3,300,610.

Comstock & Wescott, Inc.: *See*—
Rice, Richard E., and Whitney. 3,299,945.

Coninx, William A. Piston groove cutting tool. 3,299,751, 1-24-67, Cl. 82—4.

Conner, Rex A., to The University of Kentucky Research Foundation. Gauge for measuring height of strings from fingerboard of stringed musical instruments. 3,299,518, 1-24-67, Cl. 33—172.

Conner, William D.: *See*—
Walters, William R., and Conner. 3,299,817.

Connors, John D.: *See*—
Moore, William C., and Connors. 3,299,884.

Consoletti, Paul C., to Draper Corp. Thread attaching means for bobbins. 3,300,160, 1-24-67, Cl. 242—125.1.

Consolidated Controls Corp.: *See*—
O'Sullivan, George A. 3,299,709.

Consolidated Electrodynamics Corp.: *See*—
Engert, Karl-Hans G. 3,300,716.

Consolidated Foods Corp.: *See*—
Hendrick, David L., and Crowder. 3,299,611.

Construcoes Continental: *See*—
Teixeira, Jose M. A. 3,299,795.

Container Corp. of America: *See*—
Kosaner, Dennis J. 3,300,117.
Owens, Emert E. 3,300,118.
Wojciechowski, Walter P. 3,300,166.

Continental Can Co., Inc.: *See*—
Shaw, Fred B. 3,299,603.
Dopp, David S., and Mucibabich. 3,299,607.
Javorik, Laszlo J., and Higgins. 3,299,809.

Continental Granite Corp.: *See*—
Grage, Casper R. 3,299,877.

Continental Oil Co.: *See*—
Miller, Donald B. 3,300,540.
Lee, Milford R., Waters, and Heath. 3,300,754.

Contino, John: *See*—
Rhyne, Earl C., Jr., and Contino. 3,300,708.

Control Data Corp.: *See*—
Hawley, Charles L., Jr. 3,300,758.

Controls for Radiation, Inc.: *See*—
McCall, Richard C. 3,300,643.

Coo, Albert W., to The Goodyear Tire & Rubber Co. Drag block brake. 3,299,988, 1-24-67, Cl. 188—29.

Cook, Donald F., and D. F. Cosper, to Texas Instruments Inc. Method of making symmetrical switching diode. 3,299,487, 1-24-67, Cl. 29—25.3.

Cook, Ralph W. Feed liquid inlet flow device. 3,299,937, 1-24-67, Cl. 159—2.

Cooper, Emanuel: *See*—
Gold, Charles M., and Cooper. 3,300,703.

Cooper, James N., ⅛ to H. Hurvitz. Teaching machine. 3,299,538, 1-24-67, Cl. 35—35.

Cooper, Noel R., W. C. Hurley, D. E. Larkin, J. O. Mavis, and J. W. Jones, to Pet Milk Co. Method of preparing fruit pies. 3,300,316, 1-24-67, Cl. 99—92.

Cooper, Robert S., to Stauffer Chemical Co. Anti-static coated textile fiber. 3,300,337, 1-24-67, Cl. 117—139.

Cooper, Thomas G., and R. E. Linde, to Crown Zellerbach Corp. Creped sheet materials and the process of producing the same. 3,300,368, 1-24-67, Cl. 161—128.

Coplin, John F.: *See*—
Wilde, Geoffrey L., Bill, and Coplin. 3,299,632.

Coplin, John F., P. A. Taylor, J. A. Petrie, and K. E. G. Bracey, to Rolls-Royce Ltd. Helicopter rotor. 3,299,961, 1-24-67, Cl. 170—135.4.

Cornell, William D., to Brunswick Corp. Ball speed control mechanism. 3,300,212, 1-24-67, Cl. 273—49.

Corning Glass Works: *See*—
Bally, Alexander O., and Wardale. 3,299,938.
Rogers, Leo A. 3,300,412.
Wohl, Kurt A. 3,300,076.

Coronelli, Carolina: *See*—
Craveri, Renato, Coronelli, and Sensi. 3,300,379.

Cosper, David F.: *See*—
Cook, Donald F., and Cosper. 3,299,487.

Cote, Rene E.: *See*—
Ross, Sidney D., and Cote. 3,300,693.

Cox, Alvon R., to The Faultless Rubber Co. Method of manufacture and assembly of hollow inflatable articles including a two-part valve therein. 3,299,501, 1-24-67, Cl. 29—451.

Cox, John A., Jr., to Honeywell Inc. Mounting arrangement having means for accurately locating a plurality of switching devices. 3,300,613, 1-24-67, Cl. 200—168.

Cox, John M.: *See*—
Carlson, Donald W., and Cox. 3,299,475.

Coxe, Edward H., to Ethyl Corp. Holder for the ignitor tip in ignitron rectifiers. 3,300,674, 1-24-67, Cl. 313—237.

Cragoe, Edward J., Jr., to Merck & Co., Inc. Pyrazinamidoguanidine products. 3,300,494, 1-24-67, Cl. 260—250.

Craig, S., Investments Pty. Ltd.: *See*—
Craig, Samuel. 3,300,346.

Craig, Samuel, to S. Craig Investments Pty. Ltd. Rust proofing process. 3,300,346, 1-24-67, Cl. 148—6.15.

Craveri, Renato, C. Coronelli, and P. Sensi, to Lepetit S.p.A. Antibiotic thermorubin, and methods of preparing the same. 3,300,379, 1-24-67, Cl. 167—65.

Creutzmann, Reinhold, and H. Wullschleger, to Maschinenfabrik Buckau R. Wolf Aktiengesellschaft. Transporting carriage for conveyer system. 3,300,023, 1-24-67, Cl. 198—36.

Cronin, Daniel. Magnetic tape signal transfer compensation system. 3,300,590, 1-24-67, Cl. 179—100.2.

Crookes Laboratories Ltd., The: *See*—
Sharpe, Christopher J., and Stephens. 3,300,507.

Crosfield Electronics Ltd.: *See*—
Crosfield, John F. 3,300,362.

Crosfield, John F., to Crosfield Electronics Ltd. Apparatus for etching of printing surfaces. 3,300,362, 1-24-67, Cl. 156—345.

Crowder, John V.: *See*—
Hendrick, David L., and Crowder. 3,299,611.

Crown Zellerbach Corp.: *See*—
Cooper, Thomas G., and Linde. 3,300,368.

Cubic Corp.: *See*—
Mason, John R. 3,300,780.

Culligan Inc.: *See*—
Dunklin, Edward W. 3,299,617.

Cully, Donald C.: *See*—
Burkley, Ralph A., Cully, and Folk. 3,300,369.

Cumberland Chemical Corp.: *See*—
Vavica, Alphonse J. 3,300,460.

Cummings, Henry S., Jr.: *See*—
Campanile, Dominic, and Cummings. 3,299,750.

Cunningham, Thomas W., to D. H. Baldwin Co. Electronic organ. 3,300,569, 1-24-67, Cl. 84—1.22.

Cunningham, Wesley B. Percussion device. 3,299,968, 1-24-67, Cl. 173—135.

Cunningham, William H.: *See*—
Packard, Alfred R., and Cunningham. 3,299,916.

Curtis, Truman P., and J. R. M. Vaughan, to General Electric Co. Tolerance compensating electrode support structure and method of manufacturing same. 3,300,673, 1-24-67, Cl. 313—153.

Curtiss-Wright Corp.: *See*—
Jones, Charles. 3,300,124.

Cutaia, Alfred, to International Business Machines Corp. Data register with particular intrastage feedback and transfer means between stages to automatically advance data. 3,300,724, 1-24-67, Cl. 328—37.

Cyril Bath Co., The: *See*—
Dolney, Stanley M., and MacKenzie. 3,299,689.

Cypra, Arne, F. Haentzschel, E. Munk, and G. Winter, to Robert Bosch G.m.b.H. High voltage capacitor arrangement. 3,300,695, 1-24-67, Cl. 317—260.

Czap, Lawrence. Ulnar drift splint. 3,299,887, 1-24-67, Cl. 128—77.

Dafler, Gene L.: *See*—
Frazier, Richard D., and Dafler. 3,300,666.

Dahl, Frank L. Supporting closure cover for a container. 3,300,075, 1-24-67, Cl. 215—100.

Dahlgren, Victor R., and S. K. Tally, to Sanders Associates, Inc. Extensible and retractable flexible circuit cable. 3,300,572, 1-24-67, Cl. 174—69.

Daien, Bernard B., to Automatic Switch Co. Power line failure detection system. 3,300,650, 1-24-67, Cl. 307—64.

Daimler-Benz Aktiengesellschaft: *See*—
Van Winsen, Friedrich H., and Bauer. 3,300,232.

Daiichi Seiyaku Co., Ltd.: *See*—
Shimizu, Masao, Ohta, Nagase, Okada, and Hosokawa. 3,300,508.

Dainippon Ink and Chemicals, Inc.: *See*—
Sawada, Hiroomi, Takahashi, Kobayashi, and Kasu. 3,299,806.

Dalby, Terence: *See*—
Bellar, Oscar. 3,300,747.

Dalin, David. Steam boiler and hot water generator. 3,299,859, 1-24-67, Cl. 122—328.

Damm, Klaus: *See*—
Andres, Karl-Heinz, Steinbach, and Damm. 3,300,418.

Dana Corp.: *See*—
Games, Robert F. 3,300,224.

Dantoss A/S: *See*—
Enemark, Arne F. 3,300,126.
Olsen, Robert. 3,299,851.

Daniels, John F., and D. R. Locke, to Sperry Rand Corp. Electric knife support. 3,300,264, 1-24-67, Cl. 312—279.

Danon, David, to Yeda Research and Development Co., Ltd. Method for measuring osmotic fragility of red blood corpuscles. 3,300,385, 1-24-67, Cl. 167—84.5.

Darby, Joseph R., and P. R. Graham, to Monsanto Co. Metal phosphite and benzophenone stabilized resin composition. 3,300,442, 1-24-67, Cl. 260—45.75.

Davey, Gerald F., to Riley Stoker Corp. Furnace wall. 3,299,587, 1-24-67, Cl. 52—483.

David, Charles A. M., to Compagnie des Machines Bull (Societe Anonyme). Storage circuit employing tunnel diode, transistor and input transformer connected in series. 3,300,657, 1-24-67, Cl. 307—88.5.

Davis, Claude G., E. E. Sumner, and L. C. Thomas, to Bell Telephone Laboratories, Inc. Data transmission. 3,300,578, 1-24-67, Cl. 178—3.

Davis, John S., and P. E. Wells, to The Bunker-Ramp Corp. Woven screen magnetic storage matrix. 3,300,767, 1-24-67, Cl. 340—174.

Davis, Louis A.: *See*—
Scott, Harold R., Davis, and Fogaty. 3,300,598.

Davoli, Pierre: *See*—
Wyss, Edgar, and Davoli. 3,299,490.

Dawson, Gordon B.: *See*—
Paul, Thomas C., Edwards, and Dawson. 3,300,025.

Dayco Corp.: *See*—
Trogdon, Thomas. 3,299,451.

Dean, Morris: *See*—
Staler, Robert L., and Dean. 3,300,606.

Dearsley, George, to American Machine & Foundry Co. Cigarette or cigar making machine and method. 3,299,895, 1-24-67, Cl. 131—20.

De Boo, Jerome L., to Teletype Corp. Split pulley clutch. 3,299,727, 1-24-67, Cl. 74—192.

De Castelet, Gaëtan de C., to Regie Nationale des Usines Renault. Devices for damping angular velocity fluctuations between two rotating components, one of which drives the other. 3,299,671, 1-24-67, Cl. 64—27.

De Castelet, Gaëtan de C., to Regie Nationale des Usines Renault. Vehicle ventilation devices. 3,299,794, 1-24-67, Cl. 98—2.

De Castelet, Gaëtan de C., to Regie Nationale des Usines Renault. Disc brakes. 3,299,991, 1-24-67, Cl. 188—73.

De Castelet, Gaëtan de C., to Regie Nationale des Usines Renault. Shock-absorbers for vehicle suspensions. 3,299,996, 1-24-67, Cl. 188—88.

De Castelet, Gaëtan de C., to Regie Nationale des Usines Renault. Rotors of rotary engines. 3,299,863, 1-24-67, Cl. 123—8.

De Castelet, Gaëtan de C., to Regie Nationale des Usines Renault. Rotary-engine rotors. 3,299,864, 1-24-67, Cl. 123—8.

De Castiglione, Roberto: *See*—
Bernardi, Luigi, and De Castiglione. 3,300,469.

De Geer, Hans H., to Sandvikens Jernverks Aktiebolag. Hot top. 3,300,322, 1-24-67, Cl. 106—38.35.

Dehydag Deutsche Hydrierwerke G.m.b.H.: *See*—
Michael, Gregor, Frotscher, Markert, and Petzold. 3,300,390.

Delafrange, Kenneth M. Electrical connector with a helical conductor overload circuit breaker. 3,300,607, 1-24-67, Cl. 200—115.5.

De La Mare, Harold E., to Shell Oil Co. Polymerization catalysts and process. 3,300,463, 1-24-67, Cl. 260—93.7.

Delaney, Ronald T.: *See*—
Naiband, Thomas E. and E., and Delaney. 3,300,286.

Delanoy, Richard L., and G. J. Laurer, to International Business Machines Corp. Schmitt trigger with active collector to base coupling. 3,300,654, 1-24-67, Cl. 307—88.5.

Delman Co., The: *See*—
Lawson, Charles T. 3,300,143.

Deluxe Reading Corp.: *See*—
Wolf, Tobin. 3,299,779.

Delbourgo, Ralph: *See*—
Lafitte, Paul, Delbourgo, and Quercia. 3,299,675.

De Ment, Jack. Method of separating light energy from shock wave energy including the pumping of a laser with an exploding wire. 3,300,734, 1-24-67, Cl. 331—94.5.

De Mol, Constant L.: *See*—
Lens, Georges X., Vanhentenrijk, and De Mol. 3,300,026.

De Munck, Joseph L.: *See*—
Willems, Jozef F., and De Munck. 3,300,312.

Deng, Nianu-Chyung, S. L. Lindauer, and G. T. Paul, to International Business Machines Corp. Apparatus for testing binary-coded decimal arithmetic digits by binary parity checking circuits. 3,300,625, 1-24-67, Cl. 235—153.

Dennison Mfg. Co.: *See*—
White, Kenneth J. 3,300,012.

De Olive-Henrici, Gisela: *See*—
Olive, Salvodor, and De Olive-Henrici. 3,300,461.

Deptula, Frank J.: *See*—
Hanson, Rudolph A., and Deptula. 3,299,622.

Derderian, Edward J.: *See*—
Eberwein, Francis D., and Derderian. 3,300,241.

Deritend Engineering Co. Ltd., The: *See*—
Bishop, Thomas D. 3,299,801.

De Santis, Vincent J., to General Electric Co. Rupturable containers. 3,300,037, 1-24-67, Cl. 206—4.

Desbois, Theodore J. Fishing tackle. 3,299,561, 1-24-67, Cl. 43—42.09.

Desnaw, Zoltan. Electric incandescent lamp filament support. 3,300,675, 1-24-67, Cl. 313—274.

Design Enterprise, Inc.: *See*—
Snyder, Ernest L. 3,299,541.

De Stevens, George, to Cloa Corp. Ether-2-R-substituted benzimidazoles and derivatives and acid addition salts thereof. 3,300,505, 1-24-67, Cl. 260—294.8.

De Soto Chemical Coatings, Inc.: *See*—
Culoupek, LeRoy A., and Sekmakas. 3,300,439.

Deutsch, Felix, to Yissum Research Development Co. Braking device for high velocity conductive members in dividing axially spaced opposed adjacent magnetic fields. 3,300,744, 1-24-67, Cl. 335—268.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See*—
Bretschneider, Gunther, and Sperr. 3,300,276.
Meyer-Simon, Eugene, and Frey. 3,300,414.
Nagelschmidt, Rudolf, and Goecke. 3,300,425.

Dewas, Raymond. Weaving machine with uninterrupted weft supply. 3,299,911, 1-24-67, Cl. 139—123.

Diamond Crystal Salt Co.: *See*—
Keves, Henry I., and Leverenz. 3,300,093.

Diassi, Patrick A., to E. R. Squibb & Sons, Inc. Process for the preparation of 17α-hydroxy-16,20-diketo pregnanes. 3,300,522, 1-24-67, Cl. 260—397.4.

Dickinson, Ben W. O., III. Method and apparatus for detecting flaws using ultrasonic helical waves. 3,299,694, 1-24-67, Cl. 73—67.5.

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Dickow, Fre H.: *See*—
McBrady, William J., and Dickow. 3,299,925.

Dieffenbach, Harry N., to Mark Systems, Inc. Film process magazine. 3,299,790, 1-24-67, Cl. 95—89.

Dielectric Products Engineering Co., Inc.: *See*—
Rhyne, Earl C., Jr., and Contino. 3,300,708.

Dieter, Donald P., and W. O. Riggs, to Unarco Industries, Inc. Dockboard. 3,299,456, 1-24-67, Cl. 14—71.

Dietz, Richard E., to Phillips Petroleum Co. Removal of catalyst residues from polymers. 3,300,464, 1-24-67, Cl. 260—93.7.

Difco Laboratories, Inc.: *See*—
Kuypers, Norbert T. 3,300,087.

Digby, James J., to The Bendix Corp. Starter drive. 3,300,006, 1-24-67, Cl. 192—63.

Dines, Charles E., to Elliott Bros. (London) Ltd. Control of steam generators. 3,300,133, 1-24-67, Cl. 236—14.

Dinkin, Leon W. Stop and magnetic holder for relatively moveable elements. 3,300,239, 1-24-67, Cl. 292—251.5.

Dion, Lucien. Forage hopper with auger means. 3,300,032, 1-24-67, Cl. 198—213.

Disteikamp, Adolf P., and O. R. McDuff. Process of producing and using flavoring components of citrus fruit juices and product. 3,300,320, 1-24-67, Cl. 99—205.

Dixon, Corbin: *See*—
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Doebel, Karl J., and H. A. Pfenninger, to Geigy Chemical Corp. Certain pyridobenzodiazepine derivatives. 3,300,482, 1-24-67, Cl. 260—239.3.

Doebel, Karl J., and H. A. Pfenninger, to Geigy Chemical Corp. Lower alkyl esters of (substituted) benzyl pipecolinic acid and derivatives thereof. 3,300,504, 1-24-67, Cl. 260—294.3.

Doelz, Melvin L., and G. F. Grondin, to Collins Radio Co. Data processor. 3,300,764, 1-24-67, Cl. 340—172.5.

Doerfling, Ralph G., to Detroit Gasket and Mfg. Co. Headliner construction and method of making same. 3,300,357, 1-24-67, Cl. 156—211.

Detroit Gasket and Mfg. Co.: *See*—
Doerfling, Ralph G. 3,300,357.

Dollgener, Robert W., C. O. Henry, and T. Abbott. Arm rest for desk and bench workers. 3,300,250, 1-24-6, Cl. 297—411.

Dolney, Stanley M., and R. A. MacKenzie, to The Cyril Bath Co. Method and apparatus for combined stretch forming and die drawing. 3,299,689, 1-24-67, Cl. 72—297.

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Dome, Edwin C., to Artnell Co. Suspension system for mattresses and the like. 3,299,447, 1-24-67, Cl. 5—118.

Dommann, Gunther, and H. Temme, to Gewerkschaft Eisenhutte Westfalia. Coupling device for joining mining conveyor trough sections. 3,300,031, 1-24-67, Cl. 198—204.

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Doner, John T., to Whirlpool Corp. Door stop mechanism. 3,299,879, 1-24-67, Cl. 126—194.
Donnelley, R. R., & Sons Co.: *See*—
Kleboe, John E., and Runyan. 3,300,034.
Funke, Charles B., Kleboe, and Runyan. 3,300,035.
Donovan, Daniel R., and J. A. Murphy. High temperature furnace conveyor system. 3,300,195, 1-24-67, Cl. 263—8.
Dopp, David S., and P. R. Mucibabich, to The Continental Can Co. Filter and capping head. 3,299,607, 1-24-67, Cl. 53—87.
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Clumpner, Joseph A., and Dore. 3,300,198.
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Brotzmann, Karl. 3,299,481.
Douberly, Arnold J. Accelerator and speed controlled brake. 3,299,998, 1-24-67, Cl. 192—3.
Double, Plummer E., to Multifastener Corp. Method of making a nut and panel assembly. 3,299,500, 1-24-67, Cl. 29—432.2.
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Blok, Dirk E. 3,299,602.
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Horvath, Jack W., and Doumas. 3,300,335.
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Hatch, Melvin J. 3,300,416.
Hebert, Norman T. 3,300,427.
Horvath, Jack W., and Doumas. 3,300,335.
Priesing, Charles P., and Mogeinicki. 3,300,407.
Reding, John N., Jr. 3,300,298.
Waples, George E., Jr. 3,300,452.
Ward, Calvin F. 3,300,415.
Dow Corning Corp.: *See*—
Hadlock, Ronald O. 3,300,542.
Dowling, Edward C., to AMP Inc. Sequential bit binary detector circuit and system. 3,300,775, 1-24-67, Cl. 340—348.
Downey, David F., and J. J. Moughty, to Electrolux Corp. Vacuum cleaner hose having electrical conductors. 3,300,571, 1-24-67, Cl. 174—47.
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Consoletti, Paul C. 3,300,160.
Flamand, Maurice R. 3,299,910.
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Dritz, Arthur. Fastening device. 3,299,483, 1-24-67, Cl. 24—150.
Dry, John P. Combined air diffuser and lighting fixture. 3,299,797, 1-24-67, Cl. 98—40.
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Kleiman, Joseph P., and Dubeck. 3,300,472.
Duff, Buddy L., to Whittaker Corp. Method of making a filament wound sandwich core. 3,300,354, 1-24-67, Cl. 156—169.
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Haul, Robert, and Dumbgen. 3,299,713.
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Dunklin, Edward W., to Culligan Inc. Method of removing entrapped gas from an ion exchange resin bed. 3,299,617, 1-24-67, Cl. 55—37.
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Jenkins, Peter J. 3,300,029.
Merriman, Peter, Simcox, and Newham. 3,300,421.
Dunn, Elman R.: *See*—
Price, Ralph E., and Dunn. 3,299,581.
Dunn, Ralph. Automatic lighting and warning system. 3,300,755, 1-24-67, Cl. 340—52.
Du Pont de Nemours, E. I., and Co.: *See*—
Apotheker, David. 3,300,433.
Bissot, Thomas C. 3,300 527.
Charlton, John D. 3,299,469.
Clay, William R. 3,300,450.
Cobb, James S., Jr. 3,299,760.
Doukas, George. 3,299,527.
James, John A., Jr., and Kramis. 3,300,531.
Kieselbach, Richard. 3,299,693.
Luckenbaugh, Raymond W. 3,300,292.
Masino, John A. 3,299,882.
Rorer, Ellis W., and Scheinfeld. 3,299,473.
Schmutzler, Reinhard. 3,300,503.
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Bopp, Warren G., Knapp, and Ollman. 3,300,698.
Durand, Francois. Transmission mechanisms. 3,299,729, 1-24-67, Cl. 74—411.
Du Rocher, Gideon A., and C. T. Hill, to Essex Wire Corp. Turn signal. 3,300,601, 1-24-67, Cl. 200—61.34.
DuShane, Ray N., to Universal Molding Co. Combined corner and roller for screen frames. 3,299,575, 1-24-67, Cl. 49—420.
Dustin, Daniel S., and J. W. Sigan, to Archer-Daniels-Midland Co. Method of inhibiting bacteria in brine systems. 3,300,408, 1-24-67, Cl. 210—64.
Duval Corp.: *See*—
Taraba, Bueford W. 3,300,690.
Dykes, Willie M., Jr. Brush applicator for shaving cream dispenser. 3,299,465, 1-24-67, Cl. 15—552.
Dynapower Systems Corp.: *See*—
Kendall, William D., and Yarger. 3,299,892.
ESGE-Marby G.m.b.H., & Co.: *See*—
Zurmuhlen, Emil. 3,300,110.
Ealing Corp., The: *See*—
Stull, John L., and Ferguson. 3,299,535.
East, George F., to Clary Corp. Gyroscope. 3,299,718, 1-24-67, Cl. 74—5.12.
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Casebeer, Oran T. 3,300,646.
Chandler, Jasper S. 3,299,724.
Chandler, Jasper S., and Hoadley. 3,299,789.
Inkley, Deforest E. 3,299,928.
Jackson, Winston J., Jr., and Caldwell. 3,300,451.
Kennard, Kenneth C., and Anderson. 3,300,310.
Kennard, Kenneth C., and Anderson. 3,300,811.
Lowry, Harold D. 3,299,793.
Nardone, Anthony J. and Blattner. 3,299,792.
Pesch, Edward T., and Vaughn. 3,300,305.
Peterson, Dean M., Pickering, and Windle. 3,300,003.
Rauner, Frederick J., and Houle. 3,300,314.
Roman, Robert J. 3,300,155.
Smith, Albert C. 3,300,307.
Smith, Richard L., and Johnston. 3,300,327.
Stockbridge, Bruce W. 3,299,470.
Tucker, Archie J., Ulmschneider, and White. 3,300,156.
Eastern Products Corp.: *See*—
Steingass, Hermann, and Steyer. 3,299,754.
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Murphy, Terrance J. 3,300,137.
Roper, Daniel W 3,300,002.
Eaton Yale & Towne, Inc.: *See*—
Quayle, George F. 3,300,612.
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Brigham, Ward E., and Eckert. 3,300,019.
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Paul, Thomas C., Edwards, and Dawson. 3,300,025.
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Fitch, Eugene K., Jr., and Eheart. 3,300,776.
Eheart, Willis L., Jr.: *See*—
Fitch, Eugene K., Jr., and Eheart. 3,300,776.
Eisberg, Keith V., and J. R. Bourne, to Carrier Corp. 3,299,652, 1-24-67, Cl. 62—101.
Eisberg, Keith V., and J. R. Bourne, to Carrier Corp. 3,299,668, 1-24-67, Cl. 62—476.
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O'Brien, Robert J., and Griese. 3,299,464.
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Winslow, John S. 3,300,645.
Elkind, Philip; ¼ to R. Guarino. Transistor ignition. 3,299,874, 1-24-67, Cl. 123—148.
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Sones, William L., Elliott, and Neyhouse. 3,300,150.
Ellis, Charles A., to General Fitting Co. Fuel oil preheater. 3,300,620, 1-24-67, Cl. 219—331.
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Epstein, Michael M., and J. E. Rhoads, to J. E. Rhoads & Sons, Inc. Polyurethane-polyamide article and method of preparation. 3,300,370. 1-24-67, Cl. 161—190.
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Eubank, Harold P., to United States of America, Atomic Energy Commission. Means for measuring plasma density by resonant charge transfer with a beam of neutral particles. 3,300,640, 1-24-67, Cl. 250—43.5.
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Kuhnl, Leopold K. 3,299,508.
Kuhnl, Leopold K. 3,299,509.
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Atwater, Franklin S. 3,299,583.
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von Rosenberg, Buido, and Sapper. 3,300,321.
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Fisher, Bernard C., to Neutronic Development Corp. Spark plug with anti-fouling means and fixed spark gap. 3,300,672, 1-24-67, Cl. 313—120.
Fisher, Franklin G. Saline spray distillation within rotating solar heater. 3,300,393, 1-24-67, Cl. 203—10.
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Flodin, Per G. M., and B. G. Ingelman, to Aktiebolaget Pharmacia. Sucrose ether copolymerization. 3,300,474, 1-24-67, Cl. 260—209.
Flowers, Thomas H., to Her Majesty's Postmaster General. Line circuits for subscribers' telephones. 3,300,588, 1-24-67, Cl. 179—70.
Flurscheim, Cedric H., and A. Roxburgh, to Associated Electrical Industries Ltd. Switchgear for high voltage power circuits with removable vacuum switch units. 3,300,609, 1-24-67, Cl. 200—145.
Flynn, John H. Control for multiple gas burner installation. 3,300,194, 1-24-67, Cl. 263—6.
Flynn, John H. Method of making jointed polyolefin-coated paperboard products. 3,300,350, 1-24-67, Cl. 156—82.
FMC Corp: *See*—
Bacon, Roger J. 3,299,982.
Rose, Boyd W., and Mumma. 3,299,528.
Geiger, Joseph A., and Schneebeli. 3,299,845.
Holmes, Jack H. 3,300,021.
Thuse, Erik. 3,299,525.
Todd, William L. 3,299,951.
Todd, William L. 3,299,958.
Foex, Marc, to Centre National de la Recherche Scientifique. Methods and devices for heating substances by means of radiant energy and plasma heat sources. 3,300,561, 1-24-67, Cl. 13—3.
Fogaty, Peter J.: *See*—
Scott, Harold R., Davis, and Fogaty. 3,300,598.
Fogle, Gene E., to Martin Mfg. Co. Animal holding and sorting pen. 3,299,856, 1-24-67, Cl. 119—99.
Folk, John L.: *See*—
Burkley, Ralph A., Cully, and Folk. 3,300,369.
Ford Motor Co.: *See*—
Bouchard, Constant L. 3,299,629.
Burnside, Gilbert L., Madejczyk, and Strosberg. 3,300,400.
Colvin, Alex D., and Warnick. 3,299,703.
Felts, Jerome J., and Gott. 3,299,733.
General, Norman T. 3,299,742.
Hurlin, Kenneth P. 3,299,737.
Konrad, Eugene W. 3,299,746.
Mieras, Laurence F. 3,299,876.
Motsch, Alfons. 3,300,007.
Nilssen, Ole K. 3,300,619.
Skay, Frank. 3,299,875.
Spencer, Robert E. 3,300,230.
Stockton, Thomas R. 3,299,726.
Stockton, Thomas R. 3,299,739.
Stockton, Thomas R. 3,299,740.
Stockton, Thomas R. 3,299,743.
Stockton, Thomas R. 3,300,001.
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Nava, Louis J., Hutton, Shields, and Kemp. 3,300,315.
Forgno Corp.: *See*—
Shipman, Raldo E. 3,299,715.
Forster, Franz, and K. Stolz, to Linde Aktiengesellschaft. Adjustable hydrostatic drive. 3,299,635, 1-24-67, Cl. 60—53.
Forsvarets Fabriksstyrelse: *See*—
Johansson, Lars O. E., and Oatrom. 3,300,067.
Foster, Leslie W., to Outboard Marine Corp. Propeller retention means. 3,299,964, 1-24-67, Cl. 170—173.
Fournier, Amedee J. Fabricating decorative articles. 3,300,358, 1-24-67, Cl. 156—219.
Foxboro Co., The: *See*—
Hatch, Richard W., Jr. 3,300,176.

Fraley, Melvin L., to AMP Inc. Multiple electrical connector. 3,300,751, 1-24-67, Cl. 339—91.

Franklin, Leo. Method of preparing a fowl product. 3,300,317, 1-24-67, Cl. 99—107.

Franklin, Sidney, to Metro Game Mfg. Corp. Ball-holding electric receptacle board. 3,300,217, 1-24-67, Cl. 273—135.

Franks, John T., Jr., and G. T. Tuttle, to Goodyear Aerospace Corp. Associative memory system. 3,300,760, 1-24-67, Cl. 340—172.5.

Franks, Robert S., to Advanced Technical Products Co. Pool-playing accessory. 3,299,537, 1-24-67, Cl. 35—29.

Franz, Joseph P., to General Electric Co. Watercooled screen grid resistor. 3,300,746, 1-24-67, Cl. 338—55.

Franzmann, Karl, to Babcock & Wilcox, Ltd. Vapor generator wall construction. 3,299,858, 1-24-67, Cl. 122—6.

Frau Sigrid Heim nee Krukenberg: *See*—
Hermanns, Peter. 3,300,161.

Frazier, Richard D., and G. L. Dafler, to General Motors Corp. End frame-main frame connection. 3,300,666, 1-24-67, Cl. 310—42.

Frechette, Leo P., to Royal Typewriter Co., Inc. Type bar action having combined cam latching and driving lever. 3,300,018, 1-24-67, Cl. 197—17.

Frey, Artur: *See*—
Meyer-Simon, Eugene, and Frey. 3,300,414.

Frey, Horst E., to Standard Oil Co. Foam resins prepared from aromatic anhydrides and isocyanates. 3,300,420, 1-24-67, Cl. 260—2.5.

Freyberger, Donald L., and J. F. Longenecker, to Lukens Steel Co. Process for the production of bonded metal structures. 3,299,503, 1-24-67, Cl. 29—471.5.

Freyer, Ernest F. Screening means for clamshell bucket. 3,299,548, 1-24-67, Cl. 37—183.

Freyholdt, Helmut, and A. Aebischer, to Ventilator A.-G. Vane for an axial ventilator and method for producing the same. 3,300,123, 1-24-67, Cl. 230—134.

Fr. Hesser Maschinenfabrik-Aktiengesellschaft: *See*—
Stambera, Adolf, and Cap. 3,299,975.

Frick Co.: *See*—
Dreksler, Moshe Y., and Sloan. 3,299,659.

Frick, Harold L., to Whirlpool Corp. Burner. 3,299,941, 1-24-67, Cl. 158—115.

Frick, John G., Jr.: *See*—
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Fried, John, T. S. Bry, and A. A. Patchett, to Merck & Co., Inc. 17α-trifluorovinyl androstenes. 3,300,518, 1-24-67, Cl. 260—397.4.

Friedeck, Walter: *See*—
Blise, Bernard G., and Friedeck. 3,299,446.

Friis, Carsten, to Central Machine Works Co. Spring controlled and cushioned springboard devices. 3,300,209, 1-24-67, Cl. 272—66.

Frohbieter, Edwin H.: *See*—
Linstromberg, William J., and Frohbieter. 3,299,656.

Frotscher, Herbert: *See*—
Michael, Gregor, Frotscher, Markert, and Petzold. 3,300,395.

Frungel, Frank, and G. Roder, to Impulsphysik Dr.-Ing. Frungel, Frank, G.m.b.H. Spark discharge arrangement. 3,300,682, 1-24-67, Cl. 315—171.

Fujihashi, Seitaro, to Kyoto Machinery Co., Ltd. Apparatus for continuously leading textiles into or out of a pressure treating chamber. 3,299,676, 1-24-67, Cl. 68—5.

Fuji Photo Film Co. Ltd.: *See*—
Fukuda, Susumu. 3,299,791.

Fukuda, Susumu, to Fuji Photo Film Co. Ltd. Device for developing copying paper. 3,299,791, 1-24-67, Cl. 95—89.

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Yazejian, Zaven, Fuld, and Benkler. 3,300,017.

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Bennett, Royston H., and Fuller. 3,300,537.

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Suh, Nam P., and Fuller. 3,299,812.

Fuller, Ray A. Multi can package. 3,300,041, 1-24-67, Cl. 206—65

Fulton, Robert W. Multi-purpose ignition test unit. 3,300,713, 1-24-67, Cl. 324—16.

Funke, Charles B., J. E. Kleboe, and M. E. Runyan, to R. R. Donnelley & Sons Co. Linecasting control system. 3,300,035, 1-24-67, Cl. 199—11.

Furnier-und Aperrholzwerk, Werz, J. F., Jr., KG.: *See*—
Munk, Edmund. 3,299,595.

Furtner, Vinibald: *See*—
Vassel, Bruno, Furtner, and Feige. 3,300,330.

Fuscoe, John M.: *See*—
Gregory, John W., Fetheroff, and Fuscoe. 3,300,341.

Future Products Tool Corp.: *See*—
Batur, Eugene H. 3,300,769.

Gabriel, William F., to Keltec Industries, Inc. Negative resistance amplifier. 3,300,730, 1-24-67, Cl. 330—61.

Gabrielian, Henry, to Electronic Engineering Co. of California. Rotary thumbwheel voltage divider switch. 3,300,748, 1-24-67, Cl. 338—200.

Gaertner, Van R: *See*—
Schisla, Robert M., and Gaertner. 3,300,376.

Gagliardi, Domenick D., and F. B. Shippee, to Scientific Chemicals Inc. Metal containing compositions, processes and products. 3,300,336, 1-24-67, Cl. 117—38.5.

Gaitten, Walden M., to Soderhamn Machine Mfg. Co. Apparatus for forming particle boards. 3,299,478, 1-24-67, Cl. 19—155.

Galey, William F., J. A. Gulotta, F. K. Umbel, to Pittsburgh Plate Glass Co. Length and area partitioning methods and apparatus. 3,300,629, 1-24-67, Cl. 235—185.

Gambale, John C.: *See*—
Rockefeller, George D., Jr., and Gambale. 3,300,648.

Games, Robert F., to Dana Corp. Spacer-expander for piston ring assembly. 3,300,224, 1-24-67, Cl. 277—139.

Gangelhoff, Vernon E. Bathtub construction. 3,299,444, 1-24-67, Cl. 4—173.

Gannett, Wright K., to Mast Development Co., Inc. Digitalizer and digital servomechanism. 3,300,773, 1-24-67, Cl. 340—347.

Garrett, Dwight A., to Gorrett Enumclaw Co. Chain-driven articulating frame vehicle. 3,299,981, 1-24-67, Cl. 180—51.

Gates, Robert W., to United States of America, Atomic Energy Commission. Minimal gas producing low detonation rate explosive and detonation sources. 3,299,811, 1-24-67, Cl. 102—24.

Gaudino, Orlando A. Visor clip. 3,300,168, 1-24-67, Cl. 248—229.

Gauthier, Robert, to Societe Industrielle Generale de Mecanique Applique S.I.G.M.A. Rotary liquid metering pumps, in particular for the feed of fuel injection pumps. 3,299,824, 1-24-67, Cl. 103—120.

Gauthier, Roger A., Jr., and R. J. Snooks, Jr., to Monsanto Co. Polyamide of enhanced dyeability containing phenyl phosphonic acid and N-amino ethyl piperazine. 3,300,448, 1-24-67, Cl. 260—78.

Gebruder Junghans Aktiengesellschaft: *See*—
Junghans, Helmut, and Kaiser. 3,299,614.

Gechele, Giovanni B.: *See*—
Guzzetta, Giuseppe, Sabbioni, and Gechele. 3.300,462.

Geen, James E., and F. H. Winters, to Caterpillar Tractor Co. Tractor leveling device for earth moving scrapers. 3,299,547, 1-24-67, Cl. 37—129.

Gehrie, Charles S., to Presto Lock Co., Inc. Latching and locking means for luggage cases and like receptacles 3,299,677, 1-24-67, Cl. 70—69.

Gehrt, Edwin E., and W. T. Jensen, to Methode Electronics, Inc. Method of making forked contacts. 3,299,493, 1-24-67. Cl. 29—155.55.

Geiger, Joseph A., and J. P. Schneebeli, to FMC Corp. Apparatus for seaming metallic containers. 3,299,845, 1-24-67, Cl. 113—30.

Geigy Chemical Corp.: *See*—
Doebel, Karl J., and Pfenninger. 3,300,482.
Doebel, Karl J., and Pfenninger. 3,300,504.

General Dynamics Corp.: *See*—
Bray, Donald T., Le Grange, Merten, and Park. 3,300,344.

General Electric Co.: *See*—
Alper, Stanley. 3,299,630.
Caulier, Paul W., and Dixon. 3,299,771.
Bessarab, Michael. 3,300,681.
Boyles, Robert L. 3,300,664.
Coates, Clarence L., Jr. and Lewis. 3,300,628.
Curtis, Truman P., and Vaughan. 3,300,673.
De Santis, Vincent J. 3,300,037.
Franz, Joseph P. 3,300.746.
Hay, Allan S. 3,300,456.
Pugh, John W., Amra, and Hurd. 3,300,285.

General Films, Inc.: *See*—
Welkert, Roy J. 3,299,606.

General Fireproofing Co., The: *See*—
Wilmer, Rudolph H., and Machingo. 3,300,265.

General Fittings Co.: *See*—
Ellis, Charles A. 3,300,620.

General Foods Corp.: *See*—
Marona, Robert N. 3,300,099.
Szczesniak Alina S., and Engel. 3,300,318.

General Electric Co.: *See*—
Watters, Robert L. 3,300,659.
Wellford, Armistead L. 3,300,706.
Woodbury, Henry J. 3,300,671.

General Electric Co. Ltd., The: *See*—
West, Gordon M. 3,300,732.

General Motors Corp.: *See*—
Carlson, Donald W., and Cox. 3,299,475.
Carpenter, Arthur J., and Kaptur. 3,299,571.
Castellana, Jack P. 3,299,734.
Frazier, Richard D., and Dafler. 3,300,666.
Gooderum, Reuben C. 3.300 179.
Jacobs, James W. 3,299,524.
Johnson, Douglas. 3,300 121.
Nakolan, Andrew P. 3.300,248.
Newman, Ralph P. 3,300,726.
Peterson, Victor W. 3,300 004.
Sand, Darrel R. 3,299,738.
Short, Brooks H., and Shaw. 3,300,709.
Sones, William L., Elliott, and Neyhouse. 3,300,150.
Stott, Thomas C. F. 3 299 735.
Ziegler, Eugene R. 3,299,721.

General, Norman T., to Ford Motor Co. Transmission. 3,299,742, 1-24-67, Cl. 74—687.

General Precision Inc.: *See*—
Russell, Howard, Jr. 3,299,731.
Stiles, John C. and Carow. 3,299,716.
Trostrud, Arville T., Jr. 3,300,765.

General Radio Co.: *See*—
Noyes, Atherton Jr. 3,300,731.

General Research, Inc.: *See*—
Simjian, Luther G. 3,300,016.

General Signal Corp.: *See*—
Hughson, J. Donald.. 3.299,834.

Gershon, Herman, and W. J. Nickerson, to H. Gershon. 8-hydroxyquinoline metal chelates. 3,300,498, 1-24-67, Cl. 260—270.

Gershon, Herman: *See*—
Gershon, Herman, and Nickerson. 3,300,498.

Gerson, Herman, and W. E. Bachman, to Allied Chemical Corp. Synthesis of metal-containing phthalocyanines. 3,300,512, 1-24-67, Cl. 260—314.5.

Gervasi, Jay A., and L. W. McTeer, to Union Carbide Corp. Polymers of vinyl chloride and certain polymerizable aliphatic ethers containing ester groups. 3,300,455, 1-24-67, Cl. 260—87.1.

Gevaert Photo-Producten N.V.: *See*—
Sevens, Gerard M., and Wagemans. 3,300,306.
Vrancken, Marcel N., Cleeys, Van Paesschen, and Lambrechts. 3,300,313.
Willems, Jozef F., and de Munck. 3,300,312.

Gewerkschaft Eisenhutte Westfalia: *See*—
Dommann, Gunther, and Temme. 3,300,031.

Gewirc, Vladislav, and M. Shachter. Quick acting tool for threaded fasteners. 3,299,725, 1-24-67, Cl. 74—157.

Gharaibeh, Hashem: *See*—
Johnson, Donald E., and Gharaibeh. 3,299,759.

Gilbert, Curtiss M., to Sprague Electric Co. Electrolytic capacitor with a gelled electrolyte of an ionogen and dimethylformamide. 3,300,691, 1-24-67, Cl. 317—230.

Girard, Pierre: *See*—
Chatelon, Andre E. J., and Girard. 3,300,774.

Girling Ltd.: *See*—
Boadle, Campbell D., and Morgan. 3,299,976.

Glass, Marvin I. C. Ayala, and G. A. Barlow, to Marvin Glass & Associates. Music box. 3,299,762, 1-24-67, Cl. 84—95.

Glass, Marvin, & Associates: *See*—
Glass, Marvin I., Ayala, and Barlow. 3,299,762.
Glass, Marvin I., Ayala, and Barlow. 3,299,763.

Glass, Marvin I., C. Ayala, and G. A. Barlow, to Marvin Glass & Associates. Music box. 3,299,763, 1-24-67, Cl. 84—95.

Glaverbel S.A.: *See*—
Plumat, Emile, and Jaupain. 3,300,323.

Rohm & Haas Co.: *See*—
Glavis, Frank J., Keighley, and Haag. 3,300,429.

Globe-Union Inc.: *See*—
Noddin, Ray C. 3,300,702.

Goodyear Aerospace Corp.: *See*—
Burkley, Ralph A., Cully, and Folk. 3,300,369.
Franks, John T., Jr., and Tuttle. 3,300,760.
Tuttle, Gene T. 3,300,761.
Batcher, Kenneth E. 3,300,762.

Goodyear Tire & Rubber Co., The: *See*—
Bush, Charles F. 3,299,935.
Coo, Albert W. 3,299,988.
Hunsucker, Eugene R. 3,300,426.
Pace, Henry A. 3,299,934.
Prevorsek, Dusan C. 3,300,440.

Glavis, Frank J., W. J. Keighley, and T. H. Haag, to Rohm & Haas Co. Aqueous polymeric blends containing ureido monomer. 3,300,429, 1-24-67, Cl. 260—29.6.

Gluchowicz, Gersson, to Ulosunda Verkstader Aktiebolag. Internal grinding machines. 3,299,580, 1-24-67, Cl. 51—165.

Godbersen, Harold W. Bridge deck finisher. 3,299,786, 1-24-67, Cl. 94—45.

Goecke, Max: *See*—
Nagelschmidt, Rudolf, and Goecke. 3,300,425.

Gogia, Jugal K., W. L. Hinde, and K. Seidner, to TRW, Inc. Alternator load demand sequencing system. 3,300,647, 1-24-67, Cl. 290—30.

Gold, Charles M. and E. Cooper, to Yardney International Corp. Pressure switch and apparatus incorporating same. 3,300,703, 1-24-67, Cl. 320—46.

Goldbert, Irving: *See*—
Schendorf, John, and Goldbert. 3,300,014.

Golden, Allen: *See*—
Tiner, Jack D., and Golden. 3,300,390.

Goldman, David A.: *See*—
Gushue, Edward J., and Goldman. 3,300,591.

Goldman, Rubin. Punch assembly. 3,299,761, 1-24-67, Cl. 83—639.

Golobart, Ramon B. Selective weft presenting device. 3,299,909, 1-24-67, Cl. 139—122.

Good, Arthur L. Power transmission apparatus. 3,300,005, 1-24-67, Cl. 192—61.

Goode, Chester L. Apparatus for opening collapsed box blanks. 3,299,784, 1-24-67, Cl. 93—53.

Gooderum, Reuben C., to General Motors Corp. Blade stalk cover plate. 3,300,179, 1-24-67, Cl. 253—77.

Goodner, Homer W., to Monsanto Co. Yarn tecturing apparatus. 3,299,780, 1-24-67, Cl. 91—35.

Goodwin, Ollie K., to Newport News Shipbuilding and Dry Dock Co. Anchor apparatus. 3,299,848, 1-24-67, Cl. 114—208.

Gordon, Henry D. Resilient units. 3,300,042, 1-24-67, Cl. 267—62.

Gorham, William F., and H. L. Willard, to Union Carbide Corp. Coated particulate material and method for producing same. 3,300,332, 1-24-67, Cl. 117—100.

Gorman, Jeremy W., and B. W. Nordlander, to Loctite Corp. Adhesive anaerobic composition and method of producing same. 3,300,547, 1-24-67, Cl. 260—885.

Gorrett Enumclaw Co.: *See*—
Garrett, Dwight A. 3,299,981.

Gosnell, Rex B., to Whittaker Corp. Coating process for glass fibers and product. 3,300,334, 1-24-67, Cl. 117—126.

Gossling, Robert C., and L. S. Wilcoxon, to Clopay Corp. Window shade having telescoping roller. 3,299,944, 1-24-67, Cl. 160—263.

Gott, Alfred J.: *See*—
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Gottfried, Louis, and J. Berger. Crib-bed. 3,299,450, 1-24-67, Cl. 5—100.

Gottwald, Bruce C., and J. M. Haigh, to Albemarle Paper Co. Process for smoothly laminating a thin film on an unsmoothed paper base. 3,300,864, 1-24-67, Cl. 156—281.

Gould, Charna: *See*—
Gould, William and C. 3,299,766.

Gould, William and C. Sealing element for fastener devices. 3,299,766, 1-24-67, Cl. 85—1.

Grable, Gene T. Bib. 3,299,440, 1-24-67, Cl. 2—49.

Grace, W. R., & Co.: *See*—
Gunkel, Kenneth M. 3,299,477.
Terry, Lewis I. 3,299,619.

Graff, Stanley F. Stitch cutting machine. 3,299,454, 1-24-67, Cl. 12—39.3.

Grage, Casper R., to Continental Granite Corp. Apparatus for cutting cylindrical blocks of stone. 3,299,877, 1-24-67, Cl. 125—21.

Graham, Paul R.: *See*—
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Grahl, Darwin R., to American Radiator & Standard Sanitary Corp. Air conditioning system and valve used therein. 3,300,132, 1-24-67, Cl. 236—1.

Granite City Steel Co.: *See*—
Heagler, Richard B., and Wilson. 3,299,641.

Grant, Norman H.: *See*—
Alburn, Harvey E., Clark, and Grant. 3,300,510.

Grant, Robert F., and R. V. Jensen, to Walker Mfg. Co. Method of removing the cell walls of a resilient cellular filter material. 3,300 558, 1-24-67, Cl. 264—321.

Grashege, Albert A. Multiple compartment single piece blank carton and single piece blank therefor. 3,300,116, 1-24-67, Cl. 229—28.

Grau, Theodore H. Metering device. 3,300,024, 1-24-67, Cl. 198—39.

Gray, Allan P.: *See*—
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Gray, Jack E., G. E. Underwood, and K. M. Mann, to The Upjohn Co. Diminishing toxicity of antiviral N⁶-(hydroxyalkyl)adenines with 4-hydroxypyrazolo(3,4-*d*)pyrimidine. 3,300,380, 1-24-67, Cl. 167—65.

Gray, Landon R. Sheet metal stretch forming apparatus and method. 3,299,688, 1-24-67, Cl. 72—296.

Greenlee, Sylvan O., to S. C. Johnson & Son, Inc. Polymeric polycarboxylic acids. 3,300,444, 1-24-67, Cl. 260—47.

Gregory, John W., C. W. Fetheroff, and J. M. Fuscoe, to TRW Inc. Fuel cell heat and water removal system using electrolyte circulation. 3,300,341, 1-24-67, Cl. 136—086.

Greiner, Harry, to Linotype G.m.b.H. Mold wheel indexing mechanism. 3,300,036, 1-24-67, Cl. 199—13.

Grettle, Donald P.: *See*—
Norris, Frank A., and Grettle. 3,300,524.

Grey, Donald M. Bale stacking machine. 3,300,059, 1-24-67, Cl. 212—35.

Grich, Edward R., and J. W. Hood, to Purifax, Inc. Purification of putrescible unstable wastes. 3,300,402, 1-24-67, Cl. 210—6.

Griese, Elmer W., Jr.: *See*—
O'Brien, Robert J., and Griese. 3,299,464.

Griffith, George L., to Trojan Powder Co. Explosive conitrates and process for preparing the same. 3,300,348, 1-24-67, Cl. 149—93.

Grimes, David D., to The Richards Corp. Unitary serpentine tubular light source and mounting means and method of making. 3,300,633, 1-24-67, Cl. 240—11.4.

Grondin, George F.: *See*—
Doelz, Melvin L., and Grondin. 3,300,764.

Gruenman, Vsevolod, and M. Hoffer, to Hoffmann-La Roche Inc. 2-aryl-2-piperazinylaceto-phenones. 3,300,497, 1-24-67, Cl. 260—268.

Guarino, Richard: *See*—
Elkind, Phillip. 3,299,874.

Guerout, Jean-Bernard, and M. Lafond, to AMP Inc. Crimping presses for crimping connector elements onto conductor means and the method therefor. 3,299,690, 1-24-67, Cl. 72—330.

Guerra, Alberto: *See*—
Ferrari, Alsides, Guerra, and Taramasso. 3,299,827.

Gulotta, Joseph A.: *See*—
Galey, William F., Gulotta, and Umbel. 3,300,629.

Gunkel, Kenneth M., to W. R. Grace & Co. Apparatus for processing crushed fibrous stalks. 3,299,477, 1-24-67, Cl. 19—90.

Gushue, Edward J., and D. A. Goldman, to Cognitronics Corp. Audio playback unit. 3,300,591, 1-24-67, Cl. 179—100.3.

Gustafson, Norman F., to The Stanley Works. Swinging door and hardware for mounting the same. 3,299,573, 1-24-67, Cl. 49—388.

Gustafsson, Nils I. E., and A. Odelberg, to Bofors, Aktiebolaget. Gyroscopic device. 3,299,717, 1-24-67, Cl. 74—5.7.

Guzzetta, Giuseppe, F. Sabbioni, and G. B. Gechele, to Montecatini Edison S.p.A. Process for the depolymerization of styrene polymers. 3,300,462, 1-24-67, Cl. 260—93.5.

Gwinn, Robert P., to Sunbeam Corp. Glide agent dispenser for electric shaver. 3,299,506, 1-24-67, Cl. 30—41.

Haag, Thomas H.: *See*—
Glavis, Frank J., Keighley and Haag. 3,300,429.

Hack, Nathan, to Ripple Sole Corp. Shoe heel. 3,299,544, 1-24-67, Cl. 36—59.

Hadlock, Ronald O., to Dow Corning Corp. Food release coating. 3,300,542, 1-24-67, Cl. 260—825.

Haeberle, Manfred: *See*—
Schmid, Karl, Stedefeder, Guenther, Haeberle, Lautenschlager, and Trieschmann. 3,300,457.

Haecker, Ernest. Dartboard with expanded plastic base. 3,300,216, 1-24-67, Cl. 273—102.

Haefner, Fred F. Trailer power unit. 3,299,980, 1-24-67, Cl. 180—14.

Haentzschel, Frederich: *See*—
Cypra, Arne, Haentzschel, Munk, and Winter. 3,300,695.

Haigh, John M.: *See*—
Gottwald, Bruce C., and Haigh. 3,300,364.

Hall, James J. A: *See*—
Bertolini, William A., and Hall. 3,300,228.

Hall, Oliver C., to Stromberg-Carlson Corp. Telephone test circuit. 3,300,592, 1-24-67, Cl. 179—175.2.
Hall, Teller B. Cutting tool. 3,299,491, 1-24-67, Cl. 29—96.
Halliburton Co.: *See*—
Hulme, Jack R. 3,299,702.
Halverson, James E. Egg rack. 3,300,054, 1-24-67, Cl. 211—14.
Hamann, Rudolf: *See*—
Feiner, Alfred, Hamann, and Schopf. 3,299,642.
Hamner, Robert L.: *See*—
Pilloton, Roger L., and Hamner. 3,300,284.
Hamprecht, Guenther, L. Vogel, M. Schwarzmann, and R. Mohr, to Badische Anilin & Soda-Fabrik Aktiengesellschaft. Vaporizing urea in the production of melamine. 3,300,492, 1-24-67, Cl. 260—249.7.
Handwerk, Otto: *See*—
Shallenberg, Robert L., and Handwerk. 3,299,705.
Hanka, Ladislav J.: *See*—
Bergy, Malcolm E., Coats, Hanka, and Johnson. 3,300,382.
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Wagner, Tobias. 3,300,771.
Hanschitz, Rudolf. Rotating comminuting attachment for use with portable kitchen appliances of the electric mixer type. 3,299,924, 1-24-67, Cl. 146—68.
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Lauer, James L., and Hansel. 3,300,283.
Hansen, Philip J., to Motorola Inc. Squelch circuit. 3,300,723, 1-24-67, Cl. 325—348.
Hanske, Willi W.: *See*—
Zahn, Rudolf K., Tiesler, and Hanske. 3,300,476.
Hanson, Rudolph A., and F. J. Deptula, to Yard-Man, Inc. Rotary disc mower with a cast frame and a sheet metal blade housing. 3,299,622, 1-24-67, Cl. 56—25.4.
Hanze, Arthur R., to The Upjohn Co. Deazapurine riboside cyclic 3',5'-phosphates and process therefor. 3,300,479, 1-24-67, Cl. 260—211.5.
Harada, Katsujiro. Music box. 3,300,220, 1-24-67, Cl. 274—10.
Hardcastle, William E. Oil filter adapter kit. 3,300,049, 1-24-67, Cl. 210—232.
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Hardy, Paul W., and G. W. Peisker, to American Can Co. Method of producing a lightweight foamed metal. 3,300,296, 1-24-67, Cl. 75—20.
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Harmon, Thomas O., to The Dow Chemical Co. Apparatus for dispensing liquids employing a cup having a foamable coating thereon. 3,299,914, 1-24-67, Cl. 141—82.
Harner, Donald R., and M. Plaza, to AMP Inc. Reversible plugboard programming panel. 3,300,750, 1-24-67, Cl. 339—18.
Harnish, James R., to Westinghouse Electric Corp. Check valve means for heat pumps. 3,299,662, 1-24-67, Cl. 62—324.
Hernick, Jack F. Brake shoes. 3,300,353, 1-24-67, Cl. 156—154.
Harnish, James R., and R. W. Ayling, to Westinghouse Electric Corp. Check valve manifolds for heat pumps. 3,299,661, 1-24-67, Cl. 62—324.
Harrington, John A., R. K. Allwardt, B. E. Porter, and R. J. Wass, to Wolverine Shoe & Tanning Corp. Heel and sole trimmer. 3,299,455, 1-24-67, Cl. 12—87.
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Harris, David A., to The Rank Organisation Ltd. Phase sensitive detectors. 3,300,727, 1-24-67, Cl. 329—50.
Harris, John. Dockboard locking unit. 3,299,457, 1-24-67, Cl. 14—72.
Harris-Intertype Corp.: *See*—
Hunstiger, Francis. 3,299,777.
Kolb, Edwin R., Richardson, and Hunstiger. 3,299,787.
Harrison, Henry. Stepladder construction. 3,299,985, 1-24-67, Cl. 182—194.
Hart, Atlee S., and L. G. Mallett, to American Radiator & Standard Sanitary Corp. Elapsed time meter. 3,299,627, 1-24-67, Cl. 58—145.
Hart, Harry E., to The Celotex Corp. Gypsum plaster board. 3,300,371, 1-24-67, Cl. 161—229.
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Sears, Hartley M. 3,299,857.
Hartenstein, Raymond G. Electromechanical analog multiplier which includes a semiconductor bridge circuit. 3,300,630, 1-24-67, Cl. 235—194.
Hatch, Melvin J., to The Dow Chemical Co. Exchange resins from vinyl sulfonium resins and method for making same. 3,300,416, 1-24-67, Cl. 260—2.1.
Hatch, Richard W., Jr., to The Foxboro Co. Digital operator. 3,300,176, 1-24-67, Cl. 251—33.
Hatschek, Rudolf, to H. List. Method for the direct measurement of pressure differences. 3,299,711, 1-24-67, Cl. 73—398.
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Sabbaides, Hippocrate, and Sommer. 3,299,896.
Haupt, Rudolf: *See*—
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Hausweiler, Arnold: *See*—
Kunze, Heinrich, Hausweiler, Scherhag, and Haupt. 3,299,618.
Hautau, Charles F., to Baldwin-Lima-Hamilton Corp. Program controlled tube bender. 3,299,681, 1-24-67, Cl. 72—7.
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Hawley, Charles L., Jr., to Control Data Corp. High speed scanner and reservation system. 3,300,758, 1-24-67, Cl. 340—147.
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Hay, Allan S., to General Electric Co. Polymeric acetylenes and process for producing the same. 3,300,456, 1-24-67, Cl. 260—88.2.
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Hedgepeth, Edward B. Bumper mounts for carrying loads imposed above vehicles. 3,300,111, 1-24-67, Cl. 224—42.07.
Heiland, Wolfgang, to United States of America, Agriculture. Puffing gun. 3,299,799, 1-24-67, Cl. 99—238.
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Sontheimer, Heinrich, and Heinicke. 3,300,401.
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Heinze, Bennie, to Cities Service Oil Co. Geochemical exploration method for determining the proximity of an underground petroleum reservoir. 3,300,641, 1-24-67, Cl. 250—71.
Helms, Charles R., to Knoll Associates, Inc. Upholstery cover-frame connection. 3,300,251, 1-24-67, Cl. 297—445.
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Hench, Hans. Spinning nozzle fastener. 3,299,471, 1-24-67, Cl. 18—8.
Hendrick, David L., and J. V. Crowder, to Consolidated Foods Corp. Packaging machine. 3,299,611, 1-24-67, Cl. 53—186.
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Hendrix, William L., J. P. Markham, and T. R. Hunnicutt, to Hendrix Wire & Cable Corp. Aerial cable spacer and tie apparatus. 3,300,576, 1-24-67, Cl. 174—146.
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Henig, Seymour, and E. C. Palasky, to United States of America, Commerce. Sorting machine providing self-optimizing inventory reduction. 3,300,066, 1-24-67, Cl. 214—11.
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Budnowski, Manfred. 3,300,490.
Hennessey, William M., to Burroughs Corp. Package for an electronic module. 3,300,687, 1-24-67, Cl. 317—101.
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Dollgener, Robert W., Henry, and Abbott. 3,300,250.
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Flowers, Thomas H. 3,300,588.
Herman, Daniel F.: *See*—
Orsino, Joseph A., Herman, and Brancato. 3,300,329.
Hermanns, Peter, to Frau S. Heim (nee Krukenberg). Control device. 3,300,161, 1-24-67, Cl. 242—154.
Herz, Kurt P. Carrying case and garment hanger. 3,299,997, 1-24-67, Cl. 190—43.
Herzog, William E., to Collins Radio Co. A.C. ripple and noise reduction without increasing current drain. 3,300,740, 1-24-67, Cl. 333—79.
Hess, Kenneth G., to Polar Ware Co. Press guard. 3,300,009, 1-24-67, Cl. 192—130.
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Black, Lawrence W. 3,300,405.
Heubl, Walter. Bottle closure. 3,300,074, 1-24-67, Cl. 215—90.
Hewlett-Packard Co.: *See*—
Umphrey, James M. 3,300,718.
Hewett, Willis G. Limit switch. 3,300,597, 1-24-67, Cl. 200—47.
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Williams, Robert H., and Hickey. 3,300,360.
Higgins, Edward D.: *See*—
Javorik, Laszlo J., and Higgins. 3,299,809.
Hill, Chester T.: *See*—
Du Rocher, Gideon A., and Hill. 3,300,601.
Hill, John: *See*—
Calandrello, Nicola A., Hill, and Royan. 3,300,340.
Hill, Maurice: *See*—
Schumacher, William J., and R. D. and M. Hill. 3,299,757.

Hill, Richard D.: *See*—
Schumacher, William J., and R. D. and M. Hill. 3,299,757.
Hill, Robert V.: *See*—
Bystrom, Albin, Hill, and Williams. 3,300,768.
Hill Tool and Engineering Co.: *See*—
Schumacher, William J., and R. D. and M. Hill. 3,299,757.
Hill, William J., to Morgan Construction Co. Rod bundling machine. 3,299,609, 1-24-67, Cl. 53—167.
Hills, William H., E. K. McIntosh, and K. B. Roy, Jr., to Monsanto Co. Yarn texturing process. 3,299,485, 1-24-67, Cl. 28—75.
Hilton, Roy, and F. G. Powles, to International Standard Electric Corp. Rotatable piezoelectric tuning device. 3,300,665, 1-24-67, Cl. 310—9.1.
Himes, Don L., and R. M. Aughey, to International Telephone and Telegraph Corp. Solid state identification keyer. 3,300,582, 1-24-67, Cl. 178—79.
Hinde, William L.: *See*—
Gogia, Jugal K., Hinde, and Seldner. 3,300,647.
Hirsch, Abraham A. Truly vertical flow upflow tank with complete volumetric transit for water and waste treatment. 3,300,047, 1-24-67, Cl. 210—197.
Hirsch, Gerhard, and W. Krank, to Telefunken Patentverwertungsgesellschaft m.b.H. Waveguide fitting for coupling helical elliptical waveguide. 3,300,741, 1-24-67, Cl. 333—98.
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Tishler, Max, Steinberg, and Hirschmann. 3,300,483.
Hitachi, Ltd.: *See*—
Koreishi, Yasuki. 3,300,157.
Hoadley, Harvey O.: *See*—
Chandler, Jasper S., and Hoadley. 3,299,789.
Hockaday, Edmund E., to Weyerhaeuser Co. Crossarm assembly. 3,299,586, 1-24-67, Cl. 52—40.
Hoehmann, Henry G., to International Business Machines Corp. Message exchange system utilizing time multiplexing and a plurality of different sized revolvers. 3,300,763, 1-24-67, Cl. 340—172.5.
Hoenel, Herbert, and H. Lackner, to Vianova Kunstharz Aktiengesellschaft. Process for the production of hardenable products by multiesterification. 3,300,424, 1-24-67, Cl. 260—21.
Hoesch Aktiengesellschaft: *See*—
Sablotny, Adalbert, and Wennemann. 3,300,616.
Hoffer, Max: *See*—
Gruenman, Vsevolod, and Hoffer. 3,300,497.
Hoffmann-La Roche Inc.: *See*—
Gruenman, Vsevolod, and Hoffer. 3,300,497.
Hogan, Walter H.: *See*—
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Holden, Kenneth G., to Smith Kline & French Laboratories. Steroidal C-17 spirolactones and processes and intermediates used in the preparation thereof. 3,300,489, 1-24-67, Cl. 260—239.57.
Hollichem Corp.: *See*—
Shibe, William J., Jr., and Sittenfield. 3,300,377.
Hollingworth, Charles E. Gas treatment device. 3,299,620, 1-24-67, Cl. 55—126.
Hollstein, Elmer J., to Sun Oil Co. Slow release fertilizer composition comprising dispersion of urea-wax adduct in wax-polymer blend. 3,300,294, 1-24-67, Cl. 71—28.
Holmes, Jack H., to FMC Corp. Method and apparatus for handling articles. 3,300,021, 1-24-67, Cl. 198—33.
Holthoff, Helmut: *See*—
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Holzer, Walter. Device for making a momentary contact. 3,300,595, 1-24-67, Cl. 200—19.
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Honeywell Inc.: *See*—
Sear, Arthur W. 3,299,536.
Scarlett, Theodore C. 3,299,701.
Witt, Walter, and Mayer. 3,299,770.
Sear, Arthur W. 3,300,567.
Sear, Arthur W. 3,300,568.
Cox, John A., Jr. 3,300,613.
Fillmore, Robert L., Flom, and Hawkins. 3,300,696.
Hood, John W.: *See*—
Grich, Edward R., and Hood. 3,300,402.
Hoosier Crown Corp.: *See*—
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Hopkins, Neil E., and W. L. Osborn, to Borg-Warner Corp. Purge system for absorption refrigeration apparatus. 3,299,666, 1-24-67, Cl. 62—475.
Hopp, Harold P. Method of applying spark plug gaskets. 3,299,504, 1-24-67, Cl. 29—511.
Hora, Karl, to Firma "Canada" Tiefbohrgerate und Maschinenfabrik and Ing. S. Nadel & A. Nadel. Bar-coupling. 3,299,830, 1-24-67, Cl. 103—202.
Horgan, William J., Jr.: *See*—
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Horvath, Jack W., and A. C. Doumas, to The Dow Chemical Co. Electroless metal plating with foam. 3,300,335, 1-24-67, Cl. 117—130.
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Shimizu, Masao, Ohta, Nagase, Okada, and Hosokawa. 3,300,508.
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Rauner, Frederick J., and Houle. 3,300,314.
Howard, William J. Shaft bushings. 3,300,259, 1-24-67, Cl. 308—121.
Howe, Charles P. Superposed well tubing assembly of separate tubing strings and method of supporting same. 3,299,956, 1-24-67, Cl. 166—49.
Howe, David O., J. E. Etsel, and A. P. Miller, to Commercial Solvents Corp. Anaerobic treatment of organic industrial wastes in an artificial lagoon. 3,300,404, 1-24-67, Cl. 210—11.
Howells, Earl: *See*—
Terahin, John A., and Howells. 3,300,349.
Howey, Thomas L. Machine shop combination. 3,299,918, 1-24-67, Cl. 144—1.
Hu, James S.: *See*—
Orloff, Daniel L., Keating, and Hu. 3,299,608.
Huber, Harry, and R. Le Bihan, to CSF-Compagnie Generale de Telegraphie Sans Fil. Fuel cell including electrodes having two dissimilar surfaces. 3,300,343, 1-24-67, Cl. 136—86.
Hubbard, John S. Overhead maintenance apparatus. 3,299,983, 1-24-67, Cl. 182—63.
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Kasza, Carl J., and Smith. 3,300,347.
Hughes, Claude A. Reclining chair. 3,300,244, 1-24-67, Cl. 297—89.
Hughson, J. Donald, to General Signal Corp. Control system for railway trains. 3,299,834, 1-24-67, Cl. 105—61.
Huizinga, Martin, to R. C. Allen Business Machines, Inc. Gyroscopic instrument. 3,299,522, 1-24-67, Cl. 33—204.
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Hendrix, William L., Markham, and Hunnicutt. 3,300,576.
Hunstad, Asbjorn, to International Standard Electric Corp. Regulated D.C. voltage converter. 3,300,705, 1-24-67, Cl. 321—2.
Hunstiger, Francis, to Harris-Intertype Corp. Web register mechanism. 3,299,777, 1-24-67, Cl. 68—24.
Hunstiger, Francis: *See*—
Kolb, Edwin R., Richardson, and Hunstiger. 3,299,787.
Hunsucker, Eugene R., to The Goodyear Tire & Rubber Co. Adhesive composition comprising mixture of a phenol-formaldehyde resin and a polybutadiene rubber latex. 3,300,426, 1-24-67, Cl. 260—29.3.
Hunter Douglas International (Quebec) Ltd.: *See*—
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Hurd, Dallas T.: *See*—
Pugh, John W., Amra, and Hurd. 3,300,285.
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Hurlin, Kenneth P., to Ford Motor Co. Retainer bushing. 3,299,737, 1-24-67, Cl. 74—595.
Hurvits, Hyman: *See*—
Cooper, James N. 3,299,538.
Husted, Lawrence E., to Ametek, Inc. Rake. 3,299,545, 1-24-67, Cl. 56—400.16.
Hutson, Clifford L. Dental aspirator. 3,299,511, 1-24-67, Cl. 32—33.
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Nava, Louis J., Hutton, Shields, and Kempf. 3,300,315.
Hylak, Peter J., to Institute of Gas Technology. Resistance heating device and method for melting concrete. 3,300,253, 1-24-67, Cl. 299—14.
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Zocholl, Stanley E. 3,300,685.
Ibisch, Alvin C. Rotary snow plow. 3,299,546, 1-24-67, Cl. 37—43.
Ideal Industries, Inc.: *See*—
Nivens, Allen B. 3,299,479.
Izuka, Keigo. Method and apparatus for measuring electromagnetic energy with photosensitive reflectors. 3,300,722, 1-24-67, Cl. 325—67.
Illinois Lock Co.: *See*—
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Illinois Milling, Inc.: *See*—
Liebig, Joseph M. 3,300,256.
Illinois Tool Works Inc.: *See*—
Bury, George J. 3,300,611.
Fisher, Julian V. 3,300,169.
Im, Ho Bin: *See*—
Wickham, Donald G., and Im. 3,300,411.
Imperial Chemical Industries Ltd.: *See*—
Baird, William, and Parkinson. 3,300,515.
Bild, Frederick, and Robinson. 3,300,555.
Impulsphysik Dr.-Ing. Frungel, Frank, G.m.b.H.: *See*—
Frungel, Frank, and Roder. 3,300,682.
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Industrial Ovens, Inc.: *See*—
Alexeff, Alexander V. 3,299,843.
Alexeff, Alexander V., and Zobenica. 3,299,574.
Ingelman, Bjorn G.-A.: *See*—
Flodin, Per G. M., and Ingelman. 3,300,474.
Ingersoll-Rand Co.: *See*—
Law, John P. 3,299,781.
Lewis, Samuel P. 3,299,971.
Ingle, Kermit K. Drafting implement or device. 3,299,514, 1-24-67, Cl. 33—79.
Ingwalson, Raymond W.: *See*—
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Inkley, Deforest E., to Eastman Kodak Co. Protective wallet for photographic films. 3,299,928, 1-24-67, Cl. 150—39.
Institut de Recherches de la Siderurgie Francaise: *See*—
Boucraut, Michel, and Toth. 3,299,947.
Boucraut, Michel, and Toth. 3,300,295.
Institute of Gas Technology: *See*—
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Institute Organicheskoi Khimii im, ND.: *See*—
Nikishin, Gennady I., and Mustafaev. 3,300,514.
Insul-8 Corp.: *See*—
Luberts, Alfred J. 3,300,593.
International Business Machines Corp.: *See*—
Perri, John A., Riseman, and Ruggles. 3,300,339.
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Deng, Niann-Chyung, Lindauer, and Paul. 3,300,625.
Delanoy, Richard L., and Laurer. 3,300,654.
Johnson, Alfred H., McConnell, and Schulz. 3,300,686.
Hoehmann, Henry G. 3,300,763.
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International Equipment Co.: *See*—
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International Standard Electric Corp.: *See*—
Bezaguet, Janine N. L., and Judeinstein. 3,300,624.
Chatelon, Andre E. J., and Girard. 3,300,774.
Hilton, Roy, and Powles. 3,300,665.
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International Telephone and Telegraph Corp.: *See*—
Calandrello, Nicola A., Hill, and Royan. 3,300,340.
Himes, Don I., and Aughey. 3,300,582.
Lombardi, Anthony J. 3,300,749.
Vallese, Lucio M. 3,300,631.
Irish, Meral C., to National Automatic Tool Co., Inc. Rotational positioning means. 3,300,010, 1–24–67, Cl. 192—142.
Isaacs, Harold, to E. Isaacs. Detachable cargo body and vehicle with elevating mechanism for same. 3,300,071, 1–24–67, Cl. 214—390.
Isaacs, Edith: *See*—
Isaacs, Harold. 3,300,071.
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Wakasa, Ryoichi, Kominami, and Ishii. 3,300,528.
Jackson, John P., and G. A. Boyd, to Vickers-Armstrongs (Engineers) Ltd. Control devices for hydraulic pumps and motors. 3,299,829, 1–24–67, Cl. 103—162.
Jackson, Winston J., Jr., and J. R. Caldwell, to Eastman Kodak Co. Chlorinated pivaiolactones and polymers therefrom. 3,300,451, 1–24–67, Cl. 260—78.3.
Jacob, Theodore A., R. A. Vitali, J. W. Rothrock, and E. S. Inamine, to Merck & Co., Inc. Isolation of 5′-guanylic acid by formation of 5′-suanylic and dioxanate. 3,300,477, 1–24–67, Cl. 260—211.5.
Jacobs, James W., to General Motors Corp. Process for dehydrating a sealed motor compressor unit. 3,299,524, 1–24–67, Cl. 34—1.
Jacobs, Paul F.: *See*—
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Jacobsen, Paul W., to H. G. Weber and Co., Inc. Three dimensional web shifting apparatus. 3,300,114, 1–24–67, Cl. 226—180.
Jacobson, Alden H., to The Heald Machine Co. Grinding machine. 3,299,579, 1–24–67, Cl. 51—115.
Jacoby, Harold E. Method and apparatus for the concentration of liquids. 3,299,942, 1–24–67, Cl. 159—17.
James, Arthur M. Grating for waste trenches. 3,299,785, 1–24–67, Cl. 94—33.
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James, John A., Jr., and C. J. Kramis, to E. I. du Pont de Nemours and Co. Process for preparing dimethylacetamide. 3,300,531, 1–24–67, Cl. 260—561.
Jamison, Robert M.: *See*—
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Jarlan, Gerard E., to Canadian Patents and Development Ltd. Stable floating support columns. 3,299,846, 1–24–67, Cl. 114—.5.
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Jeanlin, Pierre, to Neophone. Two-way telephone communication system. 3,300,584, 1–24–67, Cl. 179—1.
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Jenny, Walter, I. Hari, M. Staeuble, and K. Weber, to Ciba Ltd. Vat dyestuffs. 3,300,491, 1–24–67, Cl. 260—249.
Jensen, Hans A., and A. H. Eberman, to Mayer, Oscar & Co., Inc. Vacuum gripping apparatus. 3,300,063, 1–24–67, Cl. 214—1.
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Jensen, William T.: *See*—
Gehrt, Edwin E., and Jensen. 3,299,493.
Jerman, Ralph B., P. F. Santoro, and H. F. van Kessel, to United States of America, Atomic Energy Commission. In-core sampling and spray device for nuclear reactors. 3,300,388, 1–24–67, Cl. 176—19.
Johansson, Lars O. E., and G. B. Öström, to Forsvarets Fabriksstyrelse. Method and device for loading washing machines. 3,300,067, 1–24–67, Cl. 214—17.
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Johnsen, James A., to Teletype Corp. Character generation matrix. 3,300,596, 1–24–67, Cl. 200—46.
Johnson, Alfred H., W. R. McConnell, and P. R. Schulz, to International Business Machines Corp. Compatible packaging of miniaturized circuit modules. 3,300,686, 1–24–67, Cl. 317—101.
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Johnson, Douglas, to General Motors Co. Axial-flow compressor. 3,300,121, 1–24–67, Cl. 230—122.
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Jordan, Harold O. W., to The Machlett Laboratories, Inc. X-ray vidicon having a target and window assembly with improved thermal conductivity. 3,300,669, 1–24–67, Cl. 313—65.
Johnson, Herbert P., and L. R. Wilkes, to Textile Paper Products, Inc. Smooth-surfaced paper body and method of forming same. 3,300,159, 1–24–67, Cl. 242—118.32.
Johnston, Theodore L., to Mineral Concentrates and Chemical Co., Inc. Concentration of beryllium ores. 3,300,147, 1–24–67, Cl. 241—20.
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Jones, William C. Single cutter board straightener and method of straightening. 3,299,921, 1–24–67, Cl. 144—323.
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Junker, Otto. Vacuum induction furnace. 3,300,565, 1–24–67, Cl. 13—27.
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Karlsen, Stanley A. Pulverizing earth and rock drilling head. 3,299,972, 1–24–67, Cl. 175—107.
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Kaspar, Arthur H. Multi-shelf rack. 3,300,056, 1–24–67, Cl. 211—134.
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Keith, Willis C., and R. P. Zmitrovis, to Sinclair Research, Inc. Method for making 1-chloro-2-phenyl-3-lower alkoxy-1-propene. 3,300,671, 1–24–67, Cl. 260—611.
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Kennard, Kenneth C., and A. E. Anderson, to Eastman Kodak Co. X-ray intensifying screens employing a water soluble copolymer of alkyl acrylate and acrylic acid. 3,300,311, 1–24–67, Cl. 96—82.
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Ketola, Veiko K. Electrically heated sauna installation. 3,299,443, 1–24–67, Cl. 4—160.
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Kinn, Marion, ½ to R. Kinn. Compact with illuminated means. 3,300,632, 1–24–67, Cl. 240—6.45.
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Kinn, Marion. 3,300,632.
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Knauss, Dalton L. Voltage reference circuit with low incremental impedance and low temperature coefficient. 3,300,710, 1–24–67, Cl. 323—17.
Kneip, George D., Jr., and W. F. Spain, to National Research Corp. Metallurgy. 3,299,687, 1–24–67, Cl. 72—278.
Knight, Ronald G., and M. C. Branch, to International Standard Electric Corp. Automatic telecommunication exchanges. 3,300,587, 1–24–67, Cl. 179—18.
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Helms, Charles R. 3,300,251.
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Koch, Alexander W. Water heater. 3,299,881, 1–24–67, Cl. 126—271.
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Koerner, Ralph J., and E. J. Schneberger, to The Bunker-Ramo Corp. Associative memory selection device. 3,300,766, 1–24–67, Cl. 340—174.
Kohlstrunk, Arthur T., to Wheel Trueing Tool Co. Crankshaft-simulating dresser. 3,299,582, 1–24–67, Cl. 51—262.
Kolb, Edwin R., J. I. Richardson, and F. Hunstiger, to Harris-Intertype Corp. Electrophotographic micro-copy printer. 3,299,787, 1–24–67, Cl. 95—1.7.
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Komeno, Taichiro, to Shionogi & Co., Ltd. 3-oxo-Δ^4-thieno or furo[4′,3′,2′-4,5,6]steroids and process for the production thereof. 3,300,485, 1–24–67, Cl. 260—239.5.
Komeno, Taichiro, to Shionogi & Co., Ltd. 6β-thiocyanato pregnane derivatives. 3,300,519, 1–24–67, Cl. 260—397.4.
Kometani, Yutaka, T. Sueyoshi, and M. Tatemoto, to Thiokol Chemical Corp. Purification of perfluoroolefins and chloroperfluoroolefins. 3,300,538, 1–24–67, Cl. 260—653.3.
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Koppelmann, Eldo K., to Madison Industries, Inc. Recessing tool. 3,299,749, 1–24–67, Cl. 77—58.
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Kossnar, Dennis J., to Container Corp. of America. Domed cover two piece carton. 3,300,117, 1–24–67, Cl. 229—32.
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Kozel, James A., to American Radiator & Standard Sanitary Corp. Pilot-operated valve. 3,300,175, 1–24–67, Cl. 251—30.
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Kramer, Israel, to Kramer Trenton Co. Air cooled condenser fan arrangement for control of head pressure in a refrigeration or air conditioning system and method of installing the same. 3,299,650, 1–24–67, Cl. 62—89.
Kramer Trenton Co.: *See*—
Kramer, Israel. 3,299,658.
Kramer, Israel, to Kramer Trenton Co. Air conditioning or refrigeration system with means for cooling the compressor and controls. 3,299,658, 1–24–67, Cl. 62—263.
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Malkoff, Hyman, and Kramer. 3,299,657.
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Malkoff, Hyman, and Kramer. 3,299,657.
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Kraus, Charles E., to Excelermatic, Inc. Toroidal-type transmission. 3,299,744, 1–24–67, Cl. 74—720.5.
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Kraut, Herman G., to The Stanley Works. Method of packaging. 3,299,604, 1–24–67, Cl. 53—22.
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Kronogard, Sven-Olof, to Volvo, Aktiebolaget. Apparatus for hydrodynamic torque transmission. 3,299,636, 1–24–67, Cl. 60—54.

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Bregi, Benjamin F., Bush, and Krygier. 3,299,578.

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Kudola, Andrew, Jr., to Machlett Laboratories, Inc. Cooling device having a plurality of annular parallel discs forming compartments adjacent the heated element. 3,299,948, 1–24–67, Cl. 165—185.

Kuhnl, Leopold K., to Eversharp, Inc. Safety razor having predetermined overload yielding means. 3,299,508, 1–24–67, Cl. 30—60.5.

Kuhnl, Leopold K., to Eversharp, Inc. Spring seat for adjustable razor. 3,299,509, 1–24–67, Cl. 30—60.5.

Kullman, Russell M. H., R. M. Reinhardt, and J. G. Frick, Jr., to United States of America, Agriculture. Production of cellulosic materials with oxidizing powder. 3,300,273, 1–24–67, Cl. 8—116.3.

Kunze, Heinrich, A. Hausweiler, B. Scherhag, and R. Haupt, to Farbenfabriken Bayer Aktiengesellschaft. Process for separating acrylonitrile and acetonitrile. 3,299,618, 1–24–67, Cl. 55—85.

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Kutchera, Don H., and R. M. Elss, to Kimberly-Clark Corp. Papermaking machine. 3,299,531, 1–24–67, Cl. 34—125.

Kuypers, Norbert T., to Difco Laboratories, Inc. Article dispensing magazine and a dispenser with removable magazines. 3,300,087, 1–24–67, Cl. 221—93.

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Kyoto Machinery Co. Ltd.: *See*—
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Lafitte, Paul, R. Delbourgo, and M. Quercia, to Marcel Quercia Flaminaire. Flintless gas-fueled lighter. 3,299,675, 1–24–67, Cl. 67—7.

Lafond, Maurice: *See*—
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Lagelbauer, Ernest. Turbofan engine. 3,299,639, 1–24–67, Cl. 60—226.

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Bray, Donald T., La Grange, Merten, and Park. 3,300,344.

Lakh, Vladimir I., B. I. Stadnyk, and I. F. Paljanytsa. Device for measuring the ratio of drops in non-electric values, using resistance pickups. 3,299,708, 1–24–67, Cl. 73—342.

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Landbouwwerktuigen-en Machinefabriek H. Vissers N.V.: *See*—
Vissers, Herbert. 3,300,223.

Landis, Mark H. Vacuum heads for disc grinders, sanders and the like. 3,299,584, 1–24–67, Cl. 51—362.

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Landrey, Francis X., and R. L. Snell. Elevator conveyor. 3,300,028, 1–24–67, Cl. 198—160.

Lane, Ronald G., to The National Cash Register Co. Electric stamp issuing mechanism. 3,300,113, 1–24–67, Cl. 226—110.

Lang, Richard J.: *See*—
Spiece, Stanley J., and Lang. 3,300,570.

Langecker, Erhard: *See*—
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Lankford, William A., to USCO Power Equipment Corp. Line tension circuit interrupter. 3,300,599, 1–24–67, Cl. 200—48.

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Larsen, Ludolph: *See*—
Blomquist, Arthur G., Larsen, Neuman, and Wermager. 3,300,600.

Latrobe Steel Co.: *See*—
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Latty, Cyril X. G., to Nobel-Bozel. Vulcanisable mixtures and products obtainable therefrom. 3,300,541, 1–24–67, Cl. 260—740.

Laubman & Pank Proprietary Ltd.: *See*—
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Laurer, George J.: *See*—
Delanoy, Richard L., and Laurer. 3,300,654.

Lauer, James L., and W. B. Hansel, to Sun Oil Co. Controlled wave reactor employing rupturable means. 3,300,283, 1–24–67, Cl. 23—284.

Lautenschlager, Hans: *See*—
Schmid, Karl, Stedefeder, John, Haeberle, Lautenschlager, and Trieschmann. 3,300,457.

Law, John P., to Ingersoll-Rand Co. Air inlet and exhaust manifold. 3,299,781, 1–24–67, Cl. 91—58.

Lawson, Charles T., to The Delman Co. Nozzle for windshield clearing system. 3,300,148, 1–24–67, Cl. 239—284.

Layton, Jack D., to Layton Mfg. Co. Apparatus for attaching trailing and lead vehicles. 3,300,234, 1–24–67, Cl. 280—460.

Layton Mfg. Co.: *See*—
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Lea, Lawrence N. Levels. 3,299,523, 1–24–67, Cl. 33—211.

Leach, John M. Composite article and method of making the same. 3,300,303, 1–24–67, Cl. 75—208.

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Le Bihan, Raymond: *See*—
Huber, Harry, and Le Bihan. 3,300,343.

Lee, Clifford S., 25% to Charley Warren. Lifting frames for reinforcing columns. 3,300,186, 1–24–67, Cl. 254—143.

Lee, Milford R., K. H. Waters, and B. J. Heath, to Continental Oil Co. Method for producing impedance logs using seismographic techniques. 3,300,754, 1–24–67, Cl. 340—15.5.

Le Gras, Jacques: *See*—
Tailleur, Andre, and Le Gras. 3,300,112.

Leiber, Heinz, to Teldix Luftfahrt-Ausrustungs-G.m.b.H. Navigational equipment. 3,299,539, 1–24–67, Cl. 35—40.

Leknovich, Henry, to Tamar Electronics, Inc. Unified control of induction motor speed. 3,300,599, 1–24–67, Cl. 318—212.

Leigh, Bertram J., to Telsta Corp. Cable guiding device. 3,300,191, 1–24–67, Cl. 254—190.

Lemardeley, Claude Y. L., and P. M. Barrot, to Societe Anoyme: Babbitless. Electric stress sensing devices for crushing machines. 3,300,149, 1–24–67, Cl. 241—36.

Lemieux, Roger J.: *See*—
Ronald, Ulrich P., and Lemieux. 3,300,573.

Lemieux, Roger J., to Northern Electric Co. Ltd. Strand extruder. 3,299,686, 1–24–67, Cl. 72—261.

Lemrick, Barton P. Tomato plant housing support. 3,299,569, 1–24–67, Cl. 47—45.

Lens, Georges X., J. E. F. Vanhentenrijk, and C. L. De Mol, to International Standard Electric Corp. Transporting device. 3,300,026, 1–24–67, Cl. 198—143.

Leonard, Louis H., Jr., to Carrier Corp. Method of preventing surge in the compressor of a refrigeration system. 3,299,654, 1–24–67, Cl. 62—116.

Lepetit S.p.A.: *See*—
Craveri, Renato, Coronelli, and Sensi. 3,300,379.

Lesher, George Y., to Sterling Drug Inc. 4-alkyl (or alkenyl)-1,4-dihydro-1-oxobenzo[f] [1,7]naphthyridine 2-carboxylic acid and derivatives. 3,300,499, 1–24–67, Cl. 260—287.

Lessard, Darrald G. Line holder for brick laying. 3,299,515, 1–24–67, Cl. 33—86.

Lesyk, Leo: *See*—
Stevens, Harold E., and Lesyk. 3,300,737.

Leverenz, Melvin E.: *See*—
Keves, Henry I., and Leverenz. 3,300,093.

Lewis, Philip M., II: *See*—
Coates, Clarence L., Jr., and Lewis. 3,330,628.

Lewis, Samuel P., to Ingersoll-Rand Co. Core drill. 3,299,971, 1–24–67, Cl. 175—92.

Leyman Corp.: *See*—
O'Neill, Joseph V., and Homanick. 3,299,957.

Liberman, Milton. Lighting fixture and mount therefor. 3,300,634, 1–24–67, Cl. 240—78.

Liebig, Joseph M., to Illinois Milling, Inc. Oil pan-to-bearing cap seal. 3,300,256, 1–24–67, Cl. 308—23.

Lieten, Helmut: *See*—
Quester, Karl W., and Lieten. 3,300,098.

Lind, Joseph M. Dough sheeter. 3,299,837, 1–24–67, Cl. 107—12.

Lindauer, Sydney L.: *See*—
Deng, Niann-Chyung, Lindauer, and Paul. 3,300,625.

Linde Aktiengesellschaft: *See*—
Forster, Franz, and Stolz. 3,299,635.

Linde, Robert E.: *See*—
Cooper, Thomas G., and Linde. 3,300,368.

Lindstrom, Olle, to Allmanna Svenska Elektriska Aktiebolaget. Arrangement for increasing the surface of a boiling solution surface. 3,299,861, 1–24–67, Cl. 122—501.

Lindquist, Gunnar W., to K. B. Svensk, Fargindustri, Lundin & Co. Camouflage paint reflecting ultraviolet light for use in snowy country. 3,300,325, 1–24–67, Cl. 106—195.

Ling, Andrew Te-An, to Radio Corp. of America. Multiplier for binary octal coded numbers. 3,300,626, 1–24–67, Cl. 235—156.

Link, Edwin A., to Ocean Systems, Inc. Underwater capsule. 3,299,645, 1–24–67, Cl. 61—69.

Linotype G.m.b.H.: *See*—
Greiner, Harry. 3,300,036.

Linstromberg, William J., and E. H. Frohbieter, to Whirlpool Corp. Ice maker apparatus. 3,299,656, 1–24–67, Cl. 62—233.

Liquid Controls Corp.: *See*—
Shallenberg, Robert L., and Handwerk. 3,299,705.

List, Hans: *See*—
Hatschek, Rudolf. 3,299,711.

Little, Arthur D., Inc.: *See*—
Stuart, Robert W., Chellis, and Hogan. 3,299,646.
Swain, Charles G. 3,300,622.

Llobet, Josep. Display device. 3,299,551, 1–24–67, Cl. 40—32.

Locke, David R.: *See*—
Daniels, John F., and Locke. 3,300,264.

Lockheed Aircraft Corp.: *See*—
Campbell, Joe A. 3,299,820.
Inderbitzen, Anton L. 3,299,969.
Olson, David C. 3,300,233.

Loctite Corp.: *See*—
Gorman, Jeremy W., and Nordlander. 3,300,547.

Lombardi, Anthony J., to International Telephone and Telegraph Corp. Devices for engaging for relative movement the turns of a helical element. 3,300,749, 1–24–67, Cl. 339—9.

Long, Bernard, to Pittsburgh Corning Corp. Continuous method of making a glass sheet. 3,300,289, 1–24–67, Cl. 65—22.

Longenecker, John F.: *See*—
Freyberger, Donald L., and Longenecker. 3,299,503.

Lonza Ltd.: *See*—
Kirsch, Kurt. 3,300,526.

Loofbourrow, Alan G., and McCordic, to Chrysler Corp. Control linkage arrangement for turbine transmission. 3,299,732, 1–24–67, Cl. 74—472.

Lorman, Alfred F. Germicidal hospital mat. 3,300,275, 1–24–67, Cl. 21—61.

Lowe, Kenneth S., to Kenlowe Accessories and Co. Ltd. Variable-pitch fan. 3,299,963, 1–24–67, Cl. 170—160.13.

Lowell Wrench Co.: *See*—
Campanile, Dominic, and Cummings. 3,299,750.

Lowry Development Corp.: *See*—
Cabot, Philip D., and Lowry. 3,299,967.

Lowry, Harold D., to Eastman Kodak Co. Processing apparatus for photosensitive film. 3,299,793, 1–24–67, Cl. 95—94.

Lowry, Robert D.: *See*—
Cabot, Philip D., and Lowry. 3,299,967.

Lox Equipment Co.: *See*—
Josephian, William. 3,299,828.

Luberts, Alfred J., to Insul-8 Corp. Electrical bus bar heater system. 3,300,593, 1–24–67, Cl. 191—27.

Lubrizo. Corp., The: *See*—
Butler, Thomas A. 3,300,409.

Lucas, Rene, to Etablissement Public Centre Nationale de la Recherche Scientifique. Molecular separation of gaseous mixtures. 3,299,616, 1–24–67, Cl. 55—17.

Luce, Betty M., to Clevite Corp. Electroless plating of gold. 3,300,328, 1–24–67, Cl. 117—47.

Luce, Stewart B: *See*—
Young, Harland H., and Luce. 3,300,470.

Luckenbaugh, Raymond W., to E. I. du Pont de Nemours and Co. Herbicidal compositions containing uracil thiocyanate addition compounds. 3,300,292, 1–24–67, Cl. 71—2.5.

Lukens Steel Co.: *See*—
Freyberger, Donald L., and Longenecker. 3,299,503.

Luketa, Frank J. Trawl net load responsive apparatus. 3,299,559, 1–24–67, Cl. 43—9.

Luketa, Frank J. Sectional trawl doors. 3,299,560, 1–24–67, Cl. 43—9.

Lull, Walter L., and W. J. Young, to White Motor Corp. Vehicle frame. 3,300,231, 1–24–67, Cl. 280—106.

Lyons, Ernest H., Jr. Electrolytic cell for producing electricity and method of operating the cell. 3,300,345, 1–24–67, Cl. 136—86.

Lyons, J., & Co., Ltd.: *See*—
Smith, Peter H. 3,300,615.

Machingo, William J.: *See*—
Wilmes, Rudolph H., and Machingo. 3,300,265.

Machlett Laboratories, Inc., The: *See*—
Jordan, Harold O. W. 3,300,669.
Kudola, Andrew, Jr. 3,299,948.

Mack, Charles H., and S. E. Ellzey, Jr., to United States of America, Agriculture. Process for preparing tris(N-alkylarylamino)borines from N-aryl amides. 3,300,530, 1–24–67, Cl. 260—551.

MacKenzie, Robert A.: *See*—
Dolney, Stanley M., and MacKenzie. 3,299,689.

MacMullen, Clinton W., to Olin Mathieson Chemical Corp. Water soluble film containing agriculture chemicals. 3,299,566, 1–24–67, Cl 47—1.

Madejczyk, Leopold A.: *See*—
Burnside, Gilbert L., Madejczyk, and Strosberg. 3,300,400.

Madison Industries, Inc.: *See*—
Koppelmann, Elido K. 3,299,749.

Maeda, Shin: *See*—
Sawa, Yoshiro, and Maeda. 3,300,500.

Maffezzoni, Umberto: *See*—
Maruillo, Gerlando, Maffezzoni, and Susa. 3,300,466.

Magne, Frank C.: *See*—
Skau, Evald L., Mod, and Magne. 3,300,434.

Malkoff, Hyman, and I. Kramer, to Kramer Trenton Co. All weather high side unit for refrigerating and air conditioning systems. 3,299,657, 1–24–67, Cl. 62—259.

Mallory, P. R., & Co., Inc.: *See*—
Booe, James M. 3,300,692.

Mallcoat, Robert C. Can holder having means to grasp a horizontal member of a ladder. 3,300,167, 1–24–67, Cl. 248—210.

Mallett, Lawrence G.: *See*—
Hart, Atlee S., and Mallett. 3,299,627.

Malmstrom, Rolf E., to Outokumpu Osakeyhtio. Process for the production of metallic lead from materials containing lead oxide. 3,300,301, 1–24–67, Cl. 75—77.

Manganese Steel Forge Co.: *See*—
Scherfel, Otto C. 3,300,030.

Mann, Kingsley M.: *See*—
Gray, Jack E., Underwood, and Mann. 3,300,380.

Manyik, Robert M., W. E. Walker, and T. P. Wilson, to Union Carbide Corp. Continuous processes for the production of ethylene polymers and catalysts suitable therefor. 3,300,458, 1–24–67, Cl. 260—88.2.

Marconi Co. Ltd., The: *See*—
Mortley, Wilfrid S. 3,300,739.

Margerum, Donald L., and A. L. Perga, to Electronic Specialty Co. Communications repeater system. 3,300,782, 1–24–67, Cl. 343—100.

Maring, Aafko, to L. Stromeyer & Co. G.m.b.H. Removable surface coverings. 3,300,211, 1–24–67, Cl. 273—27.

Mark Products Co.: *See*—
Kowols, Gilbert J. 3,300,720.

Mark Systems, Inc.: *See*—
Dieffenbach, Harry N. 3,299,790.

Markert, Hans: *See*—
Michael, Gregor, Frotscher, Markert, and Petzold. 3,300,395.

Markham, James P.: *See*—
Hendrix, William L., Markham, and Hunnicutt. 3,300,576.

Marks, Alvin M. and M. M. Casting composition for light polarizing film. 3,300,436, 1–24–67, Cl. 260—31.2.

Marks, Mortimer M.: *See*—
Marks, Alvin M. and M. M. 3,300,436.

Marks, Jerry H. Lint removing surface cleaner for garments. 3,299,461, 1–24–67, Cl. 15—104.

Marks, William J. Protective abdominal plate for use with vehicle safety belts. 3,300,247, 1–24–67, Cl. 297—385.

Marotta, Nicholas G., and K. S. Ronai, to National Starch and Chemical Corp. Solid sauce bases. 3,300,319, 1–24–67, Cl. 99—144.

Martland, Theodore H. Light bulb protector. 3,300,637, 1–24–67, Cl. 240—102.

Maruillo, Gerlando, U. Maffezzoni, and E. Susa, to Montecatini Edison S.p.A. Process of producing crystalline syndiotactic 1,2-polybutadiene. 3,300,466, 1–24–67, Cl. 260—94.3.

Markwardt, Fritz, P. Walamann, G. Schafer, and H. Topfer, to Veb Arzneimittelwerk Dresden. Hirudine from leeches and process for recovery thereof. 3,300,383, 1–24–67, Cl. 167—74.

Marona, Robert N., to General Foods Corp. Metering dispenser for liquids. 3,300,099, 1–24–67, Cl. 222—207.

Marra, Daniel A., Sr. Metal cutting torch. 3,299,939, 1–24–67, Cl. 158—27.4.

Marraffino, Leonard L. Plural source heated fluid mixing head. 3,300,095, 1–24–67, Cl. 222—146.

Marraffino, Leonard L. Mixing head. 3,300,144, 1–24–67, Cl. 239—307.

Marraffino, Leonard L. Mixing head. 3,300,145, 1–24–67, Cl. 239—307.

Marshall, George C., Jr. Wheel jack bracket. 3,300,183, 1–24–67, Cl. 254—133.

Marshall, Samuel J. E. Pumps. 3,299,823, 1–24–67, Cl. 103—119.

Marsili, Domenick. Ravioli making apparatus. 3,299,835, 1–24–67, Cl. 107—1.

Martin, Calvin L., and J. C. Bolger, to Allied Chemical Corp. Device for releasing cutting tool. 3,299,747, 1–24–67, Cl. 77—55.

Martin, Eugie A., to Monsanto Co. Spinnerette pack for melt spinning. 3,299,472, 1–24–67, Cl. 18—8.

Martin, Joseph F., to J. F. and M. Martin, as tenants by the entireties, with rights of survivorship. Single lever service and emergency brake system. 3,299,999, 1–24–67, Cl. 192—4.

Martin, Mabel: *See*—
Martin, Joseph F. 3,299,999.

Martin-Marietta Corp.: *See*—
Talaat, Mostafa E. 3,300,661.

Martin Mfg. Co.: *See*—
Fogle, Gene E. 3,299,856.

Martindale Electric Co., The: *See*—
Stanley, Frederic R. 3,299,889.

Maschinenfabrik Buckau R. Wolf Aktiengesellschaft: *See*—
Creutzmann, Reinhold, and Wullschlaeger. 3,300,023.

Masino, John A., to E. I. du Pont de Nemours and Co. Physiologic fluid pressure sensor mount. 3,299,882, 1–24–67, Cl. 128—2.05.

Mason, John R., to Cubic Corp. Electronic surveying system. 3,300,780, 1–24–67, Cl. 343—12.

Mason, Robert M.: *See*—
Maynard, Owen E., Taub, Brown, Olling, and Mason. 3,300,162.

Massey-Ferguson Inc.: *See*—
Clifford, Peter J. 3,299,966.
Noller, Fred W., and Hauff. 3,300,172.

Masson, James C., to Monsanto Co. Interpolymers comprising acrylonitrile and cyanoallyloxybenzenesulfonic acid or its salts. 3,300,453, 1–24–67, Cl. 260—79.3.

Mast Development Co., Inc.: *See*—
Gannett, Wright K. 3,300,773.

Mathison, Robert V. Combined sponge and holder and elements thereof. 3,299,462, 1–24–67, Cl. 15—244.

Matsubara, Hideo. Methods of producing propeliant grain adapted for single stage rockets. 3,300,549, 1–24–67, Cl. 264—3.

Matthews, Jack R., to Pittsburgh Plate Glass Co. Method for the production of glass fibers. 3,300,288, 1–24–67, Cl. 65—2.

Mauclet, Maurice. Sinking of shafts and galleries in hand and water-bearing ground. 3,299,643, 1–24–67, Cl. 61—36.

Mauz, Otto: *See*—
Schmidt, Heinz, Roos, and Mauz. 3,300,441.

Mavis, James O.: *See*—
Cooper, Noel R., Hurley, Larkin, Mavis, and Jones. 3,300,316.

May, Donald R., to American Cyanamid Co. Method for manufacture of cyanamide. 3,300,281, 1–24–67, Cl. 23—190.

Mayer, Ferdy: *See*—
Benoit, Gerard, Ferdy and Franz Mayer, and Thomas. 3,300,752.

Mayer, Franz: *See*—
Benoit, Gerard, Ferdy and Franz Mayer, and Thomas. 3,300,752.

Mayer, Oscar, & Co., Inc.: *See*—
Orloff, Daniel L., Keating, and Hu. 3,299,608.
Jensen, Hans A., and Eberman. 3,300,063.

Mayer, Robert: *See*—
Witt, Walter, and Mayer. 3,299,770.

Maynard, Owen E., W. M. Taub, D. Brown, E. H. Olling, and R. M. Mason, to United States of America, National Aeronautics and Space Administration. Radial module space station. 3,300,162, 1–24–67, Cl. 244—1.

Mazuze, Jack L. P., to Societe d'Etude et de Construction de Machines-Outils, S.E.C.M.O. Fluid operated machine tool spindle. 3,299,783, 1–24–67, Cl. 91—355.

Mazzanti, Giorgio: *See*—
Natta, Giulio, Mazzanti, and Boschi. 3,300,459.

Mazzarella, Emil D.: *See*—
Brown, Gerald H., and Mazzarella. 3,300,423.

McBrady, William J., and F. H. Dickow, to Swift & Co. Blade design. 3,299,925, 1–24–67, Cl. 146—95.

McCall, Richard C., to Controls for Radiation, Inc. Thermoluminescent radiation dosimeter readout apparatus using nitrogen gas in the readout chamber. 3,300,643, 1–24–67, Cl. 250—71.5.

McClung, Robert A.: *See*—
Moses, Nelson K., and McClung. 3,300,140.

McClure, David A., to Rexall Drug and Chemical Co. Method of effecting diuretic therapy. 3,300,381, 1–24–67, Cl. 167—65.

McColgan, Arnold J., to W. Ralston & Co. (Canada) Ltd. Container. 3,300,120, 1–24–67, Cl. 229—55.

McCollum, Burton, deceased; P. R. Powe and Bank of The Southwest National Association, executors. Method of frequency discrimination. 3,300,753, 1–24–67, Cl. 340—15.5.

McConnell, William R.: *See*—
Johnson, Alfred H., McConnell, and Schulz. 3,300,686.

McCordic, James R.: *See*—
Loofbourrow, Alan G., and McCordic. 3,299,732.

McCoy, Lee A., to Flo-Mac, Inc. Magnetic drive. 3,299,819, 1–24–67, Cl. 103—87.

McCulloch, John R. Microtome. 3,299,758, 1–24–67, Cl. 83—410.

McCune, James D., to Schlumberger Technology Corp. Pipeline cleaning apparatus. 3,299,459, 1–24–67, Cl. 15—3.51.

McDuff, Omer R.: *See*—
Dilatelkamp, Adolf P., and McDuff. 3,300,320.

McEachern, Loyd R., to The American Monorail Co. Systems for collecting and handling lint. 3,299,463, 1–24–67, Cl. 15—312.

McElroy, Wilbur R., to Mobay Chemical Co. Polyurethane plastics. 3,300,417, 1–24–67, Cl. 260—2.3.

McGrath, William L., and S. J. Rachfal, to Carrier Corp. Separation systems. 3,299,649, 1–24–67, Cl. 62—79.

McGrath, William L., to Carrier Corp. System for providing air conditioning and producing fresh water. 3,299,651, 1–24–67, Cl. 62—93.

McGraw-Edison Co.: *See*—
Moore, James W. 3,300,562.
Spiece, Stanley J., and Lang. 3,300,570.

McIlvin, Donald B., to United-Shoe Machinery Corp. Injection molding cut-off device. 3,299,476, 1–24–67, Cl. 18—30.

McIntosh, Euell K.: *See*—
Hills, William H., McIntosh, and Roy. 3,299,485.

McKay Co., The: *See*—
Chisler, Paul E. 3,299,628.

McKilligan, Vincent P. Motor vehicle preheater. 3,300,138, 1–24–67, Cl. 237—8.

McMillen, Bobby E., to American Bosch Arma Corp. Regulated electrical supply system. 3,300,704, 1–24–67, Cl. 320—61.

McNelis, Edward J., to Sun Oil Co. Preparation of 2,2'-dihydroxy-1,1'-binaphthyl. 3,300,536, 1–24–67, Cl. 260—620.

McTeer, Lucian W.: *See*—
Gervasi, Jay A., and McTeer. 3,300,455.

McWhorter, John R.: *See*—
Hemker, Fritz L., and McWhorter. 3,299,841.

McWilliams, Robert J.: *See*—
Rutherford, David A., and McWilliams. 3,300,197.

Mead Corp., The: *See*—
Chaussadas, Jean. 3,300,119.

Medley, Jackson C.: *See*—
Carter, John W., Medley, and Mueller. 3,300,203.

Meier, Don E., and D. J. Rotier, to Ault Inc. Resonant energy voltage regulator providing constant total energy pulses dependent on, but not affected by load requirements. 3,300,656, 1–24–67, Cl. 307—88.5.

Meichiona, James V. Self adjusting rope exerciser. 3,300,210, 1–24–67, Cl. 272—79.

Melendy, Warren A., to Butler Bin Co. Dual range weighing scale. 3,299,977, 1–24–67, Cl. 177—158.

Melikian, Vaughn W. Mobile dehydrator. 3,299,532, 1–24–67, Cl. 34—195.

Melpar, Inc.: *See*—
Tiner, Jack D., and Golden. 3,300,390.

Mendenhall, Charles A., to The Bendix Corp. Electromagnetic clutch. 3,300,008, 1–24–67, Cl. 192—84.

Merck & Co., Inc.: *See*—
Cragoe, Edward J., Jr. 3,300,494.
Fried, John, Bry, and Patchett. 3,300,518.
Jacob, Theodore A., Vitali, and Rothrock, and Inamine. 3,300,477.
Tishler, Max, Steinberg, and Hirschmann. 3,300,483.

Merrick, Richard H., to Carrier Corp. Absorption refrigeration. 3,299,669, 1–24–67, Cl. 62—476.

Merriman, Peter, D. J. Simcox, and J. L. Newhan, to Dunlop Rubber Co. Ltd. Resilient cellular material and method for making same. 3,300,421, 1–24–67, Cl. 260—2.5.

Merritt, Marion M. Shoe tongue having lacing means. 3,299,543, 1–24–67, Cl. 36—54.

Merten, Ulrich: *See*—
Bray, Donald T., La Grange, Merten, and Park. 3,300,344.

Methode Electronics, Inc.: *See*—
Gehrt, Edwin E., and Jensen. 3,299,493.

Metro Game Mfg. Corp.: *See*—
Franklin, Sidney. 3,300,217.

Mettler-Muller, E., A.G.: *See*—
Bolliger, Hans. 3,300,015.

Metzger, Lillie S.: *See*—
Metzger, Reece U. and Lillie S. 3,300,185.

Metzger, Reece U. and Lillie S. Flagpole rope threader. 3,300,185, 1–24–67, Cl. 254—134.3.

Meyers, Clarence L., & Co., Inc.: *See*—
Meyers, Gordon E. and Milton M. 3,299,486.

Meyer, Ernst. Submersible pump. 3,299,818, 1–24–67, Cl. 103—53.

Meyers, Gordon E. and Milton M., to Clarence L. Meyers & Co., Inc. Method of making stretch cotton knitted fabrics. 3,299,486, 1–24–67, Cl. 28—76.

Meyers, Milton M.: *See*—
Meyers, Gordon E. and Milton M. 3,299,486.

Meyer-Simon, Eugene, and A. Frey, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Production of mixtures of zirconium oxide and silici acid. 3,300,414, 1–24–67, Cl. 252—454.

Michael, Gregor, H. Frotscher, H. Marbert, and M. Petzold, to Dehydag Deutsche Hydrierwerke G.m.b.H. Nickel electroplating baths and process. 3,300,395, 1–2–67, Cl. 204—49.

Microcard Corp.: *See*—
Baptie, Alexander L., and Miles. 3,299,776.

Mid-Continent Steel Casting Corp.: *See*—
Schudalla, Henry A., Sr., and Henry A., Jr. 3,299,720.

Mieras, Laurence F., to Ford Motor Co. Ignition system. 3,299,876, 1–24–67, Cl. 123—148.

Mikan, Venzel R. Traction methods and apparatus. 3,299,886, 1–24–67, Cl. 128—71.

Mikulec, Richard A.: *See*—
Brown, Edward A., and Mikulec. 3,300,523.

Miles, John M., to Phillips Petroleum Co. Process and apparatus for plural distillation of hydrocarbon water feed. 3,300,394, 1–24–67, Cl. 203—42.

Miles, Lyle G.: *See*—
Baptie, Alexander L., and Miles. 3,299,776.

Milne, F. W. & Sons Proprietary Ltd.: *See*—
Milne, Hugh V. 3,299,832.

Miller, Archie P.: *See*—
Howe, David O., Etzel, and Miller. 3,300,404.

Miller, Carl G. Automatic flasher caution signal system for automotive vehicles. 3,300,756, 1–24–67, Cl. 340—72.

Miller, Donald B., to Continental Oil Co. Preparation of allenes. 3,300,540, 1–24–67, Cl. 260—680.

Miller, Robert A., and C. M. Taris, to Bell Telephone Laboratories, Inc. Electric motor control apparatus. 3,300,701, 1–24–67, Cl. 318—261.

Miller, Robert L., to Cleveland Trust Co. Apparatus for producing a permanent record of bowling game scores entered on a visual scoreboard. 3,299,775, 1–24–67, Cl. 88—24.

Miller, Robert L., to Cleveland Trust Co. Pinfall detecting apparatus with shift register storage means. 3,300,213, 1–24–67, Cl. 273—54.

Miller, Stewart F.: *See*—
Pernack, Frank, Miller, Krygier, and Abrahamsson. 3,299,577.

Milne, Hugh V., to F. W. Milne & Son Proprietary Ltd. Pumping apparatus. 3,299,832, 1–24–67, Cl. 103—234.

Mineral & Chemical Philipp Corp.: *See*—
Ferrigno, Thomas H. 3,300,326.
Ferrigno, Thomas H. 3,300,437.

Mineral Concentrates and Chemical Co., Inc.: *See*—
Johnston, Theodore L. 3,300,147.

Minneapolis Honeywell Regulator Co.: *See*—
Thompson, Howard J., and West. 3,299,714.

Minnesota Mining and Mfg. Co.: *See*—
Evensen, Thomas J. 3,299,807.
Page, Mary A. 3,300,333.

Mirror Polishing and Plating Co., Inc., The: *See*—
Nalband, Thomas E. and Eugene R., and Delaney. 3,300,286.

Mission, George W., to Pittsburgh Plate Glass Co. Apparatus for producing sheet glass. 3,300,291, 1–24–67, Cl. 65—159.

Mission, George W., to Pittsburgh Plate Glass Co. Method and apparatus for conveying and heating glass on a fluid support bed. 3,300,290, 1–24–67, Cl. 65—25.

Mistretta, Victor S. Disposable cylindrical razor apparatus. 3,299,507, 1–24–67, Cl. 30—49.

Mitchell, David F., to International Equipment Co. Filter tube for use in a centrifuge. 3,300,051, 1–24–67, Cl. 210—339.

Miyamoto, Yoshito. Card holder for use as a scheduler. 3,299,550, 1–24–67, Cl. 40—19.5.

Mizejewski, Theodore C., to A. G. Spalding Bros., Inc. Velocity measuring and segregating device for propelled articles. 3,299,692, 1–24–67, Cl. 73—13.

Mizelle, Ned W. Reclining chair fixture. 3,300,243, 1–24–67, Cl. 297—85.

Mobay Chemical Co.: *See*—
McElroy, Wilbur R. 3,300,417.

Mobil Oil Corp.: *See*—
Savins, Joseph S. 3,299,952.
Fails, James C. 3,300,324.

Moberly, Lawrence E.: *See*—
Boes, David J., and Moberly. 3,300,667.

Mod, Robert R.: *See*—
Skau, Evald L., Mod, and Magne. 3,300,434.

Mogelnicki, Stanley: *See*—
Priesing, Charles P., and Mogelnicki. 3,300,407.

Mohr, Rudolf: *See*—
Hamprecht, Guenther, Vogel, Schwarzmann, and Mohr. 3,300,492.

Moller, Sven L. Drilling tools. 3,299,748, 1–24–67, Cl. 77—58.

Momchilolvch, Milan, and W. F. Rhodes, to The Falls Stamping and Welding Co. Pump. 3,299,816, 1–24–67, Cl. 103—6.

Monnemacher, Dale A., to Teletype Corp. Line switching system for simultaneously transmitting telegraph messages to multiple addresses. 3,300,579, 1–24–67, Cl. 178—4.

Mono Pumps Ltd.: *See*—
Payne, Stanley A. E. 3,299,822.

Monsanto Co.: *See*—
Baer, Massimo. 3,300,545.
Brignac, Edmond P. 3,300,449.
Brown, Gordon E. 3,300,361.
Darby, Joseph R., and Graham. 3,300,442.
Fenn, Joe D. 3,300,153.
Gauthier, Roger A., Jr., and Snooks. 3,300,448.
Goodner, Homer W. 3,299,780.
Hills, William H., McIntosh, and Roy. 3,299,485.
Martin, Eugie A. 3,299,472.
Masson, James C. 3,300,453.
Olive, Salvodor, and de Olive-Henrici. 3,300,461.
Robinson, Horace M. 3,300,272.
Schisla, Robert M., and Gaertner. 3,300,376.
Shelby, Richard K. 3,300,551.
Shelby, Richard K. 3,300,552.
Price, George B. 3,300,733.
Shelby, Richard K. 3,300,553.
Wildi, Bernard S., and Hull. 3,300,399.

Montecatini Edison S.p.A.: *See*—
Guzzetta, Giuseppe, Sabbioni, and Gechele. 3,300,462.
Marullo, Gerlando, Maffezzoni, and Susa. 3,300,466.
Natta, Giulio, Nazzanti, and Boschi. 3,300,459.

Montecatini Societa Generale per l'Industria Mineraria e Chimica: *See*—
Natta, Porri, Stoppa, and Carbonaro. 3,300,467.

Moore, Alvin E.: *See*—
Butcher, Troy. 3,299,663.

Moore, Irving B., Corp.: *See*—
Moore, Paul B. 3,299,468.

Moore, James W., to McGraw-Edison Co. Arc furnace electrode control apparatus. 3,300,562, 1–24–67, Cl. 13—13.

Moore, Paul B., to Irving B. Moore Corp. Material treating process and apparatus. 3,299,468, 1–24–67, Cl. 18—6.

Moore, William C., and J. D. Connors, to Welch Allyn, Inc. Air cooled lamp handle and diagnostic instrument combination. 3,299,884, 1–24–67, Cl. 128—23.

Morris, Edward P., to The Coe Mfg. Co. Veneer dryer. 3,299,533, 1–24–67, Cl. 34—205.

Morgan Construction Co.: *See*—
Hill, William J. 3,299,609.

Morgan, Dagwell J.: *See*—
Boadle, Campbell D., and Morgan. 3,299,976.

Mortley, Wilfrid S., to The Marconi Co. Ltd. Frequency-dispersive electro-mechanical delay cell utilizing grating. 3,300,739, 1–24–67, Cl. 333—30.

Moses, Nelson K., and R. A. McClung, to Railroad Permanent Way Products Corp. Beams for railroad track structure. 3,300,140, 1–24–67, Cl. 238—25.

Motorola Inc.: *See*—
Hansen, Philip J. 3,300,723.

Motsch, Alfons, to Ford Motor Co. Disk clutch particularly for motor vehicles. 3,300,007, 1–24–67, Cl. 192—68.

Motz, Carl H., and R. W. Anthony, to National Broach & Machine Co. Gear checker. 3,299,520, 1–24–67, Cl. 33—179.5.

Moughty, John J.: *See*—
Downey, David F., and Moughty. 3,300,571.

Moyer, Thomas J. Rotary combustion engine. 3,299,865, 1–24–67, Cl. 123—11.

Mucibabich, Peter R.: *See*—
Dopp, David S., and Mucibabich. 3,299,607.

Muckelrath, Ernest R., to Air Heaters, Inc. Air and water heater. 3,299,878, 1–24–67, Cl. 126—101.

Muckinhaupt, Frederick H. Fracture setting device. 3,299,888, 1–24–67, Cl. 128—87.

Mueller, James P.: *See*—
Carter, John W., Medley, and Mueller. 3,300,203.

Muhlhoff, Friedrich. Tear strip arrangement for a cup-shaped closure lid for containers of synthetic plastic material. 3,300,081, 1–24–67, Cl. 220—54.

Mulreed, James E., and A. Orlens, to Pitney-Bowes, Inc. Plate feed means in address printers. 3,299,805, 1–24–67, Cl. 101—65.

Multifastener Corp.: *See*—
Double, Plummer E. 3,299,500.

Mumma, Harold J.: *See*—
Rose, Boyd W., and Mumma. 3,299,528.

Munk, Edmund, to Furnier- und Aperrholzwerk, J. F. Wers, Jr., KG. Compound door. 3,299,595, 1–24–67, Cl. 52—309.

Munk, Erwin: *See*—
Cypra, Arne, Haentzschel, Munk, and Winter. 3,300,695.

Murphy, James A.: *See*—
Donovan, Daniel R., and Murphy. 3,300,195.

Murphy, Terrance J., to Eaton Mfg. Co. Manifold heat control valve. 3,300,137, 1–24–67, Cl. 236—101.

Murray, Francis E.: *See*—
Risk, James B., and Murray. 3,300,282.

Mustafaev, Ramis I. O.: *See*—
Nikishin, Gennady I., and Mustafaev. 3,300,514.

Myer, Wilbur V. Lifting apparatus. 3,300,062, 1–24–67, Cl. 214—1.

Nabben, Marvin. Air operated fresh air ventilator. 3,299,798, 1–24–67, Cl. 98—119.

Nadherny, John D., to H. and R. B. Spector, a partnership, d.b.a. Superior Toy & Mfg. Co. Coin transfer bank. 3,299,899, 1–24–67, Cl. 133—3.

Nachf, Heinrich M.: *See*—
Zahn, Rudolf K., Tiesler, and Hanske. 3,300,476.

Nagahara, Shusaku: *See*—
Takagi, Toshihiko, and Nagahara. 3,300,580.

Nagase, Osamu: *See*—
Shimizu, Masao, Ohta, Nagase, Okada, and Hosokawa. 3,300,508.

Nagelschmidt, Rudolf, and M. Goecke, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Halogen-containing thermoplastic compositions for the production of cured products suitable for artificial leathers, sheets, coatings and impregnations. 3,300,425, 1–24–67, Cl. 260—29.1.

Nakolan, Andrew P., to General Motors Corp. Folding seat belt retractor. 3,300,248, 1–24–67, Cl. 297—388.

Nalband, Eugene R.: *See*—
Nalband, Thomas E. and E. R., and Delaney. 3,300,286.

Nalband, Thomas E. and E. R., and R. T. Delaney, to The Mirror Polishing and Plating Co., Inc. Composite metallic roll or other member and method of making same. 3,300,286, 1–24–67, Cl. 29—183.5.

Nalco Chemical Co.: *See*—
Wolfson, Leonard L. 3,300,373.

Narayanan, Vankatachala L., to E. R. Squibb & Sons, Inc. Certain adamantane aziridides. 3,300,480, 1–24–67, Cl. 260—239.

Nardone, Anthony J., and R. F. Blattner, to Eastman Kodak Co. Tray closure mechanism for a photographic processing apparatus. 3,299,792, 1–24–67, Cl. 95—89.

National Aeronautics and Space Administration: *See*—
Fischer, Joseph A., and Dombrowski. 3,299,913.
Kemp, Robert F., Sellen, and Slattery. 3,300,717.

National Automatic Tool Co., Inc.: *See*—
Irish, Meral C. 3,300,010.

National Blank Book Co.: *See*—
Schultz, Bennett V. 3,299,557.

National Broach & Machine Co.: *See*—
Anthony, Russel W. 3,299,521.
Anthony, Russel W. 3,299,753.
Bregi, Benjamin F., Bush, and Krygier. 3,299,578.
Motz, Carl H., and Anthony. 3,299,520.
Pernack, Frank, Miller, Krygier, and Abrahamsson. 3,299,577.

National Cash Register Co., The: *See*—
Lane, Ronald G. 3,300,113.

National Lead Co.: *See*—
Orsino, Joseph A., Herman, and Brancato. 3,300,329.

National Research Corp.: *See*—
Clough, Philip J., and Steeves. 3,300,781.
Kneip, George D., Jr., and Spain. 3,299,687.

National Smelting Co. Ltd., The: *See*—
Bennett, Royston H., and Fuller. 3,300,537.

National Starch and Cheinical Corp.: *See*—
Armour, Walter B., and Fass. 3,300,430.
Brown, Gerald H., and Mazzarella. 3,300,423.
Marotta, Nicholas G., and Ronai. 3,300,319.
Williams, Robert H., and Hickey. 3,300,360.

Natta, Giulio, G. Mazzanti, and G. Boschi, to Montecatini Edison S.p.A. Elastomeric copolymers of ethylene and propylene. 3,300,459, 1–24–67, Cl. 260—88.2.

Natta, Giulio, L. Porri, G. Stoppa, and A. Carbonaro, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Production of crystalline isotactic cis-1,4 polypentadiene with a Ti(OR)$_4$-AlR$_3$ catalyst. 3,300,467, 1–24–67, Cl. 260—94.3.

Nava, Louis J., J. T. Hutton, J. B. Shields, and C. A. Kemp, to Foremost Dairies, Inc. Method for the manufacture of dry milk products. 3,300,315, 1–24–67, Cl. 99—56.

Neal, Harry B., and R. P. Brown, to Anaconda Aluminum Co. Door. 3,299,596, 1–24–67, Cl. 52—476.

Neary, Ralph E.: *See*—
Tornoe, John A., Neary, and Fernandez-Castro. 3,300,240.

Nedschroef Octrooi Maatschappij N.V.: *See*—
Van de Meerendonk, Gerardus C. 3,299,453.

Neisler Laboratories, Inc.: *See*—
Cavallito, Chester J., and Gray. 3,300,506.

Nelson, George L.: *See*—
Baker, Donald B., and Nelson. 3,300,374.

Nemechek, Joseph F.: *See*—
Briggs, Stephen F., and Nemechek. 3,299,986.

Neophone: *See*—
Jeanlin, Pierre. 3,300,584.

Neuman, Milton C.: *See*—
Blomquist, Arthur G., Larsen, Neuman, and Wermager. 3,300,600.

Neumoyer, Clifton R.: *See*—
Tarricone, James A., Neumoyer, and ter Horst. 3,300,432.

Neutronic Development Corp.: *See*—
Fisher, Bernard C. 3,300,672.

Newport News Shipbuilding and Dry Dock Co.: *See*—
Goodwin, Ollie K. 3,299,848.

New, Thorndike C. T.: *See*—
Stehney, Thomas G., and New. 3,300,694.

Newham, John L. M.: *See*—
Merriman, Peter, Simcox, and Newham. 3,300,421.

Newman, Herman, and D. Coby. Automotive message indicator and actuator. 3,299,552, 1–24–67, Cl. 40—52.

Newman, Herman, and D. Coby. Changeable message display. 3,299,553, 1–24–67, Cl. 40—52.

Newman, Ralph P., to General Motors Corp. Sine spectrum generator. 3,300,726, 1–24–67, Cl. 328—187.

Neyhouse, George A.: *See*—
Sones, William L., Elliott, and Neyhouse. 3,300,150.

Nichols, Edgar B. Bowling pin with homogeneous nylon casing including an interior filamentary structure. 3,300,214, 1–24–67, Cl. 273—82.

Nickerson, Walter J.: *See*—
Gershon, Herman, and Nickerson. 3,300,498.

Nicoud, Gilbert: *See*—
Roth, Adrien W., Catella, and Nicoud. 3,300,610.

Nielsen, Peter S., to Roblon, Frederikshavn, A/S. Means for influencing the sub-marine migration of material. 3,299,640, 1–24–67, Cl. 61—3.

Nies, Nelson P., and P. F. Jacobs, to United States Borax & Chemical Corp. Crystalline sodium metaborate tetrahydrate and process for production thereof. 3,300,278, 1–24–67, Cl. 23—59.

Nikishin, Gennady I., and R. I. O. Mustafaev, to Institute Organicheskoi Khimii im, ND. Method of preparing 5-alkyl-2 pyrrolidones. 3,300,514, 1–24–67, Cl. 260—326.5.

Nikkel, Willem A. Method and apparatus for making corrugated board. 3,300,359, 1–24–67, Cl. 156—292.

Niklas, Wilfrid F., to The Rauland Corp. Image converter tube. 3,300,668, 1–24–67, Cl. 313—65.

Nilssen, Ole K., to Ford Motor Co. Heating system for an automotive vehicle. 3,300,619, 1–24–67, Cl. 219—279.

Nimtz, Klaus, to Palitex Project Co. G.m.b.H. Balloon-confining apparatus for spinning and twisting machines. 3,299,624, 1–24–67, Cl. 57—108.

Nopco Chemical Co.: *See*—
Sellet, Lucien. 3,300,446.

Nippon Columbia Kabushiki Kaisha (Nippon Columbia Co., Ltd.): *See*—
Takagi, Toshibiko, and Nagahara. 3,300,580.

North American Philips Co., Inc.: *See*—
Roozendaal, Klaas, and van der Ster. 3,299,647.

Northern Electric Co. Ltd.: *See*—
Berger, Bernard A. 3,299,494.
Lemieux, Roger J. 3,299,686.
Ronald, Ulrich P., and Lemieux. 3,300,573.
Reedyk, Cornelis W., and Fatovic. 3,300,585.

Northrop Corp.: *See*—
Sponsler, William B. 3,299,978.

Nivens, Allen B., to Ideal Industries, Inc. Sliver coiler. 3,299,479, 1–24–67, Cl. 19—159.

Nobel-Bozel: *See*—
Latty, Cyril X. G. 3,300,541.

Noddin, Ray C., to Globe-Union Inc. Protection device for solid state ignition systems and battery charging systems. 3,300,702, 1–24–67, Cl. 320—25.

Noel, Yvon-Pol, to Centre National de Rocherches Metallurgeques. Method of measuring temperatures. 3,299,707, 1–24–67, Cl. 73—339.

Noll, George H., to Wildman Jacquard Co. Cam control means for knitting machines. 3,299,673, 1–24–67, Cl. 66—57.

Noller, Fred W., and R. E. Hauff, to Massey-Ferguson Inc. Multiple position seat for material handling equipment. 3,300,172, 1–24–67, Cl. 248—425.

Nordbak, Carl. Shelf device. 3,299,839, 1–24–67, Cl. 108—152.

Nordlander, Birger W.: *See*—
Gorman, Jeremy W., and Norlander. 3,300,547.

Norris, Frank A., and D. P. Grettie, to Swift & Co. Inhibition of hydrolysis of fats. 3,300,524, 1–24–67, Cl. 260—398.5.

Noyes, Atherton Jr., to General Radio Co. Digital frequency synthesizer having a plurality of selectably connectable phase-locked digit insertion units. 3,300,731, 1–24–67, Cl. 331—2.

Nylund, Knut H. Shoe heel with exchangeable tread part. 3,299 542, 1–24–67, Cl. 36—42.

O'Brien, Robert J., and E. W. Griese, Jr., to Ekco Containers, Inc. Applicator package. 3,299,464, 1–24–67, Cl. 15—506.

Ocean Systems, Inc.: *See*—
Link, Edwin A. 3,299,645.

Odelberg, Axel: *See*—
Gustafsson, Nils I. E., and Odelberg. 3,299,717.

Ohio Crankshaft Co., The: *See*—
Kasper, Robert J. 3,300,563.
Sorensen, Phillips N. 3,300,614.

Ohta, Genkichi: *See*—
Shimizu, Masao, Ohta, Nagase, Okada, and Hosokawa. 3,300,508.

Okada, Seizaburo: *See*—
Shimizu, Masao, Ohta, Nagase, Okada, and Hosokawa. 3,300,508.

O'Kane, Richard H. Tripod. 3,300,165, 1–24–67, Cl. 248—168.

Olin Mathieson Chemical Corp.: *See*—
Clumpner, Joseph A., and Dore. 3,300,198.
MacMullen, Clinton W. 3,299,566.

Oliphant, Keith M., to Research Laboratories of Australia Ltd. Conductive liquid developer for xerographic images. 3,300,410, 1–24–67, Cl. 252—62.1.

Olive, Salvaodor, and G. de Olive-Henrici, to Monsanto Co. Organic phosphide catalysts in alpha-olefin polymerization processes. 3,300,461, 1–24–67, Cl. 260—89.5.

Olling, Edward H.: *See*—
Maynard, Owen E., Taub, Brown, Olling, and Mason. 3,300,162.

Ollman, Melvin L.: *See*—
Bopp, Warren G., Knapp, and Ollman. 3,300,698.

Olney, Nathaniel M., to Swingline, Inc. Carton opening tool with slidable cutting means. 3,299,449, 1–24–67, Cl. 7—5.4.

Olsen, Robert, to Danfoss A/S. Sightglass construction. 3,299,851, 1–24–67, Cl. 116—117.

Olson, David C., to Lockheed Aircraft Corp. Towbar. 3,300,233, 1–24–67, Cl. 280—453.

O'Neill, Joseph V., and G. Homanick, to Leyman Corp. Drill string suspension arrangement. 3,299,957, 1–24–67, Cl. 166—77.5.

Onoue, Hirosh, to Shionogi & Co., Ltd. N,N'-bis [4-(4-halogenated - 5 - alkyl - 3 - isoxazolylsulfamoyl)-phenyl]-ureas. 3,300,488, 1–24–67, Cl. 260—239.9.

Oppenheimer, Walter S. Fuel oil jet. 3,300,146, 1–24–67, Cl. 239—487.

Optical Research and Development: *See*—
Alvarez, Luis W. 3,299,768.

Optische Werke G. Rodenstock: *See*—
Pennig, Karl-Heinz. 3,300,267.

Orlens, Alfreda: *See*—
Mulreed, James E., and Orlens. 3,299,805.

Orloff, Daniel L., R. J. Keating, and J. S. Hu, to Oscar Mayer & Co., Inc. Packaging machine. 3,299,608, 1–24–67, Cl. 53—112.

Orsino, Joseph A., D. F. Herman, and J. J. Brancato, to National Lead Co. Metal-polyolefin compositions and process for making same. 3,300,329, 1–24–67, Cl. 117—49.

Osakada, Sunao: *See*—
Yamamoto, Kenichi, and Osakada. 3,300,127.

Osborn, Stephen W., to Thiokol Chemical Corp. Catalytic oxide process. 3,300,454, 1–24–67, Cl. 260—79.7.

Osborn, William L.: *See*—
Hopkins, Neil E., and Osborn. 3,299,866.

Osborne, William T., to Carrier Corp. Refrigeration system. 3,299,653, 1–24–67, Cl. 62—115.

Osterlund, Henry H.: *See*—
Hendrickson, Jay D., and Osterlund. 3,299,467.

Oström, Gustav B.: *See*—
Johansson, Lars O. E., and Oström. 3,300,067.

O'Sullivan, George A., to Consolidated Controls Corp. Resistance thermometer system. 3,299,709, 1–24–67, Cl. 73—362.

Outboard Marine Corp.: *See*—
Foster, Leslie W. 3,299,964.
Koerber, John H. 3,299,987.

Outokumpu Osakeyhtio: *See*—
Malmstrom, Rolf E. 3,300,301.

Owens, Emert E., to Container Corp. of America. Easy opening container construction. 3,300,118, 1–24–67, Cl. 229—51.

Owens-Illinois Glass Co.: *See*—
Bayer, John W., and Santiago. 3,300,465.

Owens-Illinois Inc.: *See*—
Veres, Frank. 3,300,670.

P. & V. (Mining & Engineering) Ltd.: *See*—
Clemmow, Raymond J. 3,299,974.

Pace, Henry A., to Goodyear Tire & Rubber Co. Liner for pneumatic tire. 3,299,934, 1–24–67, Cl. 152—354.

Pacific Spring & Hardware Mfg. Corp.: *See*—
Fleskes, Lyle J. 3,300,238.

Packard, Alfred R., and W. H. Cunningham, to Toolkraft Corp. Radial arm saw adjustment means. 3,299,916, 1–24–67, Cl. 143—6.

Packman, Gordon, and J. L. Kearney, to United Kingdom Atomic Energy Authority. Refuelling machines for gas cooled nuclear reactors. 3,300,389, 1–24–67, Cl. 176—32.

Page, Edmund J.: *See*—
Kershaw, John W. G., Simmons, and Page. 3,300,254.

Page, John S., Jr., to J. S. Page, Sr. Well tool apparatus. 3,299,955. 1–24–67, Cl. 166—48.

Page, John S., Sr.: *See*—
Page, John S., Jr. 3,299,955.

Page, Mary A., to Minnesota Mining and Mfg. Co. Method of and means for applying corrosion inhibiting coating. 3,300,333, 1–24–67, Cl. 117—120.

Pahl, Emil F.: *See*—
Pahl, John G. and E. F. 3,299,691.

Pahl, John G. and E. F. Switch arm grooving and flaring machine. 3,299,691, 1–24–67, Cl. 72—64.

Paine, Bud A., and G. Soulakis, Jr., to Spectrol Electronics Corp. Electric switch having a rotor with a resiliently deformable detent beam member. 3,300,594, 1–24–67, Cl. 200—11.

Palasky, Ervin C.: *See*—
Henig, Seymour, and Palasky. 3,300,066.

Palitex Project Co. G.m.b.H.: *See*—
Nimtz, Klaus. 3,299,624.

Paljanytsa, Ivan F.: *See*—
Lakh, Vladimir I., Stadnyk, and Paljanytsa. 3,299,708.

Panzica, Nicholas J., R. M. Jamison, E. Umbricht, and O. M. Arnold, to Ajem Laboratories, Inc. Rotary flow gas washer. 3,299,621, 1–24–67, Cl. 55—223.

Pappo, Raphael, to G. D. Searle & Co. Process and intermediates for manufacture of 13-alkyl-3,17-bisoxygenated gona-1,3,5(10)-trienes. 3,300,484, 1–24–67, Cl. 260—239.5.

Paquette, Leo A., to The Upjohn Co. 2-acyl-2-azabicyclo [3.2.2]-6-nonenes. 3,300,513, 1–24–67, Cl. 260—326.

Paradiso, Joe: *See*—
Black, Lawrence W. 3,300,405.

Parisot, Gerard, to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine. Process for production of hydrofluoric acid from sulphuric acid, fluorspar and anhydrite. 3,300,279, 1–24–67, Cl. 23—153.

Park, Charles D.: *See*—
Bray, Donald T., La Grange, Merten, and Park. 3,300,344.

Parker-Hannifin Corp.: *See*—
Stacey, Hugh J. 3,299,903.

Parker, Leon O., to San Francisco Research Corp. Surgical bandage, dressing and the like. 3,299,890, 1–24–67, Cl. 128—156.

Parker, Phillip H., Jr., to Chevron Research Co. 1,4 naphthoquinone as polymerization controller in β-staging unsaturated polyester resins. 3,300,544, 1–24–67, Cl. 260—866.

Parkinson, Alexander: *See*—
Baird, William I., and Parkinson. 3,300,515.

Parks, Jerry T., to Wagner Electric Corp. Automatic adjusting mechanism. 3,299,994. 1–24–67, Cl. 188—79.5.

Patchett, Arthur A.: *See*—
Fried, John, Bry, and Patchett. 3,300,518.

Patterson, Charles M. Waste receptacle. 3,300,082, 1–24–67, Cl. 220—65.

Paul, Gerard T.: *See*—
Deng, Niann-Chyung, Lindauer, and Paul. 3,300,625.

Paul, Thomas C., D. Edwards, and G. B. Dawson, to Coal Industry (Patents) Ltd. Conveyors. 3,300,025, 1–24–67, Cl. 198—102.

Pauli, Jude A., and R. Willner, to Alco Valve Co. Temperature sensing system. 3,299,710, 1–24–67, Cl. 73—368.2.

Payer, Frances C.: *See*—
Payer, Rodolphe L. and F. C. 3,299,626.

Payer, Rodolphe L. and F. C. Cable attachment device and method. 3,299,626, 1–24–67, Cl. 57—145.

Payne, Harry R., to The Seeburg Corp. Dispensing mechanism for articles in front to back staggered stacks. 3,300,084, 1–24–67, Cl. 221—15.

Payne, Stanley A. E., to Mono Pumps Ltd. Helical gear pump. 3,299,822, 1–24–67, Cl. 103—117.

Payne, Sumas. Pipe cleaner. 3,299,898, 1–24–67, Cl. 131—246.

Pearson, Harry C., to Portland Iron Works. Circular saw. 3,299,917, 1–24–67, Cl. 143—133.

Peisker, Glenn W.: *See*—
Hardy, Paul W., and Peisker. 3,300,296.

Pennig, Karl-Heinz, to Ontische Werke G. Rodenstock. High-speed photographic lens system. 3,300,267, 1–24–67, Cl. 350—223.

Peppley, Lloyd L.: *See*—
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Peras, Lucien, to Regie Nationale des Usines Renault. Lobed rotors of rotary engines. 3,299,862, 1–24–67, Cl. 123—8.

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Perina, Zdenek, V. Bydzovsky, and Z. Budesinsky, to Spofa, Sdruzeni podniku pro zdrovotnickou vyrobu. 4-carboxy-alkylmercapto-5-aryl pyrimidines and method of preparing same. 3,300,495, 1–24–67, Cl. 260—251.

Perkins, Alaadin N., to Bell Aerospace Corp. Polyphase crystal-controlled microwave power source. 3,300,707, 1–24–67, Cl. 321—69.

Perkins, John H. Method of soil erosion control. 3,299,567, 1–24–67, Cl. 47—9.

Perl, Richard L., to The Tappan Co. Granular detergent dispenser. 3,300,096, 1–24–67, Cl. 222—166.

Pernack, Frank, S. F. Miller, E. Z. Krygier, and A. B. Abrahamsson, to National Broach & Machine Co. Method and apparatus for trimming grinding wheels. 3,299,577, 1–24–67, Cl. 51—5.

Pernick, David. Fabric inspection machine. 3,299,484, 1–24–67, Cl. 26—70.

Perri, John A., J. Riseman, and R. L. Ruggles, Jr., to International Business Machines Corp. Method of covering the surfaces of objects with protective glass jackets and the objects produced thereby. 3,300,339, 1–24–67, Cl. 117—215.

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Doebel, Karl J., and Pfenninger. 3 300,504.

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Dietz, Richard E. 3 300,464.
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Picard, Joseph A., Jr.: *See*—
Richardson, Donald V., and Picard. 3,300,785.

Pickering, Charles E.: *See*—
Peterson, Dean M., Pickering, and Windle. 3,300,003.

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Pittsburgh Corning Corp.: *See*—
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Mission, George W. 3,300,290.
Mission, George W. 3,300,291.
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Chu, Simon L. 3,300,309.

Porri, Lido: *See*—
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Porritts & Spencer Ltd.: *See*—
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Hilton, Roy, and Powles. 3,300,665.

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Price, Ralph E., and E. R. Dunn, to Landis Tool Co. Spindle aligning indicator. 3,299,581, 1–24–67, Cl. 51—165.

Priesing, Charles P., and S. Mogelnicki, to The Dow Chemical Co. Process for dewatering an aqueous suspension of organic waste solids. 3,300,407, 1–24–67, Cl. 210—53.

Prevorsek, Dusan C., to The Goodyear Tire & Rubber Co. Polyester resins stabilized with thiophosphate esters. 3,300,440, 1–24–67, Cl. 260—45.7.

Procter & Gamble Co., The: *See*—
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Products Research Associates, Inc.: *See*—
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Puidokas, Stanley V., to American Motors Corp. Clutch link. 3,299,736, 1–24–67, Cl. 74—586.

Pullman Inc.: *See*—
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Grich, Edward R., and Hood. 3,300,402.

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Saxe, Ludvig, and Krogstad. 3,300,187.

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Quelland, Leonard H. and K. E. 3,300,636.

Quelland, Leonard H. and K. E. Auto light holder. 3,300,636, 1–24–67, Cl. 240—90.

Quercetti, Alessandro. Launching pad and flying toy combination. 3,299,564, 1–24–67, Cl. 46—74.

Quercia, Marcel, Flaminaire: *See*—
Lafitte, Paul, Delbourgo, and Quercia. 3,299,675.

Quercia, Marcel: *See*—
Lafitte, Paul, Delbourgo, and Quercia. 3,299,675.

Quester, Karl W., and H. Lieten, to W. Quester. Device for dispensing loose materials to a number of user points. 3,300,098, 1–24–67, Cl. 222—196.

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Quester, Karl W., and Lieten. 3,300,098.
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McGrath, William L., and Rachfal. 3,299,649.
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Radcliffe, Richard S. Canopy. 3,299,570, 1–24–67, Cl. 49—27.
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Beltz, John P. 3,300,757.
Chang, Kern K. N. 3,300,729.
Ling, Andrew T.-A. 3,300,626.
Karol, Kenneth N., and Thall. 3,300,677.
Raffa, Charles. Support standard and selectively positionable shelf brackets therefor shelf construction with adjustable bracket. 3,300,170, 1–24–67, Cl. 248—242.
Ragollo, John. Combination jack and tire breaker. 3,300,184, 1–24–67, Cl. 254—133.
Railroad Permanent Way Products Corp.: *See*—
Moses, Nelson K., and McClung. 3,300,140.
Raleigh Industries Ltd.: *See*—
Toplis, John G. 3,299,745.
Ralston, W., & Co. (Canada) Ltd.: *See*—
McColgan, Arnold J. 3,300,120.
Ramsey, Joseph R., Jr. Chandelier light fixture. 3,300,635, 1–24–67, Cl. 240—78.
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Bleloch, William. 3,300,302.
Randol, Gleen T. Automatic carburetion interrupter for internal-combustion engines. 3,299,872, 1–24–67, Cl. 123—102.
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Raskin, Seymour H. Position indicating switch means. 3,300,602, 1–24–67, Cl. 200—61.41.
Rasmussen, Raymond A.: *See*—
Fisher, Gerald L., and Rasmussen. 3,299,683.
Ratcliffe, Arnold. Constant load extension device. 3,299,990, 1–24–67, Cl. 188—67.
Rath, Erich W. High power fuse with ceramic casing. 3,300,608, 1–24–67, Cl. 200—131.
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Niklas, Wilfrid F. 3,300,668.
Rauner, Frederick J., and C. G. Houle, to Eastman Kodak Co. Nonsilver, light-sensitive photographic elements. 3,300,314, 1–24–67, Cl. 96—89.
Rawle, David, to Clinch-Tite Corp. Pallet enclosure. 3,300,077, 1–24–67, Cl. 217—65.
Rayner, Raymond E., and W. C. Smith, to Worthington Corp. Oil lubrication system for refrigeration apparatus. 3,299,655, 1–24–67, Cl. 62—193.
Reader, Trevor D.: *See*—
Smith, Robert T., Jr., and Reader. 3,299,906.
Recognition Equipment Inc.: *See*—
Childs, George W., Pitcher, and Staples. 3,300,207.
Reding, John N., Jr., to The Dow Chemical Co. Transfer of molten magnesium along ferrous metal surface without halide flux creepage. 3,300,298, 1–24–67, Cl. 75—67.
Reed, Charles L., Jr. Ski construction and method for varying the flexibility thereof. 3,300,226, 1–24–67, Cl. 280—11.13.
Reedyk, Cornelis W., and P. Fatovic, to Northern Electric Co., Ltd. Self-polarized electrostatic microphone-semiconductor amplifier combination. 3,300,585, 1–24–67, Cl. 179—1.
Reef, Jan. Gauge. 3,299,516, 1–24–67, Cl. 33—147.
Reeves, Howard F., Jr., R. W. Ingwalson, and G. D. Kyker, to Velsicol Chemical Corp. Polyvinyl chloride plasticized with methyl substituted benzophenone. 3,300,438, 1–24–67, Cl. 260—32.8.
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Williams, Leonard E., and Regan. 3,299,954.
Regents of the University of Michigan, The: *See*—
Burckhalter, Joseph H. 3,300,501.
Regie Nationale des Usines Renault: *See*—
De Castelet, Gaëtan de C. 3,299,671.
De Castelet, Gaëtan de C. 3,299,794.
De Castelet, Gaëtan de C. 3,299,863.
De Castelet, Gaëtan de C. 3,299,864.
De Castelet, Gaëtan de C. 3,299,991.
De Castelet, Gaëtan de C. 3,299,996.
Peras, Lucien. 3,299,862.
Reimer, Ernest M.: *See*—
Broersma, Robert J., and Reimer. 3,299,926.
Reinhardt, Robert M.: *See*—
Kullman, Russell M. H., Reinhardt, and Frick. 3,300,273.
Remick, David W.: *See*—
Axe, Daniel E., and Remick. 3,299,901.
Remington Arms Co., Inc.: *See*—
Rickey, Edward A. 3,299,813.
Renfroe, Mary E. T.: *See*—
Renfroe, Lester C. 3,300,242.
Renfroe, Lester C., deceased, by M. E. T. Renfroe, administratrix, to Safety Clamps, Inc. Plate lifting clamps. 3,300,242, 1–24–67, Cl. 294—101.
Research Corp.: *See*—
Tobolsky, Arthur V., and Takahashi. 3,299,568.
Research Laboratories of Australia Ltd.: *See*—
Oliphant, Keith M. 3,300,410.
Restall, George, to Owen Rubery and Co. Ltd. Power couplings. 3,299,979, 1–24–67, Cl. 180—14.
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McClure, David A. 3,300,381.
Reynolds Metals Co.: *See*—
Pilger, Nicholas J. 3,300,039.
Rezin, Leonard A., to Borg-Warner Corp. Purge system for refrigeration apparatus. 3,299,665, 1–24–67, Cl. 62—475.
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Rhoads, J. E., & Sons, Inc.: *See*—
Epstein, Michael M., and Rhoads. 3,300,370.
Rhoads, Joseph E.: *See*—
Epstein, Michael M., and Rhoads. 3,300,370.
Rhoads, Millard A. Pipe smoker's device. 3,299,897, 1–24–67, Cl. 131—232.
Rhodes, Wallace F.: *See*—
Momchilovich, Milan, and Rhodes. 3,299,816.
Rhyne, Earl C., Jr., and J. Contino, to Dielectric Products Engineering Co., Inc. Pole changer type frequency converter. 3,300,708, 1–24–67, Cl. 321—69
Rice, Richard E., and W. E. Whitney, to Comstock & Wescott, Inc. Heat-storage apparatus. 3,299,945, 1–24–67, Cl. 165—4.
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Richardson, Donald V., and J. A. Picard, Jr., to United Aircraft Corp. Multiplex recording apparatus. 3,300,785, 1–24–67, Cl. 346—17.
Richardson, James L.: *See*—
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Richardson, Ronald E., to Pittsburgh Plate Glass Co. Assemblies of glass sheets. 3,300,351, 1–24–67, Cl. 156—102.
Richmond Aerosols Ltd.: *See*—
Featherstone, Charles B., and Hawtin 3,300,103.
Rickey, Edward A., to Remington Arms Co., Inc. Water sealing shot container for shotshells. 3,299,813, 1–24–67, Cl. 102—42.
Rigby, George R., to Canadian Refractories Ltd. Spalling-resistant refractory brick. 3,299,600, 1–24–67, Cl. 52—597.
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Dieter, Donald P., and Riggs. 3,299,456.
Rines, Robert H.: *See*—
Arden, Dean N. 3,300,627.
Riniker, Bernhard: *See*—
Schwyzer, Robert, Iselin, Kappeler, Riniker, and Rittel. 3,300,468.
Rinke, Heinrich: *See*—
Thoma, Wilhelm, and Rinke. 3,300,447.
Ripple Sole Corp.: *See*—
Hack, Nathan. 3,299,544.
Riseman, Jacob: *See*—
Perri, John A., Riseman, and Ruggles. 3,300,339.
Risk, James B., and F. E. Murray, to British Columbia Research Council. Method and apparatus for hydrogen sulfide determination. 3,300,282, 1–24–67, Cl. 23—232.
Rittel, Werner: *See*—
Schwyzer, Robert, Iselin, Kappeler, Riniker, and Rittel. 3,300,468.
Ritter Pfaudler Corp.: *See*—
Schneider, Leopold M. 3,300,249.
Rizk, Waheeb, and C. A. Keer, to The English Electric Co. Ltd. Turbines. 3,300,178, 1–24–67, Cl. 253—39.1.
Robert, Roger A. Devices for the control of an aerial bomb operation. 3,299,810, 1–24–67, Cl. 102—4.
Roberts, Hershel C., and L. L. Peppley. Drier device for ski shoes and the like. 3,299,529, 1–24–67, Cl. 34—104.
Robinson, Horace M., to Monsanto Co. Process for the preparation of dyeable acrylonitrile polymer fibers and compositions thereof. 3,300,272, 1–24–67, Cl. 8—100.
Robinson, William: *See*—
Bild, Frederick, and Robinson. 3,300,555.
Robinson, William P.: *See*—
Swart, Kenneth H., and Robinson. 3,299,973.
Roblon, Frederikshavn, A/S: *See*—
Nielsen, Peter S. 3,299,640.
Rochon, John A. Musical instrument stand. 3,299,765. 1–24–67, Cl. 84—422.
Rock-Ola Mfg. Corp.: *See*—
Rockola, Donald C. 3,300,094.
Rockefeller, George D., Jr., and J. C. Gambale, to Westinghouse Electric Corp. Load computing and shedding apparatus. 3,300,648, 1–24–67, Cl. 307—29.
Rockola, Donald C., to Rock-Ola Mfg. Corp. Mixing device. 3,300,094, 1–24–67, Cl. 222—129.4.
Rockwell-Standard Corp.: *See*—
Slater, George E., and James. 3,300,135.
Roder, Gert: *See*—
Frungel, Frank, and Roder. 3,300,682.
Roemer, Ralph R. Fluid pressure operable device and control device. 3,299,634, 1–24–67, Cl. 60—52.
Rogers, Leo A., to Corning Glass Works. Phosphorescent opal glasses. 3,300,412, 1–24–67, Cl. 252—301.6.
Rohm & Haas Co.: *See*—
Pollio, Francis X. 3,300,406.
Rohr, Joseph H. Rack. 3,300,055, 1–24–67, Cl. 211—74.
Rolen, Carl R. Connected column and beam construction. 3,300,237, 1–24–67, Cl. 287—189.36.
Rolls-Royce Ltd.: *See*—
Wilde, Geoffrey L., Bill, and Coplin. 3,299,632.
Coplin, John F., Taylor, Petrie, and Bracey. 3,299,961.
Roman, Robert J., to Eastman Kodak Co. Automatic rewinding mechanism for film or the like. 3,300,155, 1–24–67, Cl. 242—56.12.
Ronai, Kenneth S.: *See*—
Marotta, Nicholas G., and Ronai. 3,300,319.
Ronald, Ulrich P., and R. J. Lemieux, to Northern Electric Co. Ltd. Composite shield for electric cables. 3,300,573, 1–24–67, Cl. 174—106.

Roos, Dirk G. J., to Trans-Atlas A.G. Machine for treating, such as heat sealing and cutting, a web of sheet material, in particular for the manufacture of sacks. 3,300,365, 1–24–67, Cl. 156—583.
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Roozendaal, Khaas, and van der Ster, Johannes, to North American Philips Co., Inc. Device for separating in a solid state components from a gas mixture by cooling and gas separating plant provided with one or more of these devices. 3,299,647, 1–24–67, Cl. 62—42.
Roper, Daniel W., to Eaton Mfg. Co. Bi-directional roller clutch with differential speed responsive pilot clutch. 3,300,002, 1–24–67, Cl. 192—35.
Rorer, Ellis W., and A. Scheinfeld, to E. I. du Pont de Nemours and Co. Adjustable screw melter heater. 3,299,473, 1–24–67, Cl. 18—12.
Rosaen, Nils O. Power transfer circuit. 3,300,662, 1–24–67, Cl. 310—12.
Rosaen, Nils O.; 10% to C. J. Ladner, 10% to A. E. Moore, 7½% to J. B. Burrow, Sr. Power transfer circuits. 3,300,663, 1–24–67, Cl. 310—12.
Rose, Boyd W., and H. J. Mumma, to FMC Corp. Article drying apparatus. 3,299,528, 1–24–67, Cl. 34—60.
Rosen, Joseph L. Dispenser valve structure. 3,300,105, 1–24–67, Cl. 222—517.
Rosenbluth, William, to Hazeltine Research Inc. Linear sweep signal generator. 3,300,655, 1–24–67, Cl. 307—88.5.
Rosenthal, Harry. Web severing device having means to blow web material clear of severing means. 3,299,756, 1–24–67, Cl. 83—98.
Ross, David S. *See*—
Ross, Gene W., and D. S. 3,300,392.
Ross, Gene W., and D. S., to Amcodyne & Co. Vacuum distillation including pre-degasification of distilland. 3,300,392. 1–24–67, Cl. 202—176.
Ross, Sidney D., and R. E. Cote, to Sprague Electric Co. Capacitor with low resistivity electrolyte and high voltage range. 3,300,693, 1–24–67, Cl. 317—230.
Roth, Adrien W., A. Catella, and G. Nicoud, to Compagnie General D'Electricite. Anti-restriking oil circuit breaker having an anti-cavitation device. 3,300,610, 1–24–67, Cl. 200—150.
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Jacob, Theodore A., Vitali, Rothrock, and Inamine. 3,300,477.
Rotier, Donald J.: *See*—
Meier, Don E., and Rotier. 3,300,656.
Rowe, P. R.: *See*—
McCollum, Burton, and Rowe. 3,300,753.
Roxburgh, Albert: *See*—
Flurscheim, Cedric, and Roxburgh. 3,300,609.
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Hills, William H., McIntosh, and Roy. 3,299,485.
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Frechette, Leo P. 3,300,018.
Royalty, Galen E. Combination scrub mop, squeegee, and wringer receptacle tray. 3,299,458, 1–24–67, Cl. 15—1.
Royan, John: *See*—
Calandrello, Nicola A., Hill, and Royan. 3,300,340.
Royer, Thurber W., to Aerojet General Corp. Releasable securing means. 3,299,767, 1–24–67, Cl. 85—32.
Rubens, Harry S., to Engelhard Hanovia, Inc. Gynecologic instrument. 3,299,883, 1–24–67, Cl. 128—4.
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Restall, George. 3,299,979.
Rucchio, Elizabeth R. Knock Down Chair. 3,299,448, 1–24–67, Cl. 5—332.
Rue, Howard M., to Sun Oil Co. Process for preparing phenolic compounds. 3,300,534, 1–24–67, Cl. 260—613.
Rufil, Anton: *See*—
Spiess, Gustav, and Rufil. 3,299,698.
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Rumble, Fenton J. Picnic table. 3,300,245, 1–24–67, Cl. 297—157.
Ruminsky, Paul P., to H. C. Brauchla. Method for driving screws. 3,299,499, 1–24–67, Cl. 29—413.
Runyan, Martin E.: *See*—
Kleboe, John E., and Runyan. 3,300,034.
Runyan, Martin E.: *See*—
Funke, Charles B., Kleboe, and Runyan. 3,300,035.
Russell, Howard, Jr., to General Precision Inc. Gimbal-type joystick. 3,299,731, 1–24–67, Cl. 74—471.
Russell, Malcolm C., to Russell Mfg. Co. Card cutting machine. 3,299,755, 1–24–67, Cl. 83—94.
Russell Mfg. Co.: *See*—
Russell, Malcolm C. 3,299,755.
Rutherford, David A., and R. J. McWilliams, to Abex Corp. Surface hardening apparatus. 3,300,197, 1–24–67, Cl. 266—4.
Sabbaides, Hippocrate, and H. Sommer, to Hauni-Werke Korber and Co., K. G. Apparatus for loosening or opening tobacco. 3,299,896, 1–24–67, Cl. 131—149.
Sabbioni, Franco: *See*—
Guzzetta, Giuseppe, Sabbioni, and Gechele. 3,300,462.
Sablotny, Adalbert, and W. Wennemann, to Hoesch Aktiengesellschaft. Apparatus for the resistance welding of tubes helically wound from metallic bands. 3,300,616, 1–24–67, Cl. 219—62.
Safety Clamps, Inc.: *See*—
Renfroe, Lester C., and M. E. T. 3,300,242.
Saginaw Machine & Tool Co.: *See*—
Cashman, Robert W. 3,299,752.
St. Regis Paper Co.: *See*—
Burroughs, Edwin E. 3,300,363.
Sand, Darrel R., to General Motors Corp. Coolant system. 3,299,786, 1–24–67, Cl. 74—606.
Sanderford, John W.: *See*—
Kompanek, Andrew J., Jr., and Sanderford. 3,300,258.
Sanders Associates, Inc.: *See*—
Dahlgren, Victor R., and Tally. 3,300,572.
Sandvikens Jernverks Aktiebolag: *See*—
De Geer, Hans H. 3,300,322.
San Francisco Research Corp.: *See*—
Parker, Leon O. 3,299,890.
Santamaria, Jesse J., and B. R. Winborn, to LTV Aerospace Corp. Variable flow deflection means. 3,299,638, 1–24–67, Cl. 60—204.
Santiago, Edgardo: *See*—
Bayer, John W., and Santiago. 3,300,465.
Santoro, Peter F.: *See*—
Jerman, Ralph B., Santoro, and van Kessel. 3,300,388.
Santosuosso, James W. Chocking mechanism. 3,299,989, 1–24–67, Cl. 188—32.
Sapper, Wolfgang: *See*—
Von Rosenberg, Buldo, and Sapper. 3,300,321.
Saresvuo, Teuvo T., to A. Osakeyhtio Ahlstrom. Arrangement in drums with unperforated mantle. 3,299,919, 1–24–67, Cl. 144—208.
Sargent, Raymond W., to Simmonds Precision Products, Inc. Electroformed inner tube for tank unit. 3,299,492, 1–24–67, Cl. 29—155.5
Sasaki, Kanzo, and J. Kawanami, to Shionogi & Co., Ltd. Oxazepine derivative of 12β-amino-α-pregnane-3β-.20β-diol. 3,300,487, 1–24–67, Cl. 260—239.55.
Sato, Yukio: *See*—
Ueno, Kenzo, Kamichika, Sato, and Kabata. 3,300,431.
Sondinaitis, Emanuel, to Zenith Radio Corp. Television sweep system with semiconductor switch and energy storage devire for expediting its activation. 3,300,680, 1–24–67, Cl. 315—29.
Sauls, Clyde. Lock for sectional scaffolding. 3,300,236, 1–24–67, Cl. 287—53.5.
Savage, George M., to The Upjohn Co. Petrolenm fuels containing antibiotics combinations. 3,300,287, 1–24–67, Cl. 44—50.
Savins, Joseph S., to Mobil Oil Corp. Use of viscoelastic liquids for cementing wells in subterranean formations. 3,299,952, 1–24–67, Cl. 166—22.
Sawa, Yoshiro, and S. Maeda, to Shionogi & Co., Ltd. 6-alkylmorphinan derivatives and production thereof. 3,300,500, 1–24–67, Cl. 260—285.
Sawa, Hiroomi, K. Takahashi, K. Kobayashi, and S. Kasu, to Dainippon Ink and Chemicals, Inc. Electrostatic printing apparatus with inking means between electrodes. 3,299,806, 1–24–67 Cl. 101—114.
Saxe, Ludvig, and I. Krogstad, to A/S Pusnes Mek. Verksted. Semi-automatic warping and mooring arrangement. 3,300,187, 1–24–67, Cl. 254—172.
Scarlett, Theodore C., to Honeywell Inc. Pressure control apparatus. 3,299,701, 1–24–67, Cl. 73—178.
Schafer, Gerhardt: *See*—
Markwardt, Fritz, Walsmann, Schafer, and Topfer. 3,300,583.
Schauer, Marvin L., to Boise Cascade Corp. Compartmented dispensing carton formed from a single blank. 3,300,115, 1–24–67, Cl. 229—27.
Scheibe, Walter H. Warp knit tubular netting. 3,299,674, 1–24–67. Cl. 66—195.
Scheinfeld, Abraham: *See*—
Rorer, Ellis W., and Scheinfeld. 3,299,473.
Schenck, Remsen T. E., to Keystone Chemurgic Corp. Hydrated magnesium aluminate and process for preparing same. 3,300,277, 1–24–67. Cl. 23—52.
Schendorf, John, and I. Goldbert, said Schendorf, assor. to said Goldbert. Multi-price vending machine. 3,300,014. 1–24–67. Cl. 194—1.
Scherhag, Bernhard: *See*—
Kunz, Heinrich, Hausweiler, Scherhag, and Haupt. 3,299,618.
Scherotto, John J. Display devices. 3,299,555, 1–24–67, Cl. 40—124.1.
Scherfel, Otto C., to Manganese Steel Forge Co. Conveyor belt. 3,300,030. 1–24–67, Cl. 198—193.
Schisla, Robert M., and V. R. Gaertner, to Monsanto Co. Controlling bacteria with alkyleneglycol carbonate esters of 2,2'-thiobis-(dischlorophenols). 3,300,376, 1–24–67, Cl. 167—30.
Schlafly, Hubert J., to Tele Pro Industries Inc. Data recorder, responder and teaching system. 3,299,534, 1–24–67, Cl. 35—9.
Schlage Lock Co.: *See*—
Tornoe, John A., Neary, and Fernandez-Castro. 3,300,240.
Schlicke, Heinz M., to Allen-Bradley Co. Feedback arrangements for transforming isolator and gyrator circuits into similar or opposite type of circuit. 3,300,738, 1–24–67, Cl. 333—24.1.
Schumberger Technology Corp.: *See*—
McCune, James D. 3,299,459.
Schmbidt, Arnold W. Method and apparatus for producing knit pile fabric. 3,299,672. 1–24–67, Cl. 66—9.
Schmidt, George H., to American Cyanamid Co. Hammer finish from aqueous composition containing non-leafing aluminum particles. 3,300,428, 1–24–68, Cl. 260—29.4.
Schmidt, Heins, G. Roos, and O. Maus, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Polyacetals stabilized with phenoxypropionitriles. 3,300,441, 1–24–67, Cl. 260—45.8.
Schmid, Karl, J. Stedefeder, G. John, M. Haeberle, H. Lautenschlager, and H. G. Trieschmann, to Badische Anilin-& Soda-Fabrik Aktiengesellschaft. Process and apparatus for the polymerization of monoolefines. 3,300,457, 1–24–67, Cl. 260—88.2.

Schmutzler, Reinhard, to E. I. du Pont de Nemours and Co. Nitrogen-containing fluorophosphoranes. 3,300,503, 1-24-67, Cl. 260—293.

Schneberger, Edward J.: *See*—
Koerner, Ralph J., and Schneberger. 3,300,766.

Schneebeli, Jean P.: *See*—
Geiger, Joseph A., and Schneebeli. 3,299,845.

Schneider, Leopold M., to Ritter Pfaudler Corp. Headrest for dental operating chair. 3,300,249, 1-24-67, Cl. 297—408.

Schoeler, Horst, and O. Weibrecht, to VEB Carl Zeiss Jena. Rectifiers for differential strip-by-strip rectification of aerial photographs. 3,299,774, 1-24-67, Cl. 88—24.

Schoff Mfg., Co., Inc., The: *See*—
Clarizio, Giacomo. 3,299,927.

Scholl, William M. Household slipper. 3,299,540, 1-24-67, Cl. 36—8.1.

Schonhuber, Max-Josef, to Brown, Boveri & Cie, Aktiengesellschaft. Lead-through insulator, particularly for high voltage mercury vapor tubes. 3,300,574, 1-24-67, Cl. 174—142.

Schopf, Clemens: *See*—
Feiner, Alfred, Hamann, and Schopf. 3,299,642.

Schudalla, Henry A., Jr.: *See*—
Schudalla, Henry A., Sr. 3,299,720.

Schudalla, Henry A., Sr. and H. A., Jr., to Mid-Continent Steel Casting Corp. Piston pump with transverse thread actuator. 3,299,720., 1-24-67, Cl. 74—57.

Schueler, Marlin A., to Unimark Corp. Article handling and electrostatic imprinting apparatus and method. 3,299,804, 1-24-67, Cl. 101—35.

Schultz, Bennett V., to National Blank Book Co. Projection transparencies. 3,299,557, 1-24-67, Cl. 40—158.

Schultz, Donald H., to Laubman & Pank Proprietary Ltd. Fibre-optics time resolved perimeter for testing peripheral vision. 3,300,269, 1-24-67, Cl. 351—24.

Schultz, Fritz, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of pure preparations of the kallifrein inactivator. 3,300,384, 1-24-67, Cl. 167—74.

Schultz, Moses R., to Knoll Associates, Inc. Furniture connection. 3,299,840, 1-24-67, Cl. 108—157.

Schulz, Peter R.: *See*—
Johnson, Alfred H., McConnell, and Schulz. 3,300,686.

Schumacher, William J., R. D. Hill and M. Hill, to Hill Tool and Engineering Co. Apparatus for the operation of flying cut-off device. 3,299,757, 1-24-67, Cl. 83—293.

Schumer, Louis. Key case. 3,299,930, 1-24-67, Cl. 150—40.

Schumer, Louis. Head block for wigs. 3,300,108, 1-24-67, Cl. 223—66.

Schwartz, Thomas. Vehicle for handling bulk materials. 3,300,070, 1-24-67, Cl. 214—508.

Schwartzmann, Matthias: *See*—
Hamprecht, Guenther, Vogel, Schwarzmann, and Mohr. 3,300,492.

Schwyzer, Robert, B. Iselin, H. Kappeler, B. Riniker, and W. Rittel, to Ciba Corp. Octadecapeptides and intermediates in the preparation thereof. 3,300,468, 1-24-67, Cl. 260—112.5.

Sciaky, David, to Welding Research, Inc. Optical viewing system for electron beam welders. 3,300,618, 1-24-67, Cl. 219—121.

Scientific Chemicals Inc.: *See*—
Gagliardi, Domenick D., and Shippee. 3,300,336.

Sperry Rand Corp.: *See*—
Walter, Gerard O., and Scordato. 3,299,772.

Scott, H. H., Inc.: *See*—
Von Recklinghausen, Daniel R. 3,299,946.

Scott, Harold R., L. A. Davis, and P. J. Fogaty, to The Birmingham Small Arms Co. Ltd. Electrical limit switches. 3,300,598, 1-24-67, Cl. 200—47.

Scott, Hermon H. Method of and apparatus for phonograph suspension and low frequency improvement. 3,300,222, 1-24-67, Cl. 274—39.

Seaman, Gary G., and J. A. Trenerry, to Western Electric Co., Inc. Article transfer apparatus. 3,300,020, 1-24-67, Cl. 198—25.

Sear, Arthur W., to Honeywell Inc. Image combining apparatus. 3,299,036, 1-24-67, Cl. 35—25.

Sear, Arthur W., to Honeywell Inc. Sonar simulator apparatus. 3,300,567, 1-24-67, Cl. 35—10.4.

Sear, Arthur W., to Honeywell Inc. Simulation apparatus. 3,300,568, 1-24-67, Cl. 35—10.4.

Searle, G. D., & Co.: *See*—
Pappo, Raphael. 3,300,484.
Brown, Edward A., and Mikulec. 3,300,523.

Sears, Hartley M., to The Hartley Co. Pen with ink cartridge extension and retraction mechanism. 3,299,857, 1-24-67, Cl. 120—42.13.

Seaton, Stuart L., to United States of America, National Aeronautics and Space Administration. Means for communicating through a layer of ionized gases. 3,300,721, 1-24-67, Cl. 325—65.

Sec-Sonics, Inc.: *See*—
Finnerty, John A. 3,300,270.

Seeburg Corp., The: *See*—
Payne, Harry R. 3,300,084.

Seeger, Ernst, to Boehringer Ingelheim G.m.b.H. Substituted 2-oxo-1,2,3,4-tetrahydroquinolines and their tautomers. 3,300,502, 1-24-67, Cl. 260—289.

Seeley, Dunham B., to Burroughs Corp. Sheet processing apparatus. 3,299,852, 1-24-67, Cl. 118—68.

Segsworth, Robert S., to Ajax Magnethermic Corp. Control device for automatically adding and substracting capacitors to maintain preselective power output. 3,300,712, 1-24-67, Cl. 323—105.

Sekmakos, Kazys: *See*—
Chloupek, LeRoy A., and Sekmakos. 3,300,439.

Seldner, Kurt: *See*—
Gogla, Jugal K., Hinde, and Seldner. 3,300,647.

Selker, Milton L., and P. P. Zapponi, to Clevite Harris Products, Inc. Lubricated rubber bearing. 3,300,257, 1-24-67, Cl. 308—36.1.

Sellen, John M., Jr.: *See*—
Kemp, Robert F., Sellen, and Slattery. 3,300,717.

Sellet, Lucien, to Nopco Chemical Co. Amphoteric resins prepared by condensing alkali metal salts of sulfomethyl dicyandiamide with formaldehyde. 3,300,446, 1-24-67, Cl. 260—69.

Serany, Frank J., Jr.: *See*—
White, Edward J., Serany, and Stern. 3,299,442.

Sensi, Piero: *See*—
Craveri, Renato, Coronelli, and Sensi. 3,300,379.

Sevens, Gerard M., and A. P. Wagemans, to Gevaert Photo-Producten N.V. Process for the manufacture of printing plates. 3,300,306, 1-24-67, Cl. 96—29.

Shachter, Mosheh: *See*—
Gewirc, Vladislav, and Shachter. 3,299,725.

Shagin, Terry M., and E. J. Fishman. Wallet insert. 3,299,929, 1-24-67, Cl. 150—39.

Shallenberg, Robert L., and O. Handwerk, to Liquid Controls Corp. Temperature compensator. 3,299,705, 1-24-67, Cl. 73—233.

Sharpe, Christopher J., and F. F. Stephens, to The Crookes Laboratories Ltd. Benzothiazolylbenzene amides. 3,300,507, 1-24-67, Cl. 260—304.

Shatto, Howard L., Jr., to Shell Oil Co. Pipe line connector. 3,299,950, 1-24-67, Cl. 166—.5.

Shaw, Fred B., to Continental Can Co., Inc. Method of filling pouches. 3,299,603, 1-24-67, Cl. 53—22.

Shaw, George B.: *See*—
Short, Brooks H., and Shaw. 3,300,709.

Shelby, Richard K., to Monsanto Co. Process for selectively foaming surface areas on a plastic article. 3,300,551, 1-24-67, Cl. 264—45.

Shelby, Richard K., to Monsanto Co. Process for selectively foaming surface areas on a plastic article. 3,300,552, 1-24-67, Cl. 264—45.

Shelby, Richard K., to Monsanto Co. Process for selectively foaming surface areas on a plastic article. 3,300,553, 1-24-67, Cl. 264—45.

Shell Oil Co.: *See*—
Shatto, Howard L., Jr. 3,299,950.
De La Mare, Harold E. 3,300,463.

Shepard, David H., to Cognitronics Corp. Conversation machine. 3,300,586, 1-24-67, Cl. 179—6.

Shepler, Paul R., to Koppers Co., Inc. Extrusion protected resilient rod seal. 3,300,225, 1-24-67, Cl. 277—165.

Sherk, Fred T., to Phillips Petroleum Co. Isoolefin recovery. 3,300,539, 1-24-67, Cl. 260—677.

Shibe, William J., Jr., and M. Sittenfield, to Hollichem Corp. Biocidal quaternary ammonium aromatic cyclic imides. 3,300,377, 1-24-67, Cl. 167—33.

Shields, John B.: *See*—
Nava, Louis J., Hutton, Shields, and Kempf. 3,300,315.

Shiels, Robert T., Jr., to Anaconda Wire and Cable Co. Method of reeling communication cables to identify defective pairs including grounding the identified defective pairs. 3,300,714, 1-24-67, Cl. 324—52.

Shimizu, Masao, G. Ohta, O. Nagase, S. Okada, and Y. Hosokawa, to Daiichi Seiyaku Co., Ltd. 2-[N'-(pantoyl)-2'-aminoethyl]-2-thiazoline. 3,300,508, 1-24-67, Cl. 260—306.7.

Shionogi & Co., Ltd.: *See*—
Komeno, Taichiro. 3,300,485.
Komeno, Taichiro. 3,300,519.
Sasaki, Kanzo, and Kawanami. 3,300,487.
Onoue, Hirosh. 3,300,488.
Sawa, Yoshiro, and Maeda. 3,300,500.
Komeno, Taichiro. 3,300,519.

Shipman, Raldo E., to Forgflo Corp. Static balancing apparatus. 3,299,715, 1-24-67, Cl. 73—480.

Shippee, Fred B.: *See*—
Gagliardi, Domenick D., and Shippee. 3,300,336.

Shirley, Gerald. Spindle adapter. 3,300,221, 1-24-67, Cl. 274—10.

Short, Brooks H., and G. B. Shaw, to General Motors Corp. Current and voltage regulator. 3,300,709, 1-24-67, Cl. 322—25.

Short, Herbert D., to Lacal Industries Ltd. Conductor suspension assembly. 3,300,575, 1-24-67, Cl. 174—144.

Sicklesteel, Donald L. Valve for internal combustion engines. 3,299,869, 1-24-67, Cl. 123—90.

Sidi, Henri, to Tenneco Chemicals, Inc. Copolymers of formaldehyde and s-trithianes. 3,300,445, 1-24-67, Cl. 260—67.

Sierra Electric Corp.: *See*—
Ramsing, Robert E. V., and Bourbenne. 3,300,605.

Sigan, Jack W.: *See*—
Dustin, Daniel S., and Sigan. 3,300,408.

Silvern, David H., to Sundstrand Corp. Pump inducer. 3,299 821. 1-24-67, Cl. 103—89.

Simcox, Donald J.: *See*—
Merriman, Peter, Simcox, and Newham. 3,300,421.

Simjian, Luther G., to General Research, Inc. Service compartment 3.300.016, 1-24-67, Cl. 194—4.

Simkovich, Alex: *See*—
Bailey, Gilbert R., and Simkovich. 3,299,706.

Simmonds Precision Products, Inc.: *See*—
Sargent, Raymond W. 3,299,492.

Simmons, Arthur W.: *See*—
Kershaw, John W. G., Simmons, and Page. 3,300,254.

Simmons Co.: *See*—
Blise, Bernard G., and Friedeck. 3,299,446.

Simor, George G. Dispenser for flexible strips. 3,300,085, 1-24-67, Cl. 221—41.

Simplicity Engineering Co.: *See*—
Behnke, George W., and Wirth. 3,300,152.

Simpson Timber Co.: *See*—
Vonhof, Herbert. 3,299,922.

Sinclair Research, Inc.: *See*—
Vrbaski, Theodore. 3,300,516.
Keith, Willis C., and Zmitrovis. 3,300,583.
Keith, Willis C., and Zmitrovis. 3,300,671.

Singer Co., The: *See*—
Wigington, Jerry. 3,300,700.

Singer, Max E., to Keyes Fibre Co. Carton closing apparatus. 3,299,615, 1-24-67, Cl. 53—376.

Sipos, Steve G. Golfer's stance training device. 3,300,219, 1-24-67, Cl. 273—187.

Sirkis, Rafael, 50% to Technion Research and Development Foundation. Three dimensional pictorial displays. 3,300,779, 1-24-67, Cl. 343—7.9.

Sittenfield, Marcus: *See*—
Shibe, William J., Jr., and Sittenfield. 3,300,377.

Skau, Evald L., R. R. Mod, and F. C. Magne, to United States of America, Agriculture. N-acyl derivatives of cyclic imines. 3,300,434, 1-24-67, Cl. 260—30.2.

Skay, Frank, to Ford Motor Co. Ignition system. 3,299,875, 1-24-67, Cl. 123—148.

Skelton, Samuel R.: *See*—
Allbeson, Erneat N., and Skelton. 3,299,670.

Slater, George E., and D. W. James, to Rockwell-Standard Corp. Thermal bypass valve with bimetallic control. 3,300,135, 1-24-67, Cl. 236—34.5.

Slattery, Jack C.: *See*—
Kemp, Robert F., Sellen, and Slattery. 3,300,717.

Slimovits, Morris L. Feel glove with flap holddown. 3,299,441, 1-24-67, Cl. 2—158.

Sloan, Charles S. Indicator lamp. 3,300,638, 1-24-67, Cl. 240—8.16.

Sloan, Kenneth T.: *See*—
Yakimik, Harry, Jr., and Sloan. 3,300,535.

Sloan, Thomas F.: *See*—
Dreksler, Moshe Y., and Sloan. 3,299,659.

Slusher, William E., and S. Karandanis, to Transitron Electronic Corp. Semi-conductor amplifying device. 3,300,658, 1-24-67, Cl. 307—88.5.

Smeton, Robert L. Hypodermic syringes and attachments thereto pleasing to children. 3,299,891, 1-24-67, Cl. 128—218.

Smidth, F. L., & Co.: *See*—
Anderson, Axel B. 3,300,199.

Smirra, Johannes R., TRW Inc. Solder valve. 3,299,905, 1-24-67, Cl. 137—341.

Smith, Albert C., to Eastman Kodak Co. Photographic developer composition. 3,300,307, 1-24-67, Cl. 96—36.

Smith, Carleton C.: *See*—
Chapman, William P., and Smith. 3,300,759.

Smith Industries International Inc.: *See*—
Swart, Kenneth H., and Robinson. 3,299,973.

Smith Kline & French Laboratories: *See*—
Holden, Kenneth G. 3,300,489.

Smith, Peter H., to J. Lyons & Co., Ltd. Electronic ovens. 3,300,615, 1-24-67, Cl. 219—10.55.

Smith, Walter J.: *See*—
Kassa, Carl J., and Smith. 3,300,347.

Smith, Richard L., and R. K. Johnston, to Eastman Kodak Co. Coating to prevent heat sealing of polyolefin surfaces. 3,300,327, 1-24-67, Cl. 117—44.

Smith, Robert T., Jr., and T. D. Reader, to Sperry Rand Corp. 3,299,906, 1-24-67, Cl. 137—593.

Smith, Wilbur C.: *See*—
Rayner, Raymond E., and Smith. 3,299,655.

Smyrnos, Gus J., to Automatic Electric Laboratories, Inc. Crystal oven heating and control system. 3,300,623, 1-24-67, Cl. 219—501.

Snam S.p.A.: *See*—
Ferrari, Alsides, Guerra, and Taramasso. 3,299,827.

Snell, Raymond L.: *See*—
Landrey, Francis X., and Snell. 3,300,028.

Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A.: *See*—
Ciceri, Luigi, and Perazzoni. 3,300,443.

Snooks, Rupert J., Jr.: *See*—
Gauthier, Roger A., Jr., and Snooks. 3,300,448.

Snyder, Ernest L., to Design Enterprise, Inc. Snowshoe and tread therefor. 3,299,541, 1-24-67, Cl. 36—4.5.

Snyder, Stephen L.: *See*—
Starer, Robert L., and Dean. 3,300,606.

Socha, Rudolf: *See*—
Ackermann, Karl, and Socha. 3,299,788.

Societa Farmaceutici Italia: *See*—
Bernardi, Luigi, and De Castiglione. 3,300,469.

Societe Anonyme: Babbitless: *See*—
Lemardeley, Claude Y. L., and Barrot. 3,300,149.

Societe Anonyme D.B A.: *See*—
Toulier, Pierre. 3,299,719.

Societe Anonyme dite: Societe Nationale des Petroles d'Aquitaine: *See*—
Terminet, Rene. 3,300,280.

Societe Anonyme Etablissements Bresson-Faille-Marchand: *See*—
Alletru, Jean L. 3,300,743.

Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine: *See*—
Parisot, Gerard. 3,300,279.

Societe d'Etude et de Construction de Machines-Outils, S.E.C.M.O.: *See*—
Mazue, Jack L. P. 3,299,783.

Societe Industrielle Generale de Mecanique Applique S.I.G.M.A.: *See*—
Gauthier, Robert. 3,299,824.

Soderhamn Machine Mfg. Co.: *See*—
Galtten, Walden M. 3,299,478.

Sokolik, Edward. Soil conditioning apparatus. 3,299,965, 1-24-67, Cl. 172—160.

Sommer, Hans: *See*—
Sabbaides, Hippocrate, and Sommer. 3,299,896.

Sones, William L., J. E. Elliott, and G. A. Neyhouse, to General Motors Corp. Garbage disposal speed control. 3,300,150, 1-24-67, Cl. 241—36.

Sontheimer, Heinrich, and D. Heinicke. Dewatering organic sludge which has been separated during treatment of waste water. 3,300,401, 1-24-67, Cl. 210—5.

Sorensen, Phillips N., to The Ohio Crankshaft Co. Power transaformer for industrial heating apparatus. 3,300,614, 1-24-67, Cl. 219—10.43.

Soulakis, George, Jr.: *See*—
Paine, Bud A., and Soulakis. 3,300,594.

Sout, Allison B., Jr., to Kennecott Copper Corp. Directional air sampler. 3,299,700, 1-24-67, Cl. 73—170.

Southwest National Association: *See*—
McCollum, Burton, and Cowe. 3,300,753.

Spain, William F.: *See*—
Kneip, George D., Jr., and Spain. 3,299,687.

Spalding, A. G., Bros., Inc.: *See*—
Misejewski, Theodore C. 3,299,692.

Spann, James L., to Kinkead Industries Inc. Carpet tool for drawing seam edges together by single throw lever means. 3,300,181, 1-24-67, Cl. 254—62.

Sparling, Russell W., to Taco, Inc. Tool condition detector. 3,299,697, 1-24-67, Cl. 73—104.

Spector, Harold: *See*—
Nadherny, John D. 3,299,899.

Spector, Raymond B.: *See*—
Nadherny, John D. 3,299,899.

Spectrol Electronics Corp.: *See*—
Paine, Bud A., and Soulakis. 3,300,594.

Speiser, Maximilian R. Golf ball image projecting system for golf games. 3,300,218, 1-24-67, Cl. 273—185.

Spembly Ltd.: *See*—
Walker, Alan J. 3,300,566.

Spencer, Elbert M., to Illinois Lock Co. Lock device for vending machine or the like. 3,299,678, 1-24-67, Cl. 70—208.

Spencer, Robert E., to Ford Motor Co. Integral thrust bearing and kingpin bushing seal. 3,300,230, 1-24-67, Cl. 280—96.1.

Spencer, White and Prentis, Inc.: *See*—
White, Robert E. 3,299,644.

Sperr, Fritz: *See*—
Bretschneider, Gunther, and Sperr. 3,300,276.

Sperry Rand Corp.: *See*—
Daniels, John F., and Locke. 3,300,264.
Walter, Gerard O., and Scordato. 3,299,772.
Smith, Robert T., Jr., and Reader. 3,299,906.
Yazejian, Zaven, Fuid, and Benkler. 3,300,017.

Spiece, Stanley J., and R. J. Lang, to McGraw-Edison Co. Power distribution connection apparatus. 3,300,570, 1-24-67, Cl. 174—38.

Spiegetglaswerke Germania Aktiengesellschaft: *See*—
Woelk, Hubert. 3,299,591.

Spiess, Gustav, and A. Rufli. Apparatus for measuring the load torque on drive systems, especially on conveying systems. 3,299,698, 1-24-67, Cl. 73—136.

Spindel-Motoren- und Maschinenfabrik A.G.: *See*—
Beerli, Karl. 3,299,625.

Spofa, Sdruzeni podniku pro zdrovotnickou vyrobu: *See*—
Perina, Zdenek, Bydzovsky, and Budesinsky. 3,330,495.

Sponsler, William B., to Northrop Corp. Surface vehicle having selectively positionable plural walking beam running gear means. 3,299,978, 1-24-67, Cl. 180—9.52.

Sprague Electric Co.: *See*—
Gilbert, Curtiss M. 3,300,691.
Ross, Sidney D., and Cote. 3,300,693.

Sprague, James W., to The Standard Oil Co. Process for the production of cyanogen halide and apparatus for use therewith. 3,300,398, 1-24-67, Cl. 204—101.

Spring, Claude L. Drafting board. 3,299,513, 1-24-67, Cl. 33—76.

Staeuble, Max: *See*—
Jenny, Walter, Harl, Staeuble, and Weber. 3,300,491.

Square D Co.: *See*—
Stanback, Harris I. 3,300,078.

Squibb, E. R., & Sons, Inc.: *See*—
Narayanan, Venkatachala L. 3,300,480.
Diassi, Patrick A. 3,300,522.

Stacey, Hugh J., to Parker-Hannifin Corp. Fluid system and valve assembly therefor. 3,299,903, 1-24-67, Cl. 137—118.

Stadnyk, Bogdan I.: *See*—
Lakh, Vladimir I., Stadnyk, and Paljanytsa. 3,299,708.

Stahle, Helmut: *See*—
Zelle, Karl, Hauptmann, and Stahle. 3,300,511.

Stahlecker, Hans, and S. Kemmler, to Wilhelm Stahlecker G.m.b.H. Device for measuring the load on the pressure rollers of a drawing mechanism. 3,299,699, 1-24-67, Cl. 73—141.

Stahlecker, Wilhelm, G.m.b.H.: *See*—
Stahlecker, Hans, and Kemmler. 3,299,699.

Stambera, Adolf, and B. Cap, said Stambera assor. to Fr. Hesser Maschinenfabrik-Aktiengesellschaft. Conveyor control weighing apparatus. 3,299,975, 1-24-67, Cl. 177—52.

Stanback, Harris I., to Square D Co. Enclosure for electrical panelboards and the like. 3,300,078, 1-24-67, Cl. 220—4.

Standard Controls, Inc.: *See*—
Walter, Richard C. 3,300,745.

Standard Oil Co., The: *See*—
Sprague, James W. 3,300,398.
Frey, Horst E. 3,300,420.

Stanley, Frederic R., to The Martindale Electric Co. Sanitary masks. 3,299,889, 1-24-67, Cl. 128—146.

Stanley Works, The: *See*—
Gustafson, Norman F. 3,299,573.
Bobrowski, Louis G. 3,299,576.
Kraut, Herman G. 3,299,604.

Staples, Ernest L., Jr.: *See*—
Childs, George W., Pitcher, and Staples. 3,300,207.
Starer, Robert L., and M. Dean, to S. L. Snyder. Rate responsive pressure control system. 3,300,606, 1–24–67, Cl. 200—83.
Stauffer Chemical Co.: *See*—
Cooper, Robert S. 3,300,337.
Sterzl, Carl F. 3,300,676.
Stedefeder, Joachim: *See*—
Schmid Karl, Stedefeder, John, Haeberle, Lautenschlager, and Trieschmann. 3,300,457.
Steeves, Robert W.: *See*—
Clough, Philip J., and Steeves. 3,300,781.
Steffan, Walter J. Power means for sofa bed. 3,299,445, 1–24–67, Cl. 5—13.
Stehney, Thomas G., and T. C. T. New, to Westinghouse Electric Corp. Semiconductor controlled rectifier with firing pin portion on emitter. 3,300,694, 1–24–67, Cl. 317—235.
Steier, Anshel, D., and M. Merchandising display with sample dispensing means. 3,300,088, 1–24–67, Cl. 221—97.
Steier, David: *See*—
Steier, Anshel, D., and M. 3,300,088.
Steier, Meyer: *See*—
Steier, Anshel, D., and M. 3,300,088.
Steinbach, Hans-Horst: *See*—
Andres, Karl-Heinz, Steinbach, and Damm. 3,300,418.
Steinberg, Nathan G.: *See*—
Tishler, Max, Steinberg, and Hirschmann. 3,300,483.
Steingass, Hermann, and J. P. Steyer, to Eastern Products Corp. Cutter for a metal window shade roller. 3,299,754, 1–24–67, Cl. 82—98.
Steinmeyer, Don J. Flat screen electroluminescent X–Y display. 3,300,581, 1–24–67, Cl. 178—7.5
Steinfvelt, Georg A., to Porritts & Spencer Ltd. Filter apparatus. 3,300,052, 1–24–67, Cl. 210—402.
Stella, Patrick S., to Wagner Electric Corp. Automatic adjusting mechanism. 3,299,992, 1–24–67, Cl. 188—79.5.
Stella, Patrick S., to Wagner Electric Corp. Automatic adjusting mechanism. 3,299,993, 1–24–67, Cl. 188—79.5.
Stella, Patrick S., to Wagner Electric Corp. Automatic adjusting mechanism. 3,299,995, 1–24–67, Cl. 188—79.5.
Stephens, Francis F.: *See*—
Sharpe, Christopher J., and Stephens. 3,300,507.
Stephenson, Carl G. Storage cabinet. 3,300,262, 1–24–67, Cl. 312—223.
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Lesher, George Y. 3,300,499.
Sterling, Walter S., to Pneumatic Scale Corp., Ltd. Closure handling apparatus. 3,300,022, 1–24–67, Cl. 198—33.
Stern, Albert, to Ebosa S.A. Bearing for a staff with pointed end. 3,300,260, 1–24–67, Cl. 308—159.
Stern, Gottfried F. Valve. 3,299,960, 1–24–60, Cl. 169—23.
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White, Edward J., Serany, and Stern. 3,299,442.
Sterzl, Carl F., to Stauffer Chemical Co. Filament tensioning device for electron gun structure. 3,300,676, 1–24–67, Cl. 313—278.
Stewart, John K. Externally engaging lifting jack frame. 3,299,833, 1–24–67, Cl. 104—7.
Stevens, Harold E., and L. Lesyk, to Bird Electronics Corp. Coaxial electrical line attenuator. 3,300,737, 1–24–67, Cl. 333—22.
Steyer, John P.: *See*—
Steingass, Hermann, and Steyer. 3,299,754.
Stiefel, Rudy C. Data listing device. 3,299,556, 1–24–67, Cl. 40—124.
Stiles, John C., and W. M. Carow, to General Precision Inc. Fluid rotor gyro. 3,299,716, 1–24–67, Cl. 74—5.6.
Stockbridge, Bruce W., to Eastman Kodak Co. Spinnerette closure for high pressure spinning of melt polymers. 3,299,470, 1–24–67, Cl. 18—8.
Stockton, Thomas R., to Ford Motor Co. Infinitely variable speed transmission. 3,299,726, 1–24–67, Cl. 74—190.5.
Stockton, Thomas R., to Ford Motor Co. Transmission. 3,299,739, 1–24–67, Cl. 74—677.
Stockton, Thomas R., to Ford Motor Co. Transmission. 3,299,740, 1–24–67, Cl. 74—677.
Stockton, Thomas R., to Ford Motor Co. Infinitely variable speed transmission. 3,299,743, 1–24–67, Cl. 74—690.
Stockton, Thomas R., to Ford Motor Co. Transmission braking arrangement. 3,300,001, 1–24–67, Cl. 192—4.
Stoker, Riley, Corp.: *See*—
Davey, Gerald F. 3,299,597.
Stolfo, John F. Stand with retractable cover. 3,299,932, 1–24–67, Cl. 150—52.
Stolz, Karl: *See*—
Forster, Franz, and Stolz. 3,299,635.
Stone, Morris D., and C. H. Johnson, to United Engineering and Foundry Co. Strip cooling system. 3,299,900, 1–24–67, Cl. 134—122.
Stoppa, Gianfranco: *See*—
Natta, Giulio, Porri, Stoppa, and Carbonaro. 3,300,467.
Stott, Thomas C. F., to General Motors Corp. Flywheel assemblies. 3,299,735, 1–24–67, Cl. 74—572.
Stoyke, Ludwig T., to Fairchild Hiller Corp. Control system for infinitely variable transmission. 3,300,000, 1–24–67, Cl. 192—.09.
Strabag Bau-A.G.: *See*—
Feiner, Alfred, Hamann, and Schopf. 3,299 642.
Straub, Carl, to Brevetti Omnitec. Stop light switch for vehicles. 3,300,604, 1–24–67, Cl. 200—61.89.
Straub, Lothar. Means for eliminating interefering diffraction effects originating at the edges of a mirror. 3,300,268, 1–24–67, Cl. 350—296.
Strawn, Charles F., to Johnson Service Co. Lowest signal responsive control system. 3,300,649, 1–24–67, Cl. 307—39.
Strohlein & Co.: *See*—
Haul, Robert, and Dumbgen. 3,299,713.
Strohrmann, Gunther: *See*—
Wondrak, Gerhard, and Strohrmann. 3,300,091.
Stromberg-Carlson Corp.: *See*—
Carter, Charles W. 3,300,589.
Hall, Oliver C. 3,300,592.
Stromeyer, L., & Co. G.m.b.H.: *See*—
Maring, Aafko: 3,300,211.
Strong, Grant F., to Kaiser Aluminum & Chemical Corp. Wire coiling device. 3,300,158, 1–24–67, Cl. 242—83.
Strosberg, Gordon G.: *See*—
Burnside, Gilbert L., Madejczyk, and Strosberg. 3,300,400.
Stuart, Robert W., F. F. Chellis, and W. H. Hogan, to Arthur D. Little, Inc. Cryogenic Joule-Thompson helium liquefier with cascade helium and nitrogen refrigeration circuits. 3,299,646, 1–24–67, Cl. 62—40.
Studebaker Corp.: *See*—
Warnken, Elmer P., and Korelitz. 3,300,356.
Sulzer Bros., Inc.: *See*—
Zublin, Marcel W. 3,300,136.
Stull, John L., and F. E. Ferguson, to The Ealing Corp. Frictionless track and gliders having air bearing surfaces for demonstrating mechanical principles. 3,299,535, 1–24–67, Cl. 35—19.
Sueyoshi, Tatsuo: *See*—
Kometani, Yutaka, Suegoshi, and Tatemoto. 3,300,538.
Suh, Nam P., and G. C. Fuller, to United Shoe Machinery Corp. Electric ignition cartridges. 3,299,812, 1–24–67, Cl. 102—39.
Sullivan, Alfred D., to American Radiator & Standard Sanitary Corp. Air conditioner. 3,299,660, 1–24–67, Cl. 62—285.
Sumner, Eric E.: *See*—
Davis, Claude G., Sumner, and Thomas. 3,300,578.
Sun Chemical Corp.: *See*—
Brigham, Ward E., and Eckert. 3,300,019.
Sun Oil Co.: *See*—
Lauer, James L., and Hansel. 3,300,283.
Bozzelli, Andrew J., Belak, and Campbell. 3,300,293.
Hollstein, Elmer J. 3,300,294.
Rue, Howard M. 3,300,534.
McNelis, Edward J. 3,300,536.
Sunbeam Corp.: *See*—
Gwinn, Robert P. 3,299,506.
Sunday, Howard R. Rack drive fluid engine. 3,299,782, 1–24–67, Cl. 91—189.
Sundholm, Edwin P. Axially-operated hand grease gun. 3,300,100, 1–24–67, Cl. 222—260.
Sundstrand Corp.: *See*—
Silvern, David H. 3,299,821.
Susa, Ermanno: *See*—
Marullo, Gerlando, Maffezzoni, and Susa. 3,300,466.
Svedahl, Clifford L. Step insert for concrete pipe sections. 3,299,984, 1–24–67, Cl. 182—92.
Svendsen, Konrad S., to Combustion Engineering, Inc. Circulating system for forced circulation steam generator. 3,299,860, 1–24–67 Cl. 122—406.
Svensk, K. B., Fargindustri, Lundin & Co.: *See*—
Lindquist, Gunnar W. 3,300,325.
Swain, Charles G., to Arthur D. Little, Inc. Electrical sensing device. 3,300,622, 1–24–67, Cl. 219—497.
Swart, Kenneth H., and W. P. Robinson, to Smith Industries International Inc. Lubrication and sealing of well drilling bit. 3,299,973, 1–24–67, Cl. 175—371.
Swartz, William M. Advertising display. 3,300,367, 1–24–67, Cl. 161—113.
Swede, Harald G., to Tetra Pak, AB. Method of making packages from a web of material. 3,299,605, 1–24–67, Cl. 53—28.
Swensen, Norman E., to Capital Records, Inc. Traveling wave tube with plural pole piece assemblies defining a vacuum sealed tube body and particular collector structure. 3,300,678, 1–24–67, Cl. 315—3.5.
Swift & Co.: *See*—
McBrady, William J., and Dickow. 3,299,925.
Young, Harland H., and Luce. 3,300,470.
Norris, Frank A., and Grettie. 3,300,524.
Swingline, Inc.: *See*—
Olney, Nathaniel M. 3,299,449.
Syntex Corp.: *See*—
Villotti, Riccardo, and Bowers. 3,300,517.
Szczesniak, Alina S., and E. Engel, to General Foods Corp. Low calorie cream-type salad dressing. 3,300,318, 1–24–67, Cl. 99—144.
Szydlowski, Joseph. Gas turbines and applications thereof. 3,299,631, 1–24–67, Cl. 60—39.28.
Szydlowski, Joseph. Turbine engine regulating equipment. 3,299,962, 1–24–67, Cl. 170—135.74.
TRW Inc.: *See*—
Smirra, Johannes R. 3,299,905.
Gregory, John W., Fetheroff, and Fuscoe. 3,300,341.
Gogia, Jugal K., Hinde, and Seldner. 3,300,647.
Larsen, Arthur B. 3,300,651.
Tache, Arthur J., and R. M. Cage, to Chrysler Corp. Gray iron casting process and composition. 3,299,482, 1–24–67, Cl. 22—211.
Taco, Inc.: *See*—
Sparling, Russell W. 3,299,697.
Taillieur, Andre, and J. Le Gras, to Compagnie de Saint-Gobain. Machine for severing glass. 3,300,112, 1–24–67, Cl. 225—93.
Takagi, Toshihiko, and S. Nagahara, to Nippon Columbia Kabushiki Kaisha (Nippon Columbia Co., Ltd.). Color video signal generating apparatus. 3,300,580, 1–24–67, Cl. 178—5.4.
Takahashi, Kenji: *See*—
Sawada, Hiroomi, Takahashi, Kobayashi, and Kasu. 3,299,806.
Takahashi, Masao: *See*—
Tobolsky, Arthur V., and Takahashi. 3,299,568.
Takeda Chemical Industries, Ltd.: *See*—
Ueno, Kenzo, Kamichika, Sato, and Kabata. 3,300,431.

Talaat, Mostafa E., to Martin-Marietta Corp. Thermionic energy converter. 3,300,661, 1–24–67, Cl. 310—4.
Tally, Sidney K.: *See*—
Dahlgren, Victor R., and Tally. 3,300,572.
Tamar Electronics, Inc.: *See*—
Lekmovich, Henry. 3,300,699.
Tanaka, Tomiyuki, to Victor Co. of Japan Ltd. Frequency modulation system. 3,300,736, 1–24–67, Cl. 332—30.
Taormina, Anthony J. Vegetable and fruit peeler. 3,299,510, 1–24–67, Cl. 30—279.
Tappan Co., The: *See*—
Perl, Richard L. 3,300,096.
Taraba, Bueford W., to Duval Corp. Material level detection device. 3,300,690, 1–24–67, Cl. 317—149.
Taramasso, Marco: *See*—
Ferrari, Alsides, Guerra, and Taramasso. 3,299,827.
Taris, Charles M.: *See*—
Miller, Robert A., and Taris. 3,300,701.
Tarr, Richard J. C., to British Aircraft Corp. ("E" Nominees) Ltd. Visual identification of aircraft. 3,300,777, 1–24–67, Cl. 343—6.
Tarricone, James A., C. R. Neumoyer, and W. P. ter Horst, to Chemetron Corp. Methylisocyanate polymer and process therefor. 3,300,432, 1–24–67, Cl. 260—29.6.
Tarrant, Fred K., Sr. Tail gate attachment. 3,300,068, 1–24,67, Cl. 214—83.36.
Tatemoto, Masayoshi: *See*—
Kometani, Yutaka, Sueyoshi, and Tatemoto. 3,300,538.
Taub, Willard M.: *See*—
Maynard, Owen E., Taub, Brown, Olling, and Mason. 3,300,162.
Taylor, James C. Engraving apparatus for making model building material. 3,299,803, 1–24–67, Cl. 101—5.
Taylor, Paul A.: *See*—
Coplin, John F., Taylor, Petrie, and Bracey. 3,299,961.
Tecfab Inc.: *See*—
Chiville, John W. 3,299,601.
Technigaz: *See*—
Alleaume, Jean. 3,299,598.
Technion Research and Development Foundation: *See*—
Sirkis, Rafael. 3,300,779.
Teixeira, Jose M. A., to Construcoes Continental. Room air conditioning arrangement with porous walls. 3,299,795, 1–24–67, Cl. 98—31.
Teldix Luftfahrt-Ausrustungs-G.m.b.H.: *See*—
Leiber, Heinz. 3,299,539.
Tele Pro Industries Inc.: *See*—
Schlafly, Hubert J. 3,299,534.
Teledyne Inc.: *See*—
Fitch, Eugene K., Jr., and Eheart. 3,300,776.
Telefiex Inc.: *See*—
Kompanek, Andrew J., Jr., and Sanderford. 3,300,258.
Collins, Glenn A., Jr. 3,300,331.
Telefunken Patentwertungsgesellschaft m.b.H.: *See*—
Hirsch, Gerhard, and Krank. 3,300,741.
Teletype Corp.: *See*—
De Boo, Jerome L. 3,299,727.
Randolph, John E. 3,300,163.
Tele Pro Industries Inc.: *See*—
Schlafly, Hubert J. 3,299,534.
Teletype Corp.: *See*—
Johnsen, James A. 3,300,596.
Monnemacher, Dale A. 3,300,579.
Telsta Corp.: *See*—
Leigh, Bertram J. 3,300,191.
Temme, Helmut: *See*—
Dommann, Gunther, and Temme. 3,300,031.
Temple Industries, Inc.: *See*—
Jones, William C. 3,299,923.
Tenneco Chemicals, Inc.: *See*—
Sidi, Henri. 3,300,445.
Yakimik, Harry, Jr., and Sloan. 3,300,535.
Ter Horst, William P.: *See*—
Tarricone, James A., Neumoyer, and Ter Horst. 3,300,432.
Terminet, Rene, to Societe Anonyme dite: Societe Nationale des Petroles d'Aquitaine. Catalyst composition and process for the recovery of sulfur compounds from gas mixtures. 3,300,280, 1–24–67, Cl. 23—175.
Terry, Lewis I., to W. R. Grace & Co. Removal of foulants from cooling water. 3,299,619, 1–24–67, Cl. 55—85.
Tershin, John A., and E. Howells, to The Boeing Co. Chemical milling process and related solutions for aluminum. 3,300,349, 1–24–67, Cl. 156—22.
Tetra Pak, AB: *See*—
Swede, Harald G. 3,299,605.
Texas Instruments Inc.: *See*—
Cook, Donald F., and Cosper. 3,299,487.
Wakely, Wilbur T. 3,300,603.
Textile Paper Products, Inc.: *See*—
Johnson, Herbert P., and Wilkes. 3,300,159.
Thall, Earle S.: *See*—
Karol, Kenneth N., and Thall. 3,300,677.
Thaw, Charles H., to Worthington Corp. Multistage, turbine driven booster pump system. 3,299,815, 1–24–67, Cl. 103—5.
Theberge, Fernand: *See*—
Theberge, Germaine and F. 3,300,038.
Theberge, Germaine and F. Shoe storage and transportation container. 3,300,038, 1–24–67, Cl. 206—7.
Thietje, Rudolph N. Electric ice cream dipper. 3,299,838, 1–24–67, Cl. 107—48.
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Osborn, Stephen W. 3,300,454.
Kometani, Yutaka, Sueyoshi, and Tatemoto. 3,300,538.
Thoma, Wilhelm, and H. Rinke, to Farbenfabriken Bayer Aktiengesellschaft. Process for reducing the acid number of polyesters. 3,300,447, 1–24–67, Cl. 260—75.
Thomas, Lewis C.: *See*—
Davis, Claude G., Sumner, and Thomas. 3,300,578.
Thomas, Pierre: *See*—
Benoit, Gerard, Ferdy Mayer, Franz Mayer, and Thomas. 3,300,752.
Thomas, Stanley W., to United States of America, Atomic Energy Commission. Wide-range count rate meter utilizing plural count rate circuits and a range identifier. 3,300,719, 1–24–67, Cl. 324—78.
Thompson, Earl A. Rolling machine for forming tubular workpieces. 3,299,680, 1–24–67, Cl. 72—6.
Thompson, Howard J., and H. D. West, to Minneapolis Honeywell Regulator Co. Balancing apparatus. 3,299,714, 1–24–67, Cl. 73—468.
Thompson, James R., to Washington Iron Works. Interlocking yarder. 3,300,188, 1–24–67, Cl. 254—184.
Thomson, John S.: *See*—
Haycock, George W. 3,299,452.
Thuse, Erik, to FMC Corp. Carrier gas sublimation. 3,299,525, 1–24–67, Cl. 34—5.
Tiesler, Richard E.: *See*—
Zahn, Rudolf K., Tiesler, and Hanske. 3,300,476.
Tillotsons (Liverpool) Ltd.: *See*—
Webster, James. 3,299,610.
Timber Engineering Co.: *See*—
Koenigshof, Gerald A. 3,299,920.
Tiner, Jack D., and A. Golden, to Melpar, Inc. Process for harvest of spores from aerial microbial structures. 3,300,390, 1–24–67, Cl. 195—104.
Tishler, Max, N. G. Steinberg, and R. F. Hirschmann, to Merck & Co., Inc. 4,6-pregnadieno-[3,2-c]pyrozoles and processes of preparing them. 3,300,483, 1–24–67, Cl. 260—239.5.
Tobolsky, Arthur V., and M. Takahashi, to Research Corp. Compositions plasticized with sulphur. 3,299,568, 1–24–67, Cl. 47—9.
Todd, William L., to FMC Corp. Method and apparatus for hanging well pipe. 3,299,951, 1–24–67, Cl. 166—.5.
Todd, William L., to FMC Corp. Unitized well head. 3,299,958, 1–24–67, Cl. 166—89.
Tomita, Tamaki, to Toyota Koki Kabushiki Kaisha. Method of assembling a machine tool and the like. 3,299,498, 1–24–67, Cl. 29—407.
Toolkraft Corp.: *See*—
Packard, Alfred R., and Cunningham. 3,299,916.
Toper, Walter B., and D. F. Bryans, to Carrier Corp. Air conditioning unit 3,299,796, 1–24–67, Cl. 98—38.
Topfer, Horst: *See*—
Markwardt, Fritz, Walsmann, Schafer, and Topfer. 3,300,383.
Topham, Alan E. and C. H. Valves for controlling fluid flow. 3,300,177, 1–24–67, Cl. 251—158.
Topham, Cedric H.: *See*—
Topham, Alan E and C. H. 3,300,177.
Toplis, John G., to Raleigh Industries Ltd. Epicyclic gear assemblies. 3,299,745, 1–24–67, Cl. 74—750.
Tornoe, John A., R. E. Neary, and L. Fernandes-Castro, to Schlage Lock Co. Latch extension device. 3,300,240, 1–24–67, Cl 292—337.
Torrington Co., The: *See*—
Benson, Carl F. 3,300,261.
Toth, Imre: *See*—
Boucraut, Michel, and Toth. 3,299,947.
Boucraut, Michel, and Toth. 3,300,295.
Toth, John E. Adjustable French curve. 3,299,519, 1–24–67, Cl. 33—177.
Toulier, Pierre, to Societe Anonyme D.B.A. Starter drive for internal combustion engine. 3,299,719, 1–24–67, Cl. 74—7.
Tourish, John P.: *See*—
Baltakmens, Gotlibs, and Tourish. 3,300,397.
Toyo Kogyo Co. Ltd.: *See*—
Yamamoto, Kenichi, and Osakada. 3,300,127.
Toyota Koki Kabushiki Kaisha: *See*—
Tomita, Tamaki. 3,299,498.
Trans-Atlas A.G.: *See*—
Roos, Dirk G. J. 3,300,365.
Transition Electronic Corp.: *See*—
Slusher, William E., and Karandanis. 3,300,658.
Trenerry, James A.: *See*—
Seaman, Gary G., and Trenerry. 3,300,020.
Treseslt, Carl P., to The Bendix Corp. Two probe standing wave null detector. 3,300,715, 1–24–67, Cl. 324—58.5.
Tri-Valley Growers: *See*—
Witmer, Clinton C. 3,300,065.
Trico Products Corp.: *See*—
Bitzer, Martin. 3,299,723.
Trieschmann, Hans G.: *See*—
Schmid, Karl, Stedefeder, John, Haeberle, Lautenschlager, and Trieschmann. 3,300,457.
Trogdon, Thomas, to Dayco Corp. Convertible pillow. 3,299,451. 1–24–67, Cl. 5—337.
Trojan Powder Co.: *See*—
Griffith, George L. 3,300,348.
Trostrud, Arville T., Jr., to General Precision Inc. Digital computer system. 3,300,765, 1–24–67, Cl. 340—172.5.
Tucker, Archie J., L. A. Ulmschneider, and N. S. White, to Eastman Kodak Co. Film scroll including an end fastener. 3,300,156, 1–24–67, Cl. 242—74.1.
Turner, Lyman H.: *See*—
Cassano, James R., and Turner. 3,300,206.
Turner, Stanley, to Avery Products Corp. Stabilized pressure sensitive adhesive consisting of saturated polyester and vinyl chloride polymer. 3,300,543, 1–24–67, Cl. 260—835.
Tuttle, Alan H., and W. W. Browning, to Worthington Corp. Segmented diaphragm assembly. 3,300,180, 1–24–67, Cl. 253—78.
Tuttle, Gene T.: *See*—
Franks, John T., Jr., and Tuttle. 3,300,760.
Tuttle, Gene T., to Goodyear Aerospace Corp. Associative memory apparatus using elastic switching storage elements. 3,300,761, 1–24–67, Cl. 340—172.5.

Twiford, Fred W. Variable speed transmission. 3,299,741, 1–24–67, Cl. 74—682.

Tyresoles Nederland N.V.: *See*—
Van den Berg, Jan. 3,299,936.

USCO Power Equipment Corp.: *See*—
Lankford, William A. 3,300,599.

Ueda, Kazuo, and S. Kawamukai, to Kureha Chemical Industry Co., Ltd. Printing ink for vinylidene chloride copolymer products. 3,300,435, 1–24–67, Cl. 260—30.4.

Ueno, Kenzo, M. Kamichika, Y. Sato, and T. Kakata, to Takeda Chemical Industries, Ltd. Non-woven fabric and adhesive composition therefor. 3,300,431, 1–24–67, Cl. 260—29.6.

Ulmschneider, Lawrence A.: *See*—
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Ulosunda Verkstader Aktiebolag: *See*—
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Umbel, Forrest K.: *See*—
Galey, William F., Guiotta, and Umbel. 3,300,629.

Umbricht, Emil: *See*—
Panzica, Nicholas J., Jamison, Umbricht, and Arnold. 3,299,621.

Umphrey, James M., to Hewlett-Packard Co. Test probe apparatus employing feedback reduction of the distributed capacitance of the signal cable. 3,300,718, 1–24–67. Cl. 324—72.5.

Unarco Industries, Inc.: *See*—
Dieter, Donald F., and Riggs. 3,299,456.

Underwood, Gerald E.: *See*—
Gray, Jack E., Underwood, and Mann. 3,300,380.

Unger, Paul. Ski sole plate and binding means for mounting on the surface of a ski. 3,300,227, 1–24–67, Cl. 280—11.35.

Unimark Corp.: *See*—
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Union Carbide Corp.: *See*—
Allan, Stewart, and Weidner. 3,300,200.
Baum, Bernard O., Bryant, and Zutty. 3,300,548.
Gorham, William F., and Willard. 3,300,332.
Gervasi, Jay A., and McTeer. 3,300,455.
Manyik, Robert M., Walker, and Wilson. 3,300,458.

Union Oil Co.: *See*—
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Union Oil Co. of California. *See*—
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United Aircraft Corp.: *See*—
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United Aircraft Products, Inc.: *See*—
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United Engineering and Foundry Co.: *See*—
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United Kingdom Atomic Energy Authority: *See*—
Packman, Gordon, and Kearney. 3,300,389.
Bond, Raymond L., Pinchin, and Jenkins. 3,300,550.

United Shoe Machinery Corp.: *See*—
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Suh, Nam P., and Fuller. 3,299,812.

United States of America
Agriculture: *See*—
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Fein, Martin L., Viola, and Filachione. 3,300,338.
Heiland, Wolfgang. 3,299,799.
Kullman, Russell M. H., Reinhardt, and Frick. 3,300,273.
Mack, Charles H., and Ellzey. 3,300,530.
Pittman, Allen G., and Wasley. 3,300,274.
Skau, Evald L., Mod, and Magne. 3,300,434.
Atomic Energy Commission: *See*—
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Gates, Robert W. 3,299,811.
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Pilloton, Roger L., and Hamner. 3,300,284.
Thomas, Stanley W. 3,300,719.
Commerce: *See*—
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National Aeronautics and Space Administration: *See*—
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University of Kentucky Research Foundation, The: *See*—
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Gray, Jack E., Underwood, and Mann. 3,300,380.
Hanze, Arthur R. 3,300,479.
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Savage, George M. 3,300,287.

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Schoeler, Horst, and Welbrecht. 3,299,774.

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Valentini, Luciano, to Valentinigomma S.p.A. Manufacturing rubber sheets provided with a relief pattern. 3,300,557, 1–24–67, Cl. 264—163.

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Van de Meerendonk, Gerardus C., to Nedschroef Octrooi Maatschappij N.V. Upsetting machine with controllable ejector means for the manufacture of screws, bolts, bolt blanks and the like. 3,299,453, 1–24–67, Cl. 10—12.

Van den Berg, Jan, to Tyresoles Nederland N.V. Repair plaster for a motor-car tire. 3,299,936, 1–24–67, Cl. 152—367.

Van der Ster, Johannes: *See*—
Roozendaal, Klaas. 3,299,647.

Vanhentenrijk, Josephus E. F.: *See*—
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Van Kessel, Henri F.: *See*—
Jerman, Ralph B., Santoro, and Van Kessel. 3,300,388.

Van Loben Sels, Peter J. Applicator for liquids and semi-liquids. 3,299,854, 1–24–67, Cl. 118—411.

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Van Winsen, Friedrich H., and K. Bauer, to Daimler-Benz Aktiengesellschaft. Curve stabilization of motor vehicles. 3,300,232, 1–24–67, Cl. 280—112.

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Brown, Jack A. 3,300,679.

Vassel, Bruno, V. Furtner, and H. I. Feige, to Johnson & Johnson. Carrier sheet containing on opposite sides a formaldehyde modified starch release coating and a formaldehyde modified starch tacky coating. 3,300,330, 1–24–67, Cl. 117—68.5.

Vaughan, James R. M.: *See*—
Curtis, Truman P., and Vaughan. 3,300,673.

Vaughn, Remsen S.: *See*—
Pesch, Edward T., and Vaughn. 3,300,305.

Veb Arzneimittelwerk Dresden: *See*—
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Ventura, Bernard F. Mute for horn-type musical instruments. 3,299,764, 1–24–67, Cl. 84—400.

Vereinigte Drahtwerke A.G.: *See*—
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Veres, Frank, to Owens-Illinois Inc. Luminescent glass articles and method for forming same. 3,300,670, 1–24–67, Cl. 313—92.

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Woodburn, James, Jr., and Ver Halen. 3,299,480.

Vianova Kunstharz Aktiengesellschaft: *See*—
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Vickers-Armstrongs (Engineers) Ltd.: *See*—
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Vickers, Tirey K., to Hazeltine Research, Inc. Perspective object indicator. 3,300,778, 1–24–67, Cl. 343—7.9.

Victor Co. of Japan Ltd.: *See*—
Tanaka, Tomiyuki. 3,300,736.

Villotti, Riccardo, and A. Bowers, to Syntex Corp. Halomethyl pregnenes. 3,300,517, 1–24–67, Cl. 260—397.3.

Vinal, Albert W., to International Business Machines Corp. Controlled current amplitude energizing system. 3,300,772, 1–24–67, Cl. 340—347.

Vinton, David S., to Caterpillar Tractor Co. Vehicle suspension strut. 3,300,202, 1–24–67, Cl. 267—1.

Viola, Samuel J.: *See*—
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Vitali, Ronald A.: *See*—
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Vogel, Ludwig: *See*—
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Volvo, Aktiebolaget: *See*—
Kronogard, Sven-Olof. 3,299,636.

Vonhof, Herbert, to Simpson Timber Co. Machine and method for producing decorative wood surfaces. 3,299,922, 1–24–67. Cl. 144—326.

Von Recklinghausen, Daniel R., to H. H. Scott, Inc. Mounting and heat sink device for electrical components. 3,299,946, 1–24–67, Cl. 165—80.

Von Rosenberg, Buido, and W. Sapper, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of ionic bright drying polish emulsions and waxes to be used in this process. 3,300,321, 1–24–67, Cl. 106—6.

Vrancken, Marcel N., D. A. Claeys, A. J. Van Paesschen, and J. B. Lambrechts, to Gevaert Photo-Producten N.V. Noncurling multilayer material. 3,300,313, 1–24–67, Cl. 96—87.

Vrbaski, Theodore, to Sinclair Research, Inc. Oxidation of aromatic compound. 3,300,516, 1–24–67, Cl. 260—346.4.

Vsesojuzny Nauchno-Issledovatelsky Institute Burovoi Tekhniki: *See*—
Zarkhin, Avraam M., and Judina. 3,300,046.

Wagemans, Albert P.: *See*—
Sevens, Gerard M., and Wagemans. 3,300,306.

Wagner Electric Corp.: *See*—
Parks, Jerry T. 3,299,994.
Stella, Patrick S. 3,299,992.
Stella, Patrick S. 3,299,993.
Stella, Patrick S. 3,299,995.

Wagner, John W., to Xerox Corp. Toner dispenser. 3,300,101, 1–24–67, Cl. 222—310.

Wagner, Tobias, 50% to M. T. Hanner. Aviation control light system. 3,300,771, 1–24–67, Cl. 340—309.1.

Wahler, Dieter, to G. Wahler. Thermostatic control valve. 3,300,184, 1–24–67, Cl. 236—34.

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Wakasa, Kyoichi, N. Kominami, and K. Ishii, to Asahi Kasei Kogyo Kabushiki Kaisha. Vapor phase process for preparing vinyl acetate by the oxidation of ethylene with a group VIII noble metal plus copper or iron. 3,300,528, 1–24–67, Cl. 260—497.

Wakely, Wilbur T., to Texas Instrument Inc. Inertia operated hermetically sealed switch. 3,300,603, 1–24–67, Cl. 200—61.45.

Walker, Alan J., to Spembly Ltd. Electric furnaces. 3,300,566, 1–24–67, Cl. 13—32.

Walker, Charles T. Electroplating techniques and anode assemblies therefor. 3,300,396, 1–24–67, Cl. 204—49.

Walker Mfg. Co.: *See*—
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Walker, Wellington F.: *See*—
Manyik, Robert M., Walker, and Wilson. 3,300,458.

Wallace, John W. Drive-through livestock gate. 3,299,572, 1–24–67, Cl. 49—131.

Walsmann, Peter: *See*—
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Walter, Gerard O., and E. A. Scordato, to Sperry Rand Corp. Document feeder for photographic copier. 3,299,772, 1–24–67, Cl. 88—24.

Walter, Richard C., to Standard Controls, Inc. Low pressure transducer. 3,300,745, 1–24–67, Cl. 338—4.

Walters, William R., and W. D. Conner. Above ground liquid level control. 3,299,817, 1–24–67, Cl. 103—25.

Wander, A., Dr., S.A.: *See*—
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Wanesky, William R., to Western Electric Co., Inc. Methods and apparatus for assembling articles. 3,299,502, 1–24–67, Cl. 29—464.

Wapies, George E., Jr., to The Dow Chemical Co. Thermosetting ethylene copolymers. 3,300,452, 1–24–67, Cl. 260—78.5.

Ward, Calvin F., to The Dow Chemical Co. Epoxy dioxanes and cured polymers obtained therefrom. 3,300,415, 1–24–67, Cl. 260—2.

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Warner & Swasey Co., The: *See*—
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Kline, Lester H. 3,300,069.

Warnick, Alan: *See*—
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Warnken, Elmer P., and M. Korelits, to Studebaker Corp. Method and apparatus for forming laminated, cylindrical wall structures. 3,300,356, 1–24–67, Cl. 156—189.

Warren, Charley: *See*—
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Warwick Electronics Inc.: *See*—
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Waters, Kenneth H.: *See*—
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Watson, Billy R., and C. E. Carter. Sand shield-filter. 3,299,831, 1–24–67, Cl. 103—220.

Watters, Robert L., to General Electric Co. Fail safe overvoltage alarm circuit. 3,300,659, 1–24–67, Cl. 307—94.

Watts, Max W., to The Aid Corp. Quick-release hold-down device. 3,300,171, 1–24–67, Cl. 248—361.

Webb, Joseph B.: *See*—
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Weber, H. G., and Co., Inc.: *See*—
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Weber, Kurt: *See*—
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Weber, Kurt, to Ciba Ltd. Anthroquinone vat dyestuffs containing sulfahalide groups. 3,300,509, 1–24–67, Cl. 260—307.5.

Webster, James, to Tillotsons (Liverpool) Ltd. Apparatus for filling sleeve package. 3,299,610, 1–24–67. Cl. 53—169.

Wechter, William J. Arabino-furanocyl 2′,5′- and 3′,5′-dinucleoside phosphates and process therefor. 3,300,478, 1–24–67, Cl. 260—211.5.

Weed, Wayne B.: *See*—
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Weibrecht, Otto: *See*—
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Weidner, William C.: *See*—
Allan, Stewart, and Weidner. 3,300,200.

Weikert, Roy J., to General Films, Inc. Automatic filling machine. 3,299,606, 1–24–67. Cl. 53—37.

Weishaar, Robert J., to The Boeing Co. Welding apparatus. 3,300,683, 1–24–67. Cl. 315—205.

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Welding Research, Inc.: *See*—
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Welles, Theodore W. Supporting device. 3,300,164, 1–24–67, Cl. 248—95.

Welliford, Armistead L., to General Electric Co. Protection arrangement. 3,300,706, 1–24–67, Cl. 321—43.

Welling, Donald L. Method for making concrete pipe. 3,300,560, 1–24–67, Cl. 264—336.

Wells, Paul E.: *See*—
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Wermager, Palmer G.: *See*—
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Werner, Heins, to Fa. Fritz Keiper. Joint fitting for adjustable backrest. 3,299,466, 1–24–67, Cl. 16—146.

Wessel, Lloyd E., to American Radiator & Standard Sanitary Corp. Hydrotherapeutic may with air inlet means and means facilitating rolling into a cylinder. 3,299,885, 1–24–67, Cl. 128—66.

West, Gordon M., to The General Electric Co. Ltd. Frequency synthesizing apparatus. 3,300,732, 1–24–67, Cl. 331—39.

West, Harold D.: *See*—
Thompson, Howard J., and West. 3,299,714.

Western Electric Co., Inc.: *See*—
Bachus, Benson F. 3,300,554.
Budzich, Mieczyslaw, and Hardesty. 3,300,044.
Seaman, Gary G., and Trenerry. 3,300,020.
Wanesky, William R. 3,299,502.

Westinghouse Air Brake Co.: *See*—
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Racki, Francis R. 3,300,255.

Westinghouse Brake & Signal Co.: *See*—
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Westinghouse Air Brake Co.: *See*—

Westinghouse Electric Corp.: *See*—
Boes, David J., and Moberly. 3,300,667.
Buck, Richard M., and Boodman. 3,300,617.
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Harnish, James R., and Ayling. 3,299,661.
Rockefeller, George D., Jr., and Gambale. 3,300,648.
Stehney, Thomas G., and New. 3,300,694.

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Wheaton, John A. Shelf organizer. 3,300,057, 1–24–67, Cl. 211—184.

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Whirlpool Corp.: *See*—
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Frick, Harold L. 3,299,941.
Linstromberg, William J., and Frohbieter. 3,299,656.
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Whitacre, Elroy G., to Amsted Industries Inc. Apparatus for coating elongated objects. 3,299,853, 1–24–67, Cl. 118—312.

White, Edward J., F. J. Serany, Jr., and J. J. Stern, to C. R. Bard, Inc. Bottle with hanger support. 3,299,442, 1–24–67, Cl. 4—110.

White, Kenneth J., to Dennison Mfg. Co. Adjustable recycling apparatus. 3,300,012, 1–24–67, Cl. 192—142.

White Motor Corp.: *See*—
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White, Neil S.: *See*—
Tucker, Archie J., Ulmschneider, and White. 3,300,156.

White, Richard B., and J. L. Fritch, to Kent-Moore Organization, Inc. Pressure system charging tool and method. 3,299,648 1–24–67, Cl. 62—77.

White, Robert E., to Spencer, White and Prentis, Inc. Underpinning system and method of constructing same. 3,299,644, 1–24–67, Cl. 61—51.

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Wickham, Donald G., and H. B. Im, to Ampex Corp. Fluxes for sintering lithium ferrites. 3,300,411, 1–24–67, Cl. 252—62.5.

Wiegel, Otto. Reference gauge accessory. 3,299,517, 1–24–67, Cl. 33—170.

Wieland, Peter: *See*—
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Wigington, Jerry, to The Singer Co. Speed control circuit for series motors. 3,300,700, 1–24–67, Cl. 318—246.

Wilcoxon, Lawrence S.: *See*—
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Wilde, Geoffrey L., A. Bill, and J. F. Coplin, to Rolls-Royce Ltd. Combustion chamber for a gas turbine engine. 3,299,632, 1–24–67. Cl. 60—39.74.

Wildi, Bernard S., and E. M. Hull, to Monsanto Co. Purifying metal polyphthalocyanines. 3,300,399, 1–24–67, Cl. 204—131.

Wildman Jacquard Co.: *See*—
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Wilhelm, Hans: *See*—
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Wilkes, Lawrence R.: *See*—
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Wilkins, Arnold H. Building construction. 3,299,585, 1–24–67, Cl. 52—13.

Willard, Harry L.: *See*—
Gorham, William F., and Willard. 3,300,332.

Willems, Jozef F., and J. L. de Munck, to Gevaert Photo-Producten N.V. Photographic material. 3,300,312, 1–24–67, Cl. 96—85.

Williams, Arthur J., to Commercial Shearing & Stamping Co. Fluid control valves. 3,299,902, 1–24–67, Cl. 137—117.

Williams, Betty C. Coin-controlled hair spray. 3,300,092, 1–24–67, Cl. 222—70.

Williams, Herbert A.: *See*—
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Williams, James F. Diaphragm pump. 3,299,826, 1–24–67, Cl. 103—152.

Williams, Leonard E., and L. M. Regan, to Cameron Iron Works, Inc. Method and apparatus for hanging a well casing in a well bore. 3,299,954, 1–24–67, Cl. 166—35.

Williams, Robert H., and L. J. Hickey, to National Starch and Chemical Corp. Process for the manufacture of corrugated board. 3,300,860, 1–24–67, Cl. 156—292.

Williams, Thomas R. Method of building multiple-bead tires. 3,300,352, 1–24–67, Cl. 156—133.

Williams, William A. Open-end power transmission belt. 3,299,728, 1–24–67, Cl. 74—235.

Willmann, Donald F., to Avco Corp. Tuning shaft positioning system. 3,300,011, 1–24–67, Cl. 192—142.

Willner, Richard: *See*—
Pauli, Jude A., and Willner. 3,299,710.

Wilmer, Rudolph H., and W. J. Machingo, to The General Fireproofing Co. Tub file. 3,300,265, 1–24–67, Cl. 312—303.

Wilson, Matt S.: *See*—
Heagler, Richard B., and Wilson. 3,299,641.

Wilson, Ray. Crane construction. 3,300,058, 1–24–67, Cl. 212—10.

Wilson, Ronald M, to William M. Wilson's Sons, Inc. Apparatus to prevent liquid meter from recording gas. 3,299,704, 1–24–67, Cl. 73—200.

Wilson, Thomas P.: *See*—
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Wilson's, William M., Sons, Inc.: *See*—
Wilson, Ronald M. 3,299,704.

Winborn, Byron R.: *See*—
Santamaria, Jesse J., and Winborn. 3,299,638.

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Peterson, Dean M., Pickering, and Windle. 3,300,003.

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Winter, Gerhard: *See*—
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Winters, Frank H.: *See*—
Geen, James E., and Winters. 3,299,547.

Winters, Lorne P.: *See*—
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Winton, Stanley J., to Kitchens of Sara Lee, Inc. Tamping device. 3,299,836, 1–24–67, Cl. 107—7.

Wirth, Hans A.: *See*—
Behnke, George W., and Wirth. 3,300,152.

Wirz, August: *See*—
Birmans, Josef, and Wirz. 3,299,912.

Wise, Paul W.: *See*—
Bowles, Andrew D., and Wise. 3,300,122.

Witmer, Clinton C., to Tri-Valley Growers. Means for material handling 3,300,065, 1–24–67, Cl. 214—6.

Witt, Walter, and R. Mayer, to Honeywell Inc. Light to electrical energy transforming apparatus for continuously indicating the index of refraction. 3,299,770, 1–24–67, Cl. 88—14.

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	3,300,697		3,300,284		3,300,162		3,300,364	54	3,299,968		3,300,148
	3,300,750		3,300,438		3,300,186		3,300,589		3,300,219		3,300,229
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	3,300,753	48	Re.26,145		3,300,235		3,300,706		3,300,458		3,300,387
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43	3,299,799		3,299,459		3,300,324		3,300,730		3,299,505		3,300,444
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44	3,299,679		3,299,526		3,300,452	53	3,299,559		3,299,531		3,300,570
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	3,300,189		3,299,664		3,300,628		3,299,922		3,299,736	56	3,299,865
	3,300,336		3,299,759		3,300,649						

DESIGN PATENTS

1	206,769	6	206,780	17	206,759	17	206,771	29	206,779	42	206,748
6	206,747	9	206,750		206,760		206,777	34	206,749		206,778
	206,758		206,772		206,761	19	206,764		206,765	44	206,782
	206,766		206,773		206,762	20	206,756		206,770	55	206,752
	206,768	12	206,757		206,763	26	206,751	36	206,753		206,754
	206,775	13	206,755		206,767	27	206,781		206,774		206,776

PLANT PATENTS

4	2,704	4	2,705	21	2,702	31	2,701

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 24, 1967 Volume 834 Number 4

TRADEMARKS

NOTICES

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Wolf Drug Company, Newark, N.J., Reg. No. 443,526, Canc. No. 8770.

Katherine Martin, Inc., assignee, by mesne assignment, of The Milky-Way Company, Inc., New York, N.Y., Reg. No. 225,082, Canc. No. 8775.

Eben L. Scott, Garden Grove, Calif., Reg. No. 576,876, Canc. No. 8771.

EDWIN L. REYNOLDS,
Assistant Commissioner of Patents.

CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	27,353
Date of oldest new application	Dec. 3, 1965
Date of oldest amended application (filing date)	Feb. 3, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	12-3-65	8-24-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-12-66	2-3-64
Renewals (All Classes)	11-8-66	
Sec. 12(c) Publications (All Classes)	11-10-66	

Applications filed during the month of November—2,166

Registrations Issued 593—No. 822,599 to No. 823,191
Renewals Issued 71

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 184,071. Index-Werke K.G. Hahn & Tessky, Esslingen (Neckar), Germany. Filed Jan. 6, 1964.

INDEX

Priority claimed under Sec. 44(d) on German application filed Aug. 16, 1963; Reg. No. 781,220, dated Dec. 11, 1963.

Class 14—Metals and Metal Castings and Forgings

For Raw and Partially Treated Base Metals, and Metal Castings.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Lathes, Automatic Lathes, Semi-Automatic Lathes, Automatic Turret Lathes, Automatic Thread Cutting Lathes, Grinding Machines, Tools for Metal Working Machines; Automatic Bar Guides and Work Guides for Machine Tools; Chucking Automats; Transporting and Control Devices for Machine Tools; Pneumatic and Hydraulic Control and Actuating Devices for Machine Tools; Pliers, Collets, Clamping Dogs, Shifting Cams, Roller Bearings, Ball Bearings, Roller Thrust Bearings, Plate Cams, Ring Cams, Tool Holders; Cooling and Lubricating Apparatus Including Conduits, Chains, Steel Balls, Noise Dampening Stock Tubes for Guiding a Part of the Rotating Bar Material.

SN 209,278. Leaseway Transportation Corp., Cleveland, Ohio. Filed Jan. 4, 1965.

LEASEWAY

Class 100—Miscellaneous

For Leasing of Industrial and Commercial Equipment and Machinery.

Class 105—Transportation and Storage

For Leasing of Automotive Equipment—Namely, Automobiles, Trucks, Tractors and Trailers, Aircraft, and Boats, and the Transportation of Goods of Others by Motor Vehicle.

First use July 1961.

SN 226,397. Reina Christina Cosmetique S.a.r.l., Lausanne, Switzerland. Filed Aug. 25, 1965.

REINA CHRISTINA

Owner of Swiss Reg. No. 200,320, dated Aug. 27, 1963.

Class 38—Prints and Publications

For Prints and Publications—Namely, Books, Booklets, Pamphlets, Self-Improvement Courses, in Particular for Beauty, Charm and Success Courses; Advertising and Promotional Leaflets and Pamphlets Relating to the Above Fields.

Class 51—Cosmetics and Toilet Preparations

For Cosmetic and Toilet Articles, Especially Perfumes, Non-Medicated Soaps, Essential Oils, Cosmetics, Hair Lotion and Shampoos, Dentifrices, and Nail Varnishes.

SN 227,985. Oscar Enterprises, Inc., Berkeley, Calif. Filed Sept. 17, 1965.

DR. VET'S

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Tethers for Pets.
First use Dec. 22, 1964.

Class 22—Games, Toys, and Sporting Goods

For Toys for Pets.
First use Feb. 17, 1965.

Class 44—Dental, Medical, and Surgical Appliances

For Grooming Equipment for Pets.
First use Jan. 22, 1965.

SN 231,794. "Automatic" Sprinkler Corporation of America, d.b.a. Kersey Manufacturing Company, Inc., Youngstown, Ohio. Filed Oct. 29, 1965.



The drawing is lined for the color orange, but color comprises no part of the mark.

Class 19—Vehicles

For Haulage Equipment—Namely, Rubber Tired Mine Tractors, Crawler Tread Tractors, Rubber and Rail Wheel Cars, Trailers, Personnel Trailers, Mine Supply Cars, Self-Unloading Trailers, Boss Cars, Utility Trucks, Material Hauling Carts, Gravity Dump Cars, Hydraulic Dump Cars and Mechanical Dump Cars.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus—Namely, Electric Motors and Battery Chargers.

First use December 1947.

SN 232,258. Marlan Company, Chicago, Ill. Filed Nov. 8, 1965.

SLEETEE

Class 45—Soft Drinks and Carbonated Waters

For Partially Frozen Soft Drink Beverage; a Base for Making a Liquid Material Used for Making That Beverage; and a Flavor Base for Making Liquid Flavoring for Said Beverage.
First use June 1965.

Class 46—Foods and Ingredients of Foods

For Base for Making a Liquid Material To Make a Frozen Novelty Confection on a Stick; and a Flavor Base for Making Liquid Flavoring for the Same.
First use June 4, 1965.

SN 234,016. Eve Elmes, d.b.a. Eve of Roma, Rome, Italy. Filed Dec. 6, 1965.

EVE OF ROMA

No claim is made to the word "Roma" apart from the mark as a whole.

Class 18—Medicines and Pharmaceutical Preparations

For Isotonic Eyedrops.

Class 51—Cosmetics and Toilet Preparations

For Cleansing Cream, Skin Lotion, Face Cream, Skin Stimulant, Face Pack, Powder Base, Face Powder, Rouge, Eyebrow Liner, Eye Shadow, Eye Cream, Eyelash Powder, Mascara Fixative, Mascara, Lipstick, Hand Cream, Foot Cream, Body Cream, Body Lotion, Body Oil, Bath Oil, Body Powder, Sun Tan Cream, Sun Tan Oil and Sun Tan Lotion.

First use on or about Mar. 15, 1960; in commerce on or about Mar. 15, 1960.

SN 234,517. Association Montessori Internationale, Amsterdam-Z, Netherlands. Filed Dec. 13, 1965.

MONTESSORI

Class 22—Games, Toys, and Sporting Goods

For Children's Educational Toys and Games and Teaching Aid in the Nature of Toys.
First use on or about May 6, 1952; in commerce on or about May 6, 1952.

Class 37—Paper and Stationery

For Lined and Unlined Paper Copy Books and Stationery Instruments for Writing Thereon.
First use on or about May 6, 1952; in commerce on or about May 6, 1952.

Class 38—Prints and Publications

For Books for Children's Self-Education, Diplomas, Periodicals, Printed Advertising and Publicity Material, and Written Exercises.
First use in or about December 1954; in commerce in or about December 1954.

Class 50—Merchandise Not Otherwise Classified

For Articles for Children's Self-Education, Instruction Means and Auxiliary Instruction Means Employed in Education.
First use on or about May 6, 1952; in commerce on or about May 6, 1952.

SN 234,614. Bailey's Beautician Supply Co., Chicago, Ill. Filed Dec. 15, 1965.

Bailey's

The drawing is lined for the color red, but no claim is made to color as an integral part of the mark.

Class 40—Fancy Goods, Furnishings, and Notions

For Artificial Eyelashes, Bobby Pins, Hair Pins, Hair Rollers, Curlers, Clips and Combs, and Wig Pins.

Class 51—Cosmetics and Toilet Preparations

For Hair Sprays, Waving Lotions, Styling Lotions, Conditioners and Peroxide Bleach, Hand Creams, and Hand and Body Lotions.

Class 52—Detergents and Soaps

For Hair Shampoos.

First use at least as early as November 1958.

SN 238,476. Hobo Joe's, Inc., Scottsdale, Ariz. Filed Feb. 10, 1966.



Hobo Joe's

The lining on the drawing is for shading purposes only.

Class 22—Games, Toys, and Sporting Goods

For Dolls.
First use Apr. 25, 1965.

Class 30—Crockery, Earthenware, and Porcelain

For Ceramic Coffee Mugs.
First use Sept. 22, 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 211,873. Compagnie Generale d'Electricite, Paris, France. Filed Feb. 12, 1965.

SETACEGEITE

Owner of French Reg. No. 402,526, dated Apr. 26, 1950 (Seine); Natl. Inst. No. 471,452.
For Synthetic Plastic Materials—Namely, a Thermosetting Synthetic Plastic Material.

SN 225,156. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Aug. 6, 1965.

ENCAP

Owner of Reg. No. 764,473.
For Encapsulating Plastic—Namely a Resin-Based Coating Material Useful for Covering Electric and Electronic Components.
First use Feb. 4, 1963.

SN 231,923. Marion R. Mulford, Lebanon, Ohio. Filed Nov. 1, 1965.

MOONVALLEY

For Pilea Plants.
First use Sept. 11, 1965.

SN 235,443. Utah Cooperative Association, Salt Lake City, Utah. Filed Dec. 28, 1965.

PAX

Owner of Reg. Nos. 232,417, 412,410, and 417,314.
For Lawn Seeds, Grass Seeds, Field Seeds, Garden Seeds.
First use January 1914.

SN 239,773. International Pulp Sales Company, New York, N.Y. Filed Feb. 28, 1966.

GOLD RIVER

For Wood Pulp.
First use Dec. 22, 1965.

SN 244,029. Reliance Upholstery Supply Co., Inc., Gardena, Calif. Filed Apr. 21, 1966.

INSULL 8

For Padding and Batting.
First use Feb. 16, 1966.

SN 247,710. Floyd R. Marsh, d.b.a. Marsh Fur Farm, Portland, Oreg. Filed June 9, 1966.

JET BLACK MINK

The words "Black Mink" and the representation of the mink are disclaimed by themselves apart from the composite mark.
For Live Minks and Mink Pelts.
First use Feb. 3, 1966.

Class 2—Receptades

SN 212,897. National Can Corporation, Chicago, Ill. Filed Feb. 26, 1965.

KAN KEG

Applicant disclaims the term "Kan" apart from the mark as shown.
For Metal Cans, Particularly One Gallon and Half-Gallon Tin Can Type Containers for Containing Beer and Beverages.
First use about Dec. 4, 1935.

SN 214,955. Columbia Corrugated Container Corp., Syosset, N.Y. Filed Mar. 25, 1965.

PICTURE-PAK

For Corrugated Paper Boxes.
First use Dec. 1, 1964.

SN 231,700. Pro-phy-lac-tic Brush Company, Florence, Mass. Filed Oct. 27, 1965.

PRO-KLEEN

Owner of Reg. Nos. 587,677, 717,693, and 720,179.
For Plastic Dinnerware.
First use Oct. 19, 1964.

SN 232,434. United States Box Crafts, Inc., Brooklyn, N.Y. Filed Nov. 9, 1965.

Prestige Plastic

Applicant disclaims the word "Plastic" separate and apart from the mark shown.
For Display Box.
First use Oct. 11, 1965.

SN 232,780. Bertram H. Harris, Chicago, Ill. Filed Nov. 16, 1965.

BOB-ROBIN

For Aluminum Food Containers Having Transparent Covers and Adapted for Reuse, and Foil Roasting Bags for Turkeys and Other Fowl.
First use Oct. 12, 1965.

SN 233,204. Whitehouse Products, Inc., Brooklyn, N.Y. Filed Nov. 23, 1965.

C-53

Owner of Reg. No. 802,495.
For Dye Bags.
First use on or about Aug. 4, 1964.

SN 235,306. Ilikon Corporation, Natick, Mass. Filed Dec. 27, 1965.



Owner of Reg. Nos. 748,750 and 768,625.
For Molded Plastic Articles—Namely, Plastic Containers.
First use April 1965.

SN 236,775. Plastics Manufacturing Company, Dallas, Tex. Filed Jan. 18, 1966.

Park Avenue

For Table-Ware Made of Plastics.
First use 1954.

SN 242,563. Columbian Steel Tank Company, Kansas City, Mo. Filed Apr. 4, 1966.

COLUMBIAN

Owner of Reg. Nos. 420,538 and 562,495.
For Sheet Metal Tanks, Sheet Metal Bins, Sheet Metal Silos and Coal Bins.
First use on or about June 1, 1941.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 216,315. Leeds Travelwear, Inc., New York, N.Y. Filed Apr. 12, 1965.

SAFE-LOCK

For Trunks.
First use Dec. 1, 1915.

SN 219,134. Noymer Manufacturing Company, Boston, Mass. Filed May 18, 1965.

Oxford

The lining on the drawing is an integral portion of the mark and not for the purpose of indicating color.
For Billfolds, Wallets, French Purses, Key Cases, Eye Glass Cases, Clutch Purses, Pocket Secretaries, and Pass Cases.
First use Mar. 24, 1965.

SN 241,816. A. Sulka & Company, New York, N.Y. Filed Mar. 24, 1966.

Sulka

For Men's and Ladies' Wallets, Passport Cases, Card Cases and Clipfolds, Eyeglass Cases, Travel Kits, and Stud Boxes.
First use 1935.

SN 241,819. A. Sulka & Company, New York, N.Y. Filed Mar. 24, 1966.

A. Sulka & Company

For Men's and Ladies' Wallets, Passport Cases, Card Cases and Clipfolds, Eyeglass Cases, Travel Kits, and Stud Boxes.
First use 1935.

Class 5—Adhesives

SN 225,296. Dehydag Deutsche Hydrierwerke, G.m.b.H., Dusseldorf-Holthausen, Germany. Filed Aug. 9, 1965.

VISCALIN

Owner of German Reg. No. 224,761, dated Oct. 5, 1917.
For Adhesives, in Particular Those Based on Starches, Dextrin, Methylcellulose, Carboxymethylcellulose and Alginates.

SN 225,312. Henkel & Cie., G.m.b.H., Dusseldorf-Holthausen, Germany. Filed Aug. 9, 1965.

ALGIPON

Owner of German Reg. No. 615,061, dated Nov. 27, 1942.
For Adhesives, Particularly Glue, Gluten, Dextrin, Sizing Pastes, and Cementing Agents for Leather.

SN 225,313. Henkel & Cie., G.m.b.H., Dusseldorf-Holthausen, Germany. Filed Aug. 9, 1965.

COLLAPRESS

Owner of German Reg. No. 605,251, dated Sept. 22, 1949.
For Adhesives of All Types, in Particular, Synthetic Adhesives, Gluten, Dextrin, Sizing Pastes, Glue, Starch for Rubber (Dextrin), and Cementing Agents for Leather.

SN 225,314. Henkel & Cie., G.m.b.H., Dusseldorf-Holthausen, Germany. Filed Aug. 9, 1965.

DELA

Owner of German Reg. No. 630,738, dated Sept. 15, 1950.
For Adhesives, Sizing Pastes, Glue, Starch for Rubber (Dextrin), and Cementing Agents for Leather.

SN 225,315. Henkel & Cie., G.m.b.H., Dusseldorf-Holthausen, Germany. Filed Aug. 9, 1965.

SAXIT

Owner of German Reg. No. 684,664, dated Jan. 10, 1952.
For Adhesives of All Types, in Particular Those Based on Synthetic Resins, Wall Tile Cements, Gluten, Dextrin, Starches, Sizing Pastes, Glue, Starch for Rubber (Dextrin), and Cementing Agents for Leather.

SN 225,316. Henkel & Cie., G.m.b.H., Dusseldorf-Holthausen, Germany. Filed Aug. 9, 1965.

TROKA

Owner of German Reg. No. 629,213, dated Sept. 15, 1950.
For Adhesives of All Types, in Particular, Gluten, Starches, Dextrin, Sizing Pastes, Glue, Starch for Rubber (Dextrin), and Cementing Agents for Leather.

SN 225,317. Henkel & Cie., G.m.b.H., Dusseldorf-Holthausen, Germany. Filed Aug. 9, 1965.

ZINAL

Owner of German Reg. No. 677,217, dated Sept. 22, 1949.
For Adhesives, in Particular Gluten, Starches, Dextrin, Sizing Pastes, Cementing Agents for Leather, and Starches for Rubber (Dextrin).

SN 225,376. Thompson-Werke, G.m.b.H., Dusseldorf, Germany. Filed Aug. 9, 1965.

NUOSA

Owner of German Reg. No. 219,111, dated May 10, 1917.
For Adhesives, in Particular Synthetic and Natural Resin Adhesives, Floor Covering Cements, and Adhesives.

SN 225,378. Thompson-Werke, G.m.b.H., Dusseldorf, Germany. Filed Aug. 9, 1965.

TOMIPREN

Owner of German Reg. No. 725,051, dated Mar. 7, 1959.
For Adhesives, in Particular Synthetic and Natural Rubber Based Cements, Floor-Covering Cements, and Adhesives.

SN 225,379. Thompson-Werke, G.m.b.H., Dusseldorf, Germany. Filed Aug. 9, 1965.

TUNO

Owner of German Reg. No. 666,650, dated Sept. 30, 1953.
For Adhesives, In Particular Synthetic and Natural Resin Adhesives, Floor-Covering Cements, and Adhesives.

SN 232,211. International Paint Company, Inc., New York, N.Y. Filed Nov. 5, 1965.

INTER-POXY

Owner of Reg. Nos. 432,974, 808,774, and others.
For Reaction-Type Epoxy Adhesive.
First use Feb. 25, 1965.

SN 240,947. Permatex Company, Inc., Brooklyn, N.Y. Filed Mar. 14, 1966.

PERMATEX

Owner of Reg. Nos. 93,418, 573,184, and others.
For Gasket Cement, Adhesive Sealants of the Fast Drying and Hard Setting Type and of the Non-Hardening and Pliable Type for Keeping Gasket in Place as Well as for Replacing Gasket Materials on Parting Surfaces as Interfacial Sealants, and Multi-Purpose Cement for Sealing Cracks and Openings Between Windows and Windshields, Glass, Wood, and Leather Parts.
First use Dec. 15, 1921.

Class 6—Chemicals and Chemical Compositions

SN 213,088. B. T. Babbitt, Inc., Albany, N.Y. Filed Mar. 2, 1965.

BAB-O 4 in 1

Owner of Reg. Nos. 203,724 and 805,856.
For Preparation Used To Brighten, Whiten, and Add Body to Fabrics.
First use Feb. 5, 1965.

SN 229,373. K. J. Quinn & Co., Inc., Malden, Mass. Filed Oct. 5, 1965.

SALTSHAKER

For Scuff-Proof, Water and Salt Resistant Leather Dressing.
First use Sept. 24, 1965.

SN 231,186. Moser Paper Company, Chicago, Ill. Filed Oct. 22, 1965.

ROSA-SPRA

Owner of Reg. No. 637,284.
For Embalming Preparation for Use by Undertakers.
First use November 1936.

SN 231,188. Moser Paper Company, Chicago, Ill. Filed Oct. 22, 1965.

Superior FEATURE BUILDER

Applicant, without waiver of common law rights, disclaims the words "Feature Builder" apart from the mark as shown.
For Liquid Which Converts Into a Cohesive Firm Plastic Mass Upon Contact With Tissue Fluids for Use in Embalming.
First use May 9, 1950.

SN 233,479. Electro-Catheter Corporation, Linden, N.J. Filed Nov. 29, 1965.

COROLAN

For Composition for Fabricating Catheters of a Plastic Material or Substance.
First use Sept. 24, 1963.

SN 234,211. The Kroger Co., Cincinnati, Ohio. Filed Dec. 8, 1965.

HOME PRIDE

For Starch, Ammonia, Fabric Softener, and Air Fresheners.
First use at least as early as Nov. 2, 1965.

SN 249,766. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed July 7, 1966.

BONDERIZE

Owner of Reg. Nos. 268,659, 643,453, and others.
For Chemical Compositions Useful as Rust and Corrosion Inhibitors for Metals.
First use June 3, 1966.

SN 249,767. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed July 7, 1966.

2000 LINE

For Chemical Compositions Useful as Rust and Corrosion Inhibitors for Metals.
First use Feb. 17, 1965.

SN 249,805. Sigma Chemical Company, St. Louis, Mo. Filed July 7, 1966.

SIGMACELL

For Cellulose for Laboratory Use.
First use June 16, 1966.

SN 249,824. American Cyanamid Company, Wayne, N.J. Filed July 8, 1966.

PEPTON

Owner of Reg. No. 424,734.
For Chemical Plasticiser Consisting of a Catalytic Peptizer To Permit Easier Processing of Both Synthetic and Natural Rubber.
First use Nov. 19, 1945.

SN 249,893. Ventron Corporation, Beverly, Mass. Filed July 8, 1966.

VEN-VAT

For Compositions for Use in Vat Dyeing To Improve Leveling, Uniformity or Ease of Processing Containing Reducing Agents, Catalysts, Dispersants or Other Agents or Additives, or Mixtures Thereof.
First use July 6, 1966.

SN 250,009. Merck & Co., Inc., Rahway, N.J. Filed July 11, 1966.

BI-CAL

For Turf Fungicide.
First use May 9, 1944.

SN 250,148. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 13, 1966.

ACARAWAY

Owner of Reg. No. 619,270.
For Chemical Ingredient Used in the Manufacture of Insecticides and Acaricides.
First use June 20, 1966.

SN 250,150. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 13, 1966.

ACAROL

Owner of Reg. Nos. 406,217, 800,876, and others.
For Chemical Ingredient Used in the Manufacture of Insecticides and Acaricides.
First use June 23, 1966.

SN 250,152. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 13, 1966.

ACARIN

Owner of Reg. No. 619,270.
For Chemical Ingredient Used in the Manufacture of Insecticides and Acaricides.
First use June 29, 1966.

SN 250,418. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 13, 1966.

ACAREX

Owner of Reg. Nos. 127,794, 805,836, and others.
For Chemical Ingredient Used in the Manufacture of Insecticides and Acaricides.
First use June 23, 1966.

Class 7—Cordage

SN 206,344. British Ropes Corporation, Elisabeth, N.J. Filed Nov. 17, 1964.

TOWEROPE

For Wire Rope and Cable for Construction and Industrial Cranes.
First use Oct. 26, 1964.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 171,052. Tang Kuen Hung, d.b.a. Wang Yick Fireworks Company, Victoria, Hong Kong.

CAMEL BRAND

Applicant disclaims exclusive rights in the word "Brand" apart from the mark as shown.
For Fireworks.
First use July 1947; in commerce October 1947.

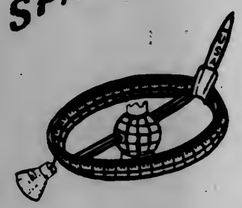
SN 234,682. St. Louis Precision Products, Inc., St. Louis, Mich. Filed Dec. 15, 1965.

GUN TAMER 25

The word "Gun" is disclaimed apart from the mark as shown.
For Recoil Absorption Devices for Use on Firearms Such as Shotguns, Rifles, and the Like.
First use Nov. 17, 1965.

SN 239,779. L. W. Loyd Company, Inc., South Pittsburg, Tenn. Filed Feb. 28, 1966.

SPACE AGE



No claim is made to the expression "USA" apart from the mark in its entirety.
For Fireworks and Firecrackers.
First use Jan. 6, 1966.

SN 243,792. The Marlin Firearms Company, New Haven, Conn. Filed Apr. 19, 1966.

GLENFIELD

For Guns.
First use Mar. 7, 1960.

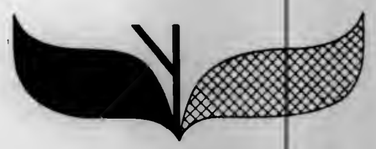
Class 10 — Fertilizers

SN 229,255. Kerr-McGee Corporation, Oklahoma City, Okla., by change of name from Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. Filed Oct. 4, 1965.

KERR McGEE

For Fertilizer.
First use Feb. 21, 1965.

SN 230,478. Continental Oil Company, Ponca City, Okla., assignee of American Agricultural Chemical Company, New York, N.Y. Filed Oct. 19, 1965.



The drawing is lined for the purposes of shading only.
For Fertilizer.
First use Dec. 4, 1963.

SN 232,890. Allied Chemical Corporation, New York, N.Y. Filed Nov. 18, 1965.

POLY-N

For Plant Food.
First use Aug. 12, 1963.

SN 234,435. Lee O. Karp, d.b.a. Country Squire Fertilizers, Farmingdale, N.Y. Filed Dec. 13, 1965.

COUNTRY SQUIRE

For Soil Fertilizers.
First use February 1960.

SN 236,264. International Minerals & Chemical Corporation, Skokie, Ill. Filed Jan. 12, 1966.

AXIPON

For Plant Food.
First use Dec. 16, 1965.

SN 236,265. International Minerals & Chemical Corporation, Skokie, Ill. Filed Jan. 12, 1966.

REGIMATE

For Plant Food.
First use Dec. 16, 1965.

SN 244,070. Armour Agricultural Chemical Company, Atlanta, Ga. Filed Apr. 22, 1966.

POWR-FLO

For Liquid Suspension Fertilizer.
First use on or prior to Feb. 23, 1966.

SN 244,768. Tennessee Corporation, New York, N.Y. Filed May 2, 1966.

YIELD-POWR

For Fertilizer.
First use on or about Feb. 1, 1966.

SN 245,806. Goodpasture, Inc., Brownfield, Tex. Filed May 10, 1966.



For Fertiliser.
First use July 1, 1965.

Class 12 — Construction Materials

SN 231,109. The Glidden Company, Cleveland, Ohio. Filed Oct. 22, 1965.

GLID-CRETE

Owner of Reg. Nos. 134,658, 717,343, and others.
For Resinous Masonry Surfacing and Patching Compound.
First use Dec. 8, 1960.

SN 231,113. The Glidden Company, Cleveland, Ohio. Filed Oct. 22, 1965.

BLOCKAID

For Cementitious Material for Use as a Filler, Sealer and Coating, Primarily for Masonry Surfaces and the Like.
First use Aug. 1, 1963.

SN 233,281. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Nov. 24, 1965.

T-WALL

For Panel Constructions and Components Therefor—Namely, Curtain Walls, Store Fronts, Partitions, and the Like.
First use at least as early as Aug. 4, 1965.

SN 233,651. Swift Industries, Inc., Elizabeth, Pa. Filed Nov. 30, 1965.



The mark consists of a stylized letter "S" as defined in a circular enclosure by contrasting colors, with the "S" being in white.
For Prefabricated Homes, Garages, Carports, and Breezeways, Construction Components and Accessories Therefor.
First use Oct. 27, 1965.

SN 234,049. Mfg. & Building Insulators of Texas, Inc., Houston, Tex. Filed Dec. 6, 1965.



For Spray-Type Cellulose Fiber Insulation Material.
First use on or about Nov. 15, 1961.

SN 234,847. Richardson Homes Corporation, d.b.a. Closing Offices of America, Elkhart, Ind. Filed Dec. 17, 1965.



For Prefabricated Buildings.
First use Sept. 15, 1965.

SN 236,181. Day & Campbell Limited, Hamilton, Ontario, Canada. Filed Jan. 11, 1966.

Tyl-on

The lining on the drawing does not represent any particular color. Owner of Canadian Reg. No. 122,654, dated June 23, 1961.
For Concrete and Slag Building Blocks.

SN 244,963. Otto Buehner and Company, Salt Lake City, Utah. Filed May 5, 1966.

INSUL-CON

For Pre-Cast Architectural Building Panels.
First use in or about 1956.

SN 246,169. Glaros Products, Inc., Pittsburgh, Pa. Filed May 20, 1966.

INSUL-LAP

For Prefabricated Building Panels of Metal and Plastic Including Steel, Aluminum, Fiberglass, and Like Materials.
First use Jan. 14, 1965.

SN 257,438. Hunter Douglas Limited, Pointe Claire, Quebec, Canada. Filed Oct. 28, 1966.

LUXAPLY

For Treated Plywood.
First use November 1965; in commerce June 15, 1966.

SN 257,910. Diamond Alkali Company, Cleveland, Ohio. Filed Nov. 4, 1966.

STOCKADE

For Vinyl Siding and Vinyl Trim.
First use Oct. 4, 1966.

SN 257,911. Diamond Alkali Company, Cleveland, Ohio. Filed Nov. 4, 1966.

CASAVIN

For Vinyl Siding and Vinyl Trim.
First use Oct. 4, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

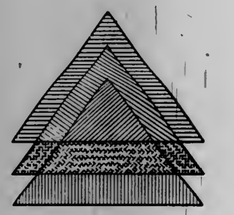
SN 232,268. John C. Amell, d.b.a. AB Co., Spokane, Wash. Filed Nov. 8, 1965.



Applicant disclaims the representation of the "paint brush and paint brush holder" in the subject designation.
For Paint Brush Holders.
First use Sept. 15, 1964.

Class 14—Metals and Metal Castings and Forgings

SN 240,305. The International Nickel Company, Inc., New York, N.Y. Filed Mar. 7, 1966.



The drawing is lined for blue, green, brown, yellow, orange, and red. Owner of Reg. Nos. 792,824 and 803,737.
For Nickel.
First use Jan. 27, 1966.

Class 15—Oils and Greases

SN 244,934. Studebaker Corporation, South Bend, Ind. Filed May 4, 1966.

STP

Owner of Reg. No. 648,087.
For Additive Compound for Motor Oils and Motor Fuels.
First use Sept. 5, 1954.

Class 16—Protective and Decorative Coatings

SN 224,155. Big Bear Stores, Inc., St. Cloud, Minn. Filed July 26, 1965.

SUPER SHIELD

For Exterior Primer, Exterior House Paint, Barn Paint, and Creosote Exterior Paint.
First use June 1, 1965.
Subj. to Intf. with SN 238,505.

SN 230,799. Devoe & Raynolds Company, Inc., New York, N.Y. Filed Oct. 21, 1965.

WONDER-1-COAT

For Exterior House Paints.
First use on about Mar. 13, 1952.

SN 236,252. The Glidden Company, Cleveland, Ohio. Filed Jan. 12, 1966.

GLID-N-DURE

Owner of Reg. Nos. 134,658, 717,343, and others.
For Paints for Exterior Primers and Topcoats.
First use Dec. 11, 1963.

SN 238,505. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Feb. 10, 1966.

SUPER SHIELD

For Exterior Clear Finish.
First use June 4, 1964.
Subj. to Intf. with SN 224,155.

SN 257,736. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Nov. 2, 1966.

TEFLON

Owner of Reg. Nos. 418,698, 676,166, and others.
For Coatings in the Nature of Paint, Based on Fluorine-Containing Resins.
First use at least as early as May 27, 1965.

Class 18—Medicines and Pharmaceutical Preparations

SN 226,524. John A. Ericson, d.b.a. Vitranide Company, Youngstown, Ohio. Filed Aug. 26, 1965.

vitranide

The drawing is lined for blue.
For Dietary Food Supplement Containing Vitamins and Minerals.
First use Aug. 1, 1964.

SN 229,709. Abbott Laboratories, North Chicago, Ill. Filed Oct. 11, 1965.

AMDAL

For Veterinary Preparations—Namely, Vaccine, Premix Containing Vitamins and Minerals, Erythromycin for Injection, and Growth Stimulant.
First use June 9, 1964.

SN 235,055. U.S. Ethicals Inc., Long Island City, N.Y. Filed Dec. 17, 1965.



For Pharmaceutical Preparations—Namely, Antispasmodic, Bioflavonoid, Cardiovascular, Hematinic, Lipotropic, Sedative, Vitamin.
First use Nov. 15, 1965.

SN 235,197. Kiefer-Stewart Company, Inc., d.b.a. Value Plus, Indianapolis, Ind. Filed Dec. 23, 1965.



For Medicines and Pharmaceutical Preparations.
First use Nov. 11, 1964.

SN 235,199. Kiefer-Stewart Company, Inc., d.b.a. Value Plus, Indianapolis, Ind. Filed Dec. 23, 1965.

VALUE PLUS

For Medicines and Pharmaceutical Preparations.
First use Nov. 11, 1964.

SN 235,700. Orbit Pharmaceutical, Inc., Kansas City, Kans. Filed Jan. 3, 1966.

ORBITUSSIN

For Antitussive, Vasoconstrictor Antihistaminic Expectorant.
First use Apr. 1, 1963.

SN 235,701. Orbit Pharmaceutical, Inc., Kansas City, Kans. Filed Jan. 3, 1966.

TETRASPECT

For Antibiotic.
First use Apr. 20, 1965.

SN 235,702. Orbit Pharmaceutical, Inc., Kansas City, Kans. Filed Jan. 3, 1966.

ORBIPEC

For Intestinal Adsorbent for Use in Symptomatic Treatment of Diarrhea.
First use Apr. 1, 1963.

SN 235,704. Orbit Pharmaceutical, Inc., Kansas City, Kans. Filed Jan. 3, 1966.

ORBIGESIC

For Analgesic-Antipyretic Tablets.
First use Apr. 1, 1963.

SN 238,051. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and/or Cole Chemical Company, St. Louis, Mo. Filed Feb. 4, 1966.

ARTHOGESIC

For Preparation for the Relief of Arthritic and Low Back Pains, Chronic Headaches, Neuralgia, Myalgia and Dysmenorrhea.
First use Jan. 11, 1957.

SN 240,008. Lever Brothers Company, New York, N.Y. Filed Mar. 2, 1966.

DEEPCOOL

For Ointment for Minor Skin Irritations.
First use Jan. 5, 1965.

SN 240,775. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 11, 1966.

WHAT GOES ON

For Medicated Skin Cream for Treating Acne.
First use Feb. 11, 1966.

SN 252,123. The Norwich Pharmacal Company, Norwich, N.Y. Filed Aug. 10, 1966.

BPN

For Antibacterial Pharmaceutical Preparation in Ointment Form.
First use prior to Mar. 1, 1960.

SN 252,129. Pharmaceutical Specialties, Inc., San Francisco, Calif. Filed Aug. 10, 1966.

L'IV-OK

For Capsules for the Prevention of Poison Ivy and Poison Oak Dermatitis.
First use June 11, 1962.

SN 252,238. C. B. Fleet Company, Incorporated, Lynchburg, Va. Filed Aug. 12, 1966.

Fleet

Owner of Reg. Nos. 315,097, 703,463, and others.
For Pharmaceutical Preparations—Namely, Enemas, Laxatives, Protein Nutrients, Vasodilators, Bronchial Dilators, Myocardial and Respiratory Stimulants, and Diarrhetics.
First use Mar. 25, 1966; 1893 as to "Fleet."

Class 19—Vehicles

SN 237,593. Rockwell-Standard Corporation, Pittsburgh, Pa. Filed Jan. 28, 1966.

UWT

For Vehicle Axle Components—Namely, Hollow Trailer and Like Non-Driving Axle Beams and Drive Axle Housings.
First use about Jan. 7, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 212,678. Power Engineering, Inc., Dallas, Tex. Filed Feb. 24, 1965.

POWER PE ENGINEERING Inc.

The mark claimed is the sine wave symbol and the block letters "PE." Applicant hereby disclaims the words "Power Engineering, Inc."
For Electrical Control Systems—Namely, Variable Speed Electric Drive Systems and Electric Motor Controls.
First use Aug. 15, 1962.

SN 227,625. Tensor Corporation, Brooklyn, N.Y. Filed Sept. 10, 1965.

LADYBUG

For Electrical Lamps.
First use May 1965.

SN 231,038. Bourns, Inc., Riverside, Calif. Filed Oct. 22, 1965.

Owner of Reg. No. 750,521.
For Electrical Apparatus and Parts—Namely, Miniature Inductors, Transformers, Capacitors, and Resistors.
First use Aug. 1, 1965.

SN 238,871. Globe-Union Inc., Milwaukee, Wis. Filed Feb. 15, 1966.

GAP-CAP

For Electronic Devices—Namely, Voltage Surge Protection Devices, Spark Gap Type Devices, and Capacitors.
First use on or about Mar. 22, 1965.

SN 241,457. Graybar Electric Company, Inc., New York, N.Y. Filed Mar. 21, 1966.

GRAYRACK

For Relay Racks for Use as Supporting Frameworks on Which Are Mounted Wired Equipment Units or Individual Mounting Plates.
First use in or about February 1963.

Class 22—Games, Toys, and Sporting Goods

SN 226,248. King Products Corporation, Harwood Heights, Chicago, Ill. Filed Aug. 23, 1965.

KING PUTT

For Golf Practice Equipment.
First use July 2, 1965.

SN 228,874. Bel-Air Pools, Inc., Royal Oak, Mich. Filed Sept. 29, 1965.

BEL-AIR

Owner of Reg. No. 776,444.
For Pool Tables, Billiard Tables, Tennis Tables, and Allied Equipment.
First use Sept. 17, 1961.

SN 229,020. Bob Maybee, Deerfield, Ill. Filed Sept. 30, 1965.

SPHAIREE

For Playing Equipment Comprising Paddle-Shaped Bats and a Perforated Ball for Playing an Outdoor and/or Indoor Athletic Game.
First use Aug. 31, 1965.

SN 233,877. Classic Industries, Inc., Los Angeles, Calif. Filed Dec. 3, 1965.

VIPER

For Toy Slot Racing Cars.
First use on or about Oct. 1, 1965.

SN 234,854. Howard B. Tewinkle, Cayuga, N.Y. Filed Dec. 17, 1965.

FIRESIDE FOOTBALL

No claim is made by the aplicant to the exclusive use of the word "Football" apart from the mark as shown.
For Equipment Sold as a Unit for Playing a Football-Type Board Game.
First use Aug. 29, 1965.

SN 235,113. Mattel, Inc., Hawthorne, Calif. Filed Dec. 22, 1965.

Francie

For Doll, Doll Clothes, and Doll Accessories.
First use Dec. 6, 1965.

SN 236,116. Mattel, Inc., Hawthorne, Calif. Filed Jan. 10, 1966.

GO-PLAY

For Manipulable Toy Assemblage Primarily for Pre-School Children.
First use Dec. 10, 1965.

SN 238,003. Outboard Marine Corporation, Waukegan, Ill. Filed Feb. 3, 1966.

AIR-BUOY

For Air Compression and Supply Apparatus for Skin Diving.
First use on or about Dec. 15, 1965.

SN 238,200. Ed-U-Cards Mfg. Corp., Long Island City, N.Y. Filed Feb. 7, 1966.

PIZZA

For Puzzles—Namely, Round Jigsaw Puzzles.
First use on or before Jan. 10, 1966.

SN 238,876. Jason March Ventures, Inc., Kenner, La. Filed Feb. 15, 1966.

GNIKNAB

For Equipment (or Apparatus), Sold as a Unit for Playing a Card Game.
First use Sept. 10, 1965.

SN 240,080. De Luxe Reading Corporation, Elizabeth, N.J. Filed Mar. 3, 1966.

BABY MAGIC

No claim of exclusive right is made to "Baby" for a doll.
For Dolls.
First use Feb. 11, 1966.

SN 240,375. Western Import Inc., Portland, Oreg. Filed Mar. 7, 1966.

COURTMASTER

For Sporting Goods, Specifically, Tennis Rackets, Badminton Rackets, and Volley Balls.
First use Jan. 10, 1965.

SN 241,636. Colt's Inc., Hartford, Conn. Filed Mar. 23, 1966.

TRAIL BLAZER

For Archery Bows.
First use Nov. 22, 1965.

SN 247,565. Bear Archery Company, Grayling, Mich. Filed June 8, 1966.

SUPER MAGNUM

For Archery Bows.
First use Dec. 30, 1965.

SN 247,566. Bear Archery Company, Grayling, Mich. Filed June 8, 1966.

MAGNUM

For Archery Bows.
First use Jan. 31, 1961.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 208,430. Auto-Bind Corporation, Atlanta, Ga. Filed Dec. 18, 1964.

AUTO BIND

For Bookbinding Machines.
First use on or about Apr. 2, 1964.

SN 214,999. Park-Air Corp., Boston, Mass. Filed Mar. 25, 1965.

WICKETEER

For Pneumatically Actuated Automatic Punch Magazine.
First use July 1963.

SN 226,164. Puller Pump Company, Newport Beach, Calif. Filed Aug. 20, 1965.

PULLER - PUMP

For Liquid-Handling Pumps Operable by Engine Manifold Vacuum.
First use Apr. 6, 1964.

SN 229,918. Ransome & Marles Bearing Company Limited, Newark-on-Trent, England. Filed Oct. 7, 1965.

SPHERISEAL

Owner of British Reg. Nos. 781,693, dated Sept. 12, 1958, 781,694, dated Sept. 12, 1958, and 779,972, dated July 21, 1958.

For Balls for Ball Bearings and Pulleys; Ball and Roller Bearings for the Axles of Vehicle Wheels and Carrying Bearings for Vehicles; Ball and Roller Bearings for Machines and Parts of Such Machines; Bearing Brackets for Ball and Roller Bearings in Power Driven Sewing Machines; Sole Plates, Wall Brackets, Wall Boxes, Hangers, Floor Standards and Axle Boxes, All for Supporting Shaft Bearings, and Girder Clips for Supporting Shaft Hangers and Shaft Brackets, All Being Parts of Power Transmission Gear (Not for Land Vehicle Propulsion Systems); and Pulleys Incorporating Ball or Roller Bearings and Being Parts of Machines.

SN 230,855. P. K. Lindsay Company, Inc., Deerfield, N.H. Filed Oct. 21, 1965.

"Give 'Em Air!"

Owner of Reg. No. 194,143.
For Air Compressors, Air Pumps, and Parts Thereof.
First use July 1924.

SN 231,124. Herter's Inc., Waseca, Minn. Filed Oct. 22, 1965.

HUDSON BAY

Owner of Reg. Nos. 719,746, 726,933, and 742,842.
For Brass Stirrers for Liquor and Food; Metal Soup Ladles; and Metal Cookie Molds for Cutting Out and Shaping Cookie Dough.
First use July 1965.

Class 26—Measuring and Scientific Appliances

SN 218,054. American Screen Process Equipment Co., Chicago, Ill. Filed May 5,1965.

POLYCOP

For Direct Contact Vacuum Exposing Units for Contact of Film and Screen Stencils.
First use Apr. 1, 1962.
Subj. to Intf. with SN 220,023.

SN 220,023. Polaroid Corporation, Cambridge, Mass. Filed May 28, 1965.

POLACOPY

Owner of Reg. Nos. 707,490, 732,138, and others.
For Photographic Image Receiving Sheet.
First use Apr. 27, 1965.
Subj. to Intf. with SN 218,054.

SN 234,152. Sylvania Electric Products Inc., New York, N.Y. Filed Dec. 7, 1965.



The drawing is lined for the colors blue and gold.
For Photographic Flashcubes.
First use June 29, 1965.

SN 237,734. Nova-Tech, Incorporated, Manhattan Beach, Calif. Filed Feb. 1, 1966.

nova Star

For Radio Navigation Instruments, Including Radio Transceivers and Omnidirectional Radio Navigational Apparatus.
First use Feb. 12, 1960.

SN 257,741. Xerox Corporation, Rochester, N.Y. Filed Nov. 2, 1966.

TELECOPIER

For Transmitting and Receiving Equipment for Producing Facsimile Copies of Documents.
First use June 13, 1966.

Class 28—Jewelry and Precious-Metal Ware

SN 237,763. Uncas Manufacturing Company, Providence, R.I. Filed Feb. 1, 1966.

Sorrento

Owner of Reg. No. 572,186.
For Jewelry for Personal Wear and Adornment.
First use Oct. 28, 1951.

SN 241,817. A. Sulka & Company, New York, N.Y. Filed Mar. 24, 1966.

Sulka

For Collar Clasps, Dress Sets and Studs, Collar Pins; Women's Brooches; Men's Cufflinks, Men's Tie Tacks and Tie Bars, Men's Key Chains and Men's Rings, and Men's Identification Bracelets.
First use 1935.

SN 241,820. A. Sulka & Company, New York, N.Y. Filed Mar. 24, 1966.

A. Sulka & Company

For Collar Clasps, Dress Sets and Studs, Collar Pins; Women's Brooches; Men's Cufflinks, Men's Tie Tacks and Tie Bars, Men's Key Chains and Men's Rings, and Men's Identification Bracelets.
First use 1935.

Class 32—Furniture and Upholstery

SN 244,761. Stanley Furniture Company, Inc., Stanleytown, Va. Filed May 2, 1966.

This is
MAGNA CARTA

For Wood Furniture—Namely, Bedroom, Living Room, Dining Room, and Chairs.
First use Mar. 21, 1966.

SN 245,338. Paramount Bedding Corporation, Norfolk, Va. Filed May 10, 1966.

ZIP-A-WAY

For Mattresses.
First use Feb. 14, 1966.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 157,905. Home Metal Products Company, Dallas, Tex. Filed Nov. 26, 1962.

KICH-N-VENTLESS

Owner of Reg. No. 635,584.
For Range Hoods.
First use Mar. 9, 1961.

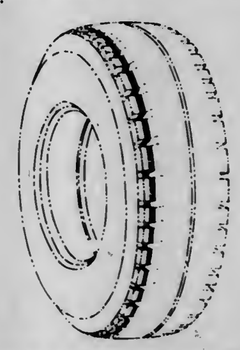
SN 231,125. Herter's Inc., Waseca, Minn. Filed Oct. 22, 1965.

HUDSON BAY

Owner of Reg. Nos. 719,746, 726,933, and 742,842.
For Metal Chestnut Roasters, Brass Coal Shuttles for Fireplaces, Brass Candlestick Holders, Brass Table Lamps (Oil), Brass Fireplace Tools and Holders, Metal Fireplace Holders for Fireplace Tools, Andirons, and Brass Stoves.
First use February 1965.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 234,950. Super Recap Tire Co., Denver, Colo. Filed Dec. 20, 1965.



No claim is made to the representation of the goods—namely, a pneumatic tire. The mark consists of a yellow stripe on the tread rubber of a retreaded tire located at a point on the shoulder of the tread adjacent the outer side of the tire. The drawing is lined for the color yellow.
For Retreaded Tires, Including Recapped, Full-Capped and Top-Capped Tires.
First use April 1961.

SN 238,152. Atlas Supply Company, Springfield, N.J. Filed Feb. 7, 1966.

VICRON

Owner of Reg. No. 605,169.
For Tire Cord Sold as a Component of Tires.
First use Jan. 25, 1966.

Class 36—Musical Instruments and Supplies

SN 221,261. Garrard Engineering Limited, Swindon, England. Filed June 16, 1965.

GARRARD

Owner of U.S. Reg. Nos. 629,004 and 626,855.
For Record Changers and Parts Thereof, Including Tone Arms, Pick Ups, Turntables, Motors, and Spindles; and Tape Recorders.
First use November 1920; in commerce November 1935.

SN 229,637. The Command Company, Clayton, Mo. Filed Oct. 8, 1965.

THE VIRTUOSO

For Improvising Keyboards for Use With Electronic Organs.
First use June 28, 1964.

SN 230,728. The H. N. White Company, Inc., Cleveland, Ohio. Filed Oct. 20, 1965.

SILVER FLAIR

The word "Silver" is disclaimed apart from the mark as shown.
For Trumpets.
First use Sept. 10, 1965.

SN 258,020. The Fred. Gretsch Mfg. Co., Brooklyn, N.Y. Filed Nov. 7, 1966.

VIKING

For Guitars.
First use May 1961.

Class 37—Paper and Stationery

SN 238,412. Ellingsworth Mfg. Co., Chicago, Ill. Filed Feb 9, 1966.

GO PORT

For Looseleaf Paper Portfolios.
First use Jan. 13, 1966.

SN 239,772. Heidi-Swiss Corporation, d.b.a. Heidi-Swiss Corp., Chicago, Ill. Filed Feb. 28, 1966.

INSTA-WRAP

For Gift Wrap Paper.
First use Dec. 20, 1965.

SN 243,009. Packaging Corporation of America, Evanston, Ill. Filed Apr. 8, 1966.

TWIN BRITE

For Paperboard.
First use on or about Feb. 28, 1966.

SN 248,036. The Hamersley Manufacturing Co., Garfield, N.J. Filed June 14, 1966.

HAMMERBRITE

Owner of Reg. Nos. 129,738, 366,733, and others.
For Bleached Sulphate Paper.
First use Oct. 7, 1965.

SN 248,876. Magic Marker Corporation, Brooklyn, N.Y. Filed June 24, 1966.

MINI-LINE

For Ink Applicator, Fountain Pens, Ink Supply Containers, and Combinations Thereof.
First use on or about May 2, 1966.

SN 249,390. The Paper Supply Company, Baltimore, Md. Filed July 1, 1966.

COMPLIANCE

For Paper and Stationery Supplies—Namely, Writing and Printing Paper.
Firs use at least as early as 1944.

SN 258,025. Standard Manifold Company, Charles, Ill. Filed Nov. 7, 1966.

FREE N' EASY

For Bond Typing Paper.
First use Feb. 28, 1966.

Class 38—Prints and Publications

SN 193,316. The American Water Works Association, New York, N.Y. Filed May 13, 1964.

AWWA

For Pamphlets, Brochures, and Periodicals.
First use December 1958.

SN 222,432. Tatler Publishing Company, Washington, D.C. Filed June 30, 1965.

DIAMOND TATLER

For Weekly Booklet Which Is a Guide to Activities and Eating Places.
First use at least as early as 1958.

SN 224,081. Editors and Engineers, Ltd., New Augusta, Ind. Filed July 23, 1965.

E E

For Series of Technical Publications for Use by the Do-It-Yourself Reader.
First use June 21, 1965.

SN 226,185. W. R. C. Smith Publishing Company, Atlanta, Ga. Filed Aug. 20, 1965.

NATIONAL AUTOMOTIVE DIRECTORY

For Trade Directory.
First use November 1961.

SN 228,657. Data Digests, Inc., New York, N.Y. Filed Sept. 27, 1965.

D D

For Periodical Publications Containing Factual Investment Data.
First use Aug. 25, 1965.

SN 231,919. Mail Advertising Corporation of America, Inc., Lincoln, Nebr. Filed Nov. 1, 1965.

MAC

The outline of the map portion of the mark is disclaimed apart from the mark.
For Prints and Publications—Namely, Mailing Lists.
First use 1957.

SN 235,441. Unilever Limited, Port Sunlight, England. Filed Dec. 28, 1965.

PROGRESS

Owner of British Reg. No. B682,898, dated Oct. 4, 1949.
For Quarterly Publication in the Form of a House Organ Containing Articles of General Interest Relating to the Activities of Applicant Company.

SN 235,491. The Christian Science Publishing Society, Boston, Mass. Filed Dec. 29, 1965.

LIVRETE TRIMESTRAL DA CIÊNCIA CRISTÃ

The English translation of the mark is "Christian Science Quarterly." Owner of Reg. Nos. 413,114 and 664,442.
For Magazine of Bible Lessons Regularly Published Every Three Months in English and Portuguese.
First use Feb. 1, 1963.

SN 237,144. Medical Opinion and Review, Inc., New York, N.Y. Filed Jan. 24, 1966.

MEDICAL OPINION & REVIEW

For Medical Journal.
First use on or about Oct. 15, 1965.

SN 237,346. Howard and Smith, Inc., Ferndale, Mich. Filed Jan. 26, 1966.

ESO

EDUCATIONAL SYSTEMS DEVELOPMENT

No claim is made to the wording "Educational Systems Development" apart from the mark as shown without waiving any common law rights therein.
For Instructional Books.
First use on or about Dec. 6, 1965.

SN 237,347. Howard and Smith, Inc., Ferndale, Mich. Filed Jan. 26, 1966.

SYNTEXT

For Instructional Books.
First use on or about Dec. 6, 1965.

SN 237,827. Equity Publishing Corporation, Orford, N.H. Filed Feb. 2, 1966.

FOLLOWS THE LAW EQUITY

For Law Books, Law Pamphlets, and Similar Publications.
First use Aug. 1, 1957.

SN 237,845. Gésa Korda, New York, N.Y. Filed Feb. 2, 1966.

ALKOTÓ MAGYAR

The mark may be translated as "creative Hungarian."
For Publication.
First use Aug. 26, 1965.

SN 238,813. Westervelt-Renhouse, Inc., East Rutherford, N.J. Filed Feb. 15, 1966.

MARKETLINE

For Periodical Newsletter Publishing News Respecting Stocks, Bonds, Commodities, and Other Securities.
First use Jan. 15, 1966.

SN 239,478. Walt Disney Productions, Burbank, Calif. Filed Feb. 23, 1966.

WALT DISNEY'S comics

No claim is made to the word "Comics" apart from the mark as shown. Walt Disney is the name of a living person whose consent is of record. Owner of Reg. No. 664,435.
For Series of Regularly Issued Comic Magazines.
First use Sept. 9, 1940.

SN 240,053. The American Automobile Association (Incorporated), Washington, D.C. Filed Mar. 3, 1966.

HOSTMARK

Owner of Reg. Nos. 547,321, 703,556, and others.
For Periodical Newsletter Devoted to Travel and Touring Subject Matter.
First use Aug. 27, 1965.

SN 240,304. Inter-Continental Motors Corporation, San Antonio, Tex. Filed Mar. 7, 1966.

MANAGEMENT FORUM

For Magazine Dealing With Business Management Subjects and Matters of General Civic Interest, Distributed to Volkswagen Dealers and Members of the Community.
First use Jan. 28, 1966.

SN 249,472. Travelers Directory Services, Inc., Winston Salem, N.C. Filed July 5, 1966.

TRAVELERS DIRECTORY SERVICE

For Combination Place Mat, Map, and Directory.
First use July 1, 1965.

SN 254,963. International Franchise Association, Inc., Chicago, Ill. Filed Sept. 23, 1966.

INTERNATIONAL FRANCHISE ASSOCIATION

For Periodicals, Newsletters, Announcements, and Handbooks.
First use in or before 1963.

Class 39—Clothing

SN 204,520. Sunnybrook Sportwear, Inc., New York, N.Y. Filed Oct. 21, 1964.

Sunnybrook

For Ladies' and Girls' Outerwear—Namely, Slacks, Pedal-Pushers, Jumpers, Shifts, Skirts, and Jackets, in Children's, Juniors', Missy and Ladies' Sizes.
First use on or about Mar. 1, 1942.

SN 205,627. Tie Rite Neckwear Company, Inc., Asheboro, N.C. Filed Nov. 5, 1964.

deMarco CREATIONS

Applicant disclaims the right to exclusive use of the word "Creations" apart from the mark as shown.
For Men's and Boys' Neckties and Hosiery.
First use on or about Dec. 1, 1961, on neckties.

SN 209,220. Glen Abbey Limited, Tallaght, Dublin, Ireland. Filed Oct. 22, 1964.

Glen Abbey

Priority claimed under Sec. 44(d) on Irish Reg. No. 68,672, dated Apr. 30, 1964.
For Ladies', Men's, and Children's Underwear, and Sweaters in the Nature of Pullovers, Slipons, Cardigans, and Waistcoats.

SN 221,939. Sea & Ski Corporation, Millbrae, Calif., assignee of Mero Industries, Inc., New York, N.Y. Filed June 24, 1965.



The drawing is lined for red, blue, and gold. Owner of Reg. Nos. 77,852, 816,141, and others.
For Hosiery.
First use Jan. 14, 1965.

SN 229,548. Robert Y. Powell, Memphis, Tenn. Filed Oct. 7, 1965.

POSE

For Brassieres and Foundation Garments.
First use Nov. 14, 1964.

SN 230,492. Anderson & Thompson Ski Co., Inc., Seattle, Wash. Filed Oct. 19, 1965.

GLACIER

For Ski Boots.
First use Aug. 3, 1965.

SN 239,426. McGregor-Doniger Inc., New York, N.Y. Filed Feb. 23, 1966.

BROLLY MALE

For Men's Sportswear—Namely, Slacks, Shirts, Sweaters, and Jackets.
First use Feb. 10, 1966.

SN 241,591. Hit Sales Corporation, New York, N.Y. Filed Mar. 8, 1966.

MONO LOOP

For Ties, Lanyards, Medallions, Badges and Disks Forming a Part of Ties and Lanyards.
First use Apr. 10, 1958.

SN 242,762. Trau & Loevner, Inc., Pittsburgh, Pa. Filed Apr. 5, 1966.

savvy

For Men's and Boys' Sweaters, Jackets, Sport Shirts, Dress Shirts, Sweatshirts, Slacks, Trousers, Belts, Neckwear, and Hosiery.
First use Nov. 10, 1965.

SN 242,889. Frederick W. Donnelly & Son, Inc., Trenton, N.J. Filed Apr. 7, 1966.

FERVEL

For Men's Suits, Sport Coats, and Topcoats.
First use Mar. 10, 1966.

SN 243,690. Marlene Industries Corporation, New York, N.Y. Filed Apr. 18, 1966.

OOM

For Women's and Children's Wearing Apparel Consisting of Dresses, Blouses, Sweaters, Skirts, Pants, Shirts, and Jackets.
First use Mar. 14, 1966.

SN 243,709. Potomac Engineering Corporation, Chicago, Ill. Filed Apr. 18, 1966.

FASTEN-AIDS

For Children's Smocks.
First use Apr. 7, 1966.

SN 243,923. Spalding Knitting Mills, Griffin, Ga. Filed Apr. 20, 1966.

SUNBEAM

For Hosiery.
First use July 18, 1922.

SN 244,254. Russ Togs, Inc., New York, N.Y. Filed Apr. 25, 1966.

RUSS

Owner of Reg. No. 653,796.
For Women's and Girls' Outer Apparel—Namely, Skirts, Jackets, Blouses, Shirts, Pants, Slacks, Jeans, Coats, Dresses, and Suits.
First use January 1956.

SN 244,542. Truval Shirt Company, Inc., New York, N.Y. Filed Apr. 28, 1966.

Truvalene

Owner of Reg. Nos. 96,306 and 792,259.
For Tricot Sport and Dress Shirts.
First use Jan. 2, 1966.

SN 244,698. Garland Corporation, Brockton, Mass. Filed May 2, 1966.

EDWARD WESLEY

The name "Edward Wesley" is fanciful.
For Sweaters.
First use Apr. 21, 1966.

SN 244,699. Garland Corporation, Brockton, Mass. Filed May 2, 1966.

EDWARD WYLDE

The name "Edward Wylde" is fanciful.
For Sweaters.
First use Apr. 21, 1966.

SN 247,138. Mister Pants, Inc., New York, N.Y. Filed June 2, 1966.

STOCK-O-MATIC

For Women's Apparel, Consisting of Ladies' Slacks, Jackets, Shirts, Sweaters, Skirts, Dresses, and Combinations Thereof.
First use Apr. 25, 1966.

SN 247,364. William B. Kessler, Inc., Hammonton, N.J. Filed June 6, 1966.

QUICKSILVER

For Men's Clothing—Namely, Suits, Jackets, Topcoats, Trousers, and Sportcoats.
First use Jan. 13, 1966.

SN 247,365. William B. Kessler, Inc., Hammonton, N.J. Filed June 6, 1966.

THE AFFLUENT LOOK

For Men's Clothing—Namely, Suits, Jackets, Topcoats, Trousers, and Sportcoats.
First use Jan. 13, 1966.

SN 247,538. Superba Cravats, Inc., Rochester, N.Y. Filed June 7, 1966.

DUELLE

For Neckwear.
First use May 23, 1966.

SN 248,646. Triton Manufacturing Company, Inc., Fall River, Mass. Filed June 21, 1966.

HOT LINE

For Men's and Boys' Suits, Sport Coats, Ski Jackets, and Walking Coats.
First use Aug. 31, 1962.

Class 40—Fancy Goods, Furnishings, and Notions

SN 230,401. Howard K. Lang, d.b.a. Custom Monogram Company, Hollywood, Calif. Filed Oct. 18, 1965.

CLIP-ALL

For Device Including a Pair of Connected Hook Members, One of Said Hook Members Being Adapted To Be Attached to Clothing, and the Other Hook Member Being Adapted To Hold Gloves and Similar Small Articles.
First use July 20, 1965.

SN 230,591. Vulcanized Rubber and Plastics Company, Incorporated, Morrisville, Pa. Filed Oct. 19, 1965.

MINI-COMB

For Combs.
First use Oct. 11, 1965.

SN 236,870. Akim Engineering Company, Inc., Willimantic, Conn. Filed Jan. 20, 1966.

SLIK-SLAK

For Hook and Eye Type Garment Fastener.
First use Jan. 6, 1966.

SN 243,997. Le Baron International, Inc., Dallas, Tex. Filed Apr. 21, 1966.

Le Baron

For Hairpieces.
First use Oct. 31, 1965.

SN 244,584. Heavenly Creations, Inc., Norfolk, Va. Filed Apr. 29, 1966.

CYNDREL

For Synthetic Fiber Incorporated in Hair Tresses.
First use Aug. 25, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 242,230. Fab-N-Trim, Inc., Belleville, Ill. Filed Mar. 30, 1966.

FAB-N-TRIM

For Textile and Knitted Fabrics for Making Women's and Children's Suits, Blouses, Skirts, Dresses, Sportswear, Draperies, Slipcovers, and the Like.
First use Nov. 11, 1961.

SN 249,491. Samuel J. Aronsohn, Inc., New York, N.Y. Filed July 5, 1966.

Interpol

For Textile Fabrics in the Piece of Cotton, Rayon, Silk, Wool, Worsted, Synthetic Fibres, and Mixtures Thereof.
First use June 2, 1966.

SN 249,846. Dan River Mills, Incorporated, Danville, Va. Filed July 8, 1966.

STARSPUN

Owner of Reg. No. 399,672.
For Textile Fabrics in the Piece of Cotton or Synthetic Fibers, or Any Combinations Thereof, and Including Gingham, Sheeting, Sheets and Pillowcases.
First use Aug. 1, 1941.

SN 249,853. Fieldcrest Mills, Inc., Spray, N.C. Filed July 8, 1966.

ARDOWN

For Blankets.
First use Jan. 5, 1965.

SN 249,875. Charles Pindyck, Inc., New York, N.Y. Filed July 8, 1966.

Pindyck

For Crib Sheets, Terry Towels, and Washcloths.
First use Dec. 5, 1963; May 14, 1944, as to "Pindyck."

SN 251,149. Princeton Knitting Mills, Inc., New York, N.Y. Filed July 27, 1966.

SKINNY BOY

For Fabrics Sold in the Piece and by the Yard, Made of Natural Man-Made Fibers and of Special Blends for Making Wearing Apparel Such as Dresses, Suits, Slacks, Sweaters, Shirts, Swimwear, Undergarments, Linings, and Outerwear.
First use July 27, 1966.
Subj. to Intf. with SN 254,884.

SN 257,832. Cone Mills Corporation, Greensboro, N.C. Filed Nov. 3, 1966.

POLY DI PARVIA

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers, or Any Combination Thereof.
First use Nov. 24, 1965.

SN 257,908. Deering Milliken, Inc., New York, N.Y. Filed Nov. 4, 1966.

POWER STRATE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Oct. 27, 1966.

Class 43—Thread and Yarn

SN 249,808. Spinnerin Yarn Co., Inc., South Hackensack, N.J. Filed July 7, 1966.

wash fit

For Yarns for Hand Knitting of Natural or Synthetic Fibers, or Combinations Thereof.
First use June 10, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 233,577. Brother International Corporation, New York, N.Y. Filed Nov. 30, 1965.

SIMPLICITY

For Electric Hair Driers.
First use Mar. 1, 1965.

SN 244,954. American Optical Company, Southbridge, Mass. Filed May 5, 1966.

S

For Respirators.
First use Oct. 19, 1964.

SN 245,645. Williams Gold Refining Co., Inc., Buffalo, N.Y. Filed May 13, 1966.

VIVOSTAR

For Plastic and Porcelain Artificial Teeth, Dental Restorative Materials, Such as, Silicate Cements or Filling Materials, Resin Cements or Resin Filling Materials, Crown and Bridge Resins, Dental Opaquer Compositions, Veneering Resins, Porcelain Powders for Use in Crown and Bridge Prosthesis, Tray Material, Denture Base, Impression Materials of the Agar-Agar Hydrocolloid, Rubber Base, Silicone, Alginate and Acrylic Types, Dental Gold Restorative Materials and Similar Dental Laboratory Materials and for Instruments Used in Dentistry, Such as Dental Articulators, Boley Gauges, Other Dental Vernier Calipers, and the Like.
First use Feb. 16, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 247,660. PepsiCo, Inc., New York, N.Y. Filed June 9, 1966.

DEVIL SHAKE

For Chocolate-Flavored Soft Drinks.
First use May 27, 1966.

Class 46—Foods and Ingredients of Foods

SN 187,552. Brooks Foods, Inc., Collinsville, Ill. Filed Feb. 27, 1964.

BROOKS

Owner of Reg. No. 532,325.
For Barbecue Sauce, Light Red Kidney Beans, Dark Red Kidney Beans, Tomato Soup, Red Beans, Pork and Beans, Chili Hot Beans, Boone County Mexi Beans, Dietetic Catsup, Dietetic Chili Sauce, Tomato Juice, Tangy Catsup, Regular Catsup, Portion Pak Captsup, Chili Mix, and Barbecue Beans, All Canned Goods.
First use Aug. 19, 1963.

SN 187,861. Fulvi S.p.A., Nepi, Viterbo, Italy. Filed Mar. 3, 1964.

FULVI

For Cheese and Butter.
First use on or about Oct. 3, 1963; in commerce on or about Oct. 3, 1963.

SN 205,841. Joseph Korelko, d.b.a. J. K. Packing Company, Uniontown, Pa. Filed Nov. 9, 1964.

JOEY BOY

The showing of the boy is fanciful and does not represent an actual person.
For Fresh Fruits.
First use Sept. 7, 1963.

SN 207,108. Boyd Coffee Company, d.b.a. Boyd Company, Portland, Oreg. Filed Nov. 30, 1964.

RED WAGON

For Coffee and Spices.
First use Sept. 16, 1964.

SN 213,681. Jamaica Food Company, Hollis, N.Y. Filed Mar. 9, 1965.

Prix de Chef

For Jars of and Canned Soup Bases, French, Italian, and Roquefort Dressings, Gelatin Desserts, and Spice Seasonings.
First use Feb. 25, 1965.

SN 214,929. Stewart In-Fra-Red, Inc., d.b.a. Stewart In-Fra-Red Commissary, Fontana, Wis. Filed Mar. 24, 1965.

FREELOADER

For Pre-Packaged Refrigerated Sandwiches.
First use prior to December 1963.

SN 216,353. Superior's Brand Meats Inc., Massillon, Ohio. Filed Apr. 12, 1965.

FRANKIES
OUR *KEENER* WIENER

Applicant disclaims the words "Our Keener Wiener" apart from the mark as shown.
For Prepared Meat Products.
First use Apr. 1, 1959; Nov. 28, 1951, as to "Frankie, the Keener Weiner."

SN 224,674. Wisconsin Foods, Inc., Sturgeon Bay, Wis. Filed July 30, 1965.

CHEREFRESH

For Canned Cherry Juice.
First use September 1962.

SN 226,075. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. Filed Aug. 19, 1965.

PEPPERMINT TWIST

Applicant disclaims the word "Peppermint" apart from the mark as shown.
For Chewing Gum.
First use Aug. 10, 1965.

SN 228,258. Jean's Food Service, Inc., Minneapolis, Minn. Filed Sept. 21, 1965.

CHEF IN A BAG

For Frozen Pre-Cooked Meals Consisting of Either Chicken, Meats, or Fish, With One or More of the Following: Vegetables, Sauces, and Alimentary Pastes.
First use June 1, 1965.

SN 231,693. Duffy-Mott Company, Inc., New York, N.Y., assignee of Lord-Mott Company, Inc., Baltimore, Md. Filed Oct. 27, 1965.

LORD-MOTT'S

Owner of Reg. No. 676,823.
For Canned Vegetables, Including Canned Irish Potatoes and Sweet Potatoes.
First use 1836.

SN 232,511. Arkco Foods, Inc., Little Rock, Ark. Filed Nov. 12, 1965.

sCat

The word "Cat" is disclaimed apart from the mark as shown.
For Cooked Food for Cats in Cans, Particularly Chopped Meat, Comprising Chicken Parts, Beef Liver, Pork Liver, and Sheep Liver.
First use October 1963.

SN 232,689. Frost-N-Mate, Inc., Ocala, Fla. Filed Nov. 15, 1965.

Frost'n Mate

For Candy Cake Decorations.
First use Oct. 20, 1965.

SN 232,927. Morinaga Confectionery Company Limited, Minato-ku, Tokyo, Japan. Filed Nov. 18, 1965.

Morinaga
Hi-CROWN

Owner of U.S. Reg. Nos. 686,963, 687,647, and 782,523.
For Chocolate.
First use Jan. 23, 1964; in commerce May 10, 1965.

SN 234,550. Escalon Packers, Inc., Escalon, Calif. Filed Dec. 14, 1965.

PINOCCHIO

For Canned Peaches, Canned Tomatoes, and Canned Tomato Paste.
First use 1957.

SN 234,708. Robert H. Schroer, d.b.a. Bob's Produce Ranch, Fridley, Minn. Filed Dec. 14, 1965.



The man shown in the drawing does not represent any particular living individual and the lining shown in the drawing does not represent color, but being an actual part of the mark.
For Gift Packages of Fresh Fruits.
First use on or about Apr. 1, 1964.

SN 236,506. Old Syb's Inc., Chicago, Ill. Filed Jan. 14, 1966.

OLD SYB'S

For Cheese Dip or Spread.
First use Oct. 11, 1965.

SN 237,358. Knudsen Creamery Co. of California, Los Angeles, Calif. Filed Jan. 26, 1966.

WHEAST

Owner of Reg. No. 742,066.
For Whey Grown Yeast for Animal and Human Consumption.
First use Aug. 3, 1961.

SN 237,777. Adams and Brooks, Inc., Los Angeles, Calif. Filed Feb. 1, 1966.

ADAMS & BROOKS

For Salted and Unsalted Nuts; Candied Nuts, Being Nuts With a Candy or Confection Coating; Nut Confections, Being Candy Confections Containing Nuts; Popped Popcorn; Popcorn Confections, Being Popcorn With a Candy or Confection Coating; and Candy.
First use at least as early as the year 1935.

SN 237,949. First National Stores, Inc., Somerville, Mass. Filed Feb. 3, 1966.

BETTY ALDEN

The name "Betty Alden" is fictitious. Owner of Reg. No. 421,884.
For Bread.
First use Apr. 2, 1945.

SN 237,950. Fisher Flouring Mills Co., d.b.a. Fisher's, Seattle, Wash. Filed Feb. 3, 1966.

PAN GOLD

For Wheat Flour.
First use Dec. 31, 1965.

SN 238,237. King Kelly Marmalade Co., Inc., d.b.a. King Kelly Foods, Dairy Valley, Calif. Filed Feb. 7, 1966.

NIFTY-NUT

For Spread Made From a Combination of Honey and Peanut Butter.
First use Jan. 6, 1966.

SN 238,317. S. B. Thomas, Inc., Long Island City, N.Y. Filed Feb. 7, 1966.



Owner of Reg. Nos. 336,401 and 565,109.
For Cakes.
First use 1951.

SN 238,318. S. B. Thomas, Inc., Long Island City, N.Y. Filed Feb. 7, 1966.

THOMAS'

Owner of Reg. No. 215,997.
For Muffins and Cakes.
First use 1933.

SN 238,341. Caruso Foods Inc., Brooklyn, N.Y. Filed Feb. 8, 1966.



The name and portrait are that of the famous singer, Enrico Caruso, deceased. Owner of Reg. Nos. 108,077, 606,792, and others.
For Spaghetti, Frozen Manicotti, Frozen Pizza Pie, Frozen Covatelli, Frozen Ravioli, Frozen Eggplant, Parmigiana, Frozen Ricotta, and Frozen Lasagna.
First use May 25, 1920; Nov. 16, 1914, as to the term "Caruso."

SN 238,552. Morningstar-Paisley, Inc., New York, N.Y. Filed Feb. 10, 1966.

S. R. TAPIOCA FLOUR

The exclusive use of the words "Tapioca Flour" is disclaimed apart from the mark as shown.
For Tapioca Flour.
First use Apr. 2, 1957.

SN 238,638. Hobo Joe's, Inc., Scottsdale, Ariz. Filed Feb. 11, 1966.



The figure on the drawing is fanciful.
For Fresh Vegetables and Fruits.
First use Nov. 13, 1965.

SN 238,837. Corn Products Company, New York, N.Y. Filed Feb. 15, 1966.

AMBER-BRU

For Liquid Corn Adjunct Concentrate.
First use at least as early as May 10, 1965.

SN 239,297. National Biscuit Company, New York, N.Y. Filed Feb. 21, 1966.

TIFFIN // Cookies

The word "Cookies" is disclaimed apart from the mark as shown. Owner of Reg. No. 117,055.
For Cookies.
First use Feb. 1, 1966.

SN 239,722. Cheese Smokers, Inc., New York, N.Y. Filed Feb. 28, 1966.

HIC-U-REE

For Cheese.
First use Oct. 15, 1965.

SN 239,737. Cove Valley Packers, Inc., Orange Cove, Calif. Filed Feb. 28, 1966.

COVE VALLEY

Applicant disclaims, apart from the association shown, the wording "Fruits Famous for Flavor," and the representation of the goods disclosed by the design element of the mark.
For Fresh Fruits.
First use June 10, 1963.

SN 240,309. Lakeland Grocery Co., Minneapolis, Minn. Filed Mar. 7, 1966.

Valdor

For Frozen Foods—Namely, Vegetables, French Fried Potatoes, and Fruit Juice Concentrate.
First use May 24, 1965.

SN 240,518. Idaho Frozen Foods, Inc., Twin Falls, Idaho. Filed Mar. 9, 1966.

RUS-IDA

Owner of Reg. No. 747,928.
For Frozen and Dehydrated Potatoes.
First use Aug. 28, 1962.

SN 240,519. Idaho Frozen Foods, Inc., Twin Falls, Idaho. Filed Mar. 9, 1966.

IDA-TREAT

For Frozen and Dehydrated Potatoes.
First use Sept. 4, 1962.

SN 240,644. Clement Pappas and Company, Inc., Cedarville, N.J. Filed Mar. 10, 1966.

SLIM-TRIM

For Dietetic Fruit Juice Beverage.
First use Dec. 17, 1957.

SN 241,870. Daily Diet Pet Food Co., d.b.a. Rite-Wey Pet Food Co., Huntington Park, Calif. Filed Mar. 25, 1966.

RITE-WEY

For Canned Dog Food.
First use Mar. 11, 1966.

SN 243,276. Wellworth Pickle Company, Paterson, N.J. Filed Apr. 12, 1966.

GO-GO

For Vegetable Salad Packed in Glass Containers.
First use Apr. 1, 1966.

SN 243,598. The Sweets Company of America, Incorporated, d.b.a. The Sweets Company of America, Inc., Hoboken, N.J. Filed Apr. 15, 1966.

POP-A-ROLL

For Candy.
First use Jan. 4, 1966.

SN 244,259. Skookum Packers Association, Inc., Wenatchee, Wash. Filed Apr. 25, 1966.

"SMILE WITH SKOOKUM"

Owner of Reg. Nos. 124,866 and 643,025.
For Fresh Deciduous Fruits.
First use in about the year 1927; July 15, 1913, as to the trademark "Skookum."

SN 244,260. Skookum Packers Association, Inc., Wenatchee, Wash. Filed Apr. 25, 1966.

Skookum

Owner of Reg. Nos. 124,866 and 643,025.
For Fresh Deciduous Fruits.
First use July 15, 1913.

SN 244,261. Skookum Packers Association, Inc., Wenatchee, Wash. Filed Apr. 25, 1966.



Owner of Reg. Nos. 124,866 and 643,025.
For Fresh Deciduous Fruits.
First use at least as early as the year 1916.

SN 244,262. Skookum Packers Association, Inc., Wenatchee, Wash. Filed Apr. 25, 1966.

Skookum 

Owner of Reg. Nos. 124,866 and 643,025.
For Fresh Deciduous Fruits.
First use at least as early as 1916; July 15, 1913, as to the trademark "Skookum."

SN 244,529. S and W Fine Foods, Inc., d.b.a. Equitable Cash Grocery Co., San Francisco, Calif. Filed Apr. 28, 1966.

GOOD DAY

For Salad Oil, Mayonnaise, Margarine, Evaporated Milk, Peanut Butter, Salt, Flour, Canned Shrimp, Canned Salmon, Canned Mushrooms, Tomato Catsup, Tomato Sauce, Canned Tomato Juice, Canned Fruit Juices, Apple Cider, Apple Sauce, Fruit Preserves, Maraschino Cherries, Canned Fruits, and Canned Vegetables.
First use Sept. 4, 1964.

SN 253,471. The Buckeye Cellulose Corporation, Cincinnati, Ohio. Filed Aug. 31, 1966.

BUCKEYE-COWLIKE

Owner of Reg. No. 501,998.
For Stock Feed Containing Cotton Seed Meal.
First use May 10, 1966.

SN 254,360. Pacific Vegetable Oil Corporation, San Francisco, Calif. Filed Sept. 13, 1966.

PAVFRY

For Hydrogenated Safflower Oil for Culinary Purposes.
First use June 17, 1966.

Class 47 — Wines

SN 227,526. H. Sichel Sons, Inc., New York, N.Y., assignee of Sichel & Fils Freres, Stuttenberg, Bordeaux, France. Filed Sept. 9, 1965.

RESERVE DU PATRON

Reserving all common law rights, applicant disclaims the exclusive right to the use of the word "Reserve," except as a part of its mark as shown.
For Wines.
First use Mar. 19, 1952; in commerce Mar. 19, 1952.

SN 233,816. The Parkdale Wines, Limited, Toronto, Ontario, Canada. Filed Dec. 2, 1965.

PARKDALE

Priority claimed under Sec. 44(d) on Canadian application filed July 5, 1965; Reg. No. 147,694, dated Oct. 28, 1966.
For Wines.

SN 241,066. Sam Jasper Winery, Manteca, Calif. Filed Mar. 15, 1966.

Tingle

For Wines.
First use Nov. 28, 1958.

Class 48 — Malt Beverages and Liquors

SN 237,052. Toyo Jozo Co., Ltd., Tagata-gun, Shizuoka-ken, Japan. Filed Jan. 21, 1966.

源氏

GENJI

The two Chinese characters are the phonetic equivalent of the term "Genji," which is the name of an ancient Japanese tribe.
For Japanese Sake.
First use June 1, 1948; in commerce June 1, 1948.

Class 49 — Distilled Alcoholic Liquors

SN 232,491. Lang Brothers Limited, Glasgow, Scotland. Filed Sept. 20, 1965.

TAM O'SHANTER

Owner of U.S. Reg. No. 308,126.
For Whisky.
First use in or about 1933; in commerce in or about 1933.

SN 237,811. J. T. S. Brown's Son Company, d.b.a. Brenton Club Distilling Company, Cincinnati, Ohio. Filed Feb. 2, 1966.

BRENTON CLUB

For Whiskey.
First use Jan. 10, 1966.

SN 240,215. Todhunter-Mitchell & Co., Ltd., Freeport, Grand Bahama. Filed Mar. 4, 1966.

BALALAIKA

For Vodka.
First use May 1, 1964; in commerce July 5, 1964.

SN 241,462. Heaven Hill Distilleries, Inc., Bardstown, Ky. Filed Mar. 21, 1966.

HEATHER HILL

For Bottled Whiskey.
First use Mar. 2, 1966.

SN 242,125. John Gross and Company, Baltimore, Md. Filed Mar. 29, 1966.

HEATHER CREAM

For Scotch Whisky.
First use Nov. 9, 1953.

SN 244,993. London & Company, Inc., Elizabeth, N.J. Filed May 5, 1966.

LONDON'S CLUB

Owner of Reg. Nos. 315,454, 752,614, and others.
For Gin, Whiskey, and Liqueur.
First use 1951.

SN 257,565. R. Stevenson, Taylor & Company Limited, Dumbarton, England. Filed Oct. 31, 1966.

GRIFFIN



For Whisky.
First use Mar. 14, 1966; in commerce Mar. 14, 1966.

Class 50—Merchandise Not Otherwise Classified

SN 211,930. Riegel Textile Corporation, New York, N.Y. Filed Feb. 12, 1965.



For Baby Layette Kits Composed of Diapers, Bibs, Wash Cloths, Safety Pins, and the Like.
First use Jan. 18, 1962.

SN 228,072. Pyramid Leather Goods Co., Inc., Long Island City, N.Y. Filed Sept. 17, 1965.

DOOR NOBBLES

For Display Signs for Door Knob Attachments.
First use Apr. 5, 1965.

SN 237,032. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company, Los Angeles, Calif. Filed Jan. 21, 1966.

REXCEL

For Plastic Containers for Merchandising Comestibles.
First use Jan. 7, 1966.

SN 241,422. Beckley-Cardy Company, Chicago, Ill. Filed Mar. 21, 1966.

"MOBILES"

For Manipulative Three-Dimensional Transparencies With Moving Parts, Used To Demonstrate Principles and Facts to Pupils by a Teacher in a Classroom Using an Overhead Projector or Similar Visual Device.
First use Apr. 30, 1965.

SN 241,984. Craft Master Corporation, Toledo, Ohio. Filed Mar. 28, 1966.

Brush Stroke

For Numbered Oil Painting Sets.
First use Mar. 17, 1966.

SN 250,510. The Pam Company, Portland, Oreg. Filed July 18, 1966.

PINSEAL

For Chair Mats for Use Under Office Chairs.
First use June 21, 1966.

SN 250,775. Harold B. Stade, d.b.a. "Stade's Signs," Park Ridge, N.J. Filed July 21, 1966.

FUNNYKINS

For Painted and Decorated Pumpkins, Gourds, and Fruits of the Cucurbitacae Family.
First use September 1961.

SN 251,020. Toledo Scale Corporation, Toledo, Ohio. Filed July 25, 1966.

INFORMA-PLATE

For Printing Plates.
First use June 6, 1966.

Class 51—Cosmetics and Toilet Preparations

SN 189,238. Carson Chemical Company, Savannah, Ga., by change of name from Morehouse Manufacturing Corporation, Savannah, Ga. Filed Mar. 20, 1964.

RED
MAGIC

Owner of Reg. Nos. 510,244, 743,120, and 741,715.
For Depilatory in Powder Form.
First use at least about Feb. 12, 1964; 1901 as to the word "Magic."

SN 228,271. Paula Payne Products Company, Charlotte, N.C. Filed Sept. 21, 1965.

GO CURVI

For Hair Preparations, i.e., Cold Waves, Styling Lotions, and Hair Conditioners.
First use May 27, 1965.

SN 228,943. Mary Agnes Schroeder, Oak Park, Ill. Filed Sept. 29, 1965.

LAUNCH!

For Moisturizing Lotion for Men.
First use Aug. 10, 1965.

SN 231,182. Moser Paper Company, Chicago, Ill. Filed Oct. 22, 1965.

PAVette

For Hand Lotion for Use by Undertakers.
First use Mar. 4, 1964.

SN 231,497. Shaklee Products, Hayward, Calif. Filed Oct. 23, 1965.

LoVue

For Facial Cream, Exfoliating Masque, Cleansing-Jell, Lotion Cleanser, Cream Cleanser, Liquid Refreshener, Beauty Oil, Skin Cleaning Lotion, Bath Oil, Deodorant Cream, Fluid Foundation Preparation, Fluid Rouge, Lipstick, Translucent Face Powder, Ester Oil Droplets, Perfume, Cologne, After Shave Lotion, Hand Care Lotion, Hair Spray, Hair Rinse, and Hair Wave Conditioner.
First use January 1962.

SN 231,732. Clairol Incorporated, New York, N.Y. Filed Oct. 28, 1965.

LE MANS

Owner of Reg. No. 784,939.
For Cologne for Men, Deodorant for Men, and Shaving Cream for Men.
First use July 2, 1965.

SN 236,253. Gold Seal Company, Bismarck, N. Dak. Filed Jan. 12, 1966.

SCENTOMANDER

For Spice Pomander.
First use Dec. 2, 1965.

SN 238,568. Riverton Laboratories Incorporated, d.b.a. Riverton Cosmetic Laboratories, Newark, N.J. Filed Feb. 10, 1966.

CHARLE K. MARI

The name "Charle K. Mari" is fanciful.
For Toilet Water, Cologne, and After Shave Lotions.
First use April 1963.

SN 240,774. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 11, 1966.

WHAT GOES ON

For After Shave Lotion, Hand Cream, Personal Deodorant, Cologne, and Hair Cream.
First use Feb. 11, 1966.

SN 241,748. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 24, 1966.

YOUNG MAN

For Shaving Cream.
First use Jan. 13, 1966.

SN 241,753. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 24, 1966.

RISE AND SHINE

Owner of Reg. Nos. 538,626, 735,040, and 786,531.
For Shaving Cream.
First use Jan. 10, 1966.

SN 241,754. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 24, 1966.

YOUNG MAN BY RISE

Owner of Reg. Nos. 538,626 and 786,531.
For Shaving Cream.
First use Jan. 13, 1966.

SN 241,756. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 24, 1966.

GOOD LOOKS

For Shaving Cream.
First use Jan. 13, 1966.

SN 254,088. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Sept. 9, 1966.



The drawing is lined for gold and green; however, no claim is made to color as a feature of the mark. The applicant disclaims apart from the mark as shown on the drawing, the descriptive words "Cleansing Milk."
For Skin Lotion.
First use Oct. 21, 1965; in commerce Oct. 21, 1965.

Class 52—Detergents and Soaps

SN 231,144. The Kroger Co., Cincinnati, Ohio. Filed Oct. 22, 1965.

HOME PRIDE

For All Purpose Cleaner.
First use at least as early as Aug. 30, 1965.

SN 238,381. Amole, Incorporated, Dayton, Ohio. Filed Feb. 9, 1966.

CROWN MAGIC

For Cleansing Products for the Hair—Namely, Castile Shampoo, Luxury Shampoo, and Creme Rinse.
First use Nov. 12, 1965.

SN 241,752. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 24, 1966.

SHOWER POWER

For Deodorant Bar Bath Soap.
First use Jan. 10, 1966.

SN 241,755. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 24, 1966.

SHOWER POWER

For Hair Shampoo Preparation.
First use Nov. 29, 1965.

SN 246,504. West Chemical Products, Inc., Long Island City, N.Y. Filed May 24, 1966.

WESLEAF

For Paper Impregnated With Soap, and Booklets of Soap Impregnated Paper.
First use May 2, 1966.

SN 247,006. Castoleum Corporation, d.b.a. The Castoleum Corporation, Yonkers, N.Y. Filed June 1, 1966.

ZIM

For Organic Solvent Cleaner—Namely, Pine Oil Containing Castor Oil Derived From Steam Distillation of Pine Tree Residues and Used as a Cleaning Solvent.
First use March 1941.

SN 247,305. Apex Distributing Co., Hopkins, Minn. Filed June 6, 1966.

Incredible

For Liquid Dishwashing Detergent.
First use Mar. 14, 1966.

SN 247,333. Colgate-Palmolive Company, New York, N.Y. Filed June 6, 1966.

ACTICLORIN

For Bleaching Agent Incorporated as an Ingredient in Scouring Cleanser.
First use May 10, 1966.

SN 247,745. Winfield Brooks Company, Inc., Woburn, Mass. Filed June 9, 1966.

SKY-RITE

For Cleaning and Degreasing Compositions, Particularly for Aircraft Exteriors and Interiors and Associated Equipment.
First use May 12, 1966.

SN 249,765. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed July 7, 1966.

2000 LINE

For Metal Cleaning Compositions.
First use Mar. 29, 1965.

SN 255,396. Masury-Young Company, Melrose Park, Ill. Filed Sept. 29, 1966.

HORIZON

For Dishwashing Detergent for Use in Households.
First use Sept. 1, 1966.

SERVICE MARKS

Class 100—Miscellaneous

SN 204,731. Ainslie Perrault, Tulsa, Okla. Filed Oct. 26, 1964.

CAMELOT INN

The word "Inn" is disclaimed apart from the trademark as a whole.
For Motels, Hotels, and Restaurant Services.
First use Aug. 4, 1964.

SN 207,794. Commissary Corporation, Wooster, Ohio. Filed Dec. 9, 1964.

MISTER S

For Carry Out Restaurant Services.
First use in or about June 1964.

SN 218,577. Thomas G. Ross, Richmond, Va. Filed May 11, 1965.

TOM ROSS' Charcoal Hearth

Applicant disclaims the words "Charcoal Hearth" apart from the mark as shown.
For Restaurant Services.
First use Dec. 15, 1961.

SN 218,578. Thomas G. Ross, Richmond, Va. Filed May 11, 1965.

TOM ROSS' Charcoal Hearth

Applicant disclaims the words "Charcoal Hearth" apart from the mark as shown.
For Restaurant Services.
First use Dec. 15, 1961.

SN 226,394. Travel Research International, Inc., New York, N.Y. Filed Aug. 24, 1965.

TRAVEL Research INTERNATIONAL, INC.

For Marketing Research Services in the Travel, Transportation, and Recreation Fields.
First use Feb. 5, 1964.

SN 229,649. Leonal P. Gardner, d.b.a. Herfy's Drive-Ins, Seattle, Wash. Filed Oct. 8, 1965.

Herfy's

For Restaurant Services.
First use Aug. 9, 1963.

SN 232,923. Loral Corporation, Scarsdale, N.Y. Filed Nov. 18, 1965.

DACAD

For Consulting Services in Organizing Technical Management, Data, Acquisition, Control, and Documentation Systems.
First use Sept. 1, 1965.

SN 232,924. Loral Corporation, Scarsdale, N.Y. Filed Nov. 18, 1965.

DACAT

For Consulting Services in Organizing Technical Management, Data, Acquisition, Control, and Documentation Systems.
First use Sept. 1, 1965.

SN 233,726. The National Model Railroad Association, Inc., Canton, Ohio. Filed Dec. 1, 1965.

NMRA

Owner of Reg. No. 430,104.
For Development of Model Railroad Technical Information, Designs, and Standards for Members of Applicant Association.
First use September 1937.

SN 235,146. WOFAC Corporation, Haddonfield, N.J. Filed Dec. 22, 1965.

VeFAC

For Business Consultant Services—Namely, Advising Firms as to the Most Efficient Work Methods To Be Used by Their Employees.
First use Nov. 1, 1965.

SN 240,175. Hotel Corporation of America, Boston, Mass. Filed Mar. 4, 1966.

ONE WORLD OF FINE HOTELS

No registration rights are claimed for the words "Fine Hotels" apart from the complete mark as shown.
For Hotel, Motor Hotel, Restaurant, and Bar and Related Services.
First use Nov. 16, 1965.

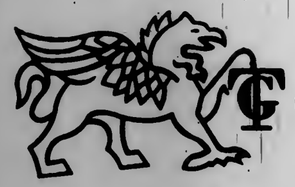
SN 254,168. Hyatt Corporation of America, Burlingame, Calif. Filed Sept. 9, 1966.



The word "Lodges" is disclaimed apart from the mark as shown.
For Motel Services.
First use January 1961.

Class 101 — Advertising and Business

SN 202,367. Tyler Griffin Company, Devon, Pa. Filed Sept. 22, 1964.



For Compiling and Preparing of Trade Information on Electronic and Vacuum Laboratory Products for Others.
First use Aug. 3, 1964.

SN 202,922. First Financial Advertising Group, Brookline, Mass. Filed Sept. 29, 1964.

AD-SERV-ELOPE

For Mail Advertising Services for Banks.
First use Aug. 1, 1964.

SN 218,029. Marshall Riconosciuto, d.b.a. United Drug Stores, Tacoma, Wash. Filed May 4, 1965.

UNITED DRUG STORES

For Retail Drug Store Services.
First use in or about April 1962.

SN 227,535. F. W. Woolworth Co., New York, N.Y. Filed Sept. 9, 1965.

WORTH MART

For Discount Store Services.
First use Mar. 4, 1965.

SN 228,641. Computerized Automotive Reporting Service, Inc., Jacksonville, Fla. Filed Sept. 27, 1965.

CARS

For Providing Daily Operating Control Reports, Management Reports, Accounting Reports, Parts Inventory Control Reports, for Automobile Dealers and Suppliers of Automobile Parts.
First use Sept. 1, 1965.

SN 229,347. HMH Publishing Co., Inc., Chicago, Ill. Filed Oct. 5, 1965.

PMOC

For Services for the Sales Promotion of Goods of Others Through the Medium of Advertising and Promotion in Publications and at the Point of Sale.
First use Dec. 16, 1964.

SN 232,478. Charlotte B. Reid, d.b.a. Shotsi Reid and Temporarily Yours, Los Angeles, Calif. Filed Nov. 10, 1965.

TEMPORARILY YOURS

For Furnishing of Employees on a Contract Basis to Persons or Places of Business Requiring Part-Time or Temporary Help, Including Stenographers, Typists, Office and Factory Workers, and Others.
First use July 19, 1965.

SN 234,990. Audiac, Inc., d.b.a. Audio Instruments Associates Co., Fair Lawn, N.J. Filed Dec. 21, 1965.



For Making Recordings of Wedding Ceremonies, and the Like.
First use Aug. 18, 1965.

SN 235,176. Extracorporeal and Medical Specialties Company, Inc., Medford, N.J. Filed Dec. 23, 1965.



Applicant disclaims the term "Extracorporeal" separate and apart from the mark as shown.
For Distribution Services of Medical and Surgical Appliances and Equipment of Others.
First use Jan. 15, 1965.

SN 235,198. Kiefer-Stewart Company, Inc., d.b.a. Value Plus, Indianapolis, Ind. Filed Dec. 23, 1965.



For Retail Drug Store Services.
First use Nov. 11, 1964.

SN 235,200. Kiefer-Stewart Company, Inc., d.b.a. Value Plus, Indianapolis, Ind. Filed Dec. 23, 1965.

VALUE PLUS

For Retail Drug Store Services.
First use Nov. 11, 1964.

SN 236,710. Automatic Data Processing, Inc., Clifton, N.J. Filed Jan. 18, 1966.

AUTOPAY

For Preparation of Payroll Checks and Data and Tax Reports for Others.
First use on or about July 1, 1965.

SN 237,575. The E. F. MacDonald Company, Dayton, Ohio. Filed Jan. 28, 1966.



For Promotion of the Sale of Goods and Services of Others by Providing Sales Incentive Plans and Advertising Copy and Layout Service.
First use Oct. 4, 1965.

Class 102 — Insurance and Financial

SN 207,027. Diebold, Incorporated, Canton, Ohio. Filed Nov. 27, 1964.

DIEBOLD VUE-MATIC

Owner of Reg. Nos. 404,085, 775,755, and others.
For Constructing, Installing, and Servicing Equipment for Conducting Banking Services of All Descriptions by Oral, Television, and Conveyor Communication Between a Customer Station Located Remote From a Bank Building and a Teller Station Located in the Bank Building.
First use Oct. 18, 1964.

SN 215,330. Citizens Insurance Agency, Sioux City, Iowa. Filed Mar. 30, 1965.

BILLFIGHTING

For Personal Loan Services.
First use Feb. 15, 1965.

SN 218,962. California Pharmaceutical Services, Inc., Los Angeles, Calif. Filed May 17, 1965.



For Operating a Payment Plan for Pharmaceutical Fees by Collecting Prepaid Pharmaceutical Fees From Purchasers and Paying Pharmaceutical Fees to Pharmacists.
First use Sept. 27, 1964.

SN 232,787. E. J. Korvette, Inc., New York, N.Y. Filed Nov. 16, 1965.



Applicant disclaims the words "Use Your Charge Plate" apart from the mark as shown.
For Performing a Charge Account Service—Namely, Extending Credit to Customers of Applicant's Department Stores.
First use July 15, 1965.

SN 236,486. Household Finance Corporation, Chicago, Ill. Filed Jan. 14, 1966.



For Complete Consumer Credit Service, Including Direct Cash Loans Repayable in Installments and the Purchase of Time Sales Installment Paper From Retail Dealers.
First use January 1947.

SN 236,487. Household Finance Corporation, Chicago, Ill. Filed Jan. 14, 1966.

HFC

For Complete Consumer Credit Service, Including Direct Cash Loans Repayable in Installments and the Purchase of Time Sales Installment Paper From Retail Dealers.
First use January 1947.

SN 238,657. National Association of Real Estate Boards, Chicago, Ill. Filed Feb. 11, 1966. COLLECTIVE MARK.



Applicant disclaims all the wording except the word "Realtors" apart from the mark as shown. Owner of Reg. Nos. 504,859, 519,790, and others.
For Indicating the Services Rendered by Members of Applicant and Membership in Applicant.
First use on or about Oct. 11, 1965.

Class 103 — Construction and Repair

SN 198,672. Shepherd Machinery Co., City of Industry, Calif. Filed July 28, 1964.



Applicant disclaims the words "Off-Hours Service" apart from the mark as shown.
For Machinery Repair Services.
First use Apr. 1, 1964.

SN 214,288. Royce's Mobile TV Service, Inc., Washington, D.C. Filed Mar. 16, 1965.

TV SHOP ON WHEELS

For the purpose of this application only and without waiver of common law rights, applicant makes no claim to the terms "TV" and "Shop on Wheels," apart from the mark as shown.
For Television Repair Services.
First use January 1950.

SN 229,257. Kerr-McGee Corporation, Oklahoma City, Okla., by change of name from Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. Filed Oct. 4, 1965.

KM

Owner of Reg. Nos. 738,028 and 743,576.
For Drilling of Bore Holes for Others.
First use Apr. 5, 1965.

SN 229,258. Kerr-McGee Corporation, Oklahoma City, Okla., by change of name from Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. Filed Oct. 4, 1965.

KM KERR-McGEE

The drawing is lined for the colors blue and red. Owner of Reg. Nos. 736,562, 749,921, and 790,486.
For Gasoline Station Services.
First use Aug. 1, 1965.

SN 232,686. Emery Industries, Inc., Cincinnati, Ohio. Filed Nov. 15, 1965.

Sanitone

Certified Master Drycleaner

The words "Certified Master Drycleaner" are disclaimed apart from the mark as shown, but without prejudice to common law rights therein. Owner of Reg. Nos. 301,342, 658,353, and others.
For Drycleaning Services.
First use July 27, 1965.

SN 234,127. Lawn-A-Mat Chemical and Equipment Corp., Mineola, N.Y. Filed Dec. 7, 1965.

LAWN-A-MAT

For Gardening Services Including the Feeding, Treatment, and Care of Soil To Enhance the Growth of Grass.
First use May 1961.

Class 104 — Communication

SN 241,593. William F. Huffman Radio, Inc., Wisconsin Rapids, Wis. Filed Mar. 22, 1966.



For Radio Broadcasting Service.
First use in or about October 1960.

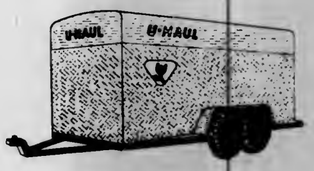
Class 105 — Transportation and Storage

SN 208,408. T.I.M.E. Freight, Inc., Lubbock, Tex. Filed Dec. 17, 1964.

T.I.M.E. FREIGHT, INC.

The drawing is lined for red.
For Transportation of General Commodities by Motor Vehicles and the Arrangement of Transportation for General Commodities by Motor Carrier, Rail Carrier, and/or Air Carrier.
First use Aug. 24, 1960; November 1945 in a different form.

SN 208,429. Arcoa, Inc., Portland, Oreg. Filed Dec. 18, 1964.



Applicant disclaims any exclusive rights, apart from the mark as shown, to the representation of a cargo trailer and its chassis. The drawing is lined for the colors silver and orange. Owner of Reg. Nos. 746,034, 786,156, and 795,733.
For Rental of Automobile Freight Trailer.
First use Oct. 15, 1945.

SN 231,540. Columbia Tours, Inc., New York, N.Y. Filed Oct. 24, 1965.

MEDITERRANEAN HOLIDAY

No claim is made to the word "Mediterranean" apart from the mark as shown.
For Travel Agency Services.
First use 1956.

Class 106 — Material Treatment

SN 227,199. Windsor Plastics, Inc., Evansville, Ind. Filed Sept. 3, 1965.

WINDSOR

For Injection Molding and Finishing of Decorative and/or Functional Plastics in Accordance to Specifications for Others.
First use June 1964.

Class 107 — Education and Entertainment

SN 237,586. Outrigger Canoe Club, Honolulu, Hawaii. Filed Jan. 28, 1966.

Outrigger Canoe Club

For Social, Entertainment, Athletic and Sporting Services Performed and Provided by the Applicant for Its Members, Including the Maintenance of Beach and Clubhouse, Restaurant, Bar, Locker Room and Bathing Facilities, and Providing Equipment and Facilities for Use in Various Sports and Avocations, Such as Swimming, Surfboarding, Volley Ball, and Canoeing.
First use May 28, 1941.

SN 239,653. The Outcasts, San Antonio, Tex. Filed Feb. 25, 1966.

THE OUTCASTS

For Musical Entertainment Services Rendered by a Band.
First use March 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 215,944. Church of the United Hebrew-Christian Brotherhood, Boston, Mass. Filed Apr. 7, 1965.



Applicant disclaims the notation "Incorporated 1946 Massachusetts."
For Indicating Membership in the Applicant.
First use at least as early as Jan. 29, 1946.

SN 223,349. The Republican Party of Iowa, Des Moines, Iowa. Filed July 14, 1965.



For Indicating Membership.
First use June 18, 1965.

SN 239,629. Impresario Cultural Society, Lathrup Village, Mich. Filed Feb. 25, 1966.



For Indicating Membership in Applicant.
First use on or about Feb. 2, 1966.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

822,599. BESLON. Toho Rayon Company Limited. MULTIPLE CLASS (Classes 1, 32, 39, 42, and 43). SN 184,187. Pub. 8–9–66. Filed 1–7–64.

822,600. CELLEX. National Lead Company. SN 221,622. Pub. 3–15–66. Filed 6–21–65.

822,601. H AND REPRESENTATION OF WINGED GLOBE. Halliburton Company. MULTIPLE CLASS (Classes 1, 6, 12, 14, 16, 23, 26, 33, and 103). SN 222,796. Pub. 11–8–66. Filed 7–7–65.

822,602. ORCHIDGLADE. Jones & Scully, Inc. SN 227,152. Pub. 11–8–66. Filed 9–3–65.

822,603. LUTOFAN. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 237,644. Pub. 11–8–66. Filed 2–1–66.

822,604. FIESTA. Keeter Charcoal Company. SN 238,089. Pub. 8–23–66. Filed 2–4–66.

822,605. PROPIOFAN. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 239,959. Pub. 11–8–66. Filed 3–2–66.

822,606. SULFIL. Fiberfil, Inc. SN 243,114. Pub. 11–8–66. Filed 4–11–66.

822,607. ARMITE. Spaulding Fibre Company, Inc. SN 243,723. Pub. 11–8–66. Filed 4–18–66.

822,608. EXTREL. Extrudo Film Corporation. SN 244,400. Pub. 11–8–66. Filed 4–27–66.

822,609. ALBAGEN. Georgia Kaolin Company. SN 244,905. Pub. 11–8–66. Filed 5–4–66.

822,610. ALBAGEL. Georgia Kaolin Company. SN 244,906. Pub. 11–8–66. Filed 5–4–66.

822,611. KWIKETS. Timberland Products Co., Inc. SN 245,030. Pub. 11–8–66. Filed 5–5–66.

822,612. HIBACHI-ETS. Timberland Products Co., Inc. SN 245,031. Pub. 11–8–66. Filed 5–5–66.

822,613. KORAD. Rohm and Haas Company. SN 247,255. Pub. 11–8–66. Filed 6–3–66.

Class 2 — Receptacles

822,614. COBEY. Harsco Corporation, assignee of Cobey Corporation. MULTIPLE CLASS (Classes 2, 19, and 23). SN 203,475. Pub. 11–8–66. Filed 10–7–64.

822,615. SK WAYNE. Symington Wayne Corporation. MULTIPLE CLASS (Classes 2 and 23). SN 216,023. Pub. 11–8–66. Filed 4–7–65.

822,616. PROPAK. Merck & Co., Inc. SN 218,885. Pub. 11–8–66. Filed 5–14–65.

822,617. VALA FLUTE. International Paper Company. SN 224,751. Pub. 11–8–66. Filed 8–2–65.

822,618. DURASTONE. Waite McClain, d.b.a. McClain Products Company. SN 224,870. Pub. 11–8–66. Filed 8–3–65.

822,619. EGG'N FOAM. Container Corporation of America. SN 225,114. Pub. 11–8–66. Filed 8–6–65.

822,620. TRAK-STAK. United Steel and Wire Company. SN 235,364. Pub. 11–8–66. Filed 12–27–65.

822,621. 5–12 PAK. Merck & Co., Inc. SN 235,415. Pub. 11–8–66. Filed 12–28–65.

822,622. ACE AND DESIGN. Weyerhaeuser Company. SN 236,032. Pub. 11–8–66. Filed 1–7–66.

822,623. MAC TAINER. J. C. MacElroy Co., Inc. SN 236,385. Pub. 11–8–66. Filed 1–13–66.

822,624. PFC AND DESIGN. The Plastic Forming Company, Inc. SN 236,509. Pub. 11–8–66. Filed 1–14–66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

822,625. SYN/TUF. Ralph F. Young, d.b.a. R. F. Young Company. SN 224,136. Pub. 11–8–66. Filed 7–23–65.

Class 4 — Abrasives and Polishing Materials

822,626. SATELLITE PRODUCTS AND DESIGN. George Warren, d.b.a. Warren Chemical Company. SN 201,984. Pub. 11–8–66. Filed 9–15–64.

822,627. PENNY SHOE SHINE. Turtle Wax, Inc. SN 230,310. Pub. 11–8–66. Filed 10–15–65.

822,628. TROPHY. Puritan Chemical Company. SN 230,426. Pub. 11–8–66. Filed 10–18–65.

Class 5 — Adhesives

822,629. MYSTIKLEER. The Borden Company, assignee of Mystik Tape, Inc. SN 231,192. Pub. 11–8–66. Filed 10–22–65.

822,630. RELI-O-BOND. W. J. Ruscoe Company. SN 231,236. Pub. 11–8–66. Filed 10–22–65.

822,631. ARMALON. E. I. du Pont de Nemours and Company. SN 252,149. Pub. 11–8–66. Filed 8–11–66.

Class 6 — Chemicals and Chemical Compositions

822,601. (See Class 1 for this trademark.)

822,632. SULFO-CHLORO-LEAD. The Elco Corporation. SN 188,737. Pub. 11–8–66. Filed 3–16–64.

822,633. TERPEX. The Glidden Company. SN 194,050. Pub. 8–9–66. Filed 5–22–64.

822,634. X5 AND DESIGN. Ulrich J. Fregeau, d.b.a. De Corporation. SN 219,421. Pub. 11–8–66. Filed 5–21–65.

822,635. GENFLOC. General Mills, Inc. SN 222,359. Pub. 8–2–66. Filed 6–30–65.

822,636. DISTAL. Archer-Daniels-Midland Company. SN 227,990. Pub. 11–8–66. Filed 9–17–65.

822,637. COSMOL. Archer-Daniels-Midland Company. SN 228,110. Pub. 11–8–66. Filed 9–20–65.

822,638. PAN-AID. Fabcon Incorporated. SN 231,084. Pub. 11–8–66. Filed 10–22–65.

822,639. FABCON. Fabcon Incorporated. SN 231,085. Pub. 11–8–66. Filed 10–22–65.

822,640. TIRE-TRU. Leon Hart Texas Enterprises, Incorporated. SN 232,834. Pub. 11–8–66. Filed 11–17–65.

822,641. STEROCOLL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 237,645. Pub. 11–8–66. Filed 2–1–66.

822,642. OPTAMINE. Cargill, Incorporated. SN 238,048. Pub. 11–8–66. Filed 2–4–66.

822,643. 1200 SL. The Harshaw Chemical Company. SN 238,083. Pub. 11–8–66. Filed 2–4–66.

822,644. FLASH. Ranco Industrial Products Corporation. SN 238,668. Pub. 9–20–66. Filed 2–11–66.

822,645. LATEKOLL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 239,958. Pub. 11–8–66. Filed 3–2–66.

822,646. DR. MERRICK'S. Westchester Veterinary Products, Inc. SN 241,292. Pub. 11–8–66. Filed 3–17–66.

822,647. CYANASET. American Cyanamid Company. SN 243,943. Pub. 11–8–66. Filed 4–21–66.

Class 7 — Cordage

822,648. LUSTRE-STRIPE. Norcross, Inc. SN 231,193. Pub. 11–8–66. Filed 10–22–65.

822,649. TUF-FLEX. Armco Steel Corporation. SN 241,731. Pub. 11–8–66. Filed 3–24–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

822,650. KELVIN'S. Circle Import-Export Company. MULTIPLE CLASS (Classes 8, 21, 23, 30, 33, and 50). SN 210,093. Pub. 11–8–66. Filed 1–18–65.

Class 10 — Fertilizers

822,651. "TINY GRAINS THAT HOLD THE RAINS." Micro-Lite, Inc. SN 227,313. Pub. 11–8–66. Filed 9–7–65.

822,652. MICRO-MIN. Anvil Mineral Products Corporation. SN 234,104. Pub. 11–8–66. Filed 12–7–65.

822,653. CASCADE. Boise Cascade Corporation. SN 239,372. Pub. 11–8–66. Filed 2–23–66.

Class 11 — Inks and Inking Materials

822,654. MORR KLEEN. Sun Chemical Corporation. SN 233,646. Pub. 11–8–66. Filed 11–30–65.

Class 12 — Construction Materials

822,601. (See Class 1 for this trademark.)

822,655. QUADECK AND DESIGN. Prestressed Concrete of Colorado, Inc. SN 176,230. Pub. 9–15–64. Filed 9–3–63.

822,656. BERLIN AND DESIGN. Berlin Seating, Inc. SN 205,243. Pub. 7–26–66. Filed 11–2–64.

822,657. TRI-LAM. Carolite, Inc. SN 208,338. Pub. 2–22–66. Filed 12–17–64.

822,658. WALDORF. The Wickes Corporation. SN 208,419. Pub. 3–22–66. Filed 12–17–64.

822,659. BANTAM CHEF. James A. Brown, Jr., d.b.a. Piedmont Equipment Company. SN 218,736. Pub. 11–8–66. Filed 5–13–65.

822,660. CARASTONE. Gemstone Corporation. MULTIPLE CLASS (Classes 12 and 50). SN 220,988. Pub. 11–8–66. Filed 6–14–65.

822,661. LOCKWOOD. Lockheed Aircraft Corporation. SN 232,467. Pub. 11–8–66. Filed 11–10–65.

822,662. TWINSIDE FENCE AND DESIGN. Potlatch Forests, Inc. SN 238,288. Pub. 11–8–66. Filed 2–7–66.

822,663. VANACITE. Vancouver Plywood Co. SN 238,372. Pub. 11–8–66. Filed 2–8–66.

822,664. VANPLY. Vancouver Plywood Co. SN 238,373. Pub. 11–8–66. Filed 2–8–66.

822,665. K AND DESIGN. Robert H. Kuecker, d.b.a. Kuecker Enterprises. SN 240,631. Pub. 11–8–66. Filed 3–10–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

822,666. GENERAL. General Valve Company, Inc. SN 208,565. Pub. 3–1–66. Filed 12–21–64.

822,667. DOLPHIN. Lipper and Mann Inc. MULTIPLE CLASS (Classes 13, 23, and 30). SN 218,360. Pub. 11–8–66. Filed 5–10–65.

822,668. OTIS. Otis Engineering Corporation. SN 232,138. Pub. 11–8–66. Filed 11–4–65.

822,669. VERNADIZED. Vernay Laboratories, Inc. SN 232,253. Pub. 11–8–66. Filed 11–5–65.

822,670. FASTTAP. Continental Industries, Inc. SN 234,390. Pub. 11–8–66. Filed 12–13–65.

822,671. FALCON PRODUCTS AND DESIGN. Falcon Line Products Corp. SN 235,967. Pub. 11–8–66. Filed 1–7–66.

822,672. CHEMPRO. Sealol, Inc. SN 237,253. Pub. 11–8–66. Filed 1–25–66.

822,673. LINLOK. Teledyne Inc. SN 237,460. Pub. 11–8–66. Filed 1–27–66.

822,674. U-HAMM'R-IN. Holmes Hardware & Sales Co. SN 239,909. Pub. 11–8–66. Filed 3–1–66.

822,675. P. The Bishop and Babcock Corporation. SN 242,792. Pub. 11–8–66. Filed 4–6–66.

822,676. 707XL. The Lunkenheimer Company. SN 245,210. Pub. 11–8–66. Filed 5–9–66.

822,677. SIMET. National Welding Equipment Co. SN 245,414. Pub. 11–8–66. Filed 5–11–66.

822,678. P AND DESIGN. Plastiline, Inc. SN 245,504. Pub. 11–8–66. Filed 5–12–66.

822,679. PLASTILINE. Plastiline, Inc. SN 245,505. Pub. 11–8–66. Filed 5–12–66.

822,680. SPIRA FLO AND DESIGN. Buell Engineering Company, Inc. SN 245,561. Pub. 11–8–66. Filed 5–13–66.

822,681. PERMA-FLO AND DESIGN. Buell Engineering Company, Inc. SN 245,562. Pub. 11–8–66. Filed 5–13–66.

822,682. MARINIUM AND DESIGN. The North and Judd Manufacturing Company. SN 245,606. Pub. 11–8–66. Filed 5–13–66.

822,683. THE SOAP RAFT. Hyman Eventoff, d.b.a. Bathbee Company. SN 248,605. Pub. 11–8–66. Filed 6–21–66.

822,684. SPHINX. Bliss & Laughlin Industries Incorporated. SN 253,101. Pub. 11–8–66. Filed 8–25–66.

Class 14 — Metals and Metal Castings and Forgings

822,601. (See Class 1 for this trademark.)

822,685. UNI-FINISH ETC. AND DESIGN. Lukens Steel Company. SN 209,518. Pub. 10–12–65. Filed 1–7–65.

822,686. BAR-COMP. Associated Spring Corporation. SN 235,383. Pub. 11–8–66. Filed 12–28–65.

822,687. TDS. The Timken Roller Bearing Company. SN 235,599. Pub. 11–8–66. Filed 12–30–65.

Class 15 — Oils and Greases

822,688. 6 IN 1. Bel-Ray Company, Inc. SN 221,986. Pub. 7–12–66. Filed 6–25–65.

Class 16 — Protective and Decorative Coatings

822,601. (See Class 1 for this trademark.)

822,689. JEM GUARD. Ajem Laboratories, Inc. SN 153,854. Pub. 1–18–66. Filed 9–25–62.

822,690. UNIPOXY. Kristal Kraft, Inc. SN 179,800. Pub. 2-9-65. Filed 10-25-63.

822,691. MISCELLANEOUS DESIGN. Dainhonbungu Co., Ltd. MULTIPLE CLASS (Classes 16 and 37). SN 223,388. Pub. 11-8-66. Filed 7-15-65.

822,692. ROYCO. Royaltone, Inc., d.b.a. Royal Paint & Varnish Co. SN 223,910. Pub. 3-15-66. Filed 7-21-65.

Class 17—Tobacco Products

822,693. STALLION. Wally Frank, Ltd. SN 232,123. Pub. 11-8-66. Filed 11-4-65.

822,694. DERBY. Universal Cigar Corporation. SN 252,991. Pub. 11-8-66. Filed 8-24-66.

Class 18—Medicines and Pharmaceutical Preparations

822,695. PREVENTIVE B8. Brands, Inc. SN 201,363. Pub. 8-16-66. Filed 9-8-64.

822,696. LINNAY. Paul Wortzel, d.b.a. Linnay Pharmaceuticals. SN 218,237. Pub. 11-8-66. Filed 5-6-65.

822,697. NITRONIC POWDER. Dawe's Laboratories, Inc. SN 221,583. Pub. 11-8-66. Filed 6-21-65.

822,698. FEDCODROP. Dr. Gunther Fiegenbaum. SN 222,017. Pub. 6-21-66. Filed 6-25-65.

822,699. WESTERN TRAIL. Western Farmers Association. MULTIPLE CLASS (Classes 18 and 46). SN 227,374. Pub. 11-8-66. Filed 9-7-65.

822,700. SUPERIOR. Moser Paper Company. SN 231,175. Pub. 11-8-66. Filed 10-22-65.

822,701. FRST AND DESIGN. Frst Company. SN 231,415. Pub. 11-8-66. Filed 10-23-65.

822,702. OVERLAY. Syntex Laboratories, Inc. SN 232,872. Pub. 11-8-66. Filed 11-17-65.

822,703. CHEWPIRIN. Foods Plus, Inc. SN 237,324. Pub. 8-23-66. Filed 1-26-66.

822,704. FORMULA 5. Chas. Pfizer & Co., Inc. SN 237,377. Pub. 11-8-66. Filed 1-26-66.

822,705. ENZOTIC. Barnes-Hind Laboratories. SN 238,153. Pub. 7-5-66. Filed 2-7-66.

822,706. TIME ZONE AND DESIGN. Progressive Drugs of America, Inc. SN 238,666. Pub. 11-8-66. Filed S.R. 2-11-66; Am. P.R. 6-24-66.

822,707. VANOXIDE. Dermik Pharmacal Co., Inc. SN 241,764. Pub. 8-23-66. Filed 3-24-66.

822,708. ANATOX. Billy N. Bellis, d.b.a. Anatox Co. SN 242,553. Pub. 11-8-66. Filed 4-4-66.

822,709. KORN GONE. E. C. De Witt & Co., Inc. SN 242,884. Pub. 11-8-66. Filed 4-7-66.

822,710. TUSSA-PRIME. Veterinary Supply Depot Incorporated. SN 243,364. Pub. 11-8-66. Filed 4-13-66.

822,711. DIPYRONIN. Johann A. Wulfing. SN 243,369. Pub. 11-8-66. Filed 4-13-66.

822,712. STERI-MED. Sterimed, Inc. SN 243,490. Pub. 11-8-66. Filed 4-14-66.

822,713. WRL AND DESIGN. Western Research Laboratories, Inc. SN 243,609. Pub. 11-8-66. Filed 4-15-66.

822,714. PIPTALAKE. Colgate-Palmolive Company. SN 243,635. Pub. 11-8-66. Filed 4-18-66.

822,715. QUIET WORLD. American Home Products Corporation. SN 243,758. Pub. 11-8-66. Filed 4-19-66.

822,716. MEDSIBANE. American Home Products Corporation. SN 243,760. Pub. 11-8-66. Filed 4-19-66.

822,717. ALFANAL. Alfanal Laboratories, Inc. SN 245,662. Pub. 11-8-66. Filed 5-16-66.

822,718. NATRICO. The Drug Products Co., Inc. SN 246,055. Pub. 11-8-66. Filed 5-19-66.

822,719. LOOK AHEAD. Bristol-Myers Company. SN 246,644. Pub. 11-8-66. Filed 5-26-66.

822,720. WIPACID. Bristol-Myers Company. SN 246,646. Pub. 11-8-66. Filed 5-26-66.

822,721. INVESTIN. Bristol-Myers Company. SN 246,650. Pub. 11-8-66. Filed 5-26-66.

822,722. ANEW. American Home Products Corporation. SN 252,057. Pub. 11-8-66. Filed 8-10-66.

822,723. AFTER-ACTION. Standard Laboratories, Inc. SN 252,234. Pub. 11-8-66. Filed 8-12-66.

822,724. SULTRIN. Ortho Pharmaceutical Corporation. SN 252,990. Pub. 11-8-66. Filed 8-24-66.

822,725. DRIPTIN. American Home Products Corporation. SN 253,089. Pub. 11-8-66. Filed 8-25-66.

822,726. RONDOSTATIN. Chas. Pfizer & Co., Inc. SN 253,098. Pub. 11-8-66. Filed 8-25-66.

822,727. ANESTADE. American Home Products Corporation. SN 253,586. Pub. 11-8-66. Filed 9-1-66.

822,728. KENASORB. E. R. Squibb & Sons, Inc. SN 253,588. Pub. 11-8-66. Filed 9-1-66.

Class 19—Vehicles

822,614. (See Class 2 for this trademark.)

822,729. HI-LO AND DESIGN. The Snyder Trailer Company. SN 189,819. Pub. 4-13-65. Filed 3-27-64.

822,730. MUSTANG. Cavalier Aircraft Corporation. SN 209,491. Pub. 6-7-66. Filed 1-7-65.

822,731. BERTRAM AND DESIGN. Nautec Corporation. SN 222,604. Pub. 11-8-66. Filed 7-2-65.

822,732. ROLL-ON AND DESIGN. Roll-On Mfg. Corp. SN 228,751. Pub. 11-8-66. Filed 9-27-65.

822,733. RAMCAR. Jeffrey Galion Manufacturing Company. SN 231,103. Pub. 11-8-66. Filed 10-22-65.

822,734. YAK YAK. Fleet Products Company, Inc. SN 232,989. Pub. 11-8-66. Filed 11-19-65.

822,735. EATON AND DESIGN. Eaton Yale & Towne Inc. MULTIPLE CLASS (Classes 19, 23, and 34). SN 236,245. Pub. 11-8-66. Filed 1-12-66.

822,736. DUNPHY. James J. Delaney, d.b.a. Delaney's Surplus Sales. SN 247,297. Pub. 11-8-66. Filed 6-6-66.

Class 21—Electrical Apparatus, Machines, and Supplies

822,650. (See Class 8 for this trademark.)

822,737. ECHOCHORD. Werner Pinternagel, trading as Dynacord, assignee of Eberdt Company. SN 158,691. Pub. 6-16-64. Filed 12-7-62.

822,738. TIMEMARK 118. Communication Papers Inc. SN 171,233. Pub. 11-8-66. Filed 6-18-63.

822,739. ELECTRO-SCHEMATIC FLICKBOARD. Desmond P. Corcoran. SN 203,379. Pub. 11-8-66. Filed 10-6-64.

822,740. ANDERLITE. Anderson Electric Corporation. SN 209,226. Pub. 11-8-66. Filed 1-4-65.

822,741. JUNKER AND DESIGN. Otto Junker. MULTIPLE CLASS (Classes 21, 23, and 34). SN 209,789. Pub. 11-8-66. Filed 1-12-65.

822,742. RELI-ALOK. Methode Electronics, Inc. SN 219,351. Pub. 11-8-66. Filed 5-20-65.

822,743. LIBRACOAT. General Precision, Inc. SN 222,361. Pub. 11-8-66. Filed 6-30-65.

822,744. "STAR-FIRE." Lafayette Radio Electronics Corporation. SN 224,314. Pub. 2-1-66. Filed 7-27-65.

822,745. BB BURR-BROWN RESEARCH CORPORATION. Burr-Brown Research Corporation. SN 227,553. Pub. 11-8-66. Filed 9-10-65.

822,746. DS. Digital Systems, Inc. SN 228,444. Pub. 11-8-66. Filed 9-23-65.

822,747. MICRO-V. Cole-Parmer Instrument & Equipment Co. SN 228,640. Pub. 11-8-66. Filed 9-27-65.

822,748. ANA-LOCK. RCK Inc. SN 229,025. Pub. 11-8-66. Filed 9-30-65.

822,749. EDUCATOR. PM & E. Electronics, Inc. SN 229,674. Pub. 11-8-66. Filed 10-8-65.

822,750. LRE AND DESIGN. Lafayette Radio Electronics Corporation. SN 229,824. Pub. 7-5-66. Filed 10-11-65.

822,751. HI-FIX. Decca Limited. MULTIPLE CLASS (Classes 21 and 26). SN 230,111. Pub. 11-8-66. Filed 10-14-65.

822,752. HOMEGARD. George N. Moffitt. SN 236,401. Pub. 6-14-66. Filed 1-13-66.

822,753. PERMA-GUARD AND DESIGN. S. Parker Hardware Mfg. Corp. SN 251,362. Pub. 11-8-66. Filed 8-1-66.

822,754. E AND DESIGN. Empire Tube Sales, Inc. SN 251,860. Pub. 11-8-66. Filed 8-8-66.

Class 22—Games, Toys, and Sporting Goods

822,755. BEWITCH. Selchow & Righter Company. SN 195,556. Pub. 2-23-65. Filed 6-12-64.

822,756. MISCELLANEOUS DESIGN. Head Ski Company, Inc. SN 197,121. Pub. 9-20-66. Filed 7-6-64.

822,757. LUCKY MATCH. Donald E. Du Bois. SN 197,479. Pub. 11-8-66. Filed 7-9-64.

822,758. VOODOO. Kohner Bros., Inc. SN 213,145. Pub. 6-14-66. Filed 3-2-65.

822,759. CONSTRUCTIONEER. Playskool Manufacturing Company. SN 217,136. Pub. 11-8-66. Filed 4-22-65.

822,760. TYROLIA. Wiener Metallwarenfabrik Smolka & Co. SN 218,512. Pub. 11-8-66. Filed 5-10-65.

822,761. TUPPER TOYMATES. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 218,697. Pub. 3-15-66. Filed 5-12-65.

822,762. TRU-LINE AND DESIGN. Pearce-Simpson, Inc. SN 219,354. Pub. 11-8-66. Filed 5-20-65.

822,763. GLAD-HOOK. Chartered Enterprises, d.b.a. Superior Sports Specialties. SN 225,729. Pub. 11-8-66. Filed 8-16-65.

822,764. AGENT ZERO-W. Mattel, Inc. SN 228,727. Pub. 8-2-66. Filed 9-27-65.

822,765. MISCELLANEOUS DESIGN. Karl Riha. SN 228,750. Pub. 9-27-66. Filed 9-27-65.

822,766. F-80. Lavoy Winton. SN 231,960. Pub. 11-8-66. Filed 11-1-65.

822,767. VANGARD. D-P Company, d.b.a. Dental Perfection Company. SN 232,293. Pub. 8-23-66. Filed 11-8-65.

822,768. DYN-O-CHARGER. Model Products Corporation. SN 232,335. Pub. 11-8-66. Filed 11-8-65.

822,769. THERMOS. King-Seeley Thermos Co. SN 234,039. Pub. 11-8-66. Filed 12-6-65.

822,770. THINK A DOT. E.S.R., Inc. SN 234,185. Pub. 11-8-66. Filed 12-8-65.

822,771. FISH-N-MATE. Gerald Bissell. SN 234,504. Pub. 11-8-66. Filed 12-13-65.

822,772. POCKET POKO AND CARD DESIGN. Eva H. Jacobs. SN 234,904. Pub. 11-8-66. Filed 12-20-65.

822,773. PLASTI-SINKER. Frank J. Yaussi, d.b.a. Laporte Mfg. and Distr. Company. SN 236,944. Pub. 11-8-66. Filed 1-20-66.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

822,601. (See Class 1 for this trademark.)

822,614. (See Class 2 for this trademark.)

822,615. (See Class 2 for this trademark.)

822,650. (See Class 8 for this trademark.)

822,667. (See Class 13 for this trademark.)

822,741. (See Class 21 for this trademark.)

822,735. (See Class 19 for this trademark.)

822,774. TURB-A-MAGIC. Automotive Associates, Inc. SN 181,742. Pub. 5-26-64. Filed 11-22-63.

822,775. ROLITON. Farmers Tool and Supply Corporation. SN 191,270. Pub. 10-20-64. Filed 4-16-64.

822,776. HEANIUM AND DESIGN. Heany Industrial Ceramic Corporation. SN 211,813. Pub. 11-8-66. Filed 2-11-65.

822,777. CE AND DESIGN. Controlled Environment Equipment Corporation. MULTIPLE CLASS (Classes 23, 26, and 50). SN 213,416. Pub. 11-8-66. Filed 3-5-65.

822,778. "MIST"-IFIER. Bruce MacNaughton. SN 213,884. Pub. 5-17-66. Filed 3-11-65.

822,779. MOHR. Mohr Lino-Saw Company. SN 223,143. Pub. 11-8-66. Filed 7-12-65.

822,780. DISC TEEN AND DESIGN. The Seeburg Corporation. SN 224,556. Pub. 11-8-66. Filed 7-29-65.

822,781. BOGIE. Nelson Harvey Bogie. SN 225,103. Pub. 11-8-66. Filed 8-6-65.

822,782. AQUADAG. La Spirotechnique. SN 225,226. Pub. 11-8-66. Filed 7-26-65.

822,783. SPIRODAG. La Spirotechnique. SN 225,228. Pub. 11-8-66. Filed 7-26-65.

822,784. ARROWHEAD (DESIGN). Oliver Corporation. SN 225,662. Pub. 11-8-66. Filed 8-13-65.

822,785. KWIK-TAPE. Kwor-To, Inc. SN 226,150. Pub. 10-11-66. Filed 8-20-65.

822,786. PRECISIONSPRING. Curtiss-Wright Corporation. SN 227,652. Pub. 11-8-66. Filed 9-13-65.

822,787. DYNAWHEEL. Applied Power Industries, Inc. SN 229,398. Pub. 11-8-66. Filed 10-6-65.

822,788. CAT. Caterpillar Tractor Co. MULTIPLE CLASS (Classes 23 and 34). SN 230,020. Pub. 11-8-66. Filed 10-13-65.

822,789. FAESSLER. Madison Industries, Inc. SN 232,220. Pub. 11-8-66. Filed 11-5-65.

822,790. CAT-A-PULLER AND DESIGN. Gatto Machinery Development Corp. SN 232,305. Pub. 11-8-66. Filed 11-8-65.

822,791. CHOP-KING. Gehl Bros. Manufacturing Company. SN 233,096. Pub. 11-8-66. Filed 11-22-65.

822,792. KOLMAN/ATHEY. Athey Products Corporation. SN 234,110. Pub. 11-8-66. Filed 12-7-65.

822,793. ZOOM-SPOUT. Norvey, Inc. SN 234,575. Pub. 11-8-66. Filed 12-14-65.

822,794. MOVATOR. Sandvikens Jernverks AB. SN 238,116. Pub. 11-8-66. Filed 2-4-66.

822,795. HI-LIFE. Vlier Engineering Corporation. SN 238,132. Pub. 11-8-66. Filed 2-4-66.

822,796. CREEP-OR-DRIVE. Allis-Chalmers Manufacturing Company. SN 238,147. Pub. 11-8-66. Filed 2-7-66.

822,797. BEACHMASTER. Allis-Chalmers Manufacturing Company. SN 238,148. Pub. 11-8-66. Filed 2-7-66.

822,798. 7 BY 7. Wilton Corporation. SN 238,324. Pub. 11-8-66. Filed 2-7-66.

822,799. COMVAC. Alvin W. Hughes, d.b.a. A. W. Hughes Co. SN 238,529. Pub. 11-8-66. Filed 2-10-66.

822,800. HURRICANE. Kenneth M. Last, d.b.a. Express Tool Company. SN 238,644. Pub. 11-8-66. Filed 2-11-66.

822,801. EXPRESS. Kenneth M. Last, d.b.a. Express Tool Company. SN 238,645. Pub. 11-8-66. Filed 2-11-66.

822,802. MEISTERGRAM. Meister-Brothers, Inc. MULTIPLE CLASS (Classes 23 and 43). SN 238,910. Pub. 11-8-66. Filed 2-16-66.

822,803. CHARGER. Brother International Corporation. SN 239,493. Pub. 11-8-66. Filed 2-24-66.

822,804. SCHOFIELD. R. H. Hood Company. SN 239,998. Pub. 11-8-66. Filed 3-2-66.

822,805. HOIST (DESIGN). Ratcliff Hoist Company, Inc. SN 240,652. Pub. 11-8-66. Filed 3-10-66.

822,806. MELROE BOBCAT AND DESIGN. Melroe Manufacturing Company. SN 243,464. Pub. 11-8-66. Filed 4-14-66.

822,807. CORN BLURR. Daffin Corporation. SN 244,085. Pub. 11-8-66. Filed 4-22-66.

822,808. ADJUSTO-PITCH. Portable Elevator Manufacturing Company. SN 244,352. Pub. 11-8-66. Filed 4-26-66.

822,809. PERM-LUBE. National Air Vibrator Company. SN 245,603. Pub. 11-8-66. Filed 5-13-66.

822,810. SCORPION. Dashé, Inc., d.b.a. Scorpion, Inc. SN 248,782. Pub. 11-8-66. Filed 6-23-66.

Class 26—Measuring and Scientific Appliances

822,601. (See Class 1 for this trademark.)

822,751. (See Class 21 for this trademark.)

822,777. (See Class 23 for this trademark.)

822,811. SCIENTIFICS AND DESIGN. Sigma Chemical Company, assignee of Peter G. Chaconas, d.b.a. Sigma Scientifics. SN 198,331. Pub. 5-25-65. Filed 7-22-64.

822,812. HUMIDITROL. Lab-Line Instruments, Inc. SN 200,448. Pub. 3-23-65. Filed 8-24-64.

822,813. POWERSTAR. The Powers Regulator Company. SN 210,351. Pub. 6-21-66. Filed 1-21-65.

822,814. AIRSONIC. Societe Anonyme Marcol. SN 215,281. Pub. 2-8-66. Filed 3-29-65.

822,815. RAYSCOPE. John L. Cassingham, d.b.a. Rayscope Company. SN 229,943. Pub. 11-8-66. Filed 10-12-65.

822,816. MARDI GRAS. General Electric Company. SN 230,816. Pub. 11-8-66. Filed 10-21-65.

822,817. BIOVUE. Denoyer-Geppert Company. MULTIPLE CLASS (Classes 26 and 38). SN 231,064. Pub. 11-8-66. Filed 10-22-65.

822,818. ENTERTAINER. Sawyer's, Inc. SN 232,600. Pub. 11-8-66. Filed 11-12-65.

822,819. AMEDA. Femco, Inc. SN 232,778. Pub. 11-8-66. Filed 11-16-65.

822,820. BEAM-TRON. Automation Devices, Inc. SN 232,810. Pub. 11-8-66. Filed 11-17-65.

822,821. INSTATHERM. Ace Glass Incorporated. SN 235,543. Pub. 11-8-66. Filed 12-30-65.

822,822. IDC. Hazleton Laboratories, Inc., d.b.a. Instrument Development Company. SN 236,255. Pub. 11-8-66. Filed 1-12-66.

822,823. POLYTRIP. National Distillers and Chemical Corporation. SN 237,372. Pub. 11-8-66. Filed 1-26-66.

822,824. EYE-SPY. Brainerd Mfg. Co. SN 239,713. Pub. 11-8-66. Filed 2-28-66.

822,825. EVENTGRAPH. Esterline Angus Instrument Company, Inc. SN 246,835. Pub. 11-8-66. Filed 5-31-66.

822,826. MAGNAVOX. The Magnavox Company. SN 248,720. Pub. 11-8-66. Filed 6-22-66.

Class 27—Horological Instruments

822,827. DESIGN. Mido G. Schaeren & Co., S.A. SN 225,514. Pub. 11-8-66. Filed 8-11-65.

822,828. GEOCHRON. Kilburg Geochron Corporation. SN 234,437. Pub. 11-8-66. Filed 12-13-65.

822,829. STATUS. Sheffield Watch Inc. SN 235,236. Pub. 11-8-66. Filed 12-23-65.

Class 28—Jewelry and Precious-Metal Ware

822,830. LORI. Lori Jewelers, Inc. SN 226,542. Pub. 11-8-66. Filed 8-26-65.

822,831. ROSE (DESIGN). Keith & Griffman, Inc. SN 234,756. Pub. 11-8-66. Filed 12-16-65.

822,832. RAPALLO. B. B. Greenberg Co. SN 249,759. Pub. 11-8-66. Filed 7-7-66.

822,833. MINIFRINS. Frank A. Kalantis. SN 252,318. Pub. 11-8-66. Filed 8-15-66.

Class 29—Brooms, Brushes, and Dusters

822,834. CECILIA. Cecilia Products Ltd. SN 232,525. Pub. 11-8-66. Filed 11-12-65.

822,835. PRIOR-DENT. Apag, Inc. SN 235,153. Pub. 11-8-66. Filed 12-23-65.

822,836. ARDYNE. Arsco Paint Rollers, Inc. SN 235,482. Pub. 11-8-66. Filed 12-29-65.

822,837. PERIDENTAL. John O. Butler Company. SN 252,159. Pub. 11-8-66. Filed 8-11-66.

Class 30—Crockery, Earthenware, and Porcelain

822,650. (See Class 8 for this trademark.)

822,667. (See Class 13 for this trademark.)

Class 31—Filters and Refrigerators

822,838. DYNACART. Dynalectron Corporation. SN 170,997. Pub. 11-8-66. Filed 6-14-63.

822,839. METERMASTER. Wayne I. Spies, d.b.a. Wisco Supply. SN 216,743. Pub. 11-8-66. Filed 4-16-65.

822,840. FLASH DEFROST. Sears, Roebuck and Co. SN 233,010. Pub. 11-8-66. Filed 11-19-65.

822,841. ICE BUTLERS AND DESIGN. Ice Butlers, Inc. SN 234,566. Pub. 11-8-66. Filed 12-14-65.

822,842. IKON. Seaway Associates, Inc. SN 235,431. Pub. 11-8-66. Filed 12-28-65.

822,843. HIDE-AWAY. Ebco Manufacturing Company. SN 241,132. Pub. 11-8-66. Filed 3-16-66.

822,844. SEA CHEST. General Thermetics, Inc. SN 241,249. Pub. 11-8-66. Filed 3-17-66.

822,845. WEEKENDER. General Thermetics, Inc. SN 241,250. Pub. 11-8-66. Filed 3-17-66.

822,846. TRIM-TO-SIZE. Research Products Corporation. SN 241,514. Pub. 11-8-66. Filed 3-21-66.

Class 32—Furniture and Upholstery

822,599. (See Class 1 for this trademark.)

822,847. TWIN-TEX. Premier Metal Products Company, Inc. SN 230,892. Pub. 11-8-66. Filed 10-21-65.

822,848. TERRYTOWN. Terrytown Importing & Manufacturing Corporation. MULTIPLE CLASS (Classes 32 and 34). SN 237,780. Pub. 11-8-66. Filed 2-2-66.

822,849. EVERFLUFF. Clark Foam Products Co., Inc. SN 242,331. Pub. 11-8-66. Filed 3-31-66.

822,850. PEDI-CRIB. Pedicraft, Inc. SN 252,622. Pub. 11-8-66. Filed 8-18-66.

Class 33—Glassware

822,601. (See Class 1 for this trademark.)

822,650. (See Class 8 for this trademark.)

Class 34—Heating, Lighting, and Ventilating Apparatus

822,741. (See Class 21 for this trademark.)

822,735. (See Class 19 for this trademark.)

822,788. (See Class 23 for this trademark.)

822,848. (See Class 32 for this trademark.)

822,851. PRIME. Karl J. Sidler. SN 211,108. Pub. 10-5-65. Filed 2-1-65.

822,852. PRIME ALLOY. Claude Michael, Inc. SN 215,246. Pub. 3-29-66. Filed 3-29-65.

822,853. SWECO AND DESIGN. Southwestern Engineering Co. SN 226,302. Pub. 11-8-66. Filed 8-23-65.

822,854. STRUCTO AND DESIGN. King-Seeley Thermos Co., d.b.a. Structo Division. SN 227,353. Pub. 11-8-66. Filed 9-7-65.

822,855. STRUCTO AND DESIGN OVAL. King-Seeley Thermos Co., d.b.a. Structo Division. SN 227,355. Pub. 11-8-66. Filed 9-7-65.

822,856. EVERFLO. Airstream, Inc. SN 230,220. Pub. 6-28-66. Filed 10-15-65.

822,857. CHANNEL-AIRE. Wehr Corporation. SN 233,212. Pub. 11-8-66. Filed 11-23-65.

822,858. YR. Young Radiator Company. SN 238,687. Pub 11-8-66. Filed 2-11-66.

822,859. AHRCO AND DESIGN. American Heat Reclaiming Corporation. SN 238,913. Pub. 11-8-66. Filed 2-16-66.

822,860. PROVINCIAL. The Tappan Company. SN 242,406. Pub. 11-8-66. Filed 3-31-66.

822,861. MECO. Kitchener B. Tassell, d.b.a. Marine Equipment Company. SN 242,517. Pub. 11-8-66. Filed 4-1-66.

822,862. FAN WAY AND DESIGN. Fan Way Corporation. SN 242,581. Pub. 11-8-66. Filed 4-4-66.

822,863. HOT NEWS. Tunlaw Corporation. SN 242,941. Pub. 11-8-66. Filed 4-7-66.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

822,864. VITRO-TFE. The Marlo Company, Inc. SN 224,632. Pub. 6-14-66. Filed 7-30-65.

822,865. REMINGTON SAFE TRACTION. Dunlop Tire and Rubber Corporation. SN 225,120. Pub. 11-8-66. Filed 8-6-65.

822,866. CROWN VINALAWN. The Goodyear Tire & Rubber Company. SN 229,800. Pub. 11-8-66. Filed 10-11-65.

822,867. POWER BELT. The Goodyear Tire & Rubber Company. SN 230,150. Pub. 11-8-66. Filed 10-14-65.

822,868. ESLINE. Abex Corporation, by change of name from American Brake Shoe Company. SN 230,752. Pub. 11-8-66. Filed 10-21-65.

822,869. ENTERPRISE. Kelly-Springfield Tire Company. SN 231,141. Pub. 11-8-66. Filed 10-22-65.

822,870. THERMOBOND. H. K. Porter Company, Inc. SN 231,220. Pub. 11-8-66. Filed 10-22-65.

822,871. GEMINI. Jetzon Tire & Rubber Corporation. SN 231,569. Pub. 11-8-66. Filed 10-24-65.

822,872. SUPER FLEET CARRIER. United States Rubber Company. SN 231,784. Pub. 11-8-66. Filed 10-28-65.

822,873. FLEET TRAILER. United States Rubber Company. SN 231,785. Pub. 11-8-66. Filed 10-28-65.

822,874. FLEET T SPECIAL. United States Rubber Company. SN 231,786. Pub. 11-8-66. Filed 10-28-65.

Class 36—Musical Instruments and Supplies

822,875. PLEASURE PROGRAMMED AND DESIGN. The Reader's Digest Association, Inc. SN 221,754. Pub. 11-8-66. Filed 6-22-65.

822,876. METRO AND DESIGN. Metro-Goldwyn-Mayer, Inc. SN 224,541. Pub. 11-8-66. Filed 7-29-65.

822,877. INN TIMATE AND DESIGN. Herschel Katchen, d.b.a. Inn Timate. SN 226,237. Pub. 11-8-66. Filed 8-23-65.

Class 37—Paper and Stationery

822,691. (See Class 16 for this trademark.)

822,878. THERM-O-LAM. Oneida Paper Products, Inc. SN 203,023. Pub. 5-31-66. Filed 9-30-64.

822,879. FITTED FILM. Extrudo Film Corporation. SN 236,075. Pub. 11-8-66. Filed 1-10-66.

822,880. PARAGON. Moore Business Forms, Inc. SN 238,099. Pub. 11-8-66. Filed 2-4-66.

822,881. CONSOLIDATED AND DESIGN. Consolidated Papers, Inc. SN 238,498. Pub. 11-8-66. Filed 2-10-66.

822,882. LINACOR. Container Corporation of America. SN 239,234. Pub. 11-8-66. Filed 2-21-66.

822,883. GLEAMPRINT. Weyerhaeuser Company. SN 239,359. Pub. 11-8-66. Filed 2-21-66.

822,884. KEELECTRO. Kee Lox Manufacturing Company. SN 242,612. Pub. 11-8-66. Filed 4-4-66.

822,885. MEMORY BOARD. David Ketner, d.b.a. Modern Research Laboratories. SN 242,733. Pub. 11-8-66. Filed 4-5-66.

822,886. SPEEDILOPE. Moore Business Forms, Inc. SN 243,567. Pub. 11-8-66. Filed 4-14-66.

822,887. CLEARMASK. St. Regis Paper Company. SN 244,032. Pub. 11-8-66. Filed 4-21-66.

822,888. INSTANT MAIL AND DESIGN. Shelby Business Forms, Inc. SN 244,144. Pub. 11-8-66. Filed 4-22-66.

822,889. TR 35. Eberhard Faber Inc. SN 244,200. Pub. 11-8-66. Filed 4-25-66.

822,890. HUCK. Marcal Paper Mills, Inc. SN 244,234. Pub. 11-8-66. Filed 4-25-66.

822,891. 20/20. Sanford Ink Company. SN 244,255. Pub. 11-8-66. Filed 4-25-66.

822,892. CAMPUS MATES. Westab Inc. SN 251,028. Pub. 11-8-66. Filed 7-25-66.

Class 38—Prints and Publications

822,817. (See Class 26 for this trademark.)

822,893. STRIPLAC. Commercial Decal, Inc. SN 209,765. Pub. 11-8-66. Filed 1-12-65.

822,894. BUSINESS AVIATION. American Aviation Publications, Inc. SN 228,970. Pub. 11-8-66. Filed 9-30-65.

822,895. THE FELLOW OF SLIM CHANCE UNIVERSITY. David S. Patterson, Sr. SN 234,359. Pub. 11-8-66. Filed 12-10-65.

822,896. SPRINGBOARDS. Portal Press, Inc., by change of name from The Great Society Press, Inc. SN 235,507. Pub. 11-8-66. Filed 12-29-65.

822,897. DYNAMIC MATURITY. American Association of Retired Persons. SN 238,327. Pub. 11-8-66. Filed 2-8-66.

822,898. OP AND DESIGN. Ojibway Press, Inc. SN 238,776. Pub. 10-4-66. Filed 2-14-66.

822,899. PILGRIM. Pilgrim Badge & Label Corporation. SN 243,479. Pub. 11-8-66. Filed 4-14-66.

822,900. BUENHOGAR. The Hearst Corporation. SN 244,950. Pub. 11-8-66. Filed 5-5-66.

822,901. LOOKING FORWARD. Kirk Shivell. SN 249,449. Pub. 11-8-66. Filed 7-1-66.

Class 39 — Clothing

822,599. (See Class 1 for this trademark.)

822,902. RIOTER. Gentex Corporation. SN 175,028. Pub. 11-8-66. Filed 8-14-63.

822,903. STORMGARDS. Converse Rubber Corporation. SN 188,847. Pub. 11-8-66. Filed 3-17-64.

822,904. NECKERT. Stedman Manufacturing Company. SN 214,478. Pub. 11-8-66. Filed 3-18-65.

822,905. ATHLETE. Marx-Haas Clothing Co. SN 222,590. Pub. 11-8-66. Filed 7-2-65.

822,906. PARALAC. Georges Meyer Corp. SN 224,773. Pub. 11-8-66. Filed 8-2-65.

822,907. FOUR CORNERS. Four Corners Sportswear, Inc. SN 225,018. Pub. 11-8-66. Filed 8-5-65.

822,908. GEMELL. Societe Rhodiaceta. SN 225,442. Pub. 1-18-66. Filed 8-10-65.

822,909. MADD. Fourrures Ronax, Societe Anonyme. SN 227,091. Pub. 11-8-66. Filed 8-12-65.

822,910. WEATHERMORE. The Leader Garment Company, Inc. SN 232,131. Pub. 11-8-66. Filed 11-4-65.

822,911. ALLEN-EDMONDS. Allen-Edmonds Shoe Corporation. SN 233,047. Pub. 11-8-66. Filed 11-22-65.

822,912. PINK PUSSYCAT. Pink Pussycat of Hollywood. SN 234,841. Pub. 11-8-66. Filed 12-17-65.

822,913. LADY BAYARD. Bayard Shirt Corp. SN 235,379. Pub. 11-8-66. Filed 12-28-65.

822,914. ARTISAN HOUSE. Artisan House Imports. SN 236,316. Pub. 11-8-66. Filed 1-10-66.

822,915. DYNAMO. Camp and McInnes, Inc. SN 239,376. Pub. 11-8-66. Filed 2-23-66.

822,916. REVELAIRES. Desco Shoe Corporation. SN 239,392. Pub. 11-8-66. Filed 2-23-66.

822,917. COTTOLENE. Arnold J. Weber. SN 239,481. Pub. 11-8-66. Filed 2-24-66.

822,918. HOLLY-MATES. Jane Holly, Inc. SN 239,520. Pub. 11-8-66. Filed 2-24-66.

822,919. WETH'R-CHEK. The Middlishade Company, Inc. SN 239,642. Pub. 11-8-66. Filed 2-25-66.

822,920. JOHN KEITH. Timely Clothes, Inc. SN 239,679. Pub. 11-8-66. Filed 2-25-66.

822,921. ACTION BACK AND DESIGN. Crescent Corset Company, Inc. SN 239,743. Pub. 11-8-66. Filed 2-28-66.

822,922. SHORESMOOTH. Macshore Classics, Inc. SN 240,755. Pub. 11-8-66. Filed 3-11-66.

822,923. SKINDERGARTERS. Maidenform, Inc. SN 240,758. Pub. 11-8-66. Filed 3-11-66.

822,924. SHAPE-CAPERS. Maidenform, Inc. SN 240,759. Pub. 11-8-66. Filed 3-11-66.

822,925. REVELATIONS. Desco Shoe Corporation. SN 247,680. Pub. 11-8-66. Filed 6-9-66.

822,926. HELEN ADAIR. Emporium World Millinery Co. SN 250,720. Pub. 11-8-66. Filed 7-21-66.

822,927. MIDWAY. Cooper's Incorporated. SN 252,314. Pub. 11-8-66. Filed 8-15-66.

822,928. B AND DESIGN. Best Coat Company. SN 252,617. Pub. 11-8-66. Filed 8-18-66.

822,929. DIVE-ETTES AND DESIGN. Dive-Ettes, Inc. SN 252,618. Pub. 11-8-66. Filed 8-18-66.

Class 40 — Fancy Goods, Furnishings, and Notions

822,930. ADJUSTO-CURLER. Cavalcade Manufacturing Corp. SN 204,889. Pub. 11-8-66. Filed 10-27-64.

822,931. CLEOPATRA. Dorothy W. Hill, d.b.a. Wig Imports Wholesale Company. SN 237,345. Pub. 11-8-66. Filed 1-26-66.

822,932. WIGS BY PAULA. Consolidated Millinery Company. SN 239,498. Pub. 11-8-66. Filed 2-24-66.

822,933. MADEMOISELLE WIG. Fifth Avenue Wig Co., Ltd. SN 239,758. Pub. 11-8-66. Filed 2-28-66.

822,934. MAGI-CUFF. Biltwell Company, Inc. SN 250,922. Pub. 11-8-66. Filed 7-25-66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

822,599. (See Class 1 for this trademark.)

822,917. (See Class 39 for this trademark.)

822,935. PUFFLETTE. Whiting Manufacturing Company, Inc. SN 195,989. Pub. 1-12-65. Filed 6-18-64.

822,936. GENELLE. The General Tire & Rubber Company. SN 229,789. Pub. 4-26-66. Filed 10-11-65.

822,937. POLY-PERM ETC. AND DESIGN. Ronald Margiln, Inc. SN 237,462. Pub. 11-8-66. Filed 1-27-66.

822,938. EMCO. Eisen Mercantile, Inc. SN 238,724. Pub. 11-8-66. Filed 2-14-66.

822,939. WHITE ROSE. A. E. Nathan Company, Inc. SN 240,322. Pub. 11-8-66. Filed 3-7-66.

822,940. A LA MOD. Graniteville Company. SN 240,433. Pub. 11-8-66. Filed 3-8-66.

822,941. ROYAL PARIS AND DESIGN. Societe Anonyme Etablissements Steiner Freres. SN 242,071. Pub. 11-8-66. Filed 3-18-66.

822,942. SOMETHING ELSE. Trend Mills, Inc. SN 242,518. Pub. 11-8-66. Filed 4-1-66.

822,943. POLY FLUFF. Acme Quilting Company, Inc. SN 242,957. Pub. 11-8-66. Filed 4-8-66.

822,944. ROYALLA. Troy Textiles, Inc. SN 243,197. Pub. 11-8-66. Filed 4-11-66.

822,945. SAND DENIM. Avondale Mills. SN 243,215. Pub. 11-8-66. Filed 4-12-66.

822,946. BARQ-WEST. Westwood Textile Manufacturing, Inc. SN 243,509. Pub. 11-8-66. Filed 4-14-66.

822,947. FLORGARDE. J. P. Stevens & Co., Inc. SN 243,596. Pub. 11-8-66. Filed 4-15-66.

822,948. ENSEIGNE DE PLAID DU QUEBEC. Desican N.V. SN 245,882. Pub. 11-8-66. Filed 5-18-66.

822,949. ENSIGN OF ONTARIO TARTAN. Desican N.V. SN 245,883. Pub. 11-8-66. Filed 5-18-66.

822,950. BELMONT. West Point-Pepperell, Inc., d.b.a. Pepperell Manufacturing Company. SN 252,310. Pub. 11-8-66. Filed 8-15-66.

822,951. LIBERTY. West Point-Pepperell, Inc., d.b.a. Pepperell Manufacturing Company. SN 252,311. Pub. 11-8-66. Filed 8-15-66.

822,952. THERMODERMO. Indian Head Inc. SN 253,266. Pub. 11-8-66. Filed 8-29-66.

Class 43 — Thread and Yarn

822,599. (See Class 1 for this trademark.)

822,802. (See Class 23 for this trademark.)

822,953. GEMELL. Societe Rhodiaceta. SN 225,444. Pub. 1-18-66. Filed 8-10-65.

822,954. ARROWHEAD AND TRIANGLE IN RECTANGLE (DESIGN). Rohm and Haas Company. SN 244,139. Pub. 11-8-66. Filed 4-22-66.

Class 44 — Dental, Medical, and Surgical Appliances

822,955. VENOUS PRESSURE GRADIENT. Jobst Institute, Inc. SN 204,261. Pub. 11-8-66. Filed 10-19-64.

822,956. CYCLONE "400." Evsco Pharmaceutical Co. SN 218,852. Pub. 11-8-66. Filed 5-14-65.

822,957. HUFF TMJ. Thomas R. Huff. SN 229,352. Pub. 11-8-66. Filed 10-5-65.

822,958. SOFT-IMPRESSIONS. Kimberly-Clark Corporation. SN 230,170. Pub. 11-8-66. Filed 10-14-65.

822,959. DIASYST. Dupaco Incorporated. SN 233,477. Pub. 11-8-66. Filed 11-29-65.

822,960. RELAX & SLEEP. Associated Mills, Inc. SN 235,951. Pub. 11-8-66. Filed 1-7-66.

822,961. AUDIO-NERVE. Reuben Zaslaw, d.b.a. Selective Hearing Center. SN 236,691. Pub. 11-8-66. Filed 1-17-66.

Class 45 — Soft Drinks and Carbonated Waters

822,962. COMBIER. Societe Anonyme des Liqueurs Combier. SN 209,313. Pub. 11-8-66. Filed 1-4-65.

822,963. SARATOGA VICHY WATER ETC. AND DESIGN. Saratoga Vichy Spring Company. SN 231,703. Pub. 11-8-66. Filed 10-27-65.

822,964. TRY-A-DIET AND DESIGN. Silver Brook Beverage Company, d.b.a. Henry Burkhardt Beverages. SN 232,730. Pub. 11-8-66. Filed 11-15-65.

822,965. FANTA IN CHINESE. The Coca-Cola Company. SN 238,171. Pub. 11-8-66. Filed 2-7-66.

Class 46 — Foods and Ingredients of Foods

822,699. (See Class 18 for this trademark).

822,966. HANEY ETC. AND DESIGN. National Fruit Product Co., Inc. SN 177,536. Pub. 11-8-66. Filed 9-23-63.

822,967. DAWN DONUTS AND DESIGN. Dawn Donut Company, Inc. SN 178,594. Pub. 11-8-66. Filed 10-9-63.

822,968. EVERYBODY LOVES ALESCI'S AND DESIGN. Kinsman Food Distributors, Inc., d.b.a. Alesci's and Alesci's Imported Foods. SN 182,625. Pub. 11-8-66. Filed 12-9-63.

822,969. BLACKIE'S DRESSING AND DESIGN. Ulysses G. Auger, d.b.a. Blackie's House of Beef. SN 198,397. Pub. 11-8-66. Filed 7-23-64.

822,970. BRINTA. W. A. Scholten's Chemische Fabrieken N.V., d.b.a. W. A. Scholten's Fabrieken. SN 199,620. Pub. 11-8-66. Filed 8-10-64.

822,971. SANTA FE CREAM DIP AND DESIGN. Creamland Dairies, Inc. SN 200,077. Pub. 11-8-66. Filed 8-18-64.

822,972. LAKE TO LAKE ETC. AND DESIGN. Lake to Lake Dairy Cooperative, d.b.a. Lake to Lake Dairy. SN 205,066. Pub. 11-8-66. Filed 10-29-64.

822,973. GROSJEANBON. Fromageries Grosjean S.A., by change of name from Fromageries Grosjean Freres, Societe Anonyme. SN 205,683. Pub. 11-8-66. Filed 11-6-64.

822,974. HANDY TREATS. Wm. Wrigley Jr. Company. SN 206,800. Pub. 11-8-66. Filed 11-23-64.

822,975. TINGLE TARTS. F & F Laboratories, Inc. SN 208,351. Pub. 11-8-66. Filed 12-17-64.

822,976. BUD SUPER SWEET. Anheuser-Busch, Incorporated. SN 212,947. Pub. 6-14-66. Filed 3-1-65.

822,977. MUTT'N JEFF. Clare P. McKaye. SN 219,034. Pub. 11-8-66. Filed 5-17-65.

822,978. MR. MISTY TWINS. American Dairy Queen Corporation. SN 220,344. Pub. 11-8-66. Filed 6-4-65.

822,979. GOOD LIFE. Milani Foods, Inc. SN 220,780. Pub. 11-8-66. Filed 6-9-65.

822,980. GUSTO. Heublein, Inc. SN 221,052. Pub. 11-8-66. Filed 6-14-65.

822,981. ROYAL DUTCH. Cacao- en Chocoladefabrieken Bensdorp N.V. SN 221,789. Pub. 11-8-66. Filed 6-23-65.

822,982. WINTER HILL. Rowse Company of N.H., Inc. SN 227,092. Pub. 11-8-66. Filed 8-17-65.

822,983. CAROLINA. Riviana Foods, Inc. SN 227,614. Pub. 11-8-66. Filed 9-10-65.

822,984. KREMLI AND DESIGN. Locatelli S.p.A. SN 227,764. Pub. 11-8-66. Filed 9-14-65.

822,985. LIQUIK. Ellsworth R. Goslin. SN 228,147. Pub. 11-8-66. Filed 9-20-65.

822,986. BETALCO. Vitamin Products Company. SN 228,773. Pub. 11-8-66. Filed 9-27-65.

822,987. CATALYN. Vitamin Products Company. SN 228,774. Pub. 11-8-66. Filed 9-27-65.

822,988. BETARIS. Vitamin Products Company. SN 228,776. Pub. 11-8-66. Filed 9-27-65.

822,989. RUTAPLEX. Vitamin Products Company. SN 228,777. Pub. 11-8-66. Filed 9-27-65.

822,990. RUTA-PLUS. Vitamin Products Company. SN 228,778. Pub. 11-8-66. Filed 9-27-65.

822,991. DRENAPLEX. Vitamin Products Company. SN 228,779. Pub. 11-8-66. Filed 9-27-65.

822,992. EFLEX. Vitamin Products Company. SN 228,781. Pub. 11-8-66. Filed 9-27-65.

822,993. MINAPLEX. Vitamin Products Company SN 228,782. Pub. 11-8-66. Filed 9-27-65.

822,994. PHOSPHADE. Vitamin Products Company. SN 228,783. Pub. 11-8-66. Filed 9-27-65.

822,995. FERROPLUS. Vitamin Products Company. SN 228,784. Pub. 11-8-66. Filed 9-27-65.

822,996. PROTEDYN. Vitamin Products Company. SN 228,786. Pub. 11-8-66. Filed 9-27-65.

822,997. SMACKERS. Fairmont Foods Company. SN 229,216. Pub. 9-6-66. Filed 10-4-65.

822,998. SOUTHERN QUEEN. Anderson, Clayton & Co. SN 229,722. Pub. 11-8-66. Filed 10-11-65.

822,999. PICTURE OF LITTLE BOY (DESIGN). McKee Baking Company, d.b.a. Mighty Mike Bakery. SN 229,987. Pub. 11-8-66. Filed 10-12-65.

823,000. SPICESYNTH. Florasynth Laboratories, Incorporated. SN 230,242. Pub. 11-8-66. Filed 10-15-65.

823,001. THYMEX. Vitamin Products Company, d.b.a. Standard Process Laboratories. SN 230,320. Pub. 11-8-66. Filed 10-15-65.

823,002. OVEX. Vitamin Products Company, d.b.a. Standard Process Laboratories. SN 230,321. Pub. 11-8-66. Filed 10-15-65.

823,003. CARDIO-PLUS. Vitamin Products Company, d.b.a. Standard Process Laboratories. SN 230,329. Pub. 11-8-66. Filed 10-15-65.

823,004. PETER BANANA POPS. Cal Pops Corporation, d.b.a. Cal Pops. SN 230,608. Pub. 11-8-66. Filed 10-20-65.

823,005. DIXALL. Cecil V. Dickson, d.b.a. Dixall Food Products. SN 230,800. Pub. 11-8-66. Filed 10-21-65.

823,006. R.G.B. AND DESIGN. R.G.B. Laboratories, Inc. SN 230,897. Pub. 11-8-66. Filed 10-21-65.

823,007. GRAPE SHAKE. Topps Chewing Gum, Incorporated. SN 230,953. Pub. 11-8-66. Filed 10-21-65.

823,008. GRAPEROO. Topps Chewing Gum, Incorporated. SN 230,957. Pub. 11-8-66. Filed 10-21-65.

823,009. ROCKS O' GUM. Topps Chewing Gum, Incorporated. SN 230,959. Pub. 11–8–66. Filed 10–21–65.

823,010. DRENAMIN. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,969. Pub. 11–8–66. Filed 10–21–65.

823,011. BETACOL. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,971. Pub. 11–8–66. Filed 10–21–65.

823,012. CYROPLEX. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,973. Pub. 11–8–66. Filed 10–21–65.

823,013. PHOSFOOD. Vitamin Products Company, d.b.a. Therapeutic Foods Company. SN 230,974. Pub. 11–8–66. Filed 10–21–65.

823,014. DANIEL BOONE AND DESIGN. Robert Daniel Boone, d.b.a. Daniel Boone. SN 231,536. Pub. 11–8–66. Filed 10–24–65.

823,015. NATURE'S DELIGHT BRAND. Eastern Boneless Beef Co. SN 232,394. Pub. 11–8–66. Filed 11–9–65.

823,016. DRIFOND AND DESIGN. Sucrest Corporation. SN 234,311. Pub. 11–8–66. Filed 12–9–65.

823,017. MERRY POPPIN'. TV Time Foods, Inc. SN 234,486. Pub. 11–8–66. Filed 12–13–65.

823,018. FREEZEGARD. Calgon Corporation. SN 236,229. Pub. 11–8–66. Filed 1–12–66.

823,019. BRENTWOOD. Carnation Company. SN 236,698. Pub. 11–8–66. Filed 7–28–65.

823,020. HARVEST GOLD ETC. AND DESIGN. Carmine Foods, Inc. SN 238,923. Pub. 11–8–66. Filed 2–16–66.

823,021. VALAS AND DESIGN. Vala's Ice Cream, Inc. SN 240,558. Pub. 11–8–66. Filed 3–9–66.

823,022. SEILER'S OF NEW ENGLAND AND DESIGN. H. J. Seiler Co., Inc. SN 244,172. Pub. 11–8–66. Filed 4–25–66.

823,023. SEA CHEF. Crest Brokerage Company, d.b.a. Crest Brokerage Co., and Crest Brokerage Company, Inc. SN 247,467. Pub. 11–8–66. Filed 6–7–66.

823,024. PRIMERO. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company, and Harlingen Canning Co. SN 248,942. Pub. 11–8–66. Filed 6–27–66.

823,025. BREV. American Home Products Corporation. SN 249,284. Pub. 11–8–66. Filed 6–30–66.

823,026. SPRINT. Mars, Incorporated, d.b.a. M & M Candies. SN 250,713. Pub. 11–8–66. Filed 7–21–66.

823,027. WHITE HOUSE. J-B Distributing Co. SN 251,542. Pub. 11–8–66. Filed 8–2–66.

823,028. DIET-SERV. Eskimo Pie Corporation. SN 251,585. Pub. 11–8–66. Filed 8–3–66.

823,029. COPELAND. Copeland Sausage Company, Inc., d.b.a. Copeland Sausage Co. SN 252,236. Pub. 11–8–66. Filed 8–12–66.

Class 47 — Wines

823,030. EMERALD GODDESS. L. N. Renault & Sons, Inc. SN 228,193. Pub. 11–8–66. Filed 9–20–65.

823,031. HIS EMINENCE'S CHOICE. Delaforce Sons & Ca. Limitada. SN 234,885. Pub. 11–8–66. Filed S.R. 12–20–65; Am. P.R. 9–14–66.

823,032. CONCHA Y TORO. Vina Concha y Toro S.A. SN 235,540. Pub. 11–8–66. Filed 12–29–65.

Class 48 — Malt Beverages and Liquors

823,033. HEINEKEN ETC. AND DESIGN. Heineken's Brouwerijen Nederland N.V. SN 228,151. Pub. 11–8–66. Filed 9–20–65.

823,034. HEINEKEN'S LAGER BEER ETC. AND DESIGN. Heineken's Brouwerijen Nederland N.V. SN 228,152. Pub. 11–8–66. Filed 9–20–65.

823,035. HEINEKEN ETC. AND DESIGN. Heineken's Brouwerijen Nederland N.V. SN 228,153. Pub. 11–8–66. Filed 9–20–65.

Class 49 — Distilled Alcoholic Liquors

823,036. DUFF GORDON. Duff Gordon & Co., S.A. SN 215,953. Pub. 11–8–66. Filed 4–7–65.

823,037. CARRINGTON. National Distillers and Chemical Corporation, d.b.a. National Distillers Products Co., and Carrington and Company, Ltd. SN 233,376. Pub. 11–8–66. Filed 11–26–65.

823,038. ENGLISH CROWN. Continental Distilling Corporation, d.b.a. W. A. Haller Company. SN 237,937. Pub. 11–8–66. Filed 2–3–66.

823,039. SCOTINI. Continental Distilling Corporation, d.b.a. Continental Distilling Co. SN 239,388. Pub. 11–8–66. Filed 2–23–66.

823,040. THORNE'S AND DESIGN. Robt. Thorne & Sons (Whisky Merchants) Limited. SN 239,461. Pub. 11–8–66. Filed 2–23–66.

823,041. CHIN CHIN LIQUEUR AND DESIGN. Puerto Rico Distillers, Inc., d.b.a. Compania de Bebidas Del Oriente. SN 247,465. Pub. 11–8–66. Filed 6–7–66.

Class 50 — Merchandise Not Otherwise Classified

822,650. (See Class 8 for this trademark.)

822,660. (See Class 12 for this trademark.)

822,777. (See Class 23 for this trademark.)

823,042. PARK AND PATIO. The Borden Company. SN 231,035. Pub. 11–8–66. Filed 10–22–65.

823,043. TRIPLEMETAL. Revere Copper and Brass Incorporated. SN 232,236. Pub. 11–8–66. Filed 11–5–65.

823,044. ETCHAWAY. Davison Clark Inc. SN 235,282. Pub. 11–8–66. Filed 12–27–65.

823,045. NITE-GLO. Warner-Lambert Pharmaceutical Company. SN 236,028. Pub. 8–30–66. Filed 1–7–66.

823,046. SAK. Neil A. Medlock, d.b.a. Safety Aid Kit Company, and Safety Aid Kit Co. SN 243,152. Pub. 11–8–66. Filed 4–11–66.

823,047. CAMPANA. Campana Art Products, Inc. SN 248,966. Pub. 11–8–66. Filed 6–27–66.

823,048. THERMO-'NITIALS. Stafast Corporation. SN 253,103. Pub. 11–8–66. Filed 8–25–66.

Class 51 — Cosmetics and Toilet Preparations

823,049. CLARISSIMA. L'Oreal, by change of name from Societe Monsavon-L'Oreal. SN 118,614. Pub. 12–11–62. Filed 4–25–61.

823,050. COOL-TONE. John H. Breck, Inc. SN 199,266. Pub. 11–8–66. Filed 8–5–64.

823,051. CLIMA-SOLEIL. Climate Cosmetics Corp. SN 220,616. Pub. 11–8–66. Filed 6–7–65.

823,052. SL–65. E. R. Squibb & Sons, Inc., assignee of Olin Mathieson Chemical Corporation. SN 223,042. Pub. 11–8–66. Filed 7–9–65.

823,053. DERMOTT OF LONDON AND DESIGN. Dermott Inc. MULTIPLE CLASS (Classes 51 and 52). SN 223,389. Pub. 11–8–66. Filed 7–15–65.

823,054. '76 AND DESIGN. McKesson & Robbins, Incorporated, d.b.a. Tawn Limited. MULTIPLE CLASS (Classes 51 and 52). SN 225,852. Pub. 6–21–66. Filed 8–17–65.

823,055. 'GURKHA.' Revlon, Inc. SN 227,069. Pub. 11–8–66. Filed 9–2–65.

823,056. KING OF SPORTS. Nassour Studios, Inc. SN 227,320. Pub. 11–8–66. Filed 9–7–65.

823,057. LIVING. International Latex Corporation. SN 230,542. Pub. 11–8–66. Filed 10–19–65.

823,058. DORSET. Duvidell Sales Corporation. SN 234,813. Pub. 9–27–66. Filed 12–17–65.

823,059. REGIMENTAL. De Beaufort, Ltd. SN 235,898 Pub. 11–8–66. Filed 1–6–66.

823,060. DENIM. De Beaufort, Ltd. SN 235,900. Pub. 11–8–66. Filed 1–6–66.

823,061. EN ROUTE. Les Parfums de Dana, Inc., d.b.a. Dana. SN 238,096. Pub. 11–8–66. Filed 2–4–66.

823,062. IMPUDENT. Societe Charrier & Cie. SN 238,894. Pub. 11–8–66. Filed 2–15–66.

823,063. 1006. Bonne Bell, Inc. SN 240,846. Pub. 11–8–66. Filed 3–14–66.

823,064. TEN-O-SIX ETC. AND DESIGN. Bonne Bell, Inc. SN 240,847. Pub. 11–8–66. Filed 3–14–66.

823,065. U.S. MALE. Haviland Laboratories, Inc. SN 241,252. Pub. 11–8–66. Filed 3–17–66.

823,066. DEP SET. Ethel Rogell Lewis and Seymour Phillips, executors of the will of Arnold L. Lewis. SN 241,350. Pub. 11–8–66. Filed 3–18–66.

823,067. ULTRA BRITE. Colgate-Palmolive Company. SN 241,863. Pub. 11–8–66. Filed 3–25–66.

823,068. ARC. The Realistic Company. SN 241,932. Pub. 11–8–66. Filed 3–25–66.

823,069. LIP SUPREME. Scandia Cosmetics Corporation. SN 242,053. Pub. 11–8–66. Filed 3–28–66.

823,070. EVA ST. CLAIRE. The William A. Webster Co. SN 242,079. Pub. 11–8–66. Filed 3–28–66.

823,071. STRONG'N BRITE. American Home Products Corporation. SN 242,185. Pub. 11–8–66. Filed 3–30–66.

823,072. MAGIC STAR. American Home Products Corporation. SN 242,190. Pub. 11–8–66. Filed 3–30–66.

823,073. SHINING STAR. American Home Products Corporation. SN 242,192. Pub. 11–8–66. Filed 3–30–66.

823,074. STAR WHITE. American Home Products Corporation. SN 242,194. Pub. 11–8–66. Filed 3–30–66.

823,075. WHITE GOLD. Beauty Counselors, Inc. SN 242,200. Pub. 11–8–66. Filed 3–30–66.

823,076. BIO-WAVE. Redken Laboratories, Inc. SN 243,939. Pub. 11–8–66. Filed 4–21–66.

823,077. HOG WASH. American Home Products Corporation. SN 253,090. Pub. 11–8–66. Filed 8–25–66.

Class 52 — Detergents and Soaps

823,053. (See Class 51 for this trademark.)

823,054. (See Class 51 for this trademark.)

823,078. SATELLITE PRODUCTS AND DESIGN. George Warren, d.b.a. Warren Chemical Company. SN 201,985. Pub. 11–8–66. Filed 9–15–64.

823,079. POWER SOFT. Alberto-Culver Company. SN 215,477. Pub. 11–8–66. Filed 4–1–65.

823,080. SOFT POWER. Alberto-Culver Company. SN 215,478. Pub. 11–8–66. Filed 4–1–65.

823,081. BONALUME. Bonewitz Chemicals, Inc. SN 236,354. Pub. 11–8–66. Filed 1–13–66.

823,082. NEOTHENE. Jerome Swimmer, d.b.a. National Biochemical Company. SN 239,552. Pub. 8–23–66. Filed 2–24–66.

823,083. INSTITUTIONAL COMET AND DESIGN. The Procter & Gamble Company. SN 240,780. Pub. 11–8–66. Filed 3–11–66.

823,084. STRONG'N BRITE. American Home Products Corporation. SN 242,180. Pub. 11–8–66. Filed 3–30–66.

823,085. MAGIC STAR. American Home Products Corporation. SN 242,191. Pub. 11–8–66. Filed 3–30–66.

823,086. SHINING STAR. American Home Products Corporation. SN 242,193. Pub. 11–8–66. Filed 3–30–66.

823,087. L'IL SQUIRT. Cole National Corporation. SN 245,812. Pub. 11–8–66. Filed 5–17–66.

823,088. DACOTEX. Diamond Alkali Company. SN 246,736. Pub. 11–8–66. Filed 5–27–66.

823,089. ENTRANCEMENT. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,157. Pub. 11–8–66. Filed 6–2–66.

823,090. YOUNG HANDS FORMULA. The Procter & Gamble Company. SN 249,290. Pub. 11–8–66. Filed 6–30–66.

823,091. CRC AND DESIGN. C. J. Webb Inc. SN 253,087. Pub. 11–8–66. Filed 8–24–66.

Service Marks

Class 100 — Miscellaneous

823,092. SACRED DESIGN. Sacred Design Associates, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 174,536. Pub. 5–24–66. Filed 8–6–63.

823,093. SACRED DESIGN AND LOGO. Sacred Design Associates, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 174,537. Pub. 5–24–66. Filed 8–6–63.

823,094. VARO. Varo, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 192,644. Pub. 11–8–66. Filed 5–4–64.

823,095. ROSS & JACK BURGER SPUD HUT AND DESIGN. R & J Corporation. SN 194,419. Pub. 11–8–66. Filed 5–27–64.

823,096. HOLLYWOOD. J & C Hollywood Drive-Ins, Inc. SN 205,409. Pub. 11–8–66. Filed 11–3–64.

823,097. HOLLYWOOD ETC. AND DESIGN. J & C Hollywood Drive-Ins, Inc. SN 205,411. Pub. 11–8–66. Filed 11–3–64.

823,098. Z. James C. Zaccaro, d.b.a. Zaccaro Associates. SN 214,398. Pub. 11–8–66. Filed 3–17–65.

823,099. THE TINKERS DAM AND DESIGN. Birch Tree Inn, Inc. SN 218,957. Pub. 11–8–66. Filed 5–17–65.

823,100. MVA AND DESIGN. American Building Maintenance Co. of California, d.b.a. American Building Maintenance Company. SN 219,500. Pub. 11–8–66. Filed 5–24–65.

823,101. CRISFIELD SEAFOOD RESTAURANT. Crisfield Seafood Co., d.b.a. Crisfield Seafood Restaurant. SN 225,291. Pub. 11–8–66. Filed 8–9–65.

823,102. MISTER SOFTEE AND DESIGN. Mister Softee, Inc. SN 230,409. Pub. 11–8–66. Filed 10–18–65.

823,103. MISTER SOFTEE. Mister Softee, Inc. SN 230,866. Pub. 11–8–66. Filed 10–21–65.

823,104. THE FUTURE BELONGS TO GAS AND DESIGN. Southern California Gas Company. SN 233,222. Pub. 11–8–66. Filed 11–22–65.

823,105. GAS FLAME AND ENERGY SYMBOL (DESIGN). Southern California Gas Company. SN 233,223. Pub. 11–8–66. Filed 11–22–65.

823,106. GAS FLAME AND SNOWFLAKE CRYSTAL (DESIGN). Southern California Gas Company. SN 233,224. Pub. 11–8–66. Filed 11–22–65.

823,107. COIN 'N COUNTER. The Macke Company. SN 233,366. Pub. 11–8–66. Filed 11–26–65.

823,108. CRANBERRY HOUSE. Ocean Spray Cranberries, Inc. SN 233,732. Pub. 11–8–66. Filed 12–1–65.

823,109. CROWNED V IN CIRCLE (DESIGN). Valle's Steak House. SN 235,601. Pub. 11–8–66. Filed 12–30–65.

823,110. BACHRACH. Bachrach, Inc. SN 236,712. Pub. 11–8–66. Filed 1–18–66.

823,111. NEUROTICS ANONYMOUS. Neurotics Anonymous International Liaison, Inc. SN 240,324. Pub. 11–8–66. Filed 3–7–66.

Class 101 — Advertising and Business

823,112. S AND DESIGN. Shurfine-Central Corporation, assignee of Central Retailer-Owned Grocers, Inc. SN 186,694. Pub. 11–8–66. Filed 2–14–64.

823,113. TEMSCO AND DESIGN. The Electric Motor Supply Co. SN 189,280. Pub. 11–8–66. Filed 3–23–64.

823,114. WEYERHAEUSER. Weyerhaeuser Company. SN 194,938–J. Pub. 11–8–66. Filed 6–4–64.

823,115. TREE IN A TRIANGLE (DESIGN). Weyerhaeuser Company. SN 194,939–J. Pub. 11–8–66. Filed 6–4–64.

823,116. STRENGTH THROUGH PLANNING AND DESIGN. Institute for Financial Planning, Inc. SN 197,303. Pub. 11–8–66. Filed 7–7–64.

823,117. ECONOMY READING PLAN. Whitlock and Company, Inc. SN 198,305. Pub. 11–8–66. Filed 7–21–64.

823,118. "YOUR WISH IS OUR COMMAND" AND DESIGN. At Your Service, Inc. SN 198,630. Pub. 11–8–66. Filed 7–28–64.

823,119. LADLOR. Ladlor Kennels, Reg. SN 202,810. Pub. 11–8–66. Filed 9–28–64.

823,120. SNOW SHOW. Ski Council of America, Inc. SN 221,527. Pub. 11–8–66. Filed 6–18–65.

823,121. REPRESENTATION OF A GENIE (DESIGN). At Your Service, Inc. SN 231,370. Pub. 11–8–66. Filed 10–23–65.

823,122. MC MARKETING COUNSELORS AND DESIGN. Marketing Counselors, d.b.a. Marketing Counselors, Inc. SN 233,115. Pub. 11–8–66. Filed 11–22–65.

823,123. PANTRY PRIDE AND DESIGN. Food Fair Stores, Inc. SN 233,334. Pub. 11–8–66. Filed 11–26–65.

823,124. DMI. Dun & Bradstreet, Inc. SN 234,118. Pub. 11–8–66. Filed 12–7–65.

823,125. MC AND DESIGN. Marketing Counselors. SN 235,473. Pub. 11–8–66. Filed 11–22–65.

823,126. CYBERNETICS ETC. AND DESIGN. Cybernetics Corporation. SN 246,986. Pub. 11–8–66. Filed 6–1–66.

Class 102 — Insurance and Financial

823,127. WEYERHAEUSER. Weyerhaeuser Company. SN 194,938–K. Pub. 11–8–66. Filed 6–4–64.

823,128. K MART AND DESIGN. S. S. Kresge Company. SN 210,963. Pub. 11–8–66. Filed 1–29–65.

823,129. OLD REPUBLIC COMPANIES. Old Republic Life Insurance Company. SN 230,878. Pub. 11–8–66. Filed 10–21–65.

Class 103 — Construction and Repair

822,601. (See Class 1 for this trademark.)

823,092. (See Class 100 for this trademark.)

823,093. (See Class 100 for this trademark.)

823,094. (See Class 100 for this trademark.)

823,130. DECKER AND DESIGN. The Decker Corporation. SN 177,340. Pub. 11–8–66. Filed 9–19–63.

823,131. WEYERHAEUSER. Weyerhaeuser Company. SN 194,938–L. Pub. 11–8–66. Filed 6–4–64.

823,132. TREE IN A TRIANGLE (DESIGN). Weyerhaeuser Company. SN 194,939–L. Pub. 11–8–66. Filed 6–4–64.

823,133. SR AND DESIGN. Southern Reneedling Works, Incorporated. SN 238,795. Pub. 11–8–66. Filed 2–14–66.

823,134. CAM. Carl A. Morse, Inc. SN 249,915. Pub. 11–8–66. Filed 7–11–66.

Class 104 — Communication

823,135. PINWHEEL (DESIGN). The Outlet Company. SN 231,201. Pub. 11–8–66. Filed 10–22–65.

Class 105 — Transportation and Storage

823,136. CARS INTERNATIONAL AND DESIGN. Tourists International Establishment. SN 178,994. Pub. 1–11–66. Filed 10–14–63.

823,137. MISCELLANEOUS DESIGN. Compania Mexicana de Aviacion, S.A. SN 198,638. Pub. 11–8–66. Filed 7–28–64.

823,138. "THE BEST MOVE YOU'LL EVER MAKE." Security Van Lines, Inc. SN 225,204. Pub. 11–8–66. Filed 8–6–65.

823,139. TELPOL. P & O-Orient Lines, Inc. SN 226,163. Pub. 11–8–66. Filed 8–20–65.

823,140. THRU-FLIGHT SERVICE AND DESIGN. The Castanea Corporation, d.b.a. Thru-Flight Service. SN 229,758. Pub. 11–8–66. Filed 10–11–65.

823,141. ROUTE OF THE HYDRO-TRAINS AND DESIGN. Puget Sound Tug & Barge Company. SN 232,345. Pub. 11–8–66. Filed 11–8–65.

Class 106 — Material Treatment

823,142. A AND DESIGN. Alton Box Board Company. SN 225,708. Pub. 11–8–66. Filed 8–16–65.

823,143. PORACC. Accurate Anodizing Corp. SN 226,967. Pub. 11–8–66. Filed 9–2–65.

823,144. EARLY BIRD AND DESIGN. Target Photo Finishers, Inc., d.b.a. Early Bird Fast Photo Service. SN 230,948. Pub. 11–8–66. Filed 10–21–65.

823,145. MAPLEWOOD STUDIOS AND DESIGN. Mildred C. De Blauwe, d.b.a. Maplewood Studios. SN 248,281. Pub. 11–8–66. Filed 6–17–66.

Class 107 — Education and Entertainment

823,146. FLYING W. Flying W Ranch, Inc. SN 180,657. Pub. 11–8–66. Filed 11–7–63.

823,147. DA-X-BE. Mildred M. Lutz. SN 192,836. Pub. 11–8–66. Filed 5–6–64.

823,148. MISCELLANEOUS DESIGN. International Play Group Inc. SN 195,106. Pub. 11–8–66. Filed 6–8–64.

823,149. ALLSTATE GOOD DRIVER TRAINER AND DESIGN. Allstate Insurance Company. SN 212,631. Pub. 11–8–66. Filed 2–24–65.

823,150. AIRWATCH. Golden West Broadcasters. SN 219,338. Pub. 11–8–66. Filed 5–20–65.

823,151. TIGER-A-GO-GO. Hilton Hotels Corporation. SN 219,993. Pub. 11–8–66. Filed 5–28–65.

823,152. THE ADVENTURES OF PHILO KVETCH. Soupy Sales. SN 222,774. Pub. 11–8–66. Filed 7–6–65.

823,153. ACA AND DESIGN. William L. Horan. SN 229,655. Pub. 11–8–66. Filed 10–8–65.

823,154. M AND DESIGN. Massey Junior College, Inc. SN 233,000. Pub. 11–8–66. Filed 11–19–65.

823,155. ASA AND DESIGN. American Students Abroad, Inc. SN 234,102. Pub. 11–8–66. Filed 12–7–65.

823,156. MISCELLANEOUS DESIGN. San Antonio Fair, Inc., d.b.a. HemisFair. SN 235,014. Pub. 11–8–66. Filed 12–21–65.

823,157. BOWLERS VICTORY LEGION ETC. AND DESIGN. National Bowling Council, d.b.a. Bowlers Victory Legion. SN 245,900. Pub. 11–8–66. Filed 5–18–66.

Collective Membership Marks

Class 200

823,158. AMERICAN INSTITUTE OF ULTRASONICS IN MEDICINE. American Institute of Ultrasonics in Medicine. SN 233,550. Pub. 11–8–66. Filed 11–2–65.

823,159. STAR DESIGN. Young Republican National Federation. SN 237,185. Pub. 11–8–66. Filed 1–24–66.

Certification Marks

Class A — Goods

823,160. CP CAREFREE VILLAGE AND DESIGN. The Clay Products Association of the Southwest, Inc. SN 220,637. Pub. 11–8–66. Filed 6–8–65.

823,161. BALANCED POWER HOMES AND DESIGN. Southern Counties Gas Company of California. SN 233,225. Pub. 11–8–66. Filed 11–22–65.

823,162. GAS FLAME AND ELECTRICAL PLUG (DESIGN). Southern Counties Gas Company of California. SN 233,227. Pub. 11–8–66. Filed 11–22–65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

823,163. Illinois Tool Works Inc., Chicago, Ill. SN 196,276. Filed P.R. 6–23–64; Am. S.R. 9–6–66.

NEWEST BIG NAME IN PACKAGING

For Plastic Containers—Namely, Cups, Relatively Small Plastic Packaging Receptacles; and Portable Carriers for Containers.
First use on or about June 5, 1964.

823,164. House of Coins, Elizabeth, N.J. SN 213,317. Filed P.R. 3–4–65; Am. S.R. 11–15–66.

COIN-O

For Paper Holders, of the Card Type, for Use by Coin Collectors for Holding Coins.
First use on or about Feb. 15, 1965.

Class 5 — Adhesives

823,165. Blair Fashions, Inc., Chicago, Ill. SN 208,883. Filed P.R. 12–28–64; Am. S.R. 11–14–66.

LIQUID GARTER

For Liquid Adhesive Applied to a Person's Body for Holding up Hosiery and for Maintaining Brassiere Straps in Place.
First use Oct. 1, 1964.

Class 12 — Construction Materials

823,166. Ador Corporation, Fullerton, Calif. SN 221,546. Filed P.R. 6–21–65; Am. S.R. 11–30–66.

CHAMPAGNE

For Aluminum Windows and Doors With an Anodized Finish.
First use June 8, 1965.

823,167. W. R. Grace & Co., New York, N.Y. SN 222,930. Filed P.R. 7–8–65; Am. S.R. 11–18–66.

SUPER BOARD

For Polystyrene Insulation in the Form of Slabs.
First use June 1963.

823,168. Colley Block Company, Inc., Robinson Creek, Ky. SN 225,847. Filed P.R. 8–12–65; Am. S.R. 11–8–66.

LITE-WATE

For Building Blocks Made of Concrete and Burnt Refuse From a Coal Mine or Coal Preparation Plant.
First use June 12, 1963.

Class 16 — Protective and Decorative Coatings

823,169. Ajax Hardware Corporation, City of Industry, Calif. SN 224,695. Filed P.R. 8–2–65; Am. S.R. 11–14–66.

ENAMELUBE

For Lubricating Finish Coating for Cabinet Drawer Slides.
First use July 13, 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

823,170. Haveg Industries, Inc., Wilmington, Del. SN 212,316. Filed P.R. 2–18–65; Am. S.R. 11–16–66.

ULTRA-THIN

For Wire for Conducting Electricity.
First use at least as early as Feb. 10, 1964.

823,171. Shock-Proof Electronics, Inc., Philadelphia, Pa. SN 213,805. Filed P.R. 3–10–65; Am. S.R. 11–16–66.

HAZARD SENSOR

For Electric Power Transformers Utilized in Connection With a Suitable Circuit Breaker and Fast Acting Fault Detector for Automatic Shutting Down of Electrical Equipment.
First use Dec. 6, 1964.

823,172. Maysteel Products Corp., Mayville, Wis. SN 232,573. Filed P.R. 11-12-65; Am. S.R. 11-21-66.

POWERBAR

For Mobile Electrical Collector System.
First use Oct. 27, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

823,173. Lisbeth Whiting Company, Inc., Brooklyn, N.Y. SN 189,186. Filed P.R. 3-20-64; Am. S.R. 11-17-66.

KNITTING JENNY

For Knitting Machines.
First use Mar. 2, 1964.

823,174. Hutt's Dairy, Inc., Buffalo, N.Y. SN 202,083. Filed P.R. 9-17-64; Am. S.R. 11-17-66.

SERV-A-PAT

For Metal Cabinets, Including Mechanical Means for Dispensing Butter or Margarine Pats.
First use Aug. 1, 1964.

823,175. Seelye Plastic-Fab, Inc., Minneapolis, Minn. SN 221,643. Filed P.R. 6-21-65; Am. S.R. 6-30-66.

SEELYE

For Machines for Etching and Chemical Milling in the Production of Printed Circuit Boards for the Electronics Industry.
First use Jan. 20, 1961.

Class 26—Measuring and Scientific Appliances

823,176. Philips Electronics and Pharmaceutical Industries Corp., New York, N.Y. SN 210,980. Filed P.R. 1-29-65; Am. S.R. 11-10-66.

BEAMSCANNER

For Electronic Equipment for Monitoring a Micro-Probe Electron Beam.
First use on or about Dec. 2, 1963.

823,177. Gritzner-Kayser Aktiengesellschaft, Karlsruhe-Durlach, Germany. SN 228,857. Filed P.R. 9-27-65; Am. S.R. 11-3-66.

GRITZNER

Priority claimed under Sec. 44(d) on German application filed Apr. 21, 1965; Reg. No. 810,125, dated Sept. 24, 1965.
For Equipment for Preparing Drawings—Namely, Drawing Boards and Stands, Drawing Machines and Drawing Board Typewriters, and Parts and Attachments Therefor.

Class 32—Furniture and Upholstery

823,178. John C. Gill, Inc., Boston, Mass. SN 233,262. Filed P.R. 11-24-65; Am. S.R. 12-1-66.

dormitory design

Owner of Reg. No. 739,829.
For Furniture, Mattresses, and Box Springs.
First use July 2, 1965.

Class 34—Heating, Lighting, and Ventilating Apparatus

823,179. R. W. Beckett Corporation, North Ridgeville, Ohio. SN 233,244. Filed P.R. 11-24-65; Am. S.R. 11-16-66.

BECKETT

For Oil burners and Oil-Fired Water Heaters.
First use Oct. 13, 1965.

Class 36—Musical Instruments and Supplies

823,180. Roberts Enterprises, Inc., Chamberlain, S. Dak. SN 224,887. Filed P.R. 8-3-65; Am. S.R. 10-27-66.

C. ROBERTS

For Musical Instruments, Specifically, Mouthpieces and Reeds.
First use May 17, 1965.

Class 37—Paper and Stationery

823,181. Uarco Incorporated, Barrington, Ill. SN 206,900. Filed P.R. 11-24-64; Am. S.R. 11-16-66.

CARBONSET

For Stationery Sheet With Carbon Sheet Attached.
First use Nov. 2, 1964.

823,182. Hudson Pulp & Paper Corp., New York, N.Y. SN 211,277. Filed P.R. 2-3-65; Am. S.R. 11-10-66.



For Disposable Paper Tissues and Toilet Tissues.
First use on or about May 31, 1962.

823,183. Service Business Forms, Inc., Wichita, Kans. SN 211,753. Filed P.R. 2-10-65; Am. S.R. 11-9-66.

SNAP-A-COPY

For Business Forms Interleaved With Carbon Paper and Fastened Together at One Margin.
First use January 1962.

823,184. Charles Bookas, Wolcott, Conn. SN 241,964. Filed 3-28-66.



For Bookkeeping Forms.
First use about February 1965.

Class 39—Clothing

823,185. Bond Stores, Inc., New York, N.Y. SN 218,267. Filed P.R. 5-7-65; Am. S.R. 11-15-66.

SILKEN SMOOTH

For Men's and Boys' Shirts and Hose.
First use Apr. 1, 1965.

823,186. Blair Fashions, Inc., Chicago, Ill. SN 218,610. Filed P.R. 5-12-65; Am. S.R. 11-14-66.

NUDETONE

For Panty Girdles, Girdles, Brassieres, Corselets and Corselet-Type of Undergarments.
First use Jan. 4, 1965.

823,187. Capezio, Inc., New York, N.Y. SN 235,274. Filed P.R. 12-27-65; Am. S.R. 11-10-66.

COBBLERS TO THE WORLD OF DANCE THEATRE AND FASHION

Owner of Reg. No. 590,633.
For Shoes.
First use Nov. 1, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

823,188. Canton Textile Mills, Inc., Canton, Ga., by change of name from Canton Cotton Mills, Canton, Ga. SN 232,521. Filed P.R. 11-12-65; Am. S.R. 10-3-66.

PLYDENIM

For Fabrics of Cotton, Wool, and Synthetic Materials and Combinations Thereof.
First use Sept. 16, 1965.

823,189. Canton Textile Mills, Inc., Canton, Ga., by change of name from Canton Cotton Mills, Canton, Ga. SN 232,522. Filed P.R. 11-12-65; Am. S.R. 10-3-66.

TWISTDENIM

For Fabrics of Cotton, Wool, and Synthetic Materials and Combinations Thereof.
First use Sept. 16, 1965.

823,190. Joshua L. Baily & Co., Inc., New York, N.Y. SN 237,646. Filed P.R. 2-1-66; Am. S.R. 11-16-66.

Baily PREST

For Fabrics Treated With a Wrinkle Free Finish.
First use Oct. 29, 1965.

Class 44—Dental, Medical, and Surgical Appliances

823,191. Gilbert Freeman, Inc., Boston, Mass. SN 227,669. Filed P.R. 9-13-65; Am. S.R. 11-28-66.

NO-CORD

For Bandage for the Legs of Race Horses.
First use March 1963.

TRADEMARK REGISTRATIONS RENEWED

29,579. RED CROSS AND DESIGN. Cl. 35. 2-23-1897.
30,031. NORWOOD. Cl. 39. 5-18-1897.
59,412. GOLDENE. Cl. 52. 1-8-07.
59,736. CONSERVO. Cl. 6. 1-15-07.
60,728. PETERS. Cl. 9. 2-19-07.
62,574. VICTOR. Cl. 35. 5-14-07.
62,595. TOURING. Cl. 22. 5-14-07.
216,986. BEN HUR AND DESIGN. Cl. 46. 8-24-26.
218,077. SWING. Cl. 23. 9-21-26.
220,921. INLAND. Cl. 19. 11-16-26.
220,997. COFFEE MILL (DESIGN). Cl. 46. 11-23-26.
220,983. CELANOL. Cl. 43. 11-23-26.
221,072. KILTIE. Cl. 46. 11-23-26.
221,414. VELVET WHITE. Cl. 46. 11-30-26.
221,640. NUJOL. Cl. 18. 12-7-26.
221,647. FAVORITA AND DESIGN. Cl. 46. 12-7-26.
221,745. PEACOCK AND DESIGN. Cl. 46. 12-7-26.
221,800. GLORIA AND DESIGN. Cl. 46. 12-14-26.
222,635. OLD TRUSTY. Cl. 29. 1-4-27.
222,636. M.P. FAVORITE. Cl. 29. 1-4-27.
222,637. LONG BOY. Cl. 29. 1-4-27.
222,638. FRIENDLY PAINTER. Cl. 29. 1-4-27.
222,639. CHINA GIRL. Cl. 29. 1-4-27.
222,640. M.P. FALCON. Cl. 29. 1-4-27.
222,685. PAINTERS PRIDE. Cl. 29. 1-4-27.
223,230. GREEK LETTER DELTA (DESIGN). Cl. 28. 1-25-27.
223,306. WHEELING CORRUGATING COMPANY AND DESIGN. Cl. 26. 2-1-27.
223,569. HILBRIDGE. Cl. 39. 2-8-27.
223,702. WHEELING CORRUGATING COMPANY AND DESIGN. Cl. 24. 2-8-27.
224,026. AN-DU-SEPTIC. Cl. 37. 2-15-27.
224,165. TURTLE BRAND AND DESIGN. Cl. 12. 2-22-27.
224,903. BETHLEHEM REVIEW. Cl. 38. 3-8-27.
225,137. SCIENCE NEWS-LETTER. Cl. 38. 3-15-27.
225,608. SHIP (DESIGN). Cl. 16. 3-22-27.
225,609. MALLARD AND DESIGN. Cl. 46. 3-22-27.
225,897. INSICO. Cl. 23. 3-29-27.
226,002. CHEF. Cl. 46. 3-29-27.

226,592. AMERICAN EXPORTER. Cl. 38. 4–12–27.
227,907. TRANSPORTATION. Cl. 35. 5–17–27.
227,953. YAWNING BOY (DESIGN). Cl. 35. 5–17–27.
423,525. LATHERKING. Cl. 21. 9–3–46.
423,623. DEEJAY FARMS. Cl. 46. 9–3–46.
425,414. G-S FLEXO. Cl. 33. 11–19–46.
425,512. DUO-THERM. Cl. 34. 11–26–46.
425,567. PLASGEN. Cl. 18. 11–26–46.
425,628. NEOPAN. Cl. 18. 11–26–46.
425,689. CLEAREX. Cl. 52. 12–3–46.
425,727. MERIDIAN. Cl. 42. 12–3–46.
426,175. STOPPER AND DESIGN. Cl. 35. 12–17–46.
426,416. GANVINAL. Cl. 18. 12–24–46.
426,456. CONSTITUTION. Cl. 17. 12–24–46.
426,548. BIG INCH. Cl. 2. 12–31–46.
426,658. BANTAM. Cl. 31. 1–7–47.
426,706. D. GHIRARDELLI. Cl. 46. 1–7–47.
427,061. BETHLEHEM WIRE ROPE AND DESIGN. Cl. 7. 1–28–47.
427,229. SHARPSHOOTER. Cl. 38. 2–4–47.
427,290. ROTOCOMICS. Cl. 38. 2–4–47.
427,332. AEROMAX. Cl. 44. 2–4–47.
427,333. THERMAX. Cl. 44. 2–4–47.
427,372. PICKER. Cl. 26. 2–4–47.
427,943. GAYLA. Cl. 40. 3–4–47.
428,070. BASKET AND DESIGN. Cl. 46. 3–11–47.
428,111. PURITAN MAID AND DESIGN. Cl. 44. 3–11–47.
428,174. CREMODIAZINE. Cl. 18. 3–11–47.
428,175. CREMOMERAZINE. Cl. 18. 3–11–47.
428,267. LASTEX. Cl. 43. 3–18–47.
428,410. SUNBEAM. Cl. 27. 3–25–47.
429,017. VIBRIN. Cl. 1. 4–15–47.
429,189. PEDA-PILLO. Cl. 44. 4–22–47.
429,336. TUFOR. Cl. 6. 4–29–47.
429,377. UNIVERSITY. Cl. 21. 4–29–47.

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18,574. S. BEISSEL WWE & SOHN AND LABEL DESIGN. Cl. 40. 11–4–1890.
138,845. O.P.T. CO. INC. AND DESIGN. Cl. 6. 1–11–21.
139,153. KLEINERT THE BEST AND DESIGN. Cl. 2. 1–25–21.
313,513. OLD GLORY. Cl. 1. 5–29–34.
323,323. "RON CARTA CAMP" ETC. Cl. 49. 4–9–35.
383,808. FIRECRACKER. Cl. 51. 12–24–40.
384,674. CHIEFTAIN. Cl. 1. 1–28–41.
387,883. SYCAMORE. Cl. 1. 6–3–41.
417,356. AIRLINE. Cl. 1. 10–23–45.

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707,929. M & T. Cl. 1.
707,930. MESKETE AND DESIGN. Cl. 1.
707,933. ANTICO. Cl. 1.
707,935. PAK-N-SNAP. Cl. 2.
707,937. TROX. Cl. 2.
707,938. SHOE 'TAINER. Cl. 2.
707,939. VACUM COOK-R. Cl. 2.
707,942. BOLING BROOKE. Cl. 2.
707,943. SELECT-O-MAGIC. Cl. 3.
707,947. MITHRA. Cl. 5.
707,950. SIL-SPRAY. Cl. 6.
707,954. REPRESENTATION OF GODDESS. Cl. 6.
707,962. VELVA-GRO. Cl. 10.
707,965. VU-MASTER. Cl. 12.
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707,967. PLANKTYLE. Cl. 12.
707,968. GEOMETRICAL DESIGN. Cl. 12.
707,969. ECONORIB. Cl. 12.
707,972. VEE FORTY 8. Cl. 12.
707,974. MULCARB. Cl. 12.
707,978. "TRI-SET." Cl. 13.
707,985. VI-TOR. Cl. 13.
707,991. SUPREME. Cl. 15.
707,992. PIONEER. Cl. 15.
707,994. BEAUTY HOUSE. Cl. 16.
708,000. ALBADEX. Cl. 18.
708,001. BAND-A-BOMB AND DESIGN. Cl. 18.
708,003. FREEZE-EM. Cl. 18.
708,004. PROTEIN HEALTH AND DESIGN. Cl. 18.
708,013. OCHLOMAZIN (JAPANESE CHARACTERS). Cl. 18.
708,014. RAUTRACTYL. Cl. 18.
708,016. KETERIN. Cl. 18.
708,023. MONARCH. Cl. 19.
708,025. PACKARD-BELL. Cl. 21.
708,036. SKYTROL. Cl. 21.
708,038. PIXIE-PAK. Cl. 22.
708,041. LIKO. Cl. 22.
708,042. PIXY PUTTY AND DESIGN. Cl. 22.
708,043. ABNEF. Cl. 22.
708,048. SPIN-A-TEST. Cl. 22.
708,049. BAT-O-MATIC. Cl. 22.
708,053. ROTA-RING. Cl. 22.
708,054. MINER-MATIC. Cl. 22.
708,055. RY-ED AND DESIGN. Cl. 22.
708,056. A-M AND DESIGN. Cl. 23.
708,061. ALEXANDER. Cl. 23.
708,066. SWIRL-A-HEAT. Cl. 23.
708,071. TRI-FINISH. Cl. 23.
708,072. COVILOID. Cl. 23.
708,081. ONSA AND DESIGN. Cl. 27.
708,084. TRUBRYTLE. Cl. 29.
708,085. RED DIAL. Cl. 29.
708,088. SPIN. Cl. 31.
708,097. ORANGE LINE. Cl. 35.
708,105. CHEK RITE SAFETY AND DESIGN. Cl. 37.
708,112. REPRESENTATION OF SLACKS, SPECTALCES AND NEWSPAPER. Cl. 39.
708,117. REINALTER AND DESIGN. Cl. 39.
708,118. LITTLE PIERRE'S. Cl. 39.
708,120. DON SACHS. Cl. 39.
708,122. DUO-THERM. Cl. 39.
708,125. COUNTRY WIDE. Cl. 39.
708,129. OSTEO-HEEL. Cl. 39.
708,135. BARTUFT. Cl. 42.
708,136. QUAINTANCE FABRICS. Cl. 42.
708,139. CUPRINO. Cl. 43.
708,140. FAIRFIELD "150." Cl. 44.
708,145. GROTESQUE OF DRAGON. Cl. 46.
708,146. DRAGON. Cl. 46.
708,147. DRAGON AND DESIGN. Cl. 46.
708,150. LA MOLINERA AND DESIGN. Cl. 46.
708,157. RH FRESHIE AND DESIGN. Cl. 46.
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708,160. JACKIE. Cl. 46.
708,163. TIMES SQUARE. Cl. 46.
708,164. PRECIOUS GEM. Cl. 46.
708,165. PURE GEM. Cl. 46.
708,166. SPARKLING GEM. Cl. 46.
708,168. THRIFTMAKER. Cl. 46.
708,170. MEAL KING. Cl. 46.
708,174. RING-A-DING. Cl. 47.
708,177. THE OLD HEIDELBERG AND DESIGN. Cl. 50.
708,179. LITHOMASTER. Cl. 50.
708,180. WING'S SUCCESSS DISPLAY AND DESIGN. Cl. 50.
708,183. BAXON'S. Cl. 51.
708,185. CONTACT. Cl. 51.
708,189. THE NATIONAL WEGIVWAY PLAN. Cl. 101.
708,191. GEOMETRICAL DESIGN. Cl. 101.
708,192. AC SYSTEMS AND DESIGN. Cl. 102.
708,194. NEW YORK AIRWAYS AND DESIGN. Cl. 105.
708,199. "ABOVE AND BEYOND THE CALL OF BEAUTY." Cl. 3.
708,203. BE MOLYBDENUM FORTIFIED LUBRICANTS. Cl. 15.
708,206. TERALASE. Cl. 18.
708,208. POP A PART. Cl. 22.
708,209. FOLD-A-SAW. Cl. 23.
708,211. SPRING-BOARD. Cl. 32.
708,218. DESIGN OF STENCIL, HAND, WRITING INSTRUMENT, ETC. Cl. 37.
708,219. POUND O'SCRATCH ETC. Cl. 37.

708,220. MANUFACTURING ENGINEERING. Cl. 38.
708,222. NAPOLI. Cl. 39.
708,223. MISS SUBTEEN. Cl. 39.
708,224. DYSON'S. Cl. 39.

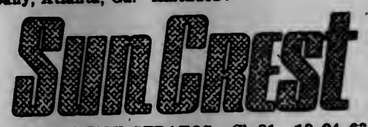
Errata

In the OFFICIAL GAZETTE of October 25, 1966, at page TM 202, under "Trademark Registrations Canceled" "264,169; 502,263; 513,222; 523,706; and 552,357" should be deleted and *245,765; 432,614; 433,104; 438,947; and 515,398*, respectively, should be inserted. Serial numbers were listed rather than registration numbers.

In the OFFICIAL GAZETTE of December 13, 1966, at page TM 105, under "Trademark Registrations Canceled" "682,410. WETHERBEE. Cl. 13. 7–28–59." should be deleted and *682,410. TOPSEAL AND DESIGN. Cl. 13. 7–28–59.* should be inserted.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

376,703. SUN CREST. Cl. 45. 4–2–40. National NuGrape Company, Atlanta, Ga. Amended:



761,868. FAIRCHILD STRATOS. Cl. 21. 12–24–63. Fairchild Stratos Corporation. Fairchild Hiller Corporation, Hagerstown, Md. Amended: In the statement, column 2, line 1, after "therefor" *for use in other than radar and television mapping systems and industrial television systems* is inserted.

801,357. THE LITTLE MINE. Cl. 38. 1–4–66. Youth Associates Company. Mine Publications, Inc., Minneapolis, Minn. Amended to appear:



814,824. DUCTROLENE. Cl. 13. 9–13–66. Clarence L. Sipler, doing business as Sipler Plastics Co. Sipler Plastics, Inc., Doylestown, Pa. Corrected: In the statement, column 1, before line 1, *Sipler Plastics, Inc.* (*Pennsylvania corporation*), *assignee of* should be inserted.

814,825. DUCTRONETTE. Cl. 13. 9–13–66. Clarence L. Sipler, doing business as Sipler Plastics Co. Sipler Plastics, Inc., Doylestown, Pa. Corrected: In the statement, column 1, before line 1, *Sipler Plastics, Inc.* (*Pennsylvania corporation*), *assignee of* should be inserted.

Erratum

In the OFFICIAL GAZETTE of July 12, 1966, at page TM 108, under "Trademark Registrations Amended, Disclaimed, Corrected, etc.," "419,488" should be deleted and *419,588* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

40,303. WINGED FOOT DESIGN. Cl. 39. Goodyear Footwear Corporation, assignee of Hervey E. Guptill. 5–12–03. New Cert. Sec. 7(c) to The Goodyear Tire & Rubber Company, Akron, Ohio.

253,733. GOODYEAR BLUE DIAMOND AND DESIGN. Cl. 39. Goodyear Footwear Corporation, assignee of Phillips-Baker Rubber Co. 3–5–29. New Cert. Sec. 7(c) to The Goodyear Tire & Rubber Company, Akron, Ohio.

253,734. GOODYEAR BLACK DIAMOND AND DESIGN. Cl. 39. Goodyear Footwear Corporation, assignee of Phillips-Baker Rubber Co. 3–5–29. New Cert. Sec. 7(c) to The Goodyear Tire & Rubber Company, Akron, Ohio.

435,115. BLADEX. Cl. 6. Shell Oil Company, Incorporated. 12–9–47. New Cert. Sec. 7(c) to Shell Oil Company, New York, N.Y.

518,578. FLEET FOOT AND DESIGN. Cl. 39. Goodyear Footwear Corporation. 12–13–49. New Cert. Sec. 7(c) to The Goodyear Tire & Rubber Company, Akron, Ohio.

720,694. CONTAK-SEAL. Cl. 37. Carpenter Paper Company. 8–29–61. New Cert. Sec. 7(c) to Connecticut Valley Paper & Envelope Co., Inc., New York, N.Y.

724,365. LANCET. Cl. 6. Metallgesellschaft Aktiengesellschaft. 11–28–61. New Cert. Sec. 7(c) to Freundorfer KG, Munich, Germany.

805,901. DIAL-A-CITY. Cl. 31. Albert Jack Miller. 3–22–66. New Cert. Sec. 7(c) to Miller Electronics Ltd., Vancouver, British Columbia, Canada.

811,496. DIABLO ROJO. Cl. 52. B. T. Babbitt, Inc. 7–19–66. New Cert. Sec. 7(c) to Pennsalt Chemicals Corporation, Philadelphia, Pa.

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American Brake Co.
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Accurate Anodizing Corp., Cicero, Ill. 823,143, pub. 11–8–66. Cl. 106.
Ace Glass Inc., Vineland, N.J. 822,821, pub. 11–8–66. Cl. 26.
Acme Quilting Co., Inc., New York, N.Y. 822,943, pub. 11–8–66. Cl. 42.
Ador Corp., Fullerton, Calif. 823,166, canc. Cl. 12.
Airstream, Inc., Jackson Center, Ohio. 822,856, pub. 6–28–66. Cl. 34.
Ajax Hardware Corp., City of Industry, Calif. 823,169. Cl. 16.
Ajem Laboratories, Inc., Livonia, Mich. 822,689, pub. 1–18–66. Cl. 16.
Aktiebolaget Svensk Rakklinga, Sandviken, Sweden. 218,077, ren. 1–24–67. Cl. 23.
Albermarle Mills Co., Albermarle, N.C. 708,122, canc. Cl. 39.
Alberto-Culver Co., Melrose Park, Ill. 823,079, pub. 11–8–66. Cl. 52.
Alberto-Culver Co., Melrose Park, Ill. 823,080, pub. 11–8–66. Cl. 52.
Alberts, Cecil D., d.b.a. Spin-A-Test Co., Hermosa Beach, Calif. 708,048, canc. Cl. 22.
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Alexander Miner Mfg. Corp., New York, N.Y. 708,054, canc. Cl. 22.
Alexander Sewing Machine Corp., Canton, Ohio. 708,061, canc. Cl. 23.
Alfanal Laboratories, Inc., Ashland, Oreg. 822,717, pub. 11–8–66. Cl. 18.
Allen-Edmonds Shoe Corp., The, Belgium, Wis. 708,129, canc. Cl. 39.
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Allis-Chalmers Mfg. Co., Milwaukee, Wis. 822,796, pub. 11–8–66. Cl. 23.
Allis-Chalmers Mfg. Co., Milwaukee, Wis. 822,797, pub. 11–8–66. Cl. 23.
Allstate Insurance Co., Skokie, Ill. 823,149, pub. 11–8–66. Cl. 107.
Alton Box Board Co., Alton, Ill. 823,142, pub. 11–8–66. Cl. 106.
Alva Coal Corp.: *See*—
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American Association of Retired Persons, Washington, D.C. 822,897, pub. 11–8–66. Cl. 38.
American Aviation Publications, Inc., Washington, D.C. 822,894, pub. 11–8–66. Cl. 38.
American Brake Co., to Abex Corp., New York, N.Y. 426,175, ren. 1–24–67. Cl. 35.
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American Building Maintenance Co. of California, d.b.a. American Building Maintenance Co., San Francisco, Calif. 823,100, pub. 11–8–66. Cl. 100.
American Cellulose & Chemical Mfg. Co. Ltd., The, to Celanese Corp., New York, N.Y. 220,985, ren. 1–24–67. Cl. 43.
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American Dairy Queen Corp., Minneapolis, Minn. 822,978, pub. 11–8–66. Cl. 46.
American Heat Reclaiming Corp., New York, N.Y. 822,859, pub. 11–8–66. Cl. 34.
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American Home Products Corp., New York, N.Y. 822,722, pub. 11–8–66. Cl. 18.
American Home Products Corp., New York, N.Y. 822,725, pub. 11–8–66. Cl. 18.
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American Machine & Foundry Co., New York, N.Y. 708,066, canc. Cl. 23.
American-Marietta Co., Chicago, Ill., from Seaman-Andwall Corp., Milwaukee, Wis. 708,056, canc. Cl. 23.
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American Students Abroad, Inc., Cincinnati, Ohio. 823,155, pub. 11–8–66. Cl. 107.
American Type Founders Co., Inc., Elizabeth, N.J. 708,179, canc. Cl. 50.
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Anderson Electric Corp., Leeds, Ala. 822,740, pub. 11–8–66. Cl. 21.
Anheuser-Busch, Inc., St. Louis, Mo. 822,976, pub. 6–14–66. Cl. 46.
Anvil Mineral Products Corp., Bay Springs, Miss. 822,652, pub. 11–8–66. Cl. 10.
Apag, Inc., New York, N.Y. 822,835, pub. 11–8–66. Cl. 29.
Applied Power Industries, Inc., Milwaukee, Wis. 822,787, pub. 11–8–66. Cl. 23.
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Archer-Daniels-Midland Co., Minneapolis, Minn. 822,637, pub. 11–8–66. Cl. 6.
Armco Steel Corp. Middletown, Ohio. 822,649, pub. 11–8–66. Cl. 7.
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Athey Products Corp., Raleigh, N.C. 822,792, pub. 11–8–66. Cl. 23.
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At Your Service, Inc., St. Paul, Minn. 823,121, pub. 11–8–66. Cl. 101.
Auger, Ulysses G., d.b.a. Blackie's House of Beef, Washington, D.C. 822,969, pub. 11–8–66. Cl. 46.
Automation Devices, Inc., Erie, Pa. 822,820, pub. 11–8–66. Cl. 26.
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Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 822,605, pub. 11–8–66. Cl. 1.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 822,641, pub. 11–8–66. Cl. 6.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 822,645, pub. 11–8–66. Cl. 6.
Bally, Joshua L., & Co., Inc., New York, N.Y. 823,190. Cl. 42.
Barnes-Hind Laboratories, Sunnyvale, Calif. 822,705, pub. 7–5–66. Cl. 18.
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Bellis, Billy N., d.b.a. Anatox Co., Santa Maria, Calif. 822,708, pub. 11–8–66. Cl. 18.
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Bemol, Inc., Boston, Mass. 708,203, canc. Cl. 15.
Bennett and Northrop, Inc., Boston, Mass. 707,939, canc. Cl. 2.
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Best Coat Co., Boston, Mass. 822,928, pub. 11–8–66. Cl. 39.
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Biltwell Co., Inc., St. Louis, Mo. 822,934, pub. 11–8–66. Cl. 40.
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Birch Tree Inn, Inc., Michigan City, Ind. 823,099, pub. 11–8–66. Cl. 100.
Bishop and Babcock Corp., The, Toledo, Ohio. 822,675, pub. 11–8–66. Cl. 13.
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Blair Fashions, Inc., Chicago, Ill. 823,186. Cl. 39.
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Bogle, Nelson H., Gilbertsville, Ky. 822,781, pub. 11–8–66. Cl. 23.
Boise Cascade Corp., Boise, Idaho. 822,653, pub. 11–8–66. Cl. 10.
Bomar Feed and Flour Co., Tuscaloosa, Ala. 708,157, canc. Cl. 46.
Bond Stores, Inc., New York, N.Y. 823,185. Cl. 39.
Bonewitz Chemicals, Inc., Burlington, Iowa. 823,081, pub. 11–8–66. Cl. 52.
Bonne Bell, Inc., Lakewood, Ohio. 823,063, pub. 11–8–66. Cl. 51.
Bonne Bell, Inc., Lakewood, Ohio. 823,064, pub. 11–8–66. Cl. 51.
Bookas, Charles, Wolcott, Conn. 823,184. Cl. 37.
Boone, Daniel: *See*—
Boone, Robert D.
Boone, Robert D., d.b.a. Daniel Boone, Parkersburg, W. Va. 823,014, pub. 11–8–66. Cl. 46.
Borden Co., The, from Mystik Tape, Inc., New York, N.Y. 822,629, pub. 11–8–66. Cl. 5.
Borden Co., The, New York, N.Y. 823,042, pub. 11–8–66. Cl. 50.
Boston Rubber Shoe Co., Boston, Mass., to United States Rubber Co., New York, N.Y. 30,031, ren. 1–24–67. Cl. 39.
Bowlers Victory Legion: *See*—
National Bowling Council.
Boyle & Co., Bell Gardens, Calif. 708,206, canc. Cl. 18.
Brainerd Mfg. Co., East Rochester, N.Y. 822,824, pub. 11–8–66. Cl. 26.
Brands, Inc., Plainfield, N.Y. 822,695, pub. 8–16–66. Cl. 18.
Breck, John H., Inc., Springfield, Mass. 823,050, pub. 11–8–66. Cl. 51.
Bristol-Myers Co., New York, N.Y. 822,719, pub. 11–8–66. Cl. 18.
Bristol-Myers Co., New York, N.Y. 822,720, pub. 11–8–66. Cl. 18.
Bristol-Myers Co., New York, N.Y. 822,721, pub. 11–8–66. Cl. 18.
Brother International Corp., New York, N.Y. 822,803, pub. 11–8–66. Cl. 23.
Brown, James A., d.b.a. Piedmont Equipment Co., Greenville, S.C. 822,659, pub. 11–8–66. Cl. 12.
Buell Engineering Co., Inc., Lebanon, Pa. 822,680, pub. 11–8–66. Cl. 13.
Buell Engineering Co., Inc., Lebanon, Pa. 822,681, pub. 11–8–66. Cl. 13.
Burkhardt, Henry, Beverages: *See*—
Silver Brook Beverage Co.
Burr-Brown Research Corp., Tucson, Ariz. 822,745, pub. 11–8–66. Cl. 21.
Butler, John O., Co., Chicago, Ill. 822,837, pub. 11–8–66. Cl. 29.
Butt, H. E., Grocery Co., d.b.a. Harlingen Canning Co., Corpus Christi, Tex. 823,024, pub. 11–8–66. Cl. 46.
Cabot, Sam', to Samuel Cabot, Inc., Boston, Mass. 59,736, ren. 1–24–67. Cl. 6.
Cabot, Samuel, Inc.: *See*—
Cabot, Sam.
Cabot, Samuel, Inc., Boston, Mass. 224,165, ren. 1–24–67. Cl. 12.
Cacao- en Chocoladefabrieken Bensdorp N.V., Bussum, Netherlands. 822,981, pub. 11–8–66. Cl. 46.
Calgon Corp., Pittsburgh, Pa. 823,018, pub. 11–8–66. Cl. 46.
Cal Pops: *See*—
Cal Pops Corp.
Cal Pops Corp., d.b.a. Cal Pops, Brooklyn, N.Y. 823,004, pub. 11–8–66. Cl. 46.
Camp and McInnes, Inc., Reading, Pa. 822,915, pub. 11–8–66. Cl. 39.
Campana Art Products, Inc., Camden, N.J. 823,047, pub. 11–8–66. Cl. 50.
Campbell Products Co., Chicago, to Deltrol Corp., d.b.a. Campbell Products Co., Bellwood, Ill. 423,525, ren. 1–24–67. Cl. 21.
Canton Cotton Mills: *See*—
Canton Textile Mills, Inc.
Canton Textile Mills, Inc., from Canton Cotton Mills, Canton, Ga. 823,188. Cl. 42.
Canton Textile Mills, Inc., from Canton Cotton Mills, Canton, Ga. 823,189. Cl. 42.
Capezio, Inc., New York, N.Y. 823,187. Cl. 39.
Cargill, Inc., Minneapolis, Minn. 822,642, pub. 11–8–66. Cl. 6.
Carmine Foods, Inc., Richmond, Va. 823,020, pub. 11–8–66. Cl. 46.
Carnation Co.: *See*—
American Milk Products Corp.
Carnation Co., Los Angeles, Calif. 823,019, pub. 11–8–66. Cl. 46.
Carolite, Inc., Gardena, Calif. 822,657, pub. 2–22–66. Cl. 12.
Carpenter Paper Co., to Connecticut Valley Paper & Envelope Co., Inc., New York, N.Y. 720,694, new cert. Cl. 37.
Carrington and Co., Ltd.: *See*—
National Distillers Products Co.
Cassingham, John L., d.b.a. Tayscope Co., North Hollywood, Calif. 822,815, pub. 11–8–66. Cl. 26.
Castanes Corp., The, d.b.a. Thru-Flight Service, Farmingdale, N.J. 823,140, pub. 11–8–66. Cl. 105.
Caterpillar Tractor Co., East Peoria, Ill. 822,788, pub. 11–8–66. Multiple Class (Classes 23 and 34).
Cavalcade Mfg. Corp., New York, N.Y. 822,930, pub. 11–8–66. Cl. 40.
Cavalier Aircraft Corp., Sarasota, Fla. 822,730, pub. 6–7–66. Cl. 19.
Cecila Products Ltd., New York, N.Y. 822,834, pub. 11–8–66. Cl. 29.
Celanese Corp.: *See*—
American Cellulose & Chemical Mfg. Co. Ltd., The.
Central Retailer-Owned Grocers, Inc.: *See*—
Shurfine-Central Corp.
Chaconas, Peter G.: *See*—
Sigma Chemical Co.
Chambord Shoe Co., Inc., New York, N.Y. 708,118, canc. Cl. 39.
Chartered Enterprises, d.b.a. Superior Sports Specialties, San Fernando, Calif. 822,763, pub. 11–8–66. Cl. 22.
Chicago Flexible Shaft Co., n.b.c.o.n. Sunbeam Corp., to Sunbeam Corp., Chicago, Ill. 428,410, ren. 1–24–67. Cl. 27.
Circle Import-Export Co., Los Angeles, Calif. 822,650, pub. 11–8–66. Multiple Class (Classes 8, 21, 23, 30, 33, and 50).
Clark Foam Products Co., Inc., Chicago, Ill. 822,849, pub. 11–8–66. Cl. 32.
Clay Products Association of the Southwest, Inc., The, Austin, Tex. 823,160, pub. 11–8–66. Cl. A.
Climate Cosmetics Corp., New York, N.Y. 823,051, pub. 11–8–66. Cl. 51.
Coca-Cola Co., The, Atlanta, Ga. 822,965, pub. 11–8–66. Cl. 45.
Cochran, Jacqueline, Inc.: *See*—
Cochran, Jacqueline.
Cochran, Jacqueline, New York, from Jacqueline Cochran, Inc., New York, N.Y. 383,808, canc. Cl. 51.
Cole National Corp., Cleveland, Ohio. 823,087, pub. 11–8–66. Cl. 52.
Cole-Parmer Instrument & Equipment, Chicago, Ill. 822,747, pub. 11–8–66. Cl. 21.
Colgate-Palmolive Co., New York, N.Y. 822,714, pub. 11–8–66. Cl. 18.
Colgate-Palmolive Co., New York, N.Y. 823,067, pub. 11–8–66. Cl. 51.
Colley Block Co., Inc., Robinson Creek, Ky. 823,168. Cl. 12.
Columbia-Southern Chemical Corp., Pittsburgh, Pa. 707,954, canc. Cl. 6.
Commercial Decal, Inc., Mount Vernon, N.Y. 822,893, pub. 11–8–66. Cl. 38.
Communication Papers Inc., Moosic, Pa. 822,738, pub. 11–8–66. Cl. 21.
Compania De Bedidas Del Oriente: *See*—
Puerto Rico Distillers, Inc.
Compania Mexicana De Aviacion, S.A., Mexico City, Mexico. 823,137, pub. 11–8–66. Cl. 105.
Comptometer Corp., Chicago, Ill. 708,105, canc. Cl. 37.
Connecticut Valley Paper & Envelope Co., Inc.: *See*—
Carpenter Paper Co.
Consolidated Millinery Co., Chicago, Ill. 822,932, pub. 11–8–66. Cl. 40.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 822,881, pub. 11–8–66. Cl. 37.
Constitution Tobacco Products Corp., to Philip Morris Inc., New York, N.Y. 426,456, ren. 1–24–67. Cl. 17.
Container Corp. of America, Chicago, Ill. 822,882, pub. 11–8–66. Cl. 37.
Continental Distilling Co.: *See*—
Continental Distilling Corp.
Continental Distilling Corp., d.b.a. W. A. Haller Co., Philadelphia, Pa. 823,038, pub. 11–8–66. Cl. 49.
Continental Distilling Corp., d.b.a. Continental Distilling Co., Philadelphia, Pa. 823,039, pub. 11–8–66. Cl. 49.
Continental Industries, Inc., Tulsa, Okla. 822,670, pub. 11–8–66. Cl. 13.
Controlled Environment Equipment Corp., Whitman, Mass. 822,777, pub. 11–8–66. Multiple Class (Classes 23, 26, and 50).
Converse Rubber Corp., Malden, Mass. 822,903, pub. 11–8–66. Cl. 39.
Cooper's Inc., Kenosha, Wis. 822,927, pub. 11–8–66. Cl. 39.
Copeland Sausage Co.: *See*—
Copeland Sausage Co., Inc.

Copeland Sausage Co., Inc., d.b.a. Copeland Sausage Co., Alachua, Fla. 823,029, pub. 11–8–66. Cl. 46.
Corcoran, Desmond P., El Paso, Tex. 822,739, pub. 11–8–66. Cl. 21.
Craddock-Terry Shoe Corp., Lynchburg, Va. 708,222, canc. Cl. 39.
Creamland Dairies, Inc., Albuquerque, N. Mex. 822,971, pub. 11–8–66. Cl. 46.
Crescent Corset Co., Inc., Cortland, N.Y. 822,921, pub. 11–8–66. Cl. 39.
Crest Brokerage Co., Inc.: *See*—
Crest Brokerage Co.
Crest Brokerage Co., d.b.a. Crest Brokerage Co., and Crest Brokerage Co., Inc., Los Angeles, Calif. 823,023, pub. 11–8–66. Cl. 46.
Crisfield Seafood Restaurant: *See*—
Crisfield Seafood Co.
Crisfield Seafood Co., d.b.a. Crisfield Seafood Restaurant, Silver Spring, Md. 823,101, pub. 11–8–66. Cl. 100.
Curtiss-Wright Corp., Cleveland, Ohio. 822,786, pub. 11–8–66. Cl. 23.
Cybernetics Corp., Manchester, N.H. 823,126, pub. 11–8–66. Cl. 101.
DCA Food Industries Inc., New York, N.Y. 708,163, canc. Cl. 46.
D-P Co., d.b.a. Dental Perfection Co., Glendale, Calif. 822,767, pub. 8–23–66. Cl. 22.
D-S Agency, Inc.: *See*—
Amalgamated Credit Systems, Inc.
Daffin Corp., Hopkins, Minn. 822,807, pub. 11–8–66. Cl. 23.
Dainhonbungu Co., Ltd., Tokyo, Japan. 822,691, pub. 11–8–66. Cl. 37.
Dashe, Inc., d.b.a. Scorpion, Inc., Beverly Hills, Calif. 822,810, pub. 11–8–66. Cl. 23.
Davison Clark Inc., Cleveland, Ohio. 823,044, pub. 11–8–66. Cl. 50.
Dawe's Laboratories, Inc., Chicago, Ill. 822,697, pub. 11–8–66. Cl. 18.
Dawn Donut Co., Inc., Jackson, Mich. 822,967, pub. 11–8–66. Cl. 46.
De Beaufort, Ltd., New York, N.Y. 823,059, pub. 11–8–66. Cl. 51.
De Beaufort, Ltd., New York, N.Y. 823,060, pub. 11–8–66. Cl. 51.
Deblauwe, Mildred C., d.b.a. Maplewood Studios, Waterloo, Iowa. 823,145, pub. 11–8–66. Cl. 106.
Decca Ltd., London, England. 822,751, pub. 11–8–66. Multiple Class (Classes 21 and 26).
Decker Corp., The, Bala Cynwyd, Pa. 823,130, pub. 11–8–67. Cl. 103.
De Corp.: *See*—
Fregeau, Ulrich J.
Delaforce Sons & Ca. Limitada, Villa Nova de Gaya, Portugal. 823,031, pub. 11–8–66. Cl. 47.
Delaney, James J., d.b.a. Delaney's Surplus Sales, North Freedom, Wis. 822,736, pub. 11–8–66. Cl. 19.
Delaney's Surplus Sales: *See*—
Delaney, James J.
Delta Delta Delta, Evanston and Chicago, Ill. 223,230, ren. 1–24–67. Cl. 28.
Deltrol Corp.: *See*—
Campbell Products Co.
De Martel, Madeleine: *See*—
Sherman, Robert M.
Denoyer-Geppert Co., Chicago, Ill. 822,817, pub. 11–8–66. Multiple Class (Classes 26 and 38).
Dental Perfection Co.: *See*—
D–P Co.
Dermik Pharmacal Co., Inc., Syosset, N.Y. 822,707, pub. 8–23–66. Cl. 18.
Dermott Inc., Chicago, Ill. 823,053, pub. 11–8–66. Multiple Class (Classes 51 and 52).
Desco Shoe Corp., New York, N.Y. 822,916, pub. 11–8–66. Cl. 39.
Desco Shoe Corp., New York, N.Y. 822,925, pub. 11–8–66. Cl. 39.
Desican N.V., Amsterdam-C, Netherlands. 822,948, pub. 11–8–66. Cl. 42.
Desican N.V., Amsterdam-C, Netherlands. 822,949, pub. 11–8–66. Cl. 42.
De Witt. E. C., & Co., Inc., Chicago, Ill. 822,709, pub. 11–8–66. Cl. 18.
Diamond Alkali Co., Cleveland, Ohio. 823,088, pub. 11–8–66. Cl. 52.
Dickson, Cecil V., d.b.a. Dixall Food Products, Oakland, Calif. 823,005, pub. 11–8–66. Cl. 46.
Digital Systems, Inc., Covina, Calif. 822,746, pub. 11–8–66. Cl. 21.
Dive-Ettes, Inc., New York, N.Y. 822,929, pub. 11–8–66. Cl. 39.
Dixall Food Products: *See*—
Dickson, Cecil V.
Donovan Industries, Inc., New York, N.Y. 707,933, canc. Cl. 1.
Drexel Enterprises, Inc., Drexel, N.C. 799,874, new cert. Cl. 32.
Drug Products Co., Inc., Bloomfield, N.J. 822,718, pub. 11–8–66. Cl. 18.
Du Bois, Donald E., Los Angeles, Calif. 822,757, pub. 11–8–66. Cl. 22.
Dunlop Tire and Rubber Corp., Buffalo, N.Y. 822,865, pub. 11–8–66. Cl. 35.
Dun & Bradstreet, Inc., New York, N.Y. 823,124, pub. 11–8–66. Cl. 101.
Dupaco Inc., Arcadia, Calif. 822,959, pub. 11–8–66. Cl. 44.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 822,631, pub. 11–8–66. Cl. 5.
Duvidell Sales Corp., New York, N.Y. 823,058, pub. 9–27–66. Cl. 51.
Dynalectron Corp., Washington, D.C. 822,838, pub. 11–8–66. Cl. 31.
E.S.R., Inc., Montclair, N.J. 822,770, pub. 11–8–66. Cl. 22.
Early Bird Fast Photo Service: *See*—
Target Photo Finishers, Inc.
Eastern Boneless Beef Co., Philadelphia, Pa. 823,015, pub. 11–8–66. Cl. 46.
Eastern States Farmers' Exchange, Inc., West Springfield, Mass. 708,168, canc. Cl. 46.
Eaton Yale & Towne Inc., Cleveland, Ohio. 822,735, pub. 11–8–66. Multiple Class (Classes 19, 23, and 34).
Ebco Mfg. Co., Columbus, Ohio. 822,843, pub. 11–8–66. Cl. 31.
Eberhard Faber Inc., Wilkes-Barre, Pa. 822,889, pub. 11–8–66. Cl. 37.
Edison Bros. Stores, Inc., St. Louis, Mo. 708,224, canc. Cl. 39.
Elsen Mercantile, Inc., Merriam, Kans. 822,938, pub. 11–8–66. Cl. 42.
Elco Corp., The, Cleveland, Ohio. 822,632, pub. 11–8–66. Cl. 6.
Elder Enterprises, Inc., Myrtle Beach, S.C. 708,209, canc. Cl. 23.
Electric Motor Supply Co., The, Baltimore, Md. 823,113, pub. 11–8–66. Cl. 101.
El Solo Packing Co., Stockton, Calif. 708,160, canc. Cl. 46.
Emerald Packing Co., Reedley, Calif. 708,164, canc. Cl. 46.
Emerald Packing Co., Reedley, Calif. 708,165, canc. Cl. 46.
Emerald Packing Co., Reedley, Calif. 708,166, canc. Cl. 46.
Empire Tube Sales, Inc., Jacksonville, Fla. 822,754, pub. 11–8–66. Cl. 21.
Emporium World Millinery Co., Chicago, Ill. 822,926, pub. 11–8–66. Cl. 39.
Eskimo Pie Corp., Richmond, Va. 823,028, pub. 11–8–66. Cl. 46.
Esterline Angus Instrument Co., Inc., Indianapolis, Ind. 822,825, pub. 11–8–66. Cl. 26.
Eureka Fire Hose Co., to United States Rubber Co., New York, N.Y. 29,579, ren. 1–24–67. Cl. 35.
Eventoff, Hyman, d.b.a. Bathbee Co., Long Island City, N.Y. 822,683, pub. 11–8–66. Cl. 13.
Evsco Pharmaceutical Co., Oceanside, N.Y. 822,956, pub. 11–8–66. Cl. 44.
Express Tool Co.: *See*—
Last, Kenneth M.
Extrudo Film Corp., New York, N.Y. 822,608, pub. 11–8–66. Cl. 1.
Extrudo Film Corp., New York, N.Y. 822,879, pub. 11–8–66. Cl. 37.
F & F Laboratories, Inc., Chicago, Ill. 822,975, pub. 11–8–66. Cl. 46.
FRST Co., Clatskanie, Oreg. 822,701, pub. 11–8–66. Cl. 18.
Fabcon Inc., Chagrin Falls, Ohio. 822,638, pub. 11–8–66. Cl. 6.
Fabcon Inc., Chagrin Falls, Ohio. 822,639, pub. 11–8–66. Cl. 6.
Fairbank, N. K., Co., The, Chicago, Ill., to Lever Brothers Co., New York, N.Y. 59,412, ren. 1–24–67. Cl. 52.
Fairchild Hiller Corp.: *See*—
Fairchild Stratos Corp.
Fairchild Stratos Corp., Fairchild Hiller Corp., Hagerstown, Md. 761,868. Am. 7(d). Cl. 21.
Fairmont Foods Co., Omaha, Nebr. 822,997, pub. 9–6–66. Cl. 46.
Falcon Line Products Corp., Pittsburgh, Pa. 822,671, pub. 11–8–66. Cl. 13.
Fan Way Corp., Milwaukee, Wis. 822,862, pub. 11–8–66. Cl. 34.
Farmers Tool and Supply Corp., Denver, Colo. 822,775, pub. 10–20–64. Cl. 23.
Femco, Inc., Irwin, Pa. 822,819, pub. 11–8–66. Cl. 26.
Fenestra Inc., Detroit, Mich. 707,969, canc. Cl. 12.
Fiberfil, Inc., Evansville, Ind. 822,606, pub. 11–8–66. Cl. 1.
Fiegenbaum, Dr. Gunter, Hamburg, Germany. 822,698, pub. 6–21–66. Cl. 18.
Fifth Avenue Wig Co., Ltd., New York, N.Y. 822,933, pub. 11–8–66. Cl. 40.
Fisk Rubber Co., The, Chicopee Falls, Mass., to United States Rubber Co., New York, N.Y. 62,574, ren. 1–24–67. Cl. 35.
Fisk Rubber Co., The, Chicopee Falls, Mass., and Cudahy, Wis., to United States Rubber Co., New York, N.Y. 227,907, ren. 1–24–67. Cl. 35.
Fisk Rubber Co., The, Chicopee Falls, Mass., and Cudahy, Wis., to United States Rubber Co., New York, N.Y. 227,953, ren. 1–24–67. Cl. 35.
Fitzpatrick, W. J., Co., The, Chicago, Ill. 708,072, canc. Cl. 23.
Fleet Products Co., Inc., Costa Mesa, Calif. 822,734, pub. 11–8–66. Cl. 19.
Florasynth Laboratories, Inc., Bronx, N.Y. 823,000, pub. 11–8–66. Cl. 46.
Flying W. Ranch, Inc., Colorado Springs, Colo. 823,146, pub. 11–8–66. Cl. 107.
Food Fair Stores, Inc., Philadelphia, Pa. 823,123, pub. 11–8–66. Cl. 101.
Foods Plus, Inc., New York, N.Y. 822,703, pub. 8–23–66. Cl. 18.
Ford Motor Co. of Canada, Ltd., Toronto, Ontario, Canada. 708,023, canc. Cl. 19.
Four Corners Sportswear, Inc., Boston, Mass. 822,907, pub. 11–8–66. Cl. 39.
Fourrures Ronax, Societe Anonyme, Paris, France. 822,909, pub. 11–8–66. Cl. 39.
Frank, Wally, Ltd., New York, N.Y. 822,693, pub. 11–8–66. Cl. 17.
Fraterlli Fulvi, S.A.R.L., Viterbo, Italy. 708,159, canc. Cl. 46.
Freeman, Gilbert, Inc., Boston, Mass. 823,191. Cl. 44.

Fregeau, Ulrich J., d.b.a. De Corp., Denver, Colo. 822,634, pub. 11–8–66. Cl. 6.
Freundorfer K.G.: *See*—
Metallgesellschaft Aktiengesellschaft.
Fromageres Grosjean S.A.: *See*—
Fromageries Grosjean Freres.
Fromageries Grosjean S.A., Jura, France, from Fromageries Grosjean Freres, Jura, France. 822,973, pub. 11–8–66. Cl. 46.
Ghio, E. & J., Winery, Fresno, Calif. 708,174, canc. Cl. 47.
Garlock Inc., from The Garlock Packing Co., The Palmyra, N.Y. 708,097, canc. Cl. 35.
Garlock Packing Co., The: *See*—
Garlock Inc.
Gatto Machinery Development, Farmingdale, N.Y. 822,790, pub. 11–8–66. Cl. 23.
Gaylord Products, Inc., Chicago, Ill. 427,943, ren. 1–24–67. Cl. 40.
Gehl Bros. Mfg. Co., West Bend, Wis. 822,791, pub. 11–8–66. Cl. 23.
Gemstone Corp., Indianapolis, Ind. 822,660, pub. 11–8–66. Multiple Class (Classes 12 and 50).
General Electric Co., East Cleveland, Ohio. 822,816, pub. 11–8–66. Cl. 26.
General Mills, Inc.: *See*—
International Co., The.
General Mills, Inc., Minneapolis, Minn. 822,635, pub. 8–2–66. Cl. 6.
General Motors Corp.: *See*—
Inland Mfg. Co.
General Precision, Inc., Glendale, Calif. 822,743, pub. 11–8–66. Cl. 21.
General Thermetics, Inc., Farmingdale, N.Y. 822,844, pub. 11–8–66. Cl. 31.
General Thermetics, Inc., Farmingdale, N.Y. 822,845, pub. 11–8–66. Cl. 31.
General Tire & Rubber Co., The, Akron, Ohio. 822,936, pub. 4–26–66. Cl. 42.
General Valve Co., Inc., Long Beach, Calif. 822,666, pub. 3–1–66. Cl. 13.
Gentex Corp., New York, N.Y. 822,902, pub. 11–8–66. Cl. 39.
Georgia Kaolin Co., Elizabeth, N.J. 822,609, pub. 11–8–66. Cl. 1.
Georgia Kaolin Co., Elizabeth, N.J. 822,619, pub. 11–8–66. Cl. 1.
Germanow-Simon Machine Co., Inc.: *See*—
Germanow-Simon Machine Co.
Germanow-Simon Machine Co., to Germanow-Simon Machine Co., Inc., Rochester, N.Y. 425,414, ren. 1–24–67. Cl. 33.
Ghirardelli Chocolate Co.: *See*—
Ghirardelli, D., Co.
Ghirardelli, D., Co., to Golden Grain Macaroni Co., d.b.a. Ghirardelli Chocolate Co., San Francisco, Calif. 426,706, ren. 1–24–67. Cl. 46.
Gill, John C., Inc., Boston, Mass. 823,178. Cl. 32.
Glidden Co., The, Cleveland, Ohio. 822,633, pub. 8–9–66. Cl. 6.
Golden Grain Macaroni Co.: *See*—
Ghirardelli, D., Co.
Golden West Broadcasters, Los Angeles, Calif. 823,150, pub. 11–8–66. Cl. 107.
Goodyear Footwear Corp., from H. E. Guptill, to The Goodyear Tire & Rubber Co., Akron, Ohio. 40,303, new cert. Cl. 39.
Goodyear Footwear Corp., from Phillips-Baker Rubber Co., to The Goodyear Tire & Rubber Co., Akron, Ohio. 253,733, new cert. Cl. 39.
Goodyear Footwear Corp., from Phillips-Baker Rubber Co., to The Goodyear Tire & Rubber Co., Akron, Ohio. 253,734, new cert. Cl. 39.
Goodyear Footwear Corp., to The Goodyear Tire & Rubber Co., Akron, Ohio. 518,578, new cert. Cl. 39.
Goodyear Tire & Rubber Co., The: *See*—
Goodyear Footwear Corp.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 822,866, pub. 11–8–66. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 822,867, pub. 11–8–66. Cl. 35.
Gordon, Duff & Co., S.A., Cadiz, Spain. 823,036, pub. 11–8–66. Cl. 49.
Goslin, Ellsworth R., Phoenix, Ariz. 822,985, pub. 11–8–66. Cl. 46.
Grace, W. R., & Co., New York, N.Y. 823,167. Cl. 12.
Graniteville Co., Graniteville, S.C. 822,940, pub. 11–8–66. Cl. 42.
Graybar Electric Co., Inc., New York, N.Y. 708,036, canc. Cl. 21.
Greenberg, B. B., Co., Cranston, R.I. 822,832, pub. 11–8–66. Cl. 28.
Gritzner-Kayser Aktiengesellschaft, Karlsruhe-Durlach, Germany. 823,177. Cl. 26.
Haller, W. A., Co.: *See*—
Continental Distilling Corp.
Halliburton Co., Duncan Okla. 822,601, pub. 11–8–66. Multiple Class (Classes 1, 6, 12, 14, 16, 23, 26, 33, and 103).
Har Lee, Inc., Brighton, Colo. 707,943, canc. Cl. 3.
Harbison-Walker Refractories Co., Pittsburgh, Pa. 707,974, canc. Cl. 12.
Harsco Corp., from Cobey Corp., Galion, Ohio. 822,614, pub. 11–8–66. Multiple Class (Classes 2, 19, and 23).
Harshaw Chemical Co., The, Cleveland, Ohio. 822,643, pub. 11–8–66. Cl. 6.
Hart, Leon, Texas Enterprises, Inc., Birmingham, Mich. 822,640, pub. 11–8–66. Cl. 6.
Haveg Industries, Inc., Wilmington, Del. 823,170. Cl. 21.
Haviland Laboratories, Inc., New York, N.Y. 823,065, pub. 11–8–66. Cl. 51.
Hays, Daniel, Co., Inc., The, Gloversville, N.Y. 708,125, canc. Cl. 39.
Hasleton Laboratories, Inc., d.b.a. Instrument Development Co., Reston, Va. 822,822, pub. 11–8–66. Cl. 26.
Head Ski Co., Inc., Dover, Del. 822,756, pub. 9–20–66. Cl. 22.
Heany Industrial Ceramic Corp., Rochester, N.Y. 822,776, pub. 11–8–66. Cl. 23.
Hearst Corp., The, New York, N.Y. 822,900, pub. 11–8–66. Cl. 38.
Heineken's Brouwerijen Nederland N.V., Amsterdam, Netherlands. 823,033, pub. 11–8–66. Cl. 48.
Heineken's Brouwerijen Nederland N.V., Amsterdam, Netherlands. 823,034, pub. 11–8–66. Cl. 48.
Heinr, Franck, Sons, Inc., Port Huron, Mich. 220,997, ren. 1–24–67. Cl. 46.
Hemisfair: *See*—
San Antonio Fair, Inc.
Heublein, Inc., Hartford, Conn. 822,980, pub. 11–8–66. Cl. 46.
Hill, Dorothy W., d.b.a. Wig Imports Wholesale Co., Salt Lake City, Utah. 822,931, pub. 11–8–66. Cl. 40.
Hills, Bob G., d.b.a. B & D Mfg. Co., Albuquerque, N. Mex. 708,053, canc. Cl. 22.
Hilton Hotels Corp., South San Francisco, Calif. 823,151, pub. 11–8–66. Cl. 107.
Holly, Jane, Inc., New York, N.Y. 822,918, pub. 11–8–66. Cl. 39.
Holmes Hardware & Sales Co., Los Angeles, Calif. 822,674, pub. 11–8–66. Cl. 13.
Hood, R. H., Co., Philadelphia, Pa. 822,804, pub. 11–8–66. Cl. 23.
Horan, William L., Leesburg, Fla. 823,153, pub. 11–8–66. Cl. 107.
House of Coins, Elizabeth, N.J. 823,164. Cl. 2.
Howdon Videx Products Corp., Califon, N.J. 708,140, canc. Cl. 44.
Howson Products, Inc., North Haven, Conn. 708,042, canc. Cl. 22.
Hubl, Anton, Export-Gesellschaft m.b.H., Vienna, Austria. 708,117, canc. Cl. 39.
Hudson Pulp & Paper Corp., New York, N.Y. 823,182. Cl. 37.
Huff, Thomas R., Paoli, Pa. 822,957, pub. 11–8–66. Cl. 44.
Hughes, Alvin W.: *See*—
Hughes, A. W., Co.
Hughes, Alvin W., d.b.a. A. W. Hughes Co., Bensenville, Ill. 822,799, pub. 11–8–66. Cl. 23.
Hutt's Dairy, Inc., Buffalo, N.Y. 823,174. Cl. 23.
Ice Butlers, Inc., Arlington, Va. 822,841, pub. 11–8–66. Cl. 31.
Illinois Tool Works Inc., Chicago, Ill. 823,163. Cl. 2.
Indian Head Inc., New York, N.Y. 822,952, pub. 11–8–66. Cl. 42.
Inland Mfg. Co., Dayton, Ohio, to General Motors Corp., Detroit, Mich. 220,921, ren. 1–24–67. Cl. 19.
Inn Timate: *See*—
Katchen, Herschel.
Institute For Financial Planning, Inc., New York, N.Y. 823,116, pub. 11–8–66. Cl. 101.
Instrument Development Co.: *See*—
Hasleton Laboratories, Inc.
International Co., The, Baltimore, Md., to General Mills, Inc., Minneapolis, Minn. 221,414, ren. 1–24–67. Cl. 46.
International Guano Co.: *See*—
McGuire, George.
International Latex Corp., Dover, Del. 823,057, pub. 11–8–66. Cl. 51.
International Paper Co., New York, N.Y. 822,617, pub. 11–8–66. Cl. 2.
International Play Group Inc., New York, N.Y. 823,148, pub. 11–8–66. Cl. 107.
International Silver Co., The: *See*—
International Silver Co.
International Silver Co., to The International Silver Co., Meriden, Conn. 225,897, ren. 1–24–67. Cl. 23.
Ironsides Co., The, Columbus, Ohio. 225,608, ren. 1–24–67. Cl. 16.
J-B Distributing Co., Los Angeles, Calif. 823,027, pub. 11–8–66. Cl. 46.
J & C Hollywood Drive-Ins, Inc., Rockford, Ill. 823,096, pub. 11–8–66. Cl. 100.
J & C Hollywood Drive-Ins, Inc., Rockford, Ill. 823,097, pub. 11–8–66. Cl. 100.
Jacobs, Eva H., Arlington, Va. 822,772, pub. 11–8–66. Cl. 22.
Jeffrey Galion Mfg. Co., Columbus, Ohio. 822,733, pub. 11–8–66. Cl. 19.
Jensen Industries, Inc., Forest Park, Ill. 707,950, canc. Cl. 6.
Jetson Tire & Rubber Corp., Bridgeport, Conn. 822,871, pub. 11–8–66. Cl. 35.
Jewelers, Lori, Inc., New York, N.Y. 822,830, pub. 11–8–66. Cl. 28.
Joannes Corp., Los Angeles, Calif., to McCormick & Co., Inc., Baltimore, Md. 216,986, ren. 1–24–67. Cl. 46.
Jobst Institute, Inc., Toledo, Ohio. 822,955, pub. 11–8–66. Cl. 44.
Johnston Export Publishing Co., to Johnston International Publishing Corp., New York, N.Y. 226,592, ren. 1–24–67. Cl. 38.
Johnston International Publishing Corp.: *See*—
Johnston Export Publishing Co.
Jones & Scully, Inc., Miami, Fla. 822,602, pub. 11–8–66. Cl. 1.
Jose Hernandes Peres, Molina de Segura, Spain. 708,150, canc. Cl. 46.
Joseph, David J., Co., The, Loveland, Ohio, to Waldron Poultry Co., Inc., Cincinnati, Ohio. 423,623, ren. 1–24–67. Cl. 46.

Junker, Otto, Kreis Monschau, Germany. 822,741, pub. 11–8–66. Multiple Class (Classes 21, 23, and 34).
Juran, Leo, Manchester, Conn. 708,219, canc. Cl. 37.
Kalansia, Frank A., Middletown, Ohio. 822,833, pub. 11–8–66. Cl. 28.
Karl Riha, Steyr, Austria. 822,765, pub. 9–27–66. Cl. 22.
Katchen, Herschel, d.b.a. Inn Timate, Aurora, Colo. 822,877, pub. 11–8–66. Cl. 36.
Kee Lox Mfg. Co., Rochester, N.Y. 822,884, pub. 11–8–66. Cl. 37.
Keeter Charcoal Co., Denver, Colo. 822,604, pub. 8–23–66. Cl. 1.
Keineken's Brouwerijen Nederland N.V., Amsterdam, Netherlands. 823,035, pub. 11–8–66. Cl. 48.
Keith & Griffman, Inc., Boston, Mass. 822,831, pub. 11–8–66. Cl. 28.
Kelley-Clarke Co., Seattle, Wash. 428,070, ren. 1–24–67. Cl. 46.
Kelly-Springfield Tire Co., Cumberland, Md. 822,869, pub. 11–8–66. Cl. 35.
Ketner, David, d.b.a. Modern Research Laboratories, New York, N.Y. 822,885, pub. 11–8–66. Cl. 37.
Kilburg Geochron Corp., San Mateo, Calif. 822,828, pub. 11–8–66. Cl. 27.
Kimberly-Clark Corp., Neenah, Wis. 822,958, pub. 11–8–66. Cl. 44.
King-Seeley Thermos Co., Ann Arbor, Mich. 822,769, pub. 11–8–66. Cl. 22.
King-Seeley Thermos Co., d.b.a. Structo Division, Freeport, Ill. 822,854, pub. 11–8–66. Cl. 34.
King-Seeley Thermos Co., d.b.a. Structo Division, Freeport, Ill. 822,855, pub. 11–8–66. Cl. 34.
Kinsman Food Distributors, Inc., d.b.a. Alesci's and Alesci's Imported Foods, Cleveland, Ohio. 822,968, pub. 11–8–66. Cl. 46.
Kleinert, I. B., Rubber Co., New York, N.Y. 139,153, canc. Cl. 2.
Knickerbocker Plastic Co., Inc., North Hollywood, Calif. 708,208, canc. Cl. 22.
Koenig, Walter, d.b.a. The Old Heidelberg, San Antonio, Tex. 708,177, canc. Cl. 50.
Kohner Bros., Inc., New York, N.Y. 822,758, pub. 6–14–66. Cl. 22.
Kresge, S. S., Co., Detroit, Mich. 823,128, pub. 11–8–66. Cl. 102.
Kristal Kraft, Inc., Palmetto, Fla. 822,690, pub. 2–9–65. Cl. 16.
Kuecker, Robert H., d.b.a. Kuecker Enterprises, Elgin, Ill. 822,665, pub. 11–8–66. Cl. 12.
Kwor-To, Inc., Fort Wayne, Ind. 822,785, pub. 10–11–66. Cl. 23.
LTV-Ling Altec, Inc.: *See*—
University Loudspeakers, Inc
Lab-Line Instruments, Inc., Melrose Park, Ill. 822,812, pub. 3–23–65. Cl. 26.
Ladlor Kennels, Reg., South El Monte, Calif. 823,119, pub. 11–8–66. Cl. 101.
Lafayette Radio Electronics Corp., Syosset, N.Y. 822,744, pub. 2–1–66. Cl. 21.
Lafayette Radio Electronics Corp., Syosset, N.Y. 822,750, pub. 7–5–66. Cl. 21.
Laitner Brush Co., Detroit, Mich. 708,085, canc. Cl. 29.
Lake To Lake Dairy: *See*—
Lake To Lake Dairy Cooperative.
Lake to Lake Dairy Cooperative d.b.a. Lake to Lake Dairy, Manitowoc, Wis. 822,972, pub. 11–8–66. Cl. 46.
La Porte Mfg. and Distr. Co.: *See*—
Yaussi, Frank J.
La Spirotechnique, Paris, France. 822,782, pub. 11–8–66. Cl. 23.
La Spirotechnique, Paris, France. 822,783, pub. 11–8–66. Cl. 23.
Last, Kenneth M., d.b.a. Express Tool Co., Miami, Fla. 822,800, pub. 11–8–66. Cl. 23.
Last, Kenneth M., d b.a. Express Tool Co., Miami, Fla. 822,801 pub. 11–8–66. Cl. 23.
Lazenby, E. & Son, Ltd., London, England, to The Nestle Co., Inc., White Plains, N.Y. 226,002, ren. 1–24–67. Cl. 46.
Leader Garment Co., Inc., The, St. Louis, Mo. 822,910, pub. 11–8–66. Cl. 39.
Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. 823,061, pub. 11–8–66. Cl. 51.
Lever Bros. Co.: *See*—
Fairbank, N. K., Co., The.
Lewis, Ethyl Rogell, and Seymour Phillips, Los Angeles, Calif. 823,066, pub. 11–8–66. Cl. 51.
Lewis, J. B., & Sons Ltd., to Meridian Ltd., Nottingham, England. 425,727, ren. 1–24–67. Cl. 42.
Lido Toy Co., New York, N.Y. 708,041, canc. Cl. 22.
Linnay Pharmaceuticals: *See*—
Wortzel, Paul.
Lipper and Mann Inc., New York, N.Y. 822,667, pub. 11–8–66. Multiple Class (Classes 13, 23, and 30).
Lisbeth Whiting Co., Inc., Brooklyn, N.Y. 823,178. Cl. 23.
Locatelli S.p.A., Milan, Italy. 822,984, pub. 11–8–66. Cl. 46.
Lockheed Aircraft Corp., Burbank, Calif. 822,661, pub. 11–8–66. Cl. 12.
L'Oreal, from Societe Monsavon-L'Oreal, Paris, France. 823,049, pub. 12–11–62. Cl. 51.
Lukens Steel Co., Coatesville, Pa. 822,685, pub. 10–12–65. Cl. 14.
Lunkenheimer Co., The, Cincinnati, Ohio. 822,676, pub. 11–8–66. Cl. 18.
Lutz, Mildred M., Harville, Ohio. 823,147, pub. 11–8–66. Cl. 107.
M & M Candies: *See*—
Mars, Inc.
Mac Fisheries Ltd., London and Bracknell, Berkshire, England. 221,072, ren. 1–24–67. Cl. 46.
MacElroy, J. C., Co., Inc., New York, N.Y. 822,623, pub. 11–8–66. Cl. 2.
Machlett Laboratories, Inc., Springdale, Conn. 427,332, ren. 1–24–67. Cl. 44.
Machlett Laboratories, Inc., Springdale, Conn. 427,333, ren. 1–24–67. Cl. 44.
Machshore Classics, Inc., New York, N.Y. 822,922, pub. 11–8–66. Cl. 39.
MacNaughton, Bruce, Phoenix, Ariz. 822,778, pub. 5–17–66. Cl. 23.
Macke Co., The, Washington, D.C. 823,107, pub. 11–8–66. Cl. 100.
Madison Industries, Inc., Pawtucket, R.I. 822,789, pub. 11–8–66. Cl. 23.
Magnavox Co., The, Fort Wayne, Ind. 822,826, pub. 11–8–66. Cl. 26.
Maidenform, Inc., New York, N.Y. 822,923, pub. 11–8–66. Cl. 39.
Maidenform, Inc., New York, N.Y. 822,924, pub. 11–8–66. Cl. 39.
Maplewood Studios: *See*—
Deblauwek, Mildred, Co.
Marcal Paper Mills, Inc., East Paterson, N.J. 822,890, pub. 11–8–66. Cl. 37.
Marglin, Ronald, Inc., New York, N.Y. 822,937, pub. 11–8–66. Cl. 42.
Marine Equipment Co.: *See*—
Tassell, Kitchener B.
Marketing Counselors, Inc.: *See*—
Marketing Counselors.
Marketing Counselors, Glendale, Calif. 823,125, pub. 11–8–66. Cl. 101.
Marketing Counselors, d.b.a. Marketing Counselors, Inc., Glendale, Calif. 823,122, pub. 11–8–66. Cl. 101.
Marlo Co., Inc., The, New York, N.Y. 822,864, pub. 6–14–66. Cl. 35.
Mars, Inc., d.b.a. M & M Candies, Wilmington, Del. 823,026, pub. 11–8–66. Cl. 46.
Marx-Haas Clothing Co., St. Louis, Mo. 822,905, pub. 11–8–66. Cl. 39.
Massey Junior College, Inc., Atlanta, Ga. 823,154, pub. 11–8–66. Cl. 107.
Material Industries, Inc., Rochester, Mich. 707,965, canc. Cl. 12.
Mattel, Inc., Hawthorne, Calif. 822,764, pub. 8–2–66. Cl. 22.
Maume Collieries Co., The, Terre Haute, Ind., from Alva Coal Corp., to Peabody Coal Co., St. Louis, Mo. 384,674, canc. Cl. 1.
Maume Collieries Co., The, Terre Haute, Ind., from Alva Coal Corp., to Peabody Coal Co., St. Louis, Mo. 313,513, canc. Cl. 1.
Maume Collieries Co., The, Terre Haute, Ind., from Alva Coal Corp., to Peabody Coal Co., St. Louis, Mo. 387,883, canc. Cl. 1.
Maume Collieries Co., The, Terre Haute, Ind., from Peabody Coal Co., St. Louis, Mo. 417,356, canc. Cl. 1.
Maysteel Products Corp., Maysville, Wis. 823,172. Cl. 21.
Medlock, Neil A., d.b.a. Safety Aid Kit, Santa Ana, Calif. 823,046, pub. 11–8–66. Cl. 50.
Meister-Bros., Inc., Cleveland, Ohio. 822,802, pub. 11–8–66. Multiple Class (Classes 23 and 43).
Melrose Mfg. Co., Gwinner, N. Dak. 822,806, pub. 11–8–66. Cl. 23.
Merck & Co., Inc.: *See*—
Sharp & Dohme, Inc.
Merck & Co., Inc., Rahway, N.J. 822,616, pub. 11–8–66. Cl. 2.
Merck & Co., Inc., Rahway, N.J. 822,621, pub. 11–8–66. Cl. 2.
Meridian Ltd.: *See*—
Lewis, J. B., & Sons Ltd.
Mermentau Rice Mill Co., Inc., Mermentau, La. 225,609, ren. 1–24–67. Cl. 46.
Metal & Thermit Corp., Woodbridge, N.J. 707,929, canc. Cl. 1.
Metallgesellschaft Aktiengesellschaft to Freundorfer K.G., Munich, Germany. 724,365, new cert. Cl. 6.
Methode Electronics, Inc., Chicago, Ill. 822,742, pub. 11–8–66. Cl. 21.
Metro-Goldwyn-Mayer, Inc., New York, N.Y. 822,876, pub. 11–8–66. Cl. 36.
Metro Molding Corp., Cleveland, Ohio. 707,942, canc. Cl. 2.
Meyer, George, Corp., New York, N.Y. 822,906, pub. 11–8–66. Cl. 39.
Michael, Claude, Inc., Glendale, Calif. 822,852, pub. 3–29–66. Cl. 34.
Micro-Lite, Inc., Norton, Kans. 822,651, pub. 11–8–66. Cl. 10.
Middlshade Co., Inc., The, Philadelphia, Pa. 822,919, pub. 11–8–66. Cl. 39.
Mighty Mike Bakery: *See*—
McKee Baking Co.
Milani Foods, Inc., Los Angeles, Calif. 822,979, pub. 11–8–66. Cl. 46.
Miller, Albert J., to Miller Electronics Ltd., Vancouver, British Columbia, Canada. 805,901, new cert. Cl. 21.
Miller Electronics Ltd.: *See*—
Miller, Albert J.
Miller, Mel, & Co., Inc., Kansas City, Mo. 708,191, canc. Cl. 101.
Mine Publications, Inc.: *See*—
Youth Associates Co.
Mister Softee, Inc., Runnemede, N.J. 823,102, pub. 11–8–66. Cl. 100.
Mister Softee, Inc., Runnemede, N.J. 823,103, pub. 11–8–66. Cl. 100.

Mithra Engineering Co., Van Nuys, Calif. 707,947, canc. Cl. 5.
Model Products Corp., Mount Clemens, Mich. 822,768, pub. 11–8–66. Cl. 22.
Modern Research: *See*—
Ketner, David.
Moffitt, George N., Indianapolis, Ind. 822,752, pub. 6–14–66. Cl. 21.
Mohr Lino-Saw Co., Skokie, Ill. 822,779, pub. 11–8–66. Cl. 23.
Moore Business Forms, Inc., Niagara Falls, N.Y. 822,880, pub. 11–8–66. Cl. 37.
Moore Business Forms, Inc., Niagara Falls, N.Y. 822,886, pub. 11–8–66. Cl. 37.
Moran, R. J., Co., Cambridge, Mass. 708,000, canc. Cl. 18.
Morris, Philip, Inc.: *See*—
Constitution Tobacco Products Corp.
Morse, Carl A., Inc., New York, N.Y. 823,134, pub. 11–8–66. Cl. 103.
Moser Paper Co., Chicago, Ill. 822,700, pub. 11–8–66. Cl. 18.
Motor Wheel Corp.; to Motor Wheel Corp., Lansing, Mich. 425,512, ren. 1–24–67. Cl. 34.
Mystik Tape, Inc.: *See*—
Borden Co., The.
McClain Products Co.: *See*—
McClain, Waite.
McClain, Waite, d.b.a. McClain Products Co., Canton, Ohio. 822,618, pub. 11–8–66. Cl. 2.
McCormick & Co., Inc.: *See*—
Joannes Corp.
McGuire, George W., d.b.a. International Guano Co., Dallas, Tex. 707,962, canc. Cl. 10.
McKaye, Clare P., Cooksville, Ontario, Canada. 822,997, pub. 11–8–66. Cl. 46.
McKee Baking Co., d.b.a. Mighty Mike Bakery, Collegedale, Tenn. 822,999, pub. 11–8–66. Cl. 46.
McKesson & Robbins, Inc., d.b.a. Tawn Ltd., New York, N.Y. 823,054, pub. 6–21–66. Multiple Class (Classes 51 and 52).
Nassour Studios, Inc., Los Angeles, Calif. 823,056, pub. 11–8–66. Cl. 51.
Nathan, A. E., Co., Inc., New York, N.Y. 822,939, pub. 11–8–66. Cl. 42.
National Air Vibrator Co., Houston, Tex. 822,809, pub. 11–8–66. Cl. 23.
National Biochemical Co.: *See*—
Swimmer, Jerome.
National Bowling Council, d.b.a. Bowlers Victory Legion, Washington, D.C. 823,157, pub. 11–8–66. Cl. 107.
National Distillers and Chemical Corp., New York, N.Y. 822,823, pub. 11–8–66. Cl. 36.
National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., and Carrington and Co., Ltd., New York, N.Y. 823,037, pub. 11–8–66. Cl. 49.
National Distillers Products Co.: *See*—
National Distillers and Chemical Corp.
National Fruit Product Co., Inc., Winchester, Va. 822,966, pub. 11–8–66. Cl. 46.
National Lead Co., New York, N.Y. 822,600, pub. 3–15–66. Cl. 1.
National NuGrape Co., Atlanta, Ga. 376,703. Am. 7(d). Cl. 45.
National Wegivway Co., The, Washington, Iowa. 708,189, canc. Cl. 101.
National Welding Equipment Co., Richmond, Calif. 822,677, pub. 11–8–66. Cl. 13.
Nantec Corp., New York, N.Y. 822,731, pub. 11–8–66. Cl. 19.
Nestle Co., Inc., The: *See*—
Lazenby, E., & Son, Ltd.
Neurotics Anonymous International Liaison, Inc., Washington, D.C. 823,111, pub. 11–8–66. Cl. 100.
New York Airways, Inc., Laguardia Airport, N.Y. 708,194, canc. Cl. 105.
Nickey Brothers, Inc., Memphis, Tenn. 707,967, canc. Cl. 12.
Mickey Brothers, Inc., Memphis, Tenn. 707,972, canc. Cl. 12.
Norcross, Inc., New York, N.Y. 822,648, pub. 11–8–66. Cl. 7.
North and Judd Mfg. Co., The, New Britain, Conn. 822,682, pub. 11–8–66. Cl. 13.
Norvey, Inc., Los Angeles, Calif. 822,793, pub. 11–8–66. Cl. 23.
Ocean Spray Cranberries, Inc., Hanson, Mass. 823,108, pub. 11–8–66. Cl. 100.
Ojibway Press, Inc., Duluth, Minn. 822,898, pub. 10–4–66. Cl. 38.
Old Heidelberg, The: *See*—
Koenig, Walter.
Old Republic Life Insurance Co., Chicago, Ill. 823,129, pub. 11–8–66. Cl. 102.
Olin Mathieson Chemical Corp.: *See*—
Squibb, E. R., & Sons, Inc.
Olin Mathieson Chemical Corp., New York, N.Y. 708,014, canc. Cl. 18.
Oliver Corp., Chicago, Ill. 822,784, pub. 11–8–66. Cl. 23.
Oneida Paper Products, Inc., Clifton, N.J. 822,878, pub. 5–31–66. Cl. 37.
Onsa Watch Co. of America, Inc., New York, N.Y. 708,081, canc. Cl. 27.
Orbis Products Corp.: *See*—
Orbis Products Trading Co., Inc.
Orbis Products Trading Co., Inc., from Orbis Products Corp., New York, N.Y. 138,845, canc. Cl. 6.
Oriental Commerce Ltd., Windsor, Ontario, Canada. 708,145, canc. Cl. 46.
Oriental Commerce Ltd., Windsor, Ontario, Canada. 708,146, canc. Cl. 46.
Oriental Commerce Ltd., Windsor, Ontario, Canada. 708,147, canc. Cl. 46.
Ortho Pharmaceutical Corp., Raritan, N.J. 822,724, pub. 11–8–66. Cl. 18.
Otis Engineering Corp., Dallas, Tex. 822,668, pub. 11–8–66. Cl. 13.
Outlet Co., The, Providence, R.I. 823,135, pub. 11–8–66. Cl. 104.
PM & E. Electronics, Inc., East Providence, R.I. 822,749, pub. 11–8–66. Cl. 21.
P & O-Orient Lines, Inc., San Francisco, Calif. 823,139, pub. 11–8–66. Cl. 105.
Pacific Coast Co., The, San Francisco, Calif. 707,968, canc. Cl. 12.
Packard-Bell Eletronics Corp., Los Angeles, Calif. 708,025, canc. Cl. 21.
Paerse-Laing Ltd., Manchester, England. 708,135, canc. Cl. 42.
Paramount Bedding Corp., Norfolk, Va. 708,211, canc. Cl. 32.
Parker Bros., Inc.: *See*—
Roche, William J.
Parker, S., Hardware Mfg. Corp., New York, N.Y. 822,753, pub. 11–8–66. Cl. 21.
Patterson, David S., Sr., Santa Rosa, Calif. 822,895, pub. 11–8–66. Cl. 38.
Peabody Coal Co.: *See*—
Maumee Collieries Co., The.
Pearce-Simpson, Inc., Miami, Fla. 822,762, pub. 11–8–66. Cl. 22.
Pedicraft, Inc., Jacksonville, Fla. 822,850, pub. 11–8–66. Cl. 32.
Pennsalt Chemicals Corp.: *See*—
Babbitt, B. T., Inc.
Penton Publishing Co., The, Cleveland, Ohio. 708,220, canc. Cl. 38.
Pepperell Mfg. Co.: *See*—
West Point-Pepperell, Inc.
Peters Cartridge Co., The, Cincinnati, Ohio, to Remington Arms Co., Inc., Bridgeport, Conn. 60,728, ren. 1–24–67. Cl. 9.
Pfizer, Chas., & Co., Inc., New York, N.Y. 822,704, pub. 11–8–66. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 822,726, pub. 11–8–66. Cl. 18.
Phillips Electronics and Pharmaceutical, New York, N.Y. 823,176. Cl. 26.
Picker X-Ray Corp.: *See*—
Picker X-Ray Corp., Waite Mfg. Division, Inc.
Picker X-Ray Corp., Waite Mfg. Division, Inc., Cleveland, Ohio, to Picker X-Ray Corp., White Plains, N.Y. 427,372, ren. 1–24–67. Cl. 26.
Piedmont Equipment Co.: *See*—
Brown, James A.
Pierce, L. S., Co.: *See*—
Pierce, Lazarre S.
Pierce, Lazarre S., d.b.a. L. S. Pierce Co., Chicago, Ill. 707,994, canc. Cl. 16.
Pilgrim Badge & Label Corp., Boston, Mass. 822,899, pub. 11–8–66. Cl. 38.
Pink Pussycat of Hollywood, Los Angeles, Calif. 822,912, pub. 11–8–66. Cl. 39.
Plastic Forming Co., Inc., The, Tonawanda, N.Y. 822,624, pub. 11–8–66. Cl. 2.
Plastiline, Inc., Pompano Beach, Fla. 822,678, pub. 11–8–66. Cl. 13.
Plastiline, Inc., Pompano Beach, Fla. 822,679, pub. 11–8–66. Cl. 13.
Playskool Mfg. Co., Chicago, Ill. 822,759, pub. 11–8–66. Cl. 22.
Plough, Inc.: *See*—
Standard Oil Co. (N.J.).
Portable Elevator Mfg. Co., Bloomington, Ill. 822,808, pub. 11–8–66. Cl. 23.
Portal Press, Inc.: *See*—
Great Society Press, Inc.
Portal Press, Inc., from The Great Society Press, Inc., New York, N.Y. 822,896, pub. 11–8–66. Cl. 38.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 822,870, pub. 11–8–66. Cl. 35.
Potlatch Forests, Inc., San Francisco, Calif. 822,662, pub. 11–8–66. Cl. 12.
Powers Regulator Co., The, Skokie, Ill. 822,813, pub. 6–21–66. Cl. 26.
Premier Metal Products Co., Inc., Bronx, N.Y. 822,847, pub. 11–8–66. Cl. 32.
Prestole Corp., Toledo, Ohio. 707,985, canc. Cl. 13.
Prestressed Concrete of Colorado, Inc., Denver, Colo. 822,655, pub. 9–15–64. Cl. 12.
Procter & Gamble Co., The, Cincinnati, Ohio. 708,185, canc. Cl. 51.
Procter & Gamble Co., The, Cincinnati, Ohio. 823,083, pub. 11–8–66. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 823,090, pub. 11–8–66. Cl. 52.
Progressive Drugs of America, Inc., Chattanooga, Tenn. 822,706, pub. 11–8–66. Cl. 18.
Puerto Rico Distillers, Inc., d.b.a. Compania De Bebidas Del Oriente, Arecibo, Puerto Rico. 823,041, pub. 11–8–66. Cl. 49.
Puget Sound Tug & Barge Co., Seattle, Wash. 823,141, pub. 11–8–66. Cl. 105.
Puritan Chemical Co., Atlanta, Ga. 822,628, pub. 11–8–66. Cl. 4.
Puritan Compressed Gas Corp., Kansas City, Mo. 428,111, ren. 1–24–67. Cl. 44.
Quaintance, W. B., & Co., Inc., New York, N.Y. 708,136, canc. Cl. 42.
RCK Inc., Sunnyvale, Calif. 822,748, pub. 11–8–66. Cl. 21.

R.G.B. Laboratories, Inc., Kansas City, Mo. 823,006, pub. 11–8–66. Cl. 46.
R & J Corp., Ogden City, Utah. 823,096, pub. 11–8–66. Cl. 100.
Rainbow Crafts, Inc., Cincinnati, Ohio. 708,038, canc. Cl. 22.
Ranco Industrial Products Corp., Cleveland, Ohio. 822,644, pub. 9–20–66. Cl. 6.
Ratcliff Hoist Co., Inc., Belmont, Calif. 822,805, pub. 11–8–66. Cl. 23.
Rayscope Co.: *See*—
Cassingham, John L.
Reader's Digest Association, Inc., The, New Castle, N.Y. 822,875, pub. 11–8–66. Cl. 36.
Realistic Co., The, Cincinnati, Ohio. 823,068, pub. 11–8–66. Cl. 51.
Redken Laboratories, Inc., Van Nuys, Calif. 823,076, pub. 11–8–66. Cl. 51.
Reliable Luggage, Inc., West Pittsburg, Pa. 708,199, canc. Cl. 3.
Remington Arms Co., Inc.: *See*—
Peters Cartridge Co., The.
Renault, L. N., & Sons, Inc., Egg Harbor City, N.J. 823,030, pub. 11–8–66. Cl. 47.
Research Products Corp., Madison, Wis. 822,846, pub. 11–8–66. Cl. 31.
Revere Copper and Brass Inc., New York, N.Y. 823,043, pub. 11–8–66. Cl. 50.
Revlon, Inc., New York, N.Y. 823,055, pub. 11–8–66. Cl. 51.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 822,761, pub. 3–15–66. Cl. 22.
Riedl & Freede Associates, Clinton, N.J. 708,043, canc. Cl. 22.
Riviana Foods Inc., Houston, Tex. 822,983, pub. 11–8–66. Cl. 46.
Roberts Enterprises, Inc., Chamberlain, S. Dak. 823,180. Cl. 36.
Roche, William J., New Bethlehem, Pa., to Parker Brothers, Inc., Salem, Mass. 62,595, ren. 1–24–67. Cl. 22.
Rohm and Haas Co., Philadelphia, Pa. 822,613, pub. 11–8–66. Cl. 1.
Rohm and Haas Co., Philadelphia, Pa. 822,954, pub. 11–8–66. Cl. 43.
Roll-On Mfg. Corp., Chicago, Ill. 822,732, pub. 11–8–66. Cl. 19.
Ron Alvares Camp, S.A.: *See*—
Wile, Julius, Sons & Co., Inc.
Rowse Co., of N.H., Inc., Greenville, N.H. 822,982, pub. 11–8–66. Cl. 46.
Royaltone, Inc., San Francisco, Calif. 822,692, pub. 3–15–66. Cl. 16.
Ruscoe, W. J., Co., Akron, Ohio. 822,630, pub. 11–8–66. Cl. 5.
Ryan Research & Development Corp., Cleveland Heights, Ohio. 708,055, canc. Cl. 22.
Ryaxons S.A., Geneva, Switzerland. 708,183, canc. Cl. 51.
Sachs, Paul, Originals Co., St. Louis, Mo. 708,120, canc. Cl. 39.
Sacred Design Associates, Inc., Minneapolis, Minn. 823,092, pub. 5–24–66. Multiple Class (Classes 100 and 103).
Sacred Design Associates, Inc., Minneapolis, Minn. 823,094, pub. 5–24–66. Multiple Class (Classes 100 and 103).
Safety Aid Kit: *See*—
Medlock, Neil A.
Saffir, Jacob A., Los Angeles, Calif. 708,084, canc. Cl. 29.
St. Regis Paper Co., New York, N.Y. 707,937, canc. Cl. 2.
St. Regis Paper Co., New York, N.Y. 822,887, pub. 11–8–66. Cl. 37.
San Antonio Fair, Inc., d.b.a. Hemisfair, San Antonio, Tex. 823,156, pub. 11–8–66. Cl. 107.
Sandvikens Jernverks, AB, Sandviken, Sweden. 822,794, pub. 11–8–66. Cl. 23.
Sanford Ink Co., Bellwood, Ill. 822,891, pub. 11–8–66. Cl. 37.
Saratoga Vichy Spring Co., Saratoga Springs, N.Y. 822,963, 11–8–66. Cl. 27.
Sawyer's Inc., Portland, Oreg. 822,818, pub. 11–8–66. Cl. 26.
Scandia Cosmetics Corp., New York, N.Y. 823,069, pub. 11–8–66. Cl. 51.
Schaeren, Mido G., & Co., Bienne, Switzerland. 822,827, pub. 11–8–66. Cl. 27.
Scholl Mfg. Co., Inc., Chicago, Ill. 429,189, ren. 1–24–67. Cl. 44.
Scholten's W. A., Fabrieken: *See*—
Scholten's, W. A., Chemische Fabrieken N.V.
Scholten's, W. A., Chemische Fabrieken N.V., d.b.a. W. A. Scholten's Fabrieken, Foxhol, Groningen, Netherlands. 822,970, pub. 11–8–66. Cl. 46.
Science Service, Inc., Washington, D.C. 225,137, ren. 1–24–67. Cl. 38.
Scorpion, Inc.: *See*—
Dash'e.
Sealol, Inc., Warwick, R.I. 822,672, pub. 11–8–66. Cl. 13.
Seaman-Andwall Corp.: *See*—
American-Marietta Co.
Sears, Roebuck and Co., Chicago, Ill. 822,840, pub. 11–8–66. Cl. 31.
Seaway Associates, Inc., Ann Arbor, Mich. 822,842, pub. 11–8–66. Cl. 31.
Security Van Lines, Inc., Kenner, La. 823,138, pub. 11–8–66. Cl. 105.
Seeburg Corp., The, Chicago, Ill. 822,780, pub. 11–8–66. Cl. 23.
Seelye Plastic-Fab, Inc., Minneapolis, Minn. 823,175. Cl. 23.
Seiler, H. J., Co., Inc., Boston, Mass. 823,022, pub. 11–8–66. Cl. 46.
Selchow & Righter Co., Bay Shore, N.Y. 822,755, pub. 2–23–65. Cl. 22.
Selective Hearing Center: *See*—
Zaslaw, Reuben.
Service Business Forms, Inc., Wichita, Kans. 823,183. Cl. 37.
Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 428,174, ren. 1–24–67. Cl. 18.
Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 428,175, ren. 1–24–67. Cl. 18.
Sheffield Watch Inc., New York, N.Y. 822,829, pub. 11–8–66. Cl. 27.
Shelby Business Forms, Inc., Shelby, Ohio. 822,888, pub. 11–8–66. Cl. 37.
Shell Oil Co.: *See*—
Shell Oil Co., Inc.
Shell Oil Co., Inc., to Shell Oil Co., New York, N.Y. 435,115, new cert. Cl. 6.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 823,089, pub. 11–8–66. Cl. 52.
Shivell, Kirk, New York, N.Y. 822,901, pub. 11–8–66. Cl. 38.
Shock-Proof Electronics, Inc., Philadelphia, Pa. 823,171. Cl. 21.
Shurfine-Central Corp., from Central Retailer-Owned Grocers, Inc., Northlake, Ill. 823,112, pub. 11–8–66. Cl. 101.
Sidler, Karl J., Boston, Mass. 822,851, pub. 10–5–65. Cl. 34.
Sigma Chemical Co., St. Louis, Mo., from P. Chaconas, d.b.a. Sigma Scientifics, Silver Spring, Md. 822,811, pub. 11–8–66. Cl. 23.
Sigma Pharmacal, Inc., Minneapolis, Minn. 708,001, canc. Cl. 18.
Sigma Scientifics: *See*—
Sigma Chemical Co.
Silver Brook Beverage Co., d.b.a. Henry Brukhardt Beverages, Chicago, Ill. 822,964, pub. 11–8–66. Cl. 45.
Sipler, Clarence L., d.b.a. Sipler Plastics Co. Sipler Plastics, Inc., Doylestown, Pa. 814,824, cor. Cl. 13.
Sipler, Clarence L., d.b.a. Sipler Plastics Co. Sipler Plastics, Inc., Doylestown, Pa. 814,825, cor. Cl. 13.
Sipler Plastics Co.: *See*—
Sipler, Clarence L.
Sipler Plastics, Inc.: *See*—
Sipler, Clarence L.
Ski Council of America, Inc., New York, N.Y. 823,120, pub. 11–8–66. Cl. 101.
Smith & Nichols, Inc., Carlstadt, N.J. 707,991, canc. Cl. 15.
Smith & Nichols, Inc., Carlstadt, N.J. 707,992, canc. Cl. 15.
Snyder Trailer Co., The, Butler, Ohio. 822,729, pub. 4–13–65. Cl. 19.
Societe Anonyme des Liqueurs Combier, Paris, France. 822,962, pub. 11–8–66. Cl. 45.
Societe Anonyme Etablissements Steiner Freres, Pantin (Seine), France. 822,941, pub. 11–8–66. Cl. 42.
Societe Anonyme Marcol, Brussels, Belgium. 822,814, pub. 2–8–66. Cl. 26.
Societe Charrier & Cie, Vallauris (Alpes Maritimes), France. 823,062, pub. 11–8–66. Cl. 51.
Societe Rhodiaceta, Paris, France. 822,908, pub. 1–18–66. Cl. 39.
Societe Rhodiaceta, Paris, France. 822,953, pub. 1–18–66. Cl. 43.
Soupy Sales, New York, N.Y. 823,152, pub. 11–8–66. Cl. 107.
Southern California Gas Co., Los Angeles, Calif. 823,104, pub. 11–8–66. Cl. 100.
Southern California Gas Co., Los Angeles, Calif. 823,105, pub. 11–8–66. Cl. 100.
Southern California Gas Co., Los Angeles, Calif. 823,106, pub. 11–8–66. Cl. 100.
Southern Counties Gas Co. of California, Los Angeles, Calif. 823,161, pub. 11–8–66. Cl. A.
Southern Counties Gas Co. of California, Los Angeles, Calif. 823,162, pub. 11–8–66. Cl. A.
Southern Reneedling Works, Inc., Gastonia, N.C. 823,133, pub. 11–8–66. Cl. 103.
Southwestern Engineering Co., City of Commerce, Calif. 822,853, pub. 11–8–66. Cl. 34.
Spaulding Fibre Co., Inc., Tonawanda, N.Y. 822,607, pub. 11–8–66. Cl. 1.
Sphera Societe Francaise d'Etrudes, de Recherches et d'Applications, Paris, France. 708,088, canc. Cl. 31.
Spies, Wayne I., d.b.a. Wiso Supply, Canton, Ohio. 822,839, pub. 11–8–66. Cl. 31.
Spin-A-Test Co.: *See*—
Alberts, Cecil D.
Squibb, E. R., & Sons, Inc., New York, N.Y. 822,728, pub. 11–8–66. Cl. 18.
Squibb, E. R., & Sons, Inc., from Olin Mathieson Chemical Corp., New York, N.Y. 823,052, pub. 11–8–66. Cl. 51.
Stafast Corp., New York, N.Y. 823,048, pub. 11–8–66. Cl. 50.
Standard Laboratories, Inc., Morris Plains, N.J. 822,723, pub. 11–8–66. Cl. 18.
Standard Oil Co. (N.J.), Bayonne, N.J., to Plough, Inc., Memphis, Tenn. 221,640, ren. 1–24–67. Cl. 18.
Standard Process Laboratories: *See*—
Vitamin Products Co.
Stedman Mfg. Co., Asheboro, N.C. 822,904, pub. 11–8–66. Cl. 39.
Steiger, Albert, Inc., Springfield, Mass. 223,569, ren. 1–24–67. Cl. 39.
Stenso Lettering Co., Baltimore, Md. 708,218, canc. Cl. 37.
Sterimed, Inc., Brooklyn, N.Y. 822,712, pub. 11–8–66. Cl. 18.
Stevens, J. P., & Co., Inc., New York, N.Y. 822,947, pub. 11–8–66. Cl. 42.
Structo Division: *See*—
King-Seeley Thermos Co.
Sucrest Corp., New York, N.Y. 823,016, pub. 11–8–66. Cl. 46.
Sunbeam Corp.: *See*—
Chicago Flexible Shaft Co., n.b.c.o.n. Sunbeam Corp.

Sun Chemical Corp., New York, N.Y. 822,654, pub. 11–8–66. Cl. 11.
Superior Sports Specialties: *See*—
Chartered Enterprises.
Swimmer, Jerome, d.b.a. National Biochemical Co., Chicago, Ill. 823,082, pub. 8–23–66. Cl. 52.
Symington Wayne Corp., Salisbury, Md. 822,615, pub. 11–8–66. Multiple Class (Classes 2 and 23).
Syntex Laboratories, Inc., Palo Alto, Calif. 822,702, pub. 11–8–66. Cl. 18.
TV Time Foods, Inc., Chicago, Ill. 823,017, pub. 11–8–66. Cl. 46.
Target Photo Finishers, Inc., d.b.a. Early Bird Fast Photo Service, Jackson, Miss. 823,144, pub. 11–8–66. Cl. 106.
Tappan Co., The, Mansfield, Ohio. 822,860, pub. 11–8–66. Cl. 34.
Tassell, Kitchener B., d.b.a. Marine Equipment Co., Grand Rapids, Mich. 822,861, pub. 11–8–66. Cl. 34.
Tawn Ltd.: *See*—
McKesson & Robbins, Inc.
Teledyne Inc., Inglewood, Calif. 822,673, pub. 11–8–66. Cl. 13.
Terrytown Importing & Mfg. Corp., Hickory, N.C. 822,848, pub. 11–8–66. Cl. 34.
Thavma, Inc., St. Paul, Minn. 708,004, canc. Cl. 18.
Therapeutic Foods Co.: *See*—
Vitamin Products Co.
Thomson Co., New York, N.Y. 708,112, canc. Cl. 39.
Thorne, Robt. & Sons (Whisky Merchants) Ltd., Dumbarton, Scotland. 823,040, pub. 11–8–66. Cl. 49.
Thru-Flight: *See*—
Castanea Corp., The.
Timberland Products Co., Inc., Stamford, N.Y. 822,611, pub. 11–8–66. Cl. 1.
Timberland Products Co., Inc., Stamford, N.Y. 822,612, pub. 11–8–66. Cl. 1.
Timely Clothes, Inc., Rochester, N.Y. 822,920, pub. 11–8–66. Cl. 39.
Timken Roller Bearing Co., The, Canton, Ohio. 822,687, pub. 11–8–66. Cl. 14.
Toho Rayon Co. Ltd., Nihonbashi-Tori, Chuo-ku, Tokyo, Japan. 822,599, pub. 8–9–66. Multiple Class (Classes 1, 32, 39, 42, and 43).
Topps Chewing Gum, Inc., Brooklyn, N.Y. 823,007, pub. 11–8–66. Cl. 46.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 823,008, pub. 11–8–66. Cl. 46.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 823,009, pub. 11–8–66. Cl. 46.
Tourists International Establishment, Vaduz, Liechtenstein. 823,136, pub. 1–11–66. Cl. 105.
Toy Textiles, Inc., New York, N.Y. 822,944, pub. 11–8–66. Cl. 42.
Trend Mills, Inc., Rome, Ga. 822,942, pub. 11–8–66. Cl. 42.
Triangle Publications, Inc., Philadelphia, Pa. 427,229, ren. 1–24–67. Cl. 38.
Triangle Publications, Inc., Philadelphia, Pa. 427,290, ren. 1–24–67. Cl. 38.
Tri-Set Inc., Ferndale, Mich. 707,978, canc. Cl. 13.
Tunlaw Corp., Washington, D.C. 822,863, pub. 11–8–66. Cl. 34.
Tupperware: *See*—
Rexall Drug and Chemical Co.
Turtle Wax, Inc., Chicago, Ill. 822,627, pub. 11–8–66. Cl. 4.
Uarco Inc., Barrington, Ill. 823,181. Cl. 37.
Unacal Products, Inc., to Wilco Co., Los Angeles, Calif. 425,689, ren. 1–24–67. Cl. 52.
United States Rubber Co.: *See*—
Boston Rubber Shoe Co.
Eureka Fire Hose Co.
Fisk Rubber Co., The.
United States Rubber Co., New York, N.Y. 428,267, ren. 1–24–67. Cl. 43.
United States Rubber Co., New York, N.Y. 429,017, ren. 1–24–67. Cl. 1.
United States Rubber Co., New York, N.Y. 429,336, ren. 1–24–67. Cl. 6.
United States Rubber Co., New York, N.Y. 822,872, pub. 11–8–66. Cl. 35.
United States Rubber Co., New York, N.Y. 822,873, pub. 11–8–66. Cl. 35.
United States Rubber Co., New York, N.Y. 822,874, pub. 11–8–66. Cl. 35.
Upjohn Co., The, Kalamazoo, Mich. 708,016, canc. Cl. 18.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 425,567, ren. 1–24–67. Cl. 18.
Upton Prodnce Co., Inc., Norfolk, Va. 708,170, canc. Cl. 46.
Usab, Ernest M., Long Beach, Calif. 707,966, canc. Cl. 12.
U.S. Vitamin Corp., to U.S. Vitamin & Pharmaceutical Corp., New York, N.Y. 426,416, ren. 1–24–67. Cl. 18.
U.S. Vitamin & Pharmaceutical Corp.: *See*—
Vitamins & Pharmaceuticals, Inc.
U.S. Vitamin Corp.
United Steel and Wire Co., Battle Creek, Mich. 822,620, pub. 11–8–66. Cl. 2.
Universal Cigar Corp., New York, N.Y. 822,694, pub. 11–8–66. Cl. 17.
University Loudspeakers, Inc., New York, N.Y., to LTV-Ling Altec, Inc., Anaheim, Calif. 429,377, ren. 1–24–67. Cl. 21.
Vala's Ice Cream, Inc., Chicago, Ill. 823,021, pub. 11–8–66. Cl. 46.
Valle's Steak House, Portland, Maine. 823,109, pub. 11–8–66. Cl. 100.
Vancouver Plywood Co., Vancouver, Wash. 822,663, pub. 11–8–66. Cl. 12.
Vancouver Plywood Co., Vancouver, Wash. 822,664, pub. 11–8–66. Cl. 12.
Varo, Inc., Garland, Tex. 823,095, pub. 11–8–66. Multiple Class (Classes 100 and 103).
Vernay Laboratories, Inc., Yellow Springs, Ohio. 822,669, pub. 11–8–66. Cl. 13.
Veterinary Supply Depot Inc., Dallas, Tex. 822,710, pub. 11–8–66. Cl. 18.
Vina Concha y Toro S.A., Santiago, Chile. 823,032, pub. 11–8–66. Cl. 47.
Vitamins & Pharmaceuticals, Inc., Dover, Del., to U.S. Vitamin & Pharmaceutical Corp., New York, N.Y. 425,628, ren. 1–24–67. Cl. 18.
Vitamin Products Co., Milwaukee, Wis. 822,986, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,987, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,988, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,989, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,990, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,991, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,992, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,993, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,994, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,995, pub. 11–8–66. Cl. 46.
Vitamin Products Co., Milwaukee, Wis. 822,996, pub. 11–8–66. Cl. 46.
Vitamin Products Co., d.b.a. Standard Process Laboratories, Milwaukee, Wis. 823,001, pub. 11–8–66. Cl. 46.
Vitamin Products Co., d.b.a. Standard Process Laboratories, Milwaukee, Wis. 823,002, pub. 11–8–66. Cl. 46.
Vitamin Products Co., d.b.a. Standard Process Laboratories, Milwaukee, Wis. 823,003, pub. 11–8–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 823,010, pub. 11–8–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 823,111, pub. 11–8–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 823,012, pub. 11–8–66. Cl. 46.
Vitamin Products Co., d.b.a. Therapeutic Foods Co., Milwaukee, Wis. 823,013, pub. 11–8–66. Cl. 46.
Vlier Engineering Corp., Los Angeles, Calif. 822,795, pub. 11–8–66. Cl. 23.
W-W Ranch, Inc., Albany, Tex. 707,930, canc. Cl. 1.
Waldron Poultry Co., Inc.: *See*—
Joseph, David J., Co., The.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 823,043, pub. 8–30–66. Cl. 50.
Warren Chemical Co.: *See*—
Warren, George.
Warren, George, d.b.a. Warren Chemical Co., Trenton, N.J. 822,626, pub. 11–8–66. Cl. 4.
Warren, George, d.b.a. Warren Chemical Co., Trenton, N.J. 823,078, pub. 11–8–66. Cl. 52.
Waterbury Garment Corp., Waterbury, Conn. 708,223, canc. Cl. 39.
Webb, C. J., Inc., Dresher, Pa. 823,091, pub. 11–8–66. Cl. 52.
Weber, Arnold J., New York, N.Y. 822,917, pub. 11–8–66. Multiple Class (Classes 39 and 42).
Webster, William A., Co., The, Memphis, Tenn. 823,070, pub. 11–8–66. Cl. 51.
Wehr Corp., Milwaukee, Wis. 822,857, pub. 11–8–66. Cl. 34.
Werner Pinternagel, d.b.a. Dynacord, Straubing, Germany, from Eberdt Co., Sutton, Quebec, Canada. 822,737, pub. 6–16–64. Cl. 21.
Westab Inc., Dayton, Ohio. 822,892, pub. 11–8–66. Cl. 37.
Westchester Veterinary Products, Inc., White Plains, N.Y. 822,646, pub. 11–8–66. Cl. 6.
Western Farmers Association, Seattle, Wash. 822,699, pub. 11–8–66. Multiple Class (Classes 18 and 46).
Western Research Laboratories, Inc., Denver, Colo. 822,713, pub. 11–8–66. Cl. 18.
West Point-Pepperell, Inc., d.b.a. Pepperell Mfg. Co., West Point, Ga. 822,950, pub. 11–8–66. Cl. 42.
West Point-Pepperell, Inc., d.b.a. Pepperell Mfg. Co., West Point, Ga. 822,951, pub. 11–8–66. Cl. 42
Westwood Textile Mfg., Inc., Southbridge, Mass. 822,946, pub. 11–8–66. Cl. 42.
Weyerhaeuser Co., Tacoma, Wash. 822,622, pub. 11–8–66. Cl. 2.
Weyerhaeuser Co., Tacoma, Wash. 822,883, pub. 11–8–66. Cl. 37.
Weyerhaeuser Co., Tacoma, Wash. 823,114, pub. 11–8–66. Cl. 101.
Weyerhaeuser Co., Tacoma, Wash. 823,115, pub. 11–8–66. Cl. 101.
Weyerhaeuser Co., Tacoma, Wash. 823,127, pub. 11–8–66. Cl. 102.
Weyerhaeuser Co., Tacoma, Wash. 823,131, pub. 11–8–66. Cl. 103.
Weyerhaeuser Co., Tacoma, Wash. 823,132, pub. 11–8–66. Cl. 103.
Wheeling Corrugating Co., to Wheeling Steel Corp., Wheeling, W. Va. 223,306, ren. 1–24–67. Cl. 26.
Wheeling Corrugating Co., to Wheeling Steel Corp., Wheeling, W. Va. 223,702, ren. 1–24–67. Cl. 24.
Wheeling Steel Corp.: *See*—
Wheeling Corrugating Co.
Whiting Mfg. Co., Inc., Cincinnati, Ohio. 822,935, pub. 1–12–65. Cl. 42.
Whitlock and Co., Inc., River Forest, Ill. 823,117, pub. 11–8–66. Cl. 101.

Wickes Corp., The, Saginaw, Mich. 822,658, pub. 3–22–66. Cl. 12.
Wiener Metallwarenfabrik Smolka & Co., Schwechat, Austria. 822,760, pub. 11–8–66. Cl. 22.
Wilco Co.: *See*—
Unacal Products, Inc.
Wile, Julius, Sons & Co., Inc., New York, N.Y., from Ron Alvares Camp, S.A., Santiago de Cuba, Cuba. 323,323, canc. Cl. 49.
Wilton Corp., Schiller Park, Ill. 822,798, pub. 11–8–66. Cl. 23.
Wing, Howard, Erie, Pa. 708,180, canc. Cl. 50.
Winton, Lavoy, Dora, Fla. 822,766, pub. 11–8–66. Cl. 22.
Wisco Supply: *See*—
Spies, Wayne I.
Wooster Brush Co., The, Wooster, Ohio. 222,635, ren. 1–24–67. Cl. 29.
Wooster Brush Co., The, Wooster, Ohio. 222,636, ren. 1–24–67. Cl. 29.
Wooster Brush Co., The, Wooster, Ohio. 222,637, ren. 1–24–67. Cl. 29.
Wooster Brush Co., The, Wooster, Ohio. 222,638, ren. 1–24–67. Cl. 29.
Wooster Brush Co., The, Wooster, Ohio. 222,639, ren. 1–24–67. Cl. 29.
Wooster Brush Co., The, Wooster, Ohio. 222,640, ren. 1–24–67. Cl. 29.
Wooster Brush Co., The, Wooster, Ohio. 222,685, ren. 1–24–67. Cl. 29.
Wortsel, Paul, d.b.a. Linnay Pharmaceuticals, Newark, N.J. 822,696, pub. 11–8–66. Cl. 18.
Wrigley, Wm., Jr. Co., Chicago, Ill. 822,974, pub. 11–8–66. Cl. 46.
Wulfing, Johann A., Dusseldorf, Germany. 822,711, pub. 11–8–66. Cl. 18.
Yale, Eaton, & Towne Inc., Cleveland, Ohio. 822,735, pub. 11–8–66. Multiple Class (Classes 19, 23, and 34).
Yaussi, Frank J., d.b.a. Laporte Mfg. and Distr. Co., Laporte, Colo. 822,773, pub. 11–8–66. Cl. 22.
Yoshitomi Pharmaceutical Industries Ltd., Osaka, Japan. 708,013, canc. Cl. 18.
Youth Associates Co. Mine Publications, Inc., Minneapolis, Minn. 801,357. Am. 7(d). Cl. 38.
Young, R. F., Co.: *See*—
Young, Ralph F.
Young, Ralph F., d.b.a. R. F. Young Co., Indianapolis, Ind. 822,625, pub. 11–8–66. Cl. 3.
Young Radiator Co., Racine, Wis. 822,858, pub. 11–8–66. Cl. 34.
Young Republican National Federation, Washington, D.C. 823,159, pub. 11–8–66. Cl. 200.
Zaccaro Associates: *See*—
Zaccaro, James C.
Zaccaro, James C., d.b.a. Zaccaro Associates, New York, N.Y. 823,098, pub. 11–8–66. Cl. 100.
Zaslaw, Reuben, d.b.a. Selective Hearing Center, Phoenix, Ariz. 822,961, pub. 11–8–66. Cl. 44.
Zirin, Benjamin, d.b.a. Zirin Enterprises, Hialeah, Fla. 708,003, canc. Cl. 18.
Zirin Enterprises: *See*—
Zirin, Benjamin.

U.S. GOVERNMENT PRINTING OFFICE:0—1967

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 31, 1967 Volume 834 Number 5

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of December 1966

Examiner affirmed	158
Examiner affirmed in part	36
Examiner reversed	50
Total	244

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,960,683, R. A. Gregory, C. T. Baker, Jr., W. Wolensky, P. W. Jackson, W. D. Winger and R. W. Murphy, DATA COORDINATOR, decided Nov. 28, 1966, Interference No. 93,305, claims 1, 2, 3, 4, 5, 9 and 10.

Patent No. 2,971,010, R. F. Gilby, Jr., C. E. Hoberg and M. K. Phibbs, PRODUCTION OF DICARBOXYLIC ACID ANHYDRIDES, decided Mar. 18, 1966, Interference No. 93,225, claim 1.

Patent No. 3,000,903, J. H. Biel, PHENYLALKYLHYDRAZINES AND USE AS PSYCHOTHERAPEUTICS, decided July 28, 1966, Interference No. 94,086, claim 14.

Patent No. 3,007,070, W. W. Cargill, Jr., ELECTROLUMINESCENT DEVICE, decided Sept. 28, 1966, Interference No. 94,718, claim 2.

Patent No. 3,007,070, W. W. Cargill, Jr., ELECTROLUMINESCENT DEVICE, decided Sept. 28, 1966, Interference No. 94,719, claim 1.

Patent No. 3,058,830, G. Christianson, METHOD OF SEPARATING LIQUID FAT FROM MEAT FIBERS, decided Apr. 29, 1966, Interference No. 94,200, claim 2.

Patent No. 3,063,850, R. A. Mikulski, METAL PLATING BY CHEMICAL REDUCTION WITH AMINE BORANES, decided Nov. 14, 1966, Interference No. 94,803, claims 1, 2, 3 and 4.

Patent No. 3,071,335, E .S. Carter, Jr., FLIGHT CONTROL SYSTEM, decided Aug. 22, 1966, Interference No. 94,482. claims 8 and 10.

Patent No. 3,076,599, K. L. Smith, STATISTICAL RECORD READING DEVICES, decided Nov. 17, 1966, Interference No. 94,642, claim 2.

Patent No. 3,084,783, D. C. Morton and P. J. Packman, HANDLING OF FLAT ARTICLES, decided Aug. 19, 1966, Interference No. 94,633, claims 12, 13 and 14.

Patent No. 3,106,636, R. L. McIntyre, C. F. Saunders and D. V. Schmidt, INPUT-OUTPUT SYSTEM FOR DIGITAL COMPUTER, decided Nov. 9, 1966, Interference No. 94,972, claim 1.

Patent No. 3,124,594, J. W. Bolger, N-(CYANOALKYL)-ENDOPERHYDRO - 4,7 - METHANOISOINDOLES, decided Nov. 25, 1966, Interference No. 94,884, claim 1.

Patent No. 3,130,390, A. C. Moore and A. S. Young, MAGNETIC STORAGE DEVICES, decided Oct. 12, 1966, Interference No. 94,793, claim 2.

Patent No. 3,130,802, R. E. Bell, CONDITION RESPONSIVE DEVICES, decided Nov. 25, 1966, Interference No. 94,743, claims 4 and 11.

Patent No. 3,173,191, J. O. Alexander, J. Hargreaves and S. C. Brown, TOOL HOLDERS FOR USE WITH DETACHABLE INSERTS, decided Nov. 17, 1966, Interference No. 95,189, claim 1.

Patent No. 3,176,373, E. A. Taylor, Jr., METHODS OF TEXTURIZING FILAMENTS, decided Dec. 7, 1966, Interference No. 95,302, claim 2.

Patent No. 3,191,867, W. L. Helms, ATOMIZER, decided Nov. 9, 1966, Interference No. 95,457, claim 1.

Double Patenting

In view of the uncertain situation which has arisen as a result of recent decisions dealing with "double patenting" it is thought to be advisable to restate the practice which should be followed in this area, particularly as regards the effect of terminal disclaimers. The term "double patenting" is properly applicable only to cases involving two or more applications and/or patents of the same inventive entity and should not be applied to situations involving commonly owned cases of different inventive entities. Sole and joint inventors cannot constitute a single entity, nor do two or more sets of joint inventors constitute a single entity if any individual is included in either set who is not also included in the other.

If two or more cases are filed by a single inventive entity, and if the expiration dates of the patents, granted or to be granted, are the same, either because of a common issue date or by reason of the filing of one or more terminal disclaimers, two or more patents may properly be granted, if the claims do not overlap, even though the subject matter to which the claims of one case are directed may be obvious in view of the subject matter claimed in the other case. *In re Robeson*, 1964 C.D. 561, 141 USPQ 485; *In re Kaye*, 1964 C.D. 630, 141 USPQ 829. Claims overlap within the meaning of this statement if it is possible for them to be infringed by the same process, machine, manufacture, or composition of matter. Cross reading is not necessary to constitute such an overlap.

Overlapping claims should not be allowed in cases filed by the same inventive entity if they are directed to identical inventive concepts, or if the concept to which one set of claims is directed would be obvious in view of that to which

New Applications Received During December 1966

Patents	8,347
Designs	384
Plant Patents	10
Reissues	17
Total	8,758

Issue—January 31, 1967

Patents	1,427	No. 3,300,786 to No.	3,302,212, incl.
Designs	70	No. 206,783 to No.	206,852, incl.
Plant Patents	1	No. 2,706	
Reissues	5	No. 26,150 to No.	26,154, incl.
Total	1,503		

the other set is directed. This is true regardless of the relative filing dates of the cases or the relative scope of the claims.

In situations involving cases filed by different inventive entities, regardless of ownership, Sections 102 and 103 of 35 U.S.C. preclude the granting of two or more patents when directed to identical inventive concepts or when one of the concepts would be obvious in view of the other. A terminal disclaimer can have no effect in this situation since the basis for refusing more than one patent is not connected with any extension of monopoly.

In view of 35 U.S.C. 135, it is necessary to determine priority of invention whenever two different inventive entities are claiming a single inventive concept, and this determination should ordinarily be made before any patent is issued. This is true regardless of ownership, and the provision of Rule 201(c) that interferences will not be declared or continued between commonly owned cases unless good cause is shown therefor does not mean that two patents are to be allowed in such cases, but that the common assignee should be called on to state which of the entities involved is prior to the other in date of invention.

Accordingly, the assignee of two or more cases of different inventive entities, containing conflicting claims, should be called on to maintain a line of demarcation between them. If such a line is not maintained then, when one of the cases is in condition for allowance, claims covering the conflicting subject matter should be suggested as provided in Rule 203, care being taken to insure that such claims cover all the conflicting matter and the assignee should be called on to state which entity is the prior inventor of that subject matter and to limit the claims of the other application accordingly. If the assignee does not comply with this requirement and presents the interfering claims in both cases, an interference should be declared, attention being directed to Rule 208 if there is a common attorney. If suggested claims are not presented within the time allowed, rejection should be made on the ground of disclaimer as indicated in Rule 203(b).

In the event that a common assignee, after taking out a patent on one of two or more applications, for the first time presents claims in a pending application which are not patentably distinct from claims of the patent, the claims of the application should be rejected on the ground that the assignee, by taking out the patent at a time when the application was not claiming the patented invention, is estopped to contend that the patentee is not the prior inventor.

If a patent is inadvertently issued on one of two commonly owned applications by different inventive entities which at the time when the patent issued were claiming inventions which are not patentably distinct, the assignee should be called on to make a determination of priority as in the case of pending applications and, if no election is made, an interference should be declared. An election of the applicant as the first inventor should not be accepted without a complete (not terminal) disclaimer of the conflicting claims in the patent.

EDWARD J. BRENNER,
Commissioner.

Jan. 9, 1967.

Foreign Patents Received in the Scientific Library as of December 31, 1966

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Dec. 15, 1966	39,266/66
(*Patents*)	Dec. 27, 1966	262,610
Austria	Dec. 13, 1966	250,250
Belgium	Oct. 18, 1966	643,000
Canada	Dec. 29, 1966	749,585
Czechoslovakia	Dec. 27, 1966	118,350
Denmark	Nov. 21, 1966	104,670
East Germany	Nov. 28, 1966	51,281
Egypt	Dec. 14, 1965	5,228
Finland	Nov. 1, 1966	35,480
France:		
(*Patents*)	Dec. 29, 1966	1,451,750
(*Additions*)	Dec. 29, 1966	87,550
(*Medicaments*)	Dec. 21, 1966	3,800 M
(*Additions*)	Apr. 18, 1966	86 CAM
Germany:		
(*Auslegeschriften*)	Dec. 1, 1966	1,224,670
(*Patents*)	Dec. 1, 1966	1,212,460
Great Britain	Dec. 27, 1966	1,050,850
India	Dec. 16, 1966	98,890
Ireland	Nov. 4, 1966	26,048
Italy	Dec. 27, 1965	650,000
Japan	Dec. 22, 1966	20,200/66
Netherlands:		
(*Octrooiaanvragen*)	Nov. 1, 1966	10,467/66
(*Patents*)	Dec. 1, 1966	121,436
Norway	Dec. 9, 1966	109,758
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Dec. 15, 1966	52,172
Rumania	Oct. 26, 1966	43,699
Sweden	Dec. 13, 1966	207,950
Switzerland	Dec. 19, 1966	413,107
U.S.S.R.	Dec. 19, 1966	185,767

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 21, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-23-63	10-18-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—O. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-20-63	9-22-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	7-11-63	2-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-15-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-5-63	4-25-62
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	3-4-63	6-27-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-15-63	8-23-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-31-63	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	8-3-65	3-12-65

Total number of pending applications (excluding Designs)	194,565
Total number of Design applications pending	4,290
Total number of applications awaiting action (excluding Designs)	142,127
Total number of Design applications awaiting action	2,504
Date of oldest new application awaiting action	March 4, 1963
Date of oldest amended application awaiting action	June 27, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during January 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents	Numbers 2,492,944 to 2,496,255, inclusive
Plant Patents	Numbers 911 to 918, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	8-6-64	5-22-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	9-2-64	9-24-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-22-64	6-18-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3-5-65	11-14-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	11-16-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-8-64	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

HENRY W. RIMBACH *v.* WILLEM LAMBERTUS WANMAKER AND CORNELIS BAKKER

No. 7589. Decided July 7, 1966

[53 CCPA —; 362 F.2d 561; 150 USPQ 302]

1. INTERFERENCE—REDUCTION TO PRACTICE—UTILITY—KNOWN UTILITY NEED NOT BE DEMONSTRATED.

"This court has long held that it is not necessary to demonstrate the practicality or utility of a composition to establish a reduction to practice where that practicality or utility is known."

2. SAME—SAME—UTILITY—TESTS—*Blicke* v. *Treves* AND *Harding* v. *Steingiser* CONSTRUED.

"It is clear that in *Harding* none of the judges endorsed the Board's requirement that Harding had failed because he had not proven *actual tests* of a 'practical use.' Rather, the requirement is that stated in *Blicke*, supra, 'the invention of such a composition is not complete unless its utility is either obvious or is established by proper tests.' Thus *Harding* offers guidance here only as a reaffirmation of the principle stated in *Blicke*."

3. SAME—SAME—SAME.

"The count itself is to a composition and does not specify any particular use. Under these circumstances evidence proving utility for any purpose is sufficient to establish a reduction to practice under the principles applied in *Blicke* v. *Treves* * * * and *Harding* v. *Steingiser* * * *."

4. SAME—SAME—SAME—COMMERCIAL EMBODIMENT NEED NOT BE SHOWN FOR REDUCTION TO PRACTICE.

"A successful commercial embodiment of an invention need not be proven in order to establish utility of the invention in proving a reduction to practice."

5. SAME—QUESTIONS ANCILLARY TO PRIORITY—REDUCTION TO PRACTICE OF SUBJECT MATTER OF THE COUNT.

"This leaves for consideration what we have termed a second secondary issue, i.e., does the record establish that the Rimbach compositions come within the scope of the count? Wanmaker raised this issue unsuccessfully before the Board. It is raised again here in support of Wanmaker's position that Rimbach did not meet his burden of establishing a reduction to practice of a composition coming within the count prior to the filing date accorded Wanmaker. While Wanmaker did not cross-appeal on the Board's adverse determination of the issue, all questions decided below which are pertinent to the issue of priority of invention are before us. See *Klemperer* v. *Price*, 47 CCPA 729, 271 F.2d 743, 123 USPQ 539."

APPEAL from the Patent Office. Interference No. 92,659.

REVERSED.

William D. Palmer (*Gordon S. Parker* of counsel) for appellant.

Norman N. Spain (*Russell G. Pelton* of counsel) for appellees.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

This is an appeal by Rimbach from the decision of the Board of Patent Interferences awarding priority of invention to Wanmaker et al., hereafter Wanmaker, in Interference No. 92,659.

The interference involves the Wanmaker application, Serial No. 851,359, filed November 6, 1959, and Rimbach application, Serial No. 810,626, filed May 4, 1959. Wanmaker, claiming priority under a Netherlands application, No. 233,044, filed November 8, 1958, moved

to shift the burden of proof. This motion was not opposed and was granted. Rimbach thus became the junior party and took the only testimony in the case and Wanmaker relied solely on the Dutch priority date.

The single count of the interference is:

A copper and manganese activated strontium phosphate phosphor corresponding to the formula $SrO.(MeO).P_2O_5.Cu_2O.MnO$, wherein (MeO) represents an oxide of at least one metal selected from the group consisting of aluminum and magnesium and wherein the molar ratio of atoms of total metal to atoms of phosphorus in said phosphor is from about 2.7:2 to 3.0:2, the ratio of atoms of said group to atoms of strontium in said phosphor is from about 1:1.5 to 1:16, the ratio of atoms of copper to atoms of phosphorus in said phosphor is from about 0.001:2 to 0.06:2, the molar ratio of manganese to phosphorus is from about 0:2 to 0.20:2, and said phosphor having been fired during preparation in a slightly-reducing atmosphere.

The subject matter of this count is a phosphor composition which is "activated" by copper and manganese. Such phosphor materials normally comprise a matrix into which a small amount of additional "activator" material is introduced. The "activator" materials render the matrix luminescent, that is, operative to convert radiations in the ultraviolet range into radiations in the visible range. Such materials are used in fluorescent lamps as well as in high pressure, mercury vapor lamps and other similar applications.

The Board awarded priority to Wanmaker stating:

It is our view that the record fails to establish a utility for the compositions prepared by Oberst [Rimbach's laboratory assistant]. We do not believe that it is sufficient merely to find that the material exhibits some fluorescence when placed under an ultraviolet lamp. There is nothing in the record to indicate that such a test as testified to by Oberst was sufficient to establish that the materials could be used for Rimbach's purpose, in a high pressure mercury vapor lamp or other fluorescent lamp or for any other purpose without further tests. Rather, in our opinion, the contrary is evidenced by the following statement appearing on page 3 of Exhibit B, dated March 25, 1958, a patent disclosure written by Rimbach:

> Meanwhile, the more promising of the phosphors will be tested in HPMV lamps, and other fluorescent lamps * * *.

* * * * * * *

We believe that the statement of the majority in *Harding* v. *Steingiser et al.*, 318 F.2d 748; 138 USPQ 32; 796 O.G. 18 (at page 22) that "the record discloses no correlation between laboratory results and test results under actual service conditions" applies to the situation here. Although a commercial use is not essential to a reduction to practice it must appear that the material will perform its intended function in actual service. We regard the holding in *Chittick* v. *Lyons*, 26 CCPA 1382; 42 USPQ 132, 1939 CD 768; 104 F.2d 818 and *Morway et al.* v. *Bondi*, 40 CCPA 917; 203 F.2d 742; 97 USPQ 318; 1953 CD 231 with regard to laboratory tests applicable here. We find nothing in the record to indicate that the fact that a material fluoresces under ultraviolet radiation leads to the conclusion that the material has utility under service conditions.

In its decision on Rimbach's petition for reconsideration, the Board stated:

We have carefully considered all the arguments advanced but remain of the opinion that in view of the whole of the record there is no conviction of success for the composition and that the utility of the composition has not been established. We find nothing in the record which could be regarded as supporting the allegation that the statement found in Exhibit B regarding the intention to test "promising" compositions in HPMV lamps relates only to the determination of commercial utility. It is our opinion that the above mentioned statement is properly a part of the record to be considered in determining whether utility for the composition of the count has been established.

Rimbach's appeal raises as its principal issue the question of what must be proven as to actual uses or so-called "utility of the composition" to prove its reduction to practice. Two secondary issues also are raised. (1) Where leading questions are asked, what is the legal effect of such testimony? (2) Does the record establish that the Rimbach compositions come within the scope of the count?

Rimbach's case for priority rests on his testimony and that of his laboratory assistant, Oberst, and certain documentary exhibits. Rimbach is a chemical engineer experienced in the phosphor field and in the development and testing of new phosphors. In explaining the general operating procedure by which tests were conducted on phosphors after he had initially discovered them, he testified:

* * * I wrote an instruction sheet for further experimentation for Mr. Oberst to perform giving formulas in grams which I derived from molar or atomic compositions which I wanted to explore and the various processing tests that were to be made upon them.

Rimbach identified six different instruction sheets he had given Oberst concerned with the preparation of phosphors. After discussing four of the instruction sheets Rimbach testified that all of the instruction sheets represented phosphor raw mix formulations together with the instructions required to prepare the phosphors.

Oberst identified sixteen different work sheets from his laboratory work book. These work sheets related to various phosphors. As to preparation and testing of these phosphors, Oberst testified as follows:

Q16. Mr. Oberst, I hand to you a copy of a page taken from a work book and marked Rimbach Exhibit J and I ask you can you identify this? A. Yes.
Q17. What is it? A. It is a copy of a sheet out of my laboratory work book.
Q18. Was the phosphor raw mix indicated on this sheet? A. Yes.
Q19. Was this given to you by Mr. Rimbach? A. Yes.
Q20. Did you prepare the phosphor by firing in the manner indicated? A. Yes.
Q21. Did you test the phosphor after preparation? A. Yes.
Q22. How did you test the phosphor? A. On all the strontium aluminum phosphors we removed them from the furnace and then into the dark hood where the ultraviolet lamps are kept.
Q23. Did you place the phosphor immediately after preparation under the ultraviolet lamp? A. Yes, that was general practice.

Oberst also testified as to temperature dependence tests as follows:

Q76. Would you briefly explain the nature of these temperature dependence tests for these phosphors? A. Well, as you will note on the bottom of the sheet there is a control 1997–BW, a sample of which was placed on a hot plate underneath the ultraviolet lamp at room temperature and the brightness tester standardized to read 2.0. The sample to be tested was placed on the same hot plate and a reading taken at room temperature. Then the temperature increased to 100° and a reading taken again. The same at 160°, 215°, 275°, 320° and 380°.
Q77. Are these degrees in centigrade? A. Yes.
Q78. Was the ultraviolet excitation selected to simulate a high pressure mercury arc? A. Yes.

Concerning the fluorescence of the phosphors when excited by ultraviolet, Oberst testified:

Q39. Mr. Oberst, I hand you a copy of a work book page identified Rimbach Exhibit M and ask you to compare it to Rimbach Exhibit F with respect to the phosphor-raw mix formulation. Are they the same? A. Yes.
Q40. Did you test this phosphor by placing it under an ultraviolet lamp? A. Yes.
Q41. Are the results of the phosphor test indicated? A. Yes.
Q42. How do you indicate them? A. By a note on the bottom of the notebook page.
Q43. Would you please read that? A. "This was the Brightest of the Group—which included XP–1982–83–84 and XP–1939A."

* * * * * * *

Q47. Are varying brightness results indicated for varying preparation techniques? A. Yes.

Q48. When you refer to brightness do you mean the fluorescence of the phosphor when excited by ultraviolet? A. Yes.

Neither Rimbach's nor Oberst's testimony was challenged by Wanmaker.

It seems to us that the Board and Wanmaker accepted Rimbach's proofs as establishing that Rimbach and Oberst had made phosphor compositions, conducted fluorescence and temperature dependence tests, and simulated a high pressure mercury arc in their ultraviolet excitation tests, all prior to Wanmaker's earliest date. However, the Board found these proofs insufficient to establish a reduction to practice because the phosphors had not been tested in high pressure mercury vapor lamps (HPMV). The Board relied for support of this position principally upon our decision in *Harding* v. *Steingiser*, 51 CCPA 701, 318 F.2d 748, 138 USPQ 32. We find this reliance to be misplaced in view of the factual situation here.

[1] This court has long held that it is not necessary to demonstrate the practicality or utility of a composition to establish a reduction to practice where that practicality or utility is known.

In *Blicke* v. *Treves*, 44 CCPA 753, 241 F.2d 718, 112 USPQ 472, priority of invention of a composition was involved and the court stated:

> * * * A composition of matter cannot be a patentable invention unless it has utility. *In re Bremer et al.*, 37 CCPA (Patents) 1032, 182 F.2d 216, 86 USPQ 74. Accordingly, the invention of such a composition is not complete unless its utility is either obvious or is established by proper tests, regardless of whether the claims contain any specific reference to utility.

This basic premise underlies our decision in *Harding* v. *Steingiser*, supra, and the differences between the judges as expressed in the two opinions therein proceed, not from any difference as to the legal principles applicable but rather as to whether the evidence there established utility as required in *Blicke*, supra. Two judges subscribing to one opinion for affirmance of the Board decision [1] required proofs beyond those established in that record while two judges subscribing to the other opinion accepted the proofs as establishing utility of the claimed composition.

[2] It is clear that in *Harding* none of the judges endorsed the Board's requirement that Harding had failed because he had not proven *actual tests* of a "practical use." Rather, the requirement is that stated in *Blicke*, supra, "the invention of such a composition is not complete unless its utility is either obvious or is established by proper tests." Thus *Harding* offers guidance here only as a reaffirmation of the principle stated in *Blicke*.

This, then, returns our inquiry to whether Rimbach's proofs are such as to bring him within the above principle.

[3] The count itself is to a composition and does not specify any particular use. Under these circumstances evidence proving utility for any purpose is sufficient to establish a reduction to practice under the principles applied in *Blicke* v. *Treves*, supra, and *Harding* v. *Steingiser*, supra. We have reviewed the record herein and find that the statement of utility in Rimbach's specification clearly encompasses the utility which was proven. After reviewing a problem encountered in this art as represented by the Thorington U.S. Patent No. 2,748,303, appellant's specification states:

> It is the general object of this invention to avoid and overcome the foregoing and other difficulties of and objections to prior-art practices by the provision of phosphor material having good temperature-dependence characteristics and a blue to orange response.
>
> It is an additional object to provide blue- to orange-emitting phosphor for use with any type of discharge device and methods for making such phosphor and improving the output of same.

[1] One judge concurred in this result and the decision of the Board was affirmed.

While it is true that Rimbach referred to the use of composite phosphor materials of his invention in color corrected, high pressure, mercury vapor lamps, he points out that:

> The aforesaid objects of the invention, and other objects which will become apparent as the description proceeds, are achieved by providing phosphate phosphor material and a method for making same. In a first class of phosphor embodiments, the phosphate phosphor material includes as metallic elements strontium, copper activator and one or more of aluminum, gallium and indium. In a second class of phosphor embodiments, the phosphate phosphor material includes as metallic elements strontium, copper activator and either magnesium or calcium. Permissible, preferred and optimum concentrations are provided for the ratio of total metal to phosphorus, the ratio of aluminum, gallium or indium to strontium, the ratio of calcium or magnesium to strontium and the ratio of copper to phosphorus in the phosphor. Also provided are a method for increasing the output of the foregoing phosphor and a high-pressure, mercury-vapor lamp which utilizes the present phosphor in conjunction with an already-known, red-emitting phosphor.

We think it clear, therefore, that the count in issue when read in the entire context of the Rimbach disclosures clearly envisioned utility as something which would be known to those of ordinary skill in the art once the phosphor composition was made known and it was tested under the laboratory test conditions, which the record establishes was done, with results which such a person could then apply to other uses.

It is the position of Wanmaker that:

> The fact that the application of Wanmaker et al. shows no lamp tests is wholly irrelevant to the type of test required by Rimbach.

We do not agree. The Wanmaker specification is before us. We think it is relevant to the basic inquiry we are here pursuing, i.e., to what *extent* is it necessary to demonstrate the practicability or utility of phosphors to one of ordinary skill in this field. Cf. *Blicke* v. *Treves*, supra. When so viewed, we find the quite impressive technical data set forth in Wanmaker resulted from excitation of the phosphor by radiation which has "a wave length of 253.7 mu" and at wavelengths "produced by the mercury discharge of a low-pressure mercury vapour discharge tube." The specification also points out:

> The temperature dependence of the luminescence of the phosphates according to the invention is satisfactory, that is to say that the difference between the intensity of the radiation is small at room temperature and at temperatures of from 200° C. to 250° C. As a result, it is also possible to use these substances where the temperature reaches such high values, for example the bulb of a high-pressure mercury vapour discharge tube.

It seems to us, therefore, that appellees as persons skilled in the art so expressed themselves in their specification as to leave no doubt that Rimbach's tests were sufficient to demonstrate the practicality or utility of the phosphor compositions defined by the count in issue.[2]

[2] The Board seems to have given considerable weight to a notation made by Rimbach that "the more promising of the phosphors will be tested in HPMV lamps, and other fluorescent lamps" and stated:

> * * * We do not regard these circumstances as evidence of any conviction of success on the part of Rimbach.

We think the Board failed to distinguish between the invention defined by the count, discussed in the text, and commercial embodiments of that invention. [4] A successful commercial embodiment of an invention need not be proven in order to establish utility of the invention in proving a reduction to practice. See *Land* v. *Regan*, 52 CCPA 1048, 342 F.2d 92, 144 USPQ 661.

Since much of Rimbach's case depends on the legal effect to be given the Oberst testimony, it becomes necessary to now consider the first of what we have termed the secondary issues. The Board apparently gave little weight to this testimony stating:

> * * * the testimony of Oberst as to the successful testing of the product was not directly stated by him but words were put in his mouth in the form of a conclusion by leading questions, see for example question 65 on page 23. * * *

Question 65 is as follows:

> Q65. Did you carry out these details and successfully test the phosphor by placing it under an ultraviolet lamp and observing it to fluoresce? A. Yes.

Essentially all that Oberst is here saying is that he placed the prepared phosphor under an ultraviolet lamp and observed that it fluoresced. The record shows Oberst had been preparing phosphor materials from 1948 through the 1958 date when he conducted the test. Oberst's qualifications to testify as to this were not questioned. While Oberst was employed as a laboratory technician and not as a scientist, he had been so employed for a number of years and a reference to his notes and work books as contained in the physical exhibits corroborate the nature of the work concerning which he testified. We note that question 65 relates to Oberst's twelfth worksheet concerning which he was asked to testify. The question appears to be a summary as to what Oberst had testified concerning earlier worksheets.

We think, therefore, this case is one which falls within the principle of *Smith* v. *Brooks*, 24 App. D.C. 75, 1904 C.D. 672, (App. D.C. 1904). Here it was sought to discredit the testimony of witnesses upon the ground that many of the interrogatories propounded to them were of a distinctly leading character and suggested their own answers. As the court stated:

> * * * while this may be a good ground for scanning their testimony with critical care, it is no ground for discrediting it. * * * It is the law that testimony adduced by leading questions cannot be excluded from consideration, unless objection to it has been properly interposed; and if it is admissible in the absence of such objection, we see no reason why it should be refused consideration.

This is a different situation from that of the stipulated testimony in *Pines* v. *McAllister*, 38 CCPA 981, 188 F.2d 388, 89 USPQ 312 (cited by the Board in its decision on reconsideration) where the conclusions in such testimony were challenged. Here, as distinguished from the situation in *Pines*, it was shown that when Oberst talked of a "successful test" he was referring to the fact that the phosphors responded to ultraviolet radiations to produce visible radiations. These are not conclusions, but are statements of an observed result, on which the witness Oberst was qualified to report.

[5] This leaves for consideration what we have termed a second secondary issue, i.e., does the record establish that the Rimbach compositions come within the scope of the count? Wanmaker raised this issue unsuccessfully before the Board. It is raised again here in support of Wanmaker's position that Rimbach did not meet his burden of establishing a reduction to practice of a composition coming within the count prior to the filing date accorded Wanmaker. While Wanmaker did not cross-appeal on the Board's adverse determination of the issue, all questions decided below which are pertinent to the issue of priority of invention are before us. See *Klemperer* v. *Price*, 47 CCPA 729, 271 F.2d 743, 123 USPQ 539.

In general, Wanmaker's argument is that since the count requires that all the copper be in the cuprous form and that the ratio of atoms of copper to atoms of phosphorus be from about 0.001:2 to 0.06:2, it was a part of Rimbach's burden either to have established the analysis of the compositions prepared and tested by Oberst or to show that the method he employed must lead invariably to the product defined by the count. On this aspect of the case we agree with the Board's statement that:

> In this case the count is drawn to a phosphor having the specified composition which is prepared by mixing raw materials in the proper proportions to give the desired ratios of the metals and phosphorus and firing at an elevated temperature. The product formed is believed to be more in the nature of a mixture rather than a definite chemical compound. We believe that it would be obvious that products as defined in the count were formed by Oberst on behalf of Rimbach. We also believe that it would be obvious that the copper would be in the cuprous state due to the fact that it is present in only a small amount and the composition [sic] were fired under reducing conditions. In view of all the circumstances we believe that the record establishes that the compositions prepared on behalf of Rimbach were within the scope of the count.

We find ample support for this position in the applications of both parties. Thus the Wanmaker application states:

> Since in the phosphates according to the invention the copper should be present in monovalent form and the manganese in bivalent form, it is necessary for the production to take place in a non-oxidizing atmosphere, for example in a reducing atmosphere. Suitable atmospheres are, for example, nitrogen or a mixture of nitrogen and hydrogen. The temperature at which the production takes place is chosen between 1000° C. and 1250° C. The heating time depends on the reactivity of the compounds used and so *inter alia* on the grain size of the initial substances. It is preferably chosen between 1 and 2 hours.

Rimbach states in his application:

> * * * While the hydrogen in the foregoing quantities is slightly reducing in nature, the moisture supplies a slightly-oxidizing effect to the atmosphere. If the phosphor raw mix is fired in air, the resulting phosphor is not nearly as bright as where the raw mix is fired in the atmosphere which is at most mildly reactive and preferably slightly reducing. In view of this, it is probable that the effect of the firing atmosphere which is at most mildly reactive is to cause at least a part of the copper to be in the cuprous state. * * *

It seems to us, therefore, the parties have clearly disclosed that the presence of copper in the cuprous state is inherent in their respective compositions when their phosphor raw-mix compositions are fired in a slightly reducing atmosphere. These disclosures themselves are a sufficient factual difference, for distinguishing this case from *Alpert* v. *Slatin*, 49 CCPA 1343, 305 F.2d 891, 134 USPQ 296, cited in support of Wanmaker's position. Also, Oberst testified as to the reducing atmosphere in which the tests were conducted. Wanmaker also challenges Rimbach's position on the basis that "there is no testimony presented as to the color of the radiation produced." This, like their attack on Rimbach's case because of failure to prove use of the phosphor compounds in a HPMV lamp, must fail for the reason that the count is silent both as to any color requirement of the composition and as to its end use in a HPMV lamp.

For the foregoing reasons, we find the Board erred in awarding priority of the sole count to Wanmaker. Its decision therefore is reversed.

REVERSED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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3,103,481. (See 2,992,170.)

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3,267,607(*a*). (See 3,243,916.)

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REISSUES

JANUARY 31, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

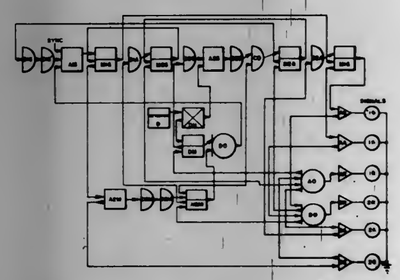
26,150

TRAFFIC CONTROLLERS EMPLOYING STATIC, LOGIC CONTROL ELEMENTS

George Donald Hendricks and Garland E. Fieser, East Moline, Ill., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Original No. 3,072,883, dated Jan. 8, 1963, Ser. No. 746,488, July 3, 1958. Application for reissue Jan. 5, 1965, Ser. No. 438,448

28 Claims. (Cl. 340—37)



1. A traffic cycle controller for use at an intersection of a main street and a cross street, said cross street having traffic actuable detectors therein, a traffic signal for each direction of traffic at the intersection, each said signal having at least a stop, go, and caution signal indication, said signals connected to said traffic cycle controller and adapted to be energized therefrom, said controller having a first [saturable core reactor] *static, solid state* timing means connected to be started after actuation of one of said traffic actuable detectors and to cause said caution signal to said main street to be energized and timed, a second *static, solid state* [saturable core reactor] timing means connected to be started by said first timing means after it has timed out, said second timing means adapted to cause said go signal to said cross street to be energized and timed, and a third *static, solid state* [saturable core reactor] timing means connected to be started by said second timing means after it has timed out, said third timing means adapted to cause said caution signal to said cross street to be energized and timed, a fourth *static, solid state* [saturable core reactor] timing means connected to be started by said third timing means after it has timed out, said fourth timing means adapted to cause said go signal to said main street to be energized and timed for a guaranteed minimum interval, at a fifth [saturable core reactor] *static, solid state* timing means connected to be started by said second timing means when said second timing means times out, said fifth timing means adapted to cause said go signal to said cross street to continue to be energized and to be timed for an extendable interval, said fifth timing means adapted to be reset after actuation of one of said traffic actuable detectors while said fifth timing *means* is timing.

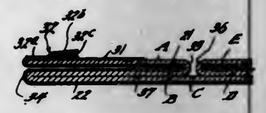
26,151

DISPOSABLE DIAPER

Robert C. Duncan, Wyoming, and Norma L. Baker, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Original No. 3,180,335, dated Apr. 27, 1965, Ser. No. 124,422, July 17, 1961. Application for reissue Mar. 21, 1966, Ser. No. 541,055

27 Claims. (Cl. 128—284)



22. A disposable diaper comprising a pad formed into a box-pleat configuration by means of a multiplicity of longitudinal folds, said folds being unsecured at the ends of said pad whereby the pad is freely laterally spreadable at said ends, said pad being constructed of a plurality of plies of creped cellulose wadding, said pad being oriented with the ridges of the creping of the plies of creped cellulose wadding therein extending in a direction substantially parallel to the longitudinal dimension of the pad.

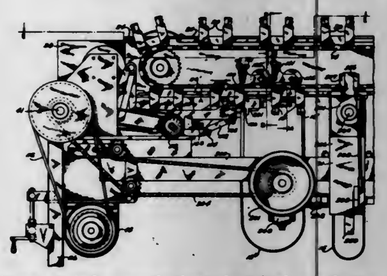
26,152

APPARATUS FOR PRODUCTION OF ELECTRICAL CONDUCTORS

Karl H. Andren, West Allis, Wis., assignor to Artos Engineering Company, Milwaukee, Wis., a corporation of Wisconsin

Original No. 3,201,848, dated Aug. 24, 1965, Ser. No. 306,499, Sept. 4, 1963, which is a division of Ser. No. 190,402, Apr. 26, 1962, now Patent No. 3,283,398, dated Nov. 8, 1966. Application for reissue Apr. 18, 1966, Ser. No. 546,126

14 Claims. (Cl. 29—33)



1. Apparatus for producing electrical conductor components comprising, a supply source for a continuous strand of insulated wire stock, [a] *an endless* conveyor *chain traversing laterally spaced sprocket wheels for movement thereof* [movable] *longitudinally* along a given *rectilinear* path *between said sprocket wheels* and provided with a plurality of wire carrier clamps spaced in single file *therealong* [along the path], a work station laterally of said conveyor *chain* on one side of said path, means for withdrawing wire from said supply source and for feeding *a predetermined length of* the same to [one] *a pair* of said carrier clamps *near one end of said path adjacent one of said sprocket wheels* for gripping *by said pair of clamps* [thereby] *with the intermediate portion of the gripped wire between said clamps freely suspended in a depending loop and with the gripped portions thereof juxta-positioned*, means for severing the *wire strand* [gripped portion of the] *to free said* [wire into a] predetermined length *thereof*, [and] means for [feeding the severed end of the wire length to an adjacent carrier clamp for gripping thereby] *moving said conveyor chain along said path* with the gripped ends of the severed wire length juxta-positioned and protruding from said clamps in a common direction *and with the intermediate looped portion freely suspended*, whereby said wire length is advanced by said conveyor *chain* to said work station with both ends of said wire length in position to be worked upon from a common side of said conveyor *chain* and its path of movement, *and means near the opposite end of said path adjacent the other of said sprocket wheels remote from said supply source for receiving the wire length from said conveyor chain.*

26,153

FERRITE MAGNETS

Alexander W. Cochardt, Export, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Original No. 3,113,927, dated Dec. 10, 1963, Ser. No. 102,190, Apr. 11, 1961. Application for reissue Dec. 9, 1965, Ser. No. 517,173

Claims priority, application Germany Oct. 18, 1960

10 Claims. (Cl. 252—62.5)

1. A permanent magnet comprising a sintered body composed of a crystalline material consisting of, by weight, from 7% to 18% of SrO, from 0.1% to 2% of $SrSO_4$, up to 1% of BaO, up to 1% of CaO, and the balance being Fe_2O_3.

26,154

PIN DETECTING AND INDICATING APPARATUS

Robert Torresen and Anthony J. Gretzky, Muskegon, Mich., assignors to Brunswick Corporation, Chicago, Ill., a corporation of Delaware

Original No. 3,094,325, dated June 18, 1963, Ser. No. 133,476, Aug. 23, 1961. Application for reissue May 13, 1965, Ser. No. 458,515

25 Claims. (Cl. 273—42)

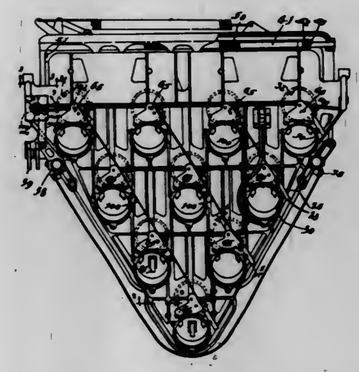
19. A bowling pin detecting apparatus for operating an indicator upon detection of a pin standing on a bowling alley, comprising, in combination,

(a) a support structure mounted for movement over a bowling alley toward and away from the alley surface and the head of a bowling pin standing on the surface;

(b) a switch assembly including a switch operable between first and second conditions and means supporting the switch on the support structure;

(c) means for operating the switch from one condition to the other including

(c–1) an actuating member mounted on the support structure and adapted to be moved thereon from a normal position to a set position on movement of the support structure toward a standing pin,



(c–2) a switch operating member mounted for movement from a normal position to a set position in response to movement of the actuating member to set position to operate said switch from first condition to second condition,

(c–3) means responsive to movement of the switch operating member to set position for holding the same in set position on movement of the support structure away from a standing pin; and

(d) a reset member separate from and movable relative to the operating means and support structure for resetting the switch operating member to normal position.

PLANT PATENTS

GRANTED JANUARY 31, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,706

BICOLORED HYBRID TEA ROSE

Harry E. Palmer, 4841 NE. 39th Ave., Portland, Oreg. 97211

Filed Oct. 21, 1965, Ser. No. 500,458

1 Claim. (Cl. Plt.—11)

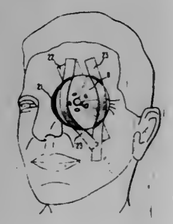
A new and distinct variety of rose plant of the hybrid tea class as herein shown and described characterized particularly as to novelty by its vigorous habit of growth, good resistance to disease and dampness, abundant flowers, its large full blooms of excellent form, and the distinctive two-toned color of its flowers, the cream-white petals of which as the bud opens assume at the free edges thereof a delicate pink color which deepens as the petals age and enlarges toward but short of the bases of the petals.

PATENTS

GRANTED JANUARY 31, 1967

GENERAL AND MECHANICAL

3,300,786
EYE SHIELD BLANK AND METHOD OF ASSEMBLING SAME
Lloyd K. Rosenvold and Robert J. Rosenvold, both of 1101 Main St., Montrose, Colo. 81401
Filed Dec. 10, 1964, Ser. No. 417,317
8 Claims. (Cl. 2—2)



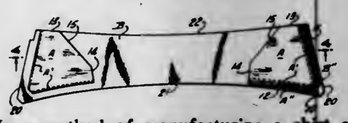
1. A blank for making an eye shield comprising a sheet of relatively stiff material of substantially circular configuration, said sheet having a circular opening substantially at its center and having a wedge-shaped opening extending from said circular opening to the periphery of said sheet, ventilation openings in said blank spaced about said circular opening, and means on said blank for securing portions of said blank adjacent the edges of said wedge-shaped opening together for forming said blank into a cone.

3,300,787
BASEBALL GLOVE
Henry Denkert, Johnstown, N.Y., assignor to M. Denkert & Company, Johnstown, N.Y., a company of the United States
Filed Dec. 2, 1964, Ser. No. 415,364
6 Claims. (Cl. 2—19)



1. In a baseball glove, the combination of a lining having a palm portion and back portion and a thumb and four separate fingers radiating from said palm and back portions and adapted to receive the thumb, forefinger, middle finger, ring finger and little finger respectively of a wearer, an outer shell receiving said lining and having a palm portion, back portion, thumb portion and little finger portion and front and back panel portions overlying and extending continuously across said forefinger, middle finger and ring finger only of said lining, padding between said lining and outer shell, means joining said front panel portion and back panel portion with one another along their end edges and along both side edges, and flexible means extending between said forefinger and middle finger and between said middle finger and ring finger of said lining and connecting said front panel portion with said back panel portion, said panels being spaced apart from one another throughout their lateral extent between said side edges.

3,300,788
METHOD OF MAKING A COLLAR
Luis B. Montero, P.O. Box 1230, Lima, Peru
Filed May 13, 1964, Ser. No. 367,143
3 Claims. (Cl. 2—143)



1. In a method of manufacturing a shirt collar, the steps of placing on the point region of a liner ply, which is to be subsequently stitched to additional plies with a line of stitching extending along and located at a predetermined distance from the periphery of said liner ply, an insert of the same general configuration as said point region of said liner ply, with peripheral edges of said insert coinciding with peripheral edges of said liner ply, stitching said insert to said liner ply with a line of stitching extending along the said coinciding peripheral edges at a distance therefrom approximately equal to twice said predetermined distance, and then trimming away peripheral portions of said insert along and closely adjacent to the line of stitching between said insert and liner ply.

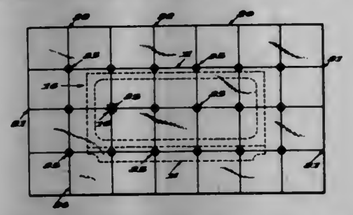
3,300,789
BOW TIE MOUNTING
Harry C. Thistle, 110 Clinton Park, San Francisco, Calif. 94103
Filed Dec. 3, 1965, Ser. No. 511,552
2 Claims. (Cl. 2—154)



1. An ornamental bow tie, comprising an ornamental clasp having a metal backing member with an ornamental facing such as a polished semi-precious stone of bow knot concealing size, a reversely bent double acting clip means at the back thereof, said clip having upstanding spaced portions behind which the knot portion of a bow tie may be disposed, a preformed bow tie having a wrapped central portion simulating a bow knot secured against the back of said metal backing member by the upstanding portions of said means, and characterized by the fact that said clip is composed of a continuous length wire having said upstanding portions for supporting the knot of the tie are disposed in spaced relation with the back of said clasp and continued to form a depending loop portion that is adapted and arranged to extend over the neckband of a shirt as a means of supporting the assembly upon the neckband of a shirt.

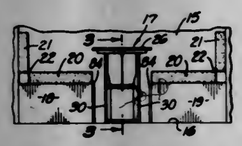
3,300,790
TUB WITH REMOVABLE LINER
Ruth G. Foote, 201 Monterey Ave., Odenton, Md. 21113
Filed Feb. 24, 1964, Ser. No. 346,975
5 Claims. (Cl. 4—185)

1. In a device for the containment of fluids, the combination comprising a supporting and retaining structure having side walls, a bottom and a drain hole in the bottom part of said structure, an adjustable unitary removable seamless inner liner made of a readily tearable polymeric plastic film impervious to the contained fluid and releasably adherent to the inner surfaces of said structure, the dimensions of said liner being proportioned with respect to the inner dimensions of said structure



so that the hydrostatic load of said contained fluid is transmitted to said structure, said liner being provided with a plurality of locally weakened areas and at least one of said weakened areas being located over said drain hole to enable said fluid to drain from said container when said liner is ruptured at said weakened area.

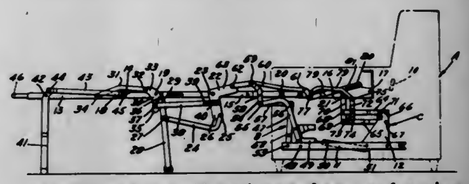
3,300,791
CONVERTIBLE TABLE
Tom Carmack, 1046 Ford St., Corona, Calif. 91720
Filed Mar. 9, 1964, Ser. No. 350,256
6 Claims. (Cl. 5—3)



1. A convertible table for use in a mobile dwelling, comprising:
a vertical track mounted on one wall of said dwelling;
a table top disposed with one end adjacent said vertical track;
a supporting frame connected to the underside of said table top;
means on said supporting frame slidably engaging said vertical track, said supporting frame and said table top being slidable vertically between a horizontal table-height position and a horizontal bed-height position;
a pair of benches arranged on opposite sides of said tale top and engaging the edges thereof to supoprt said table top when it is lowered to said bed-height position;
seat and back cushions on said benches which are adapted to be laid over said benches and said table top when the latter is at said bed-height position, thereby providing a mattress; and
means for releasably locking said table at said table-height position.

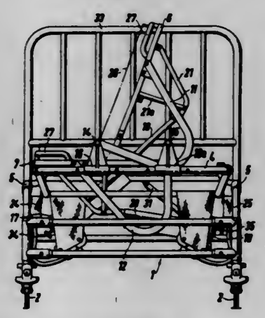
3,300,792
FOLDING SOFA-BED CONSTRUCTION
Melvin P. Spitz, Beverly Hills, Calif., assignor to Bedline Inc., Bell Gardens, Calif., a corporation of California
Filed Feb. 1, 1965, Ser. No. 429,320
8 Claims. (Cl. 5—13)

1. In a folding sofa-bed structure:
(a) a stationary frame;
(b) a foldable bed suspended therefrom, including a plurality of frame sections of which one is a head section, said sections being pivotally inter-connected in end-to-end relation for selective unfolding movement to an extended coplanar bed-forming position and a folding movement to a folded retracted sofa seat-forming position in which the head section extends in an upright position at the rear of the sofa seat; and
(c) mechanism for controlling and changing the position of said head section in response to the movement of the bed frame to said extended and retracted positions, including a movable articulated supporting frame structure having fixed pivot connections at



its inner end on said stationary frame and a pivot connection at its outer end with a part carried by said head section, said structure being swingable generally in a path above its fixed pivot connections between rear and forward positions corresponding with the retracted and extended positions of the bed frame, said structure being variable in response to its swinging movement to provide a greater spacing between its end pivot connections at the forward position than at the rear position thereof.

3,300,793
HOSPITAL AND LIKE BEDS
Ivor A. Thompson, Petts Wood, England, assignor to A. C. Egerton Engineering (Bromley) Limited, Kent, England, a British company
Filed Jan. 4, 1966, Ser. No. 518,569
Claims priority, application Great Britain, Jan. 4, 1965, 302/65; Dec. 17, 1965, 53,681/65
10 Claims. (Cl. 5—61)



1. A hospital bed comprising:
a bed frame;
a supporting structure carried by said bed frame and adapted to support a mattress;
the supporting structure being divided in a median longitudinal region into two normally co-planar parts which are so constructed that, when they are co-planar, each has portions extending transversely of the length of the bed into the other;
said extending portions crossing the center line of said supporting structure, and being in said median region;
the extending portions being hingedly mounted so as to be movable relatively to one another; and
hinge means offset from the longitudinal center line of the supporting structure, for enabling said two parts to be movable relative to each other, the arrangement being such that a person lying in the center of

the bed can be turned on his side by movement of one of the parts while his spine is supported at all times.

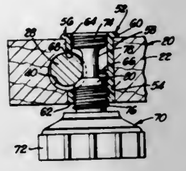
3,300,794
BEDSTEAD
Hans Altorfer, Zurcherstrasse 19, Dietikon, Zurich, Switzerland
Filed Aug. 24, 1965, Ser. No. 482,249
Claims priority, application Switzerland, Apr. 23, 1965, 5,815/65
2 Claims. (Cl. 5—68)



1. A bed member for insertion into and support by a bedstead, comprising:
(a) a generally rectangular rigid lower frame mountable on said bedstead;
(b) a generally rectangular upper frame substantially coextensive with said lower frame and including an intermediate section parallel to said lower frame and rigidly secured thereto, a head section pivotally connected with said intermediate section and forming one end of said upper frame, and an articulated foot section pivotally connected to said intermediate section and forming the other end of said upper frame;
(c) first and second link mechanisms respectively disposed on opposite sides of said intermediate section while being pivotally mounted on said lower frame and connected respectively with said head and foot sections for swinging them selectively out of the plane of said upper frame to adjust the position of a person lying upon said bed member;
(d) housing means on said lower frame below said intermediate section and between said first and second link mechanism;
(e) first and second reversible electromotor means pivotally mounted in said housing means and provided with respective threaded spindles extending toward said first and second link mechanisms from the respective electromotor means, said electromotor means being laterally offset within said housing means with each electromotor means being disposed at a side of the housing means opposite that at which the respective link mechanism is provided;
(f) respective threaded bushings each connected to one of said link mechanisms and threadedly receiving a respective one of said spindles; and
(g) hand-operable switch means including a pair of operating members respectively associated with said first and second electromotor means, said operating members each having an intermediate position and a pair of operative positions for rotation of the respective electromotor means selectively in opposite senses.

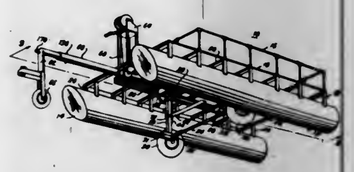
3,300,795
CRIB SIDE LOCK
Max Siegel, Los Angeles, Calif., assignor to Baby Line Furniture Corp., Los Angeles, Calif., a corporation of California
Filed June 7, 1965, Ser. No. 461,692
5 Claims. (Cl. 5—100)

1. A crib side lock for a crib having a vertically movable side and having a guide secured to the crib and engaged in an opening in the crib side so as to guide the crib side, said crib side lock comprising:
a member having an axial opening therethrough, said member having ends, screw threads within said opening in said member extending from substantially one end thereof partially toward the other end thereof, said member being positioned so that the guide opening in the crib side intersects with said member, a guide opening in said member at substantially right angles to said opening through said member and intersecting therewith, said guide opening in said member being generally aligning with the guide opening in the crib side;



a lock screw postioned within said member, said lock screw having a manually operable handle, a screw shank secured to said handle, said screw shank having first and second screw threads thereon and an elongated reduced central section between said screw threads, a lock shoulder adjacent said reduced central section and said first screw threads, said first screw threads being engaged with said screw threads within said member, said lock shoulder being adapted to engage against the crib guide within the opening in the crib side to lock said member with respect to the guide to prevent motion of the crib side with respect to the guide.

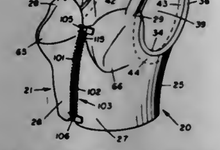
3,300,796
PONTOON BOAT AND TRAILER THEREFOR
L. A. Powers, 4136 Warbler St., Dallas, Tex. 75227
Filed Aug. 6, 1964, Ser. No. 387,969
1 Claim. (Cl. 9—1)



A trailer adapted for being attached to the underdeck of a pontoon boat having a pair of opposing pontoons along the two sides of the boat and a deck supported between said pair of pontoons, comprising:
(a) a main framework having a width less than the separation between said pair of opposing pontoons for being attached to the bottom of said deck with the front end thereof adapted to extend beyond the front edge of said deck;
(b) a transverse member attached to said main framework for rotation about an axis along its length;
(c) a pair of laterally spaced apart struts rigidly attached to said transverse member adjacent the respective ends thereof for movement between substantially vertical and horizontal positions responsive to the rotation of said transverse member;

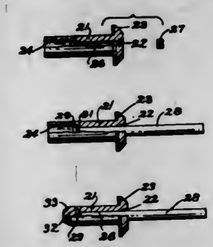
(d) a pair of wheels attached to the ends of said pair of struts, respectively, spaced from said transverse member for movment with said pair of struts between a lower position with at least a portion thereof extending below the bottoms of said pair of pontoons and a raised position between said pair of pontoons above the bottoms thereof;
(e) a lever rigidly attached at one end to said transverse member that extends behind said pair of struts at an angle intermediate the horizontal and vertical when said pair of wheels are in said lowered position;
(f) winch means attached to the front of said framework extending beyond the front edge of said deck;
(g) a flexible cable coupled to said winch means and said lever for causing said transverse member to be rotated about said axis to move said pair of wheels to said lower position in response to said cable being taken up by said winch means;
(h) a pulley attached to said framework rearward of said lever over which said flexible cable passes;
(i) resilient means connected between said framework and said lever for urging said wheels toward said raised position and for holding said wheels in said raised position when said winch means is released; and
(j) a front wheel retractably supported from said framework adapted to extend beyond the front edge of said deck for movement between a lower position with at least a portion thereof extending below said pair of pontoons and a raised position above the bottoms of said pair of pontoons.

3,300,797
LIFE JACKET
Robert S. Scheurer, 2501 Amherst, Wichita Falls, Tex. 76308
Filed Apr. 12, 1965, Ser. No. 447,417
12 Claims. (Cl. 9—342)



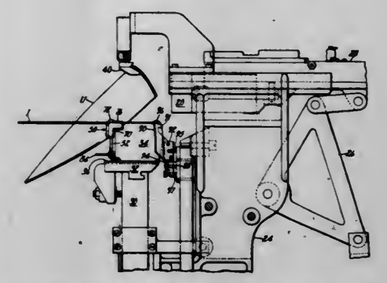
1. A life jacket including: a substantially rectangular body of resilient low density substance, said body being arcuate and having a back panel, a pair of side panels extending forwardly from opposite sides of said back panel and a pair of front panels spaced forwardly of said back panel and extending inwardly toward each other from forward sides of said side panels; a back reinforcing assembly including a rectangular flexible non-resilient panel embedded in the upper portion of said back panel and having an upper edge portion extending above the upper edge of said back panel; a pair of front reinforcing assemblies secured to said front panels, each of said front reinforcing assemblies including a substantially rectangular flexible non-resilient panel embedded in its associated front panel, said panels of said front reinforcing assemblies having outer portions extending outwardly from said front panels of said body toward each other; fastening means secured to said outer portions for securing said panels to one another; and a pair of shoulder strap means secured to said front and rear reinforcing assemblies for limiting downward movement of said body on the chest of a wearer.

3,300,798
BLIND SEALING RIVET AND METHOD OF MAKING THE SAME
Bill Lee York, Costa Mesa, Calif., assignor to Textron Industries, Inc., a corporation of Delaware
Filed Mar. 10, 1964, Ser. No. 350,827
3 Claims. (Cl. 10—27)



1. In a method of making a blind sealing rivet, the steps of
(a) forming a blank tubular rivet with an enlarged recess in its tail open at its tail end and formed with a shoulder at its inner end
(b) inserting a pulling stem for setting the rivet entirely through said tubular rivet blank
(c) providing a former on the tail end of the pulling stem bearing against the shoulder of said enlarged recess for compacting and expanding the material of said tubular blank beyond said shoulder when said stem is pulled thereby to set the rivet and
(d) sealing the tail end of the recess so as to confine said former completely surrounded in said recess.

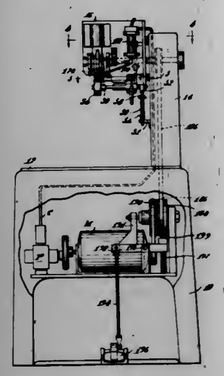
3,300,799
UPPER SHAPING MACHINES
Raymond T. Pelletier, Beverly, and Alton R. Copithorne, Rowley, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed May 16, 1966, Ser. No. 550,212
7 Claims. (Cl. 12—12.5)



1. In a machine for shaping the heel end of an upper and for securing the lasting margin of the upper to the heel end of an insole in lasted position thereon having a holddown, a heel form, a support for the heel form mounted for movement from an inoperative position to an operative position to clamp the heel end of an insole on the form against the holddown, means for moving the support, a heel band for shaping the heel end portion of the upper to said form and means for wiping the lasting margin of the upper inwardly over, and for pressing it against the heel end of the insole when said support is in operative position, means adapted to contact the insole and locate it on the form while the form is in its inoperative position, said means including a pair of gauge members for contacting the insole adjacent to the heel

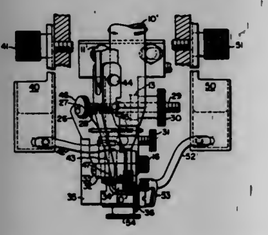
breast line and toewardly of the heel seat and a pair of gauge members for contacting the insole adjacent to its extreme heel end.

3,300,800
RIB-APPLYING MACHINE
Emil R. Oulmet, Brockton, Mass., assignor to Shoe Tech Inc., Nashville, Tenn., a corporation of Tennessee
Filed May 14, 1963, Ser. No. 280,774
16 Claims. (Cl. 12—20)



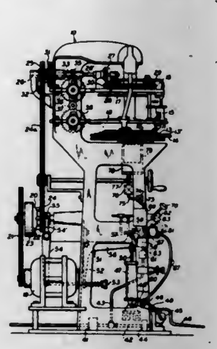
1. The combination with a rib-applying machine comprising a sole support, an edge guide and means cooperable with the sole support, by engagement with the margin of the sole on the support, to move the peripheral edge of the sole lengthwise relative to the edge guide, a strip guide for conducting a strip to a position for engagement with the sole at the place of engagement of the first means therewith; of a support on which the edge guide is fixed, said support being movable at right angles to the direction of movement of the sole, a pivoted lever connected to the support for shifting the support and hence the edge guide relative to the sole support, and a gauge block cooperable with the lever to control the movement thereof between maximum and minimum limits for location of the strip on the sole relative to its edge, said guage block containing a plurality of recesses of different lengths selectively cooperable with the lever to limit its pivotal movement, each recess representing the limit of the displacement of the strip relative to the edge of the insole.

3,300,801
COVER WRAPPING AND TRIMMING MACHINE
Walter W. Prue, 331 Minot Ave., Auburn, Maine 04210
Filed Dec. 4, 1963, Ser. No. 327,893
11 Claims. (Cl. 12—49.1)



1. A cover wrapping machine comprising a spindle and a recessed two-part block cooperating to draft and over-wipe the margins of a cover, and means for holding one of the block parts in position adjacent to the spindle while permitting it to yield pivotally with respect to the other part about an axis located parallel to and at one side of the spindle, thereby providing for fine adjustment of the draft pressure of the spindle and block upon interposed work.

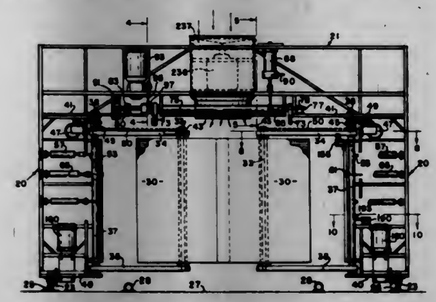
3,300,802
CUTTING MACHINE
Herbert R. Polleys, New Haven, Conn., assignor to Wellman Company, Medford, Mass., a corporation of Maine
Filed Nov. 4, 1963, Ser. No. 321,201
5 Claims. (Cl. 12—86.6)



1. A cutting machine comprising a knife, means for driving said knife in a circuit around the edge of the article to be cut, a fixed form encompassed by said circuit, a table for carrying stock from which articles are to be cut into the path of said knife and for clamping said stock against said form, a first cylinder for moving said table toward and away from said form, clutch means for connecting and disconnecting said driving means from said knife, a second cylinder for actuating said clutch means, a regulated source of pressurized fluid, a first valve actuated by said second cylinder, and a manually operable selector valve, said first cylinder communicating with said regulated source through said first valve and through said selector valve in a first position of said selector valve, and said first cylinder communicating directly with said regulated source through said selector valve in a second position of said selector valve.

3,300,803
VEHICLE WASHING APPARATUS
Raymond Seakan, Utica, N.Y., assignor to Joseph T. Hajec, Utica, N.Y.
Filed Sept. 8, 1965, Ser. No. 485,727
3 Claims. (Cl. 15—21)

1. A vehicle washing apparatus including a pair of rails extending in parallel spaced relation and being spaced apart to provide for the parking of the vehicle therebetween, a frame having spaced apart vertical leg columns movable along said rails, a brush carrier pivotally mounted on each of said leg columns, a vertical brush journalled for rotation about a vertical axis in each of said carriers, said carriers being movable about their pivots to position said brushes in close adjacency at the ends of the vehicle for brushing the same, power means operable to effect rotation of said vertical brushes about their vertical axis, a second power means for effecting movement of said frame along said rails from one end of the vehicle to the opposite end thereof and return movement to the first end of the vehicle, said carriers and vertical brushes trailing said frame during movement thereof, and being movable outwardly around the end corners of the vehicle during movement of the frame on said rails, a top brush for brushing the top surfaces of the vehicle, said top brush being normally positioned above the top surfaces of the vehicle, means responsive to movement of said vertical brushes about the end corners of the vehicle at the one end thereof to cause said top brush to move downwardly in engagement with the top surface of the vehicle, pressure means operable to maintain said vertical brushes against the vertical surfaces of the vehicle under a constant uniform pressure during movement of said frame along said rails, and means responsive upon inward movement of said brushes at the opposite end of the vehicle to effect upward movement of said top brush out of engagement with the top surfaces of the vehicle.



3,300,804
MOP HEAD
E. Burton Benjamin, Highland Park, Ill., assignor to American Uniform Company, sometimes doing business as Dust-Tex Company, Cleveland, Tenn., a corporation of Minnesota
Filed Aug. 2, 1965, Ser. No. 476,511
2 Claims. (Cl. 15—147)



1. A mop head comprising, a frame to which a mop handle may be secured, a wire wing element secured to said frame and having a loop-like configuration, a resilient plastic board element having a substantially planar underside and having a periphery substantially corresponding in size and shape to the peripheral configuration of said wing element, and means integral with said board element providing an upwardly facting peripheral groove thereon having resilient walls for grippingly receiving therebetween said wing element and for thereby securing said board element to the underside of said wing element, said wing element with said board element secured thereto being adapted for effecting connection with a floor swab or the like, the substantially planar underside of said board serving as a flat back-up surface for said swab to increase the cleaning efficiency thereof.

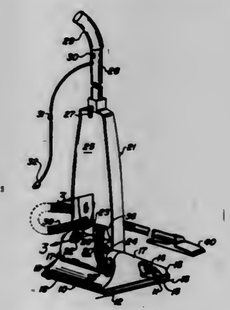
3,300,805
DISPOSABLE ROTARY BRUSH SPACER RING
Louis D. Rizzo, Union, N.J. assignor to Danline Manufacturing Company, Kenilworth, N.J., a corporation of New Jersey
Filed Apr. 19, 1965, Ser. No. 449,130
1 Claim. (Cl. 15—181)

A rotary brush spacer strip comprising a flat, flexible, strip of substantially uniform width having (1) a notched tab at one end and a slot shaped to receive and retain said tab at the opposite end which serve to lock said strip



in ring form, and (2) raised side walls which serve to resiliently support adjacent brush rings.

3,300,806
SUCTION CLEANER
Melvin H. Ripple, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Aug. 5, 1964, Ser. No. 387,574
4 Claims. (Cl. 15—334)

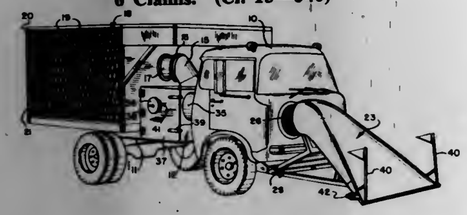


1. A suction cleaner comprising: a body having a nozzle for removing dirt from a surface being cleaned, an enclosure defining a suction chamber having a substantially flat wall portion, a valve chamber in said wall portion having first and second air passageways extending substantially parallel to said wall portion and radial from said valve chamber, an outlet from said valve chamber leading to said suction chamber, conduit means connecting said nozzle with said first air passageway for flow of dirt-laden air under suction pressure to said valve chamber and suction chamber, means defining an opening connected to atmosphere and to said second air passageway for flow of ambient air to said valve chamber, a valve member forming part of the flow passage between said outlet and said first and second air passageways in said valve chamber and having an air inlet of greater size than said first or second air passageways at said valve chamber to completely span said first passageway and a portion of said second passageway whereby the size of said valve air inlet is less than the combined areas of said first and second air passageways at said valve chamber, said valve member mounted for movement to a plurality of positions relative to said air passageways, one of the positions placing said valve air inlet in register only with said first passageway to apply high suction to said nozzle for passage of dirt-laden air to said suction chamber, and another position of said valve member arranging said valve air inlet in full register with said first air passageway and partially with said second air passageway to provide an unrestricted path for flow of dirt-laden air from said nozzle to said suction chamber and provide a suction bleed from said opening for passage of ambient air to said suction chamber during the cleaning operation.

3,300,807
CLEANING APPARATUS

George Berkowitz, Monsey, N.Y., assignor of ten percent to Aaron B. Karas, five percent to Morris Newman, and five percent to Noah Mintz

Filed Dec. 7, 1964, Ser. No. 416,356
6 Claims. (Cl. 15—340)

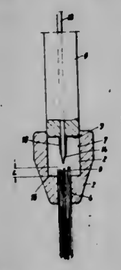


1. A cleaning apparatus comprising:
a wheeled truck chassis;
a power driven suction fan mounted on said chassis;
a drop box mounted on the air intake side of said suction fan housing, the inlet to said drop box being mounted on a wall adjacent a wall containing the air intake to said fan thereby creating an angular change in direction of air flow through the drop box;
a suction tool operably mounted on the front of said apparatus to suck debris from a surfoce along which the apparatus is advanced and operably connected by flexible coupling and duct means to said suction fan;
a collection chamber mounted on the rear of said apparatus and operably connected by duct means to said suction fan;
and debris discharge means located at the rear end thereof.

3,300,808
BRUSH

Georg Karl, Waizendorf-Bechhofen, Middle Franconia, Germany

Filed Sept. 30, 1964, Ser. No. 400,399
Claims priority, application Germany, Nov. 30, 1963, K 46,428
1 Claim. (Cl. 15—604)

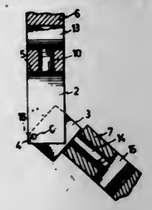


A brush comprising,
a handle having an end face,
a tapering extension projecting centrally from and integral with the end face of said handle,
a channel extending through said handle and extension,
a cup-shaped end cap sleeved upon said handle for enclosing the end face of said handle,
said end cap having an inner bottom wall coplanar with the end face of said handle and having an opening therethrough in alignment with said extension for the extending of said extension thereinto,
a bundle of bristles having root ends and being secured relative to said handle by the accommodation of the root ends through the opening of said end cap and the gripping thereof between the wall of the opening of said end cap and extension with said extension extending into the bristles of said bundle thereof and with the innermost ends of the bristles of said bundle thereof being forced into confrontation with the inner bottom wall of said end cap by the end face of said handle,
and a removable spigot having a pointed end and having a sliding fit in said channel for spreading the root ends of the said bristles of said bundle thereof.

3,300,809
COLLAPSIBLE FURNITURE

Philippe Neerman, Marke-Courtrai, and Willy Nel, Courtrai, Belgium, assignors to Ateliers d'Art de Courtrai de Coene Frères, Courtrai, Belgium, a company of Belgium

Filed Dec. 2, 1963, Ser. No. 327,427
Claims priority, application Belgium, Nov. 30, 1962, 625,555; Sept. 17, 1963, 637,486
7 Claims. (Cl. 16—135)



1. A hinge for mounting doors on furniture panels comprising conglomerated panels finished with a veneer thereon, said hinge comprising a fixed part, a pivot pin on said fixed part, and a movable part mounted on said pivot pin, said fixed part having a substantially channel-shape, said fixed part being mounted on said furniture panel in a recess therein so that said fixed part is substantially flush with the edges of said panel, said channel-shaped fixed part having a hole in the bottom thereof, a threaded member countersunk into the furniture panel spaced from but in alignment with said channel-shaped fixed part, screw means passing through said hole and engaging said threaded member thereby fixedly mounting said fixed part to said furniture panel, said moving part being attached to a corresponding furniture door, said movable part having a substantially parallelepiped shape, said movable part having a volume no greater than the volume between the depending portions of the channel-shaped fixed part, said pivot pin passing through said movable part and being retained in holes in the depending portions of the channel-shaped fixed member, and said shaft being so located as to allow the movable part and associated door to rotate preferably so as to allow the door to rotate about the furniture panel through an angle of 270°.

3,300,810
EXTRUDER

Robert B. Gregory, Stow, and William S. McCormick, Cuyahoga Falls, Ohio, assignors to NRM Corporation, a corporation of Ohio

Filed Jan. 29, 1964, Ser. No. 341,063
3 Claims. (Cl. 18—12)



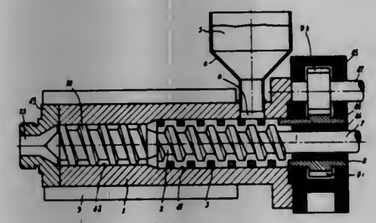
1. An apparatus for selectively working material comprising a cylinder having inlet and discharge openings adjacent its ends, and a feed screw rotatable in said cylinder and having first and third sections for advancing material axially through said cylinder from said inlet opening to said discharge opening; said feed screw being characterized

in that it has an intermediate section of its length between said first and third sections in which the screw has a plurality of helical rib means of hand opposite to that of said first and third sections and of a substantially greater lead having a helix angle of about 50°, said plurality of helical rib means defining therebetween open-ended helical channels that are effective to differentially impede the advance of particles of material of different viscosities for selective working of material therethrough whereby the particles of low viscosity move through said intermediate section at a greater velocity than the particles of high viscosity and the more viscous slower moving particles are heated by conduction from the less viscous faster moving particles.

3,300,811
PLASTIC EXTRUDING MACHINES

Pierre Amédée Berger, Firminy, Loire, France, assignor to Compagnie des Ateliers et Forges de la Loire (St. Chamond-Firminy-St. Etienne-Jacob-Holtzer), Paris, France

Filed Apr. 22, 1965, Ser. No. 450,062
Claims priority, application France, Sept. 3, 1964, 986,988, Patent 1,414,025
8 Claims. (Cl. 18—12)



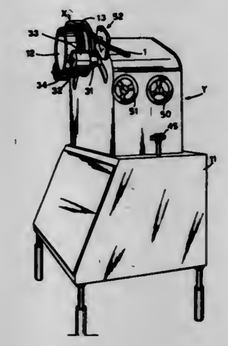
1. A machine for processing plastic material comprising a casing having an input section and a processing section in serial relationship; rotor means in said casing, said rotor means including a processing rotor section positioned in said processing casing section; means for rotating said processing rotor section to feed plastic material through said processing section of the casing while working said material between cooperating surfaces of the processing rotor section and the casing; said rotor means further including an input rotor section positioned in said input section of the casing, and including an inner rotor member and an outer rotor member, said outer rotor member comprising a helix formed by a helically wound elongated element surrounding said inner rotor element; means for feeding material to said input section of the casing; a first drive means for rotating said inner rotor member and a second drive means for rotating said outer rotor member at an angular speed selectable independently of the angular speed of said input rotor member.

3,300,812
MACHINE FOR MANUFACTURING FLEXIBLE TUBING

Glauco Pasquetti, 103 Via Sanvito Silvestro, Varese, Italy

Filed June 14, 1965, Ser. No. 463,602
Claims priority, application Italy, Jan. 25, 1965, 2,089/65
5 Claims. (Cl. 18—12)

1. Machine for manufacturing flexible tubing from a profile of plastics formed with a longitudinal channel adapted to receive a longitudinal bead on the profile, wherein the machine comprises a drum supported by the machine frame and having on its circumference two substantially helical passages arranged side by side, adapted to guide two portions of the profile brought close by helically winding the profile about the drum, the passages being separate at one end and converging at their other end to form a single passage smaller in width throughout its length than twice the width of the profile, one roller at least mounted on a driving shaft extending parallel with the axis of the drum and movable with respect to the said axis, means for moving the said driving shaft to bring the

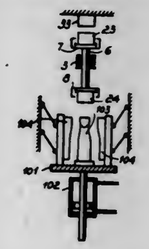


roller into adjustable pressure contact with the drum, or remove it therefrom, and means arranged in the passages, adapted to resiliently expand the channel on a profile portion engaged by one passage to permit insertion of the bead on another profile portion engaged by the other passage into the channel.

3,300,813
ATTACHMENT FOR FOOTWARE MOLDING MACHINES

Dino Vicini, Via Filippo Carcano, Milan, Italy

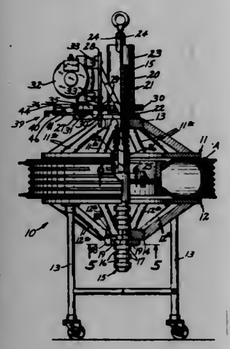
Filed Apr. 6, 1964, Ser. No. 357,834
Claims priority, application Italy, Apr. 12, 1963, 33,964/63; Aug. 7, 1963, 37,980/63
5 Claims. (Cl. 18—17)



1. An attachment for molding machines of the type described, comprising a stationary frame and a movable frame in said molding machine, a track having a first track section on said movable frame, a second track section on said movable frame, parallel with and in opposite position to said first track section, at least a third track section on said movable frame, said third track section having means for connecting said first track section with said second track section through said third track section, two die supporting carriages movable on said track and in opposite position thereto, each of said carriages having a die fixed thereon, two counter-dies cooperating with said dies, one of said counter-dies being a stationary counter-die supported on said stationary frame, the other of said counter-dies being movable in the direction towards and away from said one of said counter-dies and arranged in opposite position to and at a distance from said one of said counter-dies thereby allowing said movable frame with the

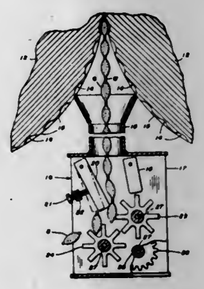
die supporting carriages thereon to be arranged between said two counter-dies, lock means to releasably lock said carriages in opposite positions on said track and in front of said counter-dies, means for moving said carriages on said track, means for moving said other of said counter-dies and therethrough said movable frame when said carriages are in position on said track towards an engaging position of said dies with said counter-dies.

3,300,814
POWER OPERATED RETREAD TIRE PRESS
Wallace V. Sornsen, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 13, 1964, Ser. No. 403,580
2 Claims. (Cl. 18—18)



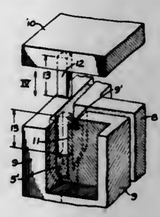
1. In a press for retreading pneumatic tire casings of the type having
(a) a pair of generally parallel annular pressure plates adapted to engage and apply pressure to opposite side walls of a tire casing interposed therebetween,
(b) a screw element extending axially through said plates,
(c) one of said plates having thereon a head for releasably securing same to one end portion of said screw element,
(d) the other of said plates having thereon a head slidably receivable over said screw element,
(e) a nut having threaded engagement with said screw element axially outwardly of the head carried by the other of said annular plates and adapted to impart clamping pressure to said other of said plates,
(f) the peripheral edge of said nut defining a plurality of circumferentially spaced teeth,
(g) means limiting relative rotary movements of said screw elements with respect to said other of said plates, and
(h) power operated means for imparting rotary movements to said nut in opposite directions, said last mentioned means including:
(1) a radially projecting arm carried by said other of said heads,
(2) a mounting bracket carried by said arm in radially spaced generally parallel relationship to said screw element and having an aperture therein exposing the peripheral edge portion of said nut,
(3) a rotary shaft journalled for rotation in said arm in radially outwardly spaced relationship to said mounting bracket and aperture therein, on an axis parallel to said screw element,
(4) an eccentric on said shaft in overlying relationship to said arm,
(5) a V-shaped pawl journalling said eccentric at the vertex thereof and defining pawl elements at its opposite ends adapted to selectively engage said teeth whereby to impart rotary movements to said nut in a given direction upon rotation of said shaft,
(6) power means for imparting rotary movements to said shaft,
(7) and yielding means for biasing a selected one of said pawl elements toward operative engagement with said teeth.

3,300,815
BRIQUETTE-PARTING APPARATUS
Donald E. Rohaus, Monroeville, and Robert J. Wilkins, North Versailles Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 418,965
8 Claims. (Cl. 18—21)



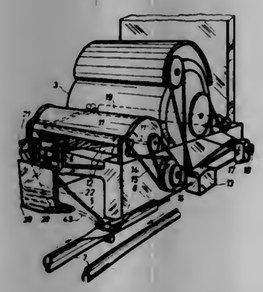
1. A briquette-parting apparatus comprising a housing for receiving a string of briquettes, a breaker plate mounted in said housing, a toothed breaker wheel mounted in said housing beneath said plate, drive means operatively connected with said wheel, and means in said housing for guiding the leading briquette of a string between the teeth of said wheel, whereby said wheel breaks the web joining the leading briquette against said plate.

3,300,816
MOLD FOR ACCUMULATOR CASE
Paul Ochner, Gehrden, Hannover, Germany, assignor to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Sept. 1, 1964, Ser. No. 393,633
Claims priority, application Germany, Sept. 7, 1963, C 30,858
1 Claim. (Cl. 18—42)



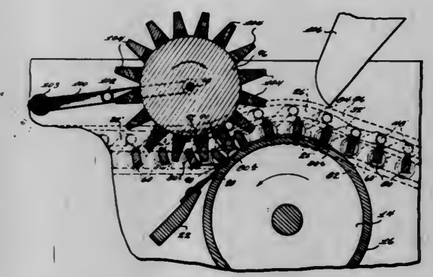
In a mold for forming a battery case with integral abutments spaced to receive a handle, separable side and end mold parts for an outer mold part defining a cavity corresponding to the side and end walls of the case to be molded, the outer mold part having a recess adjacent each corner extending downwardly from the upper margin and opening from said cavity, a lid for said mold having fixed thereon separable mold parts each in one of said downwardly extending recesses and terminating spaced above the bottom wall of said downwardly extending recess to form a lower abutment on said case having an upwardly facing abutment surface, each of said recesses being wider at its upper end and bordered by said outer mold part above said bottom wall and by said separable mold part to form an upper abutment having a downwardly facing abutment surface offset from said upwardly facing surface on the opposite side of a vertical plane, said cavity and recesses receiving the molding material and said lid with said separable mold parts being removable by upward movement from said outer mold part to form with said outer mold part recesses in said case between said abutment surfaces.

3,300,817
AUTOMATIC CARDING AND DRAWING ASSEMBLY
Rolf Binder and Hansruedi Lamparter, Winterthur, and Paul Stähli, Wallisellen, Switzerland, assignors to Rieter Machine Works Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Mar. 25, 1964, Ser. No. 354,566
Claims priority, application Switzerland, Apr. 5, 1963, 4,432/63
5 Claims. (Cl. 19—.21)



1. An automatic carding plant comprising:
a plurality of continuously fed independently operating cards,
a drawing arrangement, each card having cotton feed and sliver delivery means and stationary storage means for passage of sliver therethrough, said storage means being adapted to receive sliver therein in serpentine layers upon stopping of said drawing arrangement,
conveyor means for receiving the card slivers from said delivery means, for doubling the slivers, and for conveying the doubled slivers to said drawing arrangement,
said conveyor means being operatively connected to said drawing arrangement for simultaneous operation therewith,
a motor operatively connected to each of said cards for driving said cards,
power transmission means operatively interposed between said motor and the cotton feed and sliver delivery means of the card driven by said motor,
said transmission means comprising a high speed and a low speed transmission and means for selectively activating one at a time of said transmissions, and
means for sensing the presence of an accumulation of sliver in said storage means,
said last mentioned means being operatively connected to said means for selectively activating one at a time of said transmissions for activating the high speed transmission in response to the absence of an accumulation of sliver in said storage means and for activating the low speed transmission in response to the presence of an accumulation of sliver in said storage means, whereby said carding machine continuously delivers sliver for a predetermined period of time during stoppage of said drawing arrangement to avoid breakage of sliver during said continued delivery and upon restarting of said drawing arrangement.

3,300,818
FLIGHT-BAR TYPE ROLLER GIN
Eugene H. Brooks, Sherman, Tex., assignor to Hardwicke-Etter Company, Sherman, Tex., a corporation of Texas
Filed Feb. 10, 1964, Ser. No. 343,724
4 Claims. (Cl. 19—50)

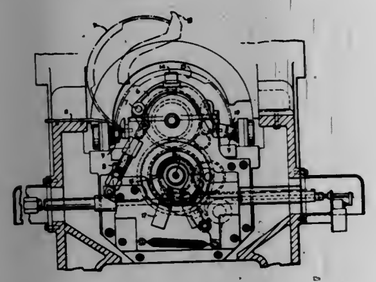


1. In a roller cotton gin having a frame, a cylinder mounted in said frame having a surface suitable for roller ginning, means for rotating said surface at a relatively high speed, a doctor knife adjustably carried by said frame and having a top substantially flat surface terminating in an edge presented tangentially against the direction of rotation of said surface and substantially in contact therewith, means for delivering seed cotton to said surface in advance of said knife, a plurality of ginning blades for cooperation with the surface of said ginning roller and with said knife, a carrier conveyor having means for mounting said blades in spaced apart relationship thereon and for guiding them in their movement so that their inner faces almost contact said surface and travel toward and with the direction of movement of said surface in the area immediately in advance of said knife, but at a speed substantially less than the surface speed of said cylinder, means for moving the ginning blades as specified, said carrier conveyor having positively acting means for positioning and abruptly swinging the edges of said blades outwardly over the edge of said knife and away from the upper surface of said knife, whereby the seeds are ginned from the cotton to a substantial extent in the area in advance of the edge of said knife, and again by being pulled by lint adhering to said surface back over the upper surface of said knife to its edge where they are then contacted and finally ginned over the edge of said knife by a succeeding blade on said carrier conveyor, and a pressing roller rotatably mounted in said frame for turning movement about an axis parallel to the axis of said cylinder, said pressing roller having radially extending segments which pass into the spaces between said ginning blades upon rotation of said pressing roller and which press the seed cotton against the surface of said ginning cylinder in advance of said doctor knife.

3,300,819
EJECTION MEANS FOR EJECTING TAILS AND DEFECTIVE PLATES FROM A PLATE CASTING MACHINE

Paul L. Tollison, North Plainfield, Charles L. Ricards, South Plainfield, and Paul J. Schkeeper, Plainfield, N.J., assignors to Wood Newspaper Machinery Corporation, Plainfield, N.J., a corporation of Virginia

Original application June 6, 1961, Ser. No. 115,145, now Patent No. 3,172,172, dated Mar. 9, 1965. Divided and this application Jan. 15, 1965, Ser. No. 425,818
5 Claims. (Cl. 22—3)



1. In a stereotype plate casting and finishing machine in which cast plates and severed tails are normally moved through the machine along a predetermined path, the improvement characterized by an ejector mechanism for ejecting a severed tail and defective plate from said machine comprising an ejector arm normally positioned below the path of movement of a cast plate and severed tail, support means pivotally mounting said arm, a stop member fixed to said arm and normally positioned below the path of movement of said plate and in the path of movement of said severed tail, and ejector actuating mechanism for pivoting said arm about said support into engagement with a severed tail or defective plate to push said tail or defective plate out of its predetermined path of movement through the machine.

3,300,820
SYSTEM FOR CONTROLLING THE LIQUID LEVEL IN A CONTINUOUS-CASTING MOLD OR THE LIKE

John Richard Tiskus, Monroeville Borough, and James Howell Wilson, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Mar. 23, 1964, Ser. No. 353,696
12 Claims. (Cl. 22—57.2)

1. A system for controlling the liquid level in a continuous casting mold comprising:

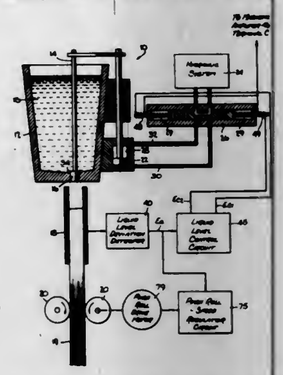
a liquid level deviation detector circuit coupled to said mold to provide an error signal, said error signal having the characteristic that its polarity indicates the direction of liquid level deviation from a predetermined level and its magnitude indicates the extent of deviation of the liquid level from said predetermined level,

a liquid level control circuit responsive to said error signal to provide a first intermittent control signal when said error signal is of one polarity, a second intermittent control signal when said error signal is of the other polarity,

pour rate regulating means responsive to said intermittent control signals to increase the pour rate in response to said first correction signal and to decrease the pour rate in response to said second correction signal,

pinch roll drive means for withdrawing a casting from said mold, and

a pinch roll speed regulator circuit responsive to said error signal to provide a third control signal for controlling the rate at which said pinch roll drive means withdraws said casting from said mold, said third control signal having the characteristics (1) that it remains unchanged in response to an error signal of either polarity that is less than a first pre-set mag-

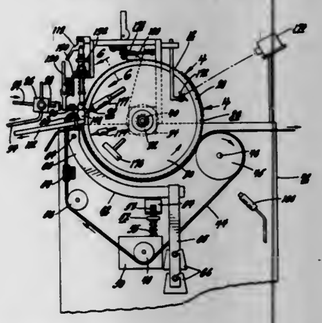


nitude, (2) that it changes linearly in amplitude in response to the magnitude of an error signal of either polarity where the error signal is greater than said first pre-set magnitude and less than a second pre-set magnitude, and (3) that it will cease to further change in response to an error signal having a magnitude that is greater than said second pre-set magnitude.

3,300,821
BATTERY GRID CASTING METHOD AND MACHINE

Charles A. Nichols, Largo, Fla., and Alexander H. Joyce, Detroit, Charles W. Gardner, Oxford, and William A. Fletcher, Bloomfield Hills, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 14, 1964, Ser. No. 389,564
9 Claims. (Cl. 22—57.4)



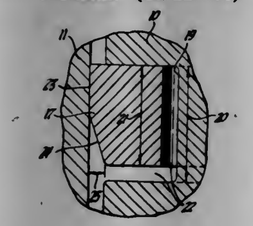
1. A machine for continuously molding castings comprising the combination of, a rotary mold drum, a continuous belt, means for supporting said continuous belt with a portion thereof freely movable relative to said rotary mold drum and a second portion continuously engaging a second portion of said drum, said first portion of said continuous belt cooperating with said rotary drum to form a throat region therebetween, dispenser means located within said throat region having a portion thereof in engagement with said freely movable belt portion, means for maintaining a second portion of said dispenser means in engagement with the outer periphery

of said drum, means for circulating molten material through said dispenser means into said throat region and exteriorly thereof; said freely movable belt portion being adjustably movable to compensate for variations in the diameter of the rotary drum and serving to wipe a predetermined portion of the circulating molten material in the throat region into the outer peripheral face of the rotary mold drum, said continuous belt and rotary drum cooperating to trap the molten material in the outer periphery of the drum for a predetermined period of time, said continuous belt and rotary drum having relatively low coefficients of heat diffusivity where they contact the molten material for maintaining the trapped molten material at a temperature substantially corresponding to the temperature in the throat region to assure penetration of the molten material into all parts of the mold, said continuous belt and drum serving to trap the molten material within the mold for a sufficient time to allow solidification of the material therein by heat transfer to a high-diffusivity portion of said drum.

3,300,822
DIE CASTING PLUNGER PISTON RING

William E. Thompson, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,658
3 Claims. (Cl. 22—70)



1. In a die casting machine the combination of a pressure cylinder having an inlet port, a shot plunger reciprocably operable within said cylinder and having a circumferential groove in the cylindrical surface thereof disposed perpendicularly to the longitudinal axis of said plunger, and a resilient expandable split piston ring in said groove, said ring having an annular chamfer on the outside diameter of the pressure side whereby molten metal is wedged between the outer cylindrical surface of said ring and the cylinder wall during the pressure stroke of said plunger, the angle of said chamfer being on the range of about 5° to 20°, said groove being of greater axial thickness than said ring and the inner diameter of said groove being smaller than the inner diameter of said ring whereby the pressurized molten metal flows into said groove between the base of said groove and the inner side of said ring to exert a sealing pressure on said ring against said cylinder wall during said pressure stroke of said plunger.

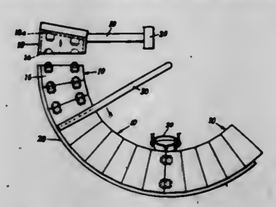
3,300,823
MOLD ASSEMBLY AND POURING METHOD AND APPARATUS

Wainwright Tuttle, Cincinnati, Ohio, assignor to Altamil Corporation, Indianapolis, Ind., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 436,050
17 Claims. (Cl. 22—130)

1. A double faced mold section comprising a generally rectangular body having top and bottom surfaces, a front surface parallel to a larger back surface, whereby said top and bottom surfaces form substantially the same acute angle with said front surface, and a pair of substantially flat side surfaces, said top and bottom surfaces including casting cavity impressions.

16. A molding process including the steps forming a plurality of molds having non-parallel top and bottom surfaces, sequentially transporting said molds in a generally horizontal orientation to an assembly station, stack-

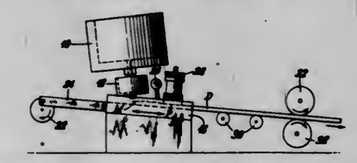


ing said molds in a vertical arc of at least 90 degrees at said assembly station, and filling said molds with molten material when said molds in said vertical arc are generally vertically oriented.

3,300,824
METHOD OF CONTINUOUS FLAT METAL CASTING WITH THE FORWARD MOLD STROKE AND PINCH ROLL SPEED SYNCHRONIZED WITH THE SPEED OF THE FORWARD SPEED OF MOLTEN METAL

John W. Ross, Toronto, Ontario, Canada, assignor to Union Carbide Canada Limited, Ontario, Canada, a corporation of Canada

Filed June 6, 1963, Ser. No. 286,069
3 Claims. (Cl. 22—200.1)



1. Method of continuous casting of flat products from molten steel with a high width to thickness ratio, which comprises continuously reciprocating an open top inclined flat mold surface while continuously cooling the same from the underside thereof continuously pouring molten steel from a fixed position tundish onto the upper side of an initial zone of said mold surface to spread laterally and forwardly with a free upper surface, confining the lateral spread of said molten steel to provide a stream of uniform width, the forward spread over an intermediate zone of the cooled surface chilling the steel to a plastic state, confining the free surface of said plastic steel to provide a stream of uniform depth, and passing said uniform depth plastic steel to a final zone of said cooled surface where said plastic steel is chilled to a solid state and delivered therefrom to pinch take-out rolls downstream thereof, the forward stroke of said reciprocation being at the speed of the pinch roll speed which in turn is synchronized with the speed of the forward spread of said molten steel as it contacts the initial zone of said mold surface and the return stroke is at a faster rate in order to maintain the forward metal flow.

3,300,825
CABLE TIE AND ANCHOR

Werner Brandt Andreasen, Fairbanks, Alaska (FAA Rapcon, CMR–5, A.P.O. Seattle, Wash. 98737)

Filed Apr. 30, 1965, Ser. No. 452,075
3 Claims. (Cl. 24—16)

1. A cable tie and anchor comprising in combination:

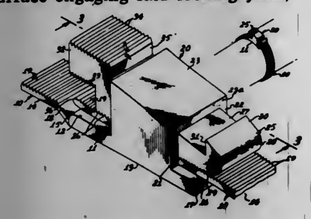
(A) an elongated flexible strap having

(B) a series of serrations spaced longitudinally on the outside surface of said strap and having a smooth inside surface,

(C) a platen formed on one end of said strap having a smooth outer surface,

(D) a locking yoke on said platen above said smooth outer surface of said platen having a smooth surface wedge-receiving opening,

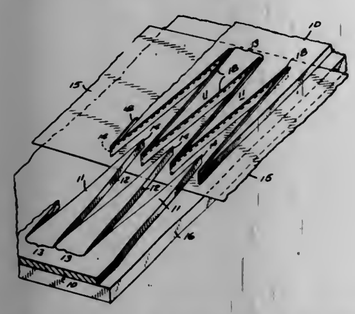
(E) a locking wedge within said wedge-receiving opening having serrations on one face engaging said serrations on the outside of said strap and smooth sloping surface engaging said locking yoke,



(F) a smooth rounded surface on the small end of said locking wedge,

(G) and a manipulating extension portion on the large end of said locking wedge for releasing and tipping up said wedge to engage said smooth rounded surface against said serrations on said strap to release said serrations on said wedge from said serrations on said strap.

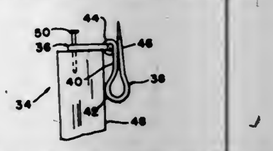
3,300,826
CONVEYOR BELT AND METHOD OF JOINTING SAME
Thomas Irvin Read, Portland, Conn., assignor to The Russell Manufacturing Company, Middletown, Conn., a corporation of Connecticut
Filed May 8, 1964, Ser. No. 365,946
4 Claims. (Cl. 24—38)



1. A belt composed of fabric reinforced plastic material having at its ends interleaved fingers extending entirely across the width of said belt, said fingers having side edges bonded by a polyvinyl chloride tape and a fabric strip extending around the area of said interleaved fingers to cover the surfaces of said fingers and the edges of said belt, said fabric strip having a polyvinyl chloride coating bonded to said fingers and to said tape.

3,300,827
DRAPERY HOOK
William L. Hutton, 184 Mohawke Road, Pontiac, Mich. 48053
Filed Aug. 24, 1964, Ser. No. 391,380
1 Claim. (Cl. 24—73)

A drapery hook adapted to be mounted on a drapery supporting member having an upstanding mounting member thereon, comprising a ring-like element of transverse circular cross-section adapted to be inserted over the mounting member and supported by the supporting member, a U-shaped member extending from and carried by said ring-like element, said U-shaped member having a pair of legs joined together at the bottom ends thereof by a connecting portion, with one of said legs having an eye on the upper end thereof engaging said ring-like member and forming a pivot connection therebetween, said eye being in the form of a generally closed loop which is wrapped transversely around said ring-like member in a plane extending substantially perpendicular to the general plane of the ring-like member when supported by the drapery supporting member, the one leg of said U-shaped member being provided on the lower portion thereof with



an offset portion adjacent the connecting portion of said U-shaped member, said offset portion having an outermost point defining a line with the outermost point of the eye, such line being substantially parallel to and spaced from said one leg of said U-shaped member, said offset portion being adapted to engage the front of the drapery supporting member and to thereby prevent undesirable pivoting of said U-shaped member with respect to said ring-like element, said other leg having a length greater than the length of said one leg and terminating in a pointed end to facilitate the insertion thereof into the drapery.

3,300,828
BODY REST ADJUSTMENT FOR COFFIN
Robert L. Hegman and Clinton L. Weber, both of Cincinnati, Ohio, assignors to Safegard Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed July 10, 1964, Ser. No. 381,745
1 Claim. (Cl. 27—12)



In a coffin comprising a bottom, ends and sides, the combination of:

a frame consisting of two spaced longitudinally extended tubular side members and two spaced generally U-shaped tubular end members telescoping into said side members to provide shoulders,

a mattress secured to said frame and extending substantially over the interior length of said coffin,

first and second spaced brackets secured to the coffin near its head end and laterally of said frame and mattress,

third and fourth spaced brackets secured to the coffin near its foot end and laterally of said frame and mattress,

each of the brackets being formed with a vertical sequence of diagonally upwardly extending tangs spaced inwardly from the sides of said coffin and defining notches,

said side members being formed with longitudinally extending slots near said shoulders,

a first transversely extending rod located under said mattress and adapted to project through two of said slots into notches on the first and second brackets,

a second transversely extending rod located under said mattress and adapted to project through the other two of said slots into notches on the third and fourth brackets,

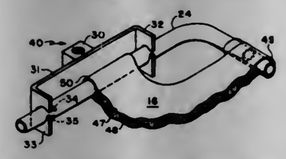
said rods having end portions providing handles,

the tangs on the first and second brackets facing away from the tangs on the third and fourth brackets and each tang being so formed as to permit an end portion of a rod to be disengaged from the notch associated with and under that tang and manually lifted to the next adjacent notch, and

means for permitting individual disengagement of any rod portion to be lifted comprising coil springs individually disposed outboard of said rod end portions between said rod end portions and said shoulders for biasing said rod portions inwardly toward said notches,

the rods being biased into the notches by the springs to support the frame and mattress in any selected position and the end portions of the rods being manually released from said notches against the force of said coil springs to permit adjustment of the elevation of the frame and mattress.

3,300,829
SIMPLIFIED BODY REST ADJUSTMENT FOR COFFIN
Robert L. Hegman and Clinton L. Weber, Cincinnati, Ohio, assignors to Safegard Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed July 10, 1964, Ser. No. 381,833
1 Claim. (Cl. 27—12)



In a coffin of the type which provides adjustable support for a corpse, the combination of:

a mattress,

a generally rectangular shaped integral tubular frame to provide peripheral support and security for the mattress, said frame having a head end and a foot end,

said frame comprising a pair of spaced longitudinally extending rod portions and a pair of spaced generally U-shaped transversely extending rod portions,

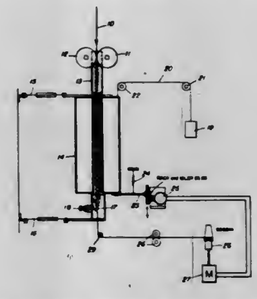
a jack screw vertically positioned adjacent said head end,

means for adjustably vertically positioning the head end of said frame comprising a generally U-shaped bracket having longitudinally extending portions formed with apertures which journal one of said transversely extending rod portions and with a threaded portion complementing said jack screw, and

means for vertical supporting the foot end of said frame and permitting longitudinal movement of said frame incident to the adjustment of the jack screw comprising a pair of spaced brackets each formed with a longitudinally extending slot adapted to permit sliding movement of the other rod portion.

3,300,830
APPARATUS FOR UNIFORMLY CRIMPING FILAMENTS
Elisha Johnson, Jr., Charlotte, N.C., assignor to Fiber Industries, Inc., a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,952
2 Claims. (Cl. 28—1)

1. An apparatus for uniformly crimping filaments which comprises: a crimping chamber, a pair of feed rolls at one end of said crimping chamber to initiate the folding of said filaments through said crimping chamber, a flexible mounted setting chamber vertically movable and separated from said crimping chamber, said setting chamber located in such relationship to said crimping chamber to receive the partially folded filaments at one end, fixed compression means at the other end of said setting chamber to fold said filaments tightly against one another, a weight sensing device attached to said flexible mounted setting chamber, a potentiometer, means attached to said weight sensing device and said potentiometer to transfer changes in weight to changes in electric current, a take-up mechanism for withdrawal of said filaments from said setting chamber wherein the speed of said take-up mechanism is instantaneously controlled by said potentiometer through said means attached to said



potentiometer and said weight sensing device attached to said setting chamber in a manner so that as the desired predetermined weight of filaments in said setting chamber is maintained, the desired speed of said take-up mechanism is maintained and as the weight of said filaments becomes excessive as to the desired predetermined weight of said filaments, the speed of the take-up mechanism is proportionally increased to attain the desired predetermined weight with the additional proviso that as the weight in said setting chamber falls below the desired predetermined weight, the speed of said take-up mechanism is proportionally decreased to attain the desired predetermined weight.

3,300,831
CRIMPING OF TEXTILE FIBRES
John Parker, Cwmbran, Monmouthshire, Kazimierz Wiktor Mieszkis, Abergavenny, Monmouthshire, and Dennis Anthony Dyer, Cheltenham, Gloucester, England, assignors to British Nylon Spinners Limited, Pontypool, England
No Drawing. Filed June 14, 1963, Ser. No. 287,805
2 Claims. (Cl. 28—72)

1. A process for the manufacture of crimped tows of thermoplastic fibres having a crimp frequency greater than 15 and a crimp ratio greater than 30, said process comprising subjecting the tow to the action of wet steam at superatmospheric pressure for a period sufficient for the tow to attain substantial equilibrium temperature with the steam, immediately crimping the tow in a stuffer-box, and steam-setting the tow at a higher steam pressure than the pressure at which the tow was steamed prior to entry into the stuffer-box.

3,300,832
METHOD OF MAKING COMPOSITE INSULATOR-SEMICONDUCTOR WAFER
Eric F. Cave, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,338
3 Claims. (Cl. 29—25.3)

1. A method of making a composite, insulator-semiconductor wafer comprising the steps of

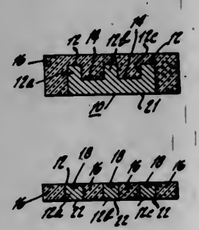
(a) forming a relief pattern of a plurality of mesas in a portion of a wafer of semiconductor material

through one surface of said wafer of semiconductor material,

(b) covering said relief pattern with a layer of an insulating material that softens with heat and has substantially the same coefficient of expansion as that of said semiconductor material,

(c) heating said semiconductor material and said insulating material until said insulating material softens,

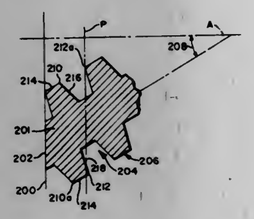
(d) applying pressure between said insulating material and said semiconductor material whereby to press said softened insulating material into said relief pattern,



(e) removing said insulating material from said one surface of said wafer of semiconductor material whereby to expose each of said mesas, and

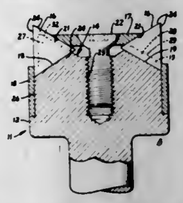
(f) removing semiconductor material from another surface opposite to said one surface of said wafer of semiconductor material to isolate said mesas from each other by said insulating material pressed into said relief pattern.

3,300,833
SERRATED GEAR SHAVING TOOL
David W. Daniel, Birmingham, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed Jan. 11, 1965, Ser. No. 424,623
7 Claims. (Cl. 29—103)



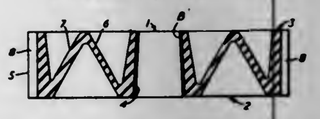
1. A gear shaving cutter adapted to cut substantially equally at opposite sides of its teeth when rotated in one direction in tight mesh with a work gear at crossed axes therewith, said cutter being in the form of a helical gear having teeth the flanks of which are provided with a plurality of parallel grooves, the side walls of said grooves intersecting the flank surfaces of said teeth to form sharp cutting edges, each groove extending longitudinally in a direction such that the cutting edges formed by the intersection of its side walls with the flanks of the teeth extend in planes of rotation of the cutter perpendicular to its axis, the side walls of said grooves being disposed such that all of the cutting edges, both at opposite sides of said teeth have substantially equal included angles of not less grooves and at opposite sides of said teeth have substantially equal included angles of not less than 90 degrees.

3,300,834
MILLING CUTTER TOOL
Edward P. Stone, 4362 Whittle Ave., Oakland, Calif. 94602
Filed Apr. 24, 1964, Ser. No. 362,357
2 Claims. (Cl. 29—105)



1. A milling tool of the type described, comprising a generally cylindrical head having at least two substantially radially extending grooves in one end face thereof and adapted to receive cutting blades therein, said grooves each having bottom walls which incline radially outwardly and toward the other end face of said head, an annular sleeve stop means secured to said head and positioned across the ends of said grooves at the same radial distance from the axis of said head and adapted to encompass the lower ends of blades positioned in said grooves, a generally circular clamping member secured to said first end face of said head and being axially movable relative to said head, said clamping member being formed of a softer metal than that of the blade, a generally triangular cutting blade disposed in each of said grooves and secured therein by said annular sleeve stop means, said cutting blades having three cutting edges with adjacent edges being disposed at substantially a 60° angle to one another, one of said cutting edges being adjacent said bottom groove wall, another of said cutting edges being engaged by said circular clamping member and the third of said edges being disposed generally parallel to the axis of said head and at a radial distance substantially the same as that of the inner wall of said stop means.

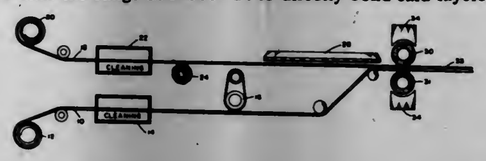
3,300,835
RESILIENT WHEELS
David John Barr, Harrow Weald, England, assignor to Her Majesty's Postmaster General, London, England
Filed Aug. 18, 1964, Ser. No. 390,364
Claims priority, application Great Britain, Sept. 3, 1963, 34,782/63
8 Claims. (Cl. 29—121)



1. A wheel comprising in combination a peripheral portion, a hub portion, and, interconnecting the peripheral portion and the hub portion, a web of a material selected from the group consisting of natural rubber, synthetic rubber and plastic materials and consisting of multiple hollow frusto-conical sections having acute apex angles, alternate sections being inverted.

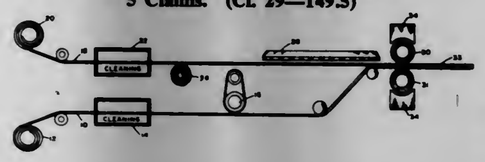
3,300,836
METHOD OF MAKING BIMETALLIC BEARING MATERIAL
Raymond L. Slater, Novelty, and William F. Fisher, Cleveland, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Apr. 30, 1965, Ser. No. 452,057
4 Claims. (Cl. 29—149.5)

1. The method of making a bimetallic bearing which comprises the steps of: selecting a layer of aluminum alloy consisting essentially of tin 4% to 10%, copper 0.5% to 2%, nickel 0.2% to 2%, silicon 0.2% to 8%, iron not over 0.7%, and the balance substantially aluminum; selecting a backing layer of low carbon steel; cleaning and roughening the bonding interfaces of said two layers and substantially immediately thereafter passing said layers together through pressure rolls having a temperature within the range 250–600° F. to directly bond said layers



together face to face, the pressure of said rolls on said layers being such as to reduce the thickness of the aluminum layer between 40% and 70% to effect a strong metallurgical bond therebetween to form a bimetal layer, maintaining the temperature of said rolls within the range of 250–600° F.; cutting said bimetal layer into sections and forming said sections into suitable bearing shapes.

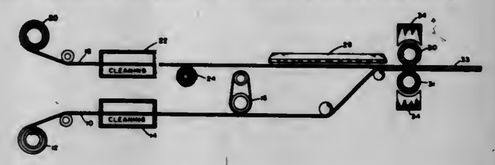
3,300,837
METHOD OF MAKING BIMETALLIC BEARING MATERIAL
William F. Fisher, Cleveland, and Raymond L. Slater, Novelty, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Apr. 30, 1965, Ser. No. 452,058
5 Claims. (Cl. 29—149.5)



1. The method of making a bimetallic bearing which comprises the steps of: selecting a layer of aluminum alloy consisting essentially of tin 10% to 35%, copper 0.5% to 2%, and the balance substantially aluminum; selecting a backing layer of low carbon steel; cleaning and severely roughening the bonding interfaces of said two layers and substantially immediately thereafter passing said layers together through pressure rolls having a temperature within the range 200–350° F. to directly bond said layers together face to face, the pressure of said rolls on said layers being such as to reduce the thickness of the aluminum layer between 50% and 70% to effect a strong metallurgical bond therebetween to form a bimetal layer and to maintain the temperature of said rolls within the range 200–350° F.; cutting said bimetal layer into sections and forming said sections into suitable bearing shapes.

3,300,838
METHOD OF MAKING BIMETALLIC BEARING MATERIAL
Raymond L. Slater, Novelty, and William F. Fisher, Cleveland, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Apr. 30, 1965, Ser. No. 452,059
3 Claims. (Cl. 29—149.5)

1. The method of making a bimetallic bearing which comprises the steps of: selecting a layer of aluminum alloy consisting essentially of silicon 2% to 8% cadmium .5% to 4% and the balance substantially aluminum; selecting a backing layer of low carbon steel; cleaning and roughening the bonding interfaces of said two layers and substantially immediately thereafter passing said layers together through pressure rolls having a temperature within the range 250–600° F. to directly bond said layers together face to face, the pressure of said rolls on said layers being such as to reduce the thickness of the aluminum layer between 40% and 70% to effect a strong metallurgi-



cal bond therebetween to form a bimetal layer, maintaining the temperature of said rolls within the range of 250–600° F., cutting said bimetal layer into sections and forming said sections into suitable bearing shapes.

3,300,839
METHOD OF MAKING CAMBERED BEAMS
Robert D. Lichti, Long Beach, Calif. (% Lihap Industries, 11834 S. Bloomfield Ave., Santa Fe Springs, Calif. 90670)
Filed July 1, 1963, Ser. No. 291,827
5 Claims. (Cl. 29—155)



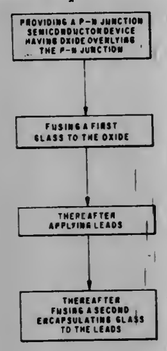
1. The method of manufacturing a cambered I-beam including, first establishing an elongate, web member with transverse corrugations throughout its longitudinal extent from an elongate metal strip having parallel side edges, then fixing an elongate first chord member to one edge of the web throughout the longitudinal extent thereof, then cambering the assembled first chord member and web, next arranging an elongate second chord member adjacent the other edge of the web and urging it into engagement therewith and finally fixing the second chord member to the web throughout the longitudinal thereof.

3,300,840
METHOD OF MAKING THERMOELECTRIC GENERATORS
Maurice Bernard Marshall, 1 Norwood Ave., Milford, Conn. 06460, and Dennison H. MacDonald, Park Ave., R.R. 3, Madison, Conn. 06443
Filed Jan. 23, 1962, Ser. No. 168,087
3 Claims. (Cl. 29—155.5)



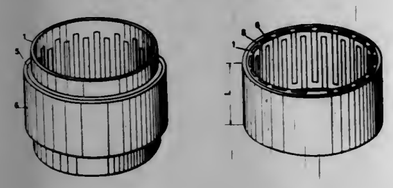
1. A method of forming an internally supported thermopile element comprising the steps of winding upon a mandrel of non-conductive material provided with at least one longitudinally disposed electrically conductive portion a coil of wire having spaced turns, a segment of each coil turn making contact with the conductive portion of the mandrel, coating approximately one-half of each coil turn with a plating resist, electroplating a different metal from that of said conductive portion and said wire on the uncoated portions of each turn, and removing the conductive portion of the mandrel by means of a chemical solution to thereby provide internal permanent support to said coil by means of said mandrel.

3,300,841
METHOD OF JUNCTION PASSIVATION AND PRODUCT
Harry E. Fisher and Elam C. Frye, Jr., Richardson, Milton K. Hicks, Hurst, and Charles R. Schraeder, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 17, 1962, Ser. No. 210,330
3 Claims. (Cl. 29—155.5)



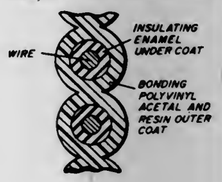
1. The method of fabricating a semiconductor device of the type having at least one P-N junction emerging at a surface of a semiconductor body and an oxide layer adjacent said surface over a point of the emergence of said P-N junction, comprising the steps of:
(a) fusing to the surface of said oxide layer a first glass, said first glass being substantially free of contaminants and having a thermal coefficient of expansion substantially corresponding with that of said semiconductor body,
(b) thereafter establishing contact with conductive leads at exposed surface areas of said body in at least two zones on opposite sides of said at least one P-N junction, and
(c) thereafter fusing a second glass solely to said conductive leads, thereby encapsulating said body.

3,300,842
METHOD OF MAKING DELAY LINE STRUCTURES
Henri Weill, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed June 1, 1964, Ser. No. 371,417
Claims priority, application France, June 12, 1963, 937,795
5 Claims. (Cl. 29—155.5)



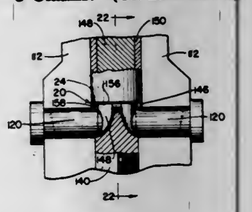
3. A method for manufacturing a high frequency delay line assembly which includes a metallic element, an electrically insulating layer on one side thereof in contact with the metallic element, and an electric signal wave delay line structure on the other side of the insulating layer, said method comprising the steps of:
providing in a metal member a series of apertures shaped so as to correspond to the gaps of the delay line, the length of the metal member being larger than the width of the delay line,
filling the said apertures with a moldable substance,
depositing a layer of insulating material on the surface of said metal member,
assembling and fixing said metal member together with the insulating coating on said metallic element,
and cutting off the extremities of said metallic member so as to form the said high frequency delay line.

3,300,843
SELF-BONDING MAGNET WIRE AND METHOD
Toshio Umewaka, Yokohama, Hiroshi Kachi, Hiratsuka, and Noriyoshi Okubo and Minoru Hirano, Yokohama, Japan, assignors to The Furukawa Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Sept. 9, 1964, Ser. No. 395,272
Claims priority, application Japan, Feb. 9, 1961, 36/4,468
10 Claims. (Cl. 29—155.57)



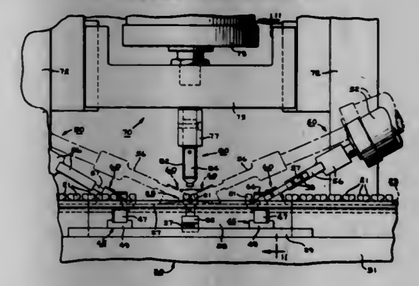
1. The method of making a self-bonded double coated wire, comprising the steps:
(a) coating the wire with an enamel selected from the group consisting of polyester enamel, polyurethane enamel, acrylic enamel, epoxy enamel, and silicone enamel, and baking said coat, whereby to form a first baked coat;
(b) coating said first coat with a mixture of polyvinyl acetal and a resin chosen from the group compatible with said polyvinyl acetal consisting of phenol resin, epoxy resin, melamine resin, silicone resin, xylene resin, furane resin, and polyurethane resin, whereby to form a second coat;
(c) underbaking said second coat such that said second coat would swell if dipped for five minutes in a boiling solution comprised initially of 30% toluol and 70% denatured alcohol, by volume;
(d) dipping said wire thus double coated into a solvent of chlorinated aliphatic hydrocarbons to cause said second coat to swell and winding said wire into a coil of contiguous adjacent turns, and
(e) heating said coil at a temperature sufficient to cause said swelled second coat to adhere together the adjacent turns.

3,300,844
METHOD OF MAKING VALVE BODIES
Henry W. Boteler, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed May 6, 1963, Ser. No. 278,027
3 Claims. (Cl. 29—157.1)



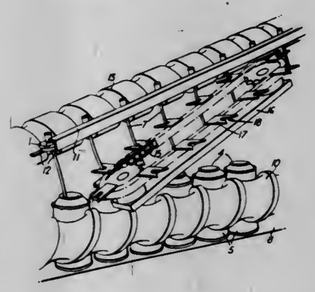
1. The method of forming an elongated valve body from a hollow metal cylinder having straight walls of substantially uniform thickness, having a passage therethrough with a central longitudinal axis and having a pair of openings at the ends of said passage, said method comprising the steps of:
(I) cutting in said cylinder an opening which:
(A) is smaller than said end openings,
(B) is located on one side of said cylinder,
(C) is located between said end openings,
(D) has an axis substantially perpendicular to and intersecting said longitudinal axis,
(II) advancing a first seat-forming die against the exterior surface of the cylinder on the side thereof opposite said side opening and continuing said advancement to begin the forming of a closure member seating portion while,
(III) forming a first portion of said cylinder wall which borders on said side opening into a lip which:
(A) extends away from said longitudinal axis,
(B) surrounds said side opening, then,
(IV) advancing a second seat-forming die:
(A) through said side opening,
(B) along said side opening axis,
(C) into engagement with the interior surface of the cylinder on the side thereof opposite said side opening,
(V) further advancing said second seat-forming die to force said seating portion of the cylinder between said first and second seat-forming dies to complete the forming of said closure member sealing portion in the body,
(VI) supporting a second portion of said cylinder wall which is adjacent said lip against movement toward said longitudinal axis while said second seat-forming die is further advanced.
(VII) bending said lip:
(A) outwardly with respect to said side opening axis,
(B) inwardly with respect to said cylinder axis,
(C) into a plane which:
(1) is parallel to said longitudinal axis,
(2) is perpendicular to said opening axis, while said second seat-forming die is further advanced and while said second cylinder wall portion is supported, to form a flange around said opening.

3,300,845
ARTICLE ASSEMBLING APPARATUS
Francis E. Knight, Greenwood, and Benjamin F. Meyers, Indianapolis, and Earl B. Dickison, deceased, late of Indianapolis, Ind., by Elnora V. Dickison, administratrix, Indianapolis, Ind., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York.
Filed Feb. 19, 1965, Ser. No. 434,141
15 Claims. (Cl. 29—206)



1. Apparauts for assembling piece parts comprising:
a plurality of stationary guide tracks extending in juxtaposed relationship and terminating in lateral alignment;
means for feeding piece parts in piggy-back relationship along each of said guide tracks;
a transfer station positioned adjacent the common terminating ends of said stationary guide tracks, said transfer station including a spring-mounted platform and an associated stationary member which together form a plurality of guide track extensions respectively aligned with said stationary guide tracks;
means positioned near the ends of said stationary guide tracks nearest said transfer station for separating the end piece part in each stationary guide track from the piece part normally positioned immediately adjacent thereto;
reciprocally operated means for simultaneously driving the separated piece parts to a desired point along the respectively aligned guide track extensions; and
reciprocally operated pick-up means for grasping and withdrawing the separated piece parts from said guide track extensions, and thereafter holding said piece parts in precise orientation and spaced relationship while transporting them to and inserting them in a mounting member at an assembly station.

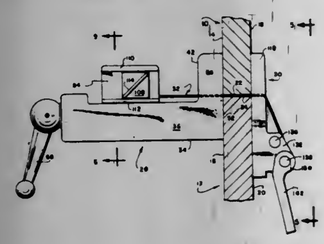
3,300,846
APPARATUS FOR ASSEMBLING DISPENSING VALVE ASSEMBLIES WITH CONTAINERS
Gerald D. Jones, Worthing, Sussex, England, assignor to The Metal Box Company Limited, London, England, a British company
Filed Mar. 8, 1965, Ser. No. 437,989
Claims priority, application Great Britain, Mar. 13, 1964, 10,799/64
9 Claims. (Cl. 29—208)



1. Apparatus for assembling with containers dispensing valve assemblies each of which includes a closure member adapted for connection with the mouth-defining portion of a container and carries a valve mechanism fitted with a dip tube, comprising container conveyer means arranged to move containers mouths uppermost in succession and in predetermined spaced relation, dispensing valve assembly conveyor means disposed above the path of the containers and arranged to move dispensing valve assemblies in succession in timed relation with the movement of the containers and with the dip tubes directed downwards towards the containers, said dispensing assembly conveyor means moving the dispensing valve assemblies in the direction of movement of the containers and converging towards the path of the containers to effect the insertion of the dip tubes into the containers, an endless conveyor supported to be divergent from the plane of said dispensing valve assembly conveyor means and convergent towards the plane of the container conveyor means in the direction of movement thereof, and dip tube engaging elements carried by the endless conveyor and arranged first to engage a dip tube at a position in the vicinity thereof at which it is attached

to the valve mechanism and thereafter to slide relative to the dip tube towards the free end thereof thereby to guide the free ends of the dip tubes into the containers.

3,300,847
PORTABLE ALIGNMENT TOOL
William J. Franklin and Neil C. Martin, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 30, 1964, Ser. No. 356,692
3 Claims. (Cl. 29—271)

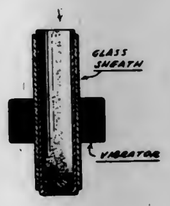


1. A tool for alignment of wall sections comprising:
(a) a first clamping element having an end surface adapted to contact the face surfaces of one side of two adjacent wall sections;
(b) said first clamping element including a pair of side elements spaced apart and joined at each end with a cross member so as to define a recess;
(c) an elongated screw positioned within said recess and journaled within said cross members;
(d) means for rotating said screw;
(e) a movable block positioned above said side members and having a bottom portion extending within said recess;
(f) said elongated screw being threaded through the bottom portion of said movable block whereby rotation of said screw will cause the movable block to move along the axis of said screw;
(g) a second clamping element being defined by a body portion with two upper legs having a substantially side planar surface adapted to contact the face surfaces of the two adjacent wall sections opposite the face surfaces contacted by said first clamping element;
(h) said body portion of said second clamping element having two flanges projecting outwardly from the side opposite the planar surface;
(i) a lever pivotally connected between said two flanges;
(j) said body portion having a blade adapted to slide form said body portion into the space between said two upper legs;
(k) said lever having means for engaging said blade and causing it to slide between said two upper legs;
(l) a thin metallic band extending between said first and second clamping elements and adapted to extend through the joint formed by the two adjacent wall sections;
(m) said movable block of said first clamping means having a retainer for holding one end of said metallic band;
(n) said body portion of said second clamping element having a retainer for holding the other end of said metallic band; and
(o) said metallic band passing between said upper legs of said second clamping element so that when said lever means is activated the blade will sever said metallic band.

3,300,848
METHOD OF PREPARING OXIDES FOR NEUTRONIC REACTOR CONTROL
Carl F. Leitten, Jr., and Ralph A. Potter, Oak Ridge, and Robert E. McDonald, Anderson County, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Dec. 24, 1963, Ser. No. 333,234
9 Claims. (Cl. 29—420.5)

1. A method of preparing stoichiometric rare earth powders of the class consisting of oxide compounds of rare earth metals, molybdate compounds of rare earth metals, tungstate compounds of rare earth metals, titanate compounds of rare earth metals, and mixtures thereof which comprises melting in an inert atmosphere said compounds to form a reduced rare earth compound melt, solidifying the fused melt, heating said fused compound in an oxidizing atmosphere to a temperature of at least 1000° C. to achieve stoichiometry and crushing the formed stoichiometric rare earth compound to produce said stoichiometric rare earth powders in the particle size range of from 44 to 149 microns.

3,300,849
PACKING METAL GAS CHROMATOGRAPHY COLUMNS
William Antony Wiseman, Maidenhead, England, assignor to Gas Chromatography Limited, Berkshire, England
Filed Oct. 8, 1963, Ser. No. 314,611
Claims priority, application Great Britain, Oct. 8, 1962, 37,963/62
10 Claims. (Cl. 29—424)

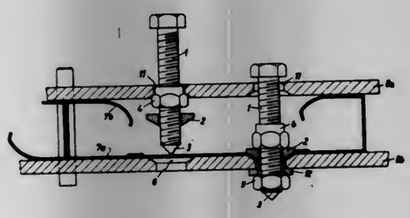


1. A method of filling a partition column formed from a metal tube for gas chromatography with a packing material consisting of an inert solid material and a liquid partition agent, which comprises the steps of providing a metal tube, placing a glass member which will be in energy transmitting relationship with the material to be packed, feeding the packing material into the tube, initiating vibrations in the glass member to effect the packing of the packing material, stopping the flow of the packing material, and removing the glass member.

8. A method as claimed in claim 1, wherein the glass member comprises a glass sheath around the metal tube.

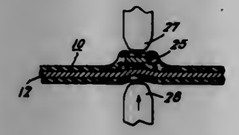
3,300,850
FASTENING MEANS AND METHOD OF FASTENING ELECTROSTATIC FILTER PLATES
Walter Steuernagel, Frankfurt am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Apr. 9, 1962, Ser. No. 186,112
Claims priority, application Germany, May 6, 1961, M 48,974
8 Claims. (Cl. 29—432.1)

1. A method for securing a thin metal electrode precipitating plate to a beam in an electrical precipitator comprising forming a countersunk bore hole in said beam, covering said beam and hole with said plate, placing a conically shaped disc on a sharp pointed threaded bolt, puncturing said plate by said bolt and extending said bolt through said bore hole, and then tightening said bolt to force said disc against the periphery of the punctured opening in said plate and depress said periphery into tight engagement with said countersunk bore hole.



2. A device for joining a thin metal electrode precipitating plate to a beam having a countersunk bore hole therein comprising a sharp pointed threaded bolt, a conically shaped disc on said bolt, nut means for urging said bolt into puncturing engagement with said plate and through said bore hole, and second nut means for tightening said bolt and forcing said conically shaped member into engagement with the periphery of the punctured opening in said plate and depress said periphery into tight engagement with said countersunk hole.

3,300,851
METHOD OF MAKING BONDED WIRE CIRCUITS
Clifford K. Lodder, Ithaca, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,272
11 Claims. (Cl. 29—470.1)



1. The method of forming an electrical circuit assembly directly upon laterally extending flexible insulating deformable plastic tapes having a plurality of generally parallel spaced flat ribbon-like conductors embedded therein comprising:
flattening the ends of the leads of the components to be bonded to said tape,
positoning the flattened end of a component lead proximate to the desired conductor of the tape to which it is to be bonded and separated from the desired conductor by deformable insulation,
providing a layer of deformable plastic at least on the side of said flattened component lead which is remote from said tape,
positioning a pair of bonding members on either side of the junction of the lead and conductor to be bonded,
applying ultrasonic energy to said bonding members,
discontinuing the ultrasonic energy after the lead and conductor have been brought into intimate contact and are bonded, and
maintaining a pressure on the junction until the deformable plastic has formed a hermetically-sealed environment around said junction.

3,300,852
METHOD FOR BONDING BERYLLIUM OXIDE TO GRAPHITE
Henderikus Johannes de Bruin, Helensburg, New South Wales, Australia, assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Feb. 18, 1964, Ser. No. 345,811
3 Claims. (Cl. 29—472.7)

1. A method for bonding a beryllium oxide body to a body of graphite having a randomly oriented crystallographic structure which comprises the steps of disposing selected surfaces of said beryllium oxide body and said graphite body in abutting relationship, interposing a thin layer of platinum metal therebetween said selected surfaces, heating said abutting surfaces in a vacuum to a temperature above 1500° C. but below 1773° C. for a sufficient length of time to cause diffusion of the platinum into said bodies to bond said abutting surfaces together and thereafter slowly cooling the bonded joint to ambient temperature.

3,300,853
FRICTION ELEMENT
Myron D. Gabbert, Willow Springs, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 28, 1963, Ser. No. 319,210
4 Claims. (Cl. 29—475)

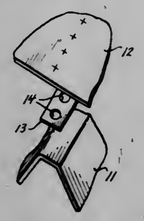


1. A process for fabricating a friction-type clutch plate, comprising: providing a bottom die assembly having a central circular cylindrical pilot member extending outwardly therefrom; providing an upper die assembly having relatively movable portions and having a central opening therethrough coaxial with said pilot member of said bottom die assembly, providing means for moving said upper die assembly relative to said bottom die assembly so that said pilot member may extend into said upper die assembly opening; placing a flat circular disc of metal between the portions of said upper die assembly, said disc having a central opening with margins thereof extending into the upper die assembly opening and being concentric therewith; placing a circular cylindrical metal sleeve on said pilot member forcing said die assemblies together so that said sleeve extrudes the margin of said disc opening to form an annular neck having an interference fit about said sleeve; withdrawing said disc and sleeve assembly from said die and welding the terminal end portion of said extruded neck to said sleeve.

3,300,854
METHOD OF MAKING REFRACTORY METAL STRUCTURES WITH AN OXIDATION RESISTANT COATING
Robert E. Jackson, Godfrey, Ill., and John D. Culp, Hazelwood, Mo., assignors to McDonnell Aircraft, St. Louis, Mo., a corporation of Maryland
Filed May 14, 1964, Ser. No. 367,308
8 Claims. (Cl. 29—527)

2. A method of protecting a columbium structure comprising the steps of providing a perforated aluminum

foil intermediate adjacent areas of components of the structure undergoing fabrication, joining the adjacent component parts to each other through the perforations, treating the completed structure of columbium with a

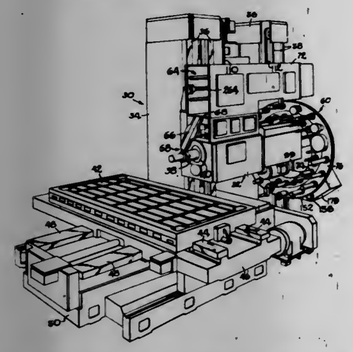


slurry of aluminum and thereafter heat treating the structure to produce columbium aluminide over the entire surface of the structure.

3,300,855
METHOD OF PREPARING ROD STOCK FOR A DRAWING OPERATION
Hans Lindemann, Lindenstrasse 39, Grossdornberg, Germany
No Drawing. Filed Mar. 11, 1965, Ser. No. 439,094
Claims priority, application Germany, Mar. 16, 1964, L 47,301
4 Claims. (Cl. 29—558)

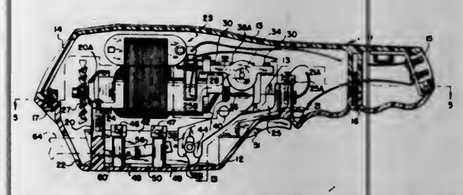
1. A method of preparing unfinished materials such as wire, rod stock or the like, for subsequent drawing operation, comprising the steps of imparting a feeding movement of said material in one direction into a sharpening machine having sharpening tool means, utilizing said sharpening tool means for firstly performing a sharpening operation on the forward end portion of said material, continuing said feeding movement, and secondly utilizing said sharpening tool means for performing a descaling operation upon a further portion of said material upon continuation of said feeding movement.

3,300,856
MACHINE TOOL WITH AUTOMATIC TOOL CHANGING APPARATUS
Jesse Daugherty, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Feb. 14, 1964, Ser. No. 344,931
23 Claims. (Cl. 29—568)



1. In a machine tool, a headstock having a rotatable spindle adapted to rotate a tool for machining, an upright column carrying said headstock for vertical movement thereon, a tool change apparatus carried by said headstock for exchanging a tool in said spindle with a different tool, and tool storage means providing a plurality of tools each adapted to be exchanged with a tool in said spindle by said tool changing apparatus, said tool storage means including a movable matrix for supporting a plurality of tools, an upright column carrying said movable matrix for vertical movement thereon, interconnected power elevating means for said headstock and said matrix for raising or lowering the latter in unison so as to maintain the same relative position of tool change apparatus and matrix for all vertical positions of said headstock.

3,300,857
DRIVING UNIT FOR ELECTRIC KNIFE
Frank Rosen and Herbert F. Young, Mansfield, Ohio, assignors to Dominion Electric Corporation, a corporation of Ohio
Filed Aug. 28, 1964, Ser. No. 392,686
14 Claims. (Cl. 30—272)

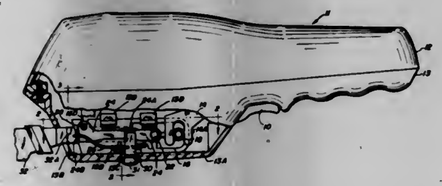


1. A device for driving in alternate longitudinal parallel reciprocation relative to each other a pair of adjacent cutting blades comprising in combination, a casing, an electric motor mounted in the casing, said motor having a rotatable shaft disposed longitudinally of the casing, a worm associated with said shaft to be rotated thereby, a worm gear carried by the casing and enmeshed with said worm to be rotated thereby, a pair of pins extending from opposite sides of said worm gear and eccentrically mounted relative to the axis of the worm gear to revolve thereabout, the said pins being about 180° out of phase with each other in revolving around said worm gear axis, a pair of rocker arms each having first and second slotted portions at the opposite ends thereof, pivotal mounting means carried by said casing for pivotably supporting each rocker arm intermediate of its ends to permit the said opposite ends to swing in opposition to each other, the first slotted portions of said rocker arm accommodating said pins, respectively, to cause said arms to rock on said pivoted mounting means upon the revolving of said pins, said arms alternately rocking in opposite directions upon the revolving of said pins out of phase with each other, a pair of blade-engaging elements disposed generally parallel to each other and each being adapted to engage a said blade for actuating the same, guide means carried by the casing for guiding alternate reciprocal parallel movements of said blade-engaging elements, each of said blade-engaging elements having a pin extending therefrom and accommodated in the second slotted portions of said rocket arms, respectively, the alternate rocking of said arms in opposite directions causing said blade-engaging elements to reciprocate along said guide means in opposite directions whereby cutting blades engaged to the respective blade-engaging elements alternately reciprocate parallel to each other in opposite directions.

3,300,858
BLADE-CONNECTING MEANS
Herbert F. Young, Mansfield, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Mar. 30, 1965, Ser. No. 443,866
8 Claims. (Cl. 30—272)

1. In an electric knife device in which a pair of adjacent knife blades are reciprocated in opposite directions by a driving mechanism in the knife handle structure of the device, the improvement of a pair of blade-engaging

elements mounted in said handle structure alongside each other for reciprocal movement in opposite directions by said driving mechanism, each of said elements having a socket in which the rear end portion of a respective knife blade may be inserted upon longitudinal movement of a said blade rearwardly toward said handle structure, each of said elements having a pin adapted to extend into locking position across the socket thereof athwart the path of the rear end portion of knife blade being inserted into said socket, each said pin being resiliently biased toward said locking position athwart said path and being movable against said resilient bias away from said locking position so as to clear said rear end portion of the said knife blade, a pair of swingable arm members each carried by a said element to reciprocate therewith and to swing relative to the longitudinal axis thereof, each arm member carrying a said pin to move the pin upon swinging of the respective arm member, each arm member having an abutting portion extending therealong, said rear end portion of each knife blade having an inclined edge providing a camming surface engageable by said pin for cammingly moving said pin against said resilient bias away from said locking position upon the insertion of a knife blade rear end portion into a said socket, said knife blade rear



end portion having a dwell portion in alignment with said inclined edge to receive said pin upon the knife blade rear end portion being inserted in the respective socket to position the dwell portion adjacent the pin whereby the said pin in response to said resilient bias enters said dwell portion and locks the knife blade rear end portion against withdrawal from said socket, and a releasing member carried by said handle structure movable in a plane normal to the axis of the handle structure and manually operable from the exterior of the handle structure on the bottom side thereof and positioned to move simultaneously both said pins in opposition to said resilient bias from said locking position to allow both the knife blade rear end portions to be simultaneously released and withdrawn from said sockets, the said releasing member including a U-shaped saddle member having a pair of free end portions within said handle structure and a button portion extending therefrom for access outwardly of said handle structure, said saddle member being generally disposed and movable in said plane, each of said free end portions being formed and positioned to engage and move the said abutting portion of one of said arm members, respectively, in any of its positions in its said reciprocal movement upon the movement of said button portion in a direction inwardly of the handle structure in said plane.

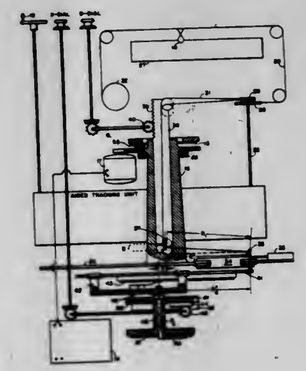
3,300,859
DENTAL MIRROR
Milton V. Sanden, 1404 Galena St., Aurora, Colo. 80010
Filed Jan. 15, 1964, Ser. No. 337,807
2 Claims. (Cl. 32—69)

1. A dental mirror comprising a mirror part consisting essentially of a stem and a mirror assembly secured to said stem, said mirror assembly having at least one reflecting surface and having arcuate indentations at the upper and lower margins thereof centrally of said reflecting surface, said mirror assembly having a maximum overall length dimension of about 25 millimeters, a minimum height dimension of about 16 millimeters which



minimum height dimension is located centrally of the reflecting surface, and having maximum height dimensions at each side of said arcuate indentations each of about 19 millimeters.

3,300,860
SUBMARINE ATTACK DIRECTOR
Duncan James Stewart and Edgar D. Lilja, Rockford, Ill., and Louis Byrne Slichter, Los Angeles, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 16, 1948, Ser. No. 8,715
8 Claims. (Cl. 33—1)



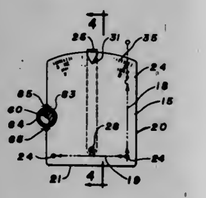
1. A triangle solver comprising a horizontal guide arm rotatable about a vertical axis and extending along a radius of said axis, a car element slidably mounted on said guide arm and thus constrained to move along a radius to said vertical axis, an anchor post mounted on the car element for determining a target point, adjustable means determining a depth reference point on said axis adjustable along said axis with respect to the point of intersection of said axis and the radius along which said anchor post is constrained to move with said car, a flexible cable connected at one end to the anchor post, means pulling the cable through said depth point to pull the post along said radius, a vertical shaft adustably spaced from said first axis in a fixed direction, a sliding radius arm constrained to slide along a radius of said vertical shaft, means pivotally connecting a vertical extension of said anchor post and one end of the radius arm, means for adjusting the horizontal distance between said vertical axis and the axis of said vertical shaft, means for adjusting the angle of said guide arm, means for measuring the angular position of said radius arm and variable resistance means variable with movement of the radius arm for measuring the radial distance between the axis of the vertical shaft and the pivotal connection of the radius arm with the anchor post.

3,300,861
FOOTBALL LINER UP DEVICE
Leonard M. Lilly, 1834 Samar Drive, Costa Mesa, Calif. 92626
Filed July 13, 1965, Ser. No. 471,612
9 Claims. (Cl. 33—46)



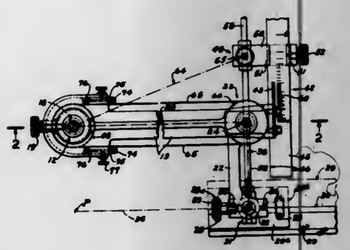
1. A device of the kind described comprising an elongated round stick adapted to be inserted into the ground, a rectangular box-like hollow casing supported on top of the stick, said casing having side, end and top walls and being open at the bottom, a closure plate closing said open bottom, said bottom plate having means for fixing the top of the stick thereto, a window in one end wall of the casing, the other end wall having a slit therein extending from the top thereof to a point remote from the bottom thereof, whereby a viewer can view a football playing field, the side walls having opposed longitudinal openings adapted to be placed over a side line of the football playing field, means inside the casing for casting the image of parallel lines received through the side openings, across the view of playing field, said one end window having a central vertical line therein adapted to coact with the parallel lines cast across the playing field for indicating the correct position of a football during play, when viewed through the slit, said slit being enlarged at its top end forming a peep hole for detecting the football therethrough.

3,300,862
RANGE FINDER
Joseph R. Judge, 1399 Woodland Ave., Menlo Park, Calif. 94025
Filed Feb. 17, 1964, Ser. No. 345,281
1 Claim. (Cl. 33—72)



A device for determining the range of a target, comprising a base board, said base board having sighting means defining a first and second sighting line, said second sighting line being disposed normal to said first sighting line, a scale on said board, a slider mounted on said board for movement along said scale, a front sight on said slider, a rear sight fixedly mounted on said board and spaced from the locus of said front sight, said front and rear sight defining a third sighting line, a pointer on said slider movable therewith to align with said scale, said scale marked off in indicia representing distance as a function of the angle between said first and third sighting lines, the position for zero distance alignment of said pointer being at the position where said third sighting line is parallel to said second sighting line, a vertical standard, a pair of wheels supporting said standard in an upright position and arranged to allow said standard to be moved along an axis between selected locations, means mounting said baseboard on an upper portion of said standard whereby said baseboard can be moved with said standard between first and second positions, said first sighting line being aligned to sight along the axis of movement of said standard.

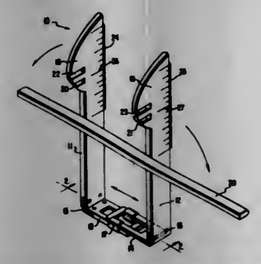
3,300,863
PERSPECTIVE DRAWING DEVICE AND COMBINATION OF PERSPECTIVE AND PARALLEL DRAWING DEVICE
Igor A. Pirogow, Georgetown Road, R.D., Erieville, N.Y. 13061
Filed May 13, 1965, Ser. No. 455,421
20 Claims. (Cl. 33—77)



1. A drawing device at least for perspective drawing comprising base means, a single pivotal arm, arm pivot means having a vertical axis and pivotally mounting the arm on the base means, a lever, lever pivot means having a vertical axis and pivotally mounting the lever on the arm at a point spaced from the arm pivot means, an operating connection between the base means and the lever to maintain the latter in the same relative angular position with respect to the base means throughout the pivotal movement of the arm including a first fixed member secured to the lever and a second fixed member secured to the base means, and a connecting linkage between the fixed members; ruling edge means including a ruling edge member having a ruling edge, ruling edge pivot means pivotally mounting the ruling edge means on the lever at a point spaced from the lever pivot means and having a vertical axis, and the ruling edge being in alignment with the axis of the ruling edge pivot means; and control pivot means having a vertical axis and carried by the arm, the control pivot means including a control pivot having its axis on a line extending from the axis of the lever pivot means and vertical to a line between the axes of the arm pivot means and the lever pivot means, slide means carried by the control pivot having its axis at right angles to the axis of the control pivot, and control rod means secured to the ruling edge means and extending at right angles to the ruling edge and slidably received by the slide means carried by the control pivot means.

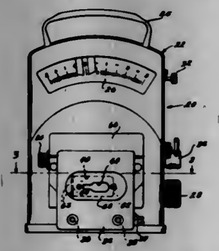
3,300,864
EYEBROW MEASURING AND MARKING GUIDE
Madlynn J. Lesslie, New Orleans, La., assignor of one-twelfth to A. Dallam O'Brien, Jr., New Orleans, La. and one-twelfth to Thomas L. Avegno, New Orleans, La.
Filed May 11, 1964, Ser. No. 366,548
10 Claims. (Cl. 33—174)

1. A guide for marking eyebrow contours comprising, a pair of base members, said members being slideably interengaged for relative lateral movement and adjustment and adapted to be placed beneath the nose of the user, a pair of elongated side arm members, each of said side arm members being pivotally connected to one of



said base members, and means on said side arm members adapted to leave a visible mark on the eyebrow area of the user.

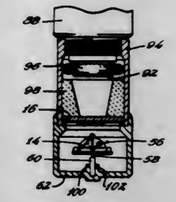
3,300,865
BORE GAGE
Joseph Sunnen, 400 S. Warwon Road, Clayton, Mo. 63837
Filed May 8, 1964, Ser. No. 365,994
13 Claims. (Cl. 33—178)



1. In a gage device for measuring and comparing bores and the like the improvements comprising a gaging mechanism, a set of gaging members, means for cooperatively mounting said gaging members on said gaging mechanism including means for adjusting the relative positions thereof, each of said gaging members including at least one bore engaging element positioned respectively thereon to engage opposite sides of a bore being gaged, and a second bore engaging element mounted on one of said gaging members to engage the bore at a location around the bore intermediate between the aforesaid bore engaging elements, and means for adjusting the position of said second element on the said one gaging member to centralize the aforesaid elements in the bore so that they measure a diameter thereof said last named means including yieldable means normally urging said second element into a retracted position on said one gage member, and adjustable means on the gage device operatively engageable with said yieldable means for changing the position of said second element on said one gaging member.

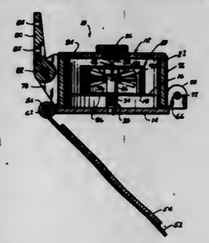
3,300,866
COMPASS AND INCLINOMETER
James J. Dalgish, 1839 Woodland Ave., St. Paul, Minn. 55112, and Earl W. Lager, 1267 Hewitt Ave., St. Paul, Minn. 55104
Filed Apr. 23, 1964, Ser. No. 362,086
3 Claims. (Cl. 33—205.5)

1. A well survey instrument including:
(a) a housing adapted to be lowered into a bore,
(b) an upright including a shaft in said housing having an enlarged bearing end and an end secured to said housing,
(c) a pivot pin having a bearing end and another end pivotal on said shaft bearing end,
(d) a generally semi-spherical transparent suspension member centrally secured on said pin intermediate said pin bearing end and said other end having depending portions,
(e) a counterbalanced plate magnetically responsive to the earth's magnetism having opposed counterweights and magnets,
(f) reference indicia on said plate,



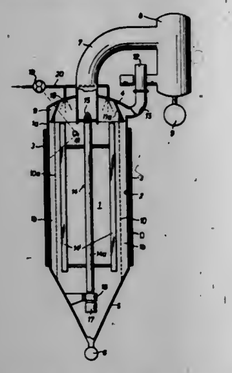
(g) said plate having a central aperture through which said shaft bearing end extends, said plate being pivotal on said shaft,
(h) said plate secured intermediate said suspension member depending portions,
(i) a generally transparent reference glass having reference marks in superposed relation to said plate,
(j) camera means in superposed photographic relation to said glass and said plate,
(k) whereby said camera photographically records changes in plate inclination and direction and direction indication in relation to said reference glass.

3,300,867
MAGNETIC COMPASS
Edward J. Sampson, East Granby, Conn., assignor to Kaman Aircraft Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Mar. 23, 1964, Ser. No. 353,802
14 Claims. (Cl. 33—222)



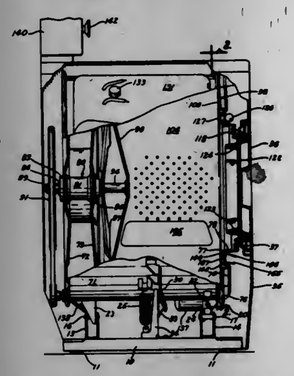
1. In a magnetic compass for use with a vehicle, the combination comprising a housing having a transparent bottom, a compass card supported within said housing for movement about a vertical axis and including a downwardly directed annular face having a central opening and having reference markings arranged in an annular series about said vertical axis, said reference markings being located at the radially inner margin of said card face, a reference element fixed relative to said housing and located within said central opening of said card face, said reference element having at least one reference mark thereon for cooperation with said reference markings of said compass card, and a mirror positioned below said transparent bottom and at an inclined angle to said vertical axis for reflecting an image of said downwardly directed face of said compass card, said mirror being of sufficient size to reflect an image of the complete annular series of said reference markings and of said reference element.

3,300,868
PROCESS FOR DRYING HEAT-SENSITIVE MATERIALS AS WELL AS DRYING APPARATUS FOR THE PERFORMANCE OF THE AFOREMENTIONED PROCESS
Fritz Anderwert, 50 Chemin de Perouge, Vaud, Switzerland
Filed Apr. 16, 1965, Ser. No. 448,668
Claims priority, application Switzerland, Apr. 24, 1964, 5,347/64
18 Claims. (Cl. 34—5)



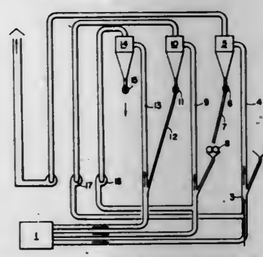
1. Process for drying heat-sensitive materials in particle form in a vacuum chamber during fall of the particles through the aforesaid vacuum chamber, comprising the steps of: furnishing radiant energy as the heat of drying effecting vaporisation, preventing contact of the particles to be dried with radiation surfaces furnishing the radiant energy used for drying, and forming a vortex in the vacuum chamber for facilitating separation of the dried particles and the vapors.

3,300,869
CLOTHES DRIER STRUCTURE AND CONTROL
Richard P. Bergeson and Curran D. Cotton, Newton, Iowa, assignors to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Feb. 28, 1964, Ser. No. 348,051
3 Claims. (Cl. 34—45)



1. In an apparatus for drying fabrics, the combination comprising: non-revoluble enclosure means; a revoluble drum at least partially enclosed by said enclosure means and including first and second end wall members, said first end wall member defining an opening into said revoluble drum; a non-revoluble panel member attached to said enclosure means and positioned in said opening openly facing the interior of said drum and positioned for effectively forming a non-revoluble extension of said first revoluble end wall member; access means for allowing insertion of fabrics into the interior of said revoluble drum; means for rotating said revoluble drum to tumble said fabrics therein; means for drying said tumbled fabrics in said revoluble drum; at least one pair of conductors associated with said non-revoluble panel member electrically insulated from each other and positioned for contact by said tumbled fabrics to effect completion of an electrical circuit between said pair of conductors, said second end wall member being constructed and disposed to direct said fabrics inwardly toward said pair of conductors upon rotation of said revoluble drum; and control means connected electrically to said pair of conductors for terminating a drying operation responsive to a predetermined electrical condition between said pair of conductors.

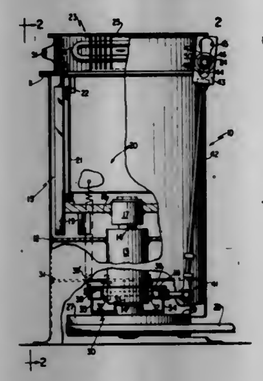
3,300,870
MULTISTAGE PNEUMATIC CONVEYING DRYING EQUIPMENT
Yujiro Sugahara, Hiroshi Tsuchida, Kiyoshi Sato, and Koichi Usui, Tsuruoka-shi, Yamagata-ken, Japan, assignors to Mizusawa Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Mar. 23, 1964, Ser. No. 353,760
3 Claims. (Cl. 34—57)



1. Multistage pneumatic drying apparatus wherein each stage comprises a drying duct, means for feeding granules to be dried into the drying duct, means for supplying hot air to the drying duct for drying granules in the duct whilst carrying them therethrough, and a separator at the discharge end of the drying duct for separating dried granules from the drying air, wherein conduits are provided for leading the air from the separator of each stage except the first stage back to the drying duct of the preceding stage, the air conduit from the separator of the first stage leading to exhaust, wherein means are provided for feeding granules discharged from the separator of each stage except the last stage to the drying duct of the next stage, means for crushing partly dried granules being provided at a location between the separator of the first stage and the drying duct of the second stage and being free from the influence of an air stream, and wherein swirl generating means are provided for causing swirling of air to be passed through the first drying duct, said swirl generating means being positioned in the drying duct upstream of the means for feeding wet granules into the first drying duct.

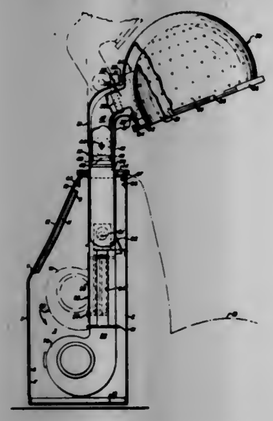
3,300,871
CENTRIFUGAL WITH COVER AND BRAKE ASSEMBLY
Frank O'Conor, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 2, 1964, Ser. No. 415,369
6 Claims. (Cl. 34—58)

1. A centrifugal dryer comprising in combination, a housing having an open upper end; a basket carrier mounted in said housing for rotation about a vertical axis; a cover for closing the open upper end of said housing; a pivot pin mounted on said housing to which said cover is pivoted; a pulley connected to said basket carrier; a brake adapted to be applied to said pulley to stop the rotation of said basket carrier; a foot treadle connected to said brake for applying it to said pulley; linkage extending from said foot treadle to said pivot pin for said



cover; and means between said linkage and said pivot pin for preventing the opening of said cover when said brake is released and for releasing said cover upon applying sufficient force to said foot treadle to cause said brake to stop said basket carrier.

3,300,872
HAIR DRYER WITH A PIVOTALLY MOUNTED DRYER ASSEMBLY
Armand J. Thieblot and Roscoe E. Lehman, Hagerstown, Md., and Andrew L. Fleming, Longmeadow, Mass., assignors to John H. Breck, Inc., Springfield, Mass., a corporation of Delaware
Filed Mar. 20, 1964, Ser. No. 353,337
6 Claims. (Cl. 34—99)



1. In a hair dryer, in combination, a cabinet and a pivoted dryer assembly, said assembly comprising a rigid air duct having a freely rockable upper portion extending above said cabinet and carrying a hood for delivering hot air to the hair of the user and a lower portion pivotally mounted within said cabinet, said lower portion containing an air heater and having a motor-driven air blower attached to and movable with its lower end.

3,300,873
GRAIN DRYER
Jack D. Bussell, Peoria, Walter P. Dickens, Eureka, and Frank N. Eidsvoog, East Peoria, Ill., assignors to Hart-Carter Company, Minneapolis, Minn., a corporation of Delaware
Filed May 12, 1964, Ser. No. 366,781
8 Claims. (Cl. 34—168)

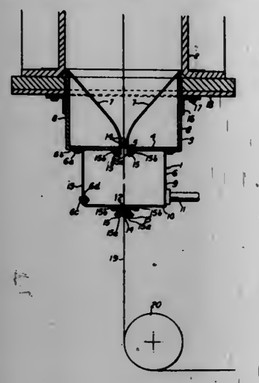


1. A dryer for granular material having a tower with an inlet port at the top thereof and an outlet port at the bottom thereof and a plurality of racks of tubular members uniformly spaced between said inlet and outlet ports and adapted to convey drying air into and out of said tower and through the granular material which is moved in the tower from the inlet port to outlet port, the improvement comprising duct members in certain of said racks forming exhaust ducts for the drying air circulated through said tower, said duct members in said exhaust racks being formed of a pair of V shaped elongated members positioned to form V shaped tops and bottom and with parallel sides, a plurality of apertures positioned along the bottom V shaped elongated members which apertures are smaller than the size of the granular material which flows through said tower from the inlet to the outlet port thereof, and aperture means at one end of each of said duct members forming exhaust ports in which the cross sectional area of the aperture is less than the total cross sectional area of all of the apertures in a bottom V shaped elongated member.

3,300,874
APPARATUS FOR THE TREATMENT OF SHEET MATERIALS
Harold Hurdley Green, Castle Bromwich, and Alec Dennis Robinson, Birmingham, England, assignors to Dunlop Rubber Company Limited, London, England, a company of Great Britain
Filed Oct. 15, 1963, Ser. No. 316,313
Claims priority, application Great Britain, Oct. 24, 1962, 40,217/62
1 Claim. (Cl. 34—242)

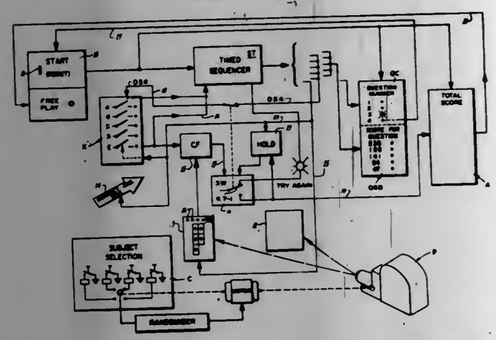
A fluidized bed comprising a container having an upper compartment for said fluidized bed and a pressure chamber below and secured air-tightly to said compartment, said compartment having an exit slot from said pressure chamber upwardly to said compartment and said pressure chamber having an inlet slot for delivery of fabric into said pressure chamber in position to pass upwardly through said exit slot, sealing means for said exit slot comprising a pair of strips of resilient, flexible composition secured to said compartment to enclose said exit slot and extending at angles toward the interior of said compartment to meet tangentially to form a seal and to diverge for the passage of fabric and of air passing under pressure through said exit slot, a pair of strips of resilient flexible composition secured to said pressure chamber to enclose said inlet slot and extending toward the interior of said pressure chamber at complementary angles to a tangential contact and displaceable to permit passage of

a fabric between them and pressed by the fluid pressure in said pressure chamber into fluid-tight contact with each other and with said fabric and a pair of imperforate



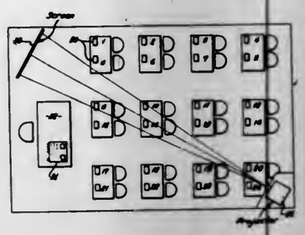
walls diverging upwardly from said exit slot to provide an upwardly increasing area for the passage of fluid from said exit slot into said fluidising compartment.

3,300,875
INSTRUCTIONAL APPARATUS
Thomas R. Nisbet, Palo Alto, Calif., assignor, by mesne assignments, to Edex Corporation, Mountain View, Calif., a corporation of Delaware
Filed Jan. 7, 1964, Ser. No. 336,274
7 Claims. (Cl. 35—9)



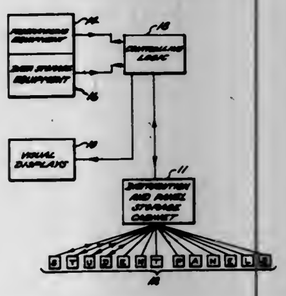
1. In instructional apparatus, in combination, means for presenting one of a plurality of questions to a player, a response register for selectively registering one of a plurality of responses entered by the player, means for interrogating the condition of the register and determining correct and incorrect player responses, means responsive to said interrogating means for indicating a correct player response to the question presented, means operatively coupled to said interrogating means serving to indicate the award of a score for a correct response to the question presented, the last said means serving to diminish said score with increasing elapsed time between presenting the question and indication of a correct response, means serving to selectively permit said registered response when incorrect to be changed a predetermined number of times with a commensurate reduction in said score whereby said score diminishes by both the number of attempted responses and the elapsed time prior to registering a correct response, and means serving to activate each said means according to a predetermined sequence at established time intervals.

3,300,876
INSTRUCTION AID
Lawrence A. Johannsen, San Gabriel, Calif., assignor to Dressen-Barnes Electronics Corporation, Pasadena, Calif., a corporation of California
Filed June 1, 1964, Ser. No. 371,274
28 Claims. (Cl. 35—9)



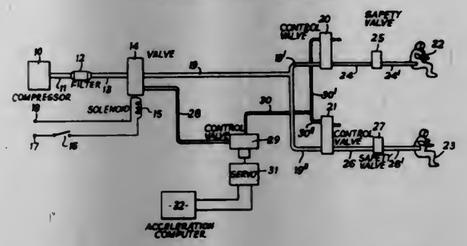
1. In apparatus of the class described: a plurality of station consoles; switching means for each of the station consoles operable at the station consoles for registering one of a series of multiple choices; circuit means for each of the station consoles selectively operable in accordance with the choice so registered; program means grouping said circuit means into two classes corresponding to correct and incorrect; a master console remote from said station consoles; a pair of display devices for each of said station consoles and mounted on the master console, said display devices corresponding to correct and incorrect; and means operatively connecting said circuit means to one of the corresponding display devices in accordance with the grouping of the program means.

3,300,877
PERCENTAGE DECISION MULTI-STUDENT TEACHING SYSTEM
Hubert C. Feder, 1517 Roosevelt Ave., Alamogordo, N. Mex. 88310
Filed Jan. 19, 1965, Ser. No. 426,697
2 Claims. (Cl. 35—9)



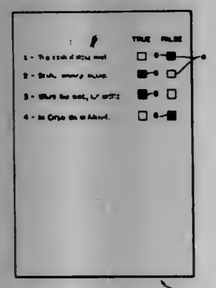
1. A multi-student teaching system comprising: means for presenting material to a plurality of students in the form of separate frames, each frame divided into different levels of instruction and each level having associated therewith plural answers at least one of which is correct, means individual to each student for selecting his level of instruction; means individual to each student enabling him to register his answer, to the selected level of instruction; means for establishing progressively the percentage of correct responses from said answer selection means to the total number of students and comparing said percentage with a programmed acceptable percentage; and means controlled by the rate at which correct responses are registered for establishing the display time for each frame.

3,300,878
FLIGHT TRAINING APPARATUS
Harold John Butcher, Gillingham, Kent, and Frank Horace Pitts, Ifield, Crawley, England, assignors to Communications Patents Limited
Filed Dec. 19, 1963, Ser. No. 331,879
Claims priority, application Great Britain, Jan. 11, 1963, 1,347/63
4 Claims. (Cl. 35—12)



1. Ground-based flight training apparatus including apparatus for simulating physical effects corresponding to those experienced in actual flight by the wearer of an inflatable garment, comprising at least one inflatable garment, means for supplying air under pressure to the garment, one remotely-controlled valve device including pressure sensitive means for controlling the supply of air to the inflatable garment, a control valve for controlling the operation of the said pressure sensitive means, a servo-mechanism for actuating the said control valve, and computing means associated with an acceleration computing system of the flight training apparatus, said computer means including a generator means for generating a first signal proportional to the rate of change of acceleration and a means for generating a second signal proportional to acceleration, and said servo-mechanism including a means for combining the first two signals to create a third signal, and means within said servo-mechanism for responding to the said third signal to actuate the said control valve, so that the pressure variations at the said pressure sensitive means derived from the control valve corresponds to the acceleration and rate of change of acceleration signals generated by the said computer.

3,300,879
MARK RESISTANT COATING
Leonard Thomas Coppeta, North Andover, Mass., assignor to The Carter's Ink Company, Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 30, 1965, Ser. No. 443,979
1 Claim. (Cl. 35—48)



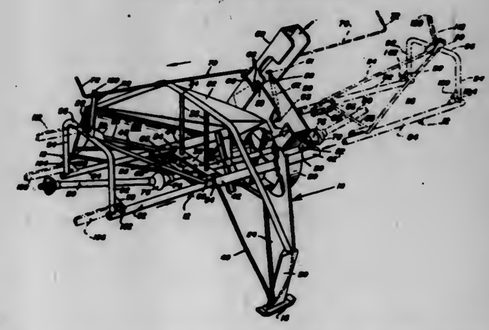
A self correcting testing device designed to receive marks from a pencil in selected areas corresponding to a predetermined test pattern comprising a score sheet having visible marks defining areas including said selected areas and also other areas outside of said test pattern, the surface of said selected areas of said sheet being of sufficient roughness and high frictional coefficient to receive a mark from a given pencil, and the surfaces of said other areas being coated with a substance of sufficient smoothness and low frictional coefficient to resist marking from said pencil.

3,300,880
CASUAL TYPE SHOE WITH HEEL-SUPPORTING WEDGE
Michael Campagna, Bristol, R.I., assignor to Maribill Company, Providence, R.I., a corporation of Rhode Island
Filed May 27, 1964, Ser. No. 370,529
4 Claims. (Cl. 36—2.5)



1. In a shoe of that kind which comprises an outer sole of elastomeric material having a substantially flat tread surface, devoid of external heel, a flexible insole, an upper having a lower marginal portion which is permanently bonded to the outer sole, and a foot-supporting wedge element interposed between the rear portion of the outer sole and the rear portion of the inner sole, the wedge element tapering in thickness forwardly from its extreme rear end and terminating in a feather edge adjacent to the ball portion of the shoe, the inner sole comprising a plurality of superposed plies, one of which is of foam elastomer and the lower of which is permanently bonded to the upper surface of the thicker end portion of the wedge element; characterized in that the wedge element is homogeneous; substantially non-resilient; and of a material which is sufficiently plastic, when the shoe is new, automatically to yield to the downward pressure of the wearer's foot and to conform itself to the contour of the undersurface of the wearer's foot so as to become a matrix for the latter, but being insufficiently resilient to resume its initial shape when the pressure is relieved, the wedge element being slightly absorbent of water and of such mechanical strength as to withstand the stresses to which it may be subjected during wear or when exposed to conventional laundry treatment.

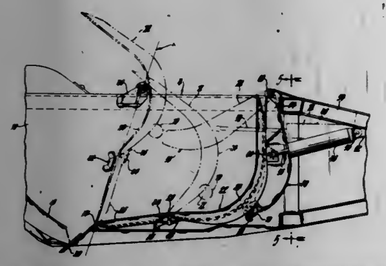
3,300,881
REVERSIBLE SNOW PLOWS
Stanley G. Siddall, Box 368, Orangeville Ontario, Canada
Filed July 15, 1964, Ser. No. 382,700
5 Claims. (Cl. 37—43)



1. In a power-operated snow plow for use on a power-supplying draft vehicle and including scraper blades for directing snow toward a central portion, a blade journalled on said plow and disposed in said central portion for casting snow laterally of the normal direction

of travel during operation of said plow; the improvement comprising a pair of support sleeves disposed at opposite sides of said plow and mounting means at opposite ends thereof, a power shaft journalled on said plow upon which said blade is mounted, said shaft including coupling means at opposite ends thereof for connection to a power shaft on the draft vehicle, and an adaptor frame including a pair of spaced sleeves, said sleeves including mounting means at one end for detachable connection to said mounting means on said snow plow, said adaptor frame including coupling means for detachable connection on the draft vehicle whereby said plow can be optionally used by mounting said frame forwardly or rearwardly thereof and operating the drafting vehicle in a forward or reverse direction depending upon how said adaptor frame is mounted.

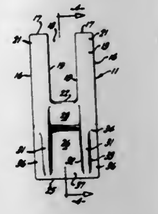
3,300,882
EJECTOR FOR SCRAPERS
Edward R. Fryer, Euclid, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,791
8 Claims. (Cl. 37—129)



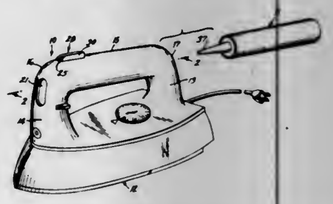
1. A scraper bowl comprising a transportable bowl frame including transversely spaced longitudinally extending side walls, a transversely extending ejector plate including a front section and a rear section both of which are interconnected about a first transverse pivot axis, support means in the form of a second transverse pivot axis connecting the forward end of the front section to the side walls, an ejector operating lever pivotally connected at one end to the bowl frame and having the other end contacting said rear section, a first stop member connected to the side walls at an upper portion thereof and forwardly of the first pivot axis, a second stop member connected to the side walls and located between said first stop member and said support means, and a fluid operated jack having one end pivotally connected to the bowl frame and the other end pivotally connected to the lever to pivot the latter forwardly about its bowl frame connection so as to independently rotate the rear section forwardly about the first pivot axis until said rear section contacts the first stop member whereafter the rear section moves upwardly along said first stop member and simultaneously raises the front section forwardly about the second pivot axis for rapping contact with said second stop member.

3,300,883
REVERSIBLE DIGGING TOOTH WITH THREE CUTTING EDGES
William M. Troeppl, Santa Clara, and Gerald A. Petersen, Sunnyvale, Calif., assignors, by direct and mesne assignments, of one-half to said Petersen, and one-half to Anita E. Petersen, Saratoga, Calif.
Filed Oct. 21, 1963, Ser. No. 317,541
6 Claims. (Cl. 37—142)

1. A tooth formed of a unitary piece of material comprising a proximal portion formed to provide means for attachment to a cooperating tooth-holder and a distal portion, said distal portion having a thin transverse front cutting edge, thin side edges extending rearwardly of said front cutting edge and forwardly converging top and bottom faces, said faces inwardly from each said side edge being spaced apart from each other a distance substantially greater than the thickness of said side edges, said side edges being substantially of the same thickness as said front cutting edge, said top and bottom faces being formed with longitudinal ribs and at the center of said tooth said faces being spaced apart from each other a lesser distance than at said ribs.



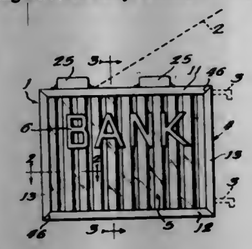
3,300,884
PRESSING IRON HAVING STARCH DISPENSING MEANS
Frank Giarraffa, 3013 Brighton 6th St., and Jack L. Most, 3129 Coney Island Ave., both of Brooklyn, N.Y. 11235
Filed Oct. 23, 1965, Ser. No. 503,628
5 Claims. (Cl. 38—78)



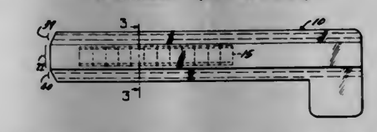
1. A pressing iron comprising a body having its underside adapted for pressing engagement with a garment, support means upstanding from said body, an elongate handgrip spaced over said body and carried by said support means, said handgrip being interiorly hollow and having an opening at one end, a container of pressurized starch in said hollow of said handgrip, a dispensing nozzle on said container extending spacedly through the opening of said handgrip and deflectable to spray starch exteriorly of said handgrip, and hand-actuable operating means mounted on said handgrip for movement into and out of deflecting engagement with said nozzle.

3,300,885
PANEL TYPE DISPLAY SIGNS
William H. Haire, 2280 Brixton Road, Columbus, Ohio 43221
Filed Feb. 24, 1965, Ser. No. 435,014
11 Claims. (Cl. 40—130)

1. A panel type display sign having a frame, a pair of spaced evenly illuminated translucent panels supported thereby, and illuminating means disposed between the two panels, characterized in that the panels include a plurality of oppositely disposed and inwardly extending spaced V-shaped corrugations to provide a plurality of elongate parallel cells, and said illuminating means is a low intensity tubular light source having a portion disposed in each cell and extending for substantially the full length thereof, said corrugated translucent panels providing for each of said cells two substantially parallel side walls and four angularly disposed end walls, said end walls being substantially normal to the light rays of said tubular light source, and said panels being so located that the V-shaped corrugations of one panel contact the V-shaped corrugations of the other to provide a completely enclosed cell.

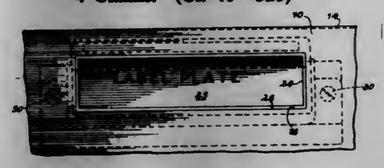


3,300,886
FILMSTRIP HOLDER
William T. Donofrio, Toledo, Ohio, assignor to Dodge Audio-Visual Corporation, Toledo, Ohio, a corporation of Ohio
Filed June 21, 1965, Ser. No. 465,366
6 Claims. (Cl. 40—152)



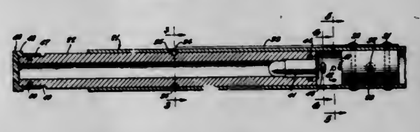
1. An elongate holder for a transparent filmstrip comprising, in combination, a central layer of sheet material with a portion cut away to receive a filmstrip, a filmstrip in the recess provided by said cut away portion, intermediate layers on each side of said central layer comprised of a transparent sheet of a relatively rigid material, and an outer layer adjacent each of said intermediate layers, said outer layer being comprised of a transparent sheet of a relatively flexible material, said central, intermediate and outer layers of material being sealed to one another at their adjacent surfaces to form a laminated, elongate filmstrip holder with a central portion extending lengthwise of said holder and displaced from the plane of the remainder of said holder to form a central channel extending lengthwise of said holder with said filmstrip positioned in said central channel.

3,300,887
DRAWER PULL AND LABEL HOLDER
Vincent J. Cafiero, Irvington, N.Y., assignor to Art Metal, Inc., Jamestown, N.Y.
Filed Oct. 20, 1965, Ser. No. 498,895
4 Claims. (Cl. 40—325)



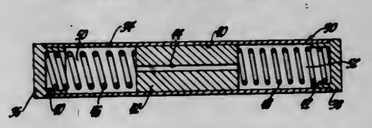
1. A combination label holder and pull device for installation in an apertured portion of a movable door panel, drawer header, or the like; said device comprising a front frame member and a back base member slidably interfitting to comprise a mutually reinforcing unit providing a label-holding slot-like space therebetween, said front frame member comprising a socketed main body portion of frame-like form having attachment means extending laterally therefrom and a centrally disposed label viewing aperture, said back base member having attachment means extending laterally thereof for assembled registry with the attachment means of said frame member and also including a main body portion comprising a forwardly protruding flat land surface portion projecting into the socketed portion of said framing member behind said frame member aperture and thereby providing means for supporting a label viewable through said frame member aperture when said parts are in assembled relation.

3,300,888
UNDERWATER GUN
Gary Lee Belcher, Coral Gables, and Robert E. Schroeder and Walter A. Starck II, Islamorada, Fla., assignors to Bangstick Corporation, Miami, Fla., a corporation of Florida
Filed Jan. 9, 1964, Ser. No. 336,757
12 Claims. (Cl. 42—1)



1. An underwater weapon particularly adapted for underwater fishing comprising a breech member, a hollow barrel member having a distal end and a proximal end, said proximal end being slidably mounted in said breech member and adapted to support a cartridge in its said proximal end, closure means engaging the distal end of the said barrel member effecting sealing of the bore thereof against the unwanted entrance of water prior to firing of said weapon, while also being readily releasable therefrom following its firing so as not to impede movement of the contents of said cartridge from said barrel; firing means mounted in said breech member for effecting firing of said cartridge upon contact therewith.

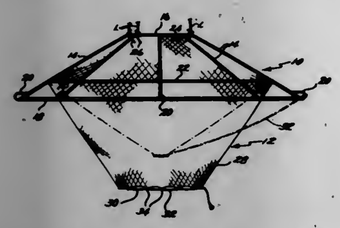
3,300,889
RECOIL SNUBBER FOR GUNS
Stephen C. Baker, Detroit, Mich., assignor to Su-Ev, Inc., Birmingham, Mich., a corporation of Michigan
Filed Apr. 22, 1965, Ser. No. 450,059
3 Claims. (Cl. 42—74)



1. Means for snubbing weaponry recoil in shoulder-fired armament, and comprising:
- a shoulder-fired weapon having a stock and a barrel frame attached thereto,
- a bore hole provided in said stock and axially aligned towards the end of said barrel frame engaged to said stock,
- a tubular member closed at opposite ends and having an inertial responsive mass provided centrally therewithin,
- said mass being close fitted in said tubular member and having an air bleed orifice provided therethrough,
- spring means in compression between the ends of said tubular member and the ends of said mass for holding and returning said mass to a balanced position centrally within said tubular member,

and means for holding said tubular member securely in said bore hole for disposing said mass in inertial responsive resistance to the recoil effort in the firing of said weapon.

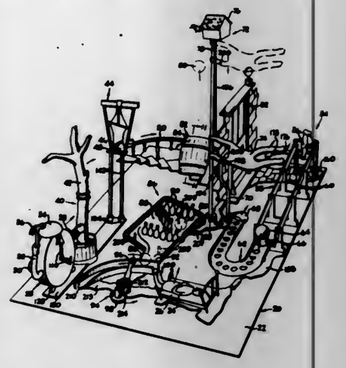
3,300,890
NESTABLE CRAB TRAPS
Erling A. Thomassen, Seattle, Wash., assignor to Orland M. Christensen, Edmonds, Wash.
Filed Jan. 22, 1962, Ser. No. 167,641
6 Claims. (Cl. 43—100)



1. A crab trap comprising a geometrically truncated, substantially rigid enclosure structure open at the top to admit crabs and having a surrounding open-mesh continuous side wall defining an enclosure which diverges downwardly from said open top, said structure having a laterally outlying supporting base at its bottom adapted to rest on the ocean floor, said side wall having a lower edge extending peripherally therearound at an intermediate level of height materially above said base and thereby substantially out of contact with the ocean floor upon which the trap rests, and bottom closure means comprising a dependingly supported purse of flexible netting material having a substantially continuous upper edge portion joined peripherally to said side wall lower edge so as to suspend the purse therefrom free of engagement with said supporting base situated laterally outwardly from said purse, said purse having a sufficient span of material downwardly from its upper edge portion to rest upon the ocean floor with the trap positioned thereon and to permit inverting the purse upwardly into the interior of the trap and against the side wall so as to accommodate the enclosure structure of a similar trap nested therewith in stacked relationship with a major portion of the height of the traps overlapping each other.

3,300,891
CONSTRUCTION TOY AMUSEMENT DEVICE
Marvin I. Glass, Anthony T. Janiszewski, and Dalia E. Verbickas, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Dec. 23, 1963, Ser. No. 332,780
2 Claims. (Cl. 46—17)

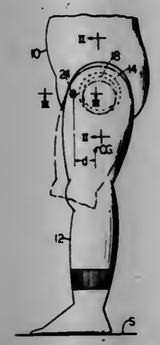
2. A construction toy amusement device comprising, a toy figure in a position simulating a particular condition of activity, actuating means operable for causing said figure to simulate another condition of activity, means operatively associated with said figure and including a plurality of comic devices for providing a comic sequence of events, said comic devices including, an alarm clock comic device having an arm and means for actuating said arm to simulate throwing a punch, a tree comic device including a normally erect tree trunk means in position to be hit upon said arm throwing said punch and thereby tilted to one side, a comic device including a stairway, a normally closed door at the lower end of said stairway, a movable means normally perched at the top of said stairway in position to be knocked from its perch by said tree trunk means upon tilting of said tree trunk means, said movable means being positioned and mounted to move down said stairway and to strike and to open said door, a running feet comic device mounted for rolling movement along an inclined track including a plurality of radial projections simulating feet, means responsive to said door swinging open to cause said feet comic device to roll down said track and simulate running feet, a golf comic device including a simulated golf club, a simulated golf ball poisitioned to be kicked by one of said running feet into guide means simulating a reverse path of flight terminating in hitting the head of said golf club, and means mounting said golf club to swing rearwardly upon being hit by said golf ball, a bird house comic device including a simulated bird house atop a tall pole, a ball simulating an egg releasably retained in said bird house, means simulating flimsy clothing waving in a breeze near the base of said pole, means to fling the clothing against said bird house to shake the bird



house and release the egg therefrom upon said golf club being hit by said golf ball, an open top barrel pivotally mounted near the base of said pole in position to receive said egg as it drops from said bird house, and means to throw said egg off center and thus tip said barrel to dump the egg, a pool table comic device including an inclined simulated pool table in position to receive said egg as it is dumped from said barrel so that the egg rolls across the table and through an area corresponding to a pocket, and a final comic device including means actuated upon said egg passing through said pocket for rendering said actuating means operative whereupon said figure changes said condition of activity, and said comic devices each including means for releasably interlocking them together for easy assembly in proper positions to provide the described interaction of said devices.

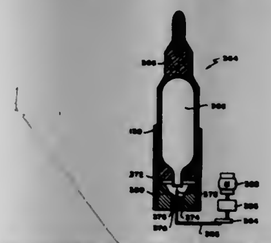
3,300,892
WALKING DOLL OR THE LIKE
Robert Gardel, 11 Riverside Drive, New York, N.Y. 10023, and Egon Gorsky, 365 E. 46th St., Brooklyn, N.Y. 11220
Filed Dec. 3, 1965, Ser. No. 511,507
5 Claims. (Cl. 46—149)

1. A doll or the like having legs mounted on a body, pivot connection means between each leg and the body disposed forward of the center of gravity of the legs when the latter are upright and are supporting the body in an erect position, said pivotal connection means providing independent free suspension for each leg whereby upon being free of a supporting surface, the legs are gravity actuated to freely swing forwardly of the erect body, and means limiting the swinging movement of the legs whereby simulated walking may be achieved on a flat surface by rocking the body from side-to-side to alternately free each leg of said flat surface, said limiting means comprising a projection on each leg received at least partly within an opening in the body, said projection having a peripheral groove bounded by a rim or flange, said groove having an inner diameter less than the diameter of said body opening and said rim or flange having means comprising a, diameter sufficiently large



so that at least portions of the body adjacent the body opening are accommodated in the groove, whereby said portions of the body and said groove cooperate to guide and limit arcuate swinging motion of the projection as the leg pivots about said pivot connection.

3,300,893
MISSILE LAUNCHING SYSTEM FOR MODEL SUBMARINE
Richard E. Dias, 17 E. Emerson St., Melrose, Mass. 02176
Original application Nov. 27, 1962, Ser. No. 240,466, now Patent No. 3,229,420, dated Jan. 18, 1966. Divided and this application May 28, 1965, Ser. No. 470,953
2 Claims. (Cl. 46—244)



1. In combination with a remotely controlled model submarine as described herein, a missile launching system comprising:

at least one elongated missile tube situated within said model submarine and having an upper and lower end portion, said upper end defining a missile discharge end;

a model missile contained within said tube and adapted to be launched out of the upper end thereof;

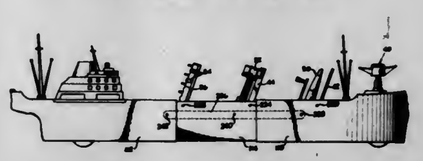
said missile containing propelling means comprising a cartridge containing pressurized fluid;

actuating means located within the lower end of said missile tube and adapted, upon activation of said propelling means, to launch said missile out through the missile discharge end of said tube;

said actuating means including piercing means spring biased upward toward the discharge end of said missile tube, rotatable cam means for controlling the position of said piercing means and, electric motor means connected to said cam means to rotate the same and release said piercing means upwardly to pierce said actuating means thereby activating said missile propelling means by releasing said pressurized fluid; and

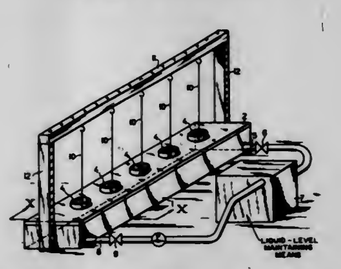
manually operable closure means at the discharge end of said missile tube for rendering said tube substantially watertight when said closure means is in its closed position.

3,300,894
SELF-PROPELLED TOY BOAT
Marvin I. Glass, Chicago, Harry Disko, Park Ridge, and Henry Stan, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 14, 1964, Ser. No. 344,936
7 Claims. (Cl. 46—244)



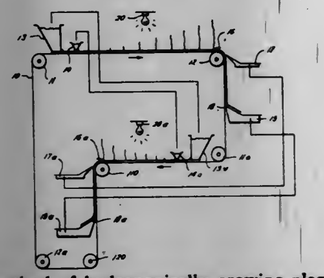
4. A self-propelled vehicular toy comprising, a boat having a hull with bow and stern portions, means mounting said portions for relative movement for varying the length of the boat between compact and extended positions, said boat having hatches movable between closed and open position, means for moving said hatches between said closed and open positions responsive to said hull moving between said compact and extended positions, toy armament concealed within said boat when said hatches are closed and exposed when said hatches are open, and drive means for moving said boat between said compact and extended positions.

3,300,895
APPARATUS FOR THE SOILLESS CULTIVATION OF SEEDLINGS AND PLANTS
Miroslav Dosedla, Decin, and Ivo Pavlica, Prague, Czechoslovakia, assignors to Roudnicke Strojirny a Slevarny, narodni, podnik, Roudnice nad Labem, Czechoslovakia
Filed Jan. 18, 1965, Ser. No. 426,199
Claims priority, application Czechoslovakia, Jan. 29, 1964, 513/64
4 Claims. (Cl. 47—1.2)



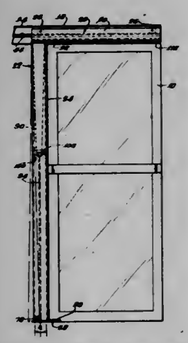
1. A plant growing arrangement, comprising, in combination, a liquid-containing container having a top wall with an opening therein and supporting means around said opening located in a horizontal plane; and a plant supporting pad supported by the supproting means above said opening and composed of a plurality of upstanding adjacent resilient strip portions of absorbent material so as to form vertical interstices between any pair of adjacent strips thus permitting the roots of a plant to extend downwardly within any of said vertical interstices between any pair of adjacent resilient strips and into said liquid-containing container while resiliently supported by those adjacent resilient strips which form those interstices or interstices through which said roots of said plant extend.

3,300,896
HYDROPONIC GROWTH OF PLANTS
Klaus Lunstroth, Houston, Tex., assignor to Research Engineering Co., Houston, Tex., a corporation of Texas
Filed May 10, 1965, Ser. No. 454,447
4 Claims. (Cl. 47—1.2)



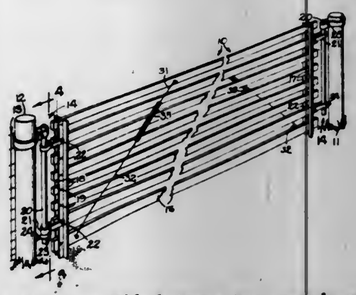
2. A method of hydroponically growing plants including the following steps:
providing a nourishment medium to one surface of a movable belt;
providing a plurality of seeds at intervals to said medium;
permitting said seeds to mature into plants while moving with said belt;
separating the plant body along with a portion of the root system in a single operation from said belt and medium; and
separating the residue of said plants and said medium from said belt after said body and partial root system is separated.

3,300,897
AUTOMATIC SLIDING SWINGING DOOR
Lance A. Wikkerink, Greendale, Wis., assignor to Republic Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 1, 1965, Ser. No. 436,030
7 Claims. (Cl. 49—137)



1. In a combined rolling and swinging door mechanism, an overhead track, a trolley adapted to run along said track, a door jamb extending downwardly from said trolley adjacent one end of said trolley, a swinging door closer mechanism secured to said trolley and providing a top door pivot near said jamb, means providing a bottom pivot secured to the bottom of said jamb in substantial vertical alignment with said top pivot, a door supported between said pivots and adapted to swing about an axis through said pivots under the control of said door closer mechanism, adjustment means for shifting the lower end of said door jamb slightly relative to the upper end thereof to shift the position of said bottom pivot relative to the position of said top pivot and to fix said jamb in adjusted position to align the door, said adjustment means comprising a member fixed to said trolley and having a portion adjacent a portion of said jamb at a position spaced from said trolley, adjustment means acting between said portions for adjusting the spacing therebetween to adjust the angularity of said jamb relative to said member and relative to said trolley, guiding means for the lower portion of said door jamb to maintain said jamb vertical, and power means connected for rolling said trolley and said door jamb as a unit along said track.

3,300,898
GATE
George M. Etnyre, Oregon, Ill. 61061
Filed Oct. 14, 1964, Ser. No. 403,717
3 Claims. (Cl. 49—193)

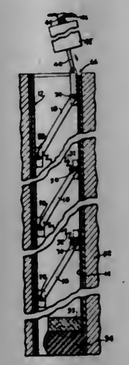


3. In a gate mountable between two spaced posts, the combination of, a plurality of vertically spaced elongated and normally horizontal members disposed in a common plane and forming the body of said gate, an upright frame member at each end of said body generally perpendicular to and pivotally connected to said elongated members to maintain the latter in spaced relation in said plane while permitting vertical movement of said upright members relative to each other, a hinge at one end of said gate for pivotally connecting the upright member at said one end to one of said posts, a latch for connecting the upright member at the other end of said gate to the other of said posts, said hinge and said latch both including an elongated upright rod extending along the adjacent end of said body in spaced relation with the adjacent upright member, upper and lower hinge elements mountable on the adjacent post and having vertically alined holes therein for slidably receiving the opposite end portions of said rod, an upper connector securing each upright member to the adjacent rod at a point spaced below the upper hinge element, and a lower connector securing each upright member to the adjacent rod, the distance between the lower end of each rod and upper edges of the hole in the associated lower hinge element being less than the distance between the upper connector and the upper hinge element whereby either rod is movable upwardly relative to the hinge elements to slide its lower end out of the lower hinge element and unlatch either end of said gate.

3,300,899
EXPANDING JAMB
Ernest Robert Haws, Allen Park, and Bert W. Piper, Redford Township, Mich., assignors to Robert Haws Co., Melvindale, Mich., a corporation of Michigan
Filed Oct. 7, 1964, Ser. No. 402,155
7 Claims. (Cl. 49—321)

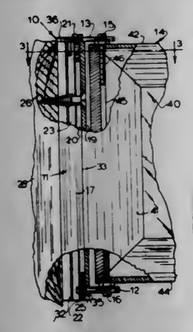
1. In a building structure of the type having an overhead track extending between a pair of opposite walls for supporting a series of panels in end-to-end relation so as to form a vertical partition therein which extends between the floor and the overhead track to divide the structure into two rooms, a jamb for engaging the endmost of said panels and expandable to cause said panels

to assume a tightly abutting relation comprising an upright support member fixedly secured to one of said opposite walls in vertical alignment with said track, said support member having a plurality of links pivotally supported at one end at vertically spaced points on said support member for swinging movement about a horizontal axis which extends perpendicular to the plane of said panels when arranged to form said partition, a vertically extending jamb spaced from said support member and parallel therewith, the other ends of said links being pivotally connected to said vertical jamb, said links being inclined upwardly from said support member in parallel



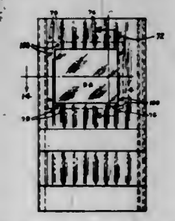
relation, said jamb extending vertically from adjacent said overhead track to adjacent the floor and terminating at its lower end at a level above said floor, means forming a compressible pad at the lower end of said jamb, means normally biasing said jamb upwardly and toward said support, power means for driving said jamb downwardly and away from said support under the control of said links, said pad being dimensioned to be compressed into sealing engagement with the floor when the jamb is driven downwardly and away from said support and means extending between and closing the space between said jamb and said support at opposite ends thereof.

3,300,900
PIVOTAL DOOR CONSTRUCTION AND METHOD
George Risk, Raymond C. Root, and Joseph E. Sotir, Columbus, Nebr., assignors to Loup Engineering Company, Columbus, Nebr., a corporation of Nebraska
Filed Dec. 21, 1964, Ser. No. 419,965
6 Claims. (Cl. 49—381)



1. A pivotal door construction comprising:
(A) An upright bar-like elongated jamb comprising two opposed side panels and an intervening front panel, said three panels being integrally joined together in a U-shaped relationship, said three panels being of appropriate cross-sectional shape whereby the internal cross-section of said U-shaped elongate jamb adjacent to the front panel includes a constricted portion adapted to securely engage an elongate fastener internally along said elongate jamb, said upright elongate jamb front panel being deeply notched near the bottom of said jamb, said jamb including an integrally connected tab within the front panel notched portion of said jamb, said tab intersecting the jamb front panel, a portion of said tab extending outwardly of said jamb toward said door,
(B) a terminal plate connected to the top end of said elongate jamb by means of a fastener surrounded by the jamb constricted portion, a portion of said terminal plate extending outwardly of said jamb toward said door, and
(C) an upright door pivotably connected to the integral tab and terminal plate of said upright elongate jamb by means of a pair of vertical pins extending vertically from said vertical door adjacent to the upright jamb, one of said pins being disposed at the bottom of said door and another of said pins being disposed at the top of said door.

3,300,901
DOOR BODY
Oliver C. Eckel, Carlisle, Mass. (P.O. Box 226, Cambridge, Mass. 02138)
Filed Aug. 18, 1964, Ser. No. 390,391
2 Claims. (Cl. 49—502)

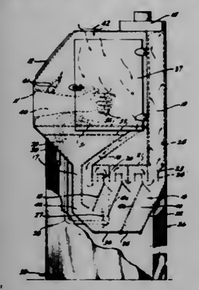


2. A door body having an intermediate window portion and comprising two corrugated cores of relatively firm and resilient material each having furrows which are respectively opposite and adjacent each other, a flat sheet extending between said cores, means connecting said flat sheet and said cores at said oppositely disposed furrows, an outer cover at the front and rear faces of said body, non-rigid material between said cores and cover, and said cores terminating laterally adjacent opposite side extremities of said window portion and extending beyond said flat sheet, a separate transparent flat sheet forming and extending beyond said window portion and between said cores, and removable means attaching said transparent flat sheet to said cores at border portions of said latter sheet.

3,300,902
DRY ABRASIVE HONING DEVICE
Lerner B. Dockery, 6143 Eastbrook Ave., Lakewood, Calif. 90713
Filed July 13, 1964, Ser. No. 382,104
7 Claims. (Cl. 51—8)

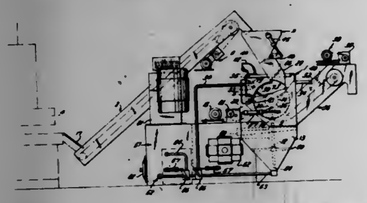
2. A dry abrasive honing device having a separator including a controlled vacuum suction tube having a top portion and an orifice provided in said top portion and a bottom portion formed by a slanted opening, the size of the orifice and the slanted angle of the bottom portion being determined by the size of the separator, the air working pressure of the separator and the volume of abrasives used by the device, and an abrasive pickup tube extending horizontally into the controlled vacuum suction tube near the bottom portion thereof and being slanted

downwardly with the controlled vacuum suction tube and being centered in the slanted opening located in the bottom



portion of the vacuum suction tube and terminating at the same angle as the slanted angle of the controlled vacuum suction tube.

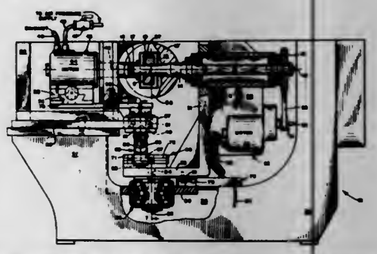
3,300,903
AUTOMATIC BLASTING DEVICE
Peter Kosar, Garden City, Mich., assignor to Ajem Laboratories, Livonia, Mich.
Original application Nov. 7, 1961, Ser. No. 150,706, now Patent No. 3,242,618, dated Mar. 29, 1966. Divided and this application Mar. 15, 1965, Ser. No. 444,498
12 Claims. (Cl. 51—13)



12. An apparatus for blast treating surfaces of articles which comprises a rotatable article carrier adapted to carry a procession of articles on a closed looped path, liquid grit blasting means positioned beneath said path and directed upwardly across said path into its loop, whereby, as the articles move to, through and beyond said blast, the angle of attack of the blast relative to the surfaces of the articles tends to lift the articles from one another and to blast intermittently first one surface and then another as one after another intercepts the blast.

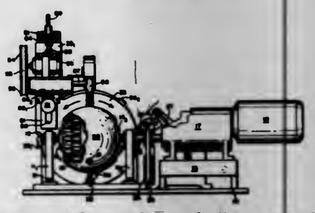
3,300,904
MACHINE FOR GENERATING ELLIPSOIDAL SURFACE
Heinz E. R. Gruner, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 11, 1964, Ser. No. 374,385
8 Claims. (Cl. 51—33)

1. A machine for generating a true ellipsoidal surface of revolution on a rigid body, said machine comprising a combination of coacting machine parts which are;
a frame,
a rotatable workshaft,
means for securing said body on said shaft with the major axis of said surface coaxial therewith,
power means operatively connected to rotate said shaft,
a first mounting member on which said workshaft and power means connected for rotating said workshaft are operatively assembled,
first pivot means which are constructed in fixed position in said first mounting member and are axially aligned in the equatorial plane of said ellipsoidal surface in spaced relation to said surface, said first mounting member being angularly movable relative to said frame in a plane which contains the major axis of said surface about said pivot means during generation of said surface,
a second mounting member which carries a forming tool and is mounted in a stationary position on said frame,
a tool head pivotally mounted on said second member,
a second pivot means formed axially parallel to the first pivot means on the tool head and second mounting member cooperatively at a distance equal to the semi-major axis of the ellipsoidal surface away from the first pivot means and coplanar therewith so that said tool head may turn thereon,
a forming tool operatively mounted on said tool head, said tool being characterized by an elongated machining surface which is positioned substantially coplanar with said major axis and includes a point on the axis of the second pivot means,



a swivel joint carried by said first mounting member at a stationary position thereon which is located in a plane parallel with the major axis and including a focal point of the ellipsoidal surface,
an elongated and rigid guide rod fixed to said tool head to turn it and extending into engagement with said swivel joint,
said rod and joint being cooperatively formed to provide a sliding connection therebetween whereby as the angular relationship changes between the first and second mounting member, the rod slides in said joint and pivots about it to move the machining surface of said tool in such a manner as to maintain said surface tangent to the true geometrical shape of said ellipsoidal surface.

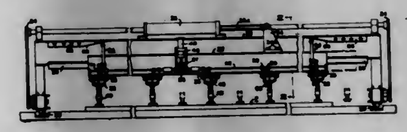
3,300,905
APPARATUS FOR SURFACE GRINDING GENERALLY SPHERICAL ELEMENTS
Henry H. Gardner, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Sept. 27, 1963, Ser. No. 312,241
2 Claims. (Cl. 51—33)



1. An apparatus for surface grinding generally spherical elements comprising, in combination,
(a) means for rotatably supporting a generally spherical element on an axis through substantially the center of said generally spherical element,
(b) means for rotating the rotatably supported generally spherical element on said axis,

(c) rotating grinding means for rotatably grinding the surface of said generally spherical element,
(d) pivotally movable mounting means for supporting the rotating grinding means on a pivotable axis passing through substantially the center of said generally spherical element when the pivotable axis is extended,
(e) means for oscillating the pivotably movable mounting means in an arcuate path,
(f) adjusting means on the pivotably movable mounting means for changing the distance between the rotating grinding means and the pivotable axis of said pivotably movable mounting means,
said means for rotating the rotatably supported generally spherical element comprising a motor driven gear reducer and said means for oscillating the rotating grinding means comprising a speed reducer actuated by said gear reducer and operably connected to said means for oscillating the rotating grinding means by eccentric arm means.

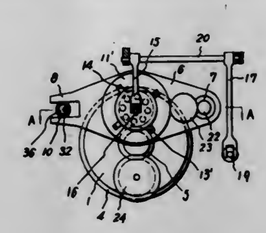
3,300,906
GRINDING MACHINE
George H. Young, Coatesville, and Richard E. Jones, Natrona Heights, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Mar. 12, 1964, Ser. No. 351,394
16 Claims. (Cl. 51—54)



1. Apparatus for grinding a flat surface on a workpiece comprising, workpiece support means adapted to support the workpiece in a grinding position, a grinder support bridge spanning said workpiece support means, a plurality of grinders mounted on said bridge and depending therefrom disposed to grind the surface of said workpiece, means to reciprocate said grinders on said bridge, means for oscillating the grinders to control the grinder wear for providing point contact with the workpiece, and means to move said bridge and said workpiece support means relatively in a direction normal to the direction of reciprocation of said grinders.

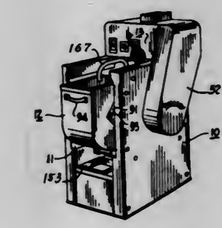
3,300,907
APPARATUS FOR FLAT SURFACE SUPERFINISHING
Toshio Asaeda, 18 Tamagawa Kaminoge, Setagaya-ku, Tokyo, Japan, Ryo Sakai, Sakura-Mura Niihari, Ibaraki-ken, and Tadayoshi Hirano, Koganei-shi, Tokyo, Japan; said Sakai and said Hirano assignors to said Asaeda
Filed May 13, 1964, Ser. No. 367,150
Claims priority, application Japan, Sept. 27, 1963, (utility model) 38/72,500
3 Claims. (Cl. 51—124)

1. Flat surface superfinishing apparatus comprising, in combination, a very fine grain disc-shaped abrasive stone; means rotatably mounting said stone for rotation about its axis; a lever extending perpendicular to the axis of said stone; means pivotally supporting one end of said lever for oscillation of said lever in a plane parallel to the working face of said stone, the free end of said lever being forked; a work holder mounted on said lever intermediate the ends thereof and adjacent the working face of said stone; means biasing said work holder toward said stone; and driving means operatively associated with the forked end of said lever and operable to impart a composite oscillation to said lever, comprising two superposed oscillations; said driving means including a drive shaft mounted for rotation about an axis substantially parallel to the axis of said stone, a smaller diameter stub shaft extending eccentrically from the end of said drive shaft, an intermediate wheel eccentrically mounted on said stub shaft for free rotation thereon and having a disc portion and a smaller diameter hub portion, said hub portion being rotatably engaged in said forked end of said lever, and a ring member, of larger diameter than said wheel disc



portion, surrounding said wheel disc portion for rolling of the latter around the inner surface of said ring member as said drive shaft rotates; whereby said lever, due to the eccentricity of said stub shaft, has a relatively small oscillation imparted thereto at a relatively high frequency and, due to the eccentricity of said intermediate wheel on said stub shaft and the rolling of said intermediate wheel about said ring member, has a relatively large oscillation imparted thereto at a relatively higher frequency.

3,300,908
APPARATUS FOR ORBITAL FINISHING
John F. Rampe, 3417 Fairfax Road, Cleveland Heights, Ohio 44118
Filed Nov. 5, 1964, Ser. No. 409,166
18 Claims. (Cl. 51—163)



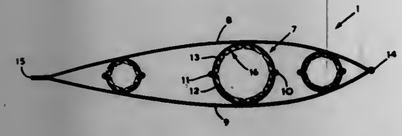
1. A vibratory device for finishing articles comprising:
frame means;
counterpoise means including a pair of counterpoise plates;
resilient means mounting each of said counterpoise plates within said frame means;
a carriage;
resilient means mounting said carriage within said frame means and between said counterpoise plates;
eccentric means rotatably channeled in said carriage and in said counterpoise;
means mounted on said frame for driving said eccentric means and coupled thereto in driving relationship; and
tub means mounted in said carriage on one side of said eccentric means and a counterweight mounted in said carriage on the other side of said eccentric means from said tub means balancing said tub means.

3,300,909
METHOD FOR PRODUCING CONTACT LENS
Melvin Dwight Cooper, Evansville, and John C. Gorman, Warrick County, Ind., assignors of one-fourth to Charles A. Brizius, and one-fourth to J. Royston Victor, both of Evansville, Ind.
Filed Aug. 19, 1963, Ser. No. 302,858
5 Claims. (Cl. 51—284)



1. The method of producing a bifocal contact lens which comprises the steps of cutting and polishing a first surface on said lens, disposing a covering compound partially over said cut and polished first surface, cutting and polishing a second surface on said lens, and removing any covering compound remaining after said cutting and polishing of said second surface.

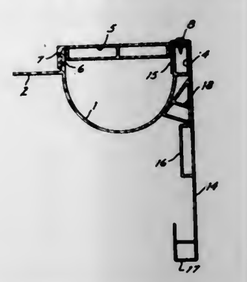
3,300,910
REELABLE STRUCTURAL MEMBERS
Peter Isaac, 9 Crown Hill Place, Apt. 410, Toronto, Ontario, Canada
Filed Dec. 10, 1965, Ser. No. 513,140
20 Claims. (Cl. 52—2)



1. A device which includes the combination of an inflatable structural member and storage means for storing said inflatable structural member in a flexible state and projecting it in a rigid state, said inflatable structural member including, in combination, stiffening means by means of which said inflatable structural member may be made rigid when inflated, said stiffening means comprising at least two resilient elements which are predominantly flat and in an overlying relationship when said inflatable structural member is in a flexible state and dished outwardly when said member projects from said storage means, element connecting means for connecting said resilient elements, element facial interlocking means for interlocking adjacent faces of said resilient elements when in said storage means, sealing means for retaining fluid within said inflatable structural member when inflated, said storage means including a reel on which said inflatable structural member may be reeled, housing means for supporting said reel, inflating means for inflating and deflating said inflatable structural member, and reel operating means.

3,300,911
PLASTIC GUTTER CONSTRUCTION
Bruce Riddell, 10071 Constitution Drive, Huntington Beach, Calif. 92646
Filed May 1, 1964, Ser. No. 364,256
5 Claims. (Cl. 52—16)

1. A gutter construction for buildings, comprising,
a gutter formed of a nonmetallic material,
a lip integrally formed on the gutter at the inner edge thereof and attachable to the building,
a reinforcing rib on the outer edge of the gutter,
a tie strip extending transversely across the gutter from the outer to the inner edge thereof,
a vertical rib on one edge of the gutter,
teeth on said rib,
teeth on the tie strip engageable with the first named teeth,



and means detachably securing the end of the tie strip opposite said teeth to the gutter.

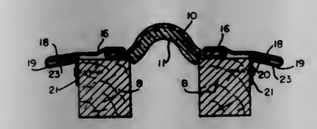
3,300,912
HANGER MEANS FOR SHEET METAL SECTIONAL ROOFING AND FLOORING
Lucky J. Shumaker, Pittsburgh, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Jan. 17, 1963, Ser. No. 252,249, now Patent No. 3,197,926, dated Aug. 3, 1965. Divided and this application Dec. 29, 1964, Ser. No. 432,918
2 Claims. (Cl. 52—39)



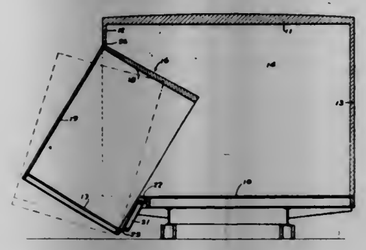
1. In a sheet metal sectional flooring or roofing section having a generally rectangular configuration including engageable lip means along the opposed side edges thereof including a male lip comprising a generally vertical surface of sheet metal along a first side edge and also including a U-shaped channel, open at the top, with the side edges thereof being generally vertical along the opposed side edges thereof, whereby said male lip is engageable in the said channel of an adacent one of said sections to secure said sections in side-by-side relation, the improvement in said section comprising:
a plurality of slits in the outer vertical surface of the said U-shaped channel extending from the bottom edge thereof through the outer sheet of the said channel, whereby a pair of said slits define a peninsular segment of the said outer surface, each said peninsular segment being adapted to be bent downwardly to serve as a hanger site, and the unbent ones of the said peninsular segments being adapted to engage with the said male lip of an adjacent one of said sections.

3,300,913
EXPANSION JOINT COVER AND FLASHING THEREFOR
Francis J. Patry, Lewiston, and Harold Blair Lamont, Lincolnville, Maine, assignors to Lamont & Riley, Inc., Worcester, Mass., a corporation of Massachusetts
Filed Mar. 2, 1964, Ser. No. 348,491
8 Claims. (Cl. 52—58)

1. An expansion joint cover for a building structure comprising a strip of elastic material, a metal strip attached thereto and extending away from one side of the elastic strip, and a piece of flashing, said flashing having a projecting portion including a raised portion, said metal strip including socket means for attaching the elastic strip to said flashing, said socket means comprising a U-shaped clip receiving said projecting portion of the flashing for attachment thereto, said U-shaped clip having means for providing a restricted entrance into the clip and for holding the projecting portion of the flashing in the clip by mechanically co-operating with said raised portion, the retaining means comprising an enlargement on one leg of said U-shaped clip.



3,300,914
HOUSE TRAILER WITH SWINGABLE EXTENSION
Douglas C. Stewart, Morris I. Adair, and Edwin E. Gerlach, Mariette, Mich., assignors to Active Homes Corporation, a corporation of Michigan
Filed Oct. 6, 1964, Ser. No. 401,889
10 Claims. (Cl. 52—67)



1. In a house trailer or the like, the combination comprising
a bottom wall,
a top wall,
side walls and end walls joining the top and bottom walls,
one of said side walls having an opening therein,
and an extension movable from a position within the trailer to a position exteriorly of the trailer comprising
a bottom panel,
a top panel,
a side panel joining the top and bottom panels along one edge,
and means mounting said extension along the bottom edge of the side opening in the trailer adjacent the bottom wall for swinging movement about an axis adajacent the other edge of the bottom panel and bodily swinging movement about an axis spaced from the first mentioned axis and adjacent the bottom edge of the side opening of the trailer whereby when the extension is in folded position within the trailer, the extension can be folded outwardly clearing the upper edge of the side opening of the trailer by bodily rotating the extension downwardly to move the other edge of the bottom panel of the extension downwardly, thereafter swinging the extension about said axis adjacent the other edge of the bottom panel to clear the upper edge of the side opening and finally moving the bottom panel and, in turn, the extension into a position wherein the bottom panel and the bottom wall of the trailer lie in generally the same plane.

3,300,915
COMMON ENVIRONMENTAL CONTAINER AND BUILDING STRUCTURE MEANS
Ben F. Brasch, 5207 Orchard Park Drive, Parma, Ohio 44129
Filed Apr. 30, 1963, Ser. No. 276,709
3 Claims. (Cl. 52—73)

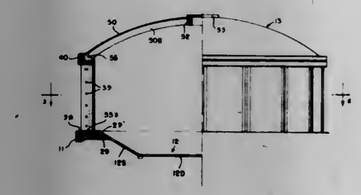


1. Common environmental container structure means and building structure means wherein said container structure means is adapted to be removably coupled to said building structure means for providing a common environmental enclosure, said building structure means defining an environmental building enclosure and having at least exterior wall portion means defining an environmental opening, said container structure means having at least frame structure portion means defining an environmental opening, guide means including first and second registering engageable parts for directing said container structure means to move in a direction to substantially align said environmental opening of said container structure means with said environmental opening of said building structure means with said container structure means extending outwardly away from said exterior wall portion means, said first part of said guide means being engageable with said second part of said guide means upon movement of said container structure means toward said building structure means and being effective to align said environmental openings in face-to-face relationship with each other prior to coupling engagement of said frame structure portion means with said exterior wall portion means, environmental coupling means including at least first and second readily disconnectable parts for environmentally coupling said frame structure portion means with said exterior wall portion means to provide a common environmental enclosure, and support means extending outwardly away from said exterior wall portion means and engageable with said container structure means for supporting same with said environmental opening thereof in face-to-face relationship with said environmental opening in said exterior wall portion means.

3,300,916
PREFABRICATED CONCRETE TANKS AND STRUCTURES
David Pritzker, 7340 38th NE., Seattle, Wash. 98115
Filed Nov. 14, 1963, Ser. No. 323,673
Claims priority, application Canada, Dec. 3, 1962, 863,581
3 Claims. (Cl. 52—81)

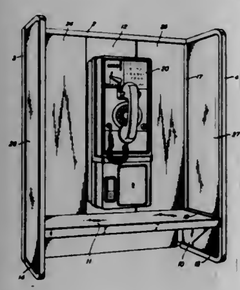
1. In a prefabricated tank and the like having a continuous side wall and a footing supporting said wall; said side wall comprising a succession of like precast components arranged upright upon said footing in edge to edge relationship; each of said components being of shal-

low U-shape in cross-section with its basewall transversely arched and its opposite side edge portions forming legs extending in substantially parallel relationship away from the basewall; the joint between adjacent edge portions of adjacent components being sealed by plastic strips interposed between them and there being tie bolts extended through and joining said adjacent leg portions of adjacent components to retain the integrity of the joint and unify the joined components, said joined leg portions providing reinforcing posts; and a roof structure composed of a



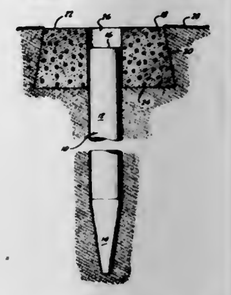
succession of adjacent radial slab-like segments rested at their outer ends on said continuous side wall and at their inner ends rested against a supporting ring, and wherein the radial slab-like segments of the roof structure are each formed lengthwise thereof on its underside and along a central longitudinal line, with a reinforcing beam integrally cast with the slab, said beams of said slabs resting at their outer ends on the upper ends of said reinforcing posts and at their inner ends are embedded in said supporting ring.

3,300,917
TELEPHONE SHELF UNIT
Keith D. Bartley, Indianapolis, Ind., and Robert E. Prescott, Rumson, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 26, 1964, Ser. No. 406,468
10 Claims. (Cl. 52—36)



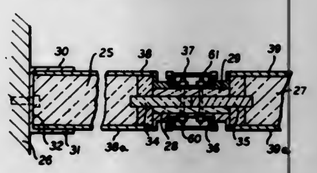
1. A telephone shelf assembly unit comprising, in combination, a pair of side panel members, a pair of back panel members, a dual purpose telephone mounting member having a grooved portion on opposing vertical boundaries thereof each slidably accommodating a first vertical edge of a respective one of said back panel members, first multifunction means for slidably accommodating the second vertical edge of each of said back panel members, for providing molding between said side panel members and said back panel members and for clamping in place a vertical edge of each of said side panel members, and a slidably mounted shelf member providing the sole vertical support for said back panel members.

3,300,918
SURVEY STAKE PROTECTOR
Frank A. Maule, 1018 S. Jackson St., Jackson, Mich. 49203
Filed Jan. 8, 1964, Ser. No. 336,448
1 Claim. (Cl. 52—103)



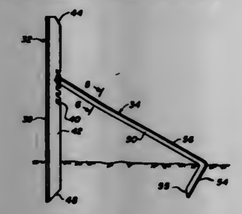
A survey stake and monument marker assembly comprising, in combination, a truncated, conical body embedded in the earth having a longitudinal axis and substantially parallel upper and lower surfaces, the conical side wall of said body converging from said lower surface in the direction of said upper surface, an axially extending hole defined within said body and concentrically extending therethrough intersecting said surfaces, and a stake within said hole having a lower end and an upper end and having an axial length greater than the axial length of said body, said stake being embedded in the earth to a depth whereby said stake upper end is disposed below said body upper surface and said stake lower end extends below said body lower surface.

3,300,919
MOVABLE FIREPROOF WALL AND JOINT
Arnon Hiller, Kew Gardens, N.Y., assignor to United States Plywood Corporation, New York, N.Y., a corporation of New York
Filed Feb. 10, 1964, Ser. No. 343,577
11 Claims. (Cl. 52—122)



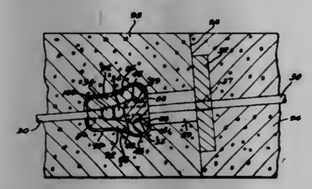
8. A movable fireproof partition assembly which comprises in combination, (1) a plurality of incombustible core elements extending substantially from the floor to the ceiling of a room, said core elements characterized by having vertical recesses in their longitudinal edges, (2) incombustible splines seated in said recesses, said splines characterized by extending beyond the planes of said edges and abutting one against the other, (3) incombustible posts positioned along the entire extending face surfaces of said splines, (4) affixing means extending through said posts and said splines, (5) levelling bolts positioned along the bottom edges of said core elements which are adapted to adjust the levels and heights of said core elements (6) a wood ceiling runner rigidly affixed to a ceiling, (7) edge trim elements rigidly affixed to said ceiling runner and extending vertically downwardly in a manner to encase the upper edges of said panels and to provide a space between said upper edges and said ceiling runner, whereby when said levelling bolts are actuated, play is provided for movement in said space.

3,300,920
REUSABLE STAKES
Peter B. Skaare, 345 Pleasant Ave., Bloomingdale, Ill. 60108
Filed July 15, 1964, Ser. No. 382,715
10 Claims. (Cl. 52—150)



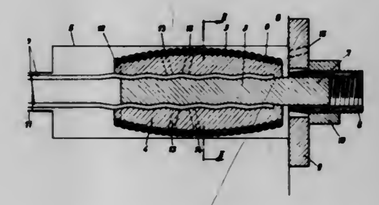
1. A metal stake assemblage for supporting and aligning forms for concrete and the like comprising: a T-shaped form support member having a stem portion perpendicularly connected to a cross-bar portion, said cross-bar portion having a plurality of apertures formed therein for receiving fastening means for securing a form to said form support member, said stem portion having a plurality of notches formed in the edge thereof in spaced relation; and a brace member having a stem portion perpendicularly connected to a cross-bar portion, one end of said brace member being angularly disposed with respect to the main body portion thereof so as to form a leg which is drivable into the ground, the cross-bar portion at the opposite end thereof being engageable in respective ones of said plurality of notches to vertically align and support said form support member when said form support member is partially driven into the ground.

3,300,921
POST-TENSIONED PRESTRESSED CONCRETE MEMBERS
Karl H. Middendorf, Costa Mesa, Calif., assignor to The Prescon Corporation, a corporation of Texas
Filed Nov. 13, 1961, Ser. No. 151,633
7 Claims. (Cl. 52—227)



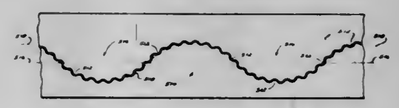
7. In a post-tensioned concrete structure a bearing member mounted in a marginal portion thereof, a rigid elongated stressing bar mounted in spaced relation to said bearing member, said stressing bar having undercut longitudinally extending shoulders thereon, said bearing member and bar having aligning openings therein, tensioning members extending through said openings and having heads larger than said openings in said bar engaging the side of said bar remote from said bearing member, a second concrete structure adjacent said first concrete structure, a rigid elongated coupling member longitudinally slidably engaged with said bar having a transverse portion and legs having inwardly directed flanges thereon provided with undercut longitudinally extending shoulders engaging the undercut shoulders of said bar, said coupling member having a longitudinally extending row of openings in said transverse portion, tension members extending through said openings and having heads engaging the inner face of said transverse portion, a yieldable sheath of compressible material extending around the peripheral surface of said coupling member, and anchoring means at the remote portion of said second structure for holding said last mentioned tension members under tension.

3,300,922
ANCHOR ASSEMBLY FOR PRESTRESSED CONCRETE STRUCTURES
Karl Buyer, Grafelfing, near Munich, Germany, assignor to Heilmann & Littmann Bau-Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed June 9, 1964, Ser. No. 373,781
7 Claims. (Cl. 52—230)



1. An anchor head for wires to be pre-stressed comprising:
a stressed cast concrete body having an outer sleeve and a solid central tension bolt extending along the axis thereof, said tension bolt having a longitudinal corrugated outer surface;
wire ends distributed around said bolt in a radially symmetrical manner and shaped to correspond to the corrugated surface of said bolt, said wires being in engagement with said bolt;
said bolt and wire ends being embedded in the concrete member so as to maintain axial tensile forces and to force the wire ends against the outer surface of the central bolt.

3,300,923
CORRUGATED METAL BUILDING AND BUILDING PANELS
Walter D. Behlen, Columbus, Nebr., assignor to Behlen Manufacturing Company, Inc., Columbus, Nebr.
Filed Mar. 11, 1963, Ser. No. 266,131
1 Claim. (Cl. 52—245)

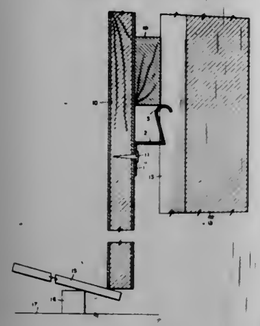


An article of manufacture, comprising,
an elongated panel,
a plurality of alternately disposed arcuate corrugations in said panel extending in continuous and uninterrupted fashion from one end of said panel to the other,
said panels being bent into a plurality of alternately disposed larger arcuate corrugations which are coextensive with said first-mentioned corrugations and which also extend in continuous and uninterrupted fashion from one end of said panel to the other;
the arcuate neutral axis of said first-mentioned corrugations forming a trignometric sine wave with respect to the straight neutral axis of said larger corrugations,
said panel being longitudinally curved.

3,300,924
PANEL ASSEMBLY AND CONCEALED PANEL FASTENER

Frederick R. Ashby, Carmel, and Harold V. Ettore, Yorktown Heights, N.Y., assignors to United States Plywood Corporation, New York, N.Y.

Filed Aug. 21, 1963, Ser. No. 303,604
1 Claim. (Cl. 52—265)

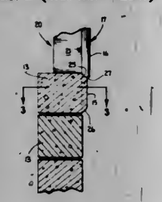


The combination of decorative plywood panel wall assembly, foundation and ceiling, which comprises a first set of spaced furring members attached directly to said foundation wall, a second set of horizontal offset furring members attached to said first set of furring members in perpendicular relation thereto, a relatively flat panel-fastener combination adapted to be attached to said second set of furring members on upward movement which comprises a relatively flat decorative wood panel having rigidly attached thereto a fastener, said fastener consisting of a first flat section rigidly attached to said flat panel, a second flat section substantially perpendicular to said first flat section and the length of which is approximately equal to the thickness of said second set of furring members, and a third flexible hook section extending substantially perpendicularly from said second flat section and opened upwardly, said flexible hook section being bent inwardly and curving outwardly at its end and positioned behind said second set of furring members; the fastener frictionally secured thereto and providing the sole means of supporting said panel, said decorative plywood panel rigidly attached to said foundation wall and abutting the ceiling.

3,300,925
BUILDING STRUCTURE

Russell T. Stelle, 6 N. Walnut St., Brazil, Ind. 47834

Filed Oct. 3, 1963, Ser. No. 313,599
2 Claims. (Cl. 52—293)

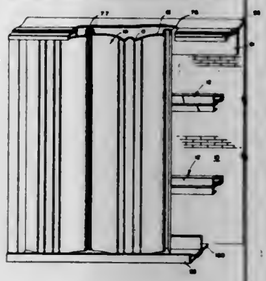


1. In a building construction including a wall of a plurality of substantially rectangular concrete blocks having each tier staggered to the tiers next below, a steel frame seated on an upper tier of blocks and a plurality of sheet steel members secured to said framework, said steel sheet members being ribbed, the improvement comprising: an uppermost tier of blocks having projections extending from the outside surface thereof, said projections having the same outward configuration as said ribs in said sheet steel members, said projections being aligned with and flush with said ribs in said sheet steel members, said projections being tapered at the upper and lower end thereof so that when a rib of a sheet steel member is aligned with a corresponding projection of a block, said taper of said upper end defines an opening with said rib of said steel sheet member to permit drainage of water from the point of connection between said steel framework and said blocks.

3,300,926
WALL PANELING SYSTEM

William C. Helrich, 2912 Wauhilah Drive, Muskogee, Okla. 74401

Filed Dec. 28, 1965, Ser. No. 516,285
4 Claims. (Cl. 52—300)



1. A paneling system for forming a wall or covering an existing building front, comprising:

(A) a plurality of panel elements having side portions lying adjacent each other, said adjacent side portions of adjacent panels including locking flanges permitting said panel elements to be assembled as a substantially vertical wall terminating at each end thereof in first and second end panels;

(B) supporting structure positioned along one side of said wall; and

(C) fastening means securing said panel elements to said supporting structure, said fastening means including side caps enclosing the terminal locking flanges of said first and second end panels and channel fasteners of a single configuration slidably mounted within said side caps, said channel fasteners having first and second sides complementarily designed to engage the locking flanges of said first and second end panels respectively as well as said side caps.

3,300,927
LAMINATED SHEET MATERIAL

Phillip Stephen Bettoli, Martinsville, N.J., assignor to The Ruberoid Company, a corporation of New Jersey

Filed Jan. 21, 1963, Ser. No. 252,690
14 Claims. (Cl. 52—309)

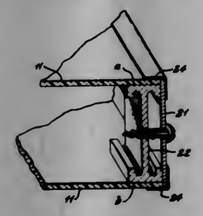


11. A roof comprising a roof deck and successive lengths of flexible roofing material having a uniform width, said material covering said roof deck, said roofing material being weather and fire resistant and uniformly secured to said roof deck with an asphaltic adhesive, said roofing material comprising a pigmented substantially opaque polyvinylfluoride plastic film having a uniform thickness of at least one mil, and an asbestos felt backing impregnated with from about 15% to about 25% by weight of polychloroprene, said film secured to said asbestos felt backing by means of a thermosetting, elastomeric adhesive, said roofing material disposed on said roof deck in a manner such that a longitudinal edge of one of said lengths of roofing material abuts the longitudinal edge of another of said lengths adjacent to it, the seam defined by said abutting longitudinal edges being sealed by pressure-sensitive adhesive tape, said tape comprising polyvinylfluoride plastic film.

3,300,928
STRUCTURAL BUILDING PANELS

Robert Renker Keller, Manchester, N.H., assignor to Kalwall Corporation, Manchester, N.H., a corporation of New Hampshire

Filed Nov. 22, 1963, Ser. No. 325,680
4 Claims. (Cl. 52—309)

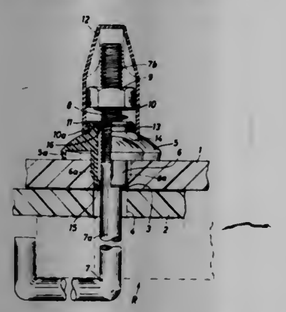


2. The combination of a sandwich type building wall panel having at least one edge portion exposing the interior of the panel and independently removable edge cap means covering said edge portion and held in abutting, weather-sealing relationship to said panel with a polyvinyl fluoride tape.

3,300,929
DEVICE FOR FASTENING ROOF PANELS AND THE LIKE

Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany

Filed Dec. 5, 1963, Ser. No. 328,317
Claims priority, application Germany, June 21, 1960, F 31,471; Dec. 18, 1962, F 38,587
9 Claims. (Cl. 52—309)

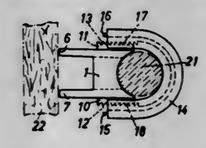


7. A device for fastening corrugated roof panels of the type having through bores to a supporting structure, comprising an annular sealing member having a first side, and a second side arranged to overlie the outer side of the upper one of a plurality of overlapping panels whose bores are in registry with each other so that said sealing member surrounds the bore in the upper panel, said sealing member consisting of corrosion-resistant synthetic plastic material and having an annular groove located intermediate said sides thereof; biasing means including a nut adjacent to the first side of said sealing member, a resilient element interposed between said nut and the first side of said sealing member, and a threaded stem meshing with said nut and having a portion arranged to extend through said sealing member, through the registering bores of overlapping panels and to be secured to a supporting structure so as to compress said resilient element between said nut and said sealing member whereby the second side of said sealing member is maintained in sealing engagement with the outer side of the upper panel; and a cup-shaped hood having an open end provided with an inwardly extending annular bead which is received in said groove by snap action so that said hood surrounds said nut, said resilient element, and a portion of said stem to prevent moisture from reaching said biasing means, said biasing means being out of engagement with and freely movable with respect to said hood.

3,300,930
DEVICE FOR SPACING APART REINFORCING INSERTS IN REINFORCED CONCRETE

Oskar Weise, Upper Bavaria, Germany, assignor to Albert Geser, Manufacturer, Sankt Gallen, Switzerland

Filed Feb. 25, 1964, Ser. No. 347,164
Claims priority, application Germany, Feb. 25, 1963, W 33,968
3 Claims. (Cl. 52—309)



1. In the construction of reinforced concrete structures shaped by means of shuttering forms or the like, a device spacing the reinforcing inserts for the concrete a predetermined distance from the shuttering comprising, in combination: a spacing member maintaining a predetermined distance between the shuttering and the reinforcing insert, said spacing member comprising a main body portion, one end of said body portion having a recess receiving the reinforcing insert and locating said spacing member generally transversely of said insert, the end of said body portion opposite to the recessed end having a pair of spaced apart arms extending longitudinally therefrom and adapted to bear against the shuttering, two opposed exterior side surfaces of said body portion having guide bars thereon extending longitudinally of said body portion, and tooth means formed on said guide bars; and a retaining member adapted to be positioned transversely of said reinforcing insert opposite said spacing member and in lockable engagement with said spacing member, said retaining member comprising a generally arcuate retainer clip adapted to encircle a substantial portion of said insert and having resilient end portions extending transversely of said insert, the interior surfaces of the clip ends being provided with retaining tooth means adapted to lockably interengage said tooth means on said guide bars of said spacing member.

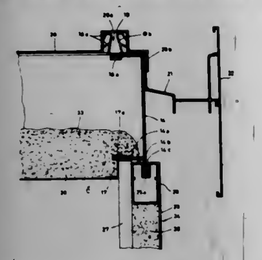
3,300,931
PREFABRICATED ROOF CONSTRUCTION WITH FOAMED PLASTIC JOINING MEANS

Günter Lütze, Untere Steigstrasse 32, Reutlingen-Ohmenhausen, Germany

Filed Sept. 15, 1964, Ser. No. 396,583
Claims priority, application Germany, Sept. 17, 1963, L 45,873
15 Claims. (Cl. 52—309)

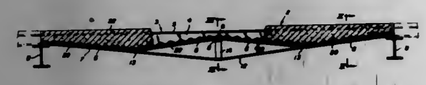
1. In a prefabricated roof, in combination, a skeleton frame comprising pairs of longitudinal and transverse frame members and a plurality of spaced joists disposed between and substantially parallel to one pair of said

frame members, said one pair of frame members and said joists having undersides provided with longitudinally extending grooves having enlarged portions spaced from the respective undersides; at least one connector for at least some of said grooves, said connectors being located at a



level below said undersides and having enlarged portions extending into and slidable in the enlarged portions of the corresponding grooves; a panel adjacent to said connectors; and a layer of adherent foamed plastic material surrounding said connectors and adhering to said panel to connect said panel to said skeleton frame.

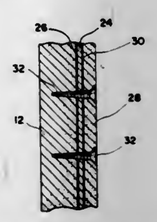
3,300,932
CONCRETE FLOOR WITH EMBEDDED PROJECTING TRUSS
George D. Ratliff, Jr., Churchill Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 397,200
10 Claims. (Cl. 52—339)



7. A composite platform comprising:
parallel, spaced apart trusses, each of said trusses including:
a main beam that has a generally horizontal top flange, a generally vertical web, said web being of variable depth along its length, and a flange plate attached to the bottom of said web, said main beam having a recess in its bottom edge,
a bar extending lengthwise along a portion of the length of said main beam, the ends of said bar being connected to said bottom edge of the main beam and said bar having said ends disposed above its middle portion and being placed with said middle portion substantially in vertical alignment with the portion of the recess in said bottom edge closest to the top flange of said main beam, and
a substantially vertical strut extending upwardly from the said middle portion of said bar to the bottom edge of said main beam,
a sheet of metal supported upon the bottom flange plates of two adjacent trusses, and
a concrete platform supported on said sheet, the webs of said adjacent trusses being embedded in said platform.

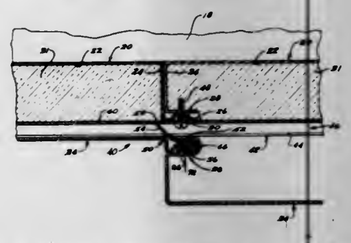
3,300,933
WALL CONSTRUCTION
Arthur J. Donahue, 1853 E. Westmoreland St., Philadelphia, Pa. 19134
Filed Mar. 11, 1964, Ser. No. 351,247
1 Claim. (Cl. 52—368)

A stud and facing panel for use in walls and partitions, said stud including a central core formed of friable material and having a relatively large cross section, a sheet of metal cemented to said core, said facing panel formed of friable material and having a relatively small cross section, an adhesive cement securing said facing panel to said metal sheet, holes formed in said facing panel re-



ceiving screws driven into said metal sheet and said core, holding said core, said metal sheet, and said facing together while the cement is setting, the outer ends of said holes being counter-sunk to receive the heads of the screws flush with the outer side of said facing panel.

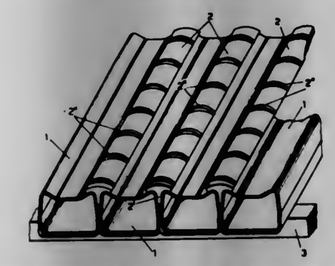
3,300,934
BUILDING OUTER WALL STRUCTURE
Jay C. Walzenhofer, Connersville, Ind., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 5, 1963, Ser. No. 299,695
10 Claims. (Cl. 52—394)



10. In a building outer wall structure, the combination comprising:
an inner metal sheath comprising a plurality of pan sections erected in side-by-side abutting relation, each of said pan sections comprising a web secured to the skeletal framework of a building, side walls extending normally therefrom, an inturned flange contiguous with the end of one of said side walls, and an outturned flange contiguous with the end of the other of said side walls and adapted to overlap the inturned flange of the adjacent one of said pan sections;
spacer means associated with one of said flanges for maintaining said flanges spaced from one another to form a pocket, a strip of sealant material disposed within said pocket for sealing said inner metal sheath;
at least two subgirts in horizontal, spaced-apart, substantially parallel relationship to each other and secured to said flanges of said inner metal sheath, said subgirts being C-shaped whereby an elongated open channel is provided;
a plurality of clip members having a sloped portion including at least two tangs at the end thereof, said clip members being adapted to fit within said channel and transversely thereof whereby said tangs are embedded in the surface of said subgirt, said clip members also having a flat body portion contiguous with said sloped portion and disposed exteriorly of said subgirt, said flat body portion terminating in a reversed turned flange extending parallel with said flat body portion to form a connecting lip; and

an outer metal sheath comprising a plurality of facing sheets each including an outturned flange and an inturned flange terminating in a reversed turned flange, said outturned flange comprising a male lip, said inturned and reversed turned flanges comprising a female lip, said male and female lips extending parallel with said subgirt, said connecting lips of said clip members being positioned within the female lip of one of said facing sheets whereby one side of said sheet is connected to said subgirts, and the male lip of the adjacent one of said facing sheets being positioned within the connecting lip of said clip members and the female lip of said one of said facing sheets.

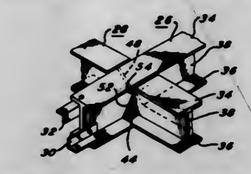
3,300,935
JOINING TUBULAR ROOF BEAMS AND MEANS THEREFOR
Giorgio Marchioli, Via G. B. Morgagni 22, Milan, Italy
Filed May 5, 1964, Ser. No. 364,995
Claims priority, application Italy, May 14, 1963, 10,054/63, Patent 696,106
1 Claim. (Cl. 52—468)



A self-supporting roof structure to be carried by spaced supporting beams, comprising a plurality of elongated, tubular roof beams of asbestos-cement arranged side by side in abutting relationship along a substantial portion of the side walls thereof, and spanning and resting on said supporting beams, each of said roof beams being of generally quadrangular cross-section, said roof beams having side walls with converging upper portions and a top wall which is centrally depressed between said side walls, precast elements in the form of substantially T-shaped butt-straps wedgedly secured between the adjacent roof beams, each butt-strap including a cap bridging the top walls of said adjacent roof beams and a rib depending centrally from said cap and being wedge-shaped in cross-section to fit between said upper portions of the confronting side walls of said adjacent roof beams, to prevent infiltration of water between adjacent roof beams, each cap of each butt-strap having longitudinally spaced ridges extending transversely along the upper surface thereof.
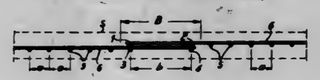
3,300,936
PREFABRICATED STRUCTURE
Michael P. Travaglia, Philadelphia, Pa., assignor to Pre-Fab Patio Systems, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1964, Ser. No. 341,277
5 Claims. (Cl. 52—477)

1. A prefabricated structure comprising an outer frame provided by a plurality of connected elements, a grid comprising a plurality of intersecting longitudinal and transverse members of uniform height confined within said frame and connected with said frame elements, said members defining a plurality of rectangular modules and have interengaging cut-out portions at their intersections providing interlocking means between said members, and a plurality of slab units adapted to be received upon and overlap said grid modules, said frame elements and grid members being composed of light weight metallic material being connected and interlocked to provide a rigid open structure, said members having a cross section with a substantially I configuration and are provided with longitudinally spaced substantially triangular cut-out portions for providing said interlocking means between intersecting members, said longitudinal and transverse members having substantially identical configurations and are positioned with respect to each other so that their inter-



engaging cut-out portions are in inverted relationship to each other, said longitudinal and transverse members each having a top flange and a bottom flange, said longitudinal members having their top flanges provided with said cut-out portions having a substantially V configuration while said transverse members have their bottom flanges provided with cut-out portions having a substantially inverted V configuration for providing said interlocking means between members.

3,300,937
STEEL MAT STRUCTURE FOR REINFORCED CONCRETE SLABS
Andreas van Schyndel, Sturzelberg, near Neuss, and Günther Schmidt, Dusseldorf, Germany, assignors to Bau-Stahlgewebe G.m.b.H., Dusseldorf, Germany, a company of Germany
Filed Jan. 10, 1964, Ser. No. 336,922
Claims priority, application Germany, Jan. 12, 1963, B 70,313
8 Claims. (Cl. 52—581)

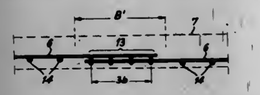


1. In a reinforced concrete structure of the type described, a concrete slab having embedded therein a reinforcing mat, said mat being comprised of a plurality of oblong rectangular mat units each consisting of longitudinal bars of equal diameter and spaced crossbars intersecting and secured to said longitudinal bars, said units being arranged in juxtaposed relation with at least two marginal longitudinal bars of one unit overlying a corresponding overlying marginal bar of an adjacent unit, and the marginal bars on at least one side of said units having a spacing distance in excess of the spacing distance of the intermediate longitudinal bars of the units.

3,300,938
REINFORCING STEEL MAT STRUCTURE FOR CONCRETE SLABS
Andreas van Schyndel, Sturzelberg, near Neuss, and Günther Schmidt, Dusseldorf, Germany, assignors to Bau-Stahlgewebe G.m.b.H., Dusseldorf-Oberkassel, Germany, a company of Germany
Filed Apr. 15, 1964, Ser. No. 359,912
Claims priority, application Germany, Apr. 3, 1963, B 71,400
9 Claims. (Cl. 52—581)

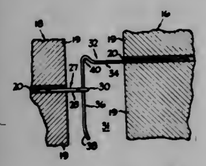
1. In a reinforced concrete structure, a concrete slab having embedded therein a reinforcing steel mat composed of a multiplicity of oblong rectangular mat units each consisting of intersecting longitudinal and cross bars rigidly connected with each other at the intersection points, said units being arranged in juxtaposed and mutually overlapping relation with at least two marginal lon-

gitudinal bars of one unit overlying the corresponding marginal bars of an adjacent unit within the overlap regions of the units, and marginal bars having a spacing distance and diameter differing, respectively and in the



same sense, from the spacing distance and diameter of the intermediate bars of the units, whereby to provide a predetermined, including unity, ratio between the steel cross-section per unit width of said slab within said overlap regions and of said intermediate regions, respectively.

3,300,939
COMBINATION ADJUSTABLE TIE AND JOINT REINFORCEMENT FOR WALL CONSTRUCTIONS
Wilfred Brynjolfsson and William H. Bartlett, Cedar Rapids, Iowa, assignors to Dur-O-Wal National, Inc., a corporation of Iowa
Filed Oct. 17, 1963, Ser. No. 316,990
4 Claims. (Cl. 52—713)



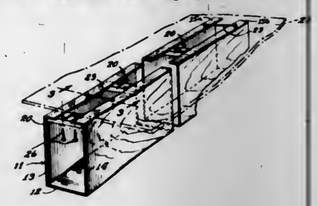
3. A combination wall tie and joint reinforcement structure for use in a two-wythe wall formed of spaced parallel wythes each built up of a plurality of horizontally extending courses of preformed wall elements, comprising: a first joint reinforcement member including longitudinally extending side rods and transversely extending cross rods, said member constructed and arranged for insertion in the mortar course of a wall wythe for reinforcement thereof, said first member having a plurality of tie connecting portions extending outwardly from a side rod and having a connecting means at the outer end thereof, and arranged to be positioned exteriorly of the mortar course of the one wythe for reception of a connecting element; and a plurality of discrete second tie members each having a first portion arranged to be installed in the mortar course of the other wall wythe and a second connecting portion extending outwardly from the first portion in slidable engagement with the connecting means of the first member, whereby the first member may be embedded in a mortar course of one wythe as the preformed elements of the one wythe are bonded together and the plurality of second members may be subsequently independently connected to the connecting portions of the first member as the second wythe is built adjacent the first with said second members being embedded in a corresponding mortar course of the second wythe.

3,300,940
ELONGATED HOUSING
Paul J. Golasz, 5334 S. 73rd Ave., Summit, Ill. 60501
Filed July 13, 1964, Ser. No. 382,248
13 Claims. (Cl. 52—718)

1. A simulated solid beam, comprising, in combination, a sheet material folded to have the edges of the sheet facing one another,

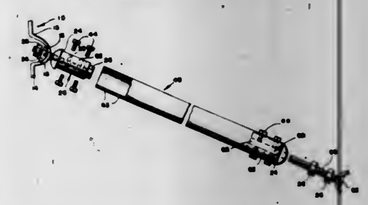
means positioned at spaced points along side edges of said sheet for tensionally urging said edges toward one another and holding said edges in position,

bracket means supporting said beam in position, each said bracket means forming receiving portions of respective ones of said edges,



and spacing means associated with said bracket for spacing said side edges so that said beam assumes its desired cross sectional shape.

3,300,941
OVERHEAD ROD INSTALLATION ASSEMBLY FOR CANOPIES OR MARQUEES
William C. Heirich, 2912 Wauhilah Drive, Muskogee, Okla. 74401
Filed Aug. 6, 1964, Ser. No. 387,830
6 Claims. (Cl. 52—721)



1. An overhead rod installation assembly for use with a marquee construction of the type having a first end attached to a wall and a second end suspended in space and terminating in a facia, comprising:

(A) a wall bracket attached to said wall at an elevation above said marquee;

(B) facia bracket means generally complementary in configuration with respect to said facia and slidably mounted therein;

(C) an overhead rod tubing having an upper end and a lower end;

(D) wall bracket attachment assembly means connecting said wall bracket and said overhead rod tubing, including:

(i) a first support mounted within said upper end of said overhead rod tubing,

(ii) first fastening means securing said first support to said wall bracket permitting said first support to rotate freely with respect to said wall bracket, and

(iii) second fastening means securing said upper end of said overhead rod tubing to said first support permitting said tubing to rotate with said first support in relation to said wall bracket; and

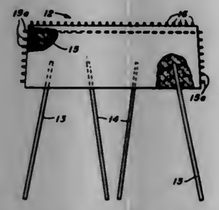
(E) facia bracket attachment assembly means connecting said overhead rod tubing and said facia bracket means, including:

(i) a second support mounted within said lower end of said overhead rod tubing,

(ii) third fastening means securing said lower end of said tubing to said second support, and

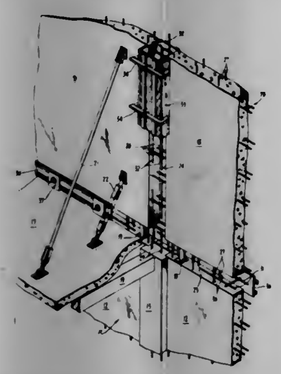
(iii) fourth fastening means securing said second support to said facia bracket means permitting said overhead rod tubing to rotate with said second support in relation to said facia bracket means while also permitting the distance between said second support and said facia bracket means to be varied as said overhead rod tubing is twisted.

3,300,942
METHOD OF CONSTRUCTING NATURAL DRAFT COOLING TOWER
William L. Horstman, Thornburg, Pa., assignor to Dravco Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 10, 1964, Ser. No. 343,867
6 Claims. (Cl. 52—742)



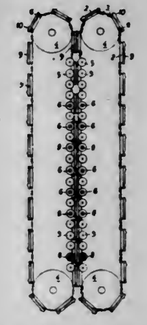
1. In the method of forming a natural draft cooling tower and like structures having a base ring supported on the ground but above ground level, the steps which comprise preforming concrete panel sections with legs attached thereto and with grooved end faces at both ends thereof, raising the sections to a position where the legs slope upwardly and inwardly toward the vertical axis of the tower with the ends of the sections in confronting spaced relation and the sections then forming a substantially circular ring, temporarily supporting the panel sections in such inclined position with props, anchoring the lower ends of the legs to a footer, filling the spaces between the panel sections including the grooved end surfaces with an air-hardening cementitious material to form interlocking keys between the panel ends, and removing the props after the ring is completed and the cementitious material has hardened and they are no longer required.

3,300,943
BUILDING SYSTEM
Sidney W. Owens, San Francisco, Calif., assignor of one-fifth to Albert C. Racine, San Mateo, Calif., and one-fifth to John P. Owens, Alameda, Calif.
Filed Apr. 29, 1964, Ser. No. 363,456
5 Claims. (Cl. 52—744)



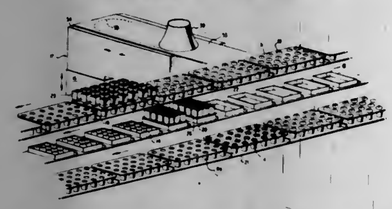
1. A method of building construction comprising positioning vertical spacer members at longitudinally spaced-apart intervals upon a concrete support surface having vertical reinforcing members projecting therefrom, providing a plurality of prefabricated reinforced concrete wall panels in horizontal position adjacent said support surface with each panel having reinforcing members projecting from the edges thereof, raising said panels to longitudinally aligned spaced-apart positions of support upon said spacer members and bracing said panels in said spaced-apart positions to thereby provide vertically extending gaps between adjacent panels and a longitudinally extending gap between said panels and said support surface, reinforcing members of each panel projecting vertically into said longitudinally extending gap and lapping said reinforcing members projecting from said support surface and reinforcing members of adjacent panels projecting longitudinally into said vertically extending gaps in lapped relationship, securing longitudinal reinforcing members to the lapped vertical reinforcing members in said longitudinally extending gaps, securing vertical reinforcing members to the lapped longitudinal reinforcing members in said vertically extending gaps, forming-in said vertically extending and longitudinally extending gaps to thereby provide vertically extending voids between adjacent panels communicating with a longitudinally extending void between said panels and support surface, and filling said voids with concrete by pouring concrete into the upper ends of said vertically extending voids.

3,300,944
METHOD AND APPARATUS FOR MAKING PARALLELEPIPED PACKAGES
Georg Thesing, Dortmund-Schonau, Germany, assignor to Holstein & Kappert, Maschinenfabrik Phoenix GmbH, Dortmund, Germany
Filed July 10, 1964, Ser. No. 381,846
Claims priority, application Germany, July 18, 1963, H 49,746
20 Claims. (Cl. 53—28)



1. In a method of producing parallelepiped packs, filled with fluent material, from a continuous flexible tube filled to a predetermined level with the fluent material and without any preliminary compression of the tube in the region of the transverse edges of the packs to be formed, and with the individual packs being formed by lateral compression of oppositely disposed walls of the tubes at longitudinally spaced intervals corresponding to the desired size of the packs and with the production of transverse seams at such intervals and subsequent severing of the tube in the central zone of the transverse seams: the improvement comprising completely encasing the tube around its entire periphery and over a length thereof at least equal to the preselected length of a pack to deform the tube to a rectangular cross section and to advance the tube solely by frictional contact with the peripheral surface thereof; and, while progressively shaping selected lengths of the tube into interconnected packs of exact parallelepiped form and forming transverse terminal seals between the packs, maintaining a tube advancing tension on the tube not in excess of the frictional force exerted on the tube during initial gripping and shaping thereof.

3,300,945
METHOD AND APPARATUS FOR PACKAGING
Lewis G. Grossi, York, and Albert S. Schmidt, Sr., Wormleysburg, Pa., assignors to Alto Company, York, Pa., a partnership
Filed Sept. 24, 1963, Ser. No. 311,109
13 Claims. (Cl. 53—35)



1. The method of packaging a roll group in an open top box positioned in an upright position in a middle zone, the roll group being alternately depanned from a left pan in a left zone and a right pan in a right zone, which method comprises the steps of

engaging a left roll group in the left pan at their tops while releasing a previously transferred right group from the right pan into a box in the middle zone,

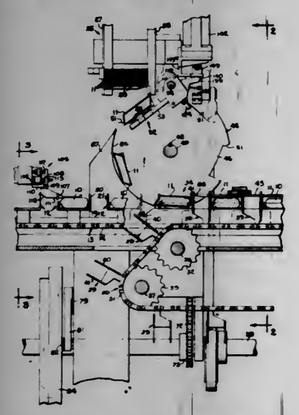
withdrawing and suspendedly transferring the left group to the middle zone while positioning an empty box at the middle zone,

positioning a filled pan at said right zone,

releasing the transferred left group into said empty box while engaging a right group at said filled pan at their tops,

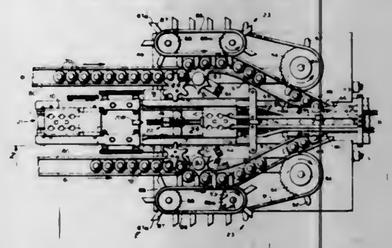
and vice versa.

3,300,946
CARTONING MACHINE
Le Roy L. Martin, Dixon, Ill., assignor to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,983
5 Claims. (Cl. 53—73)



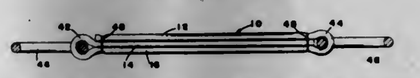
1. In a cartoning machine including first and second carriers mounted on a frame to hold rows of equally spaced and alined articles and cartons respectively, and advance said rows along side by side paths through a carton loading station, the combination of, a magazine for holding a stack of collapsed cartons and releasing the terminal carton in said stack for transfer to said second carrier; mechanism on said frame for transferring cartons from said magazine to said second carrier at a transfer station along said paths in advance of said loading station while erecting the cartons, said transfer mechanism including an arm movable toward and away from said terminal carton through loading and return strokes, and at least one suction element on said arm engageable with the terminal carton when the arm is near the beginning of each loading stroke; a valve movable back and forth between first and second positions relative to said arm and operable in said first position to apply vacuum to said cup and in said second position to vent the cup; control mechanism for alternating said member between said positions in timed relation with the arm motion to apply vacuum to said element near the beginning of each loading stroke and release the vacuum near the end of each return stroke whereby the element grips the terminal carton, pulls the same away from the stack and releases the carton; a device in advance of said transfer station for sensing the absence of articles from the row on said first carrier and producing signals indicating the absence of articles in sensed positions in said row; and additional control mechanism actuated by said signals and operable when actuated to maintain said valve in said second position during a selected loading stroke.

3,300,947
CARTON CLOSING MACHINE
Wolfgang B. Fahrenbach, Oakland, Calif., assignor, by mesne assignments, to King-O-Matic Equipment Corporation, San Francisco, Calif., a corporation of California
Filed May 1, 1961, Ser. No. 106,753
10 Claims. (Cl. 53—186)



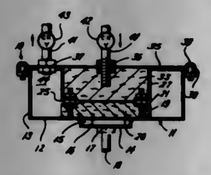
1. In a carton closing machine of the type adapted to operate with a plurality of bottles having crown caps, and a carton therefor having respective top, bottom and end panels, said bottom panel having respective side flaps to overlap the lower ends of the bottles, and top panel having apertured side panel portions hinged thereto and having side flaps, the apertures of said panel portions embracing the necks of said bottles below the crown caps thereof, and said end panels having respective side flaps to overlap the respective side flaps of said top and bottom panels and to be attached thereto by glue, a frame, a single file conveyor associated with said frame for carrying a single file of bottles in abutting relation therealong, a carton conveyor for carrying a carton of the above type in erected fashion along a path, means adjacent said path for feeding a group comprising a plurality of said bottles into an open side of said carton, means adjacent said path for holding a lower side flap of said carton in horizontal position whereby the group of bottles can be fed thereover, means adjacent said path for holding a top side panel portion of said carton in a position to permit the introduction of the bottles therein with the necks of the bottles engaged with the apertures of said side panels and with the crown caps spaced at least partially above said side panel, means operative during the travel of the carton with the bottles therein along its path for closing the side flaps of the end panels, means for applying spots of glue at the top and bottom respectively of each of said end panel flaps, means for thereafter folding the side flaps of the bottom panel up into engagement with the glue-carrying portions at the bottom of said end panel side flaps, and means for bending the top side panel portions downwardly so that they encompass the bottles around the necks thereof below the crown caps, and the side flaps thereof are brought into engagement with the glue spots at the top of the end panel side flaps, and means for holding the respective overlapping side flaps containing the glue therebetween in tight engagement as the carton travels.

3,300,948
BIT FOR HARNESS BRIDLE
Willard C. Beach, R.D. 1, Glen Rock, Pa. 17327
Filed Mar. 10, 1966, Ser. No. 533,292
7 Claims. (Cl. 54—8)



1. A non-metallic bit for a bridle for horses comprising an assembly of a plurality of overlapping plies of a laminated composite strip of a multi-folded band of textile fabric woven from flexible synthetic resin filaments, said plies being substantially co-extensive in length, stitch means securing said plies fixedly in laminated relationship, loop means formed in the outer ends of said assembly of plies, and ring means extending through said loop means for connection of the bit to a bridle, said assembly of connected plies being substantially as thick as the width thereof.

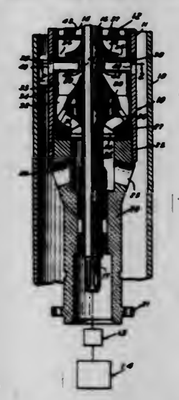
3,300,949
LIQUID-GAS SEPARATOR FOR ZERO GRAVITY ENVIRONMENT
Robert E. Smylie and Frank H. Samonski, Jr., Seabrook, and Frank Collier, Houston, Tex., assignors to the United States of America as represented by the National Aeronautics and Space Administration
Filed Sept. 21, 1964, Ser. No. 398,131
7 Claims. (Cl. 55—35)



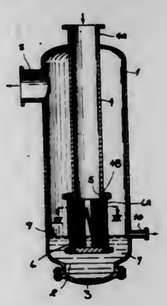
7. A method of separating a gas from a liquid-gas stream comprising the steps of injecting a liquid-gas stream into a first layer of absorptive material which will absorb the liquid while allowing the gas to pass therethrough, removing the gas from said first layer after it has passed therethrough, passing the liquid which is absorbed by said first layer through a second layer of absorptive material which is impermeable to gas, and collecting said liquid after it has passed through said second layer.

3,300,950
CENTRIFUGAL GAS SEPARATOR
Joseph T. Carle, Tulsa, Okla., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 258,080, Feb. 12, 1963. This application Oct. 18, 1965, Ser. No. 505,061
3 Claims. (Cl. 55—199)

1. A gas separator for a submersible well pump comprising: a housing including a separator inlet adapted for communication with a well fluid and a separator outlet adapted for communication with an inlet of a submersible pump, a rotatable impeller adjacent said separator inlet adapted to transfer well fluid from said inlet to said outlet, said impeller including means for imparting a centrifugal force to the well fluid during transfer thereof whereby gases entrained in the well fluid are separated therefrom, a compression tube of generally cylindrical cross section within said housing defining an elongated separation chamber having an inlet adjacent said impeller to receive well fluid and separated gases for flow generally longitudinally through said chamber, a rotatable slinger disposed interiorly of said compression tube in spaced relation to said chamber inlet, said slinger having a diameter smaller than the diameter of said compression tube and forming with said compression tube a generally annular outlet in communication with said separator outlet for delivery of well fluid thereto, and at least one conduit extending through said compression tube intermediate said chamber inlet and said annular outlet and adjacent said slinger, said conduit including an open end communicating externally of said housing and an open end disposed within said chamber generally radially inwardly of said compression tube to allow escape of separated gases from said chamber.



3,300,951
APPARATUS FOR SEPARATION OF LIQUIDS FROM GASES
Karl Wilhelm Sorg, Wiesbaden, and Paul Heimbach, Rodenkirchen, near Cologne, Germany, assignors to Linde Aktiengesellschaft, Wiesbaden, Germany
Filed July 19, 1961, Ser. No. 125,262
Claims priority, application Germany, July 22, 1960, G 30,139
2 Claims. (Cl. 55—355)



1. An apparatus for removing entrained droplets of an oily liquid having a density γ kg./m.^{3} from a gas stream having dynamic viscosity η kg.-sec./m.^{2}, comprising:

a generally cylindrical casing having a substantially vertical axis, a closed bottom and upper and lower casing portions;

means including an overflow passage in said lower casing portion for maintaining therein a body of said

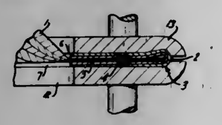
liquid with an upper liquid surface above said closed bottom;

an inlet pipe for supplying said gas stream to said casing having a substantially straight portion extending axially downwardly within said casing and terminating at a lower extremity of said pipe above said liquid surface;

an open-end generally cylindrical gas-permeable screen substantially coaxial with and affixed to said pipe at said lower extremity, while extending downwardly therefrom into said body of liquid below said surface whereby an annular portion of said screen lies between said lower extremity and said upper surface, said inlet pipe having a flow cross-section such that the velocity of the gas stream through said straight portion is of the order of $10^{-9}\times\gamma/\eta$ but less than $15\times10^{-9}\gamma/\eta$ meters/sec., said annular portion of said screen having a through-flow cross-section such that the gas stream passing therethrough has a velocity of the order of $10^{-9}\times\gamma/\eta$ meters/sec. but less than $10\times10^{-9}\gamma/\eta$ meters/sec.; and

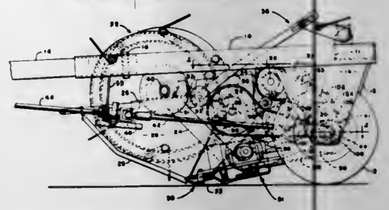
an outlet at said upper portion of said casing for conveying gas therefrom, said casing defining with said inlet pipe an annular chamber receiving gas from said screen, said chamber having a cross-section such that the velocity of the gas stream passing therethrough to said outlet is of the order of $10^{-9}\times\gamma/\eta$ but less than $10\times10^{-9}\gamma/\eta$ meters/sec., said casing being provided with an aperture aligned with said axis at said bottom of said casing and of a diameter sufficient to permit said screen to pass axially therethrough, and a cover registering with said aperture and removably mounted upon said casing for normally closing said aperture to retain said body of liquid in said casing, the exterior surface of said pipe having an inwardly and downwardly beveled lower edge within said screen whereby droplets of liquid along an inner surface of said pipe drip from said beveled lower edge into said body of liquid without contact with said screen.

3,300,952
AIR FILTER HAVING DUCTILE METAL FRAME WITH INTEGRAL LOCK
Robert J. Cuta, Madison, Wis., assignor to Research Products Corporation, Madison, Wis., a corporation of Wisconsin
Original application July 13, 1962, Ser. No. 209,679, now Patent No. 3,252,213, dated May 24, 1966. Divided and this application Sept. 22, 1965, Ser. No. 489,163
2 Claims. (Cl. 55—491)



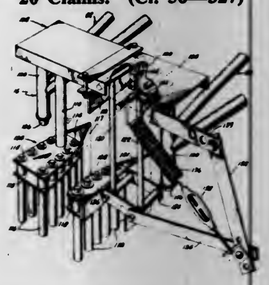
1. An air filter comprising:
(a) a crushable filter body of substantial thickness having a defined partially compacted peripheral edge,
(b) a ductile generally planular metal frame disposed over the edge of said filter body and with said frame comprising a pair of generally parallel legs joined along one edge,
(c) the ends of said frame being overlapped,
(d) and a lock integral with said overlapped ends and said filter body for holding the said ends together,
(e) said lock comprising a predetermined limited substantially imperforate area wherein the layers formed by said overlapped ends of said frame and of said filter body are intermingled indiscriminately at random in the plane of the frame.

3,300,953
HAY HARVESTER
Emmett F. Glass, Akron, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Dec. 11, 1964, Ser. No. 417,688
8 Claims. (Cl. 56—23)



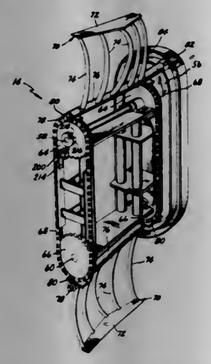
1. A harvesting machine for hay or the like comprising a mower having a first rotatable power receiving member, a reel having a second rotatable power receiving member, a crop conditioning roll having a third rotatable power receiving member, a rotatable drive shaft, a first drive member fixed on said drive shaft for rotation therewith, a second drive member journalled on said drive shaft for rotation relative thereto and disposed adjacent one side of said first drive member, a third drive member journalled on said drive shaft for rotation relative thereto and disposed adjacent the opposite side of said first drive member, means interconnecting said first drive member and said first rotatable member and transmitting driving power therebetween, means interconnecting said second drive member and said second rotatable member and transmitting driving power therebetween, means interconnecting said third drive member and said third rotatable member and transmitting driving power therebetween, and overrunning clutch means driving said second and third drive members from said first drive member upon rotation of said drive shaft and freeing said second and third drive members to overrun said first drive member and said shaft upon stoppage of the drive shaft.

3,300,954
APPARATUS WITH SENSING MECHANISM FOR USE IN HARVESTING LETTUCE
Kenneth K. Barnes, Tucson, and Billie L. Harriott, Mesa, Ariz., assignors to Arizona Research Foundation, Inc., Tucson, Ariz., a corporation of Arizona
Filed Nov. 8, 1963, Ser. No. 322,446
20 Claims. (Cl. 56—327)



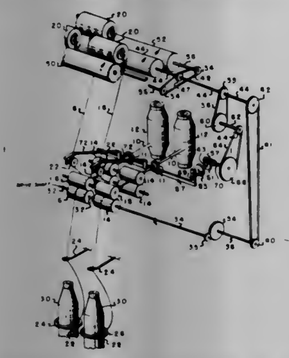
1. A vegetable head harvester comprising:
(a) a vehicle;
(b) sensing means including a pair of relatively movable head engaging units mounted to move laterally away from each other on said vehicle for distinguishing the mature vegetable heads in a row of heads to be harvested, and
(c) means mounted on said vehicle responsive to the lateral spacing of the units of said sensing means for cutting the mature heads sensed by the sensing means.

3,300,955
APPARATUS WITH CUTTING MECHANISM FOR USE IN HARVESTING LETTUCE
Kenneth K. Barnes, Tucson, Ariz., assignor to Arizona Research Foundation, Inc., Tucson, Ariz., a corporation of Arizona
Filed Nov. 8, 1963, Ser. No. 322,466
14 Claims. (Cl. 56—327)



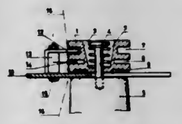
1. A cutting and conveying mechanism for a vegetable harvester comprising:
(a) a cradle for holding a vegetable head;
(b) a knife edge defining one terminal edge of said cradle;
(c) means for moving said knife edge along and substantially parallel to a row of vegetable heads to be harvested, and
(d) means to move said knife edge transversely of the row of heads,
(e) whereby a vegetable head is severed from its stalk and then moved away from the row.

3,300,956
CORE-SPINNING APPARATUS
Jack T. Phillips, Honea Path, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed July 24, 1964, Ser. No. 384,841
7 Claims. (Cl. 57—12)



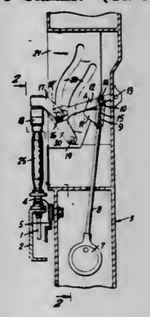
1. A core-spinning frame comprising: a foot end and a head end, a drafting system operably associated with said frame, said drafting system including a plurality of pairs of rolls in nip forming engagement, one roll of each said pairs of rolls being mounted on a rotatably mounted shaft, means supplying a strand of fiber to the nip of each of said pair of rolls, a supply of an elastic filamentary material, means rotatably supporting a plurality of delivery rolls on said frame, said supply of elastic filamentary material being mounted on said delivery rolls, means rotating said delivery rolls to supply elastic filamentary material to the nip of each of said pairs of rolls, means rotating said shaft, said means rotating said delivery rolls being interconnected to said shaft on the foot end of said frame, twisting means receiving fiber and elastic filamentary material from said drafting system to twist and wrap said fiber material around said elastic filamentary material, said shaft having an extension beyond the drafting system toward the foot end of said frame, and said means rotating said delivery rolls includes a draw change gear connected to the extension of said shaft beyond said drafting system.

3,300,957
DEVICE FOR FASTENING A YARN END TO A TUBE OF A SPINNING OR TWINING MACHINE
Herman Hendrik Wind, Enschede, Netherlands, assignor to N.V. Mij. voor Industriele Research en Ontwikkeling, Enschede, Netherlands, a corporation of the Netherlands
Filed Mar. 24, 1964, Ser. No. 354,248
Claims priority, application Netherlands, Apr. 8, 1963, 291,286
12 Claims. (Cl. 57—34)



1. A device for fastening a yarn in a spinning or twining machine, comprising a tube having a flat top end, a coaxial clamping element mounted on the tube end, a spring to press the bottom surface of the element against the top surface of the tube end, and a plate-shaped inserter, movable so that it can be brought between the tube end and the clamping element.

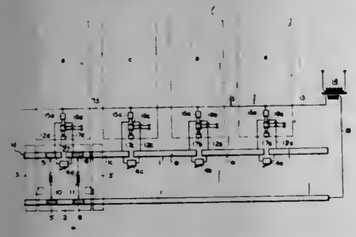
3,300,958
BOBBIN REMOVAL MECHANISM FOR SPINNING MACHINES
Siegfried Roller, Fellbach, and Gustav Idler, Strumpfelbach, Germany, assignors to Firma C. Eugen Maier Metallverarbeitung G.m.b.H., Fellbach, Germany
Filed Jan. 8, 1964, Ser. No. 336,453
Claims priority, application Germany, Jan. 16, 1963, M 55,449
6 Claims. (Cl. 57—53)



1. In a spinning machine including a spindle frame with a carriage moving along said frame, the improvement comprising a bobbin change device comprising; a lifting lever pivotally mounted at its one end on said carriage, a bobbin gripper mounted on the other end of said lifting lever, means for lifting said lifting lever

for the purpose of removing a bobbin from a spindle including an element engageable with said lever at a location spaced at a relatively large distance from the pivotal connection of said lever to said carriage for exerting a relatively large force at the initial stages of the lifting of said bobbin and an element engageable at a location spaced relatively close to the pivotal connection of said lever to said carriage for applying a relatively small lifting force to said lever after the initial stages of lifting of said bobbin.

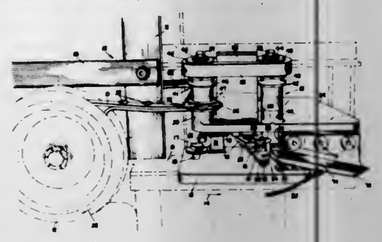
3,300,959
CONTROL FOR AUTOMATED SPINNING MACHINE
Teruo Fujihara, Osaka, and Yoshikazu Suzuki, Kariya, Japan, assignors to Toyoda Automatic Loom Works, Ltd., Kariya, Japan, and Kanegafuchi Boseki Kabushiki, Tokyo, Japan
Filed Mar. 30, 1964, Ser. No. 355,595
Claims priority, application Japan, Apr. 5, 1963, 38/18,315
3 Claims. (Cl. 57—53)



1. In a control system for controlling a carriage movable along a pair of guiding rails disposed in parallel relationship on one side of a plurality of aligned spinning machines and equipped with an automatically operating device for use with the spinning machines, said carriage including a pair of movable parallel rails capable of being operatively connected to a pair of stationary parallel rails disposed on each of the spinning machines, said automatically operating device advancing toward the associated spinning machine to perform the required operation after said pair of movable rails have been operatively connected to said pair of stationary rails, the combination of a call switch for each spinning machine responsive to an operating condition thereof to form an electrical rail circuit including those portions of said guiding rails located on that side of the carriage on which the spinning machine having its call switch operated is located, a pair of starting relays on said carriage included in said rail circuit, a driving motor disposed on said carriage, means for preventing one of said starting relays from operating during energization of the other relay, means including said driving motor to move said carriage to that spinning machine having its call switch operated, and means for automatically connecting said pair of movable rails to said pair of stationary rails at the moved position of said carriage.

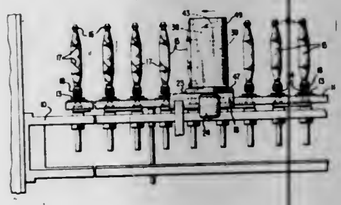
3,300,960
YARN CONTROL MECHANISM
Waldo H. Banks, 20 Prospect St., and Louis Philip Authier, 14 Park St., both of Hopedale, Mass. 01747
Filed May 13, 1965, Ser. No. 455,424
7 Claims. (Cl. 57—53)

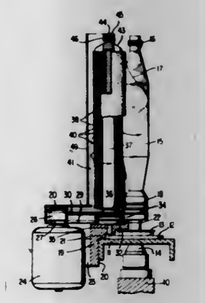
1. A yarn control mechanism adapted to cut the ends of strand material wound on bobbins disposed on a row of spindles supported on a machine which comprises:
(a) a carriage with means for mounting the latter on said machine to move along a path parallel to said spindles,
(b) a bobbin raising cam movable with said carriage to raise said bobbins from a fixed position on said spindles to a rotatable position thereon,



(c) a cutting means for parting the ends of said strand material, and
(d) means for effecting rotation of said bobbins in order to place said ends of strand material in said cutting means.

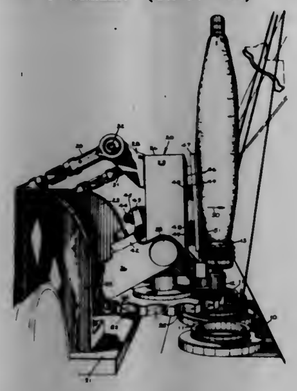
3,300,961
METHOD OF AND APPARATUS FOR CONDITIONING BOBBINS IN SPINNING FRAMES
Coy V. Jones, Sr., Greer, and Otto E. A. Edler, Greenville, S.C., assignors to Southern Machinery Company, Greer, S.C., a corporation of South Carolina
Filed July 29, 1964, Ser. No. 385,896
16 Claims. (Cl. 57—54)





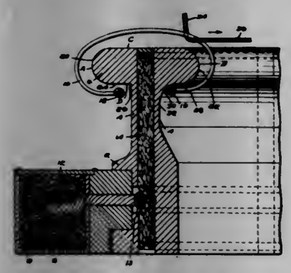
5. Apparatus for coaction with a spinning frame to condition bobbins on said frame comprising a mobile support member having guided engagement along the spinning frame, means on said member engageable with the bottoms of bobbins to elevate them slightly on their spindles to free them for rotation, and rotary means on said member including spaced rotary drive elements to engage each bobbin in succession during movement of the support member along the frame to first turn each bobbin in one direction and then in a second direction and then again in said first direction to cause breaking, unwinding and rewinding into a tip bunch of the bobbin tail end.

3,300,962
YARN SEVERING MECHANISM
Herman Haagsma, Whitinsville, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Mar. 31, 1965, Ser. No. 444,262
9 Claims. (Cl. 57—54)



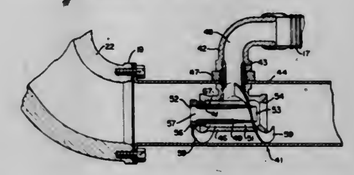
1. A yarn control mechanism adapted to sever the ends of strand material wound on bobbins disposed on a row of spindles supported on a machine which comprises:
(a) a carriage with means for mounting the latter on said machine to move along a path parallel to said spindles,
(b) a bobbin raising cam movable with said carriage to raise said bobbins from a fixed position on said spindles to a rotatable position thereon,
(c) means for clamping the end wind of said strand material to the base of each spindle as said carriage moves thereby, and
(d) a further means for causing rotation of said bobbins while clamping said strand material to sever its connection thereto.

3,300,963
HORIZONTAL SPINNING RING AND TRAVELER
Andrew J. Wayson, Needham, Mass., assignor to Merriman, Inc., a corporation of Massachusetts
Filed Mar. 11, 1964, Ser. No. 351,103
2 Claims. (Cl. 57—120)



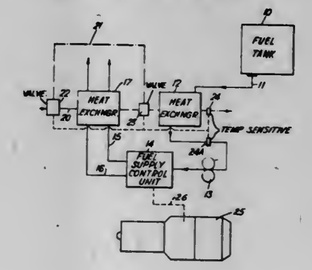
1. In combination, a horizontal type spinning ring, a circular web supporting said ring having a circular interior wall and a circular exterior wall, said ring having an interior circular under side, a circular surface extending outwardly and downwardly from said under side to said interior wall, said ring having an outer under side which meets with the upper portion of the circular exterior wall of said web, a traveler on said horizontal ring, said traveler having a covering of synthetic material on its inner end, the configuration of said traveler being such that when said synthetic covered inner end is in engagement with said circular surface and the rest of said traveler is in normal operating attitude no other part of said traveler will touch said ring.

3,300,964
ANTI-SMOG DEVICE
Edward R. Knopp, 7884 Wyandot St., Denver, Colo. 80221
Filed June 14, 1965, Ser. No. 463,610
4 Claims. (Cl. 60—30)



1. An anti-smog device for use on the exhaust system of internal combustion engines in position adjacent the exhaust valves thereof for inducing the more complete combustion of unburned products included in the heated gaseous discharge from said engine comprising a gaseous discharge flow conduit, a duct member disposed to extract a bleed portion of said gaseous discharge at a position upstream with respect to the main components of said device, a flow constriction downstream therefrom, an air tube disposed to deliver a quantity of makeup air to said device, means within said device for introducing a part of said makeup air into said bleed portion of said discharge gases at a point upstream from said flow constriction, a chamber downstream from said point of introduction for the initial premixture or combustion of said unburned products, means for the introduction of the remainder of said makeup air in a zone ahead of said flow constriction for passage therethrough, and an outlet from said flow constriction disposed centrally of said flow conduit, whereby an oxygen rich mixture from said flow constriction is subsequently discharged centrally of the flow passage for said discharge gases and in the turbulence zone downstream from said flow constriction.

3,300,965
GAS TURBINE ENGINE FUEL HEATING AND OIL COOLING SYSTEM
William Sherlaw, Mapperley, and George Kenneth Hensman, Allestree, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Mar. 29, 1965, Ser. No. 443,531
Claims priority, application Great Britain, May 8, 1964, 19,405/64
5 Claims. (Cl. 60—39.08)



1. A gas turbine engine fuel heating and oil cooling system comprising first and second heat exchangers; a fuel supply control unit for controlling a supply of fuel

to the engine in accordance with at least one engine variable; conduit means for passing fuel successively through the first heat exchanger, the fuel supply control unit, and the second heat exchanger; and ducting for passing engine oil as desired through at least one selected heat exchanger, the said ducting comprising a by-pass passage which by-passes the second heat exchanger and valve means controlling flow through the said by-pass passage, the engine oil passing through the said first heat exchanger in all positions of the said valve means.

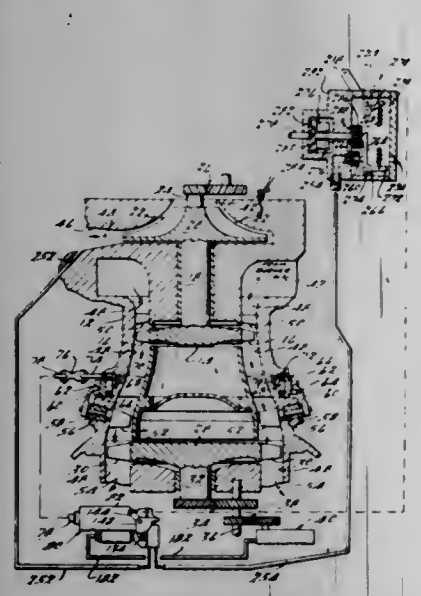
3,300,966

CONTROL MECHANISM FOR ADJUSTABLE GAS TURBINE NOZZLE

Alexander Chadwick, Farmington, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Original application Jnne 4, 1963, Ser. No. 285,341, now Patent No. 3,252,686, dated May 24, 1966. Divided and this application Sept. 24, 1965, Ser. No. 490,022

3 Claims. (Cl. 60—39.16)



1. In a multiple stage gas turbine engine having a compressor driving rotor in one stage and a power rotor in a subsequent stage, an air compressor driven by said compressor driving rotor for supplying combustion air to said engine, means for supplying motive gases to said rotors to rotate the same, manually positionable throttle means for supplying fuel to said engine, means for conducting motive gases to said rotors to rotate the same, adjustable nozzle means interposed in the path of said gases and shiftable to adjust the angle of contact therewith to vary the power imparted to said power rotor by said gases, one of the positions of adjustment of said nozzle means comprising an acceleration position for imparting comparatively low power to said power rotor while causing a comparatively high power to be imparted to said compressor rotor, control means for adjusting said nozzle means including pressure responsive piston means operatively connected to said nozzle means, a servo valve mechanically movable to various positions for adjusting the position of said pressure responsive means in accordance therewith, lever means responsive to the position of said throttle means for abutting against said servo valve in order to adjust the position of said servo valve and said piston means and adjust said nozzle means in accordance with the position of said throttle means, and additional pressure responsive abutment means effective only during periods of engine acceleration for abuttably engaging and varying the position of said lever means from that position indicated by the position of said throttle means during such periods of engine acceleration.

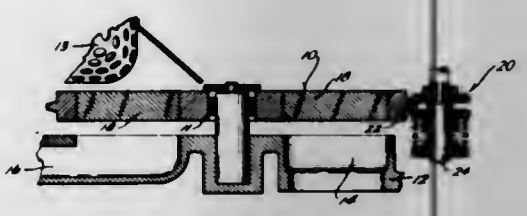
3,300,967

TRACTION DRIVE FOR CERAMIC REGENERATORS

Robert L. Trapp, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

Filed July 2, 1965, Ser. No. 469,201

11 Claims. (Cl. 60—39.51)



2. A drive for a rotary disc-type heat regenerator used with a gas turbine engine, said drive comprising a shaft having a splined portion, a first member including a flange, an internally splined portion slidably engaged with said shaft splined portion and an externally splined portion, a second member having a flange and an internally splined portion slidably engaged with said externally splined portion of said first member, and means for affording driving enegagement of said flanges with the outer periphery of the rotary disc-type regenerator.

10. A drive for a rotary disc, said drive comprising a shaft, a first member having means for engaging the outer periphery of the rotary disc, means mounting said first member on said shaft for rotation with and for axial movement relative to said shaft, a second member having means for engaging the outer periphery of the rotary disc, means mounting said second member on said first member for rotation with and for axial movement relative to said first member, and means for affording driving engagement of said engaging means with the outer periphery of the rotary disc.

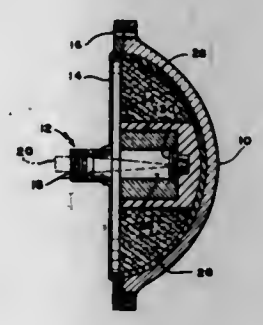
3,300,968

LASER INITIATED ROCKET TYPE IGNITER

Carl H. Fullman, Santa Clara, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Aug. 4, 1964, Ser. No. 387,537

2 Claims. (Cl. 60—39.82)

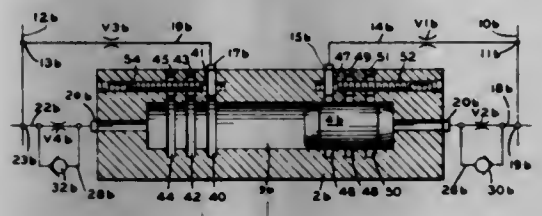


1. A laser initiated rocket type rocket igniter comprising an igniter casing, a recessed body of rocket propellant material in said casing, an initiator train in said recess, said initiator train having a heat sensitive primer, a lens holder, a lens system in said lens holder capable of collecting laser beams originating outside of the device, beaming them down said recess and bringing them to a focus upon said heat sensitive primer to ignite said train, a fast burning propellant material dispersed through said rocket propellant in finger like protuberances for carrying the ignition of said train to said propellant body, the high temperature gases thus formed bursting said lens system, and lens holder becoming a rocket nozzle for the expulsion of said gases.

3,300,969
CAVITATION MINIMIZER

Donald M. Barden, Windsor, Vt., assignor to Bryant Chucking Grinder

Filed July 6, 1965, Ser. No. 469,524
8 Claims. (Cl. 60—52)

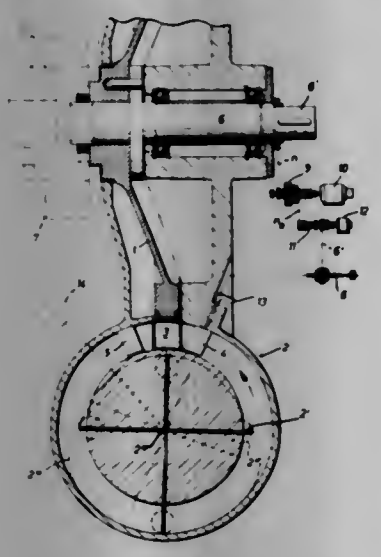


1. A system for controlling the operation of a fluid actuated motor comprising;
a fluid actuated motor;
a fluid reservoir;
a volumetric pump;
a fluid supply line and a fluid return line connecting said reservoir, said pump and said motor;
valve means connected between said motor and said pump and reservoir for controlling the flow of fluid to and from said motor;
a fluid cylinder connected between said fluid supply line and said fluid return line, said fluid cylinder including;
a chamber;
a free floating slidably movable piston in said chamber;
a plurality of port means on said cylinder connecting said chamber of said cylinder and said fluid supply line and said fluid return line, respectively; whereby fluid in said chamber on one side of said piston is forced into said fluid supply line to control cavitation defects when said controlling valve means prevents flow of fluid to said motor.

3,300,970
TORQUE CONVERTER

Hans Lindemann, Grossdornberg, Germany, assignor to Th. Calow & Co., Bielefeld, Germany

Filed Apr. 5, 1965, Ser. No. 445,617
6 Claims. (Cl. 60—54)

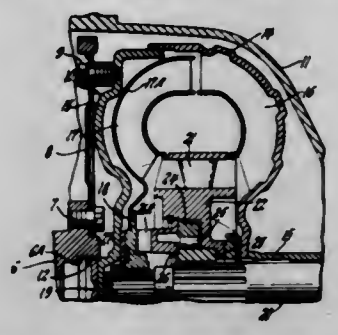


1. A torque converter comprising a pump for producing a circulating flow of a fluid and a turbine which is driven by said flow, the axes of rotation of said pump and said turbine being located substantially within parallel planes and displaced by 90° relative to each other in such manner that said turbine enters the cycle of said fluid only with one portion of the blades of said turbine so that said pump and said turbine interact like the worm and worm gear of a worm gearing.

3,300,971
PRELOADED TORQUE CONVERTER

Jack W. Quatman, Ann Arbor, and Earl L. Egbert, Northville, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,222
13 Claims. (Cl. 60—54)

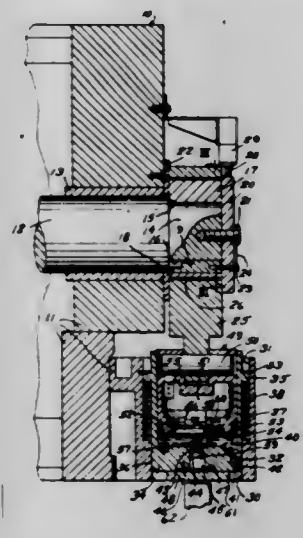


1. In a hydraulic torque converter of the type having an engine driven cover and impeller and having a turbine and a reaction member, a power delivery shaft driven by said turbine, said turbine and reaction member being axially movable with respect to said cover in response to hydraulic forces developed in said converter, preloaded biasing means for biasing said turbine and reaction member into axial spaced relationship with respect to said cover, whereby said turbine is maintained in axially spaced relationship with respect to said cover irrespective of hydraulic forces developed in said converter.

3,300,972
PRESS RAM ASSEMBLY

Arthur K. Schott, Clarence, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

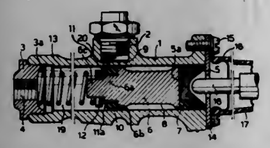
Filed June 25, 1965, Ser. No. 467,043
7 Claims. (Cl. 60—54.5)



1. A ram assembly comprising in combination:
(a) a reciprocable hollow cylinder having an external ram surface;
(b) a piston reciprocably driven in and guided by said cylinder in power and return strokes, said piston being hollow and having a chamber formed therein with a valve seat opening confronting and communicating with the interior of said cylinder, said chamber and the interior of said cylinder being adapted to jointly contain a liquid;
(c) a valve movably mounted in said cylinder, said valve being engaged by said piston once during every power stroke thereof and operative to seal a quantity of the liquid in said cylinder against flow into said piston chamber, and being disengaged from said piston once during each return stroke;
(d) means continually urging said valve toward said opening; and

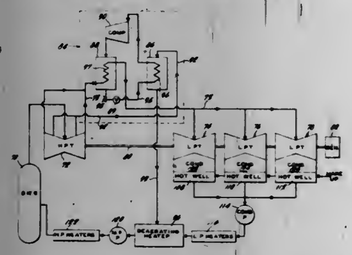
(e) means continually urging said cylinder in the direction of said return stroke.

3,300,973
MASTER CYLINDER
Philip Sidney Baldwin, Florence, Italy, assignor of one-half to Fiat Società per Azioni, Turin, Italy
Filed July 12, 1965, Ser. No. 471,104
Claims priority, application Italy, July 22, 1964, 16,385/64
2 Claims. (Cl. 60—54.6)



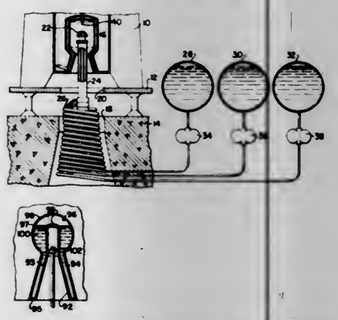
1. A master cylinder for a hydraulic brake system of a motor vehicle, the master cylinder having a fluid supply port in a wall of the cylinder in communication with a source of hydraulic fluid supply, a compression chamber in the cylinder, a piston slidable within the cylinder having sufficient clearance with the cylinder wall to permit ready passage of fluid between the piston and the cylinder, an axial cylindrical extension of lesser diameter than the piston on an end of the piston adjacent the compression chamber with a shoulder forming a radial wall between the extension and the remaining portion of the piston, a resilient combination valve and sealing ring carried by the cylindrical extension of the piston with radial clearance therebetween, the ring contacting the cylinder wall to seal the piston between the compression chamber and fluid supply port and control flow through the fluid supply port in the cylinder wall on a compression stroke of the piston, a dished member carried by the piston on a second reduced diameter extension outwardly of the cylindrical extension, a piston return spring biasing the dished member toward the cylindrical extension while leaving an axial space between the dished member and the ring when the ring is against the radial wall, the improvement comprising a resilient member interposed in the axial space between the dished member and resilient ring biasing the resilient ring against the radial wall.

3,300,974
REHEAT CYCLE FOR STEAM TURBINE POWER PLANTS
Frank M. Reed, 1537 Mineral Spring Road, Reading, Pa. 19602, and George F. Bierman, 1519 Linden St., Reading, Pa. 19604
Filed Oct. 19, 1964, Ser. No. 404,870
4 Claims. (Cl. 60—73)



1. A steam turbine power plant comprising:
a steam path;
a boiler including evaporating and superheating portions connected in and providing a part of said steam path;
a plurality of steam turbines connected in and providing a part of said steam path;
a steam line from said steam path for bleeding working steam from said steam path after some work has been performed by the steam in the steam path; and
reheater means connected between different ones of said steam turbines in said steam path comprising a closed cycle steam route, a first heat exchanger in said steam route and coupled to said steam line to adsorb heat from said bled steam for heating steam in said steam route, a compressor located after said first heat exchanger, a second heat exchanger located after said compressor in said steam route and coupled to said steam path for transferring heat from steam in said steam route to steam in said steam path, and a restriction located after said second heat exchanger for providing a pressure change of said steam in said steam route.

3,300,975
PROTECTIVE APPARATUS FOR A ROCKET MOTOR
Orville R. Seidner, Alhambra, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Original application June 13, 1955, Ser. No. 515,183, now Patent No. 2,962,934. Divided and this application May 10, 1965, Ser. No. 454,307
10 Claims. (Cl. 60—207)

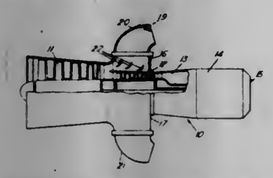


2. Protective heat transfer means for a rocket motor having a propellant nozzle therein connected with a propellant supply conduit arranged in heat exchange relation with said rocket motor comprising a liner within said rocket motor and spaced from the walls of said motor; means connecting said liner with the side walls of said rocket motor; said liner being composed of a material which disintegrates with the application of heat of combustion of propellants; means independent of said propellant conduit for supplying propellants to the interior of said liner; said liner and said independent propellant supply means being operable for producing thrust before operation of said rocket motor.

3,300,976
COMBINED GUIDE VANE AND COMBUSTION EQUIPMENT FOR BYPASS GAS TURBINE ENGINES
John Frederick Coplin, Littleover, Derby, England, assignor to Rolls-Royce Limited, Derbyshire, England, a company of Great Britain
Filed Jan. 27, 1965, Ser. No. 428,443
Claims priority, application Great Britain, Feb. 21, 1964, 7,470/64
6 Claims. (Cl. 60—224)

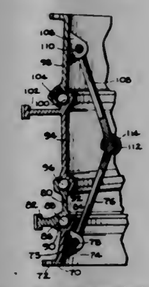
1. A gas turbine engine comprising the combination of: compressor means, combustion equipment, turbine means and exhaust nozzle means, all in flow series,

bypass ducting connected to said compressor means for receiving compressed air therefrom,
at least one nozzle mounted at a terminal end of said bypass ducting, said nozzle being rotatable to vary the direction of jet efflux therefrom,
at least one gas-deflecting, aerofoil-shaped guide vane over which air is adapted to flow laminarly, said guide vane being disposed in said ducting to deflect compressed air into said nozzle,



means for introducing fuel into the air stream to flow laminarly over the guide vane, and
means located in said guide vane for introducing air under pressure into the laminar stream of fuel and air flow over said guide vane to provide a turbulent, combustible fuel/air mixture.

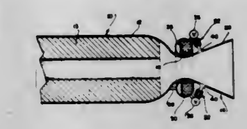
3,300,977
GIMBAL DEVICE WITH ROTARY CAM RING SECTIONS
Mark I. Hoffman, Solano Beach, and Thomas E. Cowell, Woodland Hills, Calif., assignors to North American Aviation, Inc.
Filed Aug. 24, 1964, Ser. No. 391,394
10 Claims. (Cl. 60—228)

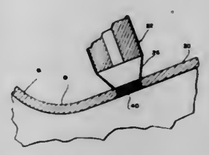


1. A gimbal device for transmitting thrust between an engine and a missile comprising;
a first annular wedge-shaped member adapted to rotate relative to said engine and to be attached thereto,
a second annular wedge-shaped member adapted to rotate relative to and to be attached to both said missile and said first member;
whereby when either of said members is rotated, the engine will gimbal relative to said missile.

3,300,978
DIRECTIONAL CONTROL MEANS FOR ROCKET MOTOR
William Pennington, Los Angeles, Calif., assignor, by mesne assignments, to Lockheed Aircraft Corporation, Burbank, Calif., a corporation of California
Filed June 18, 1962, Ser. No. 203,070
2 Claims. (Cl. 60—231)

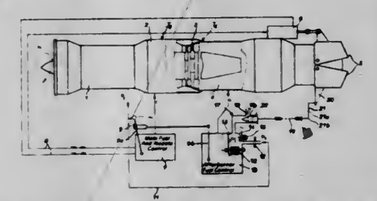
1. In a rocket motor having a convergent-divergent nozzle, thrust vector control apparatus comprising: auxiliary hybrid rocket motors disposed adjacent to the nozzle, said motors being loaded with a solid propellant component and fed with a liquid propellant component; passage means in the divergent wall of the nozzle for injecting hot gas from the auxiliary motors into the primary exhaust gas; valve means for selectively introducing and regulating the flow of the liquid propellant component to the auxiliary motors, thereby controlling the rate of hot gas injection into the nozzle so as to produce the desired





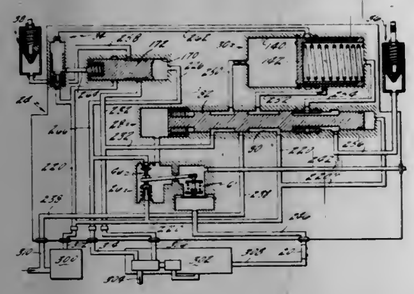
deflection of the thrust vector; and wherein the passage means comprise porous sections having pores of such diameters as to minimize the possibility of flow of the primary exhaust gas into the auxiliary motors when they are inoperative.

3,300,979
APPARATUS FOR CONTROLLING THE AFTERBURNER LOAD OF A JET ENGINE ACCORDING TO THE JET PIPE APERTURE
Jacques Aubert, Chatenay-Malabry, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Oct. 21, 1964, Ser. No. 405,537
Claims priority, application France, Oct. 23, 1963, 951,560
4 Claims. (Cl. 60—237)



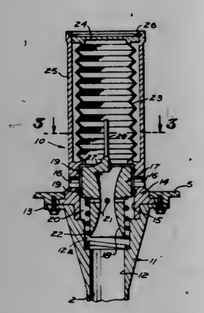
1. In a turbojet having: an afterburner, a variable-area nozzle provided with movable elements for varying the area thereof between a maximum opening position and a minimum opening position, a nozzle control system for adjusting the position of said movable elements, and an afterburner fuel supply system which includes an afterburner control comprising an afterburner fuel flow meter, a source of fluid at a pressure responsive to an operative parameter of the turbojet, an enclosure, a connection between said source and said enclosure, a restriction in said connection, a constant restricted leak passage communicating with said enclosure, and operating means extending between said enclosure and said meter for actuating said meter by said pressure fluid, the arrangement being such that the fuel flow varies with the fluid pressure in said enclosure; a correcting device for limiting said afterburner fuel flow when said nozzle is in said maximum opening position, comprising a further restricted leak passage communicating with said enclosure, obturating means for closing said further restricted leak passage, control means for actuating said obturating means so as to open said further restricted leak passage, and means under the control of said movable elements of said nozzle for actuating said control means by said movable elements in a position near to said maximum opening position.

3,300,980
AFTERBURNER IGNITER IN GAS TURBINE ENGINE
Henry L. Lussier, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,219
13 Claims. (Cl. 60—241)



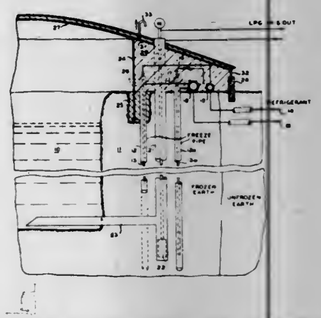
1. A jet engine including a combustion chamber, means for supplying fuel to the combustion chamber to be burned therein, and an afterburner into which gas containing oxygen is delivered, first means for supplying fuel to the afterburner to be burned therein, and means for igniting the mixture of fuel and gas therein, said last-named means including first valved means for controlling a flow of igniting fuel to the afterburner through a second fuel supply means at a location between said combustion chamber and said first means for supplying fuel to the afterburner, means for injecting a predetermined amount of igniting fuel into said combustion chamber, means actuating said first valved means for initiating flow of igniting fuel to the afterburner through said second fuel supply means, second valved means connected to said means for injecting a predetermined amount of igniting fuel to provide for its actuation after said first means for supplying fuel to said afterburner has started to supply fuel.

3,300,981
ZERO GRAVITY STARTING MEANS FOR LIQUID PROPELLANT MOTORS
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Richard N. Porter
Filed Jan. 7, 1965, Ser. No. 424,157
9 Claims. (Cl. 60—259)



1. The combination with a rocket motor and liquid propellant tank interconnected by a valve controlled supply line and means for introducing a pressurizing gas into said tank, of a starting means interposed between said tank and said supply line, said starting means comprising:
(a) a collapsible container for a predetermined volume of liquid propellant mounted within said tank, exposed externally to pressures within said tank and communicating with said supply line;
(b) valve means movable, in response to predetermined movement of a wall of said collapsible container, between a closed position isolating said tank from said supply line and an open position establishing communication therebetween;
(c) and means operable on discharge of a predetermined quantity of liquid propellant from said collapsible container to open said valve means for continued flow of liquid propellant from said tank.

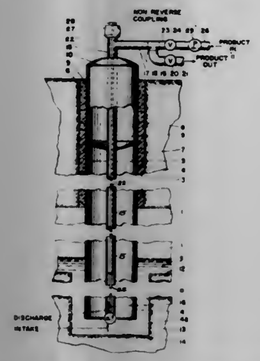
3,300,982
STORAGE OF VOLATILE LIQUIDS
Leonard P. Meade, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,831
3 Claims. (Cl. 61—.5)



1. An earthen storage system for normally gaseous liquid comprising an open-topped earthen reservoir in frozen earth; freeze pipes vertically positioned in the earth around the periphery of said reservoir to maintain the walls of the reservoir frozen; a first vertical, enclosing, vapor-impermeable wall frozen to the earth around the periphery of the reservoir between the reservoir and freeze pipes; an insulated roof covering said reservoir supported by and sealed to said first wall; a second vertical, vapor-impermeable wall sealed to the unfrozen earth around said first wall and spaced from said first wall so as to enclose said freeze pipes; a vapor-impermeable cover sealed to said second wall and said roof so as to enclose said freeze pipes in a vapor-tight space; and a vent communicating between the atmosphere and the space beneath the cover and between said first and second walls.

3,300,983
SUBTERRANEAN CAVERN PUMP ARRANGEMENT
Patrick F. Dougherty, Chester Heights, and George M. Closs, Bryn Mawr, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Mar. 2, 1964, Ser. No. 348,742
7 Claims. (Cl. 61—.5)

1. In a subterranean cavern for storing a fluid at superatmospheric pressure: a fluid transfer pipe extending from the surface of the earth downwardly to the bottom of said cavern, a fluid transfer pump mounted at the lower end of said pipe for pumping fluid from said cavern upwardly through said pipe to the surface, said pump having its intake at the lower end of said pipe; pump means coupled to said pipe for producing a pressured flow of fluid downwardly through said pipe from the surface and downwardly through said pump into said cavern for



storage therein, and means coupled to said pump for preventing rotation thereof as a result of fluid flowing downwardly therethrough.

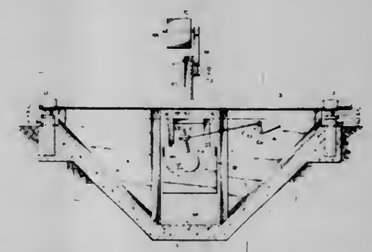
3,300,984
SUBTERRANEAN DAM AND METHOD OF MAKING THE SAME
Arthur L. Armentrout, 455 E. Ocean Blvd., Long Beach, Calif. 90802
Filed July 5, 1966, Ser. No. 562,900
5 Claims. (Cl. 61—1)



1. A subterranean aquifer dam structure including, a plurality of wells in spaced relationship across the lateral extent of the aquifer and having casings with perforations communicating with the aquifer, said wells entering the earth's formation above said aquifer, extending downwardly through the aquifer and entering the formation below the aquifer and a plurality of vertically spaced, horizontal deposits of damming material extending radially into the aquifer from the perforations in each well casing, the deposits of each well being intimately joined together and with the deposits of each adjacent well and establishing an impervious dam in the aquifer.

3,300,985
AUTOMATIC IRRIGATION GATE
Allan S. Humpherys and James A. Bondurant, Boise, Idaho, assignors to the United States of America as represented by the Secretary of Agriculture
Original application June 1, 1962, Ser. No. 199,546, now Patent No. 3,217,497, dated Nov. 16, 1965. Divided and this application Feb. 12, 1965, Ser. No. 451,083
4 Claims. (Cl. 61—25)

1. A gate for controlling the flow of liquid in an open ditch comprising:
(a) a gate member rotable about a horizontal axis located above the center of gravity of said member, said gate member being in a substantially vertical position when closed and having an opening extending below the level of a liquid backed up behind said gate when closed;
(b) latch means on the gate to maintain said gate in a closed position;
(c) a vertically adjustable cover over the opening in the gate member to permit overflow of liquid above a predetermined depth;
(d) an open-top receptacle mounted on the downstream side of the gate member for collecting liquid overflowing through the opening in the gate member;
(e) a first elongated arm rotatably mounted on the downstream side of the gate member and having one end extending over the open top of the receptacle;
(f) a first float connected to said end of the first elongated arm and extending downward into said receptacle;
(g) means connecting the elongated arm to the latch means to release said latch means when a predetermined amount of liquid has overflowed into the receptacle and has caused the first float to rise;
(h) a second float secured to the upstream side of the gate member near the lower end thereof to cause said gate member to rotate upward when the latch is released;
(i) an elongated support member rigidly secured by one end to the gate member and extending above the center of gravity thereof when said gate member is in a closed position;

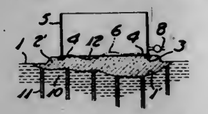


(j) a second elongated arm rotatably mounted at a point intermediate its ends on said support member at a point above the center of gravity of the gate member;
(k) pivot means for rotatably mounting said second elongated arm on said support member;
(l) tension means connecting one end of said second elongated arm with a point on said support member below the pivot means;
(m) a counterweight rotatably mounted for rotation about a horizontal axis at the other end of said second elongated arm; and
(n) a pair of stop means on said support member for restricting the angle through which said second elongated arm can rotate, said stop means being so located as to permit rotation of said second elongated arm and counterweight from a position overhanging the downstream side of the gate to urge the gate closed, past a position of alignment of said support member with said second elongated arm, to a position overhanging the upstream side of the gate to assist the second float to urge the gate toward a completely open position.

3,300,986
METHOD OF CONSTRUCTING STORAGE TANK
Hiroshi Hirata, Meguro-ku, Tokyo, Japan, assignor to Chiyoda Kako Kensetsu Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Apr. 6, 1964, Ser. No. 357,379
Claims priority, application Japan, Mar. 17, 1964, 39/14,590
3 Claims. (Cl. 61—50)

1. A method of constructing storage tanks wherein a foundation of sand banking is built on soft ground intended to support the tank, placing a support member, upon said foundation to form the peripheral foundation of the tank, mounting a sketch plate which extends about

the inner periphery of the support member on said support member and sealingly engaging the sketch plate with the side walls of said tank, placing a temporary bottom member of a flexible water impervious film over the bottom portion of said tank to cover the entire surface area thereof with its peripheral portion being sealingly at-



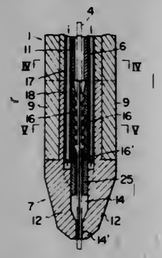
tached to said sketch plate, filling said tank with water to effect a sinking and settling of said soft ground and sand foundation, draining said tank, removing said temporary bottom member, correcting said ground surface and sealingly fitting a permanent bottom into said tank fastened about its periphery to said sketch plate.

3,300,987

APPARATUS FOR INSTALLING CARDBOARD WICK DRAIN

Keiji Maeda, Tokyo-to, Japan, assignor to Kabushiki Kaisha Kato Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed June 22, 1964, Ser. No. 376,856
Claims priority, application Japan, Nov. 18, 1963, 38/61,982
2 Claims. (Cl. 61—63)



1. An apparatus for driving a cardboard wick in the cardboard-drain process comprising a driving tube having therethrough a carboard wick insertion bore through which a cardboard wick is inserted, pressure reducing members attached to the inner wall of said insertion bore and adapted to contact lightly said cardboard wick, said pressure reducing members thereby functioning to partition said cardboard wick insertion bore into an upper bore and a lower bore, the lower part of said lower bore being formed as a nozzle by narrowing the space between said lower bore wall and said cardboard wick, and means adapted to supply compressed air into said lower bore during the driving operation, thereby to prevent infiltration of mud or water into said cardboard wick insertion bore.

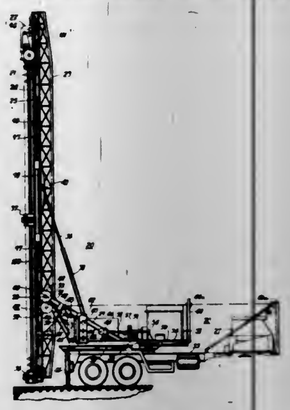
3,300,988

APPARATUS FOR FORMING PILES

Lindsey J. Phares, Butler, Harold M. McCall, Fair Lawn, Richard K. Snow, Westwood, and Ernst W. Spannhake, Butler, N.J., assignors to Raymond International Inc., New York, N.Y., a corporation of New Jersey

Original application Dec. 23, 1960, Ser. No. 77,973, now Patent No. 3,200,599, dated Aug. 17, 1965. Divided and this application Mar. 8, 1965, Ser No. 437,841
7 Claims. (Cl. 61—63)

1. Apparatus for forming piles in the earth including: an auger type drill adapted to drill a hole in the earth by sinking same to a desired depth by turning, said drill having a hollow tubular stem and spiral flights; drill hoist means for withdrawing the drill from such a hole in the earth thereby forming beneath the drill a cavity adapted to receive a pile-forming substance, the cavity being of a volume which progressively increases as the drill is withdrawn; means for filling the cavity completely during such drill withdrawal including a pump for forcing therein via the hollow stem of the drill such pile-forming substance; pressure sensing means being disposed adjacent the lower end of the drill; means for controlling said hoist



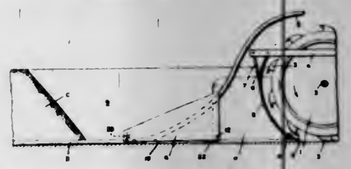
means to regulate the speed of drill withdrawal; means for controlling said pump speed to regulate the volumetric rate of inflow of such substance into the cavity; depth measuring means for relating pressure at a measured depth simultaneously to a preselected pressure at the same depth; means for changing at least one of said speeds to match the value of the actual pressure to the preselected value at the instant drill end depth.

3,300,989

PLASTIC PIPE PLACER MECHANISM

Francis M. Reising, 310 W. Fay, Edinburg, Tex. 78539

Filed July 13, 1964, Ser. No. 382,198
7 Claims. (Cl. 61—72.6)



1. In a pipe placer device for use with a trenching apparatus, said pipe placer device comprising a pair of spaced panels of generally triangular form, reinforcing means about certain of the marginal edges of said panels, spacers connecting the reinforcing means, a skid device for said spacers including an elongated cylindrical structure welded to the bottom side edges of said panels throughout its length and depending therebelow, the front end of said skid device having a downwardly and inwardly inclined closed end and the opposite end of said skid device being spaced forwardly from the discharge end of the device, a guide roller fixed to and extending transversely of the walls of the panels at the discharge end of the device and spaced upwardly and rearwardly from said opposite end of said skid device, and upper and lower spaced horizontal guide plates extending from the upper end portion of the front end of the pipe placer device to a point forward of said roller with the lower end of the lower plate terminating forwardly of the said opposite end of the skid device and said upper plate terminating rearwardly of said opposite end to direct a plastic pipe

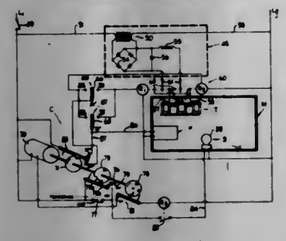
to a position beneath said guide roller, said spaced guide plates being fixed at their marginal edges to said side panels.

3,300,990

THERMOELECTRIC MEAT AGING/TENDERIZING APPARATUS

Boubene M. Jaremus, Barrington, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 14, 1965, Ser. No. 495,915
9 Claims. (Cl. 62—3)



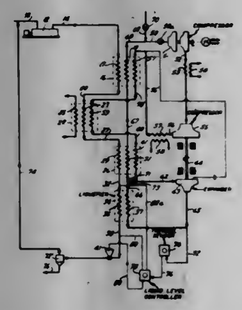
1. In apparatus of the character described, the combination comprising an insulated cabinet providing a meat storage zone; a thermoelectric conditioning unit having a load side in thermal communication with said storage zone and a sink side arranged in thermal communication with a heat sink; a sterilization unit; means for supplying unidirectional electrical energy to said thermoelectric conditioning unit, said means including a reversing switch having a first position wherein said electrical energy is supplied so that said thermoelectric conditioning unit pumps heat from said storage zone to said heat sink, a second position wherein said thermoelectric conditioning unit is inoperative, and a third position wherein said electrical energy is supplied so that said thermoelectric conditioning unit pumps heat from said heat sink to said storage zone; a high temperature thermostat; a low temperature thermostat; and control means including a timer programmed to selectively render one or the other of said thermostats operable to control said reversing switch and energize said sterilization unit.

3,300,991

THERMAL RESET LIQUID LEVEL CONTROL SYSTEM FOR THE LIQUEFACTION OF LOW BOILING GASES

Richard R. Carney, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York

Filed July 7, 1964, Ser. No. 380,754
19 Claims. (Cl. 62—9)



1. In a refrigeration process for cooling and liquefying feed gas by heat exchange with a compressed refrigerant gas wherein said feed gas and refrigerant gas both have boiling points below —80° C. at atmospheric pressure, and wherein the compressed refrigerant gas is work expanded to sufficiently low pressure to develop power and thereby cool the gas to a temperature below the desired liquefied temperature of said feed gas, and subsequently passed in countercurrent heat exchange relation with the feed gas in at least one liquefying zone and at least one heat exchange zone for cooling and liquefaction thereof, the improvement comprising sensing a refrigerant gas temperature from the work expansion, and controlling the withdrawal rate of liquefied feed from said liquefying zone in response to such sensed temperature to vary the liquid level in the liquefying zone and thereby vary the effective heat transfer area therein whereby a portion of the heat transfer load can be shifted to the heat exchange zone where compressed refrigerant work expansion feed gas can be regulated in temperature by heat exchange before work expansion so as to maintain the refrigerant gas work expansion exhaust temperature below said desired liquefied temperature of said feed gas.

3,300,992

HIGH VACUUM PUMPING WITH IMPREGNATED ADSORBENTS

Donald G. Hager and Milton Manes, Pittsburgh, Pa., assignors to Pittsburgh Activated Carbon Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 3, 1964, Ser. No. 408,669
7 Claims. (Cl. 62—48)

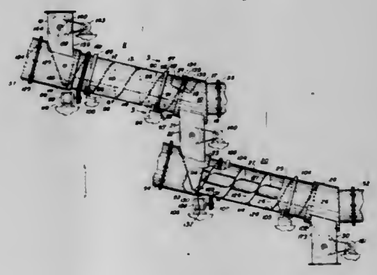
1. In a process of cryogenic pumping to obtain high vacuum by removing hydrogen the improvement comprising sorption pumping the hydrogen on activated carbon impregnated with a chemisorber for hydrogen in the system.

3,300,993

FREEZING APPARATUS AND METHOD

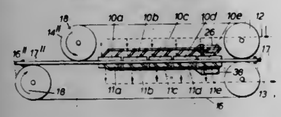
Alfred H. Schlemmer, Winter Haven, Fla. (6033 Pleasant Run Parkway South Drive, Indianapolis, Ind. 46219)

Filed Feb. 25, 1964, Ser. No. 347,172
10 Claims. (Cl. 62—63)



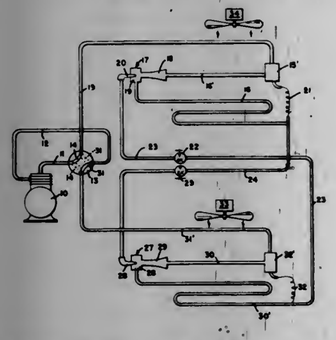
8. In a method for cooling unfrozen food particles to a predetermined temperature substantially below the freezing temperature thereof, the improvement comprising tumbling the particles through an elongated first zone, passing a gaseous coolant having a temperature below the freezing temperature of the particles but above said predetermined temperature through the first zone and in direct contact with the particles therein, directing the food particles and coolant through the first zone along a helical path, separating the particles from the coolant, passing the separated particles through a second zone, and passing a gaseous coolant having a temperature below said predetermined temperature in direct contact with said separated particles in said second zone to cool said separate particles to said predetermined temperature.

3,300,994
FREEZING OF FOODSTUFFS
Einar Bagge-Lund, Bergen, Norway, assignor to Fiskeridirektoratets Kjemisk-Tekniske Forskningsinstitutt, Bergen, Norway
Filed Nov. 17, 1964, Ser. No. 411,734
7 Claims. (Cl. 62—63)



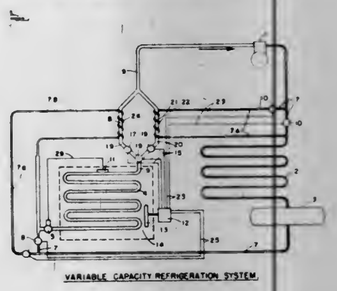
1. A process for moulding and freezing together irregularly shaped articles of food which comprises the steps of
introducing the articles into an elongated passage having a plurality of successive freezing zones therein,
conveying the articles to a first zone of said freezing zones to be frozen therein,
simultaneously compressing and freezing the articles in said first zone,
subsequently releasing the pressure on the frozen articles to permit expansion of the water therein,
advancing the partially frozen articles to a second zone of said freezing zones to be frozen therein,
simultaneously compressing and freezing the partially frozen articles in said second zone,
conveying the frozen articles out of said second zone, and
collecting the frozen articles issuing from said passage as a continuous chain.

3,300,995
REVERSE CYCLE REFRIGERATION SYSTEM
William L. McGrath, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed July 26, 1965, Ser. No. 474,886
8 Claims. (Cl. 62—116)



6. A method of obtaining staged compression on either the heating or cooling cycle of a refrigeration system operable on the reverse cycle principle, said refrigeration system having a compressor, a first heat exchange coil, a second heat exchange coil, a first expansion means associated with said first heat exchange coil, a second expansion means associated with said second heat exchange coil, a reversing valve coupled between said compressor and said coils, and an ejector associated with each of said coils, comprising the steps of compressing the refrigerant, condensing said refrigerant in one of said coils passing refrigerant through the expansion means associated with the other of said coils, evaporating refrigerant in the other of said coils, passing refrigerant through the ejector associated with the other of said coils to effect compression of refrigerant and decrease the pressure in the other of said coils, passing said refrigerant to said compressor to repeat said foregoing cycle, and selectively manipulating said reversing valve to interchange the functions of said coils and causing the ejector associated with the coil then functioning as an evaporator to compress refrigerant.

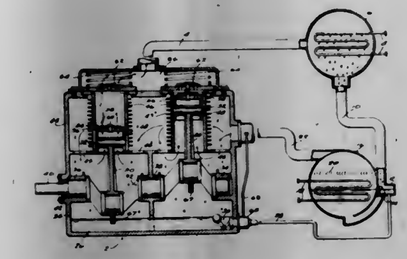
3,300,996
VARIABLE CAPACITY REFRIGERATION SYSTEM
Theodore Atwood, Sparta, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Nov. 2, 1964, Ser. No. 408,272
16 Claims. (Cl. 62—117)



14. The method of obtaining variable capacity in a refrigerant system which comprises:
(a) circulating a refrigerant possessing a wide capacity variation responsive to change in demand on cooling requirements in closed circuitous flow through a refrigeration system comprising a compressor, an evaporator, a compressed refrigerant conduit including a condenser, a compressed refrigerant vapor portion and a compressed refrigerant condensate portion, connecting the compressor with the evaporator, and an evaporated refrigerant conduit connecting the evaporator with the compressor in split parallel flow relationship,
(b) causing the evaporated refrigerant to flow to a greater or lesser extent through the split segments of the evaporated refrigerant conduit, one of which segments is disposed in heat exchange relationship with the condensate portion of the compressed refrigerant conduit,
(c) regulating the amount of flow as between the split segments responsive to temperature changes in the cooling space surrounding the evaporator,
(d) permitting a greater proportional flow through that segment disposed in heat exchange relationship with the compressed refrigerant condensate portion of the compressed refrigerant conduit when temperatures in the cooling space surrounding the evaporator register higher, thus signaling a heavier load and
(e) causing a lesser proportional flow through that segment when lower temperatures are registered in the cooling space surrounding the evaporator, signaling a decreased load and thus enabling the refrigeration capacity to parallel the load requirement.

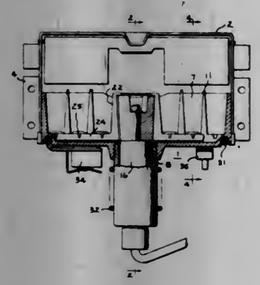
3,300,997
OIL FREE REFRIGERANT COMPRESSOR
Erich J. Kocher, Milwaukee, Wis., assignor to Vilter Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 10, 1965, Ser. No. 478,581
8 Claims. (Cl. 62—117)

1. The method of cooling the compression cylinders and pistons extending into the housing and toward the crankcase of a refrigerant compressor operating in a gas-liquid system, which comprises, drawing gaseous refrigerant employed in the system into the compressor housing in direct heat exchange relation with the compression cylinders and toward the crankcase, introducing liquid refrigerant from the system into direct heat exchange relation with the gaseous refrigerant within



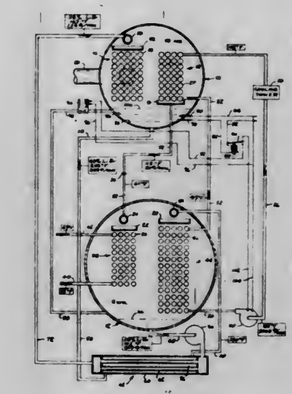
the compressor housing, admitting the gaseous refrigerant to the compression cylinders past the pistons therein, and compressing the gaseous refrigerant within the compression cylinders for return thereof to the system.

3,300,998
HYDRAULIC ICE MAKER
Dwight W. Jacobus and William C. Bodong, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Dec. 9, 1965, Ser. No. 512,723
9 Claims. (Cl. 62—135)



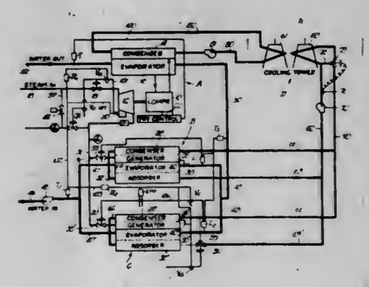
1. An automatic ice maker comprising:
a freezer mold including a mold cavity and ice ejecting means,
said ejecting means including a hydraulically operated cylinder and piston assembly operable upon movement of said piston from a first position to a second position to eject an ice piece from said cavity, said piston being frozen against movement from its first position by the formation of an ice bond between said cylinder and piston during formation of an ice piece in said cavity,
means for heating said assembly,
water supply means for supplying a volume of water under pressure to said cylinder for moving said piston to its second position upon melting of said ice bond by said heating means,
and means including a passage in said piston plunged by ice formed in said passage during formation of said ice piece and opened by the melting thereof upon movement of said piston to said second position for conveying said volume of water from said cylinder to said cavity.

3,300,999
DECRYSTALLIZATING MEANS FOR ABSORPTION REFRIGERATION SYSTEMS
John Graham Reid, Jr., Grosse Pointe, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1963, Ser. No. 324,377
5 Claims. (Cl. 62—141)



1. An absorption refrigeration system comprising a generator; condenser; evaporator; absorber; a heat exchanger arranged so that the hot solution flows from the generator through one side of the heat exchanger to the absorber, and cool solution flows from the absorber through the other side of the heat exchanger to the generator; means including a pump for circulating coolant through the absorber and condenser; means responsive to the formation of crystals in said one side of the heat exchanger for directing hot generator solution into the absorber and then through the other side of the heat exchanger to melt the crystals; and means for de-energizing the pump during the melting period; said de-energizing means comprising means for sensing an abnormal rise in generator liquid level due to crystal blockage in the heat exchanger.

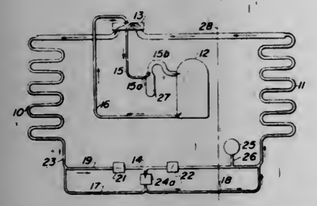
3,301,000
COMBINATION VAPOR COMPRESSION AND ABSORPTION REFRIGERATION SYSTEM
Nicholas Holbay, York, Pa., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Feb. 15, 1965, Ser. No. 432,658
11 Claims. (Cl. 62—141)



1. A refrigeration system comprising a compressor, a condenser, and an evaporator connected to provide a refrigeration circuit; a first heat exchanger in heat trans-

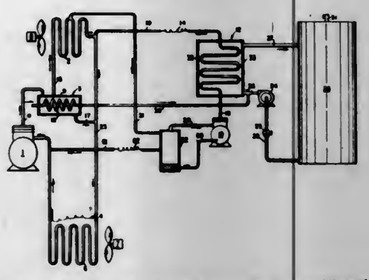
fer relation with said evaporator; an absorption refrigeration machine having a generator, a condenser, an evaporator, and an absorber connected to provide a closed, continuous cycle refrigeration circuit; a second heat exchanger in heat transfer relation with refrigerant in said absorption machine evaporator; means for circulating a heat exchange medium to and from a cooling load through said first and second heat exchangers; a steam turbine driving said compressor; means for conducting steam in series flow to said turbine and in heat exchange relation with dilute absorbent solution in said generator; first capacity control means including means for altering the flow of refrigerant gas from said evaporator to said compressor; and second capacity control means including valve means responsive to the temperature of the heat exchange medium returning from said load for varying the flow of steam to said turbine, whereby the rotational speed of said turbine is regulated in response to changes in the cooling load.

3,301,001
AUTOMATIC REFRIGERANT STORAGE FOR REVERSIBLE HEAT PUMP
William S. McKinney, Huntington Beach, Calif., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Nov. 5, 1965, Ser. No. 506,553
6 Claims. (Cl. 62—149)



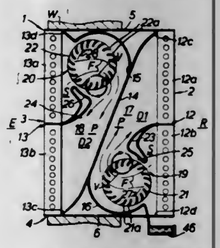
1. A reversible heat pump circuit comprising a first heat exchanger capable of operating selectively as a condenser or as an evaporator; a second heat exchanger capable of operating selectively as an evaporator; a second heat exchanger capable of operating selectively as an evaporator or as a condenser; a flow resistor connecting said first and second heat exchanger for the reversible flow of refrigerant therethrough, a compressor interposed between said exchangers and completing the circuit, reversing means in said circuit for selectively reversing the direction of flow from said compressor to and from said heat exchangers, the thermal characteristics of the circuit being such that one of the directions requires for efficient operation an effective charge larger than the charge for the other of said directions, a quantity of refrigerant in the circuit corresponding with the larger charge, a refrigerant storage tank equipped with a two-way flow connector which communicates with the circuit between said exchangers and adjacent to the exchanger which operates as a condenser when the smaller charge is needed, and an accumulator tank communicating with the circuits at a point along the compressor's refrigerant intake line, the capacity of said accumulator tank being no greater than the volume of oil which may be withdrawn from the compressor without impairing compressor operation, and the combined capacities of said accumulator and storage tanks being equal to the volume of excess charge present when the flow of refrigerant in said circuit is in said other direction so that a smaller refrigerant charge is needed, and the heat exchanger which then operates as an evaporator is subjected to its lowest expected ambient temperatures.

3,301,002
CONDITIONING APPARATUS
William L. McGrath, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,833
15 Claims. (Cl. 62—175)



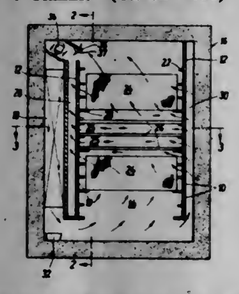
1. In a conditioning apparatus, the combination of first refrigerant circuit means for conditioning a first fluid medium, said first circuit means including a first compressor, a first heat exchanger, expansion means, and a second heat exchanger, and second refrigerant circuit means for conditioning a second fluid medium, said second circuit means including a second compressor, a condenser arranged in heat exchange relation with said second fluid medium, and means connecting said second compressor and said condenser with said first circuit means so as to operatively incorporate one of said first and second heat exchangers in said second circuit means.

3,301,003
AIR CONDITIONING APPARATUS
Nikolaus Laing, Aldingen, near Stuttgart, Germany,
Filed Dec. 8, 1965, Ser. No. 512,465
Claims priority, application Germany, Dec. 9, 1964, L 49,496
7 Claims. (Cl. 62—324)



1. Air conditioning apparatus comprising a compressor, a block-like casing having a main compartment extending from side to side in the casing and having end walls, partition walling dividing said compartment into first and second air circulation spaces one at one side and one at the other side of the casing, a heat exchanger block in each air circulation space said blocks being interconnected with said compressor in a closed refrigerant circuit to form a refrigerator wherein the block in said first space forms the evaporator and the block in the second space the condenser, means defining for each air circulation space an inlet and an outlet, a fan mounted within each air circulation space to set up a flow of air from the respective inlet, through the respective block and out of the respective outlet in a first mode of operation of said apparatus, ducts within the casing extending from the first air circulation space at the outlet side of the respective fan and block to the second air circulation space on the inlet side of the respective fan and block and from the second air circulation space on the outlet side of the respective fan and block to an auxiliary outlet on the same side of the apparatus as the outlet of the first air circulation space, and flow control means to shut off said ducts in the first mode of operation of the apparatus and in a second mode of operation thereof to cause flow to take place through the inlet of the first air circulation space and through the fan and block thereof, to the second air circulation space and through the fan and block thereof, to the second air circulation space and through the fan and block thereof, and thence to the auxiliary outlet.

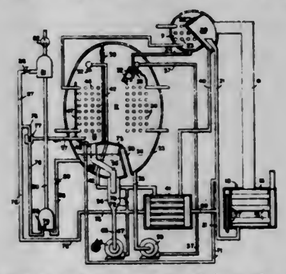
3,301,004
REFRIGERATOR, PARTICULARLY FOR BAKERY GOODS
Josef Winkelhaus-Eling, Darfeld, Coesfeld-Land, Germany
Filed Sept. 13, 1965, Ser. No. 486,691
Claims priority, application Germany, Sept. 14, 1964, W 37,543; Jan. 21, 1965, W 39,985
4 Claims. (Cl. 62—408)



1. A refrigerator, particularly for freezing bakery goods, with a box type housing provided at its inside with at least one refrigerating unit through which air is forced by a blowing means and on one of its lateral sides with doors, said refrigerator comprising several pairs of spaced vertical partition walls extending from adjacent a door opening to a back wall facing said door opening and defining together with said doors and said back wall refrigerating chambers, said partition walls being provided at their opposed inner sides with vertically spaced, horizontally aligned bracket means serving as holders for carrying means which are insertable through said doors and serve to support the to be frozen material, at least some of said carrying means being plates extending over the entire cross section of said refrigerating chambers, air guiding channels of a width substantially smaller than said refrigerating chambers being disposed outside said partition walls in coextensive relation therewith, said channels communicating with said refrigerating chambers by openings provided in said partition walls between said vertically spaced bracket means and being closed at one of their ends, the open ends of channels at one side of the refrigerating chambers communicating with the air inlet end of said refrigerating unit and being disposed substantially opposite the closed ends of channels located on the other side of said chambers, the open ends of said last mentioned channels communicating with the air outlet end of said unit and being disposed substantially opposite the closed ends of said first mentioned channels.

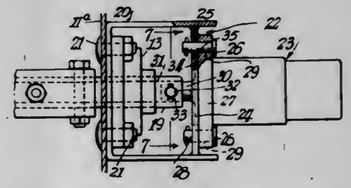
3,301,005
PURGE ARRANGEMENT FOR ABSORPTION REFRIGERATION SYSTEMS
Keith V. Eisberg, Camillus, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Dec. 14, 1965, Ser. No. 513,719
3 Claims. (Cl. 62—475)

1. In an absorption refrigeration machine including a generator section, a condenser section, an evaporator section and an absorber section interconnected to form a closed system containing an absorbent solution, a refrigerant, and a relatively low density capacity increasing additive, said absorber section including a sump adapted to collect solution relatively weak in absorbing power, and pump means for passing said relatively weak solution in said sump to said generator section, the combination of a purge line leading from said absorber section; means for drawing noncondensible gases from said absorber section into entrainment with a stream of solution discharging from said pump means; means separating noncondensible gases from said entraining solution, said separating means being adapted to separate relatively low density additive from said solution with said noncondensible gases; means for expelling said separated noncondensible gases from said system including a storage compartment disposed above said separating means for holding separated non-



condensible gases prior to removal into the atmosphere, and a conduit leading from said separating means to said storage compartment, said conduit being adapted to contain liquid additive separated from said solution by said separating means; and a solution return line between said separating means and said absorber section sump, said separating means being arranged below the level of said absorber section sump to trap solution in said return line upon shutdown of said machine to seal against the return flow of noncondensible gases from said storage compartment into said absorber section, the minimum height of said conduit being greater than the height of said solution return line by an amount sufficient to enable the pressure head of additive in said conduit to balance the pressure head of solution in said return line to prevent passage of additive into said storage compartment.

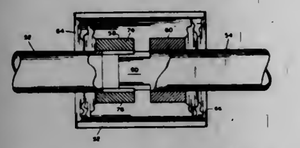
3,301,006
MOTOR MOUNT
Allen B. Sharp, Ottumwa, Iowa, assignor to Highway Equipment Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Aug. 18, 1964, Ser. No. 390,411
5 Claims. (Cl. 64—4)



1. A motor mounting of the character described, comprising a mounting bracket having means at one end for coupling to a housing supporting a driven member, the other end of said bracket being equipped with an integral mounting ring, a hydraulic motor loosely coupled to said ring in cantilever fashion relative to said bracket, said motor having an output shaft projecting into said bracket for loose coupling with a driven member supported in said housing, and pin means extending through said ring

for achieving a loose coupling between said ring and said motor whereby said motor is adapted to shift position during operation to compensate for deflection in said driven member.

3,301,007
FLEXIBLE TORQUE COUPLING
Edward S. Chalpin, Glendora, Calif., and David E. Hanson, Brockton, Mass., assignors to Metal Bellows Corporation, Sharon, Mass.
Filed Mar. 27, 1964, Ser. No. 355,376
17 Claims. (Cl. 64—15)



1. A fail-safe flexible torque coupling for transferring rotational motion between driving and driven shafts, said coupling comprising

(A) first and second shaft-receiving hubs,

(B) first and second bellows secured respectively to said first and second hubs,

(C) a hollow torque-transferring member having an axis of rotation, said member interconnecting said bellows and forming with said bellows a primary coupling unit,

(D) said first and second bellows being contained within said torque-transferring member, and

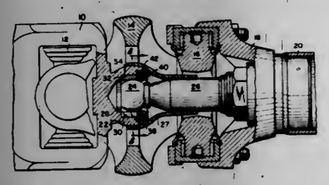
(E) first and second secondary torque-transferring means

(1) connected respectively to said first and second hubs,

(2) disposed coaxially within said torque-transferring member and extending along said axis and interfitting with each other for transferring torque between said hubs when said primary coupling unit fails, and

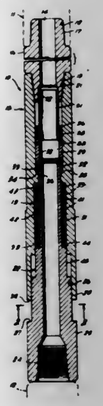
(3) held in disengagement from each other by said primary coupling unit.

3,301,008
CENTERING MEANS FOR A UNIVERSAL JOINT
Randall E. Beinke, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 15, 1964, Ser. No. 418,411
8 Claims. (Cl. 64—17)



1. Centering means for a universal joint comprising a stud which terminates in a spherical ball extending from a first yoke member, a tubular member extending from a second yoke member and surrounding the spherical ball on said stud, and a plurality of centering shoes disposed between said tubular member and said spherical ball, at least a portion of each centering shoe being in the shape of a right cylindrical tubular segment with an outer radius greater than the radius of the bore of the tubular member whereby said shoes are distorted in their assembled position and are resiliently urged radially inwardly into contact with said spherical ball.

3,301,009
ROTARY SHOCK ABSORBING SUB UNIT
John B. Coulter, Jr., Fort Worth, Tex., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 2, 1965, Ser. No. 429,797
4 Claims. (Cl. 64—23)



1. A shock absorbing sub unit adapted to be coupled in the drill string of a rotary earth-boring drill for absorbing vibrations created by the bit during drilling operations so as to prevent them from being transmitted to the drill string, comprising an inner driven open ended hollow mandrel connectible at its bottom end to the bit, an outer open-ended hollow mandrel in coaxial surrounding relation to the inner mandrel having a vertical slidable relation to the inner mandrel and connectible at its top end to the drill string, shock absorbing means slidably disposed between the inner and outer mandrels providing alternately arranged compressible resilient members and pressure transmitting members in sleeved relation to the inner mandrel and supporting the outer mandrel upon the inner mandrel, a shoulder on the inner madrel defining a seat for one end of the shock absorbing means, an opposed shoulder internally of the outer mandrel seated upon the opposite end of the shock absorbing means, the interior of the inner mandrel providing a fluid passage to the bit, a pipe in the outer mandrel providing a fluid passage from the drill string, a sleeve secured to the inner mandrel at one end having a slidable connection at its other with the pipe providing communication of the fluid passages with one another and allowing slidable axial movement of the inner mandrel relative to the pipe, means sealing the sleeve relative to the outer mandrel and the pipe against leakage of fluid around the pipe and sleeve to the shock absorbing means, and means independent of the shock absorbing means forming a sole driving connection between the outer and inner mandrels for transmitting torque of the outer mandrel to the inner mandrel.

3,301,010
AUTOMATIC TIMING ADVANCE GEAR
Ralph R. Vernick, Unionville, Ohio 44088
Filed Aug. 24, 1964, Ser. No. 391,367
6 Claims. (Cl. 64—24)

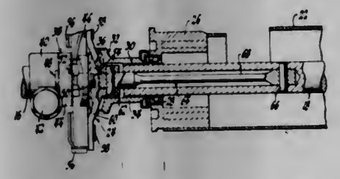
1. In an internal combustion engine, camshaft means, timing gear means rotatably mounted on said camshaft means, means secured to said camshaft for retaining said timing gear means on said camshaft, means for establishing a drive connection between said camshaft means and said timing gear means comprising piston means mounted in said gear retaining means, said timing gear means when rotating contacting said piston thereby driving said gear

retaining means and said camshaft means secured thereto, and means proportionally responsive to engine speed for



varying the position of said piston thereby varying the angular relation between said camshaft and said timing gear.

3,301,011
STEERING SHAFT ISOLATION COUPLING
Duane K. Dye and Robert P. Rohde, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 7, 1965, Ser. No. 423,973
2 Claims. (Cl. 64—27)



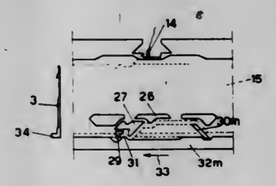
1. An isolation coupling for connecting a pair of relatively movable members, comprising, a flexible means connected between said relatively movable members, said flexible means being adapted to accommodate relative axial movement between said relatively movable members and to isolate axial and bending modes of vibration applied thereto, a metallic member connected between said relatively movable members, said metallic member permitting relative rotation between said relatively movable members and being so shaped as to undergo substantial elastic twisting upon the application of torsional vibrational energy to said relatively movable members, thereby to absorb said energy, and means for drivingly connecting said relatively movable members after a predetermined degree of relative movement therebetween.

3,301,012
CIRCULAR KNITTING MACHINES FOR THE PRODUCTION OF HOSIERY WITH DOUBLE, OUTWARDLY TURNED-OVER WELTS
Riccardo Tenconi, Varese, Italy, assignor to Marcella Sessa, Varese, Italy
Filed Dec. 24, 1964, Ser. No. 420,955
Claims priority, application Italy, Jan. 3, 1964, 179/64
8 Claims. (Cl. 66—41)

1. In a circular knitting machine for the production of hoisery with a double, outwardly folded-over welt and which comprises a rotated cylinder carrying a set of latch type needles that are axially movable and alternately have long and short butts, radially movable sinkers located between the needles and each having a cast-off ledge and an additional radially opening groove below said ledge, a thread guide for feeding thread to the successive needles, a needle lifting cam engageable with said butts of the needles for raising the latter to a level at which the needles can engage thread fed by the guide, a needle withdrawing cam acting on the butts of the needles for effecting downward movement of the latter after engagement of the needles with the thread, a sinker cam ring controlling the radial movements of the sinkers and having a portion effecting radially outward movement of the successive sinkers upon said downward movement of the adjacent needles by said withdrawing cam: the combination of

an additional needle cam spaced from the lowest part of said withdrawing cam in the direction of rotation of said cylinder and selectively engageable with the needle butts to effect downward movement of the needles beyond the lowermost position to which the needles are moved by said withdrawing cam,

an additional sinker cam spaced from said portion of the sinker cam ring in the same direction, and by a corresponding distance as said additional needle cam with respect to said withdrawing cam, said additional sinker cam being selectively engageable with the sinkers to effect radially outward movement of the latter beyond the movement thereof by said portion of the sinker cam ring,

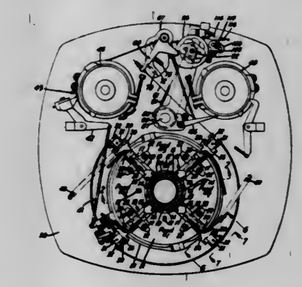


means located between said withdrawing cam and said additional needle cam to effect slight lifting movement of the needles immediately following the downward movement of the needles by said withdrawing cam,

control means for said additional needle cam positioning the latter to act only on the needles with long butts during a course which follows at least one initial course and precedes a connecting course, and

control means for said additional sinker cam positioning the latter to act on all of the sinkers during said course which precedes the connecting course.

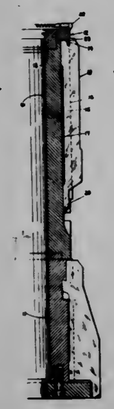
3,301,013
APPARATUS FOR FORMING POUCHES IN CIRCULARLY KNITTED FABRICS
James D. Moyer, Wyomissing, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed July 12, 1963, Ser. No. 294,494
6 Claims. (Cl. 66—54)



1. In a circular knitting machine having a plurality of knitting stations, a rotatable cylinder, a circle of needles in said cylinder, a stitch cam at each of said

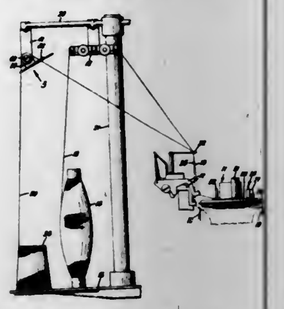
stations for operating said needles to knit circular courses of a tubular fabric, common means for simultaneously adjusting the vertical positions of said stitch cams at said stations to adjust the length of the stitches in said circular courses, the improvement comprising a second means associated with the stitch cam at each of said stations for individually moving said stitch cam from the adjusted position thereof determined by said common means to a second adjusted position to further adjust the length of the stitches in portions of said circular courses knit thereat, said second means including a lever, means connecting said lever and said stitch cam, a cam for operating said lever, means for rotating said cam in timed relation to the rotation of said cylinder, a support member on which said cam is mounted for rotation, pivot means for mounting said support member for rocking movement, means for rocking said support member on said pivot means to an inactive position to maintain said cam out of engagement with said lever, and means for rocking said support member on said pivot means to an active position in which said cam engages and operates said lever to move said stitch cam to said second adjusted position.

3,301,014
INSTRUMENT BED FOR KNITTING MACHINES
Frederick C. Wiesinger, 102 E. Myrtle Ave., Feasterville, Pa. 19047
Filed Nov. 30, 1964, Ser. No. 414,642
3 Claims. (Cl. 66—115)



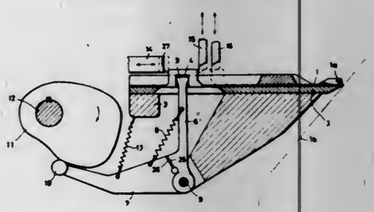
1. An instrument bed for knitting machines having in combination knitting instrumentalities, a needle cylinder, longitudinally extending and equally spaced grooves formed about the entire periphery of said cylinder, a forecut ring fixedly attached to one end of said needle cylinder, said forecut ring including an edge in contiguous relation with the grooves of said cylinder defining a circumferential lip extending about the entire extent of the cylinder, horizontally disposed forecut blades removably attached to that end of said forecut ring most remote from said cylinder, said forecut blades being in alignment with and equal in number to the grooves in said cylinder, insert blades adapted to be received by each of the grooves in said cylinder and having an end configuration cooperating with and adapted to be retained by said circumferential lip, said insert blades forming channels within which said instrumentalities are caused to reciprocate vertically, the outer diameter of said forecut ring being equal to the outer diameter of said cylinder, the combination of which provides a substantially continuous surface across which said instrumentalities are caused to move.

3,301,015
YARN FEED MEANS FOR KNITTING MACHINES
Paul H. Eberle, Reiffton, Reading, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed Sept. 10, 1964, Ser. No. 395,365
4 Claims. (Cl. 66—125)



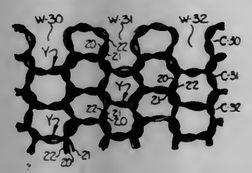
2. In a circular knitting machine having a circle of needles, yarn feeding means movable from inactive position to active position to feed yarn to said needles to be formed into knitted fabric, a supply cone for the yarn, means interposed between said cone and said feeding means for maintaining substantially uniform withdrawal of said yarn from said cone as said yarn is fed to said needles by said feeding means, said interposed means being driven by said yarn and acting to feed a surplus length of yarn between said withdrawing means and said feeding means when said feeding means is moved to inactive position, means for severing said yarn between said feeding means and said needles when said feeding means is moved to inactive position, and means interposed between said severing means and said feeding means for removing the excess of said surplus length of yarn between said withdrawing means and said feeding means following severance of said yarn by said severing means.

3,301,016
NEEDLE ACTUATING MECHANISM FOR A KNITTING MACHINE
Erich Krause, Bopfingen, Wurttemberg, Germany, assignor to Universal Maschinenfabrik Dr. Rudolf Schieber G.m.b.H., Westhausen, Wurttemberg, Germany
Filed Feb. 11, 1964, Ser. No. 344,083
Claims priority, application Germany, Feb. 15, 1963, U 9,584
5 Claims. (Cl. 66—154)



1. In a knitting machine, in combination:
(a) a support;
(b) a needle bed mounted on said support;
(c) a plurality of elongated knitting needles arranged on said needle bed for longitudinal reciprocating movement in substantially parallel respective paths extending substantially in a common plane,
(1) each needle having a yarn receiving longitudinal front end portion and a shank portion rearwardly from said front end portion;
(2) said shank portion defining a recess therein, said recess being open transversely of the direction of elongation of said needle;
(d) a lever associated with each of said needles, said lever having two arms and respective abutment faces on said arms;
(e) pivot means on said support having a pivot axis, said two arms being mounted on said pivot means for joint movement about said pivot axis and for movement relative to each other about said axis toward and away from a normal position in which said abutment faces engage each other;
(f) yieldably resilient means connecting said two arms and urging the same toward said normal position;
(g) a shaft mounted on said support for rotation about an axis;
(h) a plurality of cams secured on said shaft for rotation about said axis thereof in axially spaced respective planes;
(i) a cam follower on one of the two arms associated with each needle, the other arm having a head portion spaced from said pivot axis and received in said recess of the associated needle shank portion;
(j) yieldably resilient means for normally holding said cam follower in engagement with a respective one of said cams, whereby the associated needle is normally reciprocated in said path thereof by said head portion when said shaft rotates; and
(k) a plurality of front stop means, each front stop means being movable between an operative position in the path of the associated needle and an inoperative position spaced from said path for limiting forward movement of the associated needle.

3,301,017
PICK AND RUN RESISTANT STOCKING AND METHOD OF FORMING SAME
Joseph J. Bird and Marvin H. Comer, Burlington, N.C., assignors to Alamance Industries, Inc., Burlington, N.C., a corporation of North Carolina
Filed Feb. 7, 1964, Ser. No. 343,287
9 Claims. (Cl. 66—178)



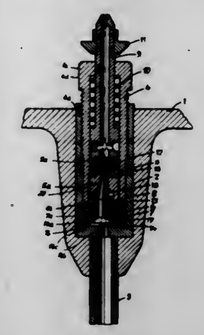
1. A pick and run resistant knit fabric comprising courses of interconnected stitch loops knit of a composite yarn consisting of a synthetic thermoplastic core yarn and a pair of thermoplastic yarns wrapped in a regular manner about said core yarn in opposite directions, said oppositely wrapped yarns being wrapped with a sufficient number of turns whereby each of said wrapped yarns makes at least two complete turns around said core yarn in each stitch loop of the fabric.

3,301,018
ELASTIC YARN AND GARMENT INCORPORATING IT
Herbert Knohl, Seneca, S.C., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Jan. 26, 1965, Ser. No. 428,185
15 Claims. (Cl. 66—202)

8. A greige blank stocking including a generally tubular circumferentially stretchable and retractive non-rib circular-knitted portion extending at least above the knee and having a plurality of different relaxed diameters generally corresponding to the corresponding contours of the human leg and primarily of fine structural yarn, forming at least a preponderance of the knitted stiches of said knitted portion and incorporating substantially throughout said portion at least one elastic yarn comprising an elastomeric core having substantially its original modulus, elongation and return and not substantially greater than 70 denier or substantially less than 20 denier in its uncovered relaxed state and not substantially greater than 35 denier or substantially less than 10 denier when stretched to 200% of its relaxed length, and helically wound about said core at least one low twist continuous multifilament covering yarn of not more than 30 denier of polymeric material having a denier per filament in the range of about 1 to 1½, a major portion of said elastic yarn extending as an inlay in at least every third course of the knitted stitches of the non-elastomeric yarns.



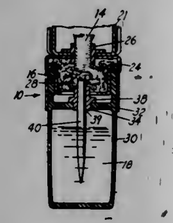
3,301,019
GAS LIGHTER CONSTRUCTION
Bernard Meylan, Villa La Ruche, Leysin-Feydey, Switzerland
Filed Nov. 9, 1964, Ser. No. 409,849
Claims priority, application Switzerland, Dec. 4, 1963, 14,890/63
2 Claims. (Cl. 67—7.1)



1. Gas lighter comprising a fuel container, a valve housing supported by said fuel container, a regulating sleeve threadably connected within said valve housing, said regulating sleeve including means providing a valve seat, said means providing a valve seat including a gas channel conically tapering towards and discharging at said valve seat, a burner nozzle mounted for axial displacement in said regulating sleeve from a closing position into an opening position, said burner nozzle including an inner end directed towards said valve seat, a valve sealing member carried by said inner end of said burner nozzle positioned to cooperate with said valve seat, a dosing pin axially displaceable relative to said regulating sleeve, said regulating sleeve cooperating with said dosing pin in order to regulate fuel departing through said valve seat via said gas channel, said dosing pin having an end which is conically tapered in conformity with the

conical tapering of said gas channel and extending into said gas channel, an intermediate ring mounted in said valve housing beneath said regulating sleeve for axial movement relative to said dosing pin, a filter disk, cooperating with said intermediate ring, said dosing pin including a head portion arranged opposite its conically tapered end, said head portion bearing against said intermediate ring via said filter disk.

3,301,020
RESERVE FUEL TANK LIGHTERS
Joseph H. Kruizenga, 410 Parchmount, Kalamazoo, Mich. 49004
Filed Feb. 26, 1965, Ser. No. 435,437
10 Claims. (Cl. 67—7.1)



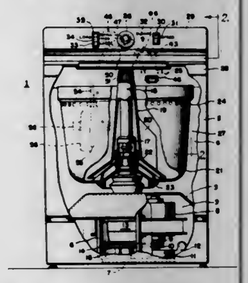
1. In a cigarette lighter comprising sparking means operatively and structurally associated with one end of a wick, the other end of which is in a wick fueling chamber substantially filled with a porous material, a reserve fuel tank for holding a reserve supply of fuel secured to said fueling chamber, and means for conveying fuel from said reserve fuel tank to said wick fueling chamber, the improvement which comprises: means for controlling the flow of fuel from said reserve fuel tank into said wick fueling chamber, said means consisting of a wall forming a tube-like passageway between said wick fueling chamber and said reserve fuel tank, and a plug of hard wood fitting in tightly engaged and closing position in said passageway with the capillary passages formed by the grain of the wood extending longitudinally of the passageway and substantially stopping the flow of fuel when said porous material in the region of said wick substantially reaches its limit of absorption of said fuel.

3,301,021
FLASH-LIGHT LAMP
Louis Marius Nijland, Emmasingel, Eindhoven, Netherlands, and Johann Schroder, Aachen, Germany, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,324
3 Claims. (Cl. 67—31)



1. A flash lamp comprising a sealed transparent bulb provided with a solid substance therein, a gas in said bulb, an ignition mechanism therein, said flash lamp providing actinic radiation upon ignition due to a chemical reaction between said solid substance and said gas, said gas being constituted of at least one volatile fluorine compound of a non-metal which compound reacts with said solid substance upon ignition, said compound requiring an energy for decomposition which per fluorine atom is not more than 20 Kcal./atom under normal conditions.

3,301,022
WASHING MACHINE HAVING A TREATING AGENT DISPENSING SYSTEM
Frank D. Low, La Grange Park, Ill., assignor to General Electric Company, a corporation of New York
Filed Mar. 15, 1965, Ser. No. 439,883
10 Claims. (Cl. 68—12)

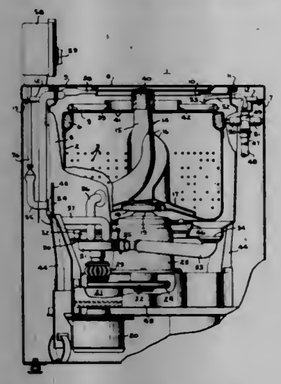


1. A washing machine comprising:
(a) container means for water and articles to be washed;
(b) water inlet means arranged to control passage of water to said container means and adapted to be connected to a source of water under pressure, said inlet means including first and second valve means;
(c) means forming of air break between said first and second valve means and said container means;
(d) a reservoir for liquid treating agent;
(e) conduit means having one end within said reservoir in aspirating relation to liquid therewithin and having its other end connected to said first valve means above said reservoir so as to be subjected to the aspirating effect of flowing water upstream of said air break;
(f) said second valve means passing a substantially larger amount of water when opened than said first valve means; and
(g) a control system for controlling the periods during which said first valve means is open and during which said second valve means is open.

3,301,023
AUTOMATIC WASHING MACHINE HAVING MEANS TO COOL DOWN THE WASH WATER
Delbert J. Painter, Jeffersontown, Ky., assignor to General Electric Company, a corporation of New York
Filed Apr. 16, 1965, Ser. No. 448,726
4 Claims. (Cl. 68—12)

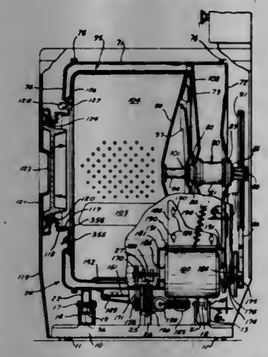
1. A washing machine comprising:
(a) a nonrotatable liquid receptacle;
(b) a rotatable perforate clothes receptacle positioned within said liquid receptacle;
(c) washing means within said liquid receptacle to effect washing of clothes placed in said clothes receptacle;
(d) pumping means for removing liquid from said receptacle;
(e) drive means having first and second operating conditions, said drive means being arranged to operate said washing means when in said first condition and to simultaneously rotate said clothes receptacle and operate said pumping means when in said second position, said drive means being formed to accelerate said clothes receptacle slowly up to full speed;

(f) supply means energizable to introduce selectively hot and cold water into said liquid receptacle;
(g) and an automatic sequence control assembly effective to provide a sequence of operation including first, energization of said supply means to effect filling of said liquid receptacle to a predetermined level, second, said first operating condition of said drive means to operate said washing means, and



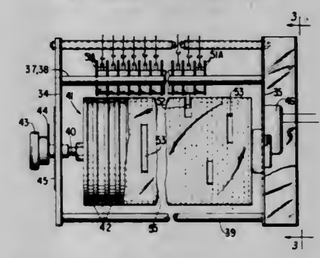
third, said second operating condition of said drive means to simultaneously rotate said clothes receptacle and operate said pumping means;
(h) said sequence control assembly being adapted to energize said supply means to introduce cold water into said liquid receptacle during at least a portion of the period of slow acceleration of said clothes receptacle.

3,301,024
LAUNDRY APPARATUS
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,346
12 Claims. (Cl. 68—12)



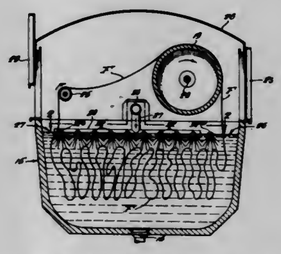
1. In a laundry apparatus for performing a complete washing and drying cycle of operations, the combination comprising: a base member; casing means; means for supporting said casing means on said base member; perforate container means mounted in said casing means for rotation about a nonvertical axis and having a wall member and an access for receiving fabrics to be washed and dried therein; means for providing washing fluids to said container means; means for drying fabrics in said container means; drive means for rotating said container means at a plurality of speeds to perform said complete washing and drying cycle of operations; control means including sequencing means and circuit means cooperable therewith for selectively energizing said drive means to effect a series of operations including a final fluid extraction operation, and a tumble dry operation; and means for terminating said tumble dry operation including electrode means positioned in said container means operative for interrupting operation of said apparatus responsive to the absence of wet tumbling fabrics contacting said electrodes.

3,301,025
LAUNDRY MACHINE
Frederick R. Gruner, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed July 13, 1965, Ser. No. 471,655
6 Claims. (Cl. 68—12)



1. In a laundry machine having a housing within which a basket is mounted for rotation, the basket being driven by an electrically operated high speed drive as well as an electrically operated low speed drive, and in which electrically operated water inlet means and water outlet means are provided, the combination therewith of a controller for sequentially operating said components comprising in combination, drum means having a plurality of axially spaced, circumferentially extending grooves; switch means mounted in cooperating position with each of said grooves, said switch means including levers that extend downwardly into the corresponding groove; and a thin sheet surrounding said drum means and including slots that are aligned with grooves in said drum means, whereby as said drum means is turned and said slots register with said levers, said levers move into said grooves, causing actuation of said switches.

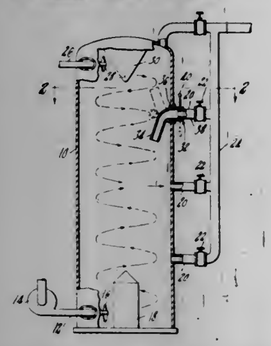
3,301,026
FABRIC DYE BECK HAVING A LIQUID FABRIC BARRIER
Walter E. Mason, Clayton, Ga., and John McNutt, Lexington, Va., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Nov. 24, 1964, Ser. No. 413,507
12 Claims. (Cl. 68—177)



1. In a dye beck assembly for piece dyeing endless lengths of fabric having a dye liquor kettle and means for circulating dye liquor into and out of the dye liquor kettle, the improvement which comprises means positioned adjacent the surface of the dye liquor for generating a

liquid current barrier in the dye liquor adjacent the surface thereof and extending substantially over the area of the dye liquor between the entrance and exit zones of the fabric for maintaining a selected length of the fabric immersed in the dye liquor.

3,301,027
PULP TREATMENT APPARATUS
John P. Rich, Nashua, N.H., assignor to Improved Machinery Inc., Nashua, N.H., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,457
4 Claims. (Cl. 68—181)



1. In a vertically positioned variable retention upflow reaction tower generally of circular cross-section having liquid-suspension inlet means at the lower portion thereof, a plurality of outlet means in said tower vertically spaced from each other above said liquid-suspension inlet means, valve means on at least all but the uppermost of said outlet means for selectively controlling the removal level of said liquid-suspension within said tower, and means within said tower for causing helical movement of said liquid-suspension to said removal liquid, that improvement in which:

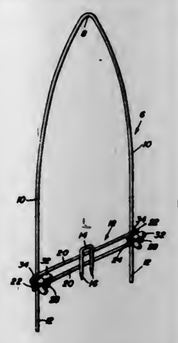
dilution liquid inlet means are positioned at the upper portion of said tower, above at least all but the uppermost of said outlet means; and

means are provided within said tower for causing helical movement of said dilution liquid to said removal level;

said dilution liquid means establishing in operation, a dilute liquid-suspension substantially at said removal level, and a relative stopping thereat of any proceeding reaction.

3,301,028
PELT STRETCHING AND DRYING DEVICE
Clifford Perardi, R.F.D. 1, Farmington, Ill. 61531
Filed Mar. 25, 1965, Ser. No. 442,670
2 Claims. (Cl. 69—19.2)

1. A pelt holding, stretching and drying device comprising: an elongated U-shaped onepiece frame embodying a pair of substantially straight coplanar resilient limbs having like ends joined by a rigid integral bight portion, a screw-threaded stud for each limb having a shank portion with a hole therethrough, a companion one of said limbs passing snugly but slidingly through said hole, a cross-brace spanning the space between and with end portions extending beyond the respectively cooperable limbs, the end portions of said cross-brace being slotted and residing in shiftably adjustable contact with coacting surfaces of said limbs, the threaded portions of said studs passing through and beyond cooperating portions of the slots, threaded assembling and clamping abutment means threaded on said threaded portions and including portions overlying and frictionally engaging the adjacent portions of the corresponding end portion of said cross-brace on both sides of the slotted portion through which the associated stud passes and

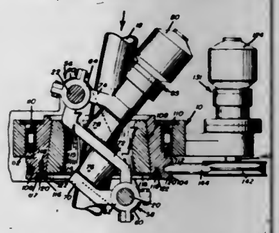


thereby clamping the corresponding end portion of said cross-brace in position both transversely and longitudinally of the associated limb, and rigid pelt engaging means carried by said cross-brace intermediate said limbs.

3,301,029
WORKING ALUMINOUS METALS
Thomas L. Fritzlen, Henrico County, and Linton D. Bylund, Chesterfield County, Va., assignors to Reynolds Metals Company, doing business as Reynolds Metals Building, Richmond, Va., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,484
10 Claims. (Cl. 72—42)

1. In the process for the rolling of an aluminum alloy wherein said allow is passed through a plurality of cooperating rolls in order to reduce the thickness thereof, the improvement which comprises contacting said alloy with a rolling oil to which has been added gas substantially free from substances reactive with aluminum at the rolling temperature.

3,301,030
ROTARY STRAIGHTENING MACHINE
Raymond G. Brownstein, 300 Fountain Ave., Ellwood City, Pa. 16117
Filed Apr. 7, 1964, Ser. No. 357,893
10 Claims. (Cl. 72—98)



1. Apparatus for straightening elongate tubular stock comprising, in combination:

(a) a hollow ring member having an internal straightening face between side working edges thereof;

(b) means supporting said ring member for rotation;

(c) means for driving said ring member;

(d) first roller means;

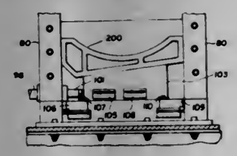
(e) second roller means;

(f) means for rotatably supporting said first and second roller means at least partially within said ring member with said first roller means disposed in overlying relation to one working edge of said straightening face and with said second roller means disposed in overlying relation to the other working edge of said straightening face;

(g) said first and second roller means being rotatable about parallel axes making an acute angle with the axis of rotation of said ring member; and,

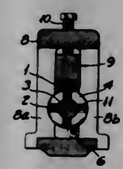
(h) said first and second roller means being spaced from one another and from said ring member to define an elongate tubular stock receiving passageway therebetween through which elongate stock can pass only by engagement with said first and second roller means and said ring member.

3,301,031
ROLLER LEVELER
Gerald L. Bearer, Mount Lebanon, Pa., assignor to Voss Engineering Company, Pittsburgh, Pa.
Filed June 23, 1964, Ser. No. 377,334
7 Claims. (Cl. 72—164)



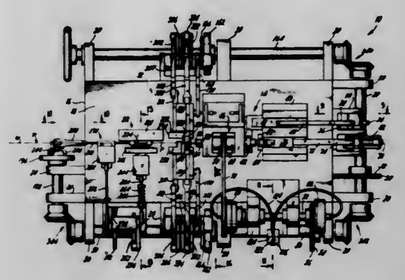
1. In a roller leveler including four vertical corner posts, a top frame and a bottom frame supported by said posts, a top set of rolls and a bottom set of rolls supported by said top and bottom frames, respectively, means between said top frame and top set of rolls to effect vertical adjustment of said top set of rolls, said top frame being rectangular, and four separate jack means, each for lifting and lowering one corner of said top frame relative to a corner post to unclamp or clamp, respectively, said top frame relative to said four corner posts.

3,301,032
PLANETARY ROLLING MILL WITH STATIONARY SINGLE SHAFT
Teruo Hirose, Midori-ku, Nagoya-shi, Japan, assignor to Daido Seiko Kabushiki Kaisha, Minami-ku, Nagoya-shi, Japan, and Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo, Japan, both corporations of Japan
Filed Mar. 2, 1964, Ser. No. 348,375
Claims priority, application Japan, Mar. 8, 1963, 38/12,063
3 Claims. (Cl. 72—197)



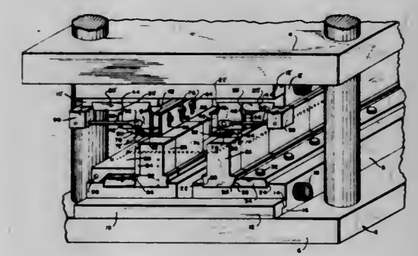
1. A planetary rolling mill comprising a stationary shaft, a pair of side rings rotatably mounted one on either end of said shaft, a plurality of box-like recesses in each said ring, a plurality of work rolls mounted in pairs in said recesses parallel to said stationary shaft so as to make a free revolution thereabout in a planetary motion, means to drive said side rings about said stationary shaft, a member mounted parallel to said stationary roller and adjustably spaced therefrom, the adjacent surfaces of said stationary shaft and said member having correspondingly profiled surfaces so that the material passed therebetween is given a flat smooth surface.

3,301,033
APPARATUS FOR PRODUCING HEADED WIRE FORMS
Frederick A. Bignell, Emporium, and Cedric W. Crosby, Austin, Pa., assignors to Emporium Specialties Co., Inc., Austin, Pa., a corporation of Pennsylvania
Filed Aug. 14, 1964, Ser. No. 389,659
14 Claims. (Cl. 72—294)



1. A wire heading mechanism for use in an automatic apparatus for producing headed wire forms including means for successively advancing a supply length of wire along a wire path to said wire heading mechanism, comprising a pair of axially telescoped rams, keyed for rotation in unison, and disposed for independent reciprocating axial movement at the end of said wire path, the outer ram of said pair having an end wire receiving bore closing about the end of said supply length of wire and presenting an encircling head forming die surface to said wire end, a ramming head forming die surface provided on an end of the inner ram operating within said wire receiving bore, and means operatively connected to said rams to selectively impart rotational and axial movements to said rams for causing said head forming die surfaces to mechanically work said wire end into a head configuration integral to the supply length of wire.

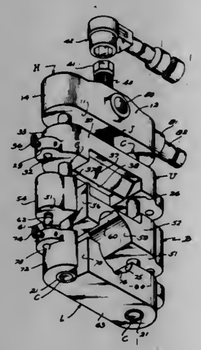
3,301,034
SHEET METAL DIE FORMING APPARATUS
Rudolf G. Boettcher, Grand Haven, Mich., assignor to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 11, 1964, Ser. No. 344,030
12 Claims. (Cl. 72—319)



1. In a bending press for bending in two operations all four edges of a substantially rectangular sheet metal work piece notched to the bend lines at its corners to define flange portions bordering a central body portion, said press comprising two pairs of die elements, means for successively spacing said die elements apart two different distances corresponding to different distances between

pairs of parallel bend lines that are opposite one another, one die element of each of said pairs of die elements having a length equal to the length of the longer bend line to be made on said work piece, means for receiving said work piece in registered position between said die pairs, spaced their greater distance to initially bend the shorter edges of said work piece, said work piece being received in endwise registration over the ends of the dies when spaced their lesser distance to bend the longer edges of said work piece, one die of each pair comprising a movable element simultaneously engaging said work piece along spaced lines on opposite sides of the bend line of the other die to clamp the body portion of the work piece between the dies while bending the flange portions.

3,301,035
SHUT-OFF TOOL
John B. Gill, % Pilot Mfg. Co., P.O. Box 2127, Torrance, Calif. 90503
Filed June 29, 1964, Ser. No. 378,662
17 Claims. (Cl. 72—404)



1. A shut-off tool of the character referred to including, a pair of elongate laterally spaced and vertically disposed parallel columns having upper and lower ends, an elongate horizontally disposed header fixed to and extending between the upper ends of the columns, an elongate horizontally disposed upper forming block slidably engaged on and extending between the columns below the header and having a straight elongate downwardly disposed and laterally extending pipe closing die surface between the columns, jack means carried by the header and coupled with the upper forming block and operable to shift the upper forming block vertically, an elongate horizontally disposed central forming block slidably engaged on and extending between the columns below the upper forming block and having a straight, elongate, laterally extending and upwardly disposed pipe closing die surface between the columns and opposing the pipe closing surface on the upper forming block and an elongate downwardly disposed semi-circular pipe opening die surface extending on an axis normal to the vertical lateral plane of the construction and intermediate the columns, and an elongate horizontally disposed lower forming block engaged with and extending between the lower ends of the columns and having an elongate upwardly disposed semi-circular pipe opening die surface extending on an axis normal to the vertical lateral plane of the construction, intermediate the columns and opposing the opening die surface of the central forming block, said central forming block being adapted to be selectively arranged in varying engagement with the lower and the upper forming blocks to cooperatively relate the die surfaces thereof with the opposing die surfaces of said lower and upper forming blocks and with a deformable pipe arranged therebetween, whereby the pipe can be collapsed and closed by the pipe closing die surfaces and can be subsequently reformed and opened by the pipe opening die surfaces.

3,301,036
SMALL DIAMETER TUBE BENDER
Philip E. Davis, Jr., 1423 Maury, Houston, Tex. 77026
Filed Dec. 10, 1964, Ser. No. 417,289
5 Claims. (Cl. 72—457)

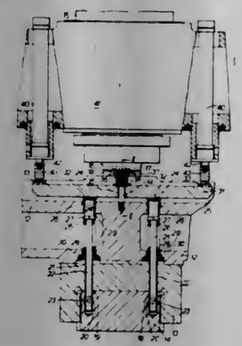


1. A device for bending hollow tubes up to approximately ⅝ inch O.D. comprising:
(a) a body having one end bent at approximately 90° relative to the body,
(b) said body having a slot therein spaced from said bent end and extending along the longitudinal axis of said body, said slot having a curved surface at each end and spaced parallel side surfaces joined at each end to said curved surfaces,
(c) a wheel having an annular groove in the circumference thereof for receiving the tube to be bent,
(d) wheel mounting means having a portion extending through said slot and engaged with said wheel for mounting it adjacent said bent end, said wheel mounting means having an enlarged end for abutting said body to position said wheel thereon,
(e) said portion of said wheel mounting means extending through said slot being smaller in diameter than the width of said slot between said parallel side surfaces and being smaller in diameter than the longitudinal extent of said slot between said end curved surfaces whereby said wheel may rotate relative to said body and may move toward and away from said bent end on said body,
(f) an additional body member,
(g) means pivotally mounting said additional body member on said body, and
(h) said additional body member having an arcuate edge for engaging said enlarged end of said wheel mounting means whereby movement of said additional body member relative to said body forces said wheel toward and away from said bent end.

3,301,037
PRESS
Jack Herbert Beard, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, England, a British company
Filed Sept. 24, 1964, Ser. No. 399,023
Claims priority, application Great Britain, Oct. 7, 1963, 39,396/63
9 Claims. (Cl. 72—481)

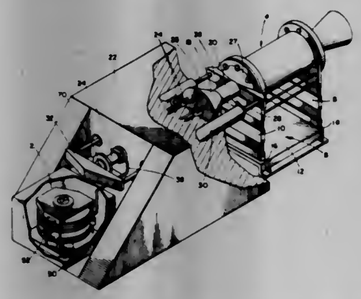
1. A pushdown press having a reciprocable crosshead carrying a tool holder including resilient means arranged to tend to retain the tool in the holder, a tool releasing

device comprising a hydraulic assembly having a ram member and a cylinder member, one of which members is rigidly mounted on the press entablature and the other



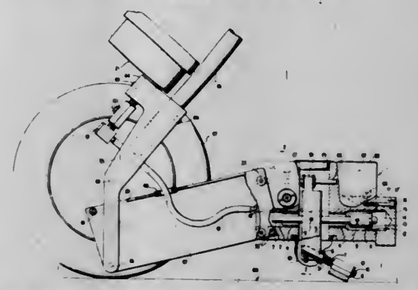
of which members is actuable, relative to the press entablature and to the crosshead, to oppose the resilient means.

3,301,038
THRUST MEASUREMENT CALIBRATOR
Robert A. Rich, Canoga Park, and George A. Hood, Van Nuys, Calif., assignors to North American Aviation, Inc.
Filed Jan. 2, 1964, Ser. No. 334,978
1 Claim. (Cl. 73—1)



A calibrating system for load cells and the like comprising;
a first piston and cylinder assembly, said piston being closely fitted within said cylinder and having a precisely known cross-sectional area,
means to apply precisely known forces on said first piston,
a second piston and cylinder assembly, said second piston being closely fitted within said second cylinder and having a precisely known cross-sectional area,
means adapted to contain fluid and expose said fluid to each of said pistons whereby when said first piston is subjected to said force, said fluid will transfer pressure to said second piston,
tension rods attached to said second piston,
a load cell, a supporting member abutting said load cell and attached to said tension rods whereby when said second piston is actuated by said precisely known forces on said first piston, said load cell will be compressed by said supporting member, said supporting member and said load cell being adapted to receive and indicate thrust from a rocket engine abutting said supporting member, and
a substantially incompressible mass extending between said second piston and said load cell and maintaining said load cell in fixed position, said tension rods freely passing through said mass.

3,301,039
SKID RESISTANCE DRAG TESTER
Hartwig W. Kummer, State College (University Park), Pa., assignor to The Pennsylvania State University, University Park, Pa.
Filed Jan. 6, 1964, Ser. No. 335,745
12 Claims. (Cl. 73—9)

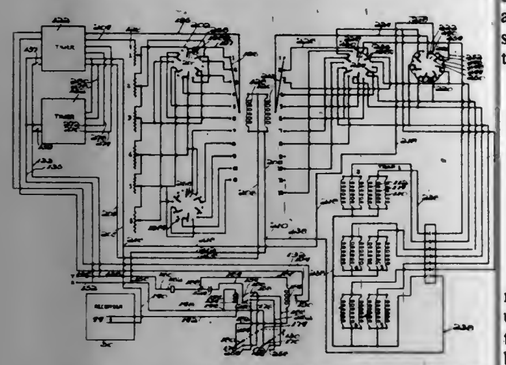


1. Apparatus for measuring roughness in local areas of a surface, comprising
a housing supported at one end adjacent said surface by a wheeled cart, being journaled at points substantially below an axis of rotation for the wheels thereof,
a longitudinal slide member mounted in substantially frictionless sliding engagement relative to said housing,
a shoe supporting a second end of said housing in sliding frictional engagement with said surface being linked to urge said member longitudinally relative to the housing in proportion to a force sufficient to slide said shoe on the surface,
manually operated means for applying a force proximately to said surface for translating said housing along the surface at a substantially uniform rate,
a closed hydraulic pressure chamber,
horizontal shaft means coupling said member to increase said pressure in proportion to said force as the shoe is translated, and
a gage registering changes of pressure in said chamber.

3,301,040
AUTOMATIC FRACTION COLLECTING SYSTEM FOR VAPOR PHASE CHROMATOGRAPHY
Eugene L. Levy, R.D. 1, Box 2913, Oxford, Pa. 19363; Leonard F. Herk, 156 Otis Ave., St. Paul, Minn. 55104; William H. Stahl, 15 Murray Hill Circle, Baltimore, Md. 21212; and David M. G. Lawrey, 224 Valley Green Drive, Chester, Pa. 19014
Continuation of application Ser. No. 723,614, Mar. 24, 1958. This application Oct. 20, 1965, Ser. No. 528,660
17 Claims. (Cl. 73—23.1)

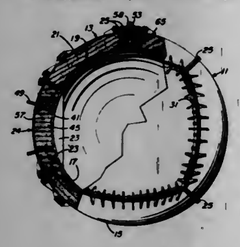
17. Apparatus for automatically collecting fractions separated from a mixture by chromatographic apparatus comprising:
(a) means for detecting a plurality of fractions which were separated from said mixture by said chromatographic apparatus and producing a plurality of signal peaks corresponding respectively to said fractions,
(b) a plurality of collecting means for collecting predetermined ones of said fractions,
(c) means for conducting said separated fractions to said collecting means, and
(d) means responsive to the maxima of the respective ones of said signal peaks for initiating the application of said predetermined fractions corre-

sponding to said signals via said conducting means to predetermined ones of said collecting means, and



(e) means responsive to predetermined subsequent portions of said respective ones of said signals for terminating the application of said corresponding predetermined fractions to said predetermined ones of said collecting means.

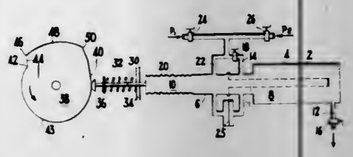
3,301,041
PRESTRESSED CONCRETE CONTAINMENT VESSEL
Donald W. Mueller, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 28, 1964, Ser. No. 392,978
4 Claims. (Cl. 73—35)



1. A concrete containment vessel comprising a spherical inner shell, a compressible blanket affixed to and substantially completely covering the exterior surface of said inner shell, an outer spherical steel shell of larger radius than that of the inner shell supported concentrically with the inner shell, a concrete layer completely filling the space between the inner and outer shell, said outer shell comprising spherical segments having edge flanges and bolts under tension joining adjacent flanges whereby said outer shell is stressed in tension and said concrete layer is stressed in compression.

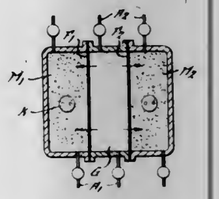
3,301,042
METHOD OF DETERMINATION OF THE CHARACTERISTICS OF POROUS BARRIERS AND INSTRUMENT FOR THE PRACTICAL APPLICATION OF SAID METHOD
Charles Eyraud, Ivan Eyraud, and Marcel Gayral, Lyon, and Pierre Gilles and Daniel Massignon, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed July 9, 1963, Ser. No. 293,730
Claims priority, application France, July 20, 1962, 904,690
3 Claims. (Cl. 73—38)

1. A method of comparing the permeability of each of a series of porous barriers to a standard porous barrier comprising the steps of interposing a barrier of unknown permeability between two chambers, establishing a stabilized pressure in each of the chambers, applying an abrupt, predetermined variation in volume in one of said chambers to establish a first pressure difference, then slowly varying the volume of the same chamber with



respect to time so that the flow rate between the chambers under said first pressure difference is equal to the variation in volume per unit time with respect to said standard barrier, measuring the pressure difference between said chambers for at least one value of the mean pressure between the chambers and comparing said measured pressure difference to said first pressure difference.

3,301,043
METHOD AND MEANS FOR THE EXPERIMENTAL DETERMINATION OF THE PERMEABILITY OF FOILS TO GAS
Georges H. Lyssy, Zollikon, Switzerland, assignor to Hans Sickinger Co., West Bloomfield Township, Mich., a corporation of Michigan
Filed Apr. 16, 1964, Ser. No. 360,309
Claims priority, application Switzerland, May 9, 1963, 5,933/63
3 Claims. (Cl. 73—38)

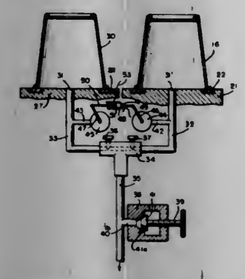


1. In a method for experimentally determining the relative permeability of two foils to a test gas, the steps of providing two chambers which are thermally substantially equivalent, using a first of said foils to form a wall of one of said chambers and the second foil to form a wall of the other chamber, filling both chambers with a reference gas, permitting a test gas differing from said reference gas to act against the outsides of both foils, and measuring the difference in thermal conductivities of the reference gases in said two chambers caused by the difference in rates of diffusion of said test gas through said two foils.

3,301,044
SYSTEM FOR TESTING PAPER CUPS FOR LEAKS
Fritz Wommelsdorf, Eggersallee 23, Hamburg-Altona, Germany
Filed Oct. 1, 1963, Ser. No. 313,058
19 Claims. (Cl. 73—45.2)

1. A system for testing paper cups or similar paper containers and sorting out paper cups having no structural defects comprising the steps of positioning a standard structurally nondefective paper cup at a measuring station, positioning a similar paper cup to be tested at a remote testing station, subjecting both of said cups to a simultaneous and equal action of air under very low

reduced pressure, measuring the difference between the reduced pressure in the cup being tested and in the cup at the measuring station, controlling a switching device



in accordance with measured pressure differential and actuating a sorting device for sorting out the defective cups from the nondefective cups by said switching device.

3,301,045
INSTRUMENT FOR MEASURING HORSEPOWER OF MARINE ENGINES
Glenn B. Grabill and Eldon L. Lorenz, Grand Rapids, Mich., assignors to Michigan Wheel Company, Grand Rapids, Mich., a corporation of Michigan
Filed Apr. 22, 1964, Ser. No. 361,651
4 Claims. (Cl. 73—134)



1. A reversible, negligible-thrust, marine engine power absorbing disc for attachment to the prop shaft of marine engines and operation in water comprising: a power absorbing disc lying generally in a plane and having a central transverse shaft-receiving hub; portions of said disc defining a plurality of generally radially extending openings around said disc in symmetrical pattern, each having a substantial width in said plane to form a water flow gate; the opposite edge portions of each of said openings extending laterally at a small acute angle in opposite directions of said disc, creating water drag surfaces of substantially negligible thrust axially of said hub and the width of said gates and of said water drag surfaces being such as to create a water flow pattern of power absorbing, negligible thrust characteristics.

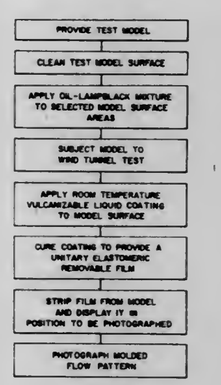
3,301,046
METHOD OF OBTAINING PERMANENT RECORD OF SURFACE FLOW PHENOMENA
Kennedy F. Rubert, Yorktown, Allen R. Vick and Earl H. Andrews, Jr., Newport News, and Charles B. King, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 14, 1964, Ser. No. 403,960
14 Claims. (Cl. 73—147)

1. A method of obtaining a molded pattern of the surface flow obtained in the wind tunnel test of an aerodynamic vehicle model comprising:

applying a flowable indicating medium to selected areas of an aerodynamic model,

subjecting the model to a wind tunnel test with flow of the indicating medium during testing producing visual indications of the surface flow phenomena on said model,

removing the model from the wind tunnel test area and thereafter applying a coating of a catalyzed room-temperature vulcanizable silicone rubber over the model surface area so as to completely engulf said indicating medium,

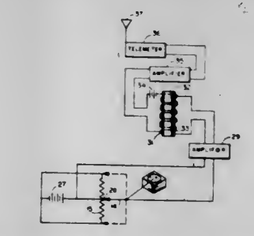


curing said room-temperature vulcanizable silicone rubber to form a unitary removable elastomeric film,

said film, as cured, completely absorbing and retaining the details of the engulfed indicating medium,

stripping said elastomeric film from said model and displaying the film so as to expose to view the model surface flow pattern as indicated by the indicating medium absorbed by said film.

3,301,047
WAVE GAGE ARRAYS FOR OBTAINING OCEAN-WAVE SPECTRA
Walter A. Von Wald, Jr., Hillcrest Heights, and Jacob E. Dinger, Silver Hill, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 8, 1963, Ser. No. 322,544
3 Claims. (Cl. 73—170)



1. A wave analysis system which comprises:

(a) a buoy,

(b) at least one electrical calorimeter-telemetering system secured within said buoy,

(c) a line secured to said buoy and extending vertically downwardly from said buoy,

(d) at least one differential pressure transducer secured onto said vertically extending line secured to said buoy,

(e) said differential pressure transducers equal in number to that of said electrical calorimeter-telemetering systems,

(f) a separate variable resistor element controlled by one each of said differential pressure transducers,

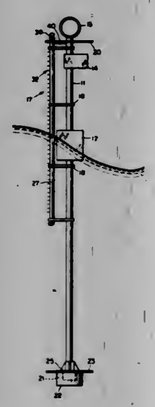
(g) said resistor element comprising a pair of resistors with a center tap providing a null position between said resistors and a movable arm normally positioned at said null position and movable along said resistors in electrical contact therewith on opposite sides of said null position,

(h) an electrical power source with one side connected to said center tap of said resistor element and the other side of said electrical power source connected to the outer ends of each of said resistors,

(i) each of said pressure transducers mechanically connected with said movable arm of one each of said separate variable resistor elements, whereby

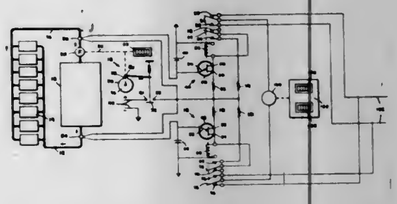
(j) said movable arm moves from said normal null position along said resistance element to supply different voltages to one each of said electrical calorimeter-telemetering systems in said buoy in accordance with any pressure change on said pressure transducer.

3,301,048
SEA STATE RECORDER
Harry D. Felsenthal, Jr., Camarillo, Walter W. Nakashima, Los Angeles, and William E. Zecher, Oxnard, Calif., and Eugene F. Ecker, Garland, Tex., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 20, 1964, Ser. No. 361,626
1 Claim. (Cl. 73—170)



A self-contained sea state recorder comprising: a mast and a float mounted upon the mast in the upper portion thereof for disposing the mast in an upright position in water; sea anchor means attached to the base of said mast for damping vertical mast motion; electrically conductive support means fixedly attached to said mast in the upper portion thereof; said support means disposed substantially parallel to said mast; wind vane means secured to said mast near the top thereof and extending outwardly therefrom in a direction different from the direction in which said support means extends so as to position said support means to windward of said mast; a plurality of electrical terminals spaced longitudinally along and attached to said support means and extending in a direction therefrom remote from said mast; a plurality of electrical resistance means connected one each intermediate adjacent pairs of said terminals; said resistance means being insulated from the water and said terminals being exposed to the water at least in portions remote from the support means; and electrical recorder means connected in series with said plurality of resistance means; said recorder means including an electrical power supply and a timer whereby wave height is determined by the number of terminals shunted by water contacting the terminals and the support means, and wave phase is determined by the span between successive waves; said sea anchor means including a flange attached to the mast at the base thereof; said recorder means includes accelerometer means to compensate for vertical oscillatory motion of said mast in response to wave motion; and a lamp positioned atop said support means and connected to said power supply and said timer whereby said lamp may be energized at the termination of a selected period of of sea state recording.

3,301,049
HEAT QUANTITY METER
Norman L. Meyerson, Glen Rock, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed June 19, 1964, Ser. No. 376,443
11 Claims. (Cl. 73—193)



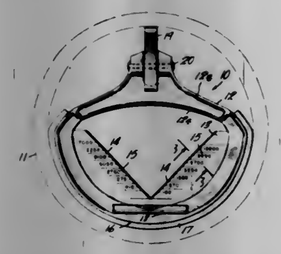
1. Measuring apparatus comprising flow measuring means for measuring the flow of a liquid which is to be heated or cooled by a generator, a first temperature sensor adapted to be positioned to measure the temperature of a liquid supplied to the generator, a second temperature sensor adapted to measure the temperature of the liquid as it leaves the generator, temperature difference sensing means controlled by said flow measuring means and by the difference in temperature between the temperature sensed by said first sensor and the temperature sensed by said second sensor, integration means controlled by said temperature difference sensing means for adding up temperature difference sensing means output signals caused by said temperature difference, said flow measuring means activating said temperature difference sensing means to feed a temperature difference sensing means output signal to said integration means for a unit of liquid flow measured by said flow measuring means, and said temperature difference sensing means including a first and a second time delay circuit, said first time delay circuit being controlled by said first sensor to produce an output signal after a period determined by the temperature sensed by said first sensor, and said second time delay circuit being controlled by said second sensor to produce an output signal after a time delay determined by the temperature sensed by said second sensor.

3,301,050
LIQUID FLOW MEASURING APPARATUS
Carrell S. McNulty, 35 Beulah Road, New Britain, Pa. 18901
Filed Mar. 16, 1964, Ser. No. 351,989
11 Claims. (Cl. 73—215)

1. Apparatus for measuring the rate of flow of liquid in a conduit adapted for easy installation inside and removal from said conduit comprising in combination

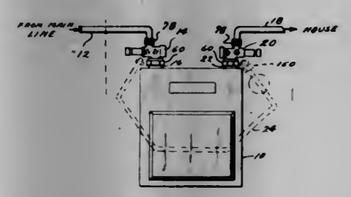
a weir plate adapted to indicate the rate of flow of liquid through said conduit, and

a frame for supporting said weir plate, said frame adapted to be removably positioned entirely within said conduit, said weir plate being rigidly mounted on said frame so as to prevent relative motion there-



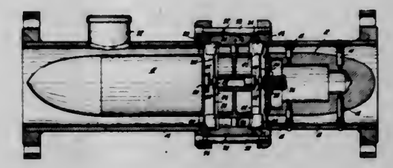
between, the bottom edge of said frame being shaped to fit in substantially liquid-tight relation the interior bottom surface of said conduit.

3,301,051
BY-PASS FLUID METER FITTING
John J. Smith, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Feb. 3, 1965, Ser. No. 430,137
12 Claims. (Cl. 73—201)



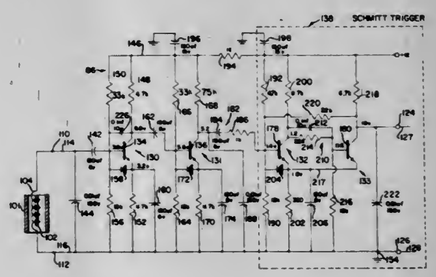
1. A by-pass type fitting for use on one of an outlet conduit and an inlet conduit of a fluid meter comprising: an elongated body provided with a bore therein closed at one end thereof and open at its other end, said elongated body having a first laterally projecting portion adjacent the closed end of said bore, said laterally projecting portion having a pasageway therethrough communicating laterally with said bore and further having a swivel nut means thereon for detachably connecting the same to one of the inlet and outlet conduits, said elongated body further having a second laterally projecting portion thereon spaced longitudinally from said first laterally projecting portion, said second laterally projecting portion having a passageway therethrough communicating with said bore laterally at a location spaced longitudinally from said first-mentioned passageway, a by-pass port communicating with said bore at a location spaced longitudinally from said second mentioned passageway on a side of the same away from the first mentioned passageway, said bore having sections of the same uniform diameter on opposite sides of said second passageway; a closure for said port detachably engageable with said body; a spool valve in said bore sealingly engageable with said bore sections and selectively movable therebetween, and stem means on said spool valve threadedly engaging said bore adjacent, and accessible from the open end thereof, said stem means having an outwardly facing wedge-shaped end.

3,301,052
TURBINE FLOWMETER
Winston F. Z. Lee, 446 Grove Road, Verona, Pa. 15147, and Henning Karlby, Fox Chapel Road, Pittsburgh, Pa. 15238
Continuation of application Ser. No. 717,922, Feb. 7, 1958. This application Nov. 15, 1965, Ser. No. 509,680
11 Claims. (Cl. 73—231)



1. In combination, means including inner and outer walls defining a rectilinear fluid flow conduit of uniform annular cross-section interrupted at spaced intervals to form axially spaced apart inwardly opening annular recesses, a pair of peripherally bladed axially spaced independently rotatable axially aligned turbine rotors having oppositely directed blade angles and having the blades thereof disposed in the path of fluid flowing through said annular conduit for movement in response to fluid flow through said conduit, the upstream one of said rotors acting to impart a supplemental driving torque on the downstream one of said rotors and the downstream one of said rotors adapted to be connected for determining the volumetric flow rate of fluid passing through said conduit, means journalling each of said rotors coaxially of said conduit with each of said rotors being radially aligned with separate ones of said recesses, the blades of said rotors extending radially across said conduit and projecting into respective ones of said recess in radially overlapping relationship to the inner and outer walls of said conduit whereby the fluid stream contacts only the blades as it passes through the turbine rotors.

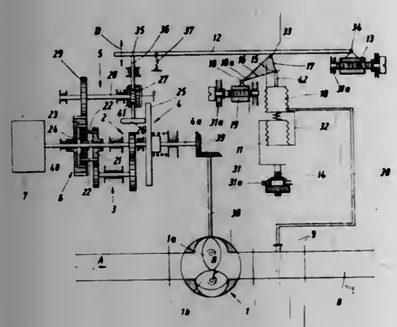
3,301,053
FLOW METER
Leo M. Walch, Jr., Pittsburgh, and William P. Caywood, Jr., Murrysville, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1964, Ser. No. 348,153
8 Claims. (Cl. 73—231)



8. In a fluid flow meter, a housing having fluid inlet and outlet openings, a rotor rotatably supported in said housing to be driven by fluid flow therethrough, an inductor coil having a pair of output terminals, means for including voltage variations in said coil in response to ro-

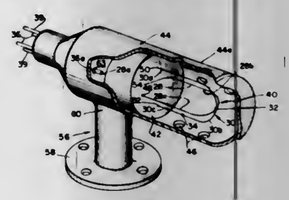
tation of said rotor to produce at said output terminals an undulating electrical signal whose amplitude and frequency are proportional to the rotational velocity of said rotor, a transistor amplifier circuit having emitter and base terminals and a collector, means electrically connecting one of said transistor circuit emitter and base terminals to one of said inductor coil output terminals, means electrically connecting the other of said transistor emitter and base terminals and the other of said inductor coil output terminals to a fixed reference voltage source, a trigger circuit, means electrically connecting the input of said trigger circuit to the output of said amplifier circuit to respond to the amplifier output signal for producing a signal of predetermined form, an electrically actuatable register operatively connected to the output of said trigger circuit to be actuated by signals produced by said trigger circuit, and gain control feedback means connected between said collector and said one terminal of said transistor amplifier circuit for (a) utilizing the full gain of said amplifier circuit to produce said amplifier output signal up to a predetermined frequency and (b) for decreasing said gain as said undulating signal increases above said predetermined frequency to avoid a possible voltage bias shift on said trigger circuit.

3,301,054
FLUID METER WITH SUMMATING DRIVE
Martin Ebert, Mannheim-Gartenstadt, Germany, assignor to Bopp & Reuther G.m.b.H., Mannheim-Waldhof, Germany
Filed Feb. 19, 1964, Ser. No. 345,875
Claims priority, application Germany, Feb. 21, 1963, B 70,827
3 Claims. (Cl. 73—233)



1. A fluid meter comprising, in combination, a recording mechanism; a rotatable volumetric metering device; and a summating drive between said metering device and said recording mechanism and comprising a main drive branch including differential gears and a secondary drive branch including friction wheel means, said friction wheel means including a first friction wheel having an axis and being connected to said metering device to be rotated about said axis, said first friction wheel having a side face, and a second friction wheel having an axis substantially normal to said axis of said first friction wheel and engaging said side face of the latter to be driven thereby, and means for adjusting said secondary drive branch comprising expandable bellows means in operative engagement with the fluid to be metered and connecting means including a first lever pivotally mounted at one end thereof and operatively engaging in the region of the other end thereof said second friction wheel, and a triangular function lever pivotally mounted at one corner thereof and engaging at a second corner thereof said bellows means and at the third corner thereof said first lever intermediate the ends of the latter.

3,301,055
THERMOELECTRIC FLUID SENSOR
Sidney B. Williams, Lexington, and Vernon C. Westcott, Lincoln, Mass., assignors to Trans-Sonics, Inc., Lexington, Mass.
Filed May 28, 1965, Ser. No. 459,793
27 Claims. (Cl. 73—295)

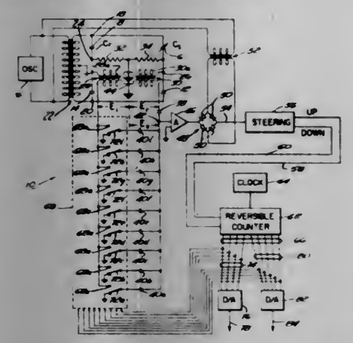


1. A transducer for determining whether a contained fluid is above or below a known level, said transducer comprising
A. a support housing having a perforate wall forming a cavity section and having a base section at one end of the cavity section,
B. a resistive wire supported by said housing with at least a portion thereof openly exposed in said cavity section to environmental fluid,
C. a thermocouple
(1) comprising first, second and third successively connected conductive strands forming a first thermocouple junction between said first and second strands and a second thermocouple junction between said second and third strands.
(2) said thermocouple being supported by said housing from said base section with said junctions disposed within said cavity section openly spaced from the housing walls and relatively thermally isolated from said housing and openly exposed to substantially the same level of environmental fluid,
(3) at least one of said first and second strands being connected with said resistive wire proximate to said first thermocouple junction,
(4) said second junction being removed from said resistive wire to have relatively low heat transfer therewith.

3,301,056
LIQUID MEASURING SYSTEM
Robert L. Blanchard, Lexington, and Arthur E. Sherburne, Bedford, Mass., assignors to Trans-Sonics, Inc., Lexington, Mass.
Filed June 14, 1963, Ser. No. 287,882
25 Claims. (Cl. 73—304)

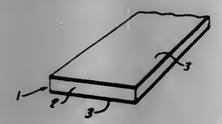
1. Apparatus responsive to the quantity of a fluid, said apparatus comprising
(a) a sensor having an electrical impedance which varies in accordance with said fluid quantity,
(b) a bridge circuit having said sensor connected in one arm thereof and operable to develop an unbalance signal indicative of said quantity,
(c) impedance balancing means connected to cancel said unbalance signal,
(d) a reversible counter connected to control the impedance of said balancing means in accordance with the content of said counter,
(e) a clock signal source connected for counting of the cycles thereof by said counter,

(f) said counter being connected to count up when said unbalance signal has one sense and count down when said signal has the opposite sense,



(g) whereby the variation of said balancing means in accordance with the content of said counter tends as a whole to minimize said unbalance signal.

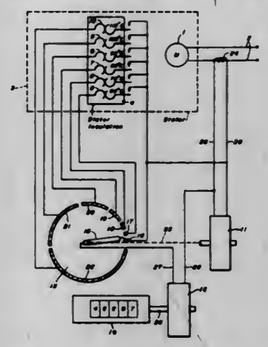
3,301,057
HUMIDITY SENSING ELEMENT
Walter J. Smith, Arlington, and Rienzi B. Parker, Weston, Mass., assignors, by mesne assignments, to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 12, 1964, Ser. No. 366,819
5 Claims. (Cl. 73—337)



1. A synthetic humidity sensing element, comprising a core of a substantially 100% esterified cellulose ester in which the esterifying acids contain up to 8 carbon atoms, and an outer layer of regenerated cellulose bonded to the core, said element being produced by hydrolyzing a surface of the core to provide said regenerated cellulose outer layer, said cellulose being highly sensitive to moisture conditions and increasing in dimension with increases in relative humidity and said core tending to resist the increase in dimension of said cellulose outer layer and preventing permanent deformation of said cellulose layer.

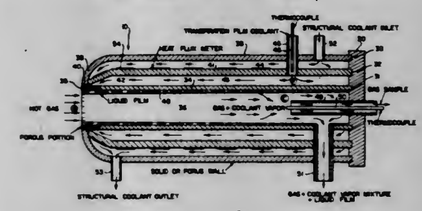
3,301,058
TIME-TEMPERATURE AGE REGISTER FOR ELECTRICAL INSULATION
William L. Roberts, Murrysville, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Oct. 2, 1963, Ser. No. 313,297
5 Claims. (Cl. 73—339)

4. Apparatus for registering the operational age of insulation in electrical equipment such as motors and the like comprising a registering means, a synchronous A.C. clock-motor drive for operating said registering means, and means controlling the operation of said drive comprising a rotary switch having a plurality of circumferentially spaced arcuate contacts, a synchronous A.C. clock-motor for operating said switch at the rate of 1 revolution per unit of time, means responsive to the operation of said electrical equipment for operating said switch clock-motor, and a plurality of control circuits respectively adapted to be completed through said arcuate contacts and effective when completed for rendering said clock-motor drive for said registering means operative for different intervals of time during each revolution of said rotary switch, one of said circuits being rendered operative during each revolution of said switch for an interval of time sufficient to cause said registering means to register the units of time said equipment is in operation, the remainder of said circuits being temperature responsive circuits and respectively including thermal switches that operate in response to the temperature of said insulator



at successively high temperatures above the normal operating temperature of said insulation, said arcuate contacts in said remaining circuits having lengths such that said remaining circuits operate when completed by closure of said thermal switches to cause said registering means to register an additional number of said units corresponding to the accelerated aging of said insulation due to operation at temperatures above its normal operating temperature.

3,301,059
APPARATUS FOR DETERMINING ENTHALPY OF HIGH TEMPERATURE GAS
Frederick C. Haas, Summit, N.J., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed Feb. 25, 1964, Ser. No. 347,158
6 Claims. (Cl. 73—339)

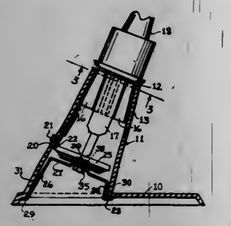


1. Apparatus for determining factors enabling computation of the enthalpy of a gas which may be too hot to have its temperature sensed directly, comprising a main conduit, a bypass conduit having one end connected to said main conduit at an upstream location and having its other end connected to said main conduit at a downstream location, said main conduit being of substantially uniform cross-section upstream from such bypass one end connection, said gas flowing through said conduits, means for annularly flooding at a known flow rate the internal surface of said main conduit at the entrance thereto with a transpiration coolant of known temperature which is carried downstream by the gas flowing through said main conduit so as to form on the internal surface of said main conduit a film which envelops the gas stream, means for determining the fraction of coolant to gas in the portion of said stream flowing through said bypass conduit, means for measuring the temperature of said stream at said upstream location, and means for measuring the flow rate of said stream.

3,301,060
THERMOSTATIC PEN HOLDER

Kenneth M. Kenmotsu, Chicago, Ill., assignor to American Toy and Furniture Co., Inc., Chicago, Ill., a corporation of Illinois

Filed Oct. 1, 1965, Ser. No. 492,050
1 Claim. (Cl. 73—343)



A pyrographic pen holder comprising

(a) a heat-resistent non-conductive base and a hollow cone-shaped pen receptable,

(b) a pen-holding means within said cone-shaped receptable adjacent one end thereof for receiving and positioning one end of a pyrographic pen therein,

(c) a thermal responsive member within said receptacle in spaced relation to said pen-holding means engageable by the point of a pen inserted therein and movable in response to the temperature thereof,

(d) means for mounting said thermal responsive member within said cone-shaped pen receptacle, and

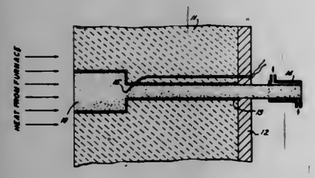
(e) a temperature indicator connected to said thermal responsive member and movable therewith for visually indicating the temperature of the pyrographic pen within said pen holder,

(f) said means for mounting said thermal responsive member within said cone-shaped receptacle comprising a substantially U-shaped mounting bracket providing means for fixedly positioning the mounting bracket within the receptacle in a predetermined position.

3,301,061
PYROMETER

William E. Schwabe and Jon A. Clotti, Niagara Falls, N.Y., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York

Original application May 15, 1963, Ser. No. 280,670, now Patent No. 3,247,714, dated Apr. 26, 1966. Divided and this application Oct. 21, 1965, Ser. No. 514,159
6 Claims. (Cl. 73—359)

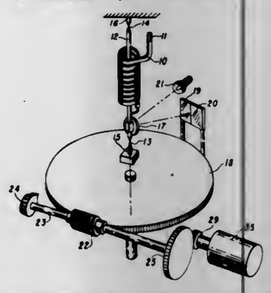


1. A pyrometer comprising an elongated thermally-conductive body having an overall non-linear temperature gradient when conducting heat axially and having first and second terminal portions disposed at opposite ends of said body, the first terminal portion possessing a higher thermal conductance than the remainder of said body and the end face of the first terminal portion being adapted for exposure to a relatively hot environment, and the second terminal portion being adapted for exposure to a relatively cold environment of substantially constant temperature; insulating means contiguous with said body and arranged so that the principal heat flow within said body is in an axial direction; and at least one temperature-sensing device in conjunction with said body for measuring the temperature of said body at an intermediate point between the aforesaid terminal portions.

3,301,062
TEMPERATURE COMPENSATED PRESSURE SENSITIVE DEVICE

Carl E. Reesby and John B. Damrel, Jr., Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 16, 1966, Ser. No. 534,696
10 Claims. (Cl. 73—393)



1. A fused quartz Bourdon tube pressure device, comprising:

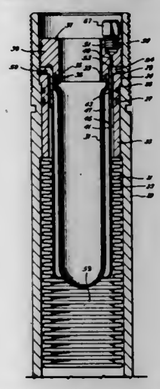
means for producing a first signal indicative of the displacement of said Bourdon tube is response to pressure applied thereto and

compensation means for generating a second signal responsive to the displacement of said Bourdon tube caused by a change in ambient temperature, said compensation means including a temperature sensitive impedance means which causes said second signal to vary in response to an ambient temperature change, whereby said compensation means modifies said first signal in opposition to a modification of said first signal in response to the displacement of said Bourdon tube by said change in ambient temperature.

3,301,063
PRESSURE RECORDER

James W. Kisling III and John E. Stachowiak, Houston, Tex., assignors to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Dec. 10, 1964, Ser. No. 417,284
3 Claims. (Cl. 73—395)

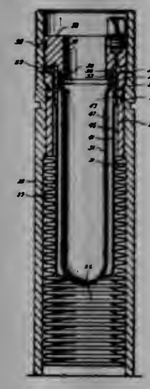


1. In a pressure-measuring apparatus for use in a well bore where the apparatus includes a housing, means within the housing which are responsive to changes of pressure for providing indications of pressures encountered in the well bore, and means providing access for well fluids to the housing to affect said pressure-responsive means, the improvement comprising: metal bellows means hermetically sealing off the interior of said housing from gas contained in well fluids and permitting the interior of said housing to be filled with a pressure-transmitting fluid; elastomer means sealing off said bellows means from access to well fluids and forming a space for receiving a pressure-transmitting fluid; and pressure relief valve means in communication with the space between said bellows and elastomer means, said bellows means and elastomer means permitting pressure in the well bore to be sensed within said housing without exposing the interior of said housing to gas or fluid found in a well.

3,301,064
PRESSURE RECORDER

James W. Kisling III, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Dec. 10, 1964, Ser. No. 417,300
2 Claims. (Cl. 73—395)



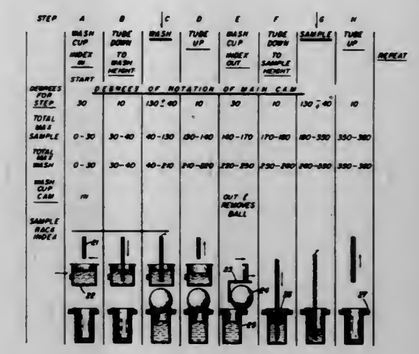
1. In a pressure-measuring apparatus for use in a well bore where the apparatus includes a housing, means within the housing which are responsive to changes of pressure for providing indications of pressures encountered in the well bore, and means providing access for well fluids to the housing to affect said pressure-responsive means, the improvement comprising: bellows means hermetically sealing off the interior of said housing from gas contained in well fluids and permitting the interior of said housing to be filled with a pressure-transmitting fluid; and elastomer means sealing off said bellows means from access to well fluids and forming a space for receiving a pressure-transmitting fluid, said bellows means and elastomer means permitting pressure in the well bore to be sensed within said housing without exposing the interior of said housing to gas or fluid found in a well.

3,301,065
LIQUID SAMPLE SUPPLY APPARATUS

Marvin Jay Fahrenbach, Tomkins Cove, N.Y., Paul Hadley Bell, Ridgewood, N.J., and Ellsworth Roland Sandhage, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Mar. 20, 1964, Ser. No. 353,409
12 Claims. (Cl. 73—423)

1. An apparatus for feeding separate discrete individual liquid samples to an automated analyzing mechanism comprising: means for sequentially supplying, in order, a plurality of samples in separate sample cups, individual readily displaceable balls covering such sample cups, means to remove the ball from each sample cup just prior to feeding of a particular sample, means to lower an aspirator tube into individual samples sequentially, and after a desired portion of each sample has been removed to raise the aspirator tube, then lower the aspirator tube into an interposed wash liquid, means to interpose a wash liquid container having a wash liquid there-

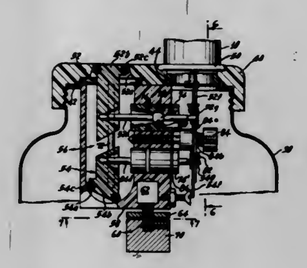


in in the path of the aspirator tube at a level above the sample cups, and displace said wash liquid container after the aspirator tube is raised therefrom, means to maintain the liquid level of the wash liquid constant, means to lift the aspirating tube from the wash liquid and immerse in a subsequent sample cup, and means to index the sample cups so that a subsequent sample cup is in position under the aspirating tube as the tube descends after the washing cycle.

3,301,066
SEWAGE SAMPLING APPARATUS

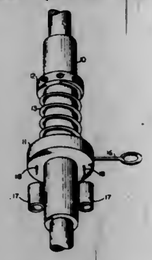
George H. Leonard, Darien, Conn. (90 Lincoln Ave., Stamford, Conn. 06902), and Robert D. Nickerson, 45 Lockwood Road, Riverside, Conn. 06878

Filed Sept. 3, 1964, Ser. No. 394,124
10 Claims. (Cl. 73—425.4)



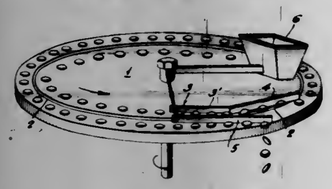
1. Apparatus for obtaining sewage samples, including a container, an elongated tubular support opening into said container and adapted to locate the container in the sewage with the space of the container vented to the atmosphere, means defining a sampling chamber having an inlet to the sewage and an outlet to the space in the container, said sampling chamber being small relative to said container, valve means operable alternately to open said inlet while said outlet is closed and to open said outlet while said inlet is closed, and means for so operating said valve means.

3,301,067
BAROPHILIC BACTERIA SAMPLER
Walter L. Brundage, Jr., Woodbridge, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 13, 1964, Ser. No. 403,669
4 Claims. (Cl. 73—425.4)



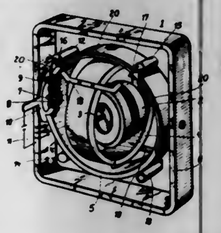
1. A barophilic bacteria sampler which comprises:
a tubular holder means,
a collar means positioned about said tubular holder,
means for positioning said collar at a specific position along said holder,
elongated sharp pointed means secured to said collar means parallel with the axis of said holder,
a test tube holding means secured to said tubular means in alignment with said elongated sharp pointed means,
and means for forcing said collar means and said sharp pointed means toward said test tube holding means.

3,301,068
DEVICE FOR FACILITATING THE INSPECTION OF TABLETS
Gunnar Baalsrud, Slependen, Norway, assignor to Collett & Co. A/S, Oslo, Norway
Filed Dec. 23, 1963, Ser. No. 332,595
Claims priority, application Norway, Jan. 7, 1963, 147,039
2 Claims. (Cl. 73—432)



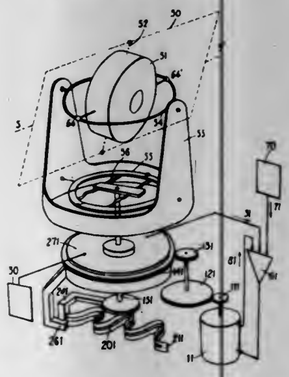
1. A device for facilitating the inspection of tablets, said device comprising a circular rotatably mounted horizontal disk, said disk having a concentric groove in the upper surface of a depth and width less than the tablet diameter, means disposed above said disk for depositing single tablets with one side face uppermost on the upper surface of said disk in a circular concentric path parallel to and adjacent said groove, a stationary guide member disposed above said disk a distance less than the thickness of the tablet, said guide member extending across said circular path and said grove at an angle thereto, whereby upon rotation of said disk to move said tablets in said circular path, said tablets will successively engage said guide member and be moved in a generally radial direction to deposit said tablets on edge in said groove, and will thereafter be moved out of said groove and deposited on the upper surface of said disk with the opposite side face uppermost and in the second circular concentric path on the opposite side of said groove from said first path, and a second stationary guide member disposed above said disk a distance less than the thickness of the tablet, said second guide member extending across only said second circular path at an angle thereto, whereby upon successive engagement of the tablets in said second path with said second guide member said last named tablets will be moved in a generally radial direction out of said second path to a point of discharge from said disk.

3,301,069
DEVICE FOR CORRECTING THE POSITION OF THE INNER CARDAN FRAME OF A GYROSCOPE
Walter Kranz, Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Hamburg, Germany
Filed July 10, 1963, Ser. No. 294,465
Claims priority, application Germany, July 17, 1962, B 68,056
4 Claims. (Cl. 74—5.4)



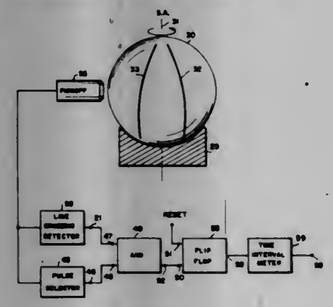
1. A gyroscope mounted on two Cardan frame gimbals, with a device for correcting the position of the inner Cardan frame and comprising pyrotechnical impulse generators arranged at the outer Cardan frame, and means operable to ignite said impulse generators when the inner Cardan frame migrates into a position nearly parallel to the outer Cardan frame.

3,301,070
GYROSCOPE PRECESSION CONTROL SYSTEM
Marcel Lapierre, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed May 20, 1964, Ser. No. 368,920
Claims priority, application France, May 28, 1963, 936,207
6 Claims. (Cl. 74—5.4)



1. A gyroscope system comprising: a gyroscope; an outer and an inner gimbal within which said gyroscope is mounted; at least one servomotor, having a control input; means for controlling said servomotor for providing a torque; a speed reducer associated with said servomotor and having an output shaft; a spring having two corrugated legs having respective first and second ends, said first ends being connected to each other and said second ends being respectively connected to said reducer and to one of said gimbals for passing said torque thereto; metering means, comprising a transmitter stator associated with said reducer and a transmitter rotor associated with said gimbal for measuring said torque; and comparing means having two inputs respectively coupled to said control means and to said rotor, and an output coupled to said servomotor control input.

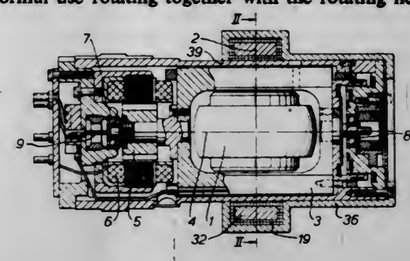
3,301,071
CONTROL APPARATUS
Arthur M. Shalloway, Green Bank, W. Va., assignor to Honeywell Inc., a corporation of Delaware
Filed June 24, 1963, Ser. No. 290,130
6 Claims. (Cl. 74—5.6)



1. A pulse generating means providing a first and a second output signal, said two output signals being comprised of a series of pulses of equal magnitude, but of opposite polarity with respect to a zero signal reference level;
a delay means connected to receive said first output signal from said pulse generating means to delay said first output signal in time by an amount not exceeding the time duration of said pulses;
a signal reducing means connected to said delay means adapted to reduce the magnitude of the signal applied thereto by some predetermined fraction;
a summing means having two inputs and one output, one of said inputs connected to receive said second output signal of said pulse generating means and the other of said inputs adapted to receive the signal from said signal reducing means; and
a zero crossing detector means connected to said summing means, adapted to receive the signal from said summing means and provide an output signal whenever the signal from said summing means crosses said zero signal reference level.

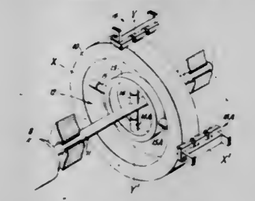
3,301,072
RATE GYROSCOPES
William Richard Simons and David Leonard Judd, Cheltenham, England, assignors to S. Smith & Sons (England) Limited, Cricklewood, London, England, a British company
Filed July 30, 1964, Ser. No. 386,180
Claims priority, application Great Britain, Aug. 10, 1963, 31,675/63
20 Claims. (Cl. 74—5.6)

1. A rate gyroscope comprising in combination a main casing, a gimbal structure mounted for precession in the main casing about a precession axis upon rotation of the gyroscope about an input axis at right angles to the precession axis, spring means for exerting spring restraint against precession of the gimbal structure about the precession axis from a datum position, an alternating current motor mounted in the gimbal structure and having a rotor mounted for rotation about a spin axis at right angles to the precession and input axes, and a stator having windings for applying a rotational magnetic field to the rotor, the rotor in normal use rotating together with the rotating field to



produce magnetic poles at the periphery of the rotor, and an electromagnet for applying a magnetic field to the rotor which interacts with said magnetic poles to produce a force tending to rotate the rotor about said precession axis.

3,301,073
GYROSCOPE APPARATUS
Edwin W. Howe, North Baldwin, N.Y., assignor to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,546
12 Claims. (Cl. 74—5.7)

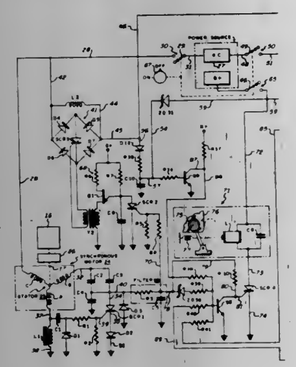


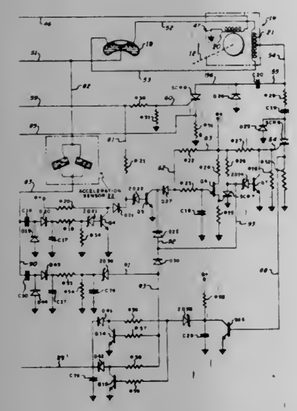
1. Gyroscope apparatus comprising:
a gyroscope rotor circularly symmetrical with respect to an axis of symmetry through it;
a drive shaft rotatable about an axis fixed in said shaft for rotating said rotor about its axis of symmetry;
a universal joint for connecting said drive shaft operatively to said rotor;
said universal joint comprising an intermediate member circularly-symmetrical about an axis through said member, a pair of driven pivots means having collinear pivot axes disposed substantially perpendicular to said axis of symmetry of said intermediate member and each connecting said drive shaft to said intermediate member to transmit torque from said drive shaft to said intermediate member while permitting said intermediate member to pivot about said driven pivot axes, and a pair of driving pivots having collinear pivot axes disposed substantially perpendicular to said axis of symmetry of said rotor and to said driven pivot axes and each connecting said intermediate member to said rotor to transmit torque from said intermediate member to said rotor about the axis of symmetry of said rotor while permitting said rotor to tilt about said driving pivot axes;
each of said driven pivots and said driving pivots comprising a crossed leaf spring support containing a pair of leaf springs disposed with their planes mutually perpendicular and having collinear axes of symmetry, each of said leaf springs being arranged to operate in flexure to provide a restoring torque about the pivot axis of its associated pivot.

3,301,074
START-UP GYROSCOPIC COMBINATION FOR GYRO VERTICALS

Terry S. Allen, Keith E. Close, and Carl L. Lidia, Phoenix, and Edwin B. Sirrine, Glendale, Ariz., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed June 29, 1964, Ser. No. 378,676
11 Claims. (Cl. 74—5.47)



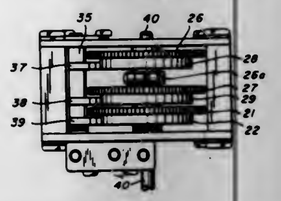


1. A system for erecting a gyroscopic rotor quickly under start-up conditions including a source of electric power; a gyro vertical having a universally mounted rotor frame, a gyroscopic rotor carried by the frame to spin about a normally vertical axis, a polyphase synchronous electric motor having a polyphase wound stator for bringing the rotor up to normal operating speed from standstill; start-up conditioning means including means for connecting the electric motor to the power source, means rendered ineffective under start-up conditions operable at a normal energy level for erecting the rotor, effective means for erecting the rotor operable at an energy level higher than the normal energy level, and changeover means including an S.C.R. with an anode connected to one of the stator windings and a gate connected to another of the stator windings and operable at a determined speed below the normal operating speed of the rotor for rendering the higher energy level erecting means ineffective and the normal energy level erecting means effective.

3,301,075
MEMORY DEVICE

John Traviss Dale, Scarboro, Ontario, Canada, assignor to Her Majesty the Queen in Right of Canada as represented by the Minister of National Defence

Original application Feb. 14, 1961, Ser. No. 89,150, now Patent No. 3,205,346, dated Sept. 7, 1965. Divided and this application Dec. 16, 1963, Ser. No. 330,852
2 Claims. (Cl. 74—10.2)

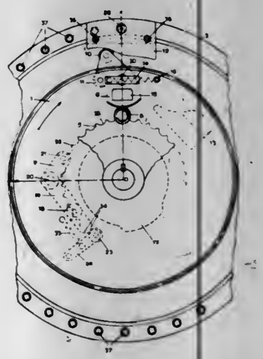


1. A memory device for storing analogue information comprising an input drive shaft, a gear wheel keyed to said shaft, a slotted index element mechanically connected to said gear wheel, a pinion meshing with said first mentioned gear wheel and driven thereby, second and third gear wheels arranged coaxially with said first mentioned gear wheel and independently mounted for rotation in mating engagement with said pinion to be driven by said pinion, slotted index means mechanically connected to said second and with said third gear wheels; said gear wheels having a number of teeth in the ratio of $n{:}n+1{:}n-1$; a pawl shaft adjacent said gear wheels, a plurality of pawls rigidly connected to said shaft and each adapted to engage in one of said slotted index means; and swich actuating means connected to said pawl shaft and adapted to operate switch means when said pawls are out of engagement with their respective slotted index means.

3,301,076
INTERMITTENT DRIVE MECHANISMS FOR A PRINTING MACHINE WEB FEED ROLL

Angus Murray Halley, Birmingham, England, assignor to James Halley & Sons Limited, Stafford, England, a British company

Filed Dec. 14, 1964, Ser. No. 417,984
Claims priority, application Great Britain, Dec. 20, 1963, 50,564/63
8 Claims. (Cl. 74—125.5)



1. An intermittent drive mechanism comprising a rotatable driving member; a rotatable driven member; and means for intermittently establishing drive between said members comprising:

(a) a wheel having a plurality of semi-circular recesses in its periphery and rotatable with the driven member,

(b) an element rotatably mounted on the driving member and having a semi-circular section complementary to the shape of each recess in the periphery of said wheel, and

(c) actuating means operatively connected to said element for rotating said element between a first position in which the element has drive transmitting engagement with a recess in the wheel periphery and a second alternative position out of such engagement comprising:

(c1) a fixed frame,

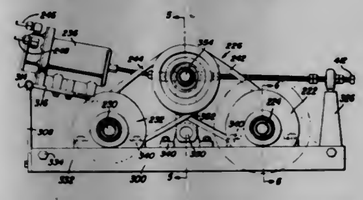
(c2) an oscillatable member mounted on the driving member and geared with said element, and

(c3) at least one cam mounted on the fixed frame and arranged to actuate said oscillatable member to rotate said element to at least one of its two alternative positions.

3,301,077
VARIABLE SPEED TRANSMISSION UNIT

Dan Caughlin, Calexico, Calif., assignor to Texonia Industries, Inc., Calexico, Calif., a corporation of California

Filed Mar. 16, 1964, Ser. No. 352,208
4 Claims. (Cl. 74—230.17)

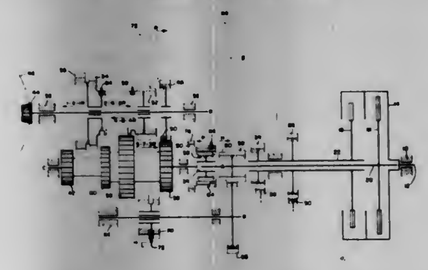


1. A variable speed transmission comprising a base, an input pulley, an output pulley, an idler shaft, means pivotally supporting the idler pulley on the base, an input idler pulley mounted on the idler shaft, an output idler pulley mounted on the idler shaft, an input belt wound around the input pulley and the input idler pulley, an output belt wound around the output pulley and the output idler pulley, the idler shaft being pivotally movable to alternately increase and decrease the tension of the belts, and means to automatically vary the diameter of one of the pulleys about which the input belt is wound in response to variations in tension of the input belt upon movement of the idler shaft.

3,301,078
VEHICLE TRANSMISSION

Richard A. Michael, Waterloo, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Aug. 21, 1964, Ser. No. 391,259
11 Claims. (Cl. 74—333)

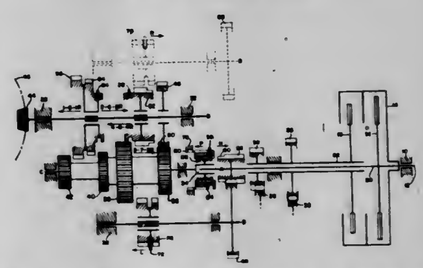


1. A vehicle transmission comprising a housing, an input shaft journaled in the housing and having an end portion and a relatively rotatable intermediate shaft journaled in the housing coaxially with the input shaft and having an end portion proximate to the input shaft end portion, an output shaft, speed-change gearing selectively connectible and disconnectible between the intermediate and output shafts, a toothed lock member rigid on the housing adjacent to said end portions of the shafts, a toothed clutch part coaxially fixed to said end portion of the input shaft, and a toothed clutch element coaxially splined to said end portion of the intermediate shaft and axially shiftable selectively in opposite directions from a central neutral position into engagement with either said clutch part or said lock member.

3,301,079
VEHICLE TRANSMISSION

Edward H. Fletcher, Waterloo, Iowa, and Andre P. Dhuicq, Orleans, Loiret, France, assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Sept. 15, 1964, Ser. No. 396,566
7 Claims. (Cl. 74—333)



1. A vehicle transmission comprising an input shaft, a relatively rotatable intermediate shaft disposed in coaxial end-to-end relation to said input shaft, a countershaft parallel to said shafts, constant-mesh gearing drivingly connecting the input and countershafts, an output shaft parallel to said shafts, first and second coaxially spaced apart gears fixed to the intermediate shaft, a reverse gear coaxially journaled relative to the output shaft and meshing with the intermediate shaft first gear, forward-reverse drive means including a member rotatable with the countershaft and axially shiftable thereon selectively among a central neutral position, a forward position driving the intermediate shaft second gear and a reverse position driving said reverse gear, direct-drive means coaxially on and selectively connectible and disconnectible between the input and intermediate shafts, additional gearing selectively connectible and disconnectible between the intermediate and output shafts and housing means journaling said shafts.

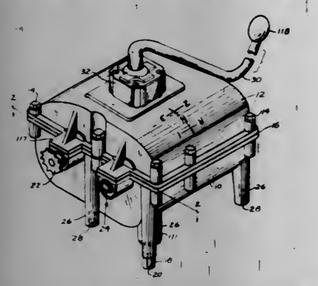
3,301,080
MULTI-SPEED TRANSMISSION

Orly Musgrave, Springfield, Ohio, assignor, by mesne assignments, to Mast-Foos Manufacturing Company, Inc., Springfield, Ohio, a corporation of Ohio

Filed Mar. 16, 1964, Ser. No. 351,928
15 Claims. (Cl. 74—375)

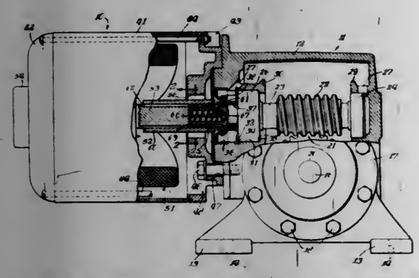
1. A multi speed transmission comprising; housing means, a driving and a driven shaft rotatably mounted in said housing means, an intermediate shaft rotatably mounted in said housing means and parallel to said driven shaft and at right angles to said driving shaft, a first plurality of speed changing gears mounted on said intermediate shaft, a driving pinion gear fixed to rotate with said driving shaft and adapted to drive said first plurality of gears, a second plurality of speed changing gears rotatably mounted on said driven shaft and restrained from axial movement thereon, said second plurality of gears being in mesh with said first plurality of

gears and each gear of said second plurality having a recess on one side thereof, two driving dogs each being keyed to rotate with said driven shaft but axially movable thereon between two gears of said second plurality of gears, each said driving dog having a neutral and two gear engagement positions, separate yoke means engaging each said driving dog, said yoke means being secured to said housing means and slidable in an axial direction along said driven shaft for axially moving said driving



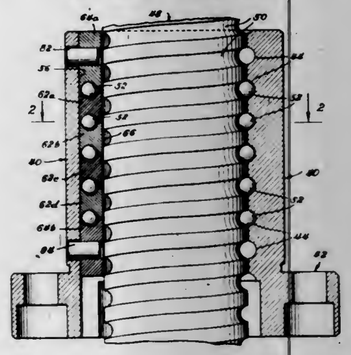
dogs into selective driving engagement with the said recesses of the pertaining gears of said second plurality of gears, and gear shift lever means mounted in said housing means having a neutral position for locking said yoke means in a neutral position and movable for selectively moving each said separate yoke means in an axial direction to move the pertaining driving dog into driving engagement while continuing to lock the other yoke means and the pertaining driving dog in a neutral position.

3,301,081
NOISE ELIMINATING COUPLING IN GEAR UNIT
Karl W. Kern, Jr., Bluffton, Ind., assignor to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana
Filed Feb. 25, 1964, Ser. No. 347,292
2 Claims. (Cl. 74—427)



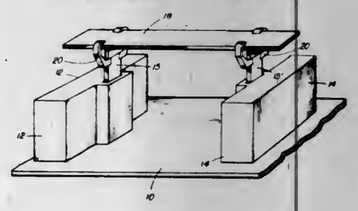
1. A motor-gear box combination, comprising a motor unit and a gear unit, each of said units including a rotatable shaft, means connecting said units together with said shafts in end-to-end relation, at least one of said shafts being mounted such that it is permitted limited axial movement, means coupling the adjacent ends of said shafts together such that relative rotative movement is prevented but relative axial movement is permitted, and biasing means operatively positioned relative to said two shafts for urging said two shafts axially away from each other, whereby the adjacent ends of said two shafts are prevented from butting and making noise, an axial bore being formed in the end of said shaft of said gear unit which end is adjacent said shaft of said motor unit, and said biasing means comprising a compression spring which is positioned within said bore and engages the end of said shaft of said motor unit, said coupling means comprising a sleeve with the ends of both of said shafts mounted within said sleeve, and said spring abutting said motor unit shaft within said sleeve.

3,301,082
BALL SCREW MECHANISM
Joseph W. Kosinski, Riverside, Ill., assignor, by mesne assignments, to Scully-Jones and Company, a corporation of Delaware
Filed June 16, 1964, Ser. No. 375,446
10 Claims. (Cl. 74—424.8)



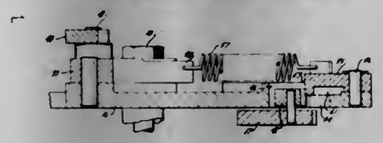
1. A ball screw mechanism comprising, in combination a first member comprising a ball screw, a second member comprising a ball nut surrounding said ball screw, said first and second members having mating helical grooves to define helical passages therebetween for trains of balls for interconnecting said first and second members, a longitudinal slot in one of said first and second members disposed to face the other of said members and interrupt said helical passages, and a plurality of individual ball return inserts mounted in said longitudinal slot, said ball return inserts having complementary groove portions formed in opposite sides thereof, and said inserts being arranged side-by-side in said slot whereby complementary groove portions in adjacent inserts will cooperate to define a crossover passage to connect opposite ends of a corresponding helical passage to provide a closed circuit for a train of balls.

3,301,083
RESETTING MECHANISM FOR ELECTRIC RELAYS
Ralph H. Johnson, Manchester, Conn., assignor to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed Mar. 26, 1964, Ser. No. 354,853
6 Claims. (Cl. 74—471)



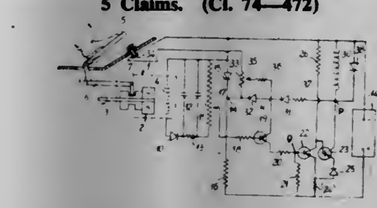
1. The means for connecting and jointly operating a plurality of like parallel non-rotary depressible members comprising, a bar member overlying the ends of said depressible members, individual members for each depressible member separate from said bar member connecting said bar member to said depressible members, each connecting member having a cap portion slidably fitted axially on a depressible member, individual arm portions extending sidewise from each said cap portion from opposite sides thereof and embracing opposite side edges of said bar member and including finger parts overlying the outer surface of said bar portion.

3,301,084
SINGLE LEVER CONTROL SYSTEM
Robert A. Boda, Oshkosh, Wis., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Wisconsin
Filed Nov. 23, 1964, Ser. No. 413,166
20 Claims. (Cl. 74—472)



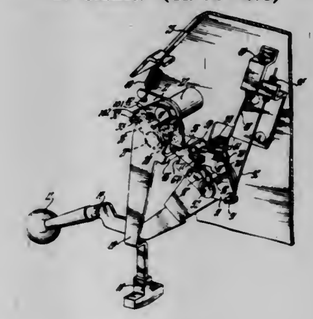
1. In a control system, a pair of operatively connected control members adapted to perform given control functions, a pair of telescoping members each of which is connected to a corresponding control member, a flexible push-pull cable having a core wire connected to one of the telescoping members and a casing connected to the other of the telescoping members, and means to actuate the push-pull cable to operate said telescoping members and thereby move the control members to perform the given functions.

3,301,085
ELECTRONIC GEAR-CHANGE CONTROL DEVICE FOR MOTOR VEHICLES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works under the control and the authority of the French government
Filed Dec. 24, 1964, Ser. No. 420,909
Claims priority, application France, Dec. 31, 1963, 958,991, Patent 1,388,904
5 Claims. (Cl. 74—472)



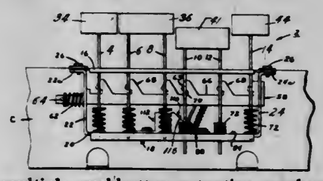
1. An electronic gear-change control device for motor vehicles, comprising means for producing an electric current whose voltage is variable as a function at least of the speed of the vehicle and a circuit having therein threshold-type semiconductor amplifiers and comprising electric gear change control means, characterized in that said circuit, which includes a source of direct current, comprises a first Zener diode providing a stabilized voltage in one portion of the circuit, a semiconductor amplifier to the base of which is applied said variable voltage controlling conductivity thereof, and a second semiconductor amplifier whose conductivity is dependent upon that of said first amplifier, said second semiconductor amplifier having a collector circuit containing said electric gear-change control means, a lead being provided between the collector of said second amplifier and a point in said stabilized-voltage circuit portion whereby said electric control means and said Zener diode are parallel-connected into said collector circuit, said lead being cross-connected to the emitter circuit of said first semiconductor amplifier and comprising, one on either side of the connection, two diodes whose conductive directions lead toward said stabilized circuit portion, and, leading away from said stabilized voltage circuit portion and said cross-connection respectively, two interconnected leads comprising at least one resistor parallel-connected with respect to said Zener diode in order that conductivity of said first semiconductor amplifier be further dependent upon the energization of said electric control means, whereby to obtain the desired step between the requirements for upward and downward gear changes, respectively.

3,301,086
TRANSMISSION CONTROL
Richard D. Williams, Fairport, and Nicholas Joseph Plumeri and Homer V. Krautwurst, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,491
17 Claims. (Cl. 74—475)



1. In a control linkage;
(a) an operating and an operated lever coaxially pivoted to a support;
(b) lost motion means operatively connected between said levers permitting free limited movement of said operating lever relative to said operated lever from one to another relative movement limiting position and thereafter moving said levers in unison;
(c) detent means operatively connected between said support and both of said levers to maintain said levers respectively in said one and another relative positions in one and another detent positions and operative on movement of said operating lever from either position to permit lost motion movement to release said levers and engage both levers at the other position.

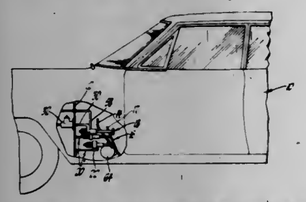
3,301,087
STRUCTURE FOR CONTROLLING PUSHBUTTONS
Gerard C. Wolters, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Oct. 5, 1964, Ser. No. 401,409
4 Claims. (Cl. 74—483)



1. In a multiple pushbutton actuating mechanism, first and second reciprocating actuating members movable between innermost and outermost positions for performing controlling functions, means for supporting and guiding the reciprocating movement of said actuator members between said innermost and outermost positions, a slidable element arranged on said supporting means for sliding

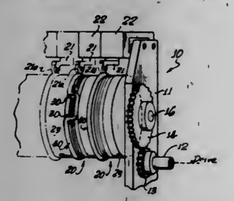
movement between first and second positions relative to said members, means for spring biasing said slidable element to said first position, said element including a blocking surface disposed in underlying contiguity to said first actuating member when said slidable element is in its first position thereby to prevent movement of said first actuator member to its innermost position, said element also including a camming surface cooperably engageable with the second actuating member upon movement of said second actuating member from its outermost to its innermost position, thereby to operate said slidable element against its biasing means to the second position, said blocking surface of said slidable element being disposed in spaced apart relationship from said first actuator member when said second actuator member is in its innermost position, thereby to allow the operation of said first actuator member to its innermost position.

3,301,088
VEHICLE ADJUSTABLE CONTROL PEDAL ASSEMBLIES
Robert L. White, Frankenmuth, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,679
2 Claims. (Cl. 74—560)



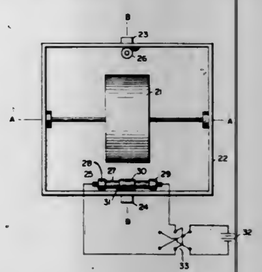
1. In combination with a vehicle having a plurality of control mechanisms, a plurality of control pedal assemblies each respective to one of said control mechanisms, each said assembly including a control member associated with said respective mechanism for control thereof and a pedal member movably mounted on said control member for positional adjustment relative thereto, an actuator on each said assembly interconnecting the control member and the pedal member thereof and operable to effect the positional adjustment of the latter, actuator drive means interconnecting the several said actuators for simultaneous operation thereof to positionally adjust said pedal members in unison relative to their respective control members, and power-operated means for driving said drive means.

3,301,089
ADJUSTABLE CAM
Paul Henry Wechsler, 603 Moltke Ave., Scranton, Pa. 18505
Filed Nov. 9, 1964, Ser. No. 409,794
7 Claims. (Cl. 74—568)



1. An adjustable cam comprising:
a drum, said drum having a first circumferential groove in the peripheral surface thereof in a plane perpendicular to the drum axis, second and third circumferential grooves parallel to said first groove;
positioner elements slidably adjustably mounted in said first groove, each of said positioner elements having a circumferentially extending projection in the said first groove in mating relationship therewith and a pair of circumferentially spaced lugs extending outwardly of the surface of said drum;
a flexible ring encircling said drum and lying partly in said second groove and partly in said third groove, said ring engaging said lugs of said positioner elements and being guided thereby to said second and third grooves, the outermost part of said ring being outwardly of the drum surface; and a cam follower contiguous with said drum and overlying said third groove for movement by the outermost part of that portion of said ring in said third groove.

3,301,090
ELECTROLYTIC BALANCING APPARATUS
Robert A. Sanford, Marblehead, Mass., assignor to General Electric Company, a corporation of New York
Filed Oct. 17, 1963, Ser. No. 317,027
6 Claims. (Cl. 74—573)

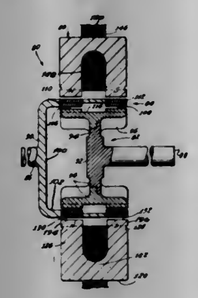


1. Electrolytic balancing apparatus for adjusting the balance of a rotatable body about an axis of rotation thereof comprising
a tubular member formed of electrically nonconducting material and having open ends;
means for mounting said tubular member on said body so that the ends thereof lie on opposite sides of said axis;
a lead electrode mounted on each end of said tubular member to plug and seal the ends thereof and form a liquid-tight electrolyte container;
a liquid electrolyte filling said container and the space between said electrodes, said electrolyte comprising an aqueous solution of lead fluoborate; and
means by which a unidirectional electrical current is passed through said electrodes and electrolyte to effect an electrolytic transfer of lead between said electrodes through said electrolyte and thereby adjust the mass of said body about said axis.

3,301,091
MAGNETIC GEARING ARRANGEMENT
Glenn A. Reese, San Pedro, Calif., assignor to The Magnavox Company, Torrance, Calif., a corporation of Delaware
Filed July 5, 1963, Ser. No. 294,216
9 Claims. (Cl. 74—640)

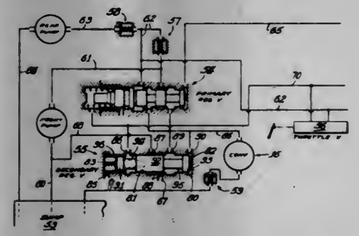
1. Gear means for operatively connecting a power source with a load that is to be driven by said source, said gear means including:
a first member having a first set of spaced teeth with magnetizable properties,
a second member disposed adjacent said first member and having a second set of teeth spaced adjacent to the teeth in said first set and provided with magnetizable properties,

one of said sets having more teeth than the other of said sets and being positioned with only a particular number of teeth in one set being aligned with a corresponding number of teeth in the other set at any particular instant,
magnetic means for creating a variable magnetic flux field having lines of flux that extend through portions of each set of teeth for progressively aligning the succeeding teeth in the two sets with each other,



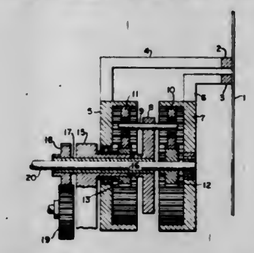
means operatively coupled to a particular one of the first and second members for driving the particular member relative to the other member, and
means operatively coupled to the magnetic means for varying the magnetic flux field created by the magnetic means to control the torque which can be applied to the particular one of the first and second members to drive the particular member relative to the other member.

3,301,092
TRANSMISSION CONTROLS
Merle D. Coy, Muncie, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 3, 1963, Ser. No. 306,094
3 Claims. (Cl. 74—645)



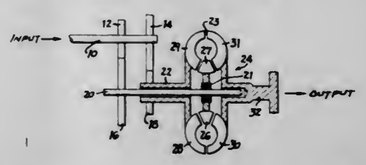
1. In a transmission mechanism for an automotive vehicle including a hydraulic torque converter, an engine and a throttle actuator for controlling the engine, a hydraulic control system for said transmission including a source of fluid pressure, a line pressure supply conduit for said controls, a primary regulator valve connected to said source of fluid pressure and to said line pressure supply conduit, said primary regulator valve adapted to regulate the fluid pressure in said line pressure conduit, a secondary regulator valve connected to said primary regulator valve and to said torque converter, a throttle valve connected to said line pressure conduit and connected to supply a fluid pressure to said primary and secondary regulator valves which increases with increasing depression of the throttle actuator, said secondary regulator valve being adapted to regulate fluid pressure supplied to said hydraulic torque converter to a pressure proportional to the pressure supplied from said throttle valve.

3,301,093
DRIVE MECHANISMS
Alfred P. Ewert, Arlington, Va., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Nov. 8, 1963, Ser. No. 322,464
8 Claims. (Cl. 74—675)



1. In a mechanism for rotating two members in synchronism and for controlling angular displacement between the two members, the combination comprising
a pair of driven gears each adapted for connection to one of the two members for rotating the two members;
a stationary gear;
an index gear axially alined with the stationary gear and angularly positionable relative thereto;
a pair of idler gears, one disposed between and in mesh with the stationary gear and one of the driven gears, and the other disposed between and in mesh with the index gear and the other of the driven gears;
first means connected to each of the idler gears for causing the idler gears to revolve in synchronism, respectively, about the stationary gear and the index gear to thereby drive the driven gears in synchronism when the index gear is stationary; and
second means connected to the index gear for controlling the angular position thereof with respect to the stationary gear to thereby control the angular displacement between the driven gears.

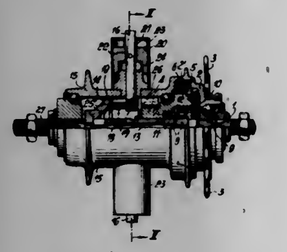
3,301,094
METHOD AND MEANS FOR CONVERSION OF TORQUE FROM PRIME MOVERS
Prem Prakash, 1561 Nott St., Schenectady, N.Y. 12309
Filed Nov. 8, 1963, Ser. No. 322,410
6 Claims. (Cl. 74—718)



1. In a continuously variable torque converting transmission, a power transmitting fluid device including first, second and third rotatable bladed members, the first bladed member being geared to at least one of the other two members so as to rotate at a speed different from that of the second and third bladed members, the second bladed member being a fluid energizing impeller member and the third bladed member being an energy absorbing turbine member, the three bladed members cooperating together to form a torroidal chamber providing a single circuit for a working fluid and each of the three bladed members having a plurality of blades so designed and proportioned that when the third member rotates at a specific speed ratio with respect to the impeller member such that the speed of the said third bladed member is approximately equal to that of the impeller member,

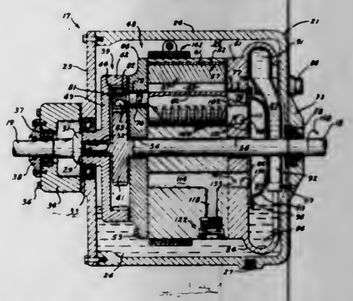
ΔAm 1st=0 and ΔAm 2nd>0 wherein (ΔAm) denotes the value of the angular momentum of the fluid per unit time at the exit minus that at the entry of the bladed member named by the suffix, and is influenced among other things by the blade angles and by the radii at the entry and at the exit and by the rate of the fluid flow through the blades and wherein the direction of rotation of the impeller member is assigned a positive sign so that an associated positive value of (ΔAm) will be equivalent to assigning a positive sign to the power when it is fed into the fluid.

3,301,095
MULTIPLE SPEED HUB WITH AUTOMATIC SHIFT
Paul Dotter, Schweinfurt am Main, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt am Main, Germany, a corporation of Germany
Filed Dec. 5, 1963, Ser. No. 328,430
Claims priority, application Germany, Dec. 8, 1962, F 38,499
14 Claims. (Cl. 74—752)



1. A multiple speed hub with automatic speed shift for a bicycle and like vehicle comprising, in combination:
(a) a shaft having an axis;
(b) a driver member mounted on said shaft for rotation about said axis;
(c) a hub shell mounted on said shaft for rotation about said axis;
(d) multiple speed transmission means mounted in said hub shell and operatively interposed between said driver member and said hub shell for rotating said hub shell at a selected transmission ratio responsive to rotation of said driver member,
(1) said transmission means including a plurality of transmission members, one of said members being movable relative to another transmission member for varying said transmission ratio;
(e) a centrifugal weight mounted on said hub shell for rotation therewith about said axis and for movement relative to said hub shell between a first position radially adjacent said axis and a second position radially remote from said axis, at least a portion of said weight being outside said hub shell when said weight is in said second position thereof;
(f) resilient means permanently urging said weight to move from said second position toward said first position thereof, said weight tending to be moved from said first to said second position by centrifugal force when said hub shell rotates;
(g) linkage means interposed between said weight and said one transmission member for varying the transmission ratio of said transmission responsive to the movement of said weight between said positions thereof,
(1) said linkage means including a linking member, said member passing through said hub shell, and being movable inward and outward of said shell; and
(h) a protective housing mounted on said shell
(1) said housing covering said weight and a portion of said linkage means when said weight is in said second position thereof,
(2) said resilient means including a spring member interposed between said housing and said weight.

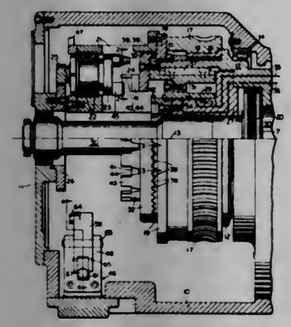
3,301,096
FLUID COUPLING
Theodore F. Thompson, 409 E. 12th St., Davenport, Iowa 52803
Filed Apr. 17, 1964, Ser. No. 360,708
2 Claims. (Cl. 74—774)



1. A fluid coupling comprising:
(a) a housing defining a chamber for storing a supply of hydraulic fluid,
(b) first shaft means and second shaft means projected into the chamber and rotatably mounted on said housing,
(c) planetary gear train means drivably coupling the first shaft means with the second shaft means including a sun gear secured to the first shaft means, a ring gear extended about the sun gear and secured to the second shaft means, and at least one planetary gear positioned between the sun gear and ring gear in meshed engagement therewith,
(d) control means for regulating the speed of rotation of the planetary gear, including a body means rotatably mounted on said first shaft means adjacent the gear train means, said body means having at least one axially extended bore, a rotary pump means operably positioned in said bore and connected to said planetary gear for rotation therewith, said pump means having an inlet and an outlet, a first passage means in said body means open to said outlet and to said chamber, a second passage means in said body means to said inlet and to one end of said body means,
(e) valve means in said first passage means for regulating the flow of fluid discharged from said outlet, said valve means being movable to a closed position in response to a selected speed of rotation of the control means whereby to terminate the flow of fluid from the outlet of said pump means and prevent the rotation thereof to stop the rotation of the planetary gears and effect a substantially one-to-one drive ratio between the input shaft and output shaft,
(f) means for supplying fluid from said chamber to said second passage means including a first annular channel member, for collecting and carrying the hydraulic fluid stored in the housing, secured to said one end of the body means in a coaxial relation therewith,
(g) a second annular channel member secured to said one end of the body means in an inwardly spaced concentric relation with said first annular channel member, and

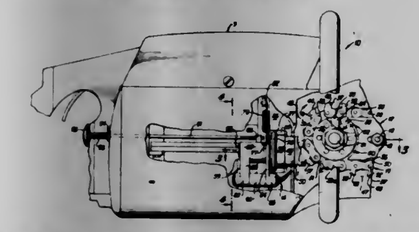
(h) troughlike means having an inlet section extended into said first channel member for receiving the fluid carried therein and an outlet section for discharging the received hydraulic fluid into said second channel member for admission to said second passage means.

3,301,097
INDEX MECHANISM
Earl Roy Beman, Rochester, N.Y., assignor to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Mar. 31, 1965, Ser. No. 444,268
10 Claims. (Cl. 74—820)



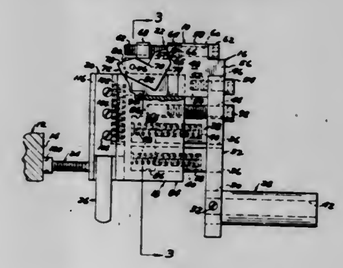
1. An index mechanism comprising a carrier, a spindle rotatable in the carrier, a Geneva driven wheel co-rotatable with the spindle and having equiangularly spaced radial slots and also similarly spaced clutch teeth, the carrier having mating clutch teeth, a Geneva driver rotatable in the carrier on an axis parallel to the spindle and having a drive pin engageable in the slots of the wheel, said driver being adapted to advance the wheel by one pitch upon each rotation thereof in which the pin engages one of said slots, and means to shift the wheel axially in the carrier between (a) a first position wherein the clutch teeth of the wheel and carrier are engaged and the wheel is unengageable by the drive and (b) a second position wherein the clutch teeth of the wheel and carrier are disengaged and the pin of the driver is engageable with said slots.

3,301,098
CHAIN SAW WITH SHARPENING WHEEL
John W. Oehrli, Pacific Palisades, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Nov. 8, 1962, Ser. No. 236,256
The portion of the term of the patent subsequent to June 30, 1981, has been disclaimed
8 Claims. (Cl. 76—37)



1. In an engine driven chain saw having an endless saw chain driven by a driving sprocket and around a saw bar, said engine being in a housing, cutting elements extending outwardly from said chain and radially outwardly from said sprocket on that portion of the chain thereon, said cutting elements having cutting edges on the outermost portions thereof and traveling in a path in an arc around said sprocket, saw chain cutting element sharpening means on said chain saw adjacent the chain driving sprocket for sharpening said chain during normal engine and cutting operation, said sharpening means comprising:
(a) a supporting member pivotally mounted on said housing,
(b) said member being biased toward said housing;
(c) a grinding wheel on a rotatable shaft bearing mounted within said member and rotatable in a plane perpendicular to the path of the cutting elements,
(d) said grinding wheel, said shaft and supporting member being slidably movable within said pivotal member so that said wheel is movable into and out of a sharpening contact occurring on a point on said arc around said sprocket;
(e) means on said chain saw adjacent said housing to slidably move said shaft so as to place said grinding wheel at said sharpening contact point with said cutting edges;
(f) spring means on said last means to bias said grinding wheel out of sharpening contact with said cutting edges; and
(g) means adjacent said housing operable to rotate said grinding wheel when it is in position at said sharpening contact point and said member is biased toward said housing.

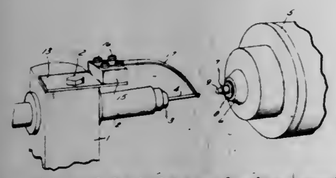
3,301,099
AUTOMATIC FORM TOOL HOLDER
Carl G. Stecker, 47860 12 Mile Road, Novi, Mich. 48050
Filed July 28, 1965, Ser. No. 475,472
6 Claims. (Cl. 77—1)



1. An automatic form tool holder for a machine tool having a rotary work holder, a stop abutment and a carriage movable longitudinally toward and away from the work holder, said tool holder comprising
a mounting structure attachable to said carriage for travel therewith and having a longitudinal guideway thereon extending forwardly therefrom toward the work holder,
a longitudinal cutting tool holder mounted on said mounting structure for travel longitudinally therewith,
a longitudinal slide structure guidedly engaging said longitudinal guideway for travel therealong forwardly toward and rearwardly away from the work holder,
said longitudinal slide structure having a transverse guideway thereon extending transversely to the axis of rotation,
a transverse slide guidedly engaging said transverse guideway for transverse travel therealong toward and away from the axis of rotation of the work holder,

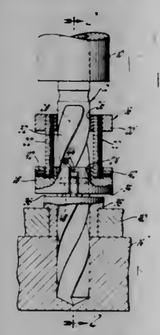
a stop element on said longitudinal slide structure engageable with the machine stop abutment for halting the travel of said longitudinal slide structure,
a transverse cutting tool holder mounted on said transverse slide for travel therewith transversely to said longitudinal cutting tool holder,
and means on said mounting structure responsive to the halting of said longitudinal slide structure and the continued longitudinal travel of said mounting structure for moving said transverse slide along said transverse guideway toward the axis of rotation of the work holder.

3,301,100
BROKEN PART DETECTOR AND MACHINE CONTROL
Jerry A. Hubeny, 2229 S. Elmwood Ave., Berwyn, Ill. 60402
Filed Oct. 5, 1964, Ser. No. 401,561
8 Claims. (Cl. 77—5)



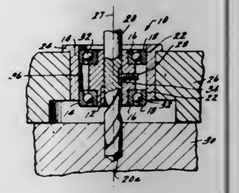
1. In a machine of the lathe type having a workholding chuck, a reciprocatory tool, and a drive motor,
an electrically conductive feeler to ride the tool, and maintain electrical contact therewith during normal operation of the machine, and
an electric circuit including said feeler, the tool and the motor,
whereby if the tool is broken the motor circuit is opened.

3,301,101
CUTTING STOP AND CHIP REMOVER
John C. McEwen, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,482
11 Claims. (Cl. 77—55)



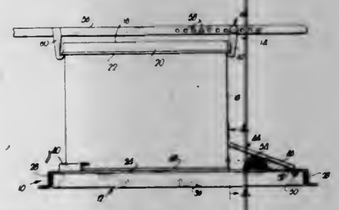
1. In combination with a cutting tool having a groove with a runout stop means including a stop collar received on said cutting tool and shear-away means operatively secured to said stop means engaging only the runout of said groove to normally prevent relative movement between said stop collar and said cutting tool and having a shear strength limit less than said cutting tool so that said shear-away means shear in a predetermined load range to release said stop means prior to cutting tool breakage.

3,301,102
TOOL GUIDE-LOCATOR
Robert Malcolm de Lara, Lynn, Mass., assignor to General Electric Company, a corporation of New York
Filed July 1, 1964, Ser. No. 379,604
10 Claims. (Cl. 77—55)



1. In combination,
a tool guide-locator to be secured with a rotary tool used for material removal; and
a jig having an internal guide surface;
the tool guide-locator comprising:
(a) a body having inner walls defining a central tool receiving and aligning cavity open at least at one end, the cavity aligned along a central axis;
(b) means to secure together the body and the tool to prohibit any relative movement between the tool and the body;
(c) a locator for positioning the tool laterally with respect to the central axis, the locator
(1) having an inner member, an outer member including an outer locating surface and an anti-friction means separating and contacting both inner and outer members,
(2) the inner and outer members being rotatable about the central axis relative one to the other through the anti-friction means,
(3) the outer locating surface being parallel to the central axis and extending radially farther from the central axis than does the body and engaging the internal guide surface of the jig, and
(d) means to secure together the body and the inner member so that the outer member is rotatable relative to both the inner member and the body around the central axis.

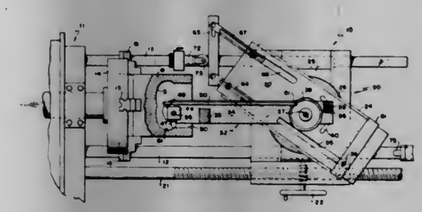
3,301,103
COVER LIFTING APPARATUS
James Donald Shultz, Rte. 4, and Robert Frank Wells, 1921 Kentucky, both of Lawrence, Kans. 66044
Filed May 13, 1965, Ser. No. 455,396
11 Claims. (Cl. 81—3.32)



3. Apparatus for lifting a lid closing the open top of a container with the lid having a continuous side flange frictionally engaging the outer periphery of the container at the upper extremity thereof, said apparatus comprising:
a baseplate adapted to be secured against movement and having an upper, generally flat surface for supporting said container;

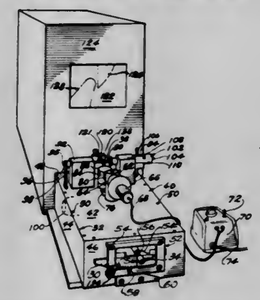
a pair of spaced, rigid members secured to and extending upwardly from said upper surface of the plate, said members being disposed adjacent to one side of the container and being engageable therewith when the container is supported on said upper surface;
a treadle having an extension and a container-engaging edge spaced from said extension, said plate having a row of openings therethrough for the extension, the row of openings being disposed adjacent to the side of said container opposite to said one side thereof when the container is supported on said upper surface, said extension of the treadle being loosely received within a corresponding opening to permit pivotal movement of said treadle relative to said plate, said treadle being movable through a distance sufficient to shift said edge thereof into engagement with said opposite side of the container and to force said one side of the same into tight engagement with said members, whereby the container is gripped and held against movement relative to said plate;
a bar disposed above the lid of said container and provided with a plurality of longitudinally spaced holes therethrough; and
a pair of hooks depending from said bar, one of the hooks having means securing it to the bar, the other hook having a fastener rotatably receivable in any one of said holes to rotatably mount and thereby adjustably connect said other hook to the bar, said hooks being releasably engageable with the underside of the flange of said lid at diametrically opposed locations thereon for lifting the lid as the container is held against movement relative to said plate by said members and said treadle.

3,301,104
APPARATUS FOR TURNING CURVED SURFACES
Philip R. Matlack, 2700 N. 25th St., Arlington, Va. 22207
Filed Jan. 29, 1965, Ser. No. 429,179
9 Claims. (Cl. 82—12)



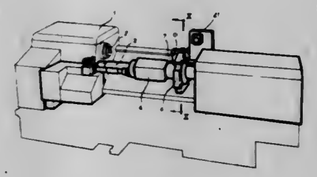
1. Apparatus of the character described comprising:
a bed having longitudinal ways;
means for supporting and rotating a workpiece;
carriage means mounted for movement along said ways toward and from said workpiece;
a slide mounted on said carriage for reciprocating movement with respect thereto;
an arm extending from said slide in the direction of said workpiece;
a tool holder pivotally mounted at the terminal end of said arm;
motion transmitting means connected between said tool holder and said carriage for effecting rotation of said tool holder upon relative movement between said carriage and said slide; and
stop means mounted on said bed for limiting movement of said slide toward said workpiece upon movement of said carriage means to effect said relative movement.

3,301,105
METHOD AND APPARATUS FOR SHAPING THE EDGE ON A CONTACT LENS
Bobby R. Morris, Decatur, Ga., assignor to Quality Optics, Incorporated, Atlanta, Ga.
Filed Feb. 23, 1965, Ser. No. 434,271
19 Claims. (Cl. 82—14)



1. In a method for providing an edge on a contact lens, the steps comprising:
(a) mounting the lens for correct axial alignment and rotating the lens in a substantially correct and constant plane as to the circular edge thereof,
(b) while rotating the lens, bringing a cutting tool into engagement with the edge of the lens, and
(c) controlling the movement of the cutting tool by guiding same in a pre-determined path as it moves into contact with and around the edge of the lens and at an angle, thereby placing the desired angle and edge contour on the lens.

3,301,106
LATHES
Rene Jean Nicolas Le Brusque, Malakoff, Seine, France, assignor to H. Ernault-Somua, Paris, France, a company of France
Filed Sept. 11, 1964, Ser. No. 395,695
Claims priority, application France, Sept. 25, 1963, 948,596
8 Claims. (Cl. 82—21)



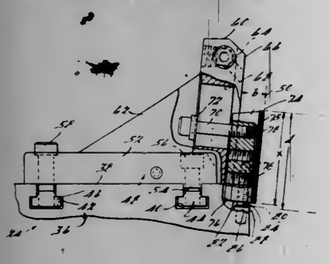
1. A tool-holding capstan mounted so as to be capable of being subjected to a motion of translation in a parallel direction to the axis of the work-piece carrying spindle of the lathe and rotating movements about an axis parallel to said spindle in order to be able, on the one hand, to assume different angular indexing positions for which the tools carried by its faces successively present themselves at the operating station, and, on the other hand, to carry out an oscillating or angular balancing movement originating from each of said angular indexing positions in order to confer to the tools a transverse motion, said lathe being characterized by the fact that the member which maintains the capstan in each of the angular indexing positions thereof is movable on the frame of the lathe,

between a stationary stop which determines said position and an end position which determines the position of maximum amplitude of the angular balancing movement of the capstan ensured by the movement of said maintaining member which permanently determines the angular position of the capstan under the action of convenient control means.

3,301,107
TOOL HOLDER

Stuart W. George, Grosse Pointe Farms, Mich., assignor to Federal-Mogul Corporation, a corporation of Michigan

Filed Sept. 2, 1964, Ser. No. 393,865
3 Claims. (Cl. 82—36)



3. In combination with a multiple spindle automatic bar machine having a plurality of rotatable spindles and means for indexing the spindles to successive work stations, the improvement comprising: a tool slide located at one of the work stations and being movable towards and away from a workpiece being rotated by that one of the spindles at said one work station, a vertical tool holder secured to said tool slide, a cutting tool having a lower surface and an upper surface with a cutting edge and being of the reusable type with said cutting edge being reestablished by removal of material from said upper surface, means on said tool and on said tool holder for holding said tool to said tool holder and for locating said tool in a direction transversely to said direction of movement of said tool slide and for permitting selective up and down movement of said tool, said last named means including engaging means for engaging said tool at selected discrete positions on said tool, said engaging means including a bolt member and a plurality of vertically spaced threaded bores extending only partly through said tool with said tool being held to said tool holder by the threaded engagement of said bolt member with one of said threaded bores, a locating surface confronting said lower surface of said tool, a second bolt member threadably engageable with a different threaded bore through said lower surface and selectively movable to predetermined positions and located in alignment with said locating surface for engagement therewith with the distance between said cutting edge and said locating surface determining the position of said cutting edge relative to the workpiece and whereby the latter position can be preset by selectively adjusting the extent that said second bolt member extends beyond said lower surface relative to said cutting edge.

3,301,108
EXPANDING AND CONTRACTING MANDREL

Edward A. Heiner, Rocky Hill, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 24, 1965, Ser. No. 442,407
6 Claims. (Cl. 82—44)

1. In an expanding mandrel for use in supporting a work piece, the combination comprising:

(a) an elongated body having an axial bore;

(b) a plurality of openings extending radially outward from said axial bore through said body;

(c) a ball in each opening;

(d) a shaft mounted for longitudinal movement within the axial bore in said body, one end of said shaft having a conical wedging surface;



(e) a clamping sleeve mounted upon said body and covering the outer ends of said openings;

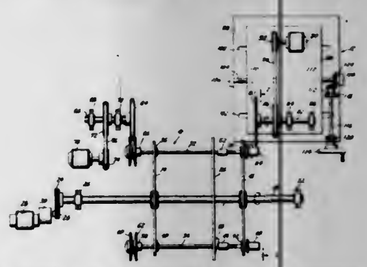
(f) resilient means for normally moving said shaft in a first direction to force said balls radially outward against said sleeve; and

(g) manually operated means for moving said shaft in a second direction to remove all outward force of said balls against said clamping sleeve.

3,301,109
METHOD FOR CUTTING ROLLS OF ADHESIVE COATED TAPE

Thomas A. Taverna, Yorktown Heights, N.Y., assignor to Technical Tape Corporation, Westchester, N.Y., a corporation of New York

Filed May 12, 1964, Ser. No. 366,851
4 Claims. (Cl. 82—47)

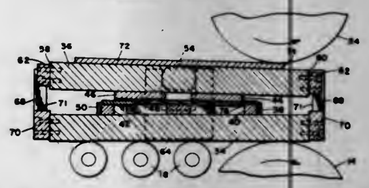


1. The method of separating a roll of pressure-sensitive tape into a plurality of rolls of predetermined width which comprises the steps of differentially rotating a cutting instrument and a roll of pressure-sensitive tape while bringing the cutting instrument and tape roll into contact with each other, and maintaining a relatively fixed differential in the peripheral speed of tape reel in respect to a fixed peripheral speed of the cutting instrument while completing the cutting operation.

3,301,110
MEANS AND METHOD OF ROLL FORMING AND PUNCHING

Harvey L. Stegner, San Diego, Calif., assignor to Blankmaster, Inc., San Diego, Calif.

Filed Dec. 7, 1964, Ser. No. 416,497
9 Claims. (Cl. 83—56)



1. A die set for use in a progressive rolling machine having successive pairs of driven rollers with progressively decreased spacing therebetween, whereby a die set passed between the rollers is subjected to successive, additive applications of pressure, the die set comprising:

a plate-like lower platen;

a plate-like upper platen;

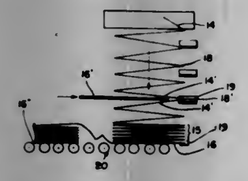
matching punch and die elements rigidly secured to said upper and lower platens to interfit and form a part therebetween when the platens are brought together;

and guide means on one of said platens engageable with the other platen to restrain said upper platen against translatory shifting in its own general plane, while allowing the upper platen to be inclined relative to the lower platen as the die set advances between said rollers.

3,301,111
VERTICAL DELIVERY OF FOLDED WEBS

Ernst Daniel Nystrand, Green Bay, Wis., assignor to Paper Converting Machine Co. Inc., Green Bay, Wis., a corporation of Wisconsin

Filed Apr. 10, 1964, Ser. No. 358,722
3 Claims. (Cl. 83—92)



1. In vertical delivery apparatus for multiple copy forms, and the like, a frame, means on said frame for delivering a Z-folded web in a generally vertical path, an endless conveyor on each side of said path disposed for movement in a generally vertical plane, each conveyor being equipped with a plurality of laterally-extending flanges, a horizontally traveling conveying means positioned at the bottom of said path, and a plurality of plates insertable in said web to separate the same and support a stacked web portion thereon when carried by said flanges, each conveyor being equipped with sprocket means adjacent said conveying means whereby adjacent flanges are spaced further apart at the time of transfer of said plates to said conveying means than during vertical travel of said flanges, each plate being equipped with a longitudinally-extending cutting edge, said cutting edge having a central projection.

3,301,112
PUNCH PRESS RAM STRUCTURE

Horthun L. Peterson, Chatham, N.J., assignor of thirty-three and one-third percent each to Peterson Stamping and Manufacturing Company, Kenilworth, N.J., Small Lot Stamping Company, Linden, N.J., and Peterson Brothers Manufacturing Company, Iselin, N.J., all corporations of New Jersey

Filed Oct. 22, 1965, Ser. No. 501,403
5 Claims. (Cl. 83—137)

1. In a punch press, the combination comprising:

a vertically movable ram comprising an enclosure having a top wall, two side walls, a bottom wall, and two open ends;

a pair of parallel facing die holders extending along a bottom surface of the bottom wall;

said die holders each defining an upper step and a lower step;

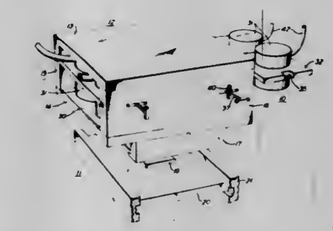
a die plate mounted on the upper steps of the holders and being horizontally slidable;

a stripper plate mounted on the lower steps of the holders and being slidable in the horizontal and vertical directions;

a punch member extending downwardly from the die plate through an aperture in the stripper plate;

a plurality of stripper pins vertically slidably mounted in apertures in the bottom wall of the ram enclosure and extending downwardly through apertures in the die plate;

means comprising at least one hydraulic cylinder for exerting a downward force on the stripper pins in response to a signal;

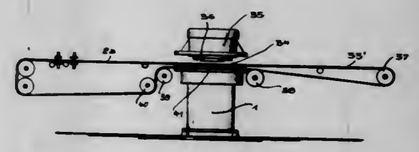


said hydraulic cylinders being mounted within the enclosure on a plate that is slidably contained within horizontal grooves on the two side walls, whereby the die plate can be removed by sliding the hydraulic cylinder out one end of the enclosure, removing the stripper pins from the apertures in the bottom wall, and sliding the die plate and stripper plate out through the die holders.

3,301,113
PUNCHING PRESS OR OTHER PROCESSING MACHINE

Willi Hartmann, Lemberg uber Pirmasens, Germany, assignor to J. Sandt Aktiengesellschaft, Pirmasens, Germany

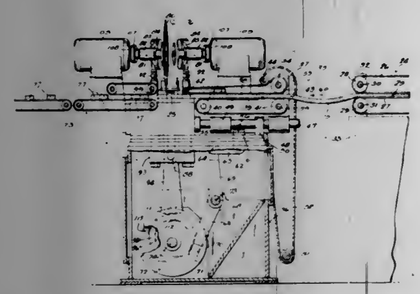
Filed July 20, 1965, Ser. No. 473,406
Claims priority, application Germany, July 21, 1964, S 92,163
7 Claims. (Cl. 83—155)



1. A punch press comprising, in combination, a stationary support means having a first end face; reciprocating punching means having a second end face facing said first end face and being movable toward and away from the latter, said end faces defining between themselves a punching space; an endless conveyor belt having an upper run adapted to receive sheet material to be punched and a lower run; guide means cooperating with said belt for guiding at least said upper run through said punching space with a sheet material thereon facing one of said end faces; feeding means for stepwise moving said conveyor belt in longitudinal direction thereof so as to feed successive portions of sheet material on said upper run into said punching space, said feeding means comprising a pair of gripping members respectively arranged on opposite sides of said upper run and the sheet material thereon and movable relative to each other between an open position and a closed position gripping said upper run and the sheet material thereon, driving means con-

nected to the gripping members for reciprocating the latter in longitudinal direction of said belt through a preselected distance toward and away from said punching space in timed relation with the to and fro movement of said reciprocating punching means, and control means cooperating with said gripping members for moving the same to said closed position before and maintaining the same in said closed position during movement of the gripping members toward said punching space and to said open position before and maintaining the same in said open position during movement of said gripping members away from said punching space.

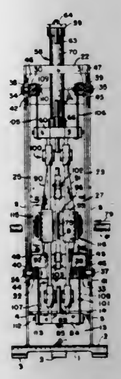
3,301,114
MAT CUTTING MACHINE WITH RECIPROCATING BELT FEEDER
Curt G. Joa, Ocean Ridge, Fla.
(Box 1121, Boynton Beach, Fla. 33435)
Filed Nov. 25, 1964, Ser. No. 413,773
8 Claims. (Cl. 83—236)



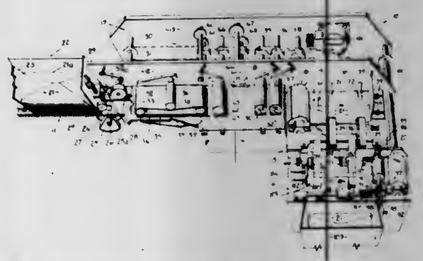
1. A high speed mat cutting machine comprising:
a belt feeder for feeding an elongated mat in the direction of its elongation,
a cutter to which the feeder advances the mat and which severs the mat transversely into discrete pad portions,
transport mechanism for the cutter to move the cutter transversely to the direction of mat elongation and into and out of severing relation to the mat,
said belt feeder comprising belts constantly driven to feed the mat toward the cutter and a belt carrier movable toward and away from the cutter,
a reciprocator for imparting reciprocating movement to the carrier, alternately to move it away from the cutter at substantially the same speed as the belts tend to advance the mat toward the cutter, thus to hold the mat stationary with respect to the cutter, and to move it toward the cutter, thus to advance the mat past the cutter at a speed in excess of belt speed,
a timer for the timed coordination of the cutter transport mechanism and the belt feeder carrier reciprocator by which the cutter severs the mat into discrete pad portions when the mat is stationary and is free of the mat when the mat advances past the cutter.

3,301,115
FLYING CUT-OFF
Joseph S. Walsh, Fairview Park, Ohio, assignor to The Yoder Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 25, 1964, Ser. No. 391,865
20 Claims. (Cl. 83—314)

1. A flying cut-off for elongated travelling work comprising, a support frame, a cut-off mechanism including: blade guides extending transversely of such work path; a cut-off blade mounted on said guides for movement therealong; and drive means thus to move said blade; and two pairs of spring straps one at each end thereof supporting said entire mechanism for yielding movement with respect to said frame.

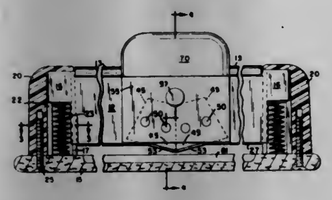


3,301,116
AUTOMATIC ENVELOPE OPENER WITH MEANS TO JOG ENVELOPE TO SHIFT CONTENTS
Trevor W. Owen, 1537 Clearwater Drive, Port Credit, Ontario, Canada
Filed July 19, 1965, Ser. No. 473,098
11 Claims. (Cl. 83—408)



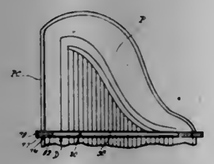
9. An automatic envelope opener comprising
a frame having a table,
means for successively withdrawing individual envelopes from a stack of envelopes of similar lengths and moving the envelopes individually along the table,
a first cutter carried by the frame for cutting a narrow strip from one longitudinal edge of each envelope,
a stop member which abuts against the table,
means for jogging each envelope against the stop member to thereby urge the contents of the envelope towards one end of the envelope,
a second cutter carried by the frame for cutting a narrow strip from the opposite end of each envelope after it has been jogged,
means for moving each envelope away from said second cutter after said opposite end has been cut,
a third cutter carried by the frame,
means for accelerating each envelope towards the third cutter after it has been moved away from the second cutter to thereby urge the contents of the envelope towards said opposite end,
means for feeding each envelope to the third cutter to thereby cut a narrow strip from said one end of each envelope, and
means for withdrawing each envelope from the third cutter after said one end has been cut.

3,301,117
PAPER CUTTER
Daniel E. Spaulding, 407 Franklin St., Fayetteville, N.Y. 87102
Filed Apr. 30, 1965, Ser. No. 452,242
4 Claims. (Cl. 83—455)



1. Apparatus for cutting sheet material comprising a rigid extruded guide bar member formed with a base, a web portion extending upwardly from said base and being formed with a bead along its upper edge, a blade holder mounted at one side of said web portion and having slidably interlocking engagement with said base and bead, a cutter blade detachably secured to said blade holder and having a cutting edge extending below said base.

3,301,118
PIANO ACOUSTIC PICK UP DEVICES
Francis X. Keane, 43—22 63rd St., Woodside, N.Y. 11377, and Stanley H. Michael, 125 Prospect St., East Orange, N.J. 07017
Filed Apr. 22, 1964, Ser. No. 361,731
15 Claims. (Cl. 84—1)



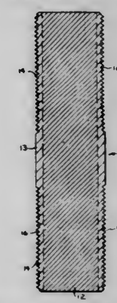
1. A pickup device for musical tones produced by an instrument having a wide array of tone producing elements, comprising an elongated casing having top, bottom, side and end walls, a plurality of partitions in said casing obliquely disposed to define a plurality of generally triangular, separate sound receiving chambers with bases at the bottom wall and apices at the top wall, said bottom wall having a plurality of pairs of holes therein, each pair of holes opening into a different one of the sound chambers near narrow ends thereof, a plurality of electro-acoustic microphones supported on said bottom wall, a different one of the microphones being centrally located in each of the sound chambers in alignment with the apex thereof with the microphone located between the holes in one of said pairs, and circuit means interconnecting the microphones for applying audio signals produced thereby to an external circuit.

3,301,119
DRUMSTICK
Anna Marie Gilbert, University Heights, Ohio
(366 Lourdes Lane, Costa Mesa, Calif. 92627)
Filed Feb. 10, 1966, Ser. No. 526,553
9 Claims. (Cl. 84—422)

1. A hollow unitary drumstick body of tubular form having a butt portion and a tapered shoulder portion, the outside diameter of said butt portion being greater than the smallest outside diameter of said shoulder portion, and the wall thickness of said body being graduated to increasing values in proportion to decreasing values of said outside diameter to maintain a substantially uniform diametrical cross-sectional area of wall throughout the length of said body.



3,301,120
TEMPERED THREADED MEMBERS AND METHOD OF MAKING
Calvin D. Loyd, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 27, 1964, Ser. No. 414,208
7 Claims. (Cl. 85—1)



1. A threaded steel member having a circular cross-section and high resistance to cracks and crack propogation, comprising:
(a) a through-hardened core portion of substantially circular cross-section, said core portion extending radially of the member from the axis thereof to adjacent the periphery thereof and having a Rockwell hardness substantially higher than that of the unhardened steel of which said member is composed;
(b) a tempered casing constituting the outer peripheral portion of said member, said casing extending radially inward from the periphery of said member and merging into said core portion, the hardness of said tempered casing decreasing from that exhibited by said core portion to a substantially softer condition through said peripheral portion; and
(c) threads formed in said tempered casing portion, the root depth of said threads being substantially less than the cross-sectional depth of said tempered casing portion,
said threaded member being characterized by a significantly higher ultimate strength in tension and wedge tension than that exhibited by a threaded member composed of the same steel but having a case hardness which is the same or greater than its core hardness.

3,301,121
ANTI-WOBBLE ASSEMBLY
Harold B. Newcomer, 4200 Aldine St., Philadelphia, Pa. 19136
Filed Mar. 4, 1965, Ser. No. 437,123
1 Claim. (Cl. 85—1)

In an anti-wobble assembly for mounting a toilet seat upon a non-resilient toilet bowl provided with mounting openings, the combination of
a non-resilient flange positioned above the said opening,

said flange carrying accessory mounting equipment and

said flange having a flat lower surface;

a threaded stud depending from the said flange and being concentric therewith,

said stud being positioned to pass downwardly through the said opening,

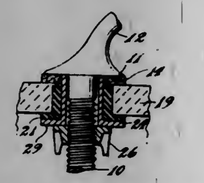
said stud being of sufficient length to extend through the said opening;

a resilient washer disposed between the said non-resilient bowl and the said flange,

said washer being of sufficient size to prevent contact between the flange and the bowl;

a hollow, resilient grommet riding upon the said stud said grommet including a circular bottom flange and a conical body portion rising above the bottom flange,

said body portion serving to concentrically position the said stud within the said opening and also serving to insulate the stud from the bowl itself,



a metallic, cylindrical sleeve carried by the said stud,

said sleeve being of a diameter to snugly fit within the said grommet,

said sleeve terminating downwardly in a concentric, circular flange,

said sleeve being constructed to a height equal to the height of the opening plus the compressed height of the said washer plus the compressed height of the said bottom flange of the grommet,

the top of the said sleeve flange contacting the bottom of the said grommet flange; and

a bottom nut threadedly engaged upon the said stud,

said nut serving to compress the grommet flange, the grommet body and the washer together by urging the cylindrical sleeve against the bottom of the said non-resilient flange,

whereby the said resilient components combine to completely insulate the non-resilient members from contact with the said bowl.

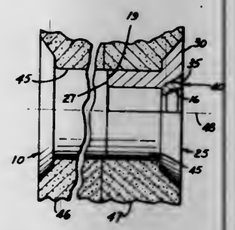
3,301,122

FASTENER WITH DEFORMABLE LOCKING COLLAR

Kenneth L. Wagner, Torrance, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California

Filed Mar. 17, 1965, Ser. No. 440,430
2 Claims. (Cl. 85—7)

1. A fastener having an axis, and comprising: a pin having an axial shank having a first diameter, a head adjacent to a first end of the shank, a groove adjacent to the second end of the shank, a tapered peripheral restraint shoulder at least partly bounding the side of said groove which is closer to the second end, a cylindrical segment on the shank adjacent to the groove on the opposite side thereof from the second end and having a dimension of length and a second diameter which is smaller than said first diameter, a stop shoulder adjacent to the segment and facing toward the second end; a sleeve having a tubular shank with an outer and an inner diameter, the said outer diameter being equal to said first diameter and said inner diameter being substantially equal to said second diameter, a stop face at a first end, and a head adjacent to the second end thereof, a deflector face in said passage tapering outwardly as it extends toward the second end of the sleeve, the stop face being adapted to abut the stop shoulder on the pin when the segment is in the passage, the said length being such that the restraint shoulder and the deflector face are at least partially axially aligned but spaced apart from each other; and a deformable tubular



collar adapted to pass over the second end of the pin shank, to be pressed against the deflector face, and thence to be deflected against the restraint shoulder, whereby to form a lock between the restraint shoulder and the deflector face which prevents separation of the pin and the sleeve, the axial spacing-apart of the heads and the ultimate length of the assembled fastener being determined by the abutment of the stop face and the stop shoulder.

3,301,123

MINE ROOF BOLTS

William E. Worley, 291 Avon Road, Devon, Pa. 19333

Filed Mar. 30, 1966, Ser. No. 538,807
11 Claims. (Cl. 85—79)



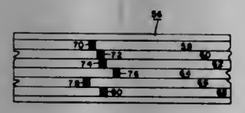
1. A bolt adapted to be mounted in in elongated opening in the roof of a mine comprising a pair of elongated bar members, the inner surface of one of said bar members having a plurality of spaced angularly disposed cam surfaces, the other bar member being of generally U-shaped cross section and having longitudinal, spaced apart side edges of stepped configuration to define a plurality of longitudinally spaced cam surfaces angularly disposed in the same direction as the cam surfaces of said one bar member, means for effecting longitudinal displacement of said bar members between a stacked position wherein the bar members are nested together and an expanded position whereby the outer side walls of the bar members opposite said cam surface are displaced laterally into pressure-applying relation with the side wall of the opening, the outer surface of said one bar member having a plurality of longitudinally spaced projections defining a plurality of longitudinally spaced contact zones adapted to engage the side wall of the opening upon displacement of the bar members to the expanded position, the spacing between substantially all of the adjacent contact zones being at least equal to the largest cross sectional dimension measured in a plane perpendicular to the longitudinal axis of the bolt in the stacked position.

3,301,124

INDIVIDUAL TRACE CORRECTOR FOR SHIFTING TRACES ON A RECORD

George B. Amery, Metairie, La., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,958
1 Claim. (Cl. 88—14)



Individual trace corrector apparatus for optically shifting seismic traces on a seismic record comprising:

a frame having an inclined stationary light-reflecting surface mounted adjacent one end thereof;

a plurality of members slidably arranged in said frame for independent movement toward and away from said stationary light-reflecting surface;

one edge of each of said slidable members having an inclined light-reflecting surface facing, and spaced from, and parallel to said stationary light-reflecting surface and arranged such that each slidable light-reflecting surface is capable of reflecting to said stationary light-reflecting surface a different seismic trace of a seismic record; and

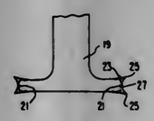
means on said slidable members for indicating the amount of movement of each slidable member from a predetermined position.

3,301,125

METHOD OF TYPE CHARACTER REPRODUCTION

Francesco Simoncini, Bologna, Italy, assignor to Officine Simoncini S.p.A.

Filed Apr. 15, 1964, Ser. No. 359,915
Claims priority, application Italy, May 28, 1963, 10,996/63, Patent 697,259
1 Claim. (Cl. 88—24)



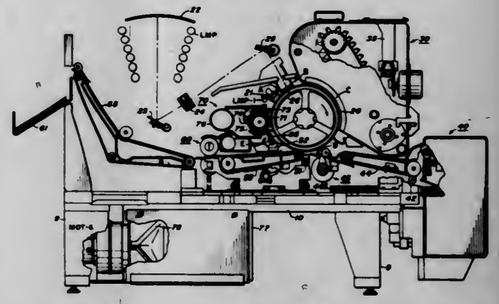
In the method of preparing a type character in relief and in negative profile, the improvement in reducing erosion which occurs at the sharp corners of the type character appearing on the negative used for printing consisting essentially of predeforming, by hand, only the intersecting edges at the sharp corners of the type character from straight and concave edges to concave edges, the last mentioned adjacent concave edges after being predeformed intersecting at a point which lies outside of and beyond the original point of intersection.

3,301,126

REPRODUCING APPARATUS

Robert F. Osborne and John W. Melville, Webster, Rolf W. Eichler, Fairport, Karl A. Northrup, Rochester, and John F. Wirley, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 30, 1964, Ser. No. 400,542
5 Claims. (Cl. 88—24)



1. A reproducing machine for reproducing copies of a document on sheets of record material including,

means for orienting the document relative to a fixed position during reproduction thereof,

positionable means operable to a predetermined condition when the document is in fixed position,

means for receiving and forming a transferable image of the document,

means for transferring said image to the sheets of record material when in contact with said image receiving means,

feed and transporting mechanism for feeding seriatim the sheets of record material into contact with said image receiving means to effect transfer of said image upon each sheet of the record material,

a counter device operatively associated with said feed and transporting means for cumulatively recording the number of the sheets of record material being transported,

a registering mechanism actuatable for indicating total actuation thereof at the rate of one actuation per input pulse in response to input pulses received by said registering mechanism,

means operatively associated with said counter device and said registering mechanism to generate to said registering mechanism a first series of input pulses for each of a predetermined number of transported sheets and a second series of input pulses for each of another predetermined number of transported sheets, and

an interlock circuit including switching means associated with said positionable means and said counter device for terminating recording by the latter when said positionable means has been operated from said predetermined condition.

3,301,127

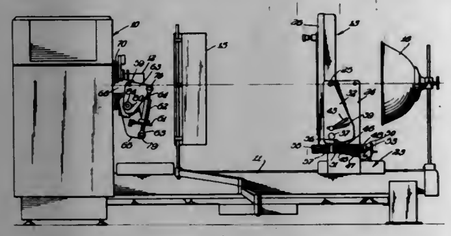
METHOD FOR REPRODUCING A SUBJECT TO BE TRANSFERRED TO A RUBBER BLANKET FOR LETTERPRESS AND OFFSET PRINTING AND THE LIKE

Walter Wanielista, Westchester, Ill., assignor to Robertson Photo-Mechanix, Inc., Chicago, Ill., a corporation of Illinois

Original application Feb. 12, 1963, Ser. No. 258,034, now Patent No. 3,230,822, dated Jan. 25, 1966. Divided and this application Sept. 1, 1965, Ser. No. 512,250
3 Claims. (Cl. 88—24)

1. A system for correcting distortion of rubber blanket printing plates caused by curving of the plate about a printing cylinder, when placing on the printing cylinder,

comprising the steps of placing a subject to be printed in a copyboard, tilting the copyboard with respect to the vertical at an angle determined by the curving of the plate about the printing cylinder, placing an unexposed film in a camera, tilting the camera lens at the angle of tilt of the subject, exposing and developing the film to produce a negative, placing the negative so produced on the copyboard in an upside down position from the posi-

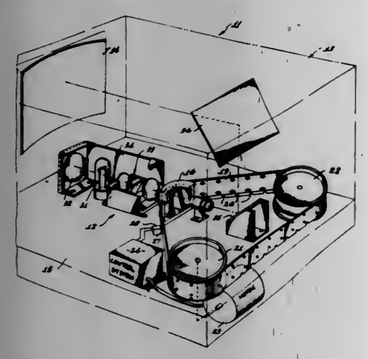


tion of the original subject and at the angle of tilt of the original subject, placing a second film in the camera in the same location as the first film, photographing the negative with the lens and copyboard both tilted at the same angles, exposing and developing the second film to provide a distortion corrected negative, the image of which is to be impressed upon a rubber blanket printing plate.

3,301,128
PROJECTOR APPARATUS

Ralph H. Brandt, 123 Columbia St., Pasadena, Calif. 91105, and John P. Schoentgen, 390 S. Grand Ave., Pasadena, Calif. 91103

Filed Nov. 4, 1963, Ser. No. 320,992
12 Claims. (Cl. 88—28)

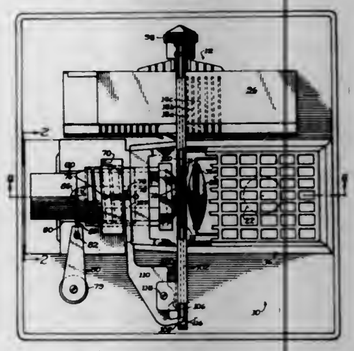


1. Projection apparatus comprising: a light source; a projection lens; a projection gate intermediate to and having an opening therethrough aligned with said lens and light source; means for supporting a film transparency against said gate in line with said opening to project the image thereon through said projection lens, the surface of said gate against which said film transparency is supported being curved in the direction of movement of the film, and said film conforming to said curvature to have physical stability against positional distortion under the heat of said light source; and a screen upon which the film image is projected, said screen having a curvature substantially optically concentric with the curvature of said gate surface so that points on the screen image are substantially equidistant from corresponding points on the image on the film.

3,301,129
MECHANICAL FOCUS MAINTAINING APPARATUS

Elmer C. Henriksen, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Jan. 25, 1965, Ser. No. 427,642
15 Claims. (Cl. 88—28)



1. A focus determination apparatus for a projector for slides, each of said slides including a film held along its edges in a mount defining the image area to be projected, the image area establishing a film plane capable of shifting upon "popping" of said film during projection, the invention comprising:

a projection lens having an axis along which the image area will be projected;

said lens having a focal plane located a fixed distance behind said lens along said projection axis wherein a projected image is in sharp focus when the film plane is coincident with said focal plane;

means to move a slide into alignment with said projection axis;

support means for relative movement of said projection lens and said aligned slide wherein said focal plane of said projection lens and said film plane of said slide may be made coincident;

a film plane sensing device connected to said support means for movement therewith, said device engaging a portion of said image area of said aligned slide; and

means biasing said sensing device into engagement with said image area of said aligned slide wherein said film plane and said focal plane are maintained coincident when said film "pops" and said sensing device moves with said image area.

3,301,130
TRIPLET TYPE OF SYMMETRICAL COPYING LENS

Richard A. Buchroeder, Brighton, and George F. Ziegler, Gates, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Apr. 13, 1966, Ser. No. 542,412
5 Claims. (Cl. 350—227)

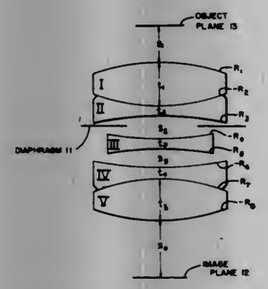
1. A quasi-symmetrical triplet type of copying objective having a relative aperture of substantially $f/8.0$ and working a magnifications between $-40\times$ and minus unity, said objective being corrected for spherical aberration and chromatic aberration including lateral and longitudinal chromatism, coma, tangential and sagittal astigmatism, distortion and field curvature,

said objective comprising two optically aligned and air spaced compound meniscus lens members which are symmetrically arranged concave toward each other, and

a double concave symmetrical lens member which is spaced axially from and between said two lens members and is designated III,

the meniscus lens members having an outer double convex lens element in contact with an inner double concave lens element, said outer front and rear elements being designated I and V respectively and said inner front and rear elements being designated II and IV respectively,

the focal length of each of said meniscus members having a value between .43F and .47F, and furthermore having a value of focal length for member III between $-.25F$ and $-.27F$ where F represents the equivalent focal length of said objective,



the constructional data relating to said objective having comprehensive values as given in the table herebelow wherein S_2 and S_3 designate the front and rear interlens air spaces respectively at either side of lens member III, t_1 to t_5 designate the axial thicknesses of the successive lens elements I to V, R_1 to $-R_8$ designate radii of the successive lens surfaces numbering from the front, the minus (—) sign used with certain R values signifying that such surfaces are concave toward incident light, and the refractive index and Abbe number of the glasses in said lens elements being designated respectively n_D and ν,

$.020F<S_2<.026F$
$.018F<S_3<.024F$
$.037F<t_1<.050F$
$.013F<t_2<.020F$
$.012F<t_3<.015F$
$.013F<t_4<.020F$
$0.37F<t_5<.050F$
$.28F<R_1<.30F$
$.20F<-R_2<.23F$
$1.42F<R_3<1.74F$
$.27F<-R_4<.29F$
$.27F<R_5<.29F$
$1.42F<-R_6<1.74F$
$.20F<R_7<.23F$
$.28F<-R_8<.30F$
$1.609<n_D(\text{I and V})<1.613$
$1.527<n_D(\text{II and IV})<1.530$
$1.527<n_D(\text{III})<1.530$
$58.0<\nu(\text{I and V})<61.0$
$51.0<\nu(\text{II and IV})<53.0$
$51.0<\nu(\text{III})<53.0$

3,301,131
TONOMETER

James R. Benford, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Mar. 23, 1964, Ser. No. 353,809
5 Claims. (Cl. 350—149)

4. An optical element for an applanation tonometer comprising, a pair of anisotropic crystals having substantially flat end faces and having their optical axes inclined to form substantially equal acute angles to the plane of the flat ends, means for coupling said pair of crystals together so that the optical axes of said pair of crystals

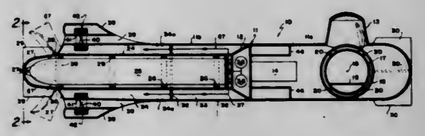


form an angle with respect to each other, and polarizing filter means coupled to one of said flat ends of said coupled pair of crystals so that the contour of the other of said flat ends appears as a split image.

3,301,132
SUBMERSIBLE MISSILE LAUNCHING VEHICLE

Guenther W. Lehmann, New London, Conn., and Kurt G. F. Moeller, Annapolis, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 29, 1965, Ser. No. 476,781
8 Claims. (Cl. 89—1.81)



1. A deep submergence missile launching vehicle comprising:

elongated hull means including a forward hull portion and an after hull portion;

water impeller means for effecting longitudinal motion of said vehicle;

one of said hull portions comprising pressure hull means housing propulsion machinery for operating said impeller means and housing control means;

the other of said hull portions comprising a tubular pressure hull for receiving a missile, closure means for said tubular pressure hull at the end thereof remote from said one hull portion, and buoyancy propulsion tank means;

ballast tank means in said hull means for varying the trim of said vehicle for alternatively hovering with its longitudinal axis in a horizontal position or in a vertical position with said closure means uppermost;

means for displacing water from said buoyancy propulsion tank means to provide a substantial positive buoyancy for accelerating said vehicle from a vertical hovering position toward the water surface for ejection of a missile from said tubular pressure hull.

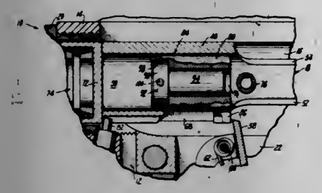
3,301,133
MECHANISM FOR CHANGING RATE OF AUTOMATIC FIRE

Foster E. Sturtevant, West Hartford, Conn., assignor to Colt's Inc., Hartford, Conn., a corporation of Arizona

Filed Jan. 21, 1965, Ser. No. 426,737
14 Claims. (Cl. 89—131)

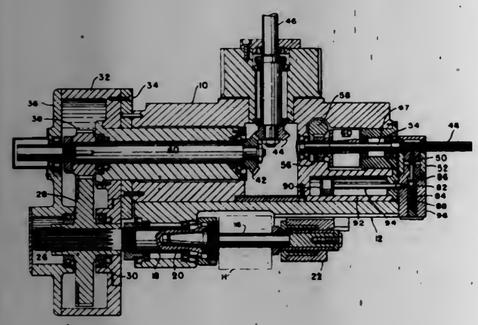
1. In an automatic firearm of the type wherein seating of the bolt and associated parts triggers the hammer fall of an immediately succeeding shot, the combination of a firing rate control device comprising slidable intertia delay

means temporarily immovable relative to said bolt immediately prior to said seating and movable subsequent to the seating of said bolt to release the hammer for trig-



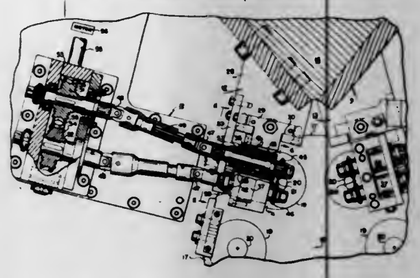
gering said hammer fall of a succeeding shot only during automatic operation of the firearm and at a positive time interval after said seating.

3,301,134
INCREMENTAL HOB SHIFT MECHANISM
David W. Daniel, Birmingham, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 24, 1965, Ser. No. 442,374
3 Claims. (Cl. 90—4)



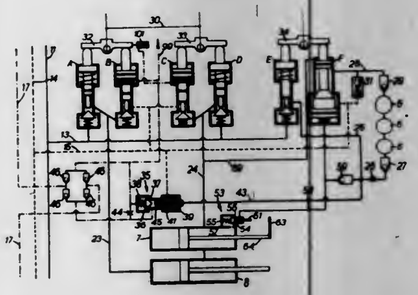
1. In a hobbing machine, a hob support, a hob carriage on said support, a hob spindle on said carriage, said carriage being movable on said support in a direction parallel to said spindle, drive means for said spindle operable in all positions of said carriage on said support, incremental hob shift mechanism operable to shift said carriage by increments from a starting position to a final position and to return said carriage rapidly in a single movement to starting position, said mechanism comprising a first fluid pressure actuated piston and cylinder device connected between said support and carriage, a shifting device connected between said support and carriage and comprising a screw and a half nut engageable with one side of said screw and movable radially of said screw into and out of thread engaging relation with reference to said screw, means for effecting incremental relative rotation between said screw and half nut in timed relation to hobbing operations to shift said carriage by increments from said starting to said final position, and means responsive to arrival of said carriage at final position to move said half nut radially out of thread engaging relation with respect to said screw and to apply fluid pressure to said first piston and cylinder device to restore said carriage to starting position, the means for moving said half nut radially of said screw comprising a second fluid pressure actuated piston and cylinder device.

3,301,135
MILLING MECHANISM
Walter W. Jenkins, Willowick, Ohio, assignor to The National Acme Company, a corporation of Ohio
Filed July 1, 1965, Ser. No. 468,809
14 Claims. (Cl. 90—15)



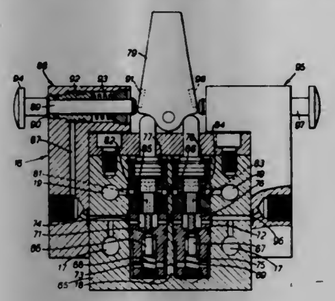
1. A milling mechanism on a machine comprising, in combination, a frame,
a workholder carried on said frame and adapted to accept a workpiece,
a movable member movably carried on said frame for movement along a path,
said movable member having first and second milling cutters relative movable thereon transversely to said path,
means connected to rotate said milling cutters,
a cam follower connected to each milling cutter,
a cam carried on said frame having an axis along the length dimension thereof parallel to the direction of movement of the movable member,
and said cam having portions along the length thereof for cooperation with the two cam followers with said portions having a variable transverse dimension from said cam axis at different places along the length of each said cam, whereby said rotating milling cutters may operate on a workpiece by movement of said movable member.

3,301,136
ADVANCEABLE ROOF SUPPORT ASSEMBLIES
Douglas Herbert Hewlett Bolton, Winchcombe, and Michael Charles Potts, Prestbury, England, assignors to Dowty Mining Equipment Limited, Tewkesbury, England, a British company
Filed Jan. 8, 1965, Ser. No. 424,306
Claims priority, application Great Britain, Jan. 14, 1964, 1,659/64
5 Claims. (Cl. 91—189)



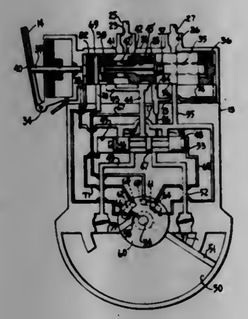
1. An advanceable roof support assembly including a series of advanceable fluid-pressure-operated roof supports, a conduit connected to each roof support in turn, each roof support including a valve assembly responsive to the receipt of a fluid-pressure signal along said conduit

to cause the roof support to undergo an advancing operation and responsive to the completion of the advancing operation to pass the signal on along said conduit, a source of fluid pressure and a control valve operable to connect the conduit to the source of fluid pressure to



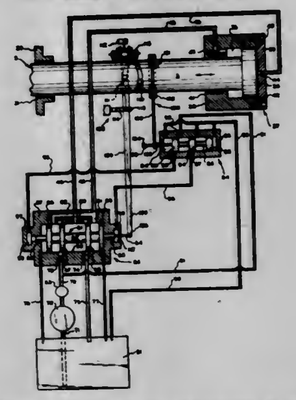
cause the signal to pass along said conduit to each roof support in turn, the control valve including means responsive to a fall in pressure in said conduit below a predetermined value to cause the control valve to isolate the conduit from the source of fluid pressure.

3,301,137
WINDSHIELD WIPER
Anthony R. D'Alba, Williamsville, and Raymond A. Delbel, Cheektowaga, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Filed Mar. 12, 1964, Ser. No. 351,414
4 Claims. (Cl. 91—219)



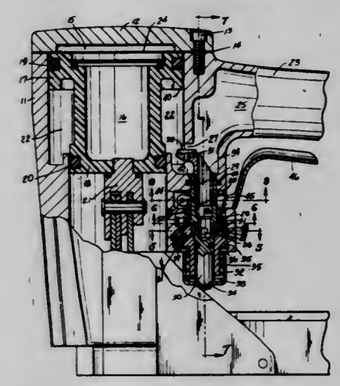
1. A hydraulic windshield wiper motor comprising a housing, a piston mounted for oscillating movement in said housing, said piston dividing a portion of said housing into first and second chambers, control valve means for controlling flow of pressurized fluid from a fluid inlet through said motor to a discharge opening, fluid operated valve means for alternately routing pressurized hydraulic fluid to said first and second chambers while permitting the fluid in the other of said chambers to be exhausted, pilot valve means for routing hydraulic pressurized fluid to said fluid operated valve means, said control valve means including flow restricting means in circuit with said fluid operated valve means for delaying operation of said fluid operated valve means and controllable means for bypassing said flow restricting means to provide continuous wiper motor cycling.

3,301,138
HYDRAULIC SYSTEM FOR RECIPROCATING A ROTATING SHAFT
Bradley G. Cox, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Dec. 11, 1964, Ser. No. 417,717
13 Claims. (Cl. 91—221)



1. A hydraulic system for reciprocating a shaft comprising piston and cylinder means associated with said shaft; control valve means for delivering fluid under pressure alternately to opposite sides of said piston means; means for rotating said shaft and means including an element connected to said shaft to move in a reciprocating path therewith operatively connected to said control valve means for maintaining a predetermined velocity of shaft reciprocation.

3,301,139
PRESSURE AIR ACTUATED TOOL AND VALVE STRUCTURE FOR USE THEREWITH
Jack Garfinkel, Bayside, N.Y., assignor to Speedfast Corporation, Long Island City, N.Y., a corporation of New York
Filed Sept. 29, 1964, Ser. No. 400,176
7 Claims. (Cl. 91—355)



1. A fluid valve structure comprising a normally unpressurized chamber having a sealing portion thereupon, a valve member axially movable within said chamber having a body portion carrying pressure fluid outlet means thereupon, an actuating element secured to said body portion normally preventing escape of pressure fluid into said chamber through said fluid outlet means, pressure fluid actuated holding means upon said actuating element for causing said element to move to extreme position and against said sealing portion, first means upon said body

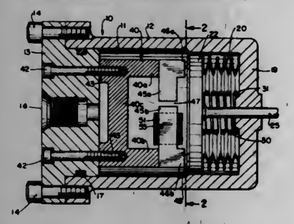
portion for mechanically moving said portion in one direction, means for actuating said first means, second means upon said body portion for mechanically moving said portion in the reverse direction, means for actuating said second means, actuation of said first mechanical means permitting escape of pressure fluid into said chamber through said pressure fluid outlet means and actuation of said holding means so that said actuating element moves to said extreme position and seals said chamber, actuation of said second mechanical means causing said body portion to move in reverse direction and cause said parts to return to normal position.

3,301,140
EXPANSIBLE SHIELDING MEANS
Robert J. Beck, Charlotte, N.C., assignor to Duff-Norton Company, Charlotte, N.C., a corporation of North Carolina
Filed May 3, 1965, Ser. No. 452,707
7 Claims. (Cl. 92—13)



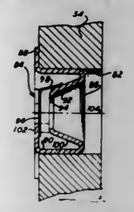
1. In a mechanism of the type having spaced portions between which an intermediate element is provided with means for mounting said element for linear as well as rotary movement with respect to the axis of linear movement, shielding means comprising a pair of linearly expansible shield members enclosing the mechanism between said spaced portions and the intermediate element, each said shield member having an end fixed to the periphery of one of said spaced portions, and means formed in the periphery of said intermediate element at opposite ends thereof for receiving and retaining the other ends of said shield members in sealing disposition, said receiving and retaining means retaining said shield member rotatably for relative rotation of said intermediate element with respect to said shield member at said receiving and retaining means.

3,301,141
MAGNETICALLY DAMPED PNEUMATIC CONTROL DEVICES
Robert S. Griffing, Los Angeles, Calif., assignor to Fairchild Hiller Corporation, a corporation of Maryland
Filed Oct. 20, 1964, Ser. No. 405,097
8 Claims. (Cl. 92—143)



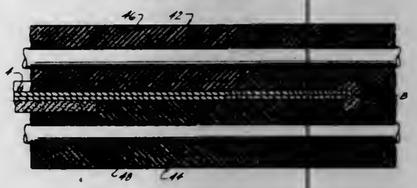
1. A pneumatic control device comprising:
pressure responsive means adapted to be moved in response to changes in pressure of a pneumatic fluid,
a head on said pressure responsive means, at least a portion of said head being of a magnetically responsive material,
a magnet for damping the motion of said head located with respect to said head so that at least a portion of the magnetic flux produced by the magnet exerts a force on the head through a variable distance gap between said head and said magnet,
means on said magnet establishing a shunt gap for flux of the magnet, the flux through said shunt gap tending to be transferred to said variable gap as said head moves closer to said magnet,
and means for impeding the transfer of flux from said shut gap to said variable gap.

3,301,142
FLUID PRESSURE OPERATED CLUTCH AND VENT VALVE ASSEMBLY
John Cenko, Plymouth, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 24, 1965, Ser. No. 458,215
8 Claims. (Cl. 92—172)



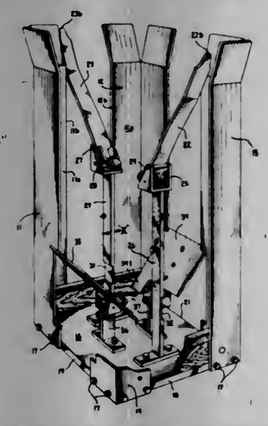
1. A vent valve assembly for use with a rotatable fluid pressure operated clutch servo having an annular piston member and an annular cylinder member that cooperate to define an annular pressure chamber, an opening formed in one of said members, a first valve element having a frusto-conical surface positioned at least in part in said opening, a valve opening in said first valve element, a second valve element adapted to register with said valve opening and including a plurality of spring fingers engageable with said frusto-conical surface thereby producing a force component tending to urge said second valve element out of registry with said valve opening, said second valve element being responsive to a pressure build-up in said chamber to move into registry with said valve opening against the opposing influence of said force component.

3,301,143
METHOD AND APPARATUS FOR FOLDING CONTAINERS HAVING A WINDOW OF SYNTHETIC PLASTIC SHEET MATERIAL
Charles E. Palmer, Somers, Conn., assignor to Monsanto Company, a corporation of Delaware
Filed Dec. 26, 1963, Ser. No. 333,294
13 Claims. (Cl. 93—36)



1. In the method of folding window containers, the steps comprising partially folding a blank having a frame of relatively rigid sheet material with a multiplicity of weakening lines therein defining wall panels to provide the sides of a container to be erected therefrom, said frame having a window aperture therein extending across one of said weakening lines into two of said wall panels and said blank having a window of semi-rigid synthetic plastic sheet material secured to said frame and extending beyond the margins of said window aperture, said partial folding of said blank being along said one weakening line and with said window disposed inwardly of said folding; further folding said partially folded blank between a pair of closely spaced pressure members to flatten and fold said blank substantially completely along said one weakening line, one of said pressure members having a resiliently deformable surface, said flattening and folding producing a relatively permanent fold line in said window substantially aligned with said one weakening line in said frame; unfolding said blank along said one weakening line and fold line; and flattening said unfolded blank between a second pair of closely spaced pressure members along said one weakening line and fold line to flatten substantially said window along said fold.

3,301,144
BOX CLOSING DEVICE
Robert E. Reeves, Indianapolis, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Sept. 4, 1964, Ser. No. 394,525
11 Claims. (Cl. 93—36)

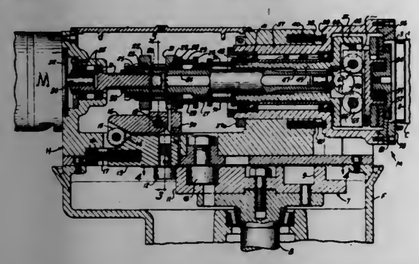


1. A box flap closing device comprising: a support member (**16**); four elongated guides (**11, 12, 13, 14**) secured to said support member and extending upwardly therefrom in parallel spaced relation, each of said guides having an angular cross section to receive a corner of a box blank inserted into the device, the upper ends of said guides being flared outwardly to facilitate entrance of a box blank into said guides, said guides establishing first and second guide planes in parallel spaced relationship to each other and third and fourth parallel spaced guide planes perpendicular to said first and second guide planes; first and second support posts (**29, 26**) secured to said support member and extending upwardly therefrom parallel to said third and fourth planes and spaced equidistantly from said third and fourth planes; first and second flaps folding members, each of said members being an elongated flap folding finger (**23, 22**), each finger having a lower and pivotally mounted to one of said support posts, and each finger being spring biased into normal position extending upwardly from the pivotal mounting thereof and outwardly through one of said first and second planes; a first latch (**44**) pivotally mounted to said first post and having an abutment portion (**44***f*) projecting upwardly from the upper surface of said first finger (**23**), the distance from said abutment portion to said first plane intercepted by said first finger and measured along said first finger being less than the length of a box flap (**63**) to be folded by said first finger, the box flap length being measured from a score line (**77**) on the box blank to the marginal edge (**63***a*) of the flap parallel to the score line, said score line being the one to be broken by said first finger during movement of the blank into the device, said latch normally preventing pivoting of said first finger downwardly when said finger is engaged by said box flap, whereby said score line is broken and said flap is turned inwardly as said box blank is moved toward said support member, the abutting engagement of said marginal edge with said abutment as said flap is turned inwardly being operative to pivot said latch to release position as said box blank is moved further toward said support member whereupon said first finger is pivotable downwardly to permit upward turning of said flap by said first support post as said blank is moved further toward said support member; a second latch pivotally mounted to said second post (**22**) and having an abutment projecting upwardly from the upper surface of said second finger and operable to release said second finger in the same manner as said first latch is operable to release said first finger; said first and second fingers being aligned with said first and second posts respectively for arresting engagement of said fingers with said posts after pivoting of said fingers to positions generally parallel to said posts; third and fourth support posts (**36, 37**) secured to said support member (**16**) and extending upwardly therefrom between said planes; third and fourth flap folding members (**33, 34**) each having a lower end pivotally mounted to one of said third and fourth posts, and each being spring biased into normal position extending upwardly from the pivotal mounting thereof and outwardly through one of said third and fourth planes; a third latch pivotally mounted to said third post and having an abutment projecting upwardly from the upper surface of said third member, the distance from said abutment portion of said third latch to said third plane and measured along said third member being less than length of another box flap (**62**) to be folded by said third member, said third latch normally preventing pivoting of said third member downwardly when said third member is engaged by said another box flap during movement of said box blank toward said support member, whereby said another flap is turned inwardly as said box blank is moved toward said support member, the abutting engagement of a marginal edge of said another flap with the abutment portion of said third latch as said box blank is moved toward said support member being operative to pivot said third latch to a release position whereupon said third folding member is permitted to pivot downwardly to permit upward turning of said another flap by said third post as said blank is moved further toward said support member; a fourth latch normally preventing pivoting of said fourth member and operable to release said fourth member in the same manner as said third latch is operable to release said third member; and stop means (**79**) secured to said support member and positioned for abutting engagement by the lower margins of wall forming portions of said blank to stop movement of said blank toward said support member when said blank is in a position where all of said flaps are inclined upwardly, two of said support posts (**29, 37**) being spaced from guide planes faced thereby to permit said another flap (**62**) to deflect said one flap (**63**) outwardly slightly as said blank approaches said stop means.

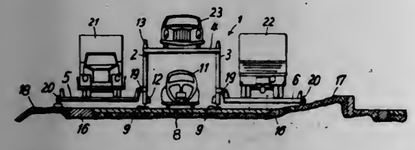
3,301,145
BOTTOM FINISHING MECHANISM FOR TWO PIECE PAPER CONTAINERS
Raymond E. Bodendoerfer, Brookfield, Wis., assignor to Paper Machinery Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed May 12, 1964, Ser. No. 366,871
7 Claims. (Cl. 93—36.5)

1. Bottom forming mechanism for two-piece containers comprising a stationary female die, a rotatable spindle, a carriage slidingly mounted on said spindle and radially shiftable with respect to said spindle and rotatable therewith, a male die roller carried on said spindle and radial-

ly shiftable therewith for cooperation with said female die in squeezing a cup flange therebetween, a pair of rollers, one rotatably mounted on said carriage and one rotatably mounted on said spindle, a free cylindrical roller located generally between and abutting against said pair of rollers, the distance between the rollers of said pair being less than the diameter of said cylindrical roller, and means for forcing said cylindrical roller tightly against said pair of rollers whereby said carriage is shifted radially to cause said male die to squeeze said cup flange against said female die as it rolls around said flange.

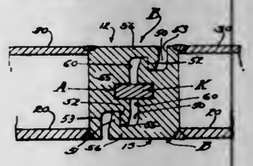


3,301,146
BY-PASS STRUCTURE
Siegfried Krug, Marianne Krug, and Franz Kosch, all of Rheinhausen, Germany, assignors to Beteiligungs- und Patentverwaltungs G.m.b.H., Essen, Germany
Filed Oct. 27, 1964, Ser. No. 406,676
Claims priority, application Germany, Nov. 5, 1963, B 74,139
9 Claims. (Cl. 94—1)



1. A vehicle by-pass for enabling a two-lane vehicular roadway to accommodate four lanes of vehicular traffic, said by-pass extending along a stretch of the roadway and having, in a plane transverse to the roadway, a generally inverted U-shaped cross-sectional configuration which is made up of two generally upright means that are arranged on the roadway and a transverse means which extends over the roadway and is connected to said upright means, said two upright means being spaced apart a distance sufficient to permit the flow therebetween of a first vehicular traffic lane directly on the roadway and said transverse means being spaced above the roadway a height sufficient to afford clearance for said first vehicular traffic lane on the roadway in consequence of which the roadway itself serves as a first road means of the by-pass; said transverse means itself constituting a second road means for supporting a second traffic lane above said first traffic lane; said by-pass further including third and fourth road means which are a short distance above the roadway and which support third and fourth traffic lanes, respectively, each of said third and fourth road means extending, from the bottom of a respective one of said two uprights, laterally away from said first traffic lane and beyond the roadway and over land adjacent the roadway, each of said third and fourth road means having two side edges one of which is connected to the respective upright means and the other of which side edges is supported on the ground; said by-pass being constituted of a plurality of individual units, positionable one after the other, to form the entire by-pass, each of said units comprising two panels constituting said two upright means, respectively, three plate means constituting, respectively, said second, third and fourth road means, and a plurality of jack means interposed between each of said two panels and the roadway and between said other edges of said third and fourth road means, said plurality of jack means being adjustable independently of each other thereby to permit the by-pass to be adapted to the configuration of the particular terrain whereat it is positioned.

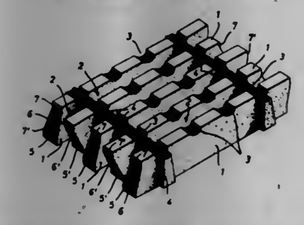
3,301,147
VEHICLE-SUPPORTING MATTING AND PLANK THEREFOR
William A. Clayton and George B. Kortz, Torrance, Calif., assignors to Harvey Aluminum (Incorporated), Los Angeles, Calif., a corporation of California
Filed July 22, 1963, Ser. No. 296,555
4 Claims. (Cl. 94—13)



1. A section of matting comprising:
(a) a plurality of planks, each plank having a unitary elongated body portion with a flat upper surface,
(b) continuous male connecting means formed integral with the body portion of each plank along one longitudinal side of the body portion,
(c) continuous complementary female connecting means formed integral with the body portion of each plank along the other longitudinal side of the body portion and presenting an opening along the length thereof receiving portions of the male connecting means of contiguous planks,
(d) an upwardly projecting element on the male connecting means spaced outwardly from the body portion of each plank,
(e) a downwardly projecting element associated with each female connecting means positioned to define one side of the opening in the female connecting means, the height dimension of the opening being greater than the height dimension of the male connecting means of each plank, the upwardly projecting element on the male connecting means and the downwardly connecting element on the female connecting means being dimensioned so that the male connecting means can be inserted and withdrawn from the female connecting means only with the upper surfaces of the body portions of the two planks arranged at an angle of less than 180° to each other,
(f) end connecting means arranged transversely of the body portion of each plank at each end of the body portion and connected thereto,
(g) an upwardly facing channel including an upwardly projecting element in one end connecting means of each plank,
(h) a complementarily shaped downwardly facing channel including a downwardly projecting element in the other end connecting means of each plank,
(i) a slot in each end connecting means extending the length thereof and opening in a direction away from the body portion, the slot at each end of each plank being similarly arranged so that the slots in two end to end contiguous planks register to form a keyway with the downwardly projecting element of the first plank received in the upwardly facing channel of the second plank and the upwardly projecting element of the second plank received in the downwardly facing channel of the first plank,

(j) the contiguous planks of the matting being arranged with the flat upper surfaces of adjacent planks coplanar and the male and female connecting means in the interlocking relationship described in limitation (e) and with the end to end connections of limitation (i) between contiguous planks being staggered relative to said end to end connections between contiguous planks along the longitudinal edge connections, and
(k) keys inserted in keying relation to the keyways of limitation (i) and blocked against endwise withdrawal by the connecting means of the longitudinal sides of the two contiguous planks.

3,301,148
PAVING BLOCK
Paul Schraudenbach, Agnes-Bernauerstrasse 53A, Munich, Germany
Filed Dec. 18, 1963, Ser. No. 331,417
Claims priority, application Germany, Dec. 19, 1962, Sch 32,494
3 Claims. (Cl. 94—13)



1. A paving block comprising a plurality of bar-shaped parallel tread members spaced from each other and having at least one transverse groove in the upper side thereof, a plurality of parallel connecting webs extending transverse to said tread member, said connecting webs being spaced from one another so as to form an opening therebetween, said spaced tread members being of a cross-sectional size gradually decreasing from the lower side to the upper side of the block, each of said tread members having a length greater than the distance between the lateral outer surfaces of the outer webs, each of said webs having a length greater than the distance between the lateral outer surfaces of the outer tread members, all of said tread members projecting with their full cross-sectional size beyond the outer webs and all of said webs projecting with their full cross-sectional size beyond the outer tread members, and the end surfaces of adjacent tread members being alternately inclined in opposite directions.

3,301,149
PORTABLE DECK
William A. Box, Fullerton, Calif., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 7, 1964, Ser. No. 336,294
6 Claims. (Cl. 94—13)



1. A portable deck comprising a plurality of connected rectangular mats adapted for rapid attachment and detachment, each of said mats comprising a plurality of parallel steel plates having top and bottom longitudinal flanges and a slot extending from the top to the center thereof, a plurality of parallel steel plates arranged at right angles to the first named steel plates, said second named plates having top and bottom longitudinal flanges and a slot extending from the bottom to the center thereof, said first named plates intersecting said second named plates at the said slots, a projection at one end of said first and second named plates, said first and second named plates having a cut out portion at the other end, said projections being arranged along two adjacent sides of said mat, said cut out portions being aligned along the other two sides of said mat, a steel plate extending between and over said aligned projections on each of said adjacent sides to form a tongue along each of said adjacent sides, a steel plate extending between said aligned cut out portions on each of said other sides to form a groove along each of said other sides, a top steel cover sheet secured to the top flanges of said first and second named steel plates, a bottom steel cover sheet secured to the bottom flanges of said first and second named steel plates, the tongues of each mat extending into the grooves of adjacent mats and the grooves of each mat receiving the tongues of adjacent mats, and means holding the mats in assembled relationship.

3,301,150
APPARATUS FOR FEEDING AND DISTRUBUTING CONCRETE IN SLIPFORMS
Raymond A. Hanson, % R. A. Hanson Co., Palouse, Wash. 99161
Filed July 13, 1964, Ser. No. 382,214
2 Claims. (Cl. 94—46)



1. An apparatus for feeding and distributing concrete on slopes, comprising:
a slipform frame extending transversely across a slope face, said frame having a forward upright wall and a rearwardly spaced screed joined to said upright wall by longitudinal bracing members;
concrete receiving means on said framework to direct incoming concrete between said forward upright wall and said screed;
sprocket means rotatably mounted between said forward upright wall and said screed for motion about parallel longitudinal axes located respectively at the transverse ends of said frame;
endless chain means entrained about said sprocket means and extending along the transverse width of said frame in upper and lower flights;
and a plurality of transverse open faced paddles carried by said chain means in parallel longitudinal positions for pushing concrete transversely upward along the slope relative to said frame.

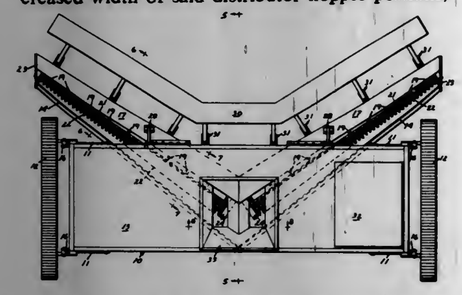
3,301,151
CONCRETE DISTRIBUTOR
Raymond A. Hanson and Robert L. Roller, Palouse, Wash., assignors to R. A. Hanson Co., Inc., Palouse, Wash.
Filed Dec. 28, 1964, Ser. No. 421,409
2 Claims. (Cl. 94—46)

1. A concrete distributor comprising:
a mobile framework;
a distributing hopper supported by said framework having portions thereof extending outwardly and rearwardly from the center of said framework forming a V-shaped configuration in plan, said hopper portions each having an open bottom section defined

by a front wall and a rear wall with the spacing between said front and rear walls decreasing from forward to rearward ends of the hopper;

a feed hopper communicating with the forward ends of said distributing hopper portions;

a distributing screw in each distributing hopper portion tapering from front to rear to conform to the decreased width of said distributor hopper portions;



a screed carried by the rear wall of each distributor hopper portion;

ground engaging supports at each side of said framework;

and means to raise and lower each side of said frame relative to said ground engaging supports to position the distributing hopper and screed at the desired elevation relative to the supporting ground surface.

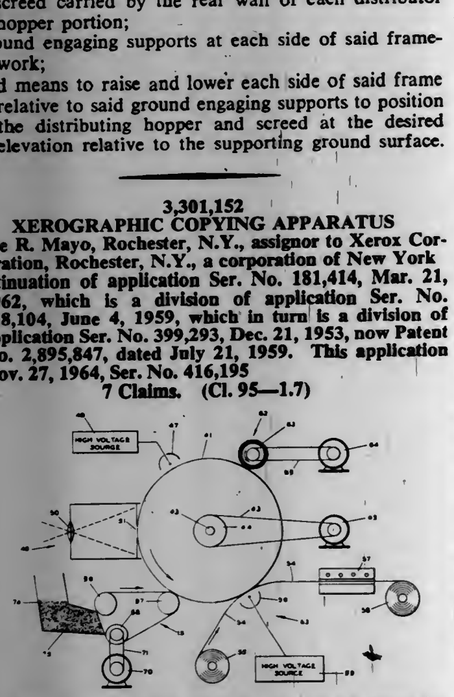
3,301,152

XEROGRAPHIC COPYING APPARATUS

Clyde R. Mayo, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Continuation of application Ser. No. 181,414, Mar. 21, 1962, which is a division of application Ser. No. 818,104, June 4, 1959, which in turn is a division of application Ser. No. 399,293, Dec. 21, 1953, now Patent No. 2,895,847, dated July 21, 1959. This application Nov. 27, 1964, Ser. No. 416,195

7 Claims. (Cl. 95—1.7)



1. Apparatus for developing an electrostatic latent image comprising a conductive cylinder having a photoconductive insulating layer on its curved surface and rotatably mounted on its longitudinal axis, drive means to rotate said cylinder and, sequentially mounted around the periphery of said cylinder in the direction of rotation, a high voltage charging means, an optical exposure station, a developing station, a transfer station and a cleaning station, said developing station comprising a support web positioned with one surface adapted to be brought into firm contact with the curved cylindrical surface, means to press one portion of said support web into contact with said curved cylindrical surface, drive means adapted to move said support web non-synchronously relative to said cylinder but in the same direction as the direction of peripheral movement of said cylinder at the point of contact between said web and said cylinder, so that said web moves relative to said cylinder and means removed from the cylindrical surface for applying to the web surface a relatively uniform coating of finely-divided powdered material charged to an electrostatic potential sufficient to cause adherence of said powder to the web surface and to cause selective adherence of said powder to said cylindrical surface in conformity with electrostatic charges thereon.

3,301,153

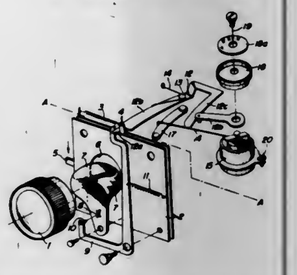
PHOTOGRAPHIC CAMERAS HAVING AN APERTURE DEVICE COUPLED WITH AN EXPOSURE METER

Hisanori Ataka, Tokyo, Japan, assignor to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan

Filed Dec. 2, 1963, Ser. No. 327,371

Claims priority, application Japan, Nov. 30, 1962, 37/54,043

4 Claims. (Cl. 95—10)



1. A photographic camera having an aperture device coupled with an exposure meter, and means for controlling the lens aperture and operable in association with a shutter release lever to hold a pointer of the exposure meter in a deflected position, said camera comprising a pivotal member for holding the pointer of the exposure meter in its deflected position, a member disposed adjacent to said pivotal member and displaceable by external operation, said displaceable member being coaxially mounted with respect to the pointer for movement about a common axis, and means for bringing said displaceable member into the path of pivotal movement of said pivotal member so that the pivotal movement of said pivotal member is restrained before said pivotal member comes into engagement with the pointer of the exposure meter to hold the latter in its deflected position, whereby the lens aperture is manually controllable, said pivotal member being a lever of U-shape which is urged in a particular angular direction, said lever including a pair of arms one of which is adapted for being held in position when the shutter release lever is disengaged and is free when the latter lever is engaged, whereas the other arm cooperates with said displaceable member and the pointer.

3,301,154

STEREOSCOPIC PICTURE CAMERA AND LENTICULAR SCREEN ASSEMBLY THEREFOR

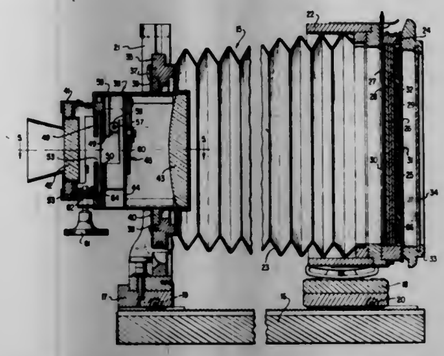
Russell T. Stewart, 7801 Ventnor Ave., Margate City, N.J. 08402, and William D. Stewart, 4351 4th St. SE., Washington, D.C. 20032

Filed Dec. 29, 1964, Ser. No. 421,820

2 Claims. (Cl. 95—18)

1. In a camera apparatus for taking stereoscopic pictures, a forward condensing lens having a lens aperture at least equal to the average interpupillary distance, a magnifying lens mounted a fixed distance rearwardly of the condensing lens, a shutter mechanism disposed between said lenses, adjustable light gate means disposed between the shutter mechanism and condensing lens and operable to define a light slit, a film holder spaced rearwardly of said lenses, supporting relatively movable means

for the film holder and said lenses to allow focusing, and a substantially rigid unitary lenticular screen assembly in the film holder forwardly of a film plate therein, said screen assembly including a rear flat face adapted to directly contact the film plate, a front lenticular face remote from the film plate and an internal portion intermediate the rear and front faces consisting of a multiplicity of opposed tangentially abutting lenticulations which are in precise lateral alignment with each other and fixed with respect to each other and with respect to the lenticulations of said front face, the lenticulations of said front face and said internal portion being in parallelism and consisting of the same number of lenticulations per inch.



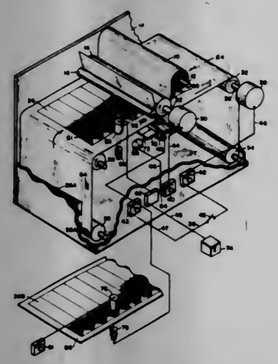
3,301,155

SEISMOGRAM PRINTING

Harland H. Heffring, Calgary, Alberta, Canada, assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Sept. 18, 1964, Ser. No. 397,532

7 Claims. (Cl. 95—75)



1. A device for making a contact print of a plurality of seismic sections in which the seismic section comprises a plurality of side-by-side traces which comprises:

an elongated transparent carrier means upon which a plurality of seismic sections are placed;

a recording medium;

means to effect essential line contact between said recording medium and said first carrier means, said line being essentially parallel to the traces on said seismic sections;

first driving means to move said carrier means in a direction perpendicular to said line of contact;

second driving means to move said recording medium perpendicular to said lines of contact;

light means for directing a line of light through said contact line so as to expose said recording medium with the line image of said seismic section;

shutter means for interrupting said line source of light; and

control means responsive to the position of seismic sections on said transparent carrier means for operating said shutter means such that said light line is interrupted when that part of said first carrier means adjacent said contact line has no seismic section thereon;

said control means including a light source on one side of said transparent carrier means and a photoelectric cell on the other side, opaque patches on said transparent carrier aligned to interrupt the light from said light source and said photo light cell, and a solenoid operable to move a light barrier into the path of said line light upon alternating changes in the output of said photoelectric cell.

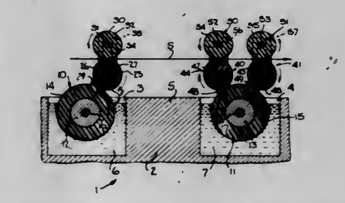
3,301,156

PROCESSING MECHANISM

Rodney W. Roeber, Port Jefferson, N.Y., assignor to Peerless Photo Products, Inc., Shoreham, N.Y., a corporation of New York

Filed Jan. 13, 1964, Ser. No. 337,216

9 Claims. (Cl. 95—89)



1. A mechanism for processing a photosensitive sheet comprising at least one processing solution trough, a processing solution roller having a plurality of spreader grooves therein mounted within said processing solution trough, at least one processing solution applicator roller having a plurality of capillary grooves therein in close proximity to said solution roller for receiving a processing solution from said solution roller and applying it to a photosensitive sheet, said applicator roller being adjustable relative to said solution roller, said applicator roller and said solution roller being rotated in opposite directions to form a bead of solution therebetween, an idle hold down roller mounted on top of said applicator roller, the axes of said hold down roller and the applicator roller being on a substantially vertical plane offset from a vertical plane extending through the axis of the solution roller.

3,301,157

THERMAL DEVELOPING APPARATUS

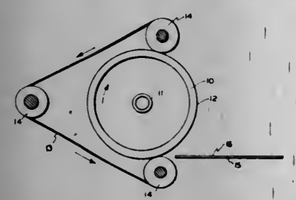
Richard E. Smith, Webster, and Robert L. Boston, Vestal, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed June 8, 1964, Ser. No. 373,202

4 Claims. (Cl. 95—89)

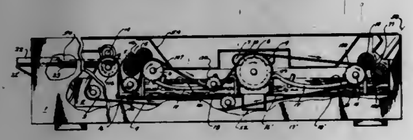
1. In a diazo type apparatus for making duplicate copies of originals by means of copy paper reactive to ultra-violet radiation to form a latent thermal image which is developed by heat to form a visible image, comprising, a first radiation source having a spectral quality predominantly in the ultra-violet range which irradiates a first surface, a second radiation source having a spectral quality in the infra-red range which irradiates a second surface, means for passing said copy paper in contact with an original over said first surface thereby subjecting it to

radiation of said first spectral range and thereafter passing said paper over said second surface thereby subjecting it to heat of said second radiation source, that improvement in said second surface comprising a cylinder of a material which is highly absorptive of the radiation of said second radiation source, and wherein said second radiation



source is disposed within said cylinder and an infra-red reflector is disposed externally of said cylinder for reflecting radiations from said second radiation source back into said cylinder and a high temperature endless belt is disposed in contact with the larger portion of the outer surface of said cylinder for intimately contacting said copy paper with said outer surface.

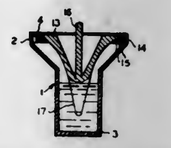
3,301,158
APPARATUS FOR PROCESSING PHOTOGRAPHIC MATERIALS
Stanley J. Klem, Jr., and Heinz F. Nitka, both of Binghampton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 20, 1964, Ser. No. 338,727
6 Claims. (Cl. 95—94)



1. Processing apparatus for photographic sheet film, particularly X-ray film, contained in a cassette comprising, in combination, a plurality of adjacent trays containing processing solutions arranged in sequential order of the processing steps, an infeed portion for said apparatus accommodating a cassette, means operable in response to insertion of said cassette for extracting the film sheet therefrom, first transport means for passing said sheet into the first processing tray, intermediate transport means for passing said sheet from one tray into the next succeeding tray, said intermediate transport means being so constructed as to envelop the film sheet upon emergence from the first tray and during passage thereof into the second tray, and outfeed transport means for passing said sheet from the last tray into a delivery portion of said apparatus.

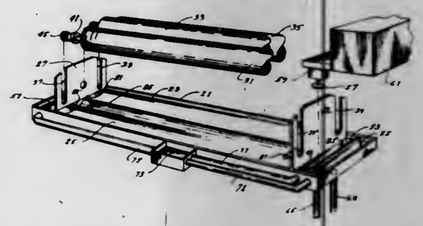
3,301,159
PROCESSING DEVICE FOR MOTION PICTURE FILMS
Ira B. Current, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,141
8 Claims. (Cl. 95—94)

1. Device for impinging solutions on a long strip comprising a channel for guiding said strip in a circular path, a solution sump positioned below said channel, and an impeller rotatably mounted wihin the circular path of said channel and tapering downwardly into said sump, said impeller being formed with guide means spirally extending from its lower end upwardly and outwardly towards



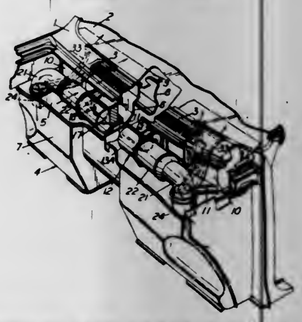
said channel and with a perforated peripheral rim extending downwardly between said channel and said guide means.

3,301,160
LIQUID DEVELOPER TRAY AND FEED ASSEMBLY
Jean-Paul R. Aubin, South Hadley, Mass., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,756
9 Claims. (Cl. 95—95)



2. In apparatus of the character described, the combination which comprises a tray structure including a pair of spaced parallel troughs adapted to hold liquid up to an operating level, a separate supply compartment adjacent each end of said pair of troughs, conduit means for simultaneously supplying liquid by gravity to both said compartments, an interconnection between each of said compartments and each of said troughs, and liquid level maintaining means for supplying liquid to said conduit means so as to maintain a predetermined operating liquid level in both said troughs.

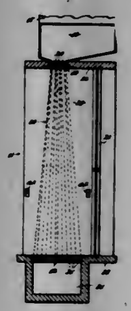
3,301,161
MOTOR VEHICLE BODY VENTILATION SYSTEMS
William Spencer Attwood, Harpenden, and David William Tree, Dunstable, England, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 4, 1964, Ser. No. 416,001
Claims priority, application Great Britain, Dec. 20, 1963, 50,322/63
4 Claims. (Cl. 98—2)



1. In combination with a vehicle body having a passenger compartment and a windshield, a ventilation system,

comprising, in combination, an air distribution duct extending transversely of the body and including a plenum chamber intermediate the ends of the duct and communicating with an air intake, a heater element located in a first portion of the plenum chamber and discharging air generally longitudinally of the body into a second portion of the plenum chamber, a pair of discharge conduits extending generally transversely of the air flow from the heater element and connected to the second portion of the plenum chamber to receive air therefrom, means diverting the air flow from the second portion of the plenum chamber into each of the conduits, each of the conduits terminating in an outlet communicating with the passenger compartment of the vehicle, a de-mist conduit connected to each of the discharge conduits adjacent the outlet thereof and communicating with the windshield of the vehicle, and valve means in each of the discharge conduits adjacent the outlets thereof to apportion air between the passenger compartment and the windshield.

3,301,162
AIR CURTAIN DOORWAY METHOD AND SYSTEM
William A. Zumbiel, 85 Dudley Road, South Fort Mitchell, Ky. 41017
Filed Apr. 12, 1966, Ser. No. 549,095
12 Claims. (Cl. 98—36)

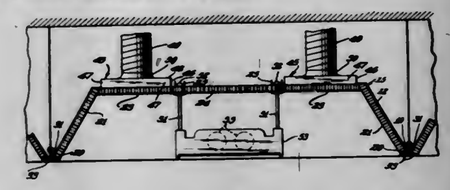


5. The method of establishing and maintaining an air curtain door across an exterior doorway which comprises
- propelling air from a circulating system through an air outlet on one side of said doorway toward an air inlet on the opposite side of said doorway,
- simultaneously drawing air through said air inlet into said circulating system whereby a high velocity stream of air in the form of an air curtain is maintained across said doorway,
- the improvement which comprises reducing the velocity of said high velocity stream of air by approximately 60 percent upon approach of a person to said doorway whereby said air curtain is maintained intact at the reduced velocity while the person passes through said doorway.

3,301,163
COFFER TYPE VENTILATING CEILING STRUCTURE
George K. Raider, Schiller Park, Ill., assignor to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey
Filed July 13, 1964, Ser. No. 382,025
8 Claims. (Cl. 98—40)

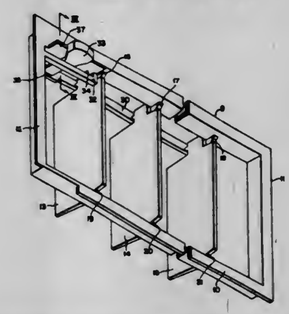
1. For use in a ventilating system in combination with a wall or a ceiling of a space to be ventilated having an inner wall spaced interiorly of said wall or ceiling, said inner wall having a plurality of openings therein,
- the improvement of a coffer type ceiling module for mounting in each of said openings,
- each said module comprising upper and lower rectangular frames of complementary shape but of different size and legs disposed angularly therebetween at the corners thereof to secure said frames in firm assembly with one another,
- a top panel in said upper frame, and
- a panel in each side wall between said upper and lower frames,

whereby said panels together with one another and said frames form an inverted recessed coffer unit adapted to form a ceiling component of a space,



each said panel formed by a flat member comprising acoustical material for absorbing sound from the space and having air passages formed therein over a substantial extent thereof for diffusion of air directly through said panels into or out of the space, and
- means forming a ventilating circuit including said coffer unit and the space for directing air through said coffer type ceiling module as an air outlet to or an air return from the space.

3,301,164
HINGED POLYPROPYLENE LOUVER SET
Arthur H. Eberhart, Hilliard, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1964, Ser. No. 412,057
6 Claims. (Cl. 98—40)



1. An adjustable louver vane set formed as a one-piece structure molded from plastic material comprising, a frame including generally parallel spaced apart side members and oppositely disposed end cross members, each of said side members having a plurality of spaced integrally molded oppositely positioned inwardly extending projections, a plurality of vane members integrally molded between said side members and connected by respective flexible plastic web portions to respective ones of said oppositely positioned projections, a gang bar integrally molded to interconnect respective end surfaces of said vanes in a plane behind the plane of the said connecting web portions of said vanes to the projections of said side members, said gang bar being connected to the respective ones of said vanes by integrally molded flexible plastic web portions, said frame including integrally molded sup-

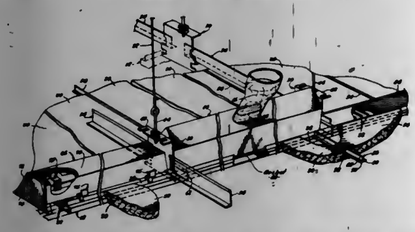
port means to receive movable operator means adapted to extend rearwardly from said support means to connect with said gang bar for effecting pivoting of said vanes.

3,301,165
CEILING AIR CONDITIONING SYSTEM

John E. Stanley, Flintridge, Calif., assignor to Duo-Flex Corporation, Glendale, Calif., a corporation of California

Continuation of abandoned application Ser. No. 407,951, Oct. 26, 1964. This application June 3, 1966, Ser. No. 555,206

12 Claims. (Cl. 98—40)



1. A ceiling structure for an air conditioning system in a building, said structure comprising:

a dropped transverse ceiling spaced from the ceiling of a floor of the building, to form a plenum chamber between the floor ceiling and the dropped ceiling, said dropped ceiling including at least one elongated panel having a transverse bottom of open construction to permit air flow therethrough in either direction;

first and second air duct means extending into the plenum chamber, one of said first and second duct means being connnected to a source of air-conditioned air under pressure, and the other one of said first and second duct means providing a return air flow passage;

at least one hollow box-shaped unit, said unit being disposed on a portion of, and supported by, said panel, and, with said panel, forming a hollow box having a top, two sidewalls, two end walls and an open transverse bottom wall;

one of said first and second air duct means being in air flow communication with the interior of said unit through an opening therein above said transverse bottom wall;

at least one masking member seated on another portion of said panel thereby to prevent air flow through the open areas of the transverse bottom of said other portion of the panel; and

at least one additional portion of the transverse bottom of said panel being left uncovered by both said unit and said masking member, and in air flow communication with said plenum chamber.

3,301,166
AIR CONDITIONER WITH VENT ASSEMBLY THEREFOR

William L. Schwartz, Franklin Township, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

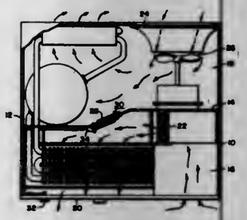
Filed Mar. 8, 1965, Ser. No. 437,978

6 Claims. (Cl. 98—94)

1. A one-piece, molded plastic exhaust vent assembly located in the bulkhead of a room air conditioner, comprising:

a frame and screen portion, said frame providing a peripheral border around said screen, and including an anchor tab on one edge offset out of the plane of the remainder of said border, said frame further including an aperture in another edge of said border to receive additional fastening means to secure said border to said bulkhead;

a cover portion for said frame and screen including a peripheral flange on its inner face encompassing said screen portion when said cover is folded against said frame, said cover further including an outwardly-directed lug on its outer face adapted to receive a cover operating connection;



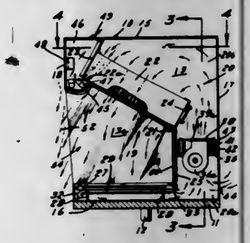
said frame and said cover being connected by an integrally molded hinge of said same plastic material and having a reduced thickness portion along the line corresponding to the pivotal axis between said frame and cover.

3,301,167
ANTICONTAMINANT WORK BENCH

Harold D. Howard, San Dimas, and Robert D. Scott, West Covina, Calif., assignors to Ray Products Company, Inc., Alhambra, Calif., a corporation of California

Filed May 4, 1964, Ser. No. 364,534

6 Claims. (Cl. 98—115)



1. The combination providing an anticontaminant working space, comprising:

(a) housing means defining a working chamber having a top wall structure including an air filter having a front face area with fluid flow discharge openings therein extending across substantially the entire width of said chamber;

(b) bench means including a top working surface having openings therein, said working surface being positioned in the working chamber below the area having the fluid flow discharge openings therein and providing with said top wall structure an access opening to the bench top working surface;

(c) duct means defining a fluid flow path exteriorly of said working chamber and having end connections in communication respectively with said discharge openings of the top wall structure and said bench top working surface openings;

(d) means for moving a fluid in said path and through said working chamber between said top wall structure and the bench top working surface; and

(e) said filter front face area having at least a portion thereof inclined with respect to the bench top working surface so that a portion of the discharged fluid will be directed through the access opening and form an air curtain extending thereacross.

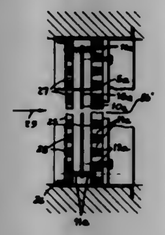
3,301,168
QUICK CLOSURE MECHANISM FOR THE AIR PASSAGE OPENINGS OF SHELTERS AND THE LIKE

Gottfried Schindler, Zurich, and Karl Sauter, Uitikon, Zurich, Switzerland, assignors to Luwa Ag., Zurich, Switzerland, a corporation of Switzerland

Filed Apr. 13, 1964, Ser. No. 359,394

Claims priority, application Switzerland, Apr. 18, 1963, 4,855/63

10 Claims. (Cl. 98—119)



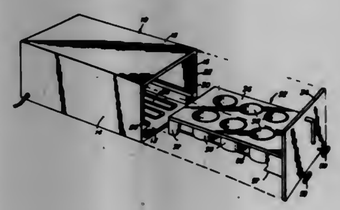
8. A quick closure mechanism for an air passage opening of shelters and other protective type compartments, comprising at least one movable flexible closure means mounted in the air passage opening and movable in response to sudden differences in air pressure appearing at opposite sides of said air passage opening, at least one stationary seating means carrying said movable flexible closure means in a manner that in the absence of said pressure differences it normally assumes an open position, said stationary seating means having a concave surface portion facing said movable flexible closure means and defining a seat against which sealingly bears said movable flexible closure means in its closed position, said movable flexible closure means and seating means being constructed as plate-shaped elements provided with openings, said openings of each plate-shaped element being separated by uninterrupted plate portions, said plate-shaped closure means and said plate-shaped seating means bearing against one another in said closed position of said closure means, said openings of said movable flexible closure means being offset with respect to the openings of said stationary seating means and lying in the zone of the uninterrupted plate portions of said stationary seating means.

3,301,169
TABLE OVEN

George A. Young, 1194 Indian Mound Road, Lexington, Ky. 40502

Filed Feb. 19, 1965, Ser. No. 434,019

3 Claims. (Cl. 99—327)



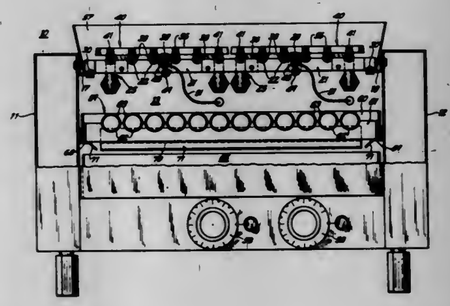
1. A table appliance comprising an insulated housing having an opening leading to the interior thereof, cooking elements supported within said housing, a food-receiving tray unit, means to slidably receive said tray in said housing, an insulated cover forming one end of said tray unit closing said opening when said tray unit is fully received in said housing, an electrical conduit between a power source and said cooking elements, a first switch across said conduit, a timing unit having a second switch across said conduit, an ejecting mechanism having a third switch across said conduit, means closing said first and second switches when said tray unit is fully received by said housing and starting said timing unit, and second means momentarily closing said third switch after said timing unit has been in operation a selected period of time.

3,301,170
ELECTRIC BROILER

Silas V. Beasley, Algonquin, Ill., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed May 11, 1964, Ser. No. 366,411

6 Claims. (Cl. 99—331)



1. An electric broiler comprising a tubular metal sheathed heating element presenting a co-planar generally serpentine pattern including a series of parallel horizontally spaced element portions and a metal article supporting grid supported solely on said sheathed heating element with parallel bar portions respectively overlying said parallel horizontally spaced element portions and having a co-planar lower surface in heat conducting supporting contact with said heating element co-planar pattern at each location where said grid overlies said heating element co-planar portions, said grid parallel bar portions having depending portions presenting curvate bottom surfaces conforming to said underlying parallel spaced heating element portions to increase surface contact and position said grid with respect to said heating element in a transverse direction, said element portions interconnecting adjoining parallel element portions having initially diverging portions joined to one another by a closed curved portion whereby said portions interconnecting said parallel element portions deviate from a wholly underlying relation with respect to said grid at positions lacking increased surface contact between said element and grid to thereat provide increased direct heat radiation to the cooking surface of said grid.

3,301,171
FOOD JUICE DEFLECTOR MEANS FOR SOLAR OVEN

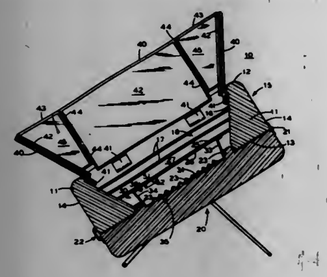
Hyman A. Steinberg, 7—25 166th St., Whitestone, N.Y. 11357

Filed Mar. 29, 1963, Ser. No. 268,986

8 Claims. (Cl. 99—425)

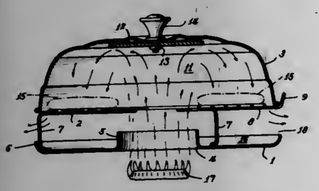
1. In a solar oven, casing means defining a chamber having a substantially flat heating collector plate; means for concentrating solar energy onto said collector plate to elevate the temperature of said chamber; said casing

means, during operation of said oven normally being tilted from the horizontal in accordance with the position of the sun; a food pan positioned in said chamber and having side and end walls contacting said collector plate; the end wall of said pan normally lowermost when said casing means is tilted being formed to define retaining means for heated food juices running down the bottom



wall of said pan; and a ledge extension projecting, from that area of the surface of said collector plate defined within the contacting side and end walls of said pan, into said pan adjacent the inner edge of said normally lowermost end wall to divert food juices, running down the surface of said collector plate, into said pan for collection in said retaining means.

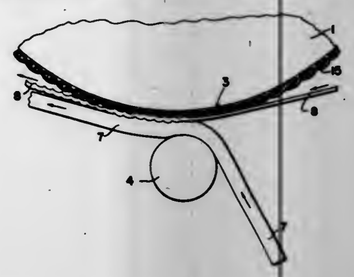
3,301,172
COOKING GRILL
Francisco Antonio Haro, Chicago, Ill.; Geronimo J. Longo, executor of said Francisco Antonio Haro, deceased
Filed Oct. 9, 1964, Ser. No. 402,904
8 Claims. (Cl. 99—446)



1. A cooking grill comprising a circular base having a central opening, said base having upstanding flanges at its periphery and at said opening to define a receptacle, a grid spaced above and substantially coextensive with and resting upon said base, and a domed cover over said grid with the edge of the cover resting upon the grid at its periphery, the edge of said cover being spaced from the edge of the base peripheral flange to leave a gap for the escape of gases throughout the circumference of the grill.

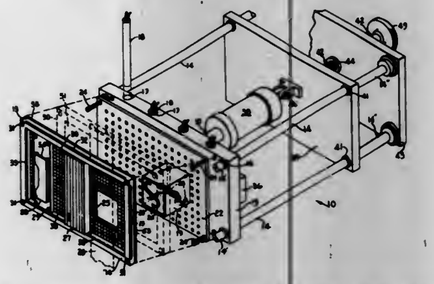
3,301,173
TEXTURIZING OF FLEXIBLE MATERIALS
Jackie M. Moody, North Charleston, S.C., assignor to Clupak, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,774
3 Claims. (Cl. 101—23)

1. An apparatus for texturizing a flat web comprising in combination: a first mounted rigid rotatable roll; a second mounted rigid rotatable roll, said second roll having its axis parallel to the axis of said first roll and located so as to form a pressure nip between it and said first roll; a woven endless belt mounted so as to pass through the pressure nip, said endless belt formed from filaments capable of shortening and stretching; a generally smooth elastomeric surface mounted so as to pass through



said pressure nip; and means for moving said surface and said belt, said means including means for shortening the elastomeric surface in the nip cause a generally corresponding shortening of the woven belt in the nip area.

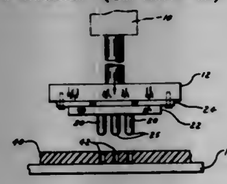
3,301,174
COMBINATION PRINTING AND HOT STAMPING PRESS
Tony Sciame, 826 Hampden St., Linden, N.J. 07036
Filed Dec. 1, 1965, Ser. No. 510,777
9 Claims. (Cl. 101—27)



1. A combination printing and hot stamping press having a stationary frame, and comprising, in combination,
a platen designed to deliver to the type area the work to be printed and hot stamped,
a stationary chase holder disposed on the press frame and having an aperture through which the hereinafter-mentioned die is designed to travel,
a stationary chase, designed to carry set printing type, and attachable ahead of said chase holder, and having an open area in alignment with said aperture,
a stationary chase back-up plate disposed behind said chase and ahead of said chase holder and designed to serve as a support for chase type, and having an aperture into which said hereinafter-mentioned die is designed to travel,
holding and feeding means for holding and feeding stamping foil tape in front of said aperture,
guide means having its forward portion attachable to said frame behind said chase holder,
a heat-conductive die movably mounted on said guide means behind said chase holder in forwardly-protruding relation toward said chase holder and disposed in alignment with said apertures so as to freely enter and leave same,
heating means for heating said die,
moving means mounted on said guide means behind said die and designed to move said die to and from said apertures, and

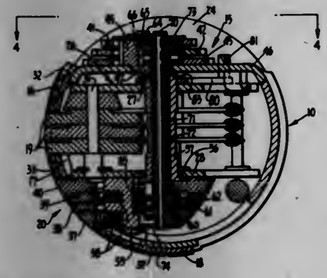
distance control means mounted on said guide means and designed to control the distance of travel of said die in a manner such that when work on said platen is moved for light contact with said type, said moving means is arranged to cause said die to pass into or through said aperture and effect longer contact of said die and foil on said work than the contact time of said work with said type.

3,301,175
METHOD AND APPARATUS FOR PRINTING ON ELECTRICAL CONDUCTOR DEVICES
Joseph Pollchette, South Farmingdale, N.Y., assignor to Process Research Company, Glen Cove, N.Y., a partnership
Filed July 15, 1964, Ser. No. 382,849
6 Claims. (Cl. 101—41)



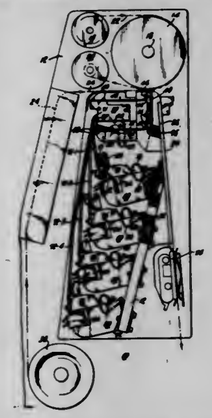
1. In the manufacture of a printed circuit board, a method for simultaneously depositing ink on the peripheral edges of a plurality of holes arranged in the insulating base member of said printed circuit board in a substantially predetermined relationship, comprising: providing a plurality of rigid printing members with end portions shaped to conform to the peripheral contour of said holes, mounting each of said printing members directly onto a flexible, resilient backing support in a predetermined relationship substantially corresponding to that of said holes in said base member, coating the end portions of said printing members with the ink to be deposited, initially contacting said printing members with said insulating base member in substantial alignment with said holes, and thereafter moving said printing members into direct alignment with said holes, whereby said ink is transferred uniformly and simultaneously from said printing members onto the peripheral contour of each of said plurality of holes.

3,301,176
POSTAGE METER
Peter M. Lowell, Pleasanton, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed Oct. 4, 1965, Ser. No. 492,795
4 Claims. (Cl. 101—85)



1. In a postage meter,
a frame,
a print-head rotatably mounted on said frame,
a town circle printing die mounted on said print-head,
a rockable member carried by said print-head adjustable to either of two positions,
a series of type wheels selectively settable to represent a date, said type wheels being rotatably mounted on said rockable member for movement to either a print or nonprint position relative to said town circle die upon adjustment of said rockable member,
a date selection means carried by said print-head manually operable to control the setting of said type wheels in either position of said rockable means, and
a manual control means mounted on said print-head for controlling the adjustment of said rockable member.

3,301,177
HAMMER FIRING ARRANGEMENT FOR HIGH SPEED PRINTER
Francis H. Shepard, Jr., Berkeley Heights, N.J., assignor to Shepard Laboratories, Inc., Summit, N.J.
Filed Jan. 29, 1964, Ser. No. 340,912
10 Claims. (Cl. 101—93)

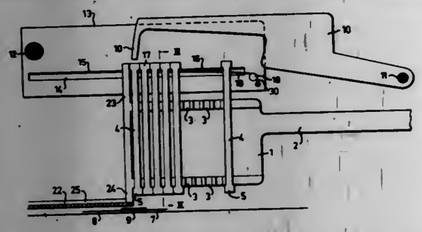


1. A hammer firing assembly of the character described comprising, a machine frame, an elongated hammer, means to guide said hammer in said frame, and a firing spring cantilever arm engaged at one of its ends with said hammer and adjacent its other end pivoted on said frame, said hammer being axially movable toward and away from a type member, and means to flex said firing spring arm to whip said hammer at high velocity toward the type member, said firing spring arm having a rocker surface bearing on said frame, said rocker surface providing a movable fulcrum for said arm when it is flexed, said arm having an outer end which overhangs said frame, said means to flex including a fixed solenoid and a movable armature, said armature bridging a gap across said solenoid, and a pull-wire attached at one end to said armature and at its other end to the outer end of said firing spring arm.

3,301,178
RECIPROCABLE TYPE CARRIER WITH INDIVIDUALLY MOVABLE TYPE BARS
Nils Evert Fridolf Holmqvist, Malmo, Sweden, assignor to Aktiebolaget Addo, Malmo, Sweden, a corporation of Sweden
Filed Feb. 24, 1965, Ser. No. 434,987
Claims priority, application Sweden, Feb. 27, 1964, 2,402/64
4 Claims. (Cl. 101—109)

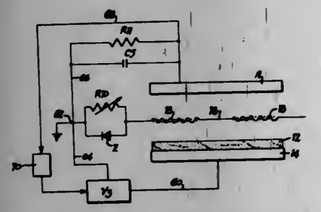
1. A printing unit, comprising a printing support for supporting a sheet to be printed, stationary frame means, at least one type carrier reciprocable on said frame means in a definite path adjacent said printing support, a plurality of type bars mounted in said carrier in a row in parallel side-by-side relationship to partake in the re-

ciprocation of said carrier so as to be positioned one at a time in a printing position and movable in their longitudinal direction in relation to said carrier transversely of the path thereof between an inoperative position spaced from said printing support and an operative position applied against said printing support, a printing type on each of said type bars on the end thereof adjacent said printing support, a first elongated guide means and a second elongated guide means stationarily mounted in longitudinal alignment on said frame means substantially in parallel with the path of said carrier and defining a



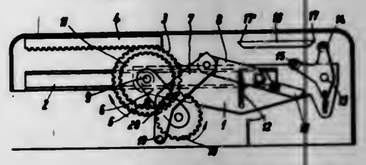
gap between them for determining the printing position, a third guide means, mounting means on said frame for yieldingly holding said third guide means in the printing position gap between said first and second guide means, engagement means on said type bars for engagement with said first, second, and third guide means to support said type bars in their inoperative position during reciprocation of said carrier, and a printing hammer movably mounted on said frame means for engaging any one of said type bars supported in the printing position gap by said third guide means and moving it to the operative position against the bias of said third guide means.

3,301,179
ELECTROSTATIC PRINTING WITH DENSITY CONTROL PROVIDED BY CHARGE MEASURING MEANS
William E. Johnson, Temperance, Mich., assignor to Owens-Illinois Inc., a corporation of Ohio
Filed Mar. 15, 1965, Ser. No. 439,799
10 Claims. (Cl. 101—114)



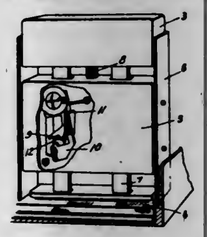
6. In an apparatus for applying an image-shaped layer of printing powder particles to an article surface including a stencil screen having an image defining aperture therethrough, means for supporting a supply of printing powder particles at one side of said screen, means for supporting an article to which the particles are to be supplied at the opposite side of said screen, electric potential source means operable when energized to establish an electric field between said supply and article capable of electrically charging powder particles in said supply and impelling the charged particles from said supply through the aperture of said screen to the surface of the article, and means for energizing said electric potential source means; the improvement comprising means for measuring the variation of electric potential between said screen and said article due to the accumulation of charged particles on said article while said potential source means is energized, and means operable by said measuring means for de-energizing said potential source means when the potential difference between said screen and article reaches a preselected magnitude.

3,301,180
SAFETY MEANS IN TRAVELING ROLLER BED AND CYLINDER PRINTING MACHINES
Werner Aehlig, Berlin, Germany, assignor to Adrema-Werke G.m.b.H., Berlin, Germany
Filed Oct. 23, 1963, Ser. No. 318,375
Claims priority, application Germany, Oct. 26, 1962, A 41,480
12 Claims. (Cl. 101—269)



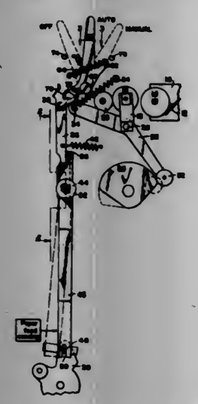
1. Means for controlling an impression roller for use with a printing plate having a sheet thereon, including: carrier means for moving said impression roller forward and backward over the sheet between first and second end positions; means for supporting said impression roller; means for pivotally mounting said supporting means on said carrier means; bendable link means bendable between an elongated position and bent positions and biased to said elongated position; further means pivotally associated with said supporting means and said bendable link means, whereby when said bendable link means is in said elongated position, said impression roller contacts said sheet and when said bendable link means is bent to a bent position, said impression roller is correspondingly raised from said sheet; and guard means supported by said bendable link means and located in front of said impression roller for contacting an object in the path of said impression roller and causing said bendable link means to bend thereby raising said impression roller from said sheet, said guard means being parallel to the axis of and substantially the same length as said impression roller.

3,301,181
STAMP RECEPTACLE WITH STAMPS
Werner Ewald, 9 Baumweg, Hanau, Germany
Filed Dec. 14, 1964, Ser. No. 417,886
Claims priority, application Germany, Dec. 19, 1963, E 26,066
3 Claims. (Cl. 101—333)



1. A stamp receptacle with stamps, comprising: a box having the shape of a rectangular parallelepiped with an an open upper side; a plurality of stamping elements having a standard size and shaped as rectangular parallelepipeds; said elements standing in the box, each with an identifying, upper end formed by a key and a stamping, lower end, said keys forming in the box a common horizontal plane; the rectangular cross section of each of said elements being of a size that allows complete filling of the box with the plurality of stamping elements, there being a small clearance between adjacent stamping elements as well as between stamping elements and box sides; and a spring-loaded means to make the keys of individual stamp elements protrude from the common horizontal plane so that the elements can be pulled from the box; said means comprising a key switching mechanism, supporting means for said mechanism and guide means, said supporting means being immovably secured in the interior of said stamping element, said key being rigidly coupled to the lower stamping surface by at least one of said guide means, said guide means extending through said supporting means and being operatively coupled to said key switching mechanism; said key switching mechanism comprising a resilient trip lever, a drive element, and a spring element, said trip lever being rotatably mounted and having a recess, an inclined edge above said recess, and a cam-like nose adjacent said recess and bent obliquely away from the plane of said trip lever, said spring element engaging said cam-like nose, said drive element being rigidly secured at its one end to said guide means, the other end of said drive element engaging into said recess in said trip lever.

3,301,182
AUTOMATIC INK DUCTOR CONTROL FOR PRINTING PRESSES
Jan Leviton, Brooklyn, N.Y., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Dec. 10, 1964, Ser. No. 417,454
4 Claims. (Cl. 101—351)



1. In a printing press of the type including an ink fountain, an ink distributing roller, an ink ductor roll mounted for intermittent swinging movement between said ink fountain and said distributing roller, an oscillating lever connected to the mounting of said ductor roll for swinging the same, cam means for oscillating said lever in synchronism with press drive cycles, paper feed sensing means, latch means normally urged to a first position in which it it holds such lever out of engagement with said cam to hold said ductor roll out of in-transfer relation to said ink fountain, and means responsive to the operation of said sensing means for moving said latch means to a second position away from said lever to allow said ductor roll to swing into ink-transfer relation to said ink fountain, the improvement which comprises;

(a) a one-way drive connection between said sensing means and said latch means permitting movement of said latch means towards its second position independently of the operation of said sensing means,

(b) a manually operable control lever movable through an intermediate idle position between first and second extreme positions.

(c) said control lever having a portion which in one of its extreme positions engages said oscillating lever to hold the same out of engagement with said cam to discontinue the ink supply independently of the position of said latch means,

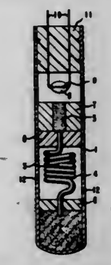
(d) said control lever having a portion which in the other of its extreme positions engages said latch means to hold the latter in its said second position away from said oscillating lever, to permit ink supply independently of the sensing of paper feed by said sensing means,

(e) spring bias means urging said control lever from its said other extreme position towards its intermediate idle position,

(f) a locking formation on said latch means for holding said control lever in its said other extreme position against the force of said spring bias means,

(g) and means controlled by said sensing means for moving said locking formation away from said control lever to allow the latter to be restored to its intermediate position upon the occurrence of a paper feed operation.

3,301,183
SAFE-ARM MECHANISM FOR EXPLOSIVE TRAINS
James Hennessy, Pitman, and George A. Noddin, Mantua, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,425
7 Claims. (Cl. 102—27)



1. An arming system comprising a donor charge, an acceptor charge separated from the donor charge by distance sufficient to preclude sympathetic actuation of the acceptor charge by a detonation stimulus from the donor charge, and a safe-arm mechanism connecting said charges,

said safe-arm mechanism comprising an exposed helix of 3 to 10 tightly coiled turns of low-energy connecting cord having a core of high velocity, cap-sensitive detonating explosive at a loading of about from 1.5 to 2.2 grains per foot encased in a ductile metal sheath, said helix being characterized by its ability to propagate a detonation stimulus when surrounded by a liquid medium and its inability to propagate such a stimulus when surrounded by a gaseous medium.

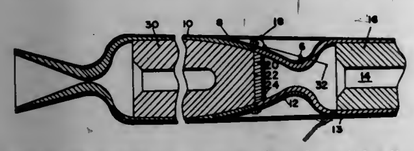
3,301,184
ROCKET ENGINE CONSTRUCTION
Frederick K. Reinstein, Arleta, and William G. Taylor, Palo Alto, Calif., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Oct. 7, 1963, Ser. No. 315,120
7 Claims. (Cl. 102—49)

1. In a plural-stage rocket wherein a first stage is a solid-propellant motor having a case open at the forward end thereof adjacent the rearward end of a second stage, said second stage containing a propellant and having a nozzle at its rearward end forming a continuation of the open end of the first stage, a pressure barrier fixed into

said forward end to close said case and form a pressure vessel, said pressure barrier comprising

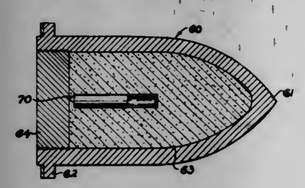
(a) a light-weight frangible disk, and

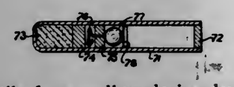
(b) an explosive means therein having at least one detonating primer adjacent the solid propellant and detonated by the heat of terminal combustion of said



first stage whereby to shatter said frangible disc and instantaneously open the forward end of the first stage and rearward end of the second stage whereby to ignite the propellant in the second stage, and means for separating the first and second stages responsive to ignition of said second stage.

3,301,185
WELL EXPLOSIVE DEVICES
James Lewis Foster, 2416 Dartmouth, Wichita Falls, Tex. 76308
Application Mar. 2, 1959, Ser. No. 796,452, which is a division of application Ser. No. 357,589, May 26, 1953, which in turn is a continuation of application Ser. No. 690,762, Aug. 15, 1946. Divided and this application Aug. 3, 1965, Ser. No. 476,882
2 Claims. (Cl. 102—56)





1. A projectile for a well explosive device comprising:

a unitary hollow body having a piercing end and a charging end;

closure means at said charging end to form a sealed chamber therewithin;

an explosive received within said chamber;

a casing freely suspended by said explosive within said chamber;

said casing comprising a sealed container having a closed end and a removable end and including a primer charge, delay pellet, explosive element, ball, and frangible disk arranged in series relationship therewithin;

said primer charge retained within said casing adjacent one end by said delay pellet;

said explosive element having means forming an aperture therethrough;

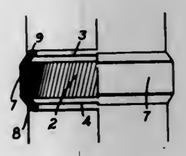
said explosive element spaced from said delay pellet and forming a chamber therebetween;

said ball maintained adjacent said explosive element by said frangible disk;

a free space defined by said frangible disk and the remaining said end wall adapted to receive said ball upon rupture of said disk;

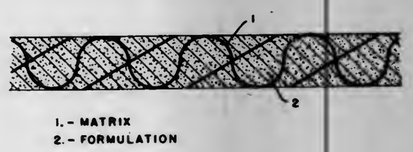
a flexible thread having a high friction coating thereon attached to said ball and extending through said explosive element aperture in close tolerance relationship therewith, and into said chamber; whereby: impact of said projectile allows the inertia of said ball to move said thread relative to said explosive element to thereby detonate said element which in turn detonates said delay pellet which in turn detonates said primer charge which in turn detonates said explosive contained in the projectile.

3,301,186
BANDED PROJECTILES PARTICULARLY FOR SMALL ARMS
Charles Henry, Cusset-Allier, France, assignor to Manufacture de Machines du Haut-Rhin, Mulhouse-Bourtzwiller, France
Filed Aug. 11, 1964, Ser. No. 388,855
Claims priority, application France, Aug. 12, 1963, 944,448
6 Claims. (Cl. 102—93)



1. A projectile to be fired by firearms having a barrel with inside rifling grooves, said projectile comprising a body having an axis of revolution, a generally tubular mild steel driving band having inner and outer cylindrical surfaces encircling a portion of said body, said portion of said body provided with a grooved structure defining top ridges and hollow bottoms, said top ridges being in immediate and continuous contact with said inner cylindrical surface of said driving band and defining air spaces between said inner cylindrical surface of said band and said hollow bottoms, means adjacent said portion of said body for securing said band to said body and a plated metal coating on said outer cylindrical surface selected from the group consisting of nickel and German silver.

3,301,187
CONSUMABLE MATERIALS
William E. Donaldson, Carroll W. Butler, Rosemary R. Whitman, and Harry B. Porter, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 31, 1965, Ser. No. 445,869
5 Claims. (Cl. 102—97)

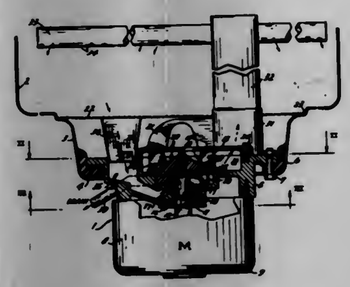


1. A consumable material comprising a cloth matrix selected from a member consisting of fiberglass, nylon, cotton cloth and paper impregnated with a formulation consisting essentially of:

	Percent by weight
Epoxy resin	50
Ammonium perchlorate	43
Magnesium	7

said resin consisting of bisphenol A, epichlorohydrin and butyl glycidyl ether.

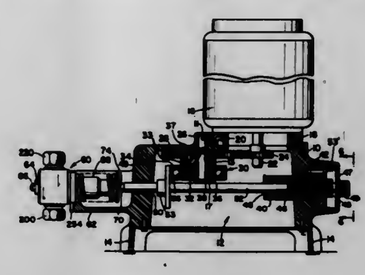
3,301,188
PUMP
Robert L. Belonger, Delavan, Wis., assignor to Sta-Rite Products, Inc., Delavan, Wis., a corporation of Wisconsin
Filed June 18, 1964, Ser. No. 376,008
4 Claims. (Cl. 103—3)



1. A pump assembly, comprising a liquid-containing member having an opening in the lower portion thereof, a pump casing mounted in the opening of said liquid containing member, a reversible motor connected to the casing and located on the exterior of said liquid containing member and having a drive shaft extending into said pump casing, journaling means connected to the pump casing for journaling said shaft for rotation, said pump casing defining an upper pumping chamber and a lower pumping chamber and said casing having a first inlet opening disposed generally axially of said shaft and communicating with said upper pumping chamber for supplying a liquid from said liquid-containing member to said first pumping chamber, first outlet conduit means providing communication between the periphery of said upper pumping chamber and said liquid-containing member, an impeller unit secured to the shaft and including a body having upper and lower faces, said impeller unit having a first series of blades mounted on the upper face and located within said upper pumping chamber and shaped to develop a high pressure head when said impeller unit is rotated in a first direction and shaped to develop a low pressure head when the impeller unit is rotated in the opposite direction, said impeller unit also having a second series of blades mounted on the lower face and located within said lower pumping chamber, inlet conduit means providing communication between the liquid-containing member and the lower end of the pumping chamber at a location between the shaft and the periphery of said second series of blades and cooperating with said second series of blades to develop a low pressure head when said impeller unit is rotated in said first direction and develop a relatively high pressure head when said impeller unit is rotated in the opposite direction, and drain conduit means connecting the periphery of said lower pumping chamber to a drain line.

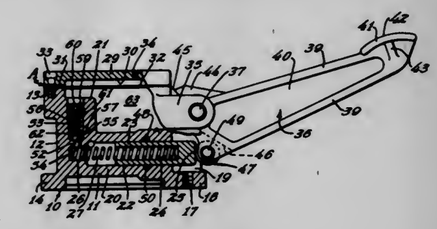
3,301,189
VARIABLE CAPACITY PUMP
Nelson G. Kling, Ringwood, N.J., assignor to Technicon Chromatography Corporation, Chauncey, N.Y., a corporation of New York
Filed Apr. 22, 1964, Ser. No. 361,726
5 Claims. (Cl. 103—38)

1. A pump comprising a cylinder; valve means coupled to said cylinder for the intake and output of fluid to said cylinder; a piston reciprocable in said cylinder in fluid intake and output directions; spring means biasing said piston in said fluid intake direction; and piston actuating means including a rod journaled adjacent each end for reciprocation on an axis common with said piston and having one end for abutment against an end of said piston against the bias of said spring means, a projection fixed to said rod, a cam journaled for peripheral abutment against



said projection for driving said end of said rod against said piston end during fluid output, and a motor coupled to said cam for rotating said cam.

3,301,190
FOOT OPERATED HYDRAULIC PUMP
John T. Gondek, Minneapolis, Minn., assignor to Oil-Dyne, Inc., a corporation of Minnesota
Filed Dec. 28, 1964, Ser. No. 421,315
2 Claims. (Cl. 103—42)



1. A foot actuated pump comprising:

a housing including a reservoir,

a cylinder in said housing having one end open to atmosphere, the cylinder having a generally horizontal axis,

a piston slidable in said cylinder and including means projecting from said open end,

a foot lever pivotally connected to said housing on a generally horizontal axis above said cylinder and in a plane normal to the axis of the cylinder,

roller means on said foot lever beneath said pivot axis and parallel thereto engaging the projecting end of said piston and operable to move said piston toward the other end of said cylinder upon pivotal movement of said foot lever,

cooperable means on said lever and on said housing limiting pivotal movement of said foot lever in a direction to limit outward movement of said piston,

resilient means normally urging said piston against said means on said foot lever,

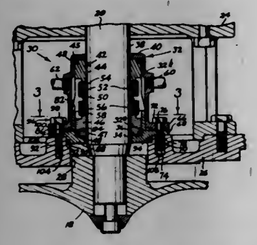
said housing having an outlet passage from said other end of said cylinder, and said housing including an inlet passage from said reservoir to said other end of said cylinder and including a check valve permitting a flow of liquid to, but not from, said cylinder, and

said housing including a separate return passage communicating with said reservoir,

said housing including a diaphragm extending across said housing dividing the interior of the housing into

a liquid chamber and an air chamber, said housing including a vent opening connecting said air chamber with atmosphere.

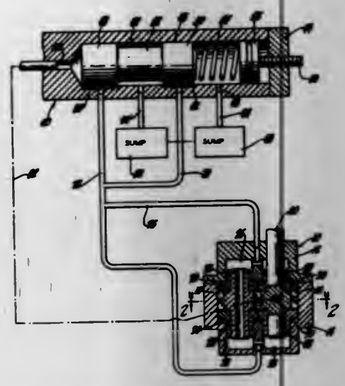
3,301,191
MECHANICAL SEAL ASSEMBLY
Clinton C. Warren, Milwaukie, Oreg., assignor to Cornell Manufacturing Co., Milwaukie, Oreg., a corporation of Oregon
Filed Apr. 12, 1965, Ser. No. 447,258
3 Claims. (Cl. 103—111)



2. A pump including a pump housing and an impeller shaft extending through an aperture in the pump housing; a pair of hollow casing sections mounted on the shaft with the casing sections axially aligned and facing each other; each of said casing sections including a flange on the outside thereof that extends circumferentially about and projects radially outwardly from the shaft, and said flanges of the two casings sections having complementing sides that are directly adjacent and face each other; mechanical seal structure within the casing including spring means biasing the casing sections axially apart; a wall in the pump housing supporting one of the flanges of said casing; a first series of bores in said wall; elongated screw-fastener means in threaded engagement with said one flange connecting the two flanges of the casing sections together, and having ends loosely received within said first series of bores; said fastener means having a retracted position, where the ends of the fastener means are retracted from said first series of bores and in threaded engagement with said one flange, and said fastener means then operating to hold the casing sections with an axial spacing introduced therebetween and with accompanying relaxation of the spring means biasing said casing sections apart; a second series of bores in said wall; and screw-fastener means passing loosely through the flanges extending into said second series of bores and in threaded engagement with said wall.

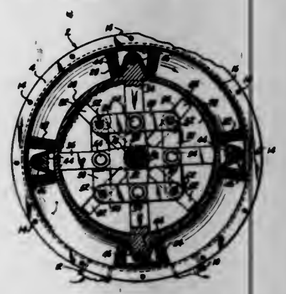
3,301,192
PRESSURE COMPENSATING MEANS FOR PUMP
Don P. Morrell, 2035 Middlebelt Road, Pontiac, Mich. 48053
Filed Aug. 25, 1965, Ser. No. 482,407
10 Claims. (Cl. 103—120)

1. In combination with a pump having outlet means and pressure responsive means;
a valve body having a valve passage therein;
orifice means in said valve body and opening into said valve passage;
a valve member movably mounted in said valve passage and in one position closing said orifice means;
fluid inlet means in said valve body to convey fluid under pressure to move said valve member, said fluid inlet means communicating with said outlet means on said pump;
fluid passage means communicating between said orifice means and said pressure responsive means in said pump, said fluid passage means conveying fluid under pressure from said valve passage and said orifice means when said valve member moves to another position uncovering said orifice means to control the output from said pump;



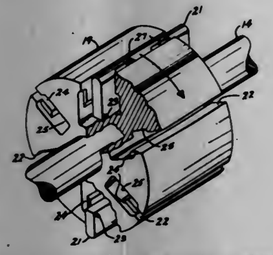
and means for modulating the pressure of the fluid passing from said orifice means to said pressure responsive means in said pump.

3,301,193
ALTERNATING PISTON ENGINE
Clyde M. Moore, Richmond, Va., assignor to Moorex Industries, Inc., Richmond, Va., a corporation of Virginia
Filed Jan. 28, 1965, Ser. No. 428,758
13 Claims. (Cl. 103—129)



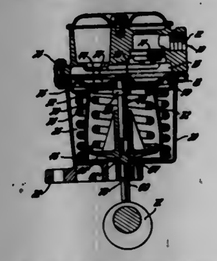
1. An alternating piston type engine, comprising: a housing having an annular chamber therein having inlet and outlet ports; a plurality of pistons in said chamber; connecting means interconnecting pairs of said pistons for simultaneous rotary movement in said chamber; a power shaft; and transmission means for translating non-uniform movement of said interconnected pairs of pistons to uniform rotation of said power shaft and vice versa, said transmission means comprising articulated link means pivotally joined to said connecting means to control movements thereof whereby when said pistons rotate in the same direction one interconnected pair may accelerate while another pair is decelerating, and vice versa, to alternately contract and expand the space between successive pistons; fixed non-circular guide means carried by said housing, a plurality of follower means carried by said articulated link means and engaging said guide means; and a member fixed on said power shaft, said follower means drivingly engaging said member; said member having circumferentially spaced means engageable with said follower means to establish substantially positive drive relationship therebetween only at the positions of said circumferentially spaced means.

3,301,194
VANE-TYPE ROTARY PUMP
Virgil A. Brunson, Grand Rapids, Mich., assignor to Dover Corporation, Grand Rapids, Mich., a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 451,851
3 Claims. (Cl. 103—136)



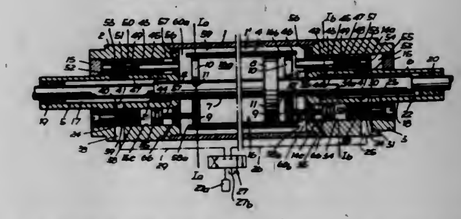
1. A wear-compensating vane-type rotary pump comprising, in combination, a rotor chamber having a peripheral inlet, and a peripheral outlet angularly displaced from the inlet, a rotor eccentrically mounted in the chamber, having radial slots, vanes which are radially movable in the slots over a distance sufficient to permit the vanes to run in contact with the periphery of the chamber, and which after being shortened substantially by wear are radially movable in the slots over a further substantial distance sufficient to permit the vanes to be held in contact with the periphery of the chamber by centrifugal force, stops on the vanes for limiting the furthermost distance to which the vanes are movable after they have been shortened substantially by wear, and a shoulder on the rotor located to engage each of such stops upon outward movement of the vane to such furthermost distance, the initial length of the vanes being great enough so that after being moved to such furthermost distance they are still firmly supported in the slots.

3,301,195
RECIPROCATING PUMP WITH FULL SPRING DRIVE CYCLE
Allen R. Streeter, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,381
4 Claims. (Cl. 103—150)



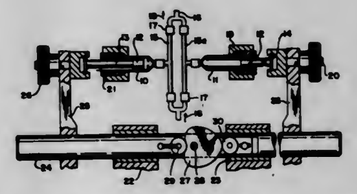
1. A pump having a body and a reciprocable member cooperating to define a pumping chamber, valve means for directing fluid in one direction through said pumping chamber, a pump body support having a bore, a plunger mounted to extend through said bore and into said body and to reciprocate in said bore and on the same axis as said member, an actuator operatively connected to said plunger, a lost motion connection between said plunger and said member, an annular support rigidly fixed to said member and disposed between the actuator and said member, a coil suction spring and a coil pressure spring mounted coaxial with and on opposite sides of said annular support, said coil suction spring being compressed between said body and said annular support, and said coil pressure spring being compressed between said annular support and said plunger and being the sole driving connection therebetween, said suction spring and said pressure spring being arranged so as to react on said annular support in opposite directions whereby said member and said annular support constitute a unit having a floating action at all times.

3,301,196
PISTON MACHINE
Maurus Glas, Jordanstrasse 10, Frankfurt am Main, Germany
Filed Jan. 29, 1965, Ser. No. 428,954
Claims priority, application Germany, Jan. 30, 1964, G 39,733
32 Claims. (Cl. 103—158)



1. In a piston machine including conduits for supplying fluid to said machine and for discharging the same therefrom, a cylindrical jacket defining an annular flow channel, a main cylinder defining an internal chamber and forming an internal wall in said flow channel, a piston reciprocating in said main cylinder within said internal chamber and dividing the latter into two separate chambers, two immovable valve members disposed at a distance from each other at both sides of said piston, a movable valve member constituted by said main cylinder and adapted to be moved relative to said immovable valve members for cooperation with the latter from an intermediate position, wherein both said separate chambers are connected with said flow channel, in order to carry out an idle stroke of said piston, in two operative positions thereof, one of said separate chambers being disconnected from said flow channel in each of said operative positions, so as to carry out a power stroke of said piston, and control means for moving and retaining said main cylinder in one of said intermediate and said operative positions, respectively, and for controlling said piston.

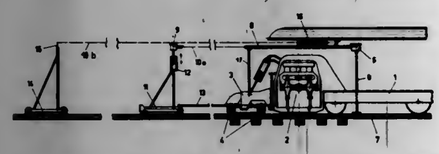
3,301,197
PUMP
Osborne C. Dodson, Chagrin Falls, and Horton Hampton Loughry, Chesterland, Ohio, assignors to Loughborne, Inc., Chesterland, Ohio, a corporation of Ohio
Filed June 22, 1964, Ser. No. 377,008
13 Claims. (Cl. 103—169)



1. A syringe pump adapted to deliver a substantially constant flow at relatively low volume comprising substantially opposed, piston-operated cylinders of the syringe type, suction and discharge conduits connected to said cylinders and having common entry and discharge ports, the piston of each cylinder having a connecting

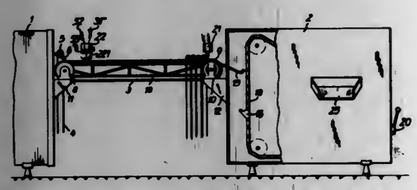
piston rod and being positioned within its cylinder and with respect to the other piston within the other cylinder to provide inter se opposite driving and suction strokes and thereby realize said substantially constant flow, and single means both to operate said pistons in unison and to lock the respective positions of the pistons inter se within their associated cylinders, said single means including a drive bar mounted for reciprocable movement in the direction of its length, yoke means connecting the drive bar to each of the piston rods, and cam-actuated means to reciprocate the drive bar, the profile of the came being constructed to minimize pulsating flow and dwell at periods of reversal of said reciprocable drive bar.

3,301,198
DEVICE FOR LEVELLING TRACK
Joseph Anton Bick, Zurich, Switzerland, assignor, by mesne assignments, to Messrs. Franz Plasser Bahnbaumaschinen, Vienna, Austria
Filed Dec. 2, 1964, Ser. No. 415,333
Claims priority, application Switzerland, Dec. 9, 1963, 15,054/63
7 Claims. (Cl. 104—7)



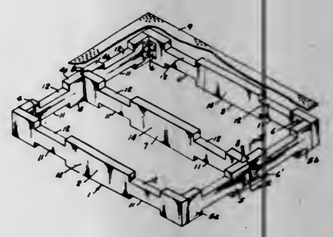
1. A device for levelling tracks comprising a wheeled track lifting machine, preferably a levelling packer, an advance trolley (11) located in front of the said machine in the direction of operation and connected therewith, means (5, 9) designed to provide a reference line (10*a*) between the machine and the advance trolley and members (8) for the determination of the deviation of the track direction from the reference line (10), characterized by a further station (14) located in front of the advance trolley in the direction of operation provided with means (15) designed to create a second reference line (10*b*) between the said machine and the said station.

3,301,199
ALIMENTARY PASTE FOOD PRODUCTION EQUIPMENT
Renzo Vassalli, Uzwil, Switzerland, assignor to Gebrueder Buehler, Uzwil, Switzerland, a company of Switzerland
Filed May 15, 1964, Ser. No. 367,763
Claims priority, application Switzerland, May 16, 1963, 6,160/63
7 Claims. (Cl. 107—7)



1. A system for the production of strands of an alimentary paste food product comprising a drying device having means for discharging at a first speed rate a series of rods over which a loop of the alimentary paste product is draped, a stripper device having means for picking up each rod for advancing the rod at a second speed rate into association with means for stripping the alimentary paste material from the rod, a conveyor located between said drying device and said stripper device for supporting said rods and for transporting said rods from said drier device to said stripper, a catching mechanism adjacent said conveyor and preventing discharge of said rods from said conveyor to said stripper so that the rods coming from said drier will be stored on said conveyor, and switching means located adjacent said conveyor and connected to said catching mechanism discharge of said rods from said conveyor at a rate to supply rods to said stripper device operating at said second speed rate.

3,301,200
FOLDING PALLET
Raymond W. Landsiedel, 4645 Le Claire Ave., Chicago, Ill. 60638
Filed Oct. 14, 1965, Ser. No. 495,979
2 Claims. (Cl. 108—51)

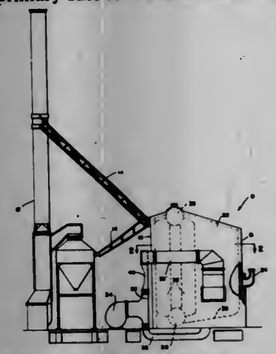


1. In a folding pallet, the combination of a plurality of elongated side members, each having a height greater than their thickness, arranged to form the perimeter of a rectangle, with a pair of opposite sides of the rectangle each being formed in two sections of equal length, and the other pair of side members being of unitary construction, hinge means connecting said side members at the corners of the rectangle and at the adjacent ends of the respective pairs of sections, the hinge means at the respective corners being disposed to pivot at the junctions of the inner walls of said side members, and the intermediate hinge means at said section junctions being disposed to pivot at the outer walls thereof, whereby said sections may be pivoted into parallel relation with the other two side members, forming a folded structure having a total width approximately equal to the combined width of two of said sections and the pair of unitary side members, and a detachable brace member extending between the respective sectioned side members, the latter being notched to receive the abutting ends of said brace member, with the brace member being operative to prevent inward movement of said sections to folded positions, said brace member and said side members each having a pair of notches in the bottom edges thereof, spaced to permit reception of a fork lift thereunder on which the pallet may be carried.

3,301,201
FURNACE
Klaus W. Mueller, Yonkers, N.Y., assignor to Diamond International Corporation, a corporation of Delaware
Filed Sept. 29, 1964, Ser. No. 400,106
6 Claims. (Cl. 110—10)

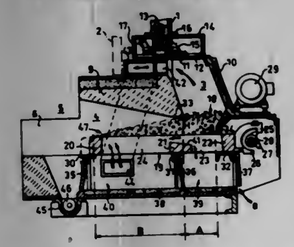
1. An apparatus for generating heat comprising a furnace, a feeding means for providing said furnace with wet primary fuel, means for introducing into said furnace a secondary fuel at a point where the wet primary fuel will pass through the flame of the secondary fuel, means for introducing oxygen into said furnace at a controlled rate, and means to control the feeding rate of said secondary fuel in relation to:

(a) the quantity of primary fuel being introduced,
(b) the amount of moisture which must be evaporated from said primary fuel to maintain its combustion,



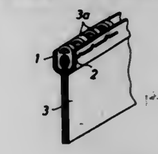
(c) the heat demand from the furnace, and
(d) the available oxygen for said secondary fuel after primary fuel combustion demand.

3,301,202
FURNACE FOR COMBUSTION OF SOLID FUELS
Bjorn Brundin, Vallingby, Sweden, assignor to Lucentia, Ekman & Brundin, Stockholm, Sweden, a corporation of Sweden
Filed June 11, 1965, Ser. No. 463,209
Claims priority, application Great Britain, June 12, 1964, 24,029/64
4 Claims. (Cl. 110—38)



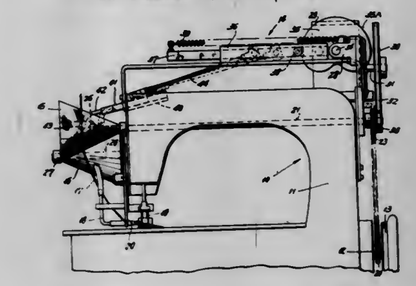
1. A furnace for burning solid fuels having a relatively high content of volatile matter, comprising a substantially horizontal movable grate located in a casing, said casing having side walls on opposite sides of the grate and transverse walls to define a degasing chamber above a primary section of the effective length of the grate and a combustion chamber above the rest of the grate, said rest of the grate forming a secondary grate section, one of said transverse walls having its lower edge disposed at a predetermined height above the grate in the vicinity of the outlet end of the primary grate section to form a gate opening defining the height of the fuel bed moved from the fuel in the degasing chamber into the combustion chamber, the height of the gate opening and the length of the primary grate section being each less than the length of the secondary grate section, said transverse walls including partitions which define a primary and a secondary ashpit located beneath the primary and secondary grate sections respectively, a gas passage formed by the upper portion of the degasing chamber, the secondary ashpit and a duct which connects said upper portion and the secondary ashpit, said duct connecting the top of said degasing chamber with said secondary ashpit below the outlet end of said secondary grate section, inlets for admitting primary air to be passed upwards through the primary grate and for admitting secondary air to said gas passage for mixing with the gases passing therein to form a combustible mixture the temperature of which, when passing incandescent fuel on the secondary grate section, being raised to the ignition point, and means for feeding fresh fuel to the primary grate in relation to the speed of the moving fuel bed in order to maintain a substantially constant fuel bed level in the degasing chamber.

3,301,203
SEWING MACHINE FOR SEWING COVERING STRIPS
Karl Friedrich Nägele, Osumstrasse, Stuttgart-Hohenheim, Germany
Filed Sept. 15, 1964, Ser. No. 396,612
Claims priority, application Germany, Sept. 21, 1963, N 23,784
6 Claims. (Cl. 112—2)



1. A machine for sewing a covering strip to a slide fastener half, said fastener half comprising a uniformly spaced series of coupling elements fixedly secured along one edge portion of a stringer tape, said machine comprising: sewing means including a needle and means for reciprocating said needle; a conveyor screw member having a helical pitch equal to the center-to-center spacing of said elements and extending past said needle; drive means connected to said sewing means for revolving said screw in synchronism with the reciprocation of said needle; and guide means for receiving said fastener half and said covering strip and presenting said fastener half to said needle with the space between two adjacent ones of said elements positioned for free sewing operation of said needle on said covering strip and said fastener half, said guide means extending parallel to the rotational axis of said screw with outer portions of said elements projecting outwardly therebeyond into the spaces between adjacent threads of said screw.

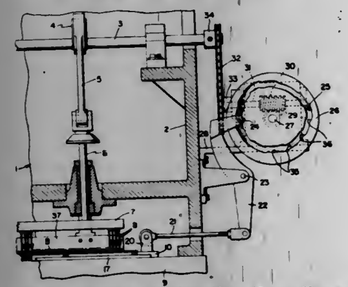
3,301,204
MECHANISM FOR FORMING A SCALLOP FRINGE
Bynom L. Chambers, Dalton, Ga., assignor to Bell Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 341,541
13 Claims. (Cl. 112—64)



1. For use with a serging machine having a sewing station, a fringing mechanism for forming various patterned scalloped fringe edges on material comprising:
(a) means positively engaging a fringing yarn for forcibly feeding the yarn at a variable linear speed to the sewing station of the serging machine,

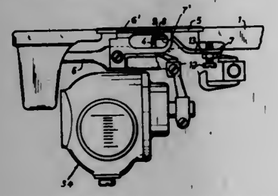
(b) and control means for controlling the operation of said feeding means in selected fashion corresponding to predetermined patterns to accomplish a desired finished scalloped fringe edge.

3,301,205
TUFTING MACHINE WITH LATERALLY SHIFTING NEEDLE PLATE
Roy T. Card, Chattanooga, Tenn., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 16, 1963, Ser. No. 316,663
9 Claims. (Cl. 112—79)



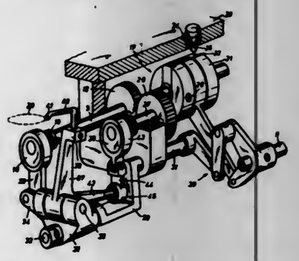
1. In a tufting machine, a plurality of needles arranged substantially on a line laterally of the machine, a needle plate for supporting a backing fabric relative to said needles, substantially laterally immobile means for feeding the backing fabric longitudinally of the machine across said needle plate, means for actuating said needles to penetrate the needle plate and the backing fabric thereon and to insert loops of yarn into said backing fabric upon each penetration of the needles, and means for shifting the backing fabric laterally of the machine and relatively to said needles comprising means for supporting said needle plate for lateral movement, means for imparting lateral movement to said needle plate, and means for securing the backing fabric to said needle plate for lateral movement therewith while providing for longitudinal movement of the backing fabric relatively to said needle plate.

3,301,206
CHAIN-STITCH SEWING MACHINE
Anton Lanzendörfer, Bielefeld, Germany, assignor to Durkoppwerke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed Feb. 20, 1964, Ser. No. 346,188
Claims priority, application Germany, Feb. 21, 1963, D 40,951
4 Claims. (Cl. 112—199)



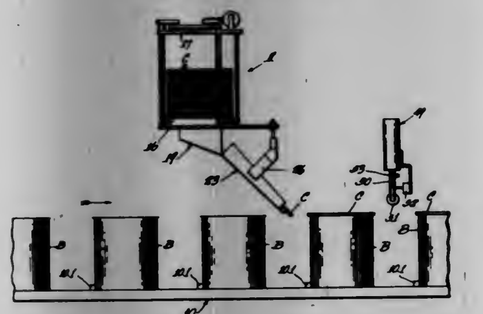
1. In a chain-stitch sewing machine, in combination:
a sewing-machine stitch plate;
a head provided with a needle reciprocably displaceable on said head generally transversely to said plate for forming a succession of chain stitches;
and loop-forming means adjacent said plate for releasably maintaining a thread loop adapted to clear said needle upon passage thereof through said plate, said loop-forming means including a generally hook-shaped member swingably displaceable about a pivotal axis generally parallel to said plate and said succession of stitches and transverse to said needle for engagement with a thread loop formed by said needle upon withdrawal thereof through said plate, said member having a face perpendicular to said pivotal axis formed with an arcuate groove,
mechanism for imparting to said member a generally elliptical motion around said needle with the major axis of the elliptical motion substantially transverse to said pivotal axis, and
a stationary element disposed adjacent the path of said member and having a finger received in said groove upon movement of said member toward said element, said element being engageable with a thread loop entrained by said member for distending said loop to receive said needle upon a subsequent passage thereof through said plate.

3,301,207
LOOPER DRIVE MECHANISM FOR CHAIN-STITCH SEWING MACHINES
Rudolf Reeber, Neukeferloh uber Munich, and Helmut Gross, Kaiserslautern, Pfalz, Germany, assignors to G. M. Pfaff A.G., Kaiserslautern, Pfalz, Germany, a corporation of Germany
Filed Oct. 24, 1963, Ser. No. 318,612
Claims priority, application Germany, Oct. 24, 1962, P 30,430
6 Claims. (Cl. 112—200)



1. In a chainstitch sewing machine of the type including a rotating drive shaft, a needle having a needle holder and arranged for both reciprocation, to form stitches, and oscillation in line with the feed, to act as work feeding means, and an oscillating looper arranged for coordinate loop-seizing and shedding movement transverse to and for needle-avoiding movement in line with the feed, to result in a substantially elliptical operating path of said looper, operating mechanism comprising in combination:
(1) an adjustable stitch-controller driven by said shaft and adapted to produce variable-amplitude oscillating output movement,
(2) first motion-transmitting means connecting said stitch-controller with said needle holder, to impart oscillating feed movement to said needle,
(3) drive means for said looper comprising a first member rotatably mounted on a first shaft having a first axis, a second member supporting said looper and rotatively mounted upon said first member about a second axis substantially at right angle to said first axis a control shaft rotatable about a fixed axis parallel to but spaced from said first shaft and operably connected thereto, to impart thereto an oscillating motion,
(4) second motion-transmitting means connecting said drive shaft with said first member, to impart thereto a substantially constant oscillating movement about said first axis in line with the feed,
(5) third motion-transmitting means connecting said drive shaft with said second member, to impart thereto a coordinate oscillating movement about said second axis substantially transverse to the feed, whereby to oscillate said looper along said elliptical path, and
(6) fourth motion-transmitting means operably connecting said stitch-controller with said control shaft, to superimpose a variable-amplitude oscillating motion proportional to the feed stroke upon the constant oscillating motion of said first member, thereby to control the needle-avoiding movement of said looper in dependence upon the feed stroke adjustment of said stitch-controller.

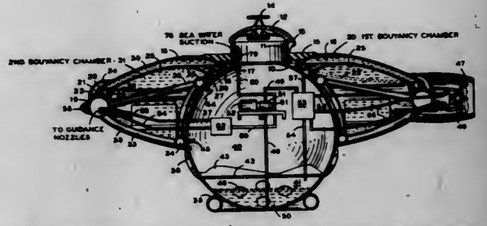
3,301,208
APPARATUS FOR CLOSING THE OPEN ENDS OF CYLINDRICAL BODIES
Fred A. Culp, Leavittsburg, Ohio, assignor to The Ohio Corrugating Company, Warren, Ohio
Filed June 9, 1964, Ser. No. 373,721
7 Claims. (Cl. 113—114)



1. In apparatus for depositing closure member on the open upper ends of successive upright cylindrical bodies moving generally horizontally along a predetermined path of travel wherein each closure member has opposed peripheral portions and wherein one of such portions is spaced from the other in a direction opposite that of body movement, the combination comprising a hopper supporting a plurality of closure members in superposed relation above said body travel path, a discharge station beneath said hopper and supporting a single closure member adjacent said body travel path, said single closure member being supported at said discharge station at an angle to the path of body travel with its one peripheral portion aforesaid spaced above the travel path of said bodies to avoid interference therewith and with its other peripheral portion aforesaid intersecting said body travel path to provide for engagement of such portion with a body upper end and subsequent movement of said single closure member along with a said body as the latter moves along its travel path, and means engageable with the upper ends of successive bodies during at least initial engagement thereof with respective closure members to limit tilting of said bodies as the latter move past said discharge station.

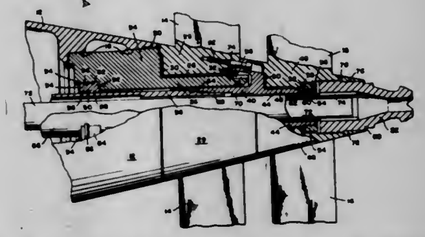
3,301,209
SUBMERSIBLE VESSELS
Patton H. Caldwell, Jr., Houston, Tex., assignor to Bajamar of Houston, Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 358,323, Apr. 8, 1964. This application Dec. 1, 1964, Ser. No. 416,960
7 Claims. (Cl. 114—16)

1. In a submersible vessel, the improvement which comprises:
(a) at least one rigid chamber secured to the vessel and containing a liquid;
(b) at least one partially distensible chamber communicating with said rigid chamber and being exposed to the sea water that normally surrounds the vessel;
(c) means for transferring at least a portion of the liquid between said chambers to vary the volume of said distensible chamber and thus the buoyancy of the vessel;



(d) the center of buoyancy and the center of gravity of the vessel both being located on a vertical plane that passes fore and aft through the center of the vessel, with said chambers being symmetrical about said vertical plane and having their centers of buoyancy on a common vertical axis in said plane.

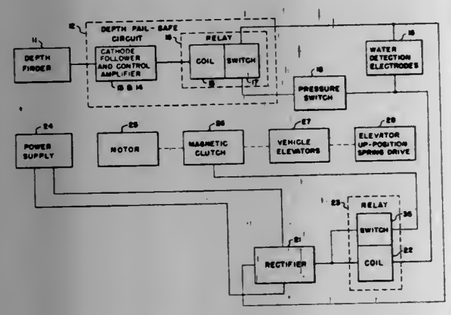
3,301,210
PROPELLER ASSEMBLY DRIVE
Ernest N. Oeland, Jr., West Covina, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 17, 1966, Ser. No. 521,223
6 Claims. (Cl. 114—20)



1. A torpedo tailcone and propeller drive assembly, comprising;
(a) a cylindrical tubular stationary first journal forming a part of the tailcone,
(b) a front propeller having a first hub with a plain cylindrical bearing surface therein rotatably mounted on said first journal,
(c) a pair of plain thrust bearings, each having flat surfaces, disposed at opposite ends of the first hub, adapted to retain it against axial movement,
(d) said first hub having a rearwardly extending torque collar rigidly affixed thereto for rotation therewith and including a tubular second journal,
(e) a rear propeller having a second hub with a plain bearing surface therein rotatably mounted on said second journal,
(f) a pair of like thrust bearings for retaining the second hub against axial movement.
(g) a tubular outer drive shaft extending axially of the tailcone adapted to be rotated in one direction having a spline at its rear end drivingly connected to a portion of said torque collar,
(h) an inner drive shaft disposed within the outer drive shaft adapted to be rotated in the opposite direction and having a spline at its rear end portion drivingly connected to the hub of said rear propeller,

(i) the construction and arrangement being such that a rearward axial force applied to said second hub is transmitted through the rearmost thrust bearing to the torque collar and first hub, and thence through the rear thrust bearing for the front hub to the tailcone, the two named spline connections preventing such force from being transmitted to the two drive shafts.

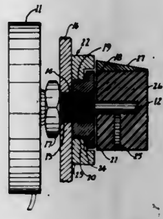
3,301,211
MOISTURE FAIL-SAFE SYSTEM
Leo E. Novak, 2159 Professor St., Cleveland, Ohio 44113; Theodore W. Quarnstrom, Jr., 1201 Orchard Heights Drive, Cleveland, Ohio 44124; and Thomas J. Higgins, 1828½ Beersford Road, Cleveland, Ohio 44112
Filed Feb. 17, 1964, Ser. No. 345,543
9 Claims. (Cl. 114—235)



1. An automatic submarine vessel safety device comprising in combination,
a water depth fail-safe circuit,
a water detection means,
a magnetic clutch means adapted for being interposed between a drive motor and a vehicle control surface in such manner that said motor is effectively connected to said vehicle control surface for the driving thereof only when said magnetic clutch is energized,
means for energizing said magnetic clutch means, and
means interconnecting said water depth fail-safe circuit, said water detection means, said magnetic clutch means, and the aforesaid energizing means for disconnecting the latter from said magnetic clutch in response to a predetermined depth signal being supplied to said depth fail-safe circuit, and in response to water being detected by the aforesaid water detection means.

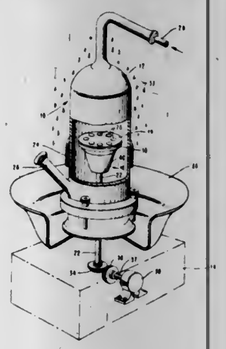
3,301,212
MANUALLY ADJUSTABLE DIAL INDEX MEMBER
Harry R. Foster, Montville, and Elmo E. Crump, West Caldwell, N.J., assignors to Ohmega Laboratories, Montville, N.J., a partnership
Filed Oct. 2, 1964, Ser. No. 401,154
3 Claims. (Cl. 116—124)

1. A dial setting device for an adjustable electrical component comprising an adjusting shaft attached to said component, an externally threaded journal through which said shaft extends, and a panel having an aperture through which said journal extends, said device comprising: an internally threaded nut fitting on said externally threaded journal to hold said electrical component in place on said panel, said nut having a round shank, one end of which bears against said panel, and a shoulder extending substantially radially from the other end of said shank, the surface of said shoulder facing said one end of shank being distant from said one end by a predetermined length; an annular ring surrounding said shank to be freely rotatably journalled thereon, the thickness of the portion of said ring in contact with said shank being less than the length of said shank; a compression device between said ring and said nut to apply pressure and rotational



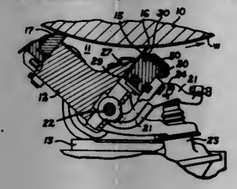
friction therebetween; a dial on said panel; an indicator on said annular ring settable with respect to said dial; and a knob on said shaft spaced from said ring and having means for indicating the setting of said knob with respect to said indicator.

3,301,213
EPITAXIAL REACTOR APPARATUS
Edward G. Grochowski, Michele Ranaldi, Robert S. Schwartz, and William H. White, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 23, 1962, Ser. No. 232,456
1 Claim. (Cl. 118—48)



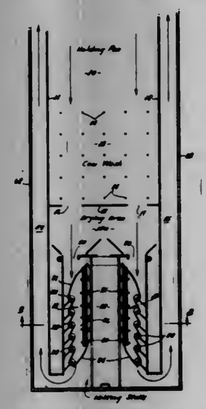
An apparatus for epitaxially growing films on a plurality of semiconductor substrates, comprising the combination of:
a chamber,
an upright solid frusto-conical support rotatably mounted within such chamber, said solid frusto-conical support having a horizontal planar face for bearing a plurality of semiconductor substrates,
an inlet in the upper portion of said chamber and above said planar face for injecting a stream of gaseous reactants upon said planar face,
means for inductively heating said support, said means being around said chamber circumferentially about said planar face and being positioned to inductively couple said support below said planar face; and,
means for rotating said support in accordance with velocity of said gaseous stream to provide said planar face with a constant profile of gaseous reactants.

3,301,214
PAPER MACHINERY COATING DOCTOR BLADE BACKS
James T. Coghill, Rochester, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Mar. 10, 1964, Ser. No. 350,910
8 Claims. (Cl. 118—126)



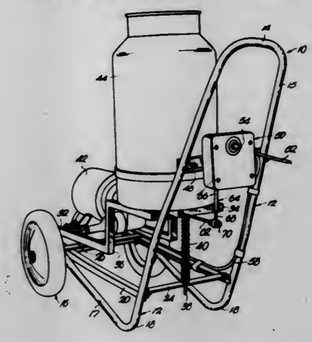
1. In apparatus for coating one side of a moving web including a backing roll adapted to support the other side of the web and a flexible blade adapted to engage the web against the roll, the combination of a holder bar for said blade, means for securing the back edge of the blade with respect to said bar and with the front edge of the blade projecting beyond said bar, means including an elongated semi-rigid bar mounted on said holder bar parallel to the blade for movement toward and away from the blade, a plurality of individual assemblies mounted on said holder bar for applying pressure to said semi-rigid bar to deform said semi-rigid bar selectively and urge the front edge thereof against the blade for localized adjustment of the pressure between the blade and the roll, and means for moving said semi-rigid bar toward and away from the blade without altering the position of said individual assemblies.

3,301,215
METHOD OF MILKING COWS
Demos D. Shakarian, 8413 Lexington Road, Downey, Calif. 90241
Filed Oct. 20, 1964, Ser. No. 405,075
4 Claims. (Cl. 119—14.02)



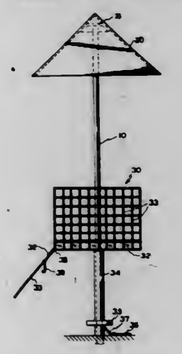
4. In dairy treatment of cows, the steps that include
(a) herding the cows into an udder washing area,
(b) confining the cows in said washing area for a suitable washing period,
(c) removing the cows from said washing area and confining them in a drying area,
(d) removing the cows from the drying area and confining the cows in a stall area,
(e) conditioning the cows udders by warming them by means of jet air impinging thereon,
(f) and then milking the udders.

3,301,216
AUTOMATIC MILK TRANSFER ASSEMBLY
Edgar R. Fleming, 3105 Chess, Parsons, Kans. 67357
Filed Feb. 1, 1966, Ser. No. 524,157
5 Claims. (Cl. 119—14.08)



1. A milk transfer assembly adapted for use with a fluid pump, said assembly comprising:
a frame;
a milk-receiving can having an outlet means connected to said pump;
shiftable means mounting said can on said frame;
a weight-responsive element coupled to said mounting means to normally yieldably dispose the same in an upper position, the means being shiftable to a lower position against the resistance of said element in response to a predetermined weight of milk in the can; and
a switch unit for operating the pump, said switch unit being operably coupled to said shiftable means and actuated thereby to start the pump and remove the milk from the can when said means has shifted to its lower position, the switch unit including mechanism operably coupled to said means for deactivation of the unit to stop the pump upon reshifting of the means to its upper position in response to the removal of milk from the can.

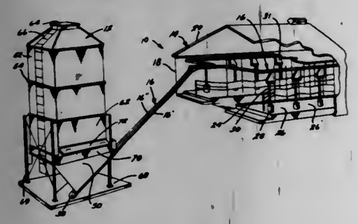
3,301,217
BIRD FEEDER
Joseph H. Prowinsky, 5925 Old Dominion Drive, McLean, Va. 24019
Filed Feb. 11, 1965, Ser. No. 431,922
4 Claims. (Cl. 119—51)



1. A bird feeder comprising a vertical standard extending a substantial height from ground level, a bottomless protective housing means supported adjacent the top portion of said standard, in fixed position thereon, and a feed tray assembly mounted on said standard for move-

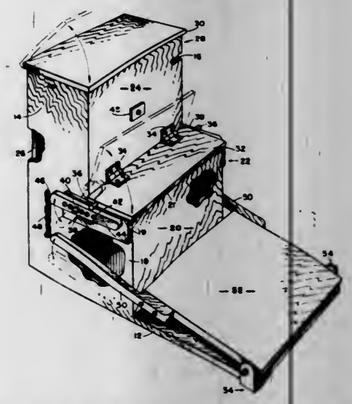
ment therealong between an elevated position adjacent to and under said housing means and inaccessible from ground level and a lowered position removed from said housing means and accessible from ground level, said feed tray assembly comprising a base member, side members including perforated panel means secured to said base member and positioned to extend upwardly from said base member, one of said side members being movable from said position to facilitate cleaning of the tray assembly, said side members retaining feed within the feeder with said perforated panel means providing perch structure for birds, and a guide means depending a substantial distance downwardly from said base member, said guide means being slidably coupled to said standard for guiding said tray assembly in its movement along said standard, and retaining means cooperating with a portion of said guide means adjacent its bottom for holding said feed tray assembly in said elevated position, said guide means depending below the lowermost reach of said housing means when said assembly is in said elevated position, whereby said guide means is accessible below said housing means and from ground level for moving said feed tray assembly between said inaccessible elevated and accessible lowered positions.

3,301,218
LIVE-BOTTOM BIN AND CHAIN FEED SYSTEM
Richard A. Haggard, Nacogdoches, Tex., and Edward F. Bares, Grand Haven, Mich., assignors to Big Dutchman, Inc., a corporation of Michigan
Filed May 7, 1964, Ser. No. 365,582
3 Claims. (Cl. 119—52)



1. An animal feed system for an animal house comprising: an outdoor supply hopper, an animal house, and a recirculatory transfer conveyor extending from said hopper into said house, including motor drive means; said recirculatory transfer conveyor including two parallel trough sections mounted directly adjacent each other and connected together by a direction changing corner at one end, said parallel trough sections being connected to divergent trough sections diverging from said two parallel trough sections and making a continuous circuit into said animal house; an endless chain riding in said trough sections, said chain being driven by said motor drive means; a plurality of gravity fed downchutes in said house attached to said transfer conveyor and communicating with animal feeding devices accessible to animals; feed operated control switch means on said chutes; said hopper including a vertically elongated housing having a generally uniform cross-sectional area over its vertical extent; said housing having four walls and an underlying floor of the same cross-sectional area as the vertical extent of said housing; a discharge feed-receiving boot extending the full width of one end wall and said floor and extending downwardly to and in communication with one of said two parallel trough sections; an elongated discharge outlet above said boot extending the full length of said hopper end wall; a continuous discharge conveyor extending the full area over said floor and positioned to travel on and across the surface of said floor toward said discharge boot and return under the level of said floor in the opposite direction; and drive means operably connected to said discharge conveyor to push a uniform layer of feed from the bottom of said hopper through said outlet; and said control switch means being electrically connected with both of said drive means to actuate them when actuated by lack of feed to fill said downchutes automatically.

3,301,219
ANIMAL-OPERATED FEEDING STATION
Ole P. Hellekson, P.O. Box 1276, Salinas, Calif. 93901
Filed Dec. 10, 1964, Ser. No. 417,340
5 Claims. (Cl. 119—55)



3. An animal feeding station of the type having a container, a hinged cover for selectively covering or exposing the interior of said container and an animal receiving treadle, improved apparatus for operatively linking said treadle to said cover comprising first and second levers mounted on said container for pivotal movement about an axis, each said lever having a plurality of apertures for engaging said axis at one of a plurality of preselected fulorum points, said cover having a stub extending from each side thereof in overlying relation to said lever so that upward movement of the forward end of said lever raises said cover, a pair of operating arms rigidly affixed to said treadle and extending in underlying relationship to said lever arms, and means for linking said lever arms to said operating arms so that downward movement of said treadle moves the end of said levers remote from said stubs downwardly and the opposite end upwardly against said stubs, thereby causing upward pivotal movement of said cover.

3,301,220
HUMMINGBIRD FEEDER
Delbert F. Queen, Richmond Dale, Ohio 45673
Filed Sept. 30, 1965, Ser. No. 491,578
4 Claims. (Cl. 119—77)



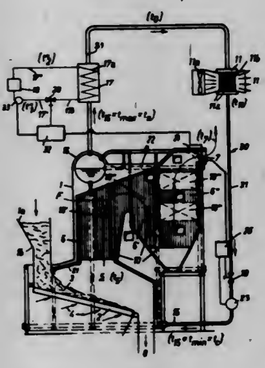
4. A bird feeder for dispensing liquid food comprising a large liquid reservoir adapted to have a quantity of liquid disposed therein and including a constant liquid level fountain-type small feeding reservoir disposed to one side of said large reservoir and in liquid communication with the large reservoir to receive liquid therefrom in a manner maintaining the liquid level in the small reservoir at the same general level, said small reservoir including a small bird bill receiving opening therein, said large reservoir including means defining an open top annular liquid receiving area disposed about the lower end of the large reservoir below said small reservoir and adapted to have a quantity of slow evaporating ant repellent liquid disposed therein, said annular liquid receiving area being defined by a member carried by a lower portion of said reservoir defining an annular trough extending circumferentially about the lower portion of said large reservoir and projecting outwardly from all sides of the latter, said feeder including a fitting depending below the lower end of said large reservoir and said annular trough, an upright support post, the upper end of said support post being removably telescopingly engaged with said fitting.

3,301,221
WRITING DEVICES
Marcel Joseph von Arx, Montgeron, France, assignor to Rotary Pen Corp., Kenilworth, N.J., a corporation of New Jersey
Application Oct. 6, 1965, Ser. No. 497,594, which is a continuation of application Ser. No. 235,763, Nov. 6, 1962. Divided and this application Apr. 11, 1966, Ser. No. 541,850
Claims priority, application France, Dec. 22, 1961, 882,949, Patent 81,707
5 Claims. (Cl. 120—42.13)



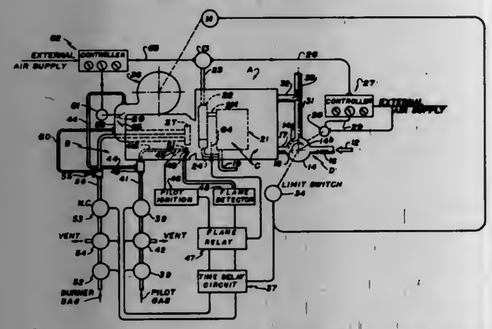
1. A writing device comprising a casing; a plurality of elongated writing units; said writing units being mounted in said casing for axial movement along the axis of said casing and being separately movable between a writing position and a retracted position in said casing; spring means biasing each writing unit to its retracted position in said casing; abutment means fixed longitudinally relative to said casing and positioned between said writing units; locking means on each of said writing units engageable by said abutment means when said writing units are moved into their writing positions for restraining said units against retraction by said spring means; a spherical member; guide means fixed relative to said casing and positioned between said writing units; said spherical member being supported by said guide means and being capable of movement transversely with respect to the longitudinal axis of said casing; and camming means integrally formed on each writing unit; the camming means of one of said writing units cooperating directly with said spherical member upon movement of said one writing unit from its retracted position toward its writing position to force said spherical member against another of said writing units when the latter is in its writing position and to move the locking means of said other writing unit clear of said abutment means so as to cause a spring-biased retraction of said other writing unit to its retracted position.

3,301,222
METHOD AND FURNACE FOR THE COMBUSTION OF LOW-GRADE FUELS, FOR INSTANCE REFUSE AND THE LIKE
Richard Tanner, Zurich, Switzerland, assignor to Von Roll A.G., Gerlafingen, Switzerland, a corporation of Switzerland
Filed Feb. 15, 1965, Ser. No. 432,530
Claims priority, application Switzerland, Feb. 20, 1964, 2,020/64; Dec. 3, 1964, 15,666/64
11 Claims. (Cl. 122—2)



1. Furnace for the combustion of low-grade fuels, such as refuse, without direct heat recovery comprising a combustion compartment for the burning of a low-grade fuel, a primary heat exchanger arranged internally of the furnace, said primary heat exchanger being contacted by the flue gases emanating from burning of the low-grade grade fuel, means providing a primary closed cycle with said primary heat exchanger for the circulation of a primary heat carrier through said primary heat exchanger, an additional heat exchanger disposed externally of said furnace and in said primary closed cycle for said heat carrier, said additional heat exchanger serving for the indirect recovery of at least a portion of the heat generated in said furnace, a heat-consumer operably connected with said additional heat exchanger, a secondary heat exchanger serving as a heat-dissipating cooler arranged in said primary closed cycle externally of said furnace and in series with said additional heat exchanger capable of dissipating heat independently of or simultaneously with said additional heat exchanger, means for controlling the throughflow of primary heat carrier through said primary closed cycle as a function of the outlet temperature of said flue gases from the furnace in order to keep such flue gas-outlet temperature substantially at a predetermined value, means providing a secondary cycle for the flow of a secondary heat carrier from said additional heat exchanger to said heat-consumer, means for controlling the throughflow of secondary heat carrier to said heat-consumer in dependency of the useful removal of heat by said heat-consumer and as a function of the outlet temperature of said flue gases from the furnace in order to keep such flue gas-outlet temperature substantially at a predetermined value.

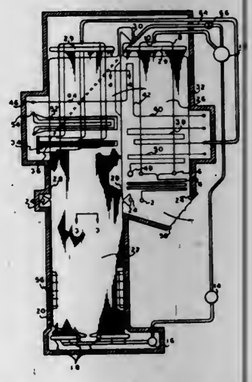
3,301,223
AUXILIARY FIRING SYSTEM
John L. Boyen, Oakland, Calif., assignor to Besler Corporation, Emeryville, Calif.
Filed July 21, 1965, Ser. No. 473,722
6 Claims. (Cl. 122—7)



1. In a waste heat recovery unit of the type having a heat transfer chamber, a heat exchanger mounted within said chamber, means applying working fluid to said heat exchanger for conversion of said fluid to a hot pressurized fluid, the improvement of an auxiliary firing system comprising in combination: means to import a waste heat gas from a source thereof into said chamber for interaction with said heat exchanger; indicator means sensitive to the energy level of pressurized fluid released from said heat exchanger; valve means responsive to be controlled by said indicator means to vary the input of waste heat gas to said heat transfer chamber inversely in respect to the energy level of said pressurized fluid; heating means mounted outside said heat transfer chamber and opening into said heat exchanger; means mounted in said heating means to generate hot gas for flow to said heat exchanger; actuator means responsive to be controlled by said indicator means at and below a predetermined energy level of said pressurized fluid, said actuator means arranged to vary the rate of hot gas flow created by said heating energy level of said pressurized fluid at and below said predetermined energy level; a cylindrical shell mounted on one external surface of said heat recovery unit with the longitudinal axis of said shell normal to said surface; a hollow cylindrical member having a body portion with a smaller outside diameter than the inside diameter of said cylindrical shell and a frusto-conical tip portion, said cylindrical member mounted with said tip portion extending into said heat transfer chamber and in coaxial alignment with said cylindrical shell to form a plenum between the shell and cylindrical member; a plurality of passageways formed through one wall of said hollow cylinder near said tip portion with the longitudinal axes of the passageways inclined toward the interior of the tip portion; and means including a blower mounted to discharge into said plenum, whereby the discharge from said blower communicates through said passageways and converges toward said tip portion.

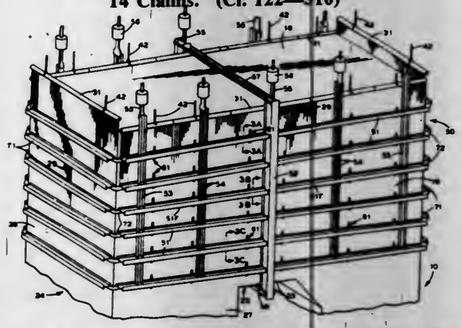
3,301,224
STEAM GENERATOR ORGANIZATION
Alwin W. Ambrose, Hazardville, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,222
8 Claims. (Cl. 122—406)

1. A vapor generator of the once-through type for operation at supercritical pressure and having a through-flow system through which the working medium is forced; said generator including a vertically disposed furnace; burner means for firing a fuel and generating combustion gases that pass through the furnace with the furnace being provided with an outlet remote from said burner means; said furnace being defined by vertically elongated walls which are lined with separate generally vertically extending tubes in side-by-side relation across the width of each wall member, said tubes being in parallel flow relation with adjacent tubes on each wall and forming part of said through-flow system; a flue extending from said furnace outlet at least a portion of said flue extending downwardly parallel to the upper portion of the furnace;



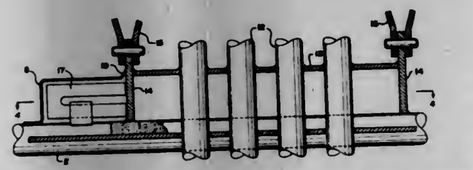
said downwardly extending portion of said flue being defined by vertically elongated walls which are lined with separate generally vertically extending tubes in side-by-side relation across the width of each wall, said tubes being in parallel flow relation; said tubes lining the furnace wall comprising a lower section and an upper section, said upper and lower sections being connected in series flow relation; a mixing header arranged to receive fluid from said lower section and to discharge fluid to both said upper section and said tubes lining the walls of the flue in parallel flow relation.

3,301,225
VAPOR GENERATOR WALL BUCKSTAY ARRANGEMENT
Harvey A. Boe, Wadsworth, and Donald J. Kassner, Massillon, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 29, 1965, Ser. No. 443,201
14 Claims. (Cl. 122—510)



1. A fluid heating unit comprising a pair of spaced upright walls defining therebetween a heating chamber wherein the flow of hot combustion gases is confined, a rigid support structure extending above said heating chamber, support rods interconnecting said support structure and said walls for the pendent support thereof, a buckstay system disposed outside of said heating chamber for providing lateral support and reinforcement to said walls, said walls and said buckstay system being subject to different rates of linear thermal expansion, said buckstay system including a grid adjacent each of said walls, each of said grids including a horizontal structural member and at least one vertical structural member engaged with said horizontal structural member at the approximate midpoint of the adjacent wall, means restraining said grids from movement away from said walls, means rigidly connecting one of said grids with its adjacent wall at one location, and means permitting relative vertical movement between said one grid and its adjacent wall in opposite directions above and below the location of the connection.

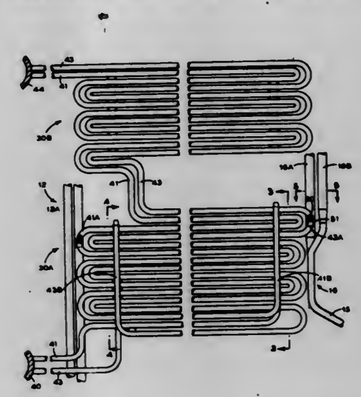
3,301,226
SUPPORT FOR ROOF TUBES OF A FLUID HEATER
Konrad S. Svendsen, Bloomfield, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed July 27, 1965, Ser. No. 475,202
5 Claims. (Cl. 122—510)



1. In a fluid heater having a heating gas flow passage and generally horizontal and parallel roof tubes covering the top of the gas passage, an apparatus for supporting said tubes comprising: a U-shaped lug welded on each supported tube with the axis of the center line through the opening of the lug being parallel with the tube and the legs of the U-lug pointing downward; a bar parallel to the supported tube and above the tube extending through the U-lug in sliding contact with the inner edge of the top of the U-lug; a horizontal rigid imperforate support member running transverse the tubes and supporting said bars from the lower edge of said member; and a skin casing of thin metal immediately adjacent the upper surface of said roof tubes and having the edges bent upwardly and welded to said support member above the lower edge of said member, so that said skin casing and support member form a generally gas-tight seal with the bar being supported from said member on the gas flow passage side of the gas-tight seal.

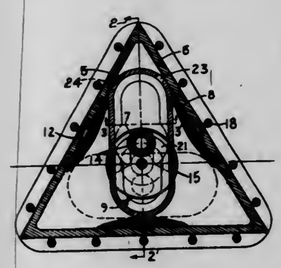
3,301,227
TUBULAR FLUID HEATER AND SUPPORT THEREFOR
James E. Ingersoll, Clinton, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 8, 1965, Ser. No. 494,073
5 Claims. (Cl. 122—510)

5. A fluid heater comprising walls defining a heating chamber, means for passing high temperature heating fluid through said heating chamber, and a tubular heat exchange platen within said chamber and having one end thereof adjacent one of said walls and including a multiplicity of coplanar multi-looped tubes having pairs of parallel straight portions connected at their ends by tube bends adjacent said one wall, lug means attaching one of said tube bends of said platen to said one wall to thereby support the straight portions connected with the attached tube bend, and means for supporting other straight portions of said platen disposed below the level of the attached tube bend from one of the straight portions connected with the attached tube bend, said last named means comprising a fluid-cooled U-shaped tube arranged in the flow circuitry of said platen and formed as an extension of one of said straight portions and connected in load-bearing relationship with one of the straight portions



connected to the attached tube bend, the legs of said U-shaped tube extending downwardly from the level of the attached tube bend on opposite sides of said platen, and means connecting the legs of said U-shaped tube to at least some of said other straight portions for the support thereof.

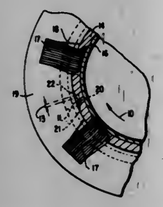
3,301,228
MOTORS
Edwin O. Winans, 4812 Edgefield Road, Bethesda, Md. 20014
Filed Mar. 20, 1964, Ser. No. 353,430
3 Claims. (Cl. 123—8)



1. In an engine of the type described, a casing defining a flat chamber in the form of an equilateral triangle comprising triangular end plates, spaced apart along an axis normal to said plates and passing through the center of the triangles, connecting walls joining said end plates along the sides of the triangles, a crankshaft disposed along said axis and carrying an eccentric, a piston in said casing having an oval curvilinear periphery, said piston being rotatably journalled on said eccentric about an axis normal to its longer dimension at the mid-point of said dimension such that said piston can rotate about its own axis as said piston axis rotates about said casing axis, and a piston guide insert mounted in the center of each wall by a spring responsive hinge mounting, said insert having a hypocycloidal curved surface facing said casing axis and being swingable to remain in continuous engagement with said piston periphery, said piston, casing

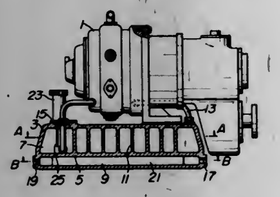
and inserts cooperating to form a plurality of chambers which vary in volume as said piston rotated, and inlet and outlet means communicating with said chambers.

3,301,229
ROTARY PISTON ENGINE
Eberhard Braun, Waiblingen, and Johannes Gassmann, Altbach, Wurttemberg, Germany, assignors to Daimler-Benz Aktiengesellschaft, Unterturkheim, Germany
Filed Apr. 24, 1964, Ser. No. 362,431
Claims priority, application Germany, May 10, 1963, D 41,528
12 Claims. (Cl. 123—8)



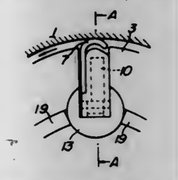
1. A rotary piston internal combustion engine of trochoidal construction, comprising:
housing means provided with internal surface means and including lateral housing parts defining together with said internal surface means an interior space,
eccentric shaft means extending through said lateral housing parts and including eccentric means,
polygonal piston means rotatably supported on said eccentric means,
and gear transmission means for rotating said piston means at a predetermined ratio to the rotational speed of said eccentric shaft means including gear means arranged at a part of the internal combustion engine in such a manner as to be substantially non-rotatable relative to said last-mentioned part, and means for elastically yieldingly supporting said gear means at said last-mentioned part in such a manner as to prestress said gear means in the normal direction of rotation of the piston means and to yield elastically in only the circumferential direction thereof opposite said normal direction of rotation within given limits.

3,301,230
MOUNTING BASE FOR ROTARY PISTON ENGINE
Ryusuke Ito, Amagasaki-shi, Japan, assignor to Yanmar Diesel Engine Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 2, 1964, Ser. No. 415,242
Claims priority, application Japan, Dec. 6, 1963, 38/91,171
2 Claims. (Cl. 123—8)



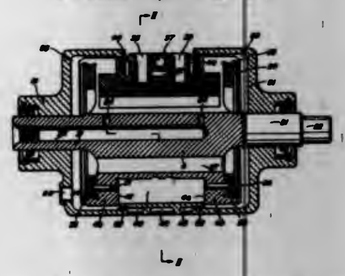
1. A mounting base for a rotary piston engine of the type including a casing having an epitrochoidal inner peripheral wall and a piston mounted in said casing for planetary motion therein and having apex portions held in sliding engagement with the inner peripheral wall of the casing, said mounting base comprising a cavity formed therein and adapted to compose an oil reservoir, said cavity being provided with openings respectively in communication with the lubricating oil inlet and outlet ports of the engine, and a water-cooling means arranged integral with said oil reservoir for cooling the oil in the reservoir.

3,301,231
SEALING DEVICE FOR ROTARY PISTON ENGINES
Hiroshi Tado, Sulta-shi, Japan, assignor to Yanmar Diesel Engine Co., Ltd., Kita-ku, Osaka, Japan, a corporation of Japan
Filed July 12, 1965, Ser. No. 471,102
Claims priority, application Japan, July 25, 1964, 39/58,635
1 Claim. (Cl. 123—8)



In a rotary piston engine of the type having a piston rotably mounted on an eccentric portion of a crank shaft in a manner that upon rotation of the crank shaft said piston makes the so-called planetary motion, that is, said piston rotates at a fixed revolving rate about the eccentric portion and at the same time about the axis of the crank shaft, a sealing device comprising an axial slot bored through an apex of said piston and an apex sealing assembly disposed in said axial slot in said piston, said apex sealing assembly comprising a strip of resiliently flexible material having an arcuate head portion, a support block having a cut-out for securely supporting thereon said flexible strip brought into intimate contact therewith, and spring means disposed below said support block for urging said support block radially outwardly for thereby urging the head portion of said flexible strip onto the inner face of the engine housing to insure positive sliding contact therebetween, characterized in that said support block is axially split into three block sections and side block sections of said support block are firmly fixed to corner sealing bolts and urged onto a side housing by corner sealing springs.

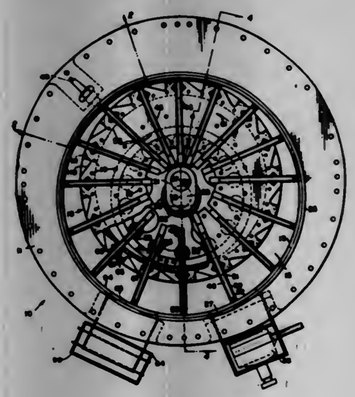
3,301,232
ROTARY VANE MACHINE
Karl Eickmann, 2420 Isshiki Hayama-machi, Kanagawa-ken, Japan
Filed July 30, 1963, Ser. No. 298,726
Claims priority, application Germany, Aug. 6, 1962, E 23,335
8 Claims. (Cl. 123—16)



1. A rotary vane machine comprising a stationary housing, a rotor in said housing comprising a central rotor part and two rotor side walls axially at both sides

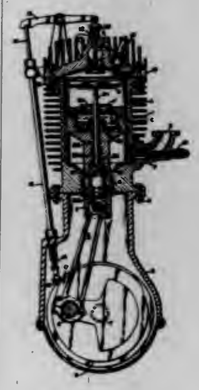
of said central part and radially projecting therefrom, said rotor side walls having opposite inner sealing surfaces adjacent to said central part, said housing having an encasing ring part with axially outer end surfaces fitted between the sealing surfaces of said rotor side walls, said rotor having substantially radial slots, vanes slidably mounted in said slots, said central rotor part together with said rotor side walls and said encasing ring part defining a working space, said working space being divided by said vanes into a plurality of individual working chambers, said housing having housing hoods spaced from and enclosing said rotor side walls to form end chambers separate from said working chambers, said end chambers formed axially outside of said rotor side walls, channel means for supplying a flowing cooling medium to said end chambers, and including first channels extending substantially axially through said rotor and opening at the axial ends of the same for connecting said two end chambers with each other, and second channels supplying said medium to said first channels intermediate the ends thereof.

3,301,233
ROTARY TYPE ENGINE
Gianni A. Dotto, Dayton, Ohio, and Wallace L. Linn, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Jan. 7, 1965, Ser. No. 424,105
22 Claims. (Cl. 123—16)



1. A rotary internal combustion engine comprising: a hollow cylindrical means having an inner wall, the axis of said inner wall eccentric with said cylindrical means; a crank means mounted in said cylindrical means; a rotor means mounted concentrically in said cylindrical means; a plurality of sealing means fixedly connected to said rotor means and overlying each extremity of said cylindrical means; a work chamber formed by the cooperative relationship of said rotor means and said inner wall, said work chamber having a compression space, an explosion space, and an exhaust space; a plurality of spaced radial slots carried by said rotor means; vanes slidably carried in said slots, said vanes including tips; means rotatably journalled to said crank means for maintaining said tips of said vanes spaced from said inner wall; an inlet means communicating with said compression space for allowing an explosive mixture to enter said compression space through said inlet means, said mixture compressed by rotational displacement of said rotor means and said cooperatively associated vanes, further rotational displacement of said rotor means and said cooperatively associated vanes causing said mixture to be slightly decompressed and ignited, said ignited mixture expanding causing additional rotational displacement of said rotor means and said cooperatively associated vanes; and an outlet means communicating with said exhaust space for scavenging a residue of said mixture present within said exhaust space.

3,301,234
POSITIVE DISPLACEMENT INTERNAL COMBUSTION ENGINE
Joseph P. Reilly, 300 Elmhurst St., Hayward, Calif. 94544
Filed Aug. 21, 1964, Ser. No. 391,248
4 Claims. (Cl. 123—47)

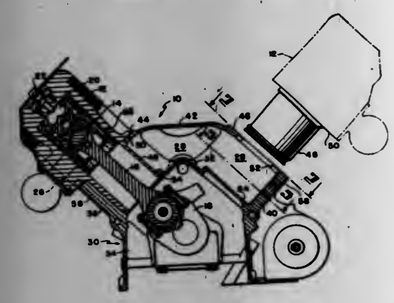


1. In a positive displacement internal combustion engine:
(a) a cylinder having an intake port at the end with a spring-biased intake valve therein;
(b) a piston slidably mounted in said cylinder and having a transfer chamber formed therein; the portion of the cylinder lying between said piston and the intake port constituting an intake chamber;
(c) said piston having gas passages placing said transfer chamber in communication with said intake chamber;
(d) a spring-biased intake flap valve for said gas passages for permitting gas to flow only into said transfer chamber from said intake chamber;
(e) a cylinder head closing the end of said cylinder that is opposite to said intake port end and having a firing chamber with an exhaust outlet;
(f) a disc valve slidable in said cylinder and disposed between said piston and said cylinder head; the portion of the cylinder lying between said disc valve and said piston constituting a gas compressing chamber;
(g) an exhaust valve for closing said exhaust outlet;
(h) means for actuating said exhaust valve;
(i) said piston having an opening placing said transfer chamber in communication with said compression chamber;
(j) an exit flap valve for said piston opening and only permitting gas to flow from said transfer chamber into said compression chamber;
(k) said cylinder having a bypass for conveying gases from said compression chamber into said firing chamber when said disc valve is at the top of its stroke, and said exhaust valve actuating means closes said exhaust valve; and
(l) means for firing the compressed gases in said firing chamber when said piston moves adjacent to said disc valve.

3,301,235
AIR SCAVENGING STRUCTURE FOR INTERNAL COMBUSTION ENGINES

Arthur T. Briggs, South Williamsport, Pa., assignor to Avco Corporation, Williamsport, Pa., a corporation of Delaware

Filed Dec. 16, 1964, Ser. No. 418,665
11 Claims. (Cl. 123—55)



5. In an internal combustion engine of the type employing a scavenging air system for forcing scavenging air through a cylinder combustion region from circumferentially positioned cylinder inlet ports to an exhaust outlet;

a plurality of cylinders, each having a lower skirt portion;

a crankcase including a crank chamber;

a scavenging air reservoir formed above said crank chamber;

oppositely extending top wall portions of said reservoir providing cylinder-supporting surfaces for V-arranged cylinders;

a lower wall of said reservoir dividing said crankcase chamber and said scavenging air reservoir;

aligned upper and lower cylinder receiving openings in said upper and lower walls, positioned to receive said lower skirt portions of said V-arranged cylinders;

means sealing said skirt portions of said cylinders in said upper and lower cylinder receiving openings, thereby to seal said scavenging air reservoir;

outer walls of said reservoir outside said cylinder walls and extending adjacent and substantially parallel to said cylinder axes, thereby completing a scavenge air reservoir formed substantially as a box extending substantially over the width and length of said crankcase with the volume of said reservoir reduced by said cylinder skirt portions projecting through said chamber;

inlet port connections of each of said cylinders positioned to receive scavenging air directly from said reservoir through openings in said upper wall adjacent each of said cylinders;

an air flow restricting means between said outer walls and each of said lower skirt portions of said cylinders.

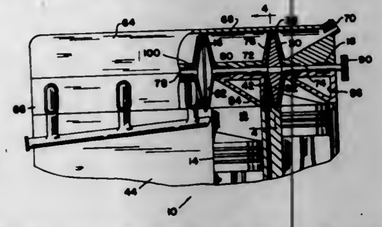
3,301,236
ROTARY VALVE INTERNAL COMBUSTION ENGINE

Robert E. Bratton, 5355 Lane Lake Road, Bloomfield Hills, Mich. 48228

Filed Oct. 5, 1964, Ser. No. 401,512
11 Claims. (Cl. 123—59)

1. In an internal combustion engine a cylinder, means defining a pair of ports in communication with said cylinder at one end of said cylinder and at the side thereof which ports are adjacent each other and are disposed in the same surface of revolution, a rotary valve having a port therein registrable sequentially with said pair of ports, an elongated rotary bearing intermediate said pair of ports engageable with said valve on the side thereof away from the cylinder and a piston reciprocal within the cylinder.

3. In an internal combustion engine a cylinder, means defining a pair of ports at one end of the cylinder in the same surface of revolution, a piston reciprocally mounted in the cylinder and a rotary valve disc having a port therein registrable sequentially with said pair of ports on

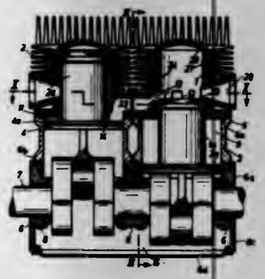


rotation thereof positioned at the surface of revolution, and means for lubricating the periphery of the valve disc in operation comprising an annular member having an inwardly opening U-shaped cross section for receiving the edge of the valve disc, a semi-solid lubricant within the U-shaped cross section and packing means at the outer ends of the U-shaped cross section of the annular member for retaining the semi-solid lubricant within the annular member.

3,301,237
TWO-STROKE INTERNAL-COMBUSTION ENGINE

Erich Wolf, Wiesbaden, Germany, assignor to Zweirad-Union A.G., Nurnberg, Germany, a corporation of Germany

Filed July 3, 1964, Ser. No. 380,161
Claims priority, application Germany, July 4, 1963, Z 10,211
8 Claims. (Cl. 123—71)



1. In a two-stroke internal-combustion engine having an engine block with a pair of working cylinders each coaxially aligned with a respective pumping cylinder, a respective stepped piston reciprocable in each of said working cylinders and the associated pumping cylinder whereby said pistons each force scavenging air from the respective pumping cylinder into the working cylinder of the other piston, and crankshaft means connecting said piston for synchronized movement, the improvement wherein:

said engine block comprises

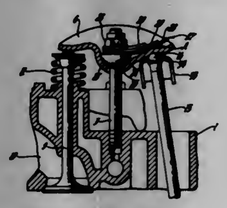
a pair of substantially identical block portions each provided with a respective one of said working cylinders, an exhaust port, and intake and scavenging ports opposite said exhaust port, the intake port and scavenging port of one of said block portions opening directly toward and respectively juxtaposed with the scavenging port and intake port of the other block portion, and

spacer means interposed between said block portions for sealingly and spacedly interconnecting same at said scavenging and intake ports while forming respective passages communicating between each scavenging port and the intake port of the other block portion.

3,301,238
STUD MOUNTED ROCKER AND SPRING

George P. Hanley, Northville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 1, 1962, Ser. No. 170,329
4 Claims. (Cl. 123—90)

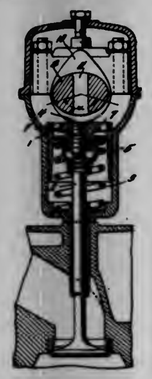


1. In combination with a rocker, a supporting stud therefor at the rocker fulcrum, bearing means on the stud journaling rocker movements of the rocker, thrust retaining means on the stud for said bearing means, and a cantilever spring secured to the stud and having its free end resiliently engaging the rocker at a distance laterally of the stud in opposition to rocking movement of the rocker in one direction.

3,301,239
ADJUSTABLE VALVE DRIVE FOR INTERNAL COMBUSTION ENGINES

Peter Thauer, Am Seeteich 9, Neuhaus, Germany

Filed July 10, 1964, Ser. No. 381,731
Claims priority, application Germany, July 13, 1963, V 24,311
7 Claims. (Cl. 123—90)

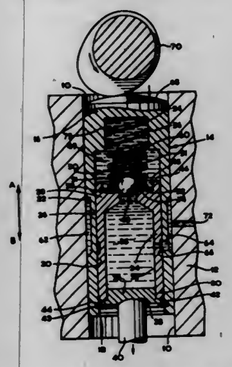


1. A valve mechanism for internal combustion engines, comprising at least one valve stem and a cam shaft provided above the valve stem, a ram provided on the stem end of the valve having a top surface to be contacted by the cam shaft and having a threaded bore therein extended through the top surface, and a setting screw in contact with and in the threaded bore which upon rotation will adjust the play in the valve stem, the cam shaft being provided with a bore which when aligned with the setting screw permits adjustment of the screw through the bore in the cam shaft.

3,301,240
HYDRAULIC VALVE LIFTER

Miroslaw J. Peresada, 107 Wright Ave., Toronto, Ontario, Canada

Filed July 2, 1965, Ser. No. 473,552
Claims priority, application Canada, June 3, 1965, 932,363
8 Claims. (Cl. 123—90)

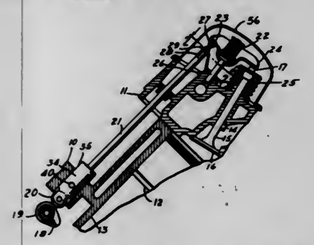


1. A hydraulic valve lifter for use in internal combustion engines comprising a sintered cylindrical outer piston having a closed forward end, an open rearward end from which a cylindrical bore extends forwardly into the outer piston, a cylindrical inner piston fitting snugly but slidably within said cylindrical bore, the inner piston having a forward end adjacent the closed forward end of the outer piston and a rearwardly extending cylindrical side wall, the inner piston being of sintered metal construction and impregnated substantially throughout with a sealant in order to make it impervious to fluid flow, the outer piston being made impervious to fluid flow between its closed forward end and the forward end of the inner piston, the remainder of the outer piston being pervious to fluid flow.

3,301,241
NON-ROTATING ROLLER TAPPET

Edward Iskenderian, 5210 Holt Ave., Los Angeles, Calif. 90056

Filed June 21, 1966, Ser. No. 560,965
7 Claims. (Cl. 123—90)



1. In an internal combustion engine including a camshaft having cam surfaces, roller tappets riding on said cam surfaces to reciprocate valve pushrods, rocker arms and overhead valves, in a cylinder head, constraining means for preventing rotation of said valve pushrods and said roller tappets, each constraining means comprising:

a rigid flat plate attached to said cylinder head,

said plate in the area of said valve pushrod having a slotted opening to guidably receive said pushrod;

a valve pushrod,

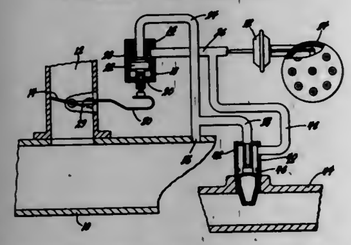
said valve pushrod having upper flatted guide means to slideably engage said slotted openings; the

lower end of said valve pushrod being provided with lower flatted guide means aligned with said upper guide means;

a roller tappet,

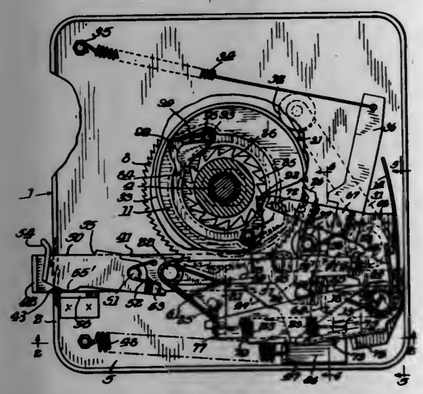
said roller tappet having a unitary valve pushrod socket provided with opposed flats to receive said lower guide means to prevent lateral rotation of said roller tappet on said cam surfaces.

3,301,242
IGNITION TIMING DEVICE
Alfred Candelise, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,408
9 Claims. (Cl. 123—117)



1. An ignition timing control system for an internal combustion engine having a throttle which controls the amount of combustible mixture supplied to said engine comprising, a distributor, control means connected with said distributor for controlling the ignition timing of said engine in accordance with the position of said throttle, said control means causing retarding of ignition timing when said throttle is in engine idling position and advancing of ignition timing when said throttle is opened beyond engine idling position, said control means being connected with an engine temperature sensitive means, said temperature sensitive means causing advancing of ignition timing despite said throttle being in engine idling position when the temperature of said engine exceeds a predetermined value approaching the safe upper limit of normal operating temperatures.

3,301,243
ENGINE STARTING DEVICES
Garland E. Lyvers, 2612 W. Crescent, Racine, Wis. 53400
Filed Sept. 9, 1963, Ser. No. 307,491
24 Claims. (Cl. 123—179)



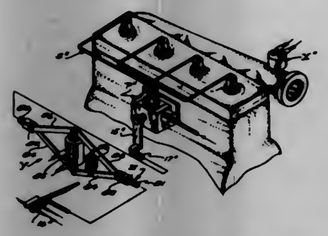
1. In a starter mechanism for a combustion engine, the combination of a housing, a rotatable drive shaft extending transversely through said housing and having a free end extending from the bottom wall of said housing, a coiled spring positioned in said housing, having its inner end operatively connected to said shaft, and its outer end fixed to said housing, a one-way clutch disposed exteriorly of said housing and having a driving member operatively connected to the free end of said drive shaft and a driven member constructed for operatively fixed connection to the drive shaft of such an engine, a ratchet gear positioned in said housing and rigidly mounted on said shaft, a drive lever, disposed in said housing, rigidly carried by a shaft pivotally supported by said housing and extending through the bottom wall thereof, a drive pawl carried by said drive lever and releasably engageable with said ratchet gear, a cam follower arm disposed exteriorly of said housing and rigidly mounted on the exterior end of said last mentioned shaft, whereby said arm and lever are rigidly connected therethrough, cam means carried by said driven member engageable with said cam following arm operative to oscillate the latter and said lever and thereby reciprocate said pawl to rotate said ratchet gear in spring winding direction, a stop pawl carried by said housing engageable with said ratchet gear to prevent reverse rotation thereof upon return movement of said drive pawl, a manual control member having means operatively associated with said drive pawl and actuating means therefor, for rendering the same inoperative in one position of said control member and operative in another position thereof, a main spring control lever pivotally supported in said housing actuatable by movement of said spring for controlling the movement of said manual control member from such operative position, said manual control member being operatively connected to said stop pawl, and operative in a third position to release said stop pawl from said ratchet gear to initiate a starting cycle, means controlled by said main spring control lever for preventing engagement of said stop pawl with said ratchet gear, following actuation of said manual control member to starting position until the spring has been unwound, means for preventing operative disengagement of said stop pawl following actuation of said manual control member to rewind position until said spring is fully wound, and manually releasable means for preventing movement of said manual control member to start position following rewinding of the spring.

3,301,244
PISTON STROKE CONTROL MECHANISM
John P. Renshaw, 340 Pine St., San Francisco, Calif. 94104
Filed Nov. 9, 1964, Ser. No. 411,182
3 Claims. (Cl. 123—197)



1. In an internal combustion engine including a plurality of cylinders each having a piston reciprocally slidable therein and a main power shaft journalled for rotation about an axis in fixed space relation to said cylinders, an improved piston stroke control apparatus for operatively connecting the pistons to the shaft comprising a plurality of piston gears one of which is associated with each said piston, each said piston gear being mounted for rotation about an axis adjacent to the cylinder associated therewith, means for connecting each said piston to the piston gear associated therewith so that said piston reciprocates in response to rotation of said gear, power gear means mounted on said power shaft for rotation therewith, said power gear means having teeth for enmeshing with said piston gears so that said main power shaft rotates in response to reciprocation of said pistons, both said piston gears and said power gear means mounted with the center point of the gears being at their axes of rotation, said piston gears and said power gear means being constructed and arranged to effect varying gear ratios therebetween so that said pistons reciprocate non-linearly with respect to rotation of said main power shaft.

3,301,245
FUEL CONTROL MEANS
Charles R. Woodburn, 440 Terraine Drive, Long Beach, Calif. 90814
Filed June 25, 1964, Ser. No. 377,827
3 Claims. (Cl. 123—198)



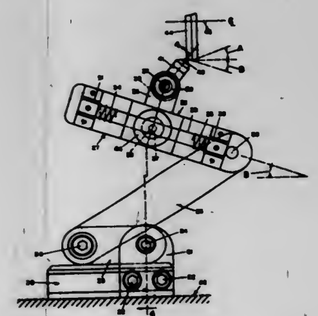
1. Means for limiting the exhaust gas temperatures of an internal combustion engine having a manually controlled fuel supply system and an exhaust gas manifold receiving and conducting exhaust gases from the engine, said means including a pyrometer related to the exhaust manifold and responsive to the temperatures of the exhaust gases therein, and means related to the fuel supply system and operatively connected with the pyrometer, said means related to the fuel supply system serving to reduce the supply of fuel delivered to the engine by the system when the exhaust gas temperatures exceed a predetermined point, said fuel supply system including valving means under control of a crank to control the flow of fuel into the engine and operating linkage comprising at least one axially shiftable, sectional rod connected with the crank, said means related to the fuel supply system including a solenoid operated, spring loaded rod shortening device engaged between the sections of said rod.

3,301,246
COMPRESSED AIR ROCKET PROPELLING DEVICE
Gerald W. Wolfe, 2508 Green Ave., Bristol, Pa. 19007
Filed Dec. 30, 1963, Ser. No. 334,328
12 Claims. (Cl. 124—13)



1. In a toy rocket, the combination of a base tube, a firing tube telescoping within said base tube in substantially air-tight sliding engagement, and a projectile body removably attached over projectile end of said firing tube in substantially air-tight sliding engagement; said base tube comprising a relatively long cylindrical, hollow body providing base end and operating end said base end closed in an air-tight end cap and said operating end being open to receive firing tube; said firing tube comprising a relatively long cylindrical, hollow body of diameter to slide within said base tube, providing open base end and open projectile end; said projectile body comprising a hollow cylindrical body of diameter to slide over said open projectile end of firing tube providing open firing tube end and front end closed in a substantially air-tight circumferential joint by a light weight head; a finned cylindrical collar encircling said projectile body and cemented thereto near said open end supporting a plurality of circumferentially spaced fins projecting perpendicularly from said collar; a cylindrical cam collar encircling said base tube and cemented thereto at operating end supporting a plurality of operating cams in spaced relation about the periphery of said collar; operating means detachably engaging a plurality of peripherally spaced means on said finned collar for manual retraction of said firing tube into telescoping relation with said base tube, said operating means contacting said operating cams after substantial telescoping movement of said firing tube within said base tube to disengage said operating means from said finned collar whereby a volume of air may be compressed within said tubes and the energy contained by said compressed air may be utilized to propel said projectile.

3,301,247
DRESSING GRINDING WHEELS, AND THE LIKE
Walter E. Pasowicz, 2334 N. Kenneth, Chicago, Ill. 60639
Filed Sept. 10, 1964, Ser. No. 395,427
10 Claims. (Cl. 125—11)



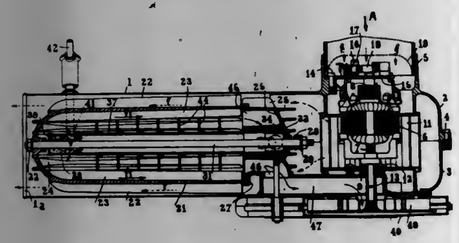
1. A self-contained unit for dressing the circular surfaces of grinding wheels, comprising in combination a base block having a smooth planar mounting surface for support on a table-like element, a primary arm pivotally mounted to said base block for rocking movement about a first defined axis lying in a plane which intersects the mounting surface of the base block, means to lock the primary arm and the base block together in angularly adjusted position, a secondary link element pivotally connected to the free end of the primary arm for angular movement with respect to the primary arm about a second defined axis substantially parallel to the first defined axis, means to lock the secondary link and the primary arm in angularly adjusted position, a dressing unit carrier pivotally connected to the free end of the secondary link element for rocking movement about a third defined axis substantially parallel to the first defined axis and the second defined axis, means to lock the dressing unit carrier and the secondary link in angularly adjusted position, a dressing unit holder, a dressing unit and cutting element, means to pivotally connect the dressing unit to the dressing unit holder for angular adjustment about an axis which intersects the plane which includes the dressing unit holder, means to lock the dressing unit in angularly adjusted position with respect to the dressing unit holder, and means to connect the dressing unit holder to the dressing unit carrier comprising means constituted to sup-

port the dressing unit holder to the carrier for back and forth movement of the dressing unit holder within a plane which intersects the first defined axis, and the second defined axis, and the third defined axis.

3,301,248
HEATING APPARATUS FOR AUTOMOTIVE VEHICLES

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France

Filed July 7, 1965, Ser. No. 470,153
Claims priority, application France, July 7, 1964, 980,952, Patent 1,409,337; Jan. 15, 1965, 2,110
16 Claims. (Cl. 126—110)



1. A fuel-combustion heater for automotive vehicle comprising a casing of elongated configuration open at both ends respectively for the ingress of fresh air and the egress of hot air, an electromotor comprising a shaft disposed transversely to said casing, said electromotor being mounted within said casing, a first fan rotatably solid with said motor shaft for forcing heating air into said casing, a combustion device comprising an elongated body constituting a heat transfer unit mounted within said casing and somewhat spaced from the inner wall thereof to provide a space into which the heating air is forced by said first fan, said elongated body having downstream and upstream ends as seen in the direction of flow of the heating air, a combustion chamber provided in said body at the downstream end thereof, a fuel feed device communicating with said combustion chamber, a spark plug housed in said combustion chamber, an electrical ignition device connected to said spark plug, a case mounted inside said casing, communicating with said elongated body at its upstream end and receiving the shaft of said electromotor, and a second fan rotatably solid with said electromotor shaft, and housed outside said casing, said second fan sucking the combustion gas produced within said elongated body.

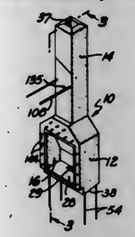
3,301,249
PRECAST FIREPLACE, METHODS OF MANUFACTURE AND ERECTION

Sidney J. Hendricks, Buena Park, Calif., assignor to Prekast Fireplace Manufacturing Company, La Mirada, Calif., a corporation of California

Filed June 3, 1964, Ser. No. 372,227
6 Claims. (Cl. 126—120)

1. A precast chimney structure including a fireplace structure and stack, said chimney structure comprising:
- a separately cast thin walled firebox made of refractory material having an overhead stack opening and a vertical hearth opening;
- a concrete encasement having relatively thick walls about said thin walled firebox forming a fireplace and substantially enclosing said firebox excepting the openings thereto and integral therewith a concrete stack having a flue opening into the stack opening of the firebox;

and said chimney structure being further characterized by longitudinally extending steel rods embedded in the fireplace end of the structure and reaching below such structure to provide exposed anchor rods for embedment in a concrete supporting base upon erection of said precast chimney structure;

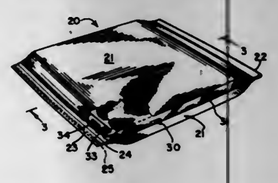


the bottom surface of the concrete encasement adjoining the underside of said firebox sloping upwardly away from the hearth side of the structure.

3,301,250
FLAMELESS HEATER, HEATING ASSEMBLY AND HEATING KIT

Ernest C. Glasser, Deerfield, Ill., assignor to Sun-Pak Products, Inc., Chicago, Ill., a corporation of Illinois

Filed Mar. 26, 1965, Ser. No. 442,907
18 Claims. (Cl. 126—263)



1. A flameless heater comprising a porous fabric bag permeable to the atmospheric gases including oxygen, a quantity of vermiculite disposed in said bag and completely surrounded thereby, comminuted iron particles disposed in said bag and substantially uniformly distributed about and upon said vermiculite, a quantity of highly dissociable inorganic salt disposed in said bag and substantially uniformly distributed about and upon said vermiculite and said iron particles, and an aqueous solution containing a wetting agent disposed in said bag and substantially uniformly distributed about and upon said vermiculite and said iron particles and said inorganic salt, whereby upon exposure to the atmosphere of said bag and the contents thereof the atmospheric oxygen passing through said bag reacts with said iron particles in the presence of said inorganic salt and said aqueous solution to produce heat.

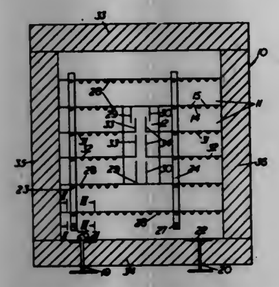
3,301,251
STORAGE BLOCK ADAPTED FOR STORAGE AND EXCHANGE OF HEAT

Robert Alfred Frederick Jackson, Glasgow, Scotland, assignor to Heatovent Electric Limited, Glasgow, Scotland

Filed Sept. 4, 1964, Ser. No. 394,588
7 Claims. (Cl. 126—400)

1. A storage device adapted for the storage and exchange of heat, comprising a plurality of storage blocks each having a mineral mass of low thermal conductivity, heat-insulating material surrounding said blocks, said blocks having at least one duct extending wholly through said blocks for passage of air therethrough, heat-conductive means between said blocks for effecting transference of heat energy between said blocks and said duct,

said heat-conductive means being movable in relation to said blocks to vary the heat transfer therefrom, and heat-exchange means extending from said heat-conductive

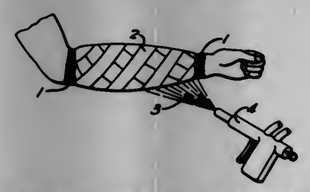


means into said at least one duct and oriented to cause air flowing through said duct to sweep the major faces of said heat-exchange means extending into said duct.

3,301,252
METHOD OF APPLYING A POLYURETHANE FOAM SPLINT

James D. Mahoney, Jr., 139 Gateshead Drive, Canonsburg, Pa. 15317

Filed Dec. 5, 1963, Ser. No. 328,304
1 Claim. (Cl. 128—90)



A method for applying a splint to an area for the support thereof which comprises spraying a polyurethane foam formulation on the area to be supported, the formulation being comprised of a polyphenylmethane polyisocyanate containing about 40 to about 60 percent of 4,4'-diphenylmethane diisocyanate, the condensation product of 1,1,3-hydroxyphenyl propane with propylene oxide having a hydroxyl number of about 380, 1-methyl-4-dimethyl aminoethyl piperazine, trichlorofluoromethane and a siloxane oxyalkylene block copolymer.

3,301,253
EAR PROTECTOR

Aram Glorig, 5539 Sarquhar Lane, Dallas, Tex. 75214

Filed Jan. 21, 1965, Ser. No. 427,037
6 Claims. (Cl. 128—152)

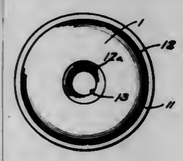


5. In an ear protector, the combination of:
- a pair of ear plugs of relatively soft, yieldable, rubber-like material each plug comprising a head engageable with the entrance to the auditory canal, and an integral reduced stem extending outward from each head,
- a retainer for each of said plugs of harder, yieldable, rubber-like material, embodying a head and an integral sleeve each extending therefrom, said heads and sleeves having an axial bore which is dimensioned to tightly receive said stems, with the ends of said sleeves abutting said heads, and
- a resilient headband having shank extremities which penetrate and are frictionally gripped by said retainer heads and said ear plug stems and which lock said retainers to said stems.

3,301,254
SURGICAL PAD

Erich Schickendanz, Illereichen-Altenstadt, Germany, assignor to Firma Scholl-Werke G.m.b.H., Frankfurt am Main, Germany

Filed Nov. 17, 1964, Ser. No. 411,811
Claims priority, application Germany, Nov. 22, 1963, Sch 34,206
4 Claims. (Cl. 128—153)

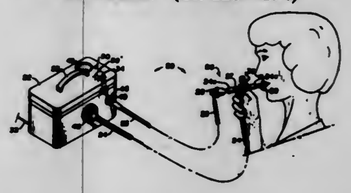


1. A surgical pad comprising:
- a lower layer of cushioning material,
- an upper layer of permanently compactible material compacted to provide an outer thin margin and a smoothly curvate upper edge,
- said pad having an affliction receiving opening therein,
- said upper layer having a compacted curvate edge at the upper end of said opening, and
- adhesive means on the underface of said lower layer to secure the pad to the body of a user.

3,301,255
METHOD AND APPARATUS FOR APPLICATION OF NEBULIZED MEDICATION IN POSITIVE PRESSURE RESPIRATORY EQUIPMENT

Harris A. Thompson, P.O. Box 916, Boulder, Colo. 80302

Filed Oct. 18, 1963, Ser. No. 317,170
15 Claims. (Cl. 128—194)

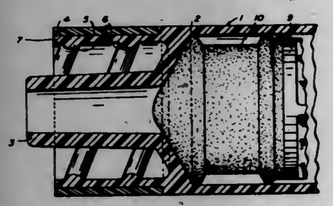


1. Apparatus for positive pressure breathing therapy adapted to interblend a low-pressure primary air flow with a high-pressure secondary air flow carrying a nebulized medicament and including, in combination:
- (a) means for supplying a primary air flow at low pressure, a breathing tube extending therefrom and a mouthpiece at the end of the breathing tube;
- (b) means for supplying a secondary air flow at higher pressure, a pressure tube extending therefrom and a nebulizer at the end of the tube connecting into the breathing tube passageway adjacent to the mouthpiece adapted to carry a liquid medicament and to effect a spray of nebulized medicament into the breathing tube with the secondary flow to normally interblend with the low-pressure air flow therein; and,

(c) a closing means adjacent to the mouthpiece traversing the breathing tube adapted to stop the discharge therethrough whereby the high-pressure, medicament-carrying secondary flow reverses the primary low-pressure air flow and back up into the breathing tube to fill a portion of the tube adjacent to the mouthpiece with unblended medicament-carrying secondary flow to be released when said closing means are again opened.

12. In positive pressure breathing therapy where a primary air flow is supplied to a patient through an inspirator breathing tube and a secondary, lesser air flow carrying a nebulized medication is discharged into the inspirator breathing tube adjacent to its exit to interblend with the primary flow during an inspiration cycle of breathing, a sequence adapted to provide a patient with concentrated medication at the beginning of an inspiration cycle and a more diluted medication in the latter phase of the inspiration cycle, including the steps of closing the inspirator breathing tube at its exit during an expiration cycle of breathing, stopping and reversing the primary flow in the inspirator breather tube and filling the portion of the inspirator breathing tube adjacent to its exit with said secondary air flow as the primary flow is reversed whereby to permit the inhalation of an unblended medicament carrying secondary flow at the beginning of the following inspiration cycle of breathing.

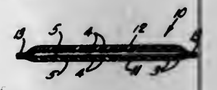
3,301,256
HYPODERMIC SYRINGE HAVING IMPROVED NEEDLE HUB RETAINING SLEEVE MEANS
Calvin C. Cowley, Short Hills, N.J., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Mar. 30, 1964, Ser. No. 355,554
4 Claims. (Cl. 128—218)



1. In a hypodermic syringe with a plastic barrel having an integral adapter extending from a partially closed end thereof and with an axially slideable stopper of a plunger in the barrel; the improvement of an integral plastic retaining sleeve concentric with the adapter and having locking means along a length of an interior surface of the retaining sleeve, said retaining sleeve being sufficiently flexible to expand radially outwardly along an entire length of said locking means for release of the integral barrel, adapter, and retaining sleeve from a mold; and a separately formed rigid band about an exterior surface of said sleeve and extending along substantially the entire length of said locking means whereby the locking means is not distorted outwardly when attached to a medical device.

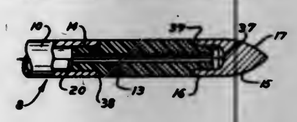
3,301,257
ABSORBENT SURGICAL DRESSING
George A. Crowe, Jr., Plainfield, and Gerald J. Lilola, North Brunswick, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed July 15, 1963, Ser. No. 295,094
17 Claims. (Cl. 128—296)

1. In an absorbent dressing
an outer covering of cellular sponge sheet material comprising a first and second panel,
an absorbent contained between said first and second panel, means to transmit fluids from the outer surface of at least one of said cellular sponge panels to said absorbent and



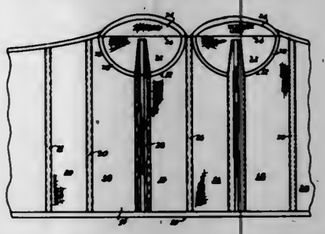
a fiber-reinforced seal between at least a major portion of the edges of said first and second panels, the sponge sheet throughout at least a major portion of said fiber reinforced seal being compacted through heat and pressure to form said seal, said fibers in said seal acting to reinforce the same and strengthen said dressing.

3,301,258
METHOD AND APPARATUS FOR TREATING VARICOSE VEINS
George Werner, Minneapolis, and Robert C. Wingrove, New Brighton, Minn., assignors to Medtronic, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 3, 1963, Ser. No. 313,597
6 Claims. (Cl. 128—303.1)



4. Apparatus for treating varicose veins in an animate body including a slender cylindrical probe of a diameter to pass through an incision in the skin and along the subcutaneous layer of an animate body between the fascia and the skin, said probe having a first hollow cylindrical electrode, a cylindrical insulator concentric with, of the same diameter as, and extending forwardly from said first electrode, a second cylindrical electrode concentric with, of the same diameter as, and extending forwardly from said insulator; a first electrical connection extending the length of said probe through said first electrode in insulated relation thereto, through said insulator and into electrical contact with said second electrode; means for generating high frequency electrical energy; and circuit means for connecting the output of said generating means between said first electrode and said first electrical connection.

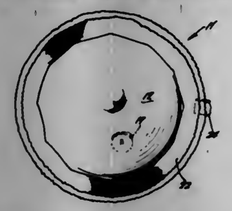
3,301,259
BODY SUPPORTING UNDERGARMENT
Josephine C. McLeod, 210 E. Jackson, Thomasville, Ga. 31792
Filed Nov. 25, 1964, Ser. No. 413,931
9 Claims. (Cl. 128—476)



2. A brassiere having a body encircling portion adapted to surround the body of the wearer immediately below the breasts, two diametrically aligned and laterally spaced apart breast receiving cups attached to and disposed above said body encircling portion, said breast receiving cups comprising an upper cup portion and a lower cup support portion joined together at the bustline, a semi-

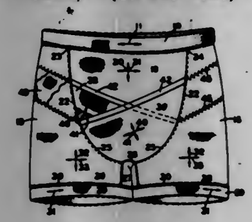
circular stay integrally disposed between each of said breast receiving cups and said body encircling portion and conforming generally to the shape of said breast receiving cups, at least one upwardly extending rigidifying stay disposed in said body encircling portion and extending into said lower cup support portion of each breast receiving cup toward said bustline, a soft cover positioned over each of said upwardly extending stays, said upwardly extending stays and their soft covers each being disposed inwardly of their respective cups and extending over their respective semicircular stays in such a manner that said upwardly extending stays are adapted to maintain a portion of said semicircular stays spaced away from the body of the wearer.

3,301,260
SELF-INFLATING BRASSIERE PAD
Velma C. Ray, 4843 Dee Boyar Ave., Lakewood, Calif. 90712
Filed Dec. 11, 1964, Ser. No. 417,640
4 Claims. (Cl. 128—481)



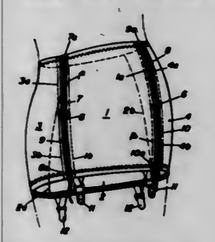
1. A self-inflating breast pad adapted to be worn inside a garment comprising an air-tight substantially conical flexible outer wall member of resilient deformable material, an air-tight flexible inner wall member of resilient deformable material peripherally secured to the margin of said outer wall member, defining an air-tight enclosure, a mass of resilient fiber material contained in said enclosure and tending to expand the enclosure, said inner wall member being provided with an air escape port, whereby air can be forced out of said enclosure by compressing the pad, and a removable plug member having a sealing shank portion sealingly engageable in said port to maintain the enclosure in an adjustably deflated condition, the quantity of resilient fiber material in the enclosure being sufficient to substantially fully inflate the enclosure when said sealing shank portion is removed.

3,301,261
MATERNITY PANTY GIRDLE
Frank G. Farino, South Euclid, Cleveland, Ohio, assignor to Leading Lady Foundations, Inc., Cleveland, Ohio, a corporation of Ohio.
Filed Mar. 1, 1965, Ser. No. 435,814
4 Claims. (Cl. 128—528)



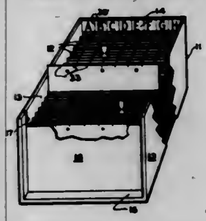
2. A maternity girdle adapted to comfortably support the abdomen of the wearer during progressive stages of pregnancy, said girdle comprising a back panel, a pair of side panels each secured to said back panel along opposed sides thereof and extending forwardly about and around the hip and buttocks of the wearer and terminating in front marginal edges together defining a substantially U-shaped opening therebetween, a front abdomen supporting panel secured to said combined front marginal edges, a pair of relatively diagonally disposed panels each secured along one edge to a portion of each of said front marginal edges, said diagonally disposed panels having top freely and independently movable overlying edges extending along intersecting planes, and relatively narrow supporting bands secured at one end to said back panel at opposite sides thereof and to said side, front and diagonal panels at their opposite ends, said back panel being formed of elastic fabric stretchable only in a substantially vertical direction, said side, front and diagonally disposed panels being formed of elastic material stretchable in a plurality of directions, the directions of stretch of said diagonal panels being angularly disposed to the directions of stretch of said back, front and side panels respectively.

3,301,262
GIRDLE
Van Davis Odell, 1158 5th Ave., New York, N.Y. 10029
Filed Feb. 17, 1965, Ser. No. 433,299
2 Claims. (Cl. 128—562)



2. A girdle comprising front, rear and side panels connected together, the connections between the front and side panels consisting exclusively of transversely spaced pairs of vertically aligned upper and lower slidable fastening means, the upper and lower fastening means of each pair extending from the upper and lower ends, respectively, of the girdle and terminating short of each other substantially midway of the length of the girdle, said upper fastening means being slidable downwardly and said lower fastening means being slidable upwardly to open position so as to thereby render the front panel substantially free of the side panels when the fastening means are in open position.

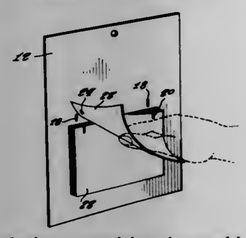
3,301,263
FILE CARD SYSTEM AND CARDS THEREFOR
Arthur T. Spees, 633 S. Carondelet, Los Angeles, Calif. 90057
Filed Dec. 9, 1963, Ser. No. 328,798
8 Claims. (Cl. 129—16.7)



1. A file card adapted for use with similar cards in a filing receptacle providing means for holding a group of file cards upright and in alignment one behind the other, comprising a body of springy sheet material folded once

upon itself to form a back sheet and a front sheet having free edges opposite the fold, said edges constituting the upper edges, said front sheet being formed to provide rearwardly projecting protuberances adjacent its upper edge and extending toward said back sheet and serving to space said sheets and being formed to provide forwardly projecting protuberances adjacent its upper edge serving to space said front sheet from the rear sheet of an adjacent file card in the filing receptacle, said forwardly and rearwardly projecting protuberances being evenly spaced across the sheet with the forwardly projecting protuberances being positioned substantially midway of the rearwardly projecting protuberances whereby a group of cards can be manually compressed in a direction normal to their planes with the individual cards flexing under tension.

3,301,264
LOOSE-LEAF DISPLAY DEVICE
Edward Usoskin, deceased, late of West Deal, N.J., by Robert N. Usoskin, executor, 111 E. 80th St., New York, N.Y. 10021
Continuation of application Ser. No. 128,813, Aug. 2, 1961. This application Apr. 7, 1964, Ser. No. 358,683
2 Claims. (Cl. 129—21)



1. A display device comprising, in combination,
a supporting panel having a front surface and a rear surface;
a plurality of individual sheets superposed on the front surface of said supporting panel; and
fastening means removably supporting said plurality of sheet on the front surface of said supporting panel, said fastening means comprising at least one staple having a pair of spaced legs joined by an intermediate portion, the intermediate portion of said staple being positioned in juxtaposition with the rear surface of said supporting panel, one of the legs of said staple extending through said panel in clenched position with the front surface of said panel to secure said staple in position, and the other of the legs of said staple extending through said panel and said sheets and being bent into an open hook for retaining said sheets in position but permitting the same to be removed from said hook without tearing, said other leg of said staple being first bent at substantially right angles to itself and extending toward said one leg of said staple and being second bent transverse to itself and extending toward said supporting panel and ending at a point spaced from said supporting panel.

3,301,265
HAIR-DRESSING DEVICE
Gemma Brenn-Albertoni, Saleggi, Bellinzona, Ticino, Switzerland
Filed July 25, 1963, Ser. No. 297,581
Claims priority, application Switzerland, July 26, 1962, 8,953/62
6 Claims. (Cl. 132—40)

1. A hair-dressing device for forming curls in the hair comprising,
a planar body portion,
means on one surface of said body for attaching the hair thereto to form the desired curl, said means including an axially projecting part around which the hair can be rolled,



securing means on the opposite surface of said body for retaining said body in the hair close to the head, said securing means comprising a plurality of flexible hair engaging members on at least a portion of said surface.

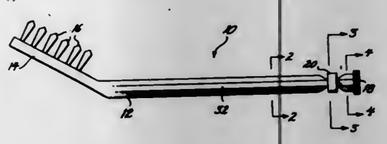
3,301,266
HAIR HOLDER
Ernest Hoffmann, Omaha, Nebr., assignor to Tip-Top Products Company, Omaha, Nebr., a corporation of Nebraska
Filed May 22, 1964, Ser. No. 369,537
10 Claims. (Cl. 132—46)



1. A hair holder comprising an enlarged bead, means defining a well extending into said bead normal to the surface of the bead; an anchor pin extending axially into said well and means for mounting said pin in said well adjacent the surface of the bead; said mounting means defining an opening in said bead communicating with the well; and an enlongated elastic band having a portion thereof entering said opening, looping around said pin, and departing through said opening.

7. A bead for a hair holder comprising an enlarged body having an elongate well extending into said bead normal to the surface thereof, and a pin axial of said well and mounted therein by means adjacent the surface of the bead, said pin and said well thereby defining an opening in said bead surface.

3,301,267
DISPENSING TOOTHBRUSH
Joseph J. Gerardi and Louis W. Becker, both of 43—44 Kissena Blvd., Flushing, N.Y. 11355
Filed Jan. 11, 1965, Ser. No. 424,644
6 Claims. (Cl. 132—84)



1. A dispensing brush comprising a hollow handle, means supporting bristles adjacent one end of said handle, means for providing communication between said bristles and the hollow interior of said handle, at least a portion of said handle including longitudinal relatively stiff spaced

apart ribs and relatively flexible spaced apart walls supported by said ribs, slide means supported on said handle for collapsing said flexible walls, and means for closing the other end of said handle.

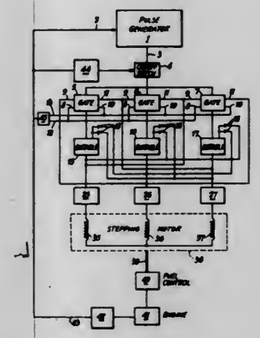
3,301,268
CRUTCHES
Richard R. Tryon, 224 E. Broadway, Maumee, Ohio 43537
Filed May 3, 1965, Ser. No. 452,694
5 Claims. (Cl. 135—50)



1. A telescoping crutch comprising, in combination, an upper portion including a pair of spaced parallel side rails having their upper ends connected by an arm rest, and a lower portion which is slidably connected to the upper portion and which includes a staff, and a handgrip by which the user holds on to the crutch and which is connected to said lower portion and is located between the parallel rails, at least a portion of the handgrip being mounted to pivot through less than a complete revolution, between a normal position and an abnormal position and being unsymmetrical with respect to the axis of pivoting to permit the user to tell by his sense of touch whether it is in its normal or its abnormal position, and a latch mechanism positively driven by the pivotable portion of the handgrip and engageable with at least one rail for latching the handgrip in a predetermined fixed position between the parallel rails when such portion of the handgrip is in its normal position and thereby locking the upper and lower portions of the crutch positively in their extended positions, the upper and lower portions of the crutch being free to slide relative to one another when such portion of the handgrip is in its abnormal position.

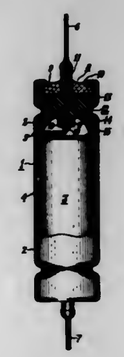
3,301,269
ENGINE CONTROL EMBODYING A MULTIPLE PULSE TRAIN GENERATOR
Charles T. Marwood, Welwyn Garden City, England, assignor to The De Havilland Aircraft Company Limited, Hatfield, England, a company of Great Britain
Filed Nov. 12, 1963, Ser. No. 322,868
Claims priority, application Great Britain, Nov. 12, 1962, 42,659/62
9 Claims. (Cl. 137—30)

1. A multiple pulse train generator comprising a plurality of gates corresponding in number to the number of pulse trains to be generated and effectively connected in a ring, at least two pairs of inputs associated with each gate and operable upon simultaneous energisation of two inputs of a pair to enable the associated gate, means for sequentially enabling said gates selectively in either one of the two directions around the ring and means for applying a generated pulse train simultaneously to said gates whereby each gate, when enabled, produces an output pulse corresponding to a pulse in the applied generated pulse train and hence each gate produces an output



pulse train the phase of which relative to the output pulse trains of the other gates is determined by the direction in which said gates are sequentially enabled.

3,301,270
ELECTROLYTIC DEVICE WITH CASING HAVING A RIGID AND A RESILIENT SEAL COMBINATION
Philip R. Horn, Columbia, S.C., assignor to General Electric Company, a corporation of New York
Filed Oct. 7, 1963, Ser. No. 314,289
9 Claims. (Cl. 317—230)

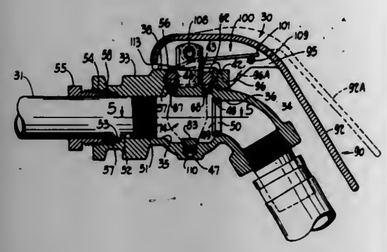


1. A sealed electrical assembly comprising, in combination, a casing having an open end, an electrolyte in said casing, an electrical device in said casing, said electrical device having a terminal lead extending through said open end, a closure sealing the open end comprising a superposed assembly of substantially rigid, fluid impermeable means sealed in said casing and including an eyelet, and an inner member of resilient insulating material inwardly adjacent said outer rigid means and in pressure sealing engagement with said casing, said inner resilient member having a base portion contacting said fluid-impermeable means and an annular wall portion projecting inwardly from said base portion and forming a cup-shaped member which opens into the interior of said casing with said annular wall portion lining the adjacent wall of said casing, said terminal lead bonded to and passing through said inner resilient member and said eyelet, to the exterior of said casing.

3,301,271
ANGLECOCK

John A. Burke, 3333 Chelsea Drive, Cleveland Heights, Ohio 44118

Filed Aug. 3, 1964, Ser. No. 387,056
4 Claims. (Cl. 137—315)

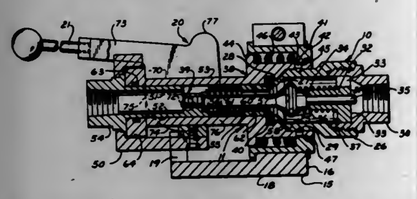


2. A railroad car angle cock, comprising in combination, a valve casing; an inlet duct and an outlet duct for the casing, said casing and ducts being co-axial; a valve seat disposed at the inner end of said outlet duct, concentric with the duct; the casing having a fixed bearing in its bottom wall and a neck in its top wall with a vertical bore therethrough, aligned with the bottom wall bearing, and adapted to receive a closure bonnet therein in a bayonet fit, the center-line of the fixed bearing and neck bore being eccentric to the longitudinal axes of the valve casing, valve ducts and valve seat; a cylindrical closure bonnet, having a bearing bore therethrough, removably mounted in said neck bore bayonet seat; a rotatable C valve unit, for said valve seat, having a shaft adapted to be journaled through said bonnet bearing bore, at its upper end, and in the fixed bottom wall bearing at its lower end; an operating handle mounted on the upper end of the shaft, above the bonnet; the bonnet being rotatable 90° on the C valve unit shaft, between a first position, wherein it and its associated C valve unit may be freely inserted in, or withdrawn through, the casing neck bore, and, a second position, wherein it is immovably seated and locked in the neck bore; the bonnet also having a laterally extending pin mounted in the periphery thereof; means on the handle engageable with the bonnet pin, whereby, upon rotation of the handle, the bonnet may be rotated from its first position to its second position; the handle being free to move through a 90° arc, either clockwise or counter-clockwise, when the bonnet is in its second position, to rotate the C valve unit in said bearings to seat and unseat the C valve unit.

3,301,272
QUICK CONNECT COUPLING

Austin E. Pettyjohn, Wickliffe, and Anthony F. Karlin, Northfield, Ohio, assignors to Lear Siegler, Inc., Los Angeles, Calif., a corporation of Delaware

Filed July 19, 1963, Ser. No. 296,217
6 Claims. (Cl. 137—614.06)



2. A coupling comprising telescoping nipple and socket parts having cooperating means for releasably locking them together, said socket part comprising

a socket body having a forward open nipple-receiving end and a tubular portion extending rearwardly therefrom,

a poppet valve in said socket body having a central stem extending forwardly and terminating in an enlarged valve closure head, said poppet valve being mounted within said socket body tubular portion and having sliding axial engagement therewith and therein between a rearward position with said valve closure head retracted rearwardly of said forward open nipple-receiving end of said socket body and a forward position with said valve closure head projected forwardly into said forward open nipple-receiving end of said socket body and into said nipple part when said telescoping nipple and socket parts are telescopingly engaged,

a valve seat sleeve mounted for axial sliding motion with and within said socket body tubular portion and concentrically of said poppet valve and having a generally forwardly facing valve seat smaller in diameter than said enlarged valve closure head and adapted to have its forward sliding motion limited by sealing engagement with said head and adapted to have abutting engagement with said nipple when said socket and nipple parts are telescopingly engaged,

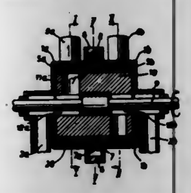
spring means acting between said valve seat sleeve and said poppet valve tending to urge said valve seat sleeve and said valve seat toward and into sealing engagement with said valve closure head,

movable cam means mounted on one for engagement with the other of said socket body and said poppet valve for coacting with said spring means to axially position one with respect to the other and to axially position said valve closure head forwardly of and out of sealing engagement with said valve seat when said nipple is telescopingly engaged in said socket part and in abutting engagement with said valve seat sleeve.

3,301,273
VOLUME GOVERNOR

August Monath, 8 Morellstrasse, Augsburg, Germany

Filed Feb. 25, 1964, Ser. No. 347,301
Claims priority, application Germany, Feb. 28, 1963, M 55,931
2 Claims. (Cl. 137—624.15)

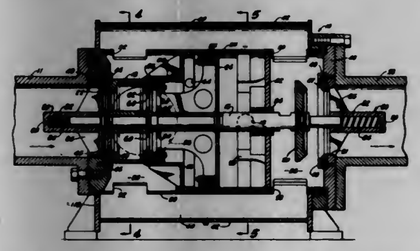


1. A volume governor for streaming fluids, particularly for distributing quantities of liquids or gases in any predetermined proportion, comprising a generally cylindrical housing, a rotatable shaft axially extending through said housing, a rotor on said shaft, said rotor being of smaller radius than said housing to provide an annular clearance between the rotor and the housing, the housing being divided along a radial plane in two similar halves, said rotor having two axially spaced radial ducts angularly displaced through 180° and opening into said annular clearance between said rotor and said housing an adjusting ring surrounding said rotor and rotatably mounted between adjacent faces of said two housing halves, two sealing and distributing bars carried by said adjusting ring and extending oppositely in axial direction in said clearance between the rotor and both housing parts to prevent communication between the two portions of the clearance space separated by said bars, the inner ends of said two radial ducts in the rotor each communicating with a fluid supply duct, two pairs of fluid delivery connections communicating with said annular clearance between the rotor and the housing, and an axially extending web situated in said annular clearance and between said two pairs of delivery connections to prevent communication between the two pairs of connections.

3,301,274
QUICK OPENING HIGH PRESSURE VALVE

James T. Kenney, Arcadia, Calif., assignor, by mesne assignments, to United Geophysical Corporation, Pasadena, Calif., a corporation of Delaware

Filed Jan. 23, 1964, Ser. No. 339,767
19 Claims. (Cl. 137—625.66)



13. In a quick-acting differential valve structure for controlling flow of high-pressure large-volume fluids:

a valve body providing a fluid chamber having an axis;

means providing a fluid inlet port on said axis to said chamber;

means providing a fluid exhaust port on said axis from said chamber;

a valve stem disposed along said axis and carrying valves adjacent its opposite ends for controlling said ports;

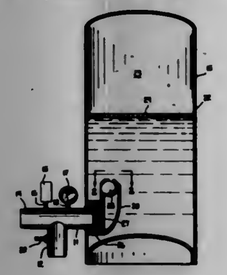
said valve body providing a high pressure fluid outlet passage from said chamber; and

a differential piston mounted on said valve stem for actuation of said valves to open one valve and close the other simultaneously.

3,301,275
AIR RETAINING MEANS FOR WATER TANKS

Richard F. Brady, Muncie, Ind., assignor to Brady Air Controls, Inc., Muncie, Ind., a corporation of Indiana

Filed Feb. 10, 1964, Ser. No. 343,681
2 Claims. (Cl. 138—31)



1. In combination with a water storage tank, an aperture in said tank, and a check valve mounted over said aperture and including a check device operable, until admission of water into said tank, to hold a charge of compressed gas in said tank above atmospheric pressure, said check device being operable by application of external water pressure greater than the gas pressure in said tank to said aperture for opening said valve and admitting water into said tank, said check device having a portion spaced from the top of the tank and floatable on water admitted to said tank when the water level in the tank has risen past said aperture, and said check device thereupon becoming responsive to change of water level adjacent said aperture for opening said valve when the water level is above said aperture and for closing said valve when the water level approaches the level of said aperture for preventing flow of gas outward from said tank through said aperture, and means in the tank for guiding said check device between valve opening and closing positions.

3,301,276
FLOW RETARDERS FOR FIRE TUBES OF BOILERS

Laurence Richard Luchford and Thomas Arthur Babbage, East Molesey, England, assignors to Trianco Limited, East Molesey, England

Filed Sept. 14, 1964, Ser. No. 396,015
Claims priority, application Great Britain, Sept. 18, 1963, 36,753/63
2 Claims. (Cl. 138—38)

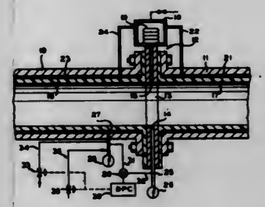


1. A retarder for fire tubes of rectilineal cross section comprising a hollow, tapering metal body of corresponding cross-section, closed at the bottom and increasing in area from the bottom to the top, a plurality of longitudinally extending tapering fins at the corners of the rectilineal section of the body, the outer edges of said fins being parallel to the axis of the body and being adapted to engage the corners of a fire tube to locate the retarder in the tube so that a plurality of tapering passages is defined between the sides of the retarder and the sides of the tube, said fins each being comprised partially by extending flats of four plates constituting the tapering body and partly by tapering flanges bent up from such plates.

3,301,277
PLASTIC-LINED CONDUIT

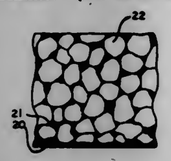
Harold S. Kelly, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 18, 1963, Ser. No. 317,257
7 Claims. (Cl. 138—114)



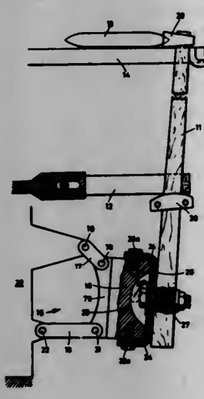
4. A conduit assembly comprising a pressure-resistant conduit; a plastic liner positioned in said conduit so as to provide an annulus between said conduit and said liner; a vessel separated into two fluid-tight chambers by a flexible membrane; fluid passage means connecting said annulus and one of said chambers; fluid passage means connecting the interior of said liner and the other said chamber; a fluid substantially filling said annulus; and a fluid substantially filling said liner.

3,301,278
PRODUCTS MADE WITH FURAN RESIN
Arthur G. Lander, Lynwood, and Delbert A. Hausmann, Glendale, Calif., assignors to American Pipe and Construction Co., South Gate, Calif., a corporation of California
Filed Aug. 5, 1963, Ser. No. 300,001
2 Claims. (Cl. 138—145)



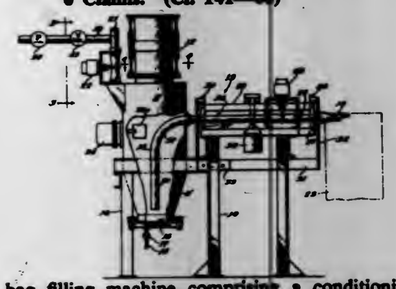
1. A pipe consisting of a furan resin-aggregate wall having an integrally formed furan resin inner liner; said furan resin-aggregate wall consisting of coarse aggregate furan resin binder, the weight ratio of said aggregate to said furan resin binder lying within the range of 12:1 to 4:1; said furan resin inner liner having a maximum thickness of one-eighth inch.

3,301,279
ARRANGEMENT FOR SECURING A PICKING STICK ON A LOOM
Hans Zollinger, Ruti, Zurich, Switzerland, assignor to Ruti Machinery Works Ltd., formerly Caspar Honegger, Ruti, Zurich, Switzerland, a corporation of Switzerland
Filed Nov. 19, 1964, Ser. No. 412,479
Claims priority, application Switzerland, Nov. 26, 1963, 14,496/63
13 Claims. (Cl. 139—149)



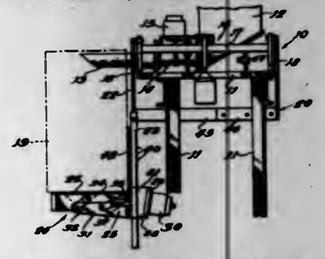
1. In a loom having an arrangement for securing a picking stick to a guide body for controlling the reciprocal movement of the picking stick during driving and stopping of a shuttle, the improvement which comprises a securing means that provides a resilient coupling between said picking stick and said guide body to allow movement of the picking stick outwardly from said guide body in a direction substantially transverse to the longitudinal axis of the picking stick and corresponding substantially to the direction of travel of the shuttle before being stopped by said picking stick and that also provides a connection between said picking stick and said guide body which prevents substantial movement in a direction parallel to the axis of said picking stick and which is rigid relative to said resilient coupling whereby said securing means provides a damping action with respect to material oscillations tending to occur along said picking stick during driving and stopping of said shuttle.

3,301,280
BAG FILLING MACHINES
Erwin M. Lau, Dolton, Ill., assignor to Black Products Co., Chicago, Ill., a corporation of Illinois
Filed June 21, 1963, Ser. No. 289,580
6 Claims. (Cl. 141—68)



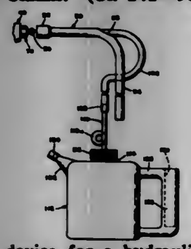
1. A bag filling machine comprising a conditioning chamber, a bag supporting spout communicating with said chamber and adapted to project into a bag to be filled, a first conduit extending between said spout and said chamber, cut off means located in said first conduit for cutting off the flow of material therethrough, bag weight responsive means for causing operation of said cut off means when a predetermined amount of material has been fed into said bag to terminate the bag filling operation, an inlet valve located in the upper portion of said chamber for permitting material to flow into said conditioning chamber, means for closing off said inlet valve during the bag filling operation, said means including a level responsve device which also maintains a free space in the upper portion of said conditioning chamber, said conditioning chamber having a diffuser pad located at the bottom thereof, said spout being located above the level of said diffuser pad, the inner and lower end of said first conduit being located immediately above said diffuser pad, a second conduit communicating with said fill space, a constant delivery air pump connected to said second conduit, a pressurizing valve interposed in said second conduit for controlling the flow of air from said air pump to said chamber, and a pressure relief valve of the continuously bleeding type connected to said second conduit to maintain the air within said conduit at a substantially constant pressure.

3,301,281
BAG EJECTOR DEVICE
Erwin M. Lau, Dolton, Ill., assignor to Black Products Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 30, 1963, Ser. No. 320,154
8 Claims. (Cl. 141—272)



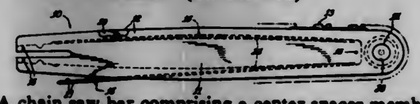
7. In a bag filling machine having a balance beam, the combination of a spout assembly including a horizontal spout, said spout assembly being suspended from said beam, a bag ejector device including a saddle suspended from said spout assembly and being spaced beneath said spout by a distance such that at least a portion of the weight of said bag will be taken up by said saddle, and means imparting a combined translational and rotational movement to said saddle for moving said saddle as a whole upwardly so as to relieve said spout from the weight of said bag, and simultaneously to tilt the bag forwardly so that said bag will slide off of said horizontal spout.

3,301,282
BLEEDING TOOL AND APPARATUS FOR HYDRAULIC SYSTEMS
Vito Fresolone, Jr., 906 Lorraine Ave., Union, N.J. 07083
Filed June 5, 1964, Ser. No. 372,977
8 Claims. (Cl. 141—98)



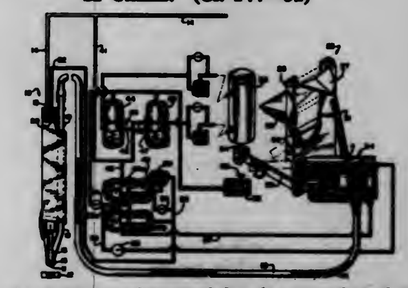
1. A bleeding device for a hydraulic braking system having at least one externally disposed bleeding screw comprising,
(a) a tube holder tool having a hollow body portion with a tube receiving opening at one end and a handle portion connected to the hollow body portion,
(b) said body portion of the tube holder tool having a bleed screw engaging means spaced from the tube receiving opening,
(c) a tube,
(d) said tube mounted in the hollow body portion concentric to the bleed screw engaging means and having one end terminating in a plane adjacent the bleed screw engaging means to coact with and seal the end of said bleed screw during operation of the tube holder tool,
(e) said tube disposed to extend out of the hollow body portion through said tube receiving opening,
(f) a vented container,
(g) a means connecting the end of the tube remote from the bleed screw engaging end to said container whereby on operation of the tube holder tool brake fluid from said hydraulic system will flow from the bleed screw through said tube to the container.

3,301,283
CHAIN SAW BAR
Max Merz, Los Angeles, Calif., assignor, by mesne assignments to Nicholson File Company, East Providence, R.I., a corporation of Rhode Island
Filed May 8, 1964, Ser. No. 365,939
4 Claims. (Cl. 143—32)



1. A chain saw bar comprising a center spacer member having a peripheral wear strip supporting surface, side plates secured to said spacer member and extending beyond the peripheral surface of said spacer to form a groove for receiving a chain saw chain, retaining means secured to said spacer member adjacent the ends of said peripheral surface and having retaining surfaces respectively forming dovetail angles with said peripheral surface, and a resilient normally straight, elongated symmetrical wear strip having tapered dihedral ends, each of said ends having opposite inclined surfaces arranged symmetrically about the longitudinal center line of the wear strip adapted to respectively complementally engage said retaining surfaces to hold said wear strip in bowed arched relation with respect to said supporting surface for resiliently and slidably supporting the chain saw chain in the groove.

3,301,284
APPARATUS FOR SUPPLYING FASTENER SHAPED PARTS
John M. Clapp, Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 1, 1965, Ser. No. 484,169
12 Claims. (Cl. 144—32)



10. An apparatus for supplying fastener shaped parts to an insertion tool through a delivery conduit operatively connected to said insertion tool and communicating with a source of fastener shaped parts to receive parts individually from said source of parts, said apparatus comprising:
a first fluid passage operatively connected to a source of pressurized fluid and communicating with said delivery conduit for supplying pressurized fluid thereto;
first valve means operatively disposed in said first fluid passage for directing fluid under a pressure within the range of from 10 to 60 pounds per square inch gauge to said delivery conduit for transporting a part therein through said delivery conduit to a position adjacent said insertion tool while the latter is driving the last previously delivered part;
a second fluid passage operatively connected to a source of pressurized fluid and communicating with said delivery conduit for supplying pressurized fluid thereto; and
second valve means operatively disposed in said second fluid passage for directing a pulse of fluid under a pressure within the range of from 70 to 110 pounds per square inch gauge to said delivery conduit for transporting a part delivered to said position adjacent said insertion tool into driving relation with said insertion tool after the latter has driven the last previously supplied part.

3,301,285
DRAG SAW
Eugene W. Cline, Box 111, Luther, Okla. 73054
Filed Dec. 21, 1964, Ser. No. 419,697
5 Claims. (Cl. 144—34)



1. A drag saw, comprising: a plurality of interconnected closed loops forming an elongated chain; and a cutting element extending diagonally through and secured to each said loop, said cutting element comprising a shank portion having a sharpened edge and having its opposing

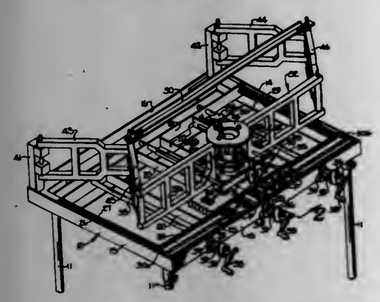
end edges projecting outwardly beyond the limit of the respective said loop, and a blade secured to the respective end surface of said shank, said blade having a sharpened edge.

3,301,286
TREE GUIDING AND FELLING MEANS
Donald E. Gibbs and Norman L. Gibbs, both of Modesto, Ill. 62667
Filed Dec. 24, 1964, Ser. No. 420,946
8 Claims. (Cl. 144—34)



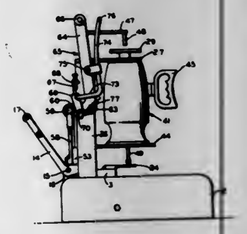
1. Tree guiding and felling means cooperable with a self-propelled vehicle and cooperable with severing means for selecting the position in which the upper portion of a standing tree is to lie when severed from its base portion comprising an elongated boom articulatable at one end by a self-propelled vehicle for raising and lowering the remote end of said boom, a tree guiding means secured to said boom adjacent its remote end, said tree guiding means including a generally horizontally disposed arm extending laterally of said boom and cooperable with said boom for engaging a tree when the upper position of said tree to be engaged is disposed between said arm and said one end of said boom, and means facing said one end of said boom for penetrating the portion of a tree to be felled.

3,301,287
SIGN ROUTING APPARATUS
Arthur T. Edwards, Salisbury, N.C., assignor to Rite-A-Sign, Inc., Rowan, N.C., a corporation of North Carolina
Filed Dec. 9, 1963, Ser. No. 328,929
9 Claims. (Cl. 144—144)



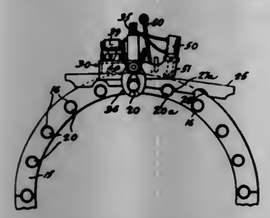
1. A sign routing apparatus for reproducing in a workpiece embossed letters and the like from a pattern comprising:
(a) a pattern and workpiece supporting table having means for clampingly supporting the pattern and workpiece on front portions thereof with the pattern being clampingly supported in front of the workpiece,
(b) a rotatable cutting tool disposed in a vertical position above said table,
(c) a carriage including a support bracket clampingly engaging said cutting tool for mounting said cutting tool on said carriage,
(d) parallelogram linkage carried by said table and including a pair of vertical guide rods on which said support bracket of said carriage is mounted for vertical movement to support said carriage on said parallelogram linkage in a predetermined plane for movement in any direction across said table and to support said cutting tool for movement into and out of engagement with the workpiece,
(e) a stylus, and
(f) means operatively connected to said parallelogram linkage and adjustably supporting said stylus in front of said cutting tool for movement in a horizontal plane to vary the distance from said stylus to said cutting tool and for vertical movement of the stylus into and out of engagement with the pattern independently of movement of said cutting tool into and out of engagement with the workpiece.

3,301,288
ROUTING MACHINE
Robert N. Norlie and Richard M. Sheffield, Chico, Calif., assignors to Norfield Manufacturing Co., Chico, Calif.
Filed Oct. 21, 1964, Ser. No. 405,415
7 Claims. (Cl. 144—144)



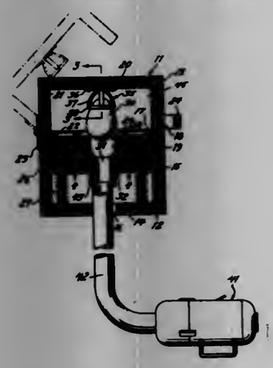
1. In a machine for routing out a recess in a jamb piece of a door frame for receiving a lock strike plate of the type having a well spaced inwardly from the edges of said plate and projecting to one side of the latter;
(a) a rigid frame;
(b) a rotary routing cutter for routing out said recess;
(c) supporting means on said frame supporting said cutter for bodily movement thereof laterally relative to its axis of rotation within the confines of outlines respectively corresponding to the outside outlines of said lock strike plate and the well therein, and for axial downward movement a first distance substantially equal to the thickness of said lock strike plate and a second distance substantially equal to the depth of said well when said jamb piece is held in a predetermined stationary position relative to said cutter in a position for cutting by said cutter during said movement of the latter;
(d) holding means on said frame actuatable for movement for releasably holding such jamb piece in said predetermined position and for releasing said jamb piece;
(e) separate guide means respectively rigid relative to said routing cutter and said frame for respectively restricting said lateral movement of said cutter to within the limits of the outline of said plate and for restricting said lateral movement to within the limits of the outline of said well;
(f) means on said frame for restricting said axial movement of said cutter a distance substantially equally to said first distance when said lateral movement of said routing cutter is restricted to within the outline of said plate, and
(g) means on said frame for restricting said axial movement of said cutter a distance substantially equal to said second distance when said lateral movement of said routing cutter is restricted to within the outline of said well.

3,301,289
DEBARKING DRUM CONSTRUCTION
Thomas P. Hanson, Lennoxville, Quebec, Canada, assignor to Uniweld Inc., Sherbrooke, Quebec, Canada
Filed Oct. 12, 1964, Ser. No. 403,204
4 Claims. (Cl. 144—208)



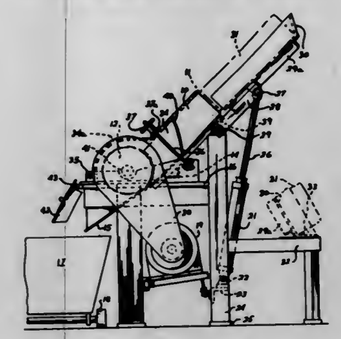
1. An open-ended cylindrical barking drum comprising, a plurality of elongated cylindrical members connected to and supported in spaced apart circumferential alignment between a pair of axially spaced end plates of annular formation and having a greater radial width than thickness with a plurality of annular stiffening plates also of greater radial width than thickness mounted on said elongated members between said end plates in spaced axial relationship therewith, each of said annular stiffening plates having on its inner surface spaced apart notches corresponding in location to said circumferentially spacing of said elongated members and being connected thereto, and annular driving members surrounding said circumferentially spaced elongated members at axially spaced points along the length of said framework.

3,301,290
EGG-SHELLING DEVICE
Albert Scalella, 156 Greenhill Road, King of Prussia, Pa. 19406, and William R. Kilroy, 310 E. Cambria St., Philadelphia, Pa. 19134
Filed June 5, 1964, Ser. No. 372,778
6 Claims. (Cl. 146—2)



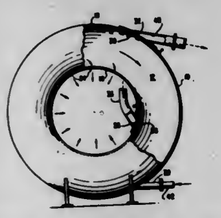
1. An egg-shelling device comprising an openable chamber, a seat in said chamber for supporting an egg at spaced regions thereof, said chamber having an outlet communicating with said seat, a shell cracker in said chamber for cracking the shell of an egg on said seat, and suction means communicating through said outlet for withdrawing the cracked shell from said chamber, said chamber comprising complementary lower and upper parts relatively movable into and out of closed relation, said seat being mounted in upwardly facing relation in said lower part, and said cracker being carried by said upper part for shell-cracking engagement upon closure of said chamber.

3,301,291
FROZEN MEAT CUTTER
Alvin W. Hughes, 4 N. 194 Church Road, Bensenville, Ill. 60106
Filed Aug. 31, 1964, Ser. No. 393,080
11 Claims. (Cl. 146—123)



1. A frozen meat cutter having a rotor from which cutting knives project, a motor for driving said rotor, a table on which said rotor is mounted, a guide casing inclined at an acute angle above a top of said table for directing a block of meat to said rotor, the upper end of said guide casing being open, a bottom portion of said guide casing being reinforced to withstand the thrust of said cutting knives upon a meat block in said guide casing, at least a substantial portion of the sides and cover of said guide casing and cover for said rotor being unitary and pivoted to said table on a side of said rotor generally opposite said guide casing for opening and cleaning of said rotor and guide casing, quickly detachable means whereby said unitary rotor cover and guide casing cover may be clamped in closed position, a loading step secured to said table at an elevation below a top of said table, a loading tray movable between said step and an elevated position enabling a meat block to be guided into the open end of said guide casing, means for raising and lowering said tray, said motor being mounted below said table top, a flexible drive connection between said motor and said rotor, and an inclined chute open at the top end thereof to receive cut meat from said rotor knives and extending in prolongation of said guide casing to an edge of said table for directing cut meat into a receptacle located outside and below said table, said rotor knives pushing the cut meat down said chute.

3,301,292
SONIC GRAIN HULLING APPARATUS AND METHOD
Kenneth F. O'Connor, Yonkers, N.Y., assignor, by mesne assignments, to Food Engineering International, Inc.
Filed Feb. 6, 1964, Ser. No. 342,919
13 Claims. (Cl. 146—221.5)



10. The method of hulling and debranning cereal grains comprising the steps of introducing the grains into a toroidal milling chamber, confining the grains in a

torodial path within the chamber, admitting a high velocity air stream at or near Mach one into the chamber in a direction substantially tangent to the outer radius of the toroidal path, subjecting the grains to the air stream to impart centrifugal force to the grains and induce continuous revolutions of the grains around the outer periphery of the chamber, and continuously admitting the high velocity air stream into the chamber to impart a boost of energy to the grains during each revolution about the chamber and to maintain the velocity of the air stream to which the grains are subjected at or near Mach one, whereby the hulls and bran coats of the grains are ruptured and peeled away from the endosperm to achieve milling by the combined action of mutual agitation of the grains against one another and against the chamber walls, and air friction against and sonic vibrations on the grain surfaces.

3,301,293
COLLAPSIBLE CONTAINER

Thomas R. Santelli, Sylvania, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio

Filed Dec. 16, 1964, Ser. No. 418,689
10 Claims. (Cl. 150—.5)



1. A collapsible container comprising opposite top and bottom walls and a flexible side wall interconnecting said top and bottom walls to enclose a space, said side wall having a plurality of longitudinally spaced bellows-like pleats each defined by a ridge and outwardly extending wall portions converging at the ridge, and interlocking means formed on a number of adjacent pairs of said pleats for retaining the container in any selected one of a plurality of collapsed positions.

3,301,294
DEVICES AND METHODS FOR HANDBAG HANDLE ATTACHMENT

Daniel I. Reiter, 868 6th Ave., New York, N.Y. 10001

Filed Mar. 26, 1965, Ser. No. 442,990
15 Claims. (Cl. 150—33)

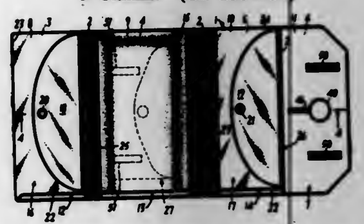


1. A handle for a handbag or the like, comprising an elongated, flat envelope with an open end, and an elongated, flat strip or stiff, bendable material extending longitudinally into said open end a short distance, said envelope and said strip being conjointly rolled upon themselves adjacent to said end to form a loop, said strip having one end extending from the open end of said envelope and turned back upon said envelope to embrace the end of said envelope.

3,301,295
TRAVELLER'S HAND KIT

Murrie M. Fitch, 1120 Cove Road, Mamaroneck, N.Y. 10543

Filed Mar. 16, 1964, Ser. No. 351,993
5 Claims. (Cl. 150—34)

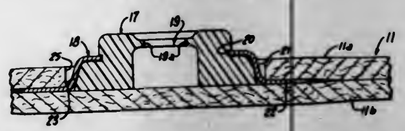


1. A multisectioned traveller's hand kit comprising, in combination, a base body divided into sections in a manner to permit folding of one section over another, a liner having matching sections and bonded to the base body only at portions of the periphery of the sections in a manner to define pockets therebetween, with mouths opening at one side edge of the base body, a plurality of envelopes which match the sections of the liner, and each envelope being bonded to the liner section only at portions of their periphery in a manner to define a pocket therewith having a mouth opening facing a section boundary, an end section of the base body forming a cover flap having a fastening means attached to an inside face thereof, an aperture in the flap having a slit for enlarging the opening of the aperture sufficiently to permit insertion of the flap over a doorknob, and matching fastening means on an exterior face of another section of the base body for engaging the flap when the base is folded to hold the kit in folded condition.

3,301,296
FASTENER DEVICE

Robert A. Meyer, West Bend, Wis., assignor to Amity Leather Products Co., West Bend, Wis., a corporation of Wisconsin

Filed Feb. 24, 1964, Ser. No. 346,609
5 Claims. (Cl. 150—35)



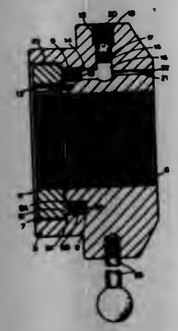
1. An article of manufacture comprising, a flexible container having walls formed of readily deformable but durable sheet material, one of said walls having a portion extending beyond and foldable over an adjacent wall to provide a closure flap and said adjacent wall being provided with an aperture, a male fastener part secured to said closure flap and having a head defined by a reduced neck portion projecting toward the aperture in said adjacent wall when said closure flap is folded thereover, a thin sheet metal plate having a raised portion provided with an elongated opening and surrounded by an integral outwardly extending flange, the raised portion of said plate corresponding in shape and size to the aperture in said adjacent wall and said plate being positioned with the flat flange thereof seated directly against the inner surface of said adjacent wall with the raised portion of said plate extending outwardly through the aperture in said adjacent wall, and a resilient female fastener part of substantial thickness having a base portion confined within the raised portion of said plate and having a reduced portion corresponding in shape and size to and extending outwardly through the elongated opening in said plate, said female fastener part having a recess of greater

width and depth than the diameter of the head of said male fastener part, the reduced outwardly extending portion of said female fastener part being formed with an integral lip overhanging the recess therein to provide at least one access opening for removably receiving the head of said male fastener part, the access opening formed by the lip being of less width than the diameter of the head of said male fastener part.

3,301,297
LOCK NUTS

William Thomas Burr, Shoreham, England, assignor to Fine-Blanking Limited, Shoreham, England

Filed July 9, 1965, Ser. No. 470,680
9 Claims. (Cl. 151—15)



1. A lock nut comprising a body having a threaded bore, at one end of which bore is provided an annular recess containing a lock ring having an internal thread whose pitch and diameter are the same as those of the thread of the threaded bore, a sealing ring provided within the recess between the lock ring and the end wall of the recess, and a channel in said body leading to said recess through which channel fluid pressure can be exerted against said sealing ring to urge the lock ring and the body away from each other.

3,301,298
FLANGED LOCK NUT

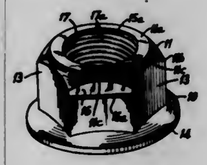
Jordan H. Stover III, Bloomfield Hills, Mich., assignor to The Lamson and Sessions Company, Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 473,097, July 19, 1965. This application July 6, 1966, Ser. No. 565,043
1 Claim. (Cl. 151—21)

A lock nut of the prevailing torque-type comprising a nut body of resilient material having a hexagonal shape and a circular bottom flange to provide said body with six sides integral with the bottom flange and forming three pairs of opposed vertical flats above the bottom flange, said nut body having a central vertical axis and including an integral upper portion forming an out-of-round truncated cone tapering continuously upwardly from said flats at an angle of approximately 45° relative to said axis, said body having a threaded central hole extending axially through the body from top to bottom and adapted to receive a mating bolt, said hole being circular at the bottom and partly defining at the reduced upper end of the cone an out-of-round annular surface in a plane normal to said axis, said annular surface forming the top of the nut body and being of substantially uniform dimension as measured between the inner and outer edges of the annular surface, said body having at the bottom an enlarged annular bearing face formed in part by said flange and surrounding the hole in a plane normal to the nut axis, the upper surface of said bottom flange sloping downward and outward at an angle of about 25 degrees relative to said bearing face, said flange having a minimum outer diameter of about 2D, where D is the nominal diameter of said mating bolt, the minimum thickness of the flange, as measured at said minimum diameter, being 0.16D, the height H of the nut body as measured between the plane of said upper end of the cone and said bearing face being at least about as follows, in inches:

D	3/16	7/32	1/4	5/16	3/8	7/16	1/2	9/16	5/8
H	.242	.265	.274	.330	.396	.460	.522	.584	.646

said minimum height being increased by the extent to which said flange thickness exceeds said minimum of 0.16D, the opposed vertical flats of one of said pairs each having an indentation extending continuously across the upper portion of the flat, the lowest extent of said indentation being spaced below the plane of said upper end of the cone a distance equal approximately to one-third of the height of the nut body less the thickness of the flange



at said minimum diameter, said cone and the threaded hole portion within the cone having in cross-section and at the top the shape of an ellipse with its major axis parallel to said indented flats and disposed in a vertical plane intersecting a pair of opposed vertical corners formed by the other flats, the minor axis of said ellipse being perpendicular to said major axis, said cone and the nut body between said indentations defining a threaded hole which is out-of-round by an amount sufficient to provide the nut with a friction locking torque of $115D^{2.4}$ to $820D^{2.5}$ on a mating screw within the dimensional tolerances of its class of fit, the conical surface of said cone extending from said reduced upper end to said vertical flats, the minimum height of the cone, as measured from the plane of its upper end to the highest points of the flats, being at least one-third of said spacing of said lowest extent of said indentation, and a coating of extreme pressure lubricant on the threads of said hole and said bearing face.

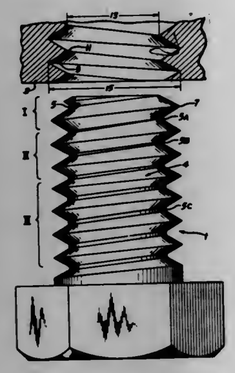
3,301,299
INTERFERING THREAD FORM

Glenn W. Stanwick, Brookfield, Wis., assignor to Accurate Automatic Parts, Inc., Brookfield, Wis., a corporation of Wisconsin

Filed May 27, 1965, Ser. No. 459,404
4 Claims. (Cl. 151—22)

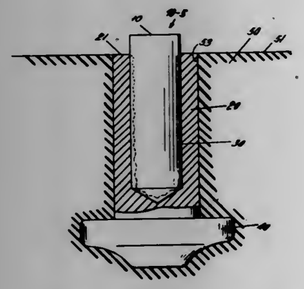
1. For use in connection with a member having a standard female thread form of uniform axial pitch with roots and crests substantially V-shaped in cross section and having constant uniform diameters; a member provided with a male thread form of corresponding uniform axial pitch throughout and also having crests of constant uniform diameter throughout, said male thread form being receivable in said female thread form and comprised of three axial zones along its length, the first extending through at least the initial complete convolution of the root thereof, said root throughout said first zone being substantially V-shaped in cross section, the second zone including subsequent convolutions of the root, said root being flattened in said second zone to a progressively increasing diameter through between one and three complete convolutions to provide from at least .004 inch interference in the initial convolution to .008 inch interfer-

ence with the crest of said female thread form in the final convolution of said second zone, and a third zone including the convolutions of the root subsequent to the second zone and having a constant flattened root diameter



throughout said third zone corresponding to the diameter of the root at the termination of the second zone, said third zone extending through at least the final complete convolution of the root.

3,301,300
TRACTION STUDS FOR VEHICLE TIRES
Bernd Natter, Haus am Sonnenbichl 4, Reutte, Tirol, Austria
Filed Mar. 16, 1965, Ser. No. 440,096
Claims priority, application Austria, Mar. 16, 1964, A 2,250/64
3 Claims. (Cl. 152—210)



1. For a vehicle tire having a tire body establishing traction engagement with a road and the like,
an axially extending elongated traction stud of hard wear-resistant metallic carbide composition to be held axially embedded in a generally radial direction in said tire body with an outer stud portion of its length establishing road-traction engagement,
an enclosure layer of metallic powder particles having a melting temperature between 800 and 1600° C. surrounding the length of said stud held embedded within said tire body, which powder particles have been sintered to each other and to the surrounded length of said stud at elevated temperature within an oxidation suppressing atmosphere and constituting an anchoring sleeve retaining said stud in said tire body while the outer stud end is subjected to traction engagement with the road.

3,301,301
VEHICLE PNEUMATIC TIRE COMPOSITION
Clarence A. Gapen, P.O. Box 818, Morgantown, W. Va. 26505
Filed Oct. 13, 1964, Ser. No. 403,640
1 Claim. (Cl. 152—330)



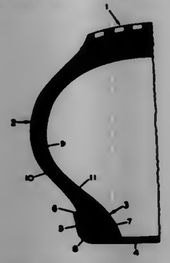
A vehicle pneumatic tire having sidewalls and a tread and being devoid of cord layers and superimposed sheets and consisting of solid rubber throughout having randomly oriented cotton strings substantially uniformly dispersed therein throughout the entire body of the tire and the tread throughout their thickness and circumference, said strings being of lengths from about a fraction of an inch to about 3 inches.

3,301,302
VEHICLE TIRES
Hans F. Wild, Muttenz, Harald H. Oelerich, Oberwil, and Hellmut R. Hiss, Pratteln, Switzerland, assignors to Fabrik für Firestone Produkte AG., Pratteln, Switzerland, a corporation of Switzerland
Filed Apr. 2, 1965, Ser. No. 445,041
Claims priority, application Switzerland, Apr. 8, 1964, 4,488/64
7 Claims. (Cl. 152—354)

1. A vehicle tire comprising spaced bead cable means, a carcass provided with at least one fabric layer bent about both of said bead cable means, said fabric layer including cut marginal edge means, and means provided for reducing the receipt of moisture by said fabric layer, said means for reducing moisture comprising a marginal portion of said cut marginal edge means which is flexed back upon itself.

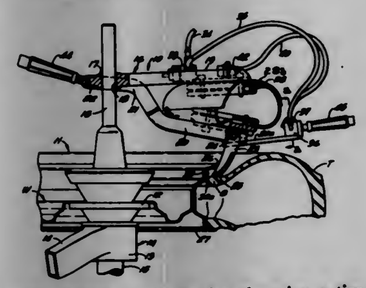
3,301,303
TIRE CASING
Georges Louis Travers, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, France
Filed May 1, 1964, Ser. No. 364,138
Claims priority, application France, May 4, 1963, 933,724
4 Claims. (Cl. 152—362)

1. A tire casing having a tread, sidewalls and beads, a zone of reverse curvature at the junction of each bead and sidewall and a carcass containing at least one carcass ply comprising at least an inner and an outer bead cable in said bead, said carcass ply extending axially outwardly beneath both of said cables, around one of said cables, radially inwardly between said outer cable and said inner cable and axially inwardly between said inner



cable and the ply beneath both of said cables and having an edge portion terminating outside said zone of reverse curvature.

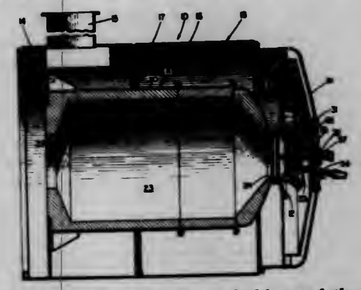
3,301,304
DEVICE FOR DEMOUNTING PNEUMATIC TIRES FROM WHEEL RIMS THEREFOR
Harry H. Whited, Barberton, Ohio, and John E. Lydle, Box 1094, Akron, Ohio 44309; said Whited assignor to said Lydle
Filed July 22, 1965, Ser. No. 474,021
13 Claims. (Cl. 157—1.17)



1. A tire-changing device as for changing a tire assembled on a wheel rim having tire bead seats and bead-retaining flanges, and wherein the tire and rim assembly is attachable on a support of the type including a rigid stem for extension axially of the wheel rim, comprising: a rigid member having means thereon for fixedly supporting the same with respect to a peripheral edge of said rim flange; relatively fixed and movable elements carried by said member to extend in axially spaced relation outwardly of said rim flange; a tool carried by said movable element for engagement with a portion of the tire adjacent said peripheral edge; and power means mounted between said elements for relatively moving the same to urge said tool against said portion of the tire to release the corresponding tire bead from its rim seat; said rigid member including a hub provided with a bore therethrough for sliding reception of said stem, whereby any tilting of said rigid member in axial direction will accomplish a wedging grip of hub portion on the stem for affixing said rigid member thereon in opposition to bead-releasing engagement of said tool against said portion of the tire.

3,301,305
COMBUSTION APPARATUS FOR A BOILER
J D Kimmel, Houston, Tex., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 5, 1965, Ser. No. 506,504
10 Claims. (Cl. 158—1.5)

1. A burner assembly adapted to be mounted on a firepot and in alignment with a combustion throat thereof, said burner assembly comprising a tubular holder for a fuel nozzle axially aligned with said combustion throat, a main spinning cone extending at a substantially 45° angle to a plane intersecting at right angles the axis of said holder and throat for directing a spinning blast of air toward the fuel spray discharged from a nozzle received in said holder, a secondary spinning cone extending at a substantially 15° angle to a plane intersect-



ing at right angles the axis of said holder and throat for directing a second spinning blast of air toward the fuel spray and being spaced closer to said firepot than said main spinning cone, the main spinning cone being larger than said secondary spinning cone to thereby discharge a larger blast of air, and means for spacing the cones a slight distance from the firepot to define therebetween a small air gap.

3,301,306
COMBINATION PENCIL TYPE AND HEAVY DUTY BURNER
Carl E. Finley and Harry A. Mitchell, Sycamore, Ill., assignors to Turner Corporation, Sycamore, Ill., a corporation of Illinois
Filed Mar. 23, 1964, Ser. No. 354,015
7 Claims. (Cl. 158—27.4)



1. In a gas burning torch for producing two distinct flame patterns in a single structure, a gas burner head assembly comprising,
an elongated burner body member having a main passage extending axially therethrough for receiving gas from a source at increased pressure and for discharging the gas at an outlet end thereof,
a tubularly shaped flame tube surrounding portions of said body member and extending beyond the outlet end thereof,
said flame tube being radially spaced from said body member and being open at the outlet end thereof and being closed at the opposite end thereof about said body member,
first and second axially spaced passageway means formed in said body member and extending transversely relative to said main passage,

said first passageway means communicating said main passage with ambient air outside said body member and said second passageway means delivering air-gas mixture from said main passage to said flame tube,

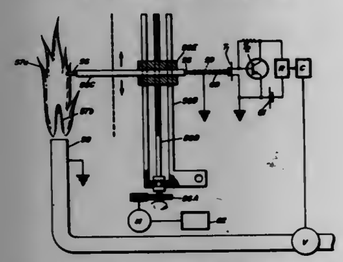
valve means formed on said flame tube for slidably carrying said flame tube on said body member and for selectively opening said second axially spaced passageway means into said flame tube whereby a pencil point type flame is formed at said outlet end when said second axially spaced passageway means is open to said flame tube and a heavy duty blow torch type flame is formed at said outlet end when said second axially spaced passageway means is closed, and

valve actuating means connected to said valve means for selectively actuating said valve means.

3,301,307
DEVICE FOR DETECTING THE CONFIGURATION OF A BURNING FLAME

Susumu Nishigaki, Kazuo Kobayashi, and Makoto Noda, Nagoya, and Takeshi Kajita, Ama-gun, Japan, assignors to NGK Insulators, Ltd., Mizuho-ku, Nagoya, Japan, a corporation of Japan

Filed Aug. 24, 1964, Ser. No. 391,531
Claims priority, application Japan, Aug. 29, 1963, 38/45,935; Nov. 12, 1963, 38/60,578; Nov. 20, 1963, 38/62,254, 38/62,255; Jan. 18, 1964, 39/1,999; Feb. 5, 1964, 39/5,645
6 Claims. (Cl. 158—28)



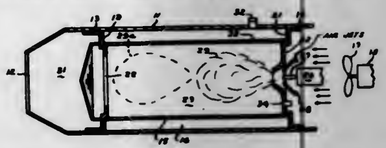
1. A device for detecting the configuration of burning flame which comprises at least one detecting electrode made of a heat resisting material selected from the group consisting of heat resistant metal, electrically conductive ceramic, a compound of metal and ceramic, and a combination of such materials, inserting at least a tip of said electrode into a burning gaseous flame issued from a burner using gaseous and liquid fuels, an amplifier connected to said electrode for amplifying the voltage difference detected between said detecting electrode and ground, an indicating device connected to be operated by the amplified voltage difference, a driving device for moving said electrode periodically in the flames to detect the configuration of flame and means operatively connected to said amplifier for analyzing and supervising said flame configuration.

3,301,308
SAFETY CONTROL FOR PORTABLE HEATERS AND LIKE EQUIPMENT

Eugene C. Briggs, Dayton, Ohio, assignor to Master Consolidated, Inc., Dayton, Ohio, a corporation of Ohio

Filed Sept. 8, 1965, Ser. No. 485,770
3 Claims. (Cl. 158—28)

1. In a safety control circuit for a space heater or like equipment including a housing having means forming therein a combustion chamber having opposite ends, one end being open to atmosphere, syphon nozzle means at the opposite end, means for causing delivery of fuel through said nozzle activated by a power means, means for blowing secondary air through said housing from said opposite end toward and through said one end, a main circuit segment for delivery of power to said power means, said housing having a lateral opening near said opposite end, light sensitive means mounted to sight through said opening for the presence or absence of flame light in said combustion chamber, said light sensitive means providing increased electrical resistance in responsive either to extinguishing of the flame or to a projecting forward of the flame in the chamber due to insufficient secondary air, the flame being normally in the said opposite end of said chamber in line with said lateral

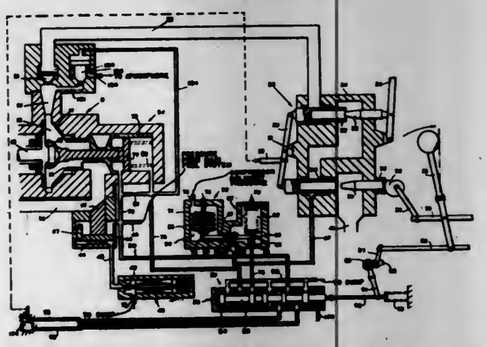


opening and moving forwardly toward the said one end of said chamber attempting to draw air through the open end of said chamber to support combustion upon a lack of secondary air, said chamber having a length to enable said flame to move forwardly a distance placing it out of line with said lateral opening, and a branch electrical control circuit segment incorporating said light sensitive means, said main circuit segment including a thermally sensitive circuit breaker and a heater therefor, said light sensitive means being in the branch circuit in bypassing relation to said heater and functioning to induce said heater to open said thermally sensitive switch in absence of sensing flame light in said combustion chamber.

3,301,309
FUEL CONTROL SYSTEMS FOR GAS TURBINE ENGINES

Stanley R. Tyler, Cheltenham, England, assignor to Dowty Fuel Systems Limited, Cheltenham, England

Continuation of application Ser. No. 228,956, Oct. 8, 1962. This application Jan. 21, 1965, Ser. No. 428,602
4 Claims. (Cl. 158—36.3)

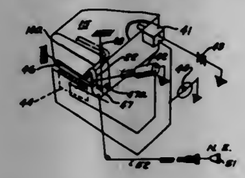


1. In a liquid flow system which is adapted to supply liquid under two sets of operating conditions, a centrifugal pump having an inlet connection and an outlet connection, means for controlling the flow of liquid into the pump by throttling the inlet connection, means for controlling the flow of liquid out of the pump by throttling the outlet connection, means operable to program the operation of the inlet and outlet flow control means whereby the inlet flow control means is caused to throttle the inlet connection under one set of operating conditions, and the outlet flow control means is caused to throttle the outlet connection under the other set of operating conditions, and means interconnecting the inlet and outlet flow control means whereby each flow control means is opened fully to flow and therefore rendered inoperative to throttle its respective connection, when the other of the flow control means is caused to throttle its respective connection.

3,301,310
FUEL SYSTEM

Henry Sperber, 20214 Berg Road, Detroit, Mich. 48219, and David Zapller, 5734 N. Spaulding, Chicago, Ill. 60645

Filed Jan. 14, 1965, Ser. No. 425,563
3 Claims. (Cl. 158—46.5)

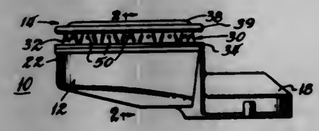


1. An emergency reserve fuel tank arrangement for internal combustion engine fuel system comprising regular fuel tank means and fuel pump means for drawing the fuel from the regular fuel tank means to the internal combustion engine, said arrangement comprising a reserve fuel tank in the fuel system between said regular tank and said fuel pump, first tubing means connecting said regular tank to said reserve tank to enable fuel to flow from said regular tank means to said reserve tank second tubing means connecting said reserve tank to said fuel pump, said second tubing means comprising a movable section of tubing inserted into said reserve tank having a normal and an emergency position, said movable section of tubing bent at 90° to the second tubing means at the point of insertion and having its orifice at the top of said reserve tank when said movable section is in the said normal position, control means for rotating said bent tubing to position the orifice at the bottom of said reserve tank when said valve is in said emergency position, said control means comprises lever means attached to said bent tubing, cable means attached to said lever means, solenoid means for actuating said lever to rotate said bent tubing from said normal position to said emergency position, sensing means to sense an empty condition of said regular fuel tank means to energize said solenoid means, and latching means for retaining said bent tubing in said emergency position until manually released.

3,301,311
GAS BURNER

Charles E. Stohrer, Jr., Chicago, and Arthur H. Sears, Harvey, Ill., assignors to Harper-Wyman Company, Chicago, Ill., a corporation of Illinois

Filed May 1, 1964, Ser. No. 364,158
4 Claims. (Cl. 158—116)

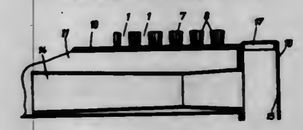


1. A gas burner cap having an annular discharge port defining region including a plurality of angularly spaced apart circular ports and a pair of discrete slots between each pair of ports, said slots being narrow and vertically elongated and extending above and below the circular ports, and the pair of slots between each pair of circular ports being inclined upwardly and away from each other and also converging toward each other in the direction of the exterior of the burner.

3,301,312
GAS BURNERS

Rolf Buns, Blocherstrasse 9, Hamburg-Altona, Germany

Filed Feb. 11, 1965, Ser. No. 431,917
Claims priority, application Germany, Feb. 13, 1964, B 75,409
9 Claims. (Cl. 158—116)



1. In a gas burner comprising an elongated casing having a longitudinal primary distribution chamber, said casing having a longitudinal opening in said chamber; a nozzle plate assembly structurally engaging the opening in the casing and comprising a row of individual nozzles separately upstanding from the casing, said nozzles being disposed in parallel, spaced apart relation transversely of the longitudinal direction of the opening, said nozzles being composed of individual and separable nozzle elements, said nozzle elements having solid bases secured together on the casing in coplanar contiguous relation with the burner casing opening, said bases having opposing side edges and upstanding sides on said edges disposed transversely of the burner casing opening, the sides of adjacent nozzle elements being in adjoining relation and having contacting end portions which lie substantially in the boundary plane between the adjacent nozzle elements and having intermediate portions between said contacting end portions which are spaced apart from each other and spaced inwardly from the boundary plane to form the interior gas flow open cross-section of the nozzles whereby secondary air can flow freely around the entirety of each individual nozzle with each nozzle having an individual flame emitting therefrom and the secondary air flowing to each individual flame from all sides.

3,301,313
HYDRAULIC DRIVING MEANS FOR OPERATING HATCH COVERS

Herbert Jan Schurink, Hilversum, Netherlands, assignor to Aktiebolaget Götaverken, Goteborg, Sweden

Filed Jan. 23, 1964, Ser. No. 339,812
Claims priority, application Netherlands, Feb. 1, 1963, 288,484
1 Claim. (Cl. 160—188)

An hydraulic operating mechanism for a hatchway cover or the like having first and second cooperating sections movable in relation to a fixed structure, comprising, in combination,

a double-acting hydraulic motor fixed to said first cover section and to said second cover section in such a manner that it constitutes a hinge betwen said two cover sections;

a generally cylindrical tank for a supply of hydraulic liquid, said tank having substantially the same diameter as, and being arranged coaxially with, said hydraulic motor;

a reversible hydraulic pump enclosed within said tank;

a reversible electric motor driving said pump;

a cable supplying current to the electric motor;

a switch in the cable to reverse the direction of current to the electric motor;

a first hydraulic connection between one side of said pump and one side of said hydraulic motor and a second hydraulic connection between the other side

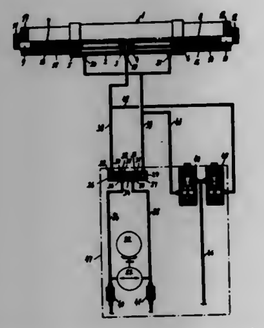
of said pump and the other side of said hydraulic motor to constitute a self-contained hydraulic circuit in which either of said hydraulic connections may convey fluid to the motor while the other connection returns fluid therefrom;

a spring-loaded non-return valve in each of said first and second hydraulic connections adapted to be opened under the influence of hydraulic liquid pressure;

a common valve housing for said valves;

a bore in said housing;

a piston slidably disposed in said bore between the valves;



each of said first and said second hydraulic connections from the pump being connected to the housing between the pertaining valve and the piston in such a manner that hydraulic pressure produced by the pump in either of said hydraulic connections causes the pertaining non-return valve to open and shifts the piston in the bore so as to open also the non-return valve in the other hydraulic connection which acts as return flow connection, said hydraulic operating mechanism being such that all operating parts are readily accessible when the hatch covers are open but are well protected when the hatch covers are closed.

3,301,314

METHOD AND MEANS FOR INCREASING THE HEAT TRANSFER COEFFICIENT BETWEEN A WALL AND BOILING LIQUID

Richard F. Gaertner, Rexford, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 2, 1964, Ser. No. 348,727
6 Claims. (Cl. 165—1)



6. A method for providing durable nucleation sites in a metal heat transfer surface to be subjected to temperature cycling in the heating of a liquid disposed thereagainst comprising the steps of:

(a) forming small macroscopic cavities in said surface,

(1) said cavities being arranged in spaced relationship and substantially uniformly distributed over said surface,

(b) introducing deposits of low surface energy material to partially fill said cavities,

(1) said material being in the form of thin film bonded to the side and bottom area of the interior of said cavities and having a contact wetting angle with the liquid of at least about 80°, and

(c) maintaining the non-cavity portion of said surface free of said material.

3,301,315

THERMAL CONDUCTIVE CONNECTION AND METHOD OF MAKING SAME

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Paul E. Woodie, Paul J. Klefer, Jr., Charles W. Wyble and Charles A. Harper

Filed Mar. 12, 1965, Ser. No. 439,489
7 Claims. (Cl. 165—1)



4. A method of forming a cleavable, thermal conductive connection between a heat producing body and a heat sink comprising:

coating said heat sink with a relatively thin layer of high molecular weight plastic;

applying a thermal conductive, low vapor pressure, hydrocarbon grease on said plastic layer;

removing the excess grease so that only a relatively thin residual layer of grease remains on said plastic layer;

applying a layer of unset, thermal conductive adhesive to the heat producing body;

positioning the heat sink with said plastic and grease layer thereon in abutting relationship with the heat producing body with said adhesive thereon so that said adhesive and said grease layers are in direct contact; and

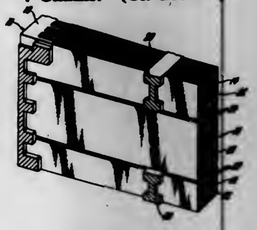
allowing said adhesive to set to effect a readily separable thermal connection between the heat producing body and the heat sink.

3,301,316

REGENERATOR MATRIX

George W. Mason, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 24, 1964, Ser. No. 391,439
4 Claims. (Cl. 165—8)



1. A matrix for a radial-flow rotary regenerator comprising, in combination,

two spaced coaxial annular end rims defining the ends of the matrix

an intermediate annular body extending from one end rim to the other and fixed to the end rims to provide a structural connection between the end rims

an outer annular body extending from one end rim to the other and spaced radially outwardly from the intermediate body

an inner annular body extending from one end rim to the other and spaced radially inwardly from the intermediate body

the three said annular bodies comprising heat exchange material porous to flow radially of the matrix through the bodies

the outer and inner annular bodies each comprising a plural number of annular sections disposed end-to-end between the end rims

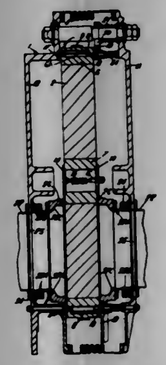
and rigid annular support rings disposed between and connecting adjacent sections of the outer and of the inner annular bodies.

3,301,317

THERMAL REGENERATORS

John H. Weaving, Knowle, Solihull, William R. Bourn, Moseley, Birmingham, and Willie S. Emmett, Kings Norton, Birmingham, England, assignors to The Austin Motor Company Limited, Birmingham, England

Filed Sept. 21, 1964, Ser. No. 397,943
Claims priority, application Great Britain, Sept. 24, 1963, 37,487/63
4 Claims. (Cl. 165—8)



1. A regenerative heat-exchanger of the kind having a rotary disc-type matrix enclosed in a casing, and designed to transfer heat from the exhaust gases of a gas turbine to the intake-air supplied to the turbine by an associated compressor; in which the casing contains aligned intake-air ducts which have a substantially elliptical cross-section where they resiliently abut opposite faces of the matrix through interposed fluid-pressurized sealing means conforming to the contour of the associated duct and enclosing approximately from one-third to one-half of the face area of the matrix, and in which the intake-air ducts within the casing are entirely surrounded by, and are in contact with, the exhaust gases flowing through the casing, said casing comprising two main castings of substantially circular form, spaced apart axially by at least three tie members which constrain them from axial separation, and interconnected by a cylindrical heat-resistant bellows sealing the casing at its periphery.

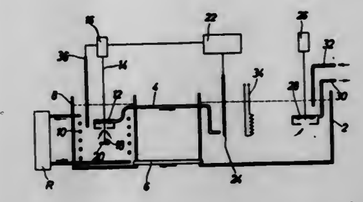
3,301,318

SYSTEM FOR STABILIZING THE TEMPERATURE OF A BATH AT A LOW LEVEL

Peter Haake, 6 Stettinerstrasse, Karlsruhe, Germany

Filed Mar. 10, 1965, Ser. No. 438,693
Claims priority, application Germany, Mar. 19, 1964, H 52,103
5 Claims. (Cl. 165—40)

4. In a system for stabilizing the temperature of a bath at a low level, the combination comprising a vessel containing a bath, a container, means for circulating the liquid of said bath from said vessel to said container and back from said container to said vessel, said means including a pair of pipes each extending between said vessel and said container and a pump communicating with at least one of said pipes, driving means for driving said



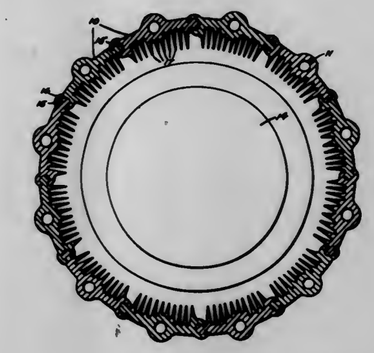
pump, cooling means for passing a cooling medium through said container in heat-exchanging relationship to said liquid, a source of a cooling fluid connected with said cooling means, agitating means mounted in said container for agitating the liquid contacting said cooling means, and means for varying the speed of operation of said pump.

3,301,319

THERMAL SHROUD

Joseph B. Merrill, Cohasset, Mass., assignor to High Vacuum Equipment Corporation, Hingham, Mass., a corporation of Massachusetts

Filed Mar. 23, 1965, Ser. No. 453,859
4 Claims. (Cl. 165—133)

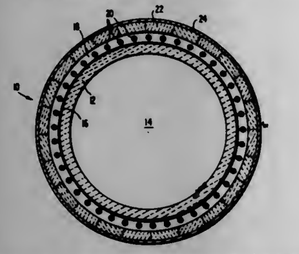


1. A heat absorbent and radiant panel for use in making a thermal shroud embodying a plurality of said panels wherein each panel comprises a body portion having an outer side and an inner side and a number of spaced parallel inwardly extending ribs on said inner side, each of said ribs being of generally triangular cross-section and having side walls diverging toward said body portion, said body portion having curved surfaces on said inner side between adjacent ribs said surfaces defining, with the side walls of the adjacent ribs generally parabolic troughs parallel to the ribs, said side walls being provided with longitudinal furrows, each of said furrows having an inner surface disposed at such an angle as to deflect radiation impinging thereon toward the confronting adjacent side wall and an under surface facing toward said parabolic trough.

3,301,320
APPARATUS FOR CONTAINING HOT METAL-ATTACKING GASES SUCH AS HYDROGEN AND HYDROGEN SULPHIDE UNDER PRESSURE WHEREBY CHEMICAL AND THERMAL STRESSES ARE SEPARATED FROM HOOP STRESS

Morgan G. Huntington, Galesville, Md., assignor to Pyrochem Corporation, Salt Lake City, Utah, a corporation of Utah

Filed Aug. 7, 1964, Ser. No. 388,176
6 Claims. (Cl. 165—134)



1. Apparatus for containing metal-attacking gases such as hydrogen and hydrogen sulphide comprising:

a wall structure defining a chamber for containing gases;

said wall structure including an inner shell of material which is resistant to embrittlement by the gases to be contained in said chamber;

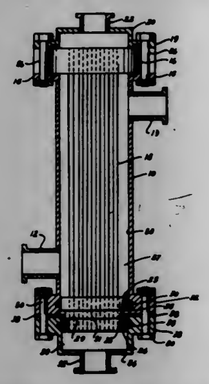
an outer shell surrounding said inner shell and defining therebetween a jacket filled with a suitable gas at a pressure which is at least substantially equal to the pressure of the metal-attacking gases contained within said inner shell and

at least one tube disposed in said jacket for carrying a cooling fluid.

3,301,321
TUBE-SHELL HEAT EXCHANGER

William H. Poore, Livonia, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed June 21, 1965, Ser. No. 465,374
9 Claims. (Cl. 165—178)

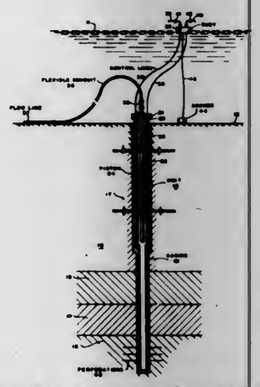


1. A heat exchanger comprising a shell; flexible fluid tubes extending within the shell; means floatably supporting the tubes adjacent one end of the shell; a header located at said one end of the shell and operable to admit fluid to or withdraw fluid from the tubes; detent means rigid with the header and shell for limiting axial movement of the floating tube support means; first seal means located between the shell and tube support means for sealing the shell space from atmosphere; and second seal means located between the header and tube support means for sealing the header space from atmosphere.

3,301,322
SUBMERGED WELL APPARATUS

Norman Newsome, New Orleans, La., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Jan. 13, 1964, Ser. No. 337,203
5 Claims. (Cl. 166—.5)

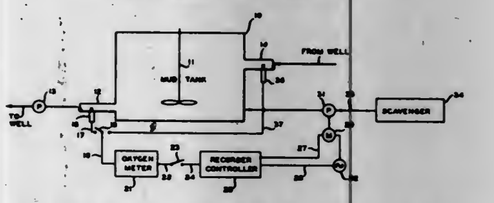


1. Apparatus for use on a submerged well having a pipe string for flow of fluid which comprises means forming a chamber on the upper end of said well, a movable member arranged in said chamber for movement from a first to a second position and vice versa, the upper end of said pipe string being arranged within said movable member for movement with said movable member and for matingly engaging with the major length of said pipe string, a piston carried by said movable member, a first sealing member arranged above said piston for sealing between said movable member and the upper end of said chamber, a second sealing member arranged below said piston for sealing between said movable member and the wall of said chamber, and means for injecting fluid between said first sealing member and said piston and between said second sealing member and piston for movement of said movable member.

3,301,323
CONTROL OF DRILLING FLUID PROPERTIES

Edwin D. Parsons, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 19, 1963, Ser. No. 331,828
13 Claims. (Cl. 166—1)

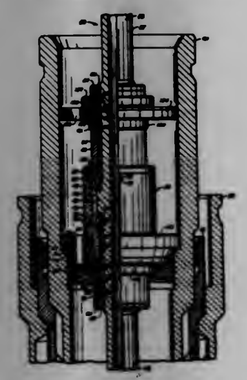


7. A method for controlling the content of a contaminant selected from the group consisting of oxygen, carbon dioxide, and hydrogen sulfide in a drilling fluid while said fluid is being continuously circulated into and out of a well, which method comprises, in combination, the steps of: continuously measuring the content of said contaminant in said drilling fluid; and adding to said drilling fluid during said circulation, in accordance with said measurement, an amount of a scavenger material sufficient to reduce and maintain said contaminant content to a level of less than 1 part by weight per million parts by weight of said drilling fluid.

3,301,324
SWIVEL FOR SUPPORTING DRILL STRING IN SUBMERGED CASING HEAD

Samuel H. Smith, Oklahoma City, Okla., assignor to A-1 Bit & Tool Company, Oklahoma City, Okla., a corporation of Texas

Filed June 12, 1964, Ser. No. 374,719
13 Claims. (Cl. 166—.5)



1. A swivel adapted for connection in a drilling string for supporting a well tool in a well casing, comprising:

an inner tubular member having upper and lower open end portions arranged for connection with the drilling string, said inner tubular member having a circumferential flange extending radially from the medial portion thereof;

a tubular housing encircling the medial portion of said inner tubular member, said housing having an enlarged central portion forming a downwarly facing exterior shoulder;

thrust bearing means disposed between said circumferential flange and said housing for preventing relative up or down movement between said inner tubular member and housing;

annular bearing means disposed above and below said thrust bearing means for permitting relative rotational movement between said inner tubular member and housing; and,

an annular support member encircling and supported on said housing below said exterior shoulder in sliding engagement with said exterior shoulder and engageable with a well casing to prevent downward movement of said swivel relative to the casing.

3,301,325
PETROLEUM RECOVERY MATERIALS AND PROCESS

William B. Gogarty, Littleton, and Russell W. Olson, Denver, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 5, 1965, Ser. No. 506,603
4 Claims. (Cl. 166—9)

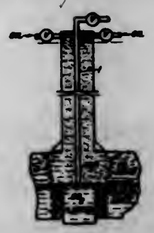
1. A process for the recovery of oil from subterranean oil-bearing formations comprising injecting into said oil-bearing formation through at least one injection well drilled therein microemulsions utilizing liquefied petroleum gas in the external phase, driving the microemulsion toward at least one recovery well drilled into said subterranean formation, and recovering crude petroleum through said recovery well.

2. Micellar systems comprising microemulsions utilizing liquefied petroleum gas as the external phase.

3,301,326
METHOD FOR SELECTIVELY INCREASING THE POROSITY AND PERMEABILITY OF SUBTERRANEAN GEOLOGIC FORMATIONS

Hugh F. McNamer, % The Elkus Acid Co., Cut Bank, Mont. 59427

Filed Dec. 31, 1963, Ser. No. 334,790
7 Claims. (Cl. 166—29)



1. A method for treating subterranean geologic formations in an area traversed by a well borehole in order to selectively increase porosity and permeability of predominantly oil and gas producing zones in the area while leaving the porosity and permeability of predominantly water producing zones substantially little affected, comprising the steps of: lowering the temperature of the formation in said area sufficiently to freeze water in said predominantly water producing zones to define temporary ice blockage in said predominantly water producing zones, displacing a quantity of fluid into said area of the borehole, said fluid having as an essential characteristic the ability to increase porosity and permeability of said geologic formations in said area through chemical reaction therewith; pressurizing said fluid in said area sufficiently to force said fluid into said predominantly oil and gas producing zones, while said temporary ice blockage prevents substantial penetration of said fluid into said predominantly oil and gas producing zones, said fluid being insufficiently pressurized to fracture said geologic formations in said predominantly oil and gas producing zones, whereby the porosity and permeability of the primarily oil and gas producing zones is increased and the porosity and permeability of the predominantly water producing zones remains substantially the same as it was prior to treatment of said area.

3,301,327
WELL STIMULATION METHOD

John T. Patton and Francis E. Campion, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,613
4 Claims. (Cl. 166—42)

1. A method for the treatment of a well that penetrates a formation having an oil-producing zone and a water-producing zone, which comprises first injecting into said formation at least one barrel of surfacant-free oil per foot of formation thickness, then injecting at least one barrel of surfactant solution per foot of formation thickness, and thereafter resuming the production of fluids from said well.

3,301,328
WELL STIMULATION

Francis E. Campion, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,929
18 Claims. (Cl. 166—42)

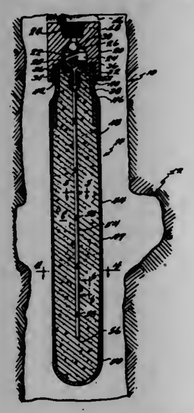
1. A method for treating a subterranean oil-bearing formation surrounding a wellbore which comprises injecting into said formation through said wellbore a solvent containing from about 0.01 to about 5 percent by volume

of a mixture of from about 50 to 70 percent by volume of an alkali metal salt of a diester of sulfosuccinic acid having C_8 aliphatic ester groups, from about 20 to about 40 percent by volume of an alkali metal salt of a diester of sulfosuccinic acid having C_8 aliphatic ester groups, and from about 5 to about 20 percent by volume of a long chain substituted polyethyleneoxyethanol having the formula $R(C_6H_4)_TO(CH_2CH_2O)_ZCH_2CH_2OH$, where R is an aliphatic group containing X carbon atoms, X is an integer from 7 to 21, Y is 0 or 1, Z is an integer from 6 to 28, and $0.475X-0.33(Z+1)=0.4$ to 1.4.

3,301,329
TOOL FOR CEMENTING AND/OR PLUGGING A WELL OR THE LIKE

John P. Martin, Apartado, Postal 1351, Guatemala, Guatemala, assignor, by direct and mesne assignments, of one-half to John N. Loomis

Filed May 15, 1964, Ser. No. 367,830
10 Claims. (Cl. 166—187)



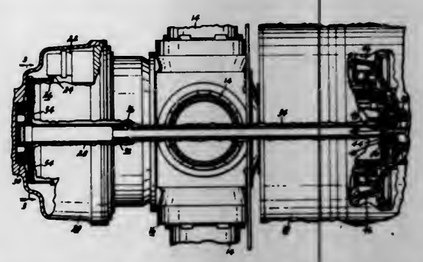
1. In a tool for cementing a well at any pre-selected point in the well, the tool being detachably carried on a drill string pipe or the like, the combination comprising: a sub detachably connected to the drill string pipe and having a passageway therethrough for the flow of fluid; valve means within the passageway in said sub for permitting fluid to flow downwardly through the passageway; a rigid sleeve member detachably carried on the lower end of said sub; an elastomeric elongated sock attached to the lower end of said sleeve member; an elongated hose having a plurality of pressure operated slits therein spaced longitudinally along the same, said hose being closed at its lower end; and means connecting the upper end of said hose to the sub and placing the interior of the same in communication with the passageway in said sub beneath said valve means.

3,301,330
PROPELLER OIL LEVEL CONTROL

Calvin C. Covert, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 16, 1964, Ser. No. 404,450
8 Claims. (Cl. 170—160.23)

4. In a variable pitch propeller having a hub, a gear reduction unit attached to the rear of said hub and a regulator reservoir attached to the front of said hub, in combination including, a stationary support about which said hub and said regulator structure rotates, a stationary pump power gear connected to said stationary support and extending into said regulator reservoir, said regulator reservoir being partially filled with oil, pump means drivingly connected with said pump power gear and disposed within said regulator structure and rotatable therewith whereby said pump means will be activated incident to rotation of said regulator structure about said stationary pump power gear and the oil in said regulator structure forms a torus during rotation thereof, stationary, pressure developing scoop means on said pump power gear with the end thereof immersed in said torus of oil when the oil level in said regulator structure is normal, a lubricating oil system for said gear reduction unit, a

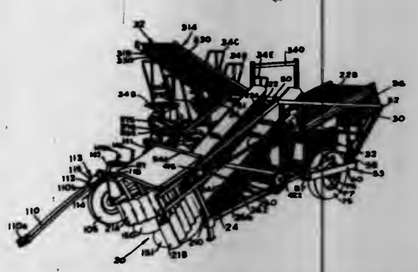


bushing having an orifice connected with said oil system for deriving a source of oil under constant, predetermined pressure communicating with said scoop means, and means for bleeding oil from said source when the pressure developed at said scoop means is equal to the pressure of said source, said oil flowing to said regulator structure when the pressure of said scoop means is less than the pressure of said source whereby the oil in said reservoir structure will be automatically maintained at the normal level.

3,301,331
METHOD OF AND APPARATUS FOR HARVESTING VINE CROPS

Olin L. Looker, Stockland, and Edwin F. Greedy, Hoopeston, Ill., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Continuation of application Ser. No. 127,199, July 27, 1961. This application Dec. 3, 1964, Ser. No. 415,633
32 Claims. (Cl. 171—1)

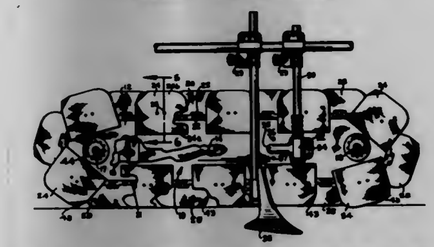


1. A method of harvesting a vine crop which includes vines growing in a row and fruit both loose on the ground around the vines and fruit attached to the vines comprising the steps of; severing vines underground and scooping up dirt, severed vines and their attached fruit, as well as loose fruit lying on the ground, whereby severed vines, attached fruit and loose fruit constitute a mass of scooped-up material, conveying said mass through a separating stage where loose fruit and dirt are separated from said mass, and shaking said vines subsequently to said separating stage thereby separating said attached fruit from the vines, said loose fruit being separated from said mass before said shaking step so as not to subject said loose fruit to said shaking step.

3,301,332
TRACK LAYING CULTIVATOR FENDER

Kermit H. Burgin, R.R. 1, Box 212, Boone County, near Whitestown, Ind. 46075

Filed Feb. 1, 1965, Ser. No. 429,575
7 Claims. (Cl. 172—509)

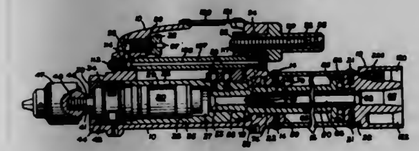


1. A cultivator fender for controlling flow of soil toward a crop row, comprising a frame;
an endless belt shiftably carried and guided around the frame through upper and lower flights;
a series of vanes fixed one after another to and along one side of said belt and extending beyond the belt in an approximately vertical plane, tne vanes along the lower flight extending downwardly from the belt, and the vanes along the upper flight extending upwardly from the belt;
means supporting said frame from the cultivator to position one or more vanes on the under flight in contact with the soil;
said vane contact with the soil being temporarily stationary and inducing travel of the belt around said frame under forward travel of the cultivator as said frame travels accordingly with the cultivator; and
said belt travel picking up successively a rear most vane of the stationary ones and lowering a foremost vane coming from the upper belt flight into soil contact ahead of the intermediate stationary vanes.

3,301,333
COMPACT AUTOMATIC MACHINE TOOL

Eugene Linsker, Dayton, Ohio, assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 27, 1964, Ser. No. 385,262
9 Claims. (Cl. 173—19)

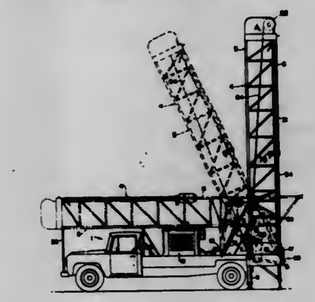


1. A compact power tool of the character described comprising, means defining a housing including a forward portion and a rear tubular portion, a piston slidably mounted in said tubular portion, a piston rod extending from said piston forming a fluid linear action motor, a headpiece supported for linear movement within said housing and secured for movement with said piston, a rotary fluid motor mounted in said headpiece, supply means for directing power fluid to said motor, means for mounting a cutting tool for rotation by said rotary motor and for linear movement with said headpiece, a fitting extending from said tubular portion and including passageways for supplying fluid pressure to said linear action motor and to said supply means of said rotary motor, pressure-operated valve means mounted within said fitting for controlling fluid through said passageways to said linear action motor, an arm extending laterally from said headpiece and mounted for linear movement with said headpiece, valve means mounted on said forward portion of said housing and arranged to control the operation of said pressure-operated valve means, and means adjustably mounted on said arm to actuate said valve means on said housing for limiting the forward movement of said linear action motor.

3,301,334
DRILL RIG

Ira D. Odgers and Marlowe A. Nelson, Iron River, and Walter W. Svendsen, Gaastra, Mich., assignors to Odgers Drilling Inc., Iron River, Mich., a corporation of Michigan

Filed June 25, 1964, Ser. No. 378,016
7 Claims. (Cl. 173—43)



1. In a drill rig, the combination comprising:
(a) a frame,
(b) an elongated mast disposed on said frame,
(c) first releasable pivot means defining a first axis and adapted to support said mast on said frame,
(d) second releasable pivot means defining a second axis parallel to and vertically disposed in relation to said first axis to support said mast on said frame,
(e) means to pivotally move said mast about one of said axes when the pivot means of the other of said axes is released,
(f) a drill head comprising drill rod chucking and rotating means mounted on said mast for movement therealong,
(g) support means for said drill head,
(1) said support means being actuatable to selectively move said drill head along the said mast in a desired direction,
(2) and said support means being pivotable about a third axis parallel to said first and second axes,
(h) means to pivot said support means about said third axis to move said drill rod chucking and rotating means transversely of said mast,
(i) said drill head being pivotable about a fourth axis,
(j) and hoist means mounted on said mast and pivotable therewith.

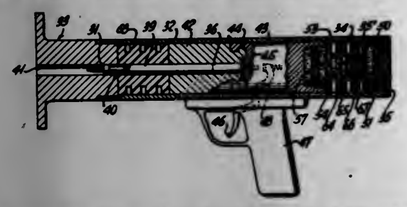
3,301,335
ENERGY ABSORBING STRUCTURE

Thomas E. Snelling, Rte. 2, Box 792, Boring, Oreg. 97009

Filed Apr. 20, 1964, Ser. No. 360,941
28 Claims. (Cl. 173—162)

12. In a tool of the character indicated, an enclosing frame, a reaction mass supported within said frame for limited relatively free longitudinal movement on an impact-driving axis, impact-driving means having a reactively based relation with said mass and having an impact-driving output in a forward direction on said axis, and recoil absorbing means contained within said frame and positioned to be compressed between said mass and a rear part of said frame as said mass is displaced rear-

wardly on said axis upon operation of said impact-driving means, said recoil-absorbing means comprising an elongated mass of foamed plastic material having an outer



limit peripherally confined by said frame and characterized by different effective cross-sectional areas in spaced planes normal to said axis.

3,301,336
METHOD AND APPARATUS FOR DEEP SEA BOTTOM CORE SAMPLING
Wadsworth W. Mount, Mountain Ave., Warren Township, Somerset County, N.J. 08873
Filed Mar. 24, 1964, Ser. No. 354,400
20 Claims. (Cl. 175—5)



1. A core sampler for sea bottom use, comprising a core tube, a weight suspended in part from the top of the core tube and in part from the ship and mounted for movement along the core tube, and cable means for raising the weight upwardly along the tube, so that a force is produced urging the tube downwardly when the tube is positioned at the bottom of the sea.

3,301,337
APPARATUS FOR COMPLETING A WELL
Arthur Vaughn, Monroe, La., and Carl Lasco Self, Birmingham, Ala., assignors to Alpha Trace, Inc., Longview, Tex.
Continuation of abandoned application Ser. No. 38,783, June 27, 1960. This application May 5, 1964, Ser. No. 390,496
15 Claims. (Cl. 175—22)

1. An apparatus for forcing a plurality of pipe segments from a borehole of a well laterally into a formation so as to form a flowway between the formation and the borehole comprising an elongated housing adapted to be lowered into the borehole, means for supporting a pipe segment in position so that it can be pushed laterally of the housing into the formation, means in the housing for holding a supply of said segments and for feeding them one-by-one into said supporting means as a preceding segment is pushed therefrom, force transmitting means for pushing said segments without rotation from said supporting means out into the formation including a part mounted for reciprocation transversely of the housing in the direction the segments are to be pushed and positioned to engage the rear end of a segment in the supporting means to apply a pushing force to such segment, force generating means in said housing including means movable longitudinally of the housing to generate a longitudinal force with respect to said housing, force multiplying means connecting said longitudinally movable means and said force transmitting means and converting and multiplying said longitudial force into a greater transverse force



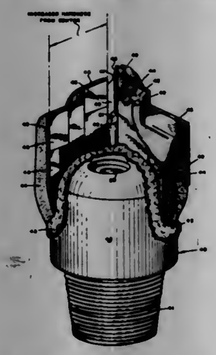
applied to said force transmitting means to move it in one transverse direction to push the segment laterally of the housing, said force multiplying means being a wedge longitudinally reciprocal in the housing and engaging the force transmitting means to move the latter laterally as the wedge is reciprocated and means for moving said force transmitting means in an opposite transverse direction after the segment has been pushed laterally of the housing.

3,301,338
HOLLOW AUGER COUPLING
Robert E. Dickinson, Indianapolis, Ind., assignor to Mobile Drilling Company, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Dec. 30, 1963, Ser. No. 334,331
5 Claims. (Cl. 175—323)



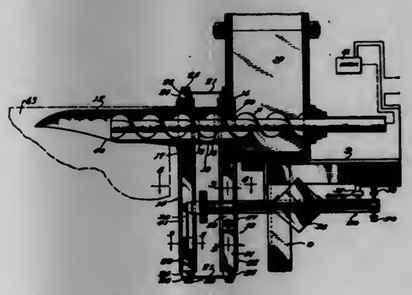
1. A hollow auger comprising a pair of stems each having a flight on the external periphery thereof, one of said stems having an external thread at one end, the other of said stems having a complementary internal thread at one end, said stems being connected together by said external and internal threads with said flights in alignment with each other, radially extending projections on the external surfaces of said stems, said projections having aligned openings therethrough, and a pin received through said openings and blocking rotation of one of said stems relative to the other, said pin projecting externally of said auger from the opposite ends of said openings whereby said pin can be driven into said openings or out of said openings.

3,301,339
DRILL BIT WITH WEAR RESISTANT MATERIAL ON BLADE
Eugene S. Pennebaker, Jr., Corpus Christi, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed June 19, 1964, Ser. No. 376,439
9 Claims. (Cl. 175—387)



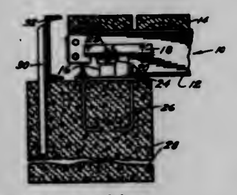
7. A drill bit adapted to be attached to a hollow drill string which comprises a body member, a plurality of spaced apart blades attached to said body member, each of said blades having a length no greater than the distance from the center of the body member to the outer edge of said blades, abrasive material of progressively increasing hardness on the leading face of each of said blades, said abrasive material providing progressively increasing wear resistance to each of said blades from the inner to the outer edge of each of said blades, and fluid passageways defined by said body member terminating in nozzles adapted to direct fluid to a point ahead of each of said blades.

3,301,340
TORQUE RESISTANT MOUNTING FOR FLOATING FRAME OF BAG FILLING MACHINE
Erwin M. Lau, Dolton, Ill., assignor to Black Products Co., Chicago, Ill., a corporation of Illinois
Filed Sept. 23, 1964, Ser. No. 398,564
5 Claims. (Cl. 177—60)



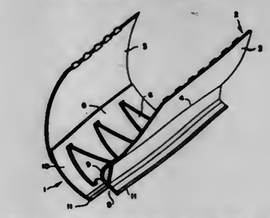
1. In an auger type bag filling machine having an auger, a motor for driving said auger, and switch means controlling the operation of said motor, scale mechanism comprising a stationary frame having knife edges secured thereto, a scale beam mounted on said knife edges for rocking movement, said switch being located adjacent to said scale beam and actuated by movement thereof, a vertically movable frame spaced forwardly of said stationary frame, a spout carried by said vertically movable frame, four leaf springs connecting said vertical movable frame to said stationary frame, each leaf spring being mounted at a corner of said vertically movable frame and being disposed in a horizontal plane to permit vertical movement of said vertically movable frame, and a pair of laterally spaced leaf springs disposed in a common vertical plane and connecting said vertically movable frame to said scale beam.

3,301,341
WEIGHBRIDGE SHOCK MOUNT
George H. Fathauer, Decatur, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Jan. 27, 1965, Ser. No. 428,304
4 Claims. (Cl. 177—184)



1. A shock mount comprising
(a) a first mounting member having an arcuate surface,
(b) a second mounting member having a flat surface, and
(c) an intermediate member having resilient material at opposite surfaces thereof, one of said surfaces of said intermediate member conformably shaped to and secured solely by bonding to said arcuate surface and another of said surfaces of said intermediate member directly opposite said one surface thereof conformably shaped to and secured solely by bonding to said flat surface, the respective surfaces of said intermediate member being entirely coextensive with said flat surface and said arcuate surface.

3,301,342
FLEXIBLE SKIRTS FOR GROUND EFFECT VEHICLES
Richard S. Jones and Alexander W. Prickett, Yeovil, Somerset, England, assignors to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Feb. 24, 1964, Ser. No. 346,971
Claims priority application Great Britain, Mar. 14, 1963, 10,117/63
6 Claims. (Cl. 180—7)



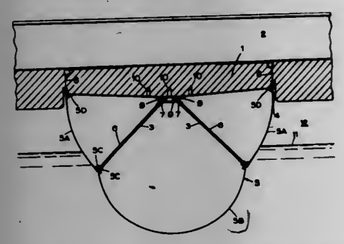
1. A ground effect vehicle including a flexible skirt assembly to retard the escape of the gaseous ground effect cushion, the flexible skirt assembly having an upper portion and a lower portion, both the upper and lower portions comprising inner and outer flexible walls, the lower portion comprising a plurality of segments, the segments of the lower portion being releasably connected to the

upper portion, the segments of the lower portion having overlapping ends, and means for securing said overlapping ends together.

3,301,343
INFLATABLE BUOYANCY CHAMBERS WITH VEHICLES EQUIPPED THEREWITH

Derek James Hardy, Cowes, and Michael Thomas Smith, East Cowes, England, assignors to Westland Aircraft Limited, Somerset, England

Filed July 2, 1964, Ser. No. 379,848
Claims priority, application Great Britain, July 27, 1963, 29,881/63
7 Claims. (Cl. 180—7)

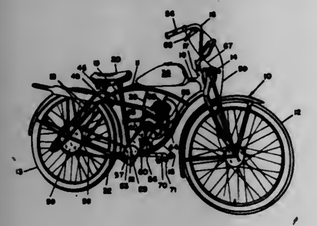


1. A pliable buoyancy chamber defined over at least a major portion of its surface by a pliable skin and furnished with apertures through which gas may be admitted into the chamber to inflate the skin and sucked out of the chamber to cause the skin to collapse, and a collapsible rigid linkage assembly inside the chamber for folding into a substantially flat plane very close to a wall forming part of the boundary of the chamber and for governing the folding of the skin in collapsing so as to provide a flat collapsed pack when deflated, said buoyancy chamber when inflated presenting lobes in cross-section, the lobes including a central lobe having a pliable skin which covers the skins of the other lobes when the chamber is in the collapsed condition, the skins of the other lobes then being folded beneath the skin of the central lobe.

3,301,344
MOTOR DRIVEN BICYCLE

Bruce Baldwin Mohs, 3525 Lake Mendota Drive, Madison, Wis. 53705

Filed Apr. 12, 1965, Ser. No. 447,427
3 Claims. (Cl. 180—33)



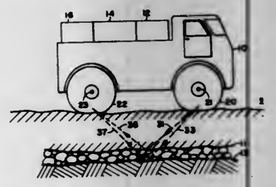
1. In combination with a bicycle having a hollow cylindrical pedal housing or the like and a frame having first and second frame elements extending from said housing, mechanism for driving the rear wheel of said bicycle comprising:

(a) a pair of metal bushings mounted in the pedal housing of said bicycle,
(b) a tubular hub pivotally mounted in said bushings,
(c) an elongated support member fixedly secured at its lower end to said tubular hub so as to be pivotable therewith between said first and second frame elements,
(d) a motor fixedly attached to the upper end of said support member, said motor having a drive shaft,
(e) a pair of springs connecting said motor and said support member to said first and second frame elements,
(f) a pair of bearings mounted in said tubular hub,
(g) a jack shaft rotatably mounted in the bearings in said tubular hub and having one end extending therefrom, said one end having a pair of sprockets fixedly mounted thereon,
(h) a drive chain connecting the drive shaft of said motor to one of said sprockets, and
(i) a second drive chain connecting the other of said sprockets to the rear wheel of said bicycle.

3,301,345
SEISMIC SURVEY SYSTEM

Bruce M. Carder, Las Vegas, Nev., assignor to Edgerton, Germeshausen & Grier, Inc., Bedford, Mass., a corporation of Massachusetts

Filed Feb. 8, 1965, Ser. No. 430,858
5 Claims. (Cl. 181—.5)

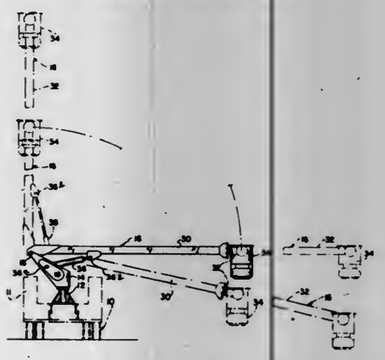


1. A seismic surveying system comprising a means for generating sound impulses mounted in a liquid medium contained within a first hollow rotatable member; a means for receiving reflected sound impulses mounted in a liquid medium contained within a second hollow rotatable member positioned in spaced apart relationship to said first member; and means for converting said received reflected sound impulses into a survey record.

3,301,346
MOBILE AERIAL TOWER

Curtis W. Verrell, Fairview Park, and James Howard Holan, Rocky River, Ohio, assignors to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey

Filed Jan. 13, 1965, Ser. No. 425,129
13 Claims. (Cl. 182—2)

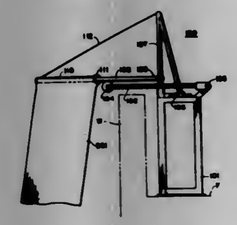


1. In an aerial tower comprising, a movable boom, a work platform rotatably supported on said boom, said boom being swingable in a generally vertical plane about a generally horizontal axis, motor means to swing said boom in said vertical plane, rotatable means operably connecting said platform to said boom in rotatating engagement, sheave means located on said boom towards said horizontal axis and adapted for selective non-rotation, compensating means mounted on said boom between said rotatable means and said sheave means and including shiftable carriage means disposed interiorly of the boom, flexible line means operably connected to said rotatable means, to said carriage means and to said sheave whereby said carriage means, said rotatable means and said sheave means coact to maintain said work platform level as said boom swings in said vertical plane.

3,301,347
LIFESAVING EQUIPMENT TO BE USED FOR STRUCTURES

Jisaburo Saita and Haruo Saita, both of 3 3-chome, Tokyo, Japan

Filed Oct. 15, 1964, Ser. No. 404,041
4 Claims. (Cl. 182—48)

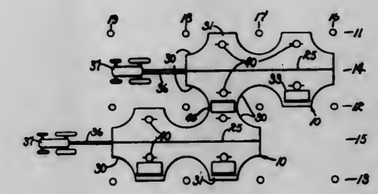


1. An emergency escape device comprising, in combination, an upright frame arranged to be mounted just inside a building exterior wall adjacent an exterior access, and including a pair of substantially rectangular upright side components, having substantially horizontal legs, and having an open inner end between said side components; a rotatable frame including a supporting frame component which is substantially triangular in lateral elevation and has a substantially rectangular base, and which is pivotally supported on said upper legs, intermediate the ends thereof, for swinging about a horizontal axis extending between said upper legs along an edge of said base; said supporting frame component being normally suspended within said upright frame for swinging upwardly through said open inner end to an upright position in which the free portion of said base is supported on a substantially horizontal rail interconnecting the outer ends of said upper legs; said rotatable frame further including an intermediate substantially rectangular U-shaped frame component having its legs pivotally connected to a cross member of said supporting frame component and a third substantially rectangular U-shaped frame component having its legs pivotally connected to the bight of said intermediate frame component; means connected to said upright frame and arranged to engage said intermediate frame component, adjacent the free end of the latter, and to support the latter in an extended substantially horizontal orientation when said supporting frame component is upright; flexible tension means connecting the bight of said third frame component to that end of said supporting frame component which is uppermost in the upright position of the latter, said tension means having a length such as to maintain said third frame component substantially horizontal when the latter is extended from the extended intermediate frame component; and an escape chute connected to said third frame component so as to have its upper end maintained opened, said chute being normally folded and stacked, inwardly of said upright frame, and, when thrown through said exterior access, pivoting said rotatable frame to the upright and component-extended position.

3,301,348
METHOD OF PERFORMING WORK ON ORCHARD TREES AND COMBINATION OF WORKMEN SUPPORT PLATFORMS FOR THE PURPOSE

Kazuo Hiyama, 8184 E. Adams, Fowler, Calif. 93625

Filed Sept. 21, 1964, Ser. No. 397,709
8 Claims. (Cl. 182—131)

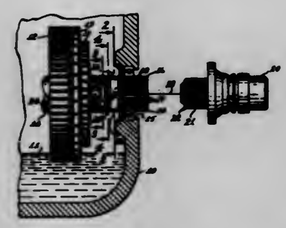


1. A method of conducting work on elevated objects arranged in spaced relation in rows comprising disposing a plurality of elevated workmen-support platforms in side-by-side relation individually between adjacent rows of the objects and moving the platforms in alternate increments of stepped progression along their respective rows to successive stationary work positions so that the platforms overlap adjacent platforms longitudinally of the rows in all stationary positions and so that the workmen can remain on the platforms throughout the conduct of the work and can pass from platform-to-platform transversely of the rows.

3,301,349
DRIVE SPLINE LUBRICATION SYSTEM

John W. Williams, 3602 N. Granite Reef Road, Scottsdale, Ariz. 85251

Filed Nov. 2, 1964, Ser. No. 408,288
2 Claims. (Cl. 184—11)



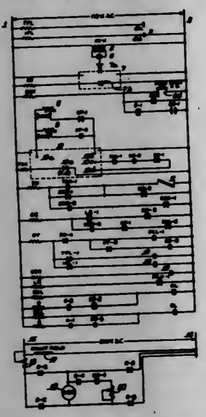
1. A drive spline lubrication system comprising in combination:

(a) a transmission case having a lubricant supply therein,
(b) a drive shaft journaled in said transmission case having a hollow bore formed axially in the outer end projecting outwardly from said transmission case,
(c) an internal driving spline formed in said bore of the projecting outer end of said drive shaft,
(d) a driven shaft having a mating external spline fitting within said internal driving spline,
(e) and a radially extending restricted passageway formed in said drive shaft and extending between the periphery of said drive shaft and said bore for supplying said lubricant received from the transmission case to said splines in said drive shaft.

3,301,350
DOOR OPERATING CONTROL FOR AUTOMATIC ELEVATORS

Alan M. Hallene, Moline, John J. Drexler, Barstow, and Henry J. Holuba, Moline, Ill., assignors to Montgomery Elevator Company, a corporation of Delaware

Continuation of application Ser. No. 258,497, Feb. 14, 1963. This application Nov. 29, 1965, Ser. No. 514,759
6 Claims. (Cl. 187—52)

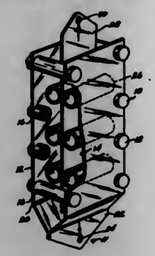


1. In a control system for the door of an elevator which serves a plurality of floors, apparatus comprising: means for opening and closing said door; a timer responsive to opening movement of said door to initiate a timing period and to generate a signal actuating said door closing means at the end of said period, said timer having two timing circuits with different timing periods; means for selecting the longer of said timing periods on opening said door; a door time transfer circuit for selecting the shorter of said timing periods; means for sensing passage of a person through said open door; and means responsive to said sensing means for actuating said transfer circuit to select the shorter of the timing periods and reduce the door open time upon passage of a person through the door.

3,301,351
ENERGY ABSORBING DEVICE

David L. Platus, Covina, and Patrick J. Cunningham, Fullerton, Calif., assignors to ARA, Inc. (Aerospace Research Associates, Inc.), West Covina, Calif., a corporation of California

Filed Dec. 16, 1964, Ser. No. 418,842
6 Claims. (Cl. 188—1)

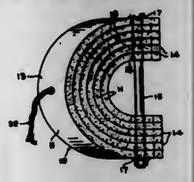


1. An energy absorbing device comprising: a tubular working element comprising a non-elastomeric material; opposed members having opposed surfaces frictionally engaging the periphery of said working element; means holding said opposed members so spaced that they partially flatten said tubular working element sufficiently to radially bend and stress different portions of the material thereof beyond their elastic limits, in tension and compression, respectively; and moving means for relatively moving said members, while maintaining their spacing, so that said surfaces cause said tubular element to roll about its tube axis and thereby to cyclically stress each portion of the material thereof in compression and tension, alternately, beyond its elastic limit whereby plastic deformation thereof absorbs the energy imparted to said members to relatively move the same.

3,301,352
LAMINATED VEHICLE WHEEL CHOCK

William E. Corson, 285 Hedgewood Drive, Akron, Ohio 44319

Filed Apr. 14, 1966, Ser. No. 542,647
11 Claims. (Cl. 188—32)



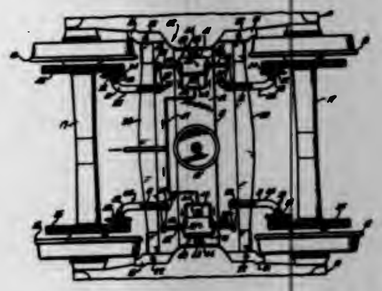
1. A chock for blocking vehicle wheels or the like comprising: a plurality of superposed arcuate pads of progressively decreasing sizes and each having opposite side edges converging from a relatively wide central portion of the pad toward opposite small ends thereof, whereby the superposed pads define a wedge-shaped block; and means for retaining said pads in said wedge-shaped superposed relation.

7. A method of making a vehicle or like wheel chock, comprising the steps of providing a plurality of pads of flexible resilient material and of progressively decreasing sizes, and each having opposite side edges converging from a relatively wide central portion of the pad toward opposite ends thereof; progressively bending the pads, starting with the largest, arcuately to form one within the other in descending superposed order of decreasing sizes to produce an arcuate, laminated block in which said opposite side edges of the pads lie substantially in angularly disposed planes to define a wedge shape of the block; and affixing a restraining member between superposed opposite ends of the pads to maintain the arcuate forms thereof and said wedge shape of the block.

3,301,353
RAILWAY CAR BRAKE MECHANISMS

Edward G. Goods, Sayder, N.Y., assignor to Buffalo Brake Beam Company, a corporation of New York

Filed Dec. 11, 1964, Ser. No. 417,617
7 Claims. (Cl. 188—59)

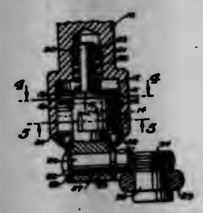


1. In a railway car truck, the combination of a pair of opposed side frames extending along the longitudinal direction of the truck, a pair of parallel equalizer bars extending between and pivotally connected at their ends to said side frames, four wheels supported on said side frames with a pair of wheels near each side of the truck and with each wheel near one side coaxial with a corresponding wheel near the opposite side, the axles of said wheels extending parallel between said side frames and trasverse to said longitudinal direction and being located on opposite sides of said pair of equalizer bars, means for applying brakes to the wheels, comprising an air cylinder unit between the wheels of each pair of wheels near the side frame supporting said pair, each unit including an air cylinder, a pair of pistons therein movable in opposite directions under the influence of air under pressure in said cylinder, and piston rods connected to said pistons respectively, said braking means also comprising four brake head levers, means supporting said levers on said equalizer bars for pivotal movement relative thereto, each equalizer bar pivotally supporting the two brake head levers for a corresponding pair of coaxial wheels, means carried by said levers for applying brakes to said wheels respectively when said brake head levers are pivotally moved in predetermined directions, connections between the two pistons of each cylinder unit near each side frame and the two brake head levers operative with the two wheels which are supported on the latter side frame for moving the latter two brake head levers in said predetermined directions simultaneously upon the movements of said pistons in said opposite directions under the influence of air under pressure in said cylinder, and means for supporting the air cylinders independently of said brake head levers.

3,301,354
AUTOMATIC SLACK ADJUSTER FOR BRAKES

Donald T. McGregor, La Crescenta, Calif., assignor to Carlodge Corporation, Los Angeles, Calif., a corporation of California

Filed May 21, 1965, Ser. No. 457,779
3 Claims. (Cl. 188—196)



1. The combination with a brake operating mechanism having a brake actuating shaft, an oscillatable lever and reciprocable rod for oscillating said shaft, wherein the lever includes a housing containing a worm gear for adjusting the brake actuating shaft to take up slack due to wear of the brakes, and a worm for advancing the worm gear, of an automatic slack adjuster for turning said worm, comprising:

(a) a shaft extending through and secured to said worm for turning said worm, said shaft having a cylindrical socket in one end;

(b) a first ratchet member secured to said shaft adjacent the outer end of said socket with its ratchet teeth facing inwardly with respect to said socket;

(c) a second ratchet member slidably and rotatably mounted in said socket and having teeth engageable with the teeth of the first ratchet member;

(d) a stem secured to said second ratchet member in coaxial relation to said shaft and extending through said first ratchet member to form an exposed end;

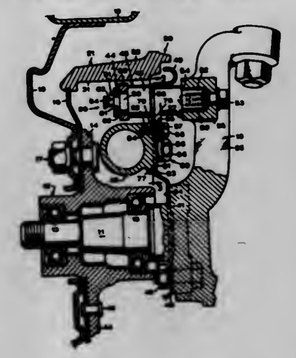
(e) a spring within said socket urging said ratchet members into mutual engagement;

(f) and means connecting said exposed end with said brake operating mechanism, to effect oscillation of said first ratchet and worm shaft thereby to advance said worm gear.

3,301,355
BRAKE SUPPORT ASSEMBLY

Glenn E. Borgard, Overland, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed July 31, 1964, Ser. No. 386,622
10 Claims. (Cl. 188—206)

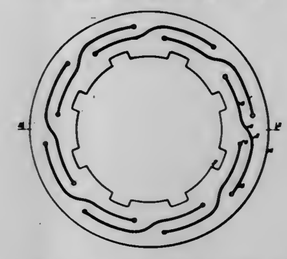


8. A friction device comprising support means, friction means movably supported on said support means, a pair of interconnecting openings in said support means, anchor means for said friction means received through one of said openings including means received in registry with the other of said openings to prevent displacement of said anchor means from said support means through said other opening, flange means on said anchor means and extending therefrom, actuator means for said friction means including other means sized to be received in said one opening, and removably secured means connected between said actuator means and flange means to prevent the displacement of said anchor means toward said one opening and the displacement of said other means from said one opening.

3,301,356
SLOTTED BRAKE DISC

Leonard Pompa, Ardmore, Pa., assignor to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania

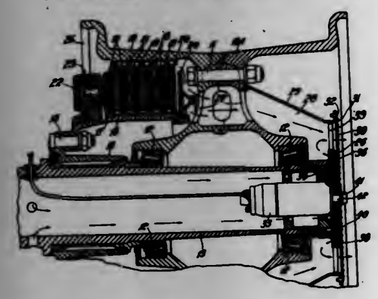
Filed Feb. 17, 1965, Ser. No. 433,296
1 Claim. (Cl. 188—218)



A brake disc comprising an annular rim surrounding an inner space, said rim having a plurality of substantially identical elongated slots therein, said slots being entirely confined between the edges of said rim, each of said slots having two portions substantially concentric to said disc, one of said portions being a leading portion and the other

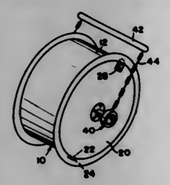
of said portions being a trailing portion and a further intermediate curved portion connecting said leading and trailing portions, said intermediate curved portion extending in a direction generally transverse to said concentric portions, the leading portion of one slot overlapping the trailing portion of a preceding slot whereby said disc is divided into a plurality of overlapping sections which join one another adjacent the inside diameter and the outside diameter of said rim and said overlapping sections are free to move independently through the middle of said disc.

3,301,357
COOLING MEANS FOR WHEEL AND BRAKE ASSEMBLY
Richard Cleminson Cussons, Cirencester, and Douglas Dewar, Wolston, near Coventry, England, assignors to Dunlop Rubber Company Limited, London, England, a British company
Continuation of application Ser. No. 39,664, June 29, 1960. This application Apr. 25, 1966, Ser. No. 545,165
Claims priority, application Great Britain, July 2, 1959, 22,681/59
10 Claims. (Cl. 188—264)



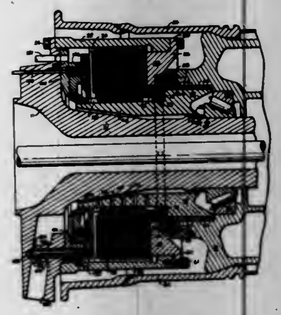
1. An aircraft landing gear which comprises a non-rotatable hollow axle, a wheel rim rotatably supported on said axle and spaced concentrically from the axle to form an open ended axially extending annular passage, a disc brake mounted in said passage and connected to said axle and said rim to provide passages for air axially of said passage, a motor in said axle operable independently of said wheel and a fan driven by said motor and having blades extending radially across said annular passage to pass an axially directed flow of cooling air through said passage and about said brake assembly.

3,301,358
HAND LUGGAGE
Harry Ernest Rubens, Westport, Conn.
(2 Sutton Place S., New York, N.Y. 10022)
Filed Dec. 5, 1963, Ser. No. 328,245
5 Claims. (Cl. 190—20)



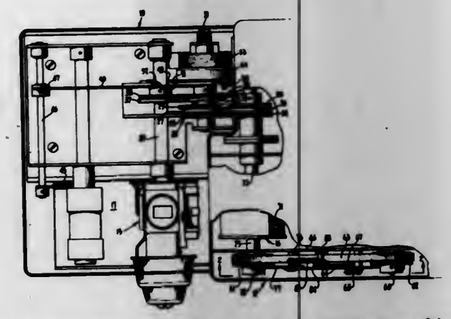
1. Wheel shaped luggage comprising a wheel, said wheel having a rim for rolling on a supporting surface, and a luggage compartment positioned inside the rim for transporting clothing and other articles, said luggage compartment having two flat ends, one end thereof being entirely removable and forming a closure; and a bar forming a handle having attaching members, at least one of the attaching members being secured to the closure, and movable therewith, the other attaching member being secured to the opposite end of the luggage compartment, said bar having a length in excess of the distance between the two ends of the compartment so that by grasping the bar the luggage compartment can be freely rolled and lifted with one hand.

3,301,359
BRAKING APPARATUS
Carroll R. Cole, Decatur, and Jackson C. Medley, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 21, 1965, Ser. No. 465,493
8 Claims. (Cl. 192—4)



4. A braking apparatus comprising, an elongate tubular axle housing, a chamber surrounding one end of said housing having a disc pack located therein; means for supplying cooling oil to said disc pack, a wheel hub rotatably mounted on said housing by at least two longitudinally spaced bearings, and a splined member operatively interconnecting said disc pack and said wheel hub, said splined member being formed to provide a restricted annular passageway through which the cooling oil passes before being distributed to such bearings in order to prevent particulate abrasive material from entering the bearings.

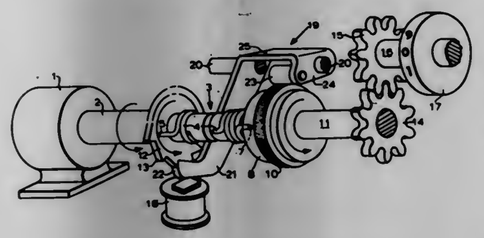
3,301,360
POSTAGE METER LOCKOUT DEVICE
Lewis C. Hill, Fremont, Calif. assignor to Friden, Inc., a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,562
5 Claims. (Cl. 192—8)



1. A drive mechanism for a postage metering machine comprising a rotative driving member, means for controlling cyclic operation of said rotative driving member, a rotative member driven in cyclic timed relation to said drive member, a belt means operatively connecting said driven member with said driving member, and a normally

inoperative locking means rendered operable by said driven member in each of certain angularly rotated positions thereof to lock said driving member in a corresponding predetermined one of a plurality of angularly rotated positions upon severance of said belt means.

3,301,361
INDEXING MECHANISM
Jacques Campion, Livry-Gargan, France, assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 16, 1965, Ser. No. 448,607
11 Claims. (Cl. 192—22)



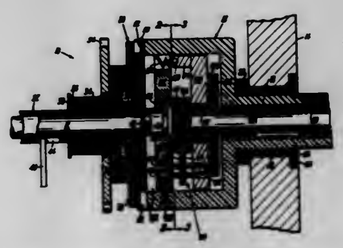
1. A rotary positioning apparatus comprising:
a first member having at least one projection,
a second member having a resilient element,
driving means urging said first and second members to rotate,
a pivotal member having first and second arms, said first arm normally engaging said projection to prevent said first member from rotating, said second arm normally penetrating slightly said resilient element and at predetermined times penetrating deeper into said resilient element, and
a control device for urging said first arm out of engagement with said projection and for holding said first arm out of engagement with said projection against the pressure of said resilient element on said second arm.

3,301,362
TANDEM CLUTCH
Gilman A. Helland, Wayzata, Minn., assignor to Helland, Inc., Navarre, Minn., a corporation of Minnesota
Filed Aug. 21, 1964, Ser. No. 391,092
1 Claim. (Cl. 192—56)



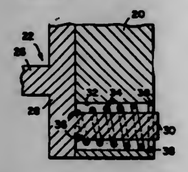
An automatically re-setting torque clutch comprising, a rotary driving member, a rotary driven member arranged concentrically with said driving member, a plurality of torque transmitting elements pivotally carried by one of said members and each having an inwardly extending lever arm of a given length and outwardly extending lever arm of a less length and normally extending between said members and forming a driving connection therebetween and being movable between a driving and a non-driving position relative to one of said members, resilient means carried by said member which carries said plurality of elements and having portions engaging respectively said plurality of elements and normally urging each of said plurality of elements from opposite directions into driving relation between said members, said portions being yieldable and disposed at opposite sides of each of said elements opposite its axis of pivot and movable away from the elements in opposite circumferential directions relative to its carrying member to permit said element to move to a non-driving position whereat the urging of said means is essentially nullified when a predetermined torque is exerted upon said elements by the driven member, and separate relative weak resilient means engaging the torque transmitting elements and urging the same toward driving position between said members when said elements are in non-driving position and re-established as soon the driving members cease to rotate after said elements have been moved to non-driving positions, said elements being positioned in tandem relation on one of said members, said one of said members including a flanged tubular member having a plurality of axially spaced shoulders defined by reduced sections, washers keyed on said tubular member in contact with each shoulder and separating said elements, said elements being elongated and having opposite ends and said first mentioned resilient means remaining in engagement at all times with said elements but having their urging nullified by said elements moving to non-driving positions at which positions the urging of said means are against the ends of said elements and along their length.

3,301,363
COUNTER DRIVE CLUTCH MECHANISM
Michael S. Juhas, Torrington, Conn., assignor to Veeder Industries Inc., a corporation of Connecticut
Filed Jan. 22, 1965, Ser. No. 427,238
12 Claims. (Cl. 192—67)



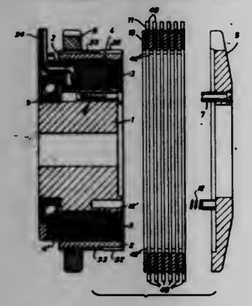
4. In a clutch mechanism comprising a rotary clutch having a pair of coaxial clutch elements relatively axially displaceable for operative engagement and disengagement of the clutch, an interlock having a pair of interlock elements connected for limited relative angular displacement coaxially with the clutch, said interlock elements having an angularly aligned release relationship for relative axial displacement of the clutch elements and having a non-aligned locking angular relationship providing an interlock for preventing said relative axial displacement of the clutch elements, means connecting said interlock elements with said clutch elements for relative axial displacement therewith respectively, spring means biasing the interlock elements into said angularly aligned relationship, and means operative upon rotation of at least one of said clutch elements for angularly displacing the interlock elements into said nonaligned locking relationship and operative for maintaining the interlock elements in said nonaligned locking relationship against the bias of the spring means.

3,301,364
TORQUE TRANSFER DEVICE
John D. Bennett, Richardson, and Walter Carl Caldwell, Jr., Irving, Tex., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Oct. 13, 1964, Ser. No. 403,523
2 Claims. (Cl. 192—72)



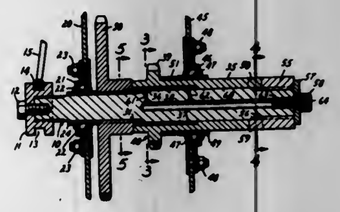
1. A frictional drive mechanism comprising a first member having a bore therein, a second member extending into said bore, the diameter of said second member being less than the diameter of said bore so as to define an annular space between said second member and the internal surface of said bore, a spring which, in its relaxed state, takes the form of a conical helix positioned in said space surrounding said second member, one end of said spring being in frictional engagement with said second member and the other end of said spring being in frictional engagement with the surface of said bore, and means transmitting rotational power to impart a cranking motion to one of said first and second members whereby, upon relative angular movement of said members in one direction, said spring winds about said second member and slips relative to said first member so as to impart a frictional drag force between said members in a first direction and, upon relative angular movement of said members in the opposite direction, said spring unwinds from said second member and slips relative to said second member so as to impart a frictional drag force between said members in the opposite direction.

3,301,365
ELECTROMAGNETICALLY ACTUATING CLUTCHES
Wilhelm Binder, Rudolf Hauer, and Walter Oberecker, Villingen, Germany, assignors to Binder Magnete K.G., Villingen/Schwarzwald, Germany, a firm of Germany
Filed Feb. 27, 1963, Ser. No. 261,338
Claims priority, application Germany, Feb. 27, 1962, B 48,308
11 Claims. (Cl. 192—84)



1. An electromagnetically controlled mechanical clutch comprising a magnet member having a ring-shaped energizing coil and a ring-shaped structure magnetizable by said coil and extending radially inward and outward of said coil in coaxial relation thereto, a ring-shaped armature coaxially mounted beside said magnet member and magnetically movable axially toward said member when said coil is energized, and one of a plurality of mechanical clutch units being selectively and exchangeably seatable coaxially on said magnet member in non-rotational relation thereto, said magnet member having abutment means axially adjustable, a distance sufficient for adaptation to differences in axial width between said respective clutch units, said one of said units being disposed axially between said abutment means and said armature for clutching operation in response to axial magnetic pressure from said armature.

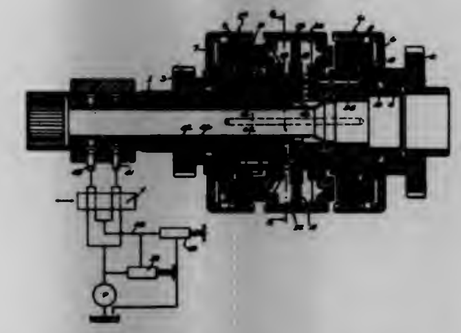
3,301,366
CLUTCH MECHANISM HAVING SHAFT ACTUATING MEANS
Richard W. Steinberg, Owatonna, Minn., assignor to Owatonna Manufacturing Company, Inc., Owatonna, Minn., a corporation of Minnesota
Filed Feb. 12, 1965, Ser. No. 432,362
2 Claims. (Cl. 192—96)



1. Clutch mechanism comprising:
(a) a shaft mounted for rotary movement and limited axial movement;
(b) a longitudinal passageway in said shaft extending from one end of said shaft to the central portion thereof and radial passageways in said shaft connected with said longitudinal passageway and extending to the outer periphery of said shaft;
(c) coupling means fixedly attached to said shaft for applying rotary motion to said shaft;
(d) a hollow, cylindrical sleeve having means fixedly attached to the outer periphery thereof for transmitting rotary motion therefrom and further having axially extended teeth positioned about one end thereof;
(e) bearing means rotatably mounting said sleeve coaxially on said shaft, said bearing means being positioned on said shaft in communication with said radial passageways during at least part of the operation of said clutch;
(f) connecting means fixedly attached to said shaft and having teeth thereon adapted to mesh with said teeth on said sleeve; and
(g) means engaging said shaft for moving said shaft axially into a first position in which said teeth on said sleeve mesh with said teeth on said connecting means whereby said sleeve rotates with said shaft and into a second position in which said teeth on said sleeve are separated from said teeth on said connecting means.

3,301,367
DOUBLE HYDRAULIC OPERATED CLUTCH HAVING LOW PRESSURE FLUID PLATE COOLING MEANS
Edward C. Yokel, Racine, Wis., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Feb. 11, 1965, Ser. No. 431,804
6 Claims. (Cl. 192—113)

1. A hydraulically operated clutch mechanism comprising a pair of axially spaced clutches having a common shaft; a main force piston axially shiftable on the shaft between said clutches for selective actuation therefrom; an annular reaction member within said force piston and fixed on said shaft to define a pair of large, variable volume, pressure fluid chambers, one adjacent each clutch whereby expansion of a chamber actuates the adjacent clutch; a relatively high pressure fluid supply passage for each of said chambers; a relatively low pressure fluid exhaust port between each of said chambers and the clutch plates of the clutch axially remote



therefrom; and valve means in each of said exhaust ports, said valve means being exposed to the supply passage of the opposite chamber and shifted by high pressure fluid therein to an exhaust port open position to thereby permit low pressure fluid to flow from its associated chamber being contracted and through its exhaust port and to said opposite clutch plates which are being engaged due to expansion of the adjacent chamber.

3,301,368
CHUTE CONSTRUCTION
Alan H. Stigleman, 30656 Woodside Drive, Franklin Village, Mich. 48025
Filed May 18, 1965, Ser. No. 456,755
1 Claim. (Cl. 193—25)



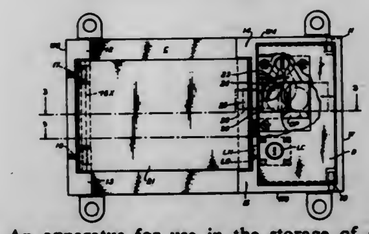
In flexible spring steel chuting having slotted, spaced, parallel side members, bolts spanning said side members lying in said slots, and plain narrow middle members lying parallel between side members on said bolts, the combination of improved spacer-clamping means comprising a slotted tubular spacer lying between said side members receiving said middle members in said slots and internally receiving said bolts,

said tubular spacer having an axial bore much larger than said bolt, and

support means on said spacer holding said spacer with said slots upwardly from said bolt so as to engage said middle members especially when the parts are unclamped and loose to hold the parts in assembly and permit flexing of the members to desired shape;

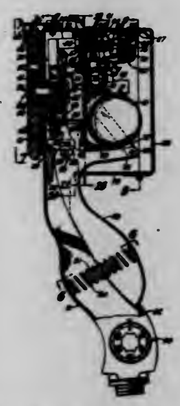
said spacers being relatively easily compressible so that upon tightening said bolts, said spacers forceably grip said middle members to hold them in assembly.

3,301,369
SKI STORAGE APPARATUS
Harold G. Kara, Jr. 11 E. Craig St., Basking Ridge, N.J. 07920
Filed Apr. 27, 1965, Ser. No. 451,235
7 Claims. (Cl. 194—65)



1. An apparatus for use in the storage of skis, said apparatus combining a coin receiving housing and a storage compartment for the skis, said housing comprising a side wall common to said compartment, a front wall, a roof, a base, a rear wall common to said compartment, a left disposed side wall for said storage compartment, a plate mounted for sliding movement on the last mentioned side wall interiorly of said compartment, a substantially L-shaped door for said compartment having its longer side edge portion hinged to the outer disposed edge portion of said plate, a door for said housing pivoted to the top and to the base thereof, a lock in said housing cooperating with means carried by said common wall and said L-shaped door for locking the latter in the closed position upon the moving of said plate in the retracted position, and means in said housing cooperating with means carried by said common side wall for locking the door of said housing independently of the locked condition of said storage compartment door.

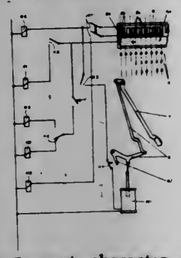
3,301,370
DEVICE FOR HOT STAMPING INDICIA ON WEBS
John Dawson Miller, 4400 N. Temple City Blvd., El Monte, Calif. 91731
Filed Mar. 18, 1965, Ser. No. 440,700
5 Claims. (Cl. 197—6.7)



1. In a portable device for hot stamping indicia on a continuous heat sensitive web, the combination of: a housing, a trigger member pivotally mounted on the housing, a flat wheel rotatably mounted in said housing, means for selectively rotating said flat wheel, a hammer means movably mounted on one side of said flat wheel for movement toward said flat wheel, means for controllably heating said hammer means, an anvil movably mounted on the other side of said flat wheel oppo-

site said hammer means for movement toward said flat wheel and hammer means, said flat wheel having a multiplicity of circumferentially spaced and outwardly extending heat-conductive fingers around the entire periphery, said fingers having raised indicia facing said anvil, means for positioning the web between said anvil and said flat wheel, and means for moving said hammer means into engagement with one of said fingers upon depression of said trigger member for simultaneously heating and flexing that finger into engagement with the web and for moving said anvil toward said web for hot stamping the indicium of that finger on the web.

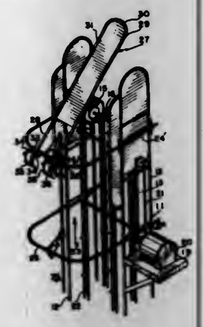
3,301,371
AUTOMATIC ZERO PRINTING MEANS
Gunter Kurt Lungwitz, Berlin, Germany, assignor to Hamann Rechenmaschinen G.m.b.H., Berlin, Germany, a corporation of Germany
Filed July 29, 1965, Ser. No. 475,645
Claims priority, application Germany, Aug. 12, 1964, H 53,507
6 Claims. (Cl. 197—17)



1. An automatic repeat character recording device comprising:
(a) a first contact bar having spaced fingers;
(b) means for tabulating a record receiving device to a predetermined spaced position relative to said fingers;
(c) electrical contact means, including a first one of a series of said fingers, jointly responsive to tabulation of the record receiving device to said position and to the recording of a character to partially complete a circuit;
(d) means operable thereafter to close a switch and complete said circuit;
(e) a device responsive to completion of the circuit for recording a character and for moving said contact bar a distance equal to said finger spacing; and
(f) means responsive to said recording device to open and then to close said circuit to cause repeated action of said character recording device.

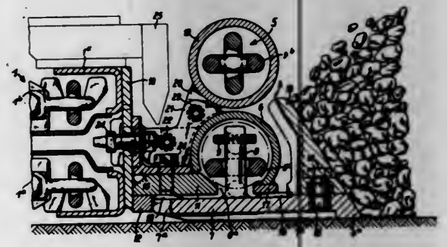
3,301,372
BALE DEFLECTING DEVICE
Harvey R. Malmgren, St. Boniface, Manitoba, Canada, assignor, by mesne assignments, to Alco Equipment Ltd., Winnipeg, Manitoba, Canada
Filed Aug. 17, 1964, Ser. No. 390,039
2 Claims. (Cl. 198—7)

1. A bale transfer device comprising in combination a substantially vertical conveyor and a substantially horizontal conveyor situated at the upper end of said vertical conveyor and extending at right angles therefrom, supporting structure for said vertical and horizontal conveyors, a bale transfer device on said upper end of said vertical conveyor for flipping bales elevated vertically upwards on said vertical conveyor to a horizontal position on said horizontal conveyor, said transfer device comprising a deflector element engageable by said bales travelling vertically on said vertical conveyor, said deflector element being pivotally mounted adjacent one end thereof to said supporting structure adjacent the upper end of said vertical conveyor, and spring means



reacting between said one end and said supporting structure normally biasing said element diagonally towards said horizontal conveyor.

3,301,373
COAL REMOVING MACHINE
Oskar Willner and Reimund Karkutt, Bochum, Germany, assignors to Gebr. Eickhoff, Maschinenfabrik und Eisengiesserei m.b.H., Bochum, Germany
Filed Dec. 14, 1964, Ser. No. 418,141
7 Claims. (Cl. 198—10)

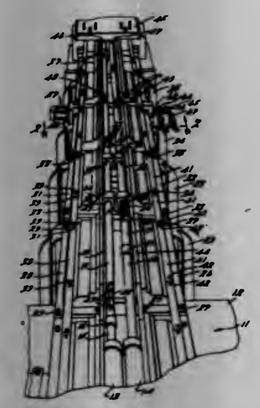


1. In an arrangement for removing cut coal: reciprocating pulling means adapted to be arranged in the longitudinal direction of a coal face, a plurality of units of coal removing means connected to said pulling means for reciprocatory movement and spaced from each other in the longitudinal direction of said pulling means, conveyor means movable transversely toward the coal face and connected to said coal removing means for moving said coal removing means toward said coal face and for receiving and conveying coal picked up by said coal removing means, each of said units of said coal removing means including foot plate means and coal removing inclined shoe means rigidly connected to said foot plate means and inclined upwardly and rearwardly toward said conveyor means, the bottom surface of said foot plate means normally being lower than the bottom surface of said conveyor means, and guiding means connected to said conveyor means and in guiding arrangement with said foot plate means for guiding the same.

3,301,374
DUAL RATE INDEXING SYSTEM FOR MACHINE TOOLS
Robert W. Proctor, St. Clair Shores, Mich., assignor to The Cross Company, a corporation of Michigan
Filed May 5, 1965, Ser. No. 453,359
23 Claims. (Cl. 198—19)

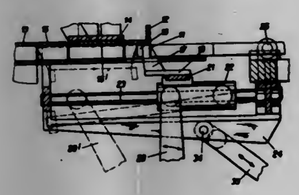
1. An indexing mechanism for transferring a workpiece to successive stations comprising
a carrier,

a first transfer drive mechanism,
a second transfer drive mechanism,
means for operating said transfer drive mechanisms at different speeds,
first coupling means for coupling said carrier to said first transfer drive mechanism for transferring said carrier between successive stations at a first rate of speed, and



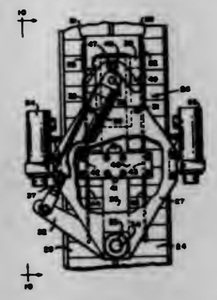
second coupling means coupling said carrier to said second transfer drive mechanism for transferring said carrier between successive stations at a second rate of speed.

3,301,375
CIGARETTE FEEDING ARRANGEMENTS
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed Oct. 21, 1964, Ser. No. 405,529
Claims priority, application Great Britain, Oct. 23, 1963, 41,801/63
7 Claims. (Cl. 198—24)



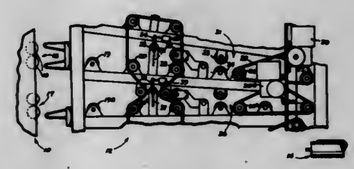
1. A cigarette feeding arrangement comprising a member for guiding a group of cigarettes, a member for pushing said group of cigarettes through said guiding member, said pushing member being movable in a closed path having a first part, a second part and a connecting part joining said first part to said second part, first means for moving said pushing member along said first part during its working stroke and along said connecting part and said second part during its return stroke, second means for moving said guiding member along said connecting part, and means for coordinating the operation of said first and second moving means for moving said pushing member and said guiding member jointly along said connecting part.

3,301,376
CASING MACHINE
Alpheus Winter IV, Fairfield, Robert J. Doran, Danbury, Frederick R. Marindin, Woodbury, and Joseph F. Pane, Danbury, Conn., assignors to Windor Incorporated, Danbury, Conn., a corporation of Connecticut
Filed Dec. 2, 1964, Ser. No. 415,355
6 Claims. (Cl. 198—31)



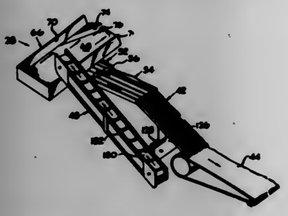
1. Apparatus adapted to be supplied with containers from a single line conveyor comprising in combination, a multi-line conveyor adapted to be supplied with containers from said single line conveyor, said multi-line conveyor having its trailing end in line with the leading end of said single line conveyor; oscillatable gate means at the junction of said conveyors; means responsive to the movement of containers through said gate means for causing said gate means to direct a predetermined number of containers alternately to each of the lines of said multi-line conveyor; and reciprocally movable means connected to said gate means moving with the containers during oscillation of said gate for preventing the turning of said containers about their vertical axes while being directed to each line of said multi-line conveyor and while continuously moving.

3,301,377
SEQUENCE UNLOADER
Charles L. Larson, Grants Pass, Oreg., assignor to Jeddeloh Bros. Sweed Mills, Inc., Gold Hill, Oreg., a corporation of Oregon
Filed Nov. 30, 1965, Ser. No. 510,544
5 Claims. (Cl. 198—32)



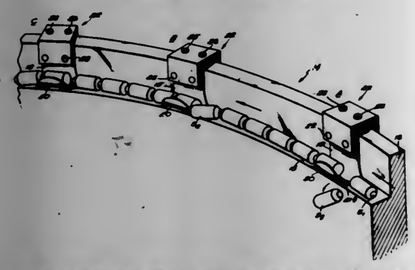
1. In sheet-unloading apparatus, the combination of at least two conveyer decks for transporting sheets, collecting means for collecting sheets coming from each of said decks,
each deck having a receiving station into which sheets travel prior to traveling onto said collecting means, said receiving stations each including an intermittently actuated discharging means producing travel of sheets onto the collecting means, and
control means controlling the flow of sheets traveling from the two conveyer decks onto said collecting means by controlling actuation of the respective discharging means of the decks' receiving stations, preventing one discharging means from being actuated when the other is being actuated.

3,301,378
FOOD HANDLING APPARATUS
Clyde D. Wayne, Wilmette, and Herbert C. Zeck, Bellwood, Ill., assignors to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 3, 1964, Ser. No. 357,254
13 Claims. (Cl. 198—33)



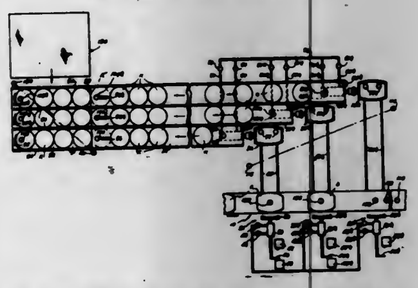
1. An apparatus for transporting a plurality of randomly oriented multi-sided objects from one station to another and for arranging the objects in uniform orientation, said objects being stable when supported on a first side thereof but being less stable when supported on a second side thereof, said apparatus comprising means defining a generally horizontally disposed surface for supporting objects being advanced therealong, said surface being provided with means for confining the advancing movement of the objects to a generally defined path, means for causing said surface to be moved so as to cause the objects supported thereon to be conveyed from adjacent one edge of said surface toward the opposite edge, and means associated with said moving surface for causing an object supported on a second side to be reoriented so as to be supported on a first side, said means comprising means defining a recess in said generally defined path for causing an object supported on a second side and advancing along said generally defined path to topple so as to be caused to fall onto a first side thereof.

3,301,379
SET SCREW ORIENTING METHOD AND APPARATUS
Harrington Moore, Acton, Mass., assignor to George W. Moore, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Jan. 21, 1965, Ser. No. 427,067
5 Claims. (Cl. 198—33)



1. In a vibratory parts feeding apparatus for use with parts of the class described and which has a bowl in which a supply of the parts may be deposited in a disoriented mass, a means for vibrating the bowl, and a track spiraling up the perimeter of the bowl from said supply and along which the parts are advanced in a train by actuation of the vibrating means to a discharge section for delivery to a usage point, and wherein said parts are moved onto said track in random attitudes but are all desired to be delivered from said discharge section in the same attitude and oriented on their sides, endwise, and with their one ends first; in combination, an orienting element, means for removably supporting the orienting element from the rim of said bowl, said orienting element having a vertical hangar portion extending down said rim from said supporting means towards said track, a lateral web portion extending from said vertical portion inwardly over and to the inside of said track, said laterally inturned web portion of said element having a riding surface spaced a predetermined short distance above said track, and at the front of said surface a camming edge angled rearwardly from the outside to the inside of the track, said web portion thereby adapted to laterally cam and so to force off said track those parts that are not feeding in said desired attitude, said web portion further adapted by said rearwardly angled edge to vertically cam and so to retain on said track those parts that are feeding in the desired on-their-sides, endwise, one-end-first attitude, said latter parts upon being urged forward by following parts in the train riding over said element and continuing on said track properly and similarly oriented for advancing to said discharge section for said delivery to a usage point.

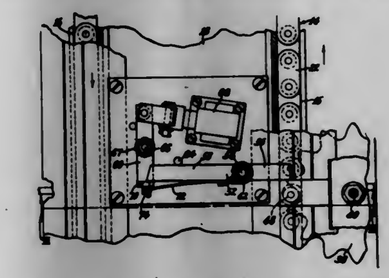
3,301,380
APPARATUS FOR REMOVING BEER KEGS FROM A CONVEYOR AND ACCUMULATING THE KEGS IN GROUPINGS FOR STORAGE THEREOF
Ernst R. Schickle, Tappan, N.Y., assignor to Rheingold Breweries, Inc., Brooklyn, N.Y., a corporation of New York
Filed Feb. 11, 1966, Ser. No. 526,768
18 Claims. (Cl. 198—33)



1. In combination with first conveyor means for transporting a single file of kegs in prone positions, keg removing means operable to remove kegs in prone positions from said first conveyor means, second conveyor means for transporting multiple parallel rows of kegs in erect positions, and upending means to receive kegs in prone positions from said keg removing means and being operative to deposit the removed kegs in erect positions in said plurality of rows on said second conveyor means for removal from the latter in multi-row, readily transportable pallet-sized groupings.

3,301,381
CONVEYOR CONTROL APPARATUS
Edward S. Babson, Ipswich, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed July 31, 1964, Ser. No. 386,557
3 Claims. (Cl. 198—34)

1. A conveyor control system for use with a conveyor system in which article-carrying devices are engaged with a conveyor so as to be continuously urged forward even when being held stationary at a stop member, said control system being adapted to limit to a predetermined number the article carrying devices that can be retained by a pool stop, and comprising a control stop member disposed upstream from the pool stop member, control stop release means disposed between the pool stop and the control stop, said release means being actuated by the passage of an article carrying device, said control stop being automatically urged to the locked position by the movement of a released article carrying device thereby, means mounted on the stop mechanism for engagement with the locking means preventing locking when there are less than the predetermined number of articles



at the pool stop, said control stop release means being positioned a predetermined distance upstream from the pool stop so that each article carrying device released from the control stop actuates said control stop release means except when the number of article-carrying devices already waiting at the pool stop equals one less than said predetermined number.

3,301,382
GLASSWARE AND CARTON HANDLING APPARATUS
Wilbur O. Doud and Charles W. Cook, Muncie, Ind., assignors to Ball Brothers Company, Incorporated, Muncie, Ind., a corporation of Indiana
Filed Aug. 5, 1963, Ser. No. 299,868
7 Claims. (Cl. 198—75)



1. Apparatus for handling glassware and cartons therefor, comprising: glassware handling means including glassware transfer means and a ware accumulator adjacent said glassware transfer means near the discharge portion thereof; first carton transfer means; second carton transfer means disposed adjacent to said glassware transfer means and movable in substantially the same direction as said glassware transfer means; rotatable carton orienting means positioned between said first and second transfer means; said second carton transfer means being adjustable to receive cartons of different sizes and shapes; and a transfer station whereat ware is manually removed from said glassware handling means and placed in cartons on said second carton transfer means.

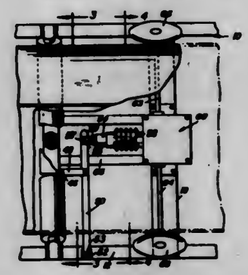
3,301,383
TROUGH-SHAPED CONVEYOR BELT
Cornelis Doyer, Wladimiriaan 6a, Bussum, Netherlands
Filed Aug. 2, 1965, Ser. No. 476,280
Claims priority, application Netherlands, Aug. 5, 1964, 64/08954
5 Claims. (Cl. 198—192)

1. A trough-shaped conveyor comprising a belt supported by a plurality of spaced rollers, said belt being supported over its entire width by each of said rollers, and each roller including a shaft and a belt supporting portion having the configuration of a hyperboloid of revolution formed by a plurality of straight rods all of which



cross the roller shaft at the same angle and at the same distance.

3,301,384
COMPENSATING ROLLER AND LIMIT MEANS THEREFOR
Edward W. Sowards, Rte. 1, Box 705, Love Creek Road, Ben Lomond, Calif. 95005
Filed Mar. 19, 1965, Ser. No. 441,020
9 Claims. (Cl. 198—202)

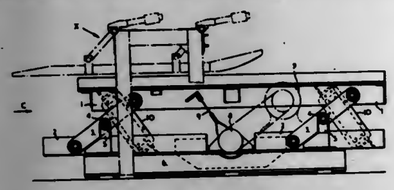


1. A control device for maintaining proper running alignment of a conveyor belt on its pulleys, comprising in combination with such conveyor belt; a longitudinal frame, a conveyor pulley assembly, a bearing supporting said conveyor pulley assembly, a transverse frame member supporting said pulley assembly and bearing on said longitudinal frame, a link pivotally connected to said pulley assembly for shifting said pulley assembly by pivotal movement about said bearing, a lever arm pivotally carried on said link and connected to the longitudinal frame supporting said pulley assembly to effect such shifting, a differential gear unit mounted on a transverse frame member connected to said longitudinal frame, a threaded shaft on said differential gear unit connected to said lever arm, and means engageable with said conveyor belt and connected to said differential gear unit and operable when the conveyor belt veers to one side of its regular path of travel for actuating said differential gear unit to move said lever arm in a direction to pivot said pulley assembly to the proper side of the belt to return the belt to its centralized running position on said pulley assembly, said means being in working arrangement with said thread shaft.

3,301,385
VIBRATORY APPARATUS
Bernard A. Lambert, Anglesey, Wales, assignor to McKenzie & Brown Limited, Caernarvon, Wales, a British company
Filed Jan. 14, 1965, Ser. No. 425,574
Claims priority, application Great Britain, Jan. 15, 1964, 1,821/64
4 Claims. (Cl. 198—220)

1. Vibratory apparatus comprising a balanced pair of upper and lower vibrating members, pivotal means supporting said members for oscillating movement thereof in a vertical plane and spring means interconnecting said members to react to said oscillating movement, in which said spring means comprises at least one spring unit consisting of at least one parallel pair of blocks of elastomeric

material, each said block having two vertically-disposed parallel faces parallel with the corresponding faces of the other block of the pair, carriers having vertically-disposed



faces respectively parallel to and bonded in surface contact to each of said vertically-disposed faces of said blocks, and thrust-transmitting means connecting said carriers alternately to said upper and lower members respectively so that said oscillating movement stresses said blocks solely in shear substantially symmetrically in said unit.

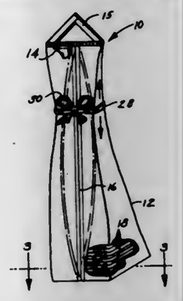
3,301,386
DISPLAY CONTAINER AND CARRIER
Eugene H. Carter, Little Rock, Ark., assignor to Hoerner Boxes, Inc., Keokuk, Iowa, a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,891
8 Claims. (Cl. 206—1)



1. A container for arrows comprising a single blank of corrugated paperboard cut and scored to define elongate front and back panels of similar outer dimensions hingedly connected together,
said panels being foldable into back-to-back relation,
each panel being narrow at the bottom and diverging outwardly toward the top, and having a number of outwardly folding score lines running from the bottom to the top,
said front panel having arcuate score lines to form separator sections which can be folded inwardly toward the back panel,
said separator sections having an outer contour which produces a curvature in both panels,
a center separator section in said front panel defined by an arcuate score line intermediate the top and bottom of said container,
said center separator section including a number of spaced holes for supporting a corresponding number of arrows in a spaced relation and being foldable into engagement with said back panel, and
means for securing the longitudinal edges of said panels together to form a tubular arrow container.

3,301,387
WALL HANGING DIAPER HOLDER
John J. Erickson, 1001 W. Date Ave., Lompoc, Calif. 93436
Filed Dec. 14, 1964, Ser. No. 417,892
6 Claims. (Cl. 206—7)

1. A diaper pouch for storing diapers comprising in combination an elongated hollow and flexible cloth bag providing container means for a plurality of stacked and folded diapers, an internal cross member carried within said bag providing stiffening means for the upper extremity of said pouch, a strap means on the upper extremity of said pouch providing a means for suspending said pouch from a suitable fastener, an internal panel of rectangular



configuration carried within said bag providing pocket means for a cardboard sheet of rectangular configuration forming a stiffener for the base of said pouch, a decorative ribbon carried by said bag providing a means for neatly keeping said bag closed and also indicating the approximate amount of remaining diapers contained within said bag or pouch.

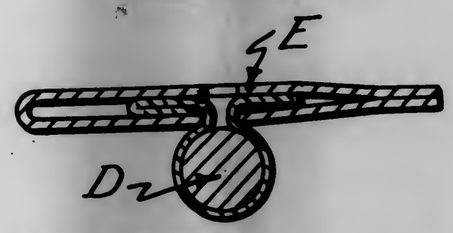
3,301,388
PLAYING CARD DISPENSER
James W. Rockwell, Minneapolis, Minn., assignor to Standard Packaging Corporation, New York, N.Y., a corporation of Virginia
Filed Oct. 22, 1965, Ser. No. 502,182
1 Claim. (Cl. 206—44.12)



A device for dispensing individual decks of playing cards comprising a vertically disposed elongated member; a plurality of plates integral with said elongated member and extending outwardly therefrom forming a ring at one end of said elongated member; a box member integral with said elongated member and disposed at the end opposite said ring forming plates, said box member having a horizontal planar delivery wall extending out from said elongated member in registry with the ring formed by said plates, the horizontal planar delivery wall having vertical side and end walls depending therefrom for supporting said device on a flat surface; and a cartridge having a bottom panel, a series of side, front and closure panels adjacent said bottom panel forming an enclosure contiguous with and over the bottom panel, the side, front and bottom panels of said cartridge having a cut-out portion forming a delivery opening at the end of the cartridge formed by said bottom panel; said cartridge being disposed in said elongated member in vertical position parallel thereto and through the ring formed by said plates, the bottom panel of said cartridge being supported by and disposed over the planar delivery wall of said box member positioning the delivery opening of said cartridge contiguous with and over the planar delivery wall, whereby decks of playing cards may be drawn

out of the delivery opening and out over said planar delivery wall.

3,301,389
METHOD AND APPARATUS FOR DISPLAYING ARTICLES
Richard F. Gulliver, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Aug. 6, 1965, Ser. No. 477,805
7 Claims. (Cl. 206—47)



1. A display card including:
a display panel having inner and outer surfaces,
a second panel having inner and outer surfaces hingedly attached to an edge of said display panel and foldable into substantially face contact with said display panel inner surface,
said display panel having an elongated slot therein extending generally parallel to, and spaced from, the line of fold connecting said panels,
a strip of shrink film extending over said fold line and having one edge secured to said display panel inner surface and the opposite edge secured to said second panel inner surface, the secured areas being parallel to said fold line,
one end of said film lying rearwardly of said slot when said panels are folded into substantially face contact, and
the full width of said film being exposed through said slot.

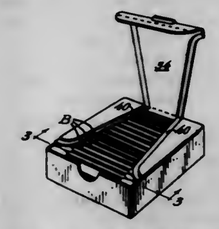
3,301,390
RUPTURABLE DIAPHRAGM
William F. Via, Jr., 450 Allard Road, Grosse Pointe, Mich. 48236
Filed Oct. 11, 1965, Ser. No. 494,759
5 Claims. (Cl. 206—47)



1. A rupturable partition disc for a container for dividing the container into two compartments, the disc being made of a thin sheet of metal bonded to a sheet of plastic material, the plastic material having a slot extending therethrough substantially at the center of the partition.

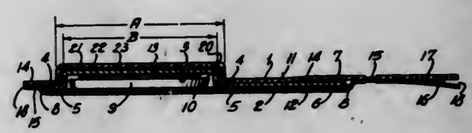
3,301,391
SWAB PACKAGES
Reynolds Guyer, White Bear Lake, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Sept. 10, 1964, Ser. No. 395,509
2 Claims. (Cl. 206—56)

1. A dispensing package for use in combination with at least one layer of articles composed of a series of headed elongated similar articles of substantially equal length and width, the package comprising in combination:
a bottom panel,
front, rear, and side panels extending upwardly from the edges of said bottom panel,
said side wall panels being spaced apart a distance substantially equal to the length of said articles and tending to be frictionally engageable with the heads of said articles,
corner flaps connected to the ends of certain of said panels and attached to the others to hold the wall panels in rectangular relation,
a cover panel hinged to the upper edge of said rear wall panel,
cover side flaps secured overlying the side walls and adhered thereto,



weakened lines of separation in non-registered relation in opposite sides of said cover panel and extending inwardly from opposite side edges of said cover panel at points spaced from the forward end thereof a distance substantially equal to the width of said articles and then rearwardly in converging relation to terminate in spaced relation at the fold connecting said rear wall to said cover panel and cut lines extending along the fold lines connecting said cover side flaps from the forward ends of said weakened lines to the forward edge of said cover panel,
whereby when said package is opened said cover panel portion is adapted to split intermediate the inner and outer surfaces to form ledges,
one said headed article adapted to be exposed for grasping intermediate its ends between the ends of said ledges and said front panel,
whereby heads of said articles are protected prior to removal from said package.

3,301,392
NESTED PACKAGE
Paul Eddingfield Regan, Jr., Somerville, N.J., assignor to Ethicon, Inc., a corporation of New Jersey
Filed Nov. 24, 1965, Ser. No. 509,486
7 Claims. (Cl. 206—56)



1. A sterile surgical package which comprises a hermetically sealed outer container, a hermetically sealed sterile inner container situated within said outer container, and a sterile surgical product enclosed in said sterile inner container, said sterile inner container comprising a relatively rigid bacteria impervious molded inner product receiving sheet and a bacteria impervious inner cover sheet, and said outer container comprising a relatively rigid bacteria impervious molded outer receiving sheet

and a bacteria impervious outer cover sheet, said molded inner product receiving sheet being shaped to form an inner chamber which entirely receives said sterile surgical product and a flat peripheral rim surrounding said inner chamber, and said inner cover sheet overlapping said inner chamber and said peripheral rim of said inner container around its entire perimeter and being sealed to said rim in a continuous area around its entire perimeter, said molded outer receiving sheet being shaped to form an outer chamber and a flat rim surrounding said outer chamber, the peripheral dimensions of said outer chamber being slightly greater than the peripheral dimensions of said inner chamber and said inner chamber nesting within said outer chamber so as to orient the peripheral rim of the inner container in a definite position with respect to the peripheral rim of the outer container, the outer edges of the rim of said outer container lying substantially beyond the outer edges of the peripheral rim of said inner container and overlapping the peripheral rim of said inner container around its entire perimeter, the outer cover sheet overlapping the outer chamber and rim of the outer container around its entire perimeter and being sealed to said rim in a continuous area only beyond the periphery of said inner container and surrounding said inner container, whereby a package is provided wherein the peripheral rim of the inner container is situated in a definite position with respect to the peripheral rim of said outer container by virtue of the nesting of said inner chamber and said outer chamber and wherein the peripheral rim of said inner container is nested between the moldable receiving sheet and the outer cover sheet of said outer container inward of the area in which the outer receiving sheet is sealed to the outer cover sheet.

3,301,393
SUTURE PACKAGE
Paul Eddingfield Regan, Jr., Somerville, and Boris Lisowsky, Union, N.J., assignors to Ethicon, Inc., a corporation of New Jersey
Filed Feb. 2, 1966, Ser. No. 524,412
12 Claims. (Cl. 206—56)

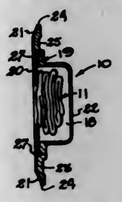


1. A suture package comprising a disk-shaped container which in turn comprises a top wall and a bottom wall together defining an annular compartment of substantial diameter and a shallow centrally located disk-shaped passage in communication with said annular compartment all around the inner border of said compartment, said annular compartment being several times greater in depth than said disk-shaped passage, said walls being joined to one another only outwardly of said compartment and one of said top and bottom walls defining a centrally located suture dispensing aperture, said disk-shaped container additionally comprising a coiled suture located in said annular compartment with one end of the suture extending from said coil through said disk-shaped passage and thence outwardly of the container through said aperture for dispensing the suture from the package, said passage being sufficiently shallow to minimize tightening of the suture coil convolutions when the suture is progressively removed from the package by drawing it through the dispensing aperture by exerting a force on the end passing through the aperture and sufficiently deep to allow any suture coil convolution which does tighten when said force is exerted thereon to snap back to its original position in the annular compartment when the force is released therefrom.

ERRATUM

For Class 206—60 see:
Patent No. 3,301,820

3,301,394
SHEATH PACKAGE
Walter P. Baermann and Armand V. Cooke, Raleigh, N.C., and Everett A. Peterson, Mineola, N.Y., assignors to Medical Supply Company, Rockford, Ill., a corporation of Illinois
Filed Oct. 15, 1965, Ser. No. 496,560
9 Claims. (Cl. 206—63.2)



1. A sheath package comprising a first sheet of relatively rigid impervious material having an area of the sheet deformed out of the plane of the sheet and forming a box-like dome defining a recess in one side of said sheet, a second sheet of impervious material of approximately the same size and shape as said first sheet disposed against said one side and having a hole therethrough opening toward said recess, an elongated flexible sheath composed of the same material as said second sheet and having an open end integrally joined to the second sheet around said hole, the other end of said sheath being closed and the sheath being folded into said dome, a continuous seal joining said sheets together along all edges thereof and protectively closing the interior of the package, and a score line in said first sheet extending around said dome between the latter and said seal thereby weakening the sheet for easy removal of the dome and the area of the first sheet within said line to expose and permit unfolding of said sheath for use.

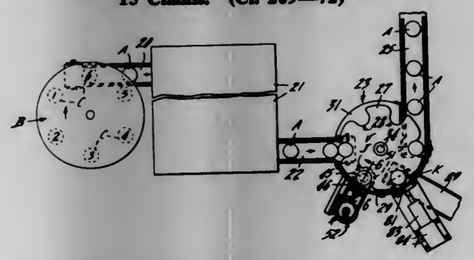
3,301,395
TEAR OPENING FOR DISPLAY PACKAGES AND METHOD OF MAKING SAME
Edwin W. Swezey, Hackensack, N.J., assignor to Union Camp Corporation, a corporation of Virginia
Filed Nov. 24, 1964, Ser. No. 413,467
13 Claims. (Cl. 206—80)



7. In a package consisting of stretchable and shrinkable plastic sheet members sealed to each other and to an outer paperboard sheet, that improvement in perforated, laminated tear opening structure consisting of a line of perforations in said paperboard sheet constituting the outer wall of said package, said line of perforations extending from an outside edge of said wall along a line into the interior portion of the package which extends beyond the edge of the inner ply of plastic sheet material thereunder, elongated bands on each side of said line of perforations

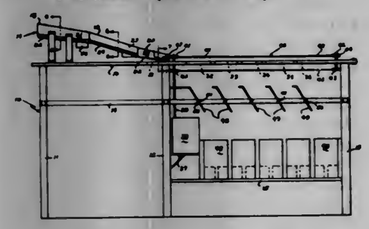
sealed under heat and pressure to bond the inner plastic sheets along said bands to each other and to the outer paperboard walls while leaving an elongated zone of inner plastic plies between said bands which lies directly opposite said line of perforations in unsealed condition, this unsealed elongated zone setting the direction of tearing into the inner plies of plastic when said perforated line is torn inwardly starting at the outer edge of the package.

3,301,396
METHOD OF AND APPARATUS FOR CLASSIFYING GLASS BOTTLES
Carl Alfred Benson, Barrington, and Arthur Le Roy Hart, Cary, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 11, 1964, Ser. No. 351,090
15 Claims. (Cl. 209—72)



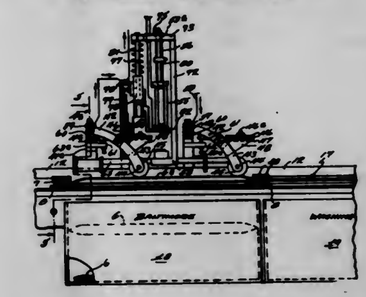
15. A method of classifying glass bottles produced in a plurality of molds, comprising the steps of molding each of said bottles with a marking on its surface which marking corresponds to the mold in which it was produced, passing the molded bottles successively into and through a detecting station and an ejecting station, setting a selector device connected with said stations to reject bottles having a selected marking, detecting the marks on said bottles at said detecting station to detect said selected bottles, and ejecting said detected bottles at said ejecting station.

3,301,397
SILVERWARE SORTING DEVICE
Roger A. Stutz, 606 W. Ash St., Piqua, Ohio 45356
Filed Sept. 23, 1964, Ser. No. 398,509
6 Claims. (Cl. 209—73)



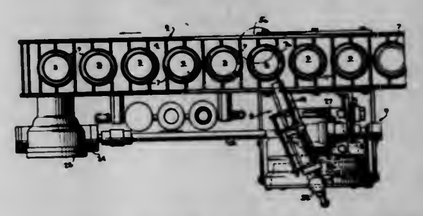
2. A sorting device for silverware or the like, including a table having an elongated slot of varying width, articles of silverware installed in said slot in an upright position with handles down and moved longitudinally thereof dropping through the table at different locations in said slot according to the article classification, means for feeding articles to said slot, and means for advancing said articles longitudinally of said slot and for simultaneously stabilizing them in an upright position, said means for feeding said articles to said slot comprising a feeder trough to receive a supply of silverware, said trough narrowing as it approaches said slot and terminating in a portion aligned with said slot and of a size to pass single articles.

3,301,398
MAIL SORTING MACHINE
Francis Du Pont Ammen, 307 W. 8th St., Los Angeles, Calif. 90014; Myra M. Ammen, administratrix of the estate of said Francis D. Ammen, deceased
Filed Sept. 9, 1963, Ser. No. 307,384
16 Claims. (Cl. 209—81)



6. In a sorting machine of the kind described for mailed envelopes, the combination of rectangular envelopes addressed to different destinations, having two transverse strips of conductive material, located on the envelopes at locations according to a given code, and spaced apart according to a given code distinctive to the destinations to which the envelope is addressed, said strips being disposed parallel to each other and each strip capable of cooperating with two contacts resting on one of said strips and two contacts resting on the other of said strips simultaneously to close a circuit in which the said strips are connected in series through the agency of said pairs of contacts, and wherein each envelope rides in a carriage in the shape of a rectangular frame with a rectangular opening in the frame presenting a ledge supporting the envelopes at their edges, thereby enabling the envelopes to be dislodged by an ejector pressed downwardly onto the upper face of the envelope.

3,301,399
DETECTION MECHANISM FOR COCKED CAPS
Charles S. Ochs, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Jan. 20, 1964, Ser. No. 339,017
11 Claims. (Cl. 209—90)



1. A detecting mechanism comprising conveying means having an unpartitioned moving surface member for supporting articles therein at any degree of spacing between adjacent articles and for moving said articles in randomly spaced fashion past a detecting unit, said detecting unit having means for inspecting said articles passing thereby, a memory device having a plurality of pins therein movable between a retracted and an extended position, said memory device being moved in synchronism with said conveying means, extending means responsive to said inspecting means for moving a pin to an extended position when said inspecting means detects a defective article, a rejection unit spaced from said detecting unit,

means responsive to said extended pin for operating said rejection unit to reject said defective article, the time for said extended pin to traverse the distance between said extending means and said operating means being substantially equal to the time for the defective article to traverse the distance between said detection unit and said rejection unit, there being a sufficient number of pins in said memory device so that at least one of said pins represents the minimum space occupied by each article, whereby at least one pin on said memory device represents a container regardless of the position of the container on said conveying means.

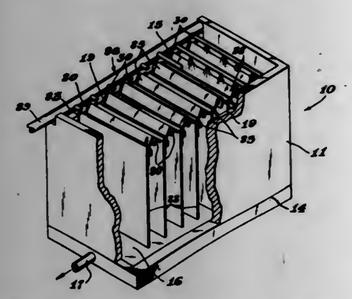
3,301,400
FLOTATION PROCESS WITH 2-CYANOVINYL ALKYLXANTHATES
Norbert M. Bikales, Livingston, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Original application Dec. 10, 1962, Ser. No. 243,615, now Patent No. 3,226,417, dated Dec. 28, 1965. Divided and this application Aug. 11, 1964, Ser. No. 388,923
4 Claims. (Cl. 209—166)

1. The process of beneficiating metal sulfide ores which comprises grinding said ores and subjecting the ground ore to froth flotation in the presence of a compound of the formula:

$$R-O-\underset{\underset{S}{\|}}{C}-SCH=CHCN$$

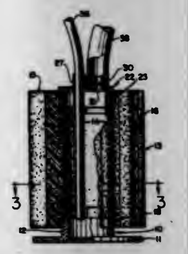
wherein R is a member selected from the group consisting of alkyl radicals having up to twelve carbon atoms and lower aralkyl radicals of less than three rings.

3,301,401
SECONDARY WASTE WATER TREATMENT APPARATUS
Robert E. Hall, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 8, 1964, Ser. No. 365,962
3 Claims. (Cl. 210—150)



1. In a biological oxidation apparatus for the secondary treatment of waste water comprising an enclosure, the enclosure having an upper and a lower end, a plurality of vertically disposed spaced apart sheets defining spaces therebetween, the sheets being in substantially parallel arrangement and having upper ends and lower ends, a liquid distributor comprising means to provide a liquid onto upper ends of the sheets, a liquid discharge at the lower end of the enclosure adapted to remove the treated water, the improvement which comprises
a plurality of baffles,
the baffles being positioned within the space adjacent the upper end of the vertically disposed sheets,
the baffles comprising elongate members having two generally parallel edges, the edges having serrations, the serrations having points, the points of the serrations of each edge being disposed against a hanging sheet, each baffle defining
a surface lying between the edges which is remotely disposed from the adjacent sheets relative to the edges and adapted to cause liquid falling thereon to be deflected to the edges, the baffle being positioned in such a manner that the falling spray of liquid is deflected onto the upper portion of each of the hanging sheets and is prevented from falling between the sheets.

3,301,402
AQUARIUM FILTER
Douglass R. Falkenberg, 20997 Westlake Road, Rocky River, Ohio 44116, and Edward L. Sharpe, Elyria, Ohio; said Sharpe assignor to said Falkenberg
Filed Feb. 26, 1964, Ser. No. 347,554
4 Claims. (Cl. 210—169)

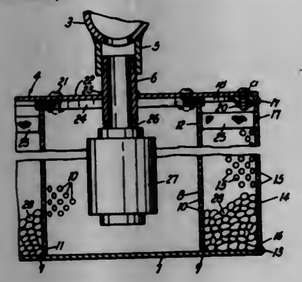


4. A submersible filter for conditioning an aqueous medium comprising in combination:
(a) a porous physically solid cylindrical filter medium having its outer surface provided with a plurality of circumferentially disposed spaced flutes parallel to the axis of said medium, and having a hollow core formed by an axially extending bore, the pores of said medium being the sole inlet of aqueous medium into said bore;
(b) a cap for closing said bore at one end of said cylindrical medium at the least submersible extremity, said cap having a depending skirt integral therewith and adapted to be removably inserted into the bore of said filter medium at one extremity, but said cap having located thereon, and extending therethrough a pair of integrally cast nipples,
(c) a weighted base heavier than said cap acting as ballast for said filter medium, and having a cylindrical wall portion integral with a solid disc portion and adapted to be removably inserted into the bore of said filter medium for closing the bore at the other end of the cylindrical medium at its deepest submersible extremity;
(d) an inlet tube for introducing air into said bore, said tube extending through, and frictionally held in, one of said pair of nipples in said cap, into said hollow bore to a point adjacent said base, and
(e) an outlet tube of preferably larger diameter for exiting air and water from said bore, said tube extending from the other one of said pair of nipples in said cap into the aqueous medium outside said filter medium.

3,301,403
FILTER ASSEMBLY FOR SHALLOW WELL INTAKES
Francis R. Reminder, Spring Lake, Mich., assignor to Tri-City Manufacturing Company, Grand Haven, Mich.
Filed Dec. 9, 1964, Ser. No. 416,979
4 Claims. (Cl. 210—253)

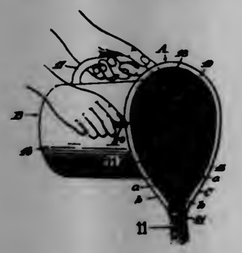
1. A filter system comprising
a main intake pipe with branch intake pipes opening

therefrom and having downwardly projecting filter connections spaced along the branch pipes,
a filter unit secured to each of said filter connections and comprising a cylindrical outer wall and a cylindrical inner wall secured in radially spaced relation to a bottom wall,
said inner and outer walls being perforate with imperforate bands along their upper and lower edges,
a cover retaining ring secured to the upper edge of said outer wall and projecting inwardly therefrom,
nuts secured to the under side of said ring,
a removable cover plate secured over said inner and outer walls and secured thereto by screws engaged with said nuts,



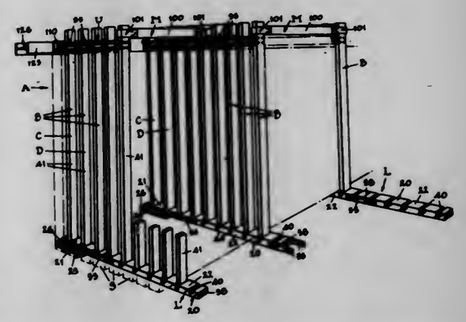
a deformable gasket fitted over the upper edge of said inner wall and bearing against said cover plate,
a nipple secured in the center of said cover plate and adapted at its upper end for engagement with the filter connection of said branch pipes and adapted at its inner end for connection to a foot valve,
and a coating of vitreous enamel covering said inner, outer and bottom walls and said cover plate,
the space between said inner and outer walls and said bottom wall and cover plate being adapted to be filled with pea size gravel.

3,301,404
STRAINER
Harold E. Becker, Los Angeles, Calif., assignor of one-half to Richard S. Backlund, Los Angeles, Calif.
Filed May 15, 1964, Ser. No. 367,655
2 Claims. (Cl. 210—465)



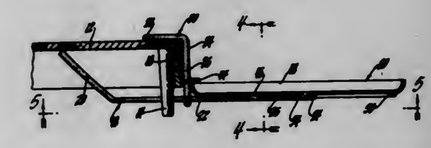
1. The combination with an open topped vessel embodying a continuous side wall having a co-planar marginal rim, of a hand strainer comprising a flat screen for removable positioning on said rim, said screen being dimensioned to overlie the open top of said vessel and to protrude outwardly therefrom with a broad expanse of screen extending between the rim of the vessel and the margin of said screen, a frame encompassing the margin of said screen and attached thereto, and a handle affixed to and projecting laterally from said frame for grasping in the hand of a person and whereby the screen may be imposed on the vessel rim in overlying relation to the open top of the vessel, a convergent pouring tongue extending from said projecting broad expanse of screen in continuation thereof whereby said tongue is in spaced relation to the rim of said vessel and the side margins of said tongue being bordered by said frame with said frame terminating in a tip and having inner margins projecting outwardly in opposite directions away from the plane of the screen forming liquid directing ledges leading to said tip for contracting liquid flowing from said screen over said tongue into a narrow stream.

3,301,405
STORING GLASS SHEETS
Joseph E. Turney, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Apr. 15, 1965, Ser. No. 448,512
13 Claims. (Cl. 211—41)



1. Apparatus for storing sheet material comprising,
(a) a lower supporting structure, including a plurality of spaced substantially parallel base members,
(b) each of said base members being made up of a plurality of elongated elements having matching ends abutting along a line at an angle to their width,
(c) means for securing said elements in said abutting relationship,
(d) a plurality of weight-substaining members extending upwardly from said base members, and
(e) an upper supporting structure, including a plurality of members associated with said weight-sustaining members adjacent their upper ends and spacing the same from and connecting them to one another.

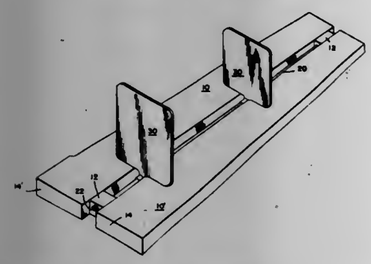
3,301,406
TRAY AND BRACKET ASSEMBLY
Henry T. Scott, 16971 Buckingham, Birmingham, Mich. 48009
Filed Oct. 21, 1964, Ser. No. 405,457
12 Claims. (Cl. 211—88)



2. A tray and bracket assembly adapted to be removably mounted on a planar support and comprising:
a bracket member having first means engaging one surface of a support, second means engaging the other surface of a support, and a portion extending outwardly, said second means limiting the position of said bracket member relative to a support;
a tray member received on said outwardly extending portion of said bracket member and having means

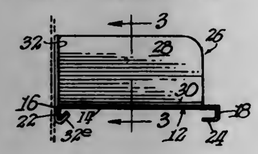
thereon engaging said portion and locating said tray member relative thereto;
and third means extending outwardly from said second means and engaging said tray member to retain said tray member on said bracket member.

3,301,407
SHELF DIVIDERS
Gerald L. Jones, 5404 Summer Ave. NE., Albuquerque, N. Mex. 87110
Filed Dec. 21, 1964, Ser. No. 419,833
3 Claims. (Cl. 211—184)



1. A divider system comprising:
(A) an elongated base;
(B) a magnetic bar passing through a longitudinal opening in said base, said bar fixed to said base at opposite longitudinal ends thereof;
(C) at least one divider generally perpendicularly oriented with respect to said base, said divider having a lower lug projecting into the opening in said base;
(D) magnetic means supported in an opening defined by said lugs, and having ends magnetically attached to said bar, said ends being in the same plane as said rod, said magnetic means imposing relatively little resistance to sliding in the same plane as said rod, and imposing relatively great resistance to sliding in a plane perpendicular to said plane of said rod.

3,301,408
SHELF CONSTRUCTION
John C. Craine, Lombard, Ill., assignor to Advertising Metal Display Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 2, 1965, Ser. No. 436,433
1 Claim. (Cl. 211—184)



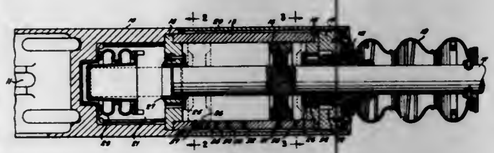
In a shelf construction the combination comprising a main shelf of rectilinear configuration; a shelf divider slidably movable along the length of said shelf, said divider having a base portion slidably movable over the surface of said main shelf and a vertical dividing wall extending from one end of said base portion; said vertical dividing wall being disposed at substantially right angles to the longitudinal axis of said shelf, said divider also having an end wall disposed at right angles to said vertical dividing wall and extending beyond the juncture of said vertical dividing wall and base portion, said shelf having a depending edge portion extending along one longitudinal edge thereof and a terminal edge upwardly extending toward the undersurface of said shelf so as to define an elongate guide member along the length of said shelf which is uniform and upwardly divergent in cross section; connector means defining the lower end of said divider end wall; said connector means being snugly receivable about the outer periphery of said shelf elongate member when said divider base portion is resting upon said main shelf; said connector means preventing movement of said divider transversely to the longitudinal axis of said shelf when disposed about said elongate member and said divider base portion is resting upon said shelf; said divider connector means being disengageable from said elongate guide member by pivotally moving said shelf divider upwardly from the main shelf about said elongate guide member.

3,301,409
WHEEL SUSPENSION FOR CRAB SUPPORTING WHEELS OF AN OVERHEAD TRAVELLING CRANE
Franco De Gasperis, Turin, Italy, assignor to Società Nazionale delle Officine de Savigliano, Turin, Italy
Filed May 17, 1965, Ser. No. 456,450
Claims priority, application Italy, June 16, 1964, 13,417/64
2 Claims. (Cl. 212—18)



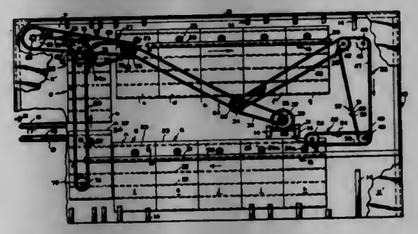
1. Wheel suspension for crab supporting wheels of an overhead travelling crane comprising a box girder, a crab having a body mounted on said girder for movement therealong, a first rail attached to said girder extending along the top of said girder at one side thereof and having its running surface facing upwardly, load suspension means carried by said crab disposed laterally outwards of said rail at said one side and tending to tilt said crab in one direction about said rail, a second rail attached to and extending along the other side of said girder and having two running surfaces, one running surface facing the opposite direction to said one direction, the other running surface facing said one direction and wheels mounted on said crab and arranged to run on the running surfaces of said rail, wherein the wheels arranged to run on said one running surface of the second rail are attached to a depending support swingably supported from pins extending parallel to said second rail, said pins being affixed to a block slideably mounted on the crab body in a direction transverse to said second rail.

3,301,410
HYDRAULIC SHOCK ABSORBING APPARATUS
Orum Elwyn Seay, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Continuation of application Ser. No. 344,579, Feb. 13, 1964. This application Feb. 14, 1966, Ser. No. 527,347
7 Claims. (Cl. 213—43)



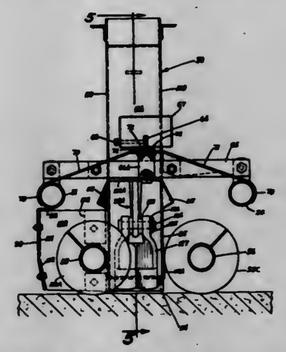
1. A hydraulic cushioning apparatus of the type described, comprising, in combination: a cylinder adapted to contain hydraulic fluid, a piston adapted to move axially relative to said cylinder, means forming a chamber, a plurality of metering ports establishing the sole communication between said cylinder and said chamber, all of said metering ports being exponentially spaced axially, successive metering ports being spaced closer together in the direction of the working stroke of the piston, each metering port having a diameter of from about 0.28 inch to about 0.38 inch, relative axial movement of said piston and cylinder acting to force hydraulic fluid from said cylinder through said metering ports and into said chamber.

3,301,411
ELEVATOR MECHANISM FOR PRODUCT COOLING OR PROOFING SYSTEM
Hiram E. Temple, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of Michigan
Filed Mar. 31, 1964, Ser. No. 356,180
5 Claims. (Cl. 214—16.4)



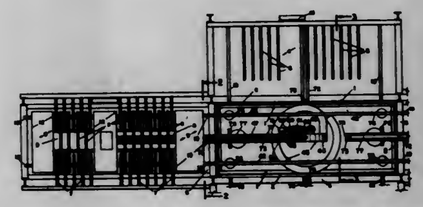
1. Product cooling or proofing apparatus comprising: horizontal rails defining upper and lower article supporting runs; conveyor means, including endless elevator conveyor means having a generally vertically disposed run substantially connecting the ends of said rails, and lowerator conveyor means having a generally vertically disposed run connecting opposite ends of said rails; carriers with vertically spaced shelves supported on said rails and elevator and lowerator means; means on said elevator conveyor means and lowerator conveyor means for engagement and disengagement with said carriers successively to respectively lift and lower the carriers vertically from one rail to the other in a circuitous travel; and conveyor means also including horizontally extending runs with means thereon for engagement and disengagement with said carriers for moving them in end to end engagement along said rails; the means on the elevator and the lowerator means and horizontally extending runs being spaced and driven at speeds such that the carriers are moved incrementally around a circuit; vertically stationary loader surface means adjacent said elevator run for supporting products to be loaded on said shelves of the carriers; vertically stationary unloading surface means adjacent said elevator run for supporting products to be unloaded from said carrier shelves successively; drive means; elevator shaft means around which said endless elevator conveyor means is trained; intermediate shaft means mounted near the upper end of said elevator run and connected with said elevator shaft means; connecting means driven continuously by said drive means and connected with said intermediate shaft means for driving said elevator conveyor shaft means continuously; lost motion mechanism on said elevator shaft means connected with said intermediate shaft means and driving the elevator endless conveyor means in indexing movements so that the carriers being elevated on said run are moved in indexing movements to dispose shelves of the carriers stationarily adjacent the loader and unloading surfaces for short periods of time sufficient to permit loading and unloading; and means for loading products from said loader surface to said shelves and unloading products from said shelves to said unloading surface during said periods of time.

3,301,412
CLOSURE STRUCTURE FOR SILO UNLOADER COLLECTOR ARM
Floyd E. Buschbom, Long Lake, Minn., assignor to Vandale Corporation, Long Lake, Minn., a corporation of Minnesota
Application May 22, 1963, Ser. No. 282,475, which is a division of application Ser. No. 27,435, May 6, 1960, now Patent No. 3,232,456, dated Feb. 1, 1966. Divided and this application Mar. 11, 1965, Ser. No. 438,909
6 Claims. (Cl. 214—17)



1. In a silo unloader collector arm, a rotary auger assembly, elongated center beam means positioned above and extended longitudinally of said auger assembly, elongated frame members positioned on opposite sides of the center beam means and extended substantially parallel thereto, shield means for covering said auger assembly, said shield means including a first sheet member projected outwardly from the center beam means and a second sheet member projected outwardly in an opposite direction from the center beam means, each sheet member having an arcuate outer edge cooperating with an arcuate surface of the adjacent frame member, said first sheet member and second sheet member being of substantially the same size and shape, and means for securing the first sheet member and the second sheet member to the center beam means.

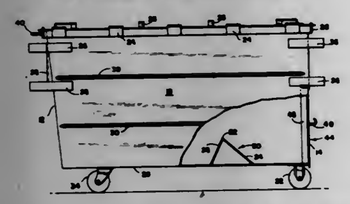
3,301,413
HIGH SPEED HIGH CAPACITY MECHANICAL PARKING SYSTEM
Ralph W. Coursey, 1414 E. Wilshire, Oklahoma City, Okla. 73116
Filed Apr. 10, 1964, Ser. No. 358,834
4 Claims. (Cl. 214—16.1)



3. In a system for storing automobiles at an elevated level, comprising:
means forming an elevator shaft extending through the elevated level;
an elevator in the shaft;
an automobile storage cell at the elevated level opening into one side of the elevator shaft;
a track in the automobile storage cell terminating adjacent the elevator shaft;

a turntable on the elevator;
a track section on the turntable of a length to protrude from the elevator shaft in one position of the turntable and mate with the adjacent end of the track in the automobile storage cell;
a vertical shaft journaled in the automobile storage cell having one-half of a latch thereon;
a stop carried by the track in the automobile storage cell adjacent the latch portion carried by said shaft;
one-half of a latch carried by the track section on the turntable in a position to contact said stop and mate with the latch portion carried by said shaft when the turntable is turned to mate said tracks; and
means for turning said shaft to interlock the latch portions when said tracks are in mating relation.

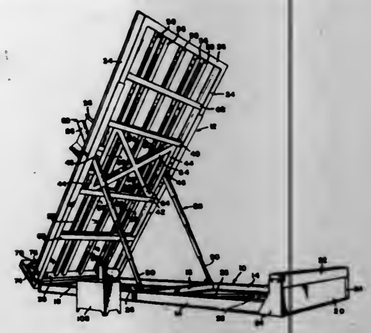
3,301,414
COMPACTION CONTAINER WITH MATERIAL DEFLECTOR
Milton Clar, Bethesda, Md., assignor, by mesne assignments, to Disposal Systems Development, Inc., Washington, D.C., a corporation of the District of Columbia
Filed Dec. 14, 1965, Ser. No. 513,729
10 Claims. (Cl. 214—41)



1. A compaction container having a pair of spaced side walls, a pair of spaced end walls, a bottom wall, and a top wall, one of said end walls having an opening adjacent to said bottom wall through which material to be compacted may be moved and having a substantial stationary portion extending upwardly above said opening, and a deflector for said material having an incline extending upwardly from said bottom wall away from said opening, said incline having its lower extremity spaced inwardly from said opening and having its upper extremity spaced from the other end wall and from said top wall at a level well above the lower extremity of said opening, said deflector being wedge-shaped and having an apex with said incline and another wall extending downwardly therefrom, the apex of said deflector being spaced from said one end wall a distance about one-third of the total distance between said end walls, and the height of said apex above said bottom wall being about 40% of the height of said opening above said bottom wall, whereby material moved through said opening is deflected upwardly by said deflector and whereby substantially the entire volume of said container, including the portion adjacent to said one end wall, may be filled with compacted material.

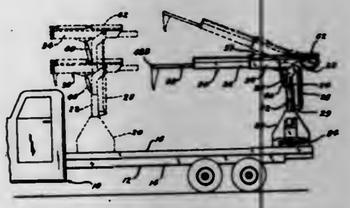
3,301,415
VEHICLE DUMPING APPARATUS
Alex E. Kunzler, Kent, and Henry M. Johnson, Des Moines, Wash., assignors to Leckenby Company, Seattle, Wash., a corporation of Washington
Filed Oct. 22, 1965, Ser. No. 501,267
2 Claims. (Cl. 214—49)

1. A portable vehicle dumping apparatus, comprising: (a) a generally rectangular portable support bed structure including longitudinal side frame members, and front, rear and intermediate bed cross frame members extending between and connecting said longitudinal side frame members; (b) a generally rectangular pivotal vehicle supporting and dumping platform supported on said bed having main side frame members and main front end, rear end and a pair of spaced-apart intermediate interconnecting members, said platform being hinged at the rear end thereof to the rear end of said portable bed structure and having a metal plate covering thereon, said platform also having a generally rigid and upstanding holding frame located at the rear end thereof for engaging a vehicular body and retaining same on said platform when said platform is pivoted upwardly, said platform further having secondary supporting frame structure including a secondary center longitudinal and also including secondary longitudinal frame pairs located be-



tween said secondary center longitudinal and each of said main side frame members for supporting the load bearing wheels of a vehicle, said secondary frame pairs extending the length of said platform between said main front end, rear and intermediate interconnecting members; and (c) a pair of telescoping, hydraulically actuated cylinders for raising and lowering said platform, said cylinders being positioned with the cylinder housings pivotally mounted on the inner sides of said platform main side frame members and extending upwardly through openings in said platform covering, said cylinders having the piston ends thereof pivotally attached to said portable bed structure.

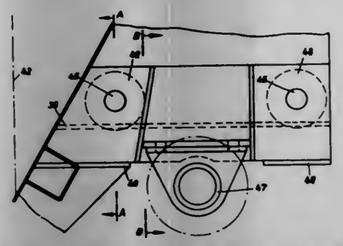
3,301,416
COMBINATION VEHICLE TRAILER AND LIFTING DEVICE
Cecil W. Bopp, Waterloo, Iowa, assignor to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa
Filed Aug. 3, 1964, Ser. No. 387,012
7 Claims. (Cl. 214—75)



1. In a trailer device adapted for use with a movable pedestal mounted lifting boom,
a trailer frame,
a bed surface on said frame,
two elongated parallel spaced apart slot openings in said bed surface, a horizontal flange adjacent one side edge of each of said slot openings and extending laterally outwardly to partially close said opening,

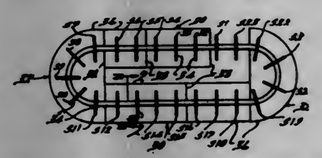
said horizontal flange extending no higher than the plane of said bed surface, said flanges adapted to movably receive the roller assemblies of a movable pedestal.

3,301,417
MECHANISM FOR MOVING FRONT WALL OF REFUSE DISPOSAL VEHICLE, OR THE LIKE
Mikko Jooseppi Terho, Autolava Oy, Raisio, Finland
Filed Apr. 8, 1965, Ser. No. 446,659
2 Claims. (Cl. 214—82)



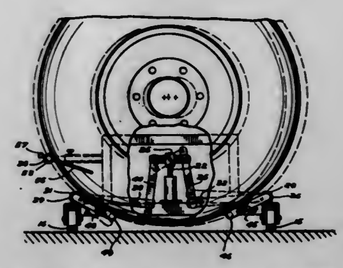
1. A movable front wall within the waste container of a transport vehicle, adapted to discharge and if necessary to compress the contents of the container, said front wall having mounted thereon a transverse shaft driven by a hydraulic motor and provided at the ends thereof with cogwheels each engaging a track arranged inside of a U-shaped channel attached with open side down to each side wall of the container, with the upper sides of the U-shaped channels serving to support the movable front wall, means for conducting pressure fluid to the hydraulic motor through flexible tubing from a pump located outside of the container, said movable front wall consisting of a case-like construction comprising a plate contacting the contents of the container and inclined rearwardly from above, side plates and wheels mounted on journals spaced at a distance from each other in the longitudinal direction on the lower part of each side plate, which wheels are adapted to roll along the upper surface of the U-shaped channels attached to the lower part of the side plates of the container, thus supporting the movable front wall so it may move from one end of the container to the other end.

3,301,418
CONVEYING APPARATUS
John V. Davis, Grosse Pointe Farms, Mich., assignor to The Udylite Corporation, Warren, Mich., a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 401,791
21 Claims. (Cl. 214—89)



1. A conveying machine for conveying workpieces through a series of treating stations comprising track means extending along the treating stations, a work carrier movably mounted on said track means, upright guide means on said work carrier, a carriage including a work-supporting arm movably mounted on said guide means, transfer means for intermittently advancing said work carrier along said track means, and lift means for moving said carriage and said work-supporting arm to and from a lowered position and a raised position and for retaining said carriage and arm in the raised position during advancement of said work carrier from one station to the next adjacent station, said lift means including a supporting member extending longitudinally of said track means and of a length less than the distance of advancing travel of said work carrier, said supporting member longitudinally reciprocable from a retracted position in which the rearward end portion thereof is disposed in engaging alignment below said carriage and said arm and a projected position in which the forward end portion thereof is disposed in engaging alignment below said carriage and said arm.

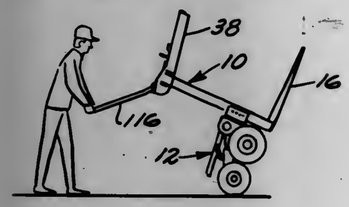
3,301,419
WHEEL LIFT
Harris L. Molden and Arthur C. Olson, both of Watson, Minn. 56295
Filed July 14, 1965, Ser. No. 471,941
7 Claims. (Cl. 214—332)



1. A wheel lift for positioning and holding wheels to be placed on a vehicle comprising:
a movable frame;
first and second spaced apart elongated parallel members rotatably secured to said frame;
a first pair of relatively short arms each of which is rigidly secured near an end of said first elongated member, said first pair of arms extending inwardly from said first elongated member generally in direction toward said second elongated member;
a first elongated wheel engaging member secured between said first pair of arms for engaging and partially supporting at least one wheel transversely at the periphery of the wheel, said first wheel engaging member being adapted to rotate with said first elongated member about the axis of said first elongated member;
a second pair of relatively short arms each of which is rigidly secured near an end of said second elongated member, said second pair of arms extending inwardly from said second elongated member generally in direction toward said first elongated member;
a second elongated wheel engaging member secured between said second pair of arms for cooperating with said first elongated wheel engaging member to support at least one wheel transversely at the periphery of the wheel, said second wheel engaging member being adapted to rotate with said second elongated member about the axis of said second elongated member;
movable means mounted on said frame capable of being selectively moved in first and second directions with respect to said frame; and
linkage means secured to said movable means and to said first and second elongated members to cause said first and second elongated members to rotate in opposite directions when said movable means is moved in either of said directions said linkage means including an arm having a central portion pivoted to said movable means, levers connected to the first and second elongated members, and links pivotally

connected to opposite outer end portions of the said arm and said levers whereby said elongated members can be rotated a relative small amount in the same direction causing a wheel supported on said first and second elongated wheel engaging members to be selectively transversely adjusted while maintaining the support of the wheel by said first and second elongated wheel engaging members.

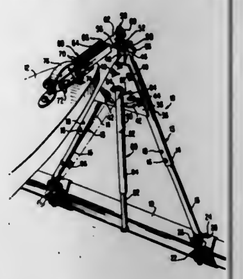
3,301,420
WHEEL MOUNTED UNLOADING FORK
Cecil W. Bopp, Waterloo, Iowa, assignor to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa
Filed Aug. 6, 1964, Ser. No. 387,970
19 Claims. (Cl. 214—372)



6. A device of the class described,
a fork means including a base frame with a load engaging portion extending outwardly in one direction therefrom,
a wheel assembly secured to said base frame opposite to said load engaging portion,
arm means on said base frame adapted to engage a cable means whereby a substantially horizontal pulling force on said cable means will tilt said fork means to an elevated position with respect to a horizontal supporting surface and impose the entire weight thereof on said wheel assembly,
said wheel assembly including a chassis,
first tandem wheel means mounted on said chassis adjacent said fork means,
brake means on said wheel means normally holding said first tandem wheel means against rotation in at least one direction,
second tandem wheel means mounted on said chassis adjacent said first tandem wheel means, and
a brake release means connecting said brake means and said second tandem wheel means whereby when the entire weight of said fork means is tilted and imposed on said first and second tandem wheel means, said brake means will release said first tandem wheel means for rotation.

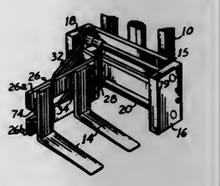
3,301,421
CAR TOP BOAT LOADER
Samuel F. Lutters, 167 Pinewood Trail, Trumbull, Conn. 06611
Filed July 27, 1965, Ser. No. 475,075
13 Claims. (Cl. 214—450)

1. A car top boat loader comprising a car engaging means including an elongated leg assembly including a pair of leg members having upper and lower ends and adapted to be pivotally attached to a car bumper at their lower ends for enabling said leg assembly to be rocked forwardly and rearwardly relative to its lower end, said leg members being disposed in the form of an inverted V so that they lie in a single transverse plane and diverge away from the upper ends; means for adjustably securing the said legs in fixed angular relationship with respect to each other while maintaining said legs in a common plane, and substantially equidistant from each other at the upper ends, said adjustable leg securing means including a rigid member spanning said leg members adjacent their upper ends, said leg members being pivotally attached adjacent their upper ends to said rigid member for angular rotation in a common plane relative to said rigid member, and releasable fastener means for releasably locking against rotation each of said leg members with respect to said



rigid member; and a boat engaging means attached to the upper ends of said legs, said boat engaging means having a longitudinal axis extending generally parallel with the longitudinal axis of a boat to be engaged thereby and being secured to said legs through a joint structure enabling rotation of said boat engaging means about its own longitudinal axis, and pivotal movement thereof about the longitudinal axis of said leg assembly in a plane generally normal thereto.

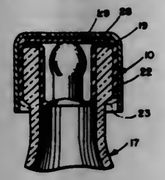
3,301,422
LOAD CARRIER FOR INDUSTRIAL TRUCKS
William W. Hendricks, Atlanta, Ga., by court decree, assignor, by mesne assignments, to Space Control Corporation, Atlanta, Ga., a corporation of Georgia
Filed Mar. 24, 1964, Ser. No. 354,249
7 Claims. (Cl. 214—730)



6. In a load carrier attached to an industrial truck having a longitudinal centerline together with a vertically movable mast, said mast having a transversely disposed portion relative to said longitudinal centerline and a pair of end portions extending outward and parallel to said longitudinal centerline, the combination therewith of rod means disposed between said end portions, a plate adapted with load handling means, said plate being adapted to assume a first position transverse to said longitudinal centerline and a second position normal to said first position, first motion means attached to said rod means, first connecting means pivotably connecting said first motion means to a first region of said plate, second motion means attached to said rod means laterally spaced from said first motion means, second connecting means pivotably and slidably, connecting said second motion means to a second region of said plate laterally spaced from said first region, actuating means for rectilinearly moving said first motion means toward said second motion means, whereby said first connecting means translates the rectilinear motion into rotary motion for pivoting said plate from said first position to said second

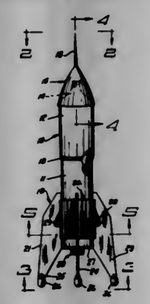
position, and cam means responsive to the rectilinear movement of said first motion means for guiding said plate through at least a portion of its pivotal movement to said second position.

3,301,423
FEEDING DEVICE FOR INFANTS AND METHOD
Ricardo Hurtado Soto, Aptdo. Aereo 9263, Bogota, Colombia
Filed Dec. 21, 1964, Ser. No. 419,659
2 Claims. (Cl. 215—11)



1. A feeding device for infants, comprising a rigid bottle having an open circular mouth, a lip integral with said bottle around said mouth and having a generally arcuate contour in transverse section, a two-position nipple constructed of resilient material mounted on said lip in retracted position, said nipple including a cup-shaped portion and a perforated tip portion disposed generally axially of said cup-shaped portion, said nipple further including a web portion integrating said tip and cup-shaped portions, said web portion being reversely folded to position said tip portion within said cup-shaped portion whereby said nipple is in said retracted position, said bottle lip having an outer, uninterrupted, cylindrical portion providing means mounting said cup-shaped portion for slidable movement in a direction away from the arcuately contoured lip portion, and a closure detachably fixed to said bottle and enclosing said nipple, said nipple when said closure is detached from said bottle being adapted to be manually manipulated to shift said cup-shaped portion relative to said lip and unfold said web portion to extend said tip portion with a part of said web portion surrounding said bottle to effect a liquid seal therewith.

3,301,424
DECANTER AND HOLDER THEREFOR
John Berzac, St. Clair Shores, Mich., assignor to Astro Manufacturing, Inc., Roseville, Mich., a corporation of Michigan
Filed Oct. 24, 1963, Ser. No. 318,703
2 Claims. (Cl. 215—12)



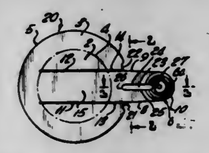
1. In combination, a decanter and holder comprising: an elongated container which is closed at the lower end and open at the upper end; a cap releasably mounted on said open upper end of said container; said container and cap being shaped in the form of a missile; a holder for supporting the container in an upright position; said holder including a ring-shaped member for the reception of the lower end of said container, a plurality of fins connected to said ring-shaped member for supporting the same, and a plate carried by said fins at a position spaced downwardly from said ring-shaped member for supporting the lower end of said container.

3,301,425
CLOSURE CAP
Kai Michael Brandtberg, Valby, near Copenhagen, Denmark, assignor to Brinch & Spehr Aktieselskabet, Ballerup, Denmark
Filed Oct. 29, 1963, Ser. No. 319,752
Claims priority, application Denmark, Oct. 31, 1962, 4,708/62
8 Claims. (Cl. 215—45)



1. A closure for a bottle having a mouth with an external circumferential cavity, said closure comprising a cap including a disc, and a resilient depending skirt on said disc, said skirt including a circumferential bulb facing inwardly, and an outwardly projecting extension below the bulb, the closure further comprising a reinforcing ring encircling the skirt for compressing the bulb in the cavity at the mouth of the bottle upon downward relative movement of the ring over the skirt a distance sufficient to cause the extension to be downwardly depressed and inwardly compressed, said ring being constituted of a material harder than that of the skirt and including an edge portion of sharp profile facing the skirt and inwardly and upwardly directed for locally cutting into the same when the extension is downwardly depressed and inwardly compressed to thereafter prevent upward movement of the ring on the skirt.

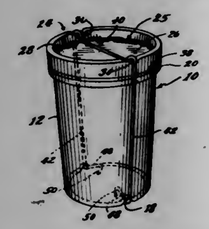
3,301,426
CLOSURE CAP
Leonard S. Kavalus, Livingston, N.J., assignor to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware
Filed June 5, 1964, Ser. No. 373,016
2 Claims. (Cl. 215—46)



1. A lightweight metal closure cap adapted to be secured over a lip bordering the opening of a container neck, said cap comprising a disc-like top portion, a laterally depending skirt therearound having a smooth cylindrical surface terminating in a substantially circular lowermost free edge, a pair of weakened tearing lines extending across said cap skirt and into said top portion, said lines defining a tear strip therebetween forming an integral part of said cap skirt and top portion, said tear strip extending downwardly away from said free edge in a short extension of said skirt and then extending radially outwardly away from said skirt in a gripping portion to facilitate tearing, a radially elongated slot formed in said tear strip, said slot

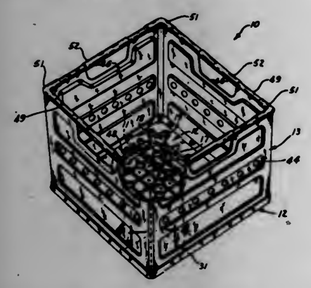
disposed within said short extension of said tear strip whereby severe distortion of said weakened lines is protected against through deformation of said slot which deformation reduces the resistance offered by said short skirt extension of said tear strip to circumferential movement of metal in said skirt during initial forming and subsequent applying of said cap.

3,301,427
CONTAINER AND A LID THEREFOR, AND MEANS FOR DETACHABLY SECURING SAID LID TO SAID CONTAINER
Harold Roman, Wilmette, Ill.
(841 W. Washington Blvd., Chicago, Ill. 60607)
Filed May 28, 1965, Ser. No. 459,594
11 Claims. (Cl. 215—89)



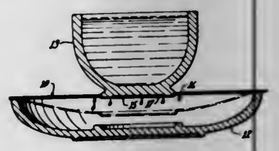
1. A device of the character described comprising a container, a lid for said container, said lid having a circular well configuration comprising a top wall and a circular upstanding rim, with said rim having opposed recesses extending below the top of said rim, a wire clamping member of a generally inverted U-shaped configuration adapted to engage in the recesses in the rim of said lid, said clamping member having hooking means at its opposite ends adapted to engage the bottom of said container for holding said lid in a closed position on said container.

3,301,428
MILK CARTON CONTAINER
Robert L. Erickson, Des Moines, Iowa, assignor to C. E. Erickson Co., Inc., Des Moines, Iowa, a corporation of Iowa
Filed Dec. 9, 1963, Ser. No. 328,814
2 Claims. (Cl. 220—4)



1. A crate for milk cartons comprising:
(a) a bottom wall including plate means, the top surface of said plate means having a plurality of spaced rounded countoured depressions, the bottom of each depression having a hole, furrow means having rounded countoured sides extended about the plate means adjacent the sides thereof, and rectangular coordinate groove means having rounded contoured sides and opening into the spaced depressions and said furrow means, said furrow means being formed with a plurality of holes and having a depth greater than said groove means; and an upright peripheral flange on said plate means,
(b) side walls having end sections, top sections and bottom sections, each of said side walls having a plurality of inwardly extended substantially horizontal panels which are laterally spaced from each other and terminate adjacent said end sections,
(c) means securing the bottom sections of the side walls to the upright peripheral flange on the plate means, and
(d) rod means secured to the top sections of said side walls.

3,301,429
SAUCER PAD, COVER OR THE LIKE
Ross O. McClain, 21813 Ravenna Ave., Torrance, Calif. 90502
Filed Oct. 29, 1963, Ser. No. 319,736
1 Claim. (Cl. 220—23.83)



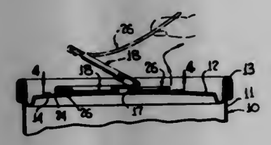
In combination, a saucer or the like having a rim structure surrounding the same and raised above the bottom wall thereof, a separate cover member disposed across said saucer and resting on said rim structure thereof, said cover member having drainage openings provided therein and having a depressed central area to nestingly receive a cup or the like, and a cup of liquid disposed in said depressed area and resting on said cover member with said cover member being elevated above said bottom wall of said saucer whereby any spillage from said cup onto said cover member will drain through said openings into the space between said cover member and said saucer to tend to keep the bottom of said cup dry, means integrally depending from said cover member to grip said rim structure to prevent slippage between said saucer and cover member and said drainage openings being disposed in said cover member to be located beneath said cup.

3,301,430
INTEGRALLY MOLDED PLASTIC COVER AND HINGE
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Apr. 23, 1965, Ser. No. 450,478
11 Claims. (Cl. 220—31)



1. A combined cover and hinge for selectively closing and exposing an opening in a cabinet, comprising:
a unitary device of molded plastic, including
(a) a substantially rigid cover portion;
(b) an elongated substantially rigid mounting block portion, and
(c) a flexible web portion integrally joined to said cover portion and to said mounting block portion along opposite edges of said web portion; said web portion having an as-molded configuration conforming to an open position of said cover portion with respect to the cabinet opening.

3,301,431
PULL TAB ASSEMBLY
Blase C. Rau, Chicago, and John C. Jasper, Hinsdale, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 23, 1964, Ser. No. 398,502
7 Claims. (Cl. 220—54)



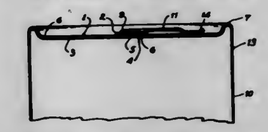
1. A pull tab assembly comprising a pull tab adapted to be secured at one end to a tear strip and a flexible pull ring connected to said pull tab at the opposite end thereof, said pull ring being formed of plastic and said pull tab having at least one edge portion rigidly clampingly securing said pull ring to said pull tab.

3,301,432
PULL KEY OPENING CAN END
James B. Novak, Glen Ellyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 13, 1964, Ser. No. 351,636
3 Claims. (Cl. 220—54)



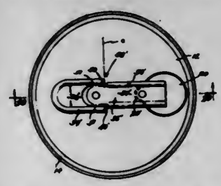
1. An easy opening container element having a removable part defined by a weakening line, said weakening line including a starting portion along which said container element is to be first ruptured in the removal of said removable part, a rigid pull member generally overlying said removable part and extending away from said starting portion, said pull member having a bearing portion at one end overlying said removable part immediately adjacent said starting portion and a grip portion at the opposite end, and means on remote sides of said pull member hingedly connecting an intermediate portion only of said pull member to said removable portion and defining a fulcrum for said pull member whereby when said grip portion is lifted said pull member will pivot relative to said container end and said bearing portion will be depressed and a rupturing force will be applied on said removable part immediately adjacent said starting portion, said connecting means being of the welding and soldering type and due to the position thereof on opposite sides of said pull member forming a pivot for said pull member.

3,301,433
CONTAINER AND METHOD OF MAKING SAME
Bernard F. Wade, Canonsburg, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1964, Ser. No. 403,084
6 Claims. (Cl. 220—54)



4. An impact extruded metal container, comprising:
a body having an integral side wall, end wall and solid rivet projecting outwardly from said end wall,
a score defined tear-out section in said end wall, and
an apertured opening tab attached to said tear-out section by said rivet headed into firm overlapping relationship with said tab.

3,301,434
CAN OPENER
Leo M. Harvey, Los Angeles, and Ralph W. Hilton, Palos Verdes Estates, Calif., assignors to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California
Original application Dec. 11, 1964, Ser. No. 417,567, now Patent No. 3,221,924. Divided and this application July 8, 1965, Ser. No. 478,517
8 Claims. (Cl. 220—54)



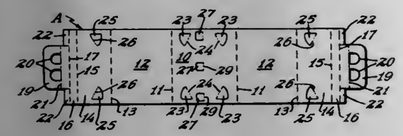
1. A can and opener for establishing spaced pouring and vent openings therein, and including:
(a) a can having an imperforate wall with spaced predetermined pouring and vent areas thereon, the pouring area being defined by a continuous prescored line;
(b) and an opener overlying the wall and comprising an elongate body of bendable material with two lever sections coupled at a hinge line, one lever section being fastened to the pouring area and with a tongue fastened to the vent area, said body having a pair of longitudinally disposed stiffening ribs at opposite sides thereof and said ribs being interrupted at the hinge line, and the tongue of the one lever section projecting between the ribs of the other lever section and with a pair of ears joining it to said spaced ribs, whereby the said other lever is operable to lift the tongue to sequentially remove from the can top the vent and pouring areas.

3,301,435
HANDLED CAN CARRIERS
William M. Tolaas, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Oct. 8, 1964, Ser. No. 402,504
8 Claims. (Cl. 220—112)

1. A can carrier for use in conjunction with cans having a chimed end, the carrier including:
an elongated flexible sheet cut and creased to provide a bottom panel adapted to underlie two side by side rows of cans, side panels connected to opposite edges

of said bottom panel and adapted to extend along opposite sides of the two rows of cans, and top panels connected to the upper edges of said side panels and each adapted to overlie a single row of cans, and anchoring flanges hinged to the top panels and adapted to extend downwardly between the rows of cans,

handle panels hinged to the lower edges of said flanges and adapted to fold in face contact between said flanges and to project above said top panels,

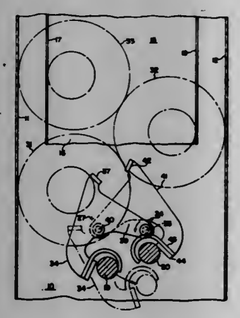


said handle panels being substantially narrower in width than the width of said flanges and being hinged to the central portions only of said flanges,

the end portions of said flanges being adapted to fold into face contact on opposite sides of said handle panels, and

chime-engaging flaps hinged to the end portions of said flanges and adapted to fold outwardly of said flanges to engage the can chimes at the upper ends of said cans.

3,301,436
BOTTLE DISPENSING APPARATUS WITH ICE BREAKER
Meigs W. Newberry, East Longmeadow, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 24, 1964, Ser. No. 420,899
3 Claims. (Cl. 221—67)



1. In bottle dispensing apparatus, the combination of wall structure providing a compartment for two columns of bottles arranged in corded or vertically staggered, horizontally overlapping relation,

bottle supporting and releasing mechanism at the bottom of said compartment comprising first and second bottle supporting and releasing rods which, in their rest positions, are horizontally spaced from each other and from the opposite sides of the compartment,

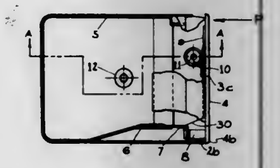
means for mounting each rod for pivotal movement from its rest position downwardly and under the other rod about an axis above and adjacent said other rod and back to its rest position,

an ice breaker member mounted to pivot about an axis adjacent and parallel to the pivot axis of one of said releasing rods,

said ice breaker member having an abutment disposed in its rest position above the center of the neck of the lowermost bottle and at least partly intermediate the columns of the necks of the bottles,

and means operable by either of said releasing rods for actuating said ice breaker member to move said abutment downwardly and into engagement with the neck of the lowermost bottle to move it in the event that it fails to follow a respective one of said rods upon releasing movement thereof and for returning said ice breaker member to its rest position upon return movement of the respective one of said rods to its rest position.

3,301,437
PILL DISPENSER
Michael Faber, East Meadow, N.Y.
(1 Belvedere Ave., Farmingdale, N.Y. 11735)
Filed Apr. 21, 1966, Ser. No. 544,209
9 Claims. (Cl. 221—202)



1. A pill dispenser comprising,

a top member, a bottom member removably attached to the top member, the said top and bottom members forming a container having side walls and exit port;

a guide plate attached to said bottom member and having a plurality of support means therein;

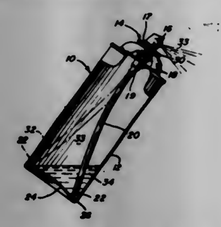
a movable lever member mounted on the guide plate by means of the said support means in the guide plate, a spring mounted in the said guide plate and nominally holding the lever outward by acting against the lever;

wherein the lever normally closes the exit port and opens the said port when depressed against the spring, the said lever including a pill holding means which is adapted to be filled with a pill in the lever's closed position and retains said pill when depressed to move said pill to said exit port;

a flexible extension attached to the lever and protruding into the container, which extension is positioned so that it closes the exit port during operation of the lever and also slides along a wall of said container without affecting the volume of said container, said extension reorientating the pills in the container by sliding friction during the return of the lever to its original position, thus preventing or clearing a jamming of the pills which would keep one pill from entering said port.

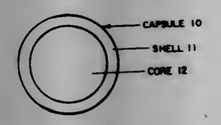
3,301,438
DIP TUBE
David S. Tillotson, Deerfield, Ill., assignor to Newman-Green, Inc., Addison, Ill., a corporation of Illinois
Filed July 6, 1965, Ser. No. 469,437
3 Claims. (Cl. 222—41)

1. A pressurized product dispenser valve including a mounting cover for the valve having an index mark thereon and a spray head having a dispensing orifice in registry with said mark, a valve housing depending from said cover having a bottom open end, and a dip tube secured at one extremity thereof to said end of the housing, said tube having a substantially cylindrical wall having a thicker portion and a thinner portion extending along diametrically opposite sides of said tube, said tube being



curved along the length thereof in an arc and having an opposite extremity displaced laterally from the bottom end of the housing in the direction of said index mark.

3,301,439
RADIATION DISINTEGRATING CAPSULE
Jaromir Kosar, Beechhurst, N.Y., and George M. Atkins, Jr., Atlanta, Ga., assignors to Kenffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
Filed Mar. 5, 1965, Ser. No. 437,472
17 Claims. (Cl. 222—52)



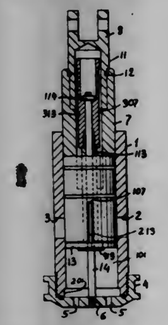
1. A capsule comprising:

a core material;

a radiation-transparent shell completely enclosing the core material; and

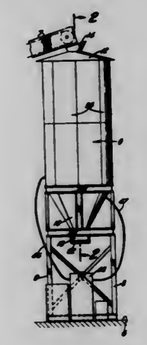
a radiation-sensitive shell-disintegrating agent in the core material.

3,301,440
MULTI-PISTON COCK ADAPTED FOR THE SIMULTANEOUS DOSING OF A PLURALITY OF DIFFERENT-FLAVORED ICES, OR THE LIKE
Poerio Carpigiani, Bologna, Italy, assignor to APAW S.A., Fribourg, Switzerland
Filed Sept. 9, 1965, Ser. No. 486,041
Claims priority, application Italy, Sept. 15, 1964, 19,783/64
5 Claims. (Cl. 222—135)



1. In a multi-piston measuring and dispensing cock, comprising a cylinder having a main bore and a shallow counter-bore of greater diameter at one end thereof, a closure member secured to said cylinder at the counter-bored end thereof and having at least one dispensing port therethrough, a dosing piston slidable in said main bore and having an abutment on its side facing said closure member and displaced laterally of said dispensing port, the thickness of said piston and abutment being less than the depth of said counterbore, an axially disposed rod fixed to the side of said piston opposite said abutment, a plunger slidable in said main bore and having an axial bore slidably receiving said rod, means on said plunger at its end opposite said piston for connection with reciprocal drive means for reciprocating both said plunger and said piston, said cylinder having at least one inlet port opening into said main bore, and abutment means fixed relative to said cylinder and limiting the stroke of said piston both relative to said cylinder and to said plunger so that said piston is stopped on one side of said inlet port and said plunger can be moved beyond said inlet port and spaced from said piston to define a measuring chamber therebetween and in communication with said inlet port, the improvement comprising said main bore having a uniform diameter throughout its length said piston and plunger having uniform diameters snugly fitting said main bore, and said abutment means being disposed in alignment with and engageable by the free end of said piston rod.

3,301,441
ASPHALTIC CONCRETE STORAGE BIN
Peter J. Werner, Carmichael, and John R. Dean, Sacramento, Calif., assignors to A. Teichert & Son, Inc.
Filed Nov. 30, 1964, Ser. No. 414,792
4 Claims. (Cl. 222—146)



1. An asphaltic concrete storage bin comprising:

(a) an inner shell for holding a charge of asphaltic concrete;

(b) a thermally conducting mounting wall encompassing said inner shell in spaced relation to afford an intervening air space;

(c) a thermally insulating layer surrounding said mounting wall in substantially face to face engagement therewith;

(d) an outer shell encircling said insulating layer;

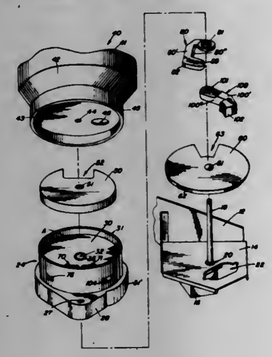
(e) a discharge member on the bottom of said shells terminating in a bottom discharging opening;

(f) means associated with said discharging opening for controlling flow through said discharging opening; and,

(g) means for maintaining said flow control means at a selected temperature, said discharge member and said flow control means including a collar member depending from the margin of said discharging opening, a muff enclosing said collar member, said muff including an inner wall, an outer wall spaced from said inner wall, an intermediate mounting wall spaced from said inner wall, a thermally insulating jacket

separating said outer wall and said intermediate wall, and electrical heating elements on said intermediate wall in face to face arrangement therewith and adjacent said insulating jacket.

3,301,442
PRODUCT DISPENSING DEVICE
Owen J. Schwertfeger, Chicago, and Frank D. Brill, Norridge, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,309
7 Claims. (Cl. 222—252)



1. A dispensing mechanism adapted to release predetermined metered amounts of a dry product and comprising:

storage means for storing the dry product;

first metering chamber means adapted to hold a first predetermined metered amount of dry product;

second metering chamber means adapted to hold a second predetermined metered amount of dry product;

release conditioning means adapted, when actuated, to condition the release of the second predetermined metered amount;

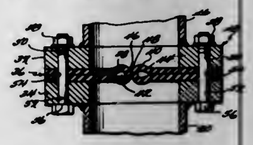
selectively operable means for actuating the release conditioning means;

means adapted to release the first predetermined metered amount of the dry product, said means being further adapted to simultaneously release the second predetermined amount when the release thereof has been conditioned by actuation of said release conditioning means; and

transport means for transporting dry product from the storage means to the first metering chamber means after the predetermined metered amount of dry product has been released therefrom so as to refill the first metering chamber means, the transport means also being adapted to transport dry product from the storage means to the second metering chamber means whenever the second predetermined metered amount of dry product has been released therefrom so as to refill the second metering chamber means.

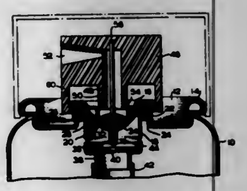
3,301,443
FEEDING MECHANISM AND VALVE USED THEREIN
John V. Clancy, Pittsburgh, and John F. Kearns, Glenshaw, Pa., assignors to United States Steel Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,469
4 Claims. (Cl. 222—380)

1. A feeding mechanism for a viscous material comprising a vertically extending cylindrical container having an open top and a conduit leading from the lower end thereof, a plunger mounted for vertical reciprocating movement within said container between a first position adjacent the open top thereof and a second position adjacent the lower end thereof, said container having a lateral opening therein adjacent said open top disposed below said plunger when the latter is disposed in said first position, a supply hopper having a lower end communicating with said opening, and feed valve means disposed in said conduit operable to open and permit flow of viscous material outwardly of said container and through said conduit in response to the downward forced movement of said plunger and to close and prevent flow of viscous ma-



terial thereby in response to the relief of the force causing downward movement of said plunger, said feed valve means comprising a pair of sheets of soft resilient material, each of said sheets being folded on itself to form a loosely folded edge portion defining an air pocket extending therealong, and means connected with said conduit for securing said folded sheets in general planar transverse alignment with the folded edge portions therein in abutting engagement, said securing means sealingly engaging said sheets annularly so as to close the ends of said air pockets.

3,301,444
AEROSOL METERING VALVE
John M. Wittke, Westfield, N.J., assignor to Oel Inc., Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 12, 1965, Ser. No. 479,070
11 Claims. (Cl. 222—402.20)



10. A one-piece valve element for use in a metering valve assembly comprising a peripheral rim, an intermediate annular web extending radially inwardly from said rim and having an aperture therethrough, a central thickened button-like portion, and a relatively small diameter thin-walled hollow tubular projection extending axially outwardly from said button centrally thereof and having a closed terminal end, said button-like portion having a central aperture therethrough communicating with the interior of said tubular projection.

3,301,445
DISPLAY DEVICES
Vito Tobia, 236 Montrose Ave., Brooklyn, N.Y. 11206
Filed Nov. 27, 1964, Ser. No. 414,157
10 Claims. (Cl. 223—88)

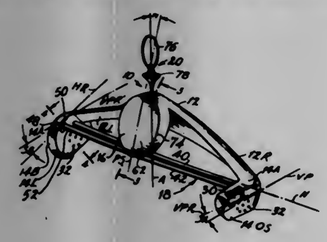
1. A display device for clothing adapted to display clothing in a hanging condition while simulating the condition of the clothing in the same proximate relationship as worn by a human form, comprising:

(A) a cross-arm having an outer configuration simulating the back and pair of shoulder plates of the human form and having a first and a second end,

(B) hanging means connected to said cross-arm in alignment with a central axis of the display device passing through the center of gravity thereof to maintain

the display device in its hanging condition with clothing thereon in a manner simulating the position of the clothing worn by the human form,

(C) a pair of shoulder portions, one of said shoulder portions being connected to said first end and the other of said shoulder portions being connected to said second end, said shoulder portions being angularly displaced from said cross-arm and directed inwardly thereof, said cross-arm including first and second arms which are mirror-images of each other and are symmetrical about a vertical plane passing through the central axis, said first end being the outer end of said first arm and said second end being the outer end of said second arm, the back portion



of each said arms being convexly curved in a first or vertical direction and in a second or horizontal direction transverse to the first direction and the central axis to form a curved outer back surface convexly-shaped in the vertical and horizontal directions relative to the central axis, each of said shoulder portions having a back surface which uniformly and continuously merges with said back portions of each said arms to form a uniformly continuous back surface for said display device, and

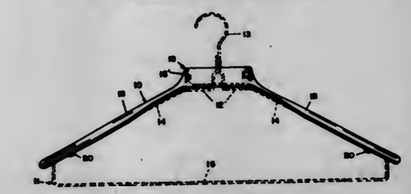
(D) a neck portion connected to said cross-arm intermediate said shoulder portions, said neck portion being angularly displaced outwardly from said cross-arm.

3,301,446
CRIMPED-END GARMENT HANGER
Reuben A. Braswell, 1218 Oakview Road, Decatur, Ga. 30030
Filed June 5, 1964, Ser. No. 373,019
1 Claim. (Cl. 223—98)



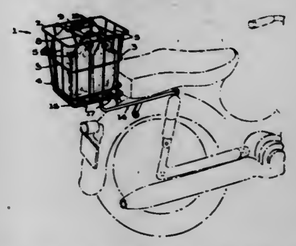
In a garment hanger formed of a single wire including a suspension hook, arms extending therefrom, a transverse hanger rail engaging the outer ends of said arms, and a loosely fitted guard mounted on said rail, the combination of means formed by said arms cooperating with said rail for restraining said guard against accidental displacement from said rail, said means including a sharp inward return bend of said arms at their engagement with said rail forming a channel for the reception of end portions of said guard, said return bent portions of said arms being inclined inwardly and downwardly toward said rail to define a yieldable restriction for frictional engagement of said guard between the inner surfaces of said arms and said rail and further to define along its exterior surface a receiving and retaining means for removable reception of looped portions of garments.

3,301,447
GARMENT HANGER ATTACHMENT
Ethilia A. Felton, 1135 Chartres St., New Orleans, La. 70116
Filed Dec. 8, 1964, Ser. No. 416,842
2 Claims. (Cl. 223—98)



1. The combination of a conventional wire garment hanger having a horizontal center portion provided with a suspension hook and a pair of sloping shoulder portions extending from the ends of said center portion, and a garment supporting attachment formed integrally from one piece of material, said attachment comprising a horizontally elongated oval-shaped collar member overlying said center portion of said hanger, said collar member having an open top, a continuous upstanding side wall and a closed bottom formed with a passage having said suspension hook of the hanger projecting upwardly therethrough, a pair of elongated sloping shoulder members extending from the ends of said collar member and overlying said shoulder portions of the hanger, said shoulder members being substantially wider than the thickness of the hanger and having a transversely curved across-section with relatively wide outer regions and relatively narrow inner regions, said inner regions of the shoulder members being connected to and of substantially the same width as said collar member, reinforcing ribs extending the length of and centrally on the underside of said shoulder members in substantial alignment with the shoulder portions of the hanger, and block-like projections depending from said ribs under said wide outer regions of the shoulder members, said projections being provided at the underside thereof with downwardly extending open slots frictionally receiving therein the shoulder portions of the hanger whereby to coact with the projection of said suspension hook through said collar member passage in retaining the attachment in position on the hanger.

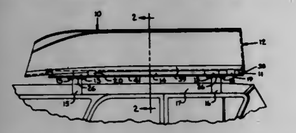
3,301,448
PACKAGE CARRIER
Yoshito Inoue, Tokyo, Japan, assignor to Honda Giken Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Nov. 3, 1964, Ser. No. 408,539
Claims priority, application Japan, Mar. 25, 1964, 39/22,438, 39/22,439
7 Claims. (Cl. 224—32)



1. The combination including, a basket having a pair of carrying handles pivotally connected to the top thereof, each of said handles including a pair of legs each of which extends to a distance greater than one-half the

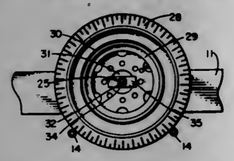
width of the basket, hold-down means intermediately disposed on one pair of said legs, said handles adapted to be pivoted alternately from a raised carrying position to a lowered substantially horizontal position spanning the top of the basket with one of said handles interlocking with the other of said handles to engage said hold-down means; and a frame including a base rail adapted to engage and support the bottom of said basket, said basket having manipulable locking means on the bottom thereof releasably engageable with said base rail to attach the basket to said frame.

3,301,449
MULTI-PURPOSE CAR TOP LUGGAGE CARRIER
Paul H. Tope, 724 Aurilla Drive, St. Joseph, Mich. 49085
Filed Nov. 19, 1965, Ser. No. 508,817
8 Claims. (Cl. 224—42.01)



1. A vehicle top mounted multi-purpose luggage carrier arrangement, comprising: base means having stop members attached thereto, said base means being attached to said vehicle top; platform means removably mounted on said base means between said stop members, said platform means including frame means, a horizontal platform top member and leg means, said frame means extending downwardly from said platform top member, and said leg means defining threaded block means depending downwardly from said platform top member and threaded conduit means for attaching to said block means whereby said platform means may be used independently as a table; elongate members fixedly attached to said platform means and positioned adjacent said base means, said elongate means and said stop members preventing relative movement between said platform means and said base means; flange means extending outwardly and upwardly from said platform means; and cover means having edge members depending on said flange means, said cover means and said platform means defining a chamber therebetween for storage of luggage and the like.

3,301,450
TRUCK-TIRE LOADING AND CARRYING DEVICE
William Widner, Box 793, Thompson Falls, Mont. 59873
Filed Oct. 1, 1965, Ser. No. 492,103
3 Claims. (Cl. 224—42.24)

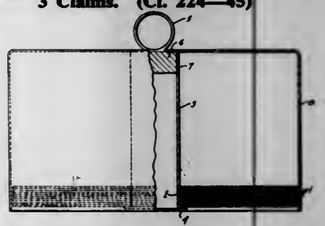


1. A tire mounting device, having appurtenances aiding in the mounting and dismounting of tires of the nature aforesaid, comprising, in combination:

a vertical, planar body member attachable to a vehicle frame by paired, opposed chair blocks rearwardly extending on each side of said frame and a plurality of J bolts releasably communicating between said frame member and said body member, said body member having in the upper medial portion of its face, a wheel rim catch adapted to receive and releasably hold the wheel rim of a mounted tire, and a fastening stud there below adapted to extend through the hub hole of said wheel and fasten it thereto, and

a lower horizontally extending cross member, carried by said body, having at its lateral extensions paired, opposed horizontal extended tire supports adapted to movably receive and support said mounted tire.

3,301,451
PHONOGRAPH RECORD CARRIER
Gordon H. Halverson, 3863 Sunny Slope Road, Milwaukee, Wis. 53215
Filed Dec. 14, 1964, Ser. No. 417,881
3 Claims. (Cl. 224—45)



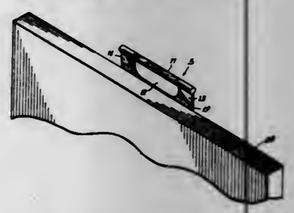
1. A record storage and transporting device for disc-like records having a central phonograph post opening of the order of one and one-half inches, comprising

a cylindrical tube having a diameter slightly less than one and one-half inches and having an integral radial flange extending outwardly from the lower end of the tube to provide a support surface for a plurality of superimposed records disposed on the tube and resting in stacked relation on the flange, said flange having a periphery which is adapted to be less than the periphery of the records to be supported thereon,

a plug member secured within the upper end of the tube, an upstanding ring peripherally secured to the outer face of the plug to provide a convenient finger support for carrying of the device, said ring having an outer diameter slightly less than the outer diameter of the tube, and

a protective cup-shaped cover having a central opening having its greatest dimension greater than the outer ring diameter and less than the tube diameter so that said cover fits over the ring and rests upon the upper end of the tube whereby the cover is adapted to be assembled in record covering relationship with the ring passed through said central opening, the top of said tube being adapted to provide the sole support for said cover.

3,301,452
HANDLE
William J. Jester, Box 1331, Newport, Ky. 41071
Filed Mar. 10, 1965, Ser. No. 438,669
3 Claims. (Cl. 224—45)



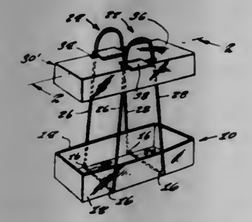
1. A handle adapted to be adhesively secured to objects to be carried by said handle, comprising;

a flexible sheet of material comprised of two superposed plies of paper material having bi-directional reinforcing strands of flexible high tensile strength material sandwiched therebetween, one side of said sheet having a water moistenable adhesive secured thereto, said sheet including a pair of spaced flaps extending longitudinally from one side thereof, each of said flaps including an end section and a middle section,

a strip extending transversely between and attached to each of said flaps in an area between said end and middle sections,

a wooden dowel pin extending transversely between said flaps in the area of said strip, each of said flaps being wrapped around one end of said dowel pin with the adhesively coated side of the end section of the flap secured to the adhesively coated side of a middle section of said flap, and a portion of said strip being wrapped around said dowel pin in one direction and another portion of said strip being wrapped around said dowel pin in another direction.

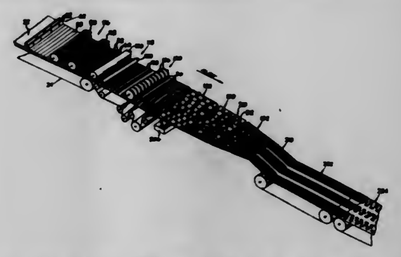
3,301,453
SHOPPING BAG COVER AND CARRIER
Edgar R. Stewart, 703 E. 18th St., Paterson, N.J. 07504
Filed Jan. 3, 1966, Ser. No. 518,374
5 Claims. (Cl. 224—49)



1. A combined cover and carrier for shopping bags comprising a hollow rectangular box open at the top and having first and second parallel oppositely disposed vertical side walls horizontally elongated, each wall having adjacent its bottom edge first and second vertically aligned horizontally separated holes, the first holes in both walls being aligned, the second holes in both walls being aligned, first and second horizontal parallel rods, the first rod extending through the first aligned holes with opposite ends extending outward therefrom, the second rod extending through the second aligned holes with opposite ends extending outward therefrom, a first inverted U shaped member having first and second downwardly extending legs extending past the outside of the first wall, the bottom ends of these first and second legs being respectively secured to corresponding ends of the first and second rods, and a second inverted U shaped member having first and second downwardly extending legs extending past the outside of the second wall, the bottom ends of these first and second legs being respectively secured to the opposite corresponding ends of the first and second rods.

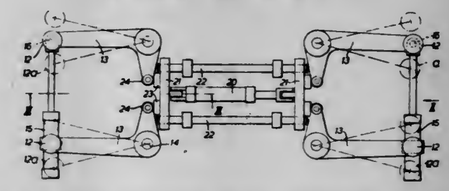
3,301,454
FOOD HANDLING APPARATUS
Clyde D. Wayne, Wilmette, and Harry A. Tabernacki, Chicago, Ill., assignors to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware
Filed June 25, 1964, Ser. No. 377,892
7 Claims. (Cl. 225—2)

1. A method of scoring a forwardly-moving gradually hardening elongated sheet of material for subsequent breaking of the hardened sheet into smaller pieces, said method comprising the steps of introducing at least one transversely extending scoring edge into the sheet at timed intervals while effecting continuous penetration of the sheet by a plurality of transversely-spaced longitudinally-extending scoring edges at a location in the forward travel of the sheet where the sheet is sufficiently soft to permit the transversely and longitudinally extending scoring edges



to be inserted into the sheet while at the same time sufficiently hard to retain a substantial portion of the score when the edges no longer occupy the score, and subsequently redefining the scores provided by the transversely-spaced, longitudinally-extending scoring edges.

3,301,455
PRESSURE RESPONSIVE MATERIAL POSITIONING DEVICES
James A. Gibson, Crosby, near Maryport, Cumberland, England, assignor to Distington Engineering Company Limited
Filed Mar. 8, 1965, Ser. No. 437,976
Claims priority, application Great Britain, Mar. 10, 1964, 10,134/64
5 Claims. (Cl. 226—17)

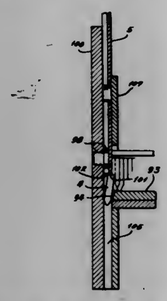


1. An article-positioning device comprising: support means; a plurality of engagement members movably mounted on said support means and movable into engagement with an article, for moving the article; first motor means acting upon said engagement members to move said members into engagement with said article; detection means for detecting an arbitrary dimension of the article; control means responsive to said detection means to maintain said engagement members in a selected relationship limiting the pressure exerted by the engagement members on said article; and second motor means acting upon said engagement members maintained in the selected relationship to move the article to a desired position.

3,301,456
NAILING MACHINE
Werner Schafroth, P.O. Box 247, Herrin, Ill. 62948, and Anthony E. Cairatti, Herrin, Ill.; said Cairatti assignor to said Schafroth
Filed Nov. 23, 1964, Ser. No. 413,045
3 Claims. (Cl. 227—120)

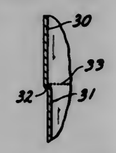
1. In a driving machine having a driving blade therein, front and rear guide means in said machine forming a guide path for said driving blade, a magazine secured to said machine adapted to feed corrugated fasteners forwardly to a position partially in said guide path and partially beneath said driving blade, said magazine having a bottom with a sloping forward edge, said guide means

having stop means connected thereto extending partially into said guide path for stopping the forward movement of said fasteners and preventing same from moving to a position completely beneath said driving blade, said stop means being less in width than said corrugated fasteners but sufficiently wide to contact at least one rib of said



fastener and stop said fastener in a position where the entire thickness of the metal in the rib contacting said stop means is in said guide path and the rear portion of said fastener is above said sloping forward edge of the bottom of said magazine, said driving blade having a cut-out portion for receiving said stop means when said driving blade is moved downwardly.

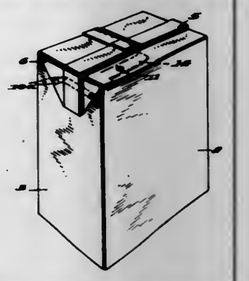
3,301,457
COLLAPSIBLE CONTAINER
Stephen J. Millian, 61—25 98th St., Rego Park, N.Y. 11374
Filed July 31, 1964, Ser. No. 386,624
4 Claims. (Cl. 229—6)



2. A collapsible vertical container for foodstuffs, soap and other particles, flakes and granules having a plurality of sections of decreasing diameter downwardly, connections between said sections, said connections being readily broken to permit the upper sections to be telescoped down over the lower sections, said connections consisting of inwardly directed shoulders extending obliquely inwardly from the lower edge of the next higher section to the upper edge of the next lower section and being perforated between said two sections midway of the sections, said sections being of circular cross-section and closely telescoping around each other and having frictional contact when telescoped.

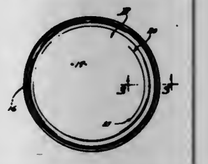
3,301,458
OPENING DEVICE FOR PACKAGES
Gad A. Rausing, Hans A. Rausing, and Sven Olof Sören Stark, Lund, Sweden, assignors to AB Tetra Pak, Lund, Sweden
Filed Mar. 18, 1965, Ser. No. 440,882
Claims priority, application Switzerland, Mar. 20, 1964, 3,650/64
7 Claims. (Cl. 229—7)

1. An opening device for a package of the kind which consists of a tube which has been closed at its ends by transverse seals and given a parallelepipedic form, a double walled triangular flap extending from the edge of said package formed by the juncture of a side wall with an end wall thereof and communicating with the interior thereof, an opening in the inner wall of said flap which is adjacent to said side wall when said flap is folded downwardly and a strip fixed to said inner wall of said



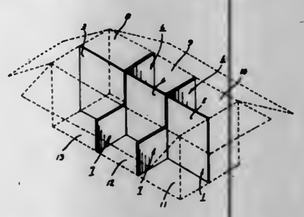
flap and covering said opening, said strip extending from the free corner of the flap inwardly to said edge and downwardly along said side wall beyond said free corner of said flap.

3,301,459
CLOSURE FOR DRINKING CONTAINERS
Timothy F. Gardner, 10426 Lindbrook, Los Angeles, Calif. 90024
Filed Apr. 16, 1965, Ser. No. 448,620
2 Claims. (Cl. 229—7)



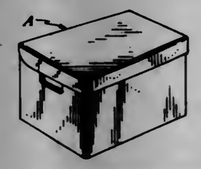
1. A closure for drinking containers of the character described and comprising:
(a) a top of flexible and resilient material;
(b) means securing said top to the container to close the same;
(c) and a line of weakening with at least one open vent perforation and dividing the top into separable and adjacently opposed relatively movable portions, said portions being movable apart for drinking purposes and normally movable together to prevent spillage.

3,301,460
PARTITION
Jerry W. Harrison, Jeffersonville, Ind., assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Feb. 1, 1965, Ser. No. 429,596
2 Claims. (Cl. 229—15)



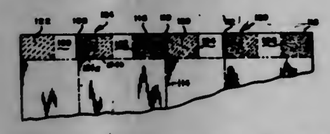
1. Partition structure formed from a blank of foldable sheet material comprising
central panels foldably interconnected by intermediate complimentary panels each reversely folded upon itself and in opposite relation to each other and with said central panels in substantial alignment and forming a single wall with said complimentary panels extending transversely outwardly in opposite directions from opposite sides of said wall.

3,301,461
FILE CASES
William O. Kroeschell, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Aug. 28, 1963, Ser. No. 305,070
5 Claims. (Cl. 229—16)



1. A file container for use in storing papers, the container comprising a non-opaque closable container body, a continuous film of pigment of plastic incorporating silver metallic particles on said body, whereby said container is relatively lightproof.

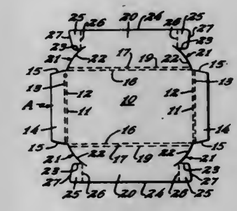
3,301,462
COLLAPSIBLE AND STACKABLE CARTON
John R. Starr, 37 Lawndale St., Belmont, Mass. 02178
Filed Jan. 4, 1965, Ser. No. 423,232
12 Claims. (Cl. 229—37)



1. A self-sealing container which is both collapsible and stackable and having
opposed side and end panels hingedly connected together to define a closed figure,
closure flaps extending from and hingedly connected to the edges of each of said side and end panels,
said flaps being substantially coextensive in length with respect to their connected panel,
said side panel flaps in the collapsed position of the container being disposed in face-to-face contacting relationship with the end panel flaps,
pressure-sensitive adhesive closure securing means applied to inner surface of one set of flaps, only, said securing means being capable of adhering to the uncoated portion of the container,
adhesive-release means applied to the portion of the inner surface of the other set of flaps disposed in face-to-face relation with the adhesive securing means on the said one set of flaps to prevent the pressure-sensitive adhesive from adhering to the inside surface of the other set of flaps when in the collapsed position.

3,301,463
FOLDERS
Frank W. Locke, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed June 21, 1965, Ser. No. 465,284
5 Claims. (Cl. 229—40)

1. A folder comprising:
a generally rectangular base panel,
substantially rectangular end flaps,
means hingedly connecting said end flaps to opposite parallel ends of said base panel,
generally rectangular side wall flaps,
means hingedly connecting said side wall flaps to opposite sides of said base panel,
a notch in each of the side edges of each side wall flap defined by a cut line extending generally diagonally inwardly from the end of the means connecting said



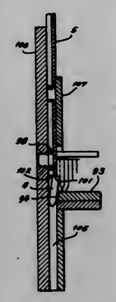
side wall flaps to said base panel, and a cut line extending generally parallel to the end of said side wall flaps from said first named cut line to the adjoining side edge of said side wall flap,
the depth of each said notch exceeding the length of said end flaps, wherein
when the side wall flaps are folded to overlie said end flaps, the portions of the side wall flaps between said notches and the ends of said side wall flaps may be tucked beneath said end flaps.

3,301,464
CONTAINER AND LID
Stephen W. Amberg, St. James, N.Y., assignor to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 349,071
15 Claims. (Cl. 229—43)



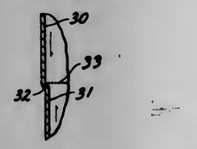
1. A container comprising a receptacle part including an interior wall surface portion defining an initially open mouth of the receptacle part, and a plug-type lid closing said receptacle part open mouth, said lid comprising an inner closure including a central portion spanning said receptacle part open mouth and a peripheral wall portion projecting generally vertical with respect to said central portion, said inner closure peripheral wall having a layer of heat sealable adhesive material thereon in adhesive sealing engagement with said receptacle part interior wall surface portion to seal closed said open mouth, said heat sealable adhesive material being of wax composition whereby said inner closure peripheral wall is detachable by manual separation from said receptacle part interior wall surface without significant mutilation of the latter, and an outer closure including a central portion and a peripheral wall portion in contiguous but separable relation with the respective of said central and peripheral wall portions of said inner closure.

having stop means connected thereto extending partially into said guide path for stopping the forward movement of said fasteners and preventing same from moving to a position completely beneath said driving blade, said stop means being less in width than said corrugated fasteners but sufficiently wide to contact at least one rib of said



fastener and stop said fastener in a position where the entire thickness of the metal in the rib contacting said stop means is in said guide path and the rear portion of said fastener is above said sloping forward edge of the bottom of said magazine, said driving blade having a cut-out portion for receiving said stop means when said driving blade is moved downwardly.

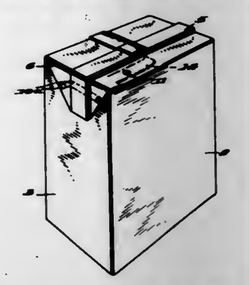
3,301,457
COLLAPSIBLE CONTAINER
Stephen J. Millian, 61—25 98th St., Rego Park, N.Y. 11374
Filed July 31, 1964, Ser. No. 386,624
4 Claims. (Cl. 229—6)



2. A collapsible vertical container for foodstuffs, soap and other particles, flakes and granules having a plurality of sections of decreasing diameter downwardly, connections between said sections, said connections being readily broken to permit the upper sections to be telescoped down over the lower sections, said connections consisting of inwardly directed shoulders extending obliquely inwardly from the lower edge of the next higher section to the upper edge of the next lower section and being perforated between said two sections midway of the sections, said sections being of circular cross-section and closely telescoping around each other and having frictional contact when telescoped.

3,301,458
OPENING DEVICE FOR PACKAGES
Gad A. Rausing, Hans A. Rausing, and Sven Olof Sören Stark, Lund, Sweden, assignors to AB Tetra Pak, Lund, Sweden
Filed Mar. 18, 1965, Ser. No. 440,882
Claims priority, application Switzerland, Mar. 20, 1964, 3,650/64
7 Claims. (Cl. 229—7)

1. An opening device for a package of the kind which consists of a tube which has been closed at its ends by transverse seals and given a parallelepipedic form, a double walled triangular flap extending from the edge of said package formed by the juncture of a side wall with an end wall thereof and communicating with the interior thereof, an opening in the inner wall of said flap which is adjacent to said side wall when said flap is folded downwardly and a strip fixed to said inner wall of said



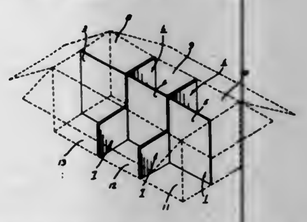
flap and covering said opening, said strip extending from the free corner of the flap inwardly to said edge and downwardly along said side wall beyond said free corner of said flap.

3,301,459
CLOSURE FOR DRINKING CONTAINERS
Timothy F. Gardner, 10426 Lindbrook, Los Angeles, Calif. 90024
Filed Apr. 16, 1965, Ser. No. 448,620
2 Claims. (Cl. 229—7)



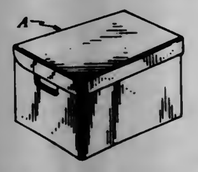
1. A closure for drinking containers of the character described and comprising:
(a) a top of flexible and resilient material;
(b) means securing said top to the container to close the same;
(c) and a line of weakening with at least one open vent perforation and dividing the top into separable and adjacently opposed relatively movable portions, said portions being movable apart for drinking purposes and normally movable together to prevent spillage.

3,301,460
PARTITION
Jerry W. Harrison, Jeffersonville, Ind., assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Feb. 1, 1965, Ser. No. 429,596
2 Claims. (Cl. 229—15)



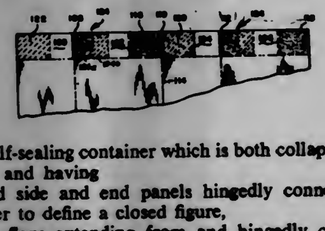
1. Partition structure formed from a blank of foldable sheet material comprising
central panels foldably interconnected by intermediate complimentary panels each reversely folded upon itself and in opposite relation to each other and with said central panels in substantial alignment and forming a single wall with said complimentary panels extending transversely outwardly in opposite directions from opposite sides of said wall.

3,301,461
FILE CASES
William O. Kroeschell, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Aug. 28, 1963, Ser. No. 305,070
5 Claims. (Cl. 229—16)



1. A file container for use in storing papers, the container comprising a non-opaque closable container body, a continuous film of pigment of plastic incorporating silver metallic particles on said body, whereby said container is relatively lightproof.

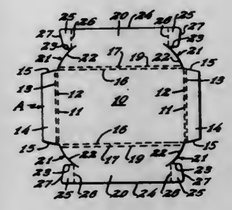
3,301,462
COLLAPSIBLE AND STACKABLE CARTON
John R. Starr, 37 Lawndale St., Belmont, Mass. 02178
Filed Jan. 4, 1965, Ser. No. 423,232
12 Claims. (Cl. 229—37)



1. A self-sealing container which is both collapsible and stackable and having
opposed side and end panels hingedly connected together to define a closed figure,
closure flaps extending from and hingedly connected to the edges of each of said side and end panels,
said flaps being substantially coextensive in length with respect to their connected panel,
said side panel flaps in the collapsed position of the container being disposed in face-to-face contacting relationship with the end panel flaps,
pressure-sensitive adhesive closure securing means applied to inner surface of one set of flaps, only, said securing means being capable of adhering to the uncoated portion of the container,
adhesive-release means applied to the portion of the inner surface of the other set of flaps disposed in face-to-face relation with the adhesive securing means on the said one set of flaps to prevent the pressure-sensitive adhesive from adhering to the inside surface of the other set of flaps when in the collapsed position.

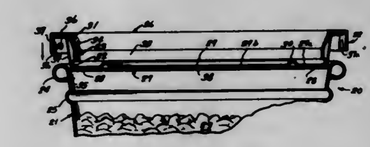
3,301,463
FOLDERS
Frank W. Locke, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed June 21, 1965, Ser. No. 465,284
5 Claims. (Cl. 229—40)

1. A folder comprising:
a generally rectangular base panel,
substantially rectangular end flaps,
means hingedly connecting said end flaps to opposite parallel ends of said base panel,
generally rectangular side wall flaps,
means hingedly connecting said side wall flaps to opposite sides of said base panel,
a notch in each of the side edges of each side wall flap defined by a cut line extending generally diagonally inwardly from the end of the means connecting said



side wall flaps to said base panel, and a cut line extending generally parallel to the end of said side wall flaps from said first named cut line to the adjoining side edge of said side wall flap,
the depth of each said notch exceeding the length of said end flaps, wherein
when the side wall flaps are folded to overlie said end flaps, the portions of the side wall flaps between said notches and the ends of said side wall flaps may be tucked beneath said end flaps.

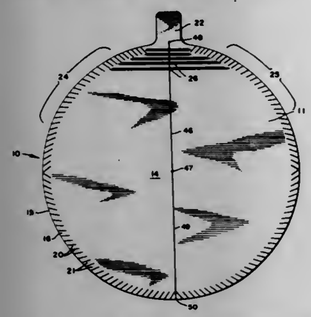
3,301,464
CONTAINER AND LID
Stephen W. Amberg, St. James, N.Y., assignor to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 349,071
15 Claims. (Cl. 229—43)



1. A container comprising a receptacle part including an interior wall surface portion defining an initially open mouth of the receptacle part, and a plug-type lid closing said receptacle part open mouth, said lid comprising an inner closure including a central portion spanning said receptacle part open mouth and a peripheral wall portion projecting generally vertical with respect to said central portion, said inner closure peripheral wall having a layer of heat sealable adhesive material thereon in adhesive sealing engagement with said receptacle part interior wall surface portion to seal closed said open mouth, said heat sealable adhesive material being of wax composition whereby said inner closure peripheral wall is detachable by manual separation from said receptacle part interior wall surface without significant mutilation of the latter, and an outer closure including a central portion and a peripheral wall portion in contiguous but separable relation with the respective of said central and peripheral wall portions of said inner closure.

3,301,465
EASILY OPENABLE PACKAGE AND CLOSURE THEREFOR

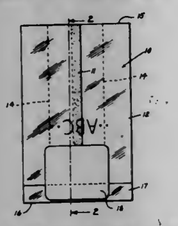
Kenneth A. Flaherty, Louisville, Ky., assignor to Anaconda Aluminum Company, a corporation of Montana
Filed Oct. 19, 1965, Ser. No. 497,808
11 Claims. (Cl. 229—43)



8. An easily openable package comprising a container, contents contained in said container, and a container closure which comprises a substantially flat closure member, a plurality of peripherally spaced score cuts through the closure member along its marginal edge and extending into the body of the closure member along its marginal edge portion, fringe portions defined by the marginal edge portions between the spaced cuts and extending in the same plane as the flat closure member, said fringe portions being separably displaceable out of the plane of the closure member, a tab means on said closure member for grasping the closure, said score cuts being cut inwardly from the peripheral edge of the closure at an oblique angle to the peripheral edge at least along those peripheral portions which diverge away from the tab means to define fringe portions therealong which extend in the direction away from a line connecting the center of the closure member and a point on the juncture of the tab means and the closure member, and a flange portion of said container folded around the peripheral edge of the closure and against the fringe portions such that upon lifting of the closure by the tab means the fringe portions are individually removable from under the flange portion and the closure is correspondingly removed from the package.

3,301,466
RECLOSABLE BAG

Dominic A. Perino, Bayside, and Walter J. Yakich, Oak Creek, Wis., assignors to Milprint, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Sept. 25, 1964, Ser. No. 399,275
1 Claim. (Cl. 229—62)



A bag made of a tube of flexible material folded to define opposed bag walls and two bag ends, wherein:

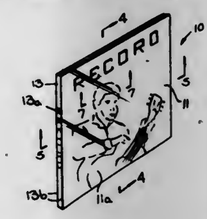
said bag when in the empty condition has (I) a closed first bag end, and (II) an open second bag end, said first bag end being closed by the construction in which (1) part of the bag walls surrounding the first bag end is folded to close the bag end and to define a folded-over portion, and (2) an adhesive member including a layer of normally tacky pressure-sensitive adhesive is affixed to the bag with part of the layer adhesively joined to the folded-over portion and another part of the layer adhesively joined to a bag wall to hold the folded-over portion against the bag wall;

said second bag end defining an opening through which the empty bag can be filled; and

said bag when filled being closed along the second bag end and openable along the first bag end upon removal of the adhesive member from adhesive contact with the bag wall and unfolding of the folded-over portion to define a commodity-withdrawal opening, said first bag end being reclosable upon re-joinder of the adhesive member to the bag wall.

3,301,467
MULTICOLORED LITHOGRAPHED RECORD JACKET

Paul B. Shore, Kings Point, N.Y., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Continuation of application Ser. No. 361,670, Apr. 22, 1964. This application Sept. 13, 1965, Ser. No. 491,491
1 Claim. (Cl. 229—68)

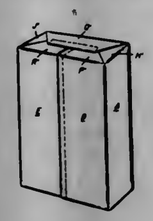


A multicolored lithographed record jacket formed of a unitary clay-coated cardboard sheet structure having a front panel overlying a rear panel integrally connected by an end spine; top and bottom closures formed by a pair of flaps extending from one of said panels; each flap being bent along scored fold lines and tucked under and adhesively secured to the interior surface of the other of said panels; each of said flaps being provided with additional score lines to facilitate securing of said flaps to the interior surface of the other of said panels; design and intelligence material imprinted directly upon said clay coating in predetermined register with said panels and spine; said top panel, rear panel, and spine being provided with a protective coat of varnish on top of said design and intelligence material imprinted thereon; scored fold lines extending between said spine and panels facilitating a right angular corner therebetween; said clay-coated cardboard sheet having a caliper of from 20 to 27 points.

3,301,468
PACKAGE FOR TOBACCO PRODUCTS

John Staley, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Dec. 11, 1964, Ser. No. 417,756
6 Claims. (Cl. 229—87)

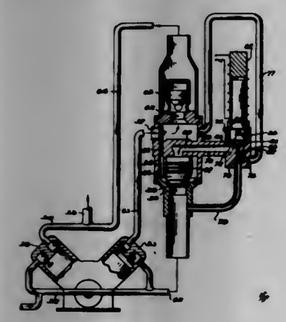
1. A container for cigarettes formed from a substantially rectangular blank comprised of a plurality of layers, at least one of which is a hydrophylic layer and at least one of which is a water-impervious layer, said blank being folded to form a tubular body of substantially rectangular cross section having four side walls, two opposed ends of the blank being overlapped to form a seam extending longitudinally of said body, said body having portions of opposed side walls adjacent both ends thereof folded inwardly substantially perpendicular to said side wall providing end walls for the container, each folded portion having a segment thereof overlapping a segment of at least one other folded portion, the overlapping segments of the respective folded portions forming seams in the corresponding container end walls, the overlapping segments forming each end wall seam and said longitudinal seam comprising edges of said blank which have



been infolded to provide a water impervious layer to water-impervious layer contact substantially along the entire length of the corresponding seams, the overlapping segments forming each seam providing passages through the container from the interior to the exterior thereof, each of said passages having a length which is at least 50 times greater than the spacing between the overlapping segments forming said seams.

3,301,469
VALVES WITH ELECTRICALLY OPERATED CLOSURE MEANS

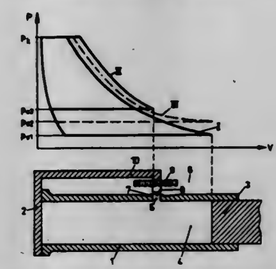
O O Shurtleff, Austin, Tex., assignor to Chatleff Controls, Inc., Austin, Tex., a corporation of Texas
Filed Jan. 8, 1964, Ser. No. 336,447
9 Claims. (Cl. 230—22)



1. A valve comprising a housing provided with a chamber having a combined inlet and outlet port, the housing being provided with an inlet passage and an outlet passage opening into said chamber, the inlet passage having a valve seat therein facing away from said chamber, movable closure means inside said chamber normally closing the entrance to said outlet passage, a movable valve member in said inlet passage for engaging said seat, a stem extending from said member into said chamber and normally engaged by said closure means to hold the valve member away from its seat to permit fluid flow through the inlet passage into the chamber and out through said port, electrically operated means for withdrawing said closure means from the outlet passage, and a spring for moving said valve member against its seat when the closure means is withdrawn, whereby fluid entering the chamber from said port can escape through said outlet passage.

3,301,470
REFRIGERATION COMPRESSOR CAPACITY AND LOADING CONTROL MEANS

Bendt Wegge Larsen and Knud Vagn Valbjorn, both of Nordborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a corporation of Denmark
Continuation of application Ser. No. 352,464, Mar. 17, 1964. This application July 1, 1966, Ser. No. 562,969
Claims priority, application Germany, Mar. 19, 1963, D 41,165
7 Claims. (Cl. 230—22)



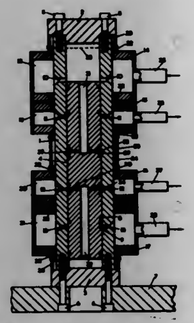
1. In a refrigerant compressor having means for compressing a gaseous refrigerant, compressor capacity and loading control means comprising means defining a bypass port of constant area for bypassing refrigerant under pressure from interiorly of said compressor to exteriorly thereof, a needle valve for opening and closing said port, said needle valve being essentially unaffected by the inertial forces of the refrigerant passing therethrough, bellows means for applying a biasing force on said valve in a direction for closing said port and biasing said valve against internal gaseous pressure in said compressor, and said bellows means and port being disposed and jointly effective to allow said refrigerant to be discharged through said port in dependence upon a given range of instantaneous differences in pressure between instantaneous compression pressures in said compressor and instantaneous suction pressure and essentially independently of the rate of change of the compression pressure for maintaining the output pressure of said compressor substantially constant regardless of increases and decreases of suction pressure and for reducing the work input to said compressor necessary to maintain compressor capacity and said output pressure constant.

3,301,471
COMBINED COMPRESSOR AND EXPANSION ENGINE

Michael E. Clarke, Kingston, Surrey, England, assignor to The British Oxygen Company Limited, a British company
Filed Aug. 19, 1965, Ser. No. 480,945
Claims priority, application Great Britain, Aug. 21, 1964, 34,274/64
1 Claim. (Cl. 230—54)

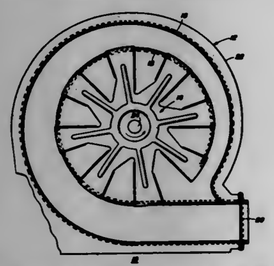
A combined compressor and expansion engine for compressing gas from a first source into a compressed gas delivery line while expanding gas from a second source into an expanded gas delivery line, comprising a body member enclosing two cylindrical chambers constituting respectively a compression cylinder and an expansion cylinder arranged in opposition to one another, a piston in each cylinder, the two pistons being connected together for movement in unison, bores in the pistons, and ports in the cylinder walls which are covered and uncovered by the piston walls during piston movement in a preselected sequence so that in a first piston position communication is provided between the compression cylinder and the said first source and between the expansion cylinder and the said second source, and in a second pis-

ton position communication is provided between the compression cylinder and the said compressed gas delivery line and between the expansion cylinder and the said expanded gas delivery line, and so that the ends of each cylinder lying outside the range of piston movement from the said first to said second positions constitute dead



spaces in which gas is trapped when the pistons enter said dead spaces, the volume of the dead spaces and the dimensions and mass of the pistons being chosen in accordance with the pressures of the gas sources and delivery lines so that the gas pressures in the compression and expansion cylinders cause the pistons to resonate approximately between said first and second positions.

3,301,472
BLOWER
Farris E. Dixon and Robert B. Duggan, both of Louisville, Ky., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1965, Ser. No. 425,464
3 Claims. (Cl. 230—127)



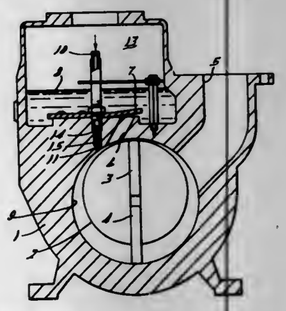
1. A blower impeller comprising a central substantially flat disc-like hub portion, an axle member secured to said hub portion centrally thereof and defining the axis of rotation of the impeller, and a plurality of circumferentially equidistantly spaced impeller blades on the hub portion projecting equal distances radially therefrom, each impeller blade being substantially U-shaped in cross section and having a frontal substantially flat face lying in a common plane with the frontal faces of the other blades, said plane perpendicular to the axis of rotation of the impeller, each impeller blade also having opposed substantially flat sides which project rearwardly of the frontal face substantially at right angles thereto, the rear edges of said sides of all blades terminating in a common plane parallel to the first-named common plane so that all of said blades are of the same depth axially of the impeller, all of said blades being of the same circumferential width, said circumferential width being somewhat less than the equal circumferential spacing of the blades, one side of each impeller blade being radially shorter than the opposite side thereof and having its inner end terminating a greater distance radially from the center of the impeller than said opposite side, the radially shorter sides of the blades being adjacent to the radially longer sides of the next blade of the impeller, whereby short and long impeller blade sides are alternately arranged around the circumference of the impeller with a lesser circumferential space between short and long sides of each blade than between short and long sides of adjacent blades.

3,301,473
BLOWER FAN CONSTRUCTION AND IMPELLERS THEREFOR
Frank L. Weninger, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 12, 1965, Ser. No. 447,139
2 Claims. (Cl. 230—134)



1. In a blower fan construction having a drivable shaft defining an axis of rotation, the improvement comprising:
a pair of associated impellers having opposed fan fins and medial hub portions;
said hub portions defining shaft semi-encircling members curved under tension;
said shaft semi-encircling members of each impeller being projected between the shaft semi-encircling members of the other impeller and defining an axial path for said shaft;
said impellers being frictionally retained on said shaft only by the torque of the tension of said shaft semi-encircling members.

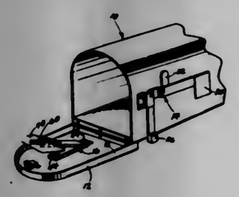
3,301,474
OIL SEALED MECHANICAL ROTARY VACUUM PUMP
Baptist Büchel, Balzers, Liechtenstein, assignor to Bendix Balzers Vacuum, Inc., Rochester, N.Y., a corporation of Delaware
Filed Sept. 24, 1965, Ser. No. 489,821
1 Claim. (Cl. 230—205)



In an oil sealed vacuum pump having a housing, a rotary pump member in said housing dividing the interior of said housing into a suction chamber and a discharge chamber, an oil bath, means connecting said oil bath

to said discharge chamber, and an air inlet system comprising:
a conduit threadedly mounted in a bore in said housing adapted to connect said discharge chamber to a source of air;
restriction means formed in said conduit means sufficiently near to said discharge chamber to be washed by the oil discharged from said discharge chamber during each pump cycle;
said restriction means includes a spring loaded ball valve engaging said conduit and having an adjustable position with respect to said bore, said position being controlled by the threaded position of said conduit.

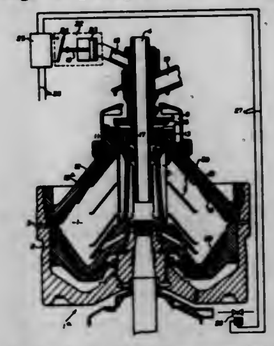
3,301,475
MAILBOX
George W. Clark, Peterson, Iowa 50218
Filed June 9, 1965, Ser. No. 462,550
6 Claims. (Cl. 232—33)



1. A mailbox, comprising,
a box unit having a door hingedly connected to one end and adapted to pivot between a vertical closed position to a horizontal open position, and
a mail holder pivotally connected to the inside of said door adjacent the inner end of said door and means tending to pivot said mail holder towards said door when said door is in its open position, said mail holder having a free end disposed adjacent the free end of said door, said free end having a releasable clamp means for holding mail, latch means for releasably holding said mail holder in a position pivoted away from the inside of said door, upon said holder being pivoted away from said door when said door is in its open position said holder is disengaged from said latch means whereby said holder is pivoted towards said door.

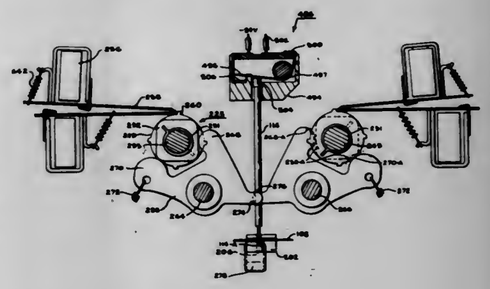
3,301,476
APPARATUS FOR SIGNALING A PREDETERMINED LEVEL IN THE SLUDGE CHAMBER OF A CENTRIFUGAL DRUM
Heinz Hemfort, Jr., Oelde, Westphalia, Germany, assignor to Westfalia Separator A.G., Oelde, Westphalia, Germany, a corporation of Germany
Filed Jan. 27, 1964, Ser. No. 340,480
Claims priority, application Germany, Jan. 26, 1963, W 33,789
11 Claims. (Cl. 233—20)

1. Centrifugal separator comprising:
(a) a drum for receiving material to be centrifuged by the separator including a sludge collection chamber, and being mounted for rotation about an axis for the centrifuging,
(b) a radially extending passageway having an inlet end and an outlet end, the outlet communicating with the drum sludge collection chamber, the inlet being closer to the drum axis than the outlet,
(c) means communicating with said inlet end for supplying fluid to the inlet for flow through said radially extending passageway to and into the sludge collection chamber,
(d) means for sensing increase in pressure of fluid in said passageway in consequence of collection of sludge at the passageway outlet end impeding fluid flow through the passageway, said means for sensing



pressure being in operative communication with said passageway, and
(e) means responsive to said sensing means for signaling said collection of sludge impeding flow through the passageway.

3,301,477
PUNCHING SYSTEM
Richard A. Edwards, Walnut Creek, Calif., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Jan. 17, 1964, Ser. No. 338,359
19 Claims. (Cl. 234—107)



1. A punch comprising:
(a) an electromagnetic device;
(b) means for operating said electromagnetic device;
(c) a latch operated by said electromagnetic device;
(d) a constantly rotating shaft;
(e) an escapement member carried on said shaft and normally restrained from rotation with said shaft by engagement of said latch with one of a plurality of stop means on said escapement member;
(f) a cam having a surface with a high portion and a low portion, said cam being mounted on said constantly rotating shaft;
(g) a spring clutch anchored to said cam and said escapement means for connecting said cam and said escapement member to said shaft for rotation therewith upon disengagement of said latch with said stop means;
(h) a second shaft;
(i) a follower mounted on said second shaft for rocking thereabout and having first and second surfaces continuously engaged with said cam surface, a chord between concurrent points of contact of said cam with

said first and second follower surfaces being offset from the center of axis of rotation of the cam;

(j) a die having a recess therein;

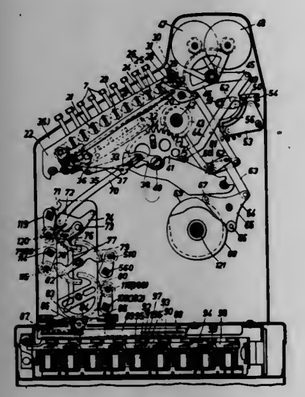
(k) a punch aligned with said recess and reciprocated by said follower into and out of the recess upon connection of said constantly rotating shaft to said cam.

3,301,478

REGISTERING BUSINESS MACHINE WITH A DEVICE FOR COMPUTING AMOUNTS OF TAX OR DISCOUNT

Gerhard Becker, Bielefeld, Germany, assignor to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany

Filed Sept. 9, 1964, Ser. No. 395,126
Claims priority, application Germany, Sept. 9, 1963, A 43,998
32 Claims. (Cl. 235—7)



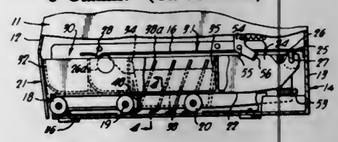
1. A registering business machine, comprising amount key banks, operation control keys, a selector key, a selective operable adding mechanism, a totalizer and respective differential mechanism connecting said key banks to said totalizer and to said adding mechanisms when selected by said selector key for entering into said totalizer and mechanism the amounts posted into said amount key banks, in combination with apparatus for computing and indicating tax and discount amounts corresponding to a given rate, said apparatus comprising electric selector switches connected to respective ones of said differential mechanisms to be selectively set thereby, said switches having respective groups of fixed contacts; displaceable follower members connected to respective ones of said differential mechanism to move in accordance with the mechanism displacement, each of said follower members having a given path of displacement and having stop means at which said follower member is arrestable for stopping the differential mechanism; a group of electromagnets having respective magnetically actuable detent members sequentially arranged along said displacement paths, each detent member being magnetically controllable to move to an active position in which said detent member is engageable with said stop means to arrest one of said respective follower members in a selected position of said path; electric circuit means interconnecting said groups of switch contacts and said magnets and forming together therewith a multiplying assembly for multiplying the sum from said adding mechanism by said rate under control by said control keys to selectively energize said magnets for placing the respective detent members to active positions jointly indicative of the multiplication result; means for displacing said differential mechanisms independently of said operation control keys to the respective stop positions determined by said detent active positions respectively for transferring into said totalizer the amount corresponding to said rate.

3,301,479

CASH REGISTER DRAWER CONSTRUCTION

John G. Clary, Pasadena, and Richard E. Busch, La Puente, Calif., assignors to Addmaster Corporation, San Gabriel, Calif., a corporation of California

Filed Nov. 8, 1965, Ser. No. 506,671
6 Claims. (Cl. 235—22)



1. A cash registering machine comprising a cash drawer housing, a cash drawer,

means on said housing for guiding said drawer from an inner position within said housing to an outer position at least partly out of said housing,

said drawer having a compartment for receiving paper money bills on edge,

spaced dividers in said compartment for dividing said compartment into a plurality of relatively narrow bill sections for receiving different groups of said bills,

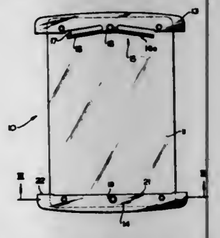
means pivotally supporting each of said dividers on said drawer for movement between a first position inclined at an angle to the vertical and a second position, and elements on said dividers engageable with a part on said housing for moving said dividers into said second positions upon movement of said drawer into said inner position and for maintaining said dividers in said second positions when said drawer is in said inner position, said elements disengaging from said part during movement of said drawer to said outer position whereby to permit movement of said dividers to said first positions.

3,301,480

SLIDE RULE CURSOR

Friedrich Müller, Hamburg-Stellingen, Germany, assignor to Dennert & Pape Aristo-Werke K.G., Hamburg-Altona, Germany

Filed Aug. 23, 1965, Ser. No. 481,641
Claims priority, application Germany, Aug. 29, 1964, D 45,307
2 Claims. (Cl. 235—70)



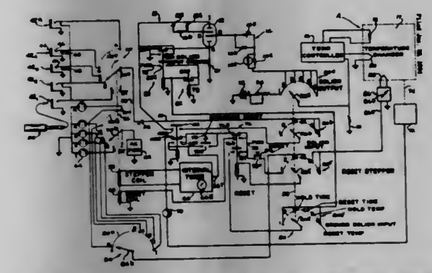
1. A slide rule cursor which includes: at least one transparent plate forming a sight window, first rail means arranged adjacent to one end face of said plate and provided with a guiding surface for sliding engagement with one side surface of a slide rule, and second rail means of polymer plastic material arranged adjacent to the other end face of said plate opposite said first rail means so that one side of said second rail means faces said first rail means, said second rail means having a guiding surface at each end facing said first rail means, said second rail means having a slot extending from inwardly of each guiding surface laterally and at an angle to the surface toward the center of said rail means, said slots defining tongues forming an obtuse angle between said guiding surfaces on the side of said second rail means facing said first rail means with their ends closer to said first rail means than said guiding surfaces, so that said tongues will resiliently engage the side of said rule under tension when in position on said rule, and a second plate fixed to the opposite sides of said rail means.

3,301,481

TEMPERATURE CONTROL SIGNAL PROGRAMMER

Jonathan W. Amy, West Lafayette, Ind., and Leo H. Soderholm, Lafayette, Calif., assignors, by mesne assignments, to Varian Aerograph, a corporation of California

Filed Jan. 29, 1964, Ser. No. 340,869
12 Claims. (Cl. 236—46)



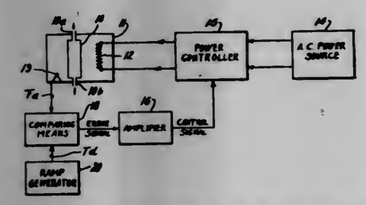
1. Apparatus for generating a time varying signal for controlling an ambient condition regulator of the type that regulates an ambient condition in response to the amplitude of an electrical control signal fed thereto, comprising a solion constructed and arranged to provide a control signal to control the ambient condition regulator having an amplitude which is a function of the time integral of the amplitude of its input D.C. signal, D.C. signal producing means to produce a plurality of constant amplitude D.C. input signals, switching means to seqeuntially connect each of the D.C. input signals from said signal producing means to said solion, and timing means connected to said switching means operable to cause said switching means to sequence at predetermined time intervals.

3,301,482

RAMP PROGRAM CONTROL SYSTEM

Clark V. Bullen, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed June 16, 1964, Ser. No. 375,530
6 Claims. (Cl. 236—46)



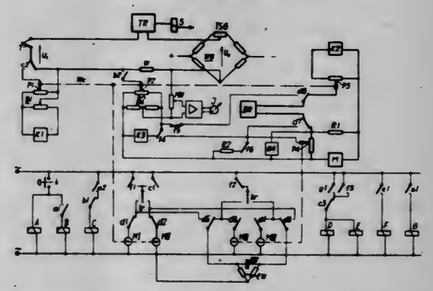
1. In a system for controlling a variable condition according to an adjustable ramp program, the combination comprising a capacitor, a first adjustable voltage source connected across said capacitor, a second adjustable voltage source, a transistor having its output circuit connected in series with said capacitor and said second voltage source, an adjustable control current source connected in series with the input circuit of said transistor, means for disconnecting said first voltage source from said capacitor so that output current through said transistor causes the voltage across said capacitor to rise linearly at a rate determined by the setting of said current source from an initial value equal to the voltage of said first source to a final value substantially equal to the voltage of the second source, a high input impedance amplifier connected to receive as its input signal the voltage across said capacitor and to produce a corresponding output voltage, means for producing a voltage representative of the actual value of the variable condition, and means responsive to said output voltage and said representative voltage for controlling the variable condition in a manner to keep the variable condition substantially proportional to the output voltage.

3,301,483

REGULATING DEVICE FOR FURNACES, PARTICULARLY ANNEALING FURNACES

Herbert Lang and Ferdinand Nierlich, Vienna, Austria, assignors to Wiener Schwachstromwerke Gesellschaft m.b.H., Vienna, Austria

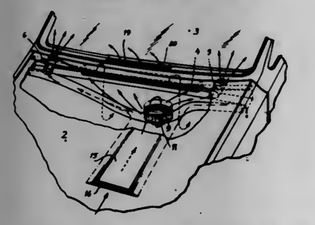
Filed Apr. 28, 1964, Ser. No. 363,194
Claims priority, application Austria, May 10, 1963, A 3,790/63
9 Claims. (Cl. 236—78)



1. A regulator for material heating apparatus comprising, in combination, circuit means providing a first control signal proportional to the difference between the temperature of the apparatus and a first pre-set temperature; a resistance included in said circuit means; a bridge circuit including a potentiometer; means operable, during a limited time period following introduction of material into said apparatus, to measure the difference between the furnace temperature at the introduction of such material and said first pre-set value, and to adjust the potentiometer in accordance with such difference; said resistance being connected in the diagonal of said bridge circuit whereby a voltage drop is applied across said resistance, proportional to such difference, to add a second signal, proportional to such difference, to said first control signal in such circuit means to provide a third control signal proportional to the difference between the temperature of the apparatus and a second temperature higher than said first pre-set temperautre; means operable responsive to said third signal to maintain a constant supply of energy to said apparatus until said second temperature is attained; a source of constant current; means operable, during attainment of said second temperature, to connect said source of constant current in supply relation with said bridge circuit; means operable, responsive to attainment of said second temperature, to disconnect said source of constant current from said bridge circuit and to supply, to said bridge circuit, a current

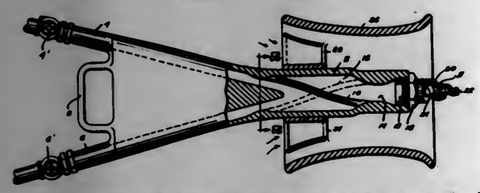
proportional to the rate of energy supply until such time as said first pre-set temperature is attained; an adjustable resistance connected in series with the first mentioned resistance; and an indicating means connected between a tap of said adjustable resistance and one end of the latter.

3,301,484
AIR-CONDITIONING OF AUTOMOBILE VEHICLES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works
Filed Nov. 30, 1964, Ser. No. 414,772
Claims priority, application France, Dec. 13, 1963, 957,155, Patent 1,387,184
1 Claim. (Cl. 237—34)



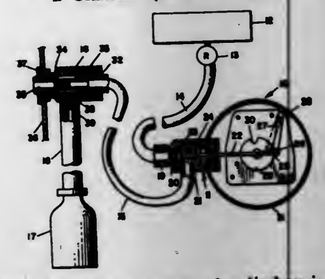
An air-conditioning device for vehicles having a hollow girder located beneath the wind screen, comprising a radiator of great longitudinal length mounted within said hollow girder, a distribution chamber immediately adjacent to and in front of said girder extending substantially along the entire length thereof, a vertical shaft electric suction fan fixedly mounted in said chamber, air intake means in the hood of said vehicle a point remote from the wind screen for taking air in and feeding it to said chamber, a plurality orifice means connecting said chamber to a passenger compartment, at least one of said orifice means spaced from each end of said radiator to feed air directly from said chamber to said compartment by-passing said radiator, further orifice means directing air passing through said radiator towards said windscreen and the vehicle floor respectively. and regulator clapper valve means in each said orifice for controlling the passage of air therethrough.

3,301,485
METHOD AND APPARATUS FOR MAKING FROZEN PARTICLES
Joseph C. Tropeano, 20 Revere St., and Philip L. Tropeano, 12 Revere St., both of Lexington, Mass. 02173
Filed Sept. 14, 1964, Ser. No. 396,227
9 Claims. (Cl. 239—2)



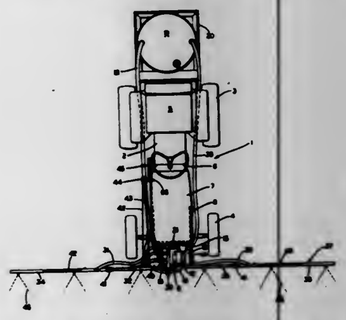
1. A method of making frozen particles from a liquid material which comprises conducting into a mixing chamber flows of compressed air and pressurized liquid to form a mass of atomized liquid particles, introducing into the mass of atomized particles while in a confined state a volume of aspirated cold ambient air and discharging the mass against helical deflecting surfaces and dispersing the atomized particles into an ambient freezing atmosphere to provide a rotating mass of conically diverging particles which occur in a frozen state.

3,301,486
LIQUID DISPENSING APPARATUS
Edward I. Brock, Sherman Oaks, Calif., assignor to Brockstone Chemical Co., Northridge, Calif., a partnership
Filed Dec. 5, 1963, Ser. No. 328,219
2 Claims. (Cl. 239—70)



1. A fluid dispensing apparatus for discharging a liquid spray into a tumbling enclosure during a clothes drying operation, said apparatus comprising: a source of compressed air; a nozzle means mounted on said enclosure; a fluid conduit connected between said source of compressed air and said nozzle means; valve means interposed in said fluid conduit; timing means mounted on said valve means; linkage means responsive to actuation of said timing means to open and close said valve means; a source of liquid chemical communicating with said nozzle means by means of a separate conduit; and a check valve means interposed in said separate conduit.

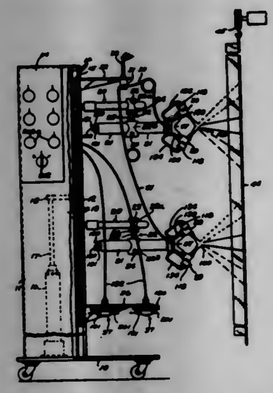
3,301,487
SPRAYER CONSTRUCTION FOR YARD TRACTORS EMPLOYING ELECTRO-MAGNETIC CLUTCH AND SOLENOID VALVES
Ramon J. Young, North Canton, Ohio, assignor of 35/100 part to Thelma Mae Young and 19/100 part to Lawrence Shirley Young, both of Hartville, Ohio
Filed Nov. 27, 1964, Ser. No. 414,212
3 Claims. (Cl. 239—168)



1. Sprayer attachment construction for small yard tractors of the type having a power takeoff, a battery, a frame, and a driver's station; including support bracket means; pump means having an inlet and an outlet; electro-magnetic clutch means mounted on the pump means and including pump drive pulley means adapted to be connected to and driven from a tractor power takeoff; a source of spray solution connected with the pump inlet; a pressure manifold connected with a pump outlet; spray boom means including a plurality of separate spray heads; conduit means separately connecting each spray head with the pressure manifold and including a solenoid controlled valve for each spray head; switch means connected with the clutch means and solenoid controlled valves adapted to be connected with the tractor battery

for controlling operation of the pump means and selectively of the solenoid controlled valves; and the pump means, pressure manifold, spray boom means, conduit means and solenoid valves all being mounted on the support bracket means as a unitary sprayer attachment package; whereby when the support bracket means is mounted on the frame of a tractor adjacent a tractor power takeoff, and when the switch means is mounted on such tractor at the driver's station, the sprayer attachment may be controlled and operated by one person at the driver's station without leaving such station and during movement of the tractor.

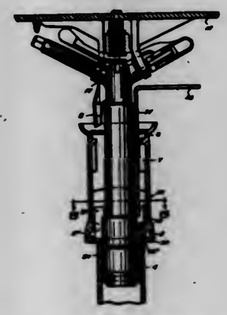
3,301,488
SPRAY GUN
Edward O. Norris, Ledgemoor Lane, Westport, Conn. 06880
Filed Aug. 19, 1965, Ser. No. 481,025
20 Claims. (Cl. 239—186)



1. A spray head arrangement of the two-fluid type for a paint spray system or the like, comprising a pair spray nozzles, each of said nozzles having means to discharge a jet of spray material suspended in carrier gas, at a given velocity, means supplying carrier gas to both of said nozzles under a predetermined pressure sufficient to finely atomize the jets of spray material issued from each nozzle, said nozzles being mounted at a relative angle of from 100 degrees to 140 degrees to cause the jets therefrom to converge and impinge on each other and form a fan of spray which lies in a plane dividing the angle between said nozzles and in which the spray particle velocity is significantly low compared to the spray particle velocity in said jets.

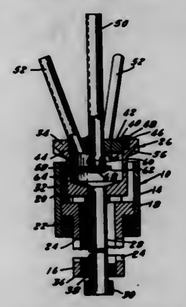
3,301,489
COMBINATION IRRIGATOR AND FLUID CONDUIT ADAPTER
Joseph C. Tropeano, 12 Revere St., and Philip L. Tropeano, 20 Revere St., both of Lexington, Mass. 02173
Filed Apr. 14, 1965, Ser. No. 448,098
4 Claims. (Cl. 239—206)

1. A fluid dispensing apparatus of the pop-up sprinkler valve class comprising in combination a housing adapted to be supported below ground level in a substantially vertically disposed position and including a tubular bottom section for connecting with an underground fluid supply main, said housing being formed at an intermediate portion thereof with an enlarged hollow body portion having a continuous horizontally extending annular locking surface and inwardly projecting lug portions located in spaced relation above the annular locking surface, a cylindrical fluid conduit member located within the housing and vertically movable therein, a locking sleeve adapter element detachably contained in the housing and having an enlarged intermediate portion thereof mounted around the fluid conduit member the upper and lower ends of said sleeve adapter element occurring in spaced relation to adjacent surfaces of the housing to provide an annular passageway, said locking sleeve adapter element presenting arcuate locking cam portions, and said cam portions being constructed and arranged to turn on the annular locking surface in snugly fitted relationship in the enlarged hol-



low body portion and engage against under surfaces of projecting lug portions to secure the locking sleeve and fluid conduit in solidly locked relationship with the housing, and said arcuate cam portions being further formed with elongated vertically projecting wrench supporting key portions which extend vertically upwardly between the housing and fluid conduit for an appreciable distance to provide bearing surfaces along which torque forces may be exerted by a slotted wrench engaged over the cam portions to turn the cam portions in the said annular passageway and thereby disengage the cam portions from the inwardly projecting locking portions.

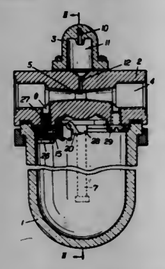
3,301,490
MULTIPLE OUTLET WATER DISCHARGE HEAD WITH INTERNAL FLOW DISTRIBUTING BAFFLE
John O. Hruby, Jr., Burbank, Calif., assignor, by mesne assignments, to Rain Jet Corp., Burbank, Calif.
Filed Dec. 7, 1964, Ser. No. 416,252
4 Claims. (Cl. 239—227)



1. An ornamental fountain discharge head comprising a manifold chamber having a water inlet in its lower end and having in its upper end a number of tubular water outlet passageways, one outlet passageway being located substantially in axial alignment with said inlet, others of said outlet passageways having entrance ends spaced radially outwardly from said one outlet passageway and extending angularly outwardly, said one outlet passageway having a portion including an entrance end extending into

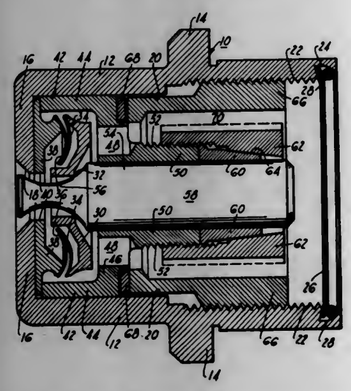
said chamber to a location spaced inwardly of the entrance ends of the others of said outlet passageways, said entrance end including a central opening aligned with said inlet and a flow distributing baffle comprising a frusto-conical tapered surface on said portion surrounding said opening and with the apex thereof facing toward said inlet.

3,301,491
ATOMIZER
Herbert Söchting, Vienna, Austria, assignor to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria
Filed Mar. 4, 1965, Ser. No. 437,100
Claims priority, application Austria, Mar. 11, 1964, A 2,098/64
4 Claims. (Cl. 239—338)



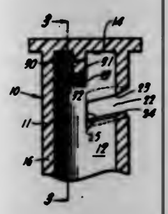
4. An atomizer, particularly for lubricants, comprising a container for the material to be atomized, said container having a filling hole therein, a plug for the filling hole, an atomizer head mounted on the container, the atomizer head having a port thereon and a restrictor with a connecting passage connecting the port in front of the restrictor, a valve spring-loaded in the closing direction controlling the connecting passage, a swinging arm upon which the plug of the filling hole of the container acts with its extremity located inside the container and actuating the valve in the opening direction, and a housing for the said valve and secured to the atomizer head, the swinging arm being pivoted on the said housing.

3,301,492
VARIABLE AREA NOZZLE
Warren G. Kingsley, New York, N.Y., assignor to The Bendix Corporation, Elmira, N.Y., a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 398,918
1 Claim. (Cl. 239—535)



A variable area nozzle comprising:
a valve body having a cylindrical interior chamber;
said valve body having a transverse wall at one end having a first central fuel deliver port extending therethrough;
an annular anchor plate disposed in said interior chamber abutting said transverse wall;
said anchor plate having a second central fuel delivery port in alignment with said first central fuel delivery port;
an annular valve seat member having a central valve orifice formed therein;
spring means interconnecting said valve seat member and said anchor plate permitting axial movement of said valve seat member relative to said anchor plate in opposition to the spring bias provided by said spring means;
said anchor plate having peripheral clearance relative to the interior surface of said cylindrical interior chamber;
a sleeve guide member arranged in said cylindrical interior chamber;
a valve member having an extending contoured end secured within said sleeve guide member;
said contoured end of said valve member extends through said central valve orifice operative to locate said valve seat member and said anchor plate radially in alignment with said valve member;
locking means operative to lock said sleeve guide member into abutting relationship with said anchor plate to fixedly secure said anchor plate and said valve seat member in alignment with said valve member; and
collar and locking means adjustably connecting said valve member within said sleeve guide to permit selective axial adjustment of said valve member.

3,301,493
LIQUID DISCHARGE
Wayne W. Frempter, Burbank, Calif., assignor to Rain Jet Corporation, Burbank, Calif., a corporation of California
Filed Aug. 5, 1965, Ser. No. 477,526
14 Claims. (Cl. 239—590)

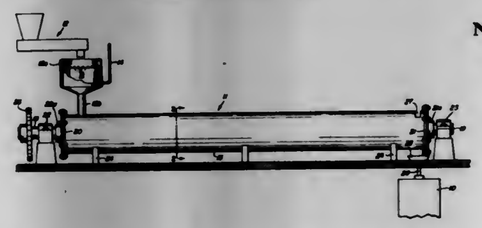


1. A liquid discharging device comprising a hollow body defining an inside chamber having opposite ends spaced apart by the length of the chamber, a liquid inlet opening to the chamber substantially at one end thereof, the body defining walls for the chamber and a liquid outlet opening laterally from the chamber at a location along the chamber spaced from the ends, the outlet opening having a minimum area greater than the area of the inlet opening, and a baffle extended within the chamber from the other end thereof toward but not to the outlet opening and occupying only a portion of the volume of the chamber between the outlet opening and said other end of the chamber.

3,301,494
METHOD FOR THE FORMATION OF MALLEABLE METAL POWDERS
Erik Tornqvist, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Mar. 13, 1964, Ser. No. 351,848
11 Claims. (Cl. 241—22)

1. A method for producing powders of malleable metals which comprises severely grinding in the absence of a diluent, a non-fused mixture consisting essentially of at least one malleable metal having a Brinell hardness ranging from about 1 to 75 and at least one solid metal halide grinding aid selected from the group consisting of chlorides and bromides of metals of Groups II–A, II–B, III–B, IV–A, IV–B, V–A, V–B, VI–A, VII–A, and VIII of the Mendeleev Periodic Table, the metal moiety of said metal halide grinding aid being at least as electropositive as the malleable metal being ground, and recovering a powder of said malleable metal substantially free of said grinding aid.

3,301,495
BALL MILL FOR FORMING LIQUID SUSPENSIONS OF FINELY DIVIDED SOLID MATERIAL
Albert E. Ziselberger, Cody, Wyo., assignor of one-third part of an undivided sixty-four percent each to Sid H. Eliason, Edward L. Hildebrand, Sid H. Eliason, Jr., all of Salt Lake City, Utah, and eight percent of the entire right to W. C. Headlee, Cody, Wyo.
Original application May 22, 1963, Ser. No. 282,485. Divided and this application Mar. 26, 1965, Ser. No. 459,965
3 Claims. (Cl. 241—62)



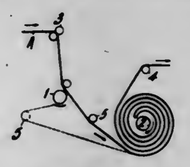
1. A ball mill for forming liquid suspensions of finely divided solid mineral particles, comprising
an elongate, stationary, substantially horizontal drum;
a deeply fluted, columnar rotor extending along the length of the interior of said drum, axially thereof, with the termini of the flute spines also extending along the length of the interior of said drum and being closely spaced from the inner wall of said drum;
masses of grinding balls packed within the respective flute valleys and confined therein and carried along therewith by respective pairs of mutually adjacent flute spines which define said valleys, so as to bear and roll against the inner wall of said drum as said rotor rotates, the spacing between the respective termini of the spines and the inner wall of the drum being considerably less than the respective diameters of said balls, so the balls in each flute valley will be retained therein and so that there is an elongate opening restricted to narrow slit character defined between each flute terminus and the inner wall of the drum solely as clearance for rotor rotation, each flute valley being otherwise closed along its length;
means at one end of the drum for flowing the initial suspension of material into the ball mill;
means at the other end of the drum for flowing the final suspension of material from the ball mill;
and means for rotating the rotor.

3,301,496
YARN WINDING MACHINE
Stefan Furst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed Mar. 23, 1964, Ser. No. 353,693
Claims priority, application Germany, Mar. 22, 1963, R 34,749
12 Claims. (Cl. 242—37)



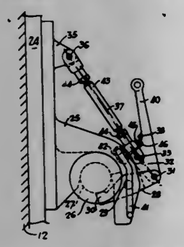
1. In a yarn winding machine, a rotating take-up spool, braking roller means, means for bringing said rotating take-up spool and said braking roller means into mutual engagement so as to brake said rotating take-up spool, and clutch means cooperating with said braking roller means for reducing sliding friction between said take-up spool and said braking roller means.

3,301,497
METHOD AND MEANS FOR CONTINUOUSLY TRANSFERRING FABRIC IN A CHAMBER OF GIVEN SIZE
Narukazu Okazaki, Wakayama-shi, Japan, assignor to Wakayama Tetsuko Kabushiki Kaisha, Wakayama-shi, Japan
Filed Aug. 30, 1965, Ser. No. 483,562



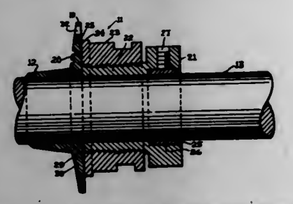
2. Apparatus for transferring a fabric in a textile machine of the type having
(a) fabric feeding guide roller means,
(b) fabric withdrawal guide roller means,
(c) first and second reversible winding rollers, and
(d) means for causing the fabric passing from said fabric feeding guide roller means (a) to the fabric withdrawal guide roller means (b) to be alternately wound on and unwound from each of said first and second winding rollers in first and second bights respectively,
said apparatus being particularly characterized in that:
(A) Said first winding roller is located in a fixed position below said fabric feeding guide roller means (a),
(B) Said second winding roller is located in a fixed position proximate to said fabric withdrawal guide roller means (b),
(C) Said first winding roller is located at a higher elevation than said second winding roller, and
(D) Said means for causing the fabric to be alternately wound on said winding rollers comprises a displaceable roller located to lie above a portion of the fabric lying between said first and second winding rollers and displaceable from a first position between said winding rollers to a second position lower than said first winding roller and more remote from said second winding roller than said first winding roller.

3,301,498
MANUAL LATCH FOR CORESHAFT BOX
Robert Greding, Beaconsfield, Quebec, Canada, assignor to Dominion Engineering Works Limited, Montreal, Quebec, Canada
Filed Dec. 21, 1964, Ser. No. 419,987
4 Claims. (Cl. 242—66)



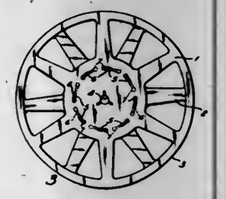
1. In a winder for paper machines employing a coreshaft for winding paper thereon having a bearing and bearing housing means positioned adjacent the ends thereof, mounting frame members having mounting bracket means positioned thereon to receive the coreshaft bearing housing means, and pivotal latch means for releasably clamping the coreshaft bearing housing in the mounting bracket means, a toggle linkage mechanism including first and second pivotally connected toggle links operatively connected thereto to provide clamping force of the latch means against the bearing housing means when in a substantially straight-line configuration and including stop means positioned to limit the movement of the toggle linkage mechanism on one side of said substantially straight-line configuration, when in the clamping position, the improvement comprising a movable release handle mounted on said winder adjacent the linkage pivot connection of said toggle linkage mechanism, having a substantially rigid release lever portion for releasing displacement of the linkage pivot connection from said stop means and past said substantially straight-line configuration to an unlocked position, whereby said pivotal latch means is released from clamping engagement with the bearing housing, to permit ready removal of the bearing housing from the winder.

3,301,499
CHUCK FOR PAPER ROLLS
Lynn H. Ewing, 2010 2½ Ave., Rock Island, Ill. 61201
Filed Jan. 6, 1965, Ser. No. 423,692
4 Claims. (Cl. 242—68.4)



1. A device for securing a hollow core paper roll on to a rotatable supporting shaft comprising in combination
(a) a pair of cooperating chucks, each of said chucks providing bushings journaled upon said shaft in spaced apart confronting relation,
(b) a radially extending flange carried by each of said bushings,
(c) one of said chucks having a shaft embracing collar extending from one side of its flange in a direction away from its bushing,
(d) means carried by said collar for releasably connecting said one of said chucks to said supporting shaft,
(e) a second shaft embracing collar for the other of said chucks providing an externally threaded bushing extending from said collar in the direction of said other of said chucks,
(f) means carried by said second shaft embracing collar for cooperating with said other of said chucks for connecting it to said supporting shaft, and
(g) means carried by said threaded bushing and movable thereover into engagement with said other of said chucks for axially moving said other of said chucks over said shaft in a direction away from said second shaft embracing collar so as to project said confronting bushings of each of said chucks into binding contact with the hollow core of the paper roll so as to center the paper roll between the radially extending flanges of each of said chucks.

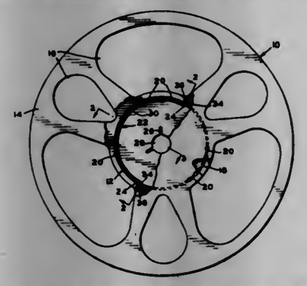
3,301,500
COLLAPSIBLE REEL
Richard H. Shackson, Cleveland, Ohio, assignor to Cleveland Technical Center, Inc., Cleveland, Ohio, a corporation of Delaware
Filed May 22, 1964, Ser. No. 369,368
3 Claims. (Cl. 242—71.2)



1. A collapsible reel comprising a pair of flanges each having an axis about which it is rotatable, said flanges being adapted to be disposed essentially coaxially relatively to each other about a common axis and having substantially identical circumferentially elongated slots disposed substantially equidistantly and equiangularly about the axes of said flanges, and a plurality of essentially rigid rods extending between said flanges with their end portions extending through said slots and having means limiting movement of said end portions of said rods inwardly of said flanges, said end portions of said rods being movably connected to said flanges at said slots, said rods and slots being of such length that when said rods are substantially parallel to said axis said flanges are axially spaced, and when said flanges are rotated relatively to each other about their axes said rods are moved in said slots to extend between said flanges at angles to the axes of said flanges as said flanges are moved toward each other.

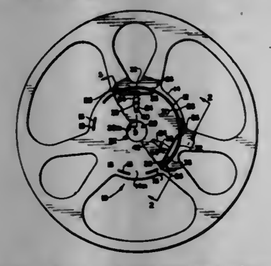
3,301,501
AUTOMATIC THREADING FILM REEL
Morris Goldberg, Denver, Colo., assignor to Goldberg Brothers, Inc., Denver, Colo., a corporation of Colorado
Filed June 3, 1965, Ser. No. 460,943
8 Claims. (Cl. 242—74)

1. A self-threading reel for motion picture film of the type having a row of sprocket holes extending along at least one side thereof which comprises: a hollow circular hub of a width corresponding to the width of the film to be wound thereon, said hub having at least one notch in the side thereof adjacent the edge of the film having the sprocket holes; a pair of disk-shaped flanges fastened to opposite edges of the hub to form a continuous annular radially-extending slot therebetween of a width designed to receive and retain the coils of film wound upon the hub, said flanges including centrally-located transversely-aligned openings sized to receive the drive spindle of a motion picture projector, and said flange fastened to the edge of the hub opposite the notched edge having the central opening therein shaped to cooperate with the projector spindle and form a driving connection therebetween; and, a pick-up bail carried by the hub for releasably engaging an end of the film to start same winding on the reel, said bail comprising a length of spring metal bent to include an arcuate section curved to fit the



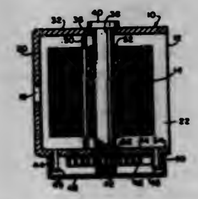
interior of the hub when placed inside thereof and a radially-extending portion formed on one end of said arcuate section positioned to emerge onto the exterior surface of said hub through the notch in its edge, said radially-extending portion forming a tooth located to enter one of the sprocket holes in a section of film laid against the hub when the reel is rotated relative to said film.

3,301,502
AUTOMATIC THREADING FILM REEL
Morris Goldberg, Denver, Colo., assignor to Goldberg Brothers, Inc., Denver, Colo., a corporation of Colorado
Filed June 7, 1965, Ser. No. 461,876
10 Claims. (Cl. 242—74)



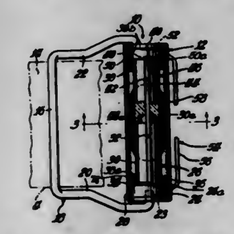
1. A self-threading reel for motion picture film of the type having a row of sprocket holes extending along at least one side thereof which comprises: a hollow circular hub of a width corresponding to the width of the film to be wound thereon, said hub having at least one circumferentially-elongate notch adjacent the edge of the film containing the sprocket holes; a pair of disk-shaped flanges fastened to the opposite side edges of the hub to form a continuous radially-extending slot therebetween of a width designed to receive and retain the coils of film wound upon the hub, said flanges including centrally-located transversely-aligned openings sized to receive the drive spindle of a motion picture projector, and said flange fastened to the edge of the hub opposite the notched edge having the central opening therein shaped to cooperate with the projector spindle and form a driving connection therebetween; and, at least one pick-up element mounted on the flange adjacent the notched edge of the hub for releasably engaging an end of the film to start same winding onto the reel, said pick-up element comprising a generally T-shaped spring metal member having a radially-extending stem portion fastened to the flange inside the hub in alignment with one of the circumferential notches and a cross-bar portion mounted intermediate its ends to the outer extremity of said stem portion in normal relation thereto immediately inside said notch, said cross-bar portion including outturned end portions forming sprocket-hole engaging fingers projecting onto the outside of the hub through the notch in position to enter one of the sprocket holes in a length of film laid against said hub.

3,301,503
RETRACTABLE SEAT BELT UNIT
Joseph B. Browning, 323 Paloma Lane, El Cajon, Calif. 92021
Filed Jan. 11, 1965, Ser. No. 424,606
3 Claims. (Cl. 242—107)



3. A retractable seat belt unit comprising:
(a) a hollow housing having side walls;
(b) an elongated tension pin extending through opposite side walls of said housing;
(c) a spiral retraction spring disposed within a cylindrical cover, said spring having one end attached to said cover and the other end attached to said tension pin adjacent one end thereof to bias said tension pin to rotate in one direction;
(d) adjustable coupling means on said cover and one of said side walls for mounting said cover to said one of said side walls; and
(e) a seat belt member; and
(f) a clip consisting of an elongated rectangular frame having an arcuate cross section and a rectangular opening therein, one end of said seat belt being wrapped through said clip and around said tension pin at least one turn, and at least a partial turn being wrapped through said clip and around said tension pin in an opposite direction from and inside said at least one turn.

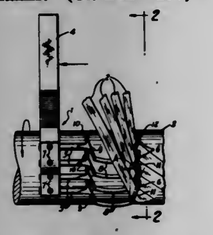
3,301,504
SEAT BELT RETRACTOR
Ernest A. Ferris, Elmhurst, and Harold A. Heinrich, Bellwood, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 4, 1964, Ser. No. 364,664
3 Claims. (Cl. 242—107.11)



1. In a rotary retractor device adapted to wind up and unwind an elongated member, said device including a reaction member, a reel for receiving said elongated member, means rotatably supporting said reel on said reaction member including a driver plug and an anchor plug rotatable relative to each other, each of said

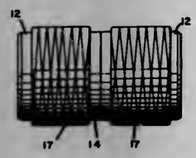
plugs including an axially extending mandrel like portion, and an elongated helical torsion spring having opposite ends thereof connected between said reel and said reaction member for rotatably driving said reel with respect to said reaction member, said spring being disposed about said mandrel like portions, defining an annular space therearound; the improvement comprising an elongated, generally cylindrical, resilient split sleeve disposed within said annular space adapted to engage a plurality of convolutions of said spring for guiding the winding movement thereof, said sleeve adapted to undergo gradual reduction in diameter responsive to engagement with the convolutions of said spring as said spring is wound up, said split sleeve being effective to clutch said mandrel portions together to resist relative movement thereof as said sleeve undergoes reduction in diameter prior to full prewind of said spring, said mandrel portions serving thereafter as a positive stop for limiting further diameter reduction of said sleeve to limit the winding of said spring to a predetermined maximum.

3,301,505
DELIVERY HEAD FOR A FILAMENT WINDING APPARATUS
Jack Lowrie McLarty, Milwaukee, Wis., assignor to McClean-Anderson, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 21, 1965, Ser. No. 426,822
8 Claims. (Cl. 242—157)



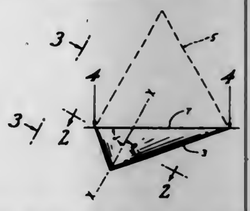
1. In an apparatus for winding a tubular article, a rotatable mandrel, a plurality of guide members located outwardly of the mandrel and spaced circumferentially over at least a portion of the circumference of the mandrel and adapted to reciprocate along the mandrel, each guide member having an elongated strand supporting surface with the axis of said supporting surface extending generally parallel to the axis of the mandrel, and means disposed at least at one end of the strand supporting surface for preventing displacement of a strand from said surface during the winding operation.

3,301,506
YARN PACKAGE
Lewis Brown Bagby, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 29, 1964, Ser. No. 363,477
1 Claim. (Cl. 242—166)



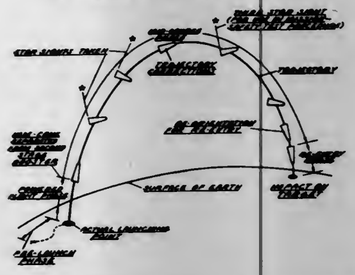
A yarn package having separate windings that have been simultaneously wound on each of at least two readily separable cylindrical core elements of a unitary tubular core and are simultaneously unwindable therefrom, said core elements being axially aligned and arranged in abutting end-to-end relationship and rigidly secured in position in the unitary tubular core by means of a latex based adhesive that is located at spaced areas within the abutting end surface areas of the core elements, said adhesive having high shear strength to enable the unitary tubular core to withstand the mechanical strains of winding at high speeds and low tensile strength so that said unitary tubular core can be readily pulled apart by application of slight tensile force into individual core elements each bearing separate windings for use as single yarn packages, and said core elements having end and central sections, the latter being of uniform radius along its length and constituting the yarn winding support, and each end section having a radius that does not exceed that of the central section to permit over-end yarn take off while avoiding yarn abrasion.

3,301,507
HYPERSONIC REENTRY VEHICLE
Edward E. Mayo, Beltsville, Md., and Robert H. Lamb, Houston, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 31, 1964, Ser. No. 422,865
9 Claims. (Cl. 244—1)



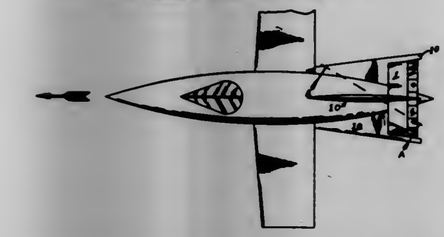
1. A heat shield for use on an earth reentry vehicle, said heat shield having an external surface in the shape of an elliptical cone which is raked across the axis thereof to form a circular base, the major arcs of said elliptical cone defining the upper and lower surfaces of the heat shield when the vehicle is in its normal reentry attitude.

3,301,508
GUIDANCE SYSTEM WITH STELLAR CORRECTION
Joseph Yamron, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 7, 1961, Ser. No. 115,867
8 Claims. (Cl. 244—3.18)



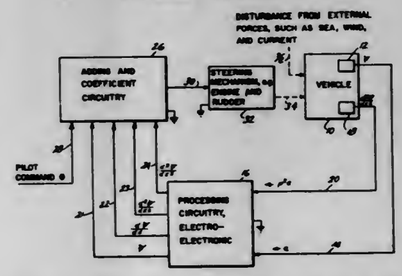
1. A guidance and control system for a vehicle comprising
means for producing signals indicative of launch parameters of vehicle launch position and vertical direction at the point of launch with respect to a coordinate reference system, one of said launch parameter signals being only approximately known within a predetermined error limit, the other said launch parameter signal being accurately known, said coordinate reference system having reference axes which are determined by said launch parameters,
means for producing a signal indicative of the position of a target,
inertial sensor means connected with said vehicle for producing signals indicative of vehicle acceleration and vehicle orientation,
means for producing from said vehicle launch position signal and from said vehicle acceleration and orientation signals an approximate vehicle present position signal,
means responsive to said approximate present position signal and said target position signal for producing a signal indicative of a reference flight trajectory to said target,
guidance means for said vehicle,
means for feeding said flight trajectory signal to said guidance means to guide said vehicle along said reference trajectory,
a stellar sensor connected with said vehicle for viewing a stellar body and producing a stellar signal indicative of the orientation of said stellar body relative to the axes of said coordinate reference system,
means responsive to said stellar signal for generating a plurality of direction cosine signals indicative of the orientation error in said coordinate reference system axes,
means responsive to said direction cosine signals for determining an accurate value of said approximately known launch parameter signal,
means for producing from said accurate launch parameter signals and from said vehicle orientation and acceleration signals a signal indicative of the actual present position of said vehicle,
means responsive to said actual vehicle present position signal and said target position signal for producing an updated trajectory to said target,
means for generating an error signal indicative of the deviation of said updated trajectory from said reference trajectory,
and means feeding said trajectory error signal to said guidance means to correct the flight path of said vehicle toward said target.

3,301,509
OTTOVENT SHROUD SYSTEM
Otto J. Sendish, Charles County, Md. (Rte. 1, Box 472, Waldorf, Md. 20601)
Filed Aug. 26, 1964, Ser. No. 392,262
2 Claims. (Cl. 244—42)



1. A propeller shroud adapted to include the movement of low pressure air by high pressure air and an aircraft attitude control means, a conical shaped outer enclosure member, a cylindrical shaped throat member carried within said conical shaped outer enclosure member a predetermined distance from said outer enclosure member ends and forming an area of least cross sectional dimension and a passageway for said low pressure air, said throat member having a plurality of annularly arranged ports therein and being operable to define a passageway between said throat member and said conical shaped outer enclosure member, conical means connecting the smaller end of said conical shaped outer enclosure member to said cylindrical shaped throat member a predetermined distance from said conical shaped outer enclosure member inlet end and defining an inlet for said high pressure air, a conical shaped diffuser member connecting said cylindrical shaped throat member to the larger end of said conical shaped outer enclosure member a predetermined distance from said conical shaped outer enclosure member outlet end and defining an air outlet for said high and low pressure air, a dorsal strut means connecting said conical shaped outer enclosure member generally ninety degrees around the longitudinal aircraft axis and thereby fixedly securing said conical shaped outer enclosure member and forming therein a propeller shaft housing in which the propeller is held concentrically within said conical shaped outer enclosure member, said conical shaped outer enclosure member having a plurality of exterior low pressure ducts positioned generally ninety degrees apart and fixedly secured to said conical shaped outer enclosure member and having communication to said throat member forming therein a conduit for low pressure air to places of need and fairing for flap control arms and control rods, a plurality of annularly movably mounted flaps, means to move said flaps whereby said flaps are movable uniformly and collectively.

3,301,510
METHOD AND APPARATUS FOR GAGE SIMULATION IN AUTOMATIC CONTROL SYSTEMS
George W. Cook, McLean, Va., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 320,682
5 Claims. (Cl. 244—77)



1. The method of simulating the presence of an angular velocity gage in an automatic guidance control system for a craft comprising the steps of sensing the angular displacement of the craft to provide a first electrical signal, and sensing the angular acceleration of the craft to provide a second electrical signal, differentiating the first electrical signal with respect to a time-constant of unity to provide a third signal, integrating the second signal with respect to a time-constant of unity to provide a four signal, and adding said third and fourth signals to produce a fifth signal as an indication of angular velocity.

3,301,511
WING DEPLOYMENT METHOD AND APPARATUS
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of John Dale Sutliff
Filed Jan. 28, 1965, Ser. No. 428,890
12 Claims. (Cl. 244—138)

1. A method for deploying a folded, flexible wing glider connected to an airborne body by a plurality of

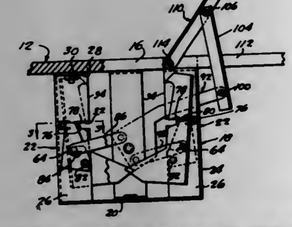
suspension cord means and restraining cord means, comprising the steps of:

releasing the folded glider from the body to a first folded trailing position dictated by the length of said restraining cord means; and



severing one only of said restraining cord means to permit the surrounding slip stream to fully deploy said glider at a second position farther from said vehicle than said first position whereby the forces incurred during full deployment thereof are borne by said plurality of suspension cords.

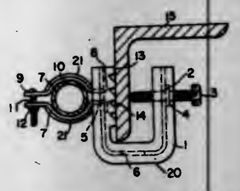
3,301,512
TREE HOLDER
Theodore A. Nyberg, Maitland, Fla.
(1641 Chestnut Ave., Winter Park, Fla. 32789)
Filed Apr. 16, 1965, Ser. No. 448,772
9 Claims. (Cl. 248—44)



1. A tree holder comprising a support, opposed clamping levers having tree gripping portions at their upper ends, the levers being devoid of tree gripping portions at their lower ends, articulated on the support to move their gripping portions toward each other into tree-clamping relationship from upwardly and outwardly-retracted positions, operating lever means pivoted on the support to move from an elevated position to a depressed position for moving the clamping levers to clamping positions, linkage means operatively connecting the operating lever means to the clamping levers, and a locking lever pivoted on the support and operatively connected to the operating lever means.

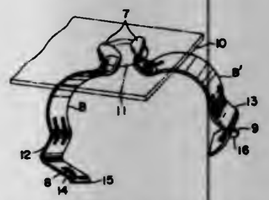
3,301,513
BEAM CLAMP AND CLIP ASSEMBLIES
Masao Sugaya, 1365 Higashi Komatsugawa 4-chome, Edogawa-ku, Tokyo, Japan
Filed May 28, 1965, Ser. No. 459,732
4 Claims. (Cl. 248—72)

1. A beam clamp and clip assembly for holding a pipe to a beam of a building comprising, a U-shaped beam clamp member having one leg portion provided with a tapped bore, the other leg portion provided with a clip receiving bore, and an intermediate portion having a clip receiving bore; a first tightening means threaded in said tapped bore; a clip member composed of two pipe holding pieces each of which has a bent end portion engaged in said clip receiving bore, a curved intermediate portion defining a space for receiving the pipe in cooperation with the curved intermediate portion of the other pipe holding piece and a straight end portion provided with a bore; and a second tightening means for



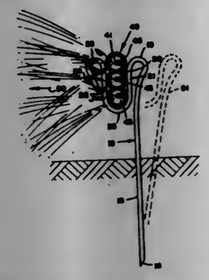
tightening said clip member with a nut in said bore; characterized in that said U-shaped beam clamp member is formed in integral, and said other leg portion includes an inner edge on which an elastic insert member for engagement with the beam of the building opposite the tip end of said first tightening means is disposed, said elastic member having a groove to fit on said edge thereby.

3,301,514
CLIPS FOR CONDUITS OR PIPES
Masao Sugaya, 1365 Higashi Komatsugawa 4-chome, Edogawa-ku, Tokyo, Japan
Filed May 28, 1965, Ser. No. 459,733
Claims priority, application Japan, Sept. 30, 1964 (utility model), 39/77,174
3 Claims. (Cl. 248—73)



1. A clip for a conduit or pipe comprising at least two flexible strip members, each of which has a center portion adapted to accommodate and hold a conduit in cooperation with the center portion of the other strip member, the center portions of the flexible strip members having an outwardly curved configuration so as to define a space for accommodating a conduit therebetween, each of the flexible strip members having a first bent abutment end with a transverse curvature substantially conforming to the curvature of an arcuate section in a circular opening of a support member, in which opening the abutment end is adapted to engage and to be held in position thereby, each of the flexible strip members having a second end with inwardly bent extensions adapted to lie one above the other when a conduit is accommodated between the strip members, the extension on the second end of one of the flexible strip members extending inward and horizontally and having a detention bore formed therein, the extension in the second end of the other of the flexible strip members extending inwardly and upwardly in a small arcuate form and having a locking piece formed therein adapted to engage in said detention bore, whereby when a conduit is accommodated between the strip members, the inner surface of said horizontally extending extention and the outer surface of said arcuately bent extension face each other and accordingly, said locking piece will engage in said detention bore.

3,301,515
SOAKER HOSE HOLDER
Vernon Gerbracht, 4 Descanso Way, San Rafael, Calif. 94903
Filed May 3, 1965, Ser. No. 452,819
1 Claim. (Cl. 248—87)



A soaker hose support comprising a single piece of wire-like material formed in a common plane to provide an elongated shaft section having one end adapted for insertion into a ground surface in substantially vertical orientation, the opposite end of said shaft section folded over to form a first curved upper end section and thence folded downwardly and thence upwardly to form a U-shaped nest section into which said soaker hose can be frictionally inserted for support above the ground surface.

3,301,516
DISPLAY DEVICE
Edward C. Bruno, 1880 S. Monaco, Denver, Colo. 80222
Filed Dec. 16, 1965, Ser. No. 514,237
19 Claims. (Cl. 248—176)



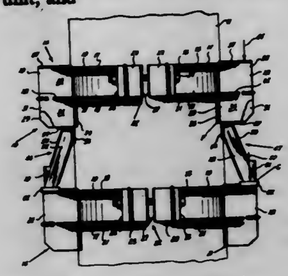
1. A display comprising: a support member; a display article for mounting on said support member; and a display device for mounting said article on said support member; said display device including a connector means and a flexible strip means having a pressure-sensitive material disposed on at least a portion thereof, said strip means having an aperture formed intermediate the ends thereof, at least a portion of the pressure-sensitive material disposed on said strip means securing said strip means in contacting, partially encompassing engagement about a portion of said article; a portion of said connector means being disposed intermediate said article and said strip means and another portion thereof being disposed in connecting engagement with said support member through the aperture of said strip means.

3,301,517
MULTIPLE FRICTION COLLAR ASSEMBLY
William A. Jennings, Des Moines, Iowa, assignor to Economy Forms Corporation, Des Moines, Iowa, a corporation of Iowa
Filed June 3, 1965, Ser. No. 461,021
5 Claims. (Cl. 248—221)

1. A multiple friction collar assembly for mounting about an upright cylindrical column comprising:

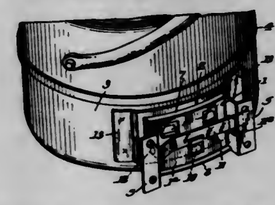
(a) a pair of collar units mountable in a vertically spaced relation about the column with the inner peripheral surfaces thereof in frictional engagement with the outer peripheral surface of said column,

(b) each collar unit including a pair of diametrically opposite load supporting portions, with the load supporting portions on one collar unit arranged vertically opposite the load supporting portions on the other collar unit, and



(c) a pair of load transfer members corresponding to each pair of vertically opposite load supporting portions, each transfer member positioned between a pair of corresponding vertically opposite load supporting portions in abutting engagement therewith and inclined downwardly and outwardly from the outer peripheral surface of said column with the lower end thereof adjacent the outer end of a lower load supporting portion.

3,301,518
RECEPTACLE SUPPORTING DEVICE
Harry G. Yetter and Joseph H. Whalen, both of Colchester, Ill. 62326
Filed Mar. 4, 1965, Ser. No. 437,196
2 Claims. (Cl. 248—311)



1. An article supporting device, including:

(a) a supporting bracket and an article attachable bracket;

(b) the supporting bracket comprising a plate provided on its opposite ends with substantially cross-sectionally L-shaped mounting flanges the outer sides of which are disposed outwardly and connectable with a support surface whereby the plate spaced outwardly therefrom;

(c) said plate having spaced horizontally aligned outwardly disposed angular fingers on its normally upper portion and an outwardly disposed angular finger thereon below and intermediately of the first mentioned fingers;

(d) a spring latch affixed at one end to the inner side of one of said L-shaped mounting flanges disposed longitudinally of and adjacent the inner side of the supporting bracket plate and extended through an opening formed in the inner side of the opposite mounting flange;

(e) said latch having an outwardly disposed tongue on an intermediate portion thereof, an opening in the plate member through which said tongue projects;

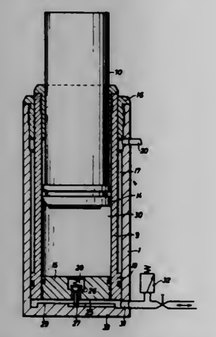
(f) the article attachable bracket comprising a plate

of depth less than that of the supporting bracket plate having spaced horizontally aligned openings therein to receive said horizontally aligned fingers of the supporting bracket plate therethrough and therewith, and an opening therein intermediately of the spaced horizontally aligned openings, of shape and size to snugly receive the spring latch tongue therethrough, the lower edge portion of said article attachable plate being engaged by said intermediate angular finger on said supporting bracket plate.

3,301,519
DOUBLE TELESCOPING HYDRAULIC PROP

Gunther Dommann and Erich Hoffmann, Altlunen, Manfred Floter, Lunen, and Egon Warns, Wethmar, Germany, assignors to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Germany, a corporation of Germany

Filed Oct. 18, 1965, Ser. No. 496,822
Claims priority, application Germany, Oct. 20, 1964, G 41,819
20 Claims. (Cl. 248—354)



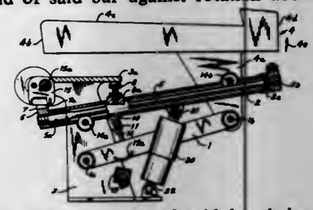
1. A multiple telescoping hydraulic prop having a single hydraulic fluid system to all telescoping pistons thereof wherein said prop contains means to restrain said largest piston from fully extending to its maximum prior to a smaller piston contacting a surface to be supported by said prop; and check valve means between two successive pistons operative to permit flow of hydraulic fluid therethrough from said hydraulic system into supporting relation with the smaller of said successive pistons and operative to permit flow of said hydraulic fluid from supporting relation with respect to said smaller piston to a source of said hydraulic fluid only when said larger piston is unsupported by hydraulic fluid.

3,301,520
RESILIENT SUSPENSION FOR TRACTOR SEATS AND THE LIKE

Manfred Barth, Am Lerechenfeld 27; Günter Hummel, Strasse des FDGB 47; Reinhard Blumenthal, Birkenweg 4; Gerhard Hendrich, Birkenweg 6; and Erdmann Puls, Brechtstr. 35; all of Schonebeck (Elbe), Germany

Filed June 28, 1965, Ser. No. 467,440
15 Claims. (Cl. 248—399)

1. In a vehicle, in combination with a seat member and a support member, a vehicular seat suspension for resiliently mounting said seat member upon said support member, said suspension comprising link means pivotally connected to said seat member and said support member while forming a parallelogrammatic linkage therebetween for permitting substantially vertical movement of said seat member relatively to said support member while maintaining the orientation of the seating surface of said seat member; at least one torsion bar swingable about an axis of a pivot connecting said link means with said members and extending generally transversely to said axis, while being entrainable by said seat member for rotation about said axis; retaining means anchoring one end of said bar against rotation about the axis

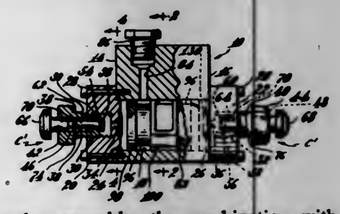


of said bar, the other end of said bar being rotatable about the axis thereof; a force arm extending generally transversely to said bar and secured to said other end thereof; and abutment means engageable by said arm and formed on one of said members for resisting rotation of said other end.

3,301,521
VALVE ASSEMBLY

Auguste J. Bouthiller, Worcester, Mass., assignor to Imperial Machine Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Jan. 28, 1964, Ser. No. 340,620
1 Claim. (Cl. 251—31)



In a valve assembly, the combination with a valve element movable selectively to connect spaced ports of the assembly, of a piston for shifting the valve element, of an elongate chamber within which the piston is freely slidable, said chamber containing a port intermediate its ends through which pressure is supplied to the chamber, of exhaust ports at the ends of the chamber through which the pressure within the chamber may be relieved, and of closure means in said exaust ports for unbalancing the pressure at the ends sufficiently to shift the piston toward the end from which the pressure is exhausted, characterized by:

uniformly flat ends of the piston,

correspondingly uniformly flat ends of the chamber,

elastically deformable O-rings compressible between the ends of the chamber and the ends of the piston to close the exhaust ports, the O-rings resting in substantially half-circular grooves formed in one of said ends concentric with the exhaust ports, and

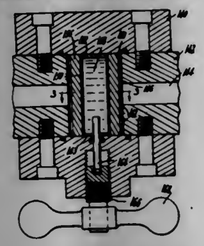
a vent hole formed at one side of each groove extending from the flat outer face of the end of the bottom of the groove.

3,301,522
VALVE

Clifford L. Ashbrook, 5027 Cheena St., Houston, Tex. 77035, and Wilson G. Wing, 33 E. Rivercrest Drive, Houston, Tex. 77042

Original application Apr. 26, 1960, Ser. No. 24,787, now Patent No. 3,223,112, dated Dec. 14, 1965. Divided and this application Dec. 19, 1963, Ser. No. 337,693
5 Claims. (Cl. 251—61)

1. A valve adapted to produce a pressure seal, said valve comprising a housing having a cylindrical bore whose walls define a flow passage and a cylindrical chamber of a diameter greater than that of said bore extending perpendicular to said bore beyond opposite sides of said bore and with portions of its wall extending across opposite sides of said bore, a normally contracted expansible piston assembly disposed in said chamber for expanding and contracting movement between an open position wherein said piston is contracted within said chamber providing a flow passage between said piston and the wall of said chamber around the periphery of said piston and a closed position wherein said piston is expanded into

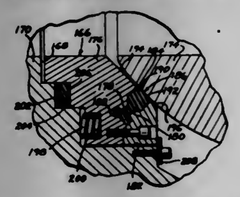


contact with the walls of said chamber sealing said flow passage, support means adjacent the ends of said cylindrical chamber maintaining said piston in axially fixed position therein, said piston having a longitudinally rigid, radially expansible inner metallic element sealed at its end portions and an outer element having an unbroken surface which is stretched radially by said inner element into sealing engagement with the wall of said chamber entirely therearound on each side of said through flow passage to seal said through passage when said piston is in closed position, and means to expand said inner element to produce said sealing engagement.

3,301,523
RESILIENT VALVE SEATS WITH RENTENION MEANS

William E. Lowrey, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Apr. 17, 1964, Ser. No. 360,517
6 Claims. (Cl. 251—172)

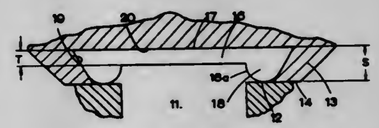


1. A sealing assembly for a valve having a movable valve member, said sealing assembly comprising an annular seat member having an annular interior flange thereon and having an annular planar sealing surface, a retiner member having an external annular flange thereon and having an annular planar sealing surface positioned coplanar relative to the planar sealing surface of said seat member, said retainer member being fitted concentrically within said seat member and defining with the seat member an annular groove having an annular restriction intermediate its ends and an enlarged portion at each end thereof, annular sealing member having a base portion and a sealing portion connected by an integral web portion, said base portion being retained within the inner end of the groove by said annular flanges, said sealing portion having an annular sealing surface extending beyond the coplanar sealing surfaces for sealing engagement with the valve member, said web portion substantially filling said restricted portion of the groove, and the base portion and sealing portion of said sealing member being of smaller cross sectional dimension than the cross sectional dimension of the inner and outer enlarged portions respectively of said groove.

3,301,524
SEALING MEANS FOR VALVES

Otto Herman Varga, Bradford-on-Avon, England, assignor to Seetru Limited, Bristol, England, a British company

Filed Feb. 17, 1966, Ser. No. 528,296
Claims priority, application Great Britain, May 11, 1962, 18,140/62
6 Claims. (Cl. 251—175)



1. A valve comprising in combination:

(a) a member having a port and a seating surface surrounding the same,

(b) a movable valve closure member positioned downstream of said port and having a face adapted to be brought into abutment with said seating surface in the closing of said port,

(c) said valve closure member face having therein an annular recess concentric with said port,

(d) said recess having a bottom surface and an undercut sloping side wall joining said bottom surface in an acute angle,

(e) a resilient sealing disc element in said recess having a face directed toward said port and having an outwardly sloping surrounding side wall conforming in slope or inclination to said undercut sloping side wall of said recess and having a flat base bearing against the said recess bottom surface,

(f) said disc element having a continuous annular bordering sealing rim bead of substantially D-configuration in cross section upon said face presenting the crown of a substantially semi-circular surface to said port surrounding seating surface for seating contact with the latter,

(g) said sloping side wall of said sealing disc joining tangentially with the said substantially semi-circular surface of the bead at the outer side of the latter,

(h) said beaded rim portion of the sealing disc having a depth from said crown to said flat base substantially equal to the mean width of the bead measured parallel to the base, the portion of the diaphragm adjoining the inner side of the bead having a thickness of from approximately 45% of said depth of the bead to slightly less than such depth,

(i) the annulus defined by the crown of the bead having a diameter greater than that of said port and less than the smallest diameter of the said recess in the said surface of the valve closure member,

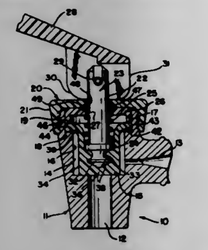
(j) said crown being disposed relative to the plane of said surface of the valve closure member in such manner as to be compressed against said seating surface in the closed position of the closure member, and

(k) the outer side of the bead having an area between said crown thereof and the terminal lower portion of the sloping wall of the recess which area is out of contact wtih said wall of the recess whereby pinching of the resilient sealing disc element between the closure member and the seating surface during closing of the valve, is precluded.

3,301,525
FLANGED SEAT CUP VALVE MEMBER WITH RETENTION MEANS

John A. Chernak, Lyndhurst, and Gilbert T. Delly, Maple Heights, Ohio, assignors to Tomlinson Industries, Inc., Cleveland, Ohio, a corporation of Ohio

Filed July 1, 1964, Ser. No. 379,552
5 Claims. (Cl. 251—331)



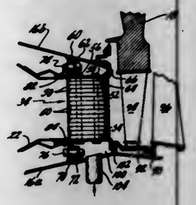
1. A valve for controlling fluid flow comprising;
a valve body having inlet and outlet ports;
a passageway in the valve body interconnecting said ports;
said passageway including a bore defining a seal chamber and a counterbore coaxial with said chamber;
a radial shoulder formed at the juncture of the sealed chamber and the counterbore in said body;
a sealing seat defined by the seal chamber transverse the axis of the passageway;
said shoulder including a groove formed therein concentric with said passageway and which defines a lip coaxial with said passageway extending away from said sealing seat;
a stem in the seal chamber having one end opposed to the sealing seat in generally aligned relationship therewith;
resilient sealing means disposed in the seal chamber and received over said one end portion of said stem:
said resilient sealing means including a longitudinally extending nipple portion having a transverse end wall adapted to engage said seat and a transverse radial flange adapted to engage said shoulder;
annular compressing means having a diameter substantially equal to the diameter of said flange disposed in said passageway surrounding said stem means and having a portion thereof extending towards said shoulder in said body to clamp said flange therebetween;
said flange, when clamped by said compressing means, having a portion thereof in said groove with the dimension of said portion of said compressing means in contact with said flange being substantially equal to the width of said groove;
spring means interposed between said one end of said stem and said compressing means biasing said stem toward said seat;
a bonnet rotatably received over said stem and threaded on the exterior of said valve body with said bonnet abutting said compressing means and thereby exerting a clamping force against said flange; and
means to reciprocate said stem against the bias of said spring means.

3,301,526
STACKED-WAFER TURBINE VANE OR BLADE

John Chamberlain, North Palm Beach, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Dec. 22, 1964, Ser. No. 420,338
18 Claims. (Cl. 253—39.1)

1. A blade-shaped member including in combination, a series of stacked wafers of airfoil section, means for maintaining said wafers together, a plurality of said wafers having a groove pattern on a face thereof, each wafer having opening means therein, the opening means of adjacent wafers cooperating with each other, said groove pattern of the wafers having the internal ends



of its grooves connected to its opening means, the other ends of said grooves intersecting the periphery of the wafer, each groove having a high L/D ratio, each groove forming a passageway with the cooperating side of the adjacent wafer.

3,301,527
TURBINE DIAPHRAGM STRUCTURE

David Max Kercher, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed May 3, 1965, Ser. No. 452,682
8 Claims. (Cl. 253—39.1)

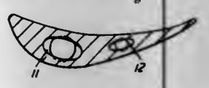


1. Turbine diaphragm structure having spaced nozzle vanes, each vane comprising,
a hollow blade means with a leading and trailing edge,
a thin walled insert disposed in said blade and spaced therefrom to define passages,
said insert having apertures oriented to discharge fluid on the leading edge inner surface to spread and flow through said passages toward said trailing edge,
said insert being formed to provide a diffusion section at the trailing edge to predetermine the flow through said passages, and
means to discharge said fluid adjacent the trailing edge.

3,301,528
AEROFOIL SHAPED BLADE FOR FLUID FLOW MACHINES

Harry Hartley Malley, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company

Filed Oct. 13, 1965, Ser. No. 495,464
Claims priority, application Great Britain, Nov. 13, 1964, 46,447/64
8 Claims. (Cl. 253—39.15)

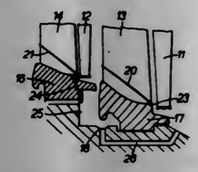


1. An aerofoil-shaped blade which is adapted for use in a fluid flow machine, said blade including a blade root and working surfaces, which are, in operation, exposed to fluid flow, said blade having a duct therein for the passage of a cooling fluid therethrough, at least that portion of the duct which is internally of the working surfaces having a constant cross sectional area throughout its length, the ratio of the length of the periphery of the said portion of said duct at any cross section to the area thereof at the said cross section varying from one part of the said portion to at least one other part thereof.

3,301,529
STEAM TURBINES

Basil Wood, Twickenham, England, assignor to Merz & McLellan Services Limited, Newcastle upon Tyne, England, a company of Great Britain

Filed May 11, 1965, Ser. No. 454,859
Claims priority, application Great Britain, May 12, 1964, 19,808/64
7 Claims. (Cl. 253—76)

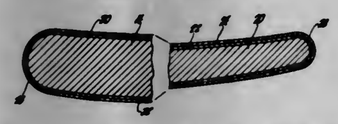


1. A steam turbine of substantially axial flow type including a rotor having rotor blades and a stator having stator vanes including at least one stage which is liable to work with saturated steam, a water divertor for each stator vane of the said stage, said divertor comprising a shoulder on the body of said vane adjacent the end remote from the turbine axis, said shoulder being shallow in relation to the pitch of the stator vanes, said shoulder being so inclined that its upstream end is nearer than its downstream end to the turbine axis, said shoulder being positioned on the upstream side of said vane so as to face upstream and away from said turbine axis, whereby said shoulder is operative to divert away from said axis any water deposits creeping along said vane while allowing the useful steam to pass over the same for further use.

3,301,530
DAMPED BLADE

William R. Lull, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 3, 1965, Ser. No. 476,816
6 Claims. (Cl. 253—77)



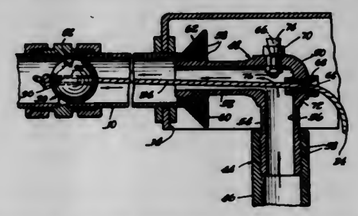
3. In a damping means for a rotor blade or the like of a metal having a modulus of elasticity which is higher than the modulus of elasticity of copper and lower than the modulus of elasticity of chromium, the combination comprising:
a first layer of copper coated on said blade, and
a hard layer of chromium coated on said first metallic layer whereby vibration of the blade produces shear stresses at the interfaces between the blade and the copper layer and between the copper and chromium layers to dissipate the energy of vibration to damp said vibration.

3,301,531
APPARATUS FOR INSTALLING ELECTRICAL WIRE IN ELECTRICAL CONDUIT

Richard J. Corsiglia, 1053 N. Parkside, Chicago, Ill. 60651

Filed Apr. 29, 1965, Ser. No. 451,817
2 Claims. (Cl. 254—134.4)

1. Pneumatic cord threading apparatus for threading a wire pulling cord through an electrical conduit, comprising, a blower having an outlet through which the blower forces air at a high rate under pressure, a flexible air supply hose connectable with said blower outlet to receive air under pressure from the latter, a tubular air supply fitting defining an internal air passage for transmitting air therethrough, said fitting having a generally right angle bend in the medial portion thereof and two legs of materially unequal length extending from the bend, the outer end of each leg being dimensioned to fit into the outlet end of said hose and having means encircling the adjacent end of said air passage to form a seal between the latter and the outlet end of the hose, a centrally open sealing ring shaped and dimensioned to fit in detachable encircling relation to the outer end of either of said fitting legs to form a seal therewith, said sealing ring defining an outwardly facing sealing surface of frusto-conical shape adapted to fit against and form a seal with the end of an electrical conduit when the sealing ring encircles the end of the fitting opposite from said hose, said fitting defining in said bend therein two apertures aligned with segments of said air passage in said respective fitting legs, each of said apertures opening outwardly to receive wire pulling cord from a supply of cord located outside the fitting and hose and supported independently of the fitting and hose, each of



said apertures opening inwardly into the fitting to pass wire pulling cord into said air passage to pass out through the end thereof aligned with the aperture, means for closing either of said apertures selectively to block the outflow of air therethrough while wire pulling cord is moving in through the other of the apertures; a cord pulling plug including means for detachably connecting the plug to the free end of a wire pulling cord, extending from the outlet end of said air passage after passing from an external supply of cord into the air passage through the fitting aperture aligned with the outlet end of the air passage; and said cord pulling plug being shaped to fit slidably into an electrical conduit to form a movable barrier to the passage of air through the electrical conduit past the plug so that the plug is movable by air under pressure from said fitting through an electrical conduit against one end of which said sealing ring on the fitting is temporarily pressed to effect threading through the electrical conduit of wire pulling cord connected to the plug and fed through one of said apertures into said air passage in the fitting from an external supply of cord.

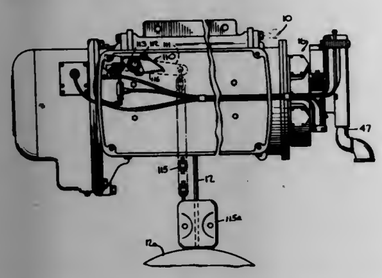
3,301,532
AUTOMATIC LIMIT CONTROL FOR AIR HOIST

Frank J. Lock and John W. Ramoska, Philadelphia, Pa., assignors to Eaton Yale & Towne Inc., a corporation of Ohio

Filed Sept. 23, 1964, Ser. No. 398,700
8 Claims. (Cl. 254—173)

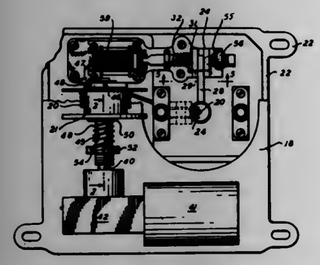
1. In a hoist, load engaging means, a fluid motor for raising and lowering said load engaging means, brake means for applying a braking force to said fluid motor, spring means for applying said brake means, fluid pressure operated means for releasing said brake means against the force of said spring means, manually operable valve means movable from a neutral position to a position connecting said fluid pressure operable means and said fluid motor to a source of fluid under pressure whereby to operate said fluid pressure operable means to release said brake means and to operate said motor to raise and lower

said load engaging means, further fluid pressure operable means for moving said valve means to neutral position against manual force applied to said valve means to stop operation of said fluid motor and release the fluid pressure on said fluid pressure operable means to allow said spring means to apply said brake means, and limit con-



trol means operable at predetermined limits of movement of said load engaging means to connect said further fluid pressure operated means to a source of fluid pressure whereby to move said valve means to said neutral position to stop operation of said fluid motor and release the pressure on said fluid pressure operated means whereby said brake means are applied by said spring means.

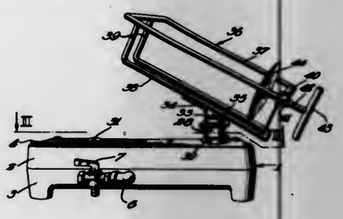
3,301,533
CONTROL MEANS FOR LOWERING DEVICE CABLES
Henry C. Pfaff, Jr., Summit, and Francis G. Schlosser, Ridgefield Park, N.J., assignors to Pfaff and Kendall, Newark, N.J., a corporation of New Jersey
Filed Aug. 27, 1965, Ser. No. 483,255
3 Claims. (Cl. 254—174)



1. A hoisting device comprising a drum, a cable having a free end for supporting a load wound on the drum, an electric motor connected to the drum for rotating the drum to wind and unwind the cable to thereby raise and lower the load, and means for controlling the motor comprising a pair of switches, means for latching the cable in a preselected position and opening one of the switches, means for sequentially closing said one of the switches and unlatching the cable, and means for closing the second switch only after closing said one switch to energize the motor.

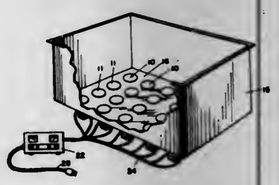
3,301,534
PAINT SHAKER MACHINE
Lawrence D. Orser, Cedar Falls, Iowa, assignor to Chamberlain Corporation, Waterloo, Iowa, a corporation of Iowa
Filed Mar. 22, 1965, Ser. No. 441,580
1 Claim. (Cl. 259—75)

In a container shaker machine:
a base housing,
a vertical shaft projecting out of said housing and extending thereabove,
a crank in said housing with one end secured to said shaft,
an air motor in said housing disposed obliquely with respect to the axis of said housing,
a reciprocatory piston in said motor,
a rigid piston rod extending from said piston,
a connector rigidly connected to said piston rod and



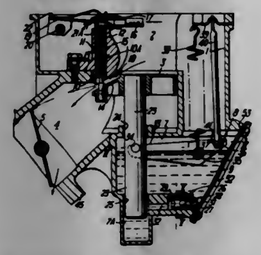
pivotally connected to the other end of said crank to regularly oscillate the crank and said shaft,
said shaft having a flat land at the upper end thereof,
an angle bracket with an included angle exceeding 90° having one leg thereof securely connected to said shaft at said flat land, and
a container rack secured to the other leg of said bracket and extending over said housing thereabove at an angle to the horizontal,
whereby a simple regular oscillation results in thorough uniform mixing of the contents of a container in said rack.

3,301,535
ULTRASONIC WASHING MACHINE AND TRANSDUCER THEREFOR
Gilbert G. Brown, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed Jan. 4, 1966, Ser. No. 518,676
8 Claims. (Cl. 259—99)



1. In combination, a transducer adapted to be installed in a liquid tank and a sealing washer comprising,
a relatively rigid plate-like member,
actuating member fixed to one side of said plate-like member adjacent the center thereof,
said actuating member being adapted to extend through an opening in the bottom of said tank,
a resilient washer having an opening in the center thereof,
said actuating member extending through said opening in said washer,
said washer having a groove in the outer periphery thereof,
said groove being adapted to receive the peripheral edge defining said opening in said tank,
and sealing means to seal said washer to said disk and to said tank whereby leakage between said tank bottom and said transducer is eliminated.

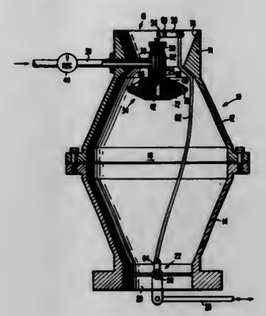
3,301,536
CARBURETTERS FOR INTERNAL COMBUSTION ENGINES
Peter P. Swatman, Olton, and John N. Morris, Edgbaston, England, assignors to S. U. Carburetter Company Limited, Erdington, England
Filed May 24, 1965, Ser. No. 458,274
Claims priority, application Great Britain, June 19, 1964, 25,369/64
6 Claims. (Cl. 261—44)



1. In a carburetter comprising a body housing a fuel metering jet, a main air inlet passage, and a mixture supply duct, a piston movable in said main air inlet passage, and a metering needle axially movable in said fuel metering jet, the improvement according to which said piston defines with a wall of said main air inlet passage a choke connecting said main air inlet passage to said mixture supply duct and communicating with said fuel metering jet to suck fuel therethrough into said choke, the effective cross-sectional area of said choke being dependent upon the position of said piston, and said metering needle being mounted on said piston for movement therewith, said carburetter further comprising a variable leverage mechanism which resists the force exerted on said piston by incoming air in said air inlet passage, by applying to said piston a load which automatically diminishes as said piston moves in response to the exertion of increasing force by said incoming air, and said variable leverage mechanism comprising a lever mounted to turn about three pivot points spaced longitudinally along said lever, spring means carried on said body and applying a load to said lever at a first one of said pivot points, and a rigid member rockably supported at one end by said body while its other end pivotally engages said lever at a second of said pivot points, said lever being positioned with said third pivot point operatively engaging said piston to transfer thereto the load applied to said lever by said spring in a proportion dependent upon the positions of said first and second pivot points relative to the point at which said spring is carried by said body, while said piston acts on said lever to adjust the positions of said first and second pivot points.

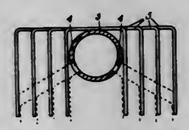
3,301,537
CARBURETOR ARRANGEMENT
John De Rugeris, 527 Kenneth Ave., Campbell, Calif. 95008
Filed Apr. 24, 1964, Ser. No. 362,282
4 Claims. (Cl. 261—51)

1. A carburetor arrangement for internal combustion engines comprising a tubular enclosure having a relatively narrow upper end portion and an expanded portion below said upper end portion; arranged within said enclosure in said upper end portion thereof a fuel supply valve having a tubular body portion and secured to said body portion a mixer nozzle in the form of a disk of a larger diameter than the diameter of said body portion and containing a fuel distribution chamber in communication with the interior of said body portion, said disk having a plurality of air-conducting passages commencing with intake openings on the upper surface of said disk and extending in a tangential direction to outlet openings provided in a peripheral area of said disk above said expanded enclosure portion, and fuel distributing channels extending from said fuel distribution chamber into said air-conducting passages; adjustable means for controlling the flow of air



through said enclosure, adjustable means for controlling the flow of fuel from the interior of said tubular valve body to said fuel distribution chamber, and means coupling said air flow control means and said fuel flow control means for operation in synchronism.

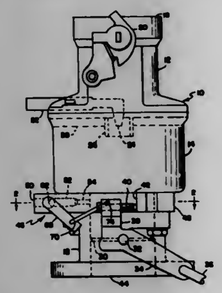
3,301,538
DIRECT CONTACT HEAT EXCHANGERS
William H. Gibson, Newcastle-upon-Tyne, England, assignor to C. A. Parsons & Company, Limited, Newcastle-upon-Tyne, England, a corporation of Great Britain
Continuation of application Ser. No. 305,494, Aug. 29, 1963. This application June 30, 1966, Ser. No. 562,000
Claims priority, application Great Britain, Sept. 25, 1962, 36,432/62
3 Claims. (Cl. 261—111)



1. A heat exchanger in which a gaseous or vaporous fluid is brought into direct contact with a liquid, comprising: a casing; means including a porous baffle for introducing a gaseous or vaporous fluid into said casing; conduit means for conducting a pressurized liquid to the interior of said casing; a series of apertures formed in said conduit means in a side-by-side relationship for injecting said liquid into said fluid in said casing as a spaced series of substantially parallel jet streams; and means for forming said liquid jets into a plurality of spaced, non-interfering, flat, thin films of liquid, said last mentioned means comprising a plurality of parallel deflector plates, and leg means extending from said conduit means and connected to said deflector plates for supporting each deflector plate vertically in the path of one of said jet streams transversely to the jet streams and at a distance from the aperture forming that jet stream different at least from the distances between its adjacent deflector plates and their associated apertures, whereby the gaseous or vaporous fluid has ready access to both sides of the plurality of substantially non-interfering flat liquid films.

3,301,539
ATTACHMENT FOR SUPPLYING AUXILIARY AIR TO A CARBURETOR

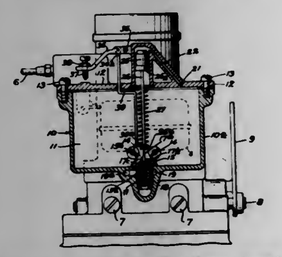
Cyrus M. Antonsen, 5539 N. 4th St., Minneapolis, Minn. 55421
Filed Mar. 12, 1964, Ser. No. 351,460
4 Claims. (Cl. 261—47)



1. In combination:
(a) a carburetor including an air induction passage having a fuel jet and an axially displaced throttle valve therein,
(b) a plate interposed between said fuel jet and throttle valve having a passage extending inwardly from the atmosphere to the mixing chamber within said carburetor;
(c) a rotatable valve plug having a portion thereof movable between blocking and unblocking positions to close said passage or to open said passage, and
(d) linkage means interconnecting said throttle valve with said valve plug for moving said plug portion into its said blocking position when said throttle valve is substantially closed and into its said unblocking position when said throttle valve is substantially half open.

3,301,540
EXTERIOR CONTROL OF THE POWER VALVE OF A CARBURETOR

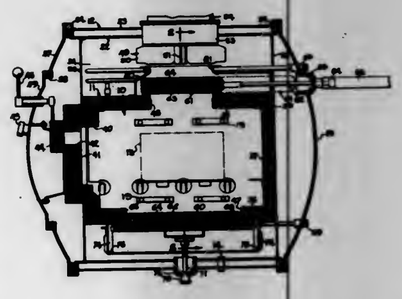
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133
Filed Sept. 28, 1965, Ser. No. 502,800
4 Claims. (Cl. 261—69)



1. A carburetor comprising a float bowl, a throttle valve, an induction passage for air and fuel, a main fuel passage for conducting fuel from said bowl to said induction passage, an auxiliary fuel passage for conducting fuel from said bowl into said main passage, a valve in said bowl for controlling the flow of fuel through said auxiliary passage, and means for regulating the position of said valve, said regulating means comprising means biasing the valve to closed position, means acting against the said biasing means for biasing the valve to a maximum open position, and vacuum responsive means for adjusting the bias of said second mentioned biasing means whereby to adjust the opening of the valve in proportion to the degree of vacuum; said valve comprising an orifice, a tapered pin, and means mounting said pin for reciprocating movement in the orifice; said second mentioned biasing means comprising a contact for abutting engagement with said tapered pin and a spring for urging said contact toward said abutting engagement, and means for selectively adjusting said maximum open position, said adjusting means comprising an abutment in engagement with the spring of said second mentioned biasing means and means on the bowl for adjusting the position of the abutment relative to the closed position independently of the contact.

3,301,541
HEAT TREATING FURNACE WITH CIRCULATED GAS QUENCH

Harold N. Ipsen, Rockford, Ill.; The Illinois National Bank & Trust Co., Rockford, Ill., executor of Harold N. Ipsen, deceased
Filed June 12, 1964, Ser. No. 374,790
12 Claims. (Cl. 266—5)



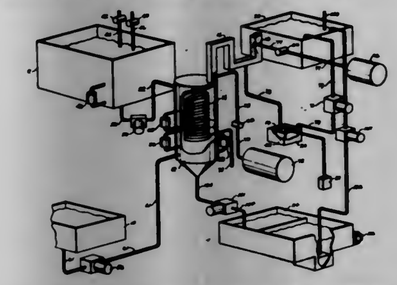
11. In a furnace for first heating and then cooling a work load, the combination of, a hollow vessel, a walled enclosure within said vessel defining a work chamber within said enclosure and a cooling chamber within the vessel outside the enclosure, a selectively operable radiant heater in said work chamber for heating a work load therein, inlet and outlet ports in the enclosure walls spaced apart across said work chamber and communicating with said cooling chamber, first and second members having reflecting surfaces overlying said ports closely adjacent said enclosure walls and substantially closing the ports to block heat radiation through the ports and confine heat within said work chamber during heating of the work load therein, and means supporting said members for movement out of the overlying positions into out-of-the-way positions spaced from said ports for a full and unobstructed flow of gas through the ports during cooling of the work load.

3,301,542
SYSTEM FOR TREATING ACIDIC ETCHING SOLUTIONS

Hugh L. Medford, Jr., Greensboro, and John E. Tennant, High Point, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 4, 1963, Ser. No. 328,089
7 Claims. (Cl. 266—12)

1. In a system for treating an acidic etching solution, a retort for reacting the acidic etching solution with a neutralizing agent to produce a gas and a precipitate,
means connected to the top of the retort for collecting the gas,
means connected to the bottom of the retort for removing the precipitate therefrom,
timing means,

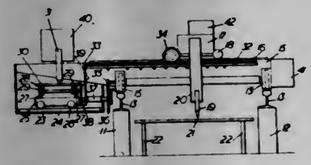
means responsive to the gas passing means and rendered effective by the timing means after a predetermined



time from the commencement of the chemical reaction in the retort for actuating said removing means to pass the precipitate out of the retort.

3,301,543
OXYGEN JET CUTTING MACHINES

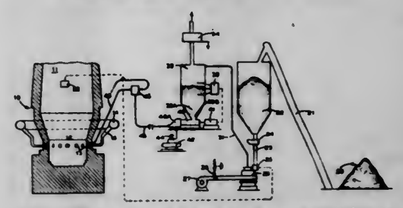
Kenneth David Seymour Semper, Croydon, Surrey, England, assignor to Hancock & Co. (Engineers) Limited, Croydon, England, a British company
Filed Jan. 30, 1963, Ser. No. 254,927
11 Claims. (Cl. 266—23)



1. An oxygen jet cutting machine comprising a pair of longitudinal rails, a longitudinal carriage adapted to run along the longitudinal rails, a pair of transverse rails mounted on the longitudinal carriage, a transverse carriage adapted to run along the transverse rails, an oxygen jet cutting burner carried on the transverse carriage, drawing table transverse carriage rails mounted on the longitudinal carriage at right angles to the direction of the longitudinal carriage rails, a drawing table transverse carriage movable along the drawing table transverse carriage rails, drawing table longitudinal carriage rails carried on the drawing table transverse carriage and laid parallel to the longitudinal carriage rails, a drawing table longitudinal carriage carrying a drawing table to support a drawing containing an outline of a shape to be cut movable along the drawing table longitudinal carriage rails, a photoelectric following device having a lead adapted to scan the outline to deliver steering signals when said outline deviates from a straight line, a steering motor responsive to signals from the photoelectric device to steer the following device to cause it to follow the deviated outline, first transmission means including a telescopic shaft coupling the drawing table longitudinal carriage to one axle of the longitudinal carriage to cause the drawing table longitudinal carriage to move with respect to the longitudinal carriage in the opposite direction at a speed which is reduced in a desired ratio with respect to the speed and direction of the longitudinal carriage along its rails, second transmission means between the transverse carriage and the drawing table transverse carriage to cause the drawing table transverse carriage to move in the same direction as the transverse carriage but with its speed reduced in the desired ratio, and an optical system in the following device to magnify the portion of the image of the outline as seen by the photoelectric device in the desired ratio.

3,301,544
BLAST FURNACE PULVERIZED COAL FIRING SYSTEM

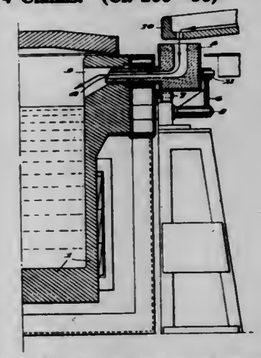
Neil W. Eft, Alliance, and Robert E. Zimmermann, Wadsworth, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 18, 1964, Ser. No. 345,680
10 Claims. (Cl. 266—28)



1. Apparatus for smelting iron ore comprising a pressurized blast furnace, a pulverized fuel preparation system operating at substantially atmospheric pressure and including a pulverized fuel collection bin and means for feeding pulverized fuel thereto, means for withdrawing fuel from said bin at a controlled rate, means defining a pressurizing chamber arranged to receive fuel from said withdrawing means, means for detecting the amount of fuel in said bin, means responsive to the amount of fuel in said bin and being controlled by said detecting means for controlling the operation of said withdrawing means to thereby control the rate at which fuel is withdrawn from said bin, means for pressurizing the fuel in said chamber for injection into said blast furnace, and means for regulating the flow of pulverized fuel to said bin in response to a condition of said blast furnace to thereby control the rate at which pulverized fuel is fed to said blast furnace.

3,301,545
DEVICE FOR TRANSFERRING LIQUID METAL

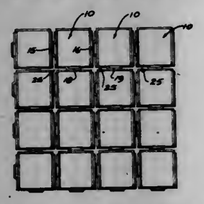
Karl-Heinz Hellmund, Dortmund, Germany, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Mar. 9, 1964, Ser. No. 350,363
4 Claims. (Cl. 266—38)



1. In a multiple furnace arrangement providing transfer of liquid metal between furnaces, the combination comprising a first stationary furnace, a second furnace located at a lower level than said first furnace, axle means supporting said second furnace for tilting movement about a horizontal axis, a transfer pipe made from a heat-resistant material for transferring liquid metal from said first furnace to said second furnace, said metal transfer pipe being located above the horizontal tilt axis of said second furnace and including a horizontal metal delivery part extending through an opening in the wall of said second furnace to the interior thereof and an upwardly turned funnel-shaped liquid metal receiving part underlying the liquid metal discharge point of said upper sta-

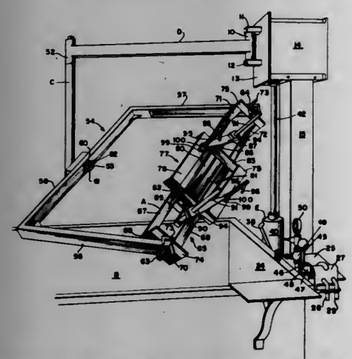
tionary furnace, means establishing a horizontal pivotal axis for said horizontal part of said transfer pipe located above the tilt axis of said second furnace, and which is movable along an arcuate path concentric with said tilt axis, and means for maintaining said funnel-shaped metal receiving part of said transfer pipe in an essentially upright attitude beneath the metal discharge point of said upper stationary furnace throughout the tilt angle of said lower furnace.

3,301,546
FURNACE CONSTRUCTION
Kenneth W. Hansen and Francis P. Shonkwiler, Bethel Park, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1964, Ser. No. 349,806
8 Claims. (Cl. 266—43)



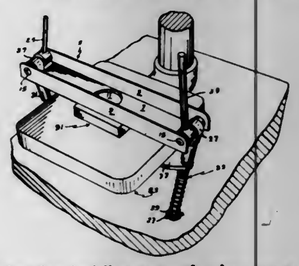
1. A metallurgical furnace lining or wall at least a portion of which is constructed of a plurality of substantially identical refractory shapes, said shapes having intersecting planar side surfaces extending between two opposed faces, each shape having an oxidizable case extending substantially from one face to another over at least two intersecing adjacent side surfaces, said shapes being substantially uniform in cross section from one face to the other, there being at least one expansion crimp formed at each end of each of the portions of the metal cases covering said adjacent side surfaces, all crimps in each shape being contiguously positioned adjacent a flat side surface of an adjacent shape, said wall thereby characterized by a plurality of interconnected generally L-shaped passages of uniform dimension from one side of the wall to the other before furnace heatup.

3,301,547
MEANS FOR HANDLING RADIATORS FOR REPAIRS
Charles Ray Jordan, Box 105, Toccoa, Ga. 30577
Filed June 18, 1964, Ser. No. 376,172
6 Claims. (Cl. 269—20)



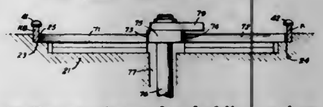
1. Means for holding work for inspection, testing and repair comprising a vertical standard, motor means adjacent the standard, a head portion slidable vertically on said standard and movably operated by said motor means, a cross arm pivotally connected to said head portion and movable therewith, said cross arm having an end swivel, said end swivel connecting with a support arm, said support arm having a shaft on one end at right angles thereto, said shaft having bearing means, a first U-shaped frame journalled by said bearing means to said shaft of the support arm, a second U-shaped frame trunnion mounted in the said first U-shaped frame, a backing frame secured to a medial section of said second U-shaped frame, and adjustable clamp means carried by said backing frame for clamping a piece of work to said backing frame of said second U-shaped frame.

3,301,548
WORK PIECE HOLDER
Phillip W. Rathbun, 16851 Bellaire Ave., Edwards, Calif. 93523
Filed Aug. 13, 1964, Ser. No. 389,506
7 Claims. (Cl. 269—92)



1. A device for holding a work piece on a work platform comprising: first means adapted to releasably secure the work piece to the work platform; members pivotally mounted at each end to the first means about eccentric axes and adapted to releasably secure the first means to the work paltform; locking means associated with the members and their respective eccentric axes to pivot the members in an arcuate path into locking engagement with the work platform.

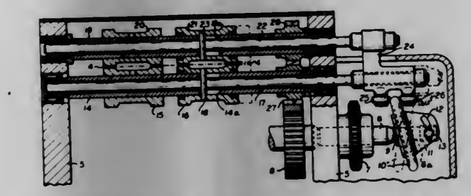
3,301,549
CLAMP FOR KEY CUTTER
Walter R. G. Haggstrom, Westminster, Mass., assignor to Independent Lock Company, Fitchburg, Mass., a corporation of Massachusetts
Original application Aug. 25, 1961, Ser. No. 133,957. Divided and this application Feb. 5, 1964, Ser. No. 347,331
1 Claim. (Cl. 269—153)



A key duplicator clamp for holding a key and key blank during cutting, comprising a support jig having a front wall and first and second spaced parallel guide wall members, first and second jaw members slidably mounted on said jig and shiftable toward and away from said first and second guide wall members, respectively, eccentric means disposed between and engaging said first and second jaw members, bearing means on said jig rotatably supporting said eccentric means, said eccentric means and bearing means being laterally shiftable relative to each other in a plane normal to the plane of said walls, means for rotating said eccentric means, and leaf spring means interposed between said members for biasing said jaw members to a normal position spaced from said wall members, said leaf spring means being attached to one of said members adjacent said front wall and extending angularly rearwardly into contact with the other said

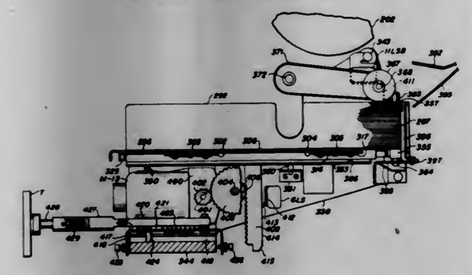
member whereby said leaf spring means act temporarily to support a key inserted between said spring means and members prior to movement of said jaw members toward said wall members.

3,301,550
APPARATUS FOR THE PRODUCTION OF A LATERAL SPACING BETWEEN A PLURALITY OF ADJACENT CUTS PRODUCED BY LONGITUDINAL AND CROSS CUTTING OF A LENGTH OF MATERIAL
Gunter Reinecke, Wuppertal-Elberfeld, Germany, assignor to Benz & Hilgers G.m.b.H., Dusseldorf, Germany, a corporation of Germany
Filed Apr. 27, 1965, Ser. No. 451,256
5 Claims. (Cl. 271—51)



1. An apparatus for the production of a lateral spacing between a plurality of adjacent cuts produced by longitudinal and cross cutting of a length of material, comprising
separating members rotating in the plane of conveyance, said separating members comprising a plurality of coaxially disposed pairs of feeding rollers,
means for rotating said pairs of feeding rollers, and
means for subjecting at least one of said pairs of feeding rollers to a variable axial displacement while said pairs of feeding rollers are simultaneously rotating.

3,301,551
SHEET FEED MECHANISM
James R. Cassano, Rochester, and Lyman H. Turner, Pittsford, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,692
2 Claims. (Cl. 271—62)

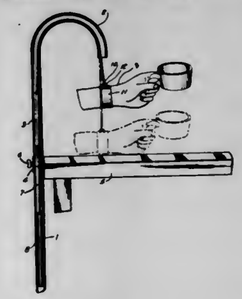


1. A paper level control system for a paper feed mechanism including a frame,
a tray for supporting a stack of sheets mounted in said frame for vertical movement,
a gear rack mounted on said tray and movable therewith,
a motor and a gear driven by said motor and operatively engageable with said gear rack, said motor being adapted to drive said tray upwardly when the same is energized,
means for supporting said motor for movement relative to said tray for disrupting the operative engagement of said gear from said gear rack,
an electrical circuit connected to said motor and to a source of electric power,
first and second switching means connected in said circuit for controlling energization of said motor,
feeler means associated with said first switching means for actuating the same and being adapted to co-act with the top of the stack of sheets at a predetermined plane,
said first switching means being normally held in one of its controlling positions for energizing said motor and actuatable to its other controlling positions to deenergize said motor when the top of the stack reaches said predetermined plane,
means for producing movement of said motor for disrupting the operative engagement of said gear with said gear rack and for producing actuation of said second switching means into its open position whereby the tray will lower while said motor is deenergized.

ERRATUM

For Class 271—87 see:
Patent No. 3,301,554

3,301,552
WEIGHTED WRIST CUFF EXERCISER
Mary G. S. Ryan, 15 Victory Road, Dorchester, Mass. 02122
Filed Oct. 9, 1963, Ser. No. 315,095
7 Claims. (Cl. 272—80)

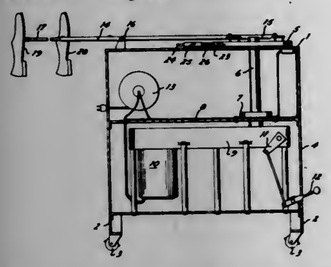


1. A device for use by persons lacking normal strength in their arms and hands to assist them to eat or drink or perform other similar operations requiring vertical movement of the arm, comprising:
(a) cuff means adapted to fit about the wrist of the user;
(b) counterbalance means of suitable weight to counterbalance the weight of the user's arm and hand to assist the user in his arm and hand;
(c) connecting means connecting the counterbalance means and cuff means; and
(d) an upright conduit means having a smoothly curved free end facing downwardly and the remainder of said conduit means being straight, said connecting means extending in said conduit means.

3,301,553
LEG EXERCISER FOR BED PATIENTS
Floyd H. Brakeman, Long Beach, Calif., assignor to Jean O. Brakeman, Long Beach, Calif.
Filed Mar. 30, 1964, Ser. No. 355,852
7 Claims. (Cl. 272—80)

6. An exerciser for a bed patient comprising a table having a top and legs depending therefrom,
a plate journaled in said table top in a horizontal position relative to the top of the table,
a motor drive means extending to the plate to oscillate the plate,

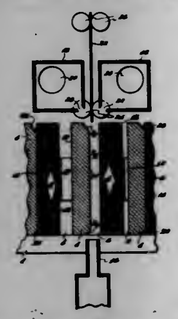
a pair of rods pivotally attached to the plate in horizontally spaced relation on opposite sides of the axis of rotation of the plate,



a foot rest means on each rod to support the feet of the patient,

and a brake shoe mounted on the table top and engageable with said plate.

3,301,554
METHOD AND APPARATUS FOR THE AIR ASSISTED INSERTION OF FILE CARDS
Robert H. Voss, Cincinnati, Ohio, assignor to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed Mar. 18, 1965, Ser. No. 440,903
10 Claims. (Cl. 271—87)



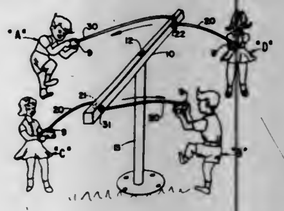
1. An apparatus for inserting a card into a deck of similarly dimensioned cards held in a file pocket having a bottom, a front wall with a beveled upper edge and a rear wall, and in which the deck is normally compressed together and held against the front wall by a biasing spring, comprising:

(a) means defining first and second air outlets positioned adjacent the top of the pocket and oriented in such a manner that their outlet streams downwardly converge and are partially deflected off the beveled upper edge and against the deck, to thereby overcome the force of the biasing spring and urge the deck toward the rear wall to create an entry space between the front wall and the deck, and

(b) drive roller means for transporting a card between the first and second air outlets and into the file pocket, whereby the outlet streams create a drag against the sides of the card to assist its insertion into the entry space.

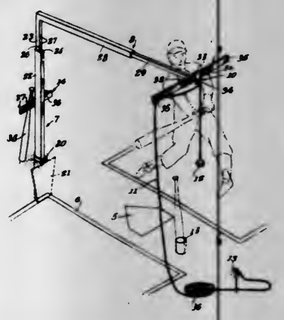
3,301,555
TUG OF WAR GAME APPARATUS
Gerald Sicherman, 18930 NW. 12th Ave., Miami, Fla. 33169
Filed Dec. 23, 1963, Ser. No. 332,774
5 Claims. (Cl. 273—1)

1. A tug of war game and exercise device including a vertical pedestal supporting means, an elongated horizontally disposed hollow housing member pivotally mounted for free rotation at its center on said pedestal, means for causing said elongated housing member to be rotated including a pair of pulling ropes, a pair of pulleys, one pulley being pivotally arranged at each end of said housing, a pair of apertures formed in opposite sides of the housing adjacent each pulley, one of said pulling ropes being inserted through one of said apertures and passed around in operative contact with one side of the first pulley nearest said aperture and extended lengthwise through the housing and passed around in operative contact with the opposite side of the pulley arranged at the other side of said housing, said rope being passed out of the housing through the aperture



therein adjacent the second described pulley, the other pulling rope being inserted through the aperture formed in opposite side of the housing opposite the aperture through which the first rope was inserted into the housing, said second rope being passed around the opposite side of the first pllley to that of the first rope and extended lengthwise through the housing crisscrossing the first described rope within the housing and passing in operative contact with the opposite side of the second pulley to that on which the first rope contacted said second pulley, said second rope being passed out of the housing through the aperture adjacent the second pulley and on the opposite side of the housing through which the first rope was passed out of the housing.

3,301,556
BALL-HOLDING DEVICE
Roy M. Hamilton, Jr., 4541 Hazeltine Ave., Apt. 1, Sherman Oaks, Calif. 91403, and Ed E. Galberth, 9232 Cedros, Van Nuys, Calif. 91402
Filed July 17, 1964, Ser. No. 383,457
12 Claims. (Cl. 273—26)



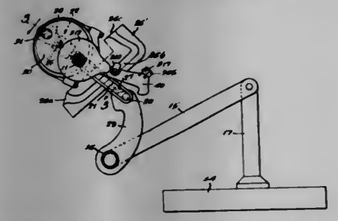
1. A device for holding a ball in position for a batsman to strike at, said device comprising:

(a) a ground-supported cross-bar,

(b) clip means supported by said crossbar for separably engaging a cord with one end connected to the ball to hold such ball suspended, the other end of the cord being tethered to the ground, and

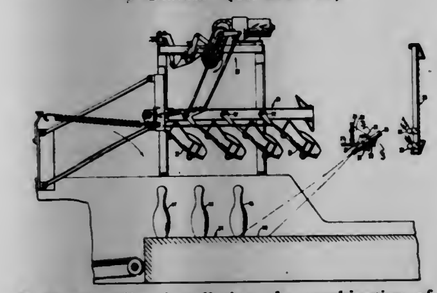
(c) a forwardly extending dowel at each end of the crossbar and over one of which, depending on whether the batsman is right- or left-handed, the cord between its tether and said clip is trained.

3,301,557
AUTOMATIC PINSETTER WITH DRIVE MODIFYING MEANS
Albert P. Rogers, Spring Lake, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,733
3 Claims. (Cl. 273—42)



3. In an automatic pinsetter, a pinsetting deck movable toward and away from the bed of a bowling lane, drive means for moving said deck through a cycle of movement including rapid descent and ascent of the deck with a lesser rate of travel near the bottom of the stroke to provide a smooth, relatively slow movement as pins are set by the deck, including a revolving drive member rotatable about an axis, and linkage connecting said drive member to said deck, said linkage including an element operatively connected to said drive member and movable to and fro during unmodified movement for transmitting movement of the drive member to said deck, and means for modifying the continuing movement of said element from a direct response to the revolving movement of the drive member in during approximately the lower one-half revolution of the revolving drive member to obtain setting movement of the deck, including a slotted member extending generally transerse to the unmodified path of movement of said element with ends of said slot terminating at locations remote from each other with at least one of the slot ends lying in the path of the element as moved in direct response to the revolving movement of the drive member, whereby said element moves along said transversely extending slotted member as the drive member revolves.

3,301,558
SELECTIVELY ACTUATED BALL PATH INDICATOR
Wentworth B. Clapham, Chappaqua, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 3, 1964, Ser. No. 342,084
9 Claims. (Cl. 273—51)



8. In a bowling installation, the combination of an alley bed including a pin deck on which bowling pins are to be placed in predetermined positions;

a plurality of luminescent images disposed at the surface of said pin deck and each arranged to indicate, when excited, the optimum ball path for a different combination of standing pins encountered in bowling; and

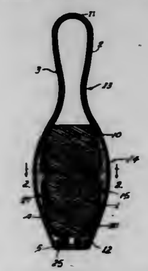
means for selectively exciting said luminescent images.

3,301,559
BOWLING FORM INDICATING DEVICE
Stanley P. Jolley, Chewelah, Wash. (E. 24523 River Road, Otis Orchard, Wash. 99027)
Filed Aug. 19, 1964, Ser. No. 390,593
4 Claims. (Cl. 273—54)



1. A bowling form indicating device for mounting on the wrist of a bowler, and comprising a flat plate, a strap extending from the sides of the plate around said wrist, a transparent first tube secured on the plate extending normally with respect to the strap, further tubes each extending from an opposite side of the first tube and communicating therewith at an acute angle, and balls mounted to move freely within the first tube and the further tubes.

3,301,560
BOWLING PIN WITH SOUND CONTROLLING MEANS
Fred E. Satchell, Muskegon, Mich., and William L. Jolitz, Oaks, Pa., assignors to Brunswick Corporation, a corporation of Delaware
Original application Nov. 20, 1959, Ser. No. 854,515, now Patent No. 3,138,380, dated June 23, 1964. Divided and this application Oct. 8, 1963, Ser. No. 314,652
4 Claims. (Cl. 273—82)



1. A bowling pin adapted to provide a sound substantially similar to a conventional maple wood pin on impact with a bowling ball or another pin comprising: a hollow metallic core, said core having the elongated shape of a bowling pin with a neck-head portion, a belly portion and a base portion, said core further having sound determining modes of vibration, one being a bell mode caused principally by vibration of the belly of said pin and the other being a flexural mode caused principally by the neck-head and base moving in a common phase and the belly moving in opposite phase, said bell mode being undesirable in that audibly it sounds harsh and unwooden while said flexural mode is desirable in that it sounds not unlike a maple wood pin which has a similar flexural mode; a mass positioned eccentrically within said hollow core in the belly area adapted to break up the symmetry

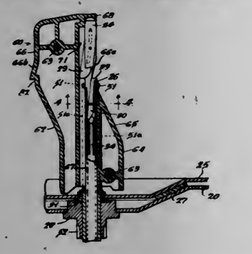
of vibration of said bell mode to quickly dissipate the sound thereof without adversely affecting the desirable vibration of said flexural mode; said belly area being devoid of other masses tending to compensate for the eccentrically positioned mass; and a resilient plastic coating encasing said core.

3,301,561
GOLF PUTTING TRAINING DEVICE
Henry J. Kaiser, 3924 Fourth Plain Road, Vancouver, Wash. 98661
Filed July 6, 1964, Ser. No. 380,368
6 Claims. (Cl. 273—186)



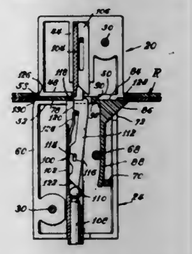
1. In a putting training guide assembly of the character described, a portable housing, an electrically conductible guide rod extending from one side of said housing, an open frame guide adapted to be attached to the shaft of a putter and capable of extending completely around the guide rod in spaced relationship thereto, means for adjustably and removably mounting said frame guide on the putter shaft, said frame guide formed of electrically conductible metal, electrical circuitry in said housing, electric current transmitting means and a master control switch for said circuitry, signal means carried by said housing, a circuit to said signal means included in said circuitry, said circuit so arranged that said guide rod will constitute a part of said circuit when mounted in place on said housing, and a conductor wire in said circuit extending from said housing and connected with said frame guide, said guide rod and said frame guide serving as terminals in said circuit, whereby contact between said frame guide and said guide rod when said circuitry is active and said master switch is closed will result in said signal means being actuated.

3,301,562
SPINDLE ADAPTER
Ernest O. P. Tatter, Addison, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware
Filed Apr. 9, 1964, Ser. No. 358,569
16 Claims. (Cl. 274—10)



10. A spindle adapter for supporting and centering large hole records and usable with a record changer having a rotatable turntable with a central small hole spindle and comprising: an adapter body formed of at least two sections; means on said body for fixedly attaching the same to said spindle so that large hole records can be played on said record changer; and means pivotally mounting each of said adapter body sections for pivotal movement away from said spindle while said adapter body remains fixedly attached thereto so that small hole records can be played on said record changer.

3,301,563
ADAPTER SPINDLE FOR RECORD CHANGERS
Richard W. Simpson, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Aug. 4, 1964, Ser. No. 387,284
11 Claims. (Cl. 274—10)



1. In an adapter spindle of the type designed to slip over a small diameter center spindle of a record changer for supporting a stack of large centerhole records and for dropping such records one at a time to a turntable for playing, which small diameter center spindle is of the type having record ejecting means embodied therein, the improvement comprising, in combination, an adapter spindle body over which a plurality of large centerhole records are adapted to be mounted, said body having an offset shelf formed at one side thereof for supporting one centerhole edge portion of the lowermost record in a stack of records on the spindle, a unitary record actuator member mounted in said spindle body for horizontal rectilinear sliding movement therein, said actuator having pusher means at one end thereof slidable over a top surface of said offset shelf for engaging the periphery of the centerhole of the lowermost record supported on said shelf and further having record supporting means at the opposite end thereof positioned for engaging underneath the peripheral edge of the centerhole of the lowermost record supported on said spindle, and said actuator being movable by said record ejecting means of said center spindle between a first normal position wherein said record supporting means is extended beneath the peripheral edge of the centerhole of the lowermost record on the spindle and said pusher means is retracted relative to the adjacent edge of said lowermost record supported on said shelf to a second position wherein said pusher means is moved outwardly to push said lowermost record from said offset shelf and said record supporting means is retracted sufficiently to move from beneath the adjacent edge of said lowermost record, thereby to release said lowermost record to a turntable.

3,301,564
PLAY-BACK INSTRUMENT FOR MAGNETIC TAPE CARTRIDGE
Stanton J. Platt, Beverly Hills, Calif., assignor to Fred P. Silva, Encino, Calif.
Filed June 4, 1964, Ser. No. 372,472
1 Claim. (Cl. 274—11)

In a recorder playback instrument having a deck with a driven capstan extending through the surface of the deck:

(a) said deck having a groove in its surface with one end adjacent the capstan and extending longitudinally to an opposite end,

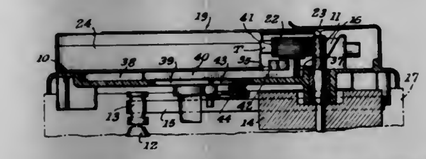
(b) a slide fitted in and shorter than said groove with its upper face flush with the deck surface,

(c) a tape-pinching roller on the end of the slide directed toward the capstan,

(d) the deck, in register with the groove, having an elongated opening shorter than the groove with both ends thereof spaced from the respective ends of the groove,

(e) an extension on the lower face of the slide disposed in and shorter than said elongated opening, and

(f) an over-center spring beneath the deck having one

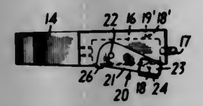


end connected to said slide extension and having an opposite end connected to the under surface of the deck,

(g) said spring, in one over-center position, biasing the slide to abut said extension against the end of the elongated opening that is remote from the capstan, thereby locating the tape-pinching roller thereon in spaced-relation to the capstan, and

(h) said spring, in the other over-center position biasing the slide in a direction toward the end of the elongated opening that is adjacent to the capstan, thereby locating the tape-pinching roller thereon into driving engagement with the capstan to feed tape pinched between the capstan and said roller.

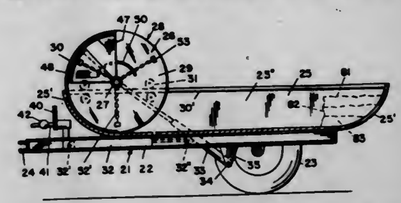
3,301,565
PHONOGRAPH RECORD REPRODUCING APPARATUS
William S. Bachman, Southport, Conn., assignor to Columbia Broadcasting Systems, Inc., New York, N.Y., a corporation of New York
Filed Aug. 14, 1963, Ser. No. 302,025
19 Claims. (Cl. 274—24)



1. Phonograph record reproducing apparatus comprising base means, turntable means mounted on the base means for driving a record to be reproduced, tone arm means pivotally mounted on the base means and having a free end, stylus support means at the free end of the tone arm means, coupling means linked to the stylus support means for motion with respect thereto in a substantially vertical plane and adapted to engage the surface of a phonograph record engaged by any stylus in the stylus support means to couple the stylus support means to the record, and means for damping relative vertical motion between the coupling means and the stylus support means.

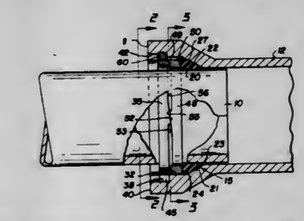
3,301,566
COMBINED MILL AND SPREADER
George C. Wood, % Darf Corporation, Edenton, N.C. 27932
Filed Mar. 10, 1964, Ser. No. 350,884
15 Claims. (Cl. 275—3)

15. In a material milling, mixing and spreading apparatus, the combination of an elongated body open at the top thereof, a carrier movable longitudinally along said body, a rotatable flail type beater unit supported by said carrier and movable longitudinally in said body from one end thereof to the other when the carrier is moved along the body whereby said beater unit may progressively come in contact with material throughout the length of the



body, means for moving said carrier, and means for rotating said beater unit, the bottom of said body being fixed and continuous and the ends thereof curved upwardly in a longitudinal direction, said carrier being substantially circular in cross section with the curvature conforming substantially to the curvature of said ends.

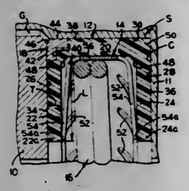
3,301,567
PIPE JOINT SEALS
Vernon L. Barr, 3382 W. 8th Ave., Vancouver, British Columbia, Canada
Continuation of application Ser. No. 333,893, Dec. 27, 1963. This application June 28, 1966, Ser. No. 561,293
3 Claims. (Cl. 277—108)



1. A pipe joint seal for a first pipe having a large bell end and a second pipe having an end adapted to extend into said bell end, said bell end having an entrance opening outwardly therefrom, comprisig an annular seat in the bell end, said seat being bevelled from an inner edge outwardly towards the bell end entrance to an outer edge, an annular compressible gasket in the bell end having a bevelled surface adapted to bear against the bevelled seat, said gasket when free being adapted to fit loosely around said second pipe end, an annular cylindrical grooved surface in the bell end between the said entrance opening and the bevelled seat, an actuating ring mounted in the groove for rotational movement about its axis but constrained against axial movement in the said groove, a thrust ring element mounted between the actuating ring and the gasket and bearing against an outer edge of said gasket for axial movement and including a restraining means to restrain the thrust ring against rotational movement, spaced lugs extending radially from the actuating ring adapted to fit into the said cylindrical groove, means for applying a constant force to the said actuating ring in a direction substantially perpendicular to the central axis of the ring and in a plane containing the ring to rotate the said ring circumferentially, a plurality of bevelled cams mounted on the actuating ring and extending axially from the said actuating ring toward the said thrust ring, a plurality of cams on the thrust ring in opposing relationship to and operative against the cams on the actuating ring, whereby when the said force is applied to the actuating ring to rotate the same then the second

set of cams and the thrust ring moves axially towards the gasket to compress the gasket axially against the said inner edge of the seat, and wherein the expanding force of the gasket towards the open end of the bell acting upon the thrust ring is transferred to the actuating ring only in a direction substantially parallel to the said axis thereof while substantially all of the transverse component of said force is absorbed by the said restraining means.

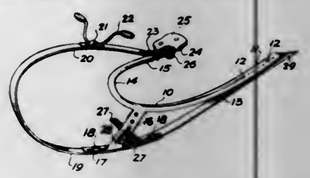
3,301,568
FLUID SEAL
Landis H. Perry, Costa Mesa, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 28, 1963, Ser. No. 283,730
8 Claims. (Cl. 277—142)



1. In a joint including an annular seal chamber defined by spaced confronting first and second walls and an intermediate wall extending between said first and second walls and being connected to said first wall; a seal in said chamber, said seal comprising an annular U-shaped sealing member having a back portion against and in circumferentially confronting relation to said intermediate wall, the minimum distance between said first and second walls being greater than the corresponding maximum dimension of the back portion of the sealing member, said sealing member also having side portions connected to and extending from said back portion along said first and second walls, said side portions terminating in an dimension of the back portion of the sealing member, being of a non-corrosive plastic material operable under extremes of temperature and pressure, and an annular U-shaped energizer having a back portion in circumferential engagement with the back portion of the sealing member and first and second groups of fingers connected to the back portion of the energizer and projecting therefrom in confronting relation with the side portions of the sealing members, said fingers having terminal edges resiliently bearing against their associated side portions of the sealing member but substantially only along the annular edges of said side portions, adjacent fingers of each group being contiguous so as to provide a substantially continuous circle of pressure against each of said side portions, and means circumferentially engaging the back portion of the energizer and applying a radially directed force thereagainst for maintaining the back portion of the energizer against the back portion of the sealing member and thus the fingers of the energizer against the side portions of the sealing member.

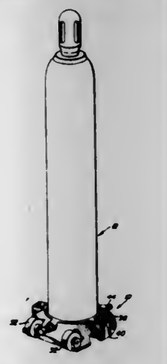
3,301,569
SKI SLED
Harry L. Broschart, 926 Warren Ave., New Castle, Pa. 16101
Filed May 19, 1965, Ser. No. 457,145
3 Claims. (Cl. 280—25)

1. A ski sled comprising an elongated body member curving upwardly and rearwardly at its forward end and having a downwardly and forwardly extending brace beneath said upwardly curving forward end, a first ski-like runner having its forward end secured to the lower end of said brace and its rearmost end secured to the rearmost end of said body member, a secondary ski-like runner formed in a U-shape and having one end adjustably attached to the forward end of said first ski-like runner, the other end of said secondary ski-like runner being secured to the uppermost portion of said body member,



handle bars attached to said secondary ski-like runner and a seat adjustably positioned on the uppermost of said body member, foot rests attached to the opposite sides of said brace and a vertical blade-like member secured to the rearmost portion of said first mentioned ski-like runner longitudinally thereof and centrally therebeneath.

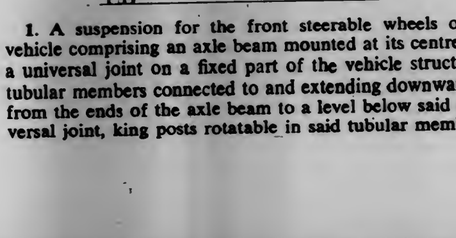
3,301,570
CYLINDER SUPPORT DOLLY
Herbert I. Berman, Lancaster, Pa., assignor to Penn-Chem Corporation, a corporation of Pennsylvania
Filed Nov. 6, 1964, Ser. No. 409,524
7 Claims. (Cl. 280—47.13)



1. A cylinder support removably engageable about the lower portion of a cylinder, said support including a central opening and a flat base projecting outwardly from the central opening, means on said support for locking the lower portion of a cylinder in said opening, roller means, and means rotatably mounting said roller means on the support, said roller means projecting outward from said support, said roller means supporting the support and cylinder upon a tipping of the support about the projecting portion of the roller means, thereby enabling a movement of the support and cylinder on the roller means, said support consisting of a plurality of individual sections positionable about a cylinder, and means releasably interlocking adjoining ends of the sections so as to completely surround the cylinder.

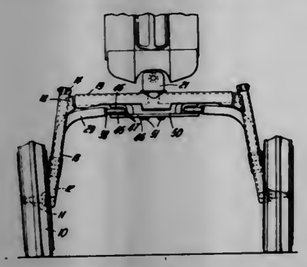
3,301,571
QUICK ATTACHABLE AND DETACHABLE WHEEL MEANS FOR A BOAT
William W. Malcolm, Rte. 2, Box 187, Montezuma, Iowa 50171
Filed Nov. 2, 1964, Ser. No. 407,960
1 Claim. (Cl. 280—47.32)

In combination with a boat having upper and lower portions, opposite sides and opposite ends,
at least two spaced apart elongated plate members operatively detachably secured to one end of said boat adjacent its upper portion so that the longitudinal axes of said plate members be in a horizontal plane,
an axle member rigidly and permanently secured to each of said plate members extending horizontally outwardly therefrom in opposite directions to each other,
said axle members extending outwardly from said opposite sides of said boat,
two clamping brackets secured to each of said plate members; each of said clamping brackets including a first vertical bracket member secured to said plate member extending upwardly therefrom which terminates in a horizontal bracket member extending



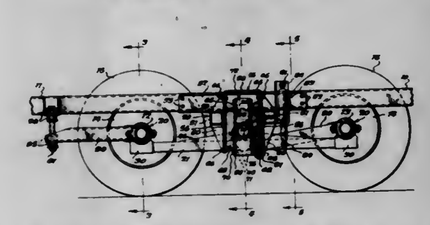
inwardly therefrom with respect to said boat, said horizontal bracket member terminating in a second vertical bracket member extending downwardly therefrom along the interior surface of said one end of said boat; and a clamping bolt means threadably extending through said second vertical bracket member and having one end engaging the interior surface of said boat to maintain said plate members thereon at times, and each of said first and second vertical bracket members having a substantially greater horizontal length relative to the vertical length of said first and second vertical bracket members,
and a wheel member rotatably secured to the outer end of each of said axle members.

3,301,572
SUSPENSIONS FOR THE FRONT STEERABLE WHEELS OF A VEHICLE
Geoffrey Edward Ernest Tapp, Farnham, and Joseph Davey, Crookham, England, assignors to County Commercial Cars Limited, Aldershot, Hampshire, England, a British company
Filed Jan. 7, 1965, Ser. No. 423,934
Claims priority, application Great Britain, Feb. 24, 1964, 8,278/64
14 Claims. (Cl. 280—95)



1. A suspension for the front steerable wheels of a vehicle comprising an axle beam mounted at its centre by a universal joint on a fixed part of the vehicle structure, tubular members connected to and extending downwardly from the ends of the axle beam to a level below said universal joint, king posts rotatable in said tubular members and having stub axles at their lower extremities for supporting the road wheels, a steering transmission associated with the king posts, radius rods secured at one end by universal joints directly to the lower ends of said tubular members which universal joints are below the first said universal joint, which radius rods converge as they extend upwardly away from the lower ends of the tubular members and are connected at their other ends by universal joints to a fixed part of the vehicle structure, and the lengths of which king posts and tubular members are selected in accordance with the clearance required between the lower part of the vehicle structure and the ground.

3,301,573
LIGHT DUTY TANDEM AXLE SUSPENSION
Albert F. Hickman, Eden, N.Y., assignor to Hickman Developments, Inc., Eden, N.Y., a corporation of New York
Filed Sept. 4, 1964, Ser. No. 394,413
4 Claims. (Cl. 280—104.5)

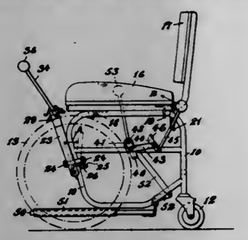


1. A tandem axle spring suspension adapted to be interposed between a vehicle frame and a pair of tandem axles each having rubber tired wheels journalled at the ends thereof, comprising a walking beam arranged at each side of said frame and extending lengthwise thereof close to the inner vertical faces of the corresponding pair of tires, a horizontal cross rod extending transversely of said frame into the space between said tires at each side of said vehicle and with its ends arranged adjacent the central parts of said walking beams, bearing means journalling said cross rod near the respective ends thereof on said central parts of said walking beams, a cross rod bracket secured to each end of said cross rod and having upright faces facing in opposite directions, a frame bracket rigidly connected to said frame and having upright faces severally opposing the corresponding faces of said cross rod bracket, a rubber body secured at its opposite upright faces to each companion pair of upright faces of said cross rod bracket and frame bracket and arranged substantially wholly exteriorly of the vertical plane of said inner vertical faces of the corresponding pair of tires, and said rubber bodies being distorted in upright shear in supporting each frame bracket on its cross rod bracket, and means movably connecting each end of each walking beam with a corresponding axle end.

3,301,574
PROPELLING ARRANGEMENT FOR WHEELED CHAIRS
Brian Taylor Good, North Lodge, Kirkby Mallory, England
Filed Oct. 7, 1964, Ser. No. 402,293
3 Claims. (Cl. 280—211)

1. An invalid wheel chair comprising a frame carrying a seat for the occupant, a pair of main wheels and at least one auxiliary wheel, all located wholly below the level of the seat and supporting the frame for wheeled movement, and a separate propulsion system for each main wheel, including a main lever pivoted on an axis that substantially coincides with the axis of the wheel, a pawl which is pivoted adjacent to the free end of the main

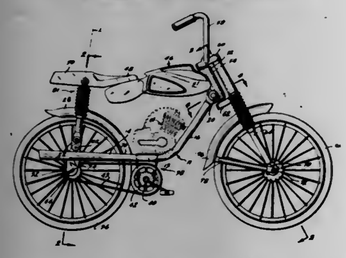
lever, on an axis parallel to the axis of the wheel, and which has two edges, located on opposite sides of the pawl axis, that are engageable with the periphery of the wheel to drive the wheel in two opposite directions, a spring which urges the pawl to a neutral position out of



engagement with the wheel, and an auxiliary lever for rocking the pawl, which is slidably connected to the pawl for movement between a position in which it extends above the level of the seat and a position in which it is wholly below the level of the seat.

3,301,575
SUSPENSION FOR TWO-WHEELED VEHICLE
John W. Ryan, Bel Aire, James Dale Moore, Sherman Oaks, and Warren Dale Kabot, Manhattan Beach, Calif., assignors to Mattel, Inc., a corporation of California

Filed Jan. 4, 1965, Ser. No. 422,898
13 Claims. (Cl. 280—275)

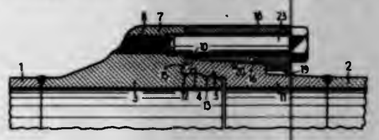


1. In a wheeled vehicle, a first and second frame means, connection means joining the frame means and accommodating relative movement therebetween, wheel means carried by the respective frame means for rollable contact with the ground, each of said wheel means including an axle rotatably connecting said wheel means to an associated frame means, said connection means being located immediately above one of said wheel means, seat means carried by one of said frame means, said seat means including a central portion positioned directly over the axle associated with the other wheel means and resilient means to resist movement between the frames.

3,301,576
FLANGED JOINT
Pierre Paul Camille Vigneron, Pont-a-Mousson, France, assignor to Centre de Recherches de Pont-a-Mousson, Pont-a-Mousson, France, a French body corporate

Filed Nov. 23, 1964, Ser. No. 413,087
Claims priority, application France, Dec. 4, 1963, 956,006
6 Claims. (Cl. 285—24)

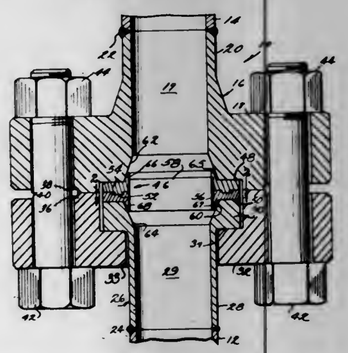
1. A flanged joint between two rigid pipe elements, said joint comprising in combination: a male end portion rigid with one of said pipe elements, a female end portion rigid with the other of said pipe elements and having an entrance end, said male portion having an outer cylindrical centering face and an outer frustoconical sealing face adjacent said centering face, and said female portion having an inner cylindrical centering face and an inner frustoconical sealing face adjacent said inner centering face, said inner and outer frustoconical faces being in sealing-tight contact and having the same taper, an outer flange rigid with said male portion and axially set back from the major part of said two adjacent outer faces, an outer frustoconical wedging face on said female portion and having a taper of substantially 10° included angle divergent towards said entrance end, a detachable ring engaged on said female portion and having a frustoconical inner



wedging face having a taper which is identical to that of said outer wedging face and engaged on said outer wedging face with an interference fit, at least a portion of said interengaged wedging faces having substantially the same location axially of said joint and substantially the same axial extent as the combined inner and outer sealing and centering faces, and a plurality of screwthreaded members axially engaged with said ring and with said flange and axially maintaining through said ring said inner and outer wedging faces and said inner and outer sealing faces in close contact with each other.

3,301,577
TRANSITION JOINT
Raymond E. Latham, Houston, Tex., assignor to Gray Tool Company, Houston, Tex., a corporation of Texas

Filed Jan. 17, 1964, Ser. No. 338,490
4 Claims. (Cl. 285—187)

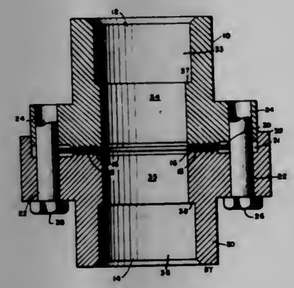


1. A sealing ring assembly for use in forming a seal between two conduit parts having end surfaces presented toward one another and flared sealing surfaces adjacent the end surfaces, each of said conduit parts having different thermal expansion characteristics, said sealing ring assembly comprising: first and second sealing ring members each having an inner annular flange portion defining a central bore and an integral external body portion, the body portions of said ring members being in abutting engagement and the flange portions being deflectable radially inwardly and extending in opposite directions and being tapered away from their body portions so as to be engageable with the flared sealing surfaces on the conduit parts, at least one of said flange portions sealingly engaging one of said flared sealing surfaces said ring members being constructed of materials having different thermal expansion characteristics; and

a thin flexible sleeve disposed within and engaging the walls of the bores of said ring members, said sleeve being constructed of a material having the same thermal expansion characteristics as one of said ring members, a circumferential portion of said sleeve being integrally secured to said one ring member in leak-proof relationship, said sleeve extending through the bore of said other ring member and then in a generally opposite direction so as to overlie a portion of the tapered surface of the flange portion of said other ring member so as to become sealingly clamped between said last-named flange and a flared sealing surface of one of the conduit parts when said ring assembly is placed in its operative position.

3,301,578
CRYOGENIC CONNECTOR FOR VACUUM USE
Philemon K. Platt, Annapolis, Md., and William T. Kitts, Houston, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 17, 1964, Ser. No. 411,944
1 Claim. (Cl. 285—331)



A metal-to-metal cryogenic vacuum seal coupling for use in sealing vacuum chambers at pressures below 10^{-6} millimeter of mercury absolute and temperatures below −320 degrees Fahrenheit, comprising:

a first circular flange member of stainless steel having an opening therethrough to permit the passage of fluid, said opening including a first cylindrical section and a second cylindrical section, said first cylindrical section having a diameter greater than said second cylindrical section to form a shoulder at the junction of the two sections, said shoulder serving to limit the insertion of a pipe into said first section of said opening of said first flange member and to permit the inner surface of the pipe to mate with the inner surface of said second section such that there would be a substantially turbulant free flow of fluid from the pipe through said first flange;

said first flange member having thereon six concentric ridges and five concentric grooves starting closely adjacent the walls forming said second cylindrical section of said opening of said first flange member and continuing radially outwardly, said grooves alternating with said ridges and forming angles of 60° therewith, said ridges being conical in cross section;

a second circular flange member of stainless steel having an opening therethrough to permit the passage of fluid, said opening including a first cylindrical section and a second cylindrical section, said second cylindrical section having a diameter greater than said first cylindrical section to form a shoulder at the junction of the two sections, said shoulder serving to limit the insertion of a pipe into said second section of said opening of said second flange member and to permit the inner surface of the pipe to mate with the inner surface of said first section such that there would be a substantially turbulant free flow of fluid from said second flange through said pipe attached thereto;

said second circular flange member having thereon five concentric ridges and six concentric grooves starting closely adjacent the walls forming said first cylindrical section of said opening of said second flange member and continuing radially outwardly, said grooves alternating with said ridges and forming angles of 60° therewith, said ridges being conical in cross section;

said ridges and grooves of the first and second flange members being positioned such that the ridges of said first flange member will mate with the grooves on said second flange member and the ridges on said second flange member will mate with the grooves on said first flange member;

said second flange member having an annular recess defined by protruding peripherally continuous lip portion extending axially, whereby said first flange member snugly fits in said recess, and, upon being inserted in said recess, has its outer surface both guided and held rigidly in position by said protruding lip portion to insure proper mating of said grooves and ridges of the first and second flange members and concentric alignment of said openings;

a plurality of bolt means located radially inwardly of said protruding lip portion and radially outwardly of said grooves and ridges for interconnecting said first and second flange members;

and an annular copper sealing gasket radially coextensive with said ridges and grooves and positioned between the first and second flange members such that, when the first and second flange members are drawn together and pressure is applied by said plurality of bolt means said sealing gasket is deformed between said ridges and grooves to thereby create ten sealing surfaces between the first and second flange member and at the same time provide a mating between the inner surfaces of said openings such that fluid flow between said first and second flange members is substantially turbulant free.

3,301,579
INTERRUPTED CONNECTION
Fred Gasche and Edward H. Epprecht, Erie, Pa., assignors to Autoclave Engineers, Inc.

Filed Nov. 25, 1964, Ser. No. 413,844
2 Claims. (Cl. 285—391)



1. An interrupted connection for joining two cylindrical telescoping bodies comprising,

(A) two cylindrical telescoping bodies,

(B) opposed circumferential grooves of the same size and shape in the opposed surfaces of said bodies and together forming at least one passage extending around said opposed surfaces,

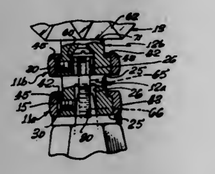
(C) resilient tubular members positioned in and spaced circumferentially from each other in said passage and comprising short segments each segment having a longitudinally extending bore therethrough radially spaced from the inner periphery of the groove in

said one of said bodies and a rod in said bore extending therethrough and beyond the ends of each segment, said rod being secured at its ends in the groove to said one of said bodies,

(D) said tubular members having a cross-sectional shape which substantially conforms to the cross-sectional shape of said passage, and

(E) passageways in the surfaces of the body opposed to the groove in which the tubular members are secured, said passageways extending axially from one end of said body, being equal in number to the tubular members and spaced around the surface in the same manner as the tubular members are spaced in the groove to which they are secured and having a width at least equal to the length of said tubular members and a radial depth at least equal to the depth of said grooves.

3,301,580
WATER FAUCET HANDLE
Meyer Greitzer, 2011 S. Garth Ave., Los Angeles, Calif. 90034
Filed Oct. 19, 1964, Ser. No. 404,713
1 Claim. (Cl. 287—53)



A valve handle securing apparatus comprising:

a first handle stem, said stem having upper and lower cylindrical portions, said lower cylindrical portion having a substantially greater diameter than said upper portion, said upper portion and said lower portion defining a transverse shoulder;

said lower portion defining therein a cylindrical cavity extending upward from the lower surface of said lower portion, said lower portion defining a threaded hole radially therethrough to said cavity, a screw inserted in said hole whereby said handle stem can be secured to a stem of a valve;

a second handle stem like said first handle stem and with the upper portion of its cylindrical cavity being threaded;

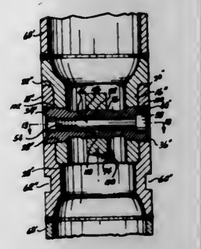
two slidable sleeves, each of said sleeve having upper and lower portions, said upper portion having substantially the same inside diameter as the diameter of said upper portions of said handle stems, said lower portion of each of said sleeves having substantially the same diameter as said lower portion of said handle stems, said upper and lower portions of each of said sleeves defining a transverse shoulder; one of said sleeves being slidably fitted upon each of said handle stems and retained by said shoulders; and said sleeves being partially removable, whereby said sleeves can be slidably removed to provide access to said threaded holes without requiring disassembly of said securing apparatus;

said first handle stem being atop said second handle stem;

stem means projecting from said second handle stem and into said cylindrical cavity of said first handle stem, and the

screw means of the first handle stem engaging and securing said stem means in said cylindrical cavity of said first handle stem.

3,301,581
DRILLING SHAFTS
Douglas F. Winberg, Hibbing, Minn., assignor to James S. Robbins and Associates, Inc., Seattle, Wash., a corporation of Washington
Filed Sept. 30, 1965, Ser. No. 491,784
6 Claims. (Cl. 287—119)



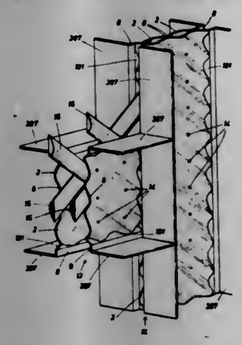
1. A slip joint construction comprising concentrically related, separable, first and second, tubular, joint forming members, said first joint forming member including side wall means forming an axially extending socket opening sized to snugly accommodate the second joint forming member, with at least one pair of opposed, inwardly tapering openings extending laterally through said side wall means, and said second joint forming member including side wall means forming an axially extending interior passageway, with at least one pair of opposed, inwardly tapering openings extending laterally through said side wall means, and being registerable with the inwardly tapering openings in the side wall means of the first joint forming member, when said second joint forming member is engaged in the socket opening of said first joint forming member, to form a pair of opposed, inwardly tapering bores, and a transverse support member spanning the interior pasageway in said second joint forming member, between the tapered openings in the side wall means thereof, said support member being rigidly attached to the side wall means of said second joint forming member, and having an opening therein that is generally aligned with the tapered openings; and coupling means comprising a pair of plug elements having tapered outboard portions sized to snugly fit within the tapered bores, and inboard portions insertable from opposite directions into the opening in said support member, to be engaged thereby, with said support member serving to substantially prevent sideways movement of the inboard end portions of said plug elements, and bolt means detachably connectable to said plug elements for pulling them together, and the tapered outboard portions thereof into tight engagement with the side surfaces of the tapered bores.

3,301,582
STRUCTURAL JOINT AND STRUCTURAL ELEMENTS
Josef Linecker, Rosengasse 5, Mattighofen, Austria
Filed Feb. 24, 1964, Ser. No. 346,687
Claims priority, application Austria, Feb. 25, 1963, A 1,429/63
7 Claims. (Cl. 287—189.36)

1. A structure comprising, in combination

(a) two elements having respective faces opposite each other, and defining a space therebetween, each of said faces being formed with a plurality of grooves elongated in a common direction and constituting respective portions of said space, the grooves in one face being angularly offset from the grooves in the other face, the grooves in the respective faces crossing each other;

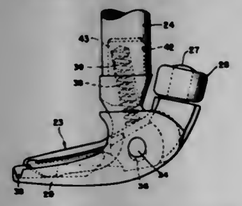
(b) two elongated locking bars, each bar having a first longitudinal portion received in a groove of a respective one of said elements and a second portion projecting from said groove, said projecting portions being elongated in a common direction and contiguously juxtaposed in a direction transverse of the direction of elongation thereof;



(c) holding means fixedly securing said juxtaposed projecting portions to each other; and

(d) retaining means preventing movement of said faces away from each other.

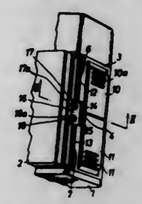
3,301,583
SPRING LOADED JAW AND HOOK ASSEMBLY
Emil J. Grichnik, Memphis, Tenn., assignor to International Harvester Company, a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,706
9 Claims. (Cl. 289—11)



1. A knotter hook assembly, comprising: a hook member, a jaw, pivot means including a pivot axis mounting said jaw on said knotter hook member for pivotal movement of said jaw about said pivot axis, said pivot means permitting movement of said jaw relative to said knotter hook member along a path transverse to said pivot axis, elastic means acting on said jaw and biasing it toward one end of said path, whereby the position of said pivot axis changes in response to variations in the thickness of binding material employed with said knotter hook assembly.

3,301,584
LOCKING ARRANGEMENT
Alfred Winkler and Dieter Maas, Munich, Dieter Engelsmann, Unterhaching, Munich, and Hubert Hackenberg, Munich-Solln, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed July 29, 1964, Ser. No. 385,885
Claims priority, application Germany, Aug. 31, 1963, A 20,548
7 Claims. (Cl. 292—228)

1. A locking arrangement for locking and unlocking a hinged lid to a housing comprising hinged catch bar means mounted on said housing, a latch means on said lid disposed for engaging said catch bar means when said lid is closed into contact with said housing whereby said lid is locked to said housing, said catch bar means being resiliently urged to engage said latch means by spring means reacting between said housing and said catch bar means, said catch bar means comprising a pair of similar catch bars mounted on said housing adjacent and in line with each other, said catch bars having remote ends, said



catch bars having catch elements engaged by said latch means adjacent each other, said spring means reacting against said remote ends of said catch bars to urge them into the locked position, and said spring means being a single curved leaf spring having a mid-portion reacting against said housing and its ends reacting against the ends of said catch bars remote from each other.

3,301,585
SHEET AND PLATE HANDLING TOOL
Charles F. Johnson, 1129 W. Milwaukee, Detroit, Mich. 48202
Filed Apr. 2, 1965, Ser. No. 444,999
6 Claims. (Cl. 294—16)

1. A sheet or plate gripping tool, comprising

a pair of scissors levers disposed in crossing relationship intermediate their forward and rearward ends and having forward arms disposed in close proximity to one another in the closed position thereof and terminating in tapered forward ends,

a pivot element pivotally interconnecting said levers at their crossing location,

a pair of gripping jaws mounted on the forward ends of said levers and having substantially sharp forward edges, resilient means engaging said levers and urging said jaws away from one another into the open position thereof,

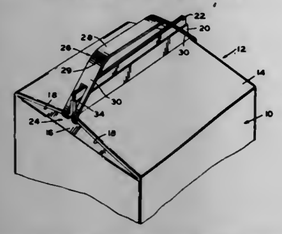
and an open-centered handle mounted rigidly on the rearward end of each lever and movable unitarily therewith,

each handle having opposite side portions connected at their forward ends to its respective lever and a cross portion interconnecting the rearward ends of said side portions,

said cross portions being disposed transversely to their respective levers,

the cross portion of one handle being disposed nearer said pivot element than the cross portion of the other handle and movable into close proximity to the side portions of said other handle in longitudinally-spaced relationship to the cross portion of said other handle.

3,301,586
CONTAINER HANDLE
Robert E. Lisiecki, Orchard Lake, Mich., assignor to Ex-Cell-O Corporation
Filed Apr. 22, 1965, Ser. No. 449,987
3 Claims. (Cl. 294—16)



1. A removable resilient carrier attachment for a gable top liquid-proof paperboard container of the type having a pair of inclined top panels and a pair of ridge-forming panels extending upward from the top panels with recesses underlying opposite ends of the ridge, said carrier comprising;

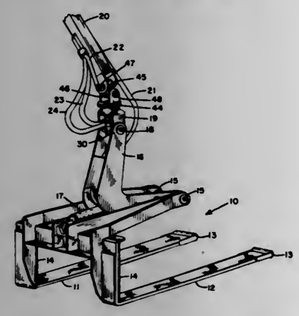
(a) a flexible member constituted of an integral piece of strip-like resinous plastic sheet material and including a horizontal central handle portion extending approximately one-half the length of the container rib to be positioned in spaced relation to the ridge-forming panels,

(b) a pair of outwardly sloping portions integrally connected to the ends of said handle such that they form an acute angle with the horizontal within the range of 45° to 55° and having parallel sided slits for receiving the end portions of the container ridge therein,

(c) a pair of tongues for engaging the undersurface of the container recesses integrally connected to the extremities of said sloping portions and extending inwardly in a substantially horizonal plane toward each other, the free ends of said tongues being spaced apart to provide an opening, and

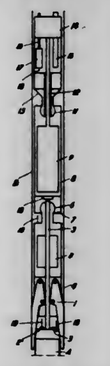
(d) said carrier handle being spaced above said ridge a distance such that when it is subjected to a downward flattening action toward the container to force said tongues away from one another said handle will contact said rib prior to effecting disengagement of said carrier from the container recesses.

3,301,587
MATERIALS POSITIONING FORK
Leo L. Heikkinen, Prentice, Wis., assignor to Prentice Hydraulics, Inc., Prentice, Wis.
Filed Mar. 1, 1965, Ser. No. 436,139
12 Claims. (Cl. 294—67)



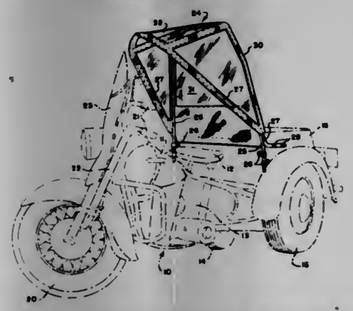
1. A materials handling device, comprising: a fork lift for handling generally flat rigid material; a generally L-shaped arm pivotally attached at one of its ends to one end of said fork lift; a hydraulically actuable piston operatively connected between said arm and said fork for swinging said fork about said pivot attachment to lift the material being handled; and means attached to the other end of said arm for coupling said arm to a boom type crane for operative engagement therewith.

3,301,588
REMOTE CONTROL MANIPULATION OF INACCESSIBLE OBJECTS
Louis Maudinet, Palaiseau, Victor Ziegelmeyer, Asnieres, and Raymond Dintzner, Ecouen, France, assignors to Societe Anonyme: Societe Alsacienne de Constructions Atomiques de Telecommunications et d'Electronique "Alcatel" and Societe à Responsabilite Limitee: Societe de Transactions Commerciales et Industrielles Entre la France et l'Allemagne en Abrege S.O.T.R.A.F.A., corporations, both of Paris, France
Filed Apr. 3, 1964, Ser. No. 357,074
Claims priority, application France, Apr. 5, 1963, 930,574
4 Claims. (Cl. 294—110)



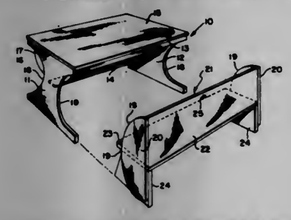
1. In an apparatus for the manipulation, under remote control, of inaccessible objects, an assembly comprising a television camera, a gripping device, means for moving said assembly, means for air-conditioning said assembly, means for electrical current supply and means for passing through an image conveying cable: an electromagnetically controlled gripping device including feeling members and clamping jaws, a first housing with an upper end and a lower end sealingly surrounding and supporting said gripping device, said jaws protruding downwards from said housing, a first ball-and-socket joint at the upper end of said first housing, an endoscope mounted axially in said first housing and traversing axially, with a given clearance, said ball-and-socket joint, said endoscope having an upper end and a lower end adjacent the lower end of said housing, a second sealed housing having an upper end and a lower end sealingly connected to said first ball-and-socket joint, a television camera, mounted in said second housing, having a scanning tube and image transmission means, as well as a transparent port-hole located opposite the upper end of the endoscope, a second sealed ball-and-socket joint mounted on the upper end of the second housing, a third sealed housing having an upper end and a lower end sealingly connected to the second ball-and-socket joint, means comprising a lighting lamp located adjacent the endoscope to illuminate the space located in front of and between the clamping jaws, a cable traversing the first, the second and the third housings, as well as the ball-and-socket joints, in order to supply current to the lamp; means traversing the first, the second and the third housings and connected, respectively, to the electromagnetic control of the gripping device; means for feeding current to the television camera and to the scanning tube thereof, said means traversing the second and the third housings, as well as the second ball-and-socket joint, means for air-conditioning the inside space of the first, the second and the third housings, and means for moving the assembly.

3,301,589
PROTECTIVE MEANS FOR MOTORCYCLE DRIVER
James T. Hayden, 6745 Belkenton, Cincinnati, Ohio 45236
Filed Jan. 21, 1965, Ser. No. 427,009
1 Claim. (Cl. 296—102)



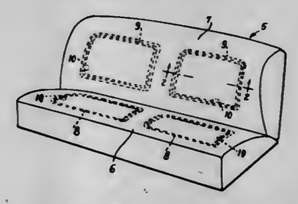
A motorcycle comprising a body including an engine, a driver's seat, a pair of rear wheels, a trunk mounted between said wheels, and a front wheel and steering means pivotably attached to said body, a windscreen mounted forwardly of said steering means and extending upwardly above said front wheel to protect the torso of the driver, and a canopy comprising a first U-shaped frame member, substantially vertically disposed, mounted on opposite sides of said trunk behind the driver's seat, a second U-shaped frame member, inclining forwardly from the first, also mounted on opposite sides of said trunk behind the driver's seat, a covering for said U-shaped frame member to provide a back panel portion supported by said first member, and a hood portion supported between said first and second members, said hood portion extending from said back panel portion forwardly toward, but its forward extent being short of, said windscreen, the maximum dimension of forward extension of said hood portion being at the top of said canopy and above said driver's seat, the top of said canopy being at substantially the same height as the top of said windscreen, the dimension of forward extension of said hood portion decreasing from top to bottom thereof, said canopy being unattached to said windscreen.

3,301,590
PLAY TABLE AND BENCH ASSEMBLY
Arthur Carl Young, Berea, Ohio 44017
Filed Mar. 30, 1965, Ser. No. 444,081
4 Claims. (Cl. 297—157)



1. The combination of a table having a top and a supporting frame and a pair of benches cooperable therewith to form a nested table assembly, said supporting frame including end members and means spacing and interconnecting said end members to form a rigid supporting frame, said interconnecting means including a cross member disposed generally vertically intermediate the top and bottom of said end members, said top forming a closure to the interior of said supporting frame, each of said end members of said supporting frame being formed with generally semicircular shaped opposed edges, each of said benches including a supporting seat section and a back section and generally semicircular end sections connected thereto, said bench being supported and stabilized by floor-engaging legs mounted below said seat sections and inwardly of the respective end sections, said end sections of said benches being snugly received by said semicircular shaped edges of said end pieces of said supporting frame when said benches are moved toward said frame, with the benches in such snugly received position being entirely disposed within the plane of said top to provide a compact nested assembly.

3,301,591
AUTO SEAT COVER WITH SUPPORT INSERTS
Edward N. Jacobs, 4552 Park Ave., Montreal, Quebec, Canada
Filed Apr. 29, 1965, Ser. No. 451,816
Claims priority, application Canada, Mar. 17, 1965, 925,891
2 Claims. (Cl. 297—219)

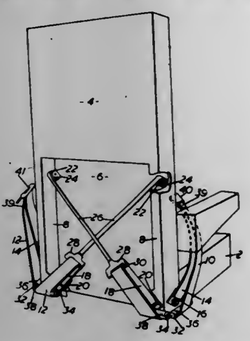


1. An automobile seat cover of the custom made type adapted to be fitted over the seat and back rest portions of the automobile seat as a protection therefor, substantially rectangular sheet members secured at their peripheral edges to predetermined areas of the unexposed under surface of the seat cover corresponding to the normal seat and back rest portions of the automobile seat taken by a passenger seated thereon, the said rectangular sheets forming pockets, and an orthopedic body supporting member fitted in each of the said pockets of the seat cover, the said body supporting members each comprising a rectangular frame bent to conform to the surface contour of the underlying seat and back rest portions of the automobile seat, a flexible body supporting structure secured at its peripheral edges in each of the said rectangular frames, and a layer of cushioning material wrapped about each of the said rectangular frames and flexible body supporting structures.

3,301,592
SECURING DEVICES
Arthur Herbert McFarlane, Basildon, and Eric Herbert Spouge, Harold Hill, both of England, assignors to Teleflex Products Limited, London, England, a company of Great Britain and Northern Ireland
Original application Nov. 14, 1962, Ser. No. 237,454. Divided and this application Oct. 11, 1965, Ser. No. 494,504
5 Claims. (Cl. 297—385)

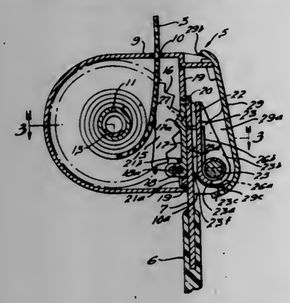
1. A two-part buckle for use on a belt having at least two runs forming a running bight, one of said runs being anchored, the other of said runs being connected to a take-up device; said two-part buckle comprising

a first buckle part and a second buckle part, said first part having a pivoted lever movable between a locked and an unlocked position; a fixed rod on said pivoted lever for said running bight, said fixed rod being positioned so that the pull of said belt urges the pivoted lever toward the locked position; a movable rod mounted for lateral movement on said lever towards said fixed rod and outside said bight; and an abutment on said first buckle



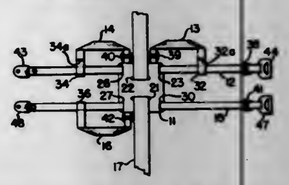
part for engagement by said second buckle part and situated on the side of said movable rod remote from said fixed rod; said second part having an abutment-engaging portion and a fixed bar, said fixed bar passing beneath said fixed and movable rods on the first buckle part when said second buckle part is inserted therein; the axes of said fixed and movable rods and said fixed bar being parallel and arranged so that when said pivoted lever is moved to its locked position said running bight is locked.

3,301,593
SEAT BELT
Ernest P. Lamb, Grosse Pointe Park, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Sept. 18, 1964, Ser. No. 397,574
3 Claims. (Cl. 297—388)



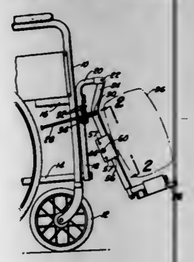
1. In a safety device, a support, a safety belt having a fixed end secured to said support, a buckle having dispensing means for carrying said belt and for dispensing the same in the direction toward said fixed end, said dispensing means including a rotatable reel having said belt wound spirally thereon, resilient means yieldingly urging rotation of said reel to wind said belt thereon to retract the latter oppositely from said direction, a retainer secured to said support and having a rigid blade, interlockable means on said blade and buckle for interlocking upon movement of said buckle to a predetermined position with respect to said blade, means shiftable to a detent position for locking said reel against rotation to prevent said dispensing of said belt comprising detent means carried by said buckle and engageable by said blade to be shifted thereby to said detent position upon movement of said buckle to said predetermined position, and means for holding said detent means out of said detent position when said buckle is moved from said predetermined position.

3,301,594
SAFETY HARNESS
Michael S. Pukish, Jr., Penfield, N.Y., assignor to Vogt Manufacturing Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 29, 1965, Ser. No. 443,182
6 Claims. (Cl. 297—389)



1. A safety device adapted to secure a person in a seat and comprising:
(a) a plate member;
(b) said plate being configured to define a pair of spaced, horizontal slots extending through said plate member and disposed one above the other;
(c) An anchoring strap means affixed firmly in place and extending vertically around the back rest of said seat in a closed loop, said anchoring strap means being threaded through each of said horizontal slots to secure said plate member slidably on said anchoring strap means with said plate member disposed flatly against and movable vertically relative to said back rest;
(d) said plate being configured to define a plurality of support strap slots; and
(e) support strap means threaded through said support strap slots and passing between said anchoring strap means and said backrest, said support strap means forming a harness for encircling the upper body portion of said person to protectively restrain said person to said plate and said anchoring strap against said backrest.

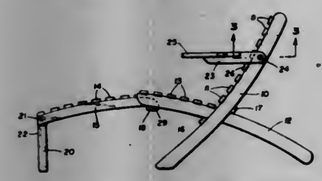
3,301,595
ADJUSTABLE LEGREST FOR WHEEL CHAIRS
Harry C. Jennings, deceased, late of Los Angeles, Calif., by Harry C. Jennings, Jr., executor, Los Angeles, Calif., assignor to Everest & Jennings, Inc., Los Angeles, Calif., a corporation of California
Original application Dec. 23, 1963, Ser. No. 332,686. Divided and this application Mar. 9, 1966, Ser. No. 534,298
2 Claims. (Cl. 297—437)



1. In combination with a wheel chair having a cylindrical footrest bracket thereon, a legrest panel for said bracket, a clamp supporting said legrest panel and lying

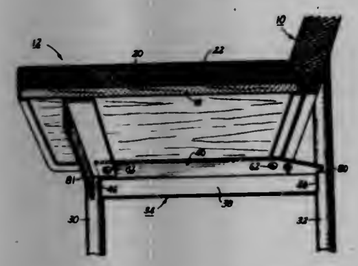
at least partially about said footrest bracket, one of said footrest bracket and clamp having pin means thereon, and the other having slot means receiving the pin means for relative movement of the pin means in the slot means, said slot means having a longitudinal portion lying lengthwise relative to the longitudinal axis of the cylindrical footrest bracket, said slot means also having at least a pair of circumferentially disposed portions spaced longitudinally disposed portion spaced longitudinally of said longitudinal portion and being of substantially the same shape at opposite sides of said longitudinal slot means.

3,301,596
COLLAPSIBLE CHAIRS
Eric A. Eos, Bailey, Colo. 80421
Filed Jan. 5, 1966, Ser. No. 518,807
5 Claims. (Cl. 297—443)



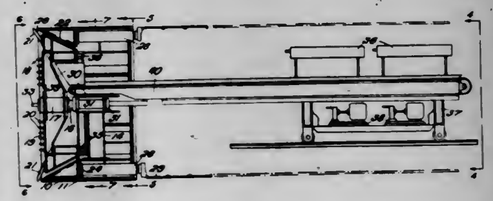
1. A collapsible chair comprising a seat portion, a back portion, a leg rest portion, spaced parallel side rails on each of said portions, the side rails of said seat portion being spaced to fit between the side rails of the back portion and slidably mounted therebetween and the side rails of the leg portion being spaced to fit between the side rails of the seat portion and slidably mounted therebetween, transverse slats on the edges of said rails the slats on the leg rest portion being of a length to fit between the rails of the seat portion.

3,301,597
FURNITURE CONSTRUCTION
Sigmund Boreday, 5M Rodreguez Serra St., Santurce, Puerto Rico
Filed Jan. 28, 1966, Ser. No. 523,625
10 Claims. (Cl. 297—450)



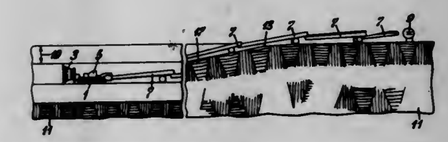
1. A seating unit comprising in combination two side sections, a seat and a back, each of said side sections comprising a pair of legs interconnected by a substantially horizontally arranged angle-iron brace on each side section, said angle-iron brace having two flanges forming an angle with each other and extending between said legs of a pair, one of said flanges being substantially upright and the other of said side flanges extending horizontally between and projecting outwardly beyond said legs, means for securing the ends of said angle-iron brace of each side section to the legs of said section comprising a single weld for each chair leg at the abutting edge at each end of the brace, connecting means for securing said seat to the horizontally extending flanges of both of said side sections to integrate the separate side sections and seat into a seating unit, means for supporting the lower end of said back from said side sections, and the joint between the end edges of the substantially upright flange of said brace and legs of each side section extending along contour lines therebetween, and the welds being located at the interior surface of said angle-iron brace whereby said welds are concealed from view when the seating unit is in an upright position.

3,301,598
TUNNEL BORING MACHINE HAVING ROTATION CONTROL RESPONSIVE TO ADVANCE PRESSURE
Norman Duncan Pirrie, Sutton, and John Bland, Epping, England, assignors to Economic Foundations Limited, London, England, a British company
Original application June 27, 1963, Ser. No. 291,118. Divided and this application Nov. 12, 1965, Ser. No. 507,314
8 Claims. (Cl. 299—1)



1. A tunnel boring machine of the kind comprising a shield, a cutting head mounted on the shield for rotation relative thereto and for axial movement therewith, a first hydraulic system acting between the shield and tunnel for advancing the cutting head along the tunnel as tunnelling proceeds, a second hydraulic system comprising hydraulic motors mounted on the shield and operable to rotate the cutting head, and hydraulic fluid control means operable in response to a predetermined hydrostatic pressure in the second system to unload the first system.

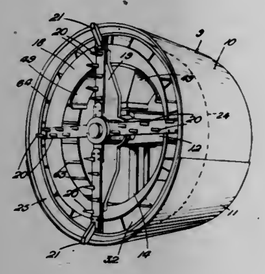
3,301,599
METHOD OF CONTINUOUS OPEN-PIT MINING AND APPARATUS THEREFOR
John W. Helmaster, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
Filed Feb. 27, 1964, Ser. No. 347,753
7 Claims. (Cl. 299—18)



1. Method for mining a selected geological strata material from which the overlying strata have been removed which comprises substantially continuously generating a generally downwardly inclined course from the surface of said strata material to a desired depth and thereafter substantially continuously generating a substantially horizontal course as an extension of said inclined course through said strata material, generating a second course contiguous to and substantially parallel with the first

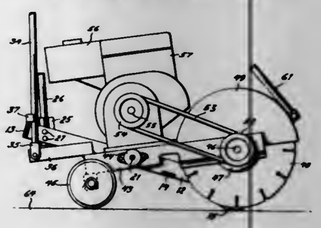
course and repeating the sequence until the width of the exposed strata material has been traversed, each course having a floor, at least one side, an end and no ceiling, each course being generated by substantially continuously disintegrating and dislodging the strata material from said end, and substantially continuously and simultaneously removing the dislodged strata material from the end of said course and transporting it to a substantially separate place.

3,301,600
TUNNEL MACHINE HAVING REVERSIBLE BORING HEAD
Norman Duncan Pirrie, Sutton, Surrey, and John Bland, Epping, Essex, England, assignors to Economic Foundations Limited, London, England, a British company
Filed June 27, 1963, Ser. No. 291,118
Claims priority, application Great Britain, Feb. 13, 1963, 5,907/63
3 Claims. (Cl. 299—33)



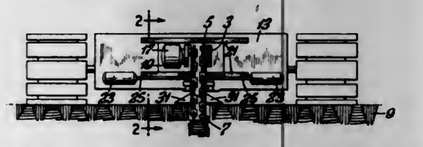
1. A tunnel boring machine comprising
(a) a non-rotatable cylindrical shield with its axis horizontal,
(b) a cutting head,
(c) means to mount the cutting head on the shield for rotation in either direction about the axis of the shield,
(d) driving means to rotate the cutting head in either direction of rotation,
(e) said cutting head having at its periphery an outer annulus of frusto-conical forms, an inner annulus also of frusto-conical form of shorter axial length than the outer annulus and spaced radially inwardly from the outer annulus, the two annuli having their front edges in the same plane, a ring extending radially inwardly from the rear edge of the outer annulus and a plurality of radial vanes extending in planes containing the axis of rotation of the head, each attached to the two annuli and the ring and spaced apart around the annuli to divide the annuli into a plurality of buckets with mouths open towards the tunnel face and discharge openings open radially inwardly of the head behind the inner annulus,
(f) a plurality of cutting blades mounted on the cutting head, each blade being symmetrical about a plane through the blade containing the axis of rotation of the head whereby each blade is operable to cut in either direction of rotation of the cutting head,
(g) a discharge chute mounted on the shield below the uppermost discharge openings on the head,
(h) shedder plates attached to the shield and extending around the inner annulus of the head on either side of the discharge station to prevent cuttings being discharged before reaching the chute, and
(i) means to convey cuttings rearwardly from the chute.

3,301,601
VERTICALLY ADJUSTABLE WHEEL SUPPORTED CONCRETE SAW
Edward A. Zuzelo, 652 Broad Acres Road, Narberth, Pa. 19072
Filed Sept. 8, 1964, Ser. No. 394,673
8 Claims. (Cl. 299—39)



1. In a machine for working a groove in a pavement or the like, a frame having a base with handle means upstanding at one end and a pair of supporting wheels spaced apart along a common axis at the other end and pivot means oriented transversely of the frame intermediate the ends, a subframe pivotally carried on the pivot means and having at one end a rotary tool located between the pair of wheels on the frame and having at the opposite end supporting wheel means, and adjustable linkage interconnecting the frame and the subframe to control the angle of pivot between the frame and the subframe.

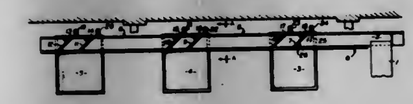
3,301,602
CONTINUOUS MINING AND CONVEYING SYSTEM
John W. Heimaster and Edgar H. Church, Jr., Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed Feb. 27, 1964, Ser. No. 347,732
3 Claims. (Cl. 299—64)



1. In a continuous mining system comprising, in combination, a self-propelled vehicle adapted to ride on a floor of a mine, an attached conveyor train consisting of a plurality of steerable conveyor units adapted to travel on the floor of said mine, means mounted on one end of said vehicle for substantially continuously disintegrating and dislodging selected strata material, and means mounted on said vehicle for collecting the disintegrated and dislodged strata material and transporting it to the first unit of said train, the improvement comprising a cutter bar slideably mounted on the end of said vehicle opposite to said disintegrating and dislodging means for simultaneously and continuously generating a relatively shallow and narrow groove in the floor of said mine along the approximate line of travel of said vehicle and of sufficient width and depth to receive a means for steering said conveyor units in response to the direction of said groove.

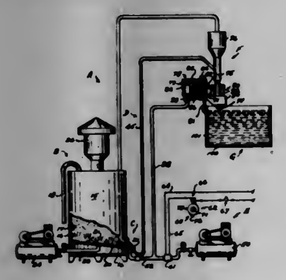
3,301,603
AIR SWEEP CONVEYOR
William Boon, The Tower, 215 Passaic Ave., Passaic, N.J. 07055
Filed Apr. 23, 1964, Ser. No. 362,081
1 Claim. (Cl. 302—19)

An air sweep conveying and classification system for fabrics which comprises in combination, a belt conveyor, means for driving said belt conveyor, means for placing fabrics on said belt conveyor, receiving stations positioned along said belt conveyor, sweeps having perforations positioned diagonally across said conveyor adjacent said receiving stations, means for forcing air through said perforations across said belt in the direction of said receiving stations whereby said fabric materials will be moved from said belt and into said receiving stations solely by said air forced through said perforations, said perforated sweeps extending across said belt adjacent said receiving stations, and rotatable means are provided



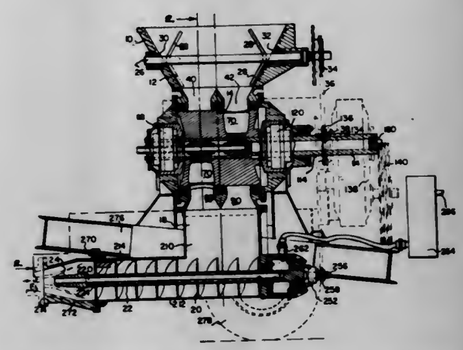
alongside said belt to move said perforated sweep alternatively over and completely clear of said belt as desired, said sweep being a hollow tube and forming an air duct, and said perforations in the form of jets communicating with said air duct so that air forced through said jets have a direction substantially perpendicular to the direction of flow of said fabrics, and wherein said perforated sweeps are positioned a sufficient distance above said belt conveyor to permit fabrics to pass thereunder on said belt when air is not being forced through said jets and upon said fabrics.

3,301,604
PARTICULATE MATERIAL CONVEYING SYSTEM
Charles E. Berry, Fairmont, W. Va., assignor to Viking Corporation, Bristol, Tenn., a corporation of Tennessee
Filed Mar. 14, 1966, Ser. No. 534,146
6 Claims. (Cl. 302—24)



1. In a conveying system for particulate material, the combination of a particulate material storage receptacle including means for aerating the particulate material received therewithin and maintaining the same in a substantially fluidized state; a container for receiving a relatively small charge of particulate material from said storage receptacle; means interconnecting said container with said storage receptacle in juxtaposition for gravity flow of particulate material from said storage receptacle to said container; check valve means for segregating the charge of particulate material of said container from the particulate material of said storage receptacle; conduit means interconnected with said container and leading to a discharge area; and pneumatic pressure means operably interconnected with said container for pneumatic discharge of a charge of particulate material from said container and through said conduit means to a discharge area under sufficient pressure to substantially clear said container and said conduit means of particulate material, said pneumatic pressure means including an elongated air nozzle mounted within said container and having a plurality of air discharge apertures spaced therealong in juxtaposition for substantial aeration and fluidizing of the particulate material charge of said container on activation of said pneumatic pressure means, and said check valve means comprises means for preventing back flow of air and particulate material from said container to said storage receptacle on activation of said pneumatic pressure means.

3,301,605
FEEDING AND PNEUMATICALLY CONVEYING CONCRETE MATERIALS
Fred H. Greenway, Santa Fe, N. Mex., assignor to Richard R. Colburn, Phoenix, Ariz.
Continuation of application Ser. No. 284,739, May 31, 1963. This application Dec. 13, 1965, Ser. No. 525,791
10 Claims. (Cl. 302—49)

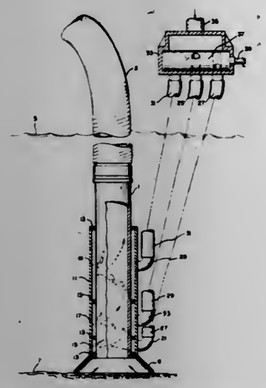


1. In a means for feeding and pneumatically conveying concrete materials the combination of
a housing having an opening at an upper portion thereof disposed to receive materials therein;
a rotor in said housing and having pockets open at the periphery thereof;
said pockets disposed to receive materials from said opening;
a resilient liner for said housing and engaging the periphery of said rotor;
cavity means in said liner disposed to receive pressure fluid;
and means for inducing pressure fluid into said cavity means whereby said liner may be forced intimately into contact with the periphery of said rotor;
an inner wall of said liner having a plurality of stiffening bars disposed parallel to the axis of said rotor and of sufficient length to bridge the pockets whereby pressure fluid acting in said cavity means creates force which is distributed by said stiffening bars thereby preventing excessive deflection of said liner into said pockets at the periphery of said rotor.

3,301,606
CYCLONIC ELEVATOR
Anthony I. Bruno, 1335 Phelps Ave., San Jose, Calif. 95117
Continuation of application Ser. No. 472,805, July 19, 1965. This application June 23, 1966, Ser. No. 560,009
6 Claims. (Cl. 302—58)

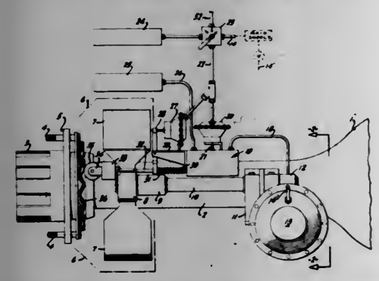
1. An air lift device comprising in combination:
(a) a tube for lifting material,
(b) at least one chamber surrounding the tube adjacent one end thereof,
(c) a plurality of passages leading from the chamber to the interior of the tube and arranged about the tube in a spiral pattern, and

(d) means for supplying compressed air to said chamber and through said passages to said tube to impart



a swirling motion to the material being lifted through the tube.

3,301,607
CAM OPERATED BRAKING SYSTEM
Michael D. Collins and Frank R. Johnson, both of 2233 Nordyke Ave., Santa Rosa, Calif. 95401
Filed Aug. 20, 1964, Ser. No. 390,956
3 Claims. (Cl. 303—10)



1. An auxiliary brake system for vehicles equipped with airbrakes comprising an annular convoluted cam firmly affixed to a wheel hub for rotation therewith, a spring-loaded rod mounted for reciprocation and having a cam roller at one end thereof adjacent said cam and urged against the cam to reciprocate by cam rotation, an hydraulic pump operated by said rod reciprocations, a jack connected to an outlet of said pump for operation by pressurized fluid from the pump and having a jack shaft extending therefrom for connection to a brake arm of the vehicle to apply brakes thereto, and control means including a first actuator operable at pressures above said predetermined minimum to hold said rod away from said cam, and a second actuator operable at pressure to release pump pressure at said jack.

3,301,608
LOGIC CONTROL TYPE ANTI-SKID SYSTEM
John L. Harned, Grosse Pointe Woods, and Frank H. Highley, Franklin, Mich., assignors to General Motors Corporation, Detroit Mich., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,553
4 Claims. (Cl. 303—21)

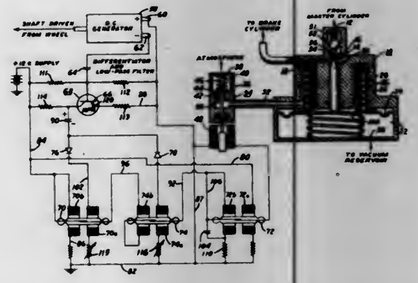
1. In combination: a closed loop anti-skid system comprising valve means adapted for connection between a master cylinder and a vehicle wheel brake motor, the valve means having a normally open configuration;

electrical current responsive control means operatively connected to the valve means for closing the valve means upon receipt of current;

a voltage generator drivably engageable with the vehicle wheel for producing a voltage proportional to the angular velocity thereof;

circuit means for differentiating said voltage thereby to produce deceleration and acceleration voltages in accordance with the respective changes in the velocity of said wheel;

signal generating means connected to the circuit means for producing respective signals of first and second polarities in response to the deceleration and acceleration signals respectively;



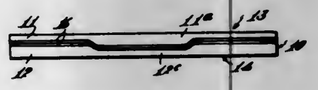
a first normally open-circuit switch having a control input connected to receive the signal of first polarity and to close the switch in response thereto;

a second normally closed-circuit switch having a control input connected to receive the signal of second polarity and to open the switch in response thereto;

a current supply;

and conductor means connecting the supply in a series circuit with the first and second switches and the control means, whereby the valve means is urged toward a closed configuration whenever the wheel decelerates at a predetermined rate and toward an open configuration whenever the wheel accelerates.

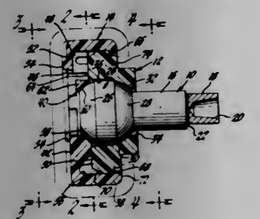
3,301,609
OILLESS ANTIFRICTION DEVICE
Donald H. Palfreyman, Walpole, Mass., assignor to Fabreeka Products Company, Boston, Mass., a corporation of Massachusetts
Filed Dec. 23, 1963, Ser. No. 332,564
1 Claim. (Cl. 308—3)



Means for supporting one end of a girder whose length varies with temperature change, said means comprising, in combination, a rigid support having a substantially horizontal upper surface, and an unlubricated antifriction device comprising upper and lower pads, the lower of which rests upon said horizontal surface of the support and the upper of which is in load-carrying relation to the aforesaid end of a girder, each pad comprising a body portion and an antifriction contact ply of organic material, the contact plies of the two pads being opposed, the body portion of each pad being approximately ¼ of an inch in thickness and of lamellar construction comprising a plurality of thin layers of inelastic organic material which are substantially non-extensible under load,

and layers of elastomeric material intercalated between certain of said first-named layers, the layers of elastomeric material being so thin as substantially to eliminate resiliency of the pad in response to vertically directed forces but being operative to lessen tendency of the pad to become compacted and lifeless, the antifriction layer of each pad consisting of synthetic resin, said antifriction layer having a hard, smooth, glossy surface and a coefficient of friction less than that of polished steel-on-steel and being of high impact resistance—the antifriction layers sliding relatively to each other without tendency to seize or bind in response to variations in a length of the girder, and the opposed faces of the pads being of a shape such as to provide a tongue and groove couple operative to permit the pads to slide freely parallel to the length of the tongue and groove but preventing relative motion of the pads in other directions.

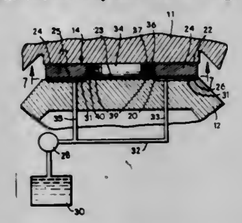
3,301,610
GUIDE ROLLER ASSEMBLY
Marvin A. Packett and Louis Romanzi, Jr., Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 24, 1964, Ser. No. 377,645
5 Claims. (Cl. 308—3.8)



2. A guide roller assembly for connecting a window regulator member and a guide channel member comprising, in combination, an annular member having an axial bore opening to one radial wall thereof and merging into a spherical seat opening to the other radial wall thereof, a roller member having a spherical seat in one radial wall thereof and an outer axially extending annular wall surrounding said second spherical seat and receiving said annular member therewithin to locate said one radial wall of said annular member and said roller member in abutting relationship and said bearing seats in axially spaced relationship, means detachably interconnecting said annular member and said roller member to provide a guide roller, a stud member having spaced spherical bearing portions respective to each of said seats and bearing thereagainst and an intermediate annular portion of lesser size than said axial bore and housed therein.

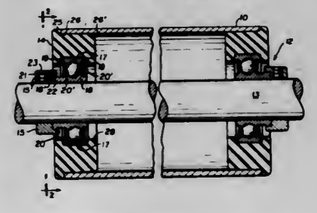
3,301,611
COMPOUND BEARING
Norman Dunlap, St. Mary's, Ohio, assignor to The Minster Machine Company, Minster, Ohio, a corporation of Ohio
Filed Sept. 7, 1965, Ser. No. 485,486
9 Claims. (Cl. 308—5)

1. A compound bearing construction comprising: a first member and a second member movable relatively thereto, said first and second members being spaced apart and having a plurality of bearing surfaces including opposed substantially parallel friction type bearing surfaces, antifriction bearing means disposed between said members and engageable with each to provide a combination of both support and guidance for each to provide a combination of both support and guidance for each of said first and second members, said antifriction bearing means being resiliently deformable to provide for closing movement between said first and second members that diminishes the clearance spacing between said members within the elastic limits of deformation of said antifriction bearing means, preloading means for forming said antifriction bearing means within the elastic limits to increase the contact area between the respective antifriction bearing means and their coacting opposed bearing surfaces, said friction type bearing surfaces being located to receive lateral thrust beyond the strength limitation of



said antifriction bearing means for supporting high orders of loads of relatively short duration causing said friction type bearing surfaces to move closer together by an amount which is within the elastic limits of said antifriction bearing means and providing both support and guidance between said first and second members as said antifriction bearing means are deformed within predetermined limits, and means providing lubrication within the spacing separating said first and second members to lubricate the movement between said slidable friction type bearing means.

3,301,612
BEARING HOUSING CARTRIDGE
Robert L. Thomas, Farmington, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Continuation of abandoned application Ser. No. 190,380, Apr. 26, 1962. This application May 20, 1965, Ser. No. 459,527
7 Claims. (Cl. 308—20)



1. An idler bearing assembly for use with a metallic sleeve having a generally cylindrical inner surface comprising

a bearing containing an outer ring,

an annular cartridge formed of rubbery material,

said cartridge having a radially extending flange for engaging an end of the sleeve to cover the same,

the inner surface of said cartridge having a circumferential recess with a diameter slightly less than the outer diameter of said outer bearing ring before engagement therewith thereby providing an interference fit with said outer bearing ring,

the outer surface of said cartridge having an axial taper for accommodating the inner surface of the sleeve when inserted therein,

said outer surface tapering from a lowermost diameter at one end to a diameter which is slightly greater that the approximate inner diameter of the sleeve which it is adapted to accommodate,

said taper being substantially of the order of 1° 40', to thereby facilitate manual assembly of said cartridge into the end of the sleeve,

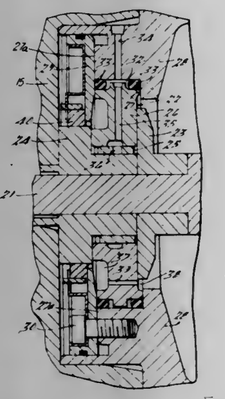
and said cartirdge comprising a continuously solid mass of said rubbery material in the radial space between said outer ring and said tapered surface.

3,301,613

DAMPED RESILIENT BEARING MOUNTING

Gerald DeClaire, Allen Park, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed July 12, 1963, Ser. No. 294,522
3 Claims. (Cl. 308—26)



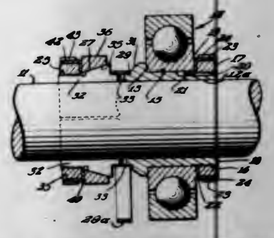
3. In combination, a housing having a cavity therein, bearing means in said cavity and having a radially inner bearing, a rotating shaft journalled in said bearing, said cavity having an outer wall spaced radially from said bearing means to provide a shielding space around the latter and also having axially spaced bearing confining walls closely adjacent axially opposite sides of the radially outer portions of said bearing means and spaced slightly therefrom axially sufficiently to enable said bearing means to float freely with respect to said housing and to reduce the transmission of radial forces between said bearing means and bearing confining walls, means for damping vibrations transmitted between said housing and bearing means comprising a pair of axially spaced seals of elastic resiliently deformable material extending in said shielding space around said bearing means under compression between the latter and said outer wall in fluid sealing relationship therewith, a conduit in said bearing means connecting said shielding space at a location between said seals with said radially inner bearing to supply lubricating oil thereto, said means for damping also including means for conducting lubricating oil to said shielding space between said seals, the viscosity of said oil cooperating with said resilient seals to damp vibrations of said bearing means transmitted thereto from said shaft, thrust bearing means spaced radially from said housing to reduce the transmission of radial forces thereto and being carried by said shaft at the axially opposite sides of the radially inner portions of said bearing means and cooperating therewith in thrust bearing relationship to limit relative axial displacement between said shaft and bearing means, having lubricating oil leakage clearance between said shaft and bearing means respectively for conducting said oil axially along said shaft between the latter and said bearing and thence radially along said thrust bearing means between the latter and said bearing means, and oil drain means in communication with the oil leakage clearance between said bearing means and thrust bearing means at locations spaced radially outwardly from said bearing.

3,301,614

BEARING ADAPTER

Walter D. Haentjens, R.D. 1, Sugarloaf, Pa. 18249

Filed July 7, 1964, Ser. No. 380,836
1 Claim. (Cl. 308—187)



In a bearing mounting, and in combination with an antifriction bearing having inner and outer aligned races, a sleeve, for mounting on a shaft, having a cylindrical inner periphery extending for the length thereof and a concentric outer peripheral portion extending for a portion of the length thereof, said sleeve having first and second threaded end portions, an abutment shoulder determining the inner limits of said concentric outer peripheral portion and extending radially outwardly therefrom, said shoulder being abutted by and locating said inner race of said bearing on said concentric outer cylindrical peripheral portion, a nut threaded on said first threaded end portion of said sleeve and retaining said race in position against said shoulder, a tapered clamping surface extending radially outwardly of said sleeve and having a small diameter end portion adjacent said second threaded end portion of said sleeve and a large diameter end portion spaced along said sleeve and spaced from said shoulder, a plurality of slits extending axially along said second threaded end portion and along said tapered clamping surface, into the space between said large diameter end portion of said tapered clamping surface and said abutment shoulder, radially drilled portions determining the inner limits of said slits and extending through said sleeve, a wedge ring having a tapered internal periphery engageable with said tapered clamping surface, a nut moving said wedge ring along said tapered clamping surface to contract said sleeve and clamp said sleeve in a selected position on a shaft without transferring distortion of said tapered clamping surface of said sleeve to said concentric outer peripheral portion, the space between the large diameter end of said tapered clamping surface and said abutment shoulder forming an oil ring groove, and an oil ring of larger diameter than said sleeve mounted in said groove for lubricating said bearing.

3,301,615

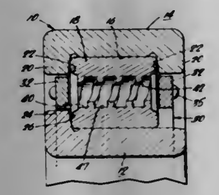
ROLLING BEARINGS

Eugene F. Brady, Drexel Hill, Pa., assignor to SKF Industries, Inc., King of Prussia, Pa., a corporation of Delaware

Filed Sept. 10, 1964, Ser. No. 395,527
8 Claims. (Cl. 308—187)

1. A rolling bearing assembly comprising a pair of rings spaced apart to define an annular space therebetween, a plurality of roller elements in said annular space, at least one of said rings having a radially projecting annular flange having a load bearing surface confronting one axial end of the rollers, means defining a bore in at least one of said roller elements, lubricant directing

means in the form of a helical radially inwardly extending projection defining a continuous screw thread in said bore operable upon rotation of said one roller element on its axis to deliver substantially all lubricant in said



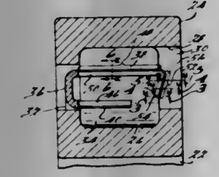
bore continuously to an axial end of the roller confronting said annular flange thereby to lubricate the contact zone between the roller and the load bearing surface of said annular flange.

3,301,616

BEARING ASSEMBLY AND METHOD

George O. Wilson, Detroit, and Herman A. Ortegren, Grosse Pointe, Mich., assignors to Federal-Mogul-Bower Bearing, Inc., Detroit, Mich., a corporation of Michigan

Filed May 18, 1964, Ser. No. 368,070
7 Claims. (Cl. 308—217)



1. A one-piece bearing retainer for holding a plurality of roller members comprising: an annular ring portion, a plurality of circumferentially spaced straight outer leg portions located at the radially outer extremity of said ring portion and extending axially from one side of said ring portion, and a plurality of straight inner leg portions spaced circumferentially about said ring portion and extending axially from said one side of said ring portion at the radially inner extremity of said ring portion, the edges of adjacent ones of said outer leg portions having confronting side surfaces, the edges of adjacent ones of said inner leg portions having confronting side surfaces, said side surfaces defining a plurality of circumferentially disposed pockets for receiving the roller members, at least a part of each of said side surfaces being engageable with the roller member with which it is associated on a surface having a contour defining a portion of a circular cylinder of a diameter substantially equal to the diameter of that portion of the roller member with which said part is engageable.

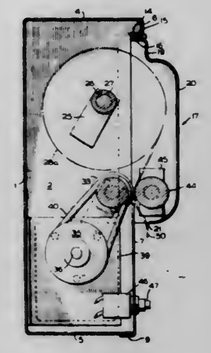
3,301,617

PAPER DISPENSING APPARATUS

Thomas E. Goodwin, Ronceverte, W. Va. 24970, and Edwin Ott, Fairlea, W. Va. 24902

Filed July 8, 1965, Ser. No. 470,507
2 Claims. (Cl. 312—39)

1. In a paper dispensing apparatus including a housing defined by a back wall, side walls and end walls, a front wall structure including an upper section and a lower section spaced from the upper section, a door hinged to the upper section and including an outwardly offset portion including an outer wall and side walls, said outer wall extending below the lower section of the housing and terminating in spaced relation thereto, means removably mounting a roll of paper in the upper section of said housing, a feed roller removably mounted in said housing below said paper roll mounting means, a plurality of spaced friction feed bands removably mounted on said



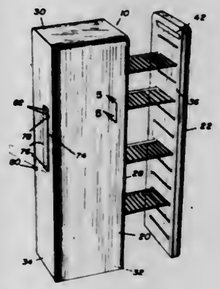
feed roller and extending outwardly to a point substantially flush with the outer surface of the front wall section of the housing; an electric motor in said housing, belt means driven by said electric motor and engaging said feed roller to drive the latter, switch means for connecting a source of power to said motor to selectively drive said feed roller, and a pressure roll mounted in the offset portion of said door and movable with said door to cooperate with the feed bands of said feed roller to apply pressure toward said feed roller to facilitate the feeding of the paper.

3,301,618

REFRIGERATOR MATCHMATE CABINET

George Feldser and Leslie Alex Feldser, both of 501 S. Staples, Corpus Christi, Tex. 78401

Filed June 11, 1965, Ser. No. 463,138
4 Claims. (Cl. 312—111)



3. In combination:

a refrigerator having a casing of a given height and depth;

refrigerator door means coupled to said casing and movable away therefrom to permit access to said casing;

said refrigerator door means having handle means on the exterior thereof;

a cabinet having a housing of said given height and depth;

cabinet door means coupled to said housing and movable away therefrom to permit access to said housing;

said cabinet door means including a continuous integral panel being an identical simulation of said refrigerator door means;

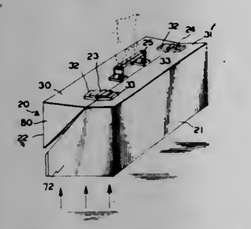
said cabinet door means having handle means on the exterior thereof simulating exactly the handle means on said refrigerator door means; and,

means affixed to said housing and projecting behind said casing to prevent the rear of said cabinet from inadvertently moving ahead of the rear of said refrigerator,

said cabinet including a plurality of shelves disposed in spaced relation within said housing and means slidably mounted on said shelves;

said cabinet door means being affixed to said shelves and being supported solely thereby, whereby, when said cabinet door means is moved away from said housing by pulling on said cabinet door handle means, all of said shelves will be pulled out of said housing.

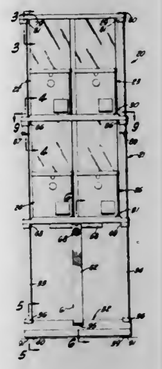
3,301,619
UTILITY BOX
Sterling G. Mead, 5101 38th St. NW., Washington, D.C. 20016
Filed Jan. 14, 1965, Ser. No. 425,545
13 Claims. (Cl. 312—200)



1. A box comprising a top panel, a bottom panel, two side panels, and two end panels, the box being divided into a base section and a lid section, said top panel, two end panels, and one side panel each having two parts, one part being incorporated in the lid section and the other part being incorporated in the base section, means hinging said two parts of said top panel for relative swinging movement of said lid and base sections about a hinge line, a handle mounted exclusively on the lid section, a tray, runner means on said tray, guide means on the inside of said parts of said end panels incorporated in said base section cooperating with said runner means for guiding movement of said tray into and out of said box, and additional guide means on the inside of said parts of said end panels incorporated in said lid section cooperating with said runner means for guiding movement of said tray on said lid section.

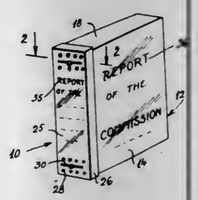
3,301,620
DISPENSING APPARATUS
Harold T. Probasco, Los Angeles County, Calif. (6531 Noble Ave., Van Nuys, Calif. 91401)
Filed Feb. 21, 1966, Ser. No. 528,701
9 Claims. (Cl. 312—201)

9. In dispensing apparatus, the combination comprising: a stand having a base and guide means fixed to said base; upper, intermediate and lower plates, at least one of said upper and lower plates being slidable vertically on said guide means, said intermediate plate also being slidable vertically on said guide means; a first vending machine between said lower and intermediate plates; a second vending machine between said intermediate and upper plates; each of said machines having an upper receptacle open at its upper end and a lower base, said lower plate having upwardly extending flanges to fit around the base of said first vending machine, said intermediate plate having downwardly extending flanges to fit around the receptacle of said first vending machine,



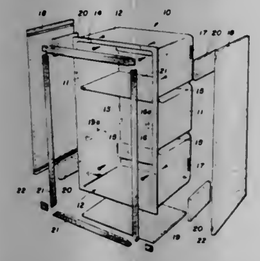
said intermediate plate having upwardly extending flanges to fit around the base of said second vending machine, said upper plate having downwardly extending flanges to fit around the receptacle of said second vending machine; and means to lock said plates in predetermined positions contiguous to said machines, said plate flanges thereby preventing removal of said machines from between said plates when said plates are locked in said predetermined positions.

3,301,621
TRANSPARENT CONTAINER FOR BOOKS, MAGAZINES AND THE LIKE
James H. Stephenson, 66 E. 83rd St., New York, N.Y. 10038
Filed Oct. 14, 1965, Ser. No. 496,019
1 Claim. (Cl. 312—234)



A closed container for a book or the like, comprising a rectangular box having integrally joined transparent walls and an open front, transparent closure plate detachably engaged with said box at the open front thereof so that when a book is stored in the box it is visible through the plate and all of said walls, said box having a groove around its open front, said plate having a channel-shaped flange with an inturned free edge engageable in said groove so that the closure plate engages the box with a snap fit, said closure plate having a pair of holes near the top and bottom thereof, tie fastener elements extending through the holes to secure a book to the closure plate with its spine in abutment with the closure plate, whereby said closure plate serves as means for handling the book or the like.

3,301,622
PLASTIC CABINET
Steve Zlatko Dasovic, 37 Brightside Drive, and Hans-Gunther Richard Wolf, 8 Du Barry Ave., both of West Hill, Ontario, Canada
Filed July 9, 1965, Ser. No. 470,714
3 Claims. (Cl. 312—245)



1. A plastic cupboard or like article comprising: a one-piece thermoplastic shell member of generally rectangular shape and having one open side; side walls and upper and lower walls of said shell member being angled inwardly to provide draft therein from said open side to the rear wall thereof; wooden under-support means being attached to a lower wall portion of said shell member over substantially the full area thereof; wooden side-support means attached to said side walls along one edge thereof at least; packing means between said side-support member and said shell side walls maintaining said support members parallel with one another and at least one attachment support member fastened to a wall of said shell opposite to said open side and extending in a horizontal plane, and formed of generally flat, bar-shaped stock having side edges tapering towards one another, and portions of said shell member adjacent said support member being molded to fit closely therearound and retain same in position embedded therein.

3,301,623
METHOD OF MANUFACTURING DOUBLE-ENDED ELECTRIC LAMPS
Luigi M. Preziosi, East Orange, and John J. Zecca, Belleville, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Original application Mar. 19, 1963, Ser. No. 266,392, now Patent No. 3,265,923, dated Aug. 9, 1966. Divided and this application Jan. 21, 1965, Ser. No. 426,761
5 Claims. (Cl. 316—21)

1. The method of manufacturing a baseless double-ended electric incandescent lamp comprising,

attaching a lead-in conductor to each end of an elongated filament to provide a mount,

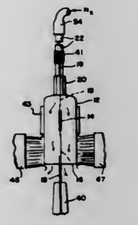
positioning a vitreous exhaust tube alongside one of the lead-in conductor portions of said mount,

threading an elongated vitreous envelope over said mount and the adjacent end segment of said exhaust tube,

positioning said enevelope relative to said mount so that the end of the envelope overlies the end segment of said exhaust tube and the ends of each of the lead-in conductor portions of said mount that are attached to said filament,

heating the end of said envelope that encircles the exhaust tube segment and adjacent lead-in conductor until it becomes plastic,

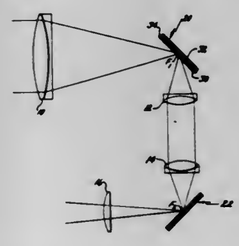
compressing the heated end of said envelope and forming it into a full-press seal that is hermetically united with the underlying segment of said lead-in conductor and is fused with but does not close the aforesaid exhaust tube segment,



heating and compressing the other end of said envelope to form a second full-press seal around the other of said lead-in conductors,

evacuating said envelope through said exhaust tube, and then tipping-off said exhaust tube at a point adjacent the end of the press seal with which it is joined.

3,301,624
PROTECTIVE OPTICAL SYSTEM WITH OFFSET LIGHT PATH AND FUSIBLE OPTICAL MIRROR
Herbert A. Morriss, Jr., Shreveport, La., assignor to the United States of America as represented by the Secretary of the Air Force
Filed July 12, 1962, Ser. No. 209,477
4 Claims. (Cl. 350—52)



1. An optical system comprising:

an objective lens,

a fusible second surface mirror oriented at an angle to the optical axis of said objective lens for diverting the passage of light through the optical system from a straight line, said fusible second surface mirror being positioned at the focal point of said objective lens at which the first image of an object indefinitely far away would be formed, said fusible second surface mirror being comprised of

a thin membrane of material capable of fusion at a predetermined thermal energy level of the light at the focal point,

a coating of specular material on the rear surface of said membrane to provide a reflecting surface said coating being of a thickness to render the reflecting surface fully reflective while still being dependent upon said membrane for structural support,

a two lens erecting system positioned to receive images reflected from said fusible second surface mirror, an optically flat mirror positioned at an angle to said two lens erecting system at the focal point of an erected image from said two lens erecting system, and an eyepiece positioned to receive images reflected from said optically flat mirror.

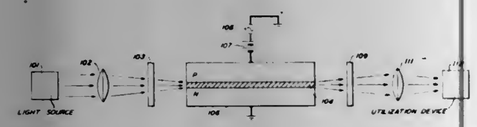
ERRATUM

For Class 350—149 see:
Patent No. 3,301,131

3,301,625
SEMICONDUCTOR LIGHT MODULATORS

Arthur Ashkin, Bernardsville, and Murray Gershenzon, Morris Plains, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 23, 1964, Ser. No. 377,367
3 Claims. (Cl. 350—150)



1. A light modulator comprising a member of semiconducting material having regions of p type and n type conductivity forming a longitudinally extending junction, means for applying a reverse bias to said junction, means for directing a polarized beam of light into said junction for propagation therealong, means for varying the polarization of the light propagating along said junction in accordance with a modulating signal, and means for detecting the amount of polarization variation.

ERRATUM

For Class 350—227 see:
Patent No. 3,301,130

3,301,626
METHOD OF PRODUCING COLORED ANIMATED CARTOONS

Leon H. Maurer, New York, N.Y., assignor to Westworld Artists Productions Inc., New York, N.Y.

Filed June 5, 1963, Ser. No. 285,622
13 Claims. (Cl. 352—38)

1. A method of producing an animated colored cartoon which comprises:

(a) preparing a color motion picture film of a live scene, portions of said motion picture film differing in grey value;

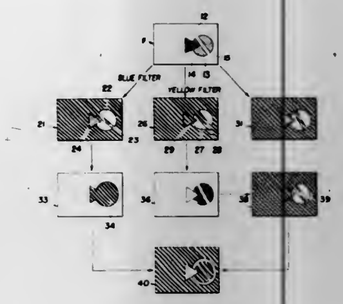
(b) preparing an outline film of said live scene;

(c) exposing a print film through said color motion picture film;

(d) developing the exposed print film in such a manner that the developed print film represents the complementary grey values of said color motion picture films, said color motion picture film, said developed print film, and said outline film each having a plurality of frames, respective frames of said print film and said outline film corresponding to each frame of said motion picture frame;

(e) superimposing corresponding frames of said color motion picture film and of said developed print film in registration to form superimposed pairs of frames;

(f) exposing respective frames of raw color film stock through said superimposed pairs;



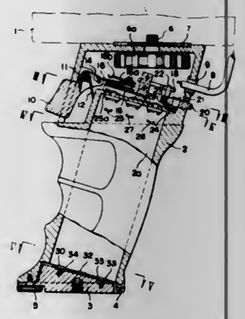
(g) exposing said frames of raw color film stock in registration through the corresponding frames of said outline film; and

(h) developing the exposed raw stock.

3,301,627
CAMERA HANDGRIP INTERNALLY PROVIDED WITH ELECTRICAL CELLS

Shuji Kimura, Yokohama-shi, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan

Filed Oct. 5, 1964, Ser. No. 401,623
Claims priority, application Japan, May 20, 1964 (utility model), 39/40,424
6 Claims. (Cl. 352—95)



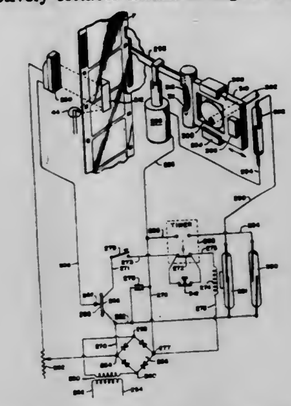
1. A handgrip for motor driven cameras or motion picture apparatus selectively enabling the use of conventional types of dry cell and the mercury of nickel-cadmium type of cell, comprising a first chamber provided with trigger means and control means cooperative with switch means to selectively operate the camera either single frame operation, or continuous filming, or locking operation, a first pair of terminals within the first chamber, an electrical cord connecting the first pair of terminals to a motor within the apparatus or camera, a second hollow chamber provided with a first set of terminals at the top portion thereof and a second set of terminals at the bottom cover for the second chamber, the first and second sets of terminals being cooperative with said switch means and being so disposed that upon insertion into the second hollow chamber of conventional dry cells they are connected to the poles of the cells, and the second hollow chamber being adopted to have inserted therein a battery casing having a stack of mercury or nickel-cadmium type cells in seriatim, the battery casing, when inserted, cooperating with the said second set of terminals.

3,301,628
STILL-MOTION PHOTOGRAPHIC APPARATUS

Rudolph L. Hellmund, 707 Central Ave., Wilmette, Ill. 60091

Filed Nov. 13, 1963, Ser. No. 323,463
7 Claims. (Cl. 352—137)

1. In a camera having feeding means for advancing a sensitized film strip intermittently past an exposure aperture so as to successively align and momentarily hold each frame of the film stationary before the exposure aperture, a shutter across said exposure aperture and operatively associated with said feeding means to alternately shield the film from exposure as it is advanced and then to expose the frame during the moment it is stationary and aligned with the exposure aperture, a second aperture adjacent said exposure aperture past which a marginal portion of the film is advanced, selectively settable means which in one position adapt the feeding means for exposing in rapid succession a series of frames and in a second position adapt said feeding means for advancing and exposing a single frame and a barrier normally covering said second aperture to prevent exposure of the film margin therethrough, said barrier being operable associated with said selectively settable means to expose a margin of the



film frame which is exposed upon setting of said means at its second position.

CHEMICAL

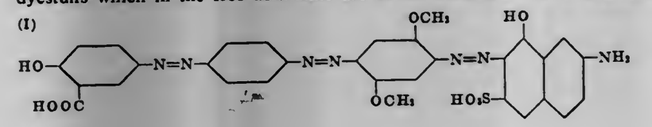
3,301,629
PROCESS FOR THE PRODUCTION OF BLACK DYEINGS ON CELLULOSE FABRICS

Bernhard Kramer, Cologne-Braunsfeld, and Gerd Henes, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 9, 1964, Ser. No. 402,952
Claims priority, application Germany, Oct. 10, 1963, F 40,955
4 Claims. (Cl. 8—26)

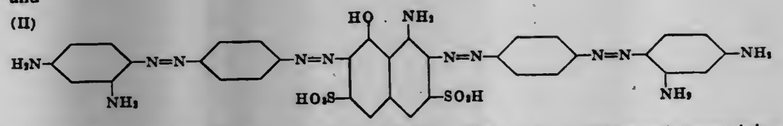
1. Process for the production of black dyeings on cellulose fabrics, which comprises applying a mixture of azo dyestuffs which in the free acid state are of the formula

(I)



and

(II)



diazotizing them on the fibre and combining with coupling components free of sulfonic acid groups.

3,301,630
FLUOROAZO DYE TREATED ARTICLES

Ernest M. May, Summit, and Andrew Fono, Montclair, N.J., assignors to Otto B. May, Inc., Newark, N.J., a corporation of New Jersey

No Drawing. Original application June 6, 1962, Ser. No. 200,304, now Patent No. 3,238,189. Divided and this application Apr. 5, 1965, Ser. No. 450,569
19 Claims. (Cl. 8—41)

2. An article which comprises a shaped article dyed with a composition which is

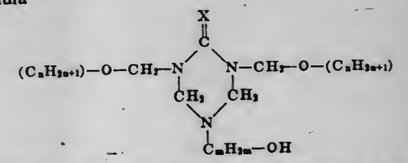
2-trifluoromethylbenzeneazosalicylic acid,
2-trifluoromethylbenzeneazo-o-cresotinic acid,
4-trifluoromethylbenzeneazosalicylic acid,
3-trifluoromethylbenzeneazosalicylic acid,
3-trifluoromethylbenzeneazo-o-cresotinic acid,
3-trifluoromethyl-6-fluorobenzeneazosalicylic acid or
3-trifluoromethyl-6-chlorobenzeneazosalicylic acid.

3,301,631
PROCESS OF MODIFYING CELLULOSIC TEXTILES WITH EPIHALOHYDRIN-TRIAZONE REACTION PRODUCTS

William L. Mauldin, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

No Drawing. Filed Aug. 21, 1962, Ser. No. 218,456
16 Claims. (Cl. 8—116.2)

1. A method for improving the properties of a cellulosic textile material containing at least 1.8 free hydroxy groups per anhydroglucose unit which comprises curing said material, impregnated with a water-soluble reaction product of an epihalohydrin and a triazone having the formula



wherein *m* is an integer from 2 to 8, inclusive, *n* is an integer from 0 to 4, inclusive, and X is selected from the group consisting of oxygen and sulfur, at an elevated tem-

perature in the presence of an acid acting catalyst, and then contacting the material with a strong base under aqueous conditions until reaction with the base reactive halogens on said material is substantially complete.

3,301,632

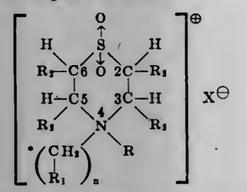
MODIFICATION OF CELLULOSIC MATERIALS WITH THIAZINE DIOXIDE QUATERNARY AMMONIUM SALTS

Albert C. Perrino, Cranston, R.I., assignor to I.C.I./Organics/Inc., Providence, R.I., a corporation of Rhode Island

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,091
12 Claims. (Cl. 8—116.2)

1. A process for the treatment of a cellulosic textile which comprises

applying to the fabric a 1,4-thiazane-1,1-dioxide treating agent having the formula



in which R is an alkyl group containing about 1 to 18 carbon atoms, R_1 is a member of the group consisting of hydrogen and organic groups which do not render the hydrogen atom bonded to the carbon atom designated by an asterisk (*) more acidic than hydrogen atoms attached to the carbon atoms at the 2 and 6 position of the thiazane ring, R_2 is a member of the group consisting of hydrogen and methyl, X^- is an anion, and n is 1–2,

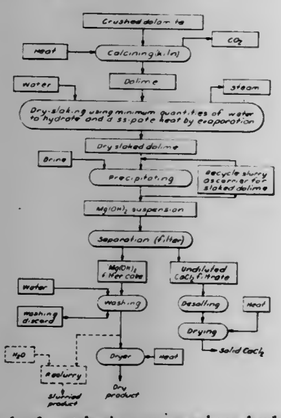
and curing in the presence of an alkaline curing agent having a $_pK_b$ less than 9.2.

3,301,633

PROCESS FOR PRODUCTION OF MAGNESIUM HYDROXIDE AND CALCIUM CHLORIDE

Robert A. Stowe and Jack B. Reynolds, Ludington, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Jan. 24, 1964, Ser. No. 340,023
7 Claims. (Cl. 23—90)



1. A method of producing magnesium hydroxide and an undiluted calcium chloride liquor essentially free of magnesium chloride comprising the steps of: slaking a calcium oxide-containing material selected from the group consisting of porous particles of dolime and lime by contacting said material with only an amount of water to hydrate the CaO contained in said material and to remove at least a portion of the heat of reaction by evaporation as steam during slaking, reacting the so-slaked calcium oxide-containing material by simultaneous addition to a stirred reactor with a brine containing magnesium chloride at a rate sufficient to provide a slight excess of $Ca(OH)_2$ corresponding to a soluble alkalinity level in the reactor within the range of from about 4 to about 30 mls. thereby to precipitate essentially all the magnesium values in said brine and form a suspension of magnesium hydroxide precipitate in an undiluted aqueous calcium chloride mother liquor; separating the magnesium hydroxide precipitate from said mother liquor; and washing the so separated precipitate, thereby forming a magnesium hydroxide product and an undiluted calcium chloride liquor.

3,301,634

PROCESS FOR DECOMPOSING MANGANESE SULFATE TO FORM MANGANOUS OXIDE AND SULFUR DIOXIDE

Harry C. Fuller, Salt Lake City, Utah, assignor to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed July 9, 1963, Ser. No. 293,911
3 Claims. (Cl. 23—145)

1. A method of decomposing manganese sulfate to form manganous oxide and a gas high in SO_2 content comprising heating said manganese sulfate in a reaction zone in the presence of a reducing agent consisting essentially of FeS_2; maintaining substantially only said manganese sulfate, said reducing agent and products of reaction in said zone during the reaction.

3,301,635

MOLDED AMORPHOUS SILICA BODIES AND MOLDING POWDERS FOR MANUFACTURE OF SAME

Horacio E. Bergna, Wilmington, Del., and Frank A. Simko, Jr., Cedar Grove, N.J., assignors to E. I. du Pont de Nemours and Company, Wimington, Del., a corporation of Delaware

Filed July 1, 1965, Ser. No. 470,338
14 Claims. (Cl. 23—182)

1. A process for making amorphous silica bodies having a density of from 91 to 100% of the theoretical density of amorphous silica which comprises the steps (1) compacting under pressure to a uniform density of at least about 1 gram per cubic centimeter a powder consisting essentially of aggregates of amorphous silica ultimate particles substantially free of non-volatile constituents other than silica, said aggregates having a particle size in the range from 0.1 to 50 microns, said powder having a tapped bulk density of at least 0.2 gram per cubic centimeter, the ultimate amorphous silica particles being spheroidal and substantially uniform in size as observed by electron microscopy, being dense, having a coalescence factor of less than about 30% and having an average diameter of from 5 to 300 millimicrons; (2) releasing the pressure and then heating the compacted material at a temperature above 1000° C. but below the devitrification temperature of the material until the density of the resulting body is increased to at least 2.0 grams per cubic centimeter; (3) cooling the body before any cristobalite is formed by devitrification of the amorphous silica.

3,301,636

NON-CAKING CAUSTIC SODA

Joseph V. Otrhalek, Dearborn, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Dec. 24, 1963, Ser. No. 333,179
5 Claims. (Cl. 23—184)

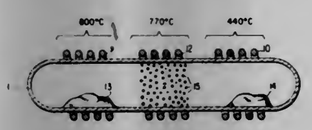
1. The method of reducing the hygroscopic properties of sodium hydroxide which comprises coating the hydroxide with a material selected from the group consisting of the alkali metal salts of triglycollamic acid, alkali metal carboxymethylcellulose, and mixtures of the foregoing.

3,301,637

METHOD FOR THE SYNTHESIS OF GALLIUM PHOSPHIDE

Joseph A. Kucza, Mount Kisco, and Gerald Mandel, New Rochelle, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 27, 1962, Ser. No. 247,705
10 Claims. (Cl. 23—204)



1. A method for producing gallium phosphide by reacting finely divided gallium and phosphorous in the presence of phosphorous trichloride as a catalyst.

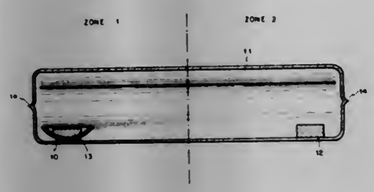
7. A method for producing a gallium phosphide film on a substrate comprising reacting stoichiometric amounts of gallium and phosphorous in the presence of a phosphorous trichloride catalyst at a temperature of approximately 800° C. to produce vapors of gallium phosphide and then condensing said vapors upon said substrate with said substrate being maintained at a temperature below 800° C.

3,301,638

METHOD OF PREPARING ALUMINUM ARSENIDE

Rubin N. Summergrad, Glen Cove, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Aug. 21, 1964, Ser. No. 391,253
2 Claims. (Cl. 23—204)



1. The method of preparing high-purity aluminum arsenide by the reaction of aluminum and arsenic which comprises the steps of placing a charge of aluminum in an aluminum oxide boat, inserting said charge and boat in a silica tube, placing a charge of arsenic in excess of the amount required to permit the reaction to go to completion in said tube, filling said tube with halogen gas, sealing said tube, heating the portion of said tube containing said aluminum to a temperature of about 700° C., heating the portion of said tube containing said arsenic to a temperature of about 600° C., said halogen gas acting to break down the protective coating formed on the heated aluminum and thereby permitting the reaction to go to completion, cooling said tube and opening said tube to remove the aluminum arsenide therefrom.

3,301,639

METHOD AND APPARATUS FOR THE MANUFACTURE OF CARBON BLACK

Charles L. De Land, West Monroe, La., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

Filed Mar. 20, 1963, Ser. No. 266,747
14 Claims. (Cl. 23—209.4)

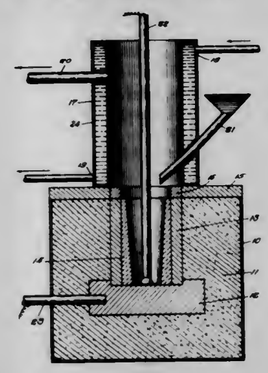
1. In the process for producing carbon black in a cylindrical furnace chamber by the thermal decomposition of hydrocarbons by heat absorbed from a rotating body of hot combustion gases passing through said cylindrical furnace chamber, the method of inducing the rotational motion of said hot gases which comprises introducing into one end of the furnace chamber a spiraling stream of gases along a path the axis of which is directed to intersect the longitudinal axis of the furnace chamber and so positioning the flight and direction of the gas spiral as it enters the furnace chamber that the momental direction of a predominant segment of the entering gases is substantially to one side of the furnace axis, thereby causing the hot gases within the furnace chamber to rotate about said axis.

3,301,640

PROCESS OF PRODUCING STOICHIOMETRIC URANIUM DIOXIDE

Forrest L. Turbett, Phoenix, Ariz., assignor, by mesne assignments, to Kerr-McGee Corporation, a corporation of Delaware

Continuation of application Ser. No. 848,954, Oct. 27, 1959. This application Aug. 5, 1963, Ser. No. 302,762
14 Claims. (Cl. 23—355)



1. A process for producing uranium dioxide comprising solidifying molten uranium dioxide which contains uranium carbide as an impurity by cooling with a fluid water containing medium which is nonoxidizing and inert thereto whereby the uranium dioxide is maintained in that oxygen-containing state, and reacting the said uranium carbide impurity with water to convert the uranium carbide to at least one substance selected from the group consisting of volatile hydrocarbons, oxides of uranium and hydroxides of uranium.

3,301,641

TUNGSTEN-RUTHENIUM ALLOY AND POWDER-METALLURGICAL METHOD OF MAKING

Richard H. Krock, West Peabody, Mass., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,511
2 Claims. (Cl. 29—182)

1. An alloy consisting essentially of 90% tungsten, about 6% nickel, about 2% molybdenum, about 1.5% iron and about 0.5% ruthenium.

2. A method of forming a ductile alloy of tungsten containing ruthenium comprising the steps of: preparing a saturated solution of ruthenium trichloride in warm water, adding tungsten powder approximately 1 micron diameter while stirring constantly, drying at 200–300° C., placing residue in a hydrogen furnace at 800° C. for one hour, adding nickel, iron, and molybdenum powders 3–5 microns diameter in such proportions that the mixture comprises 180 parts W, 12 parts Ni, 3 parts Fe, 4 parts Mo and 1 part Ru, ball-milling this mixture until the constituents are completely blended, molding this powder in a powder press at 20,000 p.s.i. and finally sintering the compacts in a hydrogen atmosphere for one hour at 1460° C.

3,301,642
LOW FRICTION, POROUS, SINTERED BEARING CONTAINING A LEAD-TELLURIUM ALLOY

Hassan Youssef, Taverny, France, assignor to La Metallurgie Francaise des Poudres-Metafram, Paris, France, a company of France

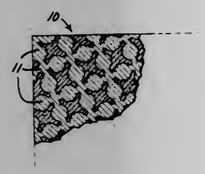
No Drawing. Filed Mar. 17, 1965, Ser. No. 440,620
Claims priority, application France, Mar. 20, 1964, 968,097
6 Claims. (Cl. 29—182)

1. A low friction bearing material of fine porosity comprising a sintered metal powder mixture, the powder mixture comprising 5 to 40% by weight a powdered lead-tellurium alloy containing 55 to 75% by weight of lead, and at least one other powdered metal having a melting point higher than that of the lead-tellurium alloy.

3,301,643
SUPERCONDUCTING COMPOSITE ARTICLES

Peter Cannon, Alplaus, and Edward T. Conlin II, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Aug. 20, 1964, Ser. No. 390,978
7 Claims. (Cl. 29—195)



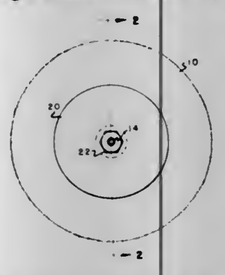
1. In a "hard" superconductive body of the type wherein superconductive material is dispersed in an inert insulating host material, the improvement comprising the arrangement of the superconductive material in an interconnected filamentary network having a regular repetitive pattern in the host material, the individual filaments of superconductive material having a maximum diameter of about 20 A.

3,301,644
FLEXIBLE RESIN-IMPREGNATED CLOTH BUFF

Emile E. Habib, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

Filed Mar. 14, 1963, Ser. No. 265,151
9 Claims. (Cl. 51—297)

1. A cloth buff consisting essentially of a coated cotton fabric, said fabric being coated with from about 2 to about 35% by weight of aldehyde resin condensation product containing a minor proportion, sufficient to



impart flexibility to the resin condensation product, of a polyurethane.

3,301,645
TUNGSTEN CARBIDE COMPOSITIONS, METHOD AND CUTTING TOOL

William D. Smiley, Mountain View, Calif., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Apr. 3, 1962, Ser. No. 184,815
20 Claims. (Cl. 51—309)

18. A tool comprising a ferroalloy body, a matrix containing a metallic binder and spheroidal tungsten carbide granules bonded to said body, and a plurality of particulate cutting elements embedded within said matrix, said granules being characterized by X-ray diffraction peaks at 2θ values of about 36.6 and about 42.5 degrees.

3,301,646
METHOD OF MAKING PARTIALLY STABILIZED ZIRCONIA

Thomas W. Smoot, Bethel Park, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 12, 1963, Ser. No. 287,203
8 Claims. (Cl. 51—309)

1. Method of making improved polishing material particularly suited for polishing glass and the like, which comprises the following steps: preparing a dry batch by intimately admixing high purity zirconium oxide, all of the particles of which are smaller than 10 microns, and a quantity of a mixture of agents for stabilizing the zirconia, the mixture of stabilizing agents for the zirconia equaling between 7 and 9 mole percent of zirconium oxide, all particles of the mixture of stabilizing agents being smaller than 10 microns, and at least 1 mole percent of said 7 to 9 mole percent being different than the other 6 to 8 mole percent of the mixture of stabilizing agents, subjecting said dry batch to a temperature between about 2050 and 2600° F., for a solid-state reaction to occur between said zirconium oxide particles and the mixture of stabilizing agents, maintaining the temperature for a time period sufficient to cause utilization of all of the mixture of stabilizing agents, cooling the batch and recovering partially stabilized zirconia for use as a polishing material all of the particles of which are less than about 10 microns in size.

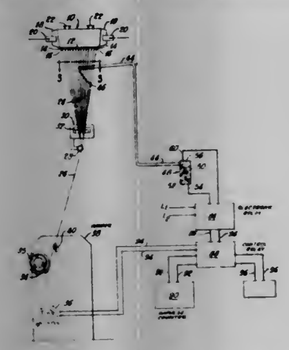
3,301,647
METHOD AND APPARATUS FOR INDICATION AND CONTROL OF FIBER-FORMING OPERATIONS

William C. Shafer, Anderson, S.C., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Continuation of application Ser. No. 272,030, Apr. 10, 1963. This application May 12, 1966, Ser. No. 550,883
6 Claims. (Cl. 65—2)

6. In glass fiber attenuating apparatus, the combination with a feeder from which flow streams of molten glass

rotatable means for attenuating and collecting continuous filaments from the streams of molten glass, means gathering said continuous filaments into a strand at a region below said feeder, forming a fan of said filaments between said feeder and said gathering means, air pressure sensing

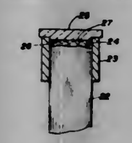


means disposed in close proximity to the filaments of said fan for sensing the pressure of induced air moving with said filaments, and means detecting variations in pressure sensed by said pressure sensing means for interrupting rotation of said rotatable means.

3,301,648
METHOD OF CONFINING AND SURFACING END PORTIONS OF OPTICAL FIBER BUNDLES FOR MAXIMUM LIGHT TRANSMISSION

Gilbert J. Sheldon, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed July 1, 1963, Ser. No. 292,036
4 Claims. (Cl. 65—4)



1. A method for producing light-transmitting fiber apparatus having a portion with a molded refractive surface including the steps of

aligning multiple light-transmitting fibers along parallel axes to form a compact flexible bundle having fiber ends terminating at a surface transverse to the bundle axes, and

molding light-transmitting bonding agent between the fiber ends and an optical surface whereby the optical surface is replicated by the molded light-transmitting bonding agent to produce a refractive surface transverse to the bundle axes.

3,301,649
METHOD OF MAKING HIGH STRENGTH GLASS ARTICLES

Francis J. Marusak, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

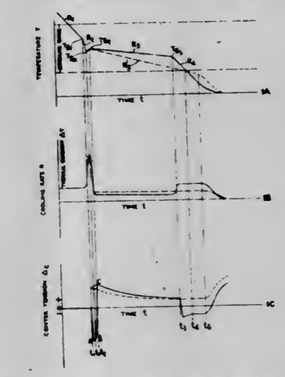
Filed Mar. 10, 1964, Ser. No. 350,787
5 Claims. (Cl. 65—30)

1. In a method for strengthening a polished alkali silicate glass article to increase its resistance to impact wherein the alkali metal ions in a surface of the glass article are replaced by larger alkali metal ions at an elevated temperature below the glass annealing range, such replacement creating a surface compression layer therein, the improvement which comprises polishing the surface of the glass article, prior to said ion replacement, to a sufficient depth to substantially eliminate microchecks that can be observed under 100× magnification after light etching.

3,301,650
ANNEALING OF GLASS

Cecil R. Ward, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1962, Ser. No. 176,276
7 Claims. (Cl. 65—95)

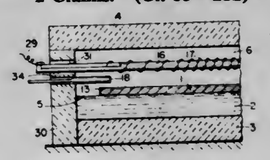


1. In a method of annealing glass in which the glass is cooled at a substantially constant rate from at least a temperature at the upper limit of the annealing range to a temperature within the annealing range and thereafter cooled at an average lower rate at least until the temperature of the glass reaches the lower limit of the annealing range, the improvement which comprises applying a momentary gaseous quench to the surfaces of the glass when the rate of cooling is changed from the said first rate to the said lower rate.

3,301,651
GLASS-DRAWING APPARATUS INCLUDING REHEATING MEANS FOR PRODUCING FLAT SHEETS

Bernard Long, Paris, France, assignor to G.B.D. Société Anonyme Holding, Luxembourg (Grand Duchy), a corporation of Grand Duchy of Luxembourg

Filed Dec. 13, 1962, Ser. No. 244,451
2 Claims. (Cl. 65—182)



1. An apparatus for producing flat glass of small thickness, comprising:

a flow channel connected to a tank furnace for receiving therefrom a flow of liquid glass to be solidified into a sheet within said channel;

molten-metal bath means in said flow channel for supporting and guiding said sheet along a substantially horizontal linear path to a drawing point;

enclosure means constituting an extension of said flow channel ahead of said drawing point, said enclosure means including a pair of side walls extending along said path;

radiant reheating means in said enclosure means extending transversely above said bath means for heat-

ing the moving sheet on its passage through said extension of the flow channel;
roller means at said drawing point positioned to exert traction upon a central sheet portion softened by said reheating means;
and a pair of heat shields above said bath means extending inwardly from said side walls underneath said reheating means in overlapping relationship with the lateral sheet edges for intercepting radiation directed from said reheating means toward said sheet edges while permitting unhindered irradiation of only the central sheet portion.

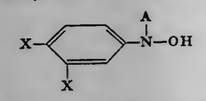
3,301,652

3,4-DIHALO-N-ACYLPHENYLHYDROXYLAMINES AS POST-EMERGENCE HERBICIDES

Jerome Linder, Niagara Falls, and Edward D. Weil, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed June 11, 1965, Ser. No. 463,353
13 Claims. (Cl. 71—2.3)

1. A method for the control of weeds comprising applying to said weeds a phytotoxic amount of a 3,4-dihalo-N-acylphenylhydroxylamine of the structure:



wherein X is a halogen selected from the group of chlorine and bromine and A is an aliphatic acyl radical selected from the group consisting of alkanoyl and alkenoyl of three to six carbon atoms, having at least one methyl group on the carbon atom adjacent to the carbonyl group.

3,301,653

COMPOSITION AND METHOD FOR CONTROLLING CRABGRASS

Arthur W. Carlson, Crystal Lake, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Original application Aug. 1, 1963, Ser. No. 299,145. Divided and this application Dec. 6, 1965, Ser. No. 523,811
2 Claims. (Cl. 71—2.3)

1. A herbicidal composition which comprises an inert carrier and a herbicidally toxic amount of the compound having the molecular formula $C_{10}H_7Cl_5$, a melting point of about 100–102° C., and an infrared absorption spectrum with strong bands at 8.3, 9.25, 11.6, 12.03, and 13.72 microns, medium bands at 7.72, 7.9, 8.12, 8.40, 8.70, 8.85, 8.91, 9.50, 9.66, 9.82, 10.81, 11.30, and 13.4 microns, and weak bands at 3.46, 8.0, 10.01, 10.31, 11.0, 11.1, and 14.22 microns.

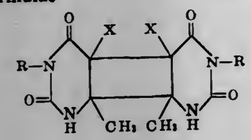
3,301,654

METHOD FOR THE CONTROL OF UNDESIRABLE VEGETATION

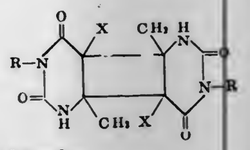
Richard L. Dalton, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 26, 1964, Ser. No. 406,596
4 Claims. (Cl. 71—2.5)

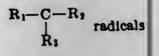
1. A method for the control of undesirable vegetation, said method comprising the application, to a locus to be protected, of a herbicidally effective amount of a compound selected from the group consisting of compounds having the formulae



and



where in both formulae:
R is selected from the group consisting of cycloalkyl radicals of from 5–8 carbon atoms, cycloalkenyl radicals of from 5–8 carbon atoms and



radicals

where:
R_1 is selected from the group consisting of hydrogen and methyl,
R_2 is selected from the group consisting of hydrogen, methyl and ethyl,
R_3 is selected from the group consisting of alkyl radicals containing from 1–6 carbon atoms

and
X is selected from the group consisting of hydrogen, halogen and methyl.

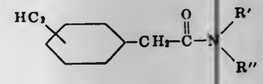
3,301,655

METHOD FOR INHIBITING GERMINATION AND PRE-EMERGENT GROWTH OF GRASS

Robert E. Wann, Manhattan, Kans., and Henry C. Godt, Jr., St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Aug. 2, 1960, Ser. No. 46,902. Divided and this application Feb. 11, 1963, Ser. No. 257,742
5 Claims. (Cl. 71—2.5)

1. The method of selectively inhibiting the germination and pre-emergent growth of grasses from seeds in contact with soil, which comprises treating the said soil with an effective amount of an N-substituted tolylacetamide of the structure



wherein R′ is selected from the group consisting of hydrogen and lower aliphatic hydrocarbon radicals and wherein R″ is a lower aliphatic hydrocarbon radical.

3,301,656

METHOD OF REDUCING CAKING TENDENCY OF UREA-PARAFFIN WAX FERTILIZER

Robert H. Campbell, Brookhaven, Pa., and Steven G. Belak, Claymont, Del., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,067
6 Claims. (Cl. 71—28)

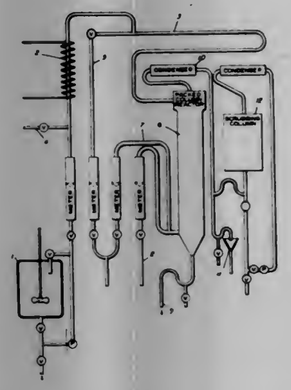
1. Method of reducing the caking tendency of solid discrete fertilizer particles comprising a dispersion of solid urea in solid paraffin wax which comprises contacting the entire surface of said particles with a urea-paraffin wax adduct accelerator, whereby a reaction between urea and paraffin wax at the surface of said particles to form a urea-paraffin wax adduct is initiated, continuing said contacting for at least 12 seconds and until said reaction is initiated over substantially the entire surface of said particles, removing said adduct accelerator from contact with the surface of said particles, and recovering discrete particles each of which contains (1) a core which comprises a dispersion of solid urea in solid paraffin wax and (2) a thin continuous film, overlaying and adjacent to said core, of a urea-paraffin wax adduct formed in situ on the surface of said core, said thin film substantially completely covering the surface of said core.

3,301,657

FERTILIZER PROCESS COMPRISING TWO-STAGE AMMONIATION WITH COUNTER CURRENT GAS TREATMENT

Geoffrey Thomas Dee, Kesgrave, near Ipswich, Suffolk, and William Francis Sheldrick, Nacton, near Ipswich, Suffolk, England, assignors to Fisons Fertilizers Limited, Felixstowe, England

Filed Oct. 22, 1965, Ser. No. 508,636
Claims priority, application Great Britain, Mar. 15, 1962, 9,919/62
10 Claims. (Cl. 71—43)



1. A process for the manufacture of ammonium salts containing less than 5% by weight of water which comprises, in a first stage, forming a mixture of ammonium salt and acid, said mixture being selected from the group consisting of (a) a mixture of nitric acid and its ammonium salt having a pH in the range 3.5 to 4.5 (b) a mixture of sulphuric acid and nitric acid and their ammonium salts having a pH in the range 2.0 to 3.0, and (c) a mixture containing at least two compounds selected from the group consisting of nitric acid, phosphoric acid, ammonium nitrate and ammonium phosphate, the selection being made so as to provide at least one acid component, at least one compound containing the nitrate radical, at least one compound containing the phosphate radical, and at least one ammonium containing component, said mixture (c) having a pH in the range 2.0 to 3.0, and, in a second stage, treating the product mixture from the first stage at an elevated temperature with a countercurrent stream of ammonia gas whereby its water content is reduced and an ammonium salt containing less than 5% by weight of water is obtained, said salt being selected from the group consisting of ammonium nitrate, ammonium sulphate nitrate, monoammonium phosphate, diammonium phosphate and mixtures of ammonium phosphate and ammonium nitrate.

3,301,658

FERTILIZER

John Rex Arthur and Russell James Nunn, Ipswich, Suffolk, England, assignors to Fisons Fertilizers Limited, Suffolk, England

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,075
Claims priority, application Great Britain, Aug. 14, 1962, 31,062/62
13 Claims. (Cl. 71—50)

1. A granular fertilizer composition which comprises at least one nitrate salt, at least one sulphate salt and triple superphosphate, the nitrate salt being selected from the group consisting of ammonium nitrate, sodium nitrate, potassium nitrate and magnesium nitrate, the sulphate salt being selected from the group consisting of ammonium sulphate, ammonium sulphate nitrate, potassium sulphate, sodium sulphate and magnesium sulphate, the triple superphosphate providing at least 60% by weight of the total water-soluble P_2O_5 in the composition, the sulphate salt being present in such proportions as to provide substantially one to three moles of sulphate salt for every mole of monocalcium phosphate present in the initial mixture and the proportion of nitrogen in the composition being 2 to 25% by weight based on the weight of the composition.

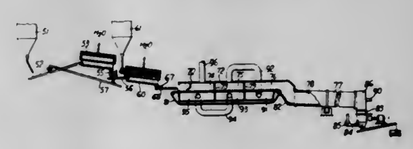
2. A process for preparing granular fertilizer compositions which comprises forming a mixture containing water and, inter alia, at least one nitrate salt, at least one sulphate salt and triple superphosphate and granulating the mixture, the nitrate salt being selected from the group consisting of ammonium nitrate, sodium nitrate, potassium nitrate and magnesium nitrate, the sulphate salt being selected from the group consisting of ammonium sulphate, ammonium sulphate nitrate, potassium sulphate, sodium sulphate and magnesium sulphate, the triple superphosphate providing at least 60% by weight of the total water-soluble P_2O_5 in the composition, the sulphate salt being present in such proportions as to provide substantially one to three moles of sulphate salt for every mole of monocalcium phosphate present in the initial mixture and the proportion of nitrogen in the composition being 2 to 25% by weight based on the weight of the composition.

3,301,659

PELLET OF IRON ORE AND FLUX, APPARATUS AND METHOD FOR MAKING SAME

Glenn M. Hanson, Wauwatosa, Robert D. Frans, Brookfield, Glenn A. Helan, Franklin, and Eugene W. Price, West Allis, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Original application Oct. 5, 1961, Ser. No. 143,097, now Patent No. 3,163,519, dated Dec. 29, 1964. Divided and this application Dec. 10, 1963, Ser. No. 329,517
3 Claims. (Cl. 75—5)



1. For making a strong pellet from iron ore and flux material, the process comprising: mixing finely divided iron ore containing silica and iron oxides that will contain hematite when heated to approximately 1600 degrees Fahrenheit in an oxidizing atmosphere with a flux material which is a carbonate of an element from the group consisting of calcium and magnesium, in amounts to provide in the mixture at least twice as much of said carbonate as is required to flux the siliceous component of the iron ore in said mixture; rolling said mixture with moisture to provide a moist core of approximately ¾ inch diameter forming a composite pellet by packing around said moist core an outer coating of moist iron ore of substantially the same composition as that of the core and free of added flux material and compressing said coating being packed about said core to the degree that said coating is approximately 1/16 inch thick and permeable to vapor of said moisture and a dioxide gas of the carbon in said carbonate, but impermeable to liquids of the viscosity of molten slag of said enclosed fluxed ore at approximately 2200–2400 degrees Fahrenheit; heating said pellet to vaporize said moisture and form carbon dioxide gas within said core but at a rate

less than a rate observed to heat escaping vapor and gases to a pressure that will fracture said coating; and then after said vapor and gases have been driven off, further heating said pellet in an oxidizing atmosphere to a temperature above the drying temperature until there is in said core a combining of a majority of the silica with said element to leave only a minority of the silica to combine with a minority of the iron and the remaining majority of the iron to form a ferrite of said element and to effect in said coating a network of bridged hematite grains.

3,301,660
METAL PURIFICATION PROCESS

Toshiaki Imamura, Kumamoto-shi, Japan, assignor to Dojindo & Co. Ltd., Kumamoto-shi, Japan

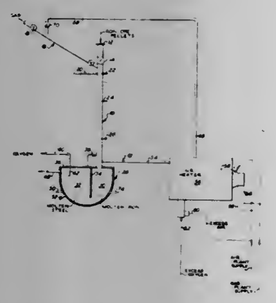
No Drawing. Filed June 26, 1964, Ser. No. 378,455
Claims priority, application Japan, Oct. 22, 1963, 38/56,682
7 Claims. (Cl. 75—20)

1. A metal purification process which comprises reacting a crude metal with a thermally stable chelating agent having a substantial difference between its melting point and boiling point to form the corresponding low melting point metal chelate, subjecting the chelate to zone-melting and subjecting the purified chelate to oxidation in a stream of oxygen and reduction with gaseous hydrogen to produce purified metal.

3,301,661
PROCESS AND APPARATUS FOR PRODUCING IRON AND STEEL

James J. McGlynn, Paoli, James L. Ma, West Chester, and William H. Funk, Glen Moore, Pa., assignors to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania

Filed Mar. 25, 1965, Ser. No. 442,760
13 Claims. (Cl. 75—40)



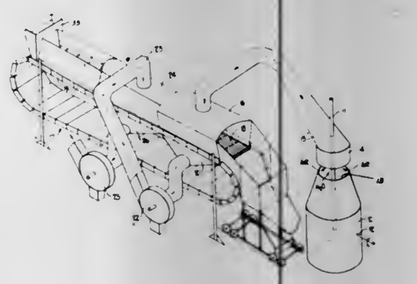
1. A process for the production of iron and steel comprising the steps of feeding a source of iron, a solid carbonaceous fuel and flux into the upper part of a heated stack, allowing molten iron to flow by gravity from the bottom of the stack to a first section of a vessel, permitting molten metal to flow from the first section to a second section of said vessel while partitioning the respective atmospheres in each section from one another, maintaining different atmospheres above the molten metal in said sections, jet oxygen refining the molten iron within the second section of said vessel and circulating the hot gaseous effluents generated by said refining step to the lower part of said stack.

8. An apparatus comprising a substantially vertically disposed stack for receiving a charge of materials used in the production of iron and steel, a collecting and refining vessel disposed below said stack, said vessel being divided into two sections by a partition, a passageway connecting said sections below the normal liquid level, the first of said sections being a collecting section in direct communication with the lower part of the stack for receiving molten iron, means for introducing an oxygen jet into the second of said sections above the normal liquid level, conduit means for delivering the hot effluents from said second section to the lower part of said stack said sections having different atmospheres above the molten metal.

3,301,662
BASIC OXYGEN STEEL MAKING PROCESS

Thomas E. Ban, Cleveland Heights, Ohio, assignor, by mesne assignments, to McDowell-Wellman Engineering Company

Filed Dec. 10, 1962, Ser. No. 243,321
3 Claims. (Cl. 75—52)



1. A basic oxygen process for making steel which comprises in combination:

(a) charging a predetermined quantity of molten pig iron to a basic oxygen furnace;

(b) charging a hearth layer of slag forming material to a traveling grate machine;

(c) superimposing upon said hearth layer, a layer of scrap iron to form a composite burden on said traveling grate machine;

(d) preheating said burden on said traveling grate machine to a temperature of from about 1000° F. to about 2200° F. by passing exhaust gases from a basic oxygen furnace through said burden;

(e) separating said preheated scrap iron from said hearth layer;

(f) charging said scrap iron at said preheated temperature to the basic oxygen furnace for admixture with said molten pig iron in an amount such that the heat required to melt the scrap iron and raise it to a predetermined teeming temperature is in excess of the sensible heat of said scrap iron by an amount sufficient to absorb the exothermic heat of the steel making reaction;

(g) charging a predetermined quantity of slag forming material from said hearth layer to the basic oxygen furnace;

(h) blowing the charge including said molten pig iron, said preheated scrap iron, and said slag forming material with a free oxygen containing gas;

(i) admixing the gases exiting from said basic oxygen furnace with an oxygen containing gas to oxidize oxidizable components thereof and to reduce the temperature of said exhaust gases; and

(j) directing said oxidized and cooled exhaust gases into heat exchange relation with a scrap iron-slag forming material composite burden to effect preheating thereof.

3,301,663
STEEL MAKING PROCESSES

Adalbert Wicher, Dortmund-Reichsmark, and Rolf Pape, Dortmund-Lucklember, Germany, assignors to Dortmund-Hörder Hüttenunion Aktiengesellschaft, Dortmund, Germany

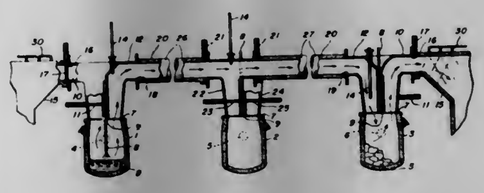
No Drawing. Filed Apr. 23, 1964, Ser. No. 362,172
Claims priority, application Germany, Apr. 27, 1963, D 41,446; Nov. 26, 1963, D 43,024
3 Claims. (Cl. 75—58)

1. A process for the manufacture of steels containing a fine distribution of nonmetallic inclusions and having good cutting properties over a wide range of cutting speeds, which comprises providing the steel with an oxygen content of 0.004 to 0.1%, deoxidizing the steel in the molten state with a ferro-alloy containing 45 to 90% of silicon, 0.5 to 40% of calcium, up to 4% of aluminium, 0.5 to 8% of manganese and remainder iron in addition to impurities whereby a protective layer of oxidized inclusions will be formed on a tool cutting the steel.

3,301,664
APPARATUS FOR AND METHOD OF PRODUCTION OF STEEL

Thomas A. Hall, Canfield, Ohio, assignor to The Youngstown Sheet and Tube Company, Youngstown, Ohio, a corporation of Ohio

Filed Mar. 27, 1964, Ser. No. 355,159
4 Claims. (Cl. 75—60)



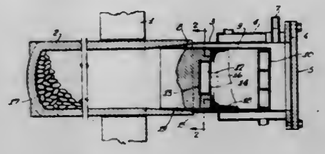
1. Apparatus of the character described comprising a plurality of furnaces, a cover for each furnace movable relatively thereto, a conduit extending from adjacent the cover of one furnace to adjacent the cover of a second furnace, means carried by one of said covers providing communication between said conduit and the interior of the second furnace when said cover is in one position relative to said furnace, means for introducing fuel and a combustion-supporting gas into said last mentioned means for projection into said second furnace, and means carried by each cover for exhausting gases from its furnace when the cover is in said position.

3. The method of refining steel in a plurality of interconnected basic oxygen furnaces which comprises the steps of subjecting a molten charge in one furnace to an oxygen blast, conducting the gases thereby evolved to a second furnace and directing them upon a relatively cold charge of metal therein, supplementing the sensible heat of said gases by introduction of oxygen to the gaseous stream before reaching the second furnace to effect combustion of combustible components thereof before contact of the stream with the cold charge, arresting the passage of oxygen into the first furnace and tapping the refined charge therefrom, charging molten metal into the second furnace for combination with the now heated but previously relatively cold charge therein, charging a relatively cold charge into the first furnace, refining the charge in the second furnace by an oxygen blast, directing the gases thereby evolved into the first furnace, introducing oxygen into said gases before reaching the first furnace to effect combustion of the combustible components thereof and impinging the gaseous stream against the relatively cold charge in the first furnace.

3,301,665
METHOD AND APPARATUS FOR PRODUCING HIGH PURITY CALCIUM

Harold A. Timm, Westmeath, Ontario, Canada, assignor to Dominion Magnesium Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Apr. 9, 1964, Ser. No. 358,546
Claims priority, application Canada, Apr. 23, 1963, 873,873
7 Claims. (Cl. 75—67)

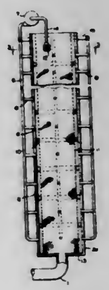


7. In the method preparing calcium by heating compacted calcined lime and aluminum powder in a retort at a temperature in excess of 1100° C. and under vacuum and condensing calcium in a condenser connected directly to the retort including the steps of collecting the calcium condensate in a condenser sleeve and subsequently pressing the calcium condensate out of the sleeve in the form of a calcium crown, the novel steps which comprise positioning a self-supporting separator unit in said sleeve filling from 30 to 90% of the cross-sectional area thereof at a distance from the hot end of said sleeve equal to from 30 to 150% the diameter of said sleeve and at a distance from the cold end of said sleeve not less than 50% of said diameter, maintaining a temperature not greater than 650° C. on the cold side of said unit, and a temperature greater than 650° C. on the hot side thereof thereby forming a high calcium crown on said hot side and a high magnesium crown on said cold side subsequently pressing the condensate out of the sleeve and then chipping off the high magnesium crown and removing the separator unit leaving a calcium crown of high purity.

3,301,666
ALUMINUM PURIFICATION SYSTEM

Hubert Martin, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Aug. 31, 1964, Ser. No. 393,016
12 Claims. (Cl. 75—68)



1. Method for the crystallization of aluminum from a liquid amalgam of aluminum and mercury which comprises the steps of providing a body of liquid aluminum-mercury amalgam, maintaining said body substantially

quiescent and in contact with a surrounding peripheral zone of a liquid layer of mercury containing a substantially lower aluminum concentration than that prevailing in the center of said body, introducing hot aluminum-mercury amalgam into the lower portion of said quiescent body, crystallizing aluminum crystals wholly within said quiescent body, allowing said aluminum crystals to rise to the top of said body and removing them therefrom, and removing spent liquid amalgam from the upper portion of said quiescent body.

3,301,667
PREPARATION OF URANIUM-NIOBIUM ALLOYS BY CO-REDUCTION

Waldo R. Golliher and Robert A. Johnston, both of Paducah, Ky., assignors to the United States of America as represented by the United States Atomic Energy Commission

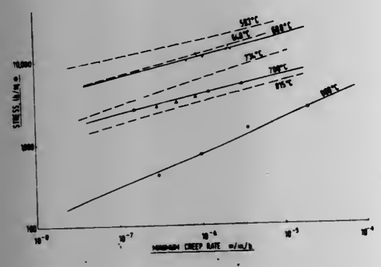
No Drawing. Filed Apr. 27, 1966, Ser. No. 546,479
3 Claims. (Cl. 75—122.7)

1. A method for synthesizing a uranium-niobium alloy which comprises effecting an essentially adiabatic bomb co-reduction of a mixture of (1) uranium tetrafluoride and (2) a composition selected from either (a) a mixture of potassium fluoniobate and from 0–50%, by weight (based on the niobium of niobium pentoxide), Nb_2O_5, or (b) the reaction product resulting from a reaction between niobium pentafluoride and a fluoride salt selected from cesium fluoride, lithium fluoride, barium fluoride, calcium fluoride, uranyl fluoride, potassium fluoride, and magnesium fluoride.

3,301,668
STAINLESS STEEL ALLOYS FOR NUCLEAR REACTOR FUEL ELEMENTS

Lawrence Henry Cope, Culcheth Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Feb. 23, 1965, Ser. No. 434,224
Claims priority, application Great Britain, Feb. 24, 1964, 7,688/64
2 Claims. (Cl. 75—128)



1. Stainless steel having the following composition

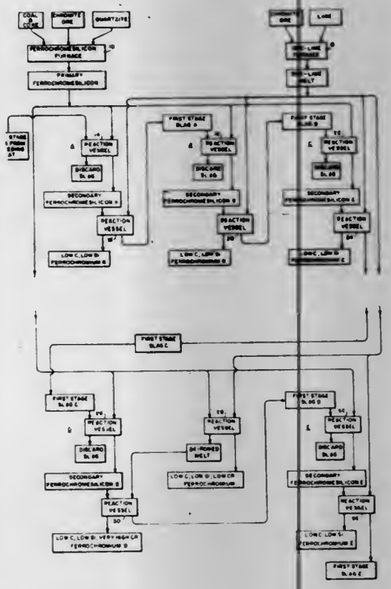
Carbon, percent max.	0.06
Chromium, percent	16.5 to 17.5
Nickel, percent	13.0 to 14.0
Molybdenum, percent	2.0 to 2.75
Manganese, percent	1.5 to 2.0
Silicon, percent max.	0.8
Phosphorus, percent max.	0.020
Sulphur, percent max.	0.020
Nitrogen, percent max.	0.06
Arsenic, percent max.	0.035
Tin, percent max.	0.020
Vanadium, percent max.	0.15

the balance being iron apart from incidental impurities.

3,301,669
PRODUCTION OF A HIGH CHROMIUM CONTAINING FERROCHROME

Heinrich W. Rathmann and John O. Staggers, Cambridge, and Victor H. Street, Richmond, Ohio, assignors to Vanadium Corporation of America, Cambridge, Ohio, a corporation of Delaware

Filed Feb. 27, 1964, Ser. No. 347,853
6 Claims. (Cl. 75—130.5)



1. In a continuous two-step process for reducing chromite ore to obtain a low silicon ferrochromium wherein in Step 1 silicon is the form of a primary ferrochromesilicon alloy is reacted with a molten intermediate slag from Step 2 of a preceding heat to form a secondary ferrochromesilicon alloy and a discard slag and in Step 2 the secondary ferrochromesilicon alloy is reacted with a chromite ore-lime melt to produce the low silicon ferrochromium and reproduce the intermediate slag, the amount of primary ferrochromesilicon being substantially equal to the effective stoichiometric quantity required to reduce the chromium and iron oxides in the chrome ore-lime melt, the improvement which consists of:

(A) adding less than the effective stoichiometric quantity of primary ferrochromesilicon to at least one heat to enrich the chromium content of the intermediate slag and

(B) in a subsequent heat,

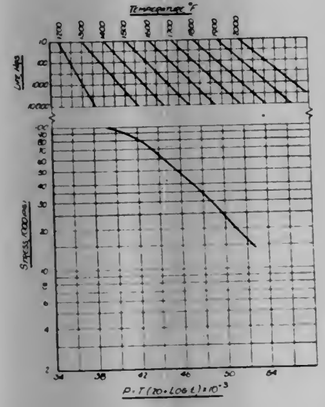
(1) adding more than the effective stoichiometric quantity of primary ferrochromesilicon, a portion thereof being added to a chrome ore-lime melt to beneficiate the ore-lime melt and a portion being added to the intermediate slag to produce a chromium enriched secondary ferrochromesilicon, the total excess primary ferrochromesilicon being substantially equal to the deficiency of primary ferrochromesilicon in the preceding heats and

(2) reacting the beneficiated chrome ore-lime melt with the chromium enriched secondary ferrochromesilicon to produce a high chromium, low silicon ferrochromium alloy and reproduce the intermediate slag.

3,301,670
CAST NICKEL-BASE ALLOY

Clarence G. Bieber, Roselle Park, N.J., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 8, 1964, Ser. No. 336,458
4 Claims. (Cl. 75—171)



1. A nickel-base alloy having a high combination of mechanical properties together with structural stability when subjected to the combined effects of temperature and stress for extended time periods in cast form and consisting essentially of about 4% to about 11% chromium, about 0.5% to 3% columbium, about 0.5% to 4% tantalum, about 2% to 6% molybdenum, about 0.5% to 4% tungsten, about 5% to 8% aluminum, up to about 1.25% titanium, up to about 0.18% carbon, with the titanium and carbon contents being so related that when the carbon content does not exceed about 0.10% the titanium content does not exceed about 0.6%, about 0.005% to 0.03% boron, about 0.01% to 0.2% zirconium, and the balance essentially nickel.

3,301,671
ALUMINOUS SINTERED PARTS AND TECHNIQUES FOR FABRICATING SAME

Samuel Storchheim, Forest Hills, N.Y., assignor to Alloys Research & Manufacturing Corporation, Woodside, N.Y., a corporation of Delaware

Filed Mar. 3, 1964, Ser. No. 349,123
11 Claims. (Cl. 75—200)

1. In a powder metallurgical process for the formation of aluminum-based articles comprising forming a powder mixture consisting essentially of particulate aluminum and from about 1 to 10% by weight of the mixture of particulate copper, shaping the mixture and sintering at a temperature above the temperature at which a liquid phase first appears, in a protective atmosphere, the improvement which consists essentially of controlling the shrinkage of the shaped mixture by adding to the mixture, before sintering, a component selected from the group consisting essentially of particulate magnesium-aluminum alloys and particulate magnesium in an amount sufficient to impart to the mixture an amount of magnesium, within the range from 0.05% to 20% by weight, sufficient to at least partially counterbalance the shrinkage that would otherwise be exhibited by the shaped mixture during sintering.

3,301,672
SOLID-STATE PREPARATION OF FOAMED LEAD

Nigel Alec Ratcliff and David Henry Roberts, Harlow, England, assignors, by mesne assignments, to St. Joseph Lead Company, New York, N.Y., a corporation of New York

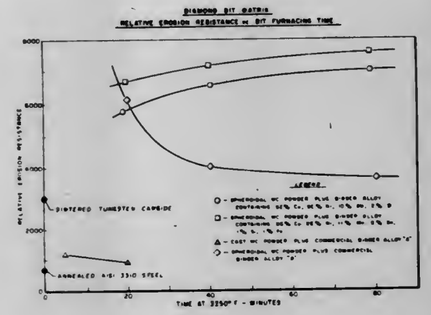
Filed Aug. 1, 1963, Ser. No. 299,294
Claims priority, application Great Britain, Aug. 3, 1962, 29,988/62
10 Claims. (Cl. 75—201)

1. A method of producing low density lead comprising the steps of obtaining a mixture of lead powder and a substance capable of liberating gas when heated to a temperature below the melting point of lead, working the mixture so that contiguous lead particles become pressure welded together to form a coherent mass with said substance dispersed therein, and thereafter heating said mass to a temperature below the melting point of lead but above that at which gas is liberated from said substance to liberate gas from said substance to form gas-filled cells in said mass.

3,301,673
LIQUID PHASE SINTERING PROCESS

Harold C. Bridwell, Palo Alto, and Arthur G. Wilder, Los Altos, Calif., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Apr. 24, 1964, Ser. No. 362,345
5 Claims. (Cl. 75—204)



1. In a liquid phase sintering operation wherein particles of a refractory hard metal are bonded together with a molten binder alloy to produce a composite material, the improvement which comprises bonding said particles together with an alloy consisting essentially of about 20 to 40 percent of at least one metal from Group VIII, Series 4 of the Periodic Table, about 10 to 25 percent maganese, about 0 to 5 percent silicon, about 0 to 10 percent tin, about 0 to 0.2 percent sulfur, and the balance copper.

3,301,674
ALUMINUM SUPPORT FOR PLANOGRAPHIC PRINTING PLATES

Fritz Uhlig, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,920
Claims priority, application Germany, Oct. 4, 1963, K 50,997
15 Claims. (Cl. 96—1)

8. An aluminum base having a first layer thereon comprising mellitic acid and a reproduction layer on the first layer.

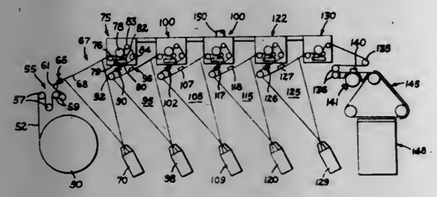
10. An aluminum base according to claim 8 in which the reproduction layer is photoconductive.

12. A process for making a printing plate which comprises exposing a coated aluminum base to radiation under a master, the coating comprising a first layer comprising mellitic acid and a reproduction layer on the first layer, and developing the resulting image, whereby the coating is removed from the base material in the image-free areas thereof.

3,301,675
ELECTROSTATIC PHOTOGRAPHIC PROCESS OF MAKING MULTI-COLORED PRINTS

Donald L. Fauser and Edwin R. Kolb, Cleveland, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Original application June 8, 1961, Ser. No. 115,643, now Patent No. 3,241,957, dated Mar. 22, 1966. Divided and this application Feb. 18, 1965, Ser. No. 433,816
10 Claims. (Cl. 96—1.2)



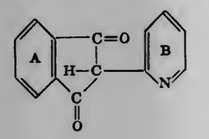
1. A process for sequentially forming a plurality of images on an image bearing member including an image bearing surface comprising the steps of sequentially forming a series of electrostatic latent images on said surface, sequentially developing said images after formation thereof with a liquid developer, each liquid developer including marking elements dispersed in an electrically insulating suspension medium, said marking elements of each developer including a liquid resin material for substantially adhering to said surface upon removal of said suspension medium, the suspension medium of each said developer being substantially free of resin material other than that associated with the said marking elements so that resin material from the said developer is deposited essentially only where said marking elements are deposited, removing the suspension medium adhering to said image bearing member after each development operation to cause substantially permanent adhesion of the marking elements deposited during the said development operation, and drying said image bearing member after the last development operation.

3,301,676
PROCESS AND MATERIAL FOR THE PRODUCTION OF ELECTROPHOTOGRAPHIC IMAGES

Martha Tomanek, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Oct. 9, 1964, Ser. No. 402,954
Claims priority, application Germany, Oct. 12, 1963, K 51,074
19 Claims. (Cl. 96—1.5)

12. An electrophotographic material comprising a conductive support layer having a sublimable photoconductive insulating layer thereon, the later comprising as the sole photoconductor a compound having the formula



in which the rings A and B may be substituted by at least one member selected from the group consisting of an aromatic group, an aliphatic group, an alkoxy group and halogen.

3,301,677
PHOTOGRAPHIC IMAGES AND PRINTING FORMS PREPARED BY HEAT DEVELOPMENT

Anita von König, Leverkusen, Peter Kruck, Cologne-Stammheim, and Raymund Pfeiffenschneider, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 22, 1964, Ser. No. 398,383
Claims priority, application Germany, Sept. 30, 1963, A 44,169
4 Claims. (Cl. 96—28)

3. A process for producing printing forms for screen printing, which process comprises the steps of thermally developing in contact with a screen printing sheet on exposed silver halide emulsion layer containing tanning developer in amount sufficient to cause the emulsion to be tanned at the exposed portions during the development, the emulsion layer being held on a support coated with an intermediate layer of a salt of polyurea sulfonic acid or a mixture of polyvinyl acetate and polyvinyl pyrrolidone, or salts or esters of alginic acid, or carboxyalkyl cellulose or carboxyalkyl starch in which the alkyl portions have up to 3 carbon atoms, moistening the screen printing sheet and separating it from the supported emulsion to cause the tanned portion of the emulsion to adhere to the sheet and come away with it while the untanned emulsion portion remains on the emulsion support.

3,301,678
PROCESS FOR STABILIZING PHOTOGRAPHIC IMAGES WITH HEAT

Wilbert J. Humphlett, Dee Lynn Johnson, and Grant M. Haist, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 28, 1964, Ser. No. 371,124
30 Claims. (Cl. 96—61)

1. A substantially dry stabilization method which comprises heating, at a temperature in the range of about 200° F. to about 400° F., an exposed photographic element comprising a photographic silver halide emulsion, and contiguous to said silver halide, at least about one mole per mole of said silver halide of a sulfur-containing compound which upon said heating forms a compound that combines with unexposed silver halide to form a silver mercaptide which is more stable to light than said silver halide.

3,301,679
TWO-COMPONENT DIAZOTYPE LIGHT-SENSITIVE PHOTOPRINTING MATERIAL SUSCEPTIBLE TO THERMAL DEVELOPMENT

Bernard I. Halperin, Glen Aubrey, John Joseph McKinney, Binghamton, and Robert I. Eldred, Jr., Endicott, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 1, 1963, Ser. No. 292,097
8 Claims. (Cl. 96—75)

1. Two-component diazotype photoprinting material susceptible to development by heating, having on a surface of a supporting sheet, an azo coupling component, a light-sensitive diazonium compound, an acid stabilizer to prevent premature coupling, an acid to neutral reagent which is converted on heating at a temperature from 100 to 200° C. to an alkaline reacting compound, and polyvinyl alcohol at least 70% unesterified having such viscosity characteristics as to provide in 4% aqueous solution at 20° C. a viscosity of 2 to 15 centipoises, said polyvinyl alcohol and said diazonium compound being combined in a single layer in such proportions that the amount of polyvinyl alcohol equals at least the amount of said diazonium compound.

5. Photoprinting material as defined in claim 1 wherein the light-sensitive diazonium compound is contained in one layer and said acid to neutral reagent is contained in a separate but contiguous layer containing an organic film-forming polymer.

3,301,680
METHOD OF IMPREGNATING PAPER TO REDUCE CURLING TENDENCY AND RESULTANT ARTICLE

Oscar Bertil Otto Nycander, Sundsen, and Svenning Natanael Carlsson, Ludvika, Sweden, assignors to Mo Och Domsjo Aktiebolag, Ornskoldsvik, Sweden, a corporation of Sweden

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,229
11 Claims. (Cl. 96—85)

1. A method of reducing the curling tendency of paper and paper-like materials and photographic paper, which comprises applying to the paper an impregnating composition consisting essentially of a water-soluble polyalkylene glycol having a molecular weight within the range from 100 to 6000, and a water-soluble polyhydric aliphatic alcohol facilitating the absorption of the polyalkylene glycol in the paper, and having from about two to about fifteen carbon atoms, the polyhydric alcohol being in an amount within the range from 0.2 to 5 parts by weight per part by weight of the polyalkylene glycol.

3,301,681
METHOD FOR PREPARING DRY FREE FLOWING FOOD SUPPLEMENT CONTAINING HYDRATED DI-CALCIUM PHOSPHATE

William Kuster, Hillsborough, Calif., assignor, by mesne assignments, to Eagle-Ottawa Leather Company, Grand Haven, Mich., a corporation of Illinois

No Drawing. Filed Mar. 4, 1963, Ser. No. 262,384
5 Claims. (Cl. 99—7)

1. A method for preparing a dry, free-flowing food supplement rich in protein comprising hydrolyzing animal by-products with phosphoric acid at a pH of about 1–3 in aqueous solution and at an elevated temperature until the protein reaches about the polypeptide state of hydrolysis, separating and recovering the aqueous protein phase formed during said hydrolysis, reducing the water content of said aqueous protein phase, and then intermixing a calcium compound therewith selected from the group consisting of calcium oxide, calcium hydroxide, and calcium carbonate in an amount sufficient to raise the pH of said protein to about 5–7, thereby further removing water from said protein phase as water of hydration of di-calcium phosphate salt formed upon the addition of said calcium compound, said water reduction step being adjusted so as to leave an amount of water in said protein phase which yields a dry, free-flowing composition after the addition of said calcium compound.

3,301,682
FAT CRYSTALLIZATION

Ching C. Loo, Sepulveda, Los Angeles, Calif., assignor to Carnation Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Sept. 5, 1963, Ser. No. 306,678
6 Claims. (Cl. 99—56)

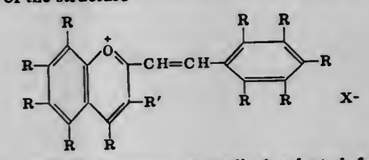
1. A composition comprising an integrally formed dried product consisting of individual parts, each of said parts having a fat composition and a nonfat composition nonmiscible in said fat composition, said fat composition consisting of readily discernible high melting point fractions and low melting point fractions, said nonmiscible nonfat portion coating said high and low melting point fractions to isolate said high melting point fraction from said low melting point fraction.

3,301,683
ACIDIC FRUIT AND VEGETABLE FOOD AND METHOD OF COLORING EMPLOYING BENZOPYRYLIUM COMPOUNDS

Leonard Jurd, Berkeley, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Feb. 27, 1963, Ser. No. 261,546
8 Claims. (Cl. 99—103)

1. A method for coloring a food selected from the group consisting of acidic fruit products and acidic vegetable products which comprises adding thereto a compound of the structure



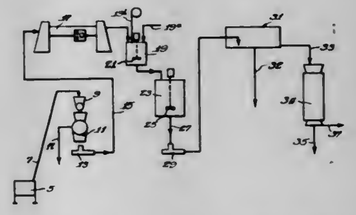
wherein each R represents a radical selected from the group consisting of hydrogen, hydroxyl, and lower alkoxy, wherein R' represents a radical selected from the group consisting of hydrogen, lower alkyl, phenyl, lower alkoxy, and phenoxy, and wherein X is an anion.

2. A composition comprising (1) a food selected from the group consisting of acidic fruit products and acidic vegetable products, and as a coloring agent (2) a compound of the structure as shown in claim 1.

3,301,684
TREATMENT OF GRAPE JUICE

George Bosy, Chicago, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware

Filed May 24, 1960, Ser. No. 31,439
3 Claims. (Cl. 99—105)



1. A method for recovering juice from grape mash, comprising the steps of adding cellulosic pulp to the grape mash, minimizing beating of the pulp, establishing a bed of the mash having a height of at least 5 inches, and substantially continuously agitating said bed of grape mash while recovering juice from the bottom of said bed.

3,301,685
PROCESS FOR PRODUCING STABLE JUICE PULP AND STABLE JUICES CONTAINING SAID STABLE JUICE PULP

Thurston W. Harwell, Maitland, Fla., assignor to Union Carbide Corporation, a corporation of New York

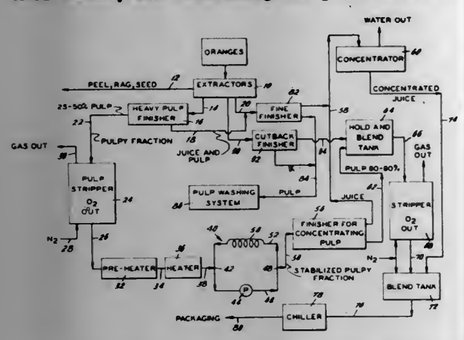
Filed July 9, 1962, Ser. No. 208,237
16 Claims. (Cl. 99—105)

1. A process for producing a stable juice pulp comprising:

(a) separating the juice into a pulp fraction and a liquid fraction;

(b) subjecting said pulp fraction to a stripping operation wherein an inert gas is passed through said pulp fraction so as to preferentially displace the oxygen present in said pulp fraction;

(c) increasing the temperature of said pulp fraction to a temperature sufficiently high to effect the desired stability and maintaining said pulp fraction at



that temperature until the desired stability is effected; and

(d) cooling the stabilized pulp fraction.

3,301,686

METHOD OF MAKING FISH PRODUCT

Ernest N. Bacon, Halifax, Nova Scotia, Canada, assignor to Nova Scotia Research Foundation, Nova Scotia, Canada

Filed Feb. 24, 1964, Ser. No. 346,645

4 Claims. (Cl. 99—111)

1. A process of making a fish product which comprises

(a) forming a body consisting essentially of not more than 10% of raw fish and not less than 90% water,

(b) beating said body to separate substantially completely the fibers of said fish and to produce a substantially homogeneous aqueous suspension of randomly arranged fish flesh fibers,

(c) removing water from said suspension to produce a mat of randomly interlocked fish flesh fibers containing at least 25% water,

(d) storing said mat until subjected to a cooking step, and

(e) maintaining said moisture content of 25% in said mat during said entire storing step to limit shrinkage and loss of fat therein during said cooking step.

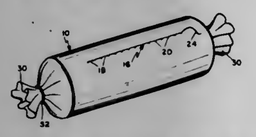
3,301,687

FOOD WRAPPER

Robert E. Davy, La Mesa, Calif., assignor to Coroga Co., Anaheim, Calif.

Filed Sept. 3, 1965, Ser. No. 485,038

4 Claims. (Cl. 99—171)



1. A food container which also serves as a cooking utensil and a dish from which cooked food can be eaten, directly, comprising:

(a) a substantially cylindrical container, in which solid, pliable food is packed;

(g) said container being made of yieldable sheet material which is moisture impermeable and is resistant to cooking heat;

(c) said sheet material being of sufficiently greater axial length than the container to permit the ends thereof to be folded over to form sealed end closures for said container;

(d) a tear thread stitched through said sheet and spaced from the ends thereof which extends longitudinally for a major portion of the central length of said containers;

(e) the respective holes through which said tear thread is stitched being sufficiently larger than the tear thread passing therethrough to provide ample space for venting of cooking vapors during heating, but small enough to prevent loss of juices;

(f) the length of said stitched tear thread being sufficient to permit said container to be opened longitudinally and then compressed from the ends thereof to form an open top, substantially circular, deep dish with the formely stitched edges being the open upper periphery thereof.

3,301,688

BONDING COMPOSITIONS

Clyde S. Simpelaar, Racine, Wis., assignor to Modine Manufacturing Company, a corporation of Wisconsin

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,968

16 Claims. (Cl. 106—1)

8. An essentially liquid bonding composition substantially free of solids other than those of colloidal size and smaller for bonding a selected metal of the class consisting of aluminum, magnesium and alloys thereof to another base metal, consisting essentially of: a fluxing salt; a liquid solvent having the characteristics of a Lewis base toward zinc halide as a Lewis acid by forming with said zinc halide a coordinate complex decomposing on heating while in contact with said selected metal to yield zinc and selected from the class consisting of aliphatic ketones of 3–12 carbon atoms, aliphatic alcohols of 1–6 carbon atoms, aqueous formaldehyde, water, aliphatic nitriles of 1–6 carbon atoms, methyl and ethyl esters of aliphatic acids of 1–8 carbon atoms and formates and acetates of aliphatic alcohols of 1–5 carbon atoms, aliphatic lactones having 3–4 methylene groups in the ring, tetrahydrofuran, and aliphatic alcohol ethers having 1–4 carbon atoms in the alkoxyl and alcohol groups; an amount of zinc halide between about 10% of said composition and substantially complete saturation of said solvent; and an amount of an additive metal in the form of a halide salt effective to retard corrosion in the resulting bond, said additive metal halide being present in an amount sufficient to provide additive metal in said bond in an amount of about 0.25–3.5% of the zinc in said bond, and said additive metal being selected from the class consisting of antimony, barium, cesium, chromium, copper, iron, manganese, silicon, zirconium, and mixtures thereof, whereby exothermic heat will develop during said bonding, said zinc halide being a member of the class consisting of zinc chloride, zinc bromide and zinc iodide.

3,301,689

VACUUM FIRED BERYLLIA WARE

John G. Theodore, Willowick, and Chester A. Bielawski, Cleveland, Ohio, assignors to The Brush Beryllium Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 27, 1962, Ser. No. 176,066

6 Claims. (Cl. 106—55)

1. A castable firable beryllia slip having a high purity and capable of being sintered under vacuum to a density in excess of approximately 95 percent theoretical density, characterized in that the slip consists essentially of water and high-purity beryllia particles 85 percent of which are less than 4 microns in size and 100 percent of which are less than 20 microns in size, said slip has a pH of approximately from 2.5 to 7, a specific gravity of from about 1.5 to a minimum specific gravity at which the slip is castable, and a viscosity of less than 200 centipoises but sufficient for slip castings.

3,301,690

PRODUCTION OF DIRECT BONDED BASIC BRICK

George R. Rigby, Lachute, Quebec, Canada, assignor to Canadian Refractories Limited, Montreal, Quebec, Canada

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,617

Claims priority, application Great Britain, Aug. 29, 1963, 34,302/63

1 Claim. (Cl. 106—59)

A method of making magnesite chrome refractory brick which comprises the successive steps of mixing a binder with a quantity of particles of chrome ore containing not more than 5% SiO_2 and having a particle size of −4 +28 mesh to coat said particles with said binder, mixing with said binder-coated particles a quantity of particles of clinker having a particle size of −65 mesh to coat said binder-coated particles with said clinker particles, said clinker having been formed by firing a mixture consisting essentially of magnesite and 5% to 15% of a material selected from the group consisting of chrome ore, iron oxide, titanium dioxide, and chromium oxide at a temperature to obtain chemical homogeneity thereof, forming a mixture consisting essentially of said clinker-coated particles and an additional quantity of binder and a quantity of magnesia particles containing not more than 1% Fe_2O_3, 2% CaO, and 2% SiO_2, and having a particle size of −4 +65 mesh, said mixture containing 5–40% of said chrome ore particles, 5–40% of said clinker particles, and the balance said magnesia particles, pressing said mixture into shapes, and firing said shapes at a temperature of 1600°–1700° C.

3,301,691

PAPER COATING CLAY AND METHOD FOR TREATING THE SAME

Glen A. Hemstock, East Brunswick, and Robert J. Bergmann, Irvington, N.J., assignors to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

Filed Dec. 27, 1963, Ser. No. 337,971

20 Claims. (Cl. 106—72)

10. A process for treating kaolin clay to render said clay amenable to the formation of high clay solids slips having materially reduced viscosity at high shear rates which comprises forming a puggable mixture of about 69 to 80 parts by weight of uncalcined kaolinite and about 31 to 20 parts by weight of water, said kaolinite having an average equivalent spherical diameter within the range of 0.5 to 0.8 micron, pugging said mixture with a work input of at least 10 hp. hrs./ton of said kaolinite in said mixture, said work input being sufficient to produce a zigzag pattern on a Hagan rheogram of a 70% solids deflocculated aqueous slip of the worked clay, diluting the kaolinite thus pugged with water to form a slip containing about 35 to 50 parts by weight of kaolinite to 65 to 50 parts by weight of water, and heating said slip at a temperature within the range of about 300° F. to about 550° F. for a time within the range of 1 second to 12 hours under at least autogenous pressure.

3,301,692

PROCESS OF TREATING PROTEINS AND THE PRODUCT THEREOF

Sulo A. Karjala and Frank K. Dering, both of Chicago, Ill., assignors to Wilson & Co., Inc., a corporation of Delaware

No Drawing. Filed Feb. 14, 1966, Ser. No. 527,040

10 Claims. (Cl. 106—161)

9. A glue consisting essentially of 8% to 12% of a product of reaction of blood proteins and glyoxal, said product being substantially insoluble in water due to dehydration of the reaction product at temperatures in the range between about 165° F. and 200° F. and having a major portion thereof soluble in alkaline solution, between about 2% and 5% of filler, between about 50% and 70% of water, between about 1% and 10% of alkali metal caustic, between about 5% and 18% alkali metal silicate and between about 1% and 10% of hydrated lime.

3,301,693

CYCLIC ACETAL COATING COMPOSITIONS

Carol K. Ikeda, Wallingford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Mar. 16, 1961, Ser. No. 96,101, now Patent No. 3,255,210, dated June 7, 1966. Divided and this application May 13, 1965, Ser. No. 455,589

6 Claims. (Cl. 106—176)

1. A coating composition consisting essentially of a product prepared by oxygenating a liquid cyclic acetal by contacting said cyclic acetal throughout its mass with gaseous oxygen, said cyclic acetal containing a plurality of 1,3-cyclic acetal radicals which have in their 2-positions substituents of the class consisting of vinyl and isopropenyl radicals, and which are connected to each other through an interposed polyvalent radical, and a siccative metal drier.

3. The coating composition of claim 1 containing another organic film-forming material.

3,301,694

PRODUCTION OF FURNACE CARBON BLACK HAVING PROPERTIES APPROXIMATING THOSE OF CHANNEL CARBON BLACK

Gerard Kraus, Bartlesville, Okla., and Yuan C. Fu, Los Angeles, Calif., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed July 27, 1964, Ser. No. 386,483

5 Claims. (Cl. 106—307)

1. A process for producing a furnace carbon black having properties approximating those of channel carbon black with respect to pH, structure and modulus which process comprises:

charging a hydrocarbon feedstock to a carbon black-producing furnace operated under conditions to produce carbon black having an oil absorption value of not more than about 1 recovering carbon black from the furnace effluent gases;

contacting the carbon black from said furnace with an amount of nitric acid sufficient to reduce the pH of the carbon black to a value in the range of about 2 to 5; adding about 40 to 60 weight percent pelleting water to the carbon black; pelleting the carbon black in a pelleting step; drying the pelleted black at a temperature of about 150° C. to 210° C.; and

recovering the carbon black so produced.

3,301,695

MINERAL BLEACHING PROCESS

Venancio Mercade, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Woodbridge, N.J., a corporation of Maryland

No Drawing. Filed May 19, 1965, Ser. No. 457,208

18 Claims. (Cl. 106—309)

1. A method for bleaching an iron-stained oxidized mineral which comprises forming an aqueous pulp of said mineral, incorporating into said pulp a small amount of a water-soluble titanium compound, incorporating a water-soluble permanganate into said pulp, agitating said pulp until said permanganate is reduced, and then bleaching said pulp with a water-soluble hydrosulfurous bleaching reagent.

3,301,696
PROCESS FOR THE IMPROVEMENT OF THE WASH-FASTNESS OF PRINTS ON CELLULOSE-CONTAINING MATERIALS WITH DYESTUFFS CONTAINING WATER-SOLUBILIZING GROUPS

Carl Taube, Leverkusen, and Klaus Böckmann, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

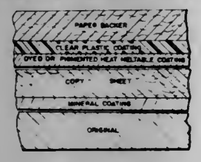
No Drawing. Filed Nov. 28, 1962, Ser. No. 240,730
Claims priority, application Germany, Dec. 7, 1961, F 35,487
4 Claims. (Cl. 117—15)

1. A process for improving the wash-fastness of dye prints on cellulose-containing materials wherein the dyes employed contain water-solubilizing groups, comprising treating the dye prints with an effective amount of a mixture containing, as active ingredient, a quaternary polyalkylene polyamine and a hardenable preliminary resin product selected from the class consisting of a methylol-urea, methylol-melamine, methylol-carbamate, and their alkyl ethers, and thereafter subjecting the print to a temperature of about 100–180° C.

3,301,697
THERMOGRAPHIC TRANSFER SHEET HAVING A SUPPORT OF A PAPER AND PLASTIC COATING AND THE METHOD OF USE

Robert B. Russell, 248 Park St., Newton, Mass. 02158

Filed Dec. 2, 1960, Ser. No. 73,245
5 Claims. (Cl. 119—36.4)



1. A transfer sheet for thermographic copying in which the transfer sheet serves as a tensioning belt and is exposed to the direct radiation of a source of radiation, said transfer sheet comprising: a paper base, a clear plastic coating on said base, and a heat meltable coating on said plastic having a melting point substantially lower than the melting point of said plastic coating.

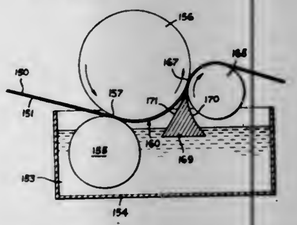
3. A transfer and copy sheet combination for use in a thermographic copying process in which the transfer sheet serves as a tensioning member, said combination including a heat meltable coating on said transfer sheet, a mineral coating on said copy sheet, said coating on said transfer sheet facing toward said copy sheet, and said coating on said copy sheet facing away from said transfer sheet.

5. In the process of imaging a copy sheet comprising the steps of superposing original infrared radiation-absorbing images together with a copy sheet and a transfer sheet having a heat-transferable imaging layer, the imaging layer being in intimate surface contact with the surface of the copy sheet, and applying thereto infrared radiations which are absorbed by the original images and converted to heat patterns in the shapes of said images, thereby heating corresponding portions of the imaging layer and causing them to melt and transfer to the copy sheet in areas corresponding to the locations and shapes of the original images, the improvement which comprises using as the transfer sheet one which is free of materials that absorb sufficient amounts of infrared radiation on instantaneous exposure thereto to cause transfer of the imaging layer and is comprised of a thin paper foundation having on one surface thereof a non-melting, non-transferable plastic intermediate layer and a top heat-transferable imaging layer based upon wax binder material, said transfer sheet being heat resistant and dimensionally stable at the melting temperature of the said imaging layer whereby the portions of the imaging layer that are transferred to the copy sheet form clear and uniform images.

3,301,698
METHOD AND APPARATUS FOR SIMULTANEOUSLY DEVELOPING AND FIXING ELECTROSTATICALLY FORMED IMAGES

Donald L. Fauser and Edwin R. Kolb, Cleveland, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Original application June 8, 1961, Ser. No. 115,643, now Patent No. 3,241,957, dated Mar. 22, 1966. Divided and this application Feb. 18, 1965, Ser. No. 433,817
9 Claims. (Cl. 117—37)



1. The method of printing comprising the steps of forming an electrostatic latent image on an image bearing member having an image bearing surface, treating said image bearing member with a liquid developer including an electrically insulating suspension medium having marking elements therein capable of deposition on said surface in accordance with said latent image, said marking elements including a polymeric material associated therewith for substantially permanently adhering to said surface upon removal of said medium, said medium being substantially free of polymeric material except that associated with said marking elements, and pressure-contacting the image bearing member across the width thereof after development of said image with a rolling member travelling at the surface speed and in the same direction as said image bearing member for removing substantially all of said medium from said surface to effect substantially permanent adhesion of the deposited marking elements to said surface.

2. A developer unit for electrostatic photography wherein a web member having an electrostatic latent image thereon is treated with a liquid developer, comprising a tank for receiving a quantity of liquid developer including an electrically insulating liquid having marking elements substantially uniformly dispersed therein, rotatable drum means positioned transversely of said tank, at least a portion of said drum means being positioned below the level of the liquid developer in said tank, means for maintaining tension in said web member, said web member being directed around said drum means with the image bearing surface in facing relation with said tank and that portion of the opposite surface below the level of liquid developer being in contact with said drum means, rotatable squeegee means positioned in spaced parallel relation to said drum means and defining a pressure nip therebetween for effecting removal of liquid adhering to said member after development of said latent image.

3,301,699
MEANS FOR AND METHOD OF COATING A SURFACE WITH A FLUID FILM

Henry J. Mozzl, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Jan. 21, 1963, Ser. No. 252,714
16 Claims. (Cl. 117—111)

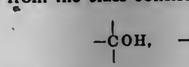
5. A method for coating a moving metal surface adapted to move at any one of a plurality of speeds with an oil film of desired thickness, the improvement comprising the steps of positioning an oil absorbent roller in direct contact with said surface while moving said metal surface relative to said roller, directing an atomized oil spray at a pressure of at least thirty pounds per square inch upon said roller, and periodically interrupting said oil spray at any one of a plurality of time intervals to ensure that the volume of oil deposited on said roller per time increment does not saturate said absorbent roller with oil while depositing sufficient oil on said roller to coat an oil film of desired uniform thickness on said metal surface.

3,301,700
COMPOSITE WITH COPOLYMER COATING BONDED TO A POLYMERIC SUBSTRATE THROUGH ACID HALIDE UNITS

Daniel Edwin Maloney, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,148
3 Claims. (Cl. 117—118)

1. A composite article comprising a polymeric material having at least one Z radical where Z is selected from the class consisting of

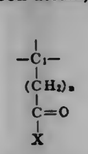


and a copolymer having at least 50 mol percent units of the formula



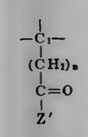
where R′ is a radical selected from the class consisting of hydrogen, halogen and hydrocarbon radicals having 1 to 8 carbon atoms and R_2 is a radical selected from the class consisting of hydrogen, halide, and methyl, and acyl halide units having 3 to 8 carbon atoms, said units including the radical

(1)



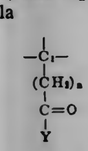
where C_1 is a carbon atom in the main polymer chain, n is 0 to 5 and X is halogen, said copolymer being bonded to the polymeric material through radicals having the formula

(2)



where C_1 is a carbon atom in the main polymer chain, n is 0 to 5, and Z′ is a radical in the polymeric material and is covalently bonded through an atom selected from the class consisting of nitrogen and oxygen to the carbon atom of the copolymer, said copolymer also having radicals having the formula

(3)



where C_1 is a carbon atom in the main polymer chain, n is 0 to 5, and Y is an organic radical, the sum of the number of radicals 1, 2, and 3 being .1 to 25 mole percent of the total number of units in the copolymer.

3,301,701
NONREFLECTIVE GLASS COATINGS

Chester L. Baker, Narberth, and John Frankle Austin, Philadelphia, Pa., assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 25, 1965, Ser. No. 467,086
5 Claims. (Cl. 117—118)

2. A process for the manufacture of surfaces coated with finely divided silica which comprises mixing an aqueous solution of sodium silicate having a weight ratio of Na_2O to SiO_2 within the range of from about 1:2.4 to 1:4 and a concentration of SiO_2 ranging from about 1 to 30% by weight with ammonia in an amount ranging from about 80 to 500% of the quantity required when slowly added to the silicate solution, to produce the first appearance of coacervation in the mixture; the higher concentrations of silica being employed with the lower ratios of Na_2O to SiO_2; contacting as an insolubilizing agent a surface having an acidic pH; the quantity of NH_3 added varying from about 0.8 to 4 parts by weight to 1 part of SiO_2 in the silicate solution; conducting the precipitation on the surface in such manner that the required film thickness is developed and so the ammonia is completely mixed in not later than the reaction with the acidified surface, the concentration of the solution being so chosen that the total SiO_2 content in the final mixture is within the range of from 0.5 to 8% by weight and recovering the resulting surface coated with finely divided silica free from silica gel.

3,301,702
COATING FOR THE PROTECTION OF FERROUS BASE ALLOYS AT ELEVATED TEMPERATURES

Stuart L. Ames, Natrona Heights, Frank A. Malagari, Jr., Freeport, and Jesse R. Conner, Jr., Sarver, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

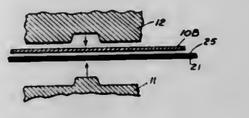
No Drawing. Filed May 9, 1963, Ser. No. 279,297
6 Claims. (Cl. 117—135.1)

1. A method of protecting the surface of ferrous base alloys from scaling or decarburization in oxidizing atmospheres at temperatures from 1800° F. to 2400° F., comprising the steps of cleaning the surface of the alloy with an inorganic detergent cleaner, and thereafter placing on the surface of the alloy a coating consisting essentially of an aqueous solution of an alkali metal silicate and from about 14% to about 53% aluminum oxide.

3,301,703
PRINTING PLATES

Arthur Edward Jeffrey Owen, Gates Mills, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

Original application Mar. 6, 1963, Ser. No. 263,350, now Patent No. 3,245,344, dated Apr. 12, 1966. Divided and this application Aug. 26, 1965, Ser. No. 493,954
2 Claims. (Cl. 117—138.8)



1. A film bearing on one side only a pigment coating for facing the intaglio depressions of an embossed printing plate undergoing embossing and comprising a film of

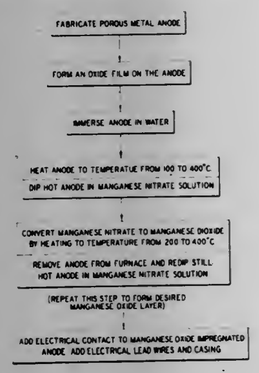
thermoplastic material, about 0.5 to 1 mil in thickness, having such a pigment coating thereon composed of the following:

Material:	Parts by weight
Vinyl-chloride vinyl-acetate copolymer as a continuous universal thermoplastic matrix for all the coating ingredients	about 5 to 6.
Pigment particles	about 7.
Abrasive particles	not more than about 7.5.
A non-drying pigment vehicle selected from the group consisting of mineral and vegetable oil	not more than about 5.25.
Adhesive material to adhere the coating to the plate when the coating is driven by pressure onto the plate	about 5 to 6.
A plasticizer and stabilizer agent selected from the group consisting of sucrose acetate isobutyrate and dioctyl phthalate	about 3 to 10.

3,301,704
CAPACITOR AND PROCESS THEREFOR

Frederic F. Zind, North Olmsted, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed Dec. 26, 1963, Ser. No. 333,656
14 Claims. (Cl. 117—200)

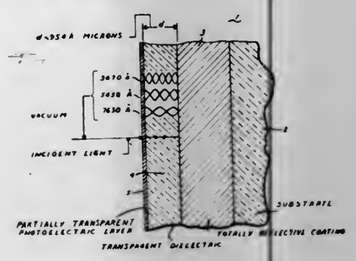


1. A process for the production of a solid electrolytic capacitor anode comprising the steps of
(1) preheating an oxidized porous metal anode having occluded water to a temperature above 100° C.,
(2) dipping the anode while still at a temperature above 100° C. into a solution of manganese nitrate which is at a temperature below about 70° C.,
(3) removing the anode from the manganese nitrate solution and heating the anode at a temperature from 200 to 400° C. for a time sufficient to convert manganese nitrate to manganese oxide,
(4) redipping the anode while it is still at a temperature above 100° C. into a solution of manganese nitrate which is at a temperature below about 70° C.,
(5) repeating steps (3) and (4) a sufficient number of times to effect a desired filling of the pores of the anode with manganese oxide.

3,301,705
INTERFERENCE PHOTOCATHODE SENSITIVE TO MULTIPLE BANDS

Radames K. H. Gebel, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed Sept. 17, 1963, Ser. No. 309,581
2 Claims. (Cl. 117—201)

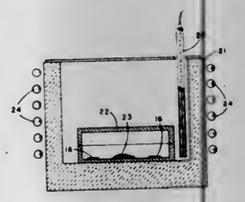


1. An interference photocathode having high sensitivity to radiation from the night sky comprising: means providing a flat totally reflecting surface, a layer of dielectric material of uniform thickness and transparent to the principal bands of radiation from the night sky on said reflecting surface, and a thin partially transparent film of photoemissive material sensitive to the principal bands of radiation from the night sky on said dielectric layer, whereby radiation normally incident on said photoemissive film produces standing waves in said dielectric layer; said photoemissive film having a thickness lying in the range 50 A.–300 A. and the thickness of said dielectric layer being the minimum value for which said photoemissive film is positioned at an antinode of each of the standing waves of wavelength 3470 A., 5450 A. and 7630 A., said minimum value being $.95k$ micron where k is close to unity and dependent principally upon the velocity of light in said dielectric material.

3,301,706
PROCESS OF FORMING AN INORGANIC GLASS COATING ON SEMICONDUCTOR DEVICES

Steward S. Flaschen, Darien, Conn., and Robert J. Gnaedinger, Jr., Port Credit, Ontario, Canada, assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 109,439, May 11, 1961. This application July 7, 1965, Ser. No. 470,043
7 Claims. (Cl. 117—217)



1. A process of forming an inorganic glass coating on semiconductor material selected from the group consisting of germanium and silicon, which process comprises thermally oxidizing the semiconductor material at a surface region thereof in an oxidizing atmosphere containing oxygen and a lead material at a temperature in the range from 400° C. to 750° C. with the lead material becoming incorporated in the glass, said lead material being selected from the group consisting of lead, lead oxide and lead halides.

3,301,707
THIN FILM RESISTORS AND METHODS OF MAKING THEREOF

William E. Loeb, Martinsville, N.J., and David J. Valley, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York

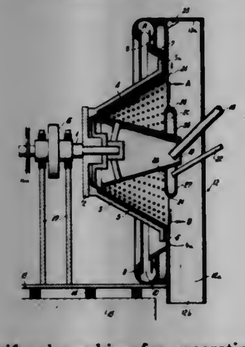
No Drawing. Filed Dec. 27, 1962, Ser. No. 247,558
12 Claims. (Cl. 117—227)

7. A resistor element comprising an intimate dispersion matrix of a nearly atomic dispersion of a normally conductive metal and a normally solid poly(p-xylylene) containing from 25 to 75 percent by weight metal, the balance being the linear solid poly(p-xylylene).

3,301,708
APPARATUS FOR SEPARATING CRYSTALS FROM SUGAR SYRUP

Julius von Rötel, Dortmund, Germany, assignor to Maschinenfabrik Buckau R. Wolf Aktiengesellschaft, Grevenbroich, Germany

Filed May 5, 1964, Ser. No. 365,020
11 Claims. (Cl. 127—19)



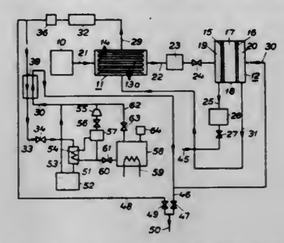
1. A centrifugal machine for separating crystals from sugar syrup, comprising a rotary vessel including a perforated basket having an open end; means for rotating said vessel; means for admitting into said basket a continuous stream of syrup whereby the liquid fraction of such syrup passes through said basket and the remaining solid crystalline fraction forms a stream of crystals which overflow and are discharged substantially radially from the open end of said basket; a collector having walls surrounding said open end so that the crystals travel in a direction toward and accumulate along said walls; and means for preventing disintegration of crystals on contact with said walls, including a hollow rotary distributor connected for rotation with said vessel and having a pair of spaced annular flanges and a web connecting the peripheral portions of said flanges and provided with openings disposed in the general plane of said open end and means for admitting high-purity sugar syrup into said distributor so that such high-purity syrup forms a stream of liquid material issuing from said openings and, in admixture to the stream of crystals, forming a cushion which coats said walls to prevent direct impact of crystals against said collector.

3,301,709
METHOD AND MEANS FOR MANUFACTURING LIQUID OXYGEN FOR FUEL CELLS

Olle Lindström, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed June 12, 1964, Ser. No. 374,669
Claims priority, application Sweden, June 17, 1963, 6,647/63
2 Claims. (Cl. 136—86)

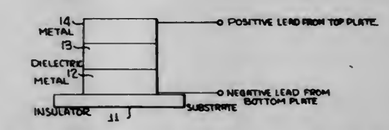
1. In a method of producing oxygen for fuel cell systems in submarines, in which a fuel containing nitrogen is combusted with formation of nitrogen gas, which nitrogen gas is at least partly condensed to liquid state in a condenser, the steps comprising bringing the liquid nitrogen into heat exchange relation with air to condense at least some of the oxygen of the air to a liquid while the liquid nitrogen is vaporized, reducing the pressure on said liquid oxygen to a sufficient extent to reduce the temperature thereof below the boiling point of nitrogen, and bringing at least a part of the condensed liquid oxygen at such reduced temperature into heat exchange relation with the nitrogen gas to condense at least some of the nitrogen gas to a liquid.



3,301,710
HYDROACTIVATED GALVANIC CELL

Michael Hacskaylo, Falls Church, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed Feb. 4, 1964, Ser. No. 342,503
4 Claims. (Cl. 136—90)



1. A thin film battery for generating an electrical output upon exposure to water or water vapor, comprising a positive electrode in the form of a metallic film porous to water molecules and having a thickness in the range from about 300 A. to about 3000 A., a water-insoluble solid electrolytic film of less than approximately 2.5 microns in thickness composed of a metal compound that undergoes a hydration reaction with water, said metal compound selected from the group consisting of cerium oxide and lead chloride, and a negative electrode in the form of an oxidizing metal film having a thickness in the range from approximately 0.1 to approximately 3 microns, said negative electrode film selected from the group consisting of aluminum, zinc, nickel and chromium, said electrolytic film interposed between said positive and negative electrode films.

3,301,711
Al-Si-Mn-Li ANODE FOR HIGH TEMPERATURE GALVANIC CELL

Burnham W. King, Jr., and Thomas G. Byrer, Columbus, and Walter A. Hedden, Worthington, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Sept. 25, 1964, Ser. No. 399,414
2 Claims. (Cl. 136—120)

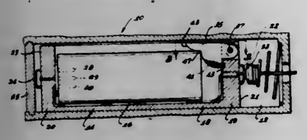
2. A high temperature galvanic cell comprising an anode having a composition consisting of the following ranges in weight percent:

	Percent
Al	72–84
Si	3–4
Mn	10–20
Li	3–4

3,301,712
BATTERY ADAPTER

Walter H. Bach, Los Angeles, Calif., assignor to Bach Auricon, Inc., Los Angeles, Calif., a corporation of California

Filed Jan. 16, 1964, Ser. No. 338,252
6 Claims. (Cl. 136—173)

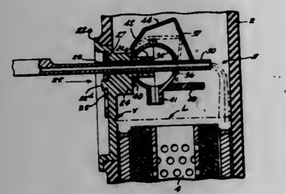


1. A battery adapter for converting a smaller battery for use as a substitute for a larger battery, comprising:
- a tubular casing having a side wall and a pair of end walls, said side wall having an access opening therein for insertion of a battery into said casing;
- a cradle within said casing defining a mounting compartment for said battery;
- a plurality of external electrical contacts upon said casing;
- a plurality of internal electrical contacts within said cradle electrically connected to said external contacts;
- and a battery hold down trigger pivotally anchored to one of said casing end walls, said trigger having a multi-lobe configuration such that proper polarity insertion of said casing into a battery receptacle moves said trigger to a battery retaining position, while reverse polarity insertion of said casing into a battery receptacle biases said trigger to a non-retaining position and prevents complete insertion of said casing into said receptacle.

3,301,713
NON-SPILLABLE STORAGE BATTERY CONTAINER WITH COMBINATION MEANS FOR VENTING AND FILLING

Homer A. Lozeau, Worcester, Mass., assignor to Koehler Manufacturing Company, Marlboro, Mass., a corporation of Massachusetts

Filed Nov. 17, 1964, Ser. No. 411,921
10 Claims. (Cl. 136—177)

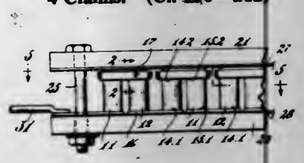


1. A storage battery construction comprising a battery casing which includes a cell enclosure section, a cell cover secured at the upper side of the cell enclosure section and a battery top overlying the said cell cover, battery plates and a fluid body of electrolyte contained in the casing and normally overlying the tops of the battery plates, fluid inlet means received through one side of the battery casing for receiving a filling tube and delivering fluid material into the battery cells, said fluid inlet means including a translucent viewing window located in a position to show the level of the fluid body of electrolyte in the cell enclosure, an inner conduit portion and an orificed trap member mounted on the inner end of the conduit portion, said window presenting a venting and filling opening which extends through the conduit and communicates with the trap member.

3,301,714
COMPLIANT THERMOELECTRIC ASSEMBLY

Frank Lyman, Jr., Cambridge, Mass., assignor to Cambridge Thermionic Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed July 30, 1963, Ser. No. 298,680
4 Claims. (Cl. 136—212)



1. Thermoelectric apparatus comprising:
- a series of thermoelements arranged side by side and having junction faces in two opposite planes;
- two rigid conductive plate means for confining said thermoelements therebetween;
- a first group of conductive thermojunction members between the junction faces in one of said planes of said series and one of said plate means, and having an area covering two adjacent thermoelement junction faces;
- a second group of thermojunction members between the junction faces in the other plane of said series and the other one of said plate means, said members of the second group having covering areas effectively similar to that of the members of said first group, and each including a concave conductive component and a conductive insert component which is concave towards the concavity of the first component, fitting therewithin with the respective backs in spaced, compliantly parallel relationship constituting contacting faces; and
- means for securing said series of thermoelements and said groups of thermojunction members between said plate means such as to establish compliantly continuous pressurable thermoelectric connection of selected thermoelements and junction members.

3,301,715
THERMOCOUPLE FOR MULTIPLE BURNER COMBUSTION CONTROL

John E. Gerrard, 41 Overlea Lane, Matawan, N.J. 07747, and James Percival, 3 Roney Road, Iselin, N.J. 08830

Filed Sept. 23, 1965, Ser. No. 489,569
3 Claims. (Cl. 136—222)

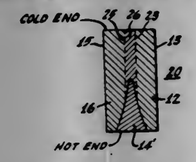


1. A thermocouple assembly useful for sensing variations of temperature in a flame comprising:
- (a) a protecting tube;
- (b) a thermocouple element comprising a pair of wires extending from cold terminals through said protecting tube and joined at their forward ends to form a hot junction, said wires being spaced apart and from the interior wall of the protecting tube;
- (c) a refractory metal tip having a base surface, a central portion of which closes the protecting tube and into which the pair of wires extend, said hot junction being imbedded in the tip by means insulating said wires in the tip up to the hot junction; and
- (d) a cooling jacket surrounding said protecting tube and sealed to the tip, said jacket having inlet and outlet conduits for circulating a coolant along the exterior of the protecting tube to an annular portion of the base surface of the tip which forms a closure of the cooling jacket.

3,301,716
SEMICONDUCTOR DEVICE FABRICATION

Hans P. Kleinknecht, Bergdietikon, Aargau, Switzerland, assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 10, 1964, Ser. No. 395,420
14 Claims. (Cl. 148—1.5)



2. The method of fabricating a semiconductor device comprising:
- forming a sandwich consisting of a metallic layer bonded between two semiconductor layers, said metallic layer having a melting point lower than that of said two semiconductor layers and being capable, when molten, of dissolving a portion of said semiconductor layers;
- maintaining a temperature differential between two ends of said sandwich to establish a temperature gradient parallel to the plane of said sandwich while heating said sandwich to a temperature above the melting point of said metallic layer but below the melting point of said semiconductor layers,
- said heating step being performed for a period of time sufficient for said metallic layer to collect at the hot end of said sandwich;
- cooling said sandwich to room temperature; and
- removing that end of said sandwich in which said metallic layer has collected.

3,301,717
PROCESS FOR PRODUCING BERYLLIUM COPPER BASE ALLOYS AND PRODUCTS

Paul Joseph Scherbner, Boyertown, Pa., assignor to The Beryllium Corporation, Reading, Pa., a corporation of Delaware

No Drawing. Filed Sept. 22, 1964, Ser. No. 398,443
8 Claims. (Cl. 148—2)

1. A process of fabricating an extruded free machining article comprising casting a billet of a copper base alloy containing beryllium and 0.07–1.0% lead and extruding said billet under a pressure of from 45,000 to 200,000 p.s.i.

5. The process of claim 1, wherein the billet is solution heat-treated at about 1450° F., cleaned and drawn subsequent to extrusion.

3,301,718
PASSIVATING BERYLLIUM

Simon J. Morana, Hazleton, Pa., assignor to The Beryllium Corporation, Reading, Pa., a corporation of Pennsylvania

Filed Mar. 22, 1965, Ser. No. 442,240
11 Claims. (Cl. 148—6.16)

1. The process of imparting surface passivity to metal consisting essentially of beryllium which comprises contacting the beryllium metal with an aqueous mixture prepared from a saturated solution of hexavalent chromium ions diluted with water in an amount of up to 50 times its volume and sufficient phosphoric acid to increase the passivity of the coating, thereby effecting deposition of a passivating coating on the metal.

3,301,719
CHEMICAL CONVERSION COATING FOR MAGNESIUM

Earl C. Groshart and James B. Mohler, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,669
2 Claims. (Cl. 148—6.21)

1. A coating process for magnesium and magnesium alloys in preparation for subsequent applications of coatings comprising the steps of degreasing, cleaning, pickling in a solution comprised of:

Chromic acid, ounces per gallon	40 to 50
Sodium nitrate, ounces per gallon	3.5 to 4.5
Sodium chloride (or chloride ion), parts per million, maximum	10
Water, balance	

rinsing, contacting with a coating solution of:

Sodium dichromate dihydrate	4 to 8 ounces per gallon
Sodium sulfate	0.5 to 0.8 ounce per gallon
Chromic acid	Sufficient to maintain the pH within 1.6 to 1.9
Water, balance	

and thereafter rinsing the part.

3,301,720
TREATMENT OF MATERIAL FOR HYSTERESIS APPLICATION

Andrew J. Griest, Jr., Pittsburgh, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 29, 1964, Ser. No. 341,125
8 Claims. (Cl. 148—120)

1. A method of producing a material suitable for rotors in hysteresis motors comprising the steps of, producing a material having from about 7.0% to about 15% manganese, the balance essentially iron and residual impurities, and reducing said material at least 99% in cross sectional area, said reduction in area being carried out with the material between about 800° F. and 950° F.

3,301,721
HYDRAZINE GEL COMPOSITIONS CONTAINING METAL AND MICRO-DIMENSIONAL FIBERS

Frederic C. McCoy, Beacon, and Edwin C. Knowles, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 18, 1961, Ser. No. 83,581
18 Claims. (Cl. 149—2)

1. A stable gel comprising 10 to 50 weight percent powder of an element selected from the group consisting of aluminum, beryllium, magnesium, carbon, boron, boron carbide and mixtures thereof, said powder having an average particle size of less than 20 mesh, 0.1 to 3.0 weight percent micro-dimensional fibers having an average fiber diameter less than 1.0 micron, said fibers being insoluble and non-reactive with hydrazine, 0.1 to 3.0 weight percent of a hydrazine soluble thickener material and the remainder selected from the group consisting of hydrazine and dialkyl substituted hydrazine wherein the alkyl group contains from 1 to 3 carbon atoms.

3,301,722
PELLETED AMMONIUM NITRATE BLASTING EXPLOSIVES

Henry H. Mohaupt, Santa Barbara, Calif., assignor to Petroleum Tool Research, Inc., Fort Worth, Tex., a corporation of Texas

No Drawing. Filed Aug. 3, 1965, Ser. No. 477,009
13 Claims. (Cl. 149—2)

3. An explosive comprising: pellets A and pellets B, said pellets A being a compacted mixture of a combustible

hydrocarbon lubricating material, nitrated organic detonatable sensitizer having low water solubility, and ammonium nitrate, in the proportions by weight of the mixture of ammonium nitrate, about 38% to 73%; and said detonatable sensitizer, about 25% to 60%; and combustible hydrocarbon lubricating material, about 1% to 3.5%; and pellets B comprising a compacted mixture of water soluble nitrates comprising predominant ammonium nitrate; said pellets A and B each having a dry specific gravity of at least 1.4; and said pellets B being present in the explosive in a ratio of pellets B to pellets A sufficient to substantially fill any spaces between pellets A, not already filled with said water soluble nitrates, with said water soluble nitrates.

3,301,723
GELLED COMPOSITIONS CONTAINING GALACTOMANNAN GUMS

Joseph D. Chrisp, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 6, 1964, Ser. No. 343,140
20 Claims. (Cl. 149—20)

1. A process for the gelation of galactomannan gums which comprises mixing water, galactomannan gum, base capable of producing hydroxide ions, and crosslinking agent selected from at least one of the group consisting of the compounds of the transition metals of atomic number 21 to 26 inclusive, 39 to 41 inclusive, 57, 72, and 73, said crosslinking agent being soluble in the system and providing from about 0.005 to 5 millimoles of transition metal per gram of galactomannan, said gelation being conducted at a pH of from about 6 to 13.

15. A stable aqueous gel comprising a uniform mixture of water and galactomannan gum crosslinked in situ at a pH of from about 6 to 13 with base capable of producing hydroxide ions and crosslinking agent selected from at least one of the group consisting of compounds of the transition metals of atomic number 21 to 26 inclusive, 39 to 41 inclusive, 57, 72, and 73, said crosslinking agent being soluble in the system and providing from about 0.005 to 5 millimoles of transition metal per gram of galactomannan.

16. A stable aqueous gel of claim 15 wherein said crosslinking agent is selected from the group consisting of transition metal salts of acids having a first dissociation constant with a pK_a of no greater than about 6 and transition metal amino-alcohol and β-diketo chelates.

17. A stable aqueous gel of claim 16, said gel being a water-bearing explosive comprising inorganic oxidizing salt, fuel, about from 5 to 45% by weight of water and about from 0.25 to 5% by weight of said galactomannan crosslinked in situ with said crosslinking agent.

18. A stable, gelled, water-bearing explosive composition of claim 17 having an oxygen balance of about from −30 to +10 comprising:

(a) about from 20 to 70% of ammonium nitrate;
(b) 0 to about 40% by weight of sodium nitrate;
(c) 0 to about 40% by weight of self-explosive comprising TNT;
(d) 0 to about 30% of at least one metallic fuel selected from aluminum and ferrophosphorus;
(e) 0 to about 10% by weight of particulate carbon;
(f) about from 10 to 30% by weight of water; and
(g) about from 0.2 to 2% by weight of galactomannan gum,

said composition including as fuel one of the group consisting of component (c) above and combinations of at least two of components (c), (d) and (e), said galactomannan being crosslinked in situ in the presence of added base at a pH of from about 6 to 9 with from about 0.01 to 3 millimoles transition metal per gram of galactomannan.

3,301,724
DETONATABLE COMPOSITIONS COMPRISING METAL NITRATES AND MONONITROPARAFFINS

Edwin M. Scott, Jr., Box 323, Tujunga, Calif. 91042

No Drawing. Filed Apr. 7, 1965, Ser. No. 446,382
3 Claims. (Cl. 149—62)

1. A detonatable composition consisting essentially of a mononitroparaffin selected from the class consisting of mononitropropane, mononitrobutane, and mixtures thereof; from 3½ to 5 parts by weight for each part of said nitroparaffin of a metallic nitrate chosen from the class consisting of sodium nitrate, potassium nitrate, calcium nitrate, and mixtures thereof; and from about ⅓ to about ⅘ part by weight, per one part of said nitroparaffin, of a comminuted material chosen from the group consisting of starch, starchy flours, cellulose, and lignocellulose, and mixtures thereof, the relative proportions of the several components within the said limits being chosen to result in an overall oxygen balance of from within about minus 3% to about plus 3%.

3,301,725
SCULPTURING OF ART FIGURES

Edward F. Frontera, West Orange, N.J. (15 Otsego Road, Verona, N.J. 07044)

Filed Sept. 25, 1963, Ser. No. 311,491
11 Claims. (Cl. 156—59)



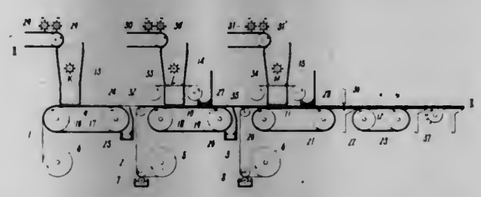
1. A method of sculpturing, under the guidance of an only-two-dimensional representation thereof, a figure of art or portion of such a figure which presents from a particular direction an elevational view of major interest wherein the outline of the figure at least largely coincides with the boundary of the area occupied by the figure along some substantially vertical plane, comprising (1) pre-forming sequential slices of the figure, within one of which said plane is contained, as respective slabs each of outline embracing the maximum extent of the figure within the respective slice, (2) joining the preformed slices together in sequential face-to-face relationship thereby to form a unitary blank embracing but protruding beyond the volume of the figure, with a substance interposed, at the inter-slice interfaces, of thinness and color such as to render the edges of those interfaces discernible as lines, and (3) selectively removing material from said blank until there is exposed to view from said direction a three-dimensionally shaped figure surface interspersed by contour-defining lines, comprising the edges of said interfaces, which with the outline of the figure form a pattern conforming to that formed with the outline of said two-dimensional representation by contour-representing lines provided therein.

3,301,726
METHOD AND APPARATUS FOR MAKING VARICOLORED PARTICLE BOARD

Kosuke Matsukata, 390 Tsurumi-cho, Tsurumi-ku, Yokohama, Japan

Filed Nov. 14, 1962, Ser. No. 237,604
Claims priority, application Japan, Nov. 16, 1961, 36/41,120
9 Claims. (Cl. 156—62.2)

1. A process for producing varicolored particle boards, comprising spreading small colored particles of a first color scheme on one face of a first base sheet having at least one aperture therein which has the shape of the area of the particle board which is to be occupied by particles of another color scheme, adhering at least one further base sheet to the other face of the first base sheet with at least part of said further base sheet exposed through at least a part of said at least one aperture in

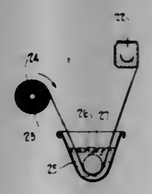


said first base sheet, spreading small colored particles of at least one further color scheme on the parts of said further base sheet exposed through the aperture in said first base sheet, and then spreading a further layer of particle board material over the previously spread layers of particles and coextensive with said first base sheet, removing the base sheets, and smoothing the surface of the thus formed particle board from which the base sheets have been removed.

3,301,727
METHOD OF MAKING HOLLOW INSULATING BOOMS

Curtis W. Verrell and Alan T. Valentine, Fairview Park, Ohio, assignors to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey

Filed Sept. 28, 1964, Ser. No. 399,437
9 Claims. (Cl. 156—171)



1. The method of forming a hollow boom which comprises the steps of covering a metal mandrel with a layer of glass fiber mat impregnated with resin, curing the mat layer, dipping woven glass roving in liquid resin, wrapping the dipped woven glass roving successive layers transversely around the mat layer, applying successive woven roving tapes extending axially between layers of the wrapped on roving as the wrapping proceeds and curing the resin in the woven glass roving.

3,301,728
PROCESS FOR MAKING THREE DIMENSIONAL DISPLAY ITEMS

William Swartz, Highland Park, Ill. (1430 W. Wrightwood Ave., Chicago, Ill. 60614)

Original application Dec. 14, 1956, Ser. No. 628,460, now Patent No. 3,057,073, dated Oct. 9, 1962. Divided and this application Apr. 26, 1965, Ser. No. 450,701
2 Claims. (Cl. 156—220)

1. A method for making a three dimensional plaque comprising the steps of printing a blank to provide the desired color effects, partially severing the blank to provide the desired outline of the plaque, applying a printed panel to the surface of the blank in a preselected position within the plaque outline, embossing the blank within the

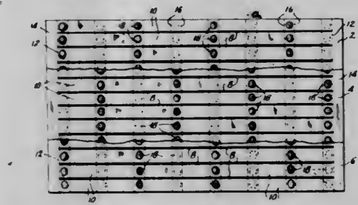


plaque outline to raise selected portions of the panel above the surface of the blank, and completely severing the plaque from the blank.

3,301,729
METHOD OF MAKING CELLULAR CORE STRUCTURES

Robert J. Kauffman, Plymouth, Mich., assignor to Narad, Inc., Plymouth, Mich., a corporation of Michigan

Filed Aug. 12, 1964, Ser. No. 389,055
7 Claims. (Cl. 156—252)

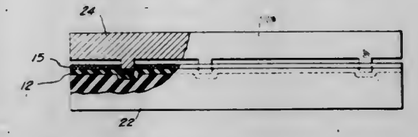


1. The method of forming cellular core structures from sheet material, comprising the steps of: forming a plurality of parallel slits in sheets of said material and extending from positions adjacent to but inwardly of one edge of each sheet to positions adjacent to but spaced inwardly from the opposite edge thereof, thereby forming a plurality of strips of material integrally joined at their ends to marginal bands; applying spaced spots of adhesive material along the upper face of each of said strips of each sheet; stacking a plurality of said sheets with their respective strips and marginal bands in super-posed relation to form an adhesively bonded pad of sheets; then separating all said marginal bands from said pad to separate the same into a plurality of stacks of adhesively bonded strips of said sheet material.

3,301,730
METHOD OF MAKING A PRINTED CIRCUIT

Lazarus Spiwak, Manchester, George R. Traut, Danielson, and Paul L. Anderson, Vernon, Conn., and John A. Zagusta, Jackson Heights, N.Y., assignors to Rogers Corporation, Rogers, Conn., a corporation of Massachusetts

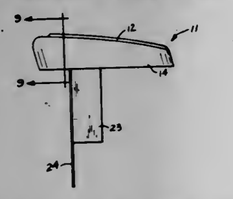
Filed Apr. 3, 1961, Ser. No. 100,226
3 Claims. (Cl. 156—267)



1. The method of producing a printed circuit assembly which comprises the steps of applying a thin conductive metal die-cut foil on a relatively thin, tough and flexible resin-coated sheet of insulating material, placing the foil and flexible sheet assembly on a resilient base member,

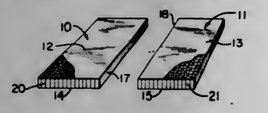
die-stamping the foil with a die to provide a predetermined metal foil circuit pattern on the insulating sheet, said die having a raised face thereon shaped in the form of said circuit pattern, and said insulating sheet and resilient base member in the region immediately beneath said raised die face yielding sufficiently during the die-stamping to permit the edge of said raised die face to cut said circuit pattern from the foil sheet without interrupting the continuous surface of the insulating sheet, removing the unwanted foil disposed about said cut metal foil circuit pattern from the insulating sheet, removing the sheet of insulating material from said resilient base member, and permanently bonding said cut metal foil circuit pattern to said insulating sheet.

3,301,731
METHOD OF SECURING COMPONENTS OF A CAP MEMBER TO ONE ANOTHER
Henry Ruskin, Bayside, and Ernest S. Viola, Westbury, N.Y., assignors to Swingline Inc., Long Island City, N.Y., a corporation of New York
Original application Mar. 1, 1961, Ser. No. 92,616, now Patent No. 3,156,058, dated Nov. 10, 1964. Divided and this application Sept. 4, 1963, Ser. No. 306,433
4 Claims. (Cl. 156—293)



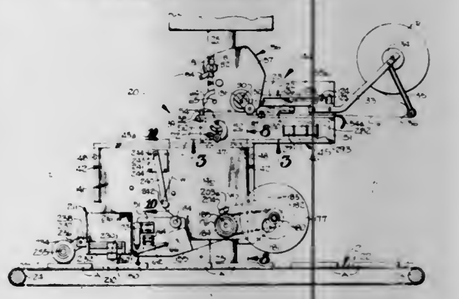
1. A method of securing an indicia bearing resinous top member having a solvent dissolvable painted lower surface to a resinous body member comprising the steps of obtaining a solvent for said resinous material, obtaining an intermediate member having a background design and being impervious to the action of said solvent, placing said intermediate member within said solvent, thence placing said intermediate member in overlapping relationship with the painted surface of said top member, thence applying said solvent to said securable surfaces of said top member and said body member and to said intermediate member, and thence placing said surfaces in overlapping relationship so that said background design appears upon said top member.

3,301,732
SANDWICH PANEL JOINT AND METHOD
Bernard P. Kunz, 5623 S. Huron, Littleton, Colo. 80120
Filed Feb. 25, 1963, Ser. No. 260,681
4 Claims. (Cl. 156—304)



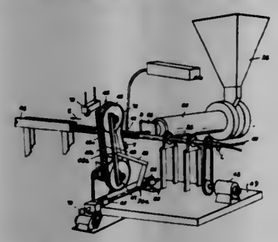
1. A method of making an edge-wise joint between two panel-like sections having edges and faces, comprising: the steps of aligning said sections in edge-to-edge relationship with a corresponding face of each section in coplanar relationship, positioning a jointer member having a width greater than the thickness of said sections between said edges, applying adhesive means on adjacent surfaces of said edges and jointer member, maintaining said sections in coplanar alignment while said adhesive means bonds said adjacent surfaces together by attaching aligning means to said jointer member extending along either side of said faces, and separating excess jointer member material and said aligning means from the area of said joint.

3,301,733
COMBINATION LABEL IMPRINTING AND APPLYING APPARATUS
John A. West and William R. Eppes, Charlotte, N.C., assignors to Idento Equipment Company, a corporation of North Carolina
Filed May 28, 1963, Ser. No. 283,918
12 Claims. (Cl. 156—363)



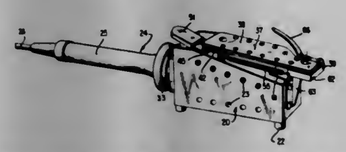
1. Combination label imprinting and applying apparatus for printing suitable indicia on serially arranged labels connected into a web of indeterminate length and for separating such labels and applying the same to articles successively and randomly presented thereto, said apparatus comprising
(a) label separating means adapted to receive the web of labels and to successively separate the same into unconnected individual labels,
(b) label applying means operatively associated with said label separating means for receiving individual labels therefrom and for applying these labels to articles presented thereto,
(c) feeding means for feeding the web of labels to said label separating means,
(d) article sensing means connected to said label applying means for sensing articles presented to said applying means and for actuating said applying means to apply labels thereto irrespective of the speed of travel or arrangement of the articles being presented for labeling, and said article sensing means also being connected to said feeding means for actuating the same to feed another label to said label separating means upon the application of a label to an article so that another label is delivered to said applying means for application to the next article presented to said applying means,
(e) label sensing means disposed adjacent said label separating means and connected to said feeding means for maintaining said feeding means actuated until another label reaches a position adjacent said separating means and being responsive to the arrival of a label at said position for deactivating said feeding means,
(f) imprinting means positioned adjacent said label separating means for printing suitable indicia on said labels in the web before the web is delivered to said separating means and including a rotatable printing cylinder,
(g) sensing means disposed between said imprinting means and said separating means for sensing the label requirements of said applying means, and
(h) control means connected to said imprinting means and responsive to said sensing means (g) for actuating the printing means to print labels and for deactuating the printing means when the label requirements have been filled.

3,301,734
APPARATUS FOR FORMING FLEXIBLE, THIN WALLED PLASTIC TUBING
Philip S. Britton, Tiburon, Calif., and Helmut P. Fochler, Chagrin Falls, Ohio, assignors, by mesne assignments, to Continental Oil Company, a corporation of Delaware
Original application Apr. 24, 1962, Ser. No. 189,733, now Patent No. 3,243,328, dated Mar. 29, 1966. Divided and this application May 27, 1965, Ser. No. 459,187
12 Claims. (Cl. 156—425)



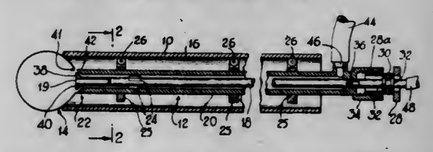
1. A system for producing a relatively thin walled, high strength tubing product, comprising, a base, a rotatable mandrel mounted on said base, motive means operably connected for rotating said mandrel about its longitudinal axis, and extrusion means disposed adjacent said mandrel for extruding a strip of polymeric material onto the rotating mandrel, and rotatable means disposed adjacent said mandrel for moving said strip axially of and off said mandrel, said rotatable means including an endless, flexible belt disposed for engagement with the strip on said rotating mandrel, support means mounting the belt on said base for selective angular disposition of said belt with respect to the strip on said rotating mandrel in a generally vertical plane, extending generally parallel to the rotational axis of said rotating mandrel, and adjustable motor means operably connected for rotating said belt, thereby to move said tubing product axially at a different rate of speed than that of the axial movement imparted to said tubing product by rotation of said mandrel.

3,301,735
APPARATUS FOR SPLICING SYNTHETIC THERMOPLASTIC YARNS
Willie Vincent Williams, 708 Green St., P.O. Box 687, Dalton, Ga. 30720
Filed Mar. 4, 1964, Ser. No. 349,435
6 Claims. (Cl. 156—433)



1. An electrically operated synthetic yarn splicing apparatus comprising a housing and support unit having side walls and being open at the top and bottom thereof, an electrical heating iron assembly including a handle portion mounted upon the housing and support unit, said heating iron assembly including a separately formed heating shoe having a substantially square corner within the housing unit, a shiftable head assembly substantially covering the top of the housing unit and movable longitudinally relative thereto and including an anvil having a groove for coaction with said shoe and a slot for receiving yarn ends, a main slide carrying said anvil, a yoke pivoted to the housing unit near the lower rear corner thereof and disposed within the housing unit and having its top pivotally secured to the main slide, a thumb lever on said yoke projecting exteriorly of the housing unit, resilient means interconnecting the housing unit and main slide serving to bias the shiftable head assembly forwardly and downwardly relative to the housing unit, an auxiliary slide on the main slide and bodily carried thereby and having a yarn clamping part adapted to enter the slot of said anvil, a spring interconnecting the auxilary slide and said anvil and urging the auxiliary slide forwardly relative to the main slide, and a stop element on the housing unit to arrest the forward movement of the auxilary slide.

3,301,736
APPARATUS FOR COATING TUBES
Millard F. Smith, Westport, Conn. (% Neirad Industries, Inc., P.O. Box 295, Saugatuck, Conn. 06880)
Filed Feb. 26, 1963, Ser. No. 261,020
2 Claims. (Cl. 156—501)

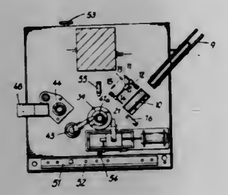


1. Apparatus for applying a coating to the interior of a tube comprising, in combination,
(A) a first conduit for liquid solidifiable coating material having
(1) a connection to a source of liquified coating material,
(2) and an open end portion,
(B) a second conduit for gas positioned within said first conduit, said second conduit having
(1) centering means thereon for maintaining said second conduit coaxial with said first conduit,
(2) a connection to a source of gas,
(3) and an open end portion,
(C) said end portions of said conduits forming an annular extrusion orifice therebetween for the passage of coating liquid around the open end of the second conduit,
(D) support means positioning the first conduit relative to the tube
(1) with associated means for adheringly applying a bubble of the coating material extruded through the orifice first to the interior of one end of the tube and then progressively down the remainder of the interior surface of the tube while liquid coating material is continuously extruded through the orifice to expand the bubble along the length of the tube
(E) and control means adjustably connecting the conduits for varying the width of the annular extrusion orifice between the ends of the conduits.

3,301,737
APPARATUS FOR MAKING HOLLOW PLASTIC ARTICLES
Max Schmidt, Brauhausstrasse 17, Ansbach, Mittelfranken, Germany
Filed Feb. 12, 1965, Ser. No. 446,444
5 Claims. (Cl. 156—511)

1. A machine for making hollow bodies from a workpiece defined by upper and lower substantially planar strips of thermoplastic synthetic material having a series of axially spaced complementary opposed cup-shaped portions jointly providing a series of axially spaced hollow bodies, comprising a supporting surface, a guide means on said supporting surface to which the workpiece is fed, cutting means on said supporting surface operably related to said guide means, means on said supporting surface for moving the workpiece from the guide means to the cutting means for cutting the workpiece transversely

between adjacent cup-shaped portions, welding means in proximity to said cutting means including a lower die carried by said supporting surface, an upper die, means mounting said upper die for movement toward and away from said lower die, and means for effecting relative rotation between said upper and lower dies, means on said supporting surface for conveying a cut section of said workpiece to said lower die so that upon movement of the upper die into operative relationship to the lower die and upon relative rotation being effected between said



upper and lower dies, the area of each strip surrounding said cup-shaped portions will be heated frictionally to provide a weld therebetween and join said cup-shaped portions to form a hollow body, a punch on said supporting surface, means on said supporting surface for removing the workpiece section from the lower die for positioning such section on said punch whereby upon actuation of said punch, said punch removes the unwelded material of the workpiece section, and means for discharging said removed unwelded material for providing a completed hollow body.

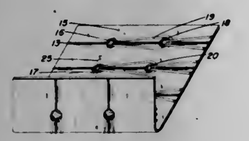
3,301,738

TEAR RESISTANT MATERIAL COMPRISING PERFORATED SHEET

Risto P. Lappala, Houston, Tex., and Nicholas J. Haight, Waterloo, and John M. Diehl, Madison, Wis., assignors to Griffolyn Co., Inc., Madison, Wis., a corporation of Delaware

Continuation of application Ser. No. 759,456, Sept. 8, 1958. This application Dec. 11, 1963, Ser. No. 331,642

5 Claims. (Cl. 161—49)



1. A nonrigid article comprising in combination a flexible web of apertured material and reinforcing strands, said strands having bight-like loops extending through said apertures, each of said loops having at least one loop from another of said strands extending from an adjacent aperture passing therethrough, said strands serving to reinforce said web, said strands being substantially unstressed.

3,301,739

REINFORCED PLASTIC WITH A STYRENE TYPE COPOLYMER AND A REINFORCING ELEMENT THEREIN

Byron M. Vanderbilt, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Continuation of application Ser. No. 816,111, May 27, 1959. This application June 21, 1963, Ser. No. 295,579

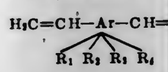
15 Claims. (Cl. 161—93)

1. A reinforced plastic comprising:

(A) glass fibers; and

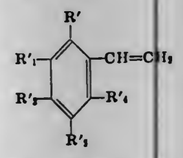
(B) a cured resin mix prepared from a resinifiable monomeric mix whose essential components are:

(1) 0.5 to 25 parts of a polyvinyl aromatic hydrocarbon having the general formula:



wherein R_1, R_2, R_3 and R_4 are each independently selected from the group consisting of hydrogen, halogen, alkyl and vinyl, and Ar is an aromatic nucleus selected from the group consisting of benzene, naphthalene, biphenyl and phenanthrene; and

(2) 99.5 to 70 parts of a monomeric styrene having the general formula:



wherein R′, R′$_1$, R′$_2$, R′$_3$ and R′$_4$ are each independently selected from the group consisting of hydrogen, halogen and alkyl containing not more than 18 carbon atoms; and

(3) a peroxide catalyst; and

(4) 0.1 to 5 parts of an unsaturated organic silane coupling agent having the general formula:

$$R''_nSi(OR''_1)_{4-n}$$

wherein R″ is an unsaturated radical selected from the group consisting of vinyl, allyl, methallyl and crotonyl, n is a positive integer selected from the group consisting of 1, 2 and 3, and R″$_1$ is a radical selected from the group consisting of alkyl and aryl.

3,301,740

AIR PERVIOUS COMPOSITE FABRIC

Karl Stiehl, Hanau am Main, and Heinrich Franz, Niederrodenbach, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed June 6, 1963, Ser. No. 285,998

Claims priority, application Germany, June 6, 1962, D 24,909; Oct. 26, 1962, D 25,726

8 Claims. (Cl. 161—98)



1. A composite fabric comprising an air pervious fabric base (1) having at least one surface united with a superposed relatively open fabric (2) the threads of which are surrounded by a coating of pliable synthetic resin the thread count and coating of pliable synthetic resin of said open fabric (2) being such that such composite fabric has an air permeability of at least ½ liter per minute per 100 cm.^{2} area at a pressure differential of 20 mm. water column said air pervious fabric base (1) having a substantially higher thread count than said relatively open fabric and being essentially uncoated by said pliable synthetic resin other than by that carried by the superposed relatively more open fabric (2) united therewith.

3,301,741

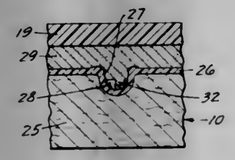
ADHESIVE SHEET AND METHOD OF MAKING

Charles H. Henrickson, Newport, Alton J. Danielson, Stillwater, and James V. Erwin, North St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Sept. 11, 1963, Ser. No. 308,167

10 Claims. (Cl. 161—119)

4. An adhesive sheet material capable of being slid into position on an adhesive-receptive work-surface and of then being adhesively anchored in said position by simple application of pressure, said sheet material including a thin continuous layer of pressure-sensitive adhesive having a pebbly contour provided by a uniform pattern of small protrusions of said adhesive separated by intervening planar adhesive surfaces, said protrusions being individually capped with continuous non-adhesive fragile protective coverings extending over at least about one-fourth the height of said protrusions.



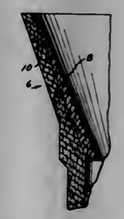
3,301,742

LAMINATE COMPRISING CARBON FIBERS, CARBURIZED RESIN, AND INORGANIC OXIDE FIBERS

Robert L. Noland, Santa Fe Springs, Warren C. Travis, Lakewood, and Mervyn B. Dagneau, La Mirada, Calif., assignors, by mesne assignments, to Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Powder Company, organized in 1964, New Castle, Del., a corporation of Delaware

Filed June 23, 1961, Ser. No. 119,064

8 Claims. (Cl. 161—170)



1. A laminate comprising a layer of carbon fibers bound together by a carburized member of the group consisting of resins and elastomers united to a layer of inorganic oxide fibers bound together by a carburized member of the group consisting of aminotriazine-aldehyde resins, furfuryl alcohol containing resins, phenolic resins, epoxy resins, polyester resins, triallyl cyanurate, butadiene-styrene copolymer, butadiene-acrylonitrile copolymer, butadiene vinyl pyridine copolymer, neoprene, urea-formaldehyde resin and butyl rubber.

3,301,743

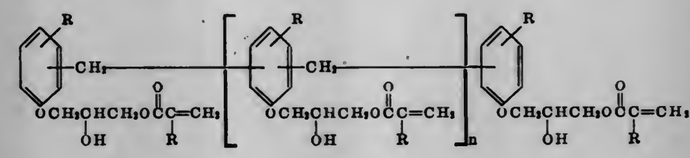
POLYHYDROXY POLYACRYLATE ESTERS OF EPOXIDIZED PHENOL-FORMALDEHYDE NOVOLAC RESINS AND LAMINATES THEREFROM

Frank Fekete, Monroeville, Patrick J. Keenan, Pittsburgh, and William J. Plant, Monroeville, Pa., assignors to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 12, 1963, Ser. No. 287,206

15 Claims. (Cl. 161—194)

1. A polymerizable resinous substance having the formula



wherein R is a substituent selected from the class consisting of hydrogen and lower alkyl radicals having from one to four carbon atoms and n is an integer from zero to five.

3,301,744

HARDBOARD HAVING A PAPER OVERLAY BONDED THERETO WITH A DRYING OIL USING A BORON TRIFLUORIDE CATALYST

Shafi Ul Hossain, Sault Ste. Marie, Ontario, Canada, assignor to Abitibi Power & Paper Company Limited, Iroquois Falls, Ontario, Canada, a corporation of Canada

No Drawing. Filed Sept. 5, 1961, Ser. No. 136,410

3 Claims. (Cl. 161—246)

1. Artificial board comprising a hardboard base mat, a paper overlay on at least one surface of said hardboard base mat, said paper overlay being bonded to the base mat in part by the natural bonding constituents of the base mat, a polymerized drying oil impregnated in said paper overlay and the adjacent surface of the base mat providing an additional bond between the base mat and the paper overlay, and a boron trifluoride catalyst incorporated in said drying oil in the amount of about two to ten percent by weight of the drying oil; said drying oil being selected from the group consisting of linseed oil, tung oil, and dehydrated castor oil.

3,301,745

PULP PROCESSING METHOD FOR MIXED CELLULOSIC MATERIALS

Sydney Coppick, Ridley Park, Pa., and Ralph Brown, Glastonbury, Conn., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 26, 1963, Ser. No. 275,857

4 Claims. (Cl. 162—55)

1. A continuous method of operating a pulp to paper web producing route comprising the steps of:

(A) pulping at least two species of cellulose containing material possessing various fractions of cellulose pulp of different chemical and physical properties associated with each species of cellulose containing material and its growth cycle, thereby obtaining a screened pulp consisting of mixed fractions of pulp;

(B) separating the various fractions by:

(1) introducing the screened pulp in a first liquid means pulp fraction separating zone,

(2) taking a portion of pulp from the first liquid means pulp fraction separating zone for further pulp processing and use in a first paper web producing route,

(3) taking the remainder of pulp from the first liquid means pulp fraction separating zone and introducing said remainder into a second liquid means pulp fraction separating zone,

(4) taking a part of the second liquid means pulp fraction separating zone accept effluent obtained by:

(a) combining the accept effluent recycled to said second zone from a third liquid means pulp fraction separating zone accept effluent which, in turn, has been made up of a fourth liquid means pulp fraction separating zone accept effluent combined and introduced into the third liquid zone with the reject effluent from said second liquid zone, and

(b) the said remainder of pulp from said first zone and further pulp processsing and use in a second paper web producing route;

(5) said first, second, third and fourth liquid pulp fraction separating zones being characterized by the obtained pulp fractions possessing the preselected differing physical and chemical properties when said pulp fractions are further subjected to subsequent pulp processing steps;

(6) the said first, second, third and fourth liquid pulp fraction separating zones being further characterized by said pulp fractions possessing the selected properties when said pulp fractions are incorporated in the final paper web.

3,301,746

PROCESS FOR FORMING ABSORBENT PAPER BY IMPRINTING A FABRIC KNUCKLE PATTERN THEREON PRIOR TO DRYING AND PAPER THEREOF

Lawrence H. Sanford, Cincinnati, and James B. Sisson, Hamilton, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Apr. 13, 1964, Ser. No. 359,295

7 Claims. (Cl. 162—113)

1. A process for the manufacture of a soft, bulky and absorbent paper sheet which comprises the steps of (1) forming an uncompacted paper web having a uniform basis weight of about 5 to about 40 pounds per 3000 square feet, (2) supporting said uncompacted paper web on an imprinting fabric having about 20 to about 60 meshes per inch, said imprinting fabric being formed from filaments having a diameter of about 0.008 to about 0.02 inch, (3) thermally pre-drying said uncompacted paper web to a fiber consistency of about 30% to about 80%, (4) imprinting the knuckle pattern of said imprinting fabric in the pre-dryed uncompacted paper web at a knuckle pressure of about 1000 p.s.i. to about 12,000 p.s.i. and (5) final drying the paper sheet so formed.

5. A soft, bulky and absorbent paper sheet characterized by having a uniform basis weight of about 5 to about 40 pounds per 3000 square feet, by having impressed in its surface, to a depth of at least 30% of its machine glazed caliper the knuckle pattern of an imprinting fabric having about 20 to about 60 meshes per inch, by having about 1% to about 14% of its surface compressed in said knuckle pattern to a relative density of at least 0.7 and said soft, bulky and absorbent paper sheet being further characterized by having a bulk density at 100 grams per square inch loading of about 1.0 to about 3.6, proportional to its basis weight.

3,301,747

FUNGICIDAL COMPOSITION CONTAINING BLASTICIDIN S AND METAL SALTS OF 1,2-PROPYLENE-BIS-DITHIOCARBAMATE

Hans Scheinpflug, Leverkusen, and Ferdinand Grewe, Burscheid, Bezirk Dusseldorf, Germany, and Herbert Ferdinand Jung, Tokyo, Japan, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 3, 1964, Ser. No 408,655

Claims priority, application Germany, Nov. 13, 1963, F 41,266

3 Claims. (Cl. 167—22)

1. A fungal composition containing as active ingredients (1) about .001% by weight of Blasticidin S and (2) about .025% by weight of zinc-1,2-propylene-bis-dithiocarbamate salt.

3,301,748

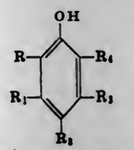
METHOD OF CONTROLLING BACTERIA AND FUNGI

Francis X. O'Shea, Wolcott, Bogislav Von Schmeling, Hamden, and Mitchell D. Dudarevitch, Cheshire, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

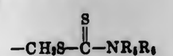
No Drawing. Filed June 9, 1965, Ser. No. 462,717

17 Claims. (Cl. 167—30)

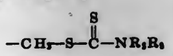
1. The method of controlling bacteria and fungi which comprises contacting bacteria and fungi with a compound having the formula:



wherein R is alkyl of 1 to 12 carbon atoms, cycloalkyl of 5 to 8 carbon atoms, or aralkyl of 7 to 9 carbon atoms, R_1 or R_2 are hydrogen and methyl, R_3 and R_4 are alkyl of 1 to 12 carbon atoms each, cycloalkyl of 5 to 8 carbon atoms each, aralkyl of 7 to 9 carbon atoms each or the group



in which R_5 and R_6 are alkyl having 1 to 3 carbon atoms each or are joined to form with the nitrogen atom morpholinyl, pyrrolidinyl and piperidinyl groups, at least one of R_3 and R_4 being the group



3,301,749

PESTICIDAL O,O-DIMETHYL-O-(2-[OR 3-] METHOXY - 4 - CYANOPHENYL) PHOSPHOROTHIOATE

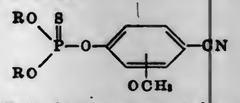
Michihiko Sakai, Masayuki Kato, and Yasuo Sato, Kyoto, Kazuo Konishi, Osaka, and Tetsuya Okutani, Hyogo, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,086

Claims priority, application Japan, Dec. 1, 1962, 37/54,255

12 Claims. (Cl. 167—30)

4. A pesticidal composition which contains as an active ingredient, in minor but effective amount, a phosphoric acid ester of the formula



wherein R is alkyl of at most two carbon atoms, and the $—OCH_3$ group is in one of the positions ortho and meta to the —CN group.

3,301,750

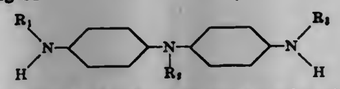
BIS (SUBSTITUTED AMINO) N ALKYL DIPHENYLAMINES AS FUNGICIDES AND ALGAECIDES

John A. Riddell, Hamden, and Edward L. Wheeler, Woodbury, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

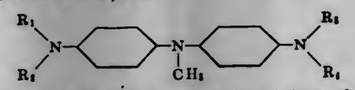
No Drawing. Filed July 16, 1964, Ser. No. 383,229

12 Claims. (Cl. 167—30)

1. The method of controlling fungi on plants which comprises applying to plants a fungicidal effective amount of a chemical having a formula selected from the group consisting of



in which R and R_3 are the same and are selected from the group consisting of alkyl radicals having 1 to 8 carbon atoms and cyclohexyl and R_2 is an alkyl radical having 1 to 2 carbon atoms, and



in which R_1, R_2 R_3 and R_4 are selected from the group consisting of alkyl radicals having 1 to 8 carbon atoms and cyclohexyl.

3,301,751

3-(2-CYANOALLYL)RHODANINE AS A SOIL FUNGICIDE

Harry G. Durham, Hsing Yun Fan, and Mason M. Turner, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 19, 1964, Ser. No. 390,745

1 Claim. (Cl. 167—33)

A method of controlling soil fungi which comprises applying to the soil an effective fungicidal quantity of 3-(2-cyanoallyl)rhodanine.

3,301,752

VAPORIZABLE BIOCIDAL COMPOSITIONS

George R. Bubash, 142 McAllister St., State College, Pa. 16801

No Drawing. Filed Sept. 3, 1965, Ser. No. 485,124

2 Claims. (Cl. 167—39)

1. A substantially dry vaporizable disinfecting composition effective against a broad spectrum of bacteria, fungi and yeast consisting essentially of about 85.5% by weight of paraformaldehyde, about 2.0% by weight of phenol, about 0.5% by weight of iodine, about 5.0% by weight of a vegetable oil binding agent and about 7.0% by weight of a filler.

3,301,753

ANTIBIOTIC

Piero Sensi and Maria Teresa Timbal, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy

Filed July 19, 1960, Ser. No. 43,954

Claims priority, application Great Britain, Aug. 7, 1959, 27.144/59

13 Claims. (Cl. 167—65)

1. The antibacterial substance defined as rifamycin S, melting at 180–182° C., having $[\alpha]_D^{20}$ about +476° (c. 0.1, methanol), being insoluble in water and dilute mineral acids, slowly dissolving in alkali metal hydroxides with red-violet coloration, being fairly soluble in methanol, ethanol acetone, ethyl acetate, less soluble in diethyl ether and very slightly soluble in petroleum ether, giving positive Tollens, Fehling and $FeCl_3$ reactions, showing in the ultra violet and visible regions of the spectrum the following maxima in 0.1 N HCl:

279 mμ ($E^{1\%}_{1cm}$ 329), 340 mμ ($E^{1\%}_{1cm}$ 117) and 401 mμ ($E^{1\%}_{1cm}$ 84)

and the following maxima in phosphate buffer pH 7.3:317 mμ ($E^{1\%}_{1cm}$ 424) and 525 mμ ($E^{1\%}_{1cm}$ 62)

being acidic in nature with pK about 7.1, appearing in two different crystalline forms, of which the one shows in the infra red region of the spectrum, the following maxima expressed in $cm.^{-1}$: 3480, 3365, 2925 (Nujol), 2850 (Nujol), 1728, 1702, 1643, 1622, 1600, 1500, 1467 (Nujol), 1418, 1377 (Nujol), 1325, 1265, 1200, 1183, 1160, 1118, 1095, 1070, 1024, 977, 948, 918, 895, 877, 850, 833, 822, 790, 765, 743, 732, 721, 685, and the other: 3410, 3340, 2920 (Nujol), 2850 (Nujol), 1732, 1664, 1655, 1640, 1622, 1598, 1502, 1467 (Nujol), 1410, 1390, 1378 (Nujol), 1320, 1267, 1240, 1200, 1177, 1163, 1129, 1112, 1100, 1087, 1076, 1055, 1033, 1006, 987, 963, 935, 920, 886, 837, 825, 805, 789, 784, 765, 740, 735, 730, 718, 664, and yielding the following chemical analysis: C, 63.34%; H, 6.79%; N, 2.18%; O, 27.80%; OCH_3, 4.50%, and $COCH_3$, 6.10%.

3,301,754

METHODS AND COMPOSITIONS FOR POTENTIATING CENTRAL NERVOUS SYSTEM DEPRESSANTS

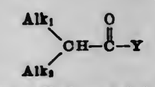
Henry Eugene Jean-Marie Meunier, Grenoble, Isere, France, assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,892

Claims priority, application France, Oct. 17, 1962, 912,469

20 Claims. (Cl. 167—65)

1. A method for potentiating the activity of the central nervous system depression of ethers, barbiturates, chlorinated aldehydes or thiazoles comprising administering to a warm-blooded animal undergoing central nervous system depressant therapy in an amount sufficient to potentiate said central nervous system depressants, a compound of the formula



wherein Alk_1 is lower alkyl containing 2–7 carbon atoms inclusive, Alk_2 is lower alkyl containing 3–7 carbon atoms inclusive; Y is selected from the group consisting of OM, OR and NHZ groups, M is selected from the group consisting of hydrogen, and alkali metals, R is lower alkyl containing 1–5 carbon atoms inclusive, and Z is selected from the group consisting of hydrogen and carbamyl.

3,301,755

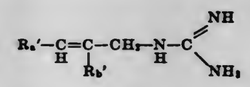
ALLYLIC GUANIDINES

Robert Paul Mull, Florham Park, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,513

3 Claims. (Cl. 167—65)

2. A pharmaceutical composition for oral administration consisting essentially of from about 0.01 g. to about 0.05 g. per dosage unit of a pharmaceutically acceptable group consisting of a compound of the formula



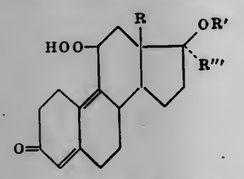
in which one of the groups R_a' and R_b' is methyl, and the other is a member selected from the group consisting of hydrogen and methyl, and a pharmaceutically acceptable, non-toxic acid addition salt thereof, as the pharmacologically active ingredient, together with a pharmaceutically acceptable carrier.

3,301,756
19-NOR STEROIDS OXYGENATED IN THE 11-POSITION, PROCESS OF PREPARATION AND UTILIZATION

Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, and Jean Jolly, Clichy-sous-Bois, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed June 5, 1964, Ser. No. 373,116
Claims priority, application France, July 10, 1963, 941,004; Oct. 22, 1963, 951,379; Apr. 15, 1964, 971,005
10 Claims. (Cl. 167—65)

10. A process for treatment of hypercholesterolemia which comprises administering a safe but effective dose of an 11β-hydroperoxy-19-nor steroid selected from the group consisting of compounds of the formula



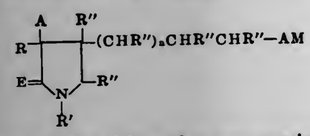
wherein R is a lower alkyl, R' is a member selected from the group consisting of hydrogen and the acyl radical of an organic carboxylic acid having from 1 to 18 carbon atoms, and R''' is a member selected from the group consisting of hydrogen and lower alkynyl.

3,301,757
ANALEPTIC COMPOSITIONS AND METHOD

Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

Filed May 26, 1965, Ser. No. 458,918
47 Claims. (Cl. 167—65)

1. A process which comprises administering to a living animal body, for its analeptic effect, an effective amount of a compound selected from the group consisting of (I) 4-(omega-substituted alkyl)-2-pyrrolidinones and -2-thionpyrrolidinones of the formula:



wherein AM is selected from the group consisting of
amino,
(lower-alkyl)-amino,
di-(lower-alkyl)-amino,
(lower-alkenyl)-amino,
di-(lower-alkenyl)-amino,
phenylamino,
(hydroxy-lower-alkyl)-amino,
di-(hydroxy-lower-alkyl)-amino,
piperidino,
(lower-alkyl)-piperidino,
poly-(lower-alkyl)-piperidino,
(lower-alkoxy)-piperidino,
pyrrolidino,
(lower-alkyl)-pyrrolidino,
poly-(lower-alkyl)-pyrrolidino,
(lower-alkoxy)-pyrrolidino,
piperazino,
N-(lower-alkyl)-piperazino,
C-(lower-alkyl)-piperazino,
poly-C-(lower-alkyl)-piperazino,
N-(lower-alkyl)-C-(lower-alkyl)-piperazino,
N-(hydroxy-lower-alkyl)-piperazino,
N-(lower-aliphatic acyloxy lower-alkyl)-piperazino,
(lower-alkoxy)-piperazino,
(lower-carbalkoxy)-piperazino,
N-lower-alkanoyl-N-lower-alkylamino,
N-lower-alkanoylamino,
phthalimido,
morpholino,
(lower-alkyl)-morpholino,
poly-(lower-alkyl)-morpholino,
(lower-alkoxy)-morpholino,
thiomorpholino,
(lower-alkyl)-thiomorpholino,
poly-(lower-alkyl)-thiomorpholino,
and (lower-alkoxy)-thiomorpholino,

A is selected from the group consisting of lower-alkyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl, and monocarbocyclic aralkyl,

R is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl, monocarbocyclic aralkyl, pyridyl, thienyl, and thenyl,

R' is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, cycloalkenyl having up to a maximum of nine carbon atoms, and monocarbocyclic aralkyl,

R'' is selected from the group consisting of hydrogen and methyl, a maximum of one R'' being other than hydrogen,

Wherein E is selected from the group consisting of oxygen and sulfur,

Wherein monocarbocyclic aryl and monocarbocyclic aralkyl has at most fifteen carbon atoms and has a radical which is selected from the group consisting of phenyl, nitrophenyl, lower-alkoxyphenyl, lower-alkylmercaptophenyl, lower-alkylphenyl, and halophenyl, and wherein "alkyl" in aralkyl is lower-alkyl, and wherein

n is selected from zero and one, and

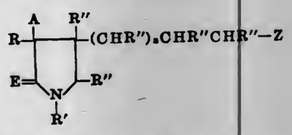
(II) pharmacologically acceptable acid addition salts thereof.

3,301,758
ANALEPTIC COMPOSITIONS AND METHOD

Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Filed May 26, 1965, Ser. No. 459,087
37 Claims. (Cl. 167—65)

1. A process which comprises administering to a living animal body, for its analeptic effect, an effective amount of a compound selected from the group consisting of 4-(omega-substituted alkyl)-2-pyrrolidinones and -2-thionpyrrolidinones of the formula:



wherein Z is selected from the group consisting of cyano, carb-lower-alkoxy, carbonyl halide, lower-alkanoyl, and aminocarbonyl wherein "amino" is selected from the group consisting of primary amino, N-(lower-alkyl) amino, N,N-di-(lower-alkyl)amino, N,N-di-(monocyclic alkyl)amino wherein each monocyclic alkyl has up to a maximum of nine carbon atoms, and saturated heterocyclic amino radicals having less than 12 carbon atoms and having up to a maximum of two hetero atoms in the heterocyclic ring,

A is selected from the group consisting of lower-alkyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl, and monocarbocyclic aralkyl,

R is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl, monocarbocyclic aralkyl, pyridyl, thienyl, and thenyl,

R' is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, cycloalkenyl having up to a maximum of nine carbon atoms, and monocarbocyclic aralkyl,

R'' is selected from the group consisting of hydrogen and methyl, a maximum of one R'' being other than hydrogen,

wherein E is selected from the group consisting of oxygen and sulfur,

wherein monocarbocyclic aryl and monocarbocyclic aralkyl has at most fifteen carbon atoms and has a radical which is selected from the group consisting of phenyl, nitrophenyl, lower-alkoxyphenyl, lower-alkylmercaptophenyl, lower-alkylphenyl, and halophenyl, and wherein "alkyl" in aralkyl is lower-alkyl, and wherein

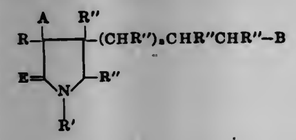
n is selected from zero and one.

3,301,759
ANALEPTIC COMPOSITIONS AND METHOD

Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Filed May 26, 1965, Ser. No. 459,092
39 Claims. (Cl. 167—65)

1. A process which comprises administering to a living animal body, for its analeptic effect, an effective amount of a compound selected from the group consisting of 4-(omega-substituted alkyl)-2-pyrrolidinones and -2-thionpyrrolidinones of the formula:



wherein

B is selected from the group consisting of halogen, hydroxy, mercapto, lower-alkylmercapto, lower-alkoxy, phenoxy, benzyloxy, benzoyloxy, hydroxybenzoyloxy, nicotinoyloxy, and lower-alkanoyloxy,

A is selected from the group consisting of lower-alkyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl, and monocarbocyclic aralkyl,

R is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl, monocarbocyclic aralkyl, pyridyl, thienyl, and thenyl,

R' is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, cycloalkenyl having up to a maximum of nine carbon atoms, and monocarbocyclic aralkyl,

R'' is selected from the group consisting of hydrogen and methyl, a maximum of one R'' being other than hydrogen,

wherein E is selected from the group consisting of oxygen and sulfur,

wherein monocarbocyclic aryl and monocarbocyclic aralkyl has at most fifteen carbon atoms and has a radical which is selected from the group consisting of phenyl, nitrophenyl, lower-alkoxyphenyl, lower-alkylmercaptophenyl, lower-alkylphenyl, and halophenyl, and wherein "alkyl" in aralkyl is lower-alkyl, and wherein

n is selected from zero and one.

3,301,760
PROCESS AND COMPOSITIONS FOR MENDING FINGERNAILS

Paul W. Jewel, North Hollywood, Calif., assignor to Max Factor & Co., Los Angeles, Calif., a corporation of Delaware

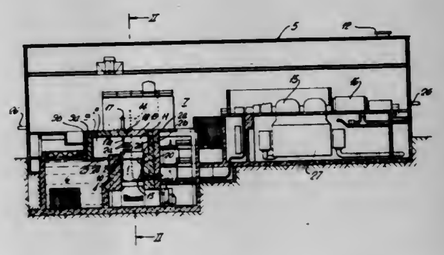
No Drawing. Filed June 11, 1962, Ser. No. 201,256
23 Claims. (Cl. 167—85)

3. A process for repairing broken fingernails comprising applying to the broken fingernail a composition comprising a fluid mixture of fingernail lacquer and from about 0.1% to about 5% fibres, said fibres having a length and diameter such that they are not readily visible to the naked eye.

3,301,761
CONTAINMENT ARRANGEMENT FOR STEAM GENERATING NUCLEAR REACTOR SYSTEMS

Frank Geoffrey Johnson, Altrincham, and Geoffrey Vincent Windle, Bolton, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 3, 1964, Ser. No. 348,962
Claims priority, application Great Britain, Mar. 8, 1963, 9,272/63
2 Claims. (Cl. 176—37)



1. A nuclear reactor system of the kind wherein steam at pressure is generated in a nuclear reactor by heat transfer from nuclear fuel to water, the system having a first containment structure spaced from and enclosing the reactor, a second containment structure in the form of an elongate hall spaced from and enclosing the first containment structure, a pond of water disposed at one end of the elongate hall in the space between the first and second containment structures, means defining a venting duct extending from the first containment structure to below the surface of said pond, and pressure-sensitive non-return relief means for venting the second containment structure to atmosphere, said relief means being situated in the second containment structure at the end which is opposed to the one end at which said pond is located, whereby substantially the full length of said elongate hall separates said pond and said relief means.

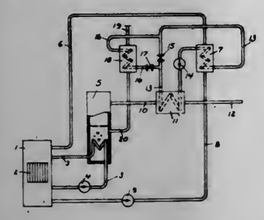
3,301,762
METHOD OF SUPERHEATING STEAM ORIGINATING FROM A STEAM GENERATOR OF A PRESSURIZED WATER NUCLEAR REACTOR

Jons Arthur Dahlgren, Nejlikevagen 6, Saltsjobaden, Sweden

Filed Aug. 24, 1965, Ser. No. 482,194
Claims priority, application Sweden, Sept. 16, 1964, 11,081/64
2 Claims. (Cl. 176—65)

1. In a method of superheating steam originating from a steam generator of a pressurized water nuclear reactor, involving passing a minor portion of the pressurized water through a first heat exchanger in which it is allowed to heat an auxiliary liquid, and passing said heated auxiliary liquid through a second heat exchanger in which it is al-

lowed to superheat the steam, the improved procedure wherein at least part of the auxiliary liquid, after having



superheated the steam, is passed through a third heat exchanger in which it is allowed to heat feed water which is passed to said steam generator.

3,301,763

METHOD FOR PREPARING ACTINIDE OXIDE FUEL PARTICLES AND ARTICLE THEREOF

Ronald L. Beatty, Clinton, and Hans Beutler, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Apr. 28, 1966, Ser. No. 546,490
6 Claims. (Cl. 176—67)

1. A method for preparing actinide oxide fuel particles having multiple carbon coatings comprising the steps of depositing a first low density, highly porous carbon coating onto the oxide fuel cores, depositing a thin high density impermeable layer of material onto said porous coating, depositing a second low density, highly porous carbon coating onto said thin high density layer and thereafter depositing a high density outer coating of pyrolytic carbon onto said porous coating at temperatures of above 2000° C.

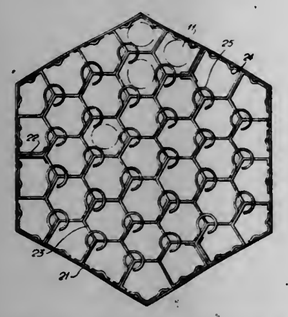
5. An actinide oxide fuel particle comprising a fuel core; a first low density, highly porous carbon coating surrounding the fuel core; a thin high density pyrolytic carbon coating disposed about said first low density carbon coating, a second low density, highly porous carbon coating surrounding said thin pyrolytic carbon coating; and an outer high density pyrolytic carbon coating.

3,301,764

NUCLEAR FUEL, GRID AND SPACER ASSEMBLY

Arthur Edwards Timbs, Flixton, and John Alan Dodd, Culcheth, Warrington, England, assignors to Societe Anglo-Belge Vulcain, S.A., Brussels, Belgium

Filed Feb. 14, 1964, Ser. No. 345,028
Claims priority, application Great Britain, Feb. 22, 1963, 7,358/63; Apr. 5, 1963, 13,749/63; Oct. 9, 1963, 39,724/63
11 Claims. (Cl. 176—78)



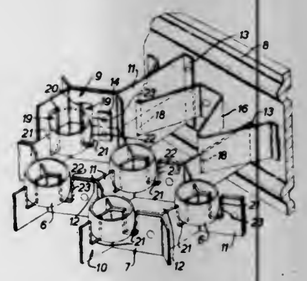
1. A nuclear fuel assembly comprising a plurality of elongate fuel elements supported in a bundle with their longitudinal axes parallel, sinuous metal strips assembled into a transverse cellular grid having hexagonal cells penetrated by the fuel elements, the strips having stems and curved tongues joined to the stems to form closed loops with their axes parallel to the longitudinal axes of the fuel elements, the loops being located as resilient spacers at alternate cell corners each in contact with three adjacent fuel elements.

3,301,765

NUCLEAR REACTOR FUEL ELEMENT ASSEMBLIES

Philip Bernard Eyre, Lytham, and Charles Johnston, Preston, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Nov. 30, 1964, Ser. No. 414,623
Claims priority, application Great Britain, Dec. 16, 1963, 49,662/63
4 Claims. (Cl. 176—78)



3. A nuclear fuel assembly including a plurality of elongate fuel elements supported in a bundle with their longitudinal axes parallel, spacing means being provided for spacing the fuel elements transversely one from another intermediate their ends, said spacing means comprising resilient spacer members located between adjacent fuel elements and a support structure carrying said resilient spacer members, said support structure comprising a series of sinuous strips joined together to form a grid assembly of cellular form, each cell of the grid being penetrated by a fuel element, the resilient spacer members being in the form of spacer rings caged in apertures in the strips forming the grid, the spacer rings lying in a plane transverse to the longitudinal axes of the fuel elements, the dimension of the apertures in the direction of the longitudinal axes of the fuel elements being greater than the depth of the spacer rings so that the spacer rings while being caged in the grid are movable relative to the grid in the direction of the longitudinal axes of the fuel elements, a clearance being provided between the circumferential surface of the spacer rings and the adjacent edges of the apertures in the strips so that the spacer rings are also movable relative to the grid in directions transverse to the longitudinal axes of the fuel elements.

3,301,766

FERMENTATION PROCESS FOR PREPARING CINNAMIC ACID AND 5-PHENYL VALERIC ACID

John D. Douros, Jr., Millington, and John W. Frankenfeld, Atlantic Highlands, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 23, 1964, Ser. No. 398,737
15 Claims. (Cl. 195—28)

1. A process for preparing cinnamic acid and 5-phenyl valeric acid from an odd alkyl moiety carbon numbered n-alkylated benzene which comprises first fermenting a microorganism selected from the group consisting of:

Pseudomonas ligustri (A.T.C.C. No. 15522)
Pseudomonas pseudomallei (A.T.C.C. No. 15523)
Pseudomonas orvilla (A.T.C.C. No. 15524)
Alcaligenes sp. (A.T.C.C. No. 15525)
Cellumonas galba (A.T.C.C. No. 15526) and
Brevibacterium healii (A.T.C.C. No. 15527)

on a carbon feed source other than the n-alkylated benzene in a fermentation media comprising an aqueous growth medium containing oxygen and other essential nutrients, then feeding said n-alkylated benzene to said fermentation, continuing fermentation for a period in excess of 18 hours and harvesting 5-phenyl valeric acid within 18 hours after the addition of the n-alkylated benzene and harvesting cinnamic acid after that period.

3,301,767

ENZYME DIGESTION OF NUCLEIC ACIDS

Louis Laufer and Sidney Gutcho, Bronx, N.Y., assignors to Schwartz Bioresearch, Inc., Orangeburg, N.Y.

No Drawing. Original application Oct. 30, 1963, Ser. No. 319,955. Divided and this application Oct. 4, 1965, Ser. No. 492,870
7 Claims. (Cl. 195—28)

1. A process for hydrolyzing nucleic acids to form primarily nucleosides which comprises:

incubating the nucleic acid to be hydrolyzed for from 2 to 10 days in a hydrolysis solution containing the substantially solids-free enzyme containing aqueous extract of rapidly proliferating seed-parts selected from the group consisting of substantially seed-free comminuted germinating seed rootlets and substantially seed-free comminuted germinating seed stems; maintaining the temperature of said hydrolysis solution at between 10 and 65° C. and the pH of said solution at between 4.5 and 7.5 during incubation whereby the nucleic acid is hydrolyzed primarily to nucleosides; and

recovering said nucleosides from the incubated hydrolysis solution.

3,301,768

PROCESS FOR OBTAINING AMYLOGLUCOSIDASE

Karl L. Smiley, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Oct. 26, 1964, Ser. No. 406,622
1 Claim. (Cl. 195—66)

An improved microbiological process for obtaining high yields of amyloglucosidase substantially free of concommitantly produced transglucosidase comprising

(a) Heating an acidified dispersion comprising about 20 parts by weight of ground corn meal, 79 parts of water and 1 part of barley malt at 60° C. for about 20 minutes to partially hydrolyze the corn starch and lower the viscosity;

(b) Steam sterilizing the partially hydrolyzed dispersion to inactivate the malt enzymes and provide a sterile culture medium;

(c) Inoculating the cooled medium with an aqueous suspension of *Aspergillus awamori* NRRL 3112;

(d) Incubating the inoculated medium at 35° C. for about 4 days while strongly agitating the medium and admitting moist sterile air at a rate of about 1.5 v./v./min.;

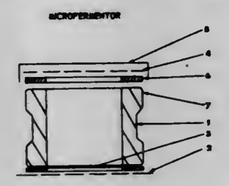
(e) Removing the cells to provide a nonevaporated cell-free liquid containing per ml. at least about 12 units of amyloglucosidase, said cell-free liquid being further characterized by being essentially free of transglucosidase.

3,301,769

MICROFERMENTOR AND PROCESS OF USING

Robert Steel, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,457
8 Claims. (Cl. 195—80)



1. A microfermentor for cultivating microorganisms in a liquid nutrient medium which comprises (a) an open-ended rigid solid wall cylinder having a liquid capacity of from 1 to 100 ml., and, (b) a membrane, having a thickness of from 0.25 mil to 25 mil, permeable to respiratory gasses, but relatively impermeable to fermentation liquids, covering both ends of said cylinder.

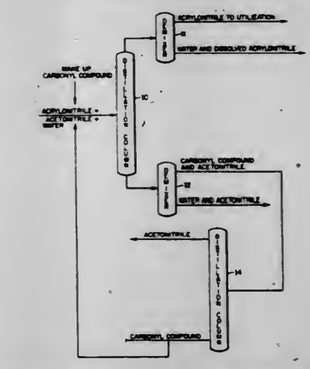
7. A process for the production of an antibiotic by a fermentation which comprises cultivating the antibiotic-producing microorganisms in a rigid cylindrical microfermentor, which comprises (a) an open-ended rigid solid wall cylinder having a liquid capacity of from 1 to 100 ml., and (b) a membrane, having a thickness of from 0.25 mil to 25 mil, permeable to respiratory gasses, but relatively impermeable to fermentation liquids, covering both ends of said cylinder; permitting the antibiotic to accumulate and assaying for said antibiotic.

3,301,770

PROCESS FOR PURIFYING ACRYLONITRILE FROM ACETONITRILE

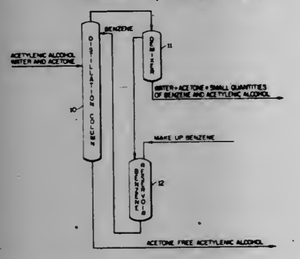
Alessandro Di Clò, San Donato Milanese, and Alessandro Ginnasi and Carlo Rescalli, Milan, Italy, assignors to SNAM S.p.A., Milan, Italy, a company of Italy

Filed Sept. 3, 1963, Ser. No. 306,322
Claims priority, application Italy, Sept. 4, 1962, 17,606/62, Patent 692,787
8 Claims. (Cl. 203—54)



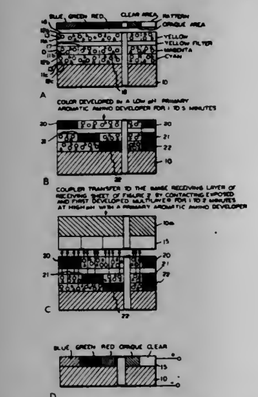
1. A process for separating acrylonitrile from a mixture containing acrylonitrile and acetonitrile which comprises distilling the mixture of the two nitriles in the presence of water and of a carbonyl compound selected from the group consisting of acetophenone, cyclohexanone, acetylacetone, benzaldehyde, and furfural, and having a boiling point between 130° C. and 200° C., to obtain as a head fraction acrylonitrile-water azeotrope, and recovering the acrylonitrile from the azeotrope.

3,301,771
METHOD FOR PURIFYING AQUEOUS SOLUTIONS OF METHYLBUTINOL THROUGH REMOVAL OF ITS ACETONE CONTENTS
Vittorio Cariati, Marcello Massi Mauri, and Alessandro Di Ciò, San Donato Milan, Italy, assignors to Snam S.p.A., Milan, Italy, a company of Italy
Filed Aug. 29, 1963, Ser. No. 305,518
Claims priority, application Italy, Sept. 4, 1962, 26,871, Patent 692,788
1 Claim. (Cl. 203—69)



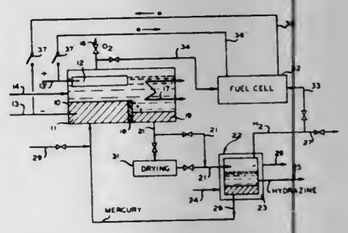
A method for the recovery of methyl butinol from an aqueous solution of methyl butinol containing acetone, consisting in the steps of distilling said solution in the presence of benzene, recovering overhead a distillate product, separating said distillate product into an aqueous phase containing the acetone and a benzene phase, recycling the said benzene phase to the distillation step, and recovering as bottoms pure methyl butinol.

3,301,772
ELECTROLYTIC COLOR DEVELOPMENT
Felix Viro, Apalachin, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 454,240
8 Claims. (Cl. 204—2)



1. A process of forming a positive multicolor photographic reproduction which comprises exposing to the color aspects of a subject a photographic material comprising a suitable support carrying at least one light sensitive photographic silver halide emulsion layer, containing a coupler compound capable of forming a dye when reacted with the oxidation products of a primary aromatic amino silver halide developing agent, and said coupler compound being characterized by relatively high diffusibility at elevated pH, developing the exposed emulsion layers in the presence of said developing agent at a pH below 12.5, to form non-diffusible dye images in those areas corresponding to light-exposure, transferring the diffusible invisible positive image of color coupler by imbibition at an elevated pH above 12.5 to a receiving layer having therein a primary aromatic amino silver halide developing agent, applying a relatively low voltage electrical potential to the total moist surface of said receiving layer, the potential of which is sufficient to bring about electrolytic oxidation of the developing agent to form oxidized developing agent which reacts with the positive image of diffusing color former to produce a positive dye image corresponding to the color aspects of the subject.

3,301,773
HYDRAZINIUM AMALGAMS AND PRODUCTION OF CONCENTRATED HYDRAZINE THEREFROM
William B. Whitney, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,434
13 Claims. (Cl. 204—101)

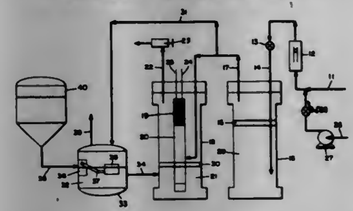


1. A hydrazinium amalgam produced by subjecting an electrolyte containing hydrazinium ions to electrolysis in an electrolytic cell provided with a liquid mercury cathode to form said amalgam at said cathode, and separating said amalgam from said cathode and said electrolyte.

3,301,774
CONDUCTING CHEMICAL REACTIONS BY MEANS OF HIGH ENERGY IONIZING RADIATION
Robert R. Hentz, Pennington, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Aug. 1, 1962, Ser. No. 213,880
1 Claim. (Cl. 204—158)

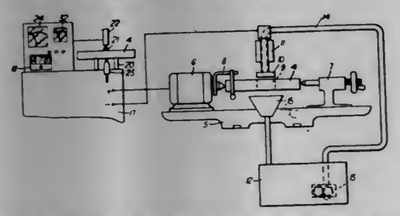
A method of carrying out a carbon-to-carbon bond-breaking radiation chemical reaction by energy transfer comprising irradiating a porous subdivided inorganic solid material in the absence of a chemical reactant to produce states of excitation therein whereby energy is stored in said material, said radiation being sufficiently energetic and penetrating as to be capable of producing said states of excitation, said solid material being irradiatable to form said states and being capable of storing energy in said states and of subsequently transferring it therefrom, said solid material being further characterized by having a surface area ranging from 1 to 700 sq. m./g., a pore volume of 5 to 70% thereof, and by having pore radii in the range of 3 Angstroms to 100 microns, then ceasing the irradiation of the solid material, then after a time greater than 0.1 second contacting the solid material with at least one fluid hydrocarbon chemical reactant for a time sufficient to enable said stored energy to be transferred to said reactant so that the latter undergoes a chemical reaction, thereby depleting the solid material of its said stored energy, said reaction involving the breaking of carbon-to-carbon bonds of said reactant and resulting in formation of a hydrocarbon product having fewer carbon atoms than said reactant, and removing said product from the solid material, said method being useful to carry out both thermodynamically allowable and thermodynamically forbidden chemical reactions.

3,301,775
OXYGEN DIFFUSION ANALYZER
Hsue C. Tsien, Livingston, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed July 14, 1964, Ser. No. 382,549
8 Claims. (Cl. 204—195)



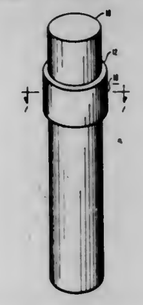
1. In a galvanic cell for analysis of oxygen in a gas mixture stream, said cell comprising in combination: (A) a container having a restraining wall, sample gas stream inlet and outlet means, an electrolyte pool and electrode assembly supporting means; (B) an electrode assembly so arranged and constructed so as to be supported within said container in such manner as to be directly contacted by said sample gas stream from said sample gas stream inlet means, said electrode assembly comprising in combination a series of contiguous, concentric cylindrical elements wherein said elements comprise in respective order from the external surface: (1) a first electrode reactable with oxygen; (2) a first absorbent layer; (3) nonporous, inert and electrically insulating diffusion barrier means; (4) a second absorbent layer, which layer contacts said first absorbent layer for at least a portion of its surface area; (5) a second electrode; (C) an electrolyte pool which pool is in contact with a portion of said first and second absorbent layers so as to cause these layers to be wetted by the electrolyte; (D) current means adapted to receive current generated by said first and second electrodes when oxygen is present in the cell; wherein said first electrode is not reactable with said electrolyte at any time and said second electrode is reactable only when oxygen is present in the cell; the improvement comprising utilizing acetic acid as the electrolyte, said acetic acid electrolyte being covered with a relatively thin layer of a mineral oil wherein the response time of the cell is improved.

3,301,776
APPARATUS FOR ELECTROCHEMICAL MACHINING OF METAL
Herbert D. Hughes, Banstead, Surrey, England, assignor to Metachemical Machines Limited
Filed Apr. 7, 1964, Ser. No. 357,910
Claims priority, application Great Britain, Apr. 8, 1963, 13,840/63
2 Claims. (Cl. 204—224)



1. Apparatus for the electrochemical machining of workpieces, comprising in combination means to support a workpiece during machining operations, a low voltage high current supply circuit to cause current to flow between an electrode and the workpiece, means circulating electrolyte between said electrode and said workpiece at such a rate that metal removed from the surface of the workpiece is carried away in the circulating electrolyte, and gauging means including a timing circuit for automatically establishing the extent of machining which is calculable from the initial dimensions of each successive workpiece and including means to preset said timing circuit according to said dimensions and the composition of the material of the workpiece, means responsive to the quantity of said current flow between the electrode and the workpiece to effect the timing of the machining operation in said timing circuit at a rate dependent on said current flow and additionally responsive to said variable presettable means dependent on the calculated workpiece dimensions and the composition of material, and means to terminate the current flow when the machining has been maintained the corresponding time thereby serving to reduce the workpiece to the required size.

3,301,777
ANODE FOR THE ELECTROWINNING OF MANGANESE
Robert E. Leonard, Henderson, Nev., assignor to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware
Filed Apr. 1, 1963, Ser. No. 269,497
1 Claim. (Cl. 204—290)

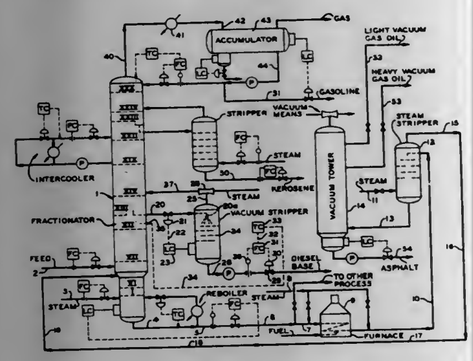


In an anode adapted for immersion in aqueous manganese-bearing solutions for the electrowinning of manganese metal having a generally circular cross-sectional configuration at the solution line and a protective covering at the solution line, the improvement which consists essentially in forming said protective covering of an inert organic binder material selected from the group consisting of polyesters, epoxies, resorcinol-formaldehyde, polycarbonates, polyvinyl chlorides and fluorocarbons, said binder being filled with fibers selected from the group consisting of glass, aluminum silicate, asbestos and fused quartz.

3,301,778
FRACTIONAL DISTILLATION
John T. Cabbage, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,183
5 Claims. (Cl. 208—355)

1. A method for fractional distillation of crude oil comprising feeding crude oil into a fractionator near the bottom thereof, injecting steam into the bottom of said fractionator to produce a topped crude fraction, intermediate distillates and light distillates, withdrawing said topped crude fraction from the bottom of said fractionator, mixing steam with said topped crude fraction to produce a topped crude-steam mixture, steam stripping said topped crude-steam mixture to produce a gas oil-steam mixture, returning said gas oil-steam mixture to a point on the fractionator just below the point where the crude oil enters the fractionator, contemporaneously with the above removing at least one of said intermediate dis-

tillates from a plate in said fractionator, passing said intermediate distillate to a vacuum stripper, maintaining a subatmospheric pressure in said vacuum stripper by use of a steam eductor, controlling the flow of intermediate distillate from said fractionator to said vacuum stripper by the level of liquid in said vacuum stripper, passing the overhead from said vacuum stripper to said steam eductor and then passing the overhead-steam mixture to said fractionator in the vicinity of the plate from

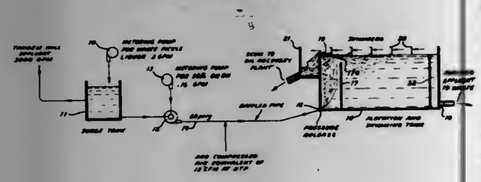


which the intermediate distillate was originally drawn from the fractionator, controlling the bottom flow from said vacuum stripper by the temperature in the fractionator in the vicinity of the plate from which the intermediate distillate was originally drawn, coordinating the controlling of the bottom flow from the vacuum stripper with the controlling of the flow of intermediate distillate from said fractionator so that the controlling of one is dependent on and responsive to the controlling of the other.

3,301,779
PROCESS FOR TREATING COLD ROLLING MILL EFFLUENT CONTAINING OIL EMULSIFIED IN WATER

Geza Louis Kovacs, Toronto, Ontario, Canada, assignor, by mesne assignments, to New Canadian Processes Limited, Toronto, Ontario, Canada

Filed Jan. 22, 1965, Ser. No. 427,418
1 Claim. (Cl. 210—44)



A process for treating the effluent cooling and lubricating liquid containing oil emulsified in water employed in cold rolling mills, comprising: the steps of adding a quantity of waste pickle liquor derived from the said cold rolling mill; adding a quantity of alkaline washer effluent from steel mills thereby forming in the effluent cooling liquid an insoluble floc to coagulate and concentrate the oil, placing the total effluent under pressure and dissolving pressurized air therein, releasing the pressure on the effluent liquid so that the air returns to the gaseous state and removes the floc and thus the oil upwardly by flotation, and skimming off the resultant layer of floc and oil.

3,301,780
PREPARATION OF COMPACTED BODY OF IMPROVED LUBRICATING AGENTS

Curtis S. Oliver, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 5, 1964, Ser. No. 365,182
3 Claims. (Cl. 252—12)

1. A method for preparing a compacted body of laminated metallic lubricating material having a greatly reduced wear rate comprising the steps of:

(a) subjecting microsize particles of at least one crystalline material selected from the group consisting of molybdenum disulfide and tungsten disulfide to the flow of a substantially dry mixture of hydrogen sulfide gas and an inert gas for a period of at least about two hours,

said inert gas being present in an amount ranging from a maximum of about 50 percent by volume to a volume effective to substantially reduce the wear rate of a pellet produced from said particles after treatment with said mixture as compared to a similar pellet produced from said particles without said treatment, and

(b) compacting said particles into a pellet.

3,301,781
METHOD OF MAKING MAGNESIUM FLUORIDE ARTICLES

Hal H. Rice, Birmingham, and Maurice J. Garey, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 27, 1964, Ser. No. 406,850
13 Claims. (Cl. 252—12)

8. A sintered high strength article which comprises magnesium fluoride and a small but effective amount of at least one compound selected from the group which includes lithium halide salts and the pentoxide compounds of vanadium, arsenic and phosphorus.

12. A sintered high strength bearing element which comprises magnesium fluoride powder having uniformly dispersed therethrough about 0.2 gram atomic percent of a sintering additive selected from the group consisting of vanadium pentoxide, arsenic pentoxide and phosphorus pentoxide, said powder being compacted and sintered in the form of a bearing element.

3,301,782
ADDUCTS OF ZINC COMPOUNDS AND LUBRICANTS CONTAINING SAME

Edwin C. Knowles, Poughkeepsie, and Frederic C. McCoy, Beacon, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,886
13 Claims. (Cl. 252—46.4)

10. A lubricating composition comprising a major proportion of a lubricating oil and 0.05 to 10 percent by weight of an oil-soluble composition produced by reacting 1 to 6 moles of a compound represented by a formula selected from the group consisting of:

(a) RR'_2N

and

(b) $R''N{=}C(H)R'$

in which R is an alkyl radical having from 6 to 30 carbon atoms, R' is selected from the group consisting of hydrogen and an alkyl radical having from 1 to 30 carbon atoms and R'' is an alkyl radical having from 1 to 30 carbon atoms, the sum of the carbon atoms in the compound represented by (a) and (b) being at least 12, with a mole of a zinc compound selected from the group consisting of zinc silicofluoride, zinc phosphite, zinc hypophosphite, zinc sulfite and zinc thiocyanate.

3,301,783
LUBRICATING COMPOSITION

Woodrow J. Dickson, La Habra, and Fred W. Jenkins, Buena Park, Calif., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Aug. 4, 1960, Ser. No. 47,387. Divided and this application June 9, 1961, Ser. No. 115,878
32 Claims. (Cl. 252—47.5)

2. A lubricating oil composition comprising a major proportion of a lubricating oil and about 0.1 to 5% by weight based on the total composition, of a compound selected from the group consisting of

(1) a linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit having 2 to 20 carbon atoms,

(2) an acylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit having 2 to 20 carbon atoms, formed by reacting, at a temperature of from about 120° C. to about 300° C., said linear polymer with an acylating agent, said acylating agent having 7–39 carbon atoms and being selected from the group consisting of aliphatic carboxylic acids, aromatic polycarboxylic acids, and precursors thereof each capable of forming said acid in said reaction,

(3) an oil-soluble oxyalkylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit having 2 to 20 carbon atoms, formed by reacting, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., said polymer with an alkylene oxide having 2–8 carbon atoms,

(4) an alkylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit having 2 to 20 carbon atoms, formed by reacting, at a temperature of from about 100° C. to about 250° C., said polymer with a hydrocarbon halide alkylating agent having 1–30 carbon atoms,

(5) an olefinated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit having 2 to 20 carbon atoms, formed by reacting, at a temperature of from about 70° C. to about 100° C., said polymer with an olefinating agent selected from the group consisting of acrylonitrile, styrene, butadiene, vinyl ethers, and vinyl sulfones,

(6) a Schiff base reaction product of a linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit having 2 to 20 carbon atoms, formed by reacting said polymer with a compound selected from the group consisting of aldehydes and ketones,

(7) an acylated, then oxyalkylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2–20 carbon atoms, formed by reacting, at a temperature of from about 125° C. to about 300° C., said linear polymer with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polymer, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., with an alkylene oxide having 2–8 carbon atoms,

(8) an oxyalkylated, then acylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, said alkylene unit therein having 2–20 carbon atoms, formed by reacting, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., said polymer with an alkylene oxide having 2–8 carbon atoms and then reacting said oxyalkylated polymer, at a temperature of from about 120° C. to about 300° C., with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction,

(9) an alkylated, then acylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2–20 carbon atoms, formed by reacting, at a temperature of from about 100° C. to about 250° C., said polymer with a hydrocarbon halide alkylating agent having 1–30 carbon atoms, and then reacting said alkylated polymer, at a temperature of from about 120° C. to about 300° C., with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction,

(10) an acylated, then alkylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2–20 carbon atoms, formed by reacting, at a temperature of from about 120° C. to about 300° C., said polymer with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polymer, at a temperature of from about 100° C. to about 250° C., with a hydrocarbon halide alkylating agent having 1–30 carbon atoms,

(11) an oxyalkylated, then alkylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2–20 carbon atoms, formed by reacting, at a temperature of from about 80° C. to about 220° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., said polymer with an alkylene oxide having 2–8 carbon atoms, and then reacting said oxyalkylated polymer, at a temperature of from about 100° C. to about 250° C., with a hydrocarbon halide alkylating agent having 1–30 carbon atoms,

(12) a Schiff base reaction product of an acylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2–20 carbon atoms, formed by reacting, at a temperature of from about 120° C. to about 300° C., said polymer with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polymer with a compound selected from the group consisting of aldehydes and ketones,

(13) a Schiff base reaction product of an alkylated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2–20 carbon atoms, formed by reacting, at a temperature of from about 100° C. to about 250° C., said polymer with a hydrocarbon halide alkylating agent having 1–30 carbon atoms, and then reacting said alkylated polymer with a compound selected from the group consisting of aldehydes and ketones,

(14) an oxyalkylated Schiff base reaction product of a linear polymer of a 1,2-alkyleneimine, said linear polymer having a molecular weight of at least 800, each alkylene unit therein having 2–20 carbon atoms

formed by reacting said linear polymer with a compound selected from the group consisting of aldehydes and ketones to form said Schiff base reaction product and then reacting said Schiff base reaction product, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., with an alkylene oxide having 2–8 carbon atoms,

(15) an acylated, then olefinated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2–20 carbon atoms, formed by reacting, at a temperature of from about 120° C. to about 300° C., said linear polymer with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polymer, at a temperature of from about 70° C. to about 100° C., with an olefinating agent selected from the group consisting of acrylonitrile, styrene, butadiene, vinyl ethers and vinyl sulfones, and

(16) an alkylated, then olefinated linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2–20 carbon atoms, formed by reacting, at a temperature of from about 100° C. to about 250° C., said polymer with a hydrocarbon halide alkylating agent having from 1–30 carbon atoms, and then reacting said alkylated polymer, at a temperature of from about 70° C. to about 100° C., with an olefinating agent selected from the group consisting of acrylonitrile, styrene, butadiene, vinyl ethers and vinyl sulfones.

3,301,784
SUBSTITUTED PYRROLIDINONES AS LUBRICATING OIL ADDITIVES

Donald J. Anderson, San Anselmo, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,555
2 Claims. (Cl. 252—51.5)

1. A lubricating oil composition comprising an oil of lubricating viscosity and in an amount sufficient to provide detergency a compound comprising a member of the group selected from mono- and bis-(N-hydrocarbyl 2-pyrrolidonones) having from 1 to 4 alkyl substituents substituted in the 3- and 5-positions, wherein said alkyl groups are of from 10 to 60 carbon atoms, said hydrocarbyl group is from 1 to 10 carbon atoms and wherein the total number of carbon atoms per pyrrolidinone is in the range of 20 to 100 carbon atoms.

3,301,785
INSULATED SOLID PROPELLANT ROCKET MOTOR

Otho D. Ratliff, Waco, and Hugh J. McSpadden, Moody, Tex., assignors to North American Aviation, Inc.

Filed May 2, 1960, Ser. No. 25,984
3 Claims. (Cl. 252—62)

1. A heat insulating material comprising (1) a copolymer of butadiene and methyl-vinylpyridine containing from about 5 to about 50 weight percent methyl-vinylpyridine components, based on the total weight of the copolymer, and (2) from 50 phr. to about 350 phr. asbestos powder consisting of fine fibers distributed throughout said copolymer.

3,301,786
SYNTHETIC FERROELECTRIC ARTICLES

Donald L. Klass, Barrington, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed May 7, 1962, Ser. No. 192,712
8 Claims. (Cl. 252—63.2)

1. A ferroelectric article consisting essentially of a solidified composition of particulate solids dispersed in a vehicle and exhibiting electric charges of opposite sign at opposite surfaces thereof, said composition consisting essentially of:

(a) from about 10–60 percent by volume of solid particles of silanol silica, said particles having an average particle size in the range of about 0.1 to 10 microns diameter, and

(b) the remainder being a vehicle selected from the group consisting of paraffin wax, microcrystalline wax, polyethylene, polypropylene, polystyrene and polybutadiene, said vehicle being further characterized as being a solid having a resistivity of not less than about 10^{12} ohms per cubic centimeter, a dielectric constant not in excess of about 15, an ASTM penetration not in excess of about 15 at 77° F., and being capable of fluidity at the time said solid particles are dispersed therein.

3,301,787
CHEMICAL BRIGHTENING OF ALUMINUM

Charles C. Cohn, Atlantic City, N.J., assignor to Samuel L. Cohn and Charles C. Cohn, copartners trading and doing business as Colonial Alloys Company, Philadelphia, Pa.

No Drawing. Filed May 24, 1965, Ser. No. 458,470
4 Claims. (Cl. 252—79.4)

1. A bath for the chemical brightening of aluminum when used at a temperature in excess of 150° F. comprising as essential constituents phosphoric acid and water, with the free phosphoric acid content in the range from 40% to 98% by weight, said bath having dispersed therein, at its operating temperature in the range 150° F. to boiling, an oily material insoluble in, and non-emulsifiable in, the bath, the content of the oily material being substantially in the range from 0.0005% to 1.0%.

3,301,788
PROCESS FOR PREPARING A DESICCANT PELLET

William P. Cummings, Severna Park, and Leon L. Baral and James A. Laudone, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 26, 1964, Ser. No. 355,110
3 Claims. (Cl. 252—194)

1. A process for preparing a desiccant pellet comprising a composite of a zeolitic molecular sieve having a pore size of about 4 Angstroms and a spray dried silica-alumina component containing about 13 to 27 percent alumina which comprises:

(a) Forming the zeolitic component into nodules.

(b) Crushing the nodular zeolitic component and mixing with the silica-alumina component to form a composite containing about 45 to 55 percent of the zeolite component.

(c) Mixing the components with about 3 to 8 percent of a pilling aid selected from the group consisting of molasses, sugar solution, graphite, a polyvinyl alcohol solution and an inorganic clay and pilling.

(d) Calcining at a temperature of about 500 to 1100° F. for about 2 to 5 hours.

(e) Cooling and recovering the desiccant product pellet.

3,301,789
ZIRCONIUM REMOVAL FROM STRONTIUM-90

Lane A. Bray, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 4, 1966, Ser. No. 534,286
2 Claims. (Cl. 252—301.1)

1. A method of recovering strontium substantially free of zirconium from an acidic solution containing strontium ions and zirconium ions which comprises:

(a) adding sufficient caustic to neutralize said solution to a pH of substantially 1.

(b) adding sufficient potassium acid carbonate, $KHCO_3$, to raise the pH to substantially 7.

(c) adding sufficient potassium carbonate, K_2CO_3, to raise the pH to at least 10, and,

(d) digesting the slurry thus formed for an extended period at a temperature of 80°–90° C.

3,301,790
METAL OXIDE-CARBON ORGANOSOL PROCESS AND PRODUCT

Frederick T. Fitch, Baltimore, and Ann B. Braun, Rockville, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,102
10 Claims. (Cl. 252—301.1)

1. A process for forming a carbon-metal oxide organosol comprising steps of

(a) mixing an aqueous dispersion of colloidal carbon with an organic carboxylic acid which is slightly soluble in water,

(b) mixing the acid-treated carbon suspension with a water-immiscible organic liquid and thereby forming a carbon organosol,

(c) mixing an aquasol of metal oxide selected from the group consisting of actinide oxides, rare earth oxides, alumina, zirconia, and mixtures thereof with an organic carboxylic acid which is slightly soluble in water,

(d) mixing the acid-treated metal oxide aquasol with the carbon organosol, and

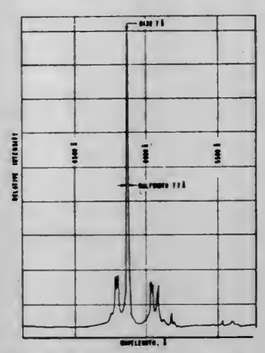
(e) removing water from the mixture wherein the quantity of acid added to the dispersion and aquasol in moles of acid per mole of colloidal material is from about $2.5/R$ to $5.6/R$ wherein R is the average radius of the sol particles in millimicrons.

3,301,791
RED LUMINESCENT COMPOSITION PRODUCT AND PROCESS

Lothar H. Brixner, Brandywine Hills, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 30, 1965, Ser. No. 452,258
6 Claims. (Cl. 252—301.4)

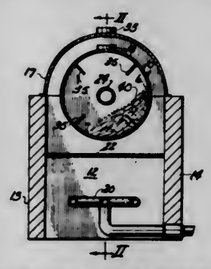
1. In a process for the production of red luminescent compositions of the generic formula $AB_{1-x}Eu_xO_3$ where A is a monovalent metal having an atomic number in the range of 3 through 11, inclusive, and B is an element selected from the group consisting of yttrium and gadolinium, and x has a value of from 0.01 to 0.2, inclusive, the steps comprising (a) intimately mixing in stoichiometric amounts, at least one compound of each of the metals of the generic formula, said compounds being selected from the group consisting of the oxides of said metals and compounds which upon heating at 800 to 1000° C. form said oxides, (b) firing the mixture at a temperature of from 800° to 1000° C. for a period of from 10 to 14 hours; (c) subjecting the fired product to comminution and remixing; and (d) firing said comminuted materials at a temperature of 1000 to 1200° C. for from 10 to 14 hours.



3,301,792
REACTIVATION OF MOLECULAR SIEVES

William Joseph Lewallen, Tulsa, and Joseph Francis Wood, Pawhuska, Okla., assignors to Skelly Oil Company, Tulsa, Okla., a corporation of Delaware

Filed Sept. 29, 1964, Ser. No. 400,074
8 Claims. (Cl. 252—418)



1. A process for reactivating crystalline zeolitic molecular sieves which comprises alternately oxidizing and quenching oxidation of a mass of molecular sieve pellets, the said oxidation being carried out at a temperature in the range from about 700 to 1000° F. for short periods not substantially in excess of 0.4 second.

3,301,793
PREPARATION OF FLUORIDED TUNGSTEN-NICKEL HYDROCRACKING CATALYSTS

Charles T. Adams and Stanley G. Brandenberger, Houston, and Maxwell Nager, Pasadena, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,320
7 Claims. (Cl. 252—441)

1. A method for the preparation of catalysts having hydrocracking activity comprising the steps (1) impregnating a silica-alumina xerogel consisting of from about 10% to about 50% by weight alumina and from about 90 to 50% silica with an aqueous solution of the salts ammonium tungstate, ammonium bifluoride and nickel nitrate at a temperature below about 50° C. and a solution pH of from 1.9 to 2.9 and (2) calcining the impregnated xerogel, the concentration of salts in the aqueous solution being sufficient to deposit on the xerogel an amount of salts equivalent to 3–13% by weight nickel, 5–20% by weight tungsten, and 0.5–5.0% by weight fluorine, basis total weight of calcined catalyst.

3,301,794
PROCESS FOR MANUFACTURING IMPROVED CATALYTIC PARTICLES
Robert H. Cramer, Belmont, Mass., and Abbott F. Houser, Cherry Hill Township, Camden County, and Kenneth I. Jagel, Jr., Mantua Township, Gloucester County, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Jan. 23, 1963, Ser. No. 253,264
7 Claims. (Cl. 252—448)

1. In a process for manufacturing a particle-form gel composite by introducing a mixture comprising finely divided crystalline aluminosilicate and an inorganic oxide sol into a body of water-immiscible fluid in the form of globules, permitting said globules of sol to set to hydrogel in said water-immiscible fluid, removing the particles of hydrogel so formed from the said fluid, base exchanging to remove zeolitic metal therefrom and drying, the improvement which comprises passing over the hydrogel composite particles, after removal from said fluid but prior to base exchange, an aqueous inorganic ammonium-containing solution having therein about 30 to about 1000 parts per million of a surface-active agent at a rate to provide turbulent flow of said solution corresponding to a Reynolds number of at least 300 for a period of time to remove water-immiscible fluid from said hydrogel particles.

3,301,795
SELF-CATALYZING EPOXY RESIN COMPOSITIONS, IMPROVED POLYCARBOXYLIC ACID ANHYDRIDE CURING AGENT THEREFOR AND PROCESS FOR PREPARING THEM
George S. Wooster, Hamburg, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 9, 1961, Ser. No. 130,243
9 Claims. (Cl. 260—2)

1. An improved curing agent for epoxy resins comprising a major proportion of a polycarboxylic acid anhydride having dissolved therein a minor proportion of a mono-amine salt of a polycarboxylic acid.

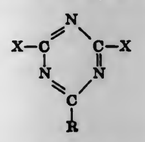
6. A heat curable, self-catalyzing resin composition comprising (1) an epoxy resin selected from the group consisting of glycidyl polyethers of polyhydric phenols, glycidyl polyethers of polyhydric alcohols, glycidyl polyethers from phenol-aldehyde condensation products and epoxy alicyclic esters, (2) a polycarboxylic acid anhydride polymerizable with said epoxy resin and (3) a catalytic amount of an organic mono-amine salt of a polycarboxylic acid.

3,301,796
METHOD OF EPOXIDE OR EPISULFIDE COPOLYMER POLYMERIZATION WITH NITRO AROMATIC COMPOUND
Robert Johnston Herold, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Jan. 20, 1964, Ser. No. 338,577
8 Claims. (Cl. 260—2)

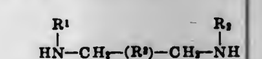
1. In a method which comprises contacting (A) a mixture of organic compounds each compound containing and polymerizable through a single cyclic ether or thioether group of from 2 to 3 carbon atoms, at least 0.5 mol percent of the compounds in said mixture containing aliphatic unsaturation and having an atom selected from the group consisting of halogen and non-carbonyl oxygen atoms attached to a carbon atom alpha to the double bond, none of the compounds in component (A) containing aliphatic unsaturation wherein the alpha carbon is a part of a polyunsaturated ring, none of the compounds in component (A) containing aliphatic unsaturation wherein the alpha carbon has attached thereto a carbonyl oxygen atom, (B) an organometallic epoxide polymerization catalyst and (C) a cocatalyst for (B), the improvement which comprises introducing into the polymerization system from about 0.01 to about 5 mols per mol of (B) of (D) a nitro-aromatic compound, whereby gelation of (A) is inhibited during and after polymerization.

3,301,797
LINEAR TRIAZINE POLYMERS
Arnold Drucker, Wilton, Conn., and Alwyn Senior, Cincinnati, Ohio, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 6, 1964, Ser. No. 350,074
6 Claims. (Cl. 260—2)

1. A method for the production of a linear, thermoplastic molding resin whch comprises interfacially condensing a solution of (1) a compound having the formula

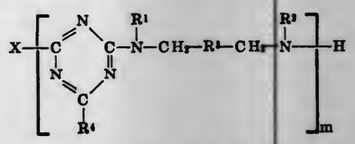


wherein X is selected from the group consisting of bromine, chlorine and iodine and R is selected from the group consisting of an alkyl (C_1–C_4), an alkoxy (C_1–C_4), an aryl (C_6–C_{10}), an aryloxy (C_6–C_{10}) and an allyloxy radical, with an aqueous solution of (2) a diamine having the formula



wherein R^1 and R^2 are individually selected from the group consisting of hydrogen and an alkyl (C_1–C_4) radical and R^3 is selected from the group consisting of an alkenylene (C_2–C_7), an arylene (C_6–C_{10}), an alkylidene (C_3–C_5) radical and a $(CH_2)_n$ group wherein n is a whole positive integer of from 0 to 7, at a temperature ranging from about 0° C. to about 100° C., the molar ratio of (1) to (2) being from about 1:1 to about 1:5, respectively.

5. A linear, thermoplastic molding resin having the structural formula



wherein X is selected from the group consisting of bromine, chlorine and iodine, R^4 is selected from the group consisting of alkoxy (C_1–C_4), aryloxy (C_6–C_{10}) and allyloxy radicals, R^1 and R^2 are individually selected from the group consisting of hydrogen and an alkyl (C_1–C_4) radical, R^3 is selected from the group consisting of alkenylene (C_2–C_7), arylene (C_6–C_{10}), alkylidene (C_3–C_5) radicals and a $(CH_2)_n$ group wherein n is a whole positive integer of from 0 to 7 and m is the number of recurring units in the resin.

3,301,798
POLYVINYL CHLORIDE FOAM
Raymond R. Waterman, Easton, and Donald C. Morris, Norwalk, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Apr. 16, 1963, Ser. No. 273,288
16 Claims. (Cl. 260—2.5)

1. An unfoamed plastisol especially adapted for the formation of an open cell polyvinyl chloride foam by the incorporation of air therein which comprises about 100 parts by weight of polyvinyl chloride resin particles dispersed in from about 45 to about 350 parts by weight of plasticizer therefor, from about 2 to about 16 parts by weight of a soap blend consisting of at least about 0.5 part by weight of alkali metal soap and at least 1.5 parts by weight of amine soap, and from about 0.2 to about 3.0 parts by weight of water, said alkali metal soap being selected from the group consisting of alkali metal salts of saturated and unsaturated fatty acids, including hydroxy fatty acids, and mixtures thereof having from 8 to 24 carbon atoms and said amine soap being selected from the group consisting of amine salts of saturated and unsaturated fatty acids, including hydroxy fatty acids, and mixtures thereof having from 8 to 24 carbon atoms.

7. A liquid frothing aid or foam former especially adapted for promoting foam formation and preventing collapse thereof by the incorporation of air into an unfoamed polyvinyl chloride plastisol containing said liquid which comprises a blend of from about 2 to about 16 parts by weight of a soap blend and from about 0.2 to about 3.0 parts by weight of water, the soap blend consisting of from about 3% to about 91% by weight of alkali metal soap and from about 97% to about 9% by weight of amine soap respectively; said alkali metal soap being selected from the group consisting of alkali metal salts of saturated and unsaturated fatty acids, including hydroxy fatty acids, and mixtures thereof having from 8 to 24 carbon atoms and said amine soap being selected from the group consisting of amine salts of saturated and unsaturated fatty acids, including hydroxy fatty acids, and mixtures thereof having from 8 to 24 carbon atoms.

3,301,799
RUBBER LATEX, GRAPHITE AND CEMENT
Henry M. Rothberg, Woodbridge, and Frederick J. Foster, Cheshire, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 11, 1963, Ser. No. 315,680
2 Claims. (Cl. 260—17)

1. An electrically conductive hydraulic cement composition for constructing electrically conductive walls or floors comprising, in admixture, by weight:
(a) 100 parts of hydraulic cement;
(b) rubber latex selected from the group consisting of natural rubber latex, butadiene polymer latex, polychloroprene latex and butyl rubber latex, in amount sufficient to provide from 5 to 25 parts of solids of said rubber;
(c) 10 to 40 parts of colloidally dispersed graphite having a particle size of not more than 10 microns;
(d) 3 to 20 parts of a non-ionic wetting agent per 100 parts of said solids of rubber latex; and
(e) up to 500 parts of aggregate.

3,301,800
ACID-TREATED CORNCOB CONSTRUCTION MATERIAL AND METHOD OF PRODUCING SAME
Turgut Demirel, Ames, Iowa, assignor to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa
No Drawing. Filed July 13, 1964, Ser. No. 382,400
4 Claims. (Cl. 260—17.4)

1. In a process for making a construction material, the steps of contacting a batch of corncobs with a phosphoric acid solution of 20–30% concentration at 80–110° C. for digesting said corncobs, withdrawing said phosphoric solution from the digested corncob product, reducing the particle size of the corncob product to a fine texture, mixing said fine-textured product with a substantially equal volume of resin-forming liquid comprising furfuryl alcohol, sulfite liquor, and phosphoric acid, the amounts of furfuryl alcohol and sulfite liquor being approximately equal, forming the mixture into a predetermined shape, and curing said formed mixture at a temperature between 80° C. and 120° C. for promoting polymerization thereof.

4. A non-combustible panel member, comprising approximately equal amounts of phosphoric acid-treated corncob particles bonded in a cured resin derived from a liquid mixture of furfuryl alcohol, spent sulfite liquor and phosphoric acid, the ratio of furfuryl alcohol to spent sulfite liquor to phosphoric acid being approximately 1:1:0.05.

3,301,801
ADMIXED COMPOSITION OF (1) COPOLYMER OF ACRYLIC ACIDS AND ESTERS THEREOF; (2) EPOXY COMPOUNDS; AND (3) DICYANDIAMIDE
Joseph E. Gaske, Argo, and Wallace H. Brown, Downers Grove, Ill., assignors to De Soto Chemical Coatings, Inc., Chicago, Ill., a corporation of Delaware
No Drawing. Filed June 8, 1965, Ser. No. 462,409
4 Claims. (Cl. 260—17)

1. A coating composition comprising an organic solvent solution containing a solution copolymer of from 3 to 20 parts of acid selected from the group consisting of acrylic acid, methacrylic acid and mixtures of said acids, and correspondingly, from 97 to 80 parts of alkyl esters of said acids in which the alkyl radical of said esters contains from 1 to 8 carbon atoms, epoxy compound in an amount providing from 21.5 to 151 1,2-epoxy groups per 100 carboxylic acid groups of said solution copolymer, said epoxy compound being a polyglycidyl ether of diphenylol compound, and dicyandiamide in an amount of from 0.5 to 0.9% by weight, based on the total weight of resin solids, to promote reaction between said solution copolymer and said epoxy compound when said solution is baked.

2. A coating composition as recited in claim 1 in which said solution includes cellulose acetate butyrate.

3,301,802
COMPOSITIONS COMPRISING BUTADIENE-STYRENE RUBBER AND POLYMERIZED FATTY ACIDS
Latimer D. Myers, Cincinnati, Ohio, assignor to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 13, 1962, Ser. No. 187,348
3 Claims. (Cl. 260—23.7)

1. A rubbery polymer composition having good rubber curing characteristics, said composition comprising a rubbery polymer formed by the emulsion polymerization of 1,3-butadiene and styrene, together with from about 3 to 10% of a product, as a processing aid, obtained on polymerizing higher fatty acids containing at least 40% of C_{18} unsaturated fatty acids in the presence of water and a crystalline clay mineral, said product containing from about 30 to 75% of a higher fatty acid polymer with the balance being essentially comprised of monomeric fatty acids.

3,301,803
ASPHALT-ALDEHYDE-PHENOLIC COMPOUND CONTAINING COMPOSITIONS
John W. Schick, Cherry Hill, and John H. Maher, Scotch Plains, N.J., assignors to Mobil Oil Company, a corporation of New York
No Drawing. Filed June 15, 1964, Ser. No. 375,347
8 Claims. (Cl. 260—28)

1. An improved asphaltic composition obtained by reacting a major proportion of a petroleum asphalt with minor proportions of an aldehyde and a phenolic compound selected from the group consisting of phenol and alkyl phenols in the presence of an acidic catalyst having a pH not higher than about 4 at a temperature sufficient to effect condensation between said reactants.

5. A composite for producing a binder which comprises: a major proportion of a petroleum asphalt and minor proportions of an aldehyde, a phenolic compound selected from the group consisting of phenol and alkyl phenols and an acidic catalyst having a pH not higher than about 4.

3,301,804

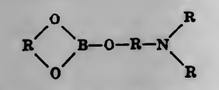
AQUEOUS EMULSION COMPRISING REACTION PRODUCT OF LIQUID EPOXY RESIN AND AMINO BORIC ACID ESTER

John G. Zora, West Mifflin Borough, Allegheny County, Pa., and Donald V. Todd, Denville, N.J., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,347
3 Claims. (Cl. 260—29.2)

1. A process for the preparation of an aqueous emulsion of an epoxy resin and a surfactant agent that is capable of functioning as a cross-linking curing agent with said epoxy resin upon application of the emulsion to a surface as a coating to form thereby a cured thermoset water insoluble resinous product which comprises:

(a) reacting from 3 to 10 parts of a boric acid ester derived from boric acid and both an alkylene glycol and a beta-dialkyl substituted amino-alkanol having the general formula:



where R is an alkyl group having from 2–6 carbon atoms in the chain, and the R may be the same or different alkyl groups, with 100 parts of a liquid epoxy resin, for a period of time of from 5 minutes to 15 minutes at a temperature of about 50–55° C. to form a partially cured liquid resin;

(b) blending the partially cured liquid resin with a sufficient amount of water to form an emulsion of the resin in the water of the desired solids content.

3,301,805

PROCESS FOR THE MANUFACTURE OF STABLE AQUEOUS DISPERSIONS OF VINYL ESTER POLYMERS

Karl-Heinz Kahrs, Anton Staller, and Johann Wolfgang Zimmermann, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed May 7, 1962, Ser. No. 192,645
Claims priority, application Germany, May 6, 1961, F 33,867
11 Claims. (Cl. 260—29.6)

1. A process for the production of aqueous dispersions of vinyl ester polymers having a good freeze-thaw stability, which comprises the step of polymerizing at least one monomer selected from the group consisting of vinyl esters of aliphatic saturated carboxylic acids with 2 to 18 carbon atoms and vinyl benzoate in the presence of an emulsifier combination consisting of 1 to 20 parts by weight of a water soluble graft polymer of vinyl acetate on polyalkylene glycol and 1 to 15 parts by weight of a polyvinyl alcohol, said parts being calculated on 100 parts of the monomer.

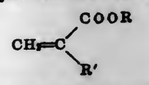
3,301,806

STYRENE-ACRYLATE-ITACONIC ACID LATEX

Leonard F. Guziak, Pittsburgh, and William N. Maclay, Monroeville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed July 17, 1962, Ser. No. 210,592
2 Claims. (Cl. 260—29.6)

1. A coating composition comprising an aqueous dispersions of a copolymer comprising from 29–49 percent by weight of an acrylic ester of the formula:



wherein R is a saturated alkyl having from 1–20 carbon atoms and R' is a member of the group consisting of hydrogen and methyl, from 50 to 70 percent by weight of a vinyl aryl monomer of the formula:

$$RCH=CH_2$$

wherein R is a member of the group consisting of phenyl, lower alkyl phenyl, and halophenyl, and from 0.5 to 1.5 percent by weight of itaconic acid.

3,301,807

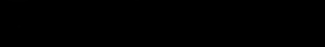
STABILIZED, CONCENTRATED POLYTETRAFLUOROETHYLENE DISPERSIONS CONTAINING NON-IONIC SURFACTANTS

Juzaemon Hoashi, Osaka-fu, Japan, assignor, by mesne assignments, to Thiokol Chemical Corporation, Trenton, N.J., a corporation of Delaware

No Drawing. Filed Apr. 7, 1964, Ser. No. 358,100
Claims priority, application Japan, Apr. 11, 1963, 38/18,945
10 Claims. (Cl. 260—29.6)

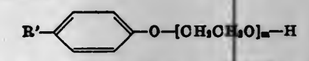
1. A process for producing stabilized, concentrated polytetrafluoroethylene dispersions consisting essentially of sequentially

(a) thoroughly mixing from about 6 to about 20 percent by weight of a concentrating nonionic surfactant having a structure represented by the formula



in which R is an alkyl group containing from 8 to 10 carbon atoms, and n is an integer having a value in the range from $[r-1.5]$ to $[r+0.5]$, where r is equal to the number of carbon atoms in the alkyl radical R, into an aqueous colloidal dispersion of polytetrafluoroethylene having a polymer solids content in the range from about 10 to about 50 percent by weight and containing a small amount of a polyfluoro-substituted emulsifying agent for the polymer, while maintaining the temperature of the aqueous colloidal dispersion in the range from 0° C. to about 45° C., the percentage of the nonionic surfactant mixed into the aqueous colloidal dispersion being based upon the weight of the polymer, thereby separating the aqueous colloidal dispersion into a relatively clear supernatant layer and a sedimentary layer and concentrating the polytetrafluoroethylene dispersion in the sedimentary layer;

(b) separating the sedimentary layer from the supernatant layer and then thoroughly mixing into the sedimentary layer a small amount of a stabilizing nonionic surfactant having a structure represented by the formula



in which R' is an alkyl group containing from 8 to 10 carbon atoms, and m is an integer equal to at least $[r'+1]$ but less than 20, where r' is equal to the number of carbon atoms in the alkyl radical R', while maintaining the temperature of the sedimentary layer in the same temperature range, to form a stabilized, concentrated polytetrafluoroethylene dispersion containing from about 65 to about 75 percent by weight of polytetrafluoroethylene particles having an average diameter in the range from about 0.05 to about 0.5 micron and being characterized by the absence of coagulated polymer particles upon electron microscope examination; and

(c) recovering the resultant stabilized, concentrated polytetrafluoroethylene dispersion.

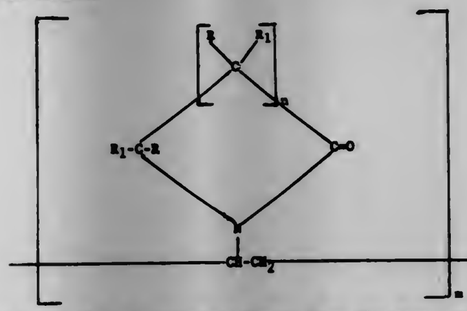
3,301,808

AQUEOUS AEROSOL FILM FORMING COMPOSITIONS

George R. Mack, Jr., Allentown, and Milton Freifeld, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 12, 1964, Ser. No. 366,900
4 Claims. (Cl. 260—29.6)

1. A nonflammable aqueous sprayable film forming composition consisting essentially of (1) an aqueous emulsion of a graft copolymer of a N-vinyl lactam polymer of the formula



wherein R is a member selected from the group consisting of hydrogen, methyl and ethyl, R_1 is a member selected from the group consisting of hydrogen, methyl and ethyl, n is an integer of from 2 to 4, and m is an integer of from 4 to 20,000, prepared by reacting from 5 to 60 part by weight of the N-vinyl lactam polymer with from 95 to 40 parts by weight of a nonaqueous vinyl monomer selected from the group consisting of vinyl acetate, isopropenyl acetate, vinyl laurate, vinyl stearate, vinyl oleate, vinyl benzoate, vinyl chloride, 2-chloropropene, methyl vinyl ether, ethyl vinyl ether, isopropyl vinyl ether, isobutyl vinyl ether, 2-oxyethyl vinyl ether, phenyl vinyl ether, methyl acrylate, ethyl acrylate, methyl methacrylate, 2-ethylhexyl acrylate, hexyl acrylate, styrene, methoxystyrene, ethylstyrene and chlorostyrene, under polymerization conditions in the presence of a free radical supplying polymerization catalyst, and

(2) an aerosol propellent selected from the group consisting of a chlorofluoro alkane hydrocarbon having from 1 to 2 carbon atoms and from 0 to 2 unreplaced hydrogen atoms, a low boiling hydrocarbon having from 1 to 4 carbon atoms, nitrogen, nitrous oxide and carbon dioxide.

3,301,809

N-METHYLOL ACRYLAMIDE-VINYL ACETATE COPOLYMER EMULSIONS CONTAINING POLYVINYL ALCOHOL

Albert I. Goldberg, Berkeley Heights, and Victor Jasinski, South Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 23, 1965, Ser. No. 450,502
12 Claims. (Cl. 260—29.6)

1. The process of preparing stable, aqueous emulsion copolymers of vinyl acetate and N-methylol acrylamide by a reaction which comprises the heating of an aqueous emulsion of a monomer charge consisting exclusively of vinyl acetate and N-methylol acrylamide in the presence of a free radical type catalyst, said aqueous emulsion of monomeric vinyl acetate and N-methylol acrylamide being emulsified with polyvinyl alcohol which is from about 80 to about 90% hydrolyzed and which has a Hoeppler viscosity in the range of from about 5 to about 25 centipoise, as determined with a 4%, by weight, aqueous solution at a temperature of 20° C.

3,301,810

ISOOLEFIN - MULTIOLEFIN COPOLYMERS THROUGH ULTRASONIC HOMOGENIZERS

Edward Allen Hunter, Clyde Lee Aldridge, Merlan Meredith Lambert, and George Oliver Hillard, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 24, 1961, Ser. No. 103,952
5 Claims. (Cl. 260—29.7)

1. In a process for preparing a latex of a rubbery copolymer comprising 85–99.5 wt. percent of an isoolefin having 4 to 6 carbon atoms and 15–0.5 wt. percent of a multiolefin having 4 to 12 carbon atoms wherein the copolymer is dissolved in an organic solvent and preliminary dispersed with an aqueous solution containing an emulsifying agent to form a crude dispersion, the improvement which comprises intimately mixing and simultaneously comminuting the components of the resulting crude dispersion by passing said dispersion through an ultrasonic homogenizer at least twice, but not more than six times, stripping off the solvent and recovering a stable latex having a particle size of 0.1 to 1 micron.

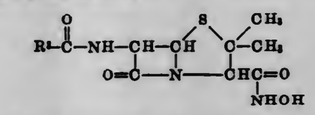
3,301,811

N-HYDROXYPENICILLIN AMIDES

John C. Godfrey, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,502
9 Claims. (Cl. 260—306.7)

1. A member selected from the group consisting of a compound of the formula



in which R^3 represents the side chain of a penicillin, and the nontoxic pharmaceutically acceptable salts thereof.

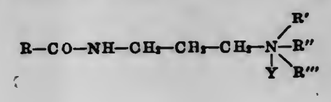
3,301,812

CLAY COMPOSITION AND USE OF SAME IN TREATMENT OF EXPANDABLE POLYSTYRENE BEADS

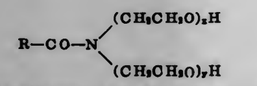
Thomas H. Ferrigno, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,784
3 Claims. (Cl. 260—32.6)

1. A destaticized free-flowing composition comprising discrete particles of a normally solid nonporous foamable styrene polymer which particles when expanded by heating are normally susceptible to agglomeration of particles one to each other and to buildup of electrical charge, and having on the surface of said particles from ½% to 2% of an adherent coating consisting of minus 44 micron particles of kaolin clay having an average particle size within the range of about 0.5 to about 5.0 microns, the surfaces of which are uniformly coated with a mixture of at least one normally solid cationic amide (a) and at least one normally solid nonionic amide (b) in amount of 1 part by weight to 2 to 9 parts by weight of said cationic amide (a), said amide (a) being a material of the general formula:



wherein R is a member of the group consisting of aliphatic and alicylic radicals containing 7 to 17 carbon atoms, R' and R'' are members of the group consisting of alkyl and hydroxyalkyl radicals each having from 1 to 3 carbon atoms, inclusive, R''' is a hydroxyalkyl radical having from 1 to 3 carbon atoms, inclusive, and Y is an anion, said compound (b) being a material of the general formula:



wherein R is an aliphatic radical having 11 to 17 carbon atoms and x and y are integers each having a value of at least 1 and totalling between 2 and 50.

3,301,813

PROCESS FOR INCORPORATING A LIQUID ADDITIVE INTO A SOLID THERMOPLASTIC POLYMER

Ronald H. Dahms, Springfield, and Edgar E. Hardy, Longmeadow, Mass., and Daniel A. Popielski, Cincinnati, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,344
14 Claims. (Cl. 260—34.2)

1. A process for incorporating a liquid additive into a solid, comparatively non-absorbent thermoplastic polymer which comprises blending the liquid additive with a substantially anhydrous, comparatively highly absorbent porous emulsion polymer at a temperature below the fusion temperature of the emulsion polymer to form a comparatively dry powder concentrate containing about 40–60% by weight of the liquid additive and blending the concentrate with the solid, comparatively non-absorbent thermoplastic polymer; said emulsion polymer being a polymer which is compatible with the solid, thermoplastic polymer.

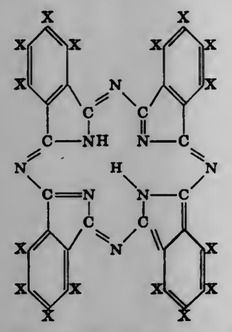
3,301,814

PROCESS FOR CURING POLYEPOXIDES WITH SUBSTITUTED PHTHALOCYANINES AND RESULTING PRODUCTS

Harvey L. Parry, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1962, Ser. No. 211,129
23 Claims. (Cl. 260—37)

1. A process for converting a polyepoxide having more than one vic-epoxy group to an insoluble infusible product having good heat resistance which comprises mixing and reacting the polyepoxide with from 1% to 75% by weight of the polyepoxide of a phthalocyanine compound of the structure



wherein at least four X's are reactive groups selected from the group consisting of carboxylic acid, acid anhydride, hydrazine, mercaptan, amine, sulfonic acid and amine sulfate groups and the remaining X's are selected from the group consisting of hydrogen, hydrocarbon radicals, halogen atoms, alkoxy radicals and ester radicals.

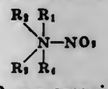
3,301,815

STABILIZATION OF VINYL RESINS WITH ORGANIC QUATERNARY AMMONIUM NITRATES

Csaba K. Hunyar, 1043 N. Sierra Bonita, Los Angeles Calif. 90046, and Karl J. Balog, 767 N. Kenmore Ave., Los Angeles, Calif. 90029

No Drawing. Filed Apr. 19, 1962, Ser. No. 188,869
9 Claims. (Cl. 260—45.9)

1. In the process for stabilizing a vinyl thermoplastic resin against blistering and gaseous decomposition upon exposure to elevated temperatures, said resin being of the class consisting of polymers and copolymers of vinyl halogenides, vinylacetates, and vinylidenehalogenides, the steps that include adding to the vinyl resin a stabilizing amount of a compound having the formula



where R_1, R_2, R_3 and R_4 are organic groups selected from the class consisting of alkyl and aryl groups, and intimately blending the vinyl resin and said compound.

3,301,816

SOLID OLEFINE POLYMER COMPOSITIONS STABILIZED WITH A BENZOPHENONE AND A SULFUR COMPOUND

Robin Henry Burgess, Hertford, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 21, 1962, Ser. No. 196,528
Claims priority, application Great Britain, May 30, 1962, 19,493/61
2 Claims. (Cl. 260—45.95)

1. A stabilizer composition comprising
(a) as a light stabilizer, 2-hydroxy-4-heptyloxy benzophenone and
(b) a mercaptol having a molecular weight of at least 250 which is the condensate of hexamethylene dithiol and 2-nonanone
there being from 0.1 to 10 orthophenolic nuclei provided to the composition by said light stabilizer to each sulfur atom provided to the composition by each mercaptol.

2. A polymeric composition comprising a solid alpha-mono olefin composition and a composition as set forth in claim 1, the amount of said light stabilizer being from 0.1 to 5% by weight of the polymeric composition.

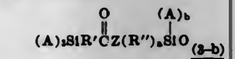
3,301,817

CARBONYL-CONTAINING ORGANOSILICON MATERIALS

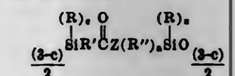
Edward V. Wilkus, Albany, and Abe Berger, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,367
11 Claims. (Cl. 260—46.5)

1. Carbonyl-containing organosilicon materials selected from the class consisting of (1) organosilicon materials of the formula,



(2) polymers consisting essentially of chemically combined units of the formula,



(3) copolymers of from 0.01 to 99.99 mole percent of organosiloxy units of the formula,



chemically combined with from 99.99 to 0.01 mole percent of (2), and (4) curable compositions comprising (a), a curing agent, and (b) a silanol chain-stopped polymer selected from

(i) homopolymers consisting essentially of chemically combined units of (2) and,

(ii) copolymers of from 5 to 95 mole percent of units of (2), chemically combined with from 95 to 5 mole percent of R_2SiO units, where R is selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, and cyanoalkyl radicals, R' is selected from the class consisting of divalent hydrocarbon radicals and halogenated divalent hydrocarbon radicals, A is selected from the class consisting of hydrogen, R radicals, halogen radicals, and alkoxy radicals, Z is an arylene radical, R'' is an alkylene radical, a is a whole number equal to 0 or 1, b is an integer equal to 2 or 3, c is a whole number equal to 0 to 2, inclusive, and d is an integer equal to 1 to 3, inclusive.

11. p - (Trimethylsilylethyl) trimethylsilyl - butyrylbenzene.

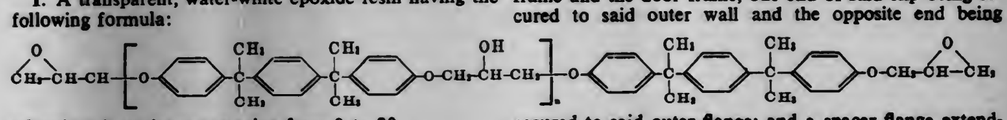
3,301,818

EPOXIDE RESINS DERIVED FROM A BIS (p-HYDROXYCUMYL)BENZENE

Oliver A. Barton, Florham Park, and Enid Schwartz, New Providence, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 15, 1961, Ser. No. 159,775
2 Claims. (Cl. 260—47)

1. A transparent, water-white epoxide resin having the following formula:



wherein n is an integer ranging from 0 to 20.

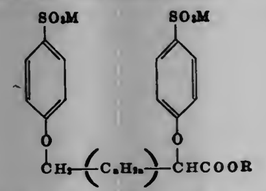
3,301,819

POLYESTERS MODIFIED WITH α,ω-BIS-(4-SULFOPHENOXY) ALKANOIC ACIDS AND ALKYL ESTERS THEREOF

Christian F. Horn, Stamford, Conn., and Harrison S. Kincaid, Nitro, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Original application July 31, 1962, Ser. No. 213,589, now Patent No. 3,256,317, dated June 14, 1966. Divided and this application Aug. 24, 1965, Ser. No. 482,253
12 Claims. (Cl. 260—49)

1. The dyeable linear polyester consisting essentially of the condensation product o (a) a dicarboxylic compound selected from the group consisting of the monocyclic aromatic dicarboxylic acids and the dialkyl esters thereof; (b) an aliphatic glycol containing from 2 to 10 carbon atoms; and, based upon the total amount of said dicarboxylic compound; (c) from about 0.1 to about 3.5 mole percent of a compound of the formula:



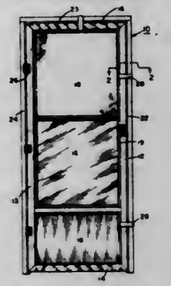
wherein M is an alkali metal, n is a value of from 0 to 5, and R is selected from the group consisting of hydrogen and alkyl of from 1 to 8 carbon atoms.

3,301,820

PRE-ASSEMBLED DOOR AND CASING THEREFOR

Roger M. Haendiges, 12700 Lake Road, Lakewood, Ohio 44107

Filed Apr. 26, 1966, Ser. No. 545,329
7 Claims. (Cl. 20—60)



1. In a pre-assembled door and casing, the casing having a mounting frame adjacently positioned on the sides and across the top of said door, said frame including a jamb portion and an angularly related outer flange, and the door including a frame member having an outer wall portion extending in the same plane as said outer flange and an angularly related inner wall portion facing said jamb portion in a substantially uniformly spaced relationship, and clip means for spacedly securing the mounting frame to the door frame, said clip means comprising a body of resilient material telescoped under tension over an entire transverse section of the mounting frame and the door frame, one end of said clip being secured to said outer wall and the opposite end being secured to said outer flange; and a spacer flange extending at substantially right angle to the major plane of the clip and intermediate to the said ends and between said jamb portion and said inner wall.

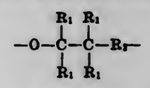
3,301,821

THERMOSTABILIZED POLYOXYMETHYLENE COPOLYMERS AND PROCESS FOR THEIR MANUFACTURE

Klaus-Dieter Asmus and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,248
Claims priority, application Germany, Feb. 14, 1962, F 36,025
4 Claims. (Cl. 260—67)

1. A process for thermostabilizing a copolymer having terminal oxymethylene groups by removing said terminal oxymethylene groups, the repeating units of said copolymer consisting essentially of —OCHR— groups interspersed with glycol structural units of the formula



wherein R and R_1 are selected from the group consisting of hydrogen and alkyl having 1 to 10 carbon atoms, and R_2 is a member selected from the group consisting of oxy and oxyalkylene having 1 to 10 carbon atoms, which method comprises treating said copolymer at a temperature of 100° C. to 160° C. and at autogenous pressure with a saturated vapor mixture of water, a volatile organic swelling agent for said copolymer, said swelling agent boiling at a temperature of 60° C. to 250° C., and

a volatile base catalyzing said removal of terminal oxymethylene groups, said volatile base being at least one member selected from the group consisting of ammonia, an alkyl amine having 1 to 20 carbon atoms, and a heterocyclic amine.

3,301,822

PROCESS COMPRISING REACTING COPOLYMERS WITH AN ALDEHYDE AND ALKYLENE OXIDE

Horst Dalibor, Harksheide, near Hamburg, Germany, assignor to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,305
5 Claims. (Cl. 260—72)

1. A process for preparing copolymers by reacting α,β-ethylenically unsaturated carboxylic acids, vinyl monomers and monoepoxides which comprises

(A) polymerizing (a) at least one member of a group consisting of α,β-ethylenically unsaturated carboxylic acid anhydrides and carboxylic acids, (b) at least one α,β-ethylenically unsaturated carboxylic acid amide, (c) at least one α,β-ethylenically unsaturated aromatic compound selected from a group consisting of styrene, vinyl toluene, alpha methylstyrene, and halogenated styrenes, (d) at least one α,β-ethylenically unsaturated alkylcarboxylic acid ester, in the presence of a polymerization accelerator and solvent by applying heat, and

(B) thereafter simultaneously reacting the copolymers by heating them at a temperature of from 70 to 90° C. with (1) at least one member of a group consisting of formaldehyde and substances that give off formaldehyde selected from a group consisting of paraformaldehyde, trioxane and hexamethylenetetramine, and (2) at least one epoxide selected from a group consisting of ethyleneoxide and propyleneoxide in the presence of a tertiary amine selected from a group consisting of trimethylamine, triethylamine, triethanolamine and ethyldiethanolamine, components (a), (b), (c) and (d) being used in substantially the following proportions by weight:

(a) 9 to 25 parts
(b) 5 to 15 parts
(c) 5 to 35 parts
(d) 5 to 50 parts.

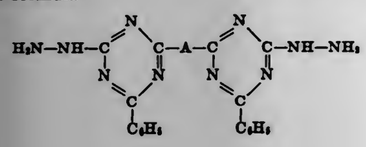
3,301,823

PROCESS FOR THE PRODUCTION OF HIGHLY ELASTIC POLYURETHANES UTILIZING DI-HYDRAZINO-DI-S-TRIAZINE COMPOUNDS AS CHAIN EXTENDERS

Robert Gehm, Ludwigshafen (Rhine), Joachim Kunde, Frankenthal, Pfalz, and Friedrich Mertes, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 3, 1964, Ser. No. 415,777
Claims priority, application Germany, Dec. 6, 1963, B 74,560
3 Claims. (Cl. 260—75)

1. A process for the production of highly elastic articles which comprises reacting, in an inert, polar solvent, (a) an isocyanate-modified polymer having a molecular weight of from about 750 to about 6,000 and prepared by reacting one mole of a polyhydroxy compound having terminal hydroxyl groups with at least two moles of an organic diisocyanate with (b) a compound having the general formula



wherein A is alkylene having 2–12 carbon atoms, and evaporating said solvent from the resultant composition.

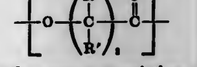
3,301,824

POLYMERS OF CYCLIC CARBONATES

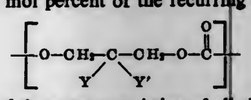
Fritz Hostettler and Eugene F. Cox, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,674
17 Claims. (Cl. 260—77.5)

1. A solid copolymer which contains from about 50 to 95 mol percent of the recurring unit:



wherein R′ is of the group consisting of hydrogen and lower alkyl, with the proviso that no more than 3 R′ variables are substituents other than hydrogen; and from about 50 to 5 mol percent of the recurring unit:



wherein Y is of the group consisting of alkyl, alkoxymethyl, alkanoyloxymethyl, nitro, cyanoalkyl, cyanoalkoxymethyl, and chloroalkyl; wherein Y′ is of the group consisting of alkyl, alkoxymethyl, alkanoyloxymethyl, cyanoalkyl, cyanoalkoxymethyl, and chloroalkyl; and wherein the average molecular weight is at least about 10,000; and said copolymer being characterized in that the recurring units are essentially interconnected through the oxy group of one unit with the carbonyl group of a second unit.

3,301,825

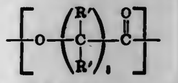
POLYESTER POLYCARBONATE POLYMERS

Fritz Hostettler and Eugene F. Cox, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,675
14 Claims. (Cl. 260—77.5)

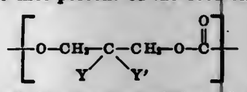
1. The substantially linear polyethylenically unsaturated polyester polycarbonate polymers containing at least about 50 mol percent of the recurring Unit I

(I)



wherein each R′ is of the group consisting of hydrogen and lower alkyl, with the proviso that no more than 3 R′ variables are substituents other than hydrogen; and up to about 50 mol percent of the recurring Unit II

(II)



wherein Y is of the group consisting of alkyl, alkenyl, alkenyloxymethyl, alkenoyloxymethyl, and nitro; wherein Y′ is of the group consisting of alkyl, alkenyl, alkenyloxymethyl, and alkenoyloxymethyl; and wherein Y and Y′ together with the gem carbon of Unit II form a divalent ethylenically unsaturated nucleus which contains six atoms in a ring and which is of the group consisting of carbocyclic and heterocyclic nuclei, said heterocyclic nucleus being composed of carbon and oxygen atoms; with the proviso that the choice of Y and Y′ is such that Unit II contains at least one carbon to carbon double bond; said polyester polycarbonate polymers having a reduced viscosity value of upwards of about 0.1 as measured at a concentration of 0.4 gram of said polymer in 100 milliliters of chloroform at 30° C.; and said polyester polycarbonate polymers being characterized in that the recurring units are essentially

interconnected through the oxy group of one unit with and a carbonyl of a second unit.

8. The product obtained by cross-linking, through the ethylenically unsaturated groups, the polymers of claim 1.

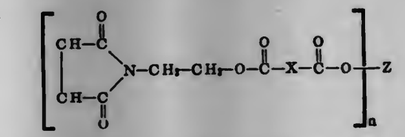
3,301,826

VULCANIZATE OF SULFUR VULCANIZABLE RUBBER WITH N-MALEIMIDE DERIVATIVES

Pliny O. Tawney, deceased, late of Passaic, N.J., by Dorothy Ethel Tawney, executrix, Passaic, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 24, 1964, Ser. No. 363,067
5 Claims. (Cl. 260—78)

1. A vulcanizate comprising the heat reaction product of 100 parts of a sulfur-vulcanizable rubber selected from the group consisting of homopolymers of aliphatic conjugated diolefin hydrocarbons having from 4 to 6 carbon atoms and heteropolymers of such diolefin hydrocarbons with copolymerizable monoolefinic compounds, said heteropolymers containing at least 35% of said diolefin hydrocarbon copolymerized therein, which has been vulcanized with from 0.25 to 6 parts of a compound represented by the formula



wherein —X— is a member selected from the group consisting of $-CH_2CH_2-$ and —CH=CH— radicals, *n* is an integer from 1 to 2, and Z is a member selected from the group consisting of a hydrogen atom when *n* equals 1 and a divalent metal when *n* equals 2, as a vulcanizing agent.

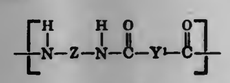
3,301,827

POLYMERS FROM POLYCYCLIC REACTANTS HAVING FUNCTIONAL SUBSTITUENTS ON BRIDGEHEAD CARBON ATOMS

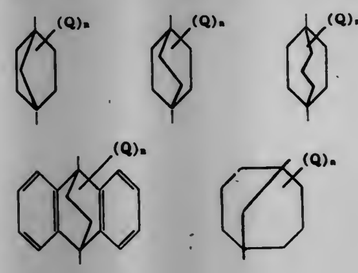
Elmore Louis Martin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 7, 1965, Ser. No. 454,202
6 Claims. (Cl. 260—78)

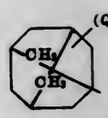
1. A fiber-forming synthetic polymer wherein at least about 85% by weight of the recurring units have the structural formula:



wherein Z is a divalent polycyclic radical of the class consisting of



and



Q is selected from the class consisting of lower alkyl; *n* is 0, 1 or 2, and Y′ is a divalent hydrocarbon radical.

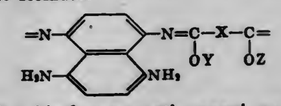
3,301,828

CONDENSATION PRODUCTS OF AROMATIC DIESTERS AND 1,4,5,8-TETRAAMINO-NAPHTHALENE AND POLYMERS THEREOF

Carl S. Marvel, Tucson, Ariz., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,502
22 Claims. (Cl. 260—78.4)

1. A solid composition of matter comprising a polymeric structure having predominately repeat units represented by the formula:



wherein X is a bivalent aromatic organic radical having from 1 to 2 aromatic rings and Y and Z are hydrocarbon radicals having up to 10 carbon atoms and having predominately ester end groups.

8. A process for the manufacture of polymeric materials which comprises mixing 1,4,5,8-tetraamino naphthalene with an aromatic dicarboxylic phenyl ester of the formula

wherein X is a bivalent aromatic organic radical having from 1 to 2 aromatic rings, the substituents of said aromatic organic radical being selected from the class consisting of hydrogen, halogen, alkyl or alkoxy of 1–4 carbon atoms and heating the mixture to a temperature in the range between 125° C. and 200° C. for a time sufficient to effect reaction and recovering from the product an imido ester condensation polymer.

3,301,829

WATER SOLUBLE ESTERS OF HYDROXYL-CONTAINING MICELLE FORMING SURFACE ACTIVE COMPOUNDS

Fred E. Woodward, Watchung, N.J., and Richard A. Grifo, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 2, 1962, Ser. No. 176,906
20 Claims. (Cl. 260—78.5)

1. A composition comprising a water-soluble partial ester of:

(1) an hydroxyl-containing micelle-forming surface active agent selected from the group consisting of anionic surface active agents, alkylene oxide condensation products with an active hydrogen-containing hydrophobe, alkylolamine condensation products with fatty acids, alkylolamine condensation products with fatty esters, and glycol and polyesters of fatty acids and

(2) an alkali-soluble interpolymer of an ethylenically unsaturated carboxylic acid anhydride with a terminal ethylenically unsaturated monomer selected from the group consisting of vinyl ethers, vinyl esters and α-olefins,

said partial ester containing not more than about 5% of the carboxyl groups present as ester groups.

3,301,830
STEROL ESTERS, METHODS FOR MAKING SAME AND USES

Richard J. Nelson, North Caldwell, N.J., and George G. Tauth, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 16, 1963, Ser. No. 309,344
16 Claims. (Cl. 260—78.5)

1. A water-soluble partial ester of

(a) an oxyalkylated sterol containing at least about 40% by weight condensed alkylene oxide of from 2 to 4 carbon atoms, and

(b) an alkali-soluble interpolymer of an α,β-unsaturated carboxylic anhydride with a monoethylenically unsaturated monomer selected from the group consisting of alkyl vinyl ethers, olefins, styrene, vinyl esters, acrylic acid and acrylic acid derivatives, the said components of the interpolymer being present in approximately equimolar quantities and in alternating repetitive arrangement, said partial ester containing not more than about 25% of the carboxyl group present as ester groups of the oxyalkylated sterol.

16. A process for preparing partial esters as defined in claim 1 which comprises adding the interpolymer to an aqueous dispersion of the oxyalkylated sterol, the latter being present in an amount of at least 0.01 mole percent based on total moles of reactants.

3,301,831
PROCESS FOR THE PREPARATION OF SULFUROUS CONDENSATION PRODUCTS WHICH ARE INSOLUBLE IN WATER

Ludwig Orthner, Frankfurt am Main, Karl Horst, Hofheim, Taunus, and Heino Wellens, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 24, 1962, Ser. No. 197,264
Claims priority, application Germany, May 27, 1961, F 34,033
6 Claims. (Cl. 260—79.1)

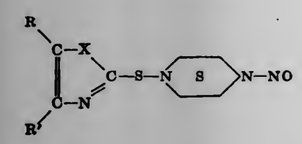
1. A process for the preparation of a water-insoluble condensate containing polysulfide bridges which comprises reacting a novolacquer (A) which contains at least 3 groups capable of reacting with thiosulfate with (B) a member selected from the group consisting of water-soluble ammonium and alkali metal thiosulfates to form (C) a salt selected from the group consisting of aryl and alkyl thiosulfuric acid, and treating said salt with an alkaline condensing agent to give said water-insoluble condensate.

3,301,832
NITROSOPIPERAZINOTHIOAZOLES

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Nov. 5, 1963, Ser. No. 321,417
12 Claims. (Cl. 260—79.5)

8. Method of vulcanizing rubber comprising heating sulfur-vulcanizable diene rubber with an accelerating amount of a compound of the formula



where X is selected from the group consisting of oxygen, sulfur, and NH, R is selected from the group consisting of hydrogen and lower alkyl, R′ is selected from the group consisting of hydrogen, lower alkyl, acetyl, lower carboalkoxy, carbamyl, and carbanilino, and R and R′ taken together with the vicinal carbon atoms of the azole ring constitute an arylene radical of the benzene series.

3,301,833
OLEFIN COPOLYMERS AND PROCESS FOR PREPARING THEM

Giulio Natta, Giorgio Mazzanti, Alberto Valvassori, Guido Sartori, and Vittorio Turba, all of Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed July 12, 1963, Ser. No. 294,752
Claims priority, application Italy, July 13, 1962, 14,103/62
15 Claims. (Cl. 260—80.5)

1. High molecular weight, substantially linear, amorphous, unsaturated copolymers of one or more polycyclic hydrocarbon dienes having two isolated nuclei and containing one double bond in each of said nuclei, with one or more monomers selected from the group consisting of ethylene and aliphatic alpha-olefins having the general formula R—CH=CH$_2$, in which R is an alkyl group containing 1 to 6 carbon atoms, which copolymers consist of macromolecules containing unsaturations and consisting of monomeric units derived from each of the monomers employed.

3,301,834
POLYMERIZATION OF OLEFINS

Donald L. Christman, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,065
9 Claims. (Cl. 260—80.5)

1. In the process for polymerizing ethylene in an inert organic diluent in the presence of a catalyst obtained by reaction of a tri- to pentavalent vanadium compound soluble in the diluent with an organoaluminum compound, the improvement which comprises forming the catalyst in the presence of a halogenated compound selected from the group consisting of alkyl esters of trichloro- and tribromoacetic acids, hexachloroacetone, hexachloropropylene, and benzotrichloride and employing an amount of vanadium compound within the range of 0.001 to 1 millimole per liter of diluent, a molar ratio of halogenated compound to vanadium compound of from 10:1 to 100:1, and a molar ratio of aluminum compound to vanadium compound of at least 3:1, whereby the activity of the catalyst is increased so that a higher yield of polymer per unit of vanadium compound is obtained.

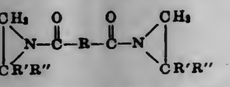
3,301,835
AMIDE-CURED CARBOXYL-CONTAINING POLYMERS

Nathaniel L. Watkins, Jr., White Bear Lake, Minn., and Richard M. McCurdy, Northridge, Calif., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Jan. 11, 1965, Ser. No. 424,824
The portion of the term of the patent subsequent to May 4, 1982, has been disclaimed
8 Claims. (Cl. 260—82.1)

1. A curable composition comprising an admixture of a vinyl copolymer containing on the average of more than 2 and not more than 15 carboxyl groups per molecule of an ethylenically unsaturated carboxylic acid or carboxylic anhydride comonomer and at least one other ethylenically unsaturated comonomer polymerizable therewith, said vinyl copolymer being substantially liquid at a temperature of about 25 to about 50° C., having an acid content in the range of about 0.1 and about 3 milliequivalents per gram and having a molecular weight not higher than about 10,000, and at least a stoichiometric

equivalent of a poly-N- ylenamide as a curing agent of the formula:



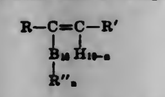
in which R is an organic radical, and R′ and R″ are hydrogen or an alkyl radical having from 1 to 8 carbon atoms.

3,301,836
ORGANO-BORON COPOLYMERS

Joseph Green and Nathan Mayes, Dover, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Oct. 21, 1960, Ser. No. 64,214
7 Claims. (Cl. 260—86.1)

1. A method for the preparation of organoboron copolymers which comprises reacting a lower alkanol ester of an acid selected from the group consisting of acrylic acid and methacrylic acid with a compound of the class



wherein R and R′ are each selected from the class consisting of hydrogen, alkyl radicals and alkenyl radicals, at least one of R and R′ being an alkenyl radical and the total number of carbon atoms in R and R′ being from 2 to 8, R″ is a lower alkyl radical, and n varies from 0 to 4, while the reactants are in admixture with a catalytic amount of an initiator for vinyl-type polymerizations.

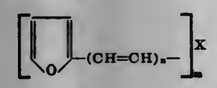
3,301,837
VULCANIZABLE COMPOSITIONS CONTAINING OLEFIN POLYMERS OR COPOLYMERS, A PROCESS FOR THEIR VULCANIZATION AND ARTICLES THUS OBTAINED

Giuliano Bartorelli and Luigi Falcone, Ferrara, and Gianfranco Pregaglia, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

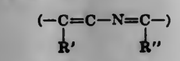
No Drawing. Filed June 7, 1963, Ser. No. 286,152
Claims priority, application Italy, June 12, 1962, 11,968/62
24 Claims. (Cl. 260—88.2)

1. Vulcanizable compositions selected from the group consisting of solid alpha-olefin polymers, and amorphous elastomeric copolymers of ethylene and alpha-olefins, together with an organic peroxide radical initiator and an organic furan derivative acting as a free-radical acceptor.

2. The compositions of claim 1 wherein the furan derivative is selected from the group consisting of furfural, furfuryl alcohol, furoic acid, furfuramide, furil; compounds having the formula:



wherein X is a radical selected from the group consisting of —CHO, —COOH, —CONH$_2$, —CN, —NO$_2$, —COOCO—, —COOR, —CO—, —CH$_2$COCH$_2$COOR and CH(COOR)$_2$, wherein R is selected from the group consisting of alkyl and aryl, wherein n is an integer between 1 and 2 and wherein m is the number of free valences of X; compounds which are furan derivatives containing the azine group;



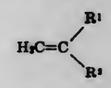
wherein R′ and R″ are selected from the group consisting of hydrogen, alkyl and cycloalkyl; and mixtures thereof.

3,301,838
METHOD OF POLYMERIZATION USING A CATALYST OF TRIVALENT MANGANESE AND AN ORGANIC REDUCING AGENT

El-Ahmadi I. Heiba, 700 Avondale Ave., Haddonfield, N.J. 08033

No Drawing. Filed Aug. 20, 1963, Ser. No. 303,419
13 Claims. (Cl. 260—88.7)

1. A method for forming a polymer comprising polymerizing an ethylenically unsaturated polymerizable compound having the formula:



wherein R^1 is selected from the group consisting of hydrogen, alkyl and halogen and R^2 is selected from the group consisting of COOH, CONR^{1}R^1, CN, halogen and COOR^3, wherein R^3 is alkyl, in the presence of:

(1) from about 10^{-6} to 10^{-1} mole of trivalent manganese per mole of polymerizable compound, the trivalent manganese being soluble in at least one component of the reaction medium, and

(2) an organic reducing agent selected from the group consisting of aldehydes, ketones, mercaptans, alcohols and acetals.

3,301,839
CRYSTALLINE 1,3-PENTADIENE POLYMERS CONTAINING THE SYNDIOTACTIC CIS-1,4 STRUCTURE

Giulio Natta, Lido Porri, Antonio Carbonaro, and Gianfranco Stoppa, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

Filed May 9, 1962, Ser. No. 193,528
Claims priority, application Italy, May 13, 1961, 8,869/61; Oct. 16, 1961, 18,693/61
19 Claims. (Cl. 260—94.2)

1. A linear homopolymer of pentadiene having a content of cis-1,4 units above 65%, a syndiotactic disposition of the tertiary carbon atoms and a crystalline structure in the solid state with an identity period of about 8.5 A. along the chain axis.

3,301,840
PREPARATION OF POLYMERS OF CONJUGATED DIENES USING ORGANOLITHIUM/POLAR COMPOUND CATALYST SYSTEMS

Robert P. Zelinski, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 718,484, Mar. 3, 1958. This application Sept. 17, 1964, Ser. No. 397,271
19 Claims. (Cl. 260—94.2)

1. A process for preparing a rubbery homopolymer of 1,3-butadiene which comprises contacting a monomer consisting essentially of 1,3-butadiene with a catalyst consisting essentially of at least 0.02 part by weight per 100 parts by weight of said 1,3-butadiene of an organolithium compound corresponding to the formula RLi, wherein R is a radical selected from the group consisting of alkyl, aryl, cycloalkyl, aralkyl, alkaryl, alkylcycloalkyl, and cycloalkylalkyl, said contacting occurring in the range of −80° to 150° C. and in the presence of a solvent mixture, inert and liquid under conditions of the process, said solvent mixture consisting essentially of (1) a hydrocarbon selected from the group consisting of aromatic, paraffinic and cycloparaffinic hydrocarbons and (2) a polar compound selected from the group consisting of ethers, thioethers and tertiary amines, the amount of said polar compound in said mixture being in the range of 0.005 to 50 weight percent of the total mixture; and recovering a rubbery homopolymer of said 1,3-butadiene.

11. A process for preparing a block polymer by catalytic polymerization which comprises polymerizing a monomer consisting essentially of an aliphatic conjugated diene containing from 4 to 10, inclusive, carbon atoms per molecule with a catalyst consisting essentially of at least 0.02 part by weight per 100 parts by weight of said conjugated diene of an organolithium compound corresponding to the formula RLi, wherein R is a radical selected from the group consisting of alkyl, aryl, cycloalkyl, aralkyl, alkaryl, alkylcycloalkyl and cycloalkylalkyl, said contacting occurring at a temperature in the range of —80 to 150° C. and in the presence of a solvent, inert and liquid under conditions of the process, said solvent consisting essentially of a hydrocarbon selected from the group consisting of aromatic, paraffinic and cycloparaffinic hydrocarbons; while said polymerization is proceeding, adding a polar compound to said hydrocarbon solvent in an amount to provide a mixture containing in the range of 0.005 to 50 weight percent of said polar compound, said polar compound being selected from the group consisting of ethers, thioethers and tertiary amines; allowing said polymerization to proceed in the presence of said hydrocarbon solvent and said polar compound; and recovering the block polymer so produced.

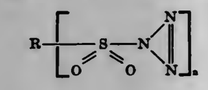
3,301,841
SULFONYL AND PHOSPHONYL AZIDES AS POLYMERIZATION INITIATORS

John E. Burleigh and Carl A. Uraneck, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed July 11, 1963, Ser. No. 294,233
11 Claims. (Cl. 260—94.4)

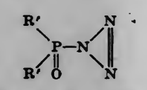
1. A process for polymerizing an ethylenically unsaturated organic monomer containing a $CH_2=C<$ group comprising contacting said monomer under polymerization conditions in the presence of an initiator selected from the group consisting of organic sulfonyl and phosphonyl azides represented by the formulae

(1)



and

(2)



wherein R is selected from the group consisting of a saturated aliphatic, saturated cycloaliphatic and aromatic radicals, R' is an aromatic radical, R and R' each having from 1 to 20 carbon atoms per molecule, and *n* is an integer from 1 to 2.

3,301,842
PROCESS FOR ISOLATING α_1-ANTITRYPSIN FROM HUMAN OR ANIMAL HUMORS

Hermann E. Schultze and Karl Heide, Marbach, near Marburg (Lahn), and Heinz Haupt, Marburg (Lahn), Germany, assignors to Behringwerke Aktiengesellschaft, Marburg (Lahn), Germany, a corporation of Germany

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,228
Claims priority, application Germany, Mar. 3, 1962, B 66,202; Mar. 8, 1962, B 66,260
4 Claims. (Cl. 260—112)

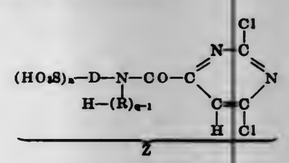
1. A process for isolating α_1-antitrypsin from an α_1-antitrypsin-containing fraction obtained by adding a saturated solution of ammonium sulfate adjusted to a pH of about 8.0 to an ascites or serum solution from human or animal humors having a protein content of about 3.8% until said ascites or serum solution is about 45% saturated with ammonium sulfate and a precipitate is obtained, separating said precipitate from the solution, adjusting the remaining solution with acetic acid to a pH of about 5.0, adding to the remaining solution a saturated ammonium sulfate solution having a pH of about 5.0 until said remaining solution is about 62% saturated with ammonium sulfate and a precipitate is obtained, separating said precipitate from this solution, and removing said ammonium sulfate from said solution containing said α_1-antitrypsin fraction, said process for isolating α_1-antitrypsin from said fraction comprising the steps of (A) adding to said solution containing the α_1-antitrypsin fraction a member selected from the group consisting of compounds of the acridine and quinoline series, said solution being maintained at a pH of from about 5.5 to about 6.5 in a substantially salt-free condition at a protein concentration of from about 1% to about 6%, until the proteins accompanying α_1-antitrypsin precipitate; (B) separating the precipitate from the α_1-antitrypsin-containing solution; (C) adjusting the pH of the solution to from about 6.5 to about 7.5 and further increasing the concentration of said member added in step A until the α_1-antitrypsin is precipitated; (D) separating the precipitated α_1-antitrypsin-containing material from the solution; (E) dissolving the precipitate in water; (F) adjusting the water solution to a pH of from about 4.0 to about 5.5 and adding an inorganic salt thereto to precipitate said member added in steps A and C; (G) separating the precipitate from the α_1-antitrypsin-containing aqueous solution; (H) adjusting the α_1-antitrypsin solution to a pH of from about 5.0 to about 6.0; (I) adding from about 40% to 50%, based on the weight of the α_1-antitrypsin-containing solution, of an organic protein precipitant to precipitate the α_1-antitrypsin therefrom at a temperature in the range from about —1.0 to —5.0° C; (J) dissolving the precipitated α_1-antitrypsin in water; and (K) lyophilizing the thus purified α_1-antitrypsin solution.

3,301,843
2,6-DIHALO-PYRIMIDINE-4-CARBOXAMIDO DYESTUFFS

Paul Dussy, Munchenstein, Basel-Land, and Marcel Reding and Werner Boesard, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Continuation of application Ser. No. 6,882, Feb. 5, 1960. This application Dec. 2, 1963, Ser. No. 327,528
Claims priority, application Switzerland, Feb. 6, 1959, 69,202/59
14 Claims. (Cl. 260—146)

1. A dyestuff of the formula



wherein
R is lower alkylene,
q is an integer from 1 to 2 inclusive
n is an integer from 2 to 3, inclusive and
D is a dyestuff radical selected from the group consisting of
(a) naphthyl-azo-phenyl with the Z moiety at the phenyl radical in p-position to the azo group;
(b) 4-(phenyl-azo)-5-pyrazolonyl containing at the phenyl radical a sulfonic acid group in o-position to the azo group and the Z moiety in meta-position to the azo group;
(c) 1-(phenyl-azo)-2-aminonaphthyl containing at the phenyl radical a sulfonic acid group in o-position to the azo group and the Z moiety in meta-position to the azo group;

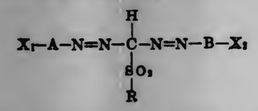
(d) 1-(phenyl-azo)-2-aminonaphthyl containing at the phenyl radical a sulfonic acid group in o-position to the azo group and the Z moiety in para-position to the azo group;
(e) 2-(phenyl-azo) - 1 - hydroxynaphthyl containing a sulfonic acid group at the phenyl radical in o-position to the azo group and the Z moiety on the phenyl radical in meta-position to the azo group;
(f) 2-(phenyl-azo) - 1 - hydroxynaphthyl containing a sulfonic acid group at the phenyl radical in o-position to the azo group and the Z moiety on the phenyl radical in para-position to the azo group;
(g) 2-(phenyl-azo) - 1 - hydroxynaphthyl containing a sulfonic acid group at the phenyl radical in o-position to the azo group and the Z moiety on the naphthyl radical in position 5;
(h) 2-(phenyl-azo) - 1 - hydroxynaphthyl containing a sulfonic acid group at the phenyl radical in o-position to the azo group and the Z moiety on the naphthyl radical in position 6;
(i) 2-(phenyl-azo) - 1 - hydroxynaphthyl containing a sulfonic acid group at the phenyl radical in o-position to the azo group and the Z moiety on the naphthyl radical in position 7;
(j) 2-(phenyl-azo) - 1 - hydroxynaphthyl containing a sulfonic acid group at the phenyl radical in o-position to the azo group and the Z moiety on the naphthyl radical in position 8;
(k) o,o'-dihydroxy-phenyl-azo-naphthyl containing the the Z moiety at the azo-free ring of the naphthyl radical and the copper, chromium and cobalt complexes thereof; and
(l) o,o' - dihydroxy-naphthyl-azo - naphthyl containing Z moiety at the azo-free ring of one of the naphthyl radicals and the copper, chromium and cobalt complexes thereof.

3,301,844
UNSYMMETRICAL DISAZO FORMAZANE DYES

Willy Steinemann, Basel, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz AG.), Basel, Switzerland

No Drawing. Filed Mar. 25, 1964, Ser. No. 354,753
Claims priority, application Switzerland, May 19, 1960, 5,721/60
6 Claims. (Cl. 260—146)

1. Azo dyestuff of the formula



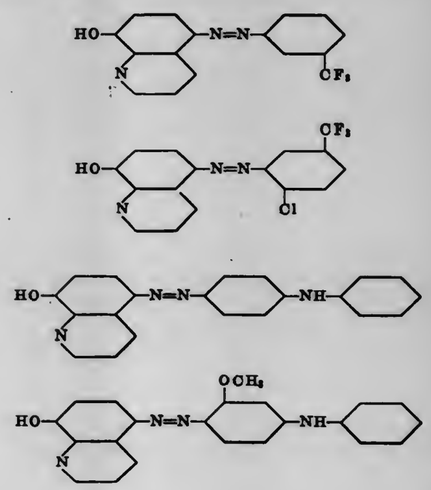
the 1:1 copper, 1:1 nickel, 1:1 cobalt or 1:1 zinc complex compounds thereof,
wherein A and B are different from each other and each is a radical selected from the group consisting of nitro-naphthalene, and naphthalene-sulfonic acid and an unsubstituted benzene radical and a substituted benzene radical, the substituents being selected from the group consisting of nitro, dinitro, chloro, dichloro, lower alkyl, di-lower alkyl, hydroxy, sulfonic acid, di-sulfonic acid, carboxylic acid, acetyl, acetylamino, pyrrolidonyl, oxyazolidonyl, carbethoxyamino, phenyl, sulfonic acid amide, lower alkyl sulfonyl, sulfonic acid lower alkyl amide, sulfonic acid-lower alkoxy-lower alkylamide, sulfonic acid-carboxy phenyl amide, sulfonic acid phenylamide, sulfonic acid-sulfophenylamide, sulfonic acid-di-lower alkyl amino lower alkylamide, sulfonic acid morpholide, sulfonic acid-di-lower alkyl amide, sulfonic acid-hydroxy-lower alkyl amide, sulfonic acid-phenyl-lower alkyl amide, suifonic acid-naphthyl-amide, sulfonic acid-naphthyl-amide-sulfonic acid, sulfonic acid-lower alkoxy-phenylamide, sulfonic acid-di-lower alkoxy-phenylamide, sulfonic acid-N-lower alkyl-phenyl amide, sulfonic acid-lower alkyl-phenyl amide, sulfonic acid-chloro-phenyl amide, sulfonic acid-dichloro-phenylamide, amino-phenyl-carboxylic acid, sulfonic acid-phenyl amide-carboxylic acid, lower alkyl sulfamino, di-lower alkyl-amino-sulfamino, phenyl-fumaric acid amide, amino-chloro-phenyl, amino-phenyl, amino-phenyl-urea, amino-lower alkyl-phenyl, amino-lower-alkoxy-phenyl, carboxy-phenyl urea, amino-hydroxy phenyl, carboxy phenyl, amino-phenoxy-acetic acid, sulfonic acid-tetrahydro-naphthlamide, sulfonic acid-acetamino-phenylamide, sulfonic acid-lower alkylamino-lower alkylamide, and sulfonic acid-cyclohexylamide;
R is a member selected from the group consisting of tetrahydronaphthalene, a substituted and an unsubstituted benzene and naphthalene radical, the substituents of the substituted benzene radical being selected from the group consisting of lower alkyl, chloro, carboxylic acid, acetyl, benzoylamino, trilower alkyl, di-lower alkyl amino-sulfoamino, lower alkyl sulfonyl amino, di-lower alkylsulfonylamino, phthaloylamino, alkyl containing 1 to 12 carbon atoms, acetylamino, lower alkoxy, and the substituents of the substituted naphthalene radical being selected from the group consisting of acetylamino, sulfonic acid, carbethoxy amino, benzoylamino, and benzyl, phenylethyl, cyclohexyl, and methylcyclohexyl, and
each of X_1 and X_2 is a member selected from the group consisting of hydroxy, carboxylic acid and alkoxy, X_1 and X_2 occupying positions adjacent to one of the azo bridges in the above formula.

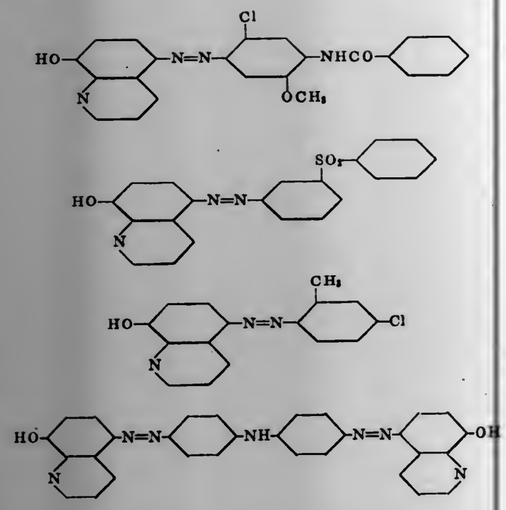
3,301,845
CATIONIC METAL CONTAINING 8-HYDROXY-QUINOLINE AZO DYESTUFFS

Kenjiro Hosokawa, Osaka, Yasushi Kojima, Hirakata, and Motoo Mori and Masaaki Suzuki, Osaka, Japan, assignors to Kanegafuchi Spinning Co., Ltd., Tokyo, Japan

No Drawing. Original application Jan. 17, 1963, Ser. No. 252,026. Divided and this application Aug. 16, 1965, Ser. No. 480,158
Claims priority, application Japan, Jan. 24, 1962, 37/2,670; Oct. 23, 1962, 37/47,467
9 Claims. (Cl. 260—146)

1. A water-soluble thermostable cationic complex metal compound of a member selected from the group consisting of the dyes of the formulae





the metal being selected from the group consisting of trivalent chromium, tetravalent zirconium, trivalent titanium and tetravalent titanium, obtained by reacting the corresponding member of the said group, as starting dye, with from 1 to 4 moles, per mole of starting dye, of a compound having a basicity lower than 33.3 percent and being selected from the group consisting of titanium trichloride, titanium tetrachloride, zirconium oxychloride, chromium chloride, chromium fluoride and chromium formate at a pH below 4 at a temperature of 50° to 150° C. in an organic solvent which (a) is a solvent for the starting dye and for the resulting metal-containing compound, (b) exhibits no alkalinity, (c) is at least partially miscible with water, and (d) does not react with the starting dye, the metal compound and the final dye.

3,301,846
DYESTUFFS CONTAINING CHLOROMETHYL OR BROMOMETHYL GROUPS
Max E. Chiddix, Easton, Pa., and David Irwin Randall, New Vernon, and Wilhelm Schmidt-Nickels, Little York, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 31, 1962, Ser. No. 248,241
6 Claims. (Cl. 260—163)

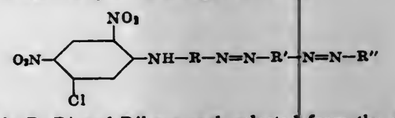
1. A water soluble azo dyestuff having the formula

$$B—N{=}N—Ar(—CH_2X)_n$$

wherein B is the residue of an azo coupling component, Ar represents the benzene nucleus, X represents Cl or Br and n is 1 or 2.

3,301,847
REACTIVE DISAZO DYESTUFFS
Angelo Mangini and Antonio Tundo, Bologna, Italy, assignors to Aziende Colori Nazionali Affini ACNA, S.p.A., Milan, Italy
No Drawing. Original application May 14, 1962, Ser. No. 194,652. Divided and this application Oct. 15, 1963, Ser. No. 316,436
Claims priority, application Italy, May 17, 1961, 9,140/61
5 Claims. (Cl. 260—184)

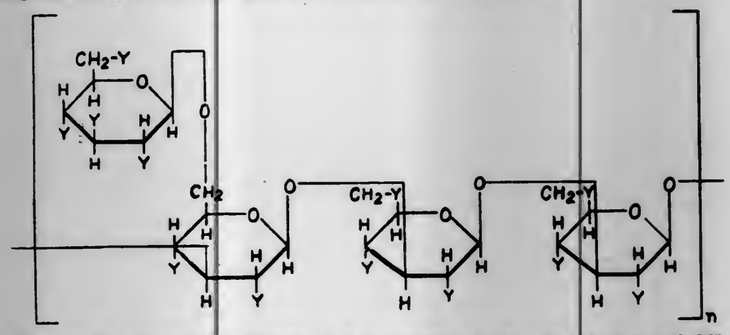
1. A reactive dyestuff having the formula



wherein R, R′ and R″ are each selected from the group consisting of phenyl, naphthyl, substituted phenyl and substituted naphthyl radicals, the substituents on said substituted radicals being selected from the group consisting of —OH, —COOH, —SO_3H, —NO_2, —NH_2 and —Cl.

3,301,848
POLYSACCHARIDES AND METHODS FOR PRODUCTION THEREOF
Frank E. Halleck, Minnetonka, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 319,093
22 Claims. (Cl. 260—209)

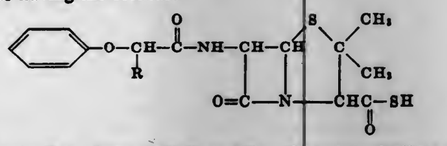
1. A water soluble polysaccharide having the characteristics of a thickening agent in water and derivatives thereof characterized by the struture:



wherein Y is a member of the class consisting of OH, OR, OOCR, OCH_2COOH, OSO_3H, ONO_2, OCS_2H, and $OOCNH\phi$, where R is a member of the class consisting of lower alkyl and phenyl and n is an integer having a value of at least 30.

3,301,849
6-(α-PHENOXYALKANOYLAMINO) THIOPENICILLANIC ACID
William J. Gottstein and Lee C. Cheney, Fayetteville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 9, 1963, Ser. No. 329,243
4 Claims. (Cl. 260—239.1)

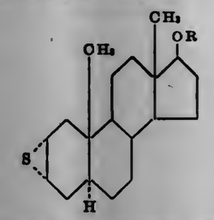
1. A compound selected from the group consisting of acids having the formula



wherein R is (lower)alkyl; and the pharmaceutically acceptable nontoxic salts thereof.

3,301,850
17-OXYGENATED-5α-ANDROSTANE-2α,3α-EPISULFIDES
Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Dec. 1, 1964, Ser. No. 415,202
5 Claims. (Cl. 260—239.5)

1. A compound of the formula



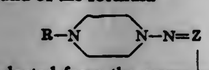
wherein R is selected from the group consisting of lower alkyl, tetrahydropyran-2-yl, and radicals of the formula



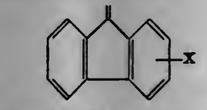
X being selected from the group of radicals consisting of β-cyclopentylpropionyltrifluoromethyl, p - (tertiary-butyl) phenoxymethyl, and 2,4-dinitrophenoxymethyl.

3,301,851
AMINOPIPERAZINE DERIVATIVES
John W. Cusic, Skokie, and Ernest F. Le Von, Morton Grove, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,360
6 Claims. (Cl. 260—240)

1. A compound of the formula



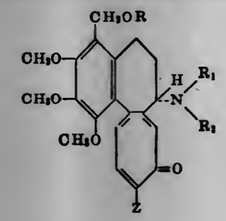
wherein R is selected from the group consisting of hydrogen and lower alkanoyl; and Z is selected from the group consisting of pyridylmethylene and



wherein X is selected from the group consisting of hydrogen, halogen, and methoxy.

3,301,852
1-HYDROXYMETHYL-COLCHICINE AND DERIVATIVES THEREOF
Georges Muller, Nogent-sur-Marne, and Roland Bardoneschi, Le Vert-Galant, France, assignors to Roussel-U.C.L.A.F., Paris, France, a corporation of France
No Drawing. Filed Oct. 1, 1963, Ser. No. 312,890
Claims priority, application France, Oct. 11, 1962, 911,957; Nov. 9, 1962, 914,928; Dec. 4, 1962, 917,511; Jan. 10, 1963, 921,004, 921,005; Feb. 8, 1963, 924,190; Mar. 1, 1963, 926,512
17 Claims. (Cl. 260—247.2)

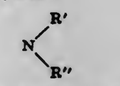
15. The morpholide of 1-hydroxymethyl colchiceine.
16. A colchicine derivative of the formula



wherein R is selected from the group consisting of hydrogen, alkyl of 1 to 3 carbon atoms, acyl of an organic carboxylic acid having 1 to 18 carbon atoms and acyl of an organic carbonic acid having 1 to 18 carbon atoms, R_1 is selected from the group consisting of hydrogen and alkyl of 1 to 3 carbon atoms, R_2 is selected from the group consisting of hydrogen and acyl of an organic carboxylic acid having 1 to 24 carbon atoms, and Z is selected from the group consisting of —OCH_3

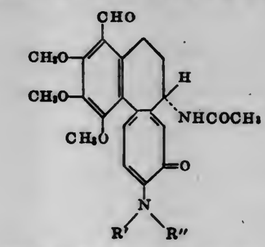
—OCH_2—CH_3

—SCH_3, —SCH_2—CH_3 and



wherein R′ and R″ are selected from the group consisting of hydrogen and alkyl having 1 to 8 carbon atoms and R′ and R″ together with the nitrogen atom to which they are attached from morpholino.

17. A colchicine derivative of the formula



wherein R′ and R″ are selected from the group consisting of hydrogen and alkyl having 1 to 8 carbon atoms and R′ and R″ together with the nitrogen atom to which they are attached form morpholino.

3,301,853
PROCESS COMPRISING REACTING AN AMINE, ETHYLENE OXIDE AND SILICA TO OBTAIN QUATERNARY AMMONIUM SILICATES
Helmut Hans Wilhelm Weldes, Havertown, Pa., assignor to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Original application Aug. 15, 1961, Ser. No. 131,490, now Patent No. 3,239,521, dated Mar. 8, 1966. Divided and this application Oct. 21, 1965, Ser. No. 500,326
1 Claim. (Cl. 260—247.7)

A method for producing an amorphous quaternary nitrogen composition having the formula:

$$X(N_nR_p^s)_2O \cdot YSiO_2 \cdot ZH_2O$$

wherein:
- n is a small integer between 1 and 10;
- X, Y and Z represent numbers defining the relative amounts of each of the component parts of the compound and X is 1, Y is between 0.5 and 20, and Z is between 0 and 99, wherein from one to four R groups are associated with each N;
- R represents organic radicals having between 1 and 20 carbon atoms, at least two of said organic radicals consisting of omega hydroxy alkyl groups,
- p is equal to the number of R groups and is at least 4 and up to $4n$,
- s is an integer from 1 to p, indicating the number of different R groups,

which comprises reacting together the following three materials at a temperature not exceeding about 30° C.:
- (a) a material selected from the group consisting of ammonia and an amine, and
- (b) ethylene oxide, and

(c) a material selected from the group consisting of finely divided silica hydrate, silica gel and a colloidal silica gel.

3,301,854
7-(SUBSTITUTED)-1,3,5-TRIAZAADAMANTANES

Norman W. Gabel, 5715 S. Kimbark, Chicago, Ill. 60637

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,840
4 Claims. (Cl. 260—248)

1. The method of making 7-nitro-1,3,5-triazaadamantane which comprises reacting nitromethane, formaldehyde, and a weak acid salt of ammonia.

4. A compound selected from the group consisting of 7-nitro-1,3,5-triazaadamantane and 7-amino-1,3,5-triazaadamantane.

3,301,855
DERIVATIVES OF 4-N-(2-N,N-DIMETHYLAMINO-LOWER ALKYL)-AMINO QUINAZOLINE

Herbert Morton Blatter, Millburn, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,861
5 Claims. (Cl. 260—256.4)

1. 4-N-(2-N,N-dimethylaminoethyl)-amino - quinazoline.

3,301,856
OXIDATION OF 4,11-DICHLORO-6,13-DIHYDRO-QUINACRIDONE

James F. Higgins, Livingston, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 20, 1965, Ser. No. 514,803
2 Claims. (Cl. 260—279)

1. In the process of oxidizing 4,11-dichloro-6,13-dihydroquinacridone to 4,11-dichloroquinacridone with nitrobenzene-meta-sodium sulfonate in a solvent mixture of water, methanol and sodium hydroxide, the improvement which comprises limiting the composition of said solvent mixture to a water content of about 70% to about 90%, a methanol content of about 5% to about 24%, and a sodium hydroxide content of about 2% to about 10%, the sum of these components always being 100%.

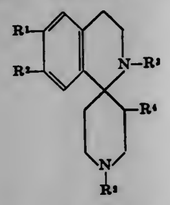
3,301,857
SPIRO[3,4-DIHYDROISOQUINOLINE-1(2H),4'-PIPERIDINES]

Leo Berger, Montclair, Alfred John Corraz, Packanack Lake, and John Lee, Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,671
10 Claims. (Cl. 260—288)

1. A compound selected from the group consisting of

(a) a compound of the formula



wherein R^1 and R^2 are selected from the group consisting of hydrogen, hydroxyl, and lower alkoxy; R^3 is selected from the group consisting of hydrogen and acetyl; R_4 is selected from the group consisting of hydrogen and lower alkyl; and R^5 is selected from the group consisting of hydrogen, lower alkyl, phenyl-lower alkyl, and dilower alkylamine-lower alkyl; except that when R^4 is lower alkyl, R^1 must be lower alkoxy, and

(b) an acid addition salt thereof with pharmaceutically acceptable acids.

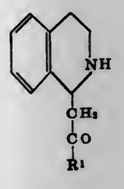
10. 6,7 - dimethoxy - 1',3'-dimethylspiro[isoquinoline-1(2H),4'piperidine]-(4H)-one.

3,301,858
BENZOQUINOLIZINE AND PROCESS FOR PREPARING SAME

Derek Harold Richard Barton, London, and Benjamin Arthur Hems, Ickenham, England, Thomas Walker, Worli, Bombay, India, Alexander Crawford Ritchie, Ware, and Rupert Frederick Keith Meredith, Lower Penarth, Glamorgan, Wales, England, Percy George Holton, Mexico City, Mexico, and Dennis Edward Clark, Windsor, and Godfrey Basil Webb, Greenford, England, assignors to Glaxo Group Limited, Greenford, England, a British company

No Drawing. Original application July 1, 1960, Ser. No. 40,200, now Patent No. 3,121,720, dated Feb. 18, 1964. Divided and this application June 17, 1963, Ser. No. 288,542
Claims priority, application Great Britain, July 8, 1959, 23,522/59
10 Claims. (Cl. 260—286)

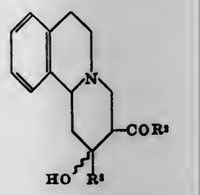
1. A process for the preparation of a benzoquinolizine, which comprises reacting a 1-substituted 1,2,3,4-tetrahydroisoquinoline of the formula



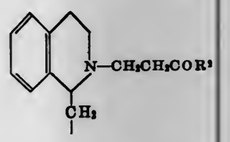
in which R^1 is selected from the group consisting of alkyl having 1 to 3 carbon atoms and 1,2,3,4-tetrahydroisoquinol-1-yl-methyl with a compound of the formula

$$R^2—CO—CH=CH_2$$

where R^2 is alkyl having 1 to 3 carbon atoms and cyclizing the resulting product to produce a benzoquinolizine of the formula

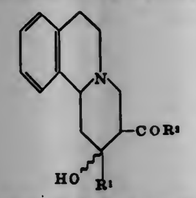


in which R^2 has the above meaning and R^3 is selected from a group consisting of alkyl having 1 to 3 carbon atoms and



where R^2 has the above meaning, said tetrahydroisoquinoline and said benzoquinolizine each being substituted with at least one lower alkoxy group.

9. A benzoquinolizine of the formula



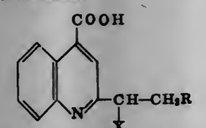
where R^1 is a member selected from the group consisting of an alkyl group having 1–3 carbon atoms and 1,2,3,4-tetrahydroisoquinol-1-yl-methyl and R^2 is an alkyl having 1–4 carbon atoms, and acid addition salts thereof, each of the aromatic rings of said benzoquinolizine compounds carrying at least one lower alkoxy substituent.

3,301,859
CINCHONINIC ACIDS AND USE IN PROCESS FOR QUINOLINOLS

Lee C. Cheney and William J. Gottstein, Fayetteville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,527
10 Claims. (Cl. 260—287)

1. A member selected from the group consisting of a compound of the formula



wherein X represents a halogen selected from the group consisting of bromine and chlorine and R represents a straight chain alkyl group having from one to fifteen carbon atoms inclusive; and the alkali metal and alkaline earth metal salts thereof.

10. The process of preparing a 2-(1-alkenyl)-4-quinolinol which comprises the consecutive steps of

(a) forming a mixed anhydride of a 2-(1-alkenyl) cinchoninic acid, reacting said mixed anhydride with a metal azide to produce the corresponding 2-(1-alkenyl)cinchoninic acid azide,

(b) treating said 2-(1-alkenyl)cinchoninic acid azide with methanol to form the corresponding methyl carbamate,

(c) hydrolyzing said methyl carbamate with alkali to a 2-(1-alkenyl)-4-aminoquinoline and

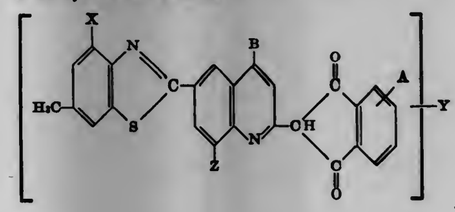
(d) diazotizing in trifluoroacetic acid said 2-(1-alkenyl)-4-aminoquinoline and then hydrolyzing in situ the diazonium salt so formed to produce a 2-(1-alkenyl)-4-quinolinol.

3,301,860
DIOXOINDANYL-QUINOLYL-BENZOTHIAZOLE COMPOUNDS

Ray Allen Clarke, Pitman, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

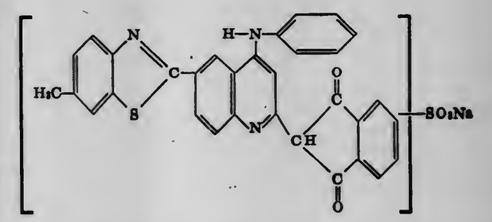
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,839
7 Claims. (Cl. 260—288)

1. A dye of the formula

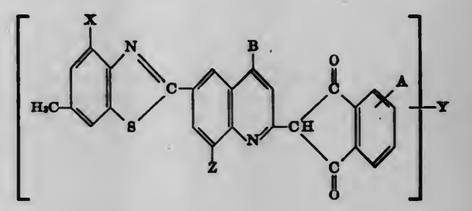


wherein X is selected from the group consisting of H and CH_3; Y is selected from the group consisting of H and SO_3M; Z is selected from the group consisting of H, CH_3 and SO_3M; A is selected from the group consisting of H, F, Cl, Br, NO_2, NH_2 and COOM; B is selected from the group consisting of H, Cl, Br, OH, piperidyl and NR_1R_2 where R_1 is selected from the group consisting of H and a C_{1-4} alkyl and R_2 is selected from the group consisting of a C_{1-4} alkyl, benzyl and monocarbocyclic aryl; M is a cation selected from the group consisting of H^+, NH_4^+, Li^+, Na^+, K^+ and $(CH_3)_2NH_2^+$.

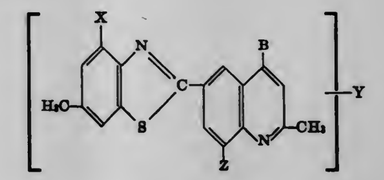
6. The dye:



7. A process for preparing a dye of the formula which contains at least one sulfo group



wherein X is selected from the group consisting of H and $—CH_3$, Y is selected from the group consisting of H and $—SO_3M$, Z is selected from the group consisting of H, $—CH_3$ and A is selected from the group consisting of H, F, Cl, Br, NO_2, NH_2 and COOM; B is selected from the group consisting of H, Cl, Br, OH, piperidyl and NR_1R_2 where R_1 is selected from the group consisting of H and a C_{1-4} alkyl and R_2 is selected from the group consisting of a C_{1-4} alkyl, benzyl and monocarbocyclic aryl; M is a cation selected from the group consisting of H^+, NH_4^+, Li^+, Na^+, K^+ and $(CH_3)NH_2^+$; in which process more than 1 mole of phthalic anhydride or derivative thereof is condensed with 1 mole of a compound of the formula:



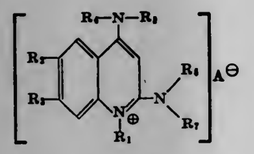
wherein X, Y, Z and B are as heretofore defined, said condensation being conducted in the presence of a reaction promoter selected from the group consisting of dimethylformamide and dimethylacetamide.

3,301,861
CERTAIN 1-ALKYL-2,4-BIS(DIALKYLAMINO)-QUINOLINIUM SALTS

Rudolf Pfister and Alfred R. Sallmann, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 20, 1963, Ser. No. 303,416
Claims priority, application Switzerland, Aug. 31, 1962, 10,381/62
4 Claims. (Cl. 260—286)

1. A compound of the formula



wherein

R_1 is unbranched alkyl, with from 1 to 3 carbon atoms,

R_2 is a member selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro and trifluoromethyl,

R_3 is a member selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy, with the further proviso that when one of R_2 or R_3 is lower alkyl or lower alkoxy, the other of R_2 or R_3 must be hydrogen, except that where one of R_2 or R_3 is methyl, the other R_2 or R_3 may also be methyl,

R_2 and R_3 taken together is the methylenedioxy group,

each of R_4, R_5, R_6, and R_7 represent lower alkyl

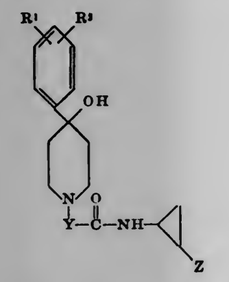
and $A^{\ominus}$ is an anion selected from the group consisting of iodine, bromide, chloride, n-alkyl sulfate with from 1 to 3 carbon atoms, methane sulfonate and toluene sulfonate.

3,301,862
N-CYCLOPROPYL, AMIDES OF 4-PHENYL PIPERIDINO-ALKANOIC ACIDS

John H. Biel and Harvey B. Hopps, Milwaukee, Wis., assignors to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed Apr. 7, 1964, Ser. No. 358,116
10 Claims. (Cl. 260—293.4)

1. A compound selected from the group consisting of compounds of the formula

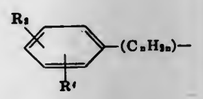


wherein

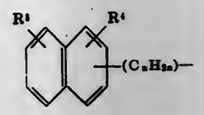
R^1 and R^2 are each a member selected from the group consisting of hydrogen, chloro, bromo, iodo, fluoro, trifluoromethyl, amino, nitro, (lower)alkyl, (lower)-alkoxy, hydroxy, phenyl, phenoxy, benzyl, (lower)-alkylamino, di(lower)alkylamino, (lower)alkanoyl-amino, (lower)alkylthio, sulfamyl, (lower)alkanoyl, (lower)alkylsulfonyl, methylenedioxy, cycloalkyl radicals having from 5 to 7 carbon atoms inclusive, and cycloalkoxy radicals having from 5 to 7 carbon atoms inclusive,

Y is a (lower)alkylene radical,

Z is a member selected from the group consisting of hydrogen, (lower)alkyl, pyridyl, thienyl and radicals of the formulae



and



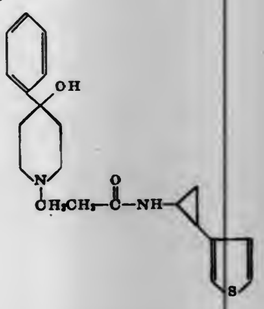
wherein

n is a whole integer from 0 to 6 inclusive, and

R^3 and R^4 are each a member selected from the group consisting of hydrogen, chloro, bromo, iodo, fluoro, trifluoromethyl, amino, nitro, (lower)alkyl, (lower)-alkoxy, hydroxy, phenyl, phenoxy, benzyl, (lower)-alkylamino, di(lower)alkylamino, (lower)alkanoyl-amino, (lower)alkylthio, sulfamyl, (lower)alkanoyl, (lower)alkylsulfonyl, methylenedioxy, cycloalkyl radicals having from 5 to 7 carbon atoms inclusive, and cycloalkoxy radicals having from 5 to 7 carbon atoms inclusive,

and the pharmaceutically acceptable nontoxic salts thereof.

8. A compound of the formula



3,301,863
AMINO DERIVATIVES OF PHENETHYL-PYRIDINES

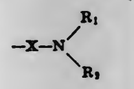
Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 18, 1965, Ser. No. 440,919
13 Claims. (Cl. 260—293)

1. Phenethylpyridine having attached to the position vicinal to the phenethyl group the substituent



wherein Q is a member of the group consisting of (O), (NH), (H,OH), (lower alkyl, OH), and T is a member of the group consisting of lower alkyl, piperidyl and



R_1 and R_2 are members of the group consisting of hydrogen and lower alkyl and together with the nitrogen atom

to which they are attached form a heterocycle having 5–6 cyclic atoms, one of said cyclic atoms, other than the aforesaid nitrogen atom, being selected from the group consisting of C, O and N, all other cyclic atoms being carbon and X is a lower alkyl group having 2–9 carbon atoms.

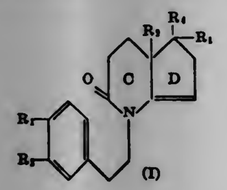
12. 2 - {3-[β-(3-chlorophenyl)-ethyl]-pyridyl}-N-methyl-4-piperidyl imine.

3,301,864
SUBSTITUTED LACTAMS AND PROCESS FOR THEIR PRODUCTION

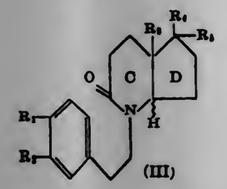
Robert I. Meltzer, Rockaway, and Richard E. Brown, Hanover, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,190
21 Claims. (Cl. 260—294)

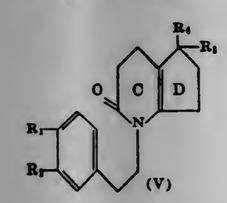
1. A compound selected from the group consisting of those having the formulas:



(I)

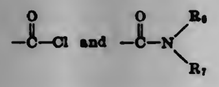


(III)



(V)

wherein R_1 and R_2 each is a member selected from the group consisting of hydrogen, hydroxy and lower alkoxy; R_3 is a member selected from the group consisting of hydrogen and lower alkyl; R_4 is a member selected from the group consisting of hydrogen, lower alkyl and alkoxy and R_4 and R_5 taken together with the carbon atom to which they are attached form a member selected from the group consisting of keto and a cyclic ketal; R_5 is a member selected from the group consisting of hydrogen, hydroxy, acyloxy, alkoxy, —COOH, —$COOR_{11}$ in which R_{11} is lower alkyl,



in which R_6 and R_7 is each a member selected from the group consisting of hydrogen and lower alkyl, and R_6 and R_7 taken together with the nitrogen to which they are attached form a heterocyclic group.

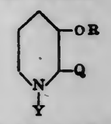
5. 1-(3,4-dimethoxyphenethyl)-2,3,4,4a,5,6-hexahydro-4a-methyl-2-oxo-1H-1-pyrindine-5-carboxylic acid.

3,301,865
ESTERS OF 2-BENZYL-3-PIPERIDINOL

Robert L. Clarke, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,136
2 Claims. (Cl. 260—294.3)

1. A compound of the formula



where Q is benzyl; Y is selected from the group consisting of hydrogen, lower-alkyl and benzyl; and R is acyl derived from a carboxylic acid ROH having from one to about ten carbon atoms and having a molecular weight less than about 200.

3,301,866
SUBSTITUTED INDENOPYRIDINES

Marshall D. Draper, Woodland Hills, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Aug. 12, 1965, Ser. No. 479,335
6 Claims. (Cl. 260—294.7)

1. 2-lower alkyl-9-oxo-4a-phenyl-1,2,3,4,4a,9a-hexahydro-9H-indeno[2,1-c]pyridine.

5. 2 - lower cycloalkyl - 9-oxo-4a-phenyl-1,2,3,4,4a,9a-hexahydro-9H-indeno[2,1-c]pyridine.

3,301,867
NOVEL PYRIDOINDOLES

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,661
2 Claims. (Cl. 260—296)

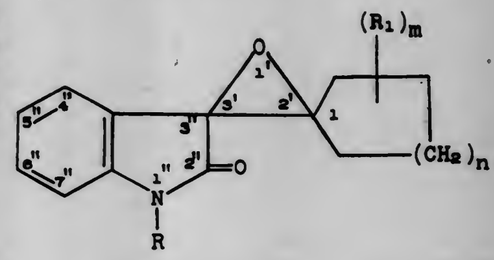
1. 1-phenethyl-6-methoxy-9H-pyrido[3,4-b]indole.

3,301,868
DISPIRO[CYCLOALKANE-1,2'-OXIRANE-3',3''-INDOLIN]-2''-ONES, AND INTERMEDIATES AND PROCESS THEREFOR

William C. Anthony, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

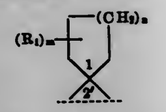
No Drawing. Filed Oct. 23, 1964, Ser. No. 406,175
11 Claims. (Cl. 260—325)

1. Dispiro[cycloalkane - 1,2' - oxirane - 3',3''-indolin]-2''-one of the formula:



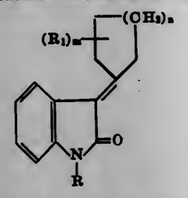
wherein R is selected from the group consisting of hydrogen and lower-alkyl; R_1 is selected from the group consisting of hydrogen and lower-alkyl of from 1 to 4 carbon atoms, inclusive, and m and n are integers from

1 to 4, inclusive, provided, however, that the spirocycloalkane part of the molecule

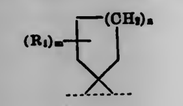


does not exceed 12 carbon atoms.

5. 3-cycloalkylideneoxindole of the formula:



wherein R is selected from the group consisting of hydrogen and lower-alkyl, R_1 is selected from the group consisting of hydrogen and lower-alkyl of from 1 to 4 carbon atoms, inclusive, and *m* and *n* are integers from 1 to 4, inclusive, provided, however, that the cycloalkylidene group



does not exceed 12 carbon atoms.

3,301,869

METHOBROMIDE AND HYDROCHLORIDE OF 1-ETHYL-3-PYRROLIDYL BENZILATE

Carl D. Lunsford, Richmond, Va., assignor to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed May 16, 1960, Ser. No. 29,156
2 Claims. (Cl. 260—326.3)

1. 1-ethyl-3-pyrrolidyl benzilate hydrochloride.

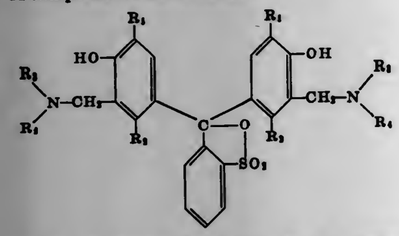
3,301,870

METALLOCHROMIC INDICATORS AND METHOD OF PRODUCING SAME

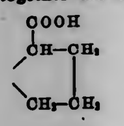
Drahomira Terzijska, 1 Bartosova; and Vlastimil Svoboda, 10 Vlhka, both of Brno, Czechoslovakia; and Jiri Körbl, 1327 Zdenka Nejedleho, Lysa nad Labem, Czechoslovakia

No Drawing. Filed Sept. 19, 1960, Ser. No. 56,632
Claims priority, application Czechoslovakia, Aug. 17, 1957, 2,844/57; Sept. 18, 1957, 3,338/57
8 Claims. (Cl. 260—326.3)

2. A compound of the formula:



wherein R_1 is isopropyl; wherein R_2 is methyl; and wherein R_3 and R_4 together are the radical



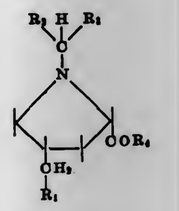
3,301,871

NOVEL 1,4-DIALKYLPROLINES, DERIVATIVES THEREOF AND PROCESS

Barney J. Magerlein, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 15, 1964, Ser. No. 375,324
19 Claims. (Cl. 260—326.3)

1. A composition of matter selected from the group consistitng of compounds of the formula



wherein R_1 is selected from the group consisting of hydrogen and alkyl, in which the alkyl group has from 1 to 11 carbon atoms, inclusive; wherein R_2 and R_3 are selected from the group consisting of hydrogen and alkyl in which the alkyl groups together contain up to and including 12 carbon atoms; and wherein R_4 is selected from the group consisting of hydroxy, alkyloxy in which the alkyl group has from 1 to 8 carbon atoms, inclusive, and amino; and mineral acid salts thereof.

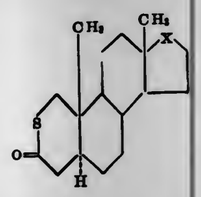
3,301,872

(OPTIONALLY 17-ALKYLATED) 17-OXYGENATED-2-THIA-5α-ANDROSTAN - 3 - ONES, MERCAPTO-ACIDS CORRESPONDING AND ESTERS THEREOF

Paul B. Sollman, Wilmette, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,114
13 Claims. (Cl. 260—327)

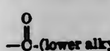
1. A compound of the formula



wherein X is selected from the group of radicals consisting of carbonyl and



R being a member of the class consisting of hydrogen and



radicals and Z being a member of the class consisting of hydrogen and radicals of the formula

$$C_nH_{2n+1}$$

wherein *n* is a positive integer less than 8.

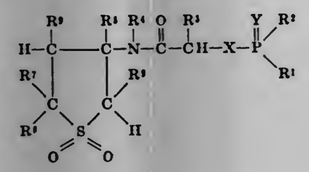
3,301,873

ORGANOPHOSPHORUS COMPOUNDS

Pieter Ten Haken, Herne Bay, Kent, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 19, 1965, Ser. No. 441,328
Claims priority, application Great Britain, Apr. 3, 1964, 13,851/64
7 Claims. (Cl. 260—332.1)

1. Compounds having the general formula:



wherein each of R^1 and R^2 is a member of the group consisting of alkyl and alkoxy of from 1 to 4 carbon atoms, R^3 is a member of the group consisting of alkyl of from 1 to 4 carbon atoms, R^4 is a member of the group consisting of alkyl and alkenyl of up to 4 carbon atoms, cycloalkyl and aralkyl of up to 10 carbon atoms, each of R^5, R^6, R^7, R^8 and R^9 is a member of the group consisting of hydrogen and alkyl of from 1 to 4 carbon atoms, and X and Y each are members of the group consisting of oxygen and sulfur.

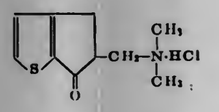
3,301,874

THIENOCYCLOPENTANONE ANTIBACTERIAL AGENTS

Joseph Sam, Oxford, Miss. 38655

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,667
10 Claims. (Cl. 260—332.3)

7. A compound of the formula



3,301,875

6-CHLORO-$\Delta^{3,5}$-STEROID DERIVATIVES AND PROCESS FOR THEIR MANUFACTURE

Werner Fritsch, Neuenhain, Taunus, Werner Haede, Hofheim, Taunus, Heinrich Ruschig, Bad Soden, Taunus, and Ulrich Stache, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,105
Claims priority, application Germany, Sept. 28, 1963, F 40,866
13 Claims. (Cl. 260—397.3)

1. Process for the manufacture of 6-chloro-$\Delta^{3,5}$-steroid derivatives which comprises reacting a compound selected from the group consisting of 3,5-cyclo-6-oxo-androstanes, 3,5 - cyclo-6-oxo-pregnanes, 3,5-cyclo-6-oxo-$\Delta^{9(11)}$-pregnenes or 3,5-cyclo-6-oxo-Δ^{16}-pregnenes and 3,5-cyclo-6-oxo-oestranes with pyrocatechyl-phosphorus trichloride and subsequently treating the 3,6-dichloro derivatives thus obtained at elevated temperature with a high boiling tertiary base of the quinoline series or with an alkali metal carbonate or alkaline earth metal carbonate in dimethylformamide to split off hydrogen chloride.

11. 6-chloro-$\Delta^{3,5}$-androstadiene-17-one.

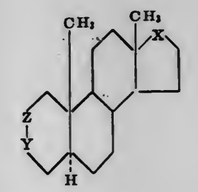
3,301,876

2/3 - OXYGENATED - 2/3 - THIOCYANATO-5α-ANDROSTAN-17-ONES AND DERIVATIVES THEREOF

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,905
11 Claims. (Cl. 260—397.3)

1. A compound of the formula



wherein X is selected from the group consisting of carbonyl, α-(lower alkyl)-β-hydroxymethylene and α-(lower alkynyl)-β-hydroxymethylene when Y is a member of the class consisting of carbonyl, α-hydroxymethylene, α-(lower alkanoyl)oxymethylene and α-thiocyanatomethylene and when Z is a member of the class consisting of carbonyl, β-hydroxymethylene, β-(lower alkanoyl)oxymethylene and thiocyanatomethylene, one but not both of the radicals represented by Y and Z at all times being thiocyanatomethylene, and X is selected from the group consisting of carbonyl, β-hydroxymethylene, β-(lower alkanoyl)-oxymethylene, α-(lower alkyl)-β-hydroxymethylene and α-(lower alkynyl)-β-hydroxymethylene when one of the groups represented by Y and Z is carbonyl.

2. 2α-thiocyanato-5α-androstane-3,17-dione.

3,301,877

PROCESS FOR PREPARATION OF 19-NOR-$\Delta^{5(10)}$-ANDROSTENE-3,17-DIONE AND 19-NOR-Δ^{4}-ANDROSTENE-3,17-DIONE

Francisco Alvarez, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed May 5, 1965, Ser. No. 453,519
Claims priority, application Mexico, June 1, 1964, 77,275
18 Claims. (Cl. 260—397.3)

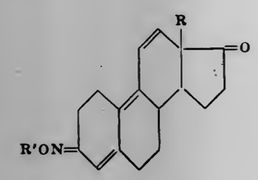
1. A process for the preparation of 19-nor-$\Delta^{5(10)}$-androstene-3,17-dione which comprises halogenating the 5(10)-double bond in a compound selected from the group consisting of 19-nor-$\Delta^{5(10)}$-androstene-3β,17β-diol and 19-nor-$\Delta^{5(10)}$-androsten-3β-ol-17-one to produce the corresponding 5α,10β-dihalo steroid wherein the 5α-halogen is selected from the group consisting of chlorine and bromine and the 10β-halogen is selected from the group consisting of chlorine, bromine and iodine, oxidizing said 5α, 10β-dihalo steroid to produce 5α,10β-dihalo-19-nor-androstane-3,17-dione, and dehalogenating said 5α,10β-dihalo-3,17-dione, using zinc in an inert organic solvent, to produce 19-nor-$\Delta^{5(10)}$-androstene-3,17-dione.

3,301,878
NOVEL PROCESS FOR THE PREPARATION OF TRIENIC STEROIDS AND INTERMEDIATES THEREIN

Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, Jean Jolly, Clichy-sous-Bois, and Jacques Prost-Marechal, Paris, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France

No Drawing. Filed May 24, 1965, Ser. No. 458,463
Claims priority, application France, May 27, 1964, 976,020
16 Claims. (Cl. 260—397.3)

12. A process for the preparation of 3-oximido-13β-alkyl-$\Delta^{4,9,11}$-gonatriene-17-one of the formula



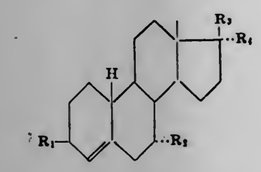
wherein R is an alkyl of 1 to 4 carbon atoms and R' is selected from the group consisting of hydrogen and lower alkyl which comprises reacting 13β-alkyl-$\Delta^{4,9,11}$-gonatriene-3,17-dione wherein the alkyl has 1 to 4 carbon atoms with a hydrocyanic acid derivative to form 13β-alkyl-17α-cyano-$\Delta^{4,9,11}$-gonatriene-17β-ol-3-one, reacting the latter with a compound selected from the group consisting of hydroxylamine, lower alkyl hydroxylamine and acid addition salts thereof to form the corresponding 3-oximido-13β-alkyl-17α-cyano-$\Delta^{4,9,11}$-gonatriene-17β-ol and subjecting the latter to a compound selected from the group consisting of a basic agent and a weak organic acid to form 3-oximido-13β-alkyl-$\Delta^{4,9,11}$-gonatriene-17-one.

3,301,879
19-NOR-ANDROSTENES

Albert Wettstein, Riehen, and Georg Anner, Peter Wieland, and Karl Heusler, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 19, 1963, Ser. No. 324,854
Claims priority, application Switzerland, Nov. 23, 1962, 13,777/62; Jan. 25, 1963, 933/63; June 26, 1963, 7,923/63
5 Claims. (Cl. 260—397.5)

1. A 19-nor-androstene of the formula



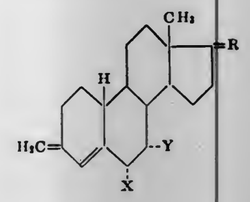
in which R_1 and R_3 each represents a member selected from the group consisting of a free, an esterified and an etherified hydroxyl group, R_2 represents a lower alkyl group and R_4 stands for a member selected from the group consisting of hydrogen, lower alkenyl, lower alkinyl, halogenated lower alkenyl and halogenated lower alkinyl, and R_3 and R_4 taken together represent oxygen, the above esterified hydroxyl groups being derived from carboxylic acids having at most 20 carbon atoms and said ether groups being members selected from the group consisting of hydrocarbon and halogenated hydrocarbon except for the ether oxygen linkages.

3,301,880
3,3-ALKYLIDENE-19-NOR-STEROIDS

Nicolaas Pieter van Vliet, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 19, 1964, Ser. No. 404,924
Claims priority, application Netherlands, Oct. 23, 1963, 299,654
5 Claims. (Cl. 260—397.5)

4. Steroids of the formula:



wherein R is selected from the group consisting of keto and $R_3(\alpha R_4)$, in which R_3 is selected from the group consisting of hydroxy, acyloxy and alkyloxy, in which the acyl is derived from an organic carboxylic acid having 1–18 carbon atoms and R_4 is selected from the group consisting of hydrogen, alkyl, alkenyl and alkynyl each having 1–4 carbon atoms, and X and Y are selected from the group consisting of hydrogen and alkyl in which X and Y are not simultaneously hydrogen nor simultaneously alkyl.

3,301,881
PROCESS OF PHOSPHATIDE PREPARATION

Paul F. Davis, Addison, Ill., assignor to Central Soya Company, Inc., Fort Wayne, Ind., a corporation of Indiana

No Drawing. Filed May 31, 1963, Ser. No. 284,351
13 Claims. (Cl. 260—403)

1. In a method of modifying a natural phosphatide, the steps of:

mixing a vegetable material consisting predominantly of phosphatidic material with a carboxylic acid anhydride containing not more than ten carbon atoms to acylate the amino groups of said phosphatidic material, and

controlling the fluidity of the acylated phosphatidic material by adding thereto a basic material.

3,301,882
MANUFACTURE OF NORMAL LEAD 2:4-DINITRORESORCINATE

George William Charles Taylor, 7 The Cobbins, and John Richard White, 81 Monkswood Ave., both of Waltham Abbey, Essex, England

No Drawing. Filed Jan. 7, 1964, Ser. No. 336,116
Claims priority, application Great Britain, Jan. 7, 1963, 765/63
4 Claims. (Cl. 260—435)

1. A process for the manufacture of normal lead 2:4-dinitroresorcinate in a granular, free-flowing form which comprises interacting at a temperature between about 50° and 100° C. a solution containing 2:4-dinitroresorcinol and sufficient caustic alkali therein to provide a pH value between about 3.3 and 6.6 with a solution consisting essentially of a soluble lead salt, said salt being present in said solution in a quantity less than the stoichiometric quantity required to convert 2:4-dinitroresorcinol to normal lead 2:4-dinitroresorcinate, whereby normal lead 2:4-dinitroresorcinate is precipitated as a mixture of colloidal and crystalline forms, the colloidal form being present in a relatively small proportion and acting as a binder for the crystalline form.

3,301,883
PREPARATION OF BIS-CYANFORMIMIDE ESTERS

Wilhelm Gruber, Darmstadt, Germany, assignor to Rohm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,814
Claims priority, application Germany, Mar. 3, 1962, R 32,189; Dec. 13, 1962, R 34,058
4 Claims. (Cl. 260—453)

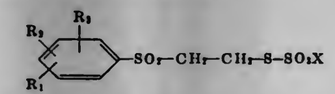
1. The method for preparing bis-cyanformimide esters by reaction of a primary alcohol with cyanogen in the presence of an alkaline catalyst, which comprises reacting a primary aromatic or primary aliphatic dihydric alcohol with cyanogen at a temperature of between about 0° and about 50° C. in the presence of a trialkyl amine in which the alkyl groups each have from 1 to 6 carbon atoms, whereby the formation of oxalic acid di-amide esters is avoided.

3,301,884
β-ARYLSULFONYLETHYL THIOSULFURIC ACIDS

Fritz Meininger and Ernst Hoyer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 6, 1964, Ser. No. 401,983
Claims priority, application Germany, Oct. 12, 1963, F 40,971
6 Claims. (Cl. 260—453)

1. A compound of the formula



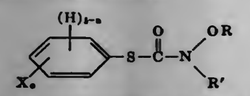
wherein R_1 represents nitro or amino, R_2 represents hydrogen, halo or lower alkoxy, R_3 represents hydrogen, halo, lower alkyl, lower alkoxy or hydroxyl, and R_2 and R_3 linked to adjacent carbon atoms taken together with the benzene nucleus represent an α-naphthyl group, and X represents hydrogen, sodium or potassium.

3,301,885
PHENYL N-HYDROCARBOXY N-HYDROCARBYL THIOCARBAMATES

Sidney B. Richter, Chicago, and Frank Ross, Villa Park, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,432
21 Claims. (Cl. 260—455)

1. A compound of the formula



where R and R' are independently selected from the group consisting of lower alkyl, alkenyl, haloalkyl and nitroalkyl; X is selected from the group consisting of hydrogen, halogen, methyl and nitro radicals; n is an integer from 0 to 2.

3,301,886
PROCESS FOR PREPARING ARYL SULFONIC ACID ESTERS

Gershon Metzger, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 8, 1963, Ser. No. 322,519
11 Claims. (Cl. 260—456)

1. A process for preparing aryl sulfonic acid esters which comprises:

(a) forming a reaction mixture of 100 parts by weight of metal sulfonate selected from the group consisting of alkali and alkaline earth metal aryl sulfonates, 100 to 10,000 parts by weight of water immiscible organic solvent, 30 to 90 parts by weight of base and 50 to 150 parts by weight of dialkylsulfate having 1 to 6 carbon atoms in a reaction zone,

(b) heating said reaction mixture to a reaction temperature of from 100° to 200° C. for from 0.5 to 10 hours to form a crude reaction product comprising substantial amounts of desired sulfonic acid ester, and

(c) recovering said desired sulfonic acid ester from said crude reaction product, said metal sulfonate being formed from a basic component containing metal selected from the group consisting of alkali metals, alkaline earth metals, and mixtures thereof, and from sulfonic acid having a molecular weight of from 158–700 wherein the sulfonic acid group is attached to a benzenoid carbon atom.

3,301,887
PRODUCTION OF CYCLIC UNSATURATED ALCOHOLS AND BORATE ESTERS

Isidor Kirshenbaum, Westfield, Ralph M. Hill, Mountainside, and Jeffrey H. Bartlett, New Providence, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 25, 1960, Ser. No. 24,239
13 Claims. (Cl. 260—462)

1. A process for producing an unsaturated alicyclic alcohol which comprises contacting an alicyclic olefin with a molecular oxygen containing gas at a temperature in the range of 100° to 250° C. in the presence of a compound selected from the group consisting of boric acid and compounds which generate boric acid upon contact with water at said temperatures, and converting the resulting borate ester to form unsaturated alicyclic alcohol.

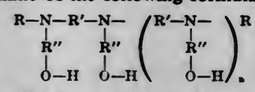
7. A process for preparing an unsaturated alicyclic borate ester which comprises contacting an alicyclic olefin with a molecular oxygen containing gas in the liquid phase at a temperature of at least 100° C. for a sufficient period of time to produce said borate ester, said alicyclic olefin being in admixture with a compound selected from the group consisting of boric acid and boric oxide.

3,301,888
POLYHYDROXYALKYLALKYLENEPOLYAMINE BORATE ESTERS

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 12, 1964, Ser. No. 366,921
6 Claims. (Cl. 260—462)

1. A borate ester of a polyalkyl-polyhydroxyalkyl-alkylenepolyamine of the following formula:



where R is an alkyl group of from 4 to about 50 carbon atoms, R' is an alkylene group of from 2 to about 6 carbon atoms, R'' is an alkylene group of from 2 to about 6 carbon atoms and n is an integer of from 0 to 4, said ester containing from about 0.5 to 2 mole proportions of the borate moiety per one mole proportion of said amine.

3,301,889
2-METHYL-2(β-CYANOETHYL)-1,3-CYCLOPENTANEDIONE

Richard E. Brown, Hanover, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Sept. 19, 1963, Ser. No. 310,146
1 Claim. (Cl. 260—464)

2-methyl-2-(β-cyanoethyl)-1,3-cyclopentanedione.

3,301,890
PROCESS FOR THE STABILIZATION OF ACRYLONITRILE

Marcel Borrel, Oullins, and Jean Konareff, Venissieux, France, assignors to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a corporation of France

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,260
Claims priority, application France, Dec. 14, 1962, 918,674
2 Claims. (Cl. 260—465.9)

1. A process for purifying acrylonitrile which comprises adding an alkaline catalyst to a mixture consisting essentially of a major amount of acrylonitrile and minor amounts of acrolein, hydrocyanic acid, and water to form the corresponding cyanohydrin, stabilizing said cyanohydrin-containing mixture by the addition of benzene sulfonic acid or toluene sulfonic acid to lower the pH of the mixture to below about 4.4, and distilling off purified acrylonitrile.

3,301,891
PRODUCTION OF CYCLOALIPHATIC NITRATES

Otto von Schickh, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Rhineland-Pfalz, Germany

No Drawing. Filed Feb. 15, 1957, Ser. No. 640,334
Claims priority, application Germany, Feb. 24, 1956, B 39,247
8 Claims. (Cl. 260—466)

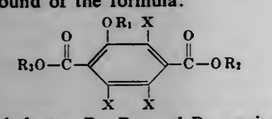
1. A process for the production of cycloaliphatic nitrates from cycloaliphatic alcohols which comprises dissolving a cycloaliphatic alcohol in an inert solvent, mixing the resultant solution with a nitrating acid at a temperature in the range of from about −40° C. to about 20° C., agitating the mixture, and thereafter removing the solvent to recover said cycloaliphatic nitrate.

3,301,892
DIALKYL-2-ALKOXY-3,5,6,TRIHALO-TEREPHTHALATES

Sidney B. Richter, Chicago, and Alfred A. Levin, Skokie, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 16, 1964, Ser. No. 375,654
9 Claims. (Cl. 260—473)

1. A compound of the formula:



wherein X is halogen; R_1, R_2, and R_3 are independently selected from the group consisting of methyl and ethyl.

3,301,893
FLUOROCARBON ETHERS CONTAINING SULFONYL GROUPS

Robert Ervin Putnam and William Dickson Nicoll, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,076
7 Claims. (Cl. 260—513)

1. A fluorocarbon ether having the general formula

$$YSO_2CFR_fCF_2O(CFXCF_2O)_nCFXCOY$$

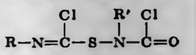
where R_f is a radical selected from the class consisting of fluorine and perfluoroalkyl radicals having from 1 to 10 carbon atoms, X is a radical selected from the class consisting of fluorine and the trifluoromethyl radical and mixtures thereof where the formula contains more than one X, and Y is a radical selected from the class consisting of fluorine, amino, hydroxyl and radicals having the formula —OMe, where Me is a group selected from the class consisting of ammonium and alkali metals and where n is a number from 0 to about 12, inclusive.

3,301,894
S-[N'-(CHLOROCARBONYL)-AMINO]ISOTHIOCARBAMYL CHLORIDES AND THEIR PREPARATION

Gerhard F. Ottmann, Hamden, and Haywood Hooks, Jr., West Haven, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,638
12 Claims. (Cl. 260—544)

1. Compounds having the formula



wherein both R and R' are independently selected from the class consisting of alkyl having 1–18 carbon atoms, cycloalkyl having 5–7 carbon atoms, aryl having 6–10 carbon atoms, halogenated phenyl, nitrated phenyl, benzyl and phenyl having a lower alkoxy substituent.

3,301,895
PROCESS FOR THE PREPARATION OF CARBODIIMIDES

Adnan A. R. Sayigh, North Haven, and Henri Ulrich, Northford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,169
13 Claims. (Cl. 260—551)

1. A process for the preparation of a carbodiimide of the formula:

$$R—N=C=N—R'$$

wherein R is aryl of 6 to 12 carbon atoms, inclusive, and with zero to 3 substituents, inclusive, said substituents being unreactive with phosgene, and wherein R' is selected from the group consisting of aryl of 6 to 12 carbon atoms, inclusive, alkyl of 1 to 18 carbon atoms, inclusive, and cycloalkyl of 3 to 12 carbon atoms, inclusive, said aryl, alkyl, and cycloalkyl each having zero to 3 substituents, inclusive, said substituents being unreactive with phosgene; which comprises mixing substantially equal molecular amounts of phosgene and a thiourea of the formula:



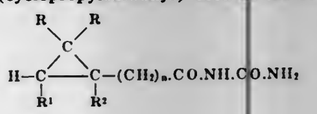
wherein R and R' are as given above, under substantially anhydrous conditions, in the absence of a substantial amount of an acid acceptor, and within the range 0° to 60° C.; maintaining the resulting mixture of said thiourea and phosgene under substantially anhydrous conditions, in the absence of a substantial amount of an acid acceptor, and within the range 0° to 60° C. until reaction between said thiourea and phosgene is substantially complete; and subsequently heating the entire resulting reaction product mixture under substantially anhydrous conditions, in the absence of a substantial amount of an acid acceptor, and within the range 75° to 200° C., to form said carbodiimide.

3,301,896
1-(CYCLOPROPYLCARBONYL) UREAS

David Frank Hayman, Vladimir Petrow, and Oliver Stephenson, all of London, England, assignors to The British Drug House Limited

No Drawing. Filed May 28, 1965, Ser. No. 459,889
Claims priority, application Great Britain, June 1, 1964, 22,579/64
10 Claims. (Cl. 260—553)

1. A 1-(cyclopropylcarbonyl) urea of the formula



(1)

where R is chlorine or bromine, R^1 is hydrogen, methyl or phenyl, R^2 is hydrogen, methyl or phenyl and n is 0 or 1.

3,301,897
PROCESS FOR UREA SYNTHESIS

Lucien H. Cook, Port Washington, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 8, 1965, Ser. No. 506,752
10 Claims. (Cl. 260—555)

1. In a urea synthesis process wherein feed streams of ammonia and carbon dioxide and a recycled process stream containing ammonia, carbon dioxide and water vapor are reacted at elevated temperature and pressure to synthesize urea, whereby a urea synthesis effluent stream containing urea, ammonium carbamate, excess ammonia and water is produced, ammonium carbamate in said effluent stream is decomposed in a plurality of stages at successively reduced pressure to generate a mixed off-gas stream at each stage containing ammonia, carbon dioxide and water vapor, the off-gas stream at each stage is separated from the residual liquid phase, whereby the residual liquid phase from the lowest pressure stage comprises product aqueous urea solution, and said off-gas streams are compressed to elevated pressure and recycled as said process stream, the improvement which comprises

(a) compressing the off-gas stream from a lower pressure stage to the next higher pressure stage in substantially adiabatic compression means, whereby said off-gas stream is heated to a highly elevated temperature,

(b) mixing the hot compressed off-gas stream from step (a) with the liquid process stream at the next higher pressure stage, whereby said off-gas stream heats said liquid process stream and thereby promotes decomposition of ammonium carbamate,

(c) separating a combined off-gas stream, derived from components of the off-gas stream from step (a) together with components derived from decomposition of ammonium carbamate and vaporization of water from said liquid process stream, from the residual liquid process stream, and

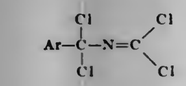
(d) further compressing the combined off-gas stream derived from step (c) to a higher pressure, prior to recycle of the total process off-gas as said recycled process stream.

3,301,898
ARYL-TETRACHLORO-AZA-PROPENES AND PROCESS FOR THE PRODUCTION THEREOF

Eberhart Degener, Leverkusen, Hans Holtschmidt, Cologne-Stammheim, and Hans-Georg Schmelzer, Cologne-Buchforst, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Oct. 15, 1963, Ser. No. 316,443
Claims priority, application Germany, Dec. 14, 1962, F 38,554
13 Claims. (Cl. 260—566)

1. Aza-propene compounds of the general formula



wherein Ar is selected from the group consisting of phenyl, naphthyl, and substituted phenyl which is substituted with a member selected from the group consisting of halogen, phenyl, phenoxy, nitro, halo-lower alkyl, and benzoyl radicals.

3,301,899
PURIFICATION OF TETRACYCLINE

Murray A. Kaplan, Syracuse, and Alphonse P. Granatek, Baldwinsville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 27, 1963, Ser. No. 326,358
19 Claims. (Cl. 260—559)

1. A complex of tetracycline and an amide selected from the group consisting of formamide, methylformamide, ethylformamide and dimethylformamide.

3,301,900
METHOD OF MANUFACTURING ACRYLAMIDE

Pierre Talet, Alfortville, France, assignor to Nobel-Bozel, Paris, Seine, France, a joint-stock company of France

No Drawing. Filed June 25, 1963, Ser. No. 290,293
Claims priority, application France, June 29, 1962, 902,550
9 Claims. (Cl. 260—561)

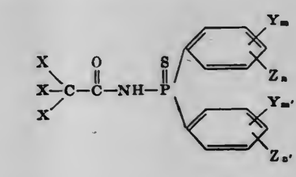
1. In the manufacture of acrylamide comprising hydrolizing acrylonitrile with sulphuric acid, neutralizing the reaction product with a base and forming an insoluble sulphate, separating the insoluble sulphate, concentrating the aqueous solution to crystallize the acrylamide formed, and purifying the crystals of acrylamide, the improvement comprising adding a hydrocarbon to the reaction medium during the hydrolysis stage, said hydrocarbon being non-miscible with water and capable of dissolving acrylamide, heating the hydrocarbon containing reaction medium, separating the hydrocarbon phase, and recovering from said hydrocarbon phase the acrylamide crystals, whereby pure crystals of acrylamide are obtained directly, with yields of at least 75% with respect to the nitrile initially employed.

3,301,901
PHOSPHINYLATED ACETAMIDE COMPOUNDS

Henry Tolkmith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 10, 1964, Ser. No. 336,884
4 Claims. (Cl. 260—562)

1. Compound of the formula



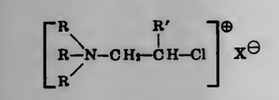
wherein each X represents a member selected from the group consisting of bromo, chloro, and fluoro; each Y independently represents loweralkyl; each Z independently represents halogen; each of m and m' represents an integer of from 0 to 5, both inclusive; each of n and n' represents an integer of from 0 to 2, both inclusive; the sum of m and m' is not in excess of 6; the sum of n and n' is not in excess of 2; and the sum of m, m' n, and n' is not in excess of 6.

3,301,902
PRODUCTION OF QUATERNARY HALO-ALKYLAMMONIUM SALTS

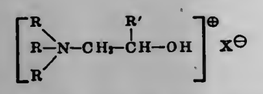
Karl-Heinz Koenig, Joachim Datow, and Ernst-Heinrich Pommer, Ludwigshafen (Rhine), Johann Jung, Limburgerhof, Pfalz, and Heinrich Scholz, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 24, 1964, Ser. No. 347,064
Claims priority, application Germany, Mar. 13, 1963, B 71,102
4 Claims. (Cl. 260—567.6)

1 A process for the production of quaternary 2-chloro-alkylammonium salts having the general formula:



in which R denotes a lower alkyl radical having one to three carbon atoms, R′ denotes a member selected from the group consisting of a hydrogen atom and a lower alkyl group having one to three carbon atoms and X denotes an anion, which comprises reacting a compound of the formula



in which R, R′ and X have the same meanings set forth, at a temperature of 100° C. to 180° C. and in an aqueous reaction medium with hydrogen chloride.

3,301,903
PURIFICATION OF META NITRO PARA TOLUIDINE

John Cryer, New Lenox, and Paul R. Bobo, Jr., Chicago Heights, Ill., assignors to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 11, 1963, Ser. No. 315,645
5 Claims. (Cl. 260—582)

1. The process for purifying meta nitro para toluidine obtained by the ammonolysis of meta nitro para cresol comprising contacting an anhydrous crude meta nitro para toluidine melt with a particulate solid adsorbent having a particle size such that a major percentage of the particles will pass a 250 mesh screen for a time sufficient to permit adsorption of impurities from said meta nitro para toluidine by said adsorbent, at a temperature in excess of the melting point of said meta nitro para toluidine but below the temperature at which substantial decomposition occurs, and thereafter separating said meta nitro para toluidine from said particulate solid adsorbent.

3,301,904
PURIFICATION OF META NITRO PARA TOLUIDINE

John Cryer, New Lenox, Ill., assignor to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 11, 1963, Ser. No. 315,662
14 Claims. (Cl. 260—582)

1. A process for purifying crude meta nitro para toluidine obtained by the ammonolysis of meta nitro para cresol comprising

(a) pretreating said meta nitro para toluidine in its liquid state with a dilute aqueous alkali solution containing an alkali from the class consisting of alkali metal carbonates and hydroxides for a period of time sufficient to remove a portion of the meta nitro para cresol present as an impurity; and separating the aqueous phase from the resultant meta nitro para toluidine;

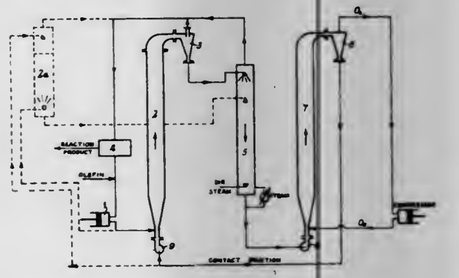
(b) thereafter contacting said meta nitro para toluidine in a liquid state with a particulate solid adsorbent having a particle size such that a major percentage of the particles will pass a 250 mesh screen for a time sufficient to permit adsorption of impurities from said meta nitro para toluidine by said adsorbent, at a temperature in excess of the melting point of said meta nitro para toluidine but below the temperature at which substantial decomposition of meta nitro para toluidine occurs, and

(c) thereafter separating meta nitro para toluidine while in the molten state from said particulate solid adsorbent.

3,301,905
PROCESS FOR OXIDIZING OLEFINS TO ALDEHYDES AND KETONES

Wilhelm Riemenschneider, Kurt Dialer, and Otto Probst, Frankfurt am Main, and Otto-Erich Bander, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 26, 1961, Ser. No. 84,968
Claims priority, application Germany, Sept. 28, 1957, F 24,051; Sept. 26, 1957, F 24,034
6 Claims. (Cl. 260—597)



1. In a process for conversion of an olefinic hydrocarbon to a carbonyl compound selected from the group consisting of aldehydes and ketones by oxidizing an olefinic carbon atom of said olefinic hydrocarbon to a carbonyl group by contacting said olefinic hydrocarbon and oxygen at a temperature between 50° C. and 160° C. and at a pH between 0.5 and 6 with water and a catalyst of (*a*) a salt of a noble metal selected from the group consisting of palladium, iridium, ruthenium, rhodium and platinum and (*b*), as a redox system, an inorganic salt of a metal showing several valence states under the reaction conditions applied, the improvement of contacting said olefinic hydrocarbon, oxygen, and said catalyst in the presence of a diluent gas selected from the group consisting of carbon monoxide and hydrogen.

3,301,906
OXIDATION OF ISOBUTYLENE TO METHACROLEIN

Alfio J. Besozzi, Skillman, and William F. Brill, East Brunswick, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed June 27, 1963, Ser. No. 290,911
5 Claims. (Cl. 260—604)

1. A process for the vapor phase production of methacrolein which comprises contacting a mixture of isobutylene and oxygen in a molar ratio of one mol of isobutylene to 0.1 to 3 mols of oxygen at an elevated temperature in the range of about 450° C. to 750° C. with a catalyst containing atoms of copper and phosphorus in an atomic ratio of 1 to 1 to 10 to 1 in the presence of a sulfur compound containing at least two atoms selected from the group consisting of hydrogen and oxygen present in an amount to provide from 0.001 to 0.1 mol equivalent of sulfur per mol of isobutylene, for about 0.005 to 1 second.

3,301,907
METHOD FOR PREPARATION OF REACTION PRODUCTS OF DECABORANE AND CONJUGATED DIOLEFINS

Eugene J. De Lorenzo, Bronx, N.Y., and Robert V. Wright, North Highland, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Apr. 20, 1961, Ser. No. 104,472
13 Claims. (Cl. 260—606.5)

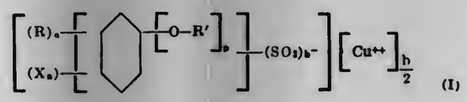
1. A method for the preparation of reaction products of decaborane and a conjugated diolefin which comprises reacting 0.5 to 10 moles of decaborane per mole of a conjugated diolefin hydrocarbon containing from 4 to 5 carbon atoms at a temperature within the range from about 100° C. to about 200° C. while the reactants are in admixture with a catalytic amount of a lower dialkyl ether.

3,301,908
CUPRIC CATALYST FOR THE CAUSTIC HYDROLYSIS OF AROMATIC HALIDES

Earl A. Ebach, Edward P. Merica, and Joseph C. Valenta, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

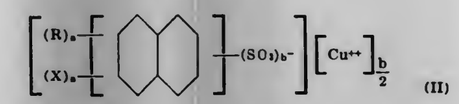
No Drawing. Original application Oct. 3, 1961, Ser. No. 142,486, now Patent No. 3,247,234. Divided and this application Mar. 14, 1963, Ser. No. 270,783
1 Claim. (Cl. 260—613)

in the method of producing hydroxy aromatic compounds by the caustic hydrolysis of aromatic halides selected from the group consisting of mono and di chlorides and bromides of benzene, di-phenyloxide, catechol and resorcinol, in the presence of a copper catalyst and an aqueous alkaline media the improvement which comprises employing as catalyst the copper salt of an aromatic compound having the formula



(I)

and



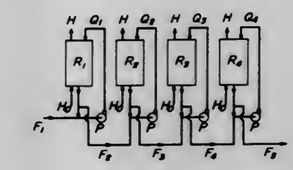
(II)

wherein R represents an aliphatic radical containing more than two carbon atoms and up to 15 carbon atoms, R′ represents a member selected from the group consisting of phenylene and naphthalene radicals, *n* represents an integer from 1 to 5, *a* represents an integer from 0 to 2 inclusive, *b* represents an integer from 1 to 2 when *p* is 0, 1 to 3 when *p* is 1, and 1 to 3+*p* when *p* is greater than 1 *p* represents an integer from 0 to 5 and X represents a halogen having an atomic number from 17 to 35 provided that the sum of *a* and *n* shall not exceed 5 in (I) when *p* is 0.

3,301,909
PROCESS FOR CONTINUOUSLY HYDROGENATING HIGHER ALDEHYDES IN LIQUID PHASE

Shigeo Kawasaki, Suginami-ku, Tokyo, Hideo Yusa, Miamata-shi, and Mikio Shinkai, Kanazawa-ku, Yokohama, Japan, assignors to Chisso Corporation, a corporation of Japan

Filed Apr. 16, 1962, Ser. No. 187,618
Claims priority, application Japan, Apr. 25, 1961, 36/14,648
4 Claims. (Cl. 260—638)

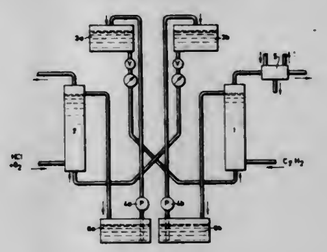


1. A process for the continuous production of alkanols by the hydrogenation of substantially pure aliphatic hydrocarbyl aldehydes having 6 to 13 carbon atoms which comprises passing a substantially pure aliphatic hydrocarbyl aldehyde feed through a plurality of reaction zones in series at a flow rate within the range of about 3 to 30 cubic meters per square meter of catalyst surface, per hour, at least one of the reaction zones in the initial stages of the process being divided into a plurality of smaller reaction zones, and each reaction zone maintained at a reaction temperature of about 110 to 160° C. and a pressure of about 20 to 35 atmospheres, contacting the feed in each reaction zone with hydrogen in the presence of a nickel catalyst which is in a fixed bed and has a particle size in the range of about 5–25 mm., recycling a part of the product of each reaction zone to that zone, and recovering a substantially completely hydrogenated product.

3,301,910
PRODUCTION OF TRICHLOROETHYLENE AND TETRACHLOROETHYLENE

Leonhard Tiganik, Skoghall, and Jan Sven Ragnar Ohlson, Karlshamn, Sweden, assignors to Uddeholms Aktiebolag, Uddeholm, Sweden, a company of Sweden

Filed Feb. 11, 1964, Ser. No. 344,104
Claims priority, application Sweden, Feb. 22, 1963, 1,978/63
6 Claims. (Cl. 260—654)

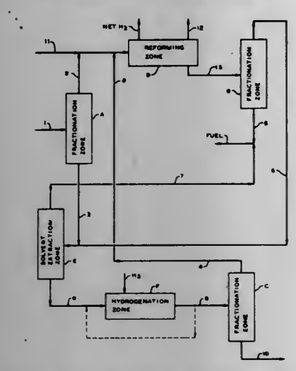


1. Method for the production of trichloroethylene and tetrachloroethylene by a reaction between acetylene and copper chloride in a water solution, which comprises passing acetylene through a reaction solution containing cupric and cuprous ions, in which the cupric ions constitute 50–100 mole percent of the total copper amount, maintaining the pH-value of the reaction solution at 1 to 3 and a reaction temperature of at least 60° C.

3,301,911
PRODUCTION OF CYCLOPARAFFINS

Robert G. Boatright, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 13, 1964, Ser. No. 389,349
5 Claims. (Cl. 260—666)



1. A method for producing at least one high purity cycloparaffin comprising providing a feed stock containing at least one cycloparaffin, at least one alkyl substituted cycloparaffin, and at least one aromatic, fractionating said feed stock to at least separate therefrom cycloparaffin, thereby leaving a residual product containing alkyl substituted cycloparaffin, reforming said residual product to convert the alkyl substituted cycloparaffin to aromatic and thereby form a reformate rich in aromatic, combining the cycloparaffin separated from the feed stock by fractionation and the aromatic rich reformate, solvent extracting said combination of cycloparaffin and reformate to produce an extract rich in aromatic and cycloparaffin, hydrogenating said extract to convert the aromatic to cycloparaffin and produce a hydrogenate, fractionating the hydrogenate to separate lighter materials from said cycloparaffin, and recovering said cycloparaffin as the product of the process.

3,301,912
POLYALKYLATED BENZENES FROM KETONES

Yu-Tang Hwang, Crystal Lake, William A. Krewer, Arlington Heights, and Walter J. Sandner, Crystal Lake, Ill., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,284
12 Claims. (Cl. 260—668)

1. The process for the preparation of a polyalkylated benzene compound which comprises condensing a ketone at a temperature of about 400° to about 900° F. in the presence of a catalyst comprising (1) a composite alumina-molybdena and (2) palladium.

3. The process of producing an unsaturated carbonyl compound and a polyalkylbenzene compound comprising condensing a methyl ketone, at a temperature of at least about 400° F., in the presence of a catalyst comprising (1) a composite alumina-molybdena, and (2) palladium.

3,301,913
HYDROGENATION PROCESS

Peter Desmond Holmes and Robert Chalmers Pitkethly, Sunbury-on-Thames, Middlesex, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock company

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,274
Claims priority, application Great Britain, Apr. 1, 1963, 12,780/63
4 Claims. (Cl. 260—677)

1. A process for selectively hydrogenating the acetylenes in a hydrocarbon feedstock containing a molar proportion of dienes in excess of 50 mol percent and a minor molar proportion of acetylenes which comprises, contacting said feedstock with a supported catalyst containing nickel which, under the operating conditions, is present in major proportion as elemental nickel, said catalyst having been previously modified by treatment with at least one sulphur-containing compound selected from the group consisting of thiophenes, thiacycloalkanes having at least four carbon atoms per ring, and dialkylmonosulphides, said treatment being carried out under conditions such that a minor proportion of the nickel present in the catalyst is thereby combined with sulphur, the hydrogenation being carried out at a hydrogenation temperature of from 100° to 130° C., and recovering a product in which at least a major proportion of the acetylenes have been selectively hydrogenated and not more than a minor proportion of the dienes has been hydrogenated.

3,301,914
PRODUCTION OF ACETYLENE, OR ACETYLENE AND ETHYLENE, BY PARTIAL OXIDATION OF HYDROCARBONS

Willi Danz, Ludwigshafen (Rhine), and Walter Teltschik, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

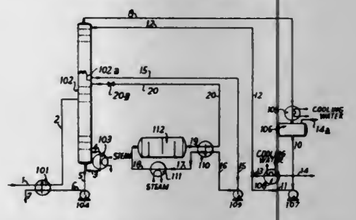
No Drawing. Filed Jan. 8, 1963, Ser. No. 249,996
Claims priority, application Germany, Jan. 12, 1962, B 65,498
6 Claims. (Cl. 260—679)

1. A process for the production of acetylene which comprises: separately preheating a hydrocarbon higher than methane and having up to 10 carbon atoms and oxygen, said hydrocarbon being preheated to a temperature greater than 350° C., mixing the preheated materials intimately in a mixer, maintaining the residence period of said mixture of hydrocarbon and oxygen in said mixer at less than 0.1 second, whereby no preignition of said hydrocarbon takes place in said mixer, passing the gas mixture through the channels of a gas distributing block into a reaction chamber, maintaining the velocity of said gas mixture immediately prior to its entry into the channels of said gas distributing block at more than 5 meters per second, burning part of the hydrocarbon and cracking the remainder of the hydrocarbon in said reaction chamber, and immediately quenching the reaction product and thereafter recovering said acetylene.

3,301,915
RECOVERY OF ISOPRENE FROM HYDROCARBON FRACTIONS

Ralph William King, London, and Barry Owen Shorthouse, Southampton, England, assignors to The International Synthetic Rubber Company Limited, Southampton, England

Filed Nov. 5, 1965, Ser. No. 513,632
Claims priority, application Great Britain, Nov. 6, 1964, 45,358/64
11 Claims. (Cl. 260—681.5)



1. A process for the recovery of an isoprene fraction with a very low cyclopentadiene content as an overhead fraction by fractional distillation from a hydrocarbon stream containing isoprene and cyclopentadiene and consisting predominantly of C_5 hydrocarbons, in which process liquid is withdrawn during the course of the fractional distillation from an intermediate point in the fractional distillation system in an area of relatively high cyclopentadiene concentration, the withdrawn liquid is subjected to dimerisation conditions for the dimerisation of cyclopentadiene and the resulting liquid product is returned to an intermediate point in the fractional distillation system.

3,301,916
DOUBLE BOND ISOMERIZATION OF OLEFINS USING ANHYDROUS METAL SULFATE CATALYSTS

Robert Chalmers Pitkethly, John Frederick Ford, and Arnold Fisher, all of Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,301
Claims priority, application Great Britain, Nov. 7, 1962, 42,081/62
10 Claims. (Cl. 260—683.2)

1. A process for the isomerization of an isomerizable olefin containing 4 to 6 carbon atoms per molecule which comprises contacting said olefin under iosmerization conditions with a catalyst consisting of an anhydrous metal sulphate carried on an inactive support, said anhydrous metal sulphate selected from the group consisting of the anhydrous sulphates of metals of Groups II, V, VI and VIII of the Periodic Table according to Mendeléef and the anhydrous sulphates of manganese.

3,301,917
UPGRADING OF PARAFFINIC HYDROCARBONS IN THE PRESENCE OF A MIXED ALUMINO-SILICATE, PLATINUM METAL CATALYST

John J. Wise, Arlington, Mass., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 22, 1964, Ser. No. 398,432
12 Claims. (Cl. 260—683.65)

1. A process for the hydroisomerization of a C_4–C_8 paraffin which comprises effecting isomerization of a C_4–C_8 paraffin at a temperature from about 400° to 600° F. and at a pressure from about atmospheric to about 600 p.s.i.g. in the presence of hydrogen and in contact with a mixed catalyst consisting essentially of a rare earth-hydrogen exchanged crystalline zeolitic alumino-silicate having a defined pore size of from above about 6 A. to about 15 A. and a hydrogenation component of platinum supported on a thermally stable carrier other than said alumino-silicate, said mixed catalyst containing from about 0.05 to 5.0% by weight of platinum and recovering a product mixture containing a major proportion of branched chain isomers of said C_4–C_8 paraffin.

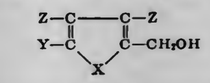
3. A process for upgrading of a C_9^+ paraffin which comprises effecting isomerization of a C_9^+ paraffin at a temperature from about 300° to about 600° F. in the presence of hydrogen and in contact with a mixed catalyst consisting essentially of a rare earth-hydrogen exchanged crystalline zeolitic alumino-silicate having a defined pore size of from above about 6 A. to about 15 A. and a hydrogenation component of platinum supported on a thermally stable carrier other than said alumino-silicate, said mixed catalyst containing from about 0.05 to 5.0% by weight of platinum and recovering a product mixture containing a major proportion of branched chain isomers of said C_9^+ paraffin when the reaction temperature is below about 400° F. and a minor proportion of said isomers when the reaction temperature is at 400° F. and above.

3,301,918
RESINOUS COPOLYMERS OF HETEROCYCLIC DIENE ALCOHOLS AND HYDROCARBONS HAVING 5 TO 14 CARBON ATOMS

John E. Dereich, Pittsburgh, Pa., assignor to Neville Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed May 21, 1963, Ser. No. 282,155
17 Claims. (Cl. 260—829)

1. A thermal polymerization process for making a resinous copolymer characterized by a hydroxyl number of at least 7.3 which process comprises mixing (a) a heterocyclic diene alcohol having the formula



wherein X is oxygen, sulfur or nitrogen, and Y and Z are hydrogens or lower alkyl groups and (b) a reactive olefinically unsaturated hydrocarbon feed which contains 5 to 14 carbon atoms per molecule and is copolymerizable with said diene alcohol, said alcohol and unsaturated hydrocarbon feed being mixed in a proportion of about 5 to about 7 parts of the alcohol per 100 parts of mixed alcohol and unsaturated hydrocarbon, and heating the mixture in the absence of a catalyst at a temperature above about 150° C. but below that at which substantial decomposition of the resulting copolymer occurs and at a pressure sufficient to keep the reactants essentially in the liquid phase until a resinous copolymer-containing product is obtained.

3,301,919
BLEND OF PARTICULATED POLYVINYL CHLORIDE, AND A TERPOLYMER OF METHYL METHACRYLATE, ETHYL ACRYLATE, AND GLYCIDYL ACRYLATE

Harry Joseph Cenci, Warminster, and Louis Charles Souder, Levittown, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,575
5 Claims. (Cl. 260—836)

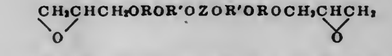
1. An extrudable, millable blend of particulated polyvinyl chloride and 0.5–25% by weight based on the weight of the polyvinyl chloride of a non-crosslinked copolymer comprising methyl methacrylate, ethyl acrylate, and glycidyl methacrylate wherein the percentage by weight of methyl methacrylate, ethyl acrylate and glycidyl methacrylate is in the range of 98.5 to 20, 0.5 to 40, and 1 to 40, respectively, and wherein at least 90% of theoretical epoxy group is intact, and said copolymer having a molecular weight in the range of 150,000 to 2,000,000.

3,301,920
DIEPOXIDE FORMED BY THE CONDENSATION OF A MONOHYDROXYALIPHATIC MONOGLYCIDYL ETHER WITH A DIALKYL ESTER OF A CARBOXYLIC ACID

Herbert P. Price, Louisville, Ky., assignor, by mesne assignments, to Celanese Coatings Company, a corporation of Delaware

No Drawing. Filed Oct. 17, 1963, Ser. No. 317,043
6 Claims. (Cl. 260—837)

1.



wherein R is the aromatic nucleus of a dihydric phenol; R′ is a divalent radical containing at least two carbon atoms and selected from the group consisting of aliphatic hydrocarbon groups, hydrocarbon substituted aliphatic hydrocarbon groups and hydrocarbon ether substituted aliphatic hydrocarbon groups; and Z is an acyl diradical of a dicarboxylic acid.

3,301,921
ISOTACTIC POLYPROPYLENE MODIFIED WITH ETHYLENE-PROPYLENE COPOLYMER

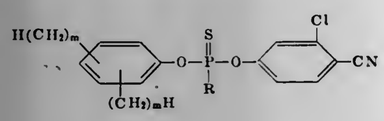
Glen A. Short, Concord, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 28, 1962, Ser. No. 183,145
4 Claims. (Cl. 260—878)

1. As a new composition of matter, a modified polypropylene product consisting of highly isotactic polypropylene polymer chains uninterrupted by ethylene and having ethylene-propylene copolymer attached to one end of at least a portion of the polypropylene chains, the total amount of ethylene units in the polymer product being in the range from 1 to 20% by weight and the proportion of ethylene units in said ethylene-propylene copolymer being between 10 and 90% by weight.

3,301,922
O-ARYL ALKYLPHOSPHONOTHIOATES

John P. Chupp, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Original application July 3, 1963, Ser. No. 292,741, now Patent No. 3,242,042. Divided and this application June 7, 1965, Ser. No. 462,098
6 Claims. (Cl. 260—940)

1. An O-aryl alkylphosphonothioate of the formula

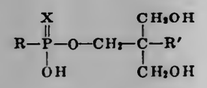


wherein m and n are integers from 0 to 1 and wherein R is lower alkyl.

3,301,923
2,2-DIHYDROXYMETHYLALKYL HYDROCARBONTHIOPHOSPHONATES AND METHOD OF PREPARATION

Herbert S. Skovronek, Morris Plains, N.J., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 25, 1963, Ser. No. 267,792
6 Claims. (Cl. 260—953)

1. A methylol thiophosphonate of the formula:

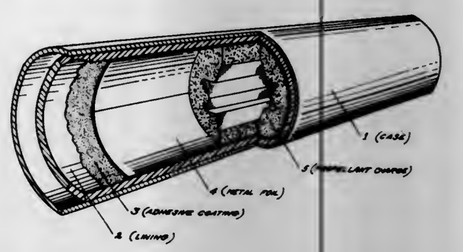


where R is a an aliphatic polyolefin radical having an average molecular weight between 250 and 50,000, R' is selected from the group consisting of a saturated aliphatic hydrocarbon radical having 1 to 10 carbons and hydrogen, and X is a chalcogen selected from the group consisting of oxygen and a mixture of sulfur and oxygen.

3,301,924
MANUFACTURE OF ROCKET MOTORS

Robert William Bryant, 2 Thaxted Way, Waltham Abbey, Essex, England, and Barry Hilton Newman, 3100 Massachusetts Ave. NW., Washington, D.C. 20008
Filed July 16, 1964, Ser. No. 390,771
6 Claims. (Cl. 264—3)

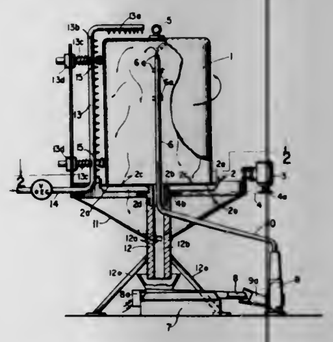
1. A process for the manufacture of a rocket motor which includes the steps of lining the inside of the rocket casing with a lining material, facing the inner surface of said lining material with a layer of metal foil and bonding said layer to said inner surface, and casting a propellant charge having a polyurethane or polybutadiene binder in contact with the metal foil whereby the



metal foil forms a continuous and impermeable barrier between the lining material and the propellant charge.

3,301,925
PROCESS AND APPARATUS FOR MOLDING HOLLOW ARTICLES FROM SYNTHETIC THERMOPLASTIC MATERIALS

Thomas Engel, Heusenstamm, Offenbach am Main, Germany, assignor to Vasco Industries Corp., New York, N.Y., a corporation of New York
Filed Dec. 6, 1962, Ser. No. 242,771
Claims priority, application Germany, Dec. 7, 1961, E 22,087
13 Claims. (Cl. 264—37)



1. The process of producing a shaped hollow article, which comprises

providing a hollow mold that is open at one end and has an internal surface of the configuration of the article to be produced,

providing a thermoplastic resin material that will form a film under the influence of heat in a measured quantity corresponding to the desired weight of said article, and

while supporting the mold with its open end facing downward and heating it to a temperature sufficient to fuse said material on said internal surface,

spraying particles of said material substantially evenly to said surface,

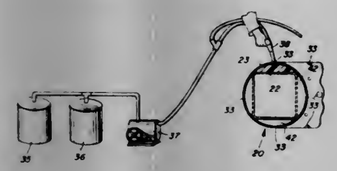
adhering to said surface and fusing together thereupon by the heat of said surface some of the spray particles as they impinge upon said surface in the spray,

flowing through said open end and collecting below the mold the spray particles not adhered to said surface, and continually re-spraying said non-adhered particles to said surface,

until substantially all of said quantity has been adhered to and fused into a layer covering said surface.

3,301,926
METHOD OF FABRICATING A SELF-BRACED CONCRETE FORM

Frank D. Relland, Chicago, Ill., assignor to Gateway Erectors, Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 8, 1964, Ser. No. 358,181
12 Claims. (Cl. 264—45)



1. A method of fabricating a self-braced form assembly to be used in molding a polygonal concrete column, said method comprising:

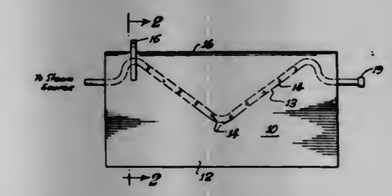
forming a tubular elliptical support shell of laminated paper or like readily destructible material with a plurality of apertures therein distributed longitudinally and radially of the shell;

forming an elongated hollow polygonal form member of laminated paper or like readily destructible material having an internal cross-sectional configuration conforming to the required column configuration; mounting said form member within said support shell so that the support shell is disposed in encompassing relation to the form member with an asymmetrical space therebetween, some of said apertures being aligned with each wall of said form member;

and filling substantially all of said space through said apertures, with a light weight cellular bracing material having substantial strength in compression, formed in situ in the space, to afford continuous bracing between the form member and the shell and complete a readily destructible form assembly having the strength to hold and mold a column of concrete extending the full height of the form.

3,301,927
METHOD OF MOLDING A HIGH STRENGTH, LOW DENSITY STRUCTURE

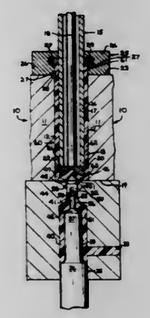
George A. Exley, Alta Loma, and Louis F. Scherer, Pomona, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Aug. 7, 1964, Ser. No. 388,117
5 Claims. (Cl. 264—45)



1. The method of producing a high strength, low density structure having an imperforate outer skin, a supporting core member and an intermediate portion of low density comprising the steps of adhering a quantity of beads of expandable low-density material sufficient on expansion to constitute the intermediate portion to a surface area of a sheet of material which will ultimately be the outer skin of the structure being formed; positioning a member having apertures transversely with respect to at least a portion of the surface area of the sheet of material which functions as an internal structural support, a heating conduit for the beads of expandable material, and as a support member for the final product; securing the assembly in a mold; and supplying steam to the member for expanding the low density material so as to conform the low density material and outer skin essentially with the contour of the mold and to form the intermediate portion.

3,301,928
METHOD OF AND APPARATUS FOR MAKING A BLOWN PLASTIC ARTICLE

Charles E. Plymale, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed June 17, 1963, Ser. No. 288,332
7 Claims. (Cl. 264—97)

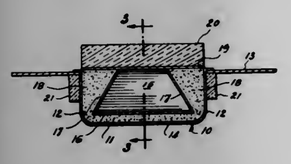


1. In a method of making a blow molded article from a closed bottom injection molded parison formed about a central parison pin projecting axially into a parison mold recess to define an annular mold space therebetween, the steps of contacting the free end of the pin with a combination aligning and valving means holding the pin against radial deflection and in axial alignment with the axis of said mold recess, flowing plasticized material through a valve passage and about said aligning and valving means to fill said annular mold space with said material, relatively moving said pin and said aligning and valving means out of contact and flowing plasticized material into the space between said pin and said aligning and valving means to form the closed bottom of said parison, and closing said valve passage with said aligning and valving means by positioning said aligning and valving means in contact with a surface of said valve passage so that said aligning and valving means blocks said passage to thereby shut off the flow of plasticized material into said mold space.

6. In an apparatus for making an inflatable parison of plasticized material and including the parison mold having a mold space with an open end communicating with a source of plasticized material under pressure and the parison pin projecting axially into the mold space to terminate short of the open end thereof, the improvements of a valve body interposed between the mold space and said source, a valve passage through which plasticized material flows from said source to said mold space, said body having a conical shaped end projecting into the mold space for contacting a registering conical recess in the parison pin and a valve portion for fitting with said valve passage to block said passage and thereby shut off the flow of plasticized material into said parison mold, means biasing said valve body into contact with the parison pin centralizing said pin in said mold space and opening said valve portion, and means for shifting said valve body to a position blocking said valve passage

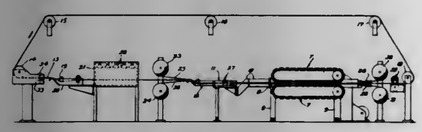
for interrupting the flow of material from said source to said mold space, said valve portion being constructed and arranged to form the closed end of said parison when shifted to its closed position.

3,301,929
SINTER-MOLDING PROCESS
Bjørn Adler Zeuthen Bruun, Boserubvej, Farum, Denmark
Filed Sept. 22, 1964, Ser. No. 398,171
Claims priority, application Denmark, Sept. 26, 1963, 4,524/63
7 Claims. (Cl. 264—126)



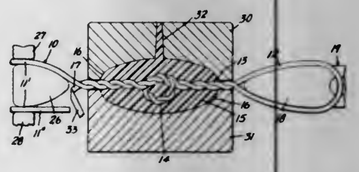
1. In a sinter-molding process in which an externally heated hollow mold having an inner surface with the configuration of an article to be produced is charged with a finely divided solid thermoplastic material that will coalesce by melting at the temperature to which the inner mold surface is heated and the heating is continued until, by continued coalescence of particles of said material, a fused plastic wall structure of required thickness is formed on said surface, said wall structure thereafter being cooled to solidify it on said surface; the improvement comprising placing a core within said hollow mold to rest on a portion of said charge of thermoplastic material at the bottom of the mold and which has sides sloping upwardly away from the adjacent sides of the mold so that the remaining portion of said charge filling the space between said sloping sides of the core and adjacent sides of the mold exerts a pressure outwardly against the latter, and removing said core from the mold after said fused plastic wall structure is formed on said inner surface of the mold, thereby to effect the removal with said core of substantial quantities of unfused thermoplastic material from said space between the mold and core.

3,301,930
METHOD OF PRODUCTION OF FIBER REINFORCED RESIN ARTICLES
Le Roy R. Boggs, Bristol, Tenn., assignor to Universal Moulded Fiber Glass Corp., Bristol, Va., a corporation of Delaware
Filed May 6, 1963, Ser. No. 278,256
2 Claims. (Cl. 264—137)



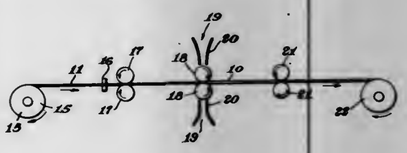
1. A method for making an article composed of fiber reinforced resin material, comprising applying to both sides of a strip type travelling carrier a coating of heat curable liquid resin material, heating the resin material on the carrier to provide gelled coatings on both sides thereof, impregnating separate fibrous reinforcements with a heat curable liquid resin material, bringing the impregnated reinforcements and the coated carrier together with the reinforcements in contact with the coatings on the carrier, feeding the juxtaposed coated carrier and reinforcements into a forming passage of cross section conforming with that of the carrier taken together with that of the articles being formed, and bonding the resin impregnant of the reinforcements to the resin coatings of the carrier and hardening the resin constituents by heating them during passage thereof through the forming passage.

3,301,931
METHOD OF MAKING LOOPED SNELLS
Louis H. Morin, Bronx, N.Y., assignor of one-fourth to Madeline F. McGill, Denver, Colo., and one-fourth to J. R. Hanna, Bronxville, N.Y.
Filed July 30, 1963, Ser. No. 298,612
10 Claims. (Cl. 264—145)



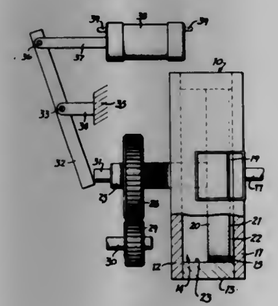
1. The method of forming a secure loop end on a monofilament strand, which comprises arranging a portion of the strand around a mandrel at a loop forming station with ends of the strand extending in substantially parallel relationship through a gripper station spaced with respect to said loop forming station, gripping the strands at the gripper station while rotating said mandrel to form a twist in the strands, between the mandrel and gripper station, continuing rotation of said mandrel to form an anchorage portion in the twisted strand substantially centrally between said mandrel and said gripper station, said anchorage portion being larger in diameter than the diameter of said twisted strand, moving the mandrel in the direction of the gripper station during said twisting, then forming a molded encapsulating element around the major portion of the length of the twist and anchorage portion in said strand, trimming the encapsulating element, and trimming one of the strand sides adjacent one end of the twist to leave the other strand side in forming a predetermined strand length extending from said formed loop in the strand.

3,301,932
METHOD FOR PRODUCING COATED ARTICLES
Douglas S. Chisholm, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 31, 1961, Ser. No. 113,691
22 Claims. (Cl. 264—174)



1. A method for coating at least two opposing surfaces of a preformed substrate with a normally solid film-forming thermoplastic resin comprising passing said substrate through an opening between two counter-rotating rolls, said opening provided by coacting circumferential grooves in said rolls, the direction of travel of the surface of said rolls at the point at which said substrate passes between said rolls being essentially opposite to the direction of travel of said substrate; applying said normally solid thermoplastic resin in molten form to the surface of said grooves in said rolls; depositing said resin from said surface onto said substrate as it passes through said opening between said rolls; and then cooling said applied resin to solidify same on said substrate.

3,301,933
ELASTIC MELT EXTRUDER
Charles E. Plymale, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed May 17, 1963, Ser. No. 281,172
7 Claims. (Cl. 264—176)

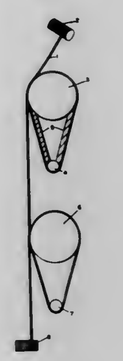


2. In a method of extruding a thermoplastic material by the visco-elastic effect exerted between the confronting faces of relatively rotatable elements, the steps of positioning said faces at a distance effective to provide a visco-elastic shearing gap therebetween whenever the issuance of extrudate is desired, and spacing said faces through a distance greater than that necessary to form an effective visco-elastic shearing gap whenever the issuance of extrudate is not desired.

7. In an elastic melt extruder, a pair of relatively rotatable elements including a driven element and a fixed element having spaced confronting faces, enclosure means defining an interior space snugly peripherally enclosing said faces and having an inlet opening through which particulate material is supplied to the space between said faces and an axial outlet opening in one of the faces for extrudate, means for relatively rotating said elements, means supporting one of said elements for movement axially of said faces, and power means for moving said one of said elements regardless of any relative rotation thereof to vary the spacing of said faces between (1) a first closely spaced position at which said faces are effective to melt and extrude material under pressure through said outlet opening, and a second relatively further spaced position at which said faces are ineffective to extrude said material and the material is merely accumulated between said faces.

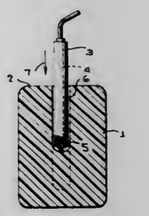
3,301,934
PROCESS FOR DRAWING POLYPROPYLENE YARN
Joseph C. Webnar, Roanoke, Va., assignor to Hercules Incorporated, a corporation of Delaware
Filed June 18, 1963, Ser. No. 288,668
3 Claims. (Cl. 264—290)

1. In the process for drawing polypropylene yarn wherein a plurality of turns of yarn are wrapped about a driven feed roll and about an idler roll disposed in spaced relation to the feed roll and arranged at a small angle out of parallel to said feed whereby said turns of yarn are guided along said feed roll without overlapping, wherein said yarn is also wrapped about a draw roll disposed in spaced parallel relation to said feed roll and driven at a speed greater than that of said feed roll whereby the yarn is drawn between said feed roll and



said draw roll, and wherein said yarn is heated at said feed roll to a desired temperature for drawing, the improvement comprising, in said heating, continuously supplying heat to said yarn at a substantially uniform temperature as said yarn passes around said feed roll and said idler roll and between said feed roll and idler roll for raising the temperature of said yarn uniformly whereby the yarn is adapted to be drawn at relatively low temperatures and without chalkiness.

3,301,935
PROCESS FOR THE FORMING OF SHAPED ARTICLES OF THERMOPLASTIC FOAM MATERIAL
Klaus Stoeckhert, Braunschweig, Germany, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 28, 1962, Ser. No. 226,913
8 Claims. (Cl. 264—321)



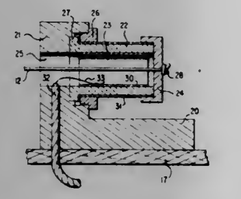
1. A process of forming a one-piece hollow body from a body of cellular-thermoplastic foam material which comprises subjecting at least one surface of said body of foam material to a fluid-stream of softening agent from a blowing jet; continuing said stream against the surface of the foam material until the cells thereof shrink to form a hollow; said hollow characterized as having a non-porous skin-like surface and said softening agent being selected from the group consisting of steam, hot gases and vapors of an organic solvent.

ELECTRICAL

3,301,936
STRINGED MUSICAL INSTRUMENTS WITH PIEZOELECTRIC TRANSDUCERS

Frank C. Carman and Lynn Johnson, both of 165 Social Hall Ave., Salt Lake City, Utah 84111

Filed Mar. 4, 1964, Ser. No. 349,290
16 Claims. (Cl. 84—1.16)

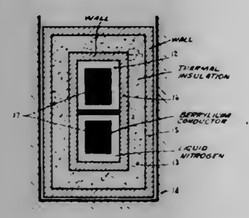


1. A stringed musical instrument comprising:
at least one vibratable string for producing musical tones;
means for placing said string under axial tension;
an axially symmetrical piezoelectric transducer disposed at one end of said string with its axis of symmetry aligned with that of said string, said transducer being placed under axial compression by the tension in said string;
said transducer including a pair of spaced apart conductive elements in contact with portions of the surface thereof;
and electrical conductors in contact with said conductive elements for deriving electrical signals therefrom in response to variations in tension of said string.

3,301,937
LIQUID NITROGEN COOLED BERYLLIUM SUPERCONDUCTOR

Pierre Burnier, Versailles, and Jacques Bonmarin, La Motte Servolex, France, assignors to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

Filed Nov. 2, 1964, Ser. No. 408,276
Claims priority, application France, Nov. 8, 1963, 953,119
8 Claims. (Cl. 174—15)

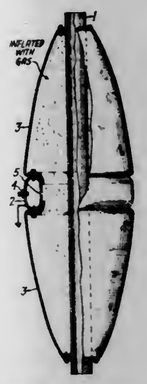


1. In an electrical device for the production of electrical, magnetic or mechanical energy or for the conversion of electrical energy, a conductor formed of beryllium cooled to a temperature below 150° K. and a liquid refrigerant circulated in heat exchange relationship with the conductor for cooling the beryllium conductor to a low temperature below 150° K.

3,301,938
LIGHT WEIGHT FLEXIBLE HIGH VOLTAGE BUSHING

Howard A. Frey, Towson, Md., assignor to General Electric Company, a corporation of New York

Filed Sept. 29, 1965, Ser. No. 491,162
5 Claims. (Cl. 174—31)

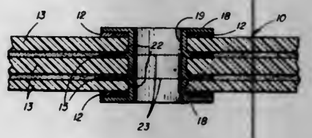


1. An electrical bushing comprising, in combination, a pair of outer shells of flexible insulating sheet material attached at one of their ends to and extending in opposite directions from a circular conductive ground ring and attached at their opposite ends to the ends of a cylindrical conductor extending through the center of said ring perpendicular to the plane of the latter, said shells normally being inflated and distended by an insulating gas under pressure filling the space in said bushing between said cylindrical conductor on the one hand and said shells and ground ring on the other hand so as flexibly to maintain the relative orientation of the conductive parts and constituting the entire outer insulating surface of said bushing.

3,301,939
MULTILAYER CIRCUIT BOARDS WITH PLATED THROUGH HOLES

S. Bert Krasnow, Hartsdale, N.Y., assignor to Precision Circuits, Inc., New Rochelle, N.Y., a corporation of New York

Filed Dec. 30, 1963, Ser. No. 334,361
5 Claims. (Cl. 174—68.5)



4. A multilayer printed circuit board comprising a stack of at least two insulating sheets having desired printed circuit conductor configurations adhered thereto, said sheets being secured to each other to form said board with at least one outer conductor configuration and at least one inner conductor configuration embedded between said sheets, at least one hole penetrating through a sufficient number of said sheets at a predetermined location to intersect at least two of said conductor configurations in different layers, at least one of said intersected conductor configurations being an inner layer, a portion of each of said intersected inner conductor layers being recessed radially outwardly from said hole, and plating in said hole, said plating having a protruding portion extending radially outwardly from said hole in the plane of each of said inner intersected conductor layers and each of said portions being electrically and mechanically connected to the radially recessed inner intersected conductor configuration in its plane and being supported above and below by adjacent insulating sheets.

3,301,940
FLEXIBLE CABLE BUS DUCT INCLUDING GROUNDING MEANS AND TELESCOPICALLY ENGAGING TUBULAR MEMBERS PERMITTING EXPANSION AND CONTRACTION

Robert A. Rischard, Yonkers, N.Y., and John E. Jessup, Hamden, Conn., assignors to Anaconda Wire and Cable Company, New York, N.Y., a corporation of Delaware

Filed Apr. 1, 1964, Ser. No. 356,616
5 Claims. (Cl. 174—78)

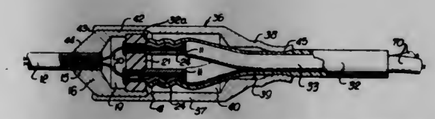


1. A flexible bus duct unit comprising:
(a) a first end section having a tubular body and connecting means at one end thereof for joining said bus duct to other units;
(b) an intermediate section connected to said first end portion comprising a plurality of telescopically connected tubular members each of which has a tail portion with a substantially uniform cross section, a tapered neck portion adjacent to said tail portion, and a bulging front portion adjacent to said neck portion adapted to insert into the tail section of a similar tubular member, said front portion having a curved outer surface along the longitudinal axis of said tubular member providing a maximum outer cross-sectional area substantially equal to the inner cross-sectional area of said tail portion of a similar unit;
(c) a second end section connected to said intermediate section having a tubular body and connecting means for connecting said bus duct unit to other units; and
(d) electrical conductive limiting means at the outer surface of said bus unit limiting the expansion of said members and simultaneously grounding each member of said bus duct unit.

3,301,941
ELECTRIC WIRE JUNCTION

Frank L. Christensen, Saratoga, Calif., assignor to Tempress Research Co., Sunnyvale, Calif., a corporation of Utah

Filed Mar. 31, 1964, Ser. No. 356,285
6 Claims. (Cl. 174—88)



1. In an electric wire junction: a terminal member having a passage; an insulated support in said member; a conductive tube secured to said support; a first sheath in said passage secured to said terminal member; a first electrical conductor extending from said sheath and disposed in said tube from one end thereof; a second sheath adjacent to said tube and having a second electrical conductor extending therefrom and disposed in said tube from the opposite end thereof; said tube being mechanically connected to the portions of said first and second electrical conductors disposed therein; insulating means disposed over said tube; and a jacket surrounding said terminal member, tube and second sheath and secured to said terminal member and second sheath to transmit mechanical forces between said first sheath and second sheath.

3,301,942
INSULATING WASHER

Paul R. Lee, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 29, 1965, Ser. No. 443,361
3 Claims. (Cl. 174—138)

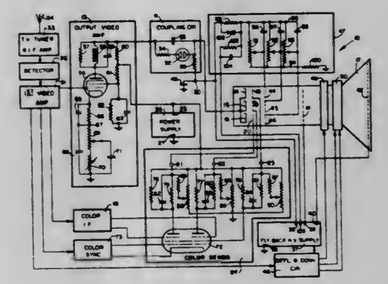


1. A washer structure comprising: a circular body of relatively brittle material having substantially parallel faces and an axial bore therethrough, concentric tenons on one of said faces, bearing members equally spaced on the end of one of said concentric tenons, an equal number of bearing members on the other face of said circular body, each of the bearing members on said tenon being directly in line with one of the bearing members on said other face.

3,301,943
COLOR TELEVISION RECEIVER BIASING ARRANGEMENT

Robert B. Hansen, Arlington Heights, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Sept. 29, 1964, Ser. No. 400,141
8 Claims. (Cl. 178—5.4)



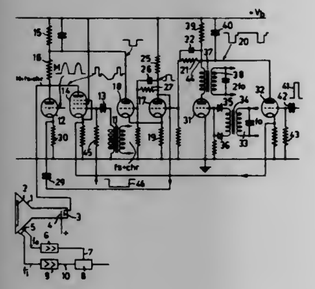
1. In a color television receiver, video amplifier means having an output terminal, color demodulator means having a plurality of output terminals, a color cathode ray tube having a plurality of cathodes and associated control grids, direct current coupling means between said color demodulator means output terminals and said control grids, and coupling means connected between said output terminal of said video amplifier means and said cathodes for providing direct current signal coupling

while biasing said cathodes at a higher positive potential level than that of said output terminal of said video amplifier means.

3,301,944
CIRCUIT ARRANGEMENT FOR USE IN A COLOUR TELEVISION RECEIVER

Bernardus Henricus Jozef Cornelissen and Hendrik Brelmer, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 10, 1963, Ser. No. 307,877
Claims priority, application Netherlands, Sept. 12, 1962, 283,158
5 Claims. (Cl. 178—5.4)



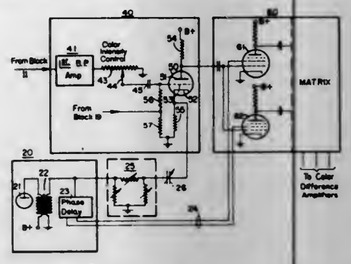
1. In a color television receiver of the type having an indexing cathode ray tube with a screen, and an electron gun for directing an electron beam to said screen, and said screen has run-in strips on one side thereof, and indexing strips and color strips in the image area thereof, whereby said electron beam impinges on said run-in strips before said indexing strips during each horizontal deflection, and means for producing run-in signals and indexing signals when said beam is directed toward said run-in strips and indexing strips respectively, said receiver comprising a source of monochrome signals, frequency dividing means for converting said indexing signals to a switching signal, a source of color signals modulated on said switching signal, gate circuit means for applying said monochrome signals to said electron gun, means for applying said color signals modulated on said switching signal to said electron gun for modulating said beam, and control circuit means for controlling said gate circuit means, said control circuit means comprising bistable circuit means, means responsive to the starting of said dividing circuit during a horizontal deflection period for setting said bistable circuit means to one stable state, and means for setting said bistable circuit means to the other stable state during the time between the end of a horizontal deflection and the beginning of the next horizontal deflection, whereby said monochrome signal is continuously applied to said electron gun after the first starting of said dividing means during each horizontal deflection.

3,301,945
AUTOMATIC COLOR TEMPERATURE CONTROL

Leonard Dietch, Skokie, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed July 1, 1964, Ser. No. 379,485
10 Claims. (Cl. 178—5.4)

1. In a color television receiver having color signal translation channel means for translating color signal information, including phase modulated components of a suppressed carrier and a reference phase component; chromatic display means coupled to the output of said color signal translation means; means generating a continuous wave signal under control of said reference phase component for demodulation of said phase modulated components; and means synthesizing and adding another

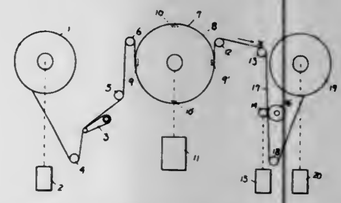


color signal of desired characteristics to said modulated components for augmenting the color display of said chromatic display means.

3,301,946
CONTROL SYSTEM FOR MAGNETIC RECORDING DEVICE

Kenjiro Takayanagi, Tokyo, Japan, assignor to Victor Company of Japan, Ltd.

Filed June 5, 1962, Ser. No. 200,209
Claims priority, application Japan, June 21, 1961, 36/22,143
4 Claims. (Cl. 178—6.6)



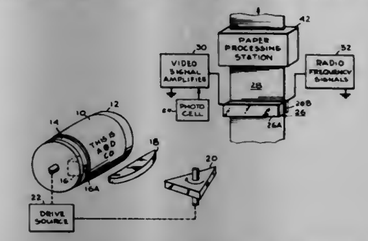
1. A control system comprising a means for recording a video signal in parallel oblique tracks on magnetic medium by means of a magnetic recording head, signal means for providing two pulses on the same transverse sweep of a recording track, a means for picking up in sequence two pulses which differ in timing from predetermined two points in a recorded track by reproducing the recorded track where being recorded the video signal by means of a magnetic reproducing head, a rotary member being provided with said recording head and reproducing head on its circumference, a driving source for driving and rotating said rotary member, a means for comparing a time interval of those two pulses picked up by said picking up means and a control means for controlling a rotating speed of said rotary member driven by said driving source in accordance with an output of said comparing means.

3,301,947
ELECTROSTATIC IMAGE COPIER HAVING PHOTOCONDUCTIVE ELEMENT SWITCHING

Joseph J. Stone, Glenview, Ill., assignor to A. B. Dick Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 1, 1963, Ser. No. 269,671
5 Claims. (Cl. 178—6.6)

1. In a system for converting a light image to a charge pattern on a writing medium, employing an electrostatic image transducer of the type comprising a plurality of photoconductive elements each of which is in the electrical curent path employed for depositing electrostatic charges on said medium representative of light image variations, the improvement comprising a source of electrical current, a single photocell connecting said source of electrical current to all of said photoconductive elements, a source of light having a fixed level of illumination, and means for successively illuminating said photoconductive elements with light from said light source while applying

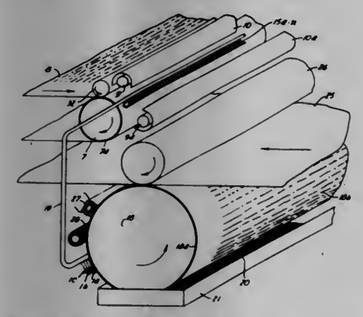


light from successive picture elements to said single photocell for controlling the current flowing successively through each photoconductive element from said current source responsive to light variations.

3,301,948
FACSIMILE APPARATUS

Joachim H. Todt, 5801 Rolling Hills Road, Fort Wayne, Ind. 46804

Filed Sept. 11, 1963, Ser. No. 308,227
11 Claims. (Cl. 178—6.6)

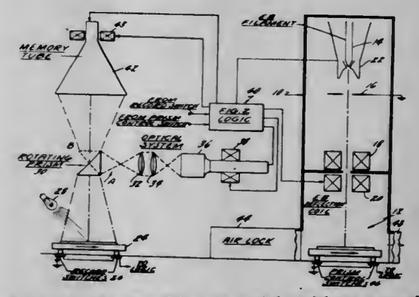


6. Facsimile apparatus comprising:
(a) a plurality of photosensitive devices adapted to scan an image formed on a smooth surface medium, said photosensitive devices disposed in communicating relationship with such medium and aligned in a row transverse to the direction of movement of such medium;
(b) a drum rotatably mounted and having a homogeneous magnetic recording surface of high retentive magnetic material for receiving and retaining a plurality of magnetic tracks formed therein;
(c) a plurality of single pole recording styli of low loss magnetic material aligned radially with respect to said drum and disposed in a row transversely thereto and in spaced relation therefrom to form an air gap and produce a corresponding number of magnetic tracks on said drum;
(d) a plurality of current amplifying devices electrically connected between said plurality of single pole reading styli and the corresponding plurality of photosensitive devices;
(e) a source of visible fine magnetic particles disposed in communicating relationship with said drum to form visible images created by said magnetic particles adhering to said plurality of magnetic tracks formed in said magnetic recording surface of said drum;
(f) and a pressure control device disposed in communicating relationship with said drum and adapted to have an image transfer medium pass between said drum and said pressure control device, said device urging such transfer medium into image receiving relationship so that the image on said drum is transferred to such transfer medium when said drum is rotated.

3,301,949
STORED IMAGE CONTROL SYSTEM FOR BEAM MACHINING

Lee R. Ullery, Jr., Simsbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Mar. 2, 1964, Ser. No. 348,634
8 Claims. (Cl. 178—6.8)



1. Apparatus for working an article with an energized beam comprising:
means for generating an energized beam,
means for modulating said beam,
means for deflecting the modulated beam,
means for supporting an article to be worked by said beam,
means for projecting an image of the article to be worked when said supporting means is located at a first position spatially displaced from said beam generating means,
means for scanning said projected image and generating signals commensurate therewith,
an image storage device,
means applying said signals commensurate with the projected image to said storage device whereby an image of the article to be worked is stored,
means responsive to the repositioning of said supporting means generally in line with said beam generating means for scanning said stored image and generating signals commensurate therewith,
means responsive to said signals commensurate with the stored image for generating beam control signals, and
means for applying said beam control signals to said beam modulating means whereby an image of the article to be worked may be stored and the article supporting means thereafter positioned generally in the path of the beam where work is performed thereon by the beam in response to the scanning of the stored image.

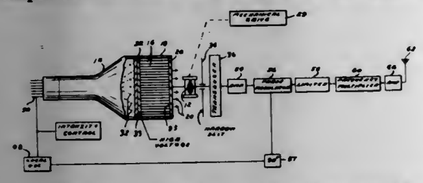
3,301,950
MODULATED LIGHT SOURCE FOR ELECTRO-OPTICAL ANALYSIS OF SPECTRAL LINES

Radames K. H. Gebel, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed Oct. 26, 1964, Ser. No. 406,633
2 Claims. (Cl. 178—7.2)

1. A system for transmitting spectrographic information comprising: a source of substantially collimated light, oscillator means coupled to said source for alternately increasing and decreasing the brightness of the light about a mean level at a high frequency carrier rate, masking

means at the viewing surface end of said source opaque to said light except along a narrow oblong slit therein, a spectrogram in the form of a photographic film disposed to be illuminated by light passing through said slit, said film having a wavelength axis perpendicular to the major axis of said slit and including spectral lines perpendicular to said wavelength axis, transducer means for converting light input thereto into an electrical signal proportional to the light intensity, slit means placed between said film and said transducer means for imaging the illuminated spectral lines on said transducer means, means for moving said film relative to said slit means at constant speed and in the direction of said wavelength axis, whereby said electrical signals at the output of said transducer means are amplitude modulated according to the frequency dis-

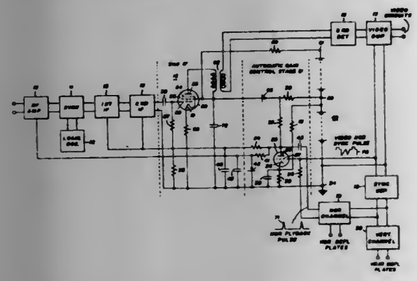


tribution of the individual spectral lines, an amplifier receiving said amplitude modulated electrical signals, phase shift means coupled to said oscillating means for shifting the carrier wave thereof by ninety degrees, phase modulating means coupled to said amplifier and to said phase shifting means for generating from the two phase quadrature related carrier waves a carrier wave modulated both in amplitude and phase, limiting means coupled to the output of said phase modulating means for removing the amplitude modulation fluctuations from said double-modulated carrier wave, multiplying means receiving the phase modulated wave from said limiting means for increasing the carrier frequency of said phase modulated wave, an antenna, and amplification means feeding into said antenna from said multiplying means.

3,301,951
NON-BLOCKING KEYED AUTOMATIC GAIN CONTROL SYSTEM

John G. Humphrey, Mattydale, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 18, 1963, Ser. No. 324,301
1 Claim. (Cl. 178—7.3)

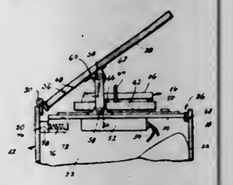


In a television receiver a channel including a plurality of stages for amplifying a carrier modulating video signal, the last stage including an electron discharge device having a cathode, a grid, a screen grid, a suppressor grid and an anode connected as an intermediate frequency amplifier with output being derived between the anode and the screen electrodes thereof, a detector for deriving a video signal from the output of said channel, means for deriving a unidirectional voltage from the output of said detector varying in magnitude in accordance with the amplitude of said video signal, said last stage drawing large screen and anode currents during the coincidence of high gain and strong signal conditions, an automatic gain control stage, means for applying horizontal synchronizing pulses and the output of said detector to said automatic gain control stage, means for deriving from said automatic gain control stage another unidirectional voltage which varies in magnitude in accordance with the peak amplitude of the video signal during the horizontal synchronizing interval, a resistance voltage divider having a pair of input and a pair of output terminals, means for applying said other unidirectional voltage across said input terminals, means for connecting the output terminal to the initial stage of said channel to control the gain thereof, means for applying said other unidirectional voltage to one of said divider input terminals in a polarity to vary the gain of said channel inversely in accordance with the amplitude of said video signal, means responsive to screen and anode currents to develop a third unidirectional voltage, means for applying said third voltage to said divider during the occurrence of said condition to change the magnitude of the output of said divider to produce low gain in said channel, whereby high gain and strong signal conditions in said channel which produce low video output therefrom are avoided.

3,301,952
COMBINATION TELEVISION PHONOGRAPH ASSEMBLY

Israel Reznik, 132 Ludlow St., New York, N.Y. 10002

Filed Apr. 20, 1964, Ser. No. 361,186
6 Claims. (178—7.9)



1. A television set and phonograph assembly comprising a rectangular casing for a television set, said casing having front, rear, side and bottom walls, the front, rear and side walls defining an open top, a cover hingedly connected to the rear wall for closing said open top, a phonograph pivotally connected between the cover and top of the front wall, means connected to the cover and the phonograph for holding the phonograph in operative position, and a spring-pressed ball detent carried by the phonograph, said rear wall of the casing having a semi-spherical recess for receiving the ball detent.

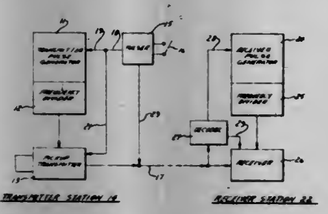
3,301,953
SYNCHRONIZED TELETRANSMISSION SYSTEM WHICH DOES NOT REQUIRE THE TRANSMISSION OF CONTINUOUS SYNC INFORMATION TO MAINTAIN SYNCHRONIZATION

Walter Mayer, Furth, Bavaria, Germany, assignor to Grundig Elektro-Mechanische Versuchsanstalt, Furth, Bavaria, Germany

Filed Oct. 29, 1964, Ser. No. 407,452
Claims priority, application Germany, Oct. 30, 1963, G 39,062
5 Claims. (Cl. 178—69.5)

1. A teletransmission system comprising, in combination, a transmitter station for transmitting a picture, said transmitter station including picture transmitting means, transmitter pulse generating means for generating picture line frequency synchronizing pulses connected to said picture transmitting means to control the transmission of a picture thereby, and pulsing means connected to said pulse generating means and to said picture transmitting means for providing a starting pulse to start operation

of said pulse generating means and of said picture transmitting means; a receiver station for receiving a picture, said receiver station including picture receiving means, and receiver pulse generating means for generating picture line frequency synchronizing pulses substantially identical to those generated by said transmitter pulse generating means, said receiver pulse generating means being connected to said picture receiving means to control the reproduction of a picture thereby; and transmission means

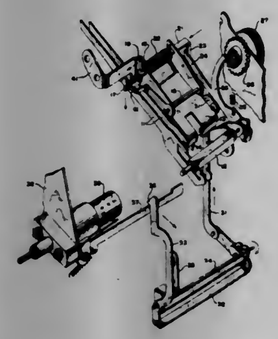


for transmitting a picture from the picture transmitting means of said transmitter station to the picture receiving means of said receiver station and for transmitting a start pulse from the pulsing means of said transmitter station to said receiver at said receiver station, at the time of start of transmission only for starting independent operation of said receiver pulse generating means so that said picture receiving means is controlled by said receiver pulse generating means only and without periodic transmission of synchronizing impulses from said transmission station.

3,301,954
BLANK DELETER

James J. Krakusky, Ridgewood, N.Y., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York

Filed May 7, 1963, Ser. No. 278,641
4 Claims. (Cl. 178—92)

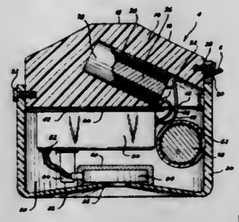


1. Blank deleter means for a reperforator of the kind having a ratcheting feed roller, a movable feed pawl on the ratchet, and a plurality of energizable punch slides arranged for actuation of the feed pawl after energization of any punch slide, which comprises rotatably mounted tailed sensing vane means having a movable portion located in the path of travel of the punch slides, resiliently biased slidable means normally urged into pawl motion blocking relationship with the feed pawl, and crank lever means engaged by said tail of said sensing vane means and engaging said slidable means for feed pawl release upon punch slide motion.

3,301,955
TELEPHONE AMPLIFIER

Clarence J. Clements, Jr., Silver Spring, Md., assignor to Prototypes, Incorporated, Kensington, Md., a corporation of Maryland

Filed May 14, 1963, Ser. No. 280,251
3 Claims. (Cl. 179—1)

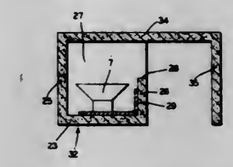


1. A telephone amplifier device for use with a telephone receiver having a front face and a diaphragm therein adjacent said front face and defining a reference plane, said amplifier comprising: a body means for releasably holding said body with one surface thereof in fixed position against said front face; a magnetic pick-up coil in said body adjacent said one surface and fixed therein with its polar axis arranged at an oblique angle to said reference plane; amplifying means in said body; a miniature speaker in said body and arranged to radiate sound from the side of said body opposite said one surface; and circuit means connecting said pick-up coil to the input of said amplifying means and connecting the output of said amplifying means to said speaker, said speaker including an electromagnet energized by said amplifying means output; and ferromagnetic shield means between said speaker and said amplifying means and between said pick-up coil and said amplifying means whereby to minimize feedback coupling between said speaker and said pick-up coil.

3,301,956
SOUND SYSTEM FOR BANKING SERVICE EQUIPMENT

Newton J. Krug and George R. Bechtel, Canton, Ohio, assignors to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio

Filed June 11, 1963, Ser. No. 287,038
5 Claims. (Cl. 179—1)

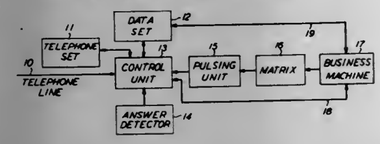


1. In banking service equipment having a customer's station and having walls forming a teller's station beyond direct oral communication with the customer's station, audio means for providing indirect communication between the stations and including a teller's microphone and a speaker at the teller's station and a customer's microphone and speaker at the customer's station; the combination therewith of a box-like enclosure for each speaker, the enclosure having opposite side, top, bottom, front, and rear walls, the front wall having a sound outlet opening, the inner surfaces of the walls being composed of a sound-absorbent material, whereby sound waves emanating from the speaker are partially absorbed at and are partially reflected from the various walls of the enclosure before passing through the opening.

3,301,957
UNATTENDED AUTOMATIC DIALING OF TELEPHONE NUMBERS

Paul J. Germond, Wall, and Karl L. Mayer, Lincroft, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 6, 1962, Ser. No. 242,765
10 Claims. (Cl. 179—3)

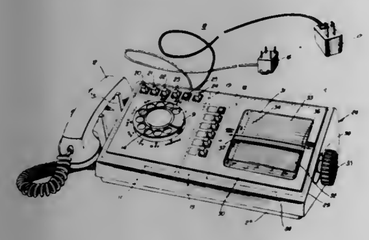


1. An automatic digit dialing control system comprising
a telephone line,
apparatus capable of processing intelligence over said telephone line and storing within itself the call digits of selected telephone subscribers in binary-coded decimal form,
means responsive to a request-for-service signal from said apparatus for seizing said telephone line,
means for outpulsing the successive call digits of a particular telephone subscriber in a normal dialing sequence,
means interconnecting said apparatus and said outpulsing means for translating successive call digits from binary-coded decimal form to a form usable by said outpulsing means, and
means connecting said apparatus to said telephone line upon completion of a dialing sequence.

3,301,958
MAGNETIC REPERTORY CALLER

William W. Blakeslee, Raritan, Philip J. Grunfelder, Mountainside, Edmund K. Nadolny, Ramsey, and Laurin L. Sevebeck, Mountainside, N.J., and Rudolf E. Vogeli, Brooklyn, N.Y., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 12, 1963, Ser. No. 301,479
9 Claims. (Cl. 179—6)

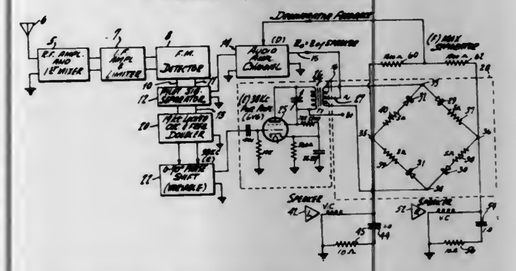


1. In an apparatus for storing information:
an endless magnetic storage belt mounted for motion along a closed path;
a transducer recording head mounted adjacent to said magnetic storage belt for motion transverse to said closed path;
an endless index belt;
means for mounting said endless index belt for motion relative to and encircling said endless magnetic storage belt to receive and store visible information thereon;
means for moving (1) said endless index belt relative to said endless magnetic storage belt, and (2) said transducer recording head means transverse to said closed path; and
means for moving said endless magnetic storage belt along said closed path relative to said transducer recording head means to record and store information on said endless magnetic storage belt.

3,301,959
FM STEREO HIGH LEVEL DEMODULATING SYSTEM

Richard Jenkins, Glenside, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Jan. 15, 1964, Ser. No. 337,777
2 Claims. (Cl. 179—15)

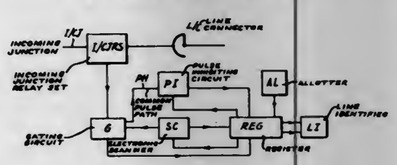


1. A frequency modulated stereophonic receiver comprising:
circuit means for demodulating a received composite stereophonic frequency modulated signal to recover its modulation components,
a single audio frequency amplifier channel including a wide band audio power amplifier coupled to said circuit means to receive said recovered components,
a tuned power amplifier tuned to a predetermined frequency coupled to said circuit means,
a high level demodulator circuit coupled to said audio power amplifier and to said tuned power amplifier for providing at respective first and second output terminals first and second high level stereophonically related audio output signals, the level of said output signals being sufficient to drive directly audio reproducing loudspeakers,
first and second loudspeakers directly connected respectively to said first and second output terminals, and
negative feedback means coupled to said first and second output terminals for developing a feedback signal proportional to the sum of said stereophonically related signals and for applying said feedback signal to said audio power amplifier.

3,301,960
AUTOMATIC TELEPHONE EXCHANGE SYSTEMS

Bloomfield James Warman, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Dec. 13, 1962, Ser. No. 244,333
Claims priority, application Great Britain, Jan. 2, 1962, 166/62
10 Claims. (Cl. 179—18)

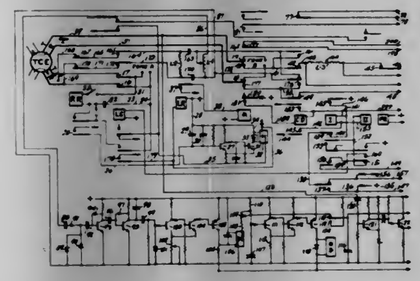


1. An automatic telephone exchange system comprising an exchange, lines connected to said exchange, incoming junctions included in said lines, incoming junction relay sets terminating said incoming junctions and individual to said junctions, registers to which access can be afforded to calling incoming junctions for the purpose of storing the identities of calling incoming junctions and called lines' numbers, electronic scanning means for producing scanning pulses, gating circuits associated, respectively, with incoming junctions and to which scanning pulses are fed in succession from said electronic scanning means, and common signal path means to which signals are transmitted when said gating circuits are conditioned to permit of the passage therethrough of said scanning pulses in the looped condition of their appertaining incoming junctions, initially for the seizure of a free register which registers the identity of the appertaining calling incoming junction and, subsequently, for the supervision and counting in the seized register of dialled impulses received over the calling incoming junction for registering the called line's identity in the seized register.

3,301,961
AUTOMATIC TELEPHONE CALL TRANSLATING AND FORWARDING APPARATUS

Martin A. Odom, 302 Oakland Ave., Oakland, Calif. 94611

Filed Apr. 9, 1963, Ser. No. 271,626
6 Claims. (Cl. 179—18)



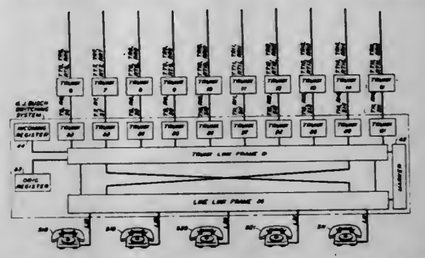
1. An automatic call forwarding system for a subscriber's telephone installation having a first and a second line to the central exchange comprising, in combination,
(a) a first signal detector coupled to said first line and responsive to incoming ringing signals thereon,
(b) first switching means actuated by operation of said first signal detector to close the circuit of said second line,
(c) a second signal detector responsive to dial tone on said second line,
(d) a dialing impulse generator for transmitting a preselected sequence of dialing impulses over said second line, said dialing impulse generator being actuated by operation of said second signal detector, and
(e) a second switching means coupling said first and second lines for transmission of voice signals therebetween following operation of said dialing impulse generator.

3,301,962
DIRECTIONAL CONFERENCE SYSTEM

William J. McKelvey, Middletown, and Milton E. Ozenberger, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 29, 1963, Ser. No. 276,544
20 Claims. (Cl. 179—18)

1. In a communication system,
selectively operable control means,
a plurality of subscriber lines,
a plurality of conference link circuits,
each of said link circuits comprising a main terminal,
a plurality of subordinate terminals,
means for enabling transmission from a line connected to said main terminal to lines each exclusively connected to distinct ones of said subordinate terminals

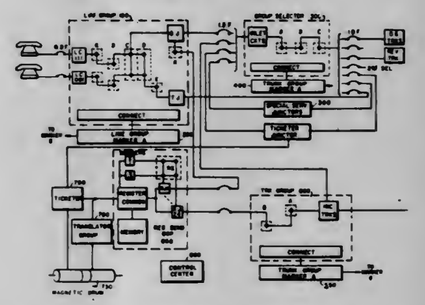


and for enabling transmission from said lines each exclusively connected to said distinct subordinate terminals only to said line connected to said main terminal.

3,301,963
REGISTER-SENDER ARRANGEMENT FOR A COMMUNICATION SWITCHING SYSTEM COMMON CONTROL ARRANGEMENT

David Kwok Kang Lee and Howard L. Wirsing, Chicago, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Sept. 11, 1963, Ser. No. 308,112
16 Claims. (Cl. 179—18)



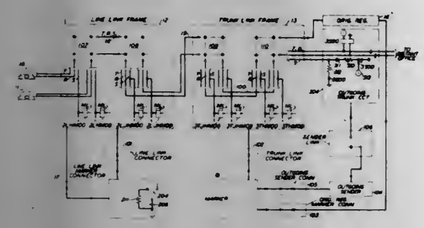
1. In a communication switching system comprising a plurality of switching groups, with marker apparatus for controlling the establishment of connections through said switching groups; having register-sender apparatus comprising register means and a plurality of senders; having translating means common to said plurality of switching groups, and means for transferring information directly between the register means and the translator means; having means including the marker apparatus, responsive to a calling line service request signal for identifying the calling line and connecting it to the register means; having means for transmitting the information identifying the equipment location number of the calling line from the marker apparatus to the register means for registration therein; and having means for registering in said register means the called line directory number as transmitted over the calling line and for translating, under the control of said translating means, at least a part of said directory information into corresponding equipment location information; there being included in the information returned from the translator a revertive call item designating whether or not the called line is possibly on the same line as the calling line:
a parity checking arrangement included in the register means to compare the calling line equipment location number as stored in the register with the called line equipment location number as received from

the translator to generate a revertive call signal responsive to these numbers being identical, internal translation means responsive to coincidence of the revertive call item from the translator and the revertive call signal from the parity checking arrangement to supply switching information which is transmitted via one of said senders to marker apparatus to cause a connection from the line on which said calling and called parties appear to be completed to a revertive call trunk circuit.

3,301,964
SYSTEM FOR RELEASING MAGNETIC LATCHING CROSSBAR SWITCHES IN WHICH HOLD MAGNETS ARE INTERCONNECTED OVER CROSSPOINT CONTACTS OF THE PRECEDING SWITCH

Edson L. Erwin, Towaco, N.J., assignor, by mesne assignments, to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 9, 1963, Ser. No. 328,990
10 Claims. (Cl. 179—25)

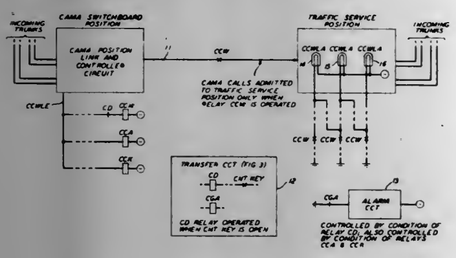


1. A telephone crossbar switching system including a plurality of tandemly connected switching stages, each of said stages including a plurality of crosspoint contacts, normally defluxed magnetic actuating means for selectively operating said contacts and for magnetically latching said contacts in the operated condition, and means for delivering a release current to all of said magnetic means to deflux said magnetic means prior to the release of said contacts.

3,301,965
TRANSFER CIRCUIT WITH ALARM FACILITIES

Charles E. Germanton, Summit, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 23, 1963, Ser. No. 318,426
9 Claims. (Cl. 179—27)

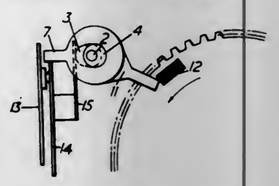


1. In a tandem switching center for interconnecting incoming trunks with outgoing circuits extending to called lines at a terminating office, a service position, a switchboard position, means for connecting said incoming trunks to said positions, a line connecting said switchboard position and said service position, a transfer circuit at said service position, said transfer circuit including a relay and a control switch operable between open and closed position, means effective when said switch is in open position for operating said relay and effective when said switch is in closed position for releasing said relay, means effective when said relay is in operated position for opening said line whereby to prevent the connection of calls thereover from said switchboard position to said service position, a second relay, said second relay being normally operated, means effective both when said first-mentioned relay remains released following opening of said switch and when said first-mentioned relay remains operated following closure of said switch for releasing said second relay, an alarm, and means effective upon release of said second relay for operating said alarm.

3,301,966
CALL TRANSMITTER

Frans Alfons Bekaert, Antwerp, Belgium, assignor to International Standard Electric Corporation, a corporation of Delaware

Filed Sept. 5, 1963, Ser. No. 306,754
Claims priority, application Netherlands, Sept. 12, 1962, 283,122
4 Claims. (Cl. 179—90)



1. A telephone dial pulsing mechanism comprising a gear train mounted to rotate in either a forward or a reverse direction, a pair of flexible contact spring members for producing pulses during gear train rotation in said reverse direction, cam means, means mounted on a first gear in said gear train spring actuating means, cam means abutting said cam means and contiguous to said spring members for repeatedly flexing said spring members in unison as said cam means rotates whereby said springs remain in electrical contact with each other as they flex, immobilizing means normally continguous to one of said spring members during the gear motion in said reversed direction for immobilizing said one of said spring members during the gear motion in said reverse direction whereby said springs repeatedly separate to break electrical contact with each other as the non-immobilized spring flexes, and negating means effective a predetermined distance from the end of said gear motion in said reverse direction for moving said immobilizing means from said contiguous relationship to said one of said spring members for negating said immobilizing means whereby said springs remain in electrical contact with each other as they flex during the remainder of said gear motion.

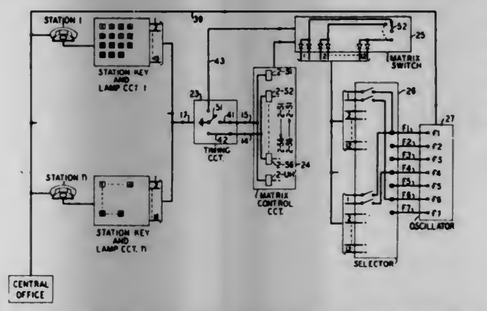
3,301,967
AUTOMATIC CALL TRANSMITTER FOR REPERTORY DIALING USING MULTIFREQUENCY PULSES

Roger A. Plyer, Vienna, Va., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

Filed Sept. 11, 1963, Ser. No. 308,128
11 Claims. (Cl. 179—90)

1. An automatic dialer for use in a telephone system to automatically call any one of a group of distant stations comprising a plurality of keys, each of which corresponds to a particular distant station, a group of step-

ping relays common to all of said keys for stepping first in a forward direction and subsequently in a reverse direction, means responsive to the actuation of a particular one of said keys to initiate and control said stepping relays, a

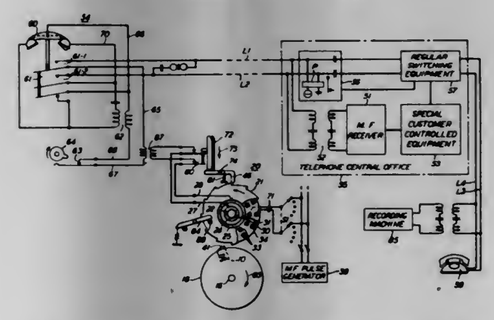


group of conductors, means responsive to said relays for applying a coded sequence of voltage pulses to said conductors, and oscillator means responsive to said coded sequence of voltage pulses for generating telephone address signals.

3,301,968
TELEPHONE SIGNALING DEVICE

Francis K. Wurst, Scotch Plains, N.J., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

Filed Dec. 9, 1963, Ser. No. 329,020
12 Claims. (Cl. 179—90)



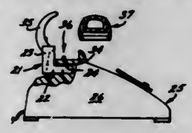
1. A telephone signaling device comprising a dial having a normal position and rotatable in a first direction to selected off-normal positions and rotatable in a second direction from said selected off-normal positions to said normal position, first means controlled by said dial for each successive rotation to a selected off-normal position for sequentially transmitting a selected signal in a series of first signals comprising a word group, said first means including means for selecting from a plurality of signals said first signals independently of said off-normal position, and second means controlled by said dial when rotated from a selected one of said off-normal positions to said normal position for transmitting a second signal indicative of said selected off-normal position.

3,301,969
TELEPHONE GUARD

Gertrude R. Darling and William V. Darling, both of 314 S. Wateka St., San Jacinto, Calif. 92383

Filed Sept. 23, 1963, Ser. No. 310,637
5 Claims. (Cl. 179—189)

1. A telephone guard for preventing the undesired removal of a telephone handset from a telephone cradle of a telephone of a type having an underlying base portion provided with said cradle adapted to carry said handset thereon, said base portion being provided with a finger-receiving recess means adapted for use in manually lifting and carrying the entire telephone, comprising: base means provided with a substantially transversely projecting bottom insertion portion arranged to be inserted into the finger-receiving recess means of the telephone base portion and to engage same in a retaining manner whereby to be retained and mounted with respect to the telephone base portion, said base means being provided with an upwardly directed portion provided with and pivotally carrying a locking member arranged to be positioned ad-

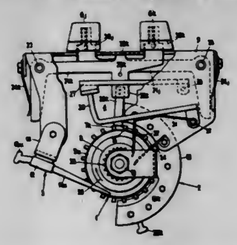


jacent to the cradle of the telephone and the handset arranged to be received thereon, said locking member being pivotally movable between an open disengaged position with respect to the handset and an engaged locking position with respect to the handset lying substantially over the top of same whereby to retain the handset on the cradle, said upright member of said base means being provided with latch means and an adjacent portion of said locking member being provided with corresponding catch means cooperable with said latch means for retaining said locking member in said engaged locking position until controllably manually unlatched.

3,301,970
DATA STORAGE ARRANGEMENTS

Arthur Edward Harrold, Hurworth on Tees, England, assignor to The General Electric Company, Limited, London, England

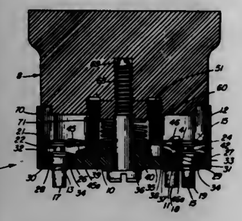
Filed Oct. 29, 1965, Ser. No. 505,620
17 Claims. (Cl. 200—5)



1. A data storage arrangement comprising first support means, second support means, drive means carried by said first support means and coupled to said second support means for moving said second support means relative to said first support means upon each actuation of that drive means, a plurality of resilient members which are carried by one of said support means and which each has a normal position and a deflected position, a plurality of deflecting members which are carried by the other one of said support means and which are actuable each to displace a different one of said resilient members from its normal position to its deflected position, a plurality of interposing members which are carried by said other one of said support means and each of which is interposed between the normal and deflected positions of a different one of said resilient members upon the relative movement between said support means that results from the actuation of said drive means whereby any resilient member deflected by its deflecting member engages and is held deflected by the associated interposing member independently of that deflecting member, a plurality of push-type

operating members which are actuable manually to enter data to be stored and coupling means which couples said operating members selectively to said deflecting members and in common to said drive means whereby, upon the actuation of any operating member, at least one resilient member is deflected by its deflecting member and the drive means is actuated to obtain the engagement of that resilient member with its associated interposing member.

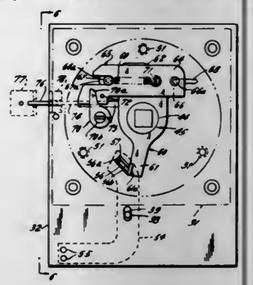
3,301,971
ELECTRIC SWITCH WITH IMPROVED DISK AND CONTACT STRUCTURE
David W. Johnson, Newington, Conn., assignor to The Arrow-Hart & Higeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed June 30, 1965, Ser. No. 468,366
16 Claims. (Cl. 200—11)



1. A rotary switch comprising:
a cylindrical base having a bottom and a side wall, said bottom having a central hub, a ring about said hub, said ring and said hub defining an annular channel and a strut extending across said channel from said ring to said hub;
a primary fixed contact in said base and a plurality of secondary fixed contacts in said base, each of said fixed contacts having a disc shaped contacting element;
a movable contact assembly comprising a bifurcate arcuate section for engaging the disc shaped element of the primary fixed contact and a bifurcate finger for engaging the disc-like members of the secondary contacts;
a hollow cylindrical drive member having a fluted section and a positioning section, said positioning section fitting in the annular channel of said base and having means engaging the movable contact assembly whereby rotation of said drive member causes rotation of the contact assembly;
a leaf spring seated in said base and engaging the fluting of the drive member to provide indexing when said drive member is rotated;
a handle having a socket engaging the fluted section of the drive member, whereby turning said handle turns said drive member;
a helical spring in said hollow drive member pressing upon said movable contact assembly; and
a bolt passing through the hub of said base and threaded in said handle to hold said handle to said base against the action of said helical spring.

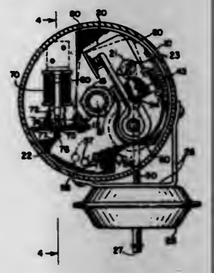
3,301,972
ROTARY HANDLE MECHANISM INCLUDING LINKAGE SYSTEM WITH RECIPROCATING CIRCUIT BREAKER HANDLE
John C. Brumfield, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 25, 1966, Ser. No. 530,029
10 Claims. (Cl. 200—17)

1. A unit for converting rotational movement of an operating handle to generally straight line motion of a circuit breaker handle; said unit comprising a frame adapted to be mounted to a circuit breaker housing; a first and second linkage means mounted to said frame; joining means pivotally connecting said first and second linkage means at first regions thereof; a pivot means mounted to said frame and rotatable through rotation of an operating handle positioned forward of said unit; a second region of said first linkage means being connected to said pivot means, whereby rotation of said pivot means effects rotation of said first linkage means; a second region of said second linkage means being pivoted to said frame about a stationary axis generally perpendicular to a plane



of motion for said second linkage; said second linkage means including translating means having a portion positioned to engage and impart generally straight line motion to a circuit breaker handle engaged thereby responsive to rotational motion of said pivot means and said first linkage means; said portion comprising an ear projecting transverse to said plane; said ear including a convex surface for engagement with a circuit breaker handle; said joining means being movable to a position wherein said pivot means is disposed between said joining means and said stationary axis.

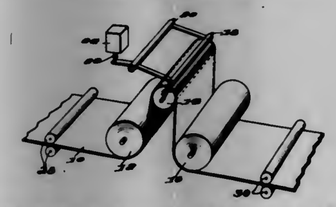
3,301,973
DISTRIBUTOR WITH VACUUM AND ELECTRO-MECHANICAL ADVANCE
Louis A. Bevacqua, Des Plaines, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 7, 1965, Ser. No. 446,327
8 Claims. (Cl. 200—31)



1. An electromechanical advance mechanism for use with an ignition timer for an automobile engine and for actuation by the engine starter switch and by vacuum taken from the automobile engine which varies in the same sense as the engine r.p.m., the mechanism including in combination, a first fixed plate, a breaker plate rotatably mounted with respect to said first plate, spring means coupled to said breaker plate and tending to hold the same in a given position to retard the engine ignition timing past the optimum position for starting the engine, electromagnet means mounted on said fixed plate and coupled to said breaker plate from said retarded position to advance spring means with respect to said first fixed plate, a vacuum actuated diaphragm, and linking means coupling

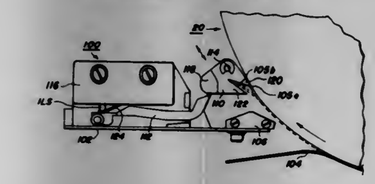
said diaphragm to said breaker plate, said electromagnet being coupled to and initially energized in response to operation of the engine starter switch and acting to rotate said breaker plate from said retarded position to advance the engine ignition timing to an optimum position for starting the same, said spring means acting to return said breaker plate to said retarded position with the engine idling and upon de-energizing of said electromagnet to reduce the emission of hydrocarbons from the engine, said diaphragm being responsive to vacuum produced by the engine when operating above idling speed, and acting through said linking means to move said breaker plate to advance the engine ignition timing.

3,301,974
DEFECT SENSING DEVICE
Jack Arnet Hancock, Nashville, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,057
1 Claim. (Cl. 200—61.13)



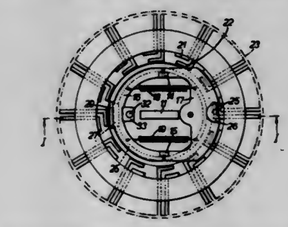
An apparatus for detecting stiff segments in filamentary tow of substantially uniform thickness which comprises:
(1) roll means having a diameter of no more than about 1½ inches,
(2) means to place a tension of from about 0.002 gm./denier to about 0.006 gm./denier on said filamentary tow,
(3) means to forward the tensioned filamentary tow around said roll means at above a 45° advance wrap angle,
(4) a floating shoe operably disposed a predetermined distance from the outer periphery of said roll means to signal a response when a leading edge of a stiff segment of filamentary tow rises away from the surface of said roll means, and
(5) switch means positioned relative to said floating shoe and actuated thereby.

3,301,975
SENSING DEVICE FOR DETECTING A SHEET ON A TRANSPORT OR DRUM
Raymond H. Camp, Cinderford, and Albert S. Pratt, Churchdown, England, assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 7, 1965, Ser. No. 493,726
Claims priority, application Great Britain, July 25, 1965, 32,531/65
2 Claims. (Cl. 200—61.41)



1. In a machine including a drum, a sensing device for detecting a sheet that is being transported in a path of movement by the drum including:
a base mounted adjacent the drum;
a connecting arm pivotally connected to the base;
a switch mounted on the base operable by the connecting arm;
a sensing arm mounted on the connecting arm in sliding contact with the drum to sense the presence of the sheet; means pivotally mounting the sensing arm to the connecting arm;
means associated with the sensing arm to force the sensing arm into the path of movement of the sheet;
said sensing arm operable by the sheet to move the connecting arm which is operable to actuate said switch to shut down the machine.

3,301,976
CAM ACTUATED SNAP ACTING MULTIPLE POSITION SWITCHES
Robert Frederick Oxley, Priory Park, Ulverston, England
Filed Oct. 15, 1964, Ser. No. 404,133
Claims priority, application Great Britain, Oct. 16, 1963, 40,924/63; Jan. 7, 1964, 786/64; Feb. 28, 1964, 8,490/64
15 Claims. (Cl. 200—63)

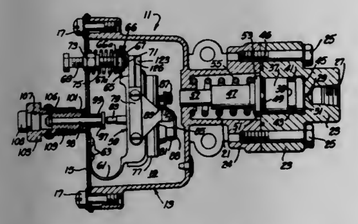


1. A multi-contact snap acting electric switch comprising a first member carrying a row of fixed contacts, a second member movable with respect to the first member and carrying a movable contact positioned to move along the row to engage sequentially different ones of said fixed contacts, spring means on said second member arranged to bias the movable contact alternatively into a fixed contact-engaging position to electrically contact one of said fixed contacts with said movable contact and into a fixed contact non-engaging position to electrically open said movable contact from all of said fixed contacts and to produce in movement of the movable contact from one fixed contact to the next a snap-action motion away from a position of contact through a position of unstable equilibrium between the two into the fixed contact non-engaging position and therefrom producing a snap-action motion back into a further position of contact, and cam and cam follower means coupled with said spring members and arranged to trigger said snap action motions in synchronism with and as a result of relative movement between the first and second members to cause said movable contact to move between each fixed contact on the row to the next.

3,301,977
ADJUSTABLE (DIFFERENTIAL) ACTUATION VALUE PRESSURE SWITCH
Rene Simonin, Jr., Downey, Calif., assignor to Barksdale Valves, Los Angeles, Calif., a corporation of California
Filed Feb. 23, 1965, Ser. No. 434,520
4 Claims. (Cl. 200—82)

1. A differential pressure switch exposed to varying fluid pressures comprising:
a support;
a switch mounted for movement toward and away from said support and having a switch blade movable between a first position and a second position;
switch biasing means biasing said switch away from said support;

restrainable means biasing said switch blade to said first position;
means responsive to the pressure rising to a first level for restraining said restrainable means from biasing said switch blade;
actuator means responsive to pressures above said first level for moving said switch against the force of said switch biasing means toward said support;



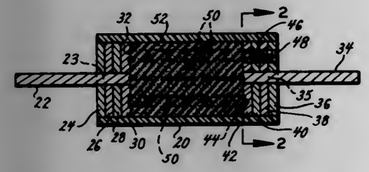
an abutment mounted on said support;
means movable with said switch into engagement with said abutment for moving said switch blade into said second position after said engagement occurs; and
means to adjust the position of said abutment relative to said support to thereby adjust the pressure at which said switch blade is moved into said second position.

3,301,978

PROTECTORS FOR ELECTRIC CIRCUITS

Aloysius J. Fister, Overland, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Sept. 20, 1965, Ser. No. 488,444
3 Claims. (Cl. 200—120)



1. A wholly-enclosed, vent-less, one-time electric fuse which comprises:
(a) a housing of insulating material that is cylindrical in configuration, that has open ends, and that is imperforate intermediate said open ends,
(b) a metal terminal,
(c) said terminal having a generally-flat portion with a reduced-width inner end,
(d) said terminal having a plurality of stiff metal washers with centrally-located openings that are telescoped over said reduced-width inner end of said generally-flat portion of said terminal,
(e) said washers being disposed in face-to-face engagement, having readily-bondable confronting faces, and coacting with said generally-flat portion to constitute a relatively massive terminal,
(f) said washers and said reduced-width inner end of said terminal being disposed within one end of said housing, and said relatively-flat portion of said terminal projecting outwardly beyond said one end of said housing,
(g) the innermost of said washers having a plurality of shallow circumferentially-spaced indentations therein,
(h) some of said washers having weight-reducing openings therein that are intermediate the peripheries and the centrally-located openings thereof,
(i) interacting surfaces on said reduced-width inner end of said terminal and on at least one of said washers to mechanically-secure and electrically-conductive bonding material in engagement with said reduced-width inner end of said terminal and also in engagement with said readily-bondable confronting faces of said washers to electrically-bond, said washers to each other and to said reduced-width inner end of said generally-flat portion of said terminal,
(j) a plurality of said washers having diameters that are just slightly smaller than the inner diameter of said one end of said housing,
(k) whereby said terminal substantially closes said one end of said housing whenever said washers of said terminal are disposed within said one end of said housing,
(l) a second metal terminal,
(m) said second terminal having a generally-flat portion with a reduced-width inner end,
(n) said second terminal having a plurality of stiff metal washers with centrally-located openings that are telescoped over said reduced-width inner end of said generally-flat portion of said second terminal,
(o) said washers of said second terminal being disposed in face-to-face engagement, having readily-bondable confronting faces, and coacting with said generally-flat portion of said second terminal to constitute a second relatively massive terminal,
(p) said washers and said reduced-width inner end of said second terminal being disposed within the other end of said housing, and said relatively-flat portion of said second terminal projecting outwardly beyond said other end of said housing,
(q) the innermost of said washers of said second terminal having a plurality of shallow circumferentially-spaced indentations therein,
(r) said shallow indentations in said innermost washer of said second terminal being in register with said indentations in said innermost washer of the first said terminal,
(s) some of said washers of said second terminal having weight-reducing openings therein that are intermediate the peripheries and the centrally-located openings thereof,
(t) interacting surfaces on said reduced-width inner end of said second terminal and on at least one of said washers of said second terminal to mechanically-secure, and electrically-conductive bonding material in engagement with said reduced-width inner end of said second terminal and also in engagement with said readily-bondable confronting faces of said washers to electrically-bond, said washers to each other and to said reduced-width inner end of said generally-flat portion of said second terminal,
(u) a plurality of said washers of said second terminal having diameters that are just slightly smaller than the inner diameter of the other end of said housing,
(v) whereby said second terminal substantially closes said other end of said housing whenever said washers of said second terminal are disposed within said other end of said housing,
(w) said washers of said second terminal having aligned openings therein to define a passage through said second terminal,
(x) a self-tapping metal plug disposed within said passage in said second terminal to close and seal said passage,
(y) one of said washers of the first said terminal having a diameter appreciably smaller than the inner diameter of said one end of said housing,

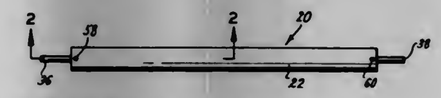
(z) said one washer of the first said terminal coacting with two abutting washers of the first said terminal to define an anular recess,
(aa) an O-ring disposed within said annular recess that simultaneously engages said one washer and said abutting washers of the first said terminal and the inner surface of said one end of said housing to provide a seal between the first said terminal and said housing,
(ab) one of said washers of said second terminal having a diameter appreciably smaller than the inner diameter of said other end of said housing,
(ac) said one washer of said second terminal coacting with two abutting washers of said second terminal to define a second anular recess,
(ad) a second O-ring disposed within said second annular recess that simultaneously engages said one washer and said abutting washers of said second terminal and the inner surface of said other end of said housing to provide a seal between said second terminal and said housing,
(ae) a plurality of fusible conductors disposed within said housing and having the ends thereof extending into said shallow indentations in said innermost washers of the first said and said second terminals,
(af) electrically-conductive material bonding further said ends of said fusible conductors within said indentations in said innermost washers of the first said and said second terminals,
(ag) arc-extinguishing filler material disposed within said housing and surrounding and engaging said fusible conductors,
(ah) sockets in the peripheries of the first said and said second terminals, and
(ai) pins extending through openings in said housing and seated within said sockets in the first said and said second terminals to hold said terminals in assembled relation with said housing.
(aj) said centrally-located openings in said washers automatically positioning said reduced-width inner ends of said terminals relative to the peripheries of said washers,
(ak) the telescoping of said washers over said reduced-width inner ends of said terminals providing full resistance to any forces tending to bend said generally-flat portions of said terminals relative to said washers,
(al) said further electrically-conductive material, said washers, and said electrically-conductive bonding material coacting to provide the current paths for current flowing from the first said terminal to said fusible conductors and thence to said second terminal.

3,301,979

FUSE PROTECTORS FOR ELECTRIC CIRCUITS HAVING IMPROVED TERMINAL MEANS FORMING A SEALED ENCLOSURE

Aloysius J. Fister, Overland, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,120
8 Claims. (Cl. 200—120)



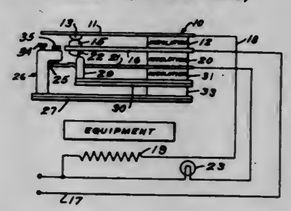
1. An electric fuse that comprises:
(a) an enclosure,
(b) an end bell that is disposed within one end of said enclosure and that has separable sections,
(c) one of said separable sections of said end bell having a sealing surface thereon,
(d) a second separable section of said end bell having a sealing surface thereon that can confront said sealing surface on said one separable section of said end bell,
(e) said one and said second separable sections of said end bell being securable in assembled relation,
(f) a sealing element that is disposed within said one end of said enclosure and that is compressed by said sealing surfaces on said one and said second separable sections of said end bell to form a seal between the interior surface of said one end of said enclosure and said separable sections of said end bell,
(g) a second end bell that is disposed within the other end of said enclosure,
(h) a fusible conductor having one end thereof secured to said one separable section of the first said end bell and having the other end thereof secured to said second end bell,
(i) said second separable section of the first said end bell being dimensioned to move relative to said enclosure while it is disposed within said one end of said enclosure, and
(j) a bridge that is secured to said one separable section of the first said end bell and to said second end bell to support said fusible conductor,
(k) said separable sections of the first said end bell permitting said fusible conductor, said bridge, said one separable section of the first said end bell, said sealing element, and said second section of the first said end bell to be disposed within said enclosure without any need of subjecting said fusible conductor to severe mechanical stresses.

3,301,980

DUAL-ANTICIPATING THERMOSTAT

Leonard J. Geis, Chicago, Ill., assignor to General Binding Corporation, Northbrook, Ill., a corporation of Illinois

Filed July 16, 1963, Ser. No. 295,321
5 Claims. (Cl. 200—138)



1. In a thermostat and in combination with a source of heat, a heating circuit energizing said source of heat and an indicating circuit indicating a predetermined operative temperature range;
two parallel spaced spring switch arms having contacts on the outer ends thereof and biased to effect engagement of said contacts and energization of the heating circuit;
a third spring switch arm engageable with one of said switch arms to complete the indicating circuit and effect indication of a predetermined operative temperature range;
two bi-metal thermally responsive elements;
a first being closer to the source of heat than the second;
the first holding said third spring switch arm from completing the indicating circuit and movable upon predetermined temperature rises to permit said third spring switch arm to complete the indicating circuit;
said first bi-metal thermally responsive element moving to engage one of said switch arms to move said switch arm to separate the contacts and break the

heating circuit therebetween upon predetermined temperature rises;

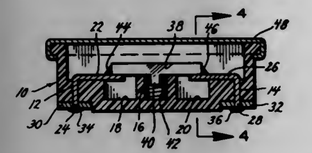
and the second bi-metal thermally responsive element following the first bi-metal thermally responsive element at a greater rate than the rate of travel of the first bi-metal thermally responsive element and engaging a second of said switch arms to periodically engage said contacts and thereby maintain a relatively uniform temperature range.

3,301,981

PROTECTORS FOR ELECTRIC CIRCUITS

Angelo Urani, St. Louis, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Jan. 28, 1966, Ser. No. 523,617
4 Claims. (Cl. 200—142)



1. A thermally-responsive circuit-breaking device that comprises:

(a) a housing of insulating material,

(b) a contact of highly-conductive material disposed within said housing,

(c) said contact having a generally-flat upper surface,

(d) a second contact of highly-conductive material disposed within said housing,

(e) said second contact having a generally-flat upper surface,

(f) said second contact being spaced from the first said contact,

(g) said contacts being fixedly secured to said housing,

(h) a bridging contact that is generally flat and that has the ends thereof overlying and being coextensive with portions of said generally-flat upper surfaces of said fixed contacts,

(i) said ends of said bridging contact directly engaging said portions of said generally-flat upper surfaces of said fixed contacts to provide two spaced-apart surface-to-surface areas of direct engagement between said bridging contact and said generally-flat upper surfaces of said fixed contacts,

(j) means biasing said ends of said bridging contact away from said portions of said generally-flat upper surfaces of said fixed contacts, and

(k) small quantities of electrically-conductive heat-softenable material that directly engage said ends of said bridging contact and said portions of said generally-flat upper surfaces of said fixed contacts to normally hold said ends of said bridging contact and said portions of said generally-flat upper surfaces of said fixed contacts in said direct engagement and against relative movement and that electrically bond said ends of said bridging contact to said portions of said generally-flat upper surfaces of said fixed contacts,

(l) said fixed contacts and said bridging contact normally being held in assembled relation to define a highly-conductive path which has only two film-like portions of heat-softenable material,

(m) whereby said thermally-responsive circuit-breaking device can respond almost wholly to externally-applied heat and is substantially insensitive to the heat generated by the current passing through it,

(n) said bridging contact being stiff and remaining substantially unbent despite the forces applied thereto by said biasing means while said small quantities of heat-softenable material hold said ends of said bridging contact in engagement with said portions of said generally-flat upper surfaces of said fixed contacts,

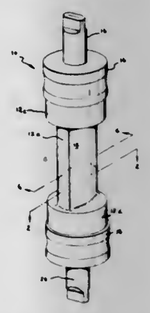
(o) said bridging contact experiencing substantially no change in the shape or configuration thereof as said bridging contact responds to said biasing means to move away from said portions of said generally-flat upper surfaces of said fixed contacts as said small quantities of heat-softenable material soften.

3,301,982

FLUID SWITCH HAVING DEFORMABLE ENVELOPE AND ENVELOPE CLOSURE MEANS OF MATCHED CONFIGURATION

Melvin Lawrence Fraley, Harrisburg, and Christopher Kingsley Brown, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Dec. 4, 1964, Ser. No. 416,080
8 Claims. (Cl. 200—152)



1. An electric switch comprising a capsule of flexible insulating material, said capsule being substantially filled with conductive fluid and including a portion of relatively thin walls adapted to be deformed to effect switch action, means adapted to be relatively moved to pinch said portion to cause a separation of conductive fluid, said means including members each having cross-sectional surfaces related to the cross-sectional surfaces of said portion to reduce working of the portion material, the said surface of one of said members being rounded to a radius in a transverse sense relative to said cross section which is slight relative to the length of said portion.

3,301,983

HIGH VOLTAGE COAXIAL SWITCH AND ASSOCIATED APPARATUS

Frank M. Collins, McMinnville, and Jack R. Hipperson, McMinnville, Oreg., by Nina May Hipperson, administratrix for estate of Jack R. Hipperson, deceased, assignors to Field Emission Corporation, McMinnville, Oreg., a corporation of Oregon

Filed Aug. 27, 1964, Ser. No. 392,558
6 Claims. (Cl. 200—153)

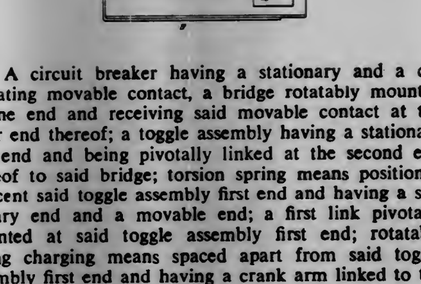
1. A switch structure, comprising:

a hollow housing member having a tubular first outer conductor portion and a tubular second outer conductor portion whose axis intersects that of said first portion;

a first inner conductor mounted coaxially within said first portion of said housing member and insulatively spaced from said housing member, said first inner conductor having a cylindrical passageway extending through one end of said first inner conductor coaxially with said second portion of said housing member;

a second inner conductor mounted coaxially within said second portion insulatively spaced from said housing member and spaced from said first inner conductor; and

a movable switch contact member mounted for sliding movement within said passageway of said first inner conductor into and out of engagement with said second inner conductor to selectively connect



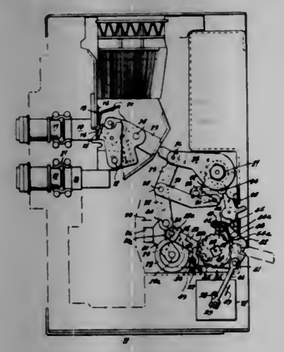
said second inner conductor in electrical contact with said first inner conductor, said passageway surrounding said switch contact member and guiding the movement of the switch contact member to maintain said switch contact member coaxial with said second conductor and insulatingly spaced from said housing.

3,301,984

SPRING CLOSED CIRCUIT BREAKER

George A. Wilson, Media, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 2, 1965, Ser. No. 436,425
5 Claims. (Cl. 200—153)



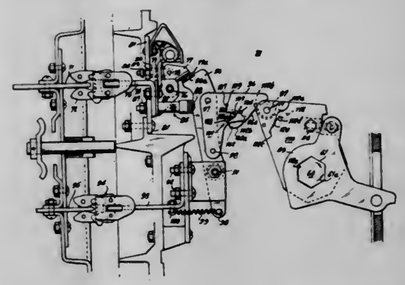
1. A circuit breaker having a stationary and a cooperating movable contact, a bridge rotatably mounted at one end and receiving said movable contact at the other end thereof; a toggle assembly having a stationary first end and being pivotally linked at the second end thereof to said bridge; torsion spring means positioned adjacent said toggle assembly first end and having a stationary end and a movable end; a first link pivotally mounted at said toggle assembly first end; rotatable spring charging means spaced apart from said toggle assembly first end and having a crank arm linked to the second end of said first link by a lever arm; said first link having a rod coupled to the second end thereof and engaging said torsion spring movable end to charge said spring under control of said spring charging means; said toggle assembly having at least one collapsible knee; latch means positioned adjacent said crank arm and having bias means for abutting said crank arm to latch said torsion spring in the fully charged position; means for releasing said latch means to drive said first link rod against said collapsible knee to rapidly close said cooperating contacts.

3,301,985

FIELD DISCHARGE BREAKER

George A. Wilson, Media, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 2, 1965, Ser. No. 436,468
6 Claims. (Cl. 200—153)



1. A discharge switch assembly for use in field discharge circuit breakers comprising a rotatable arm pivotally mounted near a first end thereof; and rotatable between a first and a second position; a first contact secured to said arm rotatable near a second end thereof; a second contact positioned to make electrical engagement with said first contact when said movable arm occupies said first position; a rotatably mounted drive member for operating said rotatable arm; said drive member being mounted for rotation at a first end thereof and having a roller member pivotally mounted thereto at a second end thereof; said drive member being rotatable between a third and a fourth position; first cam means secured to said rotatable arm and having a cam surface positioned to slidingly engage said roller member when said drive member rotates toward the fourth position to drive said first contact toward said second contact; second cam means pivotally mounted to said first cam means and having a second cam surface; spring means coupled between said first and second cam means for urging said second cam surface toward a fifth position adjacent one end of said first cam surface to effectively provide one continuous cam surface; said second cam surface slidably engaging said roller member when said roller member leaves said first cam surface as said drive member moves toward the fourth position; bias means coupled to said rotatable arm at said first end normally biasing said first and second contacts out of engagement.

3,301,986

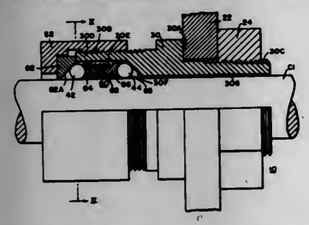
ELECTRIC CURRENT TRANSFER STRUCTURE INCLUDING CONTACT BALLS

Russell E. Frink, Forest Hills, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 13, 1965, Ser. No. 495,475
17 Claims. (Cl. 200—166)

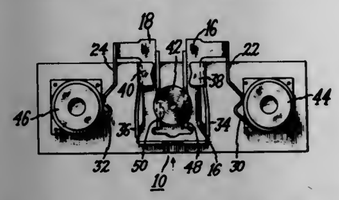
1. In combination, a tubular electrical conductor having an inner surface, another electrical conductor disposed within the tubular conductor, at least one of the conductors being movable with respect to the other conductor, a portion of the inner surface of the tubular conductor shaped to provide a generally annular space between the conductors, at least one end of the portion beveled to provide a contact area on the inner surface of the tubular conductor, a plurality of electrically conducting balls disposed in the annular space around the

periphery of said another conductor adjacent to the contact area on the inner surface of the tubular conductor, and separate means disposed in the annular space for



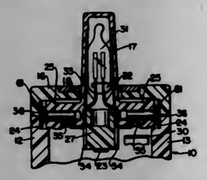
biasing each ball into contact making engagement with the contact area on the inner surface of the tubular contact and with said another conductor.

3,301,987
SHORTING DEVICE FOR SECONDARY TERMINALS OF CURRENT TRANSFORMERS
Reuel L. Davis, Jr., Dover, N.H., assignor to General Electric Company, a corporation of New York
Filed Aug. 31, 1965, Ser. No. 484,037
3 Claims. (Cl. 200—166)



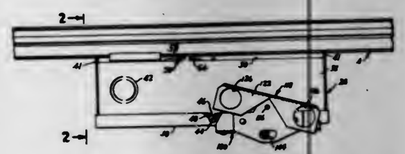
1. A one-piece shorting device for the secondary terminals of a current transformer having a member spaced between the secondary terminals, said shorting device made from resilient conducting material comprising, a central portion formed of a pair of side members, a slotted opening in said central portion between said side members, said side members adapted to slidably engage the spaced member between the secondary terminals, arms formed on said central portion and extending outwardly therefrom on each side thereof and having bent portion at the extremities thereof for engaging the secondary terminals when said central portion is in one position on the spaced member, said central portion being slidable on the spaced member to a second position in which said arms will be disengaged from the secondary terminals.

3,301,988
LIGHT SWITCH WITH INDICATING LIGHT IN A TRANSLUCENT HANDLE THEREOF
Milton J. Weltzman, Bayside, N.Y., assignor to Slater Electric Inc., Glen Cove, N.Y., a corporation of New York
Filed Feb. 10, 1965, Ser. No. 431,560
4 Claims. (Cl. 200—167)



1. In an electrical switch of the type having a housing, a cover, terminals mounted in the housing for connecting the switch in one side of a line from an A.C. power source to a load, at least one movable and at least one fixed contact arranged to connect one of said terminals to another and a movable operating handle mounted in the housing to operate the movable contact; in combination, the operating handle comprising a hollow translucent manually operable member having hollow shaft portions extending perpendicular thereto, an indicator lamp having wire leads integral therewith mounted in said operating member to be visible from outside the switch housing, means mounting said hollow shaft portions in journals formed in the side walls in at least one of the cover and housing, each said lead from said indicator lamp extending into one of said hollow shaft portions adjacent the manually operable member, pins in said hollow shaft portions engaging said leads to hold said leads in position, heads on said pins, resilient means at each side of said housing connected to one of said terminals, said resilient means being urged into continuous contact with a corresponding pin head, said connection of said resilient means to said terminals causing said indicator lamp to be in series with the load and energized therethrough when the movable contact is out of contact with the fixed contact, said indicator lamp being shorted out and de-energized when the movable contact engages one of the fixed contacts, a cap at the inner end of said manually operable member, said cap having an outwardly extending pointed member, and a detent member mounted in the switch housing and cooperating with said pointed member to hold said handle in a central position.

3,301,989
HANDLE ASSEMBLY FOR CIRCUIT BREAKERS
Eric A. Ericson, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Filed July 2, 1965, Ser. No. 469,134
5 Claims. (Cl. 200—172)



1. An external handle assembly adapted for use on a circuit breaker having a housing with a hinged cover pivotally mounted on the housing at one side thereof, and a switch in said housing with a handle extending outwardly through the cover comprising:

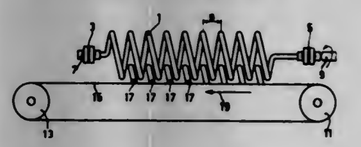
(a) a support element for mounting externally on said hinged cover adjacent the free end of said cover, said support element having a top wall and side walls for spacing said top wall from said cover of said housing;

(b) an actuator slidably mounted within said support element, said support element having a guide slot in one of said side walls and said actuator having an engaging portion extending outwardly of said slot having an aperture therein for receiving the switch handle;

(c) a handle pivotally mounted on said support element and slidably engaged with said actuator for effecting movement thereof and thereby of the switch handle to operate the switch to the "on" and "off" positions, said handle being operable remotely by a stick and the like and having a portion adapted to extend along the exterior of the side wall of the housing adjacent the free end of the cover, said handle having a shoulder thereon; and

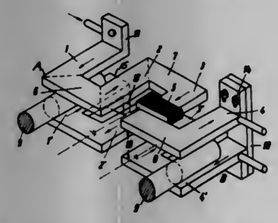
(d) an interlocking member mounted on the exterior of the side wall of the housing adjacent the free end of the cover for engagement with said shoulder when the switch is in the "on" position whereby said cover may be prevented from opening.

3,301,990
WORK COIL FOR INDUCTION HEATING
Herbert Neal, Ringwood, Victoria, Australia, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 17, 1964, Ser. No. 338,448
Claims priority, application Australia, Jan. 17, 1963, 26,427/63
13 Claims. (Cl. 219—10.79)



9. Apparatus for inductively heating an object comprising, an induction heating coil having a plurality of turns extending along its longitudinal axis, means for supplying high-frequency electrical energy to said coil, means positioning said object to be heated adjacent said coil in operative relation to the magnetic field of the coil, and means for rotating said coil about an axis parallel to and spaced apart from said longitudinal axis.

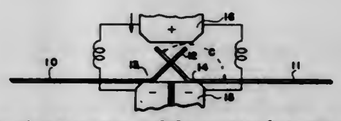
3,301,991
INDUCTOR FOR HEATING THE ENDS OF ELONGATED STOCK
Herbert Geisel, Remscheid-Luttringhausen, and Leonhard Springob, Remscheid, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany, and Allgemeine Elektricitats-Gesellschaft, Berlin-Grunewald, Germany
Filed June 3, 1964, Ser. No. 372,281
Claims priority, application Germany, June 7, 1963, D 41,722
5 Claims. (Cl. 219—10.79)



1. An inductor for heating the ends of elongated work such as bars, rods and tubes, comprising conductors in the form of rectangularly meandering lengths formed and arranged in two tiers in such manner that parallel opposite cross portions of the meandering lengths pass the current in opposite directions and together form heating stations extending lengthwise of said cross portions, so that the work can be displaced laterally from one heating station to another.

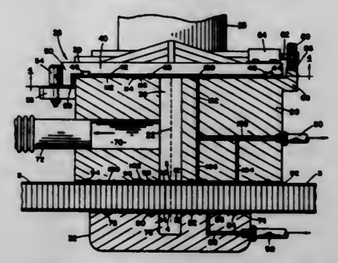
3,301,992
METHOD FOR JOINING FLAT METAL STOCK
Melvin M. Seeloff, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed Aug. 14, 1963, Ser. No. 302,015
10 Claims. (Cl. 219—105)

5. The method of making a generally flat edge-to-edge joint between a pair of metal sheet or strip pieces which consists of first serrating the edges of the pieces to be joined in such manner that the serrations of one piece interlock with the serrations of the other piece with a solid expanse of metal at and adjacent to the joint, jamming said serrated edges into angular, contacting interlocking relation, and thereafter forcing said serrations into a common plane while effecting a continuous weld



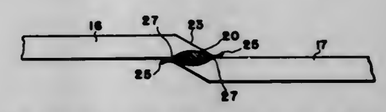
along the zig-zag pattern of the contact between the serrations on one workpiece and the serrations on the other workpiece.

3,301,993
WELDED JOINT AND APPARATUS AND METHOD FOR MAKING SAME
Edward S. Boyd, Anaheim, Vene L. Darby, Redondo Beach, and Edwin E. Hatter, Torrance, Calif., assignors to North American Aviation, Inc.
Filed May 21, 1962, Ser. No. 196,238
31 Claims. (Cl. 219—117)



1. Apparatus for welding on a workpiece, comprising:
a chamber opened on one end, said open end having sealing means thereon for contacting a surface of said workpiece in sealed relationship therewith, so that said workpiece and said chamber in combination form an enclosure isolated from surrounding atmosphere,
evacuating means operatively related to said chamber for evacuating said enclosure, and
welding means including an electron beam source mounted on said chamber for applying welding heat to said workpiece while said enclosure is evacuated of atmosphere.

3,301,994
METHOD OF JOINING METAL SHEET OR STRIP
Melvin M. Seeloff, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed Oct. 9, 1964, Ser. No. 402,705
6 Claims. (Cl. 219—117)



1. The method of joining metal sheet or strip which consists of overlapping the edge or end portions thereof to be joined, electric resistance welding said overlap portions together to establish a continuous weld nugget along the joint and between said portions, thereafter removing the free side edge portions of said first mentioned portions by a severing process which results in flatly inclined surfaces on opposite surfaces of the first mentioned portions which are substantially parallel to each other and on opposite sides of and closely adjacent to said continuous nugget, and thereafter applying a compressive force to

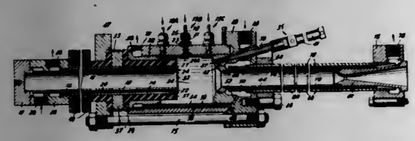
opposite sides of the welded and overlapped portions in the region of the weld and along the line thereof to force said welded portions into substantially a common plane.

3,301,995

ELECTRIC ARC HEATING AND ACCELERATION OF GASES

Richard C. Eschenbach, Indianapolis, Ind., George M. Skinner, Murray Hill, N.J., Raymond J. Sarlitto, Indianapolis, Ind., and Robert J. Wickham, Caldwell Township, N.J., assignors to Union Carbide Corporation, a corporation of New York

Continuation of application Ser. No. 178,665, Mar. 9, 1962. This application Dec. 2, 1963, Ser. No. 328,783
10 Claims. (Cl. 219—121)



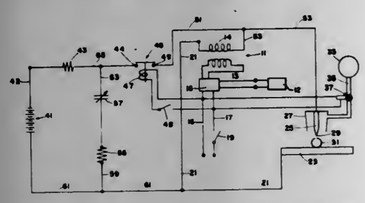
1. An electric arc gas heater comprising a first tubular water-cooled electrode having closure means at one end thereof and being open at the other end and having a length to diameter ratio of between about 5 to about 30; a second tubular water-cooled electrode open at both ends and axially spaced from the open end of said first electrode and having a length to diameter ratio of between about 5 to about 40, the ratio of the inside diameter of said first tubular electrode to the inside diameter of said second tubular electrode being between about 2.5 to 0.5; and the ratio of current to inside diameter of said second electrode being between about 50 and about 2000 amp/inch; a nozzle outlet carried by said second tubular member at one end thereof; a water-cooled chamber of substantially greater diameter than and surrounding the space between said two electrodes; a plurality of gas injection means mounted in the walls of said chamber and including a tubular member provided with an orifice for directing the gas to be heated into said chamber.

3,301,996

ARC WELDING THIN METAL

Robert W. Bidwell, Rome, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware

Filed June 28, 1963, Ser. No. 291,434
2 Claims. (Cl. 219—127)



1. Welding apparatus for joining thin metal elements by spot-like tack welds comprised of:
a grounded work holding device,
a non-consuming electrode having an inert gas shielding device,
ionization circuit means constructed and arranged to provide a high frequency, high voltage, low current connected to said electrode,
a circuit connecting said ionization circuit means, said electrode and said device,
a direct current power source,
variable capacitance means connected to said direct current source by a charge circuit including a resistance for the charging thereof,
normally-open switch means for controlling said ionization circuit mean,
a welding current circuit connecting said capacitance means to said work holding device and said electrode,
said welding current circuit including welding switch means and discharge limiting resistance means,
said discharge limiting resistance means being such as to limit the discharge of said capacitance means to provide a welding current suitable for welding thin metal elements,
said charge circuit resistance being such as to permit the charging of said capacitance means by said direct current source and to prevent a significant current flow from said direct current source to said welding circuit.

3,301,997

METHOD OF WELDING DUCTILE IRON

William F. Semenchuk, Toronto, Ontario, Canada, assignor to Canada Iron Foundries, Limited, Montreal, Quebec, Canada

No Drawing. Filed Feb. 15, 1965, Ser. No. 432,869
2 Claims. (Cl. 219—137)

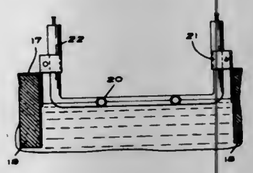
1. In a method of welding ductile iron by the electric-arc process, the step comprising using a nickel-iron-alloy electrode whose deposited weld metal has a tensile strength of between about 60,000 to about 65,000 p.s.i., a yield strength not exceeding about 52,000 p.s.i., and an elongation of at least 8 percent in 1.4 inches gauge length, and whose composition contains from about 50 to about 58 percent nickel, from about .89 to about 1.0 percent total carbon, from about 0.5 to about 1.0 percent manganese, and the balance substantially iron.

3,301,998

HUMIDIFIER HAVING FLOATING HEATING MEANS

William A. Trickey, 450 Colborne St., Brantford, Ontario, Canada

Filed July 22, 1964, Ser. No. 384,432
3 Claims. (Cl. 219—317)



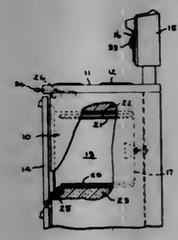
1. In a humidifier, the combination comprising a container for holding a body of water,
a ring-like frame,
float means on said frame for floating said frame for free vertical movement on the surface of said body of water in said container,
the area surrounded by said frame being completely free and unobstructed to permit water to flow freely upwardly from said container into said area and to permit steam to flow upwardly from said area,
a plurality of exposed heating elements,
means for supporting said heating elements on said frame in said unobstructed area in position substantially at the surface of the water with a portion only of said heating elements exposed and with the greater dimension of said heating elements extending substantially horizontally,
whereby when the heating elements are energized the water immediately adjacent the heating elements is heated and vaporized and passes upwardly to the atmosphere immediately surrounding the heating elements and water passes freely from beneath said heating elements to said heating elements.

3,301,999

SAFETY CONTROL MECHANISM FOR HIGH TEMPERATURE OVEN

Roy D. Chisholm, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Aug. 28, 1963, Ser. No. 305,053
6 Claims. (Cl. 219—393)



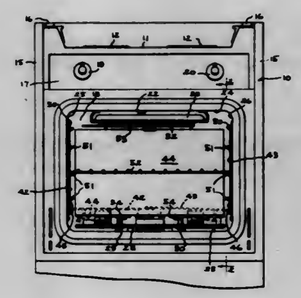
1. A domestic cooking oven comprising an oven body supporting a box-like oven liner and an access door to define an oven cavity, a source of electric power supply, and a heating circuit adapted to be completed to said power source to supply heat into said cavity, and a manual door latching means for holding the door in a closed position; the combination comprising a selector switch having an Off position and an On position, said selector switch in its Off position interrupting said heating circuit, said selector switch in its On position preparing said heating circuit, a control circuit having a manually settable temperature control device having a variable Bake position and a Clean position, said temperature control device in its variable Bake position correspondingly presetting a variable Bake temperature for said oven cavity in the normal cooking temperature range extending from about 150° to about 550° F., said temperature control device in its Clean position presetting a given heat-cleaning temperature for said oven cavity in the Heat-Clean temperature range extending from about 750° to 950° F., the door latching means having a removable handle, a key slot formed in the body of the oven adjacent the location of the selector switch and the temperature control device, the removable handle constituting a key member that is insertable into the key slot, and an interlock means operatively associated with the key member and at least one of the selector switch and the temperature control device, and an index means included with at least one of the selector switch and temperature control device to receive the interlock means only when Clean position has been set to align the index means with the interlock means, and switch means operated by the movement of the interlock means into the index means for energizing the heating circuit into a Heat-Clean cycle thereby insuring that the cleaning cycle cannot be initiated until the door is latched shut and at least one of the selector switch and temperature control device are positioned at the Clean setting, a lock member for engaging the key member after the cycle has been initiated thereby preventing the oven door from being unlocked during the Heat-Cleaning cycle, a sequence timer for timing the cycle, the timer having a start camming means that is positioned to be operated by the movement of the interlock means, the timer including a lock camming means for controlling the position of the lock member and for disengaging the lock member from the key member at the end of the cycle, and timer switch means located in the heating circuit for de-energizing the heating circuit at a given time prior to the end of the cycle so as to cool down the oven before the oven door may be opened, and for stopping the timer after the key is released at the end of the cycle.

3,302,000

DOMESTIC OVEN WITH MOVABLE WALL PANELS

George R. Sherman, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Dec. 20, 1963, Ser. No. 332,176
4 Claims. (Cl. 219—393)



1. A domestic oven comprising an oven body having an insulated oven liner and an access door that forms an oven cooking cavity, heating means for said cavity including an upper electrical broil heating unit and a lower electrical bake heating unit, a thermostatic control system for the oven including a temperature sensor positioned within the oven cavity, the oven liner being of box-like shape with a bottom wall, opposite side walls, a back wall, a top wall and an open front that is adapted to be closed by the said access door, removable panels covering the two side walls and the back wall so that the panels will protect the underlying surfaces of the oven liner from being soiled by food drippings and grease spatterings, and pyrolytic means for cleaning the food soil from the panels as well as from the bottom wall of the oven liner, said pyrolytic means comprising the formation of an enclosure over the lower bake unit by lowering the panels into close proximity therewith so as to shield the bake unit from the temperature sensor, whereby when the bake unit is energized, the temperature of the panels and the bottom wall will rise above the normal cooking temperatures into a heat cleaning temperature range between about 750° F. and about 950° F., wherein the food soil will be degraded into gaseous and ash products, without elevating the temperature of the oven body until it is uncomfortable and unsafe to the human touch.

3,302,001

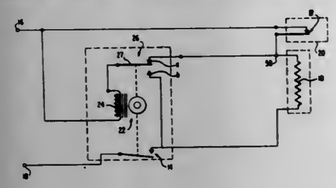
TIME-TEMPERATURE CONTROL DEVICES

John F. Frazier, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed July 2, 1964, Ser. No. 379,812
5 Claims. (Cl. 219—491)

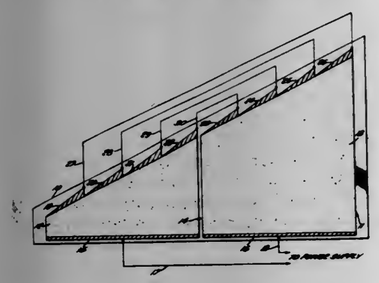
5. In combination with an electrical heating system including terminal means for connecting the system across a source of electrical current and means forming a series circuit path through a thermostatic switch, a heating element, and a timer switch, the heating element being in heating relation to the thermostatic switch: a timer motor including a winding; a transfer switch; means forming a circuit path connecting said winding through said transfer switch in normal position in shunt relation to said thermostatic switch and in series relation to said heater element and timer switch; means forming a series circuit path

through said motor winding, said transfer switch in transferred position and said timer switch; and cam means



operated by said timer motor for transferring said transfer switch and for controlling the position of said timer switch.

3,302,002
UNIFORMLY HEATED CONDUCTIVE PANELS
Robert A. Warren, Sunland, Calif., assignor to The Sierracin Corporation, Sylmar, Calif., a corporation of California
Filed Aug. 11, 1966, Ser. No. 571,922
7 Claims. (Cl. 219—543)



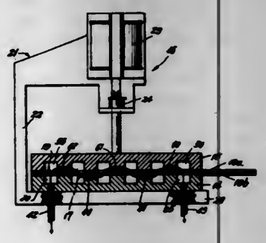
1. A conductive panel comprising: a plate of electrically non-conductive material; a plurality of discrete sections of conductive material disposed on said plate, each of said sections having first and second non-parallel opposing sides; a first bus bar electrically engaging the first side of a first of said sections; a second bus bar electrically engaging the first side of a second of said sections; first bus bar means electrically engaging the second side of said first of said sections, said first bus bar means comprising a plurality of individual segments each corresponding to a portion of said first section extending between said first and second sides thereof, each of said segments having a resistance gradient along the length thereof and having its highest resistance where said first and second sides come closest together; second bus bar means electrically engaging the second side of said second of said sections, said second bus bar means comprising a plurality of individual segments each corresponding to a portion of said second section extending between said first and second sides thereof, each of said segments having a resistance gradient along the length thereof and having its highest resistance where said first and second sides come closest together; and a plurality of electrical conductors, each of said conductors electrically connecting a segment of said first bus bar means with a segment of said second bus bar means, said segments being selected for connection so that the total resistance of each circuit comprising a portion of said first section, the segment of said first bus bar means corresponding thereto, the conductor connected to said segment a portion of said second section and the corresponding segment of said second bus bar means is substantially equal to the resistance of every other such circuit.

3,302,003
ELECTRIC HEATER
Theodore S. Kinney, 2733 4th Ave. S., Seattle, Wash. 98104
Filed Sept. 28, 1964, Ser. No. 399,699
7 Claims. (Cl. 219—550)



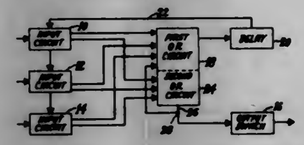
1. An electric heater, comprising:
a flexible metallic base strip having a series of insulator blocks arranged therealong in spaced-apart, face-to-face relation;
the blocks of said series having aligned openings receiving and supporting electrical resistance means in spaced relation longitudinally of said base strip;
each insulator block having an integral, outwardly-swelled projection outstanding on its periphery; and
opposed discontinuous jaw means along the side edges of said strip each gripping said insulator projections on said spaced-apart blocks.

3,302,004
PNEUMATIC RECORD SENSING APPARATUS AND METHOD
Alton B. Eckert, Jr., Port Chester, and Brooks Lyman, Pound Ridge, N.Y., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Sept. 5, 1962, Ser. No. 221,571
12 Claims. (Cl. 235—61.7)



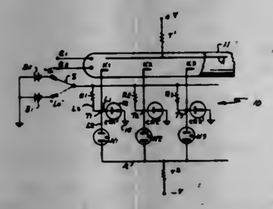
7. Apparatus for comparing perforated records; comprising means for supporting a plurality of perforated records in predetermined mutually registered relation, said supporting means being arranged to afford any perforations in a first one of said records pneumatic access to the respectively corresponding perforations in a second one of said records,
conduit means defining an air flow path to a first perforation in said first one of said records,
conduit means defining an air flow path between the perforation in said second one of said records corresponding to said first perforation and a second perforation in said second one of said records, and
conduit means defining an air flow path between the perforation in said first one of said records corresponding to said second perforation and another perforation in said first one of said records whereby the serial continuity of an air flow along said flow paths is dependent on the correspondency of the respective perforations in said records.

3,302,005
IMPULSE TOTALIZER USING SOLID STATE COMPONENTS
Richard G. Farnsworth, Dover, N.H., assignor to General Electric Company, a corporation of New York
Filed July 31, 1963, Ser. No. 299,007
12 Claims. (Cl. 235—92)



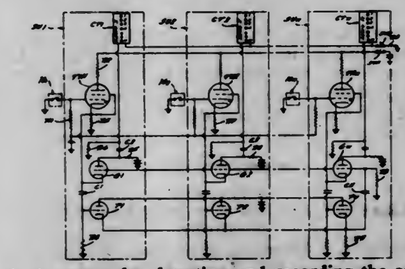
1. A solid state totalizer providing a single pulse output total from a plurality of random pulse inputs comprising:
(a) a plurality of input circuits, each of said input circuits comprising a bi-stable solid state electrical component, each said bi-stable component being triggered to a set condition on receipt of an input pulse,
(b) a first logical OR circuit, means electrically connecting each said bi-stable component to said first logical OR circuit for pulsing said first OR circuit when said bi-stable component is triggered to its set condition,
(c) a delay circuit, said delay circuit being electrically connected to said first OR circuit for actuation by the output of said first OR circuit, said delay circuit being electrically connected to send a reset pulse to one of said input circuits at the end of the delay period, said input circuits being serially connected to receive said reset pulse sequentially whereby said reset pulse acts to reset the first bi-stable component in series which is in its set condition,
(d) a second logical OR circuit, means electrically connecting each said bi-stable component to said second logical OR circuit for pulsing said second OR circuit when each said bi-stable component is reset by said reset pulse, the output of said second OR circuit being connected to said first OR circuit for providing a self-triggering scan of said input circuits, and to an output switch to thereby totalize the plurality of input pulses to said input circuits.

3,302,006
MULTI-CATHODE ELECTRONIC STEPPING TUBE COUNTER AND INDICATOR
Joseph Gaou, Bayside, N.Y., assignor to Heat Timer Corporation, New York, N.Y.
Filed Aug. 24, 1964, Ser. No. 391,585
4 Claims. (Cl. 235—92)



1. An electronic counting means to indicate the actual count at any time without stopping the counting device which includes a multi-cathode glow transfer tube as an electronic counter in combination with a circuit providing pulses to be counted, and a circuit connected to each cathode of said glow transfer tube counter, said circuit including a resistor to control current flow to each cathode, a diode to assist in controlling current flow to each cathode and a neon tube to store the current charge to indicate the count at any particular moment during the counting progress in said electronic counter, said circuit connected to a two position switch, one position of said switch connected to a high voltage supply for storing and displaying and the other position of said switch connected to a low voltage supply for counting and following.

3,302,007
AUTOMATIC TIMING AND SEQUENCE INDICATING SYSTEM
William C. Parkinson, 1600 Sheridan Drive, Ann Arbor, Mich. 48104
Original application Oct. 6, 1961, Ser. No. 143,513, now Patent No. 3,230,325, dated Jan. 18, 1966. Divided and this application Mar. 10, 1965, Ser. No. 449,354
9 Claims. (Cl. 235—92)



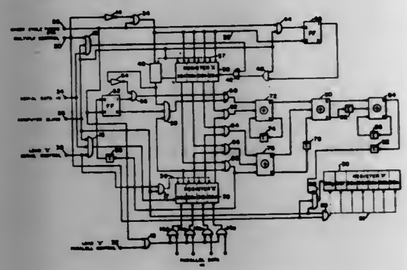
1. A system for detecting and recording the sequence of occurrence of a plurality of independent events, comprising: a plurality of detector units, each including a sensor adapted to be actuated upon the occurrence of a single event, one of said detector units being provided for each event to be detected; a counter individual to each of said detector units; circuit means responsive to each actuation of any of said detector units to disable the counter individual to the actuated detector unit and to step each of said counters other than the one disabled, whereby after all of said detector units have been actuated the number of steps any given counter has been stepped will represent the number of other detector units which were actuated before the detector unit individual to said given counter was actuated, and hence the number of other events which occurred first.

3,302,008
MULTIPLICATION DEVICE
Roscoe W. Mitchell, Jr., Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Jan. 16, 1964, Ser. No. 338,184
8 Claims. (Cl. 235—156)

1. An apparatus for obtaining a product of a multiplier and a multiplicand which comprises:
(a) reversing means for reversing the order of the digits of the multiplier to obtain a reversed multiplier;
(b) means to sequentially shift the digits of the reversed multiplier with respect to the multiplicand from a first position in which the least significant digit of the multiplicand is in effect, aligned with the least significant digit of the reversed multiplier to a last position wherein the most significant digit of the multiplicand is aligned with the most significant digit of the reversed multiplier;
(c) means to multiply digit by digit each aligned pair of digits of a multiplicand by the aligned digit of the reversed multiplier at each position in (b) above;

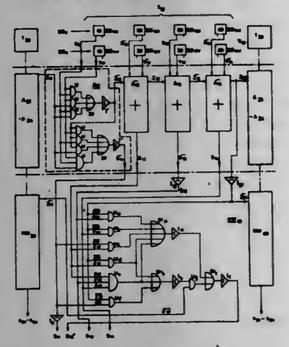
(d) means to determine the least significant digit of the sum of the sub-products of the digit by digit multiplying and any carry from the previous step for each position in the shifting of the digits;

(e) means to determine and temporarily store any remaining digits as a carry for use in the next following shifting step;



(f) means to store the digit obtained in (d) above at each shifting step in an increasing order to form the product, the least significant digit of the product being obtained from the first position of (b) above and the most significant digit of the product being obtained from the last position of (b) above.

3,302,009
PARALLEL ADDER FOR BINARY CODED NUMBERS
Theo Stutz, Zollikerberg, Switzerland, assignor to Contraves AG., Zurich, Switzerland
Filed May 6, 1964, Ser. No. 365,443
Claims priority, application Switzerland, May 7, 1963, 5,715/63
4 Claims. (Cl. 235—174)



1. In a parallel arrangement for adding four-bit combinations representing decimal numbers as augends and addends in terms of a weighted-bit binary code, in combination, a series of storage units respectively assigned to different consecutive decimal order positions of decimal numbers to be added, each unit including a first and a second group of four storage elements for storing in terms of a four-bit weighted-bit binary code in said first group of elements a four-bit combination representing the decimal digit of the augend in the respective decimal order position thereof and for storing in said second group of elements a four-bit combination representing the decimal digit of the addend in the respective decimal order position thereof, each element of said first group being assigned to a different binary order position and constituting with the corresponding element of said second group assigned to the same binary order position a pair of correlated storage elements, said weighted binary code being defined by the following chart:

BIT POSITIONS BS_8, WITH WEIGHTS g_x

Decimal Digit	BS4 g=4	BS3 g=2	BS2 g=2	BS1 g=1	BS4 g=4	BS3 g=2	BS2 g=2	BS1 g=1	Decimal Digit
0	O	O	O	O	L	L	L	L	9
1	O	O	O	L	L	L	L	O	8
2	O	O	L	O	L	L	O	L	7
3	O	O	L	L	L	L	O	O	6
4	O	L	O	O	L	O	L	L	5

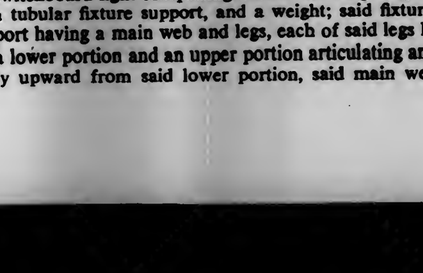
a series of binary adding devices respectively associated with said storage units, each of said adding devices including a group of four binary adders respectively connected with a different one of said pairs of correlated storage elements of the respectively associated storage unit for adding binary bits stored in said respectively connected pairs of correlated storage elements, and furnishing at its output terminal the binary sum of said bits stored in the respective correlated storage elements and, whenever applicable, a transfer bit to the following one of said adders connected with a pair of correlated elements associated with the respectively next higher binary order position, each of said adding devices having a group input for receiving a transfer bit from a preceding adding device associated with a storage unit assigned to a respectively next lower decimal order position, and a group output for transferring a transfer bit to a following adding device associated with a storage unit assigned to the respectively next higher decimal order position; a series of correcting networks respectively associated with said binary adding devices, each of said correcting networks being connected with said output terminals of the respective four binary adders of a different one of said binary adding devices, and with the respective group output and including a transfer input and logical circuit means permitting the unchanged passage therethrough of the binary sums furnished by said binary adders of the particular adding device with the exception of a selected one of said four binary adders namely the one assigned to the second lowest binary order position and converting the binary sum furnished by said selected binary adder into a corrected binary sum in accordance with the following Boolean equation:

$$S_{12}^{*}=\overline{Z_{21}}[S_{12}+(S_{13}+S_{14})(\overline{S_{11}}+Z_{11})]+S_{12}(S_{13}S_{14}+Z_{11}\overline{S_{11}})$$

wherein S_{12} is the binary sum furnished by said selected binary adder, while S_{12}^{*} is the corresponding corrected binary sum, S_{11}, S_{13} and S_{14} are the binary sums respectively furnished by the other three of said four binary adders, Z_{11} is the transfer introduced at said group input and Z_{21} is the transfer delivered at said group output; and a series of output means respectively associated with said adding devices, each of said output means comprising for a different one of said correcting networks, respectively, a group of three outputs for said binary sums passed unchanged through the particular correcting network and one output for said corrected binary sum furnished thereby.

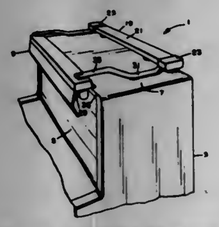
3,302,010
ALGEBRAIC COMPUTATIONAL SUBTRACTION DEVICE
Edward S. Rosett, Stamford, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 23, 1963, Ser. No. 275,040
9 Claims. (Cl. 235—177)

9. In an algebraic computational subtraction device for providing an output indicative of the difference between the number of pulses provided by two sources, the combination which comprises first and second magnetic counters having inputs and outputs for independently counting pulses provided by the two sources and for providing output pulses when filled, an auxiliary source of pulses, readout means for associating the auxiliary source with the first and second counter inputs when rendered operable so that a train of pulses is simultaneously applied thereto, first and second amplifier circuits having inputs and outputs for amplifying signals applied to the inputs when rendered effective, the first amplifier circuit being designed to provide an output having a first polarity and the second amplifier circuit being designed to provide an output having the opposite polarity, means responsive to an output of the first counter only for associating the auxiliary source with the input to the first amplifier circuit and for rendering the first amplifier circuit effective and subsequently responsive to



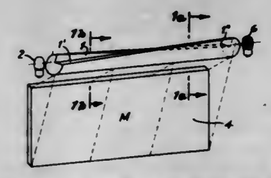
an output of the second counter for disassociating the auxiliary source from the first amplifier circuit input so that a series of pulses equal to the differential count in the counters is provided in the output circuit indicating a greater count in the first counter than in the second counter, means responsive to an output of the second counter only by associating the auxiliary source with the second amplifier circuit input and for rendering the second amplifier circuit effective and subsequently responsive to an output of the first counter for disassociating the auxiliary source from the second amplifier circuit so that a series of pulses equal to the differential count in the counters is provided in the output circuit indicating a greater count in the second counter than in the first counter, and means for rendering the readout means operable.

3,302,011
PORTABLE TELEPHONE SWITCHBOARD LIGHT
Abraham S. Katzel, 655 Park Ave., Albany, N.Y. 10007
Filed Dec. 22, 1964, Ser. No. 420,272
1 Claim. (Cl. 240—4)



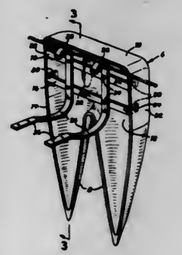
In combination, a conventional telephone switchboard and a portable telephone switchboard light mounted freely thereon; said telephone switchboard comprising a plug-in-board, a top portion and a leading edge formed by said plug-in-board and top portion; said portable telephone switchboard light comprising a fluorescent lighting fixture, a tubular fixture support, and a weight; said fixture support having a main web and legs, each of said legs having a lower portion and an upper portion articulating angularly upward from said lower portion, said main web and lower portions being coplanar and forming a base freely mounting said portable telephone switchboard light on said top portion, said upper and lower portions forming a clearance space for positioning said lighting fixture non-interferingly proximate said leading edge, said weight being freely mounted on said fixture support and adjustably positionable relative said fixture support, and said weight having funnels guiding said weight in its mounting emplacement on said fixture support.

3,302,012
LIGHTING SYSTEM UTILIZING THE FLOODLIGHT PRINCIPLE
Hellmut Reppisch, Immenstaad, Germany, assignor to Dornier-Werke, G.m.b.H., Friedrichshafen am Bodensee, Germany, a corporation of Germany
Filed June 26, 1964, Ser. No. 378,246
Claims priority, application Germany, June 29, 1963, D 41,862
8 Claims. (Cl. 240—8.16)



1. An illuminating system utilizing the floodlight principle comprising an elongated light-conducting body provided with light-reflecting surfaces extending from each end and to the center of the body, means for producing light rays at each end of the body, the light rays at one end being of different color from the rays at the other end, said light-reflecting surfaces each increasing in width with increasing distance from the respective light-producing means to provide uniform illumination, and means to independently vary the intensity of each light-producing means.

3,302,013
SIMULATED ICICLE DECORATIONS
Maxwell T. Richardson, 10 Ingrid Drive, Scarborough, Ontario, Canada
Filed Jan. 4, 1965, Ser. No. 422,978
4 Claims. (Cl. 240—10)

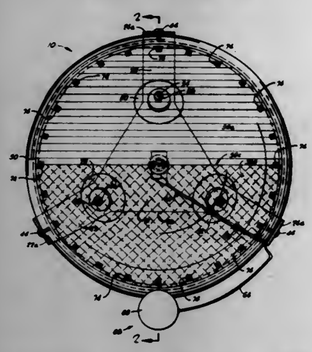


1. A simulated icicle decoration comprising a decorative body simulating at least a single icicle and having a front viewing side and a rear side, said decorative body constructed of a formable translucent material in a shell-like configuration with a cavity which is open to the rear thereof, cross straps disposed at the rear side of said decorative body and secured to the side portions thereof, said cross straps serving to hold a lamp socket, and vertically arranged attachment straps secured to said cross straps and extending rearwardly therefrom for fastening to a relatively fixed support.

3,302,014
UNDERWATER COLOR LIGHTING METHOD AND DEVICE

Bobby G. Moore, 6609 Del Norte, Dallas, Tex. 75225, and Norman D. Oswald, Dallas, Tex.; said Oswald assignor to said Moore

Filed Mar. 23, 1964, Ser. No. 353,889
14 Claims. (Cl. 240—26)

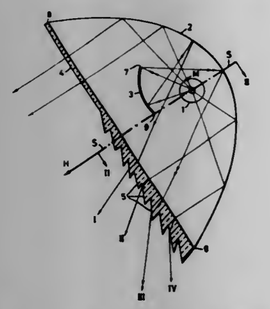


1. In combination with a light source disposed in a side wall of a water pool having a bottom and a free water surface, the light source being disposed below the water surface, a transparent colored lens member disposed over the light source such that light from the source will be projected through the lens member, the lower portion of the lens member over the light source being a first color and the upper portion of the lens member over the light source being a second color whereby light passing through the lower portion will be a first color and will be directed generally onto the bottom and light passing through the upper portion will be a second color and will simultaneously be projected generally upwardly to the surface where a portion of the light will be reflected downwardly to the bottom and be superimposed as a ripple pattern on the first color.

3,302,015
FLOOD-LIGHTING LUMINAIRE

Heinz Dahlke, Traunstein, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed May 28, 1964, Ser. No. 370,907
Claims priority, application Germany, June 8, 1963, S 45,220
6 Claims. (Cl. 240—41.3)

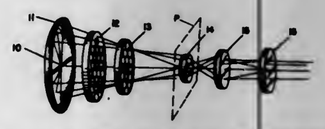


1. A floodlighting luminaire comprising: an elongated channel-shaped primary mirror having a front opening and a focus describing a line; a high-intensity elongated integral lamp mounted along and proximate the focal line of said primary mirror; said luminaire having a main radiation direction for radiations generated by said lamp and reflected by said primary mirror; a light-transmitting cover member fitting over the front opening of said primary mirror, and said cover member divided into upper and lower sections; an elongated auxiliary mirror spaced from said lamp and positioned between said lamp and the upper section of said cover member to intercept direct radiations emanated by said lamp toward said cover member and above the main radiation direction of said luminaire; and prisms provided on the lower section of said cover member to refract light striking same into the region located below the main radiation direction of said luminaire.

3,302,016
OPTICAL COLLIMATING SYSTEM

Philip M. Larraburu, Sylmar, Calif., assignor, by mesne assignments, to Textron Electronics, Inc., a corporation of Delaware

Filed Aug. 21, 1964, Ser. No. 391,256
5 Claims. (Cl. 240—41.3)

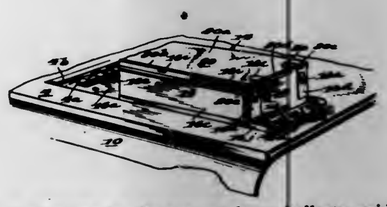


1. An optical collimating system for obtaining a collimated beam from a diffused radiant energy source, including in combination: a lenticular lens means positioned in front of said source to form images from said radiant energy at a point defining a re-imaging plane; a field lens disposed at said reimaging plane for gathering light from said lenticular lens means and projecting an image thereof; and a diffusing means on said field lens for integrating light falling thereon to render uniform the projected image from said field lens.

3,302,017
LUMINAIRE BALLAST HOUSING

Richard E. Hanson, Willowick, and Archie R. Cornell, Avon Lake, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 305,662, Aug. 30, 1963. This application Feb. 23, 1966, Ser. No. 536,515
10 Claims. (Cl. 240—51.11)



1. A housing for fluorescent lamp ballasts, said housing comprising:

a unitary body member including a generally flat base portion adapted to be mounted horizontally and having a pair of vertical side walls extending upwardly therefrom, a plurality of coplanar fastening portions connected to the vertical edges of said side walls at each end thereof and extending inwardly at right angles relative to said side walls, and securing members formed by end extremities of said base portion and extending beyond the vertical end extremities of said side walls;

a pair of parallel vertical end wall members positioned at the ends of said housing and in contiguous engagement with said fastening portions and the inner surface of said side walls, a horizontal retaining member connected to each of said end wall members and overlaying said securing members;

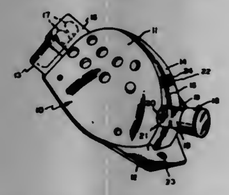
a horizontal cover member seated on the upper edge of said side walls and said end wall members; and

each of the members comprising said housing being formed of sheet metal, and connecting means formed from said unitary body member, said end wall members and said cover member for rigidly interconnecting said members.

3,302,018
HELMET-LAMP COMBINATION

Raymond Vincent Harding, 745 Stephen Ave., Perth Amboy, N.J. 08861

Filed Feb. 17, 1964, Ser. No. 345,397
1 Claim. (Cl. 240—60)

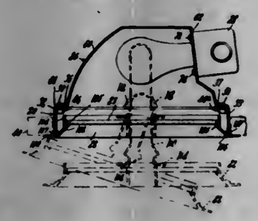


A helmet-lamp combination comprising a helmet of generally elliptical shape and formed of durable, plastic material, said helmet having a lamp mounted at the forward end thereof and a battery supported at the rear thereof, wiring connecting the lamp to the battery, a hollow, intergral raised portion extending longitudinally of the helmet and forming a recessed portion for housing the wiring, said raised portion having inwardly directed sides whereby the raised portion forms a handhold for the helmet, said lamp having means thereon for pivotally mounting said lamp to the raised portion of the helmet, means for securing the lamp in various adjusted positions, a visor mounted at the forward end of the helmet and having a lamp operating switch mounted thereon, and an expandable liner secured to the interior by plastic securing means.

3,302,019
INCANDESCENT LIGHT FIXTURE IMPROVEMENTS

Marvin Menzin, Framingham, Mass., assignor to Smithcraft Corporation, Chelsea, Mass., a corporation of Massachusetts

Filed Sept. 29, 1964, Ser. No. 400,003
8 Claims. (Cl. 240—147)



4. An incandescent fixture having a multi-use bulb-surrounding reflector adapted for stationary installation from a plurality of positions relative to a ceiling structure, comprising a rectangular mounting frame having means for securing said frame relative to said ceiling structure, said frame having two supporting ledges extending substantially horizontally from first and second opposing sides of said frame, the first of said ledges having at least one keying pin, first pin support means associated with said ledge to enable said keying pin to extend upwardly from said ledge, second pin support means associated with said ledge and spaced horizontally from said first means to enable said keying pin to extend downwardly from said ledge, the second ledge similarly having first and second spaced pin support means, located respectively opposite said second and first pin support means of said first ledge, said reflector having keying flanges with keying openings adapted to cooperate with said upwardly extending pins when said reflector is mounted from above said frame, said same keying openings adapted to cooperate with said downwardly extending pins when said reflector is reoriented horizontal 180° and mounted from below said frame.

3,302,020
RAILWAY SWITCHING MECHANISM

Kyutaro Nakamura, 3–6 Muromachi, Ikeda, Osaka, Japan

Filed Feb. 11, 1964, Ser. No. 344,047
13 Claims. (Cl. 246—452)

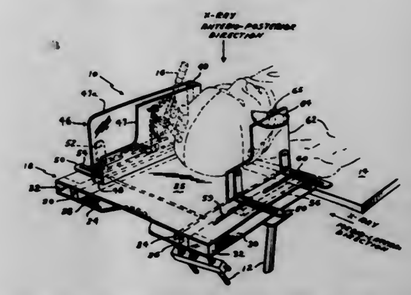


1. A device for bringing closure rails in a railway switch into and out of contact, characterized in that the arcuate ends of a connector lever for connecting together connector plates for closure rails are in close slidable contact with arcuate recesses provided in the projections of the said connector plates, and bolts passing through the said arcuate ends are each loosely inserted into a hole in one end of each of the said connector plates.

3,302,021
OPERATING TABLE ACCESSORY EXTENSION BODY SUPPORT AND HOLDER FOR PLURAL X-RAY FILM CASSETTES

Wayne Hardy, West Milton, Ohio (Box 119M, R.F.D. 3, Griffin, Ga. 30223)

Filed May 1, 1964, Ser. No. 364,339
3 Claims. (Cl. 250—50)



1. For use on a surgical operating table having an accessory universal bracket; an operating table accessory extension body support and X-ray film cassette holder comprising: a horizontal base member having an X-ray pervious substantially thin planar upper body support member, a lower member adapted for removably joining to the universal bracket on the operating table, a central recess for holding a first X-ray film cassette in close proximity to said upper body support member and formed by

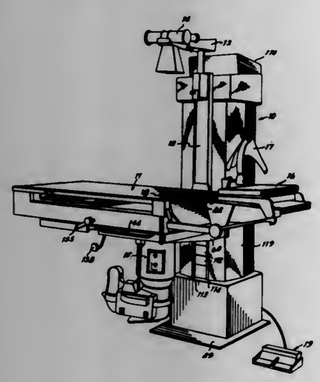
a first and a second elongated side member longitudinally joined to and between said upper body support member and said lower member, and biasing means within the central recess movably supported by one of said elongated side members for laterally biasing the first X-ray film cassette to an indexed position against the second elongated side member; an X-ray pervious vertical X-ray film cassette holding means joined to said base member for holding a second X-ray film cassette laterally above and substantially normal to the first X-ray film cassette in said base member, said vertical X-ray film cassette holding means having a bottom member and an end member for indexing two adjacent edges of the second X-ray film cassette and further having a substantially thin planar side member for laterally supporting the protruding portion of the patient's body to be in close proximity to the second X-ray film cassette, said base member and said vertical X-ray film cassette holding means having cooperating adjusting means for longitudinally and laterally positioning said vertical X-ray film cassette holding means on said base member; and X-ray pervious vertical support means joined to said base member for laterally holding the protruding portion of the patient's body against said vertical X-ray film cassette holding means, said base member and said vertical support means having cooperating adjusting means for longitudinally and laterally positioning said vertical support means on said base member.

3,302,022

VERTICALLY AND HORIZONTALLY ADJUSTABLE ROTATABLE UROLOGICAL X-RAY TABLE

Orlestus R. Brenner and George L. Reser, Cincinnati, Ohio, assignors to Liebel-Flarsheim Company, Division of Ritter Company, Inc., Rochester, N.Y., a corporation of Delaware

Filed Mar. 24, 1964, Ser. No. 354,245
15 Claims. (Cl. 250—57)



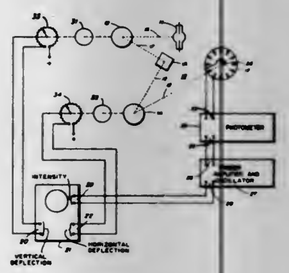
1. A cantilever type urological table comprising,
a floor supported column having a vertically extending longitudinal axis,
a vertically movable and rotatable table support mounted upon and extending laterally from said column,
means for moving said table support vertically relative to said column,
means for rotating said table support relative to said column about an axis transverse to the longitudinal axis of said column,
an X-ray table mounted upon said table support and including and X-ray transparent top surface member, and
means for mounting said table for lateral and longitudinal movement on said table support.

3,302,023

APPARATUS FOR PRODUCING THREE-DIMENSIONAL RECORDINGS OF FLUORESCENCE SPECTRA

Myron M. Schachter, Washington, D.C., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Feb. 20, 1964, Ser. No. 346,356
8 Claims. (Cl. 250—71)



1. Apparatus for displaying the fluorescence spectra of a polynuclear hydrocarbon on the face of the cathode ray tube of an oscilloscope which has inputs for controlling the vertical deflection, the horizontal deflection, and the intensity of the cathode ray tube beam comprising: a broad spectrum light source; an oscilloscope; a first filter for passing light from said source and having a second output which is an electrical signal proportional to the wavelength of a light passed therethrough; said second output of said first filter means being connected to the vertical deflection plates of said oscilloscope; a polynuclear hydrocarbon solution; said polynuclear hydrocarbon solution located so as to be in the beam of light passed through the said first filter means; a second filter means located so as to intercept the light emitted by said polynuclear hydrocarbon solution; said second filter means having a second output which is an electrical signal proportional to the wavelength of the light passed therethrough; said second output of said second filter means being connected to the horizontal deflection plates of said oscilloscope said second outputs of said first and second filters being both continuously and simultaneously variable; a light intensity detecting means connected so as to intercept the light output from said second filter means; said light intensity detecting means having an output which is proportional to the light intercepted; the output from said light intensity detecting means being connected to the intensity control of the oscilloscope for controlling the intensity of the electron beam of the oscilloscope whereby the wavelength of the excitation and the emission light from said polynuclear hydrocarbon control the position of the electron beam of the oscilloscope and the output from the light intensity detecting means controls the intensity of the electron beam of the oscilloscope all of which are dependent upon the physical characteristics of the hydrocarbon sample.

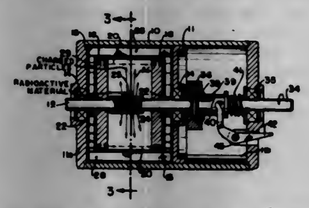
3,302,024

MOTOR USING NUCLEAR CHARGED PARTICLES

Ellsworth A. Edling, 3176 W. 90th St., Cleveland, Ohio 44104, and Richard P. McKenna, Box 57, Navesink, N.J. 07752

Filed Sept. 22, 1961, Ser. No. 140,087
16 Claims. (Cl. 250—106)

1. In a motor powered by a source of high velocity charged particles the combination comprising a rotatable shaft, a source for emitting charged particles, whose charges are predominantly of one polarity, means for producing a magnetic field for interaction with said emitted charged particles, and means for fixedly mounting at least a part of said magnetic field producing means for



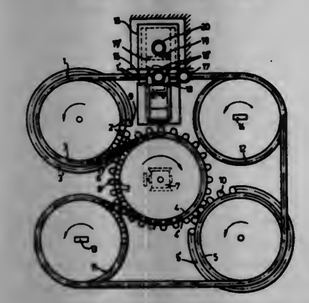
rotation with said shaft, the interaction of said charged particles and said field producing a force on said particles and a torque on said shaft to rotate the same.

3,302,025

SAMPLE CHANGER FOR RADIO-ACTIVE SAMPLES USING ENDLESS FLEXIBLE MEANS FOR SAMPLE TRANSPORTATION

Herbert Scholz, Hamburg, and Petar Palic, Hamburg-Lockstedt, Germany, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 834,601, Aug. 18, 1959. This application Aug. 29, 1963, Ser. No. 306,653
Claims priority, application Germany, Aug. 29, 1958, P 21,269
8 Claims. (Cl. 250—106)



2. A sample changer for radioactive samples employed with a radiation meter comprising a plurality of sample holders, a shielding chamber containing said radiation meter, a chain system for transporting said samples to be tested successively within the operating range of said radiation meter, means for driving said chain system, and means for engaging said sample holders and lifting the same from said chain system to deposit each sample holder into said shielding chamber containing said radiation meter.

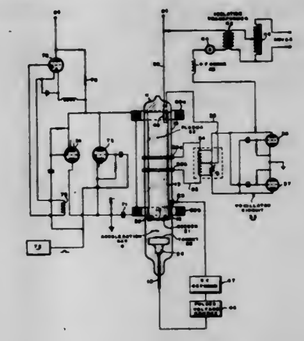
3,302,026

ION SOURCE NEUTRON GENERATOR HAVING MAGNETICALLY STABILIZED PLASMA

Richard G. Mallon and Wilmer A. Hoyer, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed July 25, 1963, Ser. No. 297,511
14 Claims. (Cl. 250—84.5)

1. Apparatus for use in generating neutrons comprising:
a closed tube;
an extraction electrode arranged in said tube and including a mesh screen dividing said tube into an accelerator chamber and an ionizing chamber;
high frequency means surrounding the ionizing chamber of said tube;
ion plasma contained within said ionizing chamber;
a target arranged in said accelerator chamber;
an electrical oscillator means connected to said high frequency means adapted to supply continuous high frequency current to said high frequency means to ionize said plasma;
a pulsed voltage source connected to said target and to said extraction electrode adapted to apply high voltage pulses to said target and extraction voltage pulses to said extraction electrode to produce bursts of neutrons;



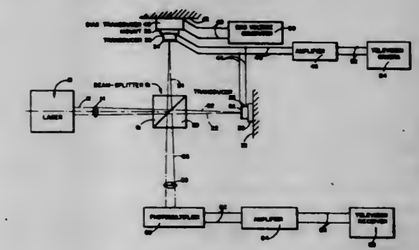
magnetic mirror field means adapted to apply a magnetic mirror field to said plasma to stabilize said plasma;
a circuit having a capacitor in series with said magnetic mirror field means and capable of being discharged through the inductance thereof;
means for charging said capacitor; and
a thyratron capable of discharging said charged capacitor upon the appearance of a voltage pulse on the grid thereof.

3,302,027

INTERFEROMETRIC METHOD AND APPARATUS FOR MODULATION AND CONTROL OF LIGHT

David L. Fried, Huntington Park, and Wendell S. Read, Los Angeles, Calif., assignors to North American Aviation, Inc.

Filed July 12, 1963, Ser. No. 294,585
22 Claims. (Cl. 250—199)



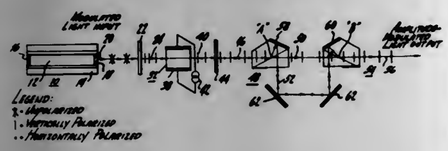
1. An optical modulation system comprising:
a source of substantially monochromatic light,
a first lens for focusing light from said source,
a beam-splitter for splitting light from said first lens into two focused beam portions,
a pair of mirrors each positioned to intercept a respective one of said beam portions at the focus thereof,
a source of modulation signal,
means responsive to said modulation signal for effecting mutually opposite sense oscillatory motion of said mirrors along the paths of said beam portions,

a second lens for collimating the modulated light beam formed by the recombination of said focused beam portions at said beam-splitter and means for continuously causing the oscillatory motion of said mirrors to operate about a selected portion of the curve relating interference with relative path lengths so that maximum linearity is obtained in the relation between light amplitude and amplitude of the modulation signal.

3,302,028
HIGH EFFICIENCY LIGHT MODULATION SYSTEM

Fred Sterzer, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed June 10, 1963, Ser. No. 286,682
6 Claims. (Cl. 250—199)



1. A light beam system for use with a polarization modulated beam comprising

means for separating the beam into two components having different polarizations,

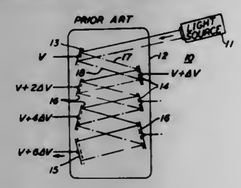
means for inverting the modulation of one of said components, and

means for adding said components after said one of said components has been inverted.

3,302,029
PHOTOMULTIPLIER RESPONSIVE TO HIGH FREQUENCY MODULATED LIGHT WAVES

Richard C. Miller, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 30, 1963, Ser. No. 334,148
15 Claims. (Cl. 250—207)



9. A photomultiplier comprising:

means defining an electrically field-free region;

an array of electrodes arranged around the periphery of the field-free region;

one of the electrodes being photoemissive and the remainder of the electrodes being secondarily emissive dynodes;

said photoemissive electrode being arranged to emit, in response to the impingement of light thereon, a stream of electrons through the field-free region toward a first dynode;

all but a last one of the dynodes being arranged to emit, in response to electron impingement thereon, secondary electrons through the field-free region toward a successive dynode of the array, whereby a tortuous electron stream path is established;

the last dynode being arranged to emit, in response to electron impingement thereon, secondary electrons toward an electron collector;

a plurality of electron-permeable grids each being at the same electric potential as the field-free region and each being closely adjacent to and parallel with the emitting surfaces of one of the electrodes;

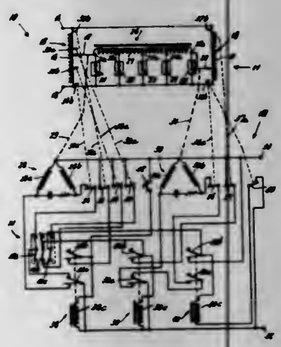
the various electrodes and adjacent grids being inclined at an angle with respect to the next preceding electrode whereby opposite electron stream boundaries between successive electrodes have different lengths;

the electrical potentials on the electrodes and grids and the angles of electrode and grid inclination being arranged such that the net electron transit times along the two opposite electron stream boundaries of the entire path established by the array are substantially equal.

3,302,030
PLURAL TRANSFORMER ELECTRIC LOAD CONTROL CIRCUIT

Burr G. Deming, Stamford, Conn., assignor to The Superior Electric Company, Hartford, Conn., a corporation of Connecticut

Filed May 23, 1963, Ser. No. 282,657
10 Claims. (Cl. 307—17)



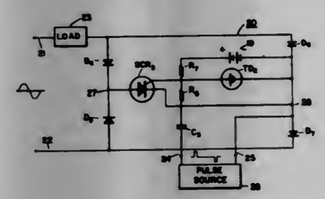
1. An electric control circuit for controlling the electrical energy to a plurality of individual load circuits comprising input terminals connectible to a source of electrical energy, a first voltage means connected to said input terminals and having output terminals across which an output voltage appears, a second voltage means connected to said input terminals and having output terminals across which an output voltage appears, a voltage dividing means connected across similar output terminals of said first and second voltage means and having a plurality of taps at different voltage positions, a plurality of load circuits, with the taps dividing the voltage difference between the values of output voltages of the first and second voltage means in a constant ratio at the different voltage positions, means connecting one side of the load circuits to one of the taps, one to one, and means connecting the other sides of the load circuits to the other output terminals of the first and second voltage means.

3,302,031
FULL AND HALF WAVE CONTROL CIRCUITS EMPLOYING TUNNEL DIODE GATE DRIVEN CONTROLLED RECTIFIERS

Frank W. Gutzwiller, Auburn, N.Y., assignor to General Electric Company, a corporation of New York

Filed Sept. 19, 1961, Ser. No. 139,269
9 Claims. (Cl. 307—88.5)

1. A control circuit for switching a source of alternating current through a load comprising at least one controlled rectifier having an anode, cathode and gate, means connecting said load in series with the anode-cathode path of said controlled rectifier, means connecting said serially connected load and controlled rectifier path to said source, at least one tunnel diode having an anode and cathode, said tunnel diode being operable between a low impedance and a high impedance state, circuit means connecting the anode of said tunnel diode in circuit with the gate of said controlled rectifier and connecting the cathode of said tunnel diode with said cathode of said controlled rectifier, and a current source con-

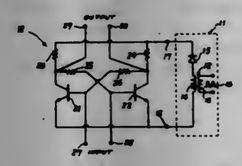


nected across said tunnel diode, said tunnel diode having a peak current characteristic such that when the current supplied to the tunnel diode exceeds its peak current characteristic, said tunnel diode switches into a high impedance state and thereby diverts current to the gate of said controlled rectifier to fire said controlled rectifier each time the alternating current source voltage at the anode of said controlled rectifier is positive.

3,302,032
TRANSISTOR LOGIC CIRCUIT

Takuya Kawamoto and Sawako Kawamoto, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Apr. 6, 1962, Ser. No. 185,572
Claims priority, application Japan, Apr. 8, 1961, 36/12,456
11 Claims. (Cl. 307—88.5)



1. In a four terminal logic circuit,

a pair of amplifier devices each including first, second and third electrodes with the impedance between said first and second electrodes being controlled by the magnitude of a signal applied between said third and first electrodes,

a first input signal,

means connecting said first electrodes to one side of said first input signal source,

a pair of impedances connecting said second electrodes to the other side of said first input signal source,

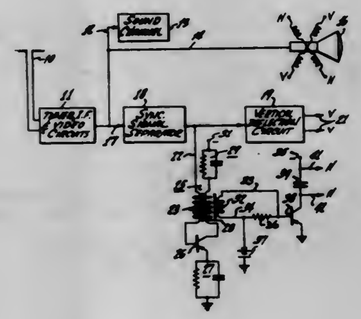
a second input signal source, means connected between said second input signal source and said amplifier devices for biasing each of said devices and defining a complete biasing path therefor including means for connecting one end of said second input signal source to one of said third electrodes and simultaneously connecting the other end of said second input signal source to the other of said third electrodes,

and an output including a pair of output terminals each connected to a respective one of said second electrodes and providing an output voltage having a value proportional to the value of the voltage of said first input signal source and a polarity dependent upon the polarity of the voltage of said second input signal source.

3,302,033
PULSE FORMING CIRCUIT FOR HORIZONTAL DEFLECTION OUTPUT TRANSISTOR

Hunter C. Goodrich, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,753
5 Claims. (Cl. 307—88.5)



1. In a horizontal deflection circuit for a transistorized television receiver having an output transistor responsive to an applied voltage waveform in excess of a predetermined cut-off amplitude for passing from a conductive to a non-conductive state and adapted to be connected to the horizontal electromagnetic deflection means of the kinescope in the television receiver for developing substantially sawtooth shaped output currents upon being rendered alternately conductive and nonconductive by shaped pulses applied to said output transistor, the pulse shaping being such that the leading edge of each of said shaped pulses has an amplitude substantially higher than the cut-off voltage for said output transistor and the trailing edge amplitude of each of said shaped pulses is higher than said cut-off voltage and substantially lower than said leading edge amplitude, means for generating said shaped pulses comprising:

a blocking oscillator transistor;

a blocking oscillator transformer connected in circuit with said blocking oscillator transistor and having a plurality of windings; and

bilaterally conductive impedance means arranged in series with one of said windings of said blocking oscillator transformer to effect said pulse shaping.

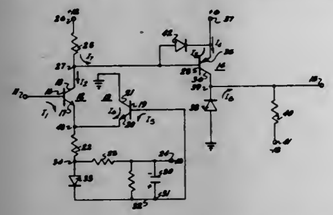
3,302,034
PULSE PROCESSING CIRCUITS HAVING AUTOMATIC THRESHOLD LEVEL CONTROL

John R. Newell, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed Apr. 24, 1963, Ser. No. 275,346
7 Claims. (Cl. 307—88.5)

1. A switching device whose threshold level is established by input signals from a source of signal pulses comprising an energy storage means having a discharge time several times greater than the period between the pulses received, a first means having a current control electrode and first and second output electrodes, said current control electrode being arranged to receive the pulses, one of said output electrodes being connected to said en-

ergy storage means to create a voltage therein proportional to the amplitude of the pulses, first and second terminals for connection to reference potentials, a second means for connecting said storage means to one of said output elec-



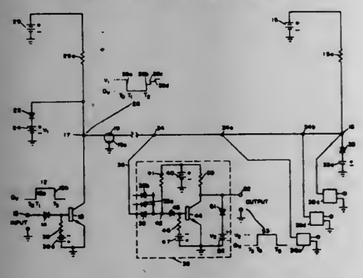
trodes to establish the level at which said first means conducts, and means for connecting said first terminal to said energy storage means and said second terminal to the other of said output electrodes.

3,302,035

TRANSMISSION SYSTEM

Harold R. Greene, New Shrewsbury, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey

Filed Apr. 30, 1963, Ser. No. 276,769
12 Claims. (Cl. 307—88.5)



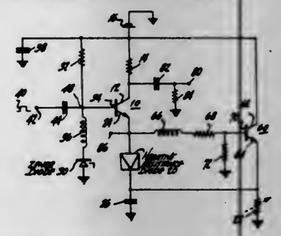
1. A system for transmitting binary information in the form of bits having first and second states, comprising
- at least one transmission line having input terminals and output terminals,
- input means having said bits applied thereto, said input means being connected to said input terminals to provide a first incident wave on said line corresponding to a first state bit and to provide a second incident wave on said line corresponding to a second state bit, the impedance across said input terminals being substantially zero during the time of a first state bit and being of value other than zero during the time of a second state bit,
- a plurality of logical elements each operable between two stable states and connected to differing points on said transmission line,
- means including a diode connected across said output terminals and biased to be conductive only for a first reflection of each of said first incident waves produced when the impedance across said input terminals is substantially zero, and
- means including a source of supply connected to said transmission line for providing at said output terminals for each of said first incident waves a termination impedance greater in magnitude than the characteristic impedance of said transmission line whereby each of said first and said second incident waves is of sufficient magnitude to fully switch each of said logical elements from one to the other of its stable states.

3,302,036

TRIGGER CIRCUIT EMPLOYING A TRANSISTOR HAVING A NEGATIVE RESISTANCE ELEMENT IN THE EMITTER CIRCUIT THEREOF

Louis S. Cosentino, Somerset, and Charles M. Wine, Princeton, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed May 20, 1963, Ser. No. 281,552
6 Claims. (Cl. 307—88.5)



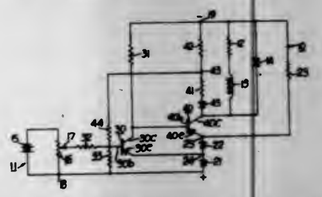
1. A high speed threshold circuit comprising:
- a transistor having a base, an emitter and a collector;
- a two-terminal circuit element having a volt-ampere characteristic with a first positive resistance region of low voltage, relatively speaking, a second positive resistance region of relatively high voltage, and a region of negative resistance between the two positive resistance regions;
- a point of reference potential;
- a resistor connected in series with said circuit element between said reference point and said emitter;
- a load impedance connected at said collector;
- bias means connected between said base and said reference point providing a quiescent emitter current which biases said circuit element in the first positive resistance region, said element being switchable to the second positive resistance region when the emitter current exceeds a predetermined value;
- a capacitor connected in a circuit across said resistor to the exclusion of said circuit element, and having a time constant which is long compared to the switching time of said circuit element and the turnoff time of said transistor; and
- means for applying input signals between said base and said reference point.

3,302,037

TRIGGER CIRCUIT WITH HIGH POWER GAIN

Manfred E. Neumann, New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed July 2, 1963, Ser. No. 292,347
3 Claims. (Cl. 307—88.5)



1. A trigger circuit for connecting and disconnecting a load between first and second terminals, comprising,
- a resistor and two diodes connected in series between said two terminals to establish first and second reference potential points with respect to said first terminal with said diodes operating in their region of low dynamic resistance to maintain said reference potentials substantially constant, said first reference point being nearer in potential than said second point to said first terminal,

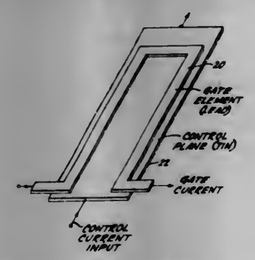
- an input transistor having its emitter terminal connected to have the potential of said first reference point and having a resistor connecting its collector terminal to said second terminal and having a resistor connecting its base terminal to said first terminal for turning off said input transistor,
- an input circuit for turning on and off said input transistor according to the input voltage level and said first reference point potential,
- an output transistor having its emitter terminal connected to have the potential of said second reference point and having its collector terminal connected to energize the load when turned on,
- means connecting said input transistor to turn the output transistor on and off according to the potential at said input transistor collector terminal and at said second reference point, and
- the series combination of two resistors connected between the output collector terminal and said second terminal to provide a measure of the voltage across the load at their common connection point, and means connecting said common connection point to the base terminal of said input transistor to form a trigger circuit.

3,302,038

CRYOELECTRIC INDUCTIVE SWITCHES

Charles M. Wine, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 6, 1963, Ser. No. 328,707
10 Claims. (Cl. 307—88.5)



1. An inductive switch comprising:
- a superconductive control plane;
- a current carrying superconductive gate element located close to the control plane having relatively closely spaced input leads over said control plane and a relatively long current carrying path over said control plane connected to said input leads;
- and means other than said gate element for substantially increasing the penetration depth λ of the control plane to effect a change in inductance of said gate element.

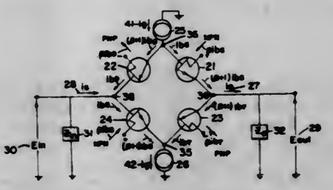
3,302,039

GATEABLE BRIDGE NETWORK HAVING POWER GAIN

Richard H. Baker, Bedford, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Feb. 17, 1964, Ser. No. 345,469
5 Claims. (Cl. 307—88.5)

1. A bridge network comprising,
- input means,
- output means,
- four transistors,
  - two of which are NPN transistors, and
  - two of which are PNP transistors,
  - a first group of said transistors comprising an NPN transistor and a PNP transistor having their bases connected together,
  - a second group of said transistors comprising an NPN transistor and a PNP transistor having their emitters connected together,
  - said first group of interconnected transistors having their emitters connected to the bases of said second group of interconnected transistors, positive and negative biasing means,
  - said PNP transistors having said negative bias applied to its collectors,
  - said NPN transistors having said positive bias applied to its collectors,



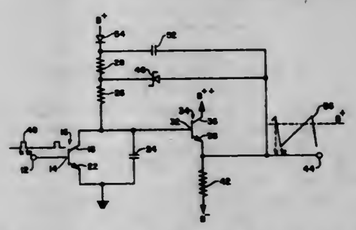
- current generating means for gating said transistors on and off having first and second leads,
- said first lead of said current generating means connected to one point of connection between said first and second group of transistors,
- said second lead of said current generating means connected to the second point of connection between the first and second group of transistors,
- said input means connected to said base connections of said first group of transistors, said output means connected to said emitter connection of said second group of transistors.

3,302,040

LINEAR SAWTOOTH VOLTAGE-WAVE GENERATOR EMPLOYING TRANSISTOR TIMING CIRCUIT HAVING CAPACITOR-ZENER DIODE COMBINATION FEEDBACK

Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of Elberson D. Green and Martin G. Woolfson

Filed Feb. 24, 1964, Ser. No. 347,101
2 Claims. (Cl. 307—88.5)



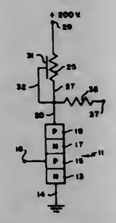
1. A sawtooth voltage wave generator for producing sawtooth waveforms of increased linearity comprising:
- a switching transistor having a base, emitter, and collector;
- an output transistor having a base, emitter, and collector and biased for emitter follower operation;
- a charging capacitor connected between said switching transistor collector and emitter;
- means coupling said switching transistor collector to said output transducer base;
- a first diode connected with its anode to a source of voltage;
- first resistor coupled at one side to the cathode of said first diode;

a second resistor connected between the other side of said first resistor and said switching transient collector;

a diode means connected between said output transistor emitter and the junction of said first resistor and said second resistor for maintaining a constant current for said charging capacitor; and

a capacitor connected between said one side of said first resistor and said switching transistor emitter and cooperating with said diode means to provide an increased period of response for said diode means whereby sawtooth waveforms of increased linearity are provided.

3,302,041
SILICON CONTROL RECTIFIER AND FIELD EFFECT TRANSISTOR PULSE GENERATOR
Melvin H. Poston, Annapolis, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 27, 1964, Ser. No. 363,029
4 Claims. (Cl. 307—88.5)



1. A constant output impedance triggered pulse generator comprising:

a silicon control rectifier means having an input and an output; and

a field effect modulated semiconductor means having a first terminal for connection to a voltage source, a second terminal and a field modulating input, said second terminal and said field modulating input being connected to said output of said first semiconductor whereby an input pulse placed on the input terminal of said first semiconductor causes an output pulse to appear on the output terminal of said first semiconductor.

3,302,042
NUCLEAR REACTOR WITH THERMIONIC CONVERTER
George M. Grover, Los Alamos, N. Mex., and Claus A. Busse, Laveno, and Josef Bohdansky, Taino, Italy, assignors, by direct and mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 23, 1965, Ser. No. 504,270
4 Claims. (Cl. 310—4)

1. In a nuclear reactor core having fissile fuel and a moderator, a heat extraction system comprising:

a first heat pipe having one end interior to the reactor core and thermally coupled to the fissile fuel and being heated thereby, the other end being exterior to the core;

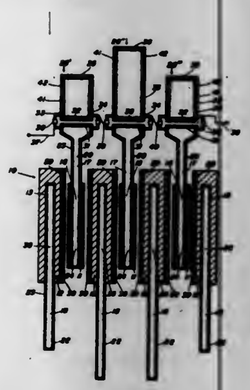
an emitter electrode thermally coupled to the end of said first heat pipe which is exterior to the core;

a collector electrode electrically isolated from said emitter electrode and disposed so as to collect electrons emitted from said emitter electrode;

a second heat pipe, one end of which is thermally coupled to said collector electrode and heated thereby and the other end of which is disposed for heat rejection by radiation;

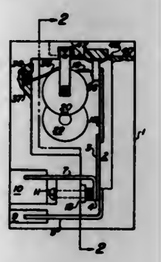
a third heat pipe having one end interior to the reactor core and thermally coupled to the moderator and heated thereby the other end being exterior to the reactor core for heat rejection by radiation;

a condensible vapor disposed within each of said first second and third heat pipes;



capillary means covering the entire inner surfaces of said first, second and third heat pipes for causing the transport of said condensible vapor within each respective heat pipe from the pipe's unheated end to its heated end whereby heat is extracted from the reactor.

3,302,043
SYNCHRONOUS ELECTRIC MOTOR
Christian D. Berger, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed July 16, 1963, Ser. No. 295,463
8 Claims. (Cl. 310—8.3)



1. An electric motor comprising;

(a) support means,

(b) driven means movably supported on said support means,

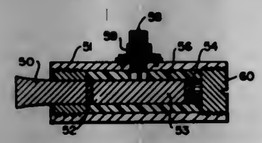
(c) a drive system including;

(aa) a piezoelectric device having a fixed part secured to said support means and a free part which is moved when said piezoelectric device is electrically stressed,

(bb) a driver carried by said free part and positioned to drive said driven means when said free part is moved, and

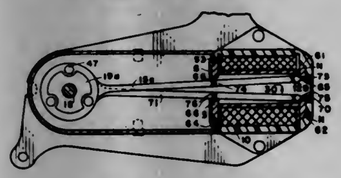
(cc) sound dampening means having a high mechanical resistance to vibration and a very low capacity to transmit vibration interposed between said driver and said free part.

3,302,044
ULTRASONIC PROBE
Lawrence C. Lynnworth, Waltham, and Edmund H. Carnevale, Beverly, Mass., assignors to Parametrics, Inc., Waltham, Mass., a corporation of Massachusetts
Filed May 14, 1964, Ser. No. 367,320
9 Claims. (Cl. 310—8.3)



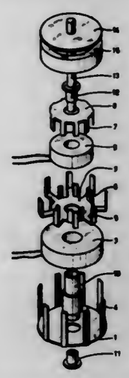
1. An ultrasonic wave transmission probe comprising, a piezoelectric crystal for emitting ultrasonic waves along an axis of propagation normal to the face of said crystal; an elongated contact element bonded to said crystal and having a longitudinal axis coincident with the axis of propagation of said emitted ultrasonic waves, said contact element having a contact surface in a plane normal to said axis of propagation, said contact surface having an area substantially less than the area of said crystal face, and a radius of curvature greater than one eighth inch.

3,302,045
VIBRATOR MOTOR WITH STEPPED ROTARY OUTPUT
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,117
16 Claims. (Cl. 310—37)



13. A slow, constant speed electric motor comprising: an apertured coil means energized by pulsating current so as to provide a source of pulsating magnetic flux, substantially O-shaped permanent magnet means abutting each extremity of said coil means so as to provide a source of steady magnetic flux, each of said permanent magnet means including two substantially U-shaped magnets having pole faces in spaced parallel relationship, said two U-shaped magnets joined to form said substantially O-shaped permanent magnet means having abutting north-south poles and poles of opposite polarity in spaced parallel relationship, at least two armatures having their free ends projecting through said aperture of said coil means and said apertures of said permanent magnet means magnetically coupling said free end of said armatures to said coil means and to said permanent magnet means, interaction of said pulsating magnetic flux of said coil means and of said steady magnetic flux of said permanent magnet means causing said free ends of said armatures to vibrate with lateral vibratory motion within said aperture of said coil means and said apertures of said permanent magnet means, a first one-way clutch means connected to an extremity of one of said armatures opposite said free end thereof, a second one-way clutch means connected to an extremity of the other armature opposite said free end thereof, a shaft coupled to said first and second clutch means, said first and said second clutch means translating said lateral vibratory motion of said armatures to unidirectional motion thereby rotating said shaft in a first direction at a constant speed and preventing rotation of said shaft in a second direction.

3,302,046
STEP MOTOR
Johannes Fredrik Brandwijk, Hendon, Adelaide, South Australia, Australia, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1964, Ser. No. 400,154
Claims priority, application Netherlands, Oct. 24, 1963, 299,711
4 Claims. (Cl. 310—49)



1. A step motor having a plurality of steps per revolution comprising a pair of concentric stator means including a pair of coaxial annular stator coil means for defining a main coil and an auxiliary coil, said coil means being separated by a first plate of ferromagnetic material having a plurality of pairs of main stator poles and also a plurality of pairs of auxiliary stator poles, the plurality of pairs of said main stator poles being equal to said plurality of steps, said stator poles being orthogonal with said first plate and annularly arranged in concentric spaced relation about the periphery of said auxiliary coil, a pair of end plates in sandwiched relation with said stator coils, each said end plate having a plurality of pairs of stator poles, said stator poles of each said end plate being orthogonal and in annular arrangement therewith, said plurality of stator poles of one said end plate surrounding said main stator coil and extending into nesting relation between said main stator poles of said first plate surrounding said auxiliary stator coil, said plurality of stator poles of the other said end plate concentrically surrounding said auxiliary stator coil and being in concentric staggered relation with the auxiliary poles of said first plate, said main stator poles and said auxiliary stator poles defining an annular gap therebetween, an annular permanent magnet rotor in said annular gap, said rotor having inner and outer circumference surfaces adjacent said stator poles, each said circumferential surface having a plurality of magnetic poles of alternate opposite polarity equal in number to said plurality of main stator pole pairs, means for shifting the excitation of the poles of said auxiliary stator 90 electrical degrees in a leading sense with respect to the poles of said main stator thereby to determine the direction of rotation of said rotor.

3,302,047
FAN ASSEMBLY FOR HIGH-TORQUE APPLICATION
Harold O. Short, Towson, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Continuation of application Ser. No. 326,569, Nov. 27, 1963. This application Dec. 24, 1964, Ser. No. 420,935
2 Claims. (Cl. 310—60)

1. In combination with a relatively high-speed high-torque electrically operated machine of the type experiencing occasional relatively high stall-torques and com-

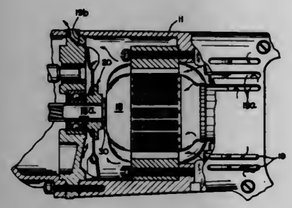
prising a motor housing, a motor in the motor housing, a driving shaft on the motor, and air inlet and exhaust openings in the motor housing: a cooling fan assembly for the motor for drawing cooling air in through the inlet openings and discharging the cooling air through the exhaust openings, said fan assembly comprising:

(A) a hub portion having a central aperture for receiving said motor driving shaft;

(B) means for mounting said hub portion to said motor driving shaft of said machine for rotation in unison;

(C) a shoulder on said hub portion;

(D) a blade portion having an apertured central section seated upon said hub portion and disposed against said shoulder; and



(E) an annular retaining member having a frustroconical cross-section concavely disposed with respect to said blade portion and seated with an interference fit upon said hub portion axially of said blade portion;

(F) whereby said blade portion is retained axially on said hub portion;

(G) whereby any necessity for selecting the material of said blade portion for compatibility with the material of said hub portion, is eliminated; and

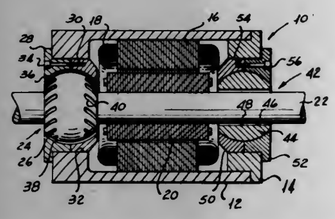
(H) whereby said blade portion may index circumferentially with respect to said hub portion whenever the machine experiences a stall-torque of a predetermined magnitude, thereby precluding fan assembly breakage and insuring subsequent adequate cooling for the motor.

3,302,048

SELF-ALIGNING GAS BEARING

Stanley Gray, Loudonville, N.Y., assignor to The Barden Corporation, Danbury, Conn., a corporation of Connecticut

Continuation of application Ser. No. 315,183, Oct. 10, 1963. This application Sept. 23, 1965, Ser. No. 496,232
1 Claim. (Cl. 310—90)



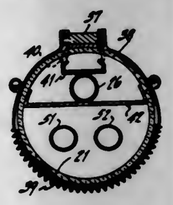
A hydrodynamic bearing assembly including in combination, an elongated housing having ends, a winding carried by said housing intermediate its ends, a shaft having an axis, a rotor carried by said shaft for coaction with said winding, a first spherical bearing element, means for securing said first bearing element to said shaft for rotation therewith, a first pair of spherical surface forming elements, means mounting said first spherical surface forming elements in assembled relationship at one end of said housing to receive said first spherical bearing element, said bearing element and the surface formed by the first pair of elements cooperating to provide a spherical hydrodynamic gas lubricant film forming space, a second bearing element having a cylindrical bore and a spherical outer surface, a second pair of spherical surface forming elements, means mounting said second pair of elements at the other end of said housing, said shaft being positioned in said bore to form a hydrodynamic spherical gas bearing therewith, and means for locking said spherical surface forming elements in engagement with said second spherical element in a position thereof at which said cylindrical bore is aligned with said shaft axis to prevent movement of said second bearing element with relation to said second pair of spherical surface forming elements.

3,302,049

MAGNET MEANS FOR CORRECTION OF BLUE BEAM LATERAL DEFLECTION FOR COLOR TELEVISION RECEIVER TUBES

Eugene Lemke, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 3, 1963, Ser. No. 277,800
4 Claims. (Cl. 313—75)



1. For use in a color television receiver, in combination,

a cathode ray tube having an envelope, a screen and a neck portion, at least part of said neck portion being made of a nonmagnetic material, said cathode ray tube further including at least three electron guns mounted within said neck portion, each of said electron guns respectively emitting an electron beam along a path towards said screen;

a pair of substantially parallel internal pole pieces made of magnetic material and arranged transversely within said tube envelope on opposite sides of one of said electron guns;

a nonmagnetic holder mounted exteriorly of said nonmagnetic neck portion of said envelope adjacent said pole pieces and movable circumferentially about said neck portion; and

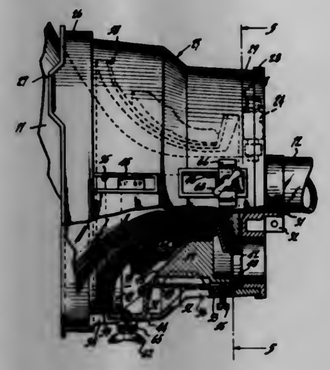
a lateral beam deflecting member made of magnetic material mounted in said nonmagnetic holder for producing a magnetic flux extending into said cathode ray tube envelope, said nonmagnetic holder being movable into a first circumferential position in which said lateral beam deflecting member is substantially parallel to said pole pieces wherein substantially all of the magnetic flux emitted thereby and extending into said tube envelope passes through only one of said pair of pole pieces and does not extend into the path of any of the electron beams and being further movable to at least a second circumferential position wherein said magnetic flux extending into said tube envelope passes through both of said internal pole pieces and into the path of only said electron beam emitted by said one of said electron guns.

3,302,050

ADJUSTABLE DEFLECTION YOKE MOUNTING FOR COLOR PICTURE CATHODE RAY TUBES

Maximilian J. Obert and John M. Ammerman, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware

Filed July 15, 1964, Ser. No. 382,786
9 Claims. (Cl. 313—77)



7. In color television display apparatus employing a tri-color cathode ray tube having a luminescent screen comprising phosphors capable of producing red, green and blue light when excited by electron beams and having respective sources of three electron beams which traverse pre-deflection paths that are spaced symmetrically about the longitudinal axis of said tube with said blue light-producing beam being horizontally above and vertically in the same plane with said axis, and said red and green light-producing beams being horizontally equally below and vertically equally on opposite sides of said axis, the combination comprising:

means including a deflection yoke mounted externally of said tube in a region between said electron beam sources and said screen and energizable to deflect said beams to scan respective red, green and blue rasters at said screen, and vertical lines of said red and green rasters being converged with one another throughout and with vertical lines of said blue raster in central portions but being subject to misconvergence with vertical lines of said blue raster in left and right side portions; and,

means for changing the elevation of the end of said yoke adjacent said electron beam sources relative to the paths of said electron beams to effect convergence of all vertical lines of said red, green and blue rasters.

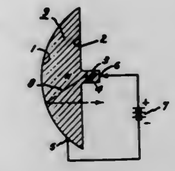
3,302,051

SEMICONDUCTIVE ALLOY LIGHT SOURCE HAVING IMPROVED OPTICAL TRANSMISSIVITY

Simeon V. Galginaitis, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 12, 1963, Ser. No. 330,173
5 Claims. (Cl. 313—108)

1. A light source comprising a crystalline semiconductive body constituted of an alloy semiconductive material; a P–N junction in said body adapted to provide radiation in response to electrical excitation; the constituents of said alloy being present in the vicinity of said junction in concentrations that provide a predetermined band-gap energy in the vicinity of said junction; a portion of said body being adapted to transmit said radiation; said constituents being present in different concentrations in said substantially all of said body other than said junction to provide a band-gap energy therein which is greater in magnitude than said predetermined band-gap energy; and, means for providing said electrical excitation in a forward direction across said junction for producing radiation which is efficiently transmitted through said body.

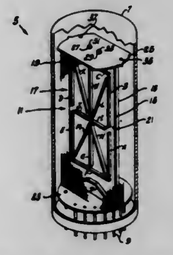


3,302,052

CATHODE BAR STRUCTURE FOR GLOW DISCHARGE DEVICES

Ray E. Schwab, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Apr. 23, 1964, Ser. No. 362,013
5 Claims. (Cl. 313—109.5)



1. A hermetically sealed glow discharge device comprising:

a transparent glass envelope having a plurality of electrical conductors sealed therein and extending therethrough and containing a gas at glow discharge pressure, said conductors having an electrical insulating layer thereon;

a rigid planar insulating support having an insulating spacer affixed thereto and spaced therefrom by a spacer, said support having a plurality of slots therethrough, said insulating spacer having a plurality of apertures aligned with and larger than said slots, and said spacer having a plurality of holes aligned with and larger than said slots and said apertures;

a plurality of cathode segments formed to provide a substantially continuous planar character display, each of said segments having a longitudinal portion spaced from the other and from said insulating spacer and a protuberance normal to said longitudinal portion, said protuberance having a first portion spaced from and extending through said aperture and hole and contacting said support whereby said segment is upheld and a second portion extending through said slot in said support,
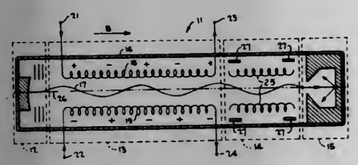
a transparent electrically conductive anode spaced equidistantly from each of said cathode segments and having at least a portion thereof in a plane substantially parallel to said display, said anode being electrically connected to one of said conductors; and

means attaching and electrically connecting each of said segments to one of said conductors and upholding said support and said anode, said means being enclosed by an electrical insulating layer.

3,302,053
HIGH EFFICIENCY TRANSVERSE-FIELD TRAVELING WAVE TUBE HAVING FAST WAVE DISSIPATIVE COUPLER BETWEEN INTERACTION CIRCUIT AND COLLECTOR FOR DECELERATING ELECTRONS

Burton J. Udelson, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed July 11, 1963, Ser. No. 294,455
1 Claim. (Cl. 315—3.6)



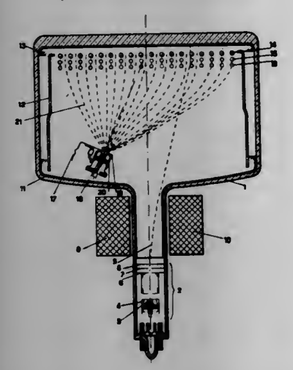
In a transverse-field microwave tube having an electron gun and a depressed collector electrode spaced apart for defining therebetween a path of electron flow and having an interaction circuit including a pair of slow wave structures where the transfer of D.C. electron beam energy on said slow wave structure is achieved by having the electron beam travel adjacent to the slow wave structure at a velocity slightly faster than the velocity of the RF wave of the structure, the improvement comprising:

a dissipative fast wave coupler interposed between said interaction region and said depressed collector electrode, whereby transverse velocity and displacement components are removed from said electron beam allowing said beam to be collected at a depressed potential.

3,302,054
DIRECT VIEWING STORAGE TUBE HAVING INCLINED FLOOD GUN AND VIRTUAL CATHODE

Bernard Courtan, Paris, France, assignor to Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed Apr. 15, 1963, Ser. No. 273,068
Claims priority, application France, May 3, 1962, 896,282
3 Claims. (Cl. 315—12)



1. A direct viewing storage tube, comprising:

viewing screen means,

storage grid means disposed ahead of said screen means,

writing electron gun means located along an axis substantially perpendicular to said screen means and including means for emitting a beam of relatively rapid electrons in the direction toward said storage grid means,

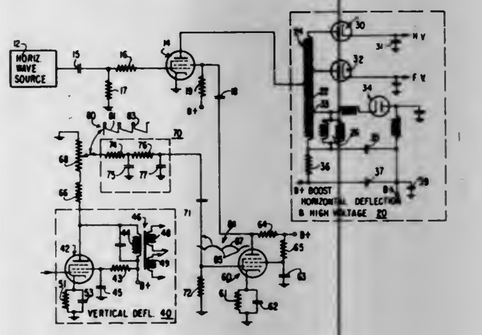
flood gun means located laterally to and inclined with respect to said axis including means for emitting a beam of relatively slow electrons in the direction toward said storage grid means,

and means located between and in the path of said flood gun means and said storage grid means and forming effectively virtual cathode means providing a substantially uniform flooding of said storage grid means by the electrons emitted from said flood gun means.

3,302,055
DYNAMIC PINCUSHION DISTORTION CORRECTION FOR TELEVISION RECEIVERS

William H. Slavik, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Feb. 25, 1964, Ser. No. 347,253
4 Claims. (Cl. 315—24)



1. A circuit for dynamically correcting distortion on the sides of the raster produced by cathode ray tube, including in combination, a deflection circuit for developing horizontal deflection signals for sweeping a beam of the cathode ray tube, said deflection circuit including a first electron control device having first electrodes conducting current therein and developing the deflection signals, said electron control device further having a control electrode, a control circuit coupled to said control electrode for operating said deflection circuit at the horizontal deflection frequency, alternating current bypass circuit means coupled to one of said first electrodes of said first electron control device and including a further electron control device therein to change the bypassing of said one electrode in response to conductive variation of said further electron control device, a source of substantially parabolic waves occurring at the vertical deflection frequency of the raster of the cathode ray tube, and means coupling said source of substantially parabolic waves to said further electron control device to vary the conduction thereof.

3,302,056
TRANSISTOR PROTECTION CIRCUITS

Joseph O. Preisig, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 8, 1963, Ser. No. 263,842
4 Claims. (Cl. 315—27)

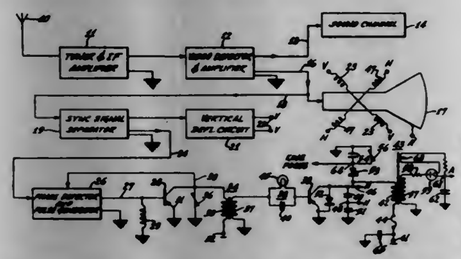
1. In an electron beam deflection circuit for a television receiver in combination,

a driver stage having a first transistor with input and output circuits;

a first resistor having a nonlinear resistance characteristic connected to the output circuit of said first transistor;

means connected to the input circuit of said first transistor for alternately rendering said transistor conductive and nonconductive;

an inductively loaded output stage having a second transistor with input and output circuits, said output circuit of said first transistor being connected to said input circuit of said second transistor for respectively rendering said second transistor conductive and nonconductive in response to the conductive and nonconductive conditions of said first transistor whereby said inductive output stage develops first voltage impulses at a rate related to the conductive and nonconductive periods of said second transistor and is further subject to the development of randomly occurring second voltage impulses having an amplitude substantially higher than the amplitude of said first voltage impulses;



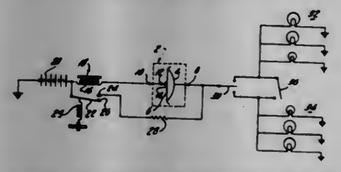
peak detecting means connected in circuit with said output circuit of said second transistor for developing a voltage having an amplitude related to the amplitude and repetition rate of said first voltage impulses;

and protective circuit means including a second resistor having a nonlinear resistance characteristic connected to said output circuit of said second transistor for preventing said second voltage impulses from adversely affecting the operation of said second transistor.

3,302,057
FLASHER FOR DIRECTIONAL AND EMERGENCY SIGNALS

Hemming G. Silberg, Union, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware

Filed Oct. 20, 1964, Ser. No. 405,149
6 Claims. (Cl. 315—77)

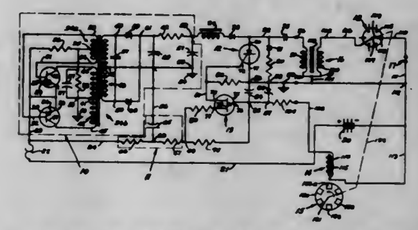


1. A circuit for flashing lamps comprising a source of energy, a relay having a winding and an armature biased to retracted position and movable to attracted position when the current through the winding reaches a given value, one end of said winding and said armature being connected to one terminal of said source, a series type flasher having input and output terminals, the other end of said winding being connected to the flasher input terminal, a pair of lamp loads, means for optionally connecting either or both of said loads between the flasher output terminal and the other terminal of the source, an armature carried contact, a fixed contact positioned for engagement with said armature carried contact when said armature is in attracted position and a resistor connected between said fixed contact and said flasher output terminal so as to be in parallel with said winding and flasher when the armature is in attracted position.

3,302,058
CAPACITIVE DISCHARGE IGNITION SYSTEM CAPABLE OF MULTIPLE SPARKING AT SLOW-ENGINE SPEEDS

John H. Otteman, 6768 Cord Ave., Pico Rivera, Calif. 90660, and Allen G. Hoffman, 8216 S. Broadway, Apt. N, Whittier, Calif. 90606

Filed Mar. 23, 1964, Ser. No. 353,711
7 Claims. (Cl. 315—207)

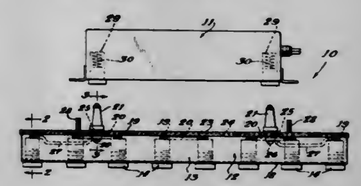


1. An ignition system for an internal combustion engine to provide a spark in a spark gap disposed in an engine cylinder, whereby to ignite a combustible mixture in said cylinder, said system comprising: an induction coil which includes a primary and a secondary winding, said spark gap being operatively connected to the said secondary winding; capacitance means; power supply means providing a D.C. output; means connecting said primary winding, said capacitance means, and said power supply means in a first series circuit so as to charge said capacitor means; trigger means actuable by a control signal connected in a second series circuit with said capacitance means and said primary winding so as to allow said capacitance means to discharge through said primary winding only when said trigger means is actuated; a pulsing means for providing an electrical pulse of a duration proportional to engine speed; multi-vibrator means operatively connected to said pulsing means whereby to be actuable by said electrical pulse to produce an oscillatory control signal having a frequency inherent within the multi-vibrator means for the duration of said electrical pulse; means applying said oscillatory control signal to said trigger means; whereby said trigger means is repetitively actuated at said frequency of said oscillatory control signal, thereby repetitively discharging said capacitance means at said frequency of said oscillatory control signal during the time the electrical pulse actuates said multi-vibrator means.

3,302,059
LAMP FIXTURE FOR LOW INTENSITY DISPLAY SIGN

William H. Haire, 2280 Brixton Road, Columbus, Ohio 43221

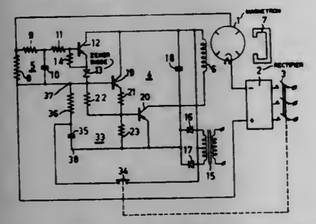
Filed June 24, 1964, Ser. No. 377,561
10 Claims. (Cl. 315—254)



10. A lamp holder for a plurality of series connected neon lamps arranged side by side, comprising a socket block molded from a high dielectric value synthetic resin and having a row of recesses formed in one surface thereof to provide lamp receiving sockets, and conductor means embedded in the material of said socket block, terminal posts projecting from another surface of said socket block,

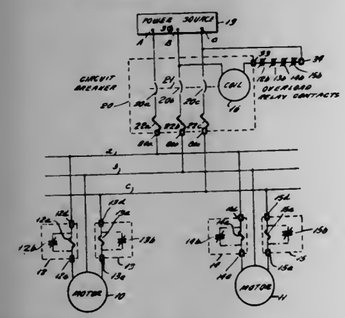
contact means disposed in said sockets for effecting electrical contact with the ferrule of a neon type lamp, said embedded conductor means connecting each terminal post to a contact means, and connecting certain other contact means to each other.

3,302,060
CONTROL SYSTEM FOR REGULATING THE CURRENT IN A MAGNETRON TUBE
Lourens Blok, Johannes Frederik Maria van Dijk, and Johan Theo Kots, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,374
Claims priority, application Netherlands, July 17, 1963, 295,449
8 Claims. (Cl. 315—307)



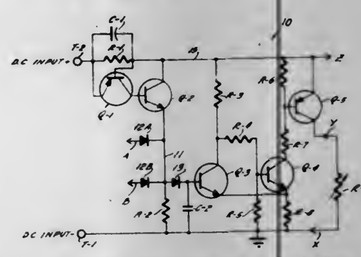
1. A control system for regulating the current in a magnetron tube comprising, means for establishing a magnetic field in said tube comprising a permanent magnet and an electromagnet having a field coil, voltage supply means for energizing said tube and said field coil, first control means for varying the current in said field coil as a function of the magnetron tube current, said first control means having a given time constant which determines its response time, switching means for applying the energy of said voltage supply means to said magnetron tube, and second control means responsive to the closure of said switching means for supplying to said field coil a gradually decreasing current.

3,302,061
CIRCUIT BREAKER WITH UNDERVOLTAGE RELAY IN SERIES WITH MOTOR CONTROL OVERLOAD RELAY AND PLUG-IN BASE
William Harold Edmunds, Bloomfield Hills, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 31, 1964, Ser. No. 393,149
4 Claims. (Cl. 317—13)



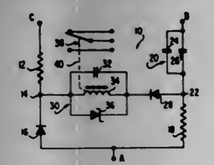
1. In combination:
a multiphase power source;
a circuit interrupter including main contacts in electrical series with said power source and mechanical operating means for operating said main contacts between open and closed positions, said interrupter further including an auxiliary tripping device which when activated operates said mechanical operating means causing the latter to operate said main contacts from said closed to said open position; said circuit interrupter having only as many sets of main contacts as there are phases of said multiphase power source;
first and second electrically energizable devices, each in electrical series with said main contacts of said circuit interrupter;
first and second overload units each including a fault detecting portion connected in circuit between said main contacts and one of said electrically energizable devices, respectively, and each of said first and second overload units further including a set of contacts and means for automatically operating said set of contacts when said fault detecting portion associated therewith is overloaded;
circuit means connecting an element of said auxiliary tripping device in circuit with said sets of contacts of said first and second overload units, respectively;
whereby operation of either set of contacts of said first and second overload units in response to the detecting of a fault by the respective fault detecting portion thereof will activate said auxiliary tripping device to open said main contacts of said circuit interrupter and thereby deenergize both said first and second devices which are both in series therewith, and whereby regardless of the number of said devices which are connected to said interrupter, all of said number will be deenergized upon the opening of the main contacts of said interrupter.

3,302,062
SOLID STATE OVERLOAD PROTECTION MEANS FOR POWER CIRCUITS
Orlyn W. Craig, Bristol, Tenn., assignor to Sperry Rand Corporation, Sperry Farragut Company Division, Bristol, Tenn., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 317,993
6 Claims. (Cl. 317—22)



1. A circuit of the type described including voltage input terminals; a first circuit connected between said terminals and including an electrical load, a variable impedance means, and an overload sensing means; said variable impedance means including a semi-conductor device comprising an emitter, a base, and a collector; said base being connected to said amplifier; said overload sensing means including a resistor; said resistor, said collector, said emitter and said load being connected in series and constituting a portion of said first circuit; a generator for producing a trigger signal; said generator connected to and actuated by said overload sensing means upon the occurrence of an overload current condition; an amplifier and means connecting said trigger generator in circuit with said amplifier; means connecting said amplifier to said impedance means in a manner such that a trigger signal produced by said generator upon the occurrence of an overload current condition is fed through said amplifier to raise the impedance of said variable impedance means from a normal relatively low range to a relatively high range thereby clearing said overload current condition and essentially deenergizing said load; a storage means charged by said trigger signal and maintaining said trigger signal applied at said amplifier for a predetermined time interval after said overload current condition has cleared thereby maintaining said variable impedance means at said relatively high range of impedance during said time interval; means, including part of another semi-conductor device of said amplifier, constituting a leakage path connected to said storage means for discharge thereof whereby the trigger signal at said amplifier will diminish during said time interval after which said variable impedance means will drop in impedance to said relatively low range and will remain in this range so long as the fault causing said overload current condition is not present, with the load being reenergized while said impedance means is at said relatively low range.

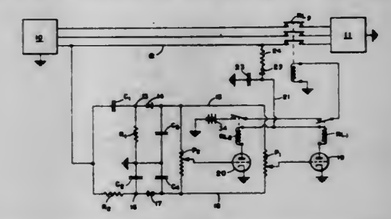
3,302,063
PHASE SEQUENCE SENSOR
Albert C. Leenhouts, Granby, Conn., assignor to Hi-G, Incorporated, Windsor Locks, Conn., a corporation of Connecticut
Filed Sept. 6, 1963, Ser. No. 307,039
14 Claims. (Cl. 317—47)



1. A switching apparatus responsive to the relative phase rotation sequence of a three wire polyphase system having a given frequency and substantially equal voltages between wires, comprising:
(a) three input terminals A, B and C for individual connection to the three wires of a polyphase system,
(b) phase shifting means serially including a resistor and a capacitor and having a common first junction point therebetween, said phase shifting means being connected between terminals A and B for deriving a voltage at the first junction point proportional to the voltage existing between terminals A and B and shifted in phase therefrom by a predetermined amount.
(c) circuit means including a second junction point connected between terminals A and C for deriving a voltage at the second junction point bearing a predetermined phase relationship to the voltage existing between terminals A and C, and
(d) diode comparator means including a relay coil connected between said first and second junction points for comparing the two derived voltages, whereby the energization of the relay coil is controlled by the comparator means in response to the relative phase rotation sequence existing between the three wires.

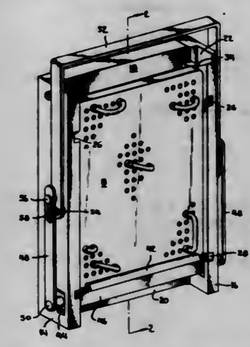
3,302,064
VOLTAGE INSENSITIVE FREQUENCY MONITORING SYSTEM
William G. Redmond, Arlington, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,399
15 Claims. (Cl. 317—51)

1. For monitoring the frequency of an A.C. power source, a system comprising:
frequency-sensitive means connected to the A.C. power source and producing a positive and negative pair of D.C. voltage outputs proportional to the frequency of the power source;
voltage-responsive current-control means having a control electrode and first and second electrodes between which electrical current flows when the current-control means conducts, current flow being from the first to the second electrode;
current-responsive means;
means connecting said current-responsive means to said power source and to said first electrode to maintain an E.M.F. between the first and second electrode;



and summing means summing the positive the negative D.C. voltage outputs and yielding therefrom a control signal voltage proportional to frequency of the power source and, at a predetermined frequency, of value sufficient for regulating current flow through the current-control device to a value yielding a desired state of energization of the current-responsive means, the summing means being connected to the control electrode of the current-control device for supply of the control signal thereto.

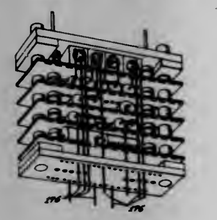
3,302,065
PLUGBOARD ACTUATING MECHANISM
Kenneth Norman Karol and Tore Rudolph Johnson, both of Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 21, 1965, Ser. No. 515,403
8 Claims. (Cl. 317—99)



8. In a switching arrangement wherein a first array of contacts carried by a first member is movable into engagement with a second array of contacts carried by a second member, a frame, an actuating mechanism carried by said frame and comprising a reciprocable bar movable between a retracted and an extended position, said bar being in force applying engagement with said first member, a pair of links pivotally secured at one end thereof to said bar, an actuating handle pivotally connected to said frame, said second member being fixed relative to said frame, said links being pivotally secured at a second end thereof to said handle, whereby movement of said handle causes said links to reciprocate said bar along

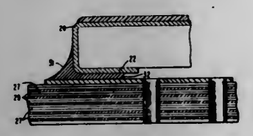
said frame from its retracted position to its extended position, said bar being operable in its extended position to move said first array of contacts into engagement with said second array.

3,302,066
STANDARDIZED WELDED WIRE MODULES
William G. Reimann, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Nov. 6, 1961, Ser. No. 150,546
15 Claims. (Cl. 317—101)



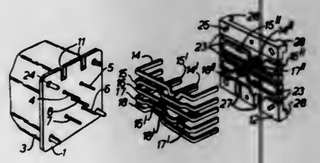
1. In an electrical circuit module having a length tailored to the complexity of the circuit, a plurality of parallel layers of electrical components, a series of elongated conducting bus strips having a width substantially greater than their thickness separating said layers, means for interconnecting some of the electrical components on said layers with the associated conducting bus strips, and means including a wiring array for interconnecting said components, said array including a set of regularly spaced layer interconnection wires extending parallel to said bus strips in a plane along one side of said module perpendicular to said components, and a set of regularly spaced riser wires extending perpendicular to said bus strips in another plane spaced outwardly from and generally parallel to the layer wiring plane, said bus strips and wiring array having adequate mechanical strength to provide self-sufficient mechanical interconnection of the components.

3,302,067
MODULAR CIRCUIT PACKAGE UTILIZING SOLDER COATED AREAS AND SOLDER REFLOW JOINTS
Ralph N. Jackson, and William R. Maclay, Endicott, Donald D. Metzger, Poughkeepsie, and William R. Stewart, Vestal, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 20, 1963, Ser. No. 266,553
Claims priority, application Canada, May 11, 1962, 848,896
11 Claims. (Cl. 317—101)



1. A circuit package assembly comprising
a plurality of flat circuit modules having a plurality of circuit elements, each of said modules having flat conductive connection areas inwardly disposed on at least one surface of the module from an edge of said surface;
an interconnection mounting board having flat conductive connecting areas disposed on at least one predetermined surface of said board; and
solder-reflow bonding means joining the connection areas of said modules and the connecting areas of said board to bond electrically and mechanically said modules to said board, said connecting areas of said board being disposed beneath said modules when said modules are bonded thereto.

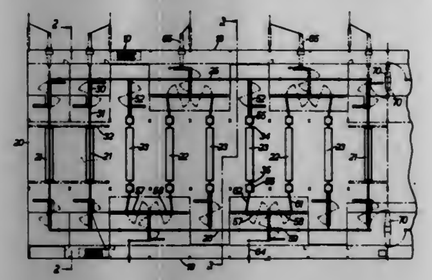
3,302,068
ELECTRICAL CIRCUIT MODULES
Bloomfield James Warman, Charlton, London, Raymond John Frederick Derbyshire, Welling, Kent, and Derek Peter Garrett, Southwark, London, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Apr. 13, 1964, Ser. No. 359,345
Claims priority, application Great Britain, Apr. 23, 1963, 15,992/63
11 Claims. (Cl. 317—101)



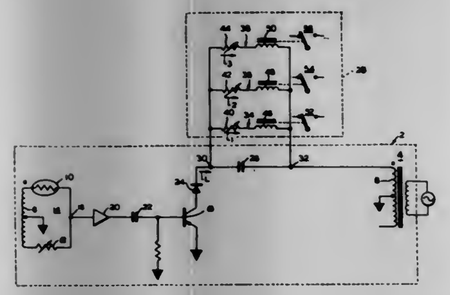
1. An electric circuit module comprising circuit elements having terminal members, a modular support structure containing said elements within it, at least one insulating end piece for said structure, said end piece having an end face and apertures extending through the end piece, through which apertures the said terminal members project, preformed, self-supporting conductors individual to each module, the conductor including a main portion extending across the end piece in a plane substantially parallel to the plane of the said end face from a position of connection with said terminal members to positions adjacent opposite edges of the said end face, said conductor having first portions extending from the said opposite edges of the end face outwardly beyond the end piece in a direction substantially perpendicular to the plane of the said end face and second portions extending from the positions of connection alongside the projecting terminal members outwardly beyond the said end piece in a direction substantially perpendicular to the plane of the said end face.

3,302,069
HIGH VOLTAGE ELECTRIC SWITCHGEAR LAYOUT
Thomas Webster Wilcox, Whitley Bay, England, assignor to Merz and McLellan Services Limited, Newcastle-upon-Tyne, England
Filed June 21, 1965, Ser. No. 465,682
Claims priority, application Great Britain, June 25, 1964, 26,356/64
9 Claims. (Cl. 317—103)

1. A polyphase switchgear assembly in which the equipment for each phase is accommodated in a different one of a number of spaces, which will be termed phase layers, situated one above the other and separated from each other by spaced horizontal planes, each phase of the assembly including a pair of busbars extending parallel to one another in the same horizontal plane in the upper part of the phase layer, a row, parallel to the busbars, of circuit breakers located in the space between vertical planes containing the busbars, a plurality of circuit outlets passing under the busbars, and means including isolators for connecting the busbars through the circuit breakers to the circuit outlets.



3,302,070
STAGING NETWORK
Billy Burley, Dallas, Tex., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 22, 1965, Ser. No. 505,603
10 Claims. (Cl. 317—137)



1. A condition responsive control system for successively operating a plurality of current responsive loads in accordance with the deviation of a condition solely in one sense from a predetermined value, comprising
a source of alternating current voltage,
a unidirectionally conductive device,
current controlling means including a pair of power circuit electrodes and a control electrode, said control electrode controlling the amplitude of the current flow through said power circuit electrodes,
a staging network including a pair of terminals between which are connected a plurality of paralleled branches each including a current responsive load and an adjustable resistance element to adjust the energization of the load, each of said current responsive loads being operable only when the current flowing therethrough exceeds a predetermined value, the independent adjustment of the corresponding resistance element, setting the amplitude of the current flow through said current controlling means to establish the necessary current flow through the current controlling means to operate the corresponding load,
load circuit means connecting in series said voltage source, said unidirectionally conductive device, said network terminals, and the power circuit electrodes of said current controlling means whereby said current controlling means is biased to conduct during one half cycle of the voltage source,
condition responsive alternating current bridge network means connected with said control electrode, said bridge network means including an energizing winding, and
means energizing said energizing winding with an alternating current voltage having the same frequency as, and a given phase relationship relative to, said voltage source to bias the current controlling means to conduct in response to the deviation of the condition in said one sense.

3,302,071
ELECTROLYTIC CAPACITOR AND ELECTROLYTE MATERIAL OPERATING OVER WIDE TEMPERATURE RANGE
Henry M. Stahr, Columbia, S.C., assignor to General Electric Company, a corporation of New York
Filed Jan. 29, 1963, Ser. No. 254,678
11 Claims. (Cl. 317—230)

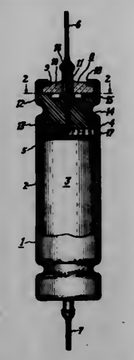


1. An electrolytic capacitor comprising a pair of electrodes at least one of which is composed of a film-forming metal having a dielectric film thereon and an electrolyte comprising a mixture in percent by weight of 85–25% butyrolactone and 15–75% N-methylpyrrolidone and having a boiling point of about 200° C. and an apparent freezing point below —55° C., and an ionogen dissolved therein in an amount to provide a resistivity for the electrolyte of at least about 10 ohm-centimeters at room temperature.

3,302,072
ELECTRICAL DEVICE WITH CASING SEAL MEMBERS COMPRISING A CAVITY IN MEETING SURFACE
Franklin H. O'Neil, Columbia, S.C., assignor to General Electric Company, a corporation of New York
Filed July 26, 1963, Ser. No. 297,830
8 Claims. (Cl. 317—230)

1. A closure for an open-ended container comprising a superposed assembly of an outer glass member with a sealed electrical terminal lead support therein and an electrical terminal lead passing therethrough and an inner insulating member characterized by low vapor transmission and moisture absorption and including high resistance to chemical and thermal attack, said members being coextensive with and sealed in the opening of the container

and having mutually contacting surfaces, said mutually contacting surfaces formed with at least one recess sur-

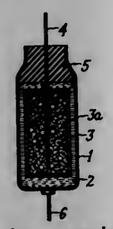


rounding the terminal lead and providing a broken interface area between said mutually contacting surfaces.

ERRATUM

For Class 317—230 see:
Patent No. 3,301,270

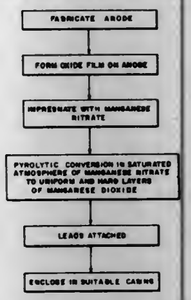
3,302,073
ELECTRICAL CAPACITORS AND ELECTRODE MATERIAL THEREFOR
Archie Broodo, Columbia, S.C., assignor to General Electric Company, a corporation of New York
Filed Oct. 21, 1963, Ser. No. 317,831
6 Claims. (Cl. 317—230)



1. An electrical capacitor comprising, in combination, a pair of electrodes, at least one of which consists of a porous body composed of a compressed sintered mass of solid substantially spherical particles of a film-forming metal, of a size varying from about 2 to about 420 microns forming a continuous surface throughout said body, the surface of each respective particle having a substantially constant radius of curvature in the non-sintered portions, said continuous surface having a continuous dielectric oxide film of substantially uniform thickness thereon, an electrolyte covering the surface of said oxide film and the other of said pair of electrodes contacting said electrolyte.

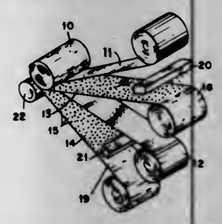
3,302,074
CAPACITOR WITH SOLID OXIDE ELECTROLYTE PYROLYTICALLY PRODUCED IN WET ATMOSPHERE
Robert D. Black, Greencastle, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,821
12 Claims. (Cl. 317—230)

1. In a method for making a solid reducible oxide capacitor including the steps of electrolytically forming a dielectric oxide film on the surface of a film-forming metal electrode, covering the surface of the filmed electrode with a solution of a material convertible to a semiconductive reducible oxide, heating said electrode to a temperature for pyrolytically in situ coverting the material of said solution to a layer of semiconductive reducible oxide overlying said dielectric film, and applying



a counter electrode of electrically conductive material on the surface of the reducible oxide layer, the improvement comprising: maintaining an atmosphere of about 90% relative humidity surrounding said electrode during the step of heating the electrode for pyrolytically converting the material of the solution to said reducible oxide layer.

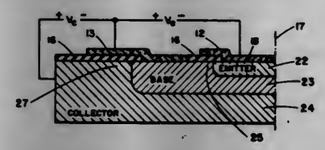
3,302,075
CAPACITOR WITH SPACERS BETWEEN ELECTRODES FILLED WITH ELECTROLYTE AND METHOD FOR MAKING SAME
John Z. Cerych and Wayne Etter, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed July 10, 1964, Ser. No. 381,828
14 Claims. (Cl. 317—230)



1. An electrolytic capacitor having oppositely disposed and spaced electrodes, at least one of which comprises a dielectric film formed on the surface thereof, a porous insulative spacer disposed between and separating said electrodes, a myriad of insulative fragments in continuous array coextending with said spacer throughout the area between said electrodes, said fragments being the ruptured walls of electrolyte filled capsules in continuous layer on said spacer, the electrolyte from said capsules in sum permeating said spacer and filling the open spaces between and covering said electrodes.

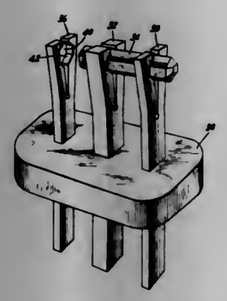
3,302,076
SEMICONDUCTOR DEVICE WITH PASSIVATED JUNCTION
Ki Dong Kang and Ezra David Metz, Phoenix, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 286,072, June 6, 1963. This application Sept. 28, 1966, Ser. No. 582,760
11 Claims. (Cl. 317—234)

1. In a semiconductor device including a semiconductor element having a first region and a second region of opposite conductivity types with the second region wholly within the first region, and a rectifying junction therebetween extending to and terminating at the top surface of the semiconductor element, the combination of an insulating coating on said top surface which can have contaminants therewith capable of inducing corresponding charge distributions in said two regions beneath said insulating coating, and means for diminishing the effect of any such charge distributions comprising conducting means in



ohmic contact with the first region and extending upwardly to the top surface of said insulating coating and radially inwardly over said top surface of said insulating coating toward said second region, and also extending over an area at the top surface of the semiconductor element and the insulating coating which encircles said second region.

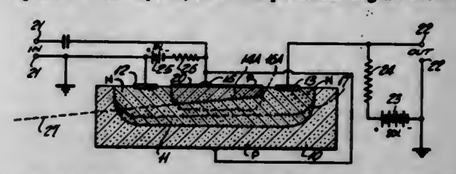
3,302,077
SEMICONDUCTOR DEVICES COMPRISING MOUNTED WHISKERS
Mogens W. Bang, Cleveland, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Nov. 20, 1961, Ser. No. 153,532
4 Claims. (Cl. 317—235)



1. A whistor device comprising a semiconductor whisker as its operative element, an insulating support plate, at least three elongated bifurcated metallic clips, each clip having a aperture in said bifurcated end and the other end mounted on said support plate, said whisker being mounted in said apertures, and said clips holding said whisker in spaced relation to said support plate, said clips providing at least three spaced contacts with said whisker and comprising a rectifying contact and an ohmic contact on each side of said rectifying contact.

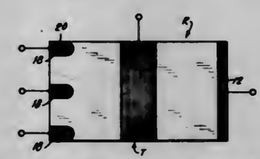
3,302,078
FIELD EFFECT TRANSISTOR WITH A JUNCTION PARALLEL TO THE (111) PLANE OF THE CRYSTAL
Albert M. Skellett, Madison, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Aug. 27, 1963, Ser. No. 304,814
1 Claim. (Cl. 317—235)

A field effect transistor comprising a conducting channel having source and drain electrodes, said channel bounded by a first diffused junction and a second alloyed junction, said junctions not in parallel relationship, the first junction being parallel to one of the surfaces of the transistor and the second junction being parallel to the 111 plane of the crystal, said 111 plane having an orienta-



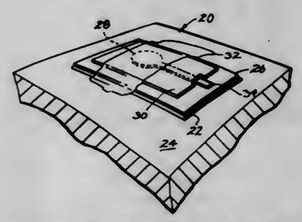
tion at an angle with respect to said surface, and said transistor having ohmic contacts on the two gate regions lying on opposite sides of the channel.

3,302,079
DIGITAL UNIBLOCK GATE STRUCTURE
Irving F. Barditch, Baltimore, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 5, 1964, Ser. No. 409,245
1 Claim. (Cl. 317—235)



A semiconductor logic gate structure in which a plurality of diodes, a resistor and a transistor are combined into one unit, said structure comprising a body of semiconductor material of one conductivity type, one portion of one surface of said body having therein spaced zones of opposite conductivity type so that of said body to form said diodes, another portion of said body spaced from said diodes having in said one surface and the opposed surface zones of a conductivity type opposite to that of said body to form said transistor, a conductive layer on said body with said transistor positioned between said diodes and said conductive layer, said diodes being spaced equidistant from said conductive layer and said diodes being connected to said transistor through said body whereby said body functions as a resistor the resistance of which is a function of the spacing between said diodes, transistor and conductive layer.

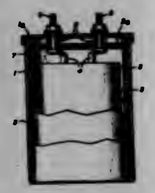
3,302,080
PRESSURE TRANSDUCER
Alan B. Dauger, Wallingford, Conn., and John M. Yarlott, Burlington, Vt., assignors to John M. Yarlott, Burlington, Vt.
Filed June 9, 1965, Ser. No. 462,654
7 Claims. (Cl. 317—246)



7. A capacitive type pressure transducer comprising a plurality of layers of thin sheet material, said layers including a base strip of dielectric material, a main electrode on top of said base strip, said main electrode having a bottom surface fixed relative to the top surface of

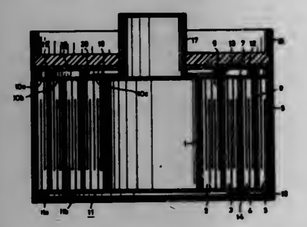
said base strip and having a rough top surface, and an upper flexible strip of dielectric material having its bottom surface freely engaging at least a part of said rough top surface of said main electrode, said base strip of dielectric material being flexible so that said transducer apart from the area of said main electrode is capable of conforming to various different curved surfaces to which it may be attached, said main electrode being of such a small maximum dimension that if said electrode does not deform as said transducer is applied to a curved surface the maximum difference in the spacing of any two points thereof from said curved surface will be of the same magnitude as the thickness of said various layers, and said upper dielectric strip being made from a plastic having a thickness of no more than one thousandth of an inch.

3,302,081
CAPACITOR ASSEMBLY WITH HIGH RESISTANCE SHUNT
Frederick W. Grahame, Fort Edward, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 30, 1965, Ser. No. 491,657
2 Claims. (Cl. 317—256)



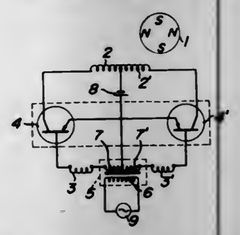
1. An electrical capacitor assembly comprising a housing with an opening therein, a capacitor within said housing, a cover for said opening, a planar laminated member interposed between said capacitor and said cover, terminals connected to said capacitor and extending through said cover and said planar laminated member, said laminated member having conductive and non-conductive lamina wherein said conductive lamina is paper having conductive particles therein.

3,302,082
HIGH-VOLTAGE CAPACITOR OF LOW INDUCTANCE
Karl Heinz Preissinger, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed May 24, 1965, Ser. No. 463,450
Claims priority, application Germany, Nov. 30, 1961, S 76,908
4 Claims. (Cl. 317—260)



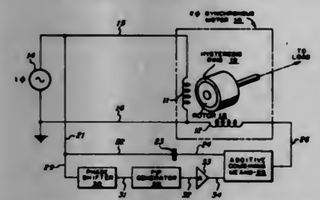
1. A high-voltage capacitor of low inductance, comprising an even number of at least four component capacitor portions coaxially tape wound on each other and positioned about an axis between a pair of spaced predetermined end planes substantially perpendicular to said axis; an intermediate layer of windings of insulating material coaxially interposed between each two adjacent ones of said capacitor portions, alternate ones of said insulating layers extending in one axial direction beyond said capacitor portions at one of said end planes and alternate others of said insulating layers extending in the opposite axial direction beyond said capacitor portions at said other end plane; a first layer of a plurality of conducting metal coatings electrically contacting said respective capacitor portions in said one end plane between said alternate ones of said insulating layers, and a second layer of a plurality of conducting metal coatings electrically contacting said respective capacitor portions in said other end plane between said alternate other insulating layers, said metal coatings in each of said planes forming coaxial rings about said axis and each of said coatings extending radially between two successive ones of said insulating layers, the totality of said coatings joining said component capacitor portions electrically in a series connection having its two ends located on the same axial side of said coaxial capacitor portions; two coaxial terminal members insulated from each other and conductively joined with said respective ends around the circumference thereof, one of said terminal members surrounding said other terminal member on said same axial side in coaxial relation to said capacitor portions; whereby said capacitor has a substantially compensated external inductivity, said coaxial terminal members being formed of respective inner and outer tubular structures, the innermost one of said capacitor portions being conductively connected with said inner tubular structure substantially along the entire periphery of said innermost capacitor portion at said one end plane, and the outermost capacitor portion being conductively connected with said outer tubular structure substantially along the entire periphery of said outermost capacitor portion at said one plane.

3,302,083
VARIABLE SYNCHRONOUS MOTORS WHICH ROTATE AT A SELF-DETERMINED ROTATIONAL SPEED
Yutaka Tanaka, Kobe, and Kaoru Sasabe, Ikeda-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Oct. 21, 1963, Ser. No. 317,693
Claims priority, application Japan, Oct. 25, 1962, 37/47,720; Nov. 17, 1962, 37/51,631; Dec. 19, 1962, 37/58,155; Sept. 5, 1963, 38/68,188
5 Claims. (Cl. 318—138)



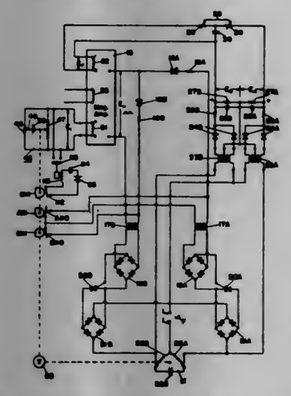
1. A variable synchronous motor wherein driving field coils are composed of coils of a switching circuit having switching elements therein, and a rotor of a permanent magnet is provided so that said permanent magnet rotor is continuously rotated by an electromagnetic force between said rotor and a magnetic field induced in said driving field coils by the action of the switching circuit, and wherein an external synchronizing signal is applied to said switching circuit to rotate said permanent magnet rotor in synchronism with a frequency of said external synchronizing signal, said permanent magnet rotor being subsequently capable of making synchronous rotation relative to the frequency of said external synchronizing signal irrespective of a variation of a load applied to said motor; said motor comprising pick-up coils in which a voltage is induced by the rotation of said permanent magnet rotor, and a coupling transformer for impressing said external synchronizing signal on control terminals of said switching circuit, said pick-up coils being connected in series with secondary coils of said coupling transformer.

3,302,084
CONTROL CIRCUITS FOR HYSTERESIS MOTORS
Robert H. Bolton, Huntington, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 341,724
2 Claims. (Cl. 318—166)



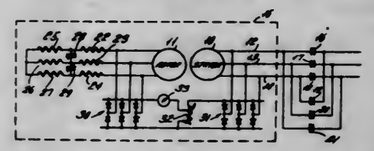
1. In combination, a synchronous motor having a stator with polyphase windings and a rotor of the hysteresis type, means for magnetizing the rotor including an A.C. source having a sinusoidal voltage output, power lines connecting the source to the stator windings, means including a pip generator energized in accordance with the frequency of the source for producing relatively narrow voltage pulses in phase with the voltage output of the source supplied to one of the windings, and combining means for adding the pulses to the voltage power line connecting said one winding, said pip generator being connected in a circuit parallel with the power line connecting said one winding, a phase shifter connected in series with said pip generator, and a variable gain amplifier connected in series with said pip generator and phase shifter.

3,302,085
LOAD CONTROL SYSTEMS USING MAGNETIC AMPLIFIERS AND CONTROLLED RECTIFIERS
Leonard R. Hulls, Gwynedd Valley, and Rolland H. Henderson, North Wales, Pa., assignors to Leeds & Northrup Company, a corporation of Pennsylvania
Filed July 9, 1963, Ser. No. 293,725
9 Claims. (Cl. 318—207)



1. A control system comprising
a magnetic amplifier having input and output circuits, said amplifier in response to a D.C. signal input producing output pulses of polarity dependent upon the polarity of the D.C. signal input,
a pair of signal channels,
polarity-sensitive means for directing said output pulses to one or the other of the signal channels of said pair in dependence upon the polarity of said amplifier output pulses,
rectifier circuits respectively associated with the channels each for producing a D.C. output signal from pulses directed to that channel,
means for isolating the rectifier circuits of the channels from each other selectively to produce isolated D.C. signal outputs in dependence upon the polarity of the D.C. signal input to said amplifier, and
controlled rectifiers associated with the signal channels for gating by said isolated D.C. signal outputs.

3,302,086
ROTOR RESISTANCE CONTROL CIRCUIT FOR REVERSIBLE A.-C. MOTORS
Otto Jensen, Malvern, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 17, 1964, Ser. No. 338,499
5 Claims. (Cl. 318—210)



1. In combination; a reversible A.-C. motor having a rotor winding, a stator winding, impedance means connected to said rotor winding, and a plugging relay for changing the value of said impedance means responsive to a plugging condition; said plugging relay comprising comparator circuit means connected to said stator winding and said rotor winding, a relay coil connected to said comparator circuit means, and relay contacts for said relay coil operatively connected to said impedance means; said relay contacts being operable from a first to a second position for changing the value of said impedance means from a first value to a second value; said relay contacts being in said first position when said relay coil is deenergized and being moved to said second position when said relay coil is energized; said relay coil being normally deenergized by said comparator means when the voltage of said stator exceeds the voltage of said rotor; said relay coil being energized responsive to the rotor voltage exceeding said stator voltage; said comparator means comprising a first rectifier means connected to said stator winding, a second rectifier connected to said rotor winding and a resistor means continuously connected in parallel with said first rectifier and in series with said second rectifier and said relay coil; said rectifiers being connected in series opposition to one another.

3,302,087
CONTROLLED SPEED INDUCTION MOTORS
Gordon Hindle Rawcliffe, Clifton, Bristol, and William Fong, Bristol, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed July 5, 1963, Ser. No. 292,838
Claims priority, application Great Britain, July 10, 1962, 26,522/62
3 Claims. (Cl. 318—225)

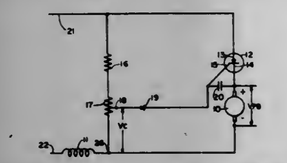
1. A poly-phase electrical inductance motor comprising; a plurality of like phase windings, each phase winding being composed of coils arranged to provide a number of pole-groups and each coil having a pitch of substantially five-sixths of full pitch, and, in the case of each phase winding, successively connected coils of the phase

winding being chosen from corresponding positions in the pole groups in sequence commencing from corresponding ends of the pole-groups; tapping connections to junctions between at least some of said successively con-



nected coils; switching means from external supply terminals arranged simultaneously to make contact with corresponding selected tapping connections in each phase winding and thereby enable like coils in each phase winding to be excluded to effect increase in speed of the motor.

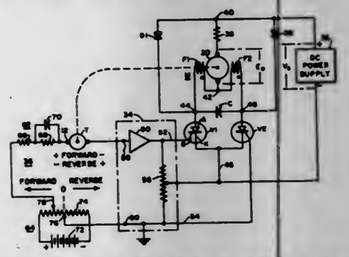
3,302,088
CONTROLLED RECTIFIER SPEED-REGULATING SYSTEMS FOR SERIES COMMUTATOR MOTORS
Jerry Wigington, Pickens, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 19, 1964, Ser. No. 353,102
5 Claims. (Cl. 318—246)



1. A motor control circuit comprising an electric motor adapted to be supplied from an alternating current source and having series-connected armature and field windings, a solid-state controlled rectifier having an anode-cathode circuit and a gate-cathode circuit, a signal channel including said motor armature for transmitting to said gate-cathode circuit the back E.M.F. of said motor as negative bias therefor, first circuit means including the anode-cathode circuit, the armature winding and the field winding connected in series, second circuit means including an impedance and the field winding connected in series, said first and second circuits being adapted to be connected in shunt relation across said alternating current source, and an adjustable portion of said impedance being included in series with said signal channel.

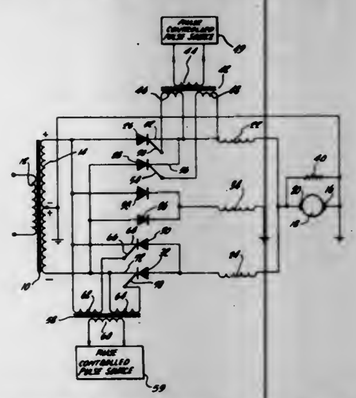
3,302,089
SYSTEM FOR CONTROLLING THE OUTPUT OF PLURAL FIELD DYNAMOELECTRIC MACHINE
John Rosa, Pittsburgh, and Peter E. Pityk, Penn Hills Township, Allegheny County, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 7, 1964, Ser. No. 343,397
17 Claims. (Cl. 318—257)

15. In a system for regulating a condition controlled by a dynamoelectric machine having first and second excitation windings for providing oppositely related control effects on the machine, first and second power input terminals, first and second controlled electric valves, each valve having a control electrode, first and second power electrodes and a main current path extending from one to the other of its power electrodes, each valve being conductive in response to the application of a control signal to its control electrode, means connecting the first input terminal to one end of each of said windings, means connecting the other end of the first winding to the first power electrode of the first valve, means connecting the second power electrode of the first valve to the second input terminal, means connecting the other end of the second winding to the first power electrode of the second valve, means connecting the second power electrode of the second value to the second input terminal, whereby said other end of each of said windings is coupled to the second input terminal through the main current path of a different one of said valves, said valves being poled alike relative to said input terminals, means responsive to deviation of said condition in one direction from a predeter-



mined norm for applying a gating signal to one of said valves, means responsive to deviation of said condition from said norm in the oposite direction for applying a gating signal to the other of said valves, and capacitive means connected across said first power terminals of the valves for ending conduction of one valve in response to initiation of conduction of the other valve, said capacitive means charging in response to conduction of one of said valves and applying the charge as a blocking voltage across that valve in response to initiation of conduction of the other valve.

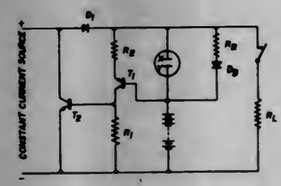
3,302,090
D.C. MOTOR DRIVE CIRCUIT
Harry F. Rayfield, Arcadia, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 30, 1964, Ser. No. 355,812
3 Claims. (Cl. 318—257)



1. A reversible motor control circuit comprising a D.C. motor having an armature, a shunt field winding, and first and second series field windings, a power transformer having a center-tapped secondary winding energized from a single phase A.C. source, the armature being connected to the center-tap and to one end of both the first and second series windings, first and second silicon controlled rectifiers having control electrodes for connecting the other end of the first series winding respectively to opposite ends of the secondary winding, third and fourth silicon controlled rectifiers

having control electrodes for connecting the other end of the second series winding respectively to opposite ends of the secondary winding, the first and second rectifiers being polarized to pass current in one direction through the armature and the third and fourth rectifiers being polarized to conduct current in the opposite direction through the armature, control means coupled to the control electrodes of the silicon controlled rectifier for selectively turning on either the first and second rectifiers or the third and fourth rectifiers, and means for passing current through the shunt winding in one direction.

3,302,091
COULOMETRIC DEVICE
Ian H. S. Henderson, Ottawa, Ontario, Canada, assignor to Her Majesty the Queen in right of Canada as represented by the Minister of National Defence
Filed Apr. 22, 1963, Ser. No. 274,458
9 Claims. (Cl. 320—48)



4. An electrochemical coulometer cell electrically connected in series with a secondary battery, said cell comprising:

(a) a vessel containing a single body of alkaline electrolyte;

(b) a pair of reversible electrodes mounted in contact with said electrolyte;

(c) each electrode consisting essentially of an inert support and solid active material that is insoluble in said electrolyte;

(i) said active material being present in both its reduced and oxidized states which are respectively metallic cadmium and cadmium hydroxide, whereby upon passage of electric current through the cell the reversible reactions occurring at the electrodes are represented by the equation

$$2OH^- + Cd \rightleftharpoons Cd(OH)_2 + 2e^-$$

the net composition of said electrolyte remaining constant while said reactions are occurring,

(ii) when the battery is fully charged the active material of a first of said electrodes is substantially in the oxidized state and the active material of the second of said electrodes is present in the reduced state in substantially an electrochemically corresponding amount,

whereby commencing from said battery fully charged, upon battery discharge current flowing through the cell, reduction of the active material will occur at said first electrode and oxidation of the active material will occur at said second electrode, and thereafter

upon passage through the cell of battery charging current oxidation of the active material will occur at said first electrode and reduction of the active material will occur at said second electrode;

(d) the quantity of said active material at one of said electrodes being chosen to give a predetermined coulometric capacity for said cell which is related to the coulometric capacity of said secondary battery, and the quantity of active material at the other electrode being at least equal to the first mentioned quantity;

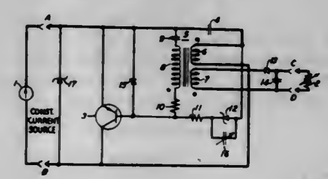
(e) whereby

(i) the voltage between said electrodes will be substantially zero while current is flowing through said cell and said secondary battery causing said reactions to occur in said cell,

(ii) the voltage between said electrodes will exhibit an abrupt change to a voltage substantially different from zero while current is flowing through said cell causing one of said reactions at one electrode to approach completion corresponding to substantially complete utilization of one of said states of said active material at that electrode and consequently the onset of a transition at that electrode from the electrochemical processes defined by said equation, and

(iii) said abrupt change to a voltage substantially different from zero will occur when the quantity of electricity passing through the cell during said charging of the battery exceeds a quantity which is substantially equal to the quantity of electricity which has passed through the cell during said discharge of the battery.

3,302,092
SWITCHING CONVERTER POWER SUPPLY FOR CONSTANT CURRENT INPUTS
Stephen D. Bloom, Forest Hills, N.Y., and Richard M. Rickert, Westfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,662
3 Claims. (Cl. 321—2)

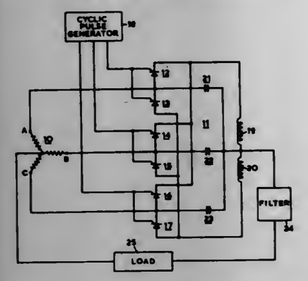


1. Apparatus for supplying substantially constant power to a variable impedance load from a source of substantially constant current, comprising a pair of input terminals and a pair of output terminals, a transistor having emitter and collector electrodes connected between said pair of input terminals and having a base electrode, a filter capacitor connected between said pair of output electrodes, a transformer having a primary winding connected between said pair of input terminals in shunting relationship with respect to said emitter and collector electrodes and an output winding connected between said pair of output terminals in shunting relationship with respect to said filter capacitor, said transformer having a feedback winding connected between said base and emitter electrodes in polarity to provide regenerative operation of said transistor, a rectifier connected serially with said output winding between said output terminals, a second capacitor connected serially with said primary winding between said input terminals, a voltage-dropping circuit connected serially with said second capacitor between said base and emitter electrodes in shunting relationship with respect to said feedback winding, and a third capacitor connected serially with said feedback winding between said base and emitter electrodes, said third capacitor having a capacitance sufficiently smaller than the capacitance of said second capacitor to have negligible shunting effect upon said second capacitor.

3,302,093
ELECTRIC FREQUENCY CHANGERS

Christopher John Yarrow, Bradford, England, assignor to The English Electric Company Limited, London, England, a British company

Filed Sept. 16, 1963, Ser. No. 308,996
Claims priority, application Great Britain, Sept. 19, 1962, 35,650/62
11 Claims. (Cl. 321—7)

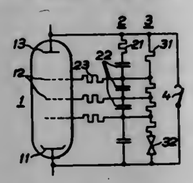


1. A frequency changer for providing an alternating current output from a polyphase alternating current source comprising, for each output phase of the frequency changer, a pair of series-connected controllable rectifiers for each phase of the polyphase source, means for connecting the connection point between each pair of controllable rectifiers to a corresponding phase of the alternating current source, means operatively associated with the controllable rectifiers for cyclically rendering them temporarily conductive in a predetermined order and at a predetermined frequency, inductor means, means for connecting each pair of controllable rectifiers in an associated bridge circuit each of which includes a pair of the controllable rectifiers in adjacent arms of the bridge circuit and the inductor means in the other two arms thereof, and capacitor means connected in each bridge circuit between the junction of the pair of controllable rectifiers and the junction of the two adjacent inductive arms of the bridge.

3,302,094
RECTIFIER AND VOLTAGE DIVIDER MEANS UTILIZED AS BY-PASS MEANS FOR CONVERTERS

Carl Ingvar Boksjö, Ludvika, and Erik Gunnar Hedenbo, Smedjebacken, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed May 5, 1964, Ser. No. 364,979
Claims priority, application Sweden, June 7, 1963, 6,294/63
5 Claims. (Cl. 321—27)

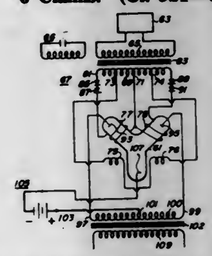


1. In a converter station comprising a plurality of constituent current converters; each constituent converter being provided with by-pass means; said by-pass means comprising a by-pass rectifier having an anode, a cathode, and intermediate electrodes, said by-pass means further including short-circuiting means; a voltage divider connected between the anode- and cathode-conductors of said by-pass rectifier, said intermediate electrodes being connected to said voltage divider; means connected in said voltage divider near the cathode of said by-pass rectifier responsive to opening of said short-circuiting means to increase the voltage between the cathode and the adjacent intermediate electrode; said increased voltage being of the same order of magnitude as the voltage across an arc arising upon opening of said short circuit means; but being substantially less than the normal voltage over the corresponding constituent converter.

3,302,095
DIRECT CURRENT TO ALTERNATING CURRENT CONVERTER

Laurence W. Bell, 717 Benicia Road, and Marion D. Hillyer, 1026 York St., both of Vallejo, Calif. 94590

Filed Aug. 16, 1963, Ser. No. 302,519
6 Claims. (Cl. 321—35)

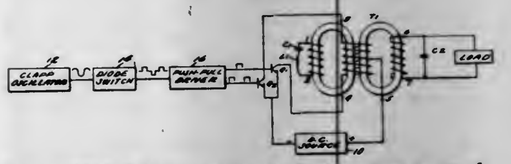


1. A device for converting direct current to alternating current comprising a gaseous discharge tube having an envelope, a cathode and two anodes, a pair of deflecting coils supported in collinear relationship with each other with the axial line thereof lying in the plane of the cathode and anodes and transverse to a median line passing from the cathode to a point midway between the anodes, a control coil supported coaxially on the envelope between the cathode and each anode, a timing wave source, means electrically connecting the timing wave source serially with the deflecting coils, means electrically coupling the timing wave source in opposite phase to the two control coils, a source of direct current potential, a power transformer having a mid-tapped primary winding and an output secondary winding, means electrically connecting one each of the end terminals of the primary winding to one each of said anodes, means electrically connecting the mid-tap of the primary winding to the cathode through said source of direct current potential.

3,302,096
TWO-CORE THREE-COIL TRANSFORMERS

Burt E. Hart, Rockville, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Oct. 12, 1962, Ser. No. 230,211
5 Claims. (Cl. 321—45)

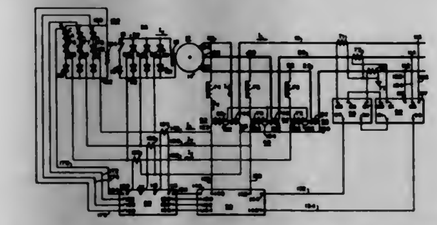


1. Apparatus for converting a direct current to an alternating current comprising:
- a pair of current switching devices each having a pair of terminals and a control element,
- means for generating switching control signals,
- means for alternately applying said switching control signals to the said control elements of said devices to alternately close said switching devices,
- a source of direct current,
- means electrically connected a first polarity terminal of said source to a first terminal of each of said switching devices,
- a two-core three-coil transformer having a common center tapped primary winding encompassing both cores and a pair of independent secondary windings each wound on a separate one of said cores,
- means electrically connecting the center tap of said primary winding to the second and opposite polarity terminal of said source,
- means connecting the opposite ends of said primary winding to the other terminal on respective switching devices whereby current will flow through said primary winding in opposite directions in response to the alternate closing of said switching devices,
- a series resonant circuit,
- means connecting said series resonant circuit across a first of said secondary windings whereby the impedance of said circuit is reflected to said primary winding,
- a capacitive element,
- means connecting said capacitive element across the second of said secondary windings whereby said capacitive element and its associated winding will form a parallel resonant circuit, and
- means for connecting a load across said parallel resonant circuit.

3,302,097
ELECTRICAL APPARATUS

Powell O. Bobo, Pittsburgh, and Frederick W. Keay, Irwin, Pa., assignors, by mesne assignments, to the United States of America, as represented by the United States Atomic Energy Commission

Continuation of application Ser. No. 236,520, Nov. 9, 1962. This application Mar. 7, 1966, Ser. No. 541,879
2 Claims. (Cl. 322—25)

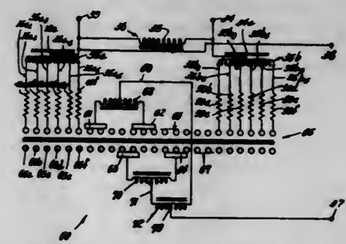


1. A regulating system for a synchronous machine having an excitation field winding and output terminals, comprising:
- vector summing transformer means including first and second primary windings and secondary windings;
- inductive reactor means connected in circuit relation with said output terminals and said first primary winding producing a first current responsive to the output voltage of said synchronous machine and lagging the line to neutral voltage of said synchronous machine by substantially ninety degrees;
- said second primary winding of said vector summing transformer means producing a second current responsive to the line current of said synchronous machine;
- said first and second currents combining vectorially in said vector summing transformer means and producing a third current in said secondary windings having a magnitude greater than the excitation current required by said field winding;
- rectifier means connected in circuit relation with said secondary windings applying said third current to said field winding;
- means producing a reference voltage;
- means producing an error signal responsive to the deviation of the output voltage of said dynamoelectric machine from said reference voltage;
- static switching means connected in parallel circuit relation with the secondary windings of said vector summing transformer means and responsive to said error signal for by-passing a portion of said third current applied to said field winding so as to maintain the output of said dynamoelectric machine at a predetermined value;
- means responsive to the output current of said synchronous machine for providing a limiting signal when a short circuit occurs at the output of said synchronous machine;
- and means for applying said limiting signal to said static switching means for by-passing a portion of said third current applied to said field winding so as to maintain the output current of said synchronous machine at a predetermined value.

3,302,098
ADJUSTABLE VOLTAGE AUTOTRANSFORMER

Allen R. Perrins, Cheshire, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut

Filed June 24, 1964, Ser. No. 377,584
12 Claims. (Cl. 323—43.5)



1. An adjustable voltage autotransformer comprising a closed magnetic core, a winding having a plurality of winding parts wound on said core to provide sequentially repeating immediately consecutive turns, a commutating surface formed by conducting surfaces of the turns to thereby provide sequentially repeating conducting surfaces of the winding parts, means for energizing the winding to provide a substantially constant incremental voltage difference between adjacent conducting surfaces, and brush means including at least two electrically separated brushes mounted in spaced apart relationship to move in electrical engagement on the commutating surface and engaging at least a conducting surface of each of the winding parts for transferring current between said winding and said brushes.

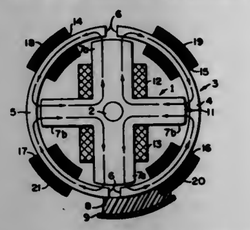
3,302,099
ELECTROMAGNETIC TRANSDUCER

Henry Packard, Norwood, Mass., assignor to Northrop Corporation, a corporation of California

Filed Dec. 6, 1963, Ser. No. 328,617
11 Claims. (Cl. 323—52)

1. In combination, a first member comprising first and second ferromagnetic portions separated by a gap having a first reluctance, a second ferromagnetic member mounted adjacent said first member for relative movement with respect to the first member over a range of relative positions disposed about said gap including a first position in which the reluctance of a first path including said second member and said first portion is equal to the reluctance of a second path including said second member and said second portion, said first and second members being separated by a second gap which is the same in all

of said positions and has a second reluctance substantially less than said first reluctance, said range of positions including positions on either side of said first position in which the reluctances of said paths are unequal, a first electromagnetic coil wound on the first ferromagnetic portion of said first member, a second electromag-



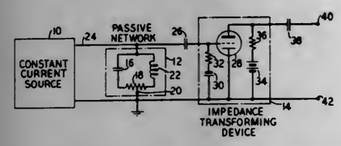
netic coil wound on the second ferromagnetic portion of said first member, and a third electromagnetic coil wound on said second ferromagnetic member, said third coil being inductively coupled with said first coil through said first path and with said second coil through said second path.

3,302,100

CONTINUOUSLY VARIABLE PHASE SHIFTER USING A PASSIVE NETWORK TERMINATED IN AN ACTIVE IMPEDANCE TRANSFORMING DEVICE

Donald E. Thomas, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 6, 1964, Ser. No. 380,558
8 Claims. (Cl. 323—125)



1. A variable phase shifter which comprises a source of alternating current, said source having a pair of output terminals and an output terminal characteristic which is substantially constant and independent of the magnitude of any external impedance connected between said output terminals, a passive phase shifting network, and an impedance transforming device, said phase shifting network being connected between the output terminals of said source and said impedance transforming device, said impedance transforming device having an input impedance and said phase shifting network having an output impedance, the magnitude of said input impedance being at least several orders of magnitude different from the magnitude of said output impedance, thereby substantially eliminating any loading effect of said impedance transforming device on the output of said phase shifting network and extending the effective phase shifting range of said network.

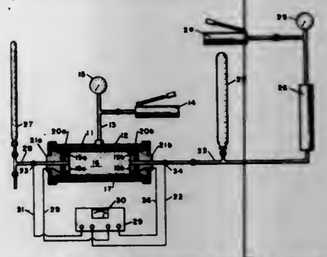
3,302,101

ELECTRODE SYSTEM HAVING A POTENTIAL ELECTRODE EMBEDDED WITHIN A CURRENT ELECTRODE FOR MEASURING THE ELECTRICAL RESISTIVITY OF A POROUS ROCK SAMPLE

Charles R. Glanville, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Mar. 26, 1964, Ser. No. 354,876
6 Claims. (Cl. 324—13)

1. Apparatus for measuring the electrical resistivity of a porous rock sample at simulated subsurface pressures comprising a pressure cell, means for supplying simulated reservoir pressures to the interior of said pressure cell, means for mounting said sample within the cell, a first electrode pair positioned within said cell for establishing contact with one end of said sample, a second electrode pair within said cell positioned to contact the other end of said sample, each of said electrode pairs comprising a current electrode and a potential electrode, each of said



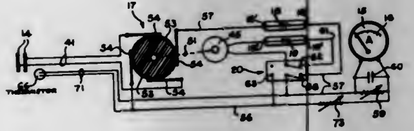
current electrodes having a substantially flat contact face, except for a recessed area therein to accommodate each of said potential electrodes, respectively; said potential electrodes being bonded in said recessed area and electrically insulated from said current electrodes; means for connecting an electric power source across said current electrodes, and means for indicating the difference in potential between said two potential electrodes.

3,302,102

PORTABLE APPARATUS FOR MEASURING CONDUCTIVITY OF FLUIDS

Melvin A. Lace, 3 Garden St., Prospect Heights, Ill. 60070

Filed Aug. 27, 1962, Ser. No. 219,519
6 Claims. (Cl. 324—30)



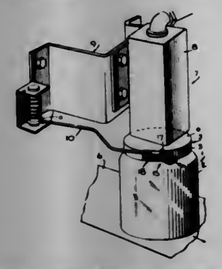
1. A manually portable device for testing the conductivity of fluids comprising an elongated strip of material forming a support frame having an upstanding flange at one end, a meter having an indicating dial supported at the flange remote end of said strip, an elongated stem forming a probe secured, at one end, on said flange and extending outwardly of the meter remote end of the frame, said probe embodying a pair of spaced, relatively insulated electrodes secured on said stem, at its flange remote end, in position for immersion in a fluid to be tested, means forming a measuring circuit interconnecting said electrodes with said meter in a series circuit including a rotary reversing switch, a manually operable circuit control switch and terminal clips for detachably supporting a direct current electric battery, on said frame, and connecting it in said measuring circuit, said reversing and control switches and said terminal clips being mounted on said frame, between the meter and said probe carrying flange, an electric motor mounted on the support frame adjacent and drivingly connected with said reversing switch, means forming a motor energizing circuit connected with said motor and comprising a manually operable motor control switch and terminal contacts for detachably supporting a direct current electric battery on said frame and for connecting it in said energizing circuit, said circuit and motor control switches being mechanically interconnected for operation in unison to activate and to disable the measuring and energizing circuits.

3,302,103

NO CAP DETECTING MECHANISM

Charles S. Ochs, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Dec. 13, 1963, Ser. No. 330,436
3 Claims. (Cl. 324—34)



1. In a no cap detecting mechanism in which containers normally having closure cap positioned thereon are moved past a detecting unit, the improvement which comprises a proximity sensor which produces a field when activated, an activating mass-plate associated with said detecting unit and movable from a normal position in the field of said proximity sensor to maintain said proximity sensor activated to a position away from the field of said proximity detector, said proximity sensor being activated by a container having a closure cap and being de-activated by a container having no closure cap thereon, said activating mass-plate being in the path of said containers so as to be moved by said containers to a position away from the field of said sensor, whereby said sensor will remain activated when a container with a closure cap thereon passes thereby and will be de-activated when a container with no closure cap passes thereby.

3,302,104

APPARATUS FOR THE LOCATION OF AXIAL AND RADIAL DISCONTINUITIES IN TUBING USING A ROTATING DETECTOR INCLINED TO THE TUBING AXIS

George V. Copland, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed Nov. 18, 1963, Ser. No. 324,474
5 Claims. (Cl. 324—37)



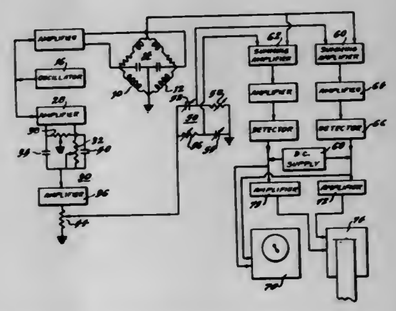
1. Apparatus of detecting discontinuities in metal tubing comprising a housing receivable therein, a source of magnetic flux having adjacent pole pieces adapted to distribute flux into the tubing wall, detection means operative to provide a signal in response to a change in said flux, and motive means in the housing to move said source in a predetermined pattern having axial and circumferential components along said tubing to move each pole piece both axially and circumferentially with respect to the tubing whereby adjacent axial and radial discontinuities in said tubing produce detection signals independently of movement of the housing.

3,302,105

EDDY CURRENT NONDESTRUCTIVE TESTING DEVICE USING AN OSCILLOSCOPE TO IDENTIFY AND LOCATE IRREGULARITIES IN A TEST PIECE

Hugo L. Libby, Richland, and Clarence R. Wandling, Kennewick, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 26, 1964, Ser. No. 392,347
2 Claims. (Cl. 324—40)



1. A device for nondestructively testing a sample comprising:
(1) a probe including first and second inductive impedances;
(2) means for providing relative motion between said probe and said sample;
(3) said first and second inductive impedances of said probe being fixedly spatially mounted with respect to each other along the direction of relative motion between said probe and said sample;
(4) means, including reference oscillator means energizing said first and second inductive impedances whereby said impedances electromagnetically couple with said material, for generating a signal representative of the difference in current flowing in said inductive impedances, said difference signal varying in phase and amplitude with respect to said reference oscillator when said impedances traverse an irregularity in said material;
(5) means for detecting said difference signal including:
(a) means receiving the output signal of said reference oscillator for generating first and second detecting signals in phase quadrature, and for shifting the phase of said first detecting signal such that it is in phase with the noise on said difference signal when said probe wobbles relative to a flawless material;
(b) means receiving said difference signal and said quadrature detecting signals for adding said difference signal to each of said quadrature detecting signals;
(c) means receiving the output signals of said adding means for generating unidirectional voltages representative of the amplitudes of the added signals; and
(6) recording means including a screen and a light spot adapted to move on said screen, said recording means receiving the output signals of said unidirectional voltage generating means and moving the light spot in one direction on said screen responsive to one of said output signals of said unidirectional voltage

generating means and in a transverse direction responsive to the other of said output signals of said unidirectional voltage generating means;

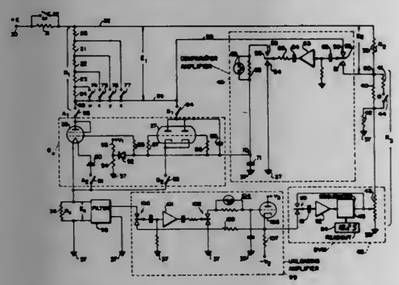
whereby the locus of said light spot generates a display which serves to identify and determine the location of irregularities in said material as they are traversed by said probe.

3,302,106

RESISTANCE MEASURING APPARATUS INCLUDING AN AUTOMATIC BALANCING BRIDGE

Thomas P. Shaw, Berkeley, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed May 29, 1963, Ser. No. 284,041
6 Claims. (Cl. 324—62)



1. In combination, a resistance to voltage converter and a digital voltmeter, said digital voltmeter including a first resistance which is employed as a potential divider, the improvement comprising

second and third fixed resistances,

vacuum tube means which is controllable to provide a variable impedance,

an unknown resistance to be measured,

a comparator amplifier,

a first current path including said second resistance, said tube means, and said unknown resistance connected in series with a voltage source,

a second current path including said third resistance and said first resistance of said digital voltmeter connected across said voltage source,

means connecting said comparator amplifier with said first and second current paths to compare the voltage drops across said second and third resistances and to vary the impedance of said tube means until said voltage drops are equal to thereby maintain a constant current in said first current path, and

means connecting the terminals of said unknown resistance as an input to said digital voltmeter whereby said digital voltmeter measures the voltage across said unknown resistance to provide an indication of the value of the resistance thereof.

3,302,107

APPARATUS FOR TESTING AUTOMATIC TRANSMISSIONS

Lawrence L. Flaugher, Pewaukee, and William E. Keller and John R. Martin, Milwaukee, Wis., assignors, by direct and mesne assignments, to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin

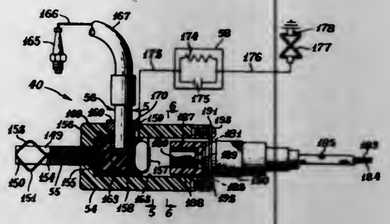
Filed Jan. 2, 1964, Ser. No. 335,088
6 Claims. (Cl. 324—70)

1. An apparatus for testing and indicating the speed or revolutions per minute at which an engine having distributor means and spark plugs is operating, said apparatus comprising, in combination:

(a) a light emitting tube or lamp arranged to provide light pulses in response to electrical pulses;

(b) said tube being electrically connected to said distributor means and an associated spark plug;

(c) means connectable to said distributor means for coupling electrical pulses developed by said distributor means to said light emitting tube and to said associated spark plug, said tube being connected to couple an electrical pulse to said associated spark plug and to concurrently emit a light pulse each time said distributor means provides an electrical pulse thereto;



(d) a photocell positioned to be energized in response to light pulses emitted by said tube;

(e) an electrical output circuitry responsive to the energization of said photocell for developing a signal which is a function of the number of said light pulses and is indicative of the speed of said engine; and

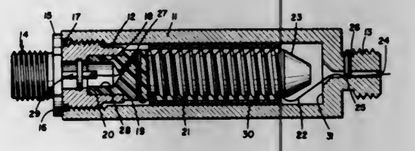
(f) said apparatus being connectable to the engine to test and indicate the speed thereof without affecting the normal operation of said distributor means and said associated spark plug.

3,302,108

APPARATUS FOR MEASURING THE VELOCITY AND DISTANCE BETWEEN BODIES DURING THE SEPARATION THEREOF

Ralph H. Murphy, Mogadore, Ohio, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 16, 1964, Ser. No. 360,467
4 Claims. (Cl. 324—70)



1. Apparatus for measuring the distance between two separating bodies and for determining the speed at which separation is taking place comprising a threaded rod mounted within one of said bodies,

a resistance wire wound in the thread wells of said threaded rod,

an electrical circuit including said resistance wire, adapted for connection to a source of power and connected at one end to said resistance wire and having a wiper contact connected at a portion remote from said one end of said resistance wire,

said other end of said resistance wire being attached to the other of said bodies,

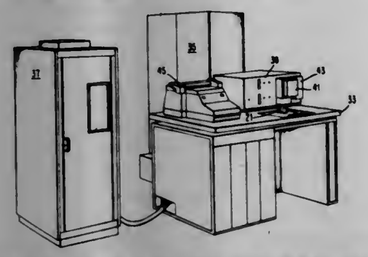
means in said circuit for indicating the current flow, and means referencing said current indication with respect to time, for providing an effective measurement of the separation distance of the separating bodies versus time.

3,302,109

APPARATUS AND METHOD FOR TESTING LOGIC CIRCUITS AND THE LIKE BY THE COMPARISON OF TEST OUTPUT PATTERNS WITH PREPROGRAMMED STANDARD PATTERNS

Harold E. Jones, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 12, 1962, Ser. No. 244,153
10 Claims. (Cl. 324—73)



1. An automatic logic tester for sequentially testing logic circuits for faulty components, each of the logic circuits having at least one input and an output, said tester comprising

test record means for storing test information for programming a series of tests which apply all minimized logical input combinations to the inputs of said logic circuits and make other tests as are necessary to determine the identity of faulty components,

analysis record means for storing Go and No Go patterns of analysis test results which would occur for the failure of different components in the test logic circuits,

means for selectively reading said test information and analysis record means,

means including means responsive to the read test information for energizing the logic circuits sequentially and for detecting a Go and No Go result for each of the tests,

a memory including at least one bi-stable storage element for storing the detected test results in a defined sequence, to provide a pattern of the detected test results which is indicative of the failure of at least one of the components in the logic circuits,

means for comparing the Go and No Go patterns of analysis test results on the analysis record means with the detected test results in said memory and providing a signal in the event of a compare, and

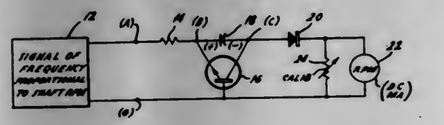
means actuated by the compare signal for providing a visual indication of the faulty components.

3,302,110

ELECTRONIC TACHOMETER AND FREQUENCY MEASURING CIRCUIT

Abram Hopengarten, Lafayette Hill, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware

Filed Feb. 13, 1964, Ser. No. 344,707
3 Claims. (Cl. 324—78)



TACHOMETER CIRCUIT

1. In combination:

(a) a source having two terminals for supplying a signal having a repetitive waveform,

(b) a limiting impedance,

(c) a capacitor,

(d) a transistor having a base electrode and two additional electrodes comprising a collector and emitter, one of said additional electrodes being connected to one of the terminals of said source via said limiting impedance, the base of said transistor connected to the other terminal of said source, said capacitor connected between said additional electrodes, said transistor being of a type such that said signal will cause a reverse breakdown of the junction between one of said additional electrodes and said base during each cycle of said signal, and

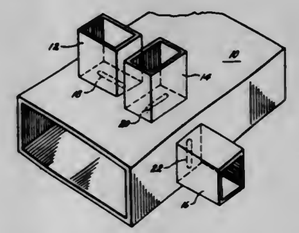
(e) a diode and a current indicating means connected in series across the other of said additional electrodes of said transistor and said base.

3,302,111

MULTIMODE WAVEGUIDE HARMONIC POWER SAMPLER

Edward M. T. Jones, Portola Valley, and Eugene D. Sharp, Palo Alto, Calif., assignors to the United States of America as represented by the Secretary of the Air Force

Filed June 13, 1966, Ser. No. 557,864
2 Claims. (Cl. 324—95)



1. A device for measuring harmonic power in a multimode waveguide, said device comprising a section of hollow electromagnetic wave transmission line, a plurality of transversely oriented, narrow irises disposed at evenly spaced points in the wall of said transmission line, said irises sampling only the component of H-field parallel to their long axes and being tuned to a resonant frequency above the harmonic frequency being measured so that only a relatively small amount of H-field is sampled, the number of said irises being equal to the number of field variations at the wall of the highest-order propagating mode, sampling waveguides attached to said transmission line at each end of said irises for receiving and transmitting the power emanating therefrom, and a calibrated, tuned detector having an output and being contained in each of said sampling waveguides for measuring the amount of power passing through said irises as an indication of the power in the multimode waveguide.

3,302,112

ELECTROMECHANICAL RECORDER CONTROL SLIDEWIRE PROVIDING ERROR SIGNALS PROPORTIONAL TO DEVIATION OF MEASURED VARIABLE FROM SET POINT OVER ENTIRE RECORDER SCALE

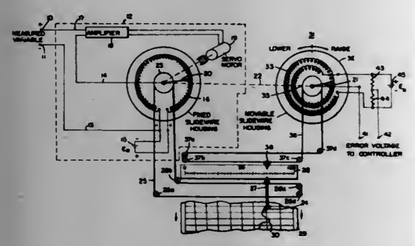
Donald R. Hyer, Lynn, Mass., assignor to General Electric Company, a corporation of New York

Filed Sept. 16, 1963, Ser. No. 309,247
1 Claim. (Cl. 324—99)

A recorder for generating an electrical error signal proportional to the difference between a measured variable signal and a desired set point signal comprising:

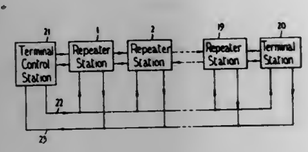
(a) a first slidewire device including a first stationary slidewire and a first slider,

(b) servometric means responsive to the measured variable signal to position said first slider, the angular position of said slider with respect to said first slidewire indicating the measured variable signal,
(c) means connected to said first slider to provide an indication of said measured variable,
(d) a second slidewire device having a second slidewire and a second slider, said second slider being directly connected to said first slider and rotatable through a first angle representing the range of said measured variable signals,



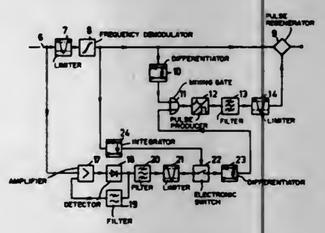
(e) rotatable set point input means directly supporting said second slidewire for rotation therewith, said second slidewire being helically disposed on said support means in a plurality of turns, said input means being rotatable through a second angle indicating the range of the set point signals, the total length of said second slidewire defining a third angle equal to the sum of said first and second angles, said second slider being rotatably mounted on said support means for rotation with respect to said second slidewire,
(f) means connected to said rotatable support means to provide an indication of the set point signal, and
(g) bridge circuit means including said second slidewire and said second slider energized by a reference voltage input means across one set of opposite terminals, the error voltage being generated across the other set of opposite terminals.

3,302,113
REMOTE MONITORING AND CONTROL SYSTEM WITH ALL CONTROL AND MONITORING TONES GENERATED AT CONTROL STATION
David Langsford Clay, Coventry, England, assignor to The General Electric Company Limited, Coventry, England
Filed Oct. 22, 1963, Ser. No. 317,896
Claims priority, application Great Britain, Oct. 25, 1962, 40,412/62; Dec. 20, 1962, 48,122/62
7 Claims. (Cl. 325—2)



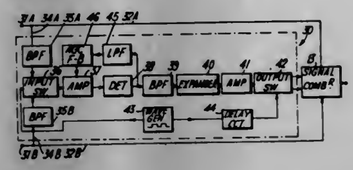
6. In a supervisory arrangement including apparatus at a control station of a communication system and apparatus at a plurality of other stations of said communication system, at each of which other stations are situated a plurality of devices each having one or other of two states in dependence upon the operative condition of units of equipment individually coupled thereto, apparatus at the control station comprising
(A) first means to receive a plurality of tone signals of different frequencies transmitted by said other stations,
(B) second means selectively to transmit first and second command signals and said plurality of tone signals,
(C) third means normally to register indications of the general operative condition of said other stations in dependence upon tone signals received from said other stations by said first means, and
(D) fourth means to register indications of the respective states of the devices at said other stations in dependence upon tone signals received by said first means during periods when said first command signal is being transmitted by said control station.

3,302,114
FREQUENCY SHIFT SIGNALING SYSTEM WITH AUXILIARY CONTROL OF PULSE REGENERATOR IN THE ABSENCE OF DATA SIGNALS
Charles Govert den Hertog, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,263
Claims priority, application Netherlands, Jan. 2, 1963, 287,379
4 Claims. (Cl. 325—30)



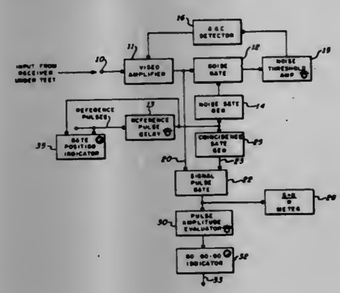
1. In a transmission system of the type comprising a transmitter having a source of coded signals in the form of mark and space elements, a source of oscillations, a source of continuous timing signals, means for frequency modulating said oscillations with said mark and space elements in synchronism with said timing signals, whereby said oscillations have a constant frequency in the absence of said coded signals, and means for transmitting said frequency modulated oscillations, and a receiver for receiving said signals comprising frequency demodulating means, time signal generating means connected to said demodulating means for generating time signals in response to transitions between mark and space elements in the signal output of said demodulating means, and pulse regenerating means connected to said demodulating means for regenerating said mark and space elements at instants determined by said time signals; means for controlling the phase of said time signals in the absence of transmission of said coded signals, said means for controlling said phase comprising means at said transmitter connected to said source of timing signals for generating an auxiliary signal, means at said transmitter responsive to the absence of said coded signals for amplitude modulating said constant frequency oscillations with said auxiliary signals, means at said receiver for amplitude detecting said received signals, and means at said receiver responsive to the absence of demodulation of successive mark and space elements by said demodulating means for applying the output of said amplitude detecting means to said time signal generating means.

3,302,115
CONTROL SIGNAL GENERATOR FOR DIVERSITY RECEPTION
Haruo Shiki, Minato-ku, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Aug. 27, 1963, Ser. No. 304,850
Claims priority, application Japan, Aug. 29, 1962, 37/36,945
3 Claims. (Cl. 325—304)



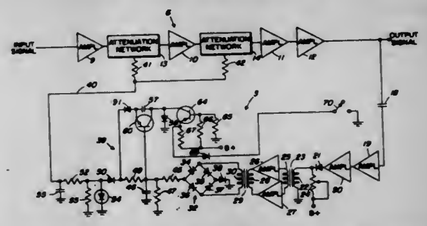
1. A control signal generator for generating a plurality of control signals in response to the signal-to-noise ratios of a plurality of control signals, for controlling the combining peration of a diversity receiver combining means, comprising
(a) an input switching device for successively applying signals from each of a given plurality of input paths to a common input of said generator,
(b) processing means in said generator coupled to said common input for processing said applied signals to provide signals corresponding to the signal-to-noise ratios of said applied signals,
(c) a common output for said processing means,
(d) an output switching device having its input coupled to said common output and having said given plurality of output terminals,
(e) a control wave generator for controlling said switching means in synchronism, and
(f) low-pass filters connected to each of said plurality of output terminals to provide said control signals.

3,302,116
SIGNAL PLUS NOISE TO NOISE MEASURING EQUIPMENT
William R. Free, Clearwater, Fla., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed May 16, 1963, Ser. No. 280,939
8 Claims. (Cl. 325—363)



1. Apparatus for making signal plus noise-to-noise measurements in electronic equipment having a pulsed input signal, said apparatus comprising,
a controllable-gain amplifying circuit adapted to receive a pulsed input signal that occurs in the presence of noise,
sampling means coupled to said amplifying circuit for sampling the noise during a short time period immediately adjacent the time of occurrence of each signal pulse,
means coupled to said sampling means for deriving a D.C. bias signal proportional to the magnitude of said sampled noise,
means responsive to said bias signal for controlling the gain of said amplifying circuit as an inverse function of said bias signal,
whereby the output of said amplifying circuit is an inverse function of the sampled noise,
gating means coupled to receive output signals from said amplifying circuit and operative to pass said output signals only during the occurrence of the pulses of said input signal, and
pulse detecting means coupled to said gating means for deriving a detected signal whose magnitude is proportional to the magnitude of the gated pulsed signals passed by said gating means.

3,302,117
GAIN CONTROL CIRCUIT WITH SELECTABLE ATTACK TIME CONSTANT THAT IS INDEPENDENT OF A FIXED DECAY TIME CONSTANT
Dale A. Smith, Marion, and Richard M. Truesdell, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed July 3, 1963, Ser. No. 292,688
7 Claims. (Cl. 325—410)

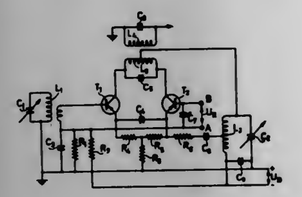


1. A gain control circuit of the type used to automatically control the gain of amplifying means, said circuit comprising: means adapted to receive an output from said amplifying means to be controlled; amplitude detector means for converting said output to a D.C. voltage; a first capacitor that is charged in response to an increase in said D.C. voltage from said detector means; resistance means through which said first capacitor discharges when said D.C. voltage is decreased; a second capacitor; a selectively biased diode connected to said second capacitor, switch means for controlling the bias on said diode so that said second capacitor is connected in parallel with said first capacitor and charged therewith only when said diode is forward-biased; one switch position providing a first charge time and the other switch position providing a second charge time; and discharge means connected to said second capacitor for discharging said second capacitor therethrough whenever said first capacitor starts to discharge whereby the discharge time constant to said gain control circuit is constant.

3,302,118
MULTIPLICATIVE MIXING WITH TRANSISTORS
Herman Schoen, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 3, 1964, Ser. No. 408,604
Claims priority, application Germany, Nov. 5, 1963, P 32,917
8 Claims. (Cl. 325—451)

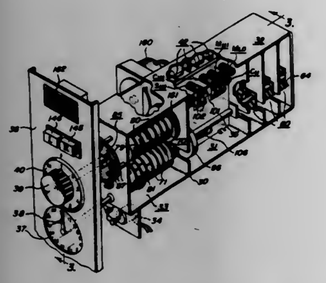
1. A transistor mixing circuit comprising first and second transistors each having a base, emitter and collector

electrode, alternating current conductive means connected between the emitter electrodes of said first and second transistors, a source of a signal voltage, means applying said signal voltage between the base electrodes of said first and second transistors, a source of a signal current, means for applying said current to the base-emitter junc-



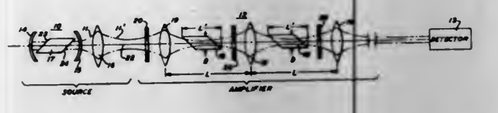
tions of said first and second transistors whereby a part of said current flows through the base-emitter junction of said first transistor and another part of said current flows through the base-emitter junction of said second transistor, and output circuit means connected to the collector electrode of at least one of said transistors.

3,302,119
TUNABLE TELEVISION RECEIVER
John F. Bell, Wilmette, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,822
17 Claims. (Cl. 325—471)



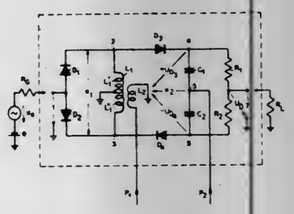
1. A tunable television broadcast receiver comprising:
signal-translating means including at least one mechanically adjustable tuning element for tuning said receiver to any selected one of a plurality of television signal channels;
a displaceable member mechanically coupled to said tuning element to effect adjustment thereof;
a bi-directional driving system for driving said member;
a selectively operable preset tuning device for energizing said driving system to displace said member to a predetermined position corresponding to the tuning of said receiver to a selected one of said signal channels;
a frequency control system coupled to said signal-translating means for deriving a control signal having a polarity and amplitude representing the sense and magnitude of the deviation, if any, in the tuning condition of said receiver from that required to tune to said selected signal channel;
and means for utilizing said control signal to energize said driving system to establish and maintain said receiver tuned to said selected signal channel.

3,302,120
LOW NOISE LASER AMPLIFIER WITH PLURAL SECTIONS RESPECTIVELY BETWEEN CONFOCALLY SPACED FOCUSERS WITH SCREENS
Johan Wilhelm Kluver, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Inc., New York, N.Y., a corporation of New York
Filed June 23, 1965, Ser. No. 466,265
5 Claims. (Cl. 330—4.3)



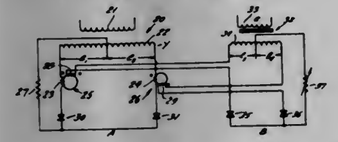
1. In an optical transmission system, between two and five amplifying sections sequentially arranged and spaced for forming a single repeater stage,
each such section comprising an active medium appropriate for the stimulated emission of radiation of at least one frequency with means for pumping said medium,
means for transmitting optical wave energy through said amplifying sections sequentially for the cumulative amplification of the optical energy,
and a separate noise-filtering means comprising a lens with an associated apertured screen preceding each amplifying section,
adjacent lenses being spaced confocally with one amplifying section being disposed on the beam axis between the lenses of each confocally spaced lens pair,
said amplifiyng sections being disposed along a region including the minimum beam diameter.

3,302,121
REACTANCE AMPLIFIER INCLUDING PHASE MODULATION AND DEMODULATION
Konrad Schmid, Frantorpsgatan 144, Goteborg, Sweden
Filed May 14, 1963, Ser. No. 280,286
3 Claims. (Cl. 330—7)



1. A reactance amplifier comprising
(a) a single parallel resonant circuit comprising a bridge having first, second, third and fourth arms; a center-tapped first inductor comprising said first and said conductor; a first polarized capacitor comprissecond arms; means for grounding the center tap of ing said third arm, and a second polarized capacitor comprising said fourth arm; said capacitors having similar terminals connected together;
(b) means for applying an input signal to the junction of said first and second capacitors and to said ground connection so that an input signal is applied equally to each of said first and second capacitors;
(c) a second inductor means coupled to said first inductor means, first means for applying pump power to said second inductor means to induce pump power in said first and second arms in phase opposition;
(d) the values of said first and second capacitors and said first inductor being chosen so that with no input signal said bridge is balanced and no pump power flows through the junction of said first and second capacitors into said signal source and said single resonant circuit is tuned to the frequency of said pump power;
(e) a phase detector connected across said first inductor, said phase detector comprising a first rectifier having one end connected to one end of said first inductor, a second rectifier having one end connected to the other end of said first inductor, said one end of said first and second rectifiers being of opposite polarities, a first branch circuit comprising third and fourth capacitors, connected in series between the other ends of said first and second rectifiers, and a second branch circuit comprising first and second resistors connected in series to the other ends of said first and second rectifiers;
(f) and second means for applying pump power to the junction of said second and third capacitors, the pump power applied by said second means having a quadrature phase relation with the pump power applied by said first means.

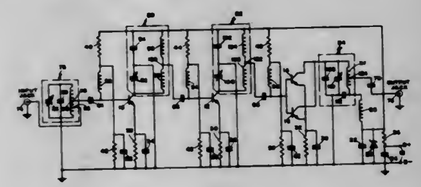
3,302,122
MAGNETIC AMPLIFIER CONTROL CIRCUIT
Isadore K. Dortort, Philadelphia, and Francis R. Bingham, Norristown, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 6, 1963, Ser. No. 300,201
6 Claims. (Cl. 330—8)



1. In a magnetic amplifier having an input circuit, an output circuit, a control reactor and a diode; said control reactor having a magnetic core; said magnetic core having a main winding and a control winding wound thereon; said input circuit, said main winding, said diodes, and said output circuit being connected in series; a control circuit connected to said control winding for supplying a given number of volt seconds to said control winding during the time said diode blocks current flow between said input circuit and said output circuit; said given number of volt seconds being unchanged by the characteristics of said control reactor and said diode; said control circuit including an auxiliary A.-C. voltage source and an adjustable impedance means connected in closed series relation with said control winding; said given voltage of said auxiliary source being in a direction to drive the flux of said core to a given value less than saturation, and in a direction opposite to the direction of flux change caused by forward conduction current through said diode and said main winding; said flux of said reactor core being changed from said given value to a saturated condition when current flows through said diode in the conduction direction of said diode.

3,302,123
MICROWAVE CONSTANT GAIN LINEAR BANDPASS AMPLIFIER
John R. Schweickert, Escondido, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Dec. 23, 1963, Ser. No. 332,637
2 Claims. (Cl. 330—21)

1. A three-stage transistor microwave amplifier, comprising:
a first transistor having means for stable bias and linear operation under varying temperatures;
a first resonant circuit coupling an input signal to said first transistor, said resonant circuit including inductor means for matching the impedance of an input signal coupling device and inductor means resonating with the input capacitance of said first transistor to increase the gain and widen the linear bandwidth of said first resonant circuit;
a second transistor having means for stable bias and linear operation under varying temperatures;
a second resonant circuit coupling the output of said first transistor to the input of said second transistor, said second resonant circuit being tuned to the same frequency as said first resonant circuit to provide a high impedance matching the high output impedance of said first transistor, said second resonant circuit including inductor means resonating with the input capacitance of said second transistor to increase the gain and widen the linear bandwidth of said second resonant circuit;
third and fourth parallel connected transistors having means for stable bias and linear operation under varying temperatures;

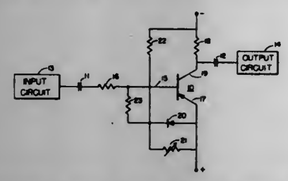


a third resonant circuit coupling the output of said second transistor to the input of said third and fourth transistors, said third resonant circuit being tuned to the same frequency as said second resonant circuit to provide a high impedance matching the high output impedance of said second transistor, said third resonant circuit including inductor means resonating with the input capacitance of said third and fourth transistors to increase the gain and widen the linear bandwidth of said third resonant circuit; and
a fourth resonant circuit coupling the output of said third and fourth transistors to an output signal coupling device, said fourth resonant circuit being tuned to the same frequency as said third resonant circuit to provide a high impedance matching the high output impedance of said third and fourth transistors, said fourth resonant circuit including inductor means matching the impedance of said output signal coupling device to increase the gain and widen the linear bandwidth of said fourth resonant circuit.

3,302,124
TRANSISTOR PULSE AMPLIFIER TO ELIMINATE BASELINE NOISE
Edgar L. Dix, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 28, 1963, Ser. No. 319,617
2 Claims. (Cl. 330—23)

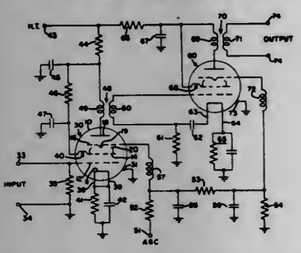
1. An amplifier comprising:
A temperature sensitive transistor having an emitter, a base and a collector;
An input signal circuit connected to said base;
A positive source of potential connected directly to said emitter;
A negative source of potential;
A first impedance connected between said negative source of potential and said collector; and

Impedance network means connected between said base and said positive source of potential, said means functioning to adjustably control the threshold level of said transistor so that said transistor will amplify input signals larger than said threshold level and



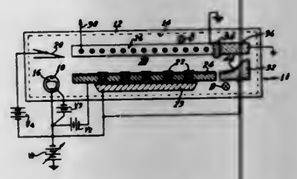
will suppress input noise signals smaller than said threshold level and further functioning to stabilize said threshold level by compensating for changes in the characteristics of said transistor due to temperature variations.

3,302,125
INTERMEDIATE FREQUENCY AMPLIFIER
Mehmet E. Ulug, Etobicoke, Ontario, Canada, assignor to Canadian General Electric Company, Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed June 6, 1963, Ser. No. 286,123
2 Claims. (Cl. 330—46)



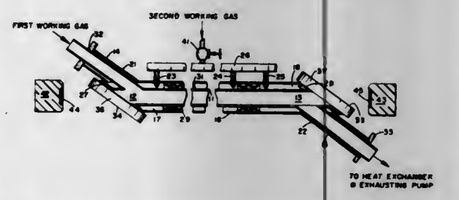
1. An electronic circuit for amplifying signals of a given frequency, said circuit comprising at least one amplifying stage of a number of similar stages, said stage comprising, in combination:
an electron discharge device comprising an evacuated envelope, said envelope enclosing a plurality of electrodes, said electrodes including a cathode having two distinct leads connected thereto to respective opposite ends thereof, a control grid wound with a constant pitch and surrounding and spaced from said cathode, a screen grid wound with a constant pitch and surrounding and spaced from said control grid, a suppressor grid surrounding and spaced from said screen grid, an anode spaced from said suppressor grid on the side away from said cathode, said cathode and said anode defining therebetween at least one main path for current, deflecting means electrically cooperating wtih said suppressor grid for deflecting slow electrons away from said main path, collecting means electrically cooperating with said screen grid for capturing said slow electrons deflected from said path;
a common reference terminal;
input circuit means electrically connected between said control grid and said common reference terminal;
biasing means electrically connected between said cathode and said common reference terminal to bias said cathode positively with respect to said control grid;
suppressor grid circuit means including automatic gain control circuit means capable of supplying an automatic gain control voltage, and inductance means tuned to a frequency different from said given frequency, said inductance means being electrically connected between said suppressor grid and said automatic gain control circuit means;
high tension means providing a source of operating voltage for said circuit;
output circuit means tunable to said given frequency, including an output transformer having a primary winding and a secondary winding, said primary winding having one end electrically connected to said anode, first connecting means to electrically connect the other end of said primary winding to said high tension means, and said secondary winding providing an output signal; second conducting means to connect said screen grid to said other end of said primary winding and shielding means to electrostatically shield said plurality of electrodes.

3,302,126
COLLECTOR ARRANGEMENT FOR COLLECTING UNFAVORABLY PHASE FOCUSED ELECTRONS
James E. Orr, Redwood City, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware
Continuation of application Ser. No. 185,270, Apr. 5, 1962. This application Nov. 8, 1963, Ser. No. 322,342
8 Claims. (Cl. 331—82)



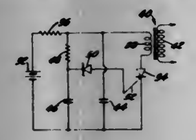
1. In a crossed field travelling wave electron discharge device, a slow-wave structure, a sole electrode disposed adjacent said slow-wave structure and spaced therefrom to form an interaction space therebetween, means including a cathode for producing and directing an electron beam along said interaction space, means for providing a magnetic field transverse to the path of the beam along said interaction space, a plurality of collector electrodes disposed along said interaction space and projecting through said sole electrode to remove unfavorably focused electrons and to recover energy from said electrons, and means for maintaining said collector electrodes at a potential substantially equal to that of said cathode, whereby the gain and efficiency of said electron discharge device is increased.

3,302,127
GAS LASER AND METHOD OF OPERATION
Shao-Chi Lin, Lexington, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,843
6 Claims. (Cl. 331—94.5)



1. The method of providing population inversion in a laser chamber having oppositely disposed transparent and nonreflective ends, comprising:
(a) providing in said chamber an ionized first gas containing metastable ions;
(b) mixing a second un-ionized gas with said first gas in said chamber, said second gas having a plurality of electronic states one of which is resonantly coupled to said metastable ions and has an energy level and spontaneous lifetime greater than the said other states; and
(c) exhausting said first and second gases from said chamber subsequent to the mixing thereof.

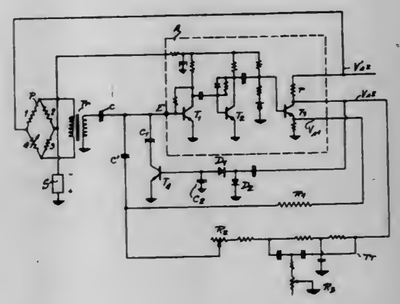
3,302,128
CONTROLLED RECTIFIER RELAXATION OSCILLATOR
Henry F. Schoemehl, La Crescenta, and Jacques A. Tazartes, Hollywood, Calif., assignors to Hoffman Electronics Corporation, El Monte, Calif., a corporation of California
Filed Nov. 18, 1964, Ser. No. 412,207
4 Claims. (Cl. 331—107)



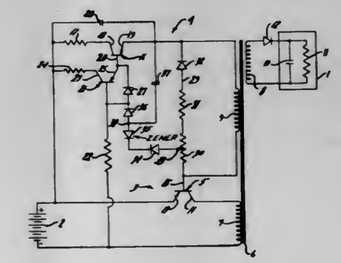
1. A pulse generating circuit comprising: a load, first resistance means; a controlled rectifier; circuit means coupling said first resistance means, said load and said controlled rectifier in a series circuit; first capacitor means coupled in parallel with said load and said controlled rectifier; second resistance means; second capacitor means; circuit means coupling said second resistance means and said second capacitor means in a series circuit in parallel with said first capacitor means; a Zener diode having a pair of leads coupled between the junction of said second resistance means and said second capacitor means and the gate of said controlled rectifier for causing said rectifier to become conductive when the voltage across said second capacitor means exceeds a predetermined value whereby said first capacitor means discharges through said load and said controlled rectifier; and means for coupling said first named series circuit to a source of D.C. voltage.

3,302,129
VARIABLE-FREQUENCY GENERATOR WITH THREE FEEDBACK CONTROLS
Jean de Chaumont, Pont-Sainte-Maxence, France, assignor to Charbonnages de France, Paris, Seine, France, a public institution of France
Filed Oct. 22, 1965, Ser. No. 500,856
Claims priority, application France, Nov. 12, 1964, 994,712
3 Claims. (Cl. 331—110)

1. A high-gain aperiodic variable-frequency generator having a low input resistance, said generator comprising a measuring bridge, an amplifier of which one frequency corresponds to the balance of said bridge, an input attenuator for said amplifier, and a selective circuit, in which there is applied to the input of said amplifier, a current resulting from the following composition:
a reaction current in phase with the output voltage of the amplifier;
a current in quadrature with said reaction current and injected by the measuring bridge, said bridge being excited by a voltage of frequency equal to the frequency delivered by said amplifier;
and a current in phase opposition with the current injected by the measuring bridge, said opposition current being supplied by the selective circuit tuned to the frequency corresponding to the equilibrium of the bridge, said selective circuit being excited by a voltage of amplitude proportional to the signal exciting the bridge of phase such, with respect to said signal, that for a variation of the frequency delivered by the generator, said selective circuit introduces a lagging phase-shift of the resultant current applied to the input of the amplifier, with respect to the output voltage of said amplifier.



3,302,130
BLOCKING OSCILLATOR POWER CONVERTER UTILIZING A CONTROL OF A TRANSFORMER REFLECTED VOLTAGE INDICATIVE OF THE LOAD
Floyd M. Minks, Chester, N.H., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware
Filed July 29, 1964, Ser. No. 385,904
5 Claims. (Cl. 331—112)

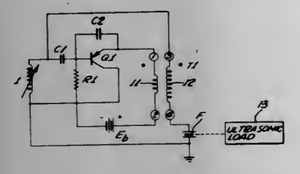


1. A regulated converter, comprising
an energy storage means including a charging winding, a combined sensing and feedback winding and an output winding said charging winding and feedback winding being regeneratively coupled to produce oscillations,
an output load circuit means connected to the output winding,
a charging circuit including an electronic switching means in series with said charging winding and power connection means, said switching means having an input circuit including said feedback winding and a variable impedance means controlling the conducting state of the switching means, and
a voltage sensitive means connected in a control circuit across the feedback winding and connected to actuate said variable impedance in response to a reflected voltage signal indicative of said load condition from the output winding during the discharge cycle of the energy storage means and thereby regulate the output of the oscillator circuit.

3,302,131
TRANSFORMER-COUPLED EMITTER-FOLLOWER OSCILLATOR

Lawrence A. Pyatt, Orange, Calif., assignor of twenty-three and three-fourths percent to Lawrence A. Pyatt and Bernard Farmen, both of Long Beach, Calif., twenty-three and three-fourths percent to Charles J. Link, Long Beach, Calif., twenty-three and three-fourths percent to Harmon G. Scoville, Garden Grove, Calif., and five percent to Robert W. Thompson, Riverside, Calif.

Filed May 9, 1966, Ser. No. 548,760
11 Claims. (Cl. 331—112)

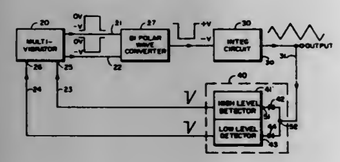


1. A transformer-coupled emitter-feedback transistor oscillator circuit comprising, in combination:
- a transistor having base, emitter, and collector electrodes;
- a step-up transformer having a primary winding and a secondary winding, and having one end of its primary winding coupled to said emitter;
- power supply means biasing the other end of said primary winding relative to said collector;
- a frequency-determining crystal coupled between said collector and one end of said secondary winding, the other end of said secondary winding being coupled to said base;
- and means for coupling output energy from said oscillator to a load.

3,302,132
BISTABLE MULTIVIBRATOR WITH SELF-TRIGGERING CIRCUIT UTILIZING LEVEL DETECTOR TUNNEL DIODES

Joseph Karklys, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Oct. 1, 1965, Ser. No. 492,210
6 Claims. (Cl. 331—113)

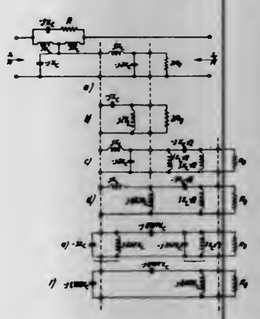


1. A stimulus generator comprising
(a) a multivibrator responsive to trigger pulses for producing a square wave synchronous with said trigger pulses which are applied thereto,
(b) integrating means coupled to said multivibrator for generating a triangular wave in synchronism with said square wave,
(c) high level detector means including a tunnel diode coupled to said integrating means for generating said trigger pulses in response to a predetermined positive level of said triangular wave,
(d) low level detector means including a tunnel diode coupled to said integrating means for generating another one of said trigger pulses in response to a predetermined negative level of said triangular wave, and
(e) means for applying said trigger pulses to said multivibrator to control the frequency of said square wave.

3,302,133
CIRCUIT

Werner Buschbeck, Ulm (Danube), and Alfred Ruhrmann, Berlin-Tempelhof, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany

Filed Jan. 2, 1962, Ser. No. 175,381
Claims priority, application Germany, Jan. 3, 1961, T 19,497
18 Claims. (Cl. 333—8)



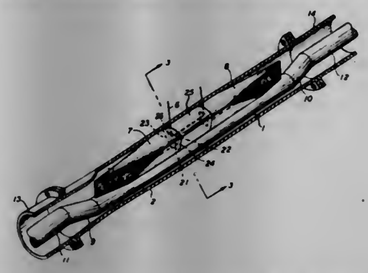
1. A circuit device which is asymmetrical with respect to ground for feeding a common load circuit, such as an antenna circuit appearing as a tuned circuit, from two high frequency (HF) generators with the same frequency and phase, said circuit device comprising, in combination:
(a) a first pair of terminals for connection with one HF generator;
(b) a second pair of terminals for connection with another HF generator;
(c) a bridge circuit having a phase angle other than an integral multiple of 180°, including the multiple 0, and including
(1) a load circuit, one corresponding terminal from each pair being connected together and with one side of said load circuit and to ground, and a load balancing resistance,
(2) a voltage divider including reactance elements of one type connected between other corresponding terminals from each pair, the point joining said reactance elements being connected to the other side of said load circuit, and
(3) a reactance element of the other type connected with said voltage divider; and
(d) at least one supplementing stage connected with said bridge circuit for making the phase angle between the two generators and the load circuit equal to an integral multiple of 180° including the multiplier 0.

3,302,134
LATCHING TYPE NONRECIPROCAL COAXIAL PHASE SHIFTER HAVING ECCENTRICALLY POSITIONED CENTER CONDUCTOR

George L. Heiter, Whippany, and William H. Hewitt, Jr., Mendham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 14, 1964, Ser. No. 403,729
7 Claims. (Cl. 333—24.1)

1. A nonreciprocal transmission path comprising a coaxial cable having a first conductor and an eccentrically positoned second conductor, an element of gyromagnetic material extending longitudinally between said first and second conductors substantially filling the larger cross sectional area between said eccentrically positioned conductors, and means for magnetizing said element with a field polarized mutually transverse to each of said conductors.



3,302,135
ADJUSTABLE DELAY LINE UTILIZING MAGNETOSTRICTIVE WIRE LYING IN GROOVES IN MAGNETIC SUPPORTING MEDIUM

Angus A. Macdonald, Hinsdale, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Feb. 10, 1964, Ser. No. 343,521
9 Claims. (Cl. 333—30)

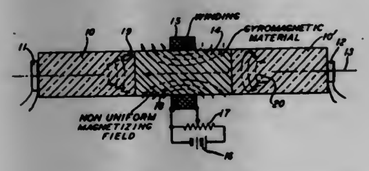


8. In a delay line wherein the delay is established by propagating a stress wave along a wire, the combination including, a hollow cylinder of magnetic material having a spiral groove on the inside surface thereof, said groove being substantially rectangular in cross section, a wire formed of material having magnetostrictive properties positioned within said groove and forming a helix, said groove being of sufficient depth to provide magnetic shielding for said wire.

3,302,136
ELASTIC WAVEFRONT SHAPING

Bert A. Auld, Menlo Park, Calif., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 6, 1964, Ser. No. 401,902
12 Claims. (Cl. 333—30)

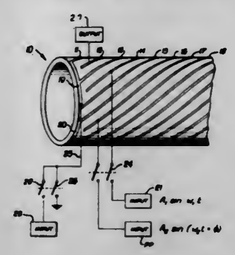


1. In combination, an elastic wave transmission path, means for launching an elastic wave propagating in a given direction along said path, and means interposed along said path for shaping the wavefront of said wave, said means comprising a body of nonconductive ferromagnetic material magnetized with components of magnetization parallel to said given direction that vary in strength with radial distance away from the center of said path.

3,302,137
TORSIONAL MODE CERAMIC BAND-PASS FILTER

Joseph W. Crownover, La Jolla, Calif., assignor of twenty-five percent to William W. Haefliger, Los Angeles, Calif.

Filed June 17, 1963, Ser. No. 288,279
11 Claims. (Cl. 333—72)

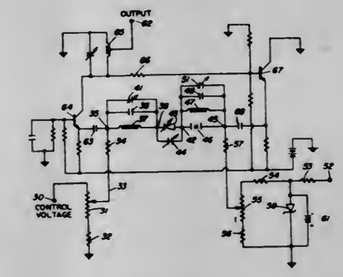


1. A band pass filter, comprising a generally axially extending and piezoelectrically responsive body, and input, output and shielding electroding carried by the body to spiral about the body axis and generally along the body with relative arrangement such that the body will produce an output signal at an output electrode and at a torsional resonance frequency of the body in response to predetermined input signal excitation of input electroding the shielding electroding located to shield input and output electroding.

3,302,138
VOLTAGE CONTROLLED CRYSTAL OSCILLATOR

Harry C. Brown, Glen Burnie, Md., and James V. Hawley, Titusville, Fla., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Aug. 18, 1965, Ser. No. 480,832
2 Claims. (Cl. 334—15)

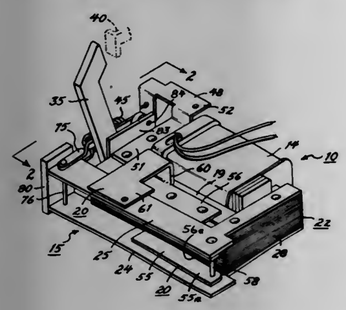


1. A voltage controlled crystal oscillator comprising
- a piezoelectric crystal;
- a voltage responsive variable capacitance connected in series with the crystal;
- a terminal for receiving a control voltage;
- a first fixed capacitance connected in parallel with the crystal;
- a second fixed capacitance connected in parallel with the voltage responsive variable capacitance;
- a third fixed capacitance connected in series with the voltage responsive variable capacitance, said second and third fixed capacitances being of equal value; and
- means connecting the terminal with the third fixed capacitance whereby a control voltage applied to the terminal causes the voltage responsive variable capacitance to vary and thereby vary the frequency of the crystal throughout its tuning range.

3,302,139
RELAY FOR TRIPPING A CIRCUIT BREAKER

Henry P. Franz, Trenton, N.J., assignor to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey

Filed July 6, 1965, Ser. No. 469,536
6 Claims. (Cl. 335—13)

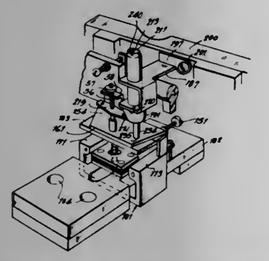


1. In an electrical relay, the combination comprising an electrical coil, a core of magnetizable material upon which said coil is mounted, an armature, means defining first, second and third support, said armature being pivotally connected to said first support, a trip finger pivotally connected to said second support at one of two positions, a link pivotally connected at one end to said armature and at the other end connected to the other of said two positions to which said trip finger is not connected, and a tension spring connected at one end to said armature and at the other end to said third support.

3,302,140
CIRCUIT BREAKER INSTANTANEOUS TRIP ADJUSTMENT

Albert Strobel, Cherry Hill, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 21, 1965, Ser. No. 465,305
9 Claims. (Cl. 335—35)

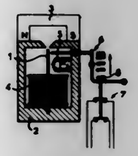


1. A manually operable armature positioning means for adjusting the air gap of a circuit breaker trip assembly, said armature positioning means comprising bracket means for mounting to a circuit breaker support member, an adjusting rod, said bracket means including aperture means for receiving said adjusting rod, such that said adjusting rod is rotatable about its central axis, a first end of said adjusting rod freely passing through said aperture means and outwardly projecting towards an externally accessible region of the circuit breaker trip assembly, the second end of said adjusting rod carrying an enlarged portion, appreciably greater than said aperture means and abutting an adjacent region of said bracket means, said enlarged portion including first and second surfaces, said first surface including a plurality of angularly spaced, radially extending, indexing recesses, said adjacent bracket region including an integrally formed protrusion cooperatively entering a preselectable one of said recesses, said second surface including a cam surface in engagement with an adjustment member connected to a magnetic trip armature, the rotation of said adjusting rod presenting different portions of said cam surface in engagement with said adjustment member, with the entering of said bracket protrusion within a preselectable one of said indexing recesses maintaining the engagement of a preselectable portion of said cam surface and said armature adjustment member, said adjusting rod having an axially extending internal cavity, a biasing means located within said internal opening, a rod extension member having a first end freely entering said internal opening and positioned against said biasing means, and a second end extending outward of said internal cavity, beyond the second end of said adjusting rod, with said biasing means urging said second end outward of said internal cavity, a member of said trip assembly abutting said second end of said rod extension and defining a stop means for limiting the outward movement of said rod extension second end such that said adjusting rod is biased in a direction forcibly urging said enlarged portion first surface against said region of said mounting bracket thereabout, with the preselectable one of said indexing recess being retained in firm engagement with said bracket protrusion.

3,302,141
ALTERNATING CURRENT SENSITIVE RELAY

Ferdy Mayer, 22 Rue Ampere, Grenoble, France

Filed Nov. 12, 1963, Ser. No. 322,603
Claims priority, application France, Nov. 12, 1962, 915,058
7 Claims. (Cl. 335—94)

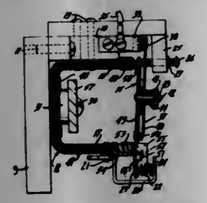


1. An alternating current sensitive relay comprising:
(a) a magnetic circuit;
(b) electrical excitation means associated with said magnetic circuit for inducing flux variations therein and having an input for receiving an alternating electrical excitation current;
(c) a resonator constituted by a mechanical vibrating element electromagnetically coupled to said magnetic circuit and tuned to resonate at a predetermined frequency under the influence of flux variations produced in said magnetic circuit by the excitation current for storing a portion of the energy supplied to said magnetic circuit by said excitation means, said storage being in the form of continuously increasing mechanical oscillations and said vibrating element being made of a magnetic material and forming a flux path with said magnetic circuit;
(d) capturing means including a permanent magnet disposed in the path of travel of said vibrating element and having a dimensionally small field which is substantially independent of the flux path defined by said magnetic circuit for attracting and holding said vibrating element when the amplitude of its oscillations has passed a predetermined minimum level; and
(e) a mechanical trigger unit associated with said resonator to be activated by said vibrating element when said latter element has been thus attracted by said capturing means.

3,302,142
LOAD RESPONSIVE SWITCH APPARATUS

Josef Max Piechotta, 2138 S. 18th St., Milwaukee, Wis. 53205

Filed Mar. 26, 1964, Ser. No. 357,009
2 Claims. (Cl. 335—128)



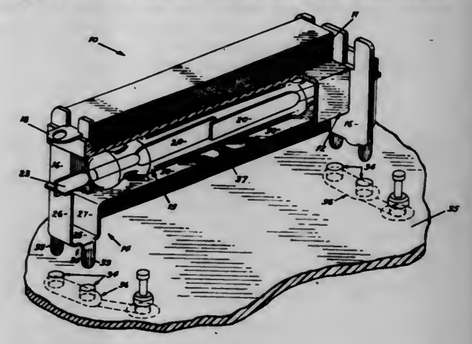
1. A load detecting apparatus adapted to respond to the current in a load circuit, comprising
a generally rectangular magnetizable member having a main laminated U-shaped frame and a movable side pivotally mounted at one end to an adjacent arm of the frame, said main laminated U-shaped frame including a greater plurality of laminations than said movable side,
a spring guide secured to the arm of the frame and defining a wall parallel to the movable side,
a resilient means disposed between the movable side and the wall and urging said movable side to pivot outwardly and establish an air gap between the free end thereof and the aligned arm of the member,
adjustable stop means adjacent the free end to preset the length of the air gap between the movable side,
a conductor passing through said magnetizable member and adapted to be connected in series in the load circuit, current in said conductor establishing a magnetic field in said magnetizable member attracting said movable side,
a pair of spaced contacts mounted adjacent the free end of the movable side,
a contact plate having contact arms aligned with the spaced contacts and superimposed over the movable side of the magnetizable member,
an insulating spacer disposed between the contact plate and the movable side and having a tubular projection extending through an opening in the contact plate,
bolt means passing through the tubular projection and clamping said spacer to the movable side of the magnetizable member,
a coil spring encircling said projection and compressed between the contact plate and the outer end of the bolt means, and
means to prevent relative rotational movement of the spacer and the contact plate on said bolt means.

3,302,143
REED RELAY ASSEMBLY HAVING IMPROVED MOUNTING MEANS

Robert J. Harkenrider, Winona, Minn., assignor to Waynco Inc., Winona, Minn., a corporation of Minnesota

Filed July 1, 1965, Ser. No. 468,731
4 Claims. (Cl. 335—154)

1. A relay comprising,
a coil-form having a coil wound thereon and a tubular opening therein defined by wall areas of said coil-form,
a reed switch having leads extending from the ends thereof,
clips positioned adjacent the ends of said coil-form, said clips having a generally U-shaped portion having a base and a pair of sides with one side being shorter than the other, said shorter side of each of said clips having a bar portion extending outwardly therefrom and into said coil-form opening and clamping against a wall area of said opening, the longer legs of said U-shaped portion engaging said switch

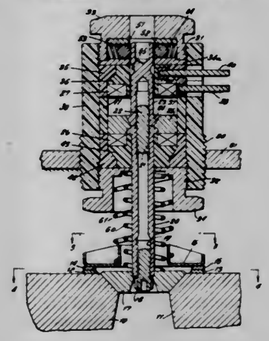


leads and supporting said reed switch in said bore, and
means mounting said clips.

3,302,144
HIGH SPEED CIRCUIT BREAKER WITH FLIP-FLOP MECHANISM

Otto Jensen, Malvern, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 22, 1965, Ser. No. 441,647
7 Claims. (Cl. 335—183)



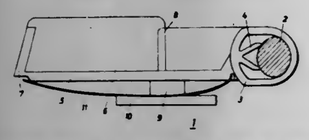
1. An operating mechanism for a circuit interrupter; said circuit interrupter including a stationary contact, a movable contact movable into and out of engagement with said stationary contact, and a movable support shaft having said movable contact secured thereto and movable therewith; said operating mechanism including a non-magnetic ring-shaped conductive armature defining a short-circuited winding connected to said shaft and first and second spaced windings; said first and second spaced windings and said ring-shaped armature positioned on a common axis and lying in spaced parallel planes; said ring-shaped armature disposed between said first and second spaced windings; said movable support shaft moving between first and second positions respectively adjacent said first and second spaced windings; said first and second positions of said shaft corresponding to engagement and disengagement respectively of said movable and stationary contacts; said first and second windings having respective terminal connections; and voltage source means connected to said terminals whereby when said armature is adjacent one of said first or second windings, energization of said one of said first or second windings by said voltage source means causes high speed movement of said

armature toward the other of said first or second windings; said voltage source means including a single pulse voltage source; said terminal connectors of said first and second windings connected to one another and to said single voltage source in a common circuit connection whereby said single pulse voltage source energizes both of said first and second windings simultaneously.

3,302,145
ARRANGEMENT FOR CORRECTING THE GEOMETRY OF THE PICTURE OF A TELEVISION PICTURE TUBE BY MEANS OF ONE OR MORE ADJUSTABLY MOUNTED MAGNETS

Rudolf Schubert, Ulm-Wiblingen, and Helmut Stenger, Weissenhorn, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm/Danube, Germany

Filed Dec. 18, 1964, Ser. No. 419,376
Claims priority, application Germany, Dec. 20, 1963, T 25,303
9 Claims. (Cl. 335—212)



1. An arrangement for correcting the geometry of the picture of a television picture tube by means of an adjustably mounted permanent magnet, comprising, in combination:

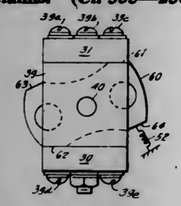
(a) a deflection unit provided with at least one elongated slot; and

(b) at least one mounting for securing a permanent magnet to said deflection unit, said mounting having a main part holding a permanent magnet and a lug projecting from said main part, said lug having a diameter which is substantially equal to the width of said slot, said lug being provided with an enlarged free end; said mounting being arranged on said deflection unit with said lug passing through said slot, thereby to allow said mounting with the permanent magnet held thereby to be slidably moved with respect to said deflection unit in the direction of the length of said slot and also to be rotated with respect to said deflection unit about the axis of said lug; said main part including a clamping portion for receiving the permanent magnet, said lug being spaced from said clamping portion thereby to cause displacement of said clamping portion and the magnet clamped thereby, when said mounting is rotated about said lug axis.

3,302,146
ROTARY ARMATURE FLUX SHIFTING DEVICE

Stanley E. Zocholl, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 2, 1965, Ser. No. 436,578
2 Claims. (Cl. 335—230)

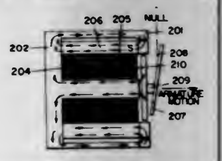


1. A magnetic latch structure comprising an armature of magnetic material and a magnet structure; said magnet structure comprising a first closed magnetic path including a pair of spaced pole faces and a source of unidirectional magnetic flux, and a second closed magnetic path including a variable source of ampere turns and said pair of spaced pole faces; said second closed magnetic path having a higher magnetic reluctance than said first closed magnetic circuit; said armature comprising a rotatable body of magnetic material having a pair of diametrically opposite pole faces; pivotal mounting means connected to a central portion of said armature; said armature being disposed between said pair of spaced pole faces of said magnet structure; said pair of diametrically opposite pole faces of said armature engaging respective pole faces of said spaced pole faces; said armature being rotatable about the said pivotal mounting means to move said pair of diametrically opposite pole faces away from their said respective spaced pole faces; and a second pair of diametrically opposed pole faces on said armature; said second pair of pole faces being movable into engagement with respective pole faces of said spaced pole faces when said pair of diametrically opposed pole faces move away from said spaced pole faces of said magnet.

3,302,147
POLARIZED SERVO VALVE MOTOR WITH A TORSIONALLY MOUNTED ARMATURE

Zenny Olsen, Nashua, N.H.
(105 McGregor St., Manchester, N.H. 03102)

Original application May 31, 1963, Ser. No. 284,405, now Patent No. 3,245,424, dated Apr. 12, 1966. Divided and this application Mar. 24, 1965, Ser. No. 442,349
8 Claims. (Cl. 335—230)



1. An electromagnetic motor means for a servo valve comprising;

low retentitvity, ferromagnetic core means having an arm for carrying an electrical coil;

an electrical coil surrounding said arm;

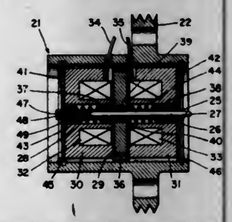
a movable armature coupled to said core means for motion with respect thereto when an electric current is applied through said coil; and

a cantilevered member torsionally coupled to said armature and said core means for motion with said armature relative to said core means.

3,302,148
MECHANICAL LOAD CELL HAVING A SPRING BIASED SHAFT

Searle G. Nevius, Playa Del Rey, Calif., assignor to W. C. Dillon & Company, Inc., a corporation of California

Filed Nov. 23, 1965, Ser. No. 509,392
5 Claims. (Cl. 336—30)

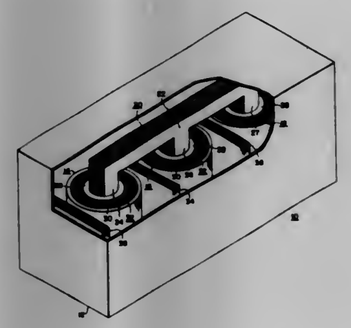


1. An improved load cell, comprising; a casing having a diaphragm portion designed to flex under load; a sensing unit mounted within said casing; shaft means extending axially within said sensing unit and having a spherical end portion; means in said diaphragm portion for receiving said spherical end portion in complementary relationship; electrical means in said sensing unit for sensing movement of said shaft means in response to movement of said diaphragm portion; adjustment means in said sensing unit for adjusting the axial position of said shaft means with respect to said electrical means; and biasing means in said sensing unit for maintaining said spherical end portion of said shaft means in engagement with said diaphragm portion.

3,302,149
ELECTRICAL INSULATING STRUCTURE

Herbert E. Forsha, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 30, 1964, Ser. No. 400,389
3 Claims. (Cl. 336—58)



1. Electrical inductive apparatus comprising:

a casing,

electrical winding means,

magnetic core means,

said electrical winding means being disposed in inductive relation with said magnetic core means to form a core-winding assembly, said core-winding assembly being disposed within said casing,

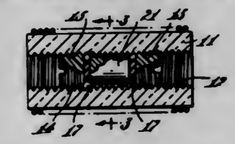
fluid dielectric means disposed within said casing,

at least one electrical insulating barrier structure having a plurality of ducts disposed therein, said at least one electrical insulating structure providing electrical insulation between predetermined components of the electrical inductive apparatus, said at least one electrical insulating barrier structure including a plurality of continuous turns formed of a strip of electrical insulating sheet material having predetermined length and width dimensions, and a plurality of strips of corrugated electrical insulating material disposed between predetermined turns of said strip of electrical insulating sheet material, said strips of corrugated electrical insulating material having predetermined length and width dimensions, with its corrugations extending across its width dimension, the length dimension of said strip of electrical insulating sheet material exceeding the length dimension of said plurality of strips of corrugated electrical insulating material, said strips of corrugated electrical insulating material being disposed in spaced parallel relation with one another across the width of said electrical insulating sheet material and oriented relative to said strip of electrical insulating sheet material to provide ducts in said at least one electrical insulating barrier structure for circulation of said fluid dielectric means.

3,302,150
ADJUSTING AND LOCKING ARRANGEMENT FOR VARIABLE IMPEDANCE DEVICES

Frank Lyman, Jr., Cambridge, Mass., assignor to Cambridge Thermionic Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Feb. 27, 1964, Ser. No. 347,809
14 Claims. (Cl. 336—136)



1. A variable inductance device comprising:

a ceramic impedance sleeve having substantially uniform internal threads,

an impedance plug of magnetic metal having substantially uniform exterior threads engaging said internal threads for axially adjusting the position of the impedance plug with the sleeve, and

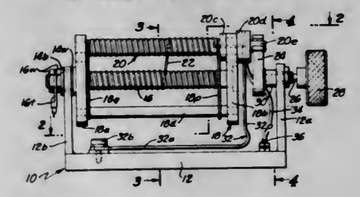
at least one jam plug of non-magnetic material more resilient than the sleeve, said jam plug having exterior threads engageable with but of greater pitch than the interior threads of said sleeve, said material having a higher coefficient of thermal expansion than said sleeve,

whereby said jam plug is frictionally held in predetermined position within the sleeve to exert locking thrust on said impedance plug.

3,302,151
CONTACTLESS VARIABLE RESISTOR

Robert J. Winter, 12 Crestwood Drive, Avon, Conn. 06001

Filed June 21, 1965, Ser. No. 465,351
6 Claims. (Cl. 338—79)



1. A variable resistor device comprising:

first means, including supporting means and an elongate fixed mandrel device fixedly supported thereon, said fixed mandrel device defining a first axis and having a conductive surface providing a first winding surface upon which a flexible conductor may be wound in numerous turns or convolutions;

second means, including a carriage supported by said first means for rotation about the said first axis, and means for causing rotation of said carriage about said first axis through numerous revolutions;

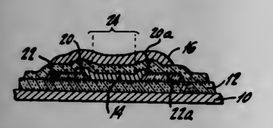
third means, including an elongate rotary mandrel device rotatably supported by said carriage for rotation about a second axis parallel to said first axis, said rotary mandrel device having an insulated surface providing a second winding surface complementary to said first winding surface and upon which a flexible conductor may be wound;

fourth means, including means connected to said first means and to said rotary mandrel device, for preventing rotation of said rotary mandrel device relative to said supporting means and permitting rotation of said rotary mandrel device relative to said carriage incident to rotation of said carriage about said first axis;

and fifth means, including an elongate bare flexible resistive element wound in part upon said conductive first winding surface and fixedly connected thereto, and in part wound upon said insulated second winding surface and adapted to be wound from either of said winding surfaces to the other incident to rotation of said carriage, said fifth means further including a first fixed electric terminal means fixedly connected to said first winding surface, and a second fixed electric terminal means and a flexible insulated conductor fixedly connected at one end to said flexible resistive element wound on said rotary mandrel device;

whereby the effective electrical resistance exhibited between said first and second fixed electric terminal means may be varied without brushing or wiping contact and by rotation of said carriage.

3,302,152
CRYOELECTRIC DEVICE
Charles M. Wine, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 19, 1964, Ser. No. 390,560
5 Claims. (Cl. 338—32)



5. A cryotron comprising:

a superconductor ground plane;

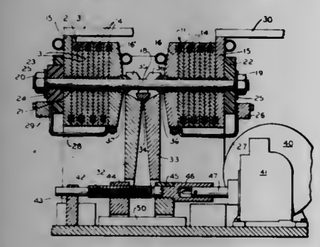
insulation on said ground plane;

a thin film superconductor gate element insulated from and lying over the ground plane, the element being thinner at its edges than at its center;

additional insulation under the edges of said gate element for spacing said edges substantially further from the ground plane than the center portion of the gate element; and

a thin film superconductor control element lying over and insulated from the gate element.

3,302,153
EXTENDED RANGE CARBON PILE RHEOSTAT
Jesse R. Atwood, Orinda, Calif., assignor to William M. Brobeck & Associates, Berkeley, Calif., a corporation of California
Filed Nov. 23, 1964, Ser. No. 412,965
9 Claims. (Cl. 338—112)



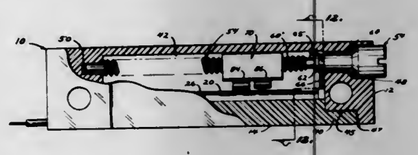
1. A carbon pile rheostat comprising: a plurality of resistance plates, each plate having two faces on opposite sides thereof, each face being normally in contact with a face of an adjacent plate; resilient means disposed intermediate said plates for separating one face of each plate from the adjacent face of another plate while maintaining surface contact between adjacent plate faces; and means for adjustably positioning said plates in relation to each other while maintaining said resilient means under stress.

3,302,154
CARBON PILE RESISTOR
Richard M. Bauer, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed July 28, 1964, Ser. No. 385,715
7 Claims. (Cl. 338—114)



1. A variable resistance carbon pile resistor comprising a straight pile of carbon resistance discs, terminals engaging the end discs in the pile and movable toward and away from each other, and longitudinally resilient means extending lengthwise of the pile and gripping the terminals and discs to normally hold them in predetermined relative positions lengthwise of the pile, the length of said resilient means being changeable by said terminals when they are moved axially of said pile in opposite directions by external forces to change the resistance of the pile, whereby when said resilient means is allowed to return to its original length it will restore the discs to substantially said predetermined relative positions.

3,302,155
TRIMMER POTENTIOMETER
Michael C. Layland, Diamond Bar, Calif., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Original application Nov. 5, 1962, Ser. No. 235,575, now Patent No. 3,233,201, dated Feb. 1, 1966. Divided and this application Jan. 25, 1966, Ser. No. 522,952
7 Claims. (Cl. 338—183)



1. In a potentiometer,

a housing,

a bearing means in said housing,

a leadscrew of integral solid construction rotatably secured in said bearing means, said leadscrew having at least limited longitudinal movement in said bearing means,

a resistance coil secured in said housing,

a collector bar secured in said housing,

wiper contact means movably mounted on said leadscrew and in engagement with said collector bar and said resistance coil,

a bore in said housing and communicating with the exterior thereof,

one end of said leadscrew extending into said bore,

at least a portion of said leadscrew and said bore having closely adjacent opposing surfaces diagonally disposed with respect to the longitudinal axis of said bore,

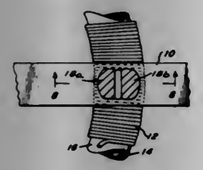
the diagonally disposed opposing surface of said leadscrew comprising a portion of its length wherein its diameter is progressively decreased from a head portion of larger diameter to a center portion of reduced diameter,

a resilient sealing means intermediate the adjacent opposing surfaces of said leadscrew and said bore,

retaining means on said leadscrew urging said leadscrew in one direction of longitudinal movement to move the opposing surfaces of said leadscrew and said bore together to compress said sealing means,

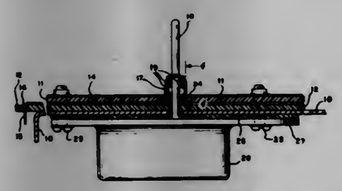
and electrical connecting means on said collector bar and said resistance coil for connecting said potentiometer in an electrical circuit.

3,302,156
ELECTRICAL RESISTOR WITH WELDED TERMINALS
Walter H. Douglass, Sr., Oreland, Pa., assignor to International Resistance Company, Philadelphia, Pa.
Filed Mar. 20, 1964, Ser. No. 353,433
3 Claims. (Cl. 338—329)



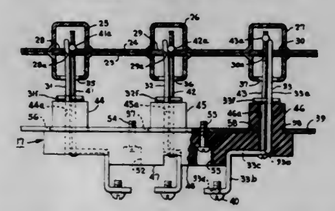
1. An electrical resistor comprising a core of electrically insulating material, an electrical resistance wire helically wound around and along said core, a terminal of an electrically conductive metal, one surface of said terminal engaging and extending a cross at least one turn of said wire, said terminal having a slit therethrough which extends longitudinally along said core across said turn of the wire, and said turn of the wire being broken with the broken ends being fused to the edges of the slit in the terminal.

3,302,157
TRANSISTOR SOCKET ASSEMBLY FOR PRINTED CIRCUIT BOARD
Thor F. Olson, Villa Park, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 24, 1964, Ser. No. 354,225
6 Claims. (Cl. 339—17)



2. In combination: a chassis; a printed circuit board, having a plurality of conductive foil elements affixed thereto, secured to one side of said chassis; a transistor, to be mounted on said chassis in heat exchange relationship therewith, having a body serving as one electrical terminal thereof and two plug-in terminals for electrical connection with respective ones of said foil elements; a socket assembly cooperating with said board for holding said transistor, said socket assembly comprising; first and second conductive straps, each strap having a lug portion adapted for connection to a different one of said foil elements and a socket portion adapted for resiliently receiving and holding a plug-in terminal of said transistor; an insulating plate forming apertures for receiving said socket portions and adapted to hold said straps against said board, a third conductive strap overlying and holding said insulating plate against said first and second conductive straps, said third conductive strap having end means thereon maintaining said aforementioned straps and plate in intimate contact with said board, and providing a connection to another one of said foil elements, and additional means forming a conductive path between the body of said transistor and said third strap.

3,302,158
BOLT-IN CONNECTOR
Robert C. Hudson, Panorama City, Calif., assignor to General Electric Company, a corporation of New York
Filed Oct. 30, 1964, Ser. No. 407,772
7 Claims. (Cl. 339—22)



1. A connector for making electrical connection to a bus bar having an opening therein comprising:

(a) a supporting base,

(b) an elongated contact stab supported on said base and projecting therefrom,

(c) a threaded bolt having a first end supported on said base and a free end remote from said base, said bolt extending parallel to and closely spaced from said contact stab,

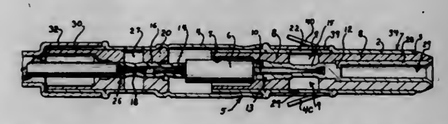
(d) a wedging member threadedly carried by said bolt adjacent said free end thereof,

(e) means limiting movement of said wedging member in a direction toward said free end of said bolt,

(f) said bolt being slightly longer than said contact stab and said wedging member being dimensioned to interfere with said contact stab whereby rotation of said wedging member about said bolt is prevented by said contact stab,

(g) said contact stab and said wedging member being receivable in said opening of said bus bar when said wedging member is adjacent said free end of said bolt, and whereby rotation of said bolt draws said wedging member toward said supported end of said contact stab and forces said contact stab against the adjacent edge of said opening in said bus bar.

3,302,159
PLUGGABLE ELECTRICAL CONNECTORS
William Ludlow Schumacher, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 11, 1964, Ser. No. 388,857
2 Claims. (Cl. 339—177)



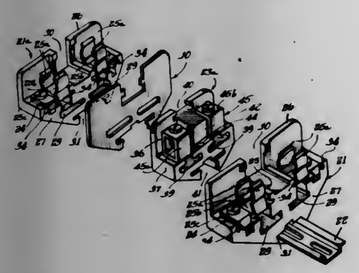
1. An electrical connector comprising a metallic shell having interfitting shell members, each of said shell members having openings extending therethrough, a first dielectric spacer in one of said shell members and having

an aperture extending therethrough in alignment with said openings of this one shell member, a center contact member in said first dielectric spacer, said center contact member having a lead-receiving section at one end with a portion of said lead-receiving section disposed in said aperture, a second dielectric spacer in the other of said shell and having a hole extending therethrough in alignment with said openings of this other shell member, an electrical component disposed between said dielectric spacers, said electrical component having electrical leads with one of said electrical leads disposed within said lead-receiving section and crimpable thereto through the aligned aperture and openings, a ferrule secured to another of said electrical leads and disposed in said second dielectric spacer, said ferrule having a lead-receiving area disposed in said hole and crimpable to a conductor member through the aligned hole and openings, and means to secure another conductor member to said shell.

3,302,160
SEGMENTED ELECTRICAL TERMINAL STRIP

Erik J. Nielsen, Mequon, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed May 6, 1964, Ser. No. 365,286
3 Claims. (Cl. 339—198)

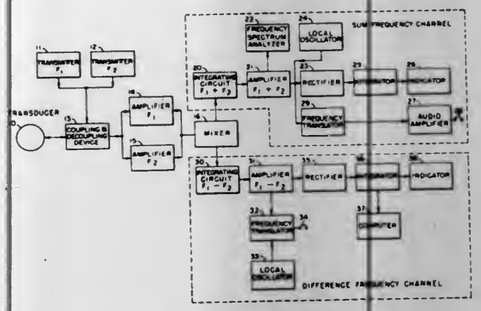


1. A composite segmented terminal strip comprising a plurality of terminal blocks of different sizes aligned in a row in end-to-end relation with a larger one of said blocks adjacent a smaller one of said blocks in said row, interlocking means on each of said blocks interlocking adjacent blocks thereby to align the blocks in said row and to restrict relative lateral movement of the blocks, said interlocking means for each block comprising: a base, a projection extending from one end face of the base and a complementary recess in the other end face of the base, each of the blocks having an integral barrier portion extending upwardly at one end of the base, an electrical connector mounted on each block in endwise alignment with the barrier portion of its associated block and exposed endwise from the end face of its associated block opposite the barrier portion thereof, the barrier portion of said one of the smaller blocks being next adjacent the end of said one of the larger blocks opposite the barrier portion thereof, the electrical connector mounted on said one of the larger blocks extending laterally of said row beyond the barrier portion of said one of the smaller blocks, an insulating barrier member interposed in the row between said one of the larger blocks and said one of the smaller blocks to provide electrical isolation between the respective connectors thereof, said insulating barrier comprising a strip of insulating material having an opening complementary to, and aligned with, the interlocked complementary recess and projection of the blocks adjacent thereto on opposite sides thereof, and said insulating barrier being sufficiently thin to permit the projection on one of said blocks adjacent thereto to extend through the said opening and to be received in an interlocking relation within the recess of the other of said blocks adjacent thereto, a single reverseing block having a thickness substantially equal to the thickness of the barriers on said block and a pair of oppositely facing projections each substantially identical with the projections on the terminal blocks so that each projection of the reversing block can be accommodated in said cavities selectively, and thereby the reversing block may be selectively positioned at an end of the row and intermediate the ends of the row in a terminal strip when one reversing block, the plurality of terminal blocks and the insulating barrier are assembled to provide a terminal strip, and a separate clamping member at each end of the terminal strip for maintaining said plurality of terminal blocks, said insulating barrier and said reversing block in assembled interlocked relation.

3,302,161
MULTIPLE-FREQUENCY RANGING SYSTEM

John V. Ellison, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 5, 1950, Ser. No. 199,271
8 Claims. (Cl. 340—3)



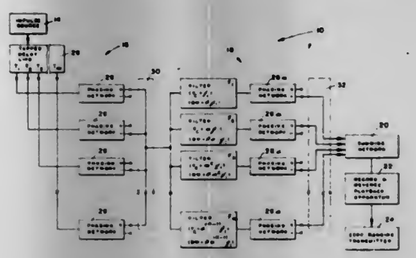
1. A pulse echo signal locator system comprising: impulse transmitter means for simultaneously transmitting to remote objects a pair of pulses each having a distinct frequency characteristic, a receiver for receiving said pulses after reflection, heterodyne means in said receiver for mixing the reflected signals of said pair of pulses to produce a sum frequency signal, and means for indicating the presence and extent of the Doppler frequency shift in said sum frequency signal.

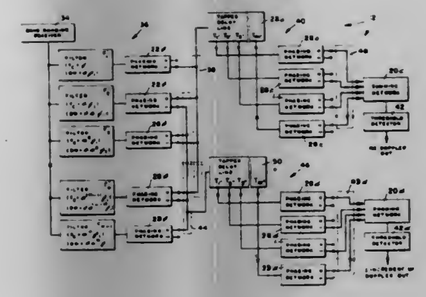
8. A sonar pulse echo signal locator system comprising: an impulse transmitter operable to simultaneously transmit to remote objects a pair of pulses each having a distinct frequency, a transducer operable to convert said pulses to sound energy and operable to convert the signals reflected from said remote objects to electrical signals, said reflected signals deviating above and below the distinct frequency characteristics of said pair of pulses in dependency on the movement of said objects, a receiver for receiving pulse echo signals reflected from said objects, isolating means for coupling said receiver and said transmitter to said transducer, heterodyne means in said receiver for mixing the reflected signals of said pair of pulses to produce a sum frequency signal and a difference frequency signal, means for separating said last named two signals into two channels, filter means in said difference frequency signal channel operative to provide a substantially noise free signal, indicator means coupled to said filter to indicate the presence of said signal; and a frequency spectrum analyzer in said sum frequency channel operative responsive to the enhanced frequency shift of said sum frequency signal to indicate the movement of said objects.

3,302,162
DOPPLER SONAR APPARATUS

Richard O. Rowlands, State College, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 4, 1965, Ser. No. 461,565
3 Claims. (Cl. 340—3)





1. In a Doppler sensing echo ranging system of the type including a matched set of first and second signal selective units, said first unit for encoding a signal for transmission to a target and said second unit for detection of the encoded signal in the echo signal returning from the target, said first and second signal selective units each comprising a predetermined series of parallel connected band pass filters and a frequency component phase selective means associated with said series of filters for passing only the output frequency components of the individual filters which are in either one or the other of opposite signal phase conditions in accordance with a predetermined random binary number code, the improvements, in combination, comprising:

(a) the individual band pass filters of the series of filters of the first signal selective unit having center frequencies that increase in accordance with a first predetermined portion of a predetermined geometric progression, and having bandwidths that increase in proportion to their respective center frequencies, and

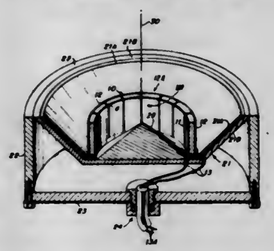
(b) said individual band pass filters of the second signal selective unit having center frequencies that increase in accordance with a second and different predetermined portion of said predetermined geometric progression, and having bandwidths that increase in direct proportion to their respective center frequencies,

(c) said first and second predetermined portons of the predetermined geometric progression being matched to allow only a signal encoded by the first signal selective unit and shifted by a predetermined Doppler condition to pass through the second signal selective unit.

3,302,163
BROAD BAND ACOUSTIC TRANSDUCER

Daniel E. Andrews, Jr., 1563 Yost Drive, San Diego, Calif. 92109

Filed Aug. 31, 1965, Ser. No. 484,134
13 Claims. (Cl. 340—8)

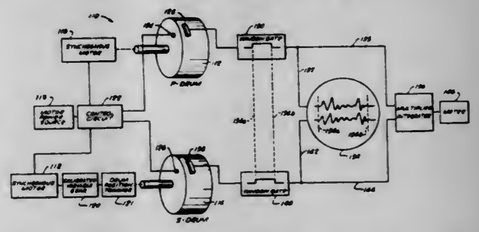


1. Acoustically responsive apparatus comprising;
an electromechanical transducer element having a hollow generally-cylindrical shape;
a conical reflector disposed concentrically and exteriorally of said cylindrical element;
a second conical reflector disposed concentrically and interiorally of said cylindrical element, the two conical reflectors being disposed to reflect waves in one direction parallel to the axis of said cylindrical element and being equally spaced from the opposed surfaces of said cylindrical element so that the distances in wave lengths along any radial line to corresponding incremental areas on the conical reflector surfaces are substantially equal;
one of said conical reflectors having a relatively hard and noncompliant surface radially facing said cylindrical element and the other of said reflectors having a relatively soft and compliant surface radially facing said cylindrical element;
said relatively hard surface having an acoustic impedance sufficiently higher than its operative ambient environs for substantially preserving the phase of impinging acoustic waves and the other surface having an acoustic impedance sufficiently lower than said environs for substantially reversing the phase of impinging waves.

3,302,164
METHOD AND APPARATUS FOR GEOPHYSICAL PROSPECTING WHICH UTILIZES BOTH REFLECTED SHEAR AND PRESSURE WAVES

Kenneth H. Waters, Ponca City, Okla., and Jesse T. Cherry, Castro Valley, Calif., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Dec. 12, 1963, Ser. No. 330,055
7 Claims. (Cl. 340—15.5)

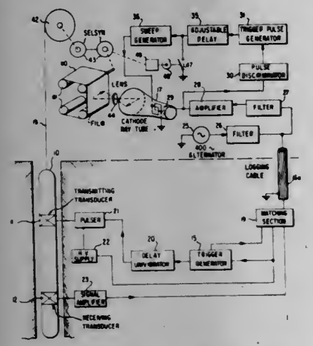


1. A method for determining physical properties of subterranean layers of the earth comprising the steps of:
producing seismic pressure wave reflection data of the subterranean layer recorded with respect to time and having an effective wave length spectrum;

producing seismic shear wave reflection data of the subterranean layer recorded with respect to time and having an effective wave length spectrum substantially the same as the effective wave length spectrum of the pressure wave reflection data; and

comparing the seismic pressure wave reflection data with the seismic shear wave reflection data.

3,302,165
WELL LOGGING WITH SINGLE CHANNEL CABLE
Terry O. Anderson, Bruce A. Blackman, and Robert O. Wilson, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Dec. 18, 1963, Ser. No. 331,598
10 Claims. (Cl. 340—18)



1. A system for logging a well bore hole comprising
(a) a sonde station for exploring the well,
(b) a surface station having periodically operable information presentation means,
(c) cable means consisting of a single pair of conductor means connecting the stations,
(d) synchronizing means at one of the stations for recurrently generating electrical timing signals,
(e) means coupling the synchronizing means to the cable means for transmission of timing signals to the other station,
(f) time delay means at each station responsive to the output of the synchronizing means to generate electrical time delayed signals after damping of cable transmission transients from the timing signals,
(g) transmitter means in said sonde station periodically operable in response to electrical trigger signals at the sonde station coupled to the cable means responsive to the local time delayed signals, and
(h) means at the surface station for initiating operation of the information presentation means responsively to the local time delayed signal to present the logging signals in predetermined time relationship with the operation of the logging means after damping of cable transmission transients resulting from timing signal transmission.

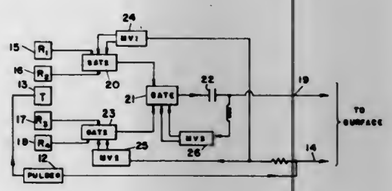
3,302,166
MULTIPLE RECEIVER ACOUSTIC WELL LOGGING
Joseph Zemanek, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Mar. 16, 1964, Ser. No. 352,173
18 Claims. (Cl. 340—18)

1. An acoustic logging system for producing a log of the acoustic velocity of subsurface formations along a borehole with compensation for irregularities in the borehole diameter comprising

a logging tool having a single transmitter of acoustic pulses intermediate the ends thereof,

at least four receivers comprised of first, second, third and fourth receivers for detecting said acoustic pulses, said receivers being spaced one from the other and supported by said logging tool in spaced relationship with said transmitter with the first and second receivers to one side of said transmitter and said third and fourth receivers to the other side of said transmitter,

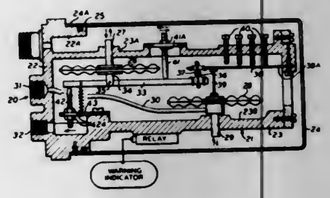
means for producing a signal representative of the production of each acoustic pulse by said transmitter,



means responsive to said signal and to the detection of said acoustic pulses by said receivers for successively producing first, second, third and fourth voltages respectively representative of the travel times of said acoustic pulses from said transmitter through segments of said subsurface formation to said first, second, third and fourth receivers, and

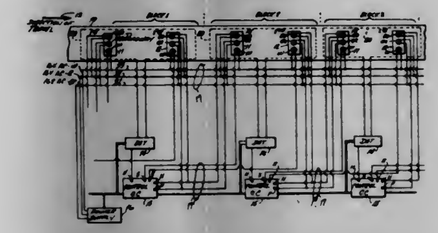
means coupled to said voltage producing means for combining said first and second voltages representative of the travel times through particular segments of the subsurface formation with said third and fourth voltages representative of travel times through the same subsurface segments to produce a log of the acoustic velocity of the earth as a function of depth.

3,302,167
AIRSPEED WARNING DEVICE
John H. Andresen, Jr., Hewitt, N.J., assignor to Astek Instrument Corp., Armonk, N.Y., a corporation of New York
Filed June 22, 1965, Ser. No. 469,051
9 Claims. (Cl. 340—27)



1. An airspeed warning indicator for use in aircraft comprising means responsive to altitude, cooperating means responsive to airspeed, a pair of movable contacts, means for rendering one of said contacts movable in response to said altitude means, means for rendering the other contact movable in response to said cooperating airspeed responsive means, means for maintaining said contacts normally closed during permissive airspeeds for a given altitude, and said contacts being opened by said airspeed responsive means when the safe airspeed is exceeded at a measured altitude, an indicator connected in circuit with said pair of contacts, and means disposed in said circuit for activating said indicator means when said contacts are opened.

3,302,168
TRAFFIC CONTROL SYSTEM
George W. Gray, Lambertville, Leslie E. Flory and Winthrop S. Pike, Princeton, and Robert E. Morey, Hamilton Square, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Jan. 28, 1964, Ser. No. 340,679
9 Claims. (Cl. 340—31)



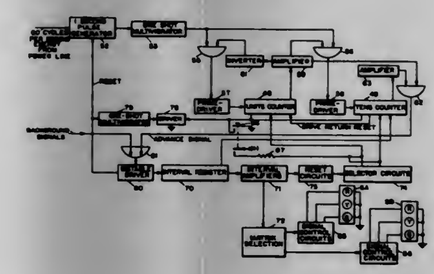
1. A traffic control circuit means for cooperation with a block detection means and with other, like traffic control circuit means, said traffic control circuit means being arranged along said roadway, said block detection means detecting the presence or absence of a vehicle and putting out a corresponding presence or absence signal, each of said control circuit means comprising:

a first light circuit actuated by a presence signal from a block detection means and having a time delay circuit to activate said light circuit a selected time delay after said absence signal changes to a presence signal,

means for diminishing a said presence signal for transmission to another, of said like traffic control circuit means,

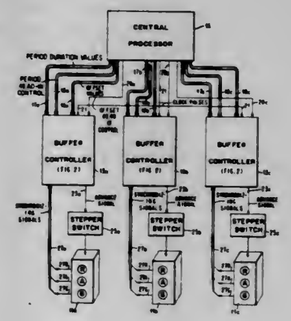
a second light circuit including means for receiving a diminished presence signal from another, like traffic control circuit means, said second light circuit being activated by said diminished presence signal and connected to said first light circuit, said second light circuit when activated disabling said first light circuit to prevent activation of said first light circuit.

3,302,169
DIGITAL COUNTER TRAFFIC SIGNAL CONTROLLER
Arthur W. Wetmore, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,314
4 Claims. (Cl. 340—41)



1. A controller for controlling the signal indication displayed by traffic signals at the intersection of conflicting rights-of-way comprising in combination, a digital counter, a source of discrete pulses having a predetermined rate for driving said counter, a register having a predetermined number of steps and being operable to each step in turn, signal control means responsive to said register for controlling said signals to display a distinctive combination of signal indications on each step of said register, means responsive to the operation of said register from one step to the next for setting said digital counter to a predetermined count selected in accordance with the particular next step to which said register is operated, and means responsive to the operation of said digital counter to a predetermined end count which is the same for each step of said register for advancing said register to its next successive step.

3,302,170
TRAFFIC LIGHT CONTROL BUFFER
Robert A. Jensen, Peekskill, and Wilbur J. Levine, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 28, 1964, Ser. No. 363,147
7 Claims. (Cl. 340—41)



1. In a traffic light control system, controller means and stepping switch means, said controller means actuating said switch means for advancing a traffic light display through a cycle including a plurality of light energizing periods in response to a series of clock pulses, said controller means comprising:

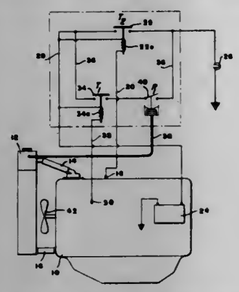
a plurality of registers, each one capable of storing numbers representing the duration of a light energizing period of said cycle; and

counting means for counting a number of said clock pulses corresponding to the number stored in each one of said registers and for providing a control signal to advance said traffic light dislay at the completion of each clock pulse count corresponding to said numbers stored in said registers.

3,302,171
VEHICLE ENGINE COOLANT CONDITION INDICATOR
William J. Sensing, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 1, 1964, Ser. No. 400,865
8 Claims. (Cl. 340—57)

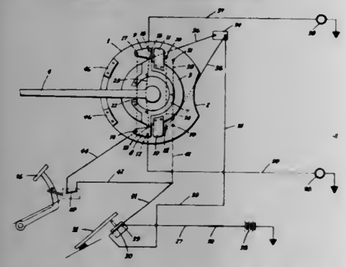
1. An indicating device comprising: an electrical power source; indicating means, means connecting one side of said indicating means to one side of said power source; first means responsive to a first temperature range to establish a conductive path between the opposite side of said electrical power source and the indicating means; second

means responsive to a second temperature range; and third means responsive to a pressure range and coop-



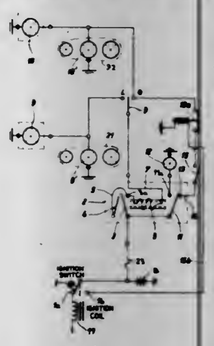
erating with said second means to establish a conductive path between said opposite side of said power source and the indicating means.

3,302,172
SIGNAL SYSTEM FOR MOTOR VEHICLES
Sofronio B. Alcoriza, P.O. Box 397, Walnut Grove, Calif. 95690
Filed Aug. 27, 1963, Ser. No. 304,784
2 Claims. (Cl. 340—72)



1. A signal system for a motor vehicle having a depressible accelerator pedal, the system comprising, with a pair of electric lights exposed at one end of the vehicle, a fixed base of insulation material, a switch-forming disc of insulation material turnably mounted on the base and having a radial handle projecting therefrom for controlling the rotation of the disc, stop means on the base engageable with the handle and limiting the extent of rotation of the disc on opposite sides of a neutral position of the handle and disc, connected contact plates projecting from opposite sides of the disc and disposed in a plane at right angles to the handle, other and separated contact plates projecting from opposite sides of the disc adjacent and disposed to the side of the first named contact plates furthest from the handle, a circuit for the lights comprising, with an initially closed switch positioned and arranged to be opened by and upon depression of the accelerator pedal, a feed wire leading to one terminal of the switch, an interrupter to one terminal of which the feed wire extends from the other terminal of the switch, a second wire leading from said one terminal of the interrupter to first and second connected contacts on the base in sequence on opposite sides of the disc beyond and clear of said other contact plates when the disc is in said neutral position, a third wire leading from the other terminal of the interrupter to third and fourth connected contacts in sequence on the base positioned to be engaged by the first named contact plates when the disc is in said neutral position, a fourth wire leading from a fifth contact on the base to one light, and a fifth wire leading from a sixth contact on the base to the other light, said fifth and sixth contacts being spaced radially of the disc from the third and fourth contacts, respectively, and being engaged by the first named contact plates when the disc is in said neutral position; the various contacts being arranged and relatively positioned so that when the disc is rotated to the point that the handle engages the stop means to one side of the neutral position of said handle, the second contact will be engaged by the corresponding one of said other contact plates while the third contact, on the same side of the disc as the second contact, becomes disengaged from the adjacent one of the first named contact plates and the fifth contact remains engaged therewith, and the fourth and sixth contacts, on the opposite side of the disc, become disengaged from the corresponding one of the first named contact plates and become engaged by the related one of the second named contact plates and the first named contact becomes disengaged from the latter plate.

3,302,173
VEHICULAR SIGNALING SYSTEM
Paul Konz and Alois Hackner, Ingolstadt (Danube), Germany, assignors to Auto Union G.m.b.H., Ingolstadt (Danube), Germany, a corporation of Germany
Filed June 3, 1963, Ser. No. 284,979
6 Claims. (Cl. 340—81)

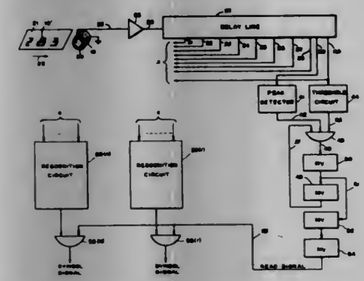


1. A signaling system for automotive vehicles and the like, comprising a source of current, a first and a second directional light, circuit means including a selector switch alternately movable from a neutral position to a first and a second working position for operatively connecting said source to said first and second lights, respectively, said circuit means further including periodically operable interrupter means adapted to energize the selected light intermittently, thereby causing the selected light to blink, conductor means forming an alternate energizing circuit for said first light, a normally open control switch in said alternate circuit, and switchover contacts coupled with said interrupter means for completing said alternate circuit in the nonenergizing condition of said interrupter means and upon closure of said control switch, thereby causing alternate blinking of said lights upon a displacement of said selector switch into said second working position for iterative operation of said interruptor means.

3,302,174
SIGNAL POSITION DETECTION CIRCUIT
Constantine Djinis, Johnson City, N.Y., and Leland J. Hanchett and Charles L. Hart, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed July 30, 1963, Ser. No. 298,640
5 Claims. (Cl. 340—146.3)

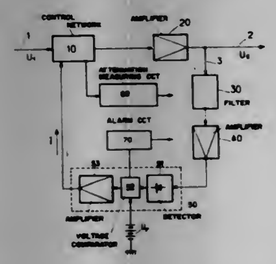
1. A waveshape presence detection circuit, comprising: first and second spatially separated wave sampling means; means for propagating a waveshape successively past said

first and second sampling means; a peak detector connected to said first sampling means, said peak detector being responsive to the peak of an antinode of said waveshape at said first sampling means to produce an output signal; a threshold circuit connected to said second sampling



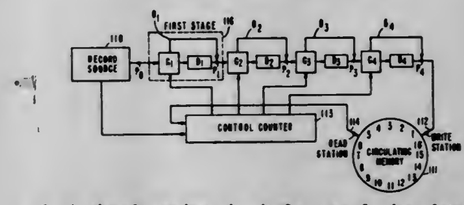
means, said threshold circuit being adapted to produce an output signal when the amplitude of the waveshape at said second sampling means is above a predetermined level; and means responsive to the simultaneous occurrence of output signals from said peak detector and threshold circuit for producing a waveshape presence signal.

3,302,175
ATTENUATION NETWORK FOR CARRIER-CURRENT TELECOMMUNICATION SYSTEMS
Albert Deracinois, L'Hay-les-Roses, and Henri François Germain Lassaigne, Gometz-la-Ville, France
Filed June 29, 1962, Ser. No. 206,291
Claims priority, application France, Nov. 14, 1961, 878,933
10 Claims. (Cl. 340—149)



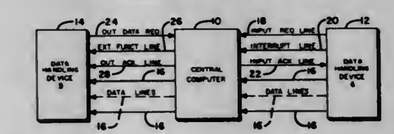
1. A controllable attenuation network having first and second terminal pairs each including first and second terminals, said network comprising a thermistor having a heater and a heated element, a pair of control terminals connected to said heater, a fixed resistor, and a 1/1 turn ratio transformer having a first and a second winding, said windings each having a non-common end and a common end constituting a common point whereithrough said windings are connected in series and phase opposition; said network further comprising connection means between said terminal pairs, thermistor, resistor and transformer; said connection means consisting of said fixed resistor connected between said first terminals of said first and second terminal pairs, said heated element of said thermistor connected between said first terminal of said first terminal pair and the non-common end of said first winding, a connection between the non-common end of said second winding and said first terminal of said second terminal pair, and a direct connection linking said second terminals of said first and second terminal pairs and said common point.

3,302,176
MESSAGE ROUTING SYSTEM
John A. McLaughlin, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 7, 1962, Ser. No. 243,063
44 Claims. (Cl. 340—172.5)



1. A signal routing circuit for transferring data provided in separate groupings, comprising: a first data station including supply means providing data groupings in a predetermined order; a second data station including demand means for requesting data groupings in said predetermined order but at random times relative to the data groupings which are provided; delay means having a controllably variable delay time and coupling the first data station to the second data station; and control means responsive to provided and requested data groupings for maintaining a continuous computation of the time difference between the times of supply and demand for controlling the delay time of the delay means.

3,302,177
DATA PROCESSING SYSTEM
Robert A. Bina, South St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 311,791
8 Claims. (Cl. 340—172.5)



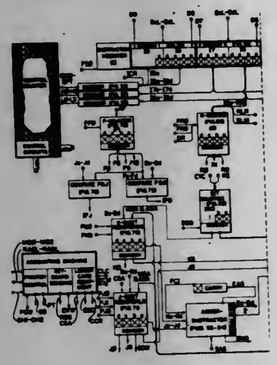
7. In a digital computing system of the type having a computer with a memory section including storage location selection means and a plurality of addressable storage locations for storing data words, data control words and binary coded programs of instruction words, and a plurality of data handling devices connected to said memory section by data lines to supply data control word identifiers to said storage location selection means and data words to said storage locations in response to a series of request control signals sent from said data handling devices to said computer for indicating that said data handling devices have data words on said data lines for said computer and acknowledge controls signals sent from said computer to said data handling devices for indicating that a data word has been stored in said memory section such that a new data word can be applied to said plurality of data lines, wherein a plurality of addressable data control words stored in said memory selectable by said data control word identifiers unique to each of said data handling devices sent from said data handling devices to said storage location selection means, specify the starting and final addresses in said memory where data words from said data handling devices are to be stored, and wherein means are provided for incrementing said starting addresses upon the transfer of each data word from a data handling device to the computer, the improvement comprising: means for sensing equality between said incremented starting address and said final address; first means

responsive to the output from said sensing means for interrupting the normal program sequence and initiating a new program sequence wherein a new data control word is stored at the addressable storage location specified by the address representing signals unique to the data handling device whose incremented starting address equaled the final address; and second means responsive to the output from said sensing means for inhibiting the transmission of the acknowledge control signal to the data handling device whose incremented starting address equaled the final address until said new data control word is stored.

3,302,178
COMPUTING SYSTEMS

Thomas P. Holloran, Brookville, and Patrick B. Close, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Original application Dec. 15, 1959, Ser. No. 859,598, now Patent No. 3,112,394, dated Nov. 26, 1963. Divided and this application Oct. 7, 1963, Ser. No. 314,094
3 Claims. (Cl. 340—172.5)

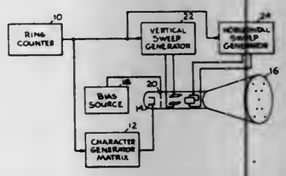


1. In an electronic digital computing machine, the combination comprising: a storage device of a type providing a plurality of separate storage locations each being capable of having either a data word or an instruction word manifestation stored therein; address selecting means associated with said storage device for obtaining access to any chosen storage location thereof; read-write means associated with said storage device and operable during a cycle of operation thereof for selectively storing a word manifestation or reproducing a word manifestation previously stored at the particular storage locations individually selected by said address selecting means; an instruction register having a plurality of sections each of which is capable of having stored therein a particular portion of an instruction word manifestation, the contents of one of said sections being indicative of a first storage location in said storage device and the contents of another one of said sections being indicative of a second storage location in said storage device; means operable at predetermined programmed times for alternately conditioning said address selecting means to be first indicative of the contents of said one section of said instruction register and next to be indicative of the contents of said another section of said instruction register; control means responsive to the contents of still another section of said instruction register for initiating a succession of cycles of operation of said read-write means; and means for selectively incrementing the contents of said one section and for decrementing the contents of said another section of said instruction register upon completion of each two cycles of operation of said read-write means such that a plurality of pairs of word manifestations are selectively stored or reproduced with respect to successive order storage locations of said storage device in response to the same instruction word manifestation initially stored in said instruction register.

3,302,179
MAGNETIC CHARACTER GENERATOR

Peter E. Osborn, Addison, and Clarence W. Turek, Glenview, Ill., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 17, 1962, Ser. No. 245,255
4 Claims. (Cl. 340—172.5)

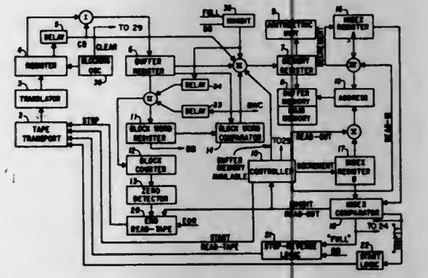


1. In a character display system of the type wherein characters are formed on a display device as a plurality of successive adjacent lines along each of which are spots displaced from one another, apparatus for providing signals from which said spots are derived comprising a counter having a number of different count stages said number equalling the total number of lines on said character display, each count stage being associated with a different line, means for driving said counter to cause each count stage to produce an output in succession, a plurality of magnetic cores each of which has a first and a second state of magnetic remanence, the number of magnetic cores in said plurality equalling the total number of spots which can occur along a line, each core being associated with a spot on every line, means responsive to the output of a count stage for driving from their first to their second states the ones of said cores associated with the spots required on the line with which said count stage is associated, means for deriving a separate output signal from each core driven by said count stages output, and means for ordering said output signals in a signal sequence having the same relative spacing as the spacing of the spots on the line with which said count stage is associated.

3,302,180
DIGITAL DATA HANDLING

Leonard J. Donohoe and Arthur D. Fritz, Houston, Tex., and David E. Keefer and Nick G. Nicolau, Scottsdale, Ariz., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Apr. 9, 1963, Ser. No. 271,679
21 Claims. (Cl. 340—172.5)



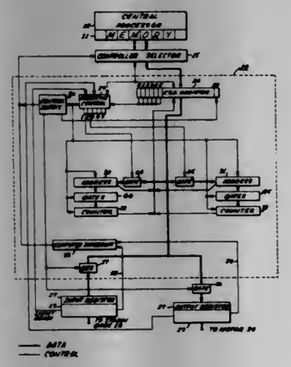
1. In a system for transferring digital data from a tape storage means to a memory where a tape storage means includes a tape having a plurality of blocks of digital words stored thereon with each block of words including a unique code for indicating the start of a block, the combination which comprises: a memory for storing digital words therein, means for transferring words from said tape to said memory including read-out means responsive to a word stored on said tape for reading said word out of said tape and read-in means for reading said word into said memory, means for moving said tape past read-out means, means for producing a full command in response to a predetermined number of words stored in said memory, means for producing a stop command in response to said full command and said unique code for stopping the movement of said tape and thereafter reversing the movement of said tape for a predetermined time to position said unique code behind said read-out means.

16. A system for asynchronously transferring digital words into and out of a memory comprising: a memory for storing digital words therein, read-in means operative to sequentially read each of a plurality of words into said memory, said read-in means including means for producing a command after each word is read into said memory, read-out means operative to read each stored word out of said memory, said read-out means including means for permising the operation of said read-out means in response to said command, whereby the read-out means has access to each word stored in the memory after it is read-in.

3,302,181
DIGITAL INPUT-OUTPUT BUFFER FOR COMPUTERIZED SYSTEMS

Henry P. Lee, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed June 17, 1963, Ser. No. 288,239
12 Claims. (Cl. 340—172.5)

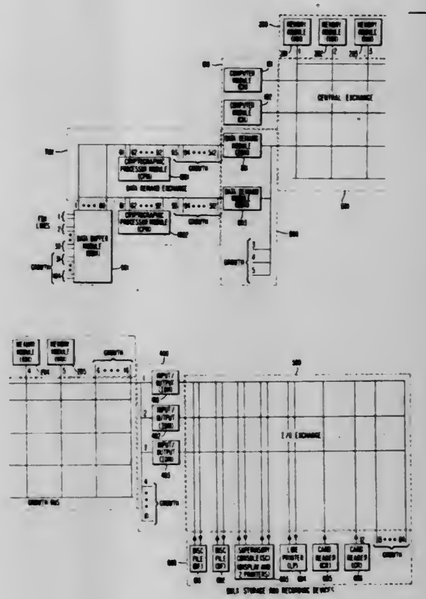


1. An apparatus for controlling the transfer of data between at least one peripheral device and a central processor which includes a memory having a plurality of data storage locations, said apparatus comprising; address register means for representing an address of a group of said plurality of storage locations of said memory, control means comprising logic circuits for receiving signals representing a data transfer operation to be executed between a peripheral device and said memory, means for initiating said transfer operation between said peripheral device and the group of said memory storage locations which is represented by said address register, said control means including means for receiving a signal from the central processor and in response to receipt of said signal to reset the address register means during execution of a transfer operation then in progress.

3,302,182
STORE AND FORWARD MESSAGE SWITCHING SYSTEM UTILIZING A MODULAR DATA PROCESSOR

John T. Lynch, Lionville, and Fred G. Wolff, Paoli, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 3, 1963, Ser. No. 313,591
19 Claims. (Cl. 340—172.5)

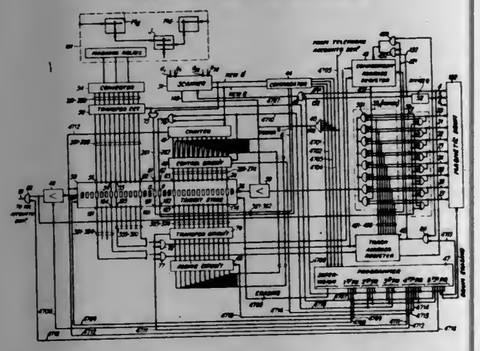


1. A store and forward message switching center comprising, in combination, a totally modular data processor having a plurality of identical memory modules, and a plurality of identical processing modules interconnected to a matrically arranged central interchange for simultaneous intercommunication therebetween, a plurality of identical input/output control modules each connected to all for selective communication with any of said identical memory modules through said central interchange, a plurality of peripheral recording and storage devices interconnected through a matrically arranged input/output interchange to said input/output control modules for simultaneous intercommunication therewith, a plurality of identical data demand modules individually connected to all for selective communication with any of said memory modules through said central interchange, a plurality of identical data buffer modules interconnected through a matrically arranged data demand interchange to said data demand modules for simultaneous intercommunication therewith, each of said buffer modules interconnecting a plurality of message communication lines to said data demand interchange, each of said pluralities of modules of said message switching center including at least one additional module in excess of system operating requirements to thereby provide a message switching center having the reliability achieved by a switching system with a complete standby system without the equipment redundancy and inherent switchover requirements of a complete standby system.

3,302,183
MICRO-PROGRAM DIGITAL COMPUTER
James R. Bennett, Glendora, and William K. Orr, San Leandro, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 26, 1963, Ser. No. 325,853
5 Claims. (Cl. 340—172.5)

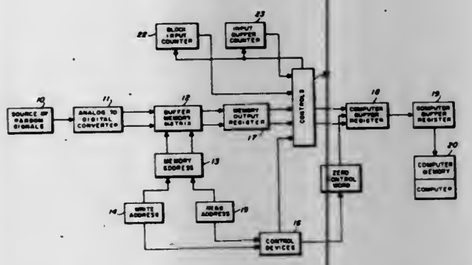
1. A control unit for a digital processor in which stored instructions are executed in sequence, the control unit including an instruction word register, a control word register, the control word register storing a group of binary coded characters, a decoder, means for coupling one of the character storing portions of the control word register to the decoder, whereby one character in the control word is decoded at a time, a read-out memory for storing a plurality of control words, means responsive to coded address information in each instruction as it is placed in the instruction word register by the processor for addressing a word in the read-out memory and placing the word in the control word register, means including a counter for successfully coupling each character in the control register to the decoder, the decoder providing a signal on a different output line for each different value of character coupled to the decoder, the output lines from the decoder being coupled to the processor to control the processor, means for transferring additional control words in address sequence from the read-out memory to the control word register when the counter indicates that all the characters in the last control word have been coupled to the decoder, means responsive to a particular output line from the decoder for addressing and transferring a new control word from the read-out memory to the control register in response to the value of the next character in sequence in the existing word in the control register, and means responsive to another particular output line from the decoder for causing the processor to bring a new instruction into the instruction register.

3,302,184
SYSTEM OF CHARGING SUBSCRIBERS AND FOR THE REMOTE READING OF TELEPHONE CHARGES
Jean-Claude Lavenir, 28 Ave. Welschinger, Viroflay, France
Filed Dec. 5, 1963, Ser. No. 328,363
Claims priority, application France, Dec. 7, 1962, 917,941
4 Claims. (Cl. 340—172.5)



1. In a telephone crossbar system having non-numerical subscriber selection stages and numerical group selection stages connected through interstage links, junctors inserted on said links and means for registering the addresses of the calling subscribers, a system for charging subscribers wherein the supervision of the charging is effected at the junctors, comprising means for counting the charging pulses relative to a call, said count at a given instant constituting the actual current charge, first temporary stores respectively associated with the junctors and adapted to store the address of a calling subscriber and the actual current charge, second temporary stores respectively associated with the subscribers and adapted to store the cumulative charges relative to said subscribers, a stepping register adapted to be cyclically connected to said first temporary stores and selectively connected to said second temporary stores, means for scanning the junctors of the crossbar system in synchronism with the stepping register and deriving therefrom a principal datum signal having two values respectively representing the engagement and the disengagement of a junctor for a call, means for cyclically transferring said principal datum signal and said actual current charge respectively from said scanning means and said counting means to said first temporary store associated with said junctor via the stepping register, means for transferring the address of the calling subscriber from said registering means to said first temporary store associated with said junctor via the stepping register, means controlled by the principal datum signal representing the disengagement of the junctor for adding the actual current charge written in the first temporary store at the junctor disengagement instant to the cumulative charge written in the second temporary store associated with the calling subscriber having said address and means for transferring the new cumulative charge resulting from the addition into said second temporary store.

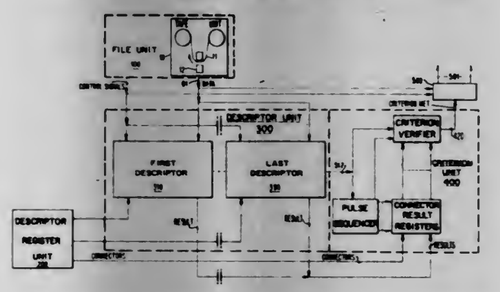
3,302,185
FLEXIBLE LOGIC CIRCUITS FOR BUFFER MEMORY
Andrew P. Cox, Jr., Lutherville, Robert H. Sapp, Baltimore, and Joseph Abruzzo, Severna Park, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 20, 1964, Ser. No. 339,042
8 Claims. (Cl. 340—172.5)



1. In combination in a control system for feeding asynchronous event words of binary bits into a synchronous computer memory,
- a buffer memory with write-in means and read-out means coupled, respectively, to the source of event words and to said computer memory,
- a write address counter for routing successive event words to different addresses in said buffer memory,
- a read address counter for successively transferring event words out of different addresses of said memory to said computer memory,
- said write address and read address counters each comprising cascaded bistable binary stages with complementary output terminals,

logical circuit means for adding a binary one to the write address counter number and logical circuit means for comparing the augmented write address number with the read address counter number, and
- circuit means for inhibiting read-out of event words from the buffer memory while the compared numbers are equal to keep the read-out operation always at least one address behind the write-in operation.

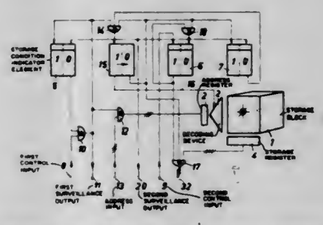
3,302,186
INFORMATION RETRIEVAL SYSTEM
Edward John Raser, Montgomery County, Md., and Alexander S. Lett, Putnam County, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 51,196, Aug. 22, 1960. This application Aug. 17, 1964, Ser. No. 391,357
31 Claims. (Cl. 340—172.5)



1. In a data handling system, file means for sequentially producing records of like format in the form of time sequential bits which are grouped into successive fields, a device for utilizing the bits of one or more particular, consecutive fields within each record produced by said file means, gating means coupled to said file means and to said device operative to deconditioned and conditioned states for blocking and admitting, respectively, the passage of bits from said file means to said device, comparing means coupled to said file means and to said gating means operative upon the receipt from said file means of a first predetermined number of bits within each record means for conditioning said gating means, counting means coupled to said gating means operative upon the admission to said device of bits which represent the field or fields of each record to be used by said device for deconditioning said gating means, and setting apparatus including first means for selectably making said comparing means responsive to the occurrence of a first particular number of fields in each record produced by said file means and second means for selectably making said counting means responsive to the occurrence of a number of bits equal to the number of bits within the field or fields to be admitted to said device, whereby any field or consecutive fields of each record produced by said file means can be admitted to said device.

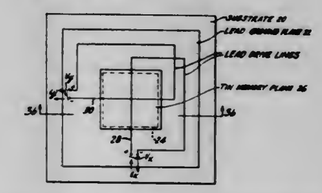
3,302,187
COMPUTER STORAGE READ-OUT SYSTEM
Heinz E. Voigt, Konstanz, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Dec. 16, 1964, Ser. No. 418,744
Claims priority, application Germany, Dec. 20, 1963, T 25,298
5 Claims. (Cl. 340—172.5)

1. A computer read out system, comprising, in combination:
- a plurality of storage blocks;
- a two part address register with the first part arranged to contain the lowest value portion of the address for determining the storage block selection; and the second part arranged to contain the higher value portion of the address for determining the location within a storage block;
- first control signal input means;
- second control signal input means;
- a plurality of gate circuits connected with the first part of said register for selectively opening, depending upon the content of said first part, the path for a first control signal and for a second control signal to the selected storage block;
- a common storage register for receiving the information read out of the selected storage block;
- a partial address register for each storage block and connected for receiving the higher value portion of the address from said second part when the first control signal is applied to said first control signal input means;



- a buffer register for connection with said common storage register;
- means connected to be controlled by said first control signal for reading out the content of the selected storage location and placing it into said buffer register for intermediate read out of the selected storage block; and
- means connected to be controlled by said second control signal for transmitting the content of the buffer register into the common storage register upon termination of read out into the buffer register.

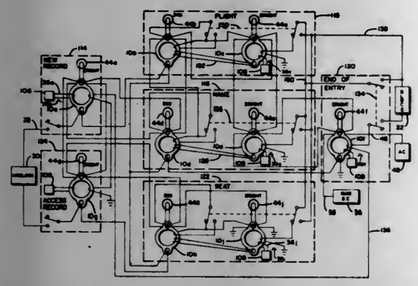
3,302,188
CRYOELECTRIC MEMORIES
James C. Miller, Pennington, and Charles M. Wine, Princeton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Apr. 3, 1964, Ser. No. 357,132
6 Claims. (Cl. 340—173.1)



6. In a cryoelectric memory, in combination,
- a superconductive memory plane;
- x and y drive leads which are insulated from one another, and from the memory plane, and which pass over the memory plane;
- means for applying a current pulse to a selected x lead, and, during the interval of said pulse, applying a second current pulse, whose leading edge occurs after the leading edge of the first pulse, to a selected y lead, the two pulses together providing a magnetic field of sufficient magnitude to drive a memory location in the memory plane, defined by the crossing of the selected x and y leads, normal, when that memory location is storing a bit of given value; and
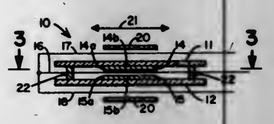
a sense amplifier coupled to said selected y drive lead for sensing the voltage which develops on that lead when said memory location is driven from the superconducting to the normal state.

3,302,189
MANUALLY OPERABLE FORMAT CONTROL UNIT FOR THE REAL-TIME OPERATION OF A DATA PROCESSING SYSTEM
Vincent J. Korkowski, Minneapolis, and Hilding E. Nelson, Marine on St. Croix, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,915
13 Claims. (Cl. 340—174)



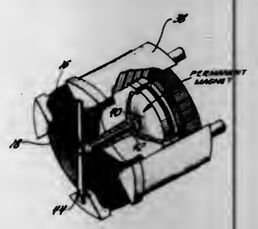
1. A format control unit having a plurality of manually selectable functions each of which designates digital data that defines the particulars of the selected function, comprising:
a plurality of manual switch means;
a plurality of manually selectable function blocks, each function block including a separate one of said switch means for causing the associated function block to assume at least one of a first or a second condition;
said function blocks forming first and second groups each group having a plurality of sections including a first section, an intermediate section and a last section;
first conductor means coupling a first function block of said first section to predetermined associated ones of the function blocks of said intermediate and last sections for forming a first group therewith;
second conductor means coupling a second function block of said first section to predetermined associated ones of the function blocks of said intermediate and last sections for forming a second group therewith;
a predetermined one of the function blocks of said intermediate and last sections being common to the first and the second of said groups;
first signal means selectively coupled to said first conductor means by the manual selection of said first function block's switching means or to said second conductor means by the manual selection of said second function block's switch means for selecting and causing the coupled function blocks of the associated first or second group to assume a first condition;
second signal means selectively coupled to the function blocks of the intermediate section of the selected first or second group by the manual selection of the function block's switch means for causing the coupled function blocks to assume a second condition; and,
third signal means selectively coupled to a function block of the last section for resetting the selected function blocks of said selected group back into their first condition only if all the function blocks of the intermediate section of the selected group had previously been set into said second condition.

3,302,190
NON-DESTRUCTIVE FILM MEMORY ELEMENT
Robert E. Boylan, St. Paul, and Harley S. Kukuk, Egan Township, Dakota County, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 103,906, Apr. 18, 1961. This application Mar. 16, 1965, Ser. No. 440,118
12 Claims. (Cl. 340—174)



1. A magnetic memory element providing nondestructive readout, comprising:
first and second open flux path type multi-stable-state cores of substantially similar ferromagnetic material having uniaxial anisotropy providing a magnetic easy axis along which each core's remanent magnetization shall reside and wherein each core is disposed in a magnetically interacting relationship with said cores' axes substantially aligned and with each core only partially closing the otherwise open flux path of the other, each of said cores effecting a demagnetizing field in the area of the other;
means inductively coupled to said cores for causing the magnetization of said cores to be aligned in a selected one of said stable-states;
means inductively coupled to said cores for producing a respective additive field intensity in the area of said first core for causing an enhanced effect upon the magnetization of said first core but a respective subtractive field intensity in the area of said second core for causing a minimized effect upon the magnetization of said second core;
sense means coupled at least to said first core, said enhanced effect upon the magnetization of said first core producing an output signal in said sense means the polarity of which is indicative of the said selected one stable-state.

3,302,191
GAUGE CIRCUIT
John R. Ziegler, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,486
9 Claims. (Cl. 340—177)



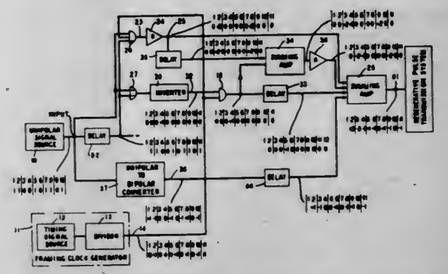
1. In an indicator gauge, apparatus for producing an angularly displaceable magnetic field comprising a source of electrical energy, a first winding directly connected across the source for producing a first magnetic field of substantially constant magnitude along the axis of the first winding, second, third and fourth windings for producing second, third and fourth magnetic fields, respectively, along the winding axes, one end of the second winding being connected to the source and the other end being connected to one end of each of the third and fourth windings, the first and second windings being coaxial such that the first and second magnetic fields are in substantially direct opposition along a first common axis, and the third and fourth windings being coaxial such that the third and fourth magnetic fields are in substantially direct opposition along a second common axis, the first and second common axes intersecting at a predetermined angle, potentiometer means for varying the current through the second, third and fourth windings, thereby to vary the magnitude of the respective fields produced, the potentiometer means comprising an impedance element connected between the other ends of the third and fourth windings and contact means connected to a point of reference potential and displaceably contacting the impedance elements.

3,302,192
FOUL INDICATOR FOR BASKETBALL GAMES
Warren H. Laughlin, Box 532, Geneseo, Kans. 67444
Filed June 12, 1964, Ser. No. 374,654
7 Claims. (Cl. 340—323)



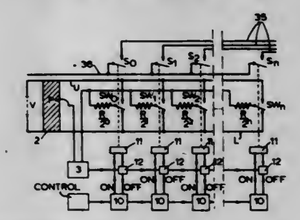
1. A foul indicator for basketball games, said foul indicator comprising a housing enclosing a set of at least five vertically spaced compartments each including a plurality of sides in which light transmitting windows including indicia defining portions are disposed, single electrically actuatable illumination means disposed in each of said compartments, said housing including means adapting said housing to be supported in an elevated position from a support surface, said illumination means and the corresponding windows being adapted to indicate the total number of fouls which have been committed by a player each time a player commits a foul, electrical potential transmitting conductor means operatively connected with said illumination means, adapted for operative connection with a source of electrical potential and including switch means operatively connected thereto operative to individually and selectively electrically actuate said illumination means when said conductor means is operatively connected to a suitable source of electrical potential, said foul indicator also including a pair of separate housings supportable in desired orientated positions remote from the first mentioned housing and including electrically actuatable team indicating illumination means adapted to indicate the direction in which a corresponding team bench is located, said conductor means also including portions electrically connected to said team indicating illumination means and including further switch means operatively connected thereto for individually and selectively electrically actuating said team indicating illumination means.

3,302,193
PULSE TRANSMISSION SYSTEM
Jack M. Sipress, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,014
11 Claims. (Cl. 340—347)



1. Apparatus for converting binary pulse signals into three state signals of positive pulses, negative pulses and spaces comprising means to divide the binary pulse signals into binary words of a plurality of bits, means connected to the output of said dividing means to convert the said binary words into three state signals of the same number of bits as said binary words in accordance with a first predetermined code until a three state signal having a first predetermined direct current component is generated, and means connected to the output of said dividing means to convert said binary words into three state signals of the same number of bits as said binary words in accordance with a second predetermined code after the occurrence of a three state signal having said first predetermined direct current component until a three state signal is generated having a second predetermined direct current component whereupon said conversion is again accomplished in accordance with said first code until a three state signal having said first predetermined direct current component is generated again, said first and second predetermined codes and the transfer of conversion from one predetermined code to the other in response to the generation of three state signals having predetermined direct current components assuring that the number of consecutive spaces is less than three.

3,302,194
TRACE READING DEVICES
Kenneth W. Green and Herbert Raby, Yeovil, Somerset, England, assignors to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Mar. 6, 1964, Ser. No. 349,899
13 Claims. (Cl. 340—347)



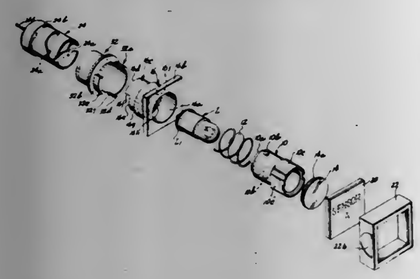
1. Apparatus for determining the position of a point on a chart comprising electrical conductors spaced apart to permit at least part of a penetrable chart to be positioned therebetween, an impedance connecting said electrical conductors, means for dividing the impedance by establishing an electrical connection by penetration through the chart at a point thereon, and a variable impedance device

for striking a balance between the divided portions of the impedance determined by said impedance dividing means, the balance determining the position of the point.

3,302,195
RELAMPABLE CAP ASSEMBLY WITH CAM-SEATED LAMP HOLDER MEMBERS

Maurice D. Fuller, Seattle, Wash., assignor to Korry Manufacturing Co., Seattle, Wash., a corporation of Washington

Filed Jan. 8, 1965, Ser. No. 424,392
16 Claims. (Cl. 340—381)



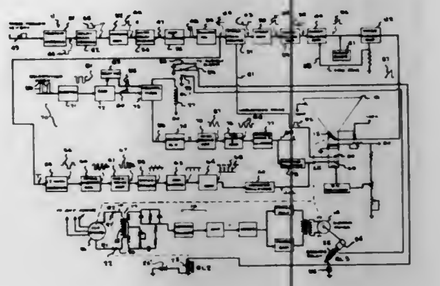
1. A connecting mechanism comprising a first member having a cylindrical bore, a second member having a cylindrical portion engageable in such bore to permit relative longitudinal and rotational movements therebetween, cam and cam follower elements, one on each such member, cooperating to advance the members together by rotating them relatively in one direction, a third member mounted for conjoint rotation and relative longitudinal movement between inner and outer limiting positions on one of the first two members and including means engageable with the other of said first two members restraining said third member against relative longitudinal movement with respect to said other member during said initial relative advancement of said first and second members, spring means urging the third member towards the outer limiting position, whereby stress in the spring means occurs as the first two members advance together with the third member restrained against such advance, and abutments on the third member and the other of the first two members interengageable, with the first two members advanced together, so as to prevent reverse relative rotation between them, and disengageable by retraction of the third member against resistance of said spring means.

3,302,196
EMERGENCY ALARM CIRCUIT FOR USE WITH AIRCRAFT DETECTION AND RECOGNITION SYSTEMS

Edward G. McCoy, Mogadore, Ohio
(Belden Hill Estates, Rte. 7, Harpursville, N.Y. 13787)

Filed Aug. 2, 1957, Ser. No. 676,040
3 Claims. (Cl. 343—6.5)

1. In an aircraft recognition system, a source of repetitive radar pulses adapted to trigger a recognition transmitter on a remote aircraft, a cathode ray tube, sweep means operatively associated with said cathode ray tube and formed and arranged to sweep the beam thereof over the screen thereof at the same repetitive rate as said radar pulses, said sweep means including rotary beam deflection coils operatively associated with said cathode ray tube, means drivingly connected to said beam deflection coils and being formed and arranged to normally rotate same continuously, means to modulate said beam to provide a plurality of fixed space reference range markers on said screen, a discharge tube having a plate, a cathode, and a pair of control grids, a source of current connected in circuit with said plate and cathode, means normally biasing each grid beyond cut-off, respective signal channels connected to said grids, means to apply a recognition signal simultaneously to said signal channels, delay means in one of the signal channels formed and arranged to delay the signal passing there-

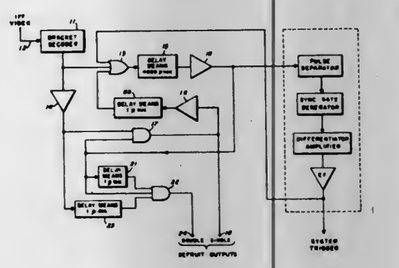


through for a predetermined time period, whereby the discharge tube remains non-conducting unless the recognition signal comprises pulses spaced by the same time period, means to further modulate said beam to provide a range mark on said screen superimposed on said fixed reference markers, and means to halt rotation of said beam deflection coils responsive to the conduction of said discharge tube.

3,302,197
SINGLE DELAY LINE DOUBLE DEFRUITER

Bernarr H. Humpherys, Escondido, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 27, 1966, Ser. No. 568,358
5 Claims. (Cl. 343—6.5)



1. A system for detecting time synchronism between a plurality of serial pulse signals when said pulses are spaced by predetermined time periods T comprising:
a source of serial pulses,
first delay means for receiving pulses and producing output pulses representative of said received pulses delayed by said time period T,
means for supplying pulses from said source to said first delay means,
first coincidence detecting means for detecting coincidence between pulses from said source and output pulses from said first delay means and responsive to such coincidence for producing a first coincidence output signal,

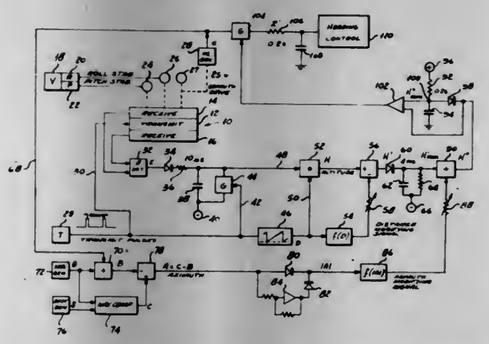
first incremental delay means for delaying said first coincidence output by a time period t and supplying said delayed coincidence output to said first delay means,
said time period t being substantially shorter than said period T,
second incremental delay means for delaying output pulses from said first delay means by said time period t,
third incremental delay means for delaying pulses from said source of regular receiving pulses by said period t,
second coincidence detecting means for detecting coincidence between pulses from said second and third incremental delay means and output pulses from said first delay means and responsive to coincidence for producing a second coincidence output pulse,
said second coincidence output being indicative of equal time spacing T between the last three pulses from said source.

2. The system of claim 1 wherein:
said source of serial pulses is a bracket decoder of an IFF radar system, and
said time period T equals the repetition time of said radar system.

3,302,198
AUTOMATIC TERRAIN AVOIDANCE SYSTEM

Manuel Selvin, Norwalk, and Frank S. Preston, Fairfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Mar. 16, 1965, Ser. No. 440,078
14 Claims. (Cl. 343—7)



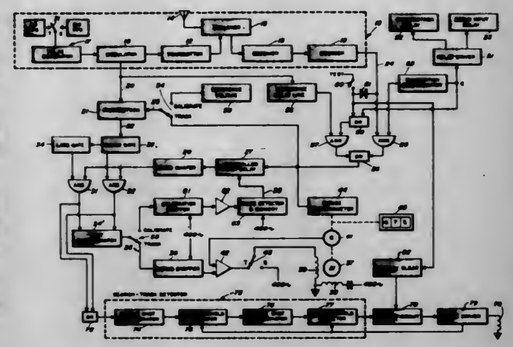
11. In a terrain avoidance system means for producing a signal representing the elevation of terrain and means for modifying said signal artificially to increase the elevation represented as the location in azimuth of said terrain increases.

3,302,199
DISTANCE MEASURING SYSTEM

Robert J. Kelly, Towson, Lester R. Yates, Timonium, and Donald H. Judd, Baltimore, Md., assignors to The Bendix Corporation, Towson, Md., a corporation of Delaware

Filed May 27, 1964, Ser. No. 370,570
10 Claims. (Cl. 343—7.3)

1. Distance measuring equipment comprising
an interrogator for transmitting an interrogation signal to a distant cooperating station,
a receiver for receiving the responsive signal from the cooperating station,
timing means initiated by the interrogation signal and terminated by a control signal for defining a time interval proportional to the control signal,
a delay circuit for delaying the signal from said receiver a variable amount, and

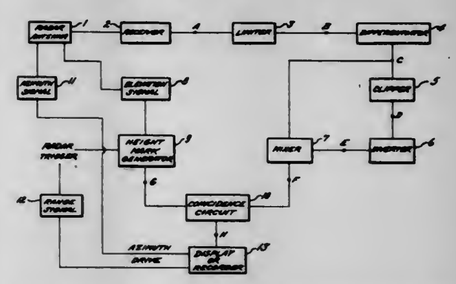


means comparing the termination of said time interval with said delayed receiver signal for adjusting said variable delay.

3,302,200
STORM TOPOGRAPHY MAPPING BY RADAR IDENTIFICATION OF TOTAL STORM CONTOUR IN THREE DIMENSIONS

David Atlas, Newton, Mass.
(828 Chestnut St., Waban, Mass. 02168)

Filed July 20, 1964, Ser. No. 384,005
10 Claims. (Cl. 343—7.9)



1. The method of providing, on a two-dimensional map, a visual display of three-dimensional data representative of the height, width and depth of a storm, which method comprises the steps of radiating pulses of electromagnetic energy both in azimuth and elevation, receiving signals reflected from said storm, generating video boundary pulses of said storm from said received reflected signals, generating height marker pulses in predisposed relationship to the time of said radiated pulses, said height marker pulses representing the expected time of arrival of the reflected signals from preselected heights, and the further step of selecting for recording only those video boundary pulses that occur at one of the height levels corresponding to one of said height marker pulses.

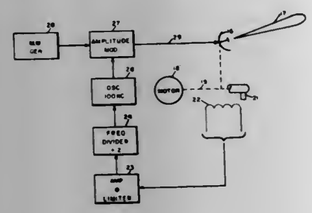
3,302,201
TACTICAL LANDING APPROACH RADIO

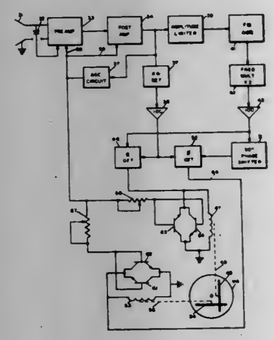
Leonard O. Vladimir, Chappaqua, N.Y., and Milton I. Lilie, Stamford, Conn., assignors to General Precision, Inc., a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,129
10 Claims. (Cl. 343—106)

1. A tactical landing approach radio system comprising, a ground based transmitter including an antenna radiating a directive beam of signal energy,

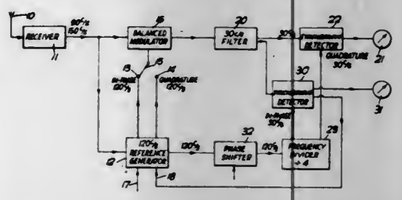
means for rotating said directive beam of signal energy in a conical scan about an axis at a selected rate of rotation,
means operated in synchronism with the rotation of said directive beam for generating a reference signal having a frequency equal to the rate of rotation of said directive beam and a phase dependent on the positional displacement thereof,
frequency dividing means dividing the frequency of said reference signal by a selected number,
a local oscillator,
means for frequency modulating the output of said local oscillator by the output of said frequency dividing means,
a microwave generator,
means for amplitude modulating the output of said microwave generator by the frequency modulated output of said local oscillator to produce a modulated transmission signal,





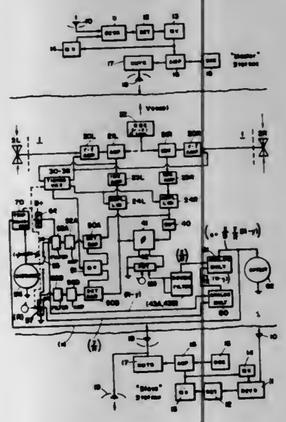
means for imposing said modulated transmission signal on said antenna to provide said directive beam of signal energy,
an airborne receiver including an amplitude modulation detector deriving a signal from said directive signal beam having a frequency equal to the rate of rotation of said directive beam of signal energy,
a frequency modulation detector producing an output signal having a frequency equal to the frequency modulation component of said directive signal beam,
means for multiplying the output signal frequency of said frequency modulation detector by said selected number,
means for detecting the phase relation of the output of said amplitude modulation detector relative to the multiplied output of said frequency modulation detector, and
indicator means energized by the output of said last mentioned means.

3,302,202
APPARATUS FOR COMPARING THE AMPLITUDE OF TWO SIGNALS OF DIFFERENT FREQUENCIES
Geoffrey George Gouriet, Chessington, England, assignor to The Wayne Kerr Laboratories Limited, Surrey, England, a British company
Filed Jan. 15, 1964, Ser. No. 337,810
Claims priority, application Great Britain, Jan. 16, 1963, 2,025/63
30 Claims. (Cl. 343—109)



24. In an I.L.S. system in which two signals of different frequencies are radiated as modulations on a common carrier, a receiver for comparing the depths of modulation of the two signals comprising means for receiving and detecting the radiated signals to produce a combined input signal containing the two modulation frequencies, means for deriving, from said input signal, a first reference signal of a frequency equal to the mean of the modulation frequencies, means for deriving from said input signal, a second reference signal of a frequency equal to half the difference of the two modulation frequencies, a balanced modulator for amplitude modulating the first reference signal with the combined input signal, and synchronous detecting means controlled by said second reference signal for detecting the output from the balanced modulator at a frequency equal to half the difference between the modulation frequencies.

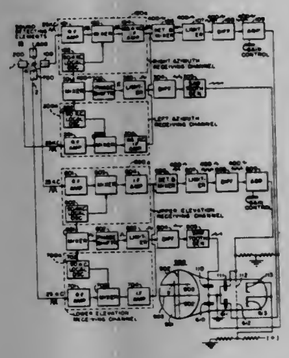
3,302,203
ELECTRONIC CHANNEL GUIDANCE SYSTEM
Peter P. Schauffler, 101 W. Springfield Ave., Philadelphia, Pa. 19118
Filed Dec. 23, 1964, Ser. No. 420,548
14 Claims. (Cl. 343—112)



11. A channel-navigation system comprising at least one pair of radio range stations located along an extension

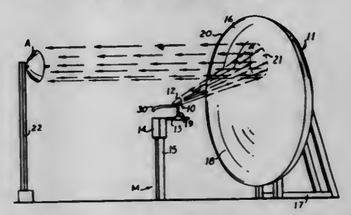
of the channel center line and having means for radiating time-separated signals,
signal-receiving means at laterally-spaced points of a vehicle for receiving the signals from said stations,
means on board said vehicle for comparing the phase of the signals as received from each of said stations by said signal-receiving means as a measure of the simultaneous relative bearings of said stations,
means on board said vehicle for transmitting a synchronized signal at a separate frequency, means at the nearest range station for receiving this signal and transmitting a response, and means aboard said vehicle for receiving this response and determining its time relationship to the original transmission as a measure of said vehicle's distance from said station,
indicating means responsive to said distance signals,
means on board said vehicle for combining the algebraic difference between said simultaneous relative bearing information with said distance information as a measure of the lateral offset of said vehicle with respect to said channel center line, and
indicating means responsive to said offset signals.

3,302,204
DIRECTION INDICATOR
Robert H. Mathes, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 5, 1950, Ser. No. 199,275
11 Claims. (Cl. 343—113)



10. An object locator system for detecting the azimuth and elevation of energy emanating or reflected from a remote object comprising a first pair of energy detecting means having overlapping zones of receptivity physically disposed along a first given line, a second pair of energy detecting means having overlapping zones of receptivity physically disposed along a second given line which is at right angles with respect to said first given line, first and second energy receiving means coupled to said first and second pair of energy detecting means respectively, a cathode ray tube display means having beam deflection means associated therewith, first and second sweep generator means coupled to the deflection means of the cathode ray tube display means for periodically deflecting the electron beam thereof in horizontal and vertical directions to produce a crosshair indication, and means coupling the outputs of said first and second receiving means to said deflection means operative to shift the position of the crosshair indication in a manner representative of the azimuth and elevation of the remote object.

3,302,205
ANTENNA RANGE FOR PROVIDING A PLANE WAVE FOR ANTENNA MEASUREMENTS
Richard C. Johnson, Atlanta, Ga., assignor to Georgia Tech Research Institute, Atlanta, Ga., a corporation of Georgia
Filed Mar. 13, 1964, Ser. No. 351,735
4 Claims. (Cl. 343—703)



1. In an antenna range for antenna measurements, means for emitting a wave front, a first parabolic surface contained within a wave guide, and a second parabolic surface, said means for emitting a wave front, said first parabolic surface, and said second parabolic surface being positioned whereby a wave front emitted by said means for emitting a wave front is reflected from said first parabolic surface to said second parabolic surface and subsequently from said second parabolic surface to an antenna being tested.

3. An antenna range providing a wave front incident upon an antenna being tested, said antenna being tested having an aperture with a maximum aperture dimension and said antenna range comprising a parabolic reflecting means positioned to place said antenna being tested relatively close to and within the perimeter of said parabolic reflecting means, said parabolic reflecting means having a focal point; and an emitting means for emitting a spherical wave front toward said parabolic reflecting means, said emitting means being positioned at said focal point so as to direct said wave front to a small portion of said parabolic reflecting means which is displaced from any edge of said parabolic reflecting means by a distance sufficient to substantially eliminate edge effects; whereby a plane wave is radiated from said parabolic reflecting means toward said antenna being tested and the aperture of said plane wave is substantially equal to said maximum aperture dimension of said antenna being tested.

3,302,206
UNDERGROUND ANTENNA BURIED IN FROZEN SOIL
D'Arcy A. Shock, Warren W. Woods, and Henry F. Coffer, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Jan. 21, 1963, Ser. No. 252,755
3 Claims. (Cl. 343—719)



1. An antenna installation comprising:
a quantity of soil at a temperature below about −30° C.,
a plurality of interconnected freeze points arranged in a closed pattern surrounding at least a portion of said soil, for maintaining said soil at a temperature below about −30° C.,

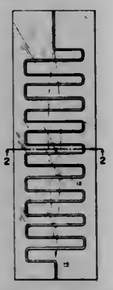
means communicating with said freeze points for furnishing refrigerant thereto at a temperature below —30° C., and

a plurality of horizontally disposed conductors embedded in said soil at a position within said closed pattern of freeze points and below the surface of said soil.

3,302,207
TRAVELING WAVE STRIP LINE ANTENNA

John G. Hoffman, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 28, 1964, Ser. No. 348,919
4 Claims. (Cl. 343—731)



1. A traveling-wave strip-line antenna comprising:

(a) a substantially flat guiding wave structure for flush mounting thereof,

(b) at least one radiation slot in said guiding structure,

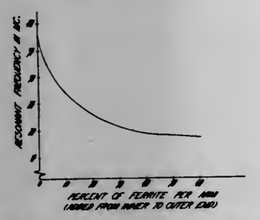
(c) a zig-zag center conductor mounted directly behind said slot for exciting the slot,

(d) the number and spacing of the zig-zag's of said center conductor controlling the antenna look angle and direction of radiation.

3,302,208
DIPOLE ANTENNA INCLUDING FERRITE SLEEVES ABOUT THE MEDIAL PORTIONS OF ITS RADIATING ELEMENTS

Harold S. Hendrickson, 9 Sunset Lane, Bloomfield, Conn. 06002; Alice Hendrickson, administratrix of said Harold S. Hendrickson, deceased

Filed Mar. 20, 1964, Ser. No. 353,371
6 Claims. (Cl. 343—787)

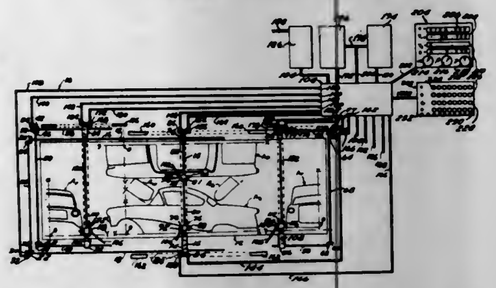


1. A one-half wave dipole antenna assembly comprising two opposite but identical arms arranged generally end-to-end, each of said arms comprising a straight elongated electrically conductive antenna element adapted when excited to have a high charge concentration at its outer end portion and a high current concentration at its inner end portion, and each of said arms further including a quantity of ferrite material in the form of at least one tubular sleeve having a magnetic permeability greater than its dielectric constant over the range of frequencies with which the antenna assembly is used located on and surrounding said antenna element thereof adjacent its inner end.

3,302,209
METHOD FOR PRODUCING MACHINE-TOOL-CONTROLLING MAGNETIC TAPES DIRECTLY FROM DRAWINGS

Werner H. Fengler, 23651 Fordson Drive, Dearborn, Mich. 48124

Filed July 6, 1964, Ser. No. 380,603
4 Claims. (Cl. 346—1)



1. A method for producing, directly from a line drawing containing aligned plan and elevational views in three mutually-perpendicular planes representing the three-dimensional appearance of an article, a multi-channel magnetic tape for automatically controlling the feeding motions of a machine tool cutter simultaneously in the three dimensions so as to reproduce the article, said method comprising

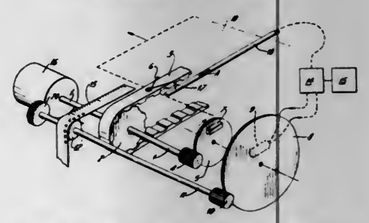
inscribing on said drawings origins of coordinates and rectangular reference coordinate axes extending in mutually perpendicular directions from said origin on said drawing,

simultaneously scanning and sequentially measuring the distances from said coordinate axes to instantaneously-corresponding minutely-separated points along corresponding lines of said views in terms of the number of electric impulses of a predetermined frequency accumulating during the scanning intervals from said coordinate axes to the respective corresponding points on said lines, and simultaneously impressing said impulses upon separate parallel channels of the magnetic tape, the number of impulses corresponding to the distances of the points on each drawing line from a given coordinate axis being impressed upon a channel of said tape assigned thereto.

3,302,210
ECHO SOUNDING APPARATUS

Alfred Willis Welsh, Loughton, Essex, and Kenneth Hussey, Ingatestone, Essex, England, assignors to S. Smith & Sons (England) Limited, Cricklewood, London, England, a British company

Filed Oct. 30, 1964, Ser. No. 407,647
Claims priority, application Great Britain, Nov. 7, 1963, 43,938/63
6 Claims. (Cl. 346—17)

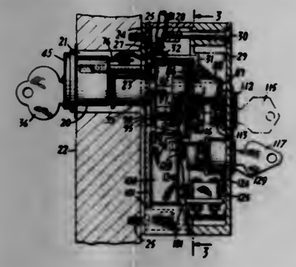


1. Echo sounding apparatus comprising transmitting means operable to transmit a pulse of acoustic energy, receiving means for receiving echoes of said pulse, and recording means coupled to said receiving means for recording said received echoes on a recording medium, said recording means including a stylus for marking said medium in accordance with reception of echoes by said receiving means, a belt carrying said stylus, driving means for driving said belt to carry said stylus around a closed path traversing said medium, switch means actuable to operate said transmitting means to transmit a pulse of acoustic energy, said switch means having first and second parts that are both moveable into a predetermined cooperating relationship with one another to effect actuation of said switch means, means coupled to said driving means for driving said first part around a closed path in synchronism with the closed-path movement of said stylus, and means for varying the range of echo signals to be recorded comprising manually adjustable means for positioning said second part adjacent a point in the path of movement of said first part to achieve said predetermined cooperating relationship with said first part when the said first part passes said point, said point being variable throughout at least a major portion of said path of movement of said first part by adjustment of said manually adjustable means thereby to vary the timing within the closed-path movement of said stylus at which said switch means is actuated.

3,302,211
KEY-IDENTIFYING LOCK SYSTEM AND COMPONENTS THEREFOR

Robert B. Essex, Hicksville, Nicholas C. Heyman, New York, and Murray Kravis, Seaford, N.Y., assignors to The Lock-Tronic Corporation, Columbus, Ohio, a corporation of Ohio

Filed July 16, 1964, Ser. No. 383,010
21 Claims. (Cl. 346—53)

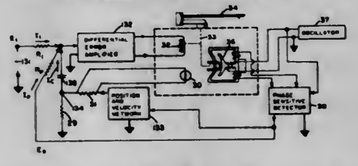


1. Apparatus comprising, lock means turnable by the insertion therein of any one of a selected plurality of keys of different shapings, a plurality of electric contacts each corresponding to a respective single one of said keys, each contact being responsive to said shaping of the corresponding key when inserted to provide a single-valued electric signal selectively indicative of the identity of that key, said plurality of contacts accordingly being adapted to provide a plurality of such signals of which each corresponds to a respective one of said contacts and of said keys, drive means to advance a record sheet through a recording zone, an array of selectively positionable recording elements disposed at said zone and lesser in number than said contacts, electromechanical positioning means for said elements, said electromechanical means being responsive to each of said signals to set up a different position permutation of said elements and being responsive one at a time to each of ones of said single-valued signals to set up the position permutation corresponding to such signal by changing the position of more than one of said elements, and record-forming means actuated after a one of said permutations has been set up to produce a recording on said sheet by said elements of respective marks representing that permutation.

3,302,212
MAGNETIC RECORDER DEVICE

William E. Koeblitz, Lyndhurst, and Allan R. Thompson, Westlake, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed Nov. 9, 1964, Ser. No. 409,699
13 Claims. (Cl. 346—139)

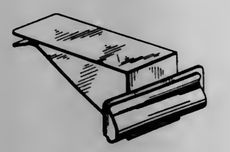


4. In a magnetic recorder device, the combination of: a magnetic system having an air gap; a driving coil rotatable in said air gap; a recording device driven by said driving coil; electric circuit means connected to said driving coil including a differential error amplifier, signal input means connected to said amplifier; position sensing means connected to said recording device to sense its position and electrically connected to the input of said amplifier to apply thereto an electric signal proportional to the position of said recording device; means connected between said position sensing means and said amplifier for differentiating the electric signal from said position sensing means and for applying said differentiated signal to the input of said amplifier; and thermistor means located near said driving coil so as to be at substantially the same temperature as said driving coil; said thermistor means being connected to the input of said amplifier means to change the output thereform to said driving coil to compensate for changes due to temperature changes of said driving coil.

DESIGNS

JANUARY 31, 1967

206,783
SIGN HOLDER
Daniel M. McCormick, 7845 Alderman Road, Jacksonville, Fla. 33211
Original design application July 19, 1965, Ser. No. 86,444. Divided and this application Dec. 20, 1965, Ser. No. 508
Term of patent 14 years
(Cl. D1—3)



206,784
SIGN HOLDER
Daniel M. McCormick, 7845 Alderman Road, Jacksonville, Fla. 33211
Original design application July 19, 1965, Ser. No. 86,444. Divided and this application Dec. 20, 1965, Ser. No. 509
Term of patent 14 years
(Cl. D1—3)



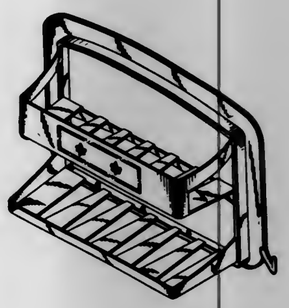
206,785
SIGN HOLDER
Daniel M. McCormick, 7845 Alderman Road, Jacksonville, Fla. 33211
Original design application July 19, 1965, Ser. No. 86,444. Divided and this application Dec. 20, 1965, Ser. No. 511
Term of patent 14 years
(Cl. D1—3)



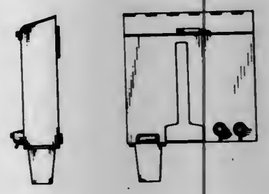
206,786
SIGN HOLDER
Daniel M. McCormick, 7845 Alderman Road, Jacksonville, Fla. 33211
Original design application July 19, 1965, Ser. No. 86,444. Divided and this application Dec. 20, 1965, Ser. No. 512
Term of patent 14 years
(Cl. D1—3)



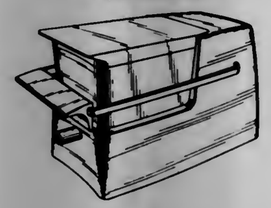
206,787
SHELF UNIT FOR BATHROOMS OR THE LIKE
Robert Z. Lerner, 7 Toppertown Lane, Brookville, Long Island, N.Y. 10708
Filed July 8, 1966, Ser. No. 3,001
Term of patent 14 years
(Cl. D4—3)



206,788
COMBINATION SOAP, DETERGENT AND MISCELLANEOUS CLEANSER DISPENSER
Ronald L. Lallone, Carmichael, Calif., assignor of thirty-three and one-third percent to Melvyn J. Coben, William L. Cooper, and Francis W. Zilaff, Sacramento, Calif.
Filed Jan. 28, 1966, Ser. No. 808
Term of patent 14 years
(Cl. D4—3)



206,789
LATHER GENERATOR
Alfred W. Madl, Mequon, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed June 20, 1966, Ser. No. 2,737
Term of patent 14 years
(Cl. D4—3)



206,790
COMBINATION BATHROOM UNIT
Rudolph L. Stiphany, 705 E. Ludington Ave., Ludington, Mich. 49431
Filed Apr. 19, 1965, Ser. No. 84,867
Term of patent 14 years
(Cl. D4—4)



206,791
LINT REMOVER
David A. Martin, 2375 Colgate Drive, Costa Mesa, Calif. 92626
Filed Feb. 23, 1966, Ser. No. 1,152
Term of patent 14 years
(Cl. D9—2)



206,792
SHOE DAUBER
Lewis James Halberstadt, Williamsburg, Mass., assignor to Pro-Phy-Lac-Tic Brush Company, Florence, Mass., a corporation of Delaware
Filed Mar. 10, 1966, Ser. No. 1,395
Term of patent 14 years
(Cl. D9—2)



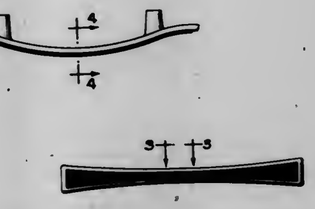
206,793
DRAWER PULL
Anthony J. Carsello, Hollywood, Calif., assignor to Ajax Hardware Manufacturing Corp., a corporation of California
Filed June 23, 1966, Ser. No. 2,792
Term of patent 14 years
(Cl. D10—8)

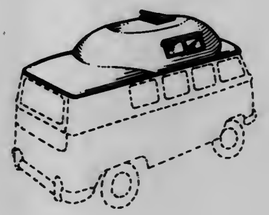


206,794
PULL
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Oct. 23, 1965, Ser. No. 87,840
Term of patent 14 years
(Cl. D10—8)



206,795
CAMPER TOP
William A. Ritter and Edward J. Anderson, both of 585 4th St., San Fernando, Calif. 91340
Filed Mar. 23, 1966, Ser. No. 1,602
Term of patent 14 years
(Cl. D14—27)





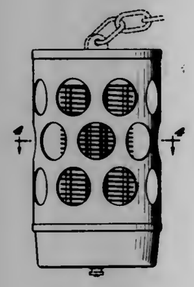
206,796
SLING CHAIR
Charles F. Bauer, Rte. 1, Box 330, Barrington, Ill. 60010
Filed Oct. 22, 1965, Ser. No. 87,809
Term of patent 14 Years
(Cl. D15—1)



206,797
NAPKIN HOLDER
Ike W. Kusisto, P.O. Box 13237, Phoenix, Ariz. 85002
Filed Dec. 20, 1965, Ser. No. 241
Term of patent 14 years
(Cl. D17—8)



206,798
INSECT TRAP
Arthur A. Hill, Los Angeles, Calif., assignor to Hillmart Enterprises, Inc., Los Angeles, Calif., a corporation of California
Filed July 13, 1966, Ser. No. 3,072
Term of patent 14 years
(Cl. D22—19)



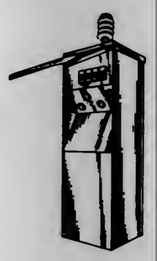
206,799
MULTIPLE ELECTRODE STRUCTURE FOR CARDIAC TESTS OR THE LIKE
Jordan D. Frasier, Orange, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Sept. 3, 1965, Ser. No. 86,852
Term of patent 14 years
(Cl. D26—1)



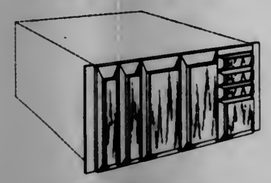
206,800
ELECTRICAL CONNECTOR PLUG COMPONENT
Elliott Goldbaum, Brooklyn, and Gordon L. Ablett, New York, N.Y., assignors to Lehigh Valley Industries, Inc., New York, N.Y., a corporation of Delaware
Original design applications May 25, 1964, Ser. No. 80,127 and Ser. No. 80,139. Divided and this application Nov. 1, 1965, Ser. No. 87,960
Term of patent 14 years
(Cl. D26—1)



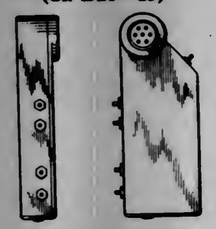
206,801
ELECTRICAL OUTLET DISTRIBUTION CABINET
Ralph W. Bickford, Napa, Calif., assignor to James L. Hall Co., Inc., San Francisco, Calif., a corporation of California
Filed June 11, 1965, Ser. No. 85,683
Term of patent 14 years
(Cl. D26—5)



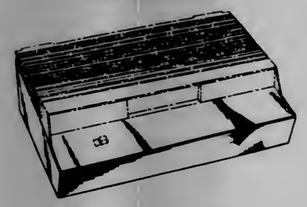
206,802
HOUSING FOR ELECTRONIC APPARATUS
Edward R. Wiener, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 1, 1965, Ser. No. 87,958
Term of patent 14 years
(Cl. D26—5)



206,803
REMOTE CONTROL UNIT FOR A RECORDING SYSTEM
Wesley L. Kirchoff, Los Angeles, Calif., assignor to Anaplex, Incorporated, Kansas City, Kans., a corporation of Kansas
Filed Oct. 11, 1965, Ser. No. 87,414
Term of patent 14 years
(Cl. D26—13)



206,804
BATTERY CHARGER
Richard A. Cunitz, Birmingham, Mich., assignor to AMT Corporation, Troy, Mich., a corporation of Michigan
Filed July 2, 1965, Ser. No. 86,007
Term of patent 14 years
(Cl. D26—15)



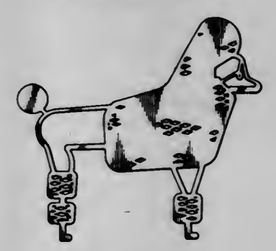
206,805
BATTERY CHARGER
Richard A. Cunitz, Birmingham, Mich., assignor to AMT Corporation, Troy, Mich., a corporation of Michigan
Filed July 2, 1965, Ser. No. 86,008
Term of patent 14 years
(Cl. D26—15)



206,806
CHRISTMAS TREE ORNAMENT
Dario Moranduzzo, Via Aretina 161, Florence, Italy
Filed Oct. 22, 1965, Ser. No. 87,817
Term of patent 14 years
(Cl. D29—1)



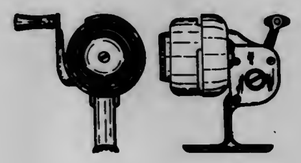
206,807
POODLE DOG WALL PLAQUE OR THE LIKE
William V. Deane, 105 S. Commonwealth, Los Angeles, Calif. 90004
Filed Feb. 18, 1966, Ser. No. 1,114
Term of patent 14 years
(Cl. D29—23)



206,808
FISHING LURE
George A. Yokich, 528 Henrietta St., Pekin, Ill. 61554
Filed Aug. 16, 1966, Ser. No. 3,489
Term of patent 14 years
(Cl. D31—4)



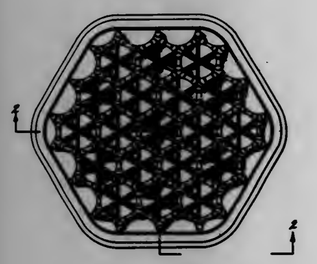
206,809
SPINNING REEL
John K. Taggart, Indianapolis, Ind., Philip M. Parker, Rogers, Ark., and Earl E. Miller, Dowagiac, Mich., assignors to James Heddon's, Sons, Dowagiac, Mich., a corporation of Michigan
Filed Nov. 4, 1965, Ser. No. 87,995
Term of patent 14 years
(Cl. D31—4)



206,810
MOBILE BOOKCASE
Phil Katzman, 11616 Leavenworth Road, Omaha, Nebr. 68154
Filed Nov. 29, 1965, Ser. No. 88,246
Term of patent 14 years
(Cl. D33—2)



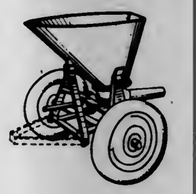
206,811
GAME BOARD
John W. Ryan, Bel Air, and Charles Richard Zimmerman, Los Angeles, Calif., assignors to Mattel, Inc., a corporation of California
Filed Nov. 22, 1965, Ser. No. 88,167
Term of patent 14 years
(Cl. D34—5)



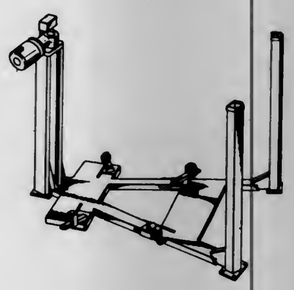
206,812
COMBINED TOY WHEELED VEHICLE AND SLED
Donald R. Keller, 1441 Forbes Road, Lexington, Ky. 40505
Filed Dec. 20, 1965, Ser. No. 245
Term of patent 14 years
(Cl. D34—15)



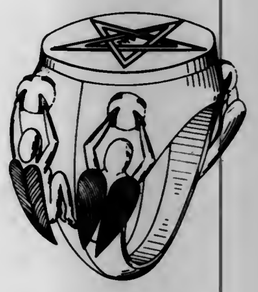
206,813
AGRICULTURAL IMPLEMENT FOR SPREADING OR SOWING GRANULAR AND POWDERED MATERIALS
Herbert Vissers, Nieuw Vennep, Netherlands, assignor to Landbouwerktuigen- en Machinefabriek H. Vissers N.V., Nieuw Vennep, Netherlands, a company of the Netherlands
Filed July 13, 1966, Ser. No. 3,066
Term of patent 14 years
(Cl. D35—2)



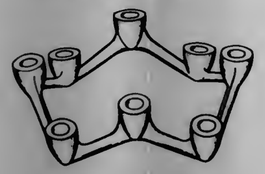
206,814
VEHICLE HOIST
Thomas Eric Greenwood and Ronald Edward Farnfield, both of Plymouth, Devon, England, assignors to Tecalemit (Engineering) Limited, Devon, England, a British company
Filed Mar. 9, 1966, Ser. No. 1,364
Term of patent 14 years
(Cl. D41—1)



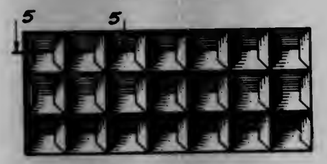
206,815
RING
Almond C. Fairfield, 12220 N. Armenia Ave., Tampa, Fla. 33612
Filed Feb. 24, 1966, Ser. No. 1,174
Term of patent 3½ years
(Cl. D45—10)



206,816
CANDLEHOLDER OR THE LIKE
John P. Myers and John L. McCarthy, both of 9885 Santa Monica Blvd., Beverly Hills, Calif. 90212
Filed Feb. 7, 1966, Ser. No. 951
Term of patent 14 years
(Cl. D48—2)



206,817
VENTILATED LENS FOR LIGHTING FIXTURES
Mitchell Bobrick, 605 Erskine Drive, Pacific Palisades, Calif. 90272
Filed Dec. 9, 1965, Ser. No. 127
Term of patent 14 years
(Cl. D48—16)



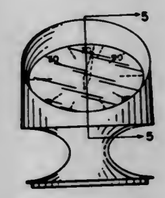
206,818
STORAGE AND DISPENSER CABINET FOR BUTTER PATS
Robert G. Fraser, 2700 W. Farrell St., Park Ridge, Ill. 60068
Filed Jan. 19, 1966, Ser. No. 679
Term of patent 14 years
(Cl. D52—2)



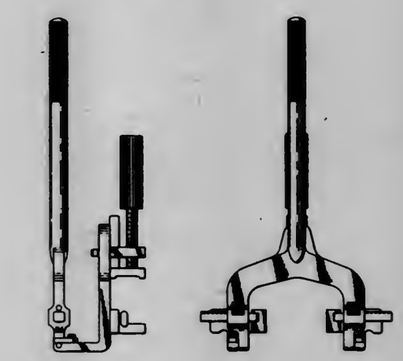
206,819
INDICATING CONTROLLER FACE
Marion Pastoric, Chesterland, and Kenneth L. Vouk, Willowick, Ohio, assignors to Bailey Meter Company, a corporation of Delaware
Filed Jan. 5, 1966, Ser. No. 474
Term of patent 14 years
(Cl. D52—6)



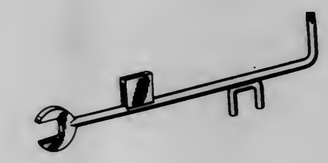
206,820
SPACE CONDITION RESPONSIVE INSTRUMENT
Walter I. Bieger, St. Anthony, and Gerald J. Hazzard, Jr., St. Paul, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 21, 1966, Ser. No. 712
Term of patent 14 years
(Cl. D52—7)



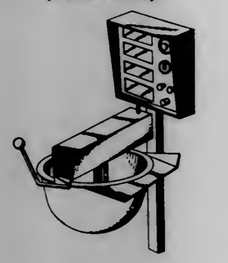
206,821
TOOL FOR ASSEMBLING AND DISASSEMBLING PIPES OR THE LIKE
Beauford E. Steely, Dallas, and General L. Cranfill, Friona, Tex., assignors to Cranford Corporation, Dallas, Tex.
Filed Oct. 23, 1965, Ser. No. 87,845
Term of patent 14 years
(Cl. D54—13)



206,822
DRUM BUNG WRENCH
Ruben R. Motl, 3573 Armstrong St., San Diego, Calif. 92111
Filed June 27, 1966, Ser. No. 2,828
Term of patent 14 years
(Cl. D54—16)



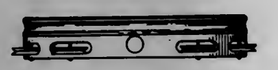
206,823
COMBINED CONFECTIONERY KETTLE AND CONTROL PANEL
Thedosius N. Peterson, 201 Mount Lebanon Road, Wilmington, Del. 19803
Filed Nov. 18, 1965, Ser. No. 88,145
Term of patent 14 years
(Cl. D55—1)



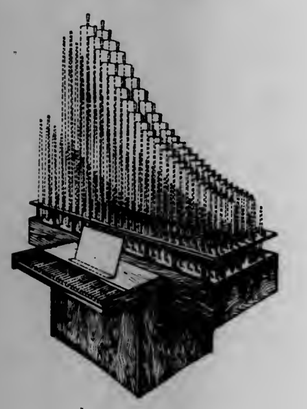
206,824
MUSICAL INSTRUMENT TOY
John W. Ryan, Bel-Air, and John H. Goetz, Sherman Oaks, Calif., assignors to Mattel, Inc., a corporation of California
Filed Nov. 4, 1965, Ser. No. 88,000
Term of patent 14 years
(Cl. D56—1)



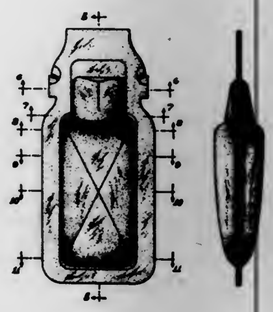
206,825
TAMBOURINE
Leo Blumenfeld, 8857 Bennett, Skokie, Ill. 60076
Filed Nov. 26, 1965, Ser. No. 88,228
Term of patent 14 years
(Cl. D56—1)



206,826
ORGAN CONSOLE
Don Marshall Stone, 4 Potomac Court, Alexandria, Va. 22314
Filed June 15, 1966, Ser. No. 2,685
Term of patent 14 years
(Cl. D56—2)



206,827
FLEXIBLE PACKAGE FOR FLUENT SUBSTANCES
Joseph L. Arcudi, Elizabeth, N.J., assignor to Ivers-Lee Company, Newark, N.J., a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 1,568
Term of patent 14 years
(Cl. D58—2)



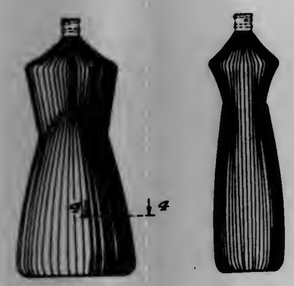
206,828
JUG
Alan J. Fox, Sewickley, Pa., assignor to Sinclair-Koppers Company, a partnership of Delaware
Filed Feb. 28, 1966, Ser. No. 1,198
Term of patent 14 years
(Cl. D58—5)



206,829
BOTTLE
Eugene Darcy, Hollywood, Calif., assignor to Consolidated Foods Corporation, a corporation of Maryland
Filed Sept. 27, 1965, Ser. No. 87,175
Term of patent 14 years
(Cl. D58—6)



206,830
BOTTLE OR THE LIKE
Paul A. Marchant, Kansas City, Mo., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 88,239
Term of patent 14 years
(Cl. D58—6)



206,831
BOTTLE
Clare E. Hodgman, Mamaroneck, N.Y., assignor to The Coca-Cola Company, Atlanta, Ga., a corporation of Delaware
Filed Jan. 10, 1966, Ser. No. 617
Term of patent 14 years
(Cl. D58—8)



206,832
COMBINED VALVE ACTUATOR AND DISPENSING HEAD FOR A PRESSURIZED CONTAINER
Paul M. Kotuby, Naugatuck, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed Jan. 5, 1966, Ser. No. 464
Term of patent 14 years
(Cl. D58—26)



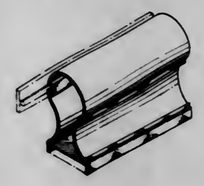
206,833
PORTABLE COMBINED SOUND AND PICTURE REPRODUCING APPARATUS
Jesse David Wolf, 1032 Dayton, Aurora, Colo. 80010
Filed Feb. 14, 1966, Ser. No. 1,876
Term of patent 14 years
(Cl. D61—1)



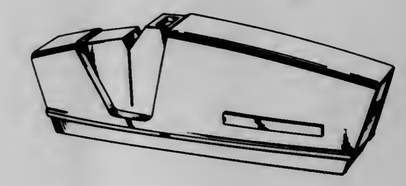
206,834
HEATING AND WELDING TORCH
Jack Sydney Foxell, Shepperton, England, assignor to The British Oxygen Company Limited, a British company
Filed Nov. 22, 1965, Ser. No. 88,181
Claims priority, application Great Britain June 3, 1965
Term of patent 14 years
(Cl. D62—2)



206,835
RUBBER STAMP OR THE LIKE
Frank R. Anderson, 3489 Flower St., Santa Maria, Calif. 93454
Filed Oct. 5, 1965, Ser. No. 87,330
Term of patent 14 years
(Cl. D64—10)



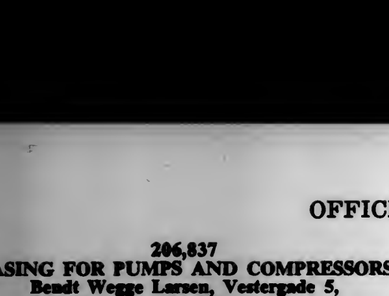
206,836
COMBINED PRINTING MACHINE AND METER FOR TICKET VALIDATION
Robert C. Ringholz, 436 Court St., San Bernardino, Calif. 95023
Filed Feb. 10, 1966, Ser. No. 1,003
Term of patent 14 years
(Cl. D64—11)



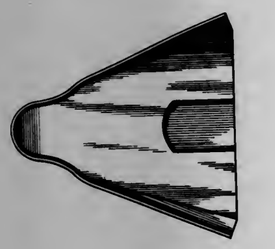
206,837
CASING FOR PUMPS AND COMPRESSORS
Bendt Wegge Larsen, Vestergade 5, Augustenborg, Denmark
Filed Jan. 24, 1966, Ser. No. 747
Claims priority, application Denmark Sept. 15, 1965
Term of patent 14 years
(Cl. D65—1)



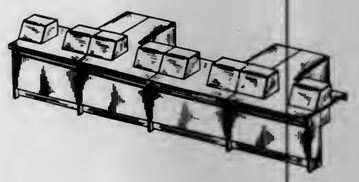
206,838
MONORAIL COACH
Alan B. Hawes, 8504 Seaview Ave., Wildwood Crest, N.J. 08260
Filed Jan. 21, 1966, Ser. No. 722
Term of patent 14 years
(Cl. D66—1)



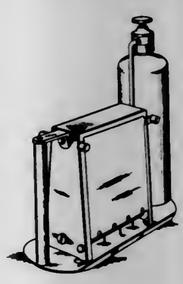
206,839
WATER CRAFT
John R. Seeley, Rte. 3, Box 20, Aurora, Colo. 80010
Filed Mar. 14, 1966, Ser. No. 1,435
Term of patent 14 years
(Cl. D71—1)



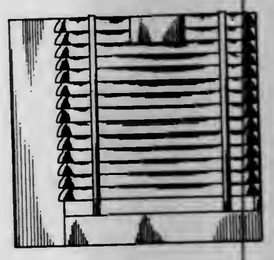
206,840
TELLER'S COUNTER
Robert L. Ziegelman, Farmington, Mich., and Norman H. Ziegelman, Southfield, Mich. (both of 167 Townsend, Birmingham, Mich. 48011)
Filed Feb. 28, 1966, Ser. No. 1,201
Term of patent 14 years
(Cl. D80—2)



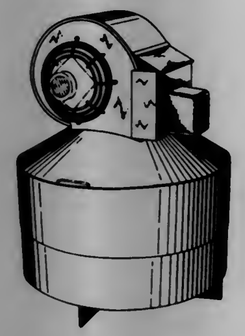
206,841
GAS HEATED TOASTER AND GRILL COMBINATION
Delevan R. Arnold, Kalamazoo, Mich., assignor to The Arnold Tackle Corporation, Paw Paw, Mich., a corporation of Michigan
Filed Dec. 30, 1965, Ser. No. 395
Term of patent 14 years
(Cl. D81—10)



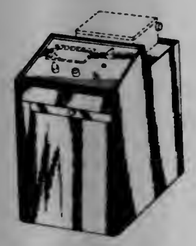
206,842
INFRA-RED SPACE HEATER
Peter P. Surckla, Geauga County, Ohio, assignor to The Bettcher Manufacturing Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 4, 1966, Ser. No. 1,295
Term of patent 14 years
(Cl. D81—19)



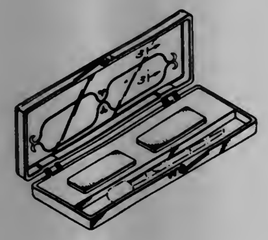
206,843
PORTABLE SPACE HEATER
John S. Taylor, Jacksonville, Fla., assignor to Tifcon Company, Jacksonville, Fla., a corporation of Florida
Filed Mar. 11, 1966 Ser. No. 1,415
Term of patent 14 years
(Cl. D81—19)



206,844
MODULAR PUMP HOUSING FOR CARDIOVASCULAR EQUIPMENT
James H. De Vries and Richard N. Sarns, Ann Arbor, Mich., assignors to Sarns, Inc., Ann Arbor, Mich., a corporation of Michigan
Filed July 28, 1965, Ser. No. 86,334
Term of patent 14 years
(Cl. D83—1)



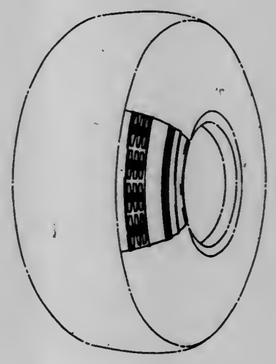
206,845
EYE SHADOW KIT
Bruce Ross, Riverdale, N.Y., assignor to Maradel Products, Inc., Farmingdale, N.Y., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 318
Term of patent 14 years
(Cl. D86—10)



206,846
TIRE
George W. MacWherter, Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Dec. 30, 1965, Ser. No. 401
Term of patent 14 years
(Cl. D90—20)



206,847
TIRE
Aristides Makris, 137 Crescent Ave., Plainfield, N.J. 08867
Filed July 20, 1966, Ser. No. 3,146
Term of patent 14 years
(Cl. D90—20)



206,848
TIRE
Carl D. Berry, Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Nov. 24, 1965, Ser. No. 88,201
Term of patent 14 years
(Cl. D90—20)



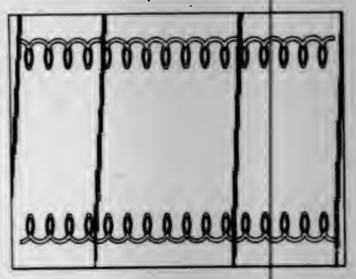
206,849
SUPPORT FOR ELONGATED, TENUOUS ARTICLES
Foster H. Guthrie, Newark, Ohio, assignor to The Larsen Manufacturing Co., Newark, Ohio, a corporation of Ohio
Filed Mar. 14, 1966, Ser. No. 1,444
Term of patent 7 years
(Cl. D91—1)



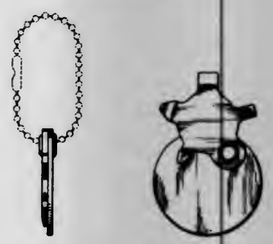
206,850
BALL COCK
Adolf Schoepe, 1620 N. Raymond Ave., Fullerton, Calif. 91720, and Fredric E. Schmuck, 535 Century Drive, Anaheim, Calif. 92805
Filed June 23, 1966, Ser. No. 2,796
Term of patent 14 years
(Cl. D91—3)



206,851
PLACE MAT OR THE LIKE
Richard M. Watts, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Nov. 4, 1965, Ser. No. 88,001
Term of patent 14 years
(Cl. D92—26)



206,852
POCKET SCREW DRIVER
Jon Hedu, Watertown, Conn., assignor to The W. E. Bassett Company, a corporation of Connecticut
Filed May 23, 1966, Ser. No. 2,375
Term of patent 14 years
(Cl. D93—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 31ST DAY OF JANUARY, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Andren, Karl H., to Artos Engineering Co. Apparatus for production of electrical conductors. Re. 26,152, 1–31–67, Cl. 29—33.
Artos Engineering Co.: *See*—
Andren, Karl H. Re. 26,152.
Baker, Norma L.: *See*—
Duncan, Robert C., and Baker. Re. 26,151.
Bliss, E. W., Co.: *See*—
Hendricks, George D., and Fieser. Re. 26,150.
Brunswick Corp.: *See*—
Torresen, Robert, and Gretzky. Re. 26,154.
Cochardt, Alexander W., to Westinghouse Electric Corp. Ferrite magnets. Re. 26,153, 1–31–67, Cl. 252—62.5.
Duncan, Robert C., and N. L. Baker, to The Procter & Gamble Co. Disposable diaper. Re. 26,151, 1–31–67, Cl. 128—284.
Fieser, Garland E.: *See*—
Hendricks, George D., and Fieser. Re. 26,150.
Gretzky, Anthony J.: *See*—
Torresen, Robert, and Gretzky. Re. 26,154.
Hendricks, George D., and G. E. Fieser, to E. W. Bliss Co. Traffic controllers employing static, logic control elements. Re. 26,150, 1–31–67, Cl. 340—37.
Procter & Gamble Co., The: *See*—
Duncan, Robert C., and Baker. Re. 26,151.
Torresen, Robert, and A. J. Gretzky, to Brunswick Corp. Pin detecting and indicating apparatus. Re. 26,154, 1–31–67, Cl. 273—42.
Westinghouse Electric Corp.: *See*—
Cochardt, Alexander W. Re. 26,153.

LIST OF PLANT PATENTEES

Palmer, Harry E. Bicolored hybrid tea rose. P.P. 2,706, 1–31–67, Cl. Plants 11.

LIST OF DESIGN PATENTEES

AMT Corp.: *See*—
Cunitz, Richard A. 206,804.
Cunitz, Richard A. 206,805.
Ablett, Gordon L.: *See*—
Goldbaum, Elliott, and Ablett. 206,800.
Ajax Hardware Mfg. Corp.: *See*—
Carsello, Anthony J. 206,793.
Amerock Corp.: *See*—
Clayton, LaVerne E. 206,794.
Anaplex, Inc.: *See*—
Kirchoff, Wesley L. 206,803.
Anderson, Edward J.: *See*—
Ritter, William A., and Anderson. 206,795.
Anderson, Frank R. Rubber stamp or the like. 206,835, 1–31–67, Cl. D64—10.
Arcudi, Joseph L., to Ivers-Lee Co. Flexible package for fluent substances. 206,827, 1–31–67, Cl. D58—2.
Arnold, Delevan R., to The Arnold Tackle Corp. Gas heated toaster and grill combination. 206,841, 1–31–67, Cl. D81—10.
Arnold Tackle Corp., The: *See*—
Arnold, Delevan R. 206,841.
Bailey Meter Co.: *See*—
Pastoric, Marion and Vouk. 206,819.
Bassett, W. E., Co., The: *See*—
Hedu, Jon. 206,852.
Bauer, Charles F. Sling chair. 206,796, 1–31–67, Cl. D15—1.
Berry, Carl D., to The B. F. Goodrich Co. Tire. 206,848, 1–31–67, Cl. D90—20.
Bettcher Mfg. Corp., The: *See*—
Surckla, Peter P. 206,842.
Bickford, Ralph W., to James L. Hall Co., Inc. Electrical outlet distribution cabinet. 206,801, 1–31–67, Cl. D26—5.
Bieger, Walter I., and G. J. Hazzard, Jr., to Honeywell Inc. Space condition responsive instrument. 206,820, 1–31–67, Cl. D52—7.
Blumenfeld, Leo. Tambourine. 206,825, 1–31–67, Cl. D56—1.
Bobrick, Mitchell. Ventilated lens for lighting fixtures. 206,817, 1–31–67, Cl. D48—16.
British Oxygen Co. Ltd., The: *See*—
Foxwell, Jack S. 206,834.
Carsello, Anthony J., to Ajax Hardware Mfg. Corp. Drawer pull. 206,793, 1–31–67, Cl. D10—8.
Clayton, LaVerne E., to Amerock Corp. Pull. 206,794, 1–31–67, Cl. D10—8.
Coben, Melvyn J.: *See*—
Lallone, Ronald L. 206,788.
Coca-Cola Co., The: *See*—
Hodgman, Clare E. 206,831.
Consolidated Foods Corp.: *See*—
Darcy, Eugene. 206,829.
Cooper, William L.: *See*—
Lallone, Ronald L. 206,788.
Cranfill, General L.: *See*—
Steely, Beauford E., and Cranfill. 206,821.
Cranford Corp.: *See*—
Steely, Beauford E., and Cranfill. 206,821.
Cunitz, Richard A., to AMT Corp. Battery charger. 206,804, 1–31–67, Cl. D26—15.
Cunitz, Richard A., to AMT Corp. Battery charger. 206,805, 1–31–67, Cl. D26—15.
Darcy, Eugene, to Consolidated Foods Corp. Bottle. 206,829, 1–31–67, Cl. D58—6.
Deane, William V. Poodle dog wall plaque or the like. 206,807, 1–31–67, Cl. D29—23.
De Vries, James H., and R. N. Sarns, to Sarns, Inc. Modular pump housing for cardiovascular equipment. 206,844, 1–31–67, Cl. D83—1.
Fairfield, Almond C. Ring. 206,815, 1–31–67, Cl. D45—10.
Farnfield, Ronald E.: *See*—
Greenwood, Thomas E., and Farnfield. 206,814.
Fox, Alan J., to Sinclair-Koppers Co. Jug. 206,828, 1–31–67, Cl. D58—5.
Foxell, Jack S., to The British Oxygen Co. Ltd. Heating and welding torch. 206,834 1–31–67, Cl. D62—2.
Fraser, Robert G. Storage and dispenser cabinet for butter pats. 206,818, 1–31–67, Cl. D52—2.
Frasier, Jordan D., to International Rectifier Corp. Multiple electrode structure for cardiac tests or the like. 206,799, 1–31–67, Cl. D26—1.
Goetz, John H.: *See*—
Ryan, John W., and Goetz. 206,824.
Goldbaum, Elliott, and G. L. Ablett, to Lehigh Valley Industries, Inc. Electrical connector plug component. 206,800, 1–31–67, Cl. D26—1.
Goodrich B. F. Co., The: *See*—
Berry, Carl D. 206,848.
MacWherter, George W. 206,846.
Greenwood, Thomas E., and R. E. Farnfield, to Tecalemit (Engineering) Ltd. Vehicle hoist. 206,814, 1–31–67, Cl. D41—1.
Guthrie, Foster H., to The Larsen Mfg. Co. Support for elongated, tenuous articles. 206,849, 1–31–67, Cl. D91—1.
Halberstadt, Lewis J., to Pro-Phy-Lac-Tic Brush Co. Shoe dauber. 206,792, 1–31–67, Cl. D9—2.
Hall, James L., Co., Inc.: *See*—
Bickford, Ralph W. 206,801.
Hawes, Alan B. Monorail coach. 206,838, 1–31–67, Cl. D66—1.
Hazzard, Gerald J., Jr.: *See*—
Bieger, Walter I., and Hazzard. 206,820.
Heddon's, James, Sons: *See*—
Taggart, John K., Parker, and Miller. 206,809.
Hedu, Jon, to The W. E. Bassett Co. Pocket screw driver. 206,852, 1–31–67, Cl. D93—4.
Hill, Arthur A., to Hillmart Enterprises, Inc. Insect trap. 206,798, 1–31–67, Cl. D22—19.
Hillmart Enterprises, Inc.: *See*—
Hill, Arthur A. 206,798.
Hodgman, Clare E., to The Coca-Cola Co. Bottle. 206,831, 1–31–67, Cl. D58—8.
Honeywell Inc.: *See*—
Bieger, Walter I., and Hazzard. 206,820.
International Business Machines Corp.: *See*—
Wiener, Edward R. 206,802.

International Rectifier Corp.: *See*—
Frasier, Jordan D. 206,799.
Ivers-Lee Co.: *See*—
Arcudi, Joseph L. 206,827.
Katzman, Phil. Mobile bookcase. 206,810, 1–31–67, Cl. D33—2.
Keller, Donald R. Combined toy wheeled vehicle and sled. 206,812, 1–31–67, Cl. D34—15.
Kirchoff, Wesley L., to Anaplex, Inc. Remote control unit for a recording system. 206,803, 1–31–67, Cl. D26—13.
Kotuby, Paul M., to The Risdon Mfg. Co. Combined valve actuator and dispensing head for a pressurized container. 206,832, 1–31–67, Cl. D58—26.
Kusisto, Ike W. Napkin holder. 206,797, 1–31–67, Cl. D17—8.
Lallone, Ronald L., 33⅓ to M. J. Coben, W. L. Cooper, and F. W. Zilaff. Combination soap, detergent and miscellaneous cleanser dispenser. 206,788, 1–31–67, Cl. D4—3.
Landbouwerktuigen-en Machinefabriek H. Vissers N.V.: *See*—
Vissers, Herbert. 206,813.
Larsen, Bendt W. Casing for pumps and compressors. 206,837, 1–31–67, Cl. D65—1.
Larsen Mfg. Co., The: *See*—
Guthrie, Foster H. 206,849.
Lehigh Valley Industries, Inc.: *See*—
Goldbaum, Elliott, and Ablett. 206,800.
Lerner, Robert Z. Shelf unit for bathrooms or the like. 206,787, 1–31–67, Cl. D4—3.
MacWherter, George W., to The B. F. Goodrich Co. Tire. 206,846, 1–31–67, Cl. D90—20.
Madl, Alfred W., to John Oster Mfg. Co. Lather generator. 206,789, 1–31–67, Cl. D4—3.
Makris, Aristides. Tire. 206,847, 1–31–67, Cl. D90—20.
Maradel Products, Inc.: *See*—
Ross, Bruce. 206,845.
Marchant, Paul A., to Rexall Drug and Chemical Co. Bottle or the like. 206,830, 1–31–67, Cl. D58—6.
Martin, David A. Lint remover. 206,791, 1–31–67, Cl. D9—2.
Mattel, Inc.: *See*—
Ryan, John W., and Zimmerman. 206,811.
Ryan, John W., and Goetz. 206,824.
McCarthy, John L.: *See*—
Myers, John P., and McCarthy. 206,816.
McCormick, Daniel M. Sign holder. 206,783, 1–31–67, Cl. D1—3.
McCormick, Daniel M. Sign holder. 206,784, 1–31–67, Cl. D1—3.
McCormick, Daniel M. Sign holder. 206,785, 1–31–67, Cl. D1—3.
McCormick, Daniel M. Sign holder. 206,786, 1–31–67, Cl. D1—3.
Miller, Earl E.: *See*—
Taggart, John K., Parker, and Miller. 206,809.
Moranduzzo, Dario. Christmas tree ornament. 206,809, 1–31–67, Cl. D29—1.
Motl, Ruben R. Drum bung wrench. 206,822, 1–31–67, Cl. D54—16.
Myers, John P., and J. L. McCarthy. Candleholder or the like. 206,816, 1–31–67, Cl. D48—2.
Oster, John, Mfg. Co.: *See*—
Madl, Alfred W. 206,789.
Parker, Philip M.: *See*—
Taggart, John K., Parker, and Miller. 206,809.
Pastoric, Marion, and K. L. Vouk, to Bailey Meter Co. Indicating controller face. 206,819, 1–31–67, Cl. D52—6.
Peterson, Thedosius N. Combined confectionery kettle and control panel. 206,823, 1–31–67, Cl. D55—1.
Pro-Phy-Lac-Tic Brush Co.: *See*—
Halberstadt, Lewis J. 206,792.
Rexall Drug and Chemical Co.: *See*—
Marchant, Paul A. 206,830.
Reynolds Metals Co.: *See*—
Watts, Richard M. 206,851.
Ringholz, Robert C. Combined printing machine and meter for ticket validation. 206,836, 1–31–67, Cl. D64—11.
Risdon Mfg. Co., The: *See*—
Kotuby, Paul M. 206,832.
Ritter, William A., and E. J. Anderson. Camper top. 206,795, 1–31–67, Cl. D14—27.
Ross, Bruce, to Maradel Products, Inc. Eye shadow kit. 206,845, 1–31–67, Cl. D86—10.
Ryan, John W., and C. R. Zimmerman, to Mattel, Inc. Game board. 206,811, 1–31–67, Cl. D34—5.
Ryan, John W., and J. H. Goetz, to Mattel, Inc. Musical instrument toy. 206,824, 1–31–67, Cl. D56—1.
Sarns, Inc.: *See*—
De Vries, James H., and Sarns. 206,844.
Sarns, Richard N.: *See*—
De Vries, James H., and Sarns. 206,844.
Schmuck, Fredric E.: *See*—
Schoepe, Adolf, and Schmuck. 206,850.
Schoepe, Adolf, and F. E. Schmuck. Ball cock. 206,850, 1–31–67, Cl. D91—3.
Seeley, John R. Water craft. 206,839, 1–31–67, Cl. D71—1.
Sinclair-Koppers Co.: *See*—
Fox, Alan J. 206,828.
Steely, Beauford E., and G. L. Cranfill, to Cranford Corp. Tool for assembling and disassembling pipes or the like. 206,821, 1–31–67, Cl. D54—13.
Stiphany, Rudolph L. Combination bathroom unit. 206,790, 1–31–67, Cl. D4—4.
Stone, Don M. Organ console. 206,826, 1–31–67, Cl. D56—2.
Surckla, Peter P., to The Bettcher Mfg. Corp. Infra-red space heater. 206,842, 1–31–67, Cl. D81—19.
Taggart, John K., P. M. Parker, and E. E. Miller, to James Heddon's Sons. Spinning reel. 206,809, 1–31–67, D31—4.
Taylor, John S., to Tifcon Co. Portable space heater. 206,843, 1–31–67, Cl. D81—19.
Tecalemit (Engineering) Ltd.: *See*—
Greenwood, Thomas E., and Farnfield. 206,814.
Tifcon Co.: *See*—
Taylor, John S. 206,843.
Vissers, Herbert, to Landbouwerktuigen-en Machinefabriek H. Vissers N.V. Agricultural implement for spreading or sowing granular and powdered materials. 206,813, 1–31–67, D35—2.
Vouk, Kenneth L.: *See*—
Pastoric, Marion, and Vouk. 206,819.
Watts, Richard M., to Reynolds Metals Co. Place mat or the like. 206,851, 1–31–67, Cl. D92—26.
Wiener, Edward R., to International Business Machines Corp. Housing for electronic apparatus. 206,802, 1–31–67, Cl. D26—5.
Wolf, Jesse D. Portable combined sound and picture reproducing apparatus. 206,833, 1–31–67, Cl. D61—1.
Yokich, George A. Fishing lure. 206,808, 1–31–67, Cl. D31—4.
Ziegelman, Norman H.: *See*—
Ziegelman, Robert L. and N. H. 206,840.
Ziegelman, Robert L. and N. H. Teller's counter. 206,840, 1–31–67, Cl. D80—2.
Zilaff, Francis W.: *See*—
Lallone, Ronald L. 206,788.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 31ST DAY OF JANUARY, 1967

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Rausing, Gad A. and H. A., and Stark. 3,301,458.
ACF Industries, Inc.: *See*—
Lowrey, William E. 3,301,523.
AMP Inc.: *See*—
Fraley, Melvin L., and Brown. 3,301,982.
Karol, Kenneth N., and Johnson. 3,302,065.
Schumacher, William L. 3,302,159.
APAW S.A.: *See*—
Carpigiani, Poerio. 3,301,440.
ARA, Inc. (Aerospace Research Associates, Inc.): *See*—
Platus, David L., and Cunningham. 3,301,351.
Abitibi Power & Paper Co. Ltd.: *See*—
Hossain, Shafi U. 3,301,744.
Abruzzo, Joseph: *See*—
Cox, Andrew P., Jr., Sapp, and Abruzzo. 3,302,185.
Accurate Automatic Parts, Inc.: *See*—
Stanwick, Glenn W. 3,301,299.
Actine Homes Corp.: *See*—
Stewart, Douglas C., Adair, and Geriach. 3,300,914.
Adair, Morris I.: *See*—
Stewart, Douglas C., Adair, and Geriach. 3,300,914.
Adams, Charles T., S. G. Brandenberger, and M. Nager, to Shell Oil Co. Preparation of fluorided tungsten-nickel hydrocracking catalysts. 3,301,793, 1–31–67, Cl. 252—441.
Addmaster Corp.: *See*—
Clary, John G., and Busch. 3,301,479.
Addressograph Multigraph Corp.: *See*—
Owen, Arthur E. J. 3,301,703.
Admiral Corp.: *See*—
Olson, Thor F. 3,302,157.
Dietch, Leonard. 3,301,945.
Adrema-Werke G.m.b.H.: *See*—
Aehlig, Werner. 3,301,180.
Advertising Metal Display Co.: *See*—
Craine, John C. 3,301,408.
Aehlig, Werner, to Adrema-Werke G.m.b.H. Safety means in traveling roller bed and cylinder printing machines. 3,301,180, 1–31–67, Cl. 101—269.
Agfa Aktiengesellschaft: *See*—
Von König, Anita, Kruck, and Pfeiffenschneider. 3,301,677.
Winkler, Alfred, Maas, Engelsmann, and Hackenberg. 3,301,584.
Ajem Laboratories: *See*—
Kosar, Peter. 3,300,903.
Aktiebolaget Addo: *See*—
Holmqvist, Nils E. F. 3,301,178.
Aktiebolaget Götaverken: *See*—
Schurink, Herbert J. 3,301,313.
Alamance Industries, Inc.: *See*—
Bird, Joseph J., and Comer. 3,301,017.
Alco Equipment Ltd.: *See*—
Malmgren, Harvey R. 3,301,372.
Alcoriza, Sofronio B. Signal system for motor vehicles. 3,302,172, 1–31–67, Cl. 340—72.
Aldrich Chemical Co., Inc.: *See*—
Biel, John H., and Hopps. 3,301,862.
Aldridge, Clyde L.: *See*—
Hunter, Edward A., Aldridge, Lambert, and Hillard. 3,301,810.
Allegheny Ludlum Steel Corp.: *See*—
Ames, Stuart L., Malagari, and Conner. 3,301,702.
Griest, Andrew J., Jr. 3,301,720.
Young, George H., and Jones. 3,300,906.
Allen, Terry S., K. E. Close, C. L. Lidia, and E. B. Sirrine, to Sperry Rand Corp. Start-up gyroscopic combination for gyro verticals. 3,301,974, 1–31–67, Cl. 74—5.47.
Allied Chemical Corp.: *See*—
Atwood, Theodore. 3,300,996.
Barton, Oliver A., and Schwartz. 3,301,818.
Wooster, George S. 3,301,795.
Allis-Chalmers Mfg. Co.: *See*—
Hanson, Glenn M., Frans, Helan, and Price. 3,301,659.
Neumann, Manfred E. 3,302,037.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Boksjo, Carl I., and Hedenbo. 3,302,094.
Lindström, Olle. 3,301,709.
Alloys Research & Mfg. Corp.: *See*—
Storchheim, Samuel. 3,301,671.
Alpha Trace, Inc.: *See*—
Vaughn, Arthur, and Self. 3,301,337.
Altamil Corp.: *See*—
Tuttle, Wainwright. 3,300,823.
Alto Co.: *See*—
Grossi, Lewis G., and Schmidt. 3,300,945.
Altorfer, Hans. Bedstead. 3,300,794, 1–31–67, Cl. 5—68.
Aluminum Co. of America: *See*—
Wade, Bernard F. 3,301,433.
Alvarez, Francisco, to Syntex Corp. Process for preparation of 19-nor-$\Delta^{5(10)}$-androstene-3,17-dione and 19-nor-Δ^{4}-androstene-3,17-dione. 3,301,877, 1–31–67, Cl. 260—397.3.
Amberg, Stephen W., to Lily-Tulip Cup Corp. Container and lid. 3,301,464, 1–31–67, Cl. 229—43.
Ambrose, Alwin W., to Combustion Engineering, Inc. Steam generator organization. 3,301,224, 1–31–67, Cl. 122—406.
American Bosch Arma Corp.: *See*—
Howe, Edwin W. 3,301,073.
American Can Co.: *See*—
Benson, Carl A., and Hart. 3,301,396.
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Fahrenbach, Marvin J., Bell, and Sandhage. 3,301,065.
American Flange & Mfg. Inc.: *See*—
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American Machine & Foundry Co.: *See*—
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Ewert, Alfred P. 3,301,093.
American Pipe and Construction Co.: *See*—
Lander, Arthur G., and Hausmann. 3,301,278.
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Brown, Gilbert G. 3,301,535.
American Telephone and Telegraph Co.: *See*—
Piyer, Roger A. 3,301,967.
Wurst, Francis K. 3,301,968.
American Toy and Furniture Co., Inc.: *See*—
Kenmotsu, Kenneth M. 3,301,060.
American Uniform Co.: *See*—
Benjamin, E. Burton. 3,300,804.
Amery, George B., to Esso Production Research Co. Individual trace corrector for shifting traces on a record. 3,301,124, 1–31–67, Cl. 88—14.
Ames, Stuart L., F. A. Malagari, Jr., and J. R. Conner, Jr., to Allegheny Ludlum Steel Corp. Coating for the protection of ferrous base alloys at elevated temperatures. 3,301,702, 1–31–67, Cl. 117—135.1.
Ametek, Inc.: *See*—
O'Conor, Frank. 3,300,871.
Gruner, Frederick R. 3,301,025.
Amity Leather Products Co.: *See*—
Meyer, Robert A. 3,301,296.
Ammen, Francis D., deceased, by M. M. Ammen, administratrix. Mail sorting machine. 3,301,398, 1–31–67, Cl. 209—81.
Ammen, Myra M.: *See*—
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Ammerman, John M.: *See*—
Obert, Maximilian J., and Ammerman. 3,302,050.
Amy, Jonathan W., and L. H. Soderholm, to Varian Aerograph. Temperature control signal programmer. 3,301,481, 1–31–67, Cl. 236—46.
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Anchor Hocking Glass Corp.: *See*—
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Ochs, Charles S. 3,302,103.
Anderson, Donald J., to Chevron Research Co. Substituted pyrrolidinones as lubricating oil additives. 3,301,784, 1–31–67, Cl. 252—51.5.
Anderson, Paul L.: *See*—
Spiwak, Lazarus, Traut, Anderson, and Zagusta. 3,301,730.
Anderson, Terry O., B. A. Blackman, and R. O. Wilson, to Halliburton Co. Well logging with single channel cable. 3,302,165, 1–31–67, Cl. 340—18.
Anderwert, Fritz. Process for drying heat-sensitive materials as well as drying apparatus for the performance of the afore-mentioned process. 3,300,868, 1–31–67, Cl. 34—5.
Andreasen, Werner B. Cable tie and anchor. 3,300,825, 1–31–67, Cl. 24—16.
Andresen, John H., Jr., to Astek Instrument Corp. Airspeed warning device. 3,302,167, 1–31–67, Cl. 340—27.
Andrews, Daniel E., Jr. Broad bend acoustic transducer. 3,302,163, 1–31–67, Cl. 340—8.
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Anner, Georg: *See*—
Wettstein, Albert, Anner, Wieland, and Heusler. 3,301,879.
Anthony, William C., to The Upjohn Co. Dispiro[cycloalkane-1,2′-oxirane-3′,3′′-indolin]-2′′-ones, and intermediates and process therefor. 3,301,868, 1–31–67, Cl. 260—325.

Antonsen, Cyrus M. Attachment for supplying auxiliary air to a carburetor. 3,301,539, 1–31–67, Cl. 261—47.

Applied Power Industries, Inc.: *See*—
Flaugher, Lawrence L., Keller, and Martin. 3,302,107.

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Barnes, Kenneth K., and Harriott. 3,300,954.
Barnes, Kenneth K. 3,300,955.

Armentrout, Arthur L. Subterranean dam and method of making the same. 3,300,984, 1–31–67, Cl. 61—1.

Arrow-Hart & Hegeman Electric Co., The: *See*—
Johnson, David W. 3,301,971.
Johnson, Ralph H. 3,301,083.

Art Metal Inc.: *See*—
Cafiero, Vincent J. 3,300,887.

Arthur, John R., and R. J. Nunn, to Fisons Fertilizers Ltd. Fertilizer. 3,301,658, 1–31–67, Cl. 71—50.

Asaeda, Toshio, R. Sakai, and T. Hirano; said Sakai and said Todayoshi assors. to said Asaeda. Apparatus for flat surface superfinishing. 3,300,907, 1–31–67, Cl. 51—124.

Ashbrook, Clifford L., and W. G. Wing. Valve. 3,301,522, 1–31–67, Cl. 251—61.

Ashby, Frederick R., and H. V. Ettore, to United States Plywood Corp. Panel assembly and concealed panel fastener. 3,300,924, 1–31–67, Cl. 52—265.

Ashkin, Arthur, and M. Gershenzon, to Bell Telephone Laboratories, Inc. Semiconductor light modulators. 3,301,625, 1–31–67, Cl. 350—150.

Asmus, Klaus-Dieter, and E. Fischer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Thermostabilized polyoxymethylene copolymers and process for their manufacture. 3,301,821, 1–31–67, Cl. 260—67.

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"Ateliers d'Art de Courtrai de Coene Freres": *See*—
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Atlas, David. Storm topography mapping by radar identification of total storm contour in three dimensions. 3,302,200, 1–31–67, Cl. 343—7.9.

Attwood, William S., and D. W. Tree, to General Motors Corp. Motor vehicle body ventilation systems. 3,301,161, 1–31–67, Cl. 98—2.

Atwood, Jesse R., to William M. Brobeck & Associates. Extended range carbon pile rheostat. 3,302,153, 1–31–67, Cl. 338—112.

Atwood, Theodore, to Allied Chemical Corp. Variable capacity refrigeration system 3,300,996, 1–31–67, Cl. 62—117.

Aubert, Jacques, to Societe Nationale D'Etude et de Construction de, Moteurs D'Aviation. Apparatus for controlling the afterburner load of a jet engine according to the jet pipe aperture. 3,300,979. 1–31–67, Cl. 60—237.

Aubin, Jean-Paul R., to General Aniline & Film Corp. Liquid developer tray and feed assembly. 3,301,160, 1–31–67, Cl. 95—95.

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Avco Corp.: *See*—
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Koenig, Karl-Heinz, Datow, Pommer, Jung, and Scholz. 3,301,902.
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Baermann, Walter P., A. V. Cooke, and E. A. Peterson, to Medical Supply Co. Sheath package. 3,301,394, 1–31–67, Cl. 206—63.2.

Bagby, Lewis B., to E. I. du Pont de Nemours and Co. Yarn package. 3,301,506, 1–31–67, Cl. 242—166.

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Banks, Waldo H., and L. P. Authier, Yarn control mechanism. 3,300,960, 1–31–67, Cl. 57—953.

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Barr, David J., to Her Majesty's Postmaster General. Resilient wheels. 3,300,835, 1–31–67, Cl. 29—121.

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Brundage, Walter L., Jr., to United States of America, Navy. Barophilic bacteria sampler. 3,301,067, 1-31-67, Cl. 73—425.4.

Brundin, Bjorn, to Lucentia, Ekman & Brundin. Furnace for combustion of solid fuels. 3,301,202, 1-31-67, Cl. 110—38.
Bruno, Anthony I. Cyclonic elevator. 3,301,606, 1-31-67, Cl. 302—58.
Bruno, Edward C. Display device. 3,301,516, 1-31-67, Cl. 248—176.
Brunson, Virgil A., to Dover Corp. Vane-type rotary pump. 3,301,194, 1-31-67, Cl. 103—136.
Brunswick Corp.: *See*—
Rogers, Albert P. 3,301,557.
Satchell, Fred E., and Jolitz. 3,301,560.
Brush Beryllium Co., The: *See*—
Theodore, John G., and Bielawski. 3,301,689.
Bruun, Bjorn A. Z. Sinter-molding process. 3,301,929, 1-31-67, Cl. 264—126.
Bryant Chucking Grinder Co.: *See*—
Barden, Donald M. 3,300,969.
Bryant, Robert W., and B. H. Newman. Manufacture of rocket motors. 3,301,924, 1-31-67, Cl. 264—3.
Brynjolfsson, Wilfred, and W. H. Bartlett, to Dur-O-Wal National Inc. Combination adjustable tie and joint reinforcement for wall constructions. 3,300,939, 1-31-67, Cl. 52—713.
Bubash, George R. Vaporizable biocidel compositions. 3,301,752, 1-31-67, Cl. 167—39.
Buchel, Baptist, to Bendix Balzers Vacuum, Inc. Oil sealed mechanical rotary vacuum pump. 3,301,474, 1-31-67, Cl. 230—205.
Buchroeder, Richard A., and G. F. Ziegler, to Bausch & Lomb Inc. Triplet type of symmetrical copying lens. 3,301,130, 1-31-67, Cl. 350—227.
Buffalo Brake Beam Co.: *See*—
Goods, Edward G. 3,301,353.
Bullen, Clark V., to Barber-Colman Co. Ramp program control system. 3,301,482, 1-31-67, Cl. 236—46.
Buns, Rolf. Gas burners. 3,301,312, 1-31-67, Cl. 158—116.
Burgess, Robin H., to Imperial Chemical Industries Ltd. Solid olefine polymer compositions stabilized with a benzophenone and a sulfur compound. 3,301,816, 1-31-67, Cl. 260—45.95.
Burgin, Kermit H. Track laying cultivator fender. 3,301,332, 1-31-67, Cl. 172—309.
Burke, John A. Anglecock. 3,301,271, 1-31-67, Cl. 137—315.
Burleigh, John E., and C. A. Uraneck, to Phillips Petroleum Co. Sulfonyl and phosphonyl azides as polymerization initiators. 3,301,841, 1-31-67, Cl. 260—94.4.
Burley, Billy, to Johnson Service Co. Staging network. 3,302,070, 1-31-67, Cl. 317—137.
Burlington Industries, Inc.: *See*—
Mason, Walter E., and McNutt. 3,301,026.
Burnier, Pierre, and J. Bonmarin, to Compagnie Pechiney de Produits Chimiques et Electrometallurgiques. Liquid nitrogen cooled beryllium superconductor. 3,301,937, 1-31-67, Cl. 174—15.
Burr, William T., to Fine-Blanking Ltd. Lock nuts. 3,301,297, 131-67, Cl. 151—15.
Burroughs Corp.: *See*—
Bennett, James R., and Orr. 3,302,183.
Campion, Jacques. 3,301,361.
Lynch, John T., and Wolff. 3,302,182.
Rayfield, Harry F. 3,302,090.
Busch, Richard E.: *See*—
Clary, John G., and Busch. 3,301,479.
Buschbeck, Werner, and A. Ruhrmann, to Telefunken Patentverwertungs-G.m.b.H. Circuit. 3,302,133, 1-31-67, Cl. 333—8.
Buschbom, Floyd E., to Vandale Corp. Closure structure for silo unloader collector arm. 3,301,412, 1-31-67, Cl. 214—17.
Busse, Claus A.: *See*—
Grover, George M., Busse, and Bohdansky. 3,302,042.
Bussell, Jack D., W. P. Dickens, and F. N. Eidsvoog, to Hart-Carter Co. Grain dryer. 3,300,873, 1-31-67, Cl. 34—168.
Butcher, Harold J., and F. H. Pitts, to Communications Patents Ltd. Flight training apparatus. 3,300,878, 1-31-67, Cl. 35—12.
Butler, Carroll W.: *See*—
Donaldson, William E., Butler, Whitman, and Porter. 3,301,187.
Buyer, Karl, to Hellmann & Littmann Bau-Aktiengesellschaft. Anchor assembly for prestressed concrete structures. 3,300,922, 1-31-67, Cl. 52—230.
Bylund, Linton D.: *See*—
Fritzlen, Thomas L., and Bylund. 3,301,029.
Byrer, Thomas G.: *See*—
King, Burnham W., Jr., Byrer, and Hedden. 3,301,711.
CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Lapierre, Marcel. 3,301,070.
Weill, Henri. 3,300,842.
Cabbage, John T., to Phillips Petroleum Co. Fractional distillation. 3,301,778, 1-31-67, Cl. 208—355.
Cafiero, Vincent J., to Art Metal Inc. Drawer pull and label holder. 3,300,887, 1-31-67, Cl. 40—325.
Cairatti, Anthony E.: *See*—
Schafroth, Werner, and Cairatti. 3,301,456.
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Caldwell, Walter C., Jr.: *See*—
Bennett, John D., and Caldwell. 3,301,364.
Cale, Albert D., Jr.: *See*—
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Lunsford, Carl D., and Cale. 3,301,758.
Lunsford, Carl D., and Cale. 3,301,759.
Cambridge Thermionic Corp.: *See*—
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Lyman, Frank, Jr. 3,302,150.
Camp, Raymond H., and A. S. Pratt, to Xerox Corp. Sensing device for detecting a sheet on a transport or drum. 3,301,975, 1-31-67, Cl. 200—61.41.
Campagna, Michael, to Marbill Co. Casual type shoe with heel-supporting wedge. 3,300,880, 1-31-67, Cl. 36—2.5.
Campbell, Robert H., and S. G. Belak, to Sun Oil Co. Method of reducing caking tendency of urea-paraffin wax fertilizer. 3,301,656, 1-31-67, Cl. 71—28.
Campion, Francis E., to Esso Production Research Co. Well simulation. 3,301,328, 1-31-67, Cl. 166—42.
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Campion, Jacques, to Burroughs Corp. Indexing mechanism. 3,301,361, 1-31-67, Cl. 192—22.
Canada, Her Majesty the Queen in right of, as represented by the Minister of National Defence: *See*—
Henderson, Ian H. S. 3,302,091.
Canada Iron Foundries, Ltd.: *See*—
Semenchuk, William F. 3,301,997.
Candelise, Alfred, to General Motors Corp. Ignition timing device. 3,301,242, 1-31-67, Cl. 123—117.
Canadian General Electric Co., Ltd.: *See*—
Ulig, Mehmet E. 3,302,125.
Canadian Refractories Ltd.: *See*—
Rigby, George R. 3,301,690.
Cannon, Peter, and E. T. Conlin II, to General Electric Co. Superconducting composite articles. 3,301,643, 1-31-67, Cl. 29—195.
Carbonaro, Antonio: *See*—
Natta, Giulio, Porri, Carbonaro, and Stoppa. 3,301,839.
Card, Roy T., to The Singer Co. Tufting machine with laterally shifting needle plate. 3,301,205, 1-31-67, Cl. 112—79.
Carder, Bruce M., to Edgerton, Germeshausen & Grier, Inc. Seismic survey system. 3,301,345, 1-31-67, Cl. 181—.5.
Cariati, Vittorio, M. Massi Mauri, and A. DiCio', to Snam S.p.A. Method for purifying aqueous solutions of methylbutinol through removal of its acetone contents. 3,301,771, 1-31-67, Cl. 203—69.
Carle, Joseph T., to Borg-Warner Corp. Centrifugal gas separator. 3,300,950, 1-31-67, Cl. 55—199.
Carlodge Corp.: *See*—
McGregor, Donald T. 3,301,354.
Carlson, Arthur W., to Velsicol Chemical Corp. Composition and method for controlling crabgrass. 3,301,653, 1-31-67, Cl. 71—2.3.
Carlsson, Svenning N.: *See*—
Nycander, Oscar B. O., and Carlsson. 3,301,680.
Carmack, Tom. Convertible table. 3,300,791, 1-31-67, Cl. 5—3.
Carman, Frank C., and L. Johnson. Stringed musical instruments with piezoelectric transducers. 3,301,936, 1-31-67, Cl. 84—1.16.
Carnation Co.: *See*—
Loo, Ching C. 3,301,682.
Carnevale, Edmund H.: *See*—
Lynnworth, Lawrence C., and Carnevale. 3,302,044.
Carney, Richard R., to Union Carbide Corp. Thermal reset liquid level control system for the liquefaction of low boiling gases. 3,300,991, 1-31-67, Cl. 62—9.
Carney, Richard R. Thermal reset liquid level control system for the liquefaction of low boiling gases. 3,301,110, 1-31-67, Cl. 62—9.
Carpigiani, Poerio, to APAW S.A. Multi-piston cock adapted for the simultaneous dosing of a plurality of different-flavored ices, or the like. 3,301,440, 1-31-67, Cl. 222—137.
Carrier Corp.: *See*—
Eisberg, Keith V. 3,301,005.
McGrath, William L. 3,300,995.
McGrath, William L. 3,301,002.
Carter, Eugene H., to Hoerner Boxes, Inc. Display container and carrier. 3,301,386, 1-31-67, Cl. 206—1.
Carter's Ink Co., The: *See*—
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Cassano, James R., and L. H. P. Turner, to Xerox Corp. Sheet feed mechanism. 3,301,551, 1-31-67, Cl. 271—62.
Caterpillar Tractor Co.: *See*—
Cole, Carroll R., and Medley. 3,301,359.
Loyd, Calvin D. 3,301,120.
Caughlin, Dan, to Texonia Industries Inc. Variable speed transmission unit. 3,301,077, 1-31-67, Cl. 74—230.17.
Cave, Eric F., to Radio Corp. of America. Method of making composite insulator-semiconductor wafer. 3,300,832, 1-31-67, Cl. 29—25.3.
Caywood, William P., Jr.: *See*—
Welch, Leo M., Jr., and Caywood. 3,301,053.
Celanese Coatings: *See*—
Price, Herbert P. 3,301,920.
Cenci, Harry J., and L. C. Souder, to Rohm & Haas Co. Blend of particulated polyvinyl chloride and a terpolymer of methyl methacrylate, ethyl acrylate, and glycidyl acrylate. 3,301,919, 1-31-67, Cl. 260—836.
Cenko, John, to Ford Motor Co. Fluid pressure operated clutch and vent valve assembly. 3,301,142, 1-31-67, Cl. 92—172.
Central Soya Co., Inc.: *See*—
Davis, Paul F. 3,301,881.
Centre de Recherches de Pont-A Mousson: *See*—
Vigneron, Pierre P. C. 3,301,576.
Cerych, John Z., and W. Etter, to P. R. Mallory & Co. Capacitor with spacers between electrodes filled with electrolyte and method for making same. 3,302,075, 1-31-67, Cl. 317—230.
Chadwick, Alexander, to Chrysler Corp. Control mechanism for adjustable gas turbine nozzle. 3,300,966, 1-31-67, Cl. 60—39.16.

Chaplin, Edward S., and D. E. Hanson, to Metal Bellows Corp. Flexible torque coupling. 3,301,007, 1–31–67, Cl. 64—15.

Chamberlain Corp.: *See*—
Orser, Lawrence D. 3,301,534.

Chamberlain, John, to United Aircraft Corp. Stacked-wafer turbine vane or blade. 3,301,526, 1–31–67, Cl. 253—39.1.

Chambers, Bynom L., to Bell Industries, Inc. Mechanism for forming a scallop fringe. 3,301,204, 1–31–67, Cl. 112—64.

Charbonnages De France: *See*—
DeChaumont, Jean. 3,302,129.

Chatleff Controls, Inc.: *See*—
Shurtleff, O. O. 3,301,469.

Chemetron Corp.: *See*—
Meunier, Henry E. J. M. 3,301,754.

Chemical Construction Corp.: *See*—
Cook, Lucien H. 3,301,897.

Cheney, Lee C., and W. J. Gottstein, to Bristol-Myers Co. Cinchoninic acids and use in process for quinolinols. 3,301,859, 1–31–67, Cl. 260—287.

Cheney, Lee C.: *See*—
Gottstein, William J., and Cheney. 3,301,849.

Chernak, John A., and G. T. Delly, to Tomlinson Industries, Inc. Flanged seat cup valve member with retention means. 3,301,525, 1–31–67, Cl. 251—331.

Cherry, Jesse T.: *See*—
Waters, Kenneth H., and Cherry. 3,302,164.

Chevron Research Co.: *See*—
Anderson, Donald J. 3,301,784.

Chicago Pneumatic Tool Co.: *See*—
Coulter, John B., Jr. 3,301,009.

Chiddix, Max E., D. I. Randall, and W. Schmidt-Nickels, to General Aniline & Film Corp. Dyestuffs containing chloromethyl or bromomethyl groups. 3,301,846, 1–31–67, Cl. 260—163.

Chisholm, Douglas S., to The Dow Chemical Co. Method for producing coated articles. 3,301,932, 1–31–67, Cl. 264—174.

Chisholm, Roy D., to General Electric Co. Safety control mechanism for high temperature oven. 3,301,999, 1–31–67, Cl. 219—393.

Chisso Corp.: *See*—
Kawasaki, Shigeo, Yusa, and Shinkai. 3,301,909.

Chiyoda Kako Kensetsu Kabushiki Kaisha: *See*—
Hirata, Hiroshi. 3,300,986.

Chrisp, Joseph D., to E. I. du Pont de Nemours and Co. Gelled compositions containing galactomannan guns. 3,301,723, 1–31–67, Cl. 149—20.

Christensen, Frank L., to Tempress Research Co. Electric wire junction. 3,301,941, 1–31–67, Cl. 174—88.

Christensen, Orland M.: *See*—
Thomassen, Erling A. 3,300,890.

Christman, Donald L., to Hercules Inc. Polymerization of olefins. 3,301,834, 1–31–67, Cl. 260—80.5.

Chrysler Corp.: *See*—
Chadwick, Alexander. 3,300,966.
De Claire, Gerald. 3,301,613.
Lamb, Ernest P. 3,301,593.

Chupp, John P., to Monsanto Co. O-aryl alkylphosphonothioates. 3,301,922, 1–31–67, Cl. 260—940.

Church, Edgar H., Jr.: *See*—
Helmaster, John W., and Church. 3,301,602.

Ciba Corp.: *See*—
Blatter, Herbert M. 3,301,855.
Mull, Robert P. 3,301,755.
Wettstein, Albert, Anner, Wieland, and Heusler. 3,301,879.

Ciottl, Jon A.: *See*—
Schwabe, William E., and Ciottl. 3,301,061.

Clancy, John V., and J. F. Kearns, to United States Steel Corp. Feeding mechanism and value use therein. 3,301,443, 1–31–67, Cl. 222—380.

Clapham, Wentworth B., to American Machine & Foundry Co. Selectively actuated ball path indicator. 3,301,558, 1–31–67, Cl. 273—51.

Clapp, John M., to Ingersoll-Rand Co. Apparatus for supplying fastener shaped parts. 3,301,284, 1–31–67, Cl. 144—32.

Clar, Milton, to Disposal Systems Development, Inc. Compaction container with material deflector. 3,301,414, 1–31–67, Cl. 214—41.

Clark, Dennis E.: *See*—
Barton, Derek H. R., Hems, Walker, Ritchie, Meredith Nolton, Clark, and Webb. 3,301,858.

Clark, George W. Mailbox. 3,301,475, 1–31–67, Cl. 232—33.

Clarke, Michael E., to The British Oxygen Co. Ltd. Combined compressor and expansion engine. 3,301,471, 1–31–67, Cl. 230—54.

Clarke, Ray A., to E. I. du Pont de Nemours and Co. Dioxoindanyl-quinolyl-benzothiazole compounds. 3,301,860, 1–31–67, Cl. 260—288.

Clarke, Robert L., to Sterling Drug Inc. Esters of 2-benzyl-3-piperidinol. 3,301,865, 1–31–67, Cl. 260—294.3.

Clary, John G., and R. E. Busch, to Addmaster Corp. Cash register drawer construction. 3,301,479, 1–31–67, Cl. 235—22.

Clay, David L., to The General Electric Co. Ltd. Remote monitoring and control system with all control and monitoring tones generated at control station. 3,302,113, 1–31–67, Cl. 325—2.

Clayton, William A., and G. B. Kortz, to Harvey Aluminum Inc. Vehicle-supporting matting and plank therefor. 3,301,147, 1–31–67, Cl. 94—13.

Clements, Clarence J., Jr., to Prototypes, Inc. Telephone amplifier. 3,301,955, 1–31–67, Cl. 179—1.

Cleveland Technical Center, Inc.: *See*—
Shackson, Richard H. 3,301,500.

Clevite Corp.: *See*—
Fisher, William F., and Slater. 3,300,837.
Slater, Raymond L., and Fisher. 3,300,836.
Slater, Raymond L., and Fisher. 3,300,838.
Koeblitz, William E., and Thompson. 3,302,212.

Cline, Eugene W. Drag saw. 3,301,285, 1–31–67, Cl. 144—34.

Close, Keith E.: *See*—
Allen, Terry S., Close, Lidia, and Sirrine. 3,301,074.

Close, Patrick B.: *See*—
Holloran, Thomas P., and Close. 3,302,176.

Closs, George M.: *See*—
Dougherty, Patrick F., and Closs. 3,300,983.

Clupak, Inc.: *See*—
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Coffer, Henry F.: *See*—
Shock, D'Arcy A., Woods, and Coffer. 3,302,206.

Coghill, James T., to The Black Clawson Co. Paper machinery coating doctor blade backs. 3,301,214, 1–31–67, Cl. 118—126.

Cohn, Charles C., to S. L. and C. C. Cohn, copartners trading and d.b.a. Colonial Alloys. Chemical brightening of aluminum. 3,301,787, 1–31–67, Cl. 252—79.4.

Cohn, Samuel L.: *See*—
Cohn, Charles C. 3,301,787.

Colburn, Richard R.: *See*—
Greenway, Fred H. 3,301,605.

Cole, Carrol R., and J. C. Medley, to Caterpillar Tractor Co. Braking apparatus. 3,301,359, 1–31–67, Cl. 192—4.

Coleman Co., Inc., The: *See*—
McKinney, William S. 3,301,001.

Collett & Co. A/S: *See*—
Baalsrud, Gunnar. 3,301,068.

Collier, Frank: *See*—
Smylie, Robert E., Samonski, and Collier. 3,300,940.

Collins, Frank M., and J. R. Hipperson, deceased; (by N. M. Hipperson, administratrix), to Field Emission Corp. High voltage coaxial switch and associated apparatus. 3,301,983, 1–31–67, Cl. 200—153.

Collins, Michael D., and F. R. Johnson. Cam operated braking system. 3,301,607, 1–31–67, Cl. 303—10.

Collins Radio Co.: *See*—
Smith, Dale A., and Truesdell. 3,302,117.

Colt's Inc.: *See*—
Sturtevant, Foster E. 3,301,133.

Columbia Broadcasting System, Inc.: *See*—
Bachman, William S. 3,301,565.

Columbian Carbon Co.: *See*—
De Land, Charles L. 3,301,639.

Combustion Engineering, Inc.: *See*—
Ambrose, Alwin W. 3,301,224.
Svendsen, Konrad S. 3,301,226.

Comer, Marvin H.: *See*—
Bird, Joseph J., and Comer. 3,301,017.

Communications Patents Ltd.: *See*—
Butcher, Harold J., and Pitts. 3,300,878.

Commissariat a l Energie Atomique: *See*—
Eyraud, Charles, Eyraud, Gayral, Gilles, and Massignon. 3,301,042.

Compagnie des Ateliers et Forges de la Loire, (St Chamond-Firming-St Etienne-Jacob-Holtzer: *See*—
Berger, Pierre A. 3,300,811.

Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie: *See*—
Travers, Georges L. 3,301,303.

Compagnie Generale de Telegraphie Sans Fil: *See*—
Courtan, Bernard. 3,302,054.

Conlin, Edward T.: *See*—
Cannon, Peter, and Conlin. 3,301,043.

Connor, Jesse R., Jr.: *See*—
Ames, Stuart L., Malagari, and Connor. 3,301,702.

Continental Can Co., Inc.: *See*—
Novak, James B. 3,301,432.
Rau, Blase C., and Jasper. 3,301,431.
Stoeckhert, Klaus. 3,301,935.

Continental Gummi-Werke, Aktiengesellschaft: *See*—
Ochner, Paul. 3,300,816.

Continental Oil Co.: *See*—
Britton, Philip S., and Fochler. 3,301,734.
Shock, D'Arcy A., Woods, and Coffer. 3,302,206.
Waters, Kenneth H., and Cherry. 3,302,164.

Contraves AG: *See*—
Stutz, Theo. 3,302,009.

Cook, Charles W.: *See*—
Doud, Wilbur O., and Cook. 3,301,382.

Cook, George W., to Thiokol Chemical Corp. Method and apparatus for gage simulation in automatic control systems. 3,301,510, 1–31–67, Cl. 244—77.

Cook, Lucien H., to Chemical Construction Corp. Process for urea synthesis. 3,301,897, 1–31–67, Cl. 260—555.

Cooke, Armand V.: *See*—
Baermann, Walter P., Cooke, and Peterson. 3,301,394.

Cooper, Melvin D., and J. C. Gorman, ¼ to C. A. Brizius, and ¼ to R. J. Victor. Method for producing contact lens. 3,300,909, 1–31–67, Cl. 51—284.

Cope, Lawrence H., to United Kingdom Atomic Energy Authority. Stainless steel alloys for nuclear reactor fuel elements. 3,301,668, 1–31–67, Cl. 75—128.

Copithorne, Alton R.: *See*—
Pelletier, Raymond T., and Copithorne. 3,300,799.

Copland, George V., to Halliburton Co. Apparatus for the location of axial and radial discontinuities in tubing using a rotating detector inclined to the tubing axis. 3,302,104, 1–31–67, Cl. 324—37.

Coplin, John F., to Rolls-Royce Ltd. Combined guide vane and combustion equipment for bypass gas turbine engines. 3,300,976, 1–31–67, Cl. 60—224.

Coppeta, Leonard T., to The Carter's Ink Co. Mark resistant coating. 3,300,879, 1–31–67, Cl. 35—48.1.

Coppick, Sydney, and R. Brown, to Scott Paper Co. Pulp processing method for mixed cellulosic materials. 3,301,745 1–31–67, Cl. 162—55.

Cornelissen, Bernardus H. J., and H. Breimer, to North American Philips Co., Inc. Circuit arrangement for use in a colour television receiver. 3,301,944, 1–31–67, Cl. 178—5.4.

Cornelius, Richard T., to The Cornelius Co. Integrally molded plastic cover and hinge. 3,301,430, 1–31–67, Cl. 220—31.

Cornelius Co., The: *See*—
Cornelius, Richard T. 3,301,430.

Cornell Aeronautical Laboratory, Inc.: *See*—
Haas, Frederick C. 3,301,059.

Cornell, Archie R.: *See*—
Hanson, Richard E., and Cornell. 3,302,017.

Cornell Mfg. Co.: *See*—
Warren, Clinton C. 3,301,191.

Corning Glass Works: *See*—
Marusak, Francis J. 3,301,649.
Frazier, John F. 3,302,001.

Coroga Co.: *See*—
Davy, Robert E. 3,301,687.

Corras, Alfred J.: *See*—
Berger, Leo, Corras, and Lee. 3,301,857.

Corsiglia, Richard J. Apparatus for installing electrical wire in electrical conduit. 3,301,531, 1–31–67, Cl. 254—134.4.

Corson, William E. Laminated vehicle wheel chock. 3,301,352, 1–31–67, Cl. 188—32.

Cosentino, Louis S., and C. M. Wine, to Radio Corp. of America. Trigger circuit employing a transistor having a negative resistance element in the emitter circuit thereof. 3,302,036, 1–31–67, Cl. 307—88.5.

Cotton, Curran D.: *See*—
Bergeson, Richard P., and Cotton. 3,300,869.

Coulter, John B., Jr., to Chicago Pneumatic Tool Co. Rotary shock absorbing sub unit. 3,301,009, 1–31–67, Cl. 64—23.

County Commercial Cars Ltd.: *See*—
Tapp, Geoffrey E. E., and Davey. 3,301,572.

Cross Co., The: *See*—
Proctor, Robert W. 3,301,374.

Coursey, Ralph W. High speed high capacity mechanical parking system. 3,301,413, 1–31–67, Cl. 214—16.1.

Courtan, Bernard, to Compagnie Generale de Telegraphie Sans Fil. Direct viewing storage tube having inclined flood gun and virtual cathode. 3,302,054, 1–31–67, Cl. 315—12.

Covert, Calvin C., to General Motors Corp. Propeller oil level control. 3,301,330, 1–31–67, Cl. 170—160.23.

Cowell, Thomas E.: *See*—
Hoffman, Mark I., and Cowell. 3,300,977.

Cowley, Calvin C., to Pharmaseal Laboratories. Hypodermic syringe having improved needle hub retaining sleeve means. 3,301,256, 1–31–67, Cl. 128—218.

Cox, Andrew P., Jr., R. H. Sapp, and J. Abruzzo, to United States of America, Navy. Flexible logic circuits for buffer memory. 3,302,185, 1–31–67, Cl. 340—172.5.

Cox, Bradley G., to Baker Perkins Inc. Hydraulic system for reciprocating a rotating shaft. 3,301,138, 1–31–67, Cl. 91—221.

Cox, Eugene F.: *See*—
Hostettler, Fritz, and Cox. 3,301,824.
Hostettler, Fritz, and Cox. 3,301,825.

Coy, Merle D., to Borg-Warner Corp. Transmission controls. 3,301,092, 1–31–67, Cl. 74—645.

Craig, Orlyn W., to Sperry Rand Corp. Solid state overload protection means for power circuits. 3,302,062, 1–31–67, Cl. 317—22.

Craine, John C., to Advertising Metal Display Co. Shelf construction. 3,301,408, 1–31–67, Cl. 211—184.

Cramer, Robert H., A. F. Houser, and K. I. Jagel, Jr., to Mobil Oil Corp. Process for manufacturing improved catalytic particles. 3,301,794, 1–31–67, Cl. 252—448.

Crosby, Cedric W.: *See*—
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Cryer, John, to The Sherwin-Williams Co. Purification of meta nitro para toluidine. 3,301,904, 1–31–67, Cl. 260—682.

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Cussons, Richard C., and D. Dewar, to Dunlop Rubber Co. Ltd. Cooling means for wheel and brake assembly. 3,301,357, 1–31–67, Cl. 188—264.

Cuta, Robert J., to Research Products Corp. Air filter having ductile metal frame with integral lock. 3,300,952, 1–31–67, Cl. 55—491.

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Dahms, Ronald H., E. E. Hardy, and D. A. Popielski, to Monsanto Co. Process for incorporating a liquid additive into a solid thermoplastic polymer. 3,301,813, 1–31–67, Cl. 260—34.2.

Daido Seiko Kabushiki Kaisha, and Ishikawajima-Harima Jukogyo Kabushiki Kaisha: *See*—
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Dalgliah, James J., and E. W. Lager. Compass and inclinometer. 3,300,866, 1–31–67 Cl. 33—205.5.

Dalibor, Horst, to Reichhold Chemicals, Inc. Process comprising reacting copolymers with an aldehyde and alkylene oxide. 3,301,822, 1–31–67, Cl. 260—72.

Dalton, Richard L., to E. I. du Pont de Nemours and Co. Method for the control of undesirable vegetation. 3,301,654, 1–31–67, Cl. 71—2.5.

D'Amico, John J., to Monsanto Co. Nitrosopiperasinothioazoles. 3,301,832, 1–31–67, Cl. 260—79.5.

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De Chaumont, Jean, to Charbonnages de France. Variable-frequency generator with three feedback controls. 3,302,129, 1–31–67, Cl. 331—110.

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Deming, Burr G., to The Superior Electric Co. Plural transformer electric load control circuit. 3,302,030, 1–31–67, Cl. 307—17.

Demirel, Turgut, to Iowa State University Research Foundation, Inc. Acid-treated corn cob construction material and method of producing same. 3,301,800, 1–31–67, Cl. 260—17.4.

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Dotto, Gianni A., to P. R. Mallory & Co., Inc. Vibrator motor with stepped rotary output. 3,302,045, 1–31–67, Cl. 310—37.

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Maloney, Daniel E. 3,301,700.
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Durham, Harry G., H. Y. Fan, and M. M. Turner, to Shell Oil Co. 3-(2-cyanoalkyl) rhodanine as a soil fungicide. 3,301,751, 1–31–67, Cl. 167—33.

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Pirrie, Norman D., and Bland. 3,301,600.

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Fauser, Donald L., and E. R. Kolb, to Harris-Intertype Corp. Method and apparatus for simultaneously developing and fixing electrostatically formed images. 3,301,698, 1–31–67, Cl. 117—37.

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Fister, Aloysius J., to McGraw-Edison Co. Fuse protectors for electric circuits having improved terminal means forming a sealed enclosure. 3,301,979, 1–31–67, Cl. 200—120.

Fitch, Frederick T., and A. B. Braun, to W. R. Grace & Co. Metal oxide-carbon organosol process and product. 3,301,790, 1–31–67, Cl. 252—301.1.

Fitch, Murrie M. Traveller's hand kit. 3,301,295, 1–31–67, Cl. 150—34.

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Flaschen, Steward S., and R. J. Gnaedinger, Jr., to Motorola, Inc. Process of forming an inorganic glass coating on semiconductor devices. 3,301,706, 1–31–67, Cl. 117—201.

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Fleming, Edgar R. Automatic milk transfer assembly. 3,301,216, 1–31–67, Cl. 119—14.08.

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Foster, Harry R., and E. E. Crump, to Ohrmeaa Laboratories. Manually adjustable dial index member. 3,301,212, 1–31–67, Cl. 116—124.

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Fraley, Melvin L., and C. K. Brown, to AMP Inc. Fluid switch having deformable envelope and closure means of matched configuration. 3,301,982, 1–31–67, Cl. 200—152.

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Franklin, William J., and N. C. Martin, to United States of America, National Aeronautics and Space Administration. Portable alignment tool. 3,300,847, 1–31–67, Cl. 29—271.

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Free, William R., to Sperry Rand Corp. Signal plus noise to noise measuring equipment. 3,302,116, 1–31–67, Cl. 325—363.

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Fuller, Harry C., to United States of America, Interior. Process for decomposing manganese sulfate to form manganous oxide and sulfur dioxide. 3,301,634, 1–31–67, Cl. 23—145.

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Fullman, Carl H., to United States of America, Air Force. Laser initiated rocket type igniter. 3,300,968, 1–31–67, Cl. 60—39.82.

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Gebel, Radames K. H., to United States of America, Air Force. Interference photocathode sensitive to multiple bands. 3,301,705, 1–31–67, Cl. 117—217.

Gebel, Radames K. H., to United States of America, Air Force. Modulated light source for electro-optical analysis of spectral lines. 3,301,950, 1–31–67, Cl. 178—7.2.

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Geisel, Herbert, and L. Springob, to Deutsche Edelstahlwerke Aktiengesellschaft and Allgemeine Elektricitats-Gesellschaft. Inductor for heating the ends of elongated stock. 3,301,991, 1–31–67, Cl. 219—10.79.

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Current, Ira B. 3,301,159.
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General Electric Co.: *See*—
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Germond, Paul J., and K. L. Mayer, to Bell Telephone Laboratories, Inc. Unattended automatic dialing of telephone numbers. 3,301,957, 1–31–67, Cl. 179—3.
Gerrard, John E., and J. Percival. Thermocouple for multiple burner combustion control. 3,301,715, 1–31–67, Cl. 136—222.
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Giarraffa, Frank, and J. L. Most. Pressing iron having starch dispensing means. 3,300,884, 1–31–67, Cl. 38—78.
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Glass, Marvin I., A. T. Janiszewski, and D. E. Verbickas, to Marvin Glass & Associates. Construction toy amusement device. 3,300,891, 1–31–67, Cl. 46—17.
Glass, Marvin I., H. Disko, and H. Stan, to Marvin Glass & Associates. Self-propelled toy boat. 3,300,894, 1–31–67, Cl. 46—244.
Glasser, Ernest C., to Sun-Pak Products, Inc. Flameless heater, heating assembly and heating kit. 3,301,250, 1–31–67, Cl. 126—263.
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Goldberg, Albert I., and V. Jasinski, to National Starch and Chemical Corp. N-methylol acrylamide-vinyl acetate copolymer emulsions containing polyvinyl alcohol. 3,301,809, 1–31–67, Cl. 260—29.6.
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Goldberg, Morris. 3,301,502.
Goldberg, Morris, to Goldberg Bros., Inc. Automatic threading film reel. 3,301,501, 1–31–67, Cl. 242—74.
Goldberg, Morris, to Goldberg Bros., Inc. Automatic threading film reel. 3,301,502, 1–31–67, Cl. 242—74.
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Gondek, John T., to Oil-Dyne, Inc. Foot operated hydraulic pump. 3,301,190, 1–31–67, Cl. 103—42.
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Goodrich, Hunter C., to Radio Corp. of America. Pulse forming circuit for horizontal deflection output transistor. 3,302,033, 1–31–67, Cl. 307—88.5.
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Green, Kenneth W., and H. Raby, to Westland Aircraft Ltd. Trace reading devices. 3,302,194, 1–31–67, Cl. 340—347.
Greene, Harold R., to Electronic Associates Inc. Transmission system. 3,302,035, 1–31–67, Cl. 307—88.5.
Greenway, Fred H., to R. R. Colburn. Feeding and pneumatically conveying concrete materials. 3,301,605, 1–31–67, Cl. 302—49.
Gregory, Robert B., and W. S. McCormick, to NRM Corp. Extruder. 3,300,810, 1–31–67, Cl. 18—12.
Greitzer, Meyer. Water faucet handle. 3,301,580, 1–31–67, Cl. 287—53.
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Gruber, Wilhelm, to Rohm & Haas G.m.b.H. Preparation of bis-cyanformimide esters. 3,301,883, 1–31–67, Cl. 260—453.
Grundig Elektro-Mechanische Versuchsanstalt: *See*—
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Guyer, Reynolds, to Waldorf Paper Products Co. Swab packages. 3,301,391, 1–31–67, Cl. 206—56.
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Haas, Frederick C., to Cornell Aeronautical Laboratory, Inc. Apparatus for determining enthalpy of high temperature gas. 3,301,059, 1–31–67, Cl. 73—339.
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Haggard, Richard A., and E. F. Bares, to Big Dutchman, Inc. Live-bottom bin and chain feed system. 3,301,218, 1–31–67, Cl. 119—52.
Haggstrom, Walter R. G., to Independent Lock Co. Clamp for key cutter. 3,301,549, 1–31–67, Cl. 269—153.
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Haken, Pieter T., to Shell Oil Co. Organophosphorus compounds. 3,301,873, 1–31–67, Cl. 260—332.1.
Hall, Robert E., to The Dow Chemical Co. Secondary waste water treatment apparatus. 3,301,401, 1–31–67, Cl. 210—150.
Hall, Thomas A., to The Youngstown Sheet and Tube Co. Apparatus for and method of production of steel. 3,301,664, 1–31–67, Cl. 75—60.
Halleck, Frank E., to The Pillsbury Co. Polysaccharides and methods for production thereof. 3,301,848, 1–31–67, Cl. 260—209.
Hallene, Alan M., J. J. Drexler, and H. J. Holuba, to Montgomery Elevator Co. Door operating control for automatic elevators. 3,301,350, 1–31–67, Cl. 187—52.
Halley, Angus M., to James Halley & Sons Ltd. Intermittent drive mechanisms for a printing machine web feed roll. 3,301,076, 1–31–67, Cl. 74—125.5.
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Halley, Angus M. 3,301,076.
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Halverson, Gordon H. Phonograph record carrier. 3,301,451, 1–31–67, Cl. 224—45.
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Hansen, Kenneth W., and F. P. Shonkwiler, to Harbison-Walker Refractories Co. Furnace construction. 3,301,546, 1–31–67, Cl. 266—43.
Hansen, Robert B., to Motorola, Inc. Color television receiver biasing arrangement. 3,301,943, 1–31–67, Cl. 178—5.4.
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Hanson, Raymond A. Apparatus for feeding and distributing concrete in slipforms. 3,301,150, 1–31–67, Cl. 94—46.
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Hanson, Raymond A., and Roller. 3,301,151.
Hanson, Thomas P., to Uniweld Inc. Debarking drum construction. 3,301,289, 1–31–67, Cl. 144—208.
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Harding, Raymond V. Helmet-lamp combination. 3,302,018, 1–31–67, Cl. 240—60.
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Hardy, Wayne. Operating table accesory extension body support and holder for plural X-ray film cassettes. 3,302,021, 1–31–67, Cl. 250—50.
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Harned, John L., and F. H. Highley, to General Motors Corp. Logic control type anti-skid system. 3,301,608, 1–31–67, Cl. 303—21.
Haro, Francisco A., deceased; G. J. Longo, executor. Cooking grill. 3,301,172, 1–31–67, Cl. 99—446.
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Fauser, Donald L., and Kolb. 3,301,698.
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Haws, Ernest R., and Piper. 3,300,899.
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Hegman, Robert L., and C. L. Weber, to Safegard Corp. Simplified body rest adjustment for coffin. 3,300,829, 1-31-67, Cl. 27—12.
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Heimaster, John W., to Union Carbide Corp. Method of continuous open-pit mining and apparatus therefor. 3,301,599, 1-31-67, Cl. 299—18.
Heimaster, John W., and E. H. Church, Jr., to Union Carbide Corp. Continuous mining and conveying system. 3,301,602, 1-31-67, Cl. 299—64.
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Heiner, Edward A., to Royal Typewriter Co., Inc. Expanding and contracting mandrel. 3,301,108, 1-31-67, Cl. 82—44.
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Heirich, William C. Overhead rod installation assembly for canopies or marquees. 3,300,941, 1-31-67, Cl. 52—721.
Heiter, George L., and W. H. Hewitt, Jr., to Bell Telephone Laboratories, Inc. Latching type nonreciprocal coaxial phase shifter having eccentrically positioned center conductor. 3,302,134, 1-31-67, Cl. 333—24.1.
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Hellmund, Karl-Heinz, to Brown, Boveri & Cie, Aktiengesellschaft. Device for transferring liquid metal. 3,301,545, 1-31-67, Cl. 266—38.
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Hems, Benjamin A.: *See*—
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Hemstock, Glen A., and R. J. Bergmann, to Minerals & Chemicals Philipp Corp. Paper coating clay and method for treating the same. 3,301,691, 1-31-67, Cl. 106—72.
Henderson, Ian H. S., to Her Majesty the Queen in right of Canada as represented by the Minister of National Defence. Coulometric device. 3,302,091, 1-31-67, Cl. 320—48.
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Hendricks, Sidney J., to Prekast Fireplace Mfg. Co. Precast fireplace, methods of manufacture and erection. 3,301,249, 1-31-67, Cl. 126—120.
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Hennessy, James, and G. A. Noddin, to E. I. du Pont de Nemours and Co. Safe-arm mechanism for explosive trains. 3,301,183, 1-31-67, Cl. 102—27.
Henriksen, Elmer C., to Bell & Howell Co. Mechanical focus maintaining apparatus. 3,301,129, 1-31-67, Cl. 88—28.
Henrickson, Charles H., A. J. Danielson, and J. V. Erwin, to Minnesota Mining and Mfg. Co. Adhesive sheet and method of making. 3,301,741, 1-31-67, Cl. 161—119.
Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Heating apparatus for automotive vehicles. 3,301,248, 1-31-67, Cl. 126—110.
Henry, Charles, to Manufacture de Machines du Haut-Rhin. Banded projectiles particularly for small arms. 3,301,186, 1-31-67, Cl. 102—93.
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Collins, Frank M. 3,301,983.
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Hirata, Hiroshi, to Chiyoda Kako Kensetsu Kabushiki Kaisha. Method of constructing storage tank. 3,300,986, 1-31-67, Cl. 61—50.
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Hiss, Hellmut R.: *See*—
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Hiyama, Kazuo. Method of performing work on orchard trees and combination of workmen support platforms for the purpose. 3,301,348, 1-31-67, Cl. 182—131.
Hoashi, Juzaemon, to Thiokol Chemical Corp. Stabilized, concentrated polytetrafluoroethylene dispersions containing non-ionic surfactants. 3,301,807, 1-31-67, Cl. 260—29.6.
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Holmes, Peter D., and R. C. Pitkethly, to The British Petroleum Co. Ltd. Hydrogenation process. 3,301,913, 1-31-67, Cl. 260—677.
Holmqvist, Nils E. F., to Aktiebolaget Addo. Reciprocable type carrier with individually movable type bars. 3,301,178, 1-31-67, Cl. 101—109.

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Horn, Philip R., to General Electric Co. Electrolytic device with casing having a rigid and a resilient seal combination. 3,301,270, 1-31-67, Cl. 317—230.
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Horstman, William L., to Dravco Corp. Method of constructing natural draft cooling tower. 3,300,942, 1-31-67, Cl. 52—742.
Hosokawa, Kenjiro, Y. Kojima, M. Mori, and M. Suzuki, to Kanegafuchi Spinning Co., Ltd. Cationic metal containing 8-hydroxyquinoline azo dyestuffs. 3,301,845, 1-31-67, Cl. 260—146.
Hossain, Shafi U., to Abitibi Power & Paper Co. Ltd. Hardboard having a paper overlay bonded thereto with a drying oil using a boron trifluoride catalyst. 3,301,744, 1-31-67, Cl. 161—246.
Hostettler, Fritz, and E. F. Cox, to Union Carbide Corp. Polymers of cyclic carbonates. 3,301,824, 1-31-67, Cl. 260—77.5.
Hostettler, Fritz, and E. F. Cox, to Union Carbide Corp. Polyester polycarbonate polymers. 3,301,825, 1-31-67, Cl. 260—77.5.
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Hruby, John O., Jr., to Rain Jet Corp. Multiple outlet water discharge head with internal flow distributing baffle. 3,301,490, 1-31-67, Cl. 239—227.
Hubeny, Jerry A. Broken part detector and machine control. 3,301,100, 1-31-67, Cl. 77—5.
Hudson, Robert C., to General Electric Co. Bolt-in connector. 3,302,158, 1-31-67, Cl. 339—22.
Hughes, Alvin W. Frozen meat cutter. 3,301,291, 1-31-67, Cl. 146—123.
Hughes, Herbert D., to Metachemical Machines Ltd. Apparatus for electrochemical machining of metal. 3,301,776, 1-31-67, Cl. 204—224.
Hulls, Leonard R., and R. H. Henderson, to Leeds & Northrup Co. Load control systems using magnetic amplifiers and controlled rectifiers. 3,302,085, 1-31-67, Cl. 318—207.
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Humpherys, Allan S., and J. A. Bondurant, to United States of America, Agriculture. Automatic irrigation gate. 3,300,985, 1-31-67, Cl. 61—25.
Humpherys, Bernarr H., to United States of America, Navy. Single delay line double defruiter. 3,302,197, 1-31-67, Cl. 343—0.5.
Humphlett, Wilbert J., D. L. Johnson, and G. M. Haist, to Eastman Kodak Co. Process for stabilizing photographic images with heat. 3,301,678, 1-31-67, Cl. 96—61.
Hunter, Edward A., C. L. Aldridge, M. M. Lambert, and G. O. Hillard, Jr., to Esso Research and Engineering Co. Isoolefin-multiolefin copolymers through ultrasonic homogenizers. 3,301,810. 1-31-67, Cl. 260—29.7.
Huntington, Morgan G., to Pyrochem Corp. Apparatus for containing hot metal-attacking gases such as hydrogen and hydrogen sulphide under pressure whereby chemical and thermal stresses are separated from hoop stress. 3,301,320, 1-31-67, Cl. 165—134.
Hunyar, Csaba K., and K. J. Balog. Stabilization of vinyl resins with organic quaternary ammonium nitrates. 3,301,815, 1-31-67, Cl. 260—45.9.
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Hwang, Yu-Tang, W. A. Krewer, and W. J. Sandner, to Union Oil Co. of California. Polyalkylated benzenes from ketones. 3,301,912, 1-31-67, Cl. 260—668.
Hyer, Donald R., to General Electric Co. Electromechanical recorder control slidewire providing error signals proportional to deviation of measured variable from set point over entire recorder. 3,302,112, 1-31-67, Cl. 324—99.
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Imperial Machine Corp.: *See*—
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Improved Machinery Inc.: *See*—
Rich, John P. 3,301,027.
Independent Lock Co.: *See*—
Haggstrom, Walter R. G. 3,301,549.
Ingersoll, James E., to The Babcock & Wilcox Co. Tubular fluid heater and support therefor. 3,301,227, 1-31-67, Cl. 122—510.
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Inland Container Corp.: *See*—
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Inoue, Yoshito, to Honda Giken Kogyo Kabushiki Kaisha. Package carrier. 3,301,448, 1-31-67, Cl. 224—32.
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International Standard Electric Corp.: *See*—
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Ipsen, Harold N., deceased, by Illinois National Bank & Trust Co., executor. Heat treating furnace with circulated gas quench. 3,301,541, 1-31-67, Cl. 266—5.
Iskenderian, Edward. Non-rotating roller tappet 3,301,241, 1-31-67, Cl. 123—90.
Isaac, Peter. Reelable structural members. 3,300,910, 1-31-67, Cl. 52—2
Ito, Ryusuke, to Yanmar Diesel Engine Co., Ltd. Mounting base for rotary piston engine. 3,301,230, 1-31-67, Cl. 123—8.
Jackson, Ralph N., W. R. Maclay, D. D. Metzger, and W. R. Stewart, to International Business Machines Corp. Modular circuit package utilizing solder coated areas and solder reflow joints. 3,302,067, 1-31-67, Cl. 317—101.
Jackson, Robert A. F., to Heatovent Electric Ltd. Storage block adapted for storage and exchange of heat. 3,301,251, 1-31-67, Cl. 126—400.
Jackson, Robert E., and J. D. Culp, to McDonnell Aircraft. Method of making refractory metal structures with an oxidation resistant coating. 3,300,854, 1-31-67, Cl. 29—527.
Jacobs, Edward N. Auto seat cover with support inserts. 3,301,591, 1-31-67, Cl. 297—219.
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Jagel, Kenneth I., Jr.: *See*—
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Jenkins, Walter W., to The National Acme Co. Milling mechanism. 3,301,135, 1–31–67, Cl. 90—15.

Jennings, Harry C., deceased, by H. C. Jennings, Jr., executor, to Everest & Jennings, Inc. Adjustable legrest for wheel chairs. 3,301,595, 1–31–67, Cl. 297—437.

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Jennings, William A., to Economy Froms Corp. Multiple friction collar assembly. 3,301,517, 1–31–67, Cl. 248—221.

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Jensen, Otto, to I-T-E Circuit Breaker Co. High speed circuit breaker with flip-flop mechanism. 3,302,144, 1–31–67, Cl. 335—183.

Jensen, Robert A., and W. J. Levine, to International Business Machines Corp. Traffic light control buffer. 3,302,170, 1–31–67, Cl. 340—41.

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Jewel, Paul W., to Max Factor & Co. Process and compositions for mending finger nails. 3,301,760, 1–31–67, Cl. 167—85.

Joa, Curt G. Mat cutting machine with reciprocating belt feeder. 3,301,114, 1–31–67, Cl. 83—236.

Johannsen, Lawrence A., to Dressen-Barnes Electronics Corp. Instruction aid. 3,300,876, 1–31–67, Cl. 35—9.

Johnson, Charles F. Sheet and plate handling tool. 3,301,585, 1–31–67, Cl. 294—16.

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Johnson, Elisha, Jr., to Fiber Industries, Inc. Apparatus for uniformly criping filaments. 3,300,830, 1–31–67, Cl. 28—1.

Johnson, Frank G., and G. V. Windle, to United Kingdom Atomic Energy Authority. Containment arrangement for steam generating nuclear reactor systems. 3,301,761, 1–31–67, Cl. 176—37.

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Johnson, Richard C., to Georgie Tech Research Institute. Antenna range for providing a plane wave for antenna measurements. 3,302,205, 1–31–67, Cl. 343—703.

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Jolly, Jean F.: *See*—
Joly, Robert, Warnant, Jolly, and Prost. 3,301,878.

Jolley, Stanley P. Bowling form indicating device. 3,301,559, 1–31–67, Cl. 273—54.

Joly, Robert, J. Warnant, and J. Jolly, to Roussel-UCLAF. 19-nor steroids oxygenated in the 11-position, process of preparation and utilization. 3,301,756, 1–31–67, Cl. 167—65.

Joly, Robert, J. Warnant, J. F. Jolly, and M. J. Prost, to Roussel-UCLAF. Novel process for the preparation of trienic steroids and intermediates therein. 3,301,878, 1–31–67, Cl. 260—397.3.

Jones, Coy V., Sr., and O. E. A. Edler, to Southern Machinery Co. Method of and apparatus for conditioning bobbins in spinning frames. 3,300,961, 1–31–67, Cl. 57—54.

Jones, Edward M. T., and E. D. Sharp, to United States of America, Air Force. Multimode waveguide harmonic power sampler. 3,302,111, 1–31–67, Cl. 324—95.

Jones, Gerald D., to The Metal Box Co. Ltd. Apparatus for assembling dispensing valve assemblies with containers. 3,300,846, 1–31–67, Cl. 29—208.

Jones, Gerald L. Shelf dividers. 3,301,407, 1–31–67, Cl. 211—184.

Jones, Harold E., to International Business Machines Corp. Apparatus and method for testing logic circuits and the like by the comparison of test output patterns with preprogrammed standard patterns. 3,302,109, 1–31–67, Cl. 324—73.

Jones, Richard E.: *See*—
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Jones, Richard S., and A. W. Prickett, to Westland Aircraft Ltd. Flexible skirts for ground effect vehicles. 3,301,342, 1–31–67, Cl. 180—7.

Jordan, Charles R. Means for handling radiators for repairs. 3,301,547, 1–31–67, Cl. 269—20.

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Judge, Joseph R. Range finder. 3,300,862, 1–31–67, Cl. 33—72.

Juhas, Michael S., to Veeder Industries, Inc. Counter drive clutch mechanism. 3,301,363, 1–31–67, Cl. 192—67.

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Jurd, Leonard, to United States of America, Agriculture. Acidic fruit and vegetable food and method of coloring employing benzopyrylium compounds. 3,301,683, 1–31–67. Cl. 99—103.

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Kachi, Hiroshi: *See*—
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Kahrs, Karl-Heinz, A. Staller, and J. W. Zimmermann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of stable aqueous dispersions of vinyl ester polymers. 3,301,805, 1–31–67, Cl. 260—29.6.

Kaiser, Henry J. Golf putting training device. 3,301,561, 1–31–67, Cl. 273—186.

Kajita, Takehi: *See*—
Nishigaki, Susumu, Kobayashi, Noda, and Kajita. 3,301,307.

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Kang, Ki D., and E. D. Metz, to Motorola, Inc. Semiconductor device with passivated junction. 3,302,076, 1–31–67, Cl. 317—234.

Kaplan, Murray A., and A. P. Granatek, to Bristol-Myers Co. Purification of tetracycline. 3,301,899, 1–31–67, Cl. 260—559.

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Karjala, Sulo A., and F. K. Dering, to Wilson & Co., Inc. Process of treating proteins and the product thereof. 3,301,692, 1–31–67, Cl. 106—161.

Karklys, Joseph, to General Dynamics Corp. Bistable multivibrator with self triggering circuit utilizing level detector tunnel diodes. 3,302,132, 1–31–67, Cl. 331—113.

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Kauffman, Robert J., to Narad, Inc. Method of making cellular core structures. 3,301,729, 1–31–67, Cl. 156—252.

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Kawamoto, Takuya and S., to Sony Corp. Transistor logic circuit. 3,302,032, 1–31–67, Cl. 307—88.5.

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Keane, Francis X., and S. H. Michael. Piano acoustic pick up devices. 3,301,118, 1–31–67, Cl. 84—1.

Kearns, John F.: *See*—
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Kenmotsu, Kenneth M., to American Toy and Furniture Co., Inc. Thermostatic pen holder. 3,301,060, 1–31–67, Cl. 73—343.

Kenney, James T., to United Geophysical Corp. Quick opening high pressure valve. 3,301,274, 1–31–67, Cl. 137—625.66.

Kercher, David M., to General Electric Co. Turbine diaphragm structure. 3,301,527, 1–31–67, Cl. 253—39.1.

Kern, Karl W., Jr., to Franklin Electric Co., Inc. Noise eliminating coupling in gear unit. 3,301,081, 1–31–67, Cl. 74—421.

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King, Ralph W., and B. O. Shorthouse, to The International Synthetic Rubber Co. Ltd. Recovery of isoprene from hydrocarbon fractions. 3,301,915, 1–31–67, Cl. 260—681.5.

Kingsley, Warren G., to The Bendix Corp. Variable area nossle. 3,301,492, 1–31–67, Cl. 239—535.

Kinney, Theodore S. Electric heater. 3,302,003, 1–31–67, Cl. 219—550.

Kirshenbaum, Isidor, R. M. Hill, and J. H. Bartlett, to Esso Research and Engineering Co. Production of cyclic unsaturated alcohols and borate esters. 3,301,887, 1–31–67, Cl. 260—462.

Kisling, James W., III, to Schlumberger Well Surveying Corp. Pressure recorder. 3,301,064, 1–31–67, Cl. 73—395.

Kisling, James W., III, and J. E. Stachowiak, to Schlumberger Well Surveying Corp. Pressure recorder. 3,301,063, 1–31–67, Cl. 73—395.

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Kleinknecht, Hans P., to Radio Corp. of America. Semiconductor device fabrication. 3,301,716, 1–31–67, Cl. 148—1.5.

Klem, Stanley J., Jr., and H. F. Nitka, to General Aniline & Film Corp. Apparatus for processing photographic materials. 3,301,158, 1–31–67, Cl. 95—94.

Klimstra, Paul D., to G. D. Searle & Co. 17-oxygenated-5-androstane-2,3-episulfides. 3,301,850, 1–31–67, Cl. 260—239.5.

Klimstra, Paul D., to G. D. Searle & Co. 2/3-oxygenated-2/3-thiocyanato-5-androstan-17-ones and derivatives thereof. 3,301,876, 1–31–67, Cl. 260—397.3.

Kling, Nelson G., to Technicon Chromatography Corp. Variable capacity pump. 3,301,189, 1–31–67, Cl. 103—38.

Kluver, Johan W., to Bell Telephone Laboratories, Inc. Low noise laser amplifier with plural sections respectively between confocally spaced focusers with screens. 3,302,120, 1–31–67, Cl. 330—4.3.

Knight, Francis E., B. F. Meyers, and E. B. Dickison, deceased; (by E. V. Dickison, administratrix), to Western Electric Co., Inc. Article assembling apparatus. 3,300,845, 1–31–67, Cl. 29—206.

Knohl, Herbert, to The Kendall Co. Elastic yarn and garment incorporating it. 3,301,018, 1–31–67, Cl. 66—202.

Knopp, Edward R. Anti-smog device. 3,300,964, 1–31–67, Cl. 60—30.

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McCoy, Frederic C., and Knowles. 3,301,721.

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Kocher, Erich J., to Vilter Mfg. Corp. Oil free refrigerant compressor. 3,300,997, 1–31–67, Cl. 62—117.

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Koenig, Karl-Heinz, J. Datow, E.-H. Pommer, J. Jung, and H. Scholz, to Badische Aniline & Soda-Fabrik Aktiengesellschaft. Production of quaternary haloalkylammonium salts. 3,301,902, 1–31–67, Cl. 260—567.6.

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Konz, Paul, and A. Hackner, to Auto Union G.m.b.H. Vehicular signaling system. 3,302,173, 1–31–67, Cl. 340—81.

Koppers Co., Inc.: *See*—
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Korbl, Jiri: *See*—
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Korkowski, Vincent J., and H. E. Nelson, to Sperry Rand Corp. Manually operable format control unit for the real-time operation of a data processing system. 3,302,189, 1–31–67, Cl. 340—174.

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Kortz, George B.: *See*—
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Kosar, Jaromir, and G. M. Atkins, Jr., to Keuffel & Esser Co. Radiation disintergrating capsule. 3,301,439, 1–31–67, Cl. 222—52.

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Kovacs, Geza L., to New Canadian Processes Ltd. Process for treating cold rolling mill effluent containing oil emulsified in water. 3,301,779, 1–31–67, Cl. 210—44.

Krakusky, James J., to The Western Union Telegraph Co. Blank deleter. 3,301,954, 1–31–67, Cl. 178—92.

Kramer, Bernhard, and G. Henes, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of black dyeings on cellulose fabrics. 3,301,629, 1–31–67, Cl. 8—26.

Kranz, Walter, to Bolkow Gesellschaft mit Beschrankter. Device for correcting the position of the inner cardan frame of a gyroscope. 3,301,069, 1–31–67, Cl. 74—5.4.

Krasnow, S. Bert, to Precision Circuits, Inc. Multilayer circuit boards with plated through holes. 3,301,939, 1–31–67, Cl. 174—68.5.

Kraus, Gerard, and Y. C. Fu, to Phillips Petroleum Co. Production of furnace carbon black having properties approximating those of channel carbon black. 3,301,694, 1–31–67, Cl. 106—307.

Krause, Erich, to Universal Maschinenfabrik Dr. Rudolf Schieber G.m.b.H. Needle actuating mechanism for a knitting machine. 3,301,016, 1–31–67, Cl. 66—154.

Krautwurst, Homer V.: *See*—
Williams, Richard D., Plumeri, and Krautwurst. 3,301,086.

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Krewer, William A.: *See*—
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Von König, Anita, Kruck, and Pfeiffenschneider. 3,301,677.

Krug, Marianne: *See*—
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Krug, Siegfried and M., and F. Kosch, to Beteiligungs-und Patentverwaltungs-G.m.b.H. By-pass structure. 3,301,146, 1–31–67, Cl. 94—1.

Kruizenga, Joseph H. Reserve fuel tank lighters. 3,301,020, 1–31–67, Cl. 67—7.1.

Kucza, Joseph A., and G. Mandel, to International Business Machines Corp. Method for the synthesis of gallium phosphide. 3,301,637, 1–31–67, Cl. 23—204.

Kukuk, Harley S.: *See*—
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Kuns, Bernard P. Sandwich panel joint and method. 3,301,732, 1–31–67, Cl. 156—304.

Kunsler, Alex E., and H. M. Johnson, to Leckenby Co. Vehicle dumping apparatus. 3,301,415, 1–31–67, Cl. 214—49.

Kuster, William, to Eagle-Ottawa Leather Co. Method of preparing dry free flowing food supplement containing hydrated di-calcium phosphate. 3,301,681, 1–31–67, Cl. 99—7.

Lace, Melvin A. Portable apparatus for measuring conductivity of fluids. 3,302,102, 1–31–67, Cl. 324—30.

Lager, Earl W.: *See*—
Dalglish, James J., and Lager. 3,300,866.

Laing, Nikolaus. Air conditioning apparatus. 3,301,003, 1–31–67, Cl. 62—324.

Lamb, Ernest P., to Chrysler Corp. Seat belt. 3,301,593, 1–31–67, Cl. 297—388.

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La Metallingir Francaise des Poudres-Metafram: *See*—
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Lamont, Harold B.: *See*—
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Lamont & Riley, Inc.: *See*—
Patry, Francis J., and Lamont. 3,300,913.

Lamparter, Hansruedi: *See*—
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Lamson and Sessions Co., The: *See*—
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Lander, Arthur G., and D. A. Hausmann, to American Pipe and Construction Co. Products made with furan resin. 3,301,278, 1–31–67, Cl. 138—145.

Landsiedel, Raymond W. Folding pallet. 3,301,200, 1–31–67, Cl. 108—51.

Lang, Herbert, and F. Nierlich, to Wiener Schwachstromwerke Gesellschaft m.b.H. Regulating device for furnaces, particularly annealing furnaces. 3,301,463, 1–31–67, Cl. 236—78.

Lanzendörfer, Anton, to Durkoppwerke Aktiengesellschaft, to Chain-stitch sewing machine. 3,301,206, 1–31–67, Cl. 112—199.

Lapierre, Marcel, to CSF Compagnie Generale de Telegraphie Sans Fil. Gyroscope precession control system. 3,301,070, 1–31–67, Cl. 74—5.4.

Lappala, Risto P., N. J. Haight, and J. M. Diehl, to Griffolyn Co., Inc. Tear resistant material comprising perforated sheet. 3,301,738, 1–31–67, Cl. 161—49.

Larraburu, Philip M., to Textron Electronics, Inc. Optical collimating system. 3,302,016, 1–31–67, Cl. 240—41.3.

Larsen, Bendt W., and K. V. Valbjorn, to Danfoss A/S. Refrigeration compressor capacity and loading control means. 3,301,470, 1–31–67, Cl. 230—22.

Larson, Charles L., to Jeddeloh Bros. Sweed Mills, Inc. Sequence unloader. 3,301,377, 1–31–67, Cl. 198—32.

Lassaigne, Henri F. G.: *See*—
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Lau, Erwin M., to Black Products Co. Bag filling machines. 3,301,280, 1–31–67, Cl. 141—68.

Lau, Erwin M., to Black Products Co. Bag ejector device. 3,301,281, 1–31–67, Cl. 141—272.

Lau, Erwin M., to Black Products Co. Torque resistant mounting for floating frame of bag filling machine. 3,301,340, 1–31–67, Cl. 177—60.

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Laufer, Louis, and S. Gutcho, to Schwarz Bioresearch, Inc. Enzyme digestion of nucleic acids. 3,301,767, 1–31–67, Cl. 195—28.

Laughlin, Warren H. Foul indicator for basketball games. 3,302,192, 1–31–67, Cl. 340—323.

Lavenir, Jean-Claude. System of charging subscribers and for the remote reading of telephone charges. 3,302,184, 1–31–67, Cl. 340—172.5.

Lawrey, David M. G.: *See*—
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Layland, Michael C., to Dale Electronics, Inc. Trimmer potentiometer. 3,302,155, 1–31–67, Cl. 338—183.

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Lee, David K. K., and H. L. Wirsing, to Automatic Electric Laboratories, Inc. Register-sender arrangement for a communication switching system common control arrangement. 3,301,963, 1–31–67, Cl. 179—18.

Lee, Henry P., to General Electric Co. Digital input-output buffer for computerized systems. 3,302,181, 1–31–67, Cl. 340—172.5.

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Leenhouts, Albert C., to Hi-G, Inc. Phase sequence sensor. 3,302,063, 1–31–67, Cl. 317—47.

Lehman, Roscoe E.: *See*—
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Lehmann, Guenther W., and K. G. F. Moeller, to United States of America, Navy. Submersible missile launching vehicle. 3,301,132, 1–31–67, Cl. 89—1.81.

Leitten, Carl F., Jr., R. A. Potter, and R. E. McDonald, to United States of America, Atomic Energy Commission. Method of preparing oxides for neutronic reactor control. 3,300,848, 1–31–67, Cl. 29—420.5.

Lemke, Eugene, to Radio Corp. of America. Magnet means for correction of blue beam lateral deflection for color television receiver tubes. 3,302,049, 1–31–67, Cl. 313—75.

Leonard, George H., and R. D. Nickerson. Sewage sampling apparatus. 3,301,066, 1–31–67, Cl. 73—425.4.

Leonard, Robert E., to American Potash & Chemical Corp. Anode for the electrowinning of manganese. 3,301,777, 1–31–67, Cl. 204—290.

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Lesslie, Madlynn J.; ½ to D. A. O'Brien, Jr., and ½ to T. L. Avegno. Eyebrow measuring and marking guide. 3,300,864, 1–31–67, Cl. 33—174.

Lett, Alexander S.: *See*—
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Levin, Alfred A.: *See*—
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Leviton, Jan, to Fairchild Camera and Instrument Corp. Automatic ink ductor control for printing presses. 3,301,182, 1–31–67, Cl. 101—351.

Le Von, Ernest F.: *See*—
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Levy, Eugene L., L. F. Herk, W. H. Stahl, and D. M. G. Lawrey. Automatic fraction collecting system for vapor phase chromatography. 3,301,040, 1–31–67, Cl. 73—23.1.

Lewallen, William J., and J. F. Wood, to Shelly Oil Co. Reactivation of molecular sieves. 3,301,792, 1–31–67, Cl. 252—418.

Libbey-Owens-Ford Glass Co.: *See*—
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Libby, Hugo L., and C. R. Wandling, to United States of America, Atomic Energy Commission. Eddy current nondestructive testing device using an oscilloscope to identify and locate irregularities in a test piece. 3,302,105, 1–31–67, Cl. 324—40.

Lichti, Robert D. Method of making cambered beams. 3,300,839, 1–31–67. Cl. 29—155.

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Liebel-Flarsheim Co., Division of Bitter Co. Inc.: *See*—
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Lilie, Milton I.: *See*—
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Lin, Shao-Chi, to Avco Corp. Gas laser and method of operation. 3,302,127, 1–31–67, Cl. 331—94.5.

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Sorg, Karl W., and Heimbach. 3,300,951.

Lindemann, Hans. Method of preparing rod stock for a drawing operation. 3,300,855, 1–31–67, Cl. 29—558.

Lindemann, Hans, to Th Calow & Co. Torque converter. 3,300,970, 1–31–67, Cl. 60—54.

Linder, Jerome, and E. D. Weil, to Hooker Chemical Corp. 3,4-dihalo-N-acylphenylhydroxylamines as postemergence herbicides. 3,301,652. 1–31–67. Cl. 71—2.3.

Linström, Olle, to Allmanna Svenska Elektriska Aktiebolaget. Method and means for manufacturing liquid oxygen for fuel cells. 3,301,709. 1–31–67. Cl. 136—86.

Linecker, Josef. Structural joint and structural elements. 3,301,582, 1–31–67, Cl. 287—189.36.

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Linn, Wallace L.: *See*—
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Linsker, Eugene, to Rockwell Mfg. Co. Compact automatic machine tool. 3,301,333, 1–31–67, Cl. 173—19.

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Lock, Frank J., and J. W. Ramoska, to Eaton Yale & Towne Inc. Automatic limit control for air hoist. 3,301,532, 1–31–67, Cl. 254—173.

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Lockheed Aircraft Corp.: *See*—
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Lock-Tronic Corp., The: *See*—
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Lodder, Clifford K., to General Electric Co. Method of making bonded wire circuits. 3,300,851, 1–31–67, Cl. 29—470.1.

Loeb, William E., and D. J. Valley, to Union Carbide Corp. Thin film resistors and method of making thereof. 3,301,707, 1–31–67, Cl. 117—227.

Long, Bernard, to G.B.D. Societe Anonyme Holding Glass-drawing apparatus including reheating means for producing flat sheets. 3,301,651, 1–31–67, Cl. 65—182.

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Looker, O'in L., and E. F. Greedy, to FMC Corp. Method of and apparatus for harvesting vine crops 3,301,331, 1–31–67, Cl 171—1

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Lorens, Eldon L.: *See*—
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Dodson, Osborne C., and Loughry. 3,301,197.

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Low, Frank D., to General Electric Co. Washing machine having a treating agent dispensing system. 3,301,022, 1–31–67, Cl. 68—12.

Lowell, Peter M., to Friden, Inc. Postage meter. 3,301,176, 1–31–67, Cl. 101—85.

Lowrey, William E., to ACF Industries, Inc. Resilient valve seats with retention means. 3,301,523, 1–31–67, Cl. 251—172.

Loyd, Calvin D., to Caterpillar Tractor Co. Tempered threaded members and method of making. 3,301,120, 1–31–67, Cl. 85—1.

Loseau, Homer A., to Koehler Mfg. Co. Non-spillable storage battery container with combination means for venting and filling. 3,301,713, 1–31–67, Cl. 136—177.

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Luchford, Laurence R., and T. A. Babbage, to Trianco Ltd. Flow retarders for fire tubes of boilers. 3,301,276, 1–31–67, Cl. 138—38.

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Lungwitz, Gunter K., to Hamann Rechenmaschinen G.m.b.H. Automatic zero printing means. 3,301,371, 1–31–67, Cl. 197—17.

Lunsford, Carl D., and A. D. Cale, Jr., to A. H. Robins Co., Inc. Analeptic compositions and method. 3,301,757, 1–31–67, Cl. 167—65.

Lunsford, Carl D., and A. D. Cale, Jr., to A. H. Robins Co., Inc. Analeptic compositions and method. 3,301,758, 1–31–67, Cl. 167—65.

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Lunsford, Carl D., to A. H. Robins Co., Inc. Methobromide and hydrochloride of 1-ethyl-3-pyrrolidyl benzilate. 3,301,869, 1–31–67, Cl. 260—326.3.

Lunstroth, Klaus, to Research Engineering Co. Hydroponic growth of plants. 3,300,896, 1–31–67, Cl. 47—1.2.

Lussier, Henry L., to United Aircraft Corp. After burner igniter in gas turbine engine. 3,300,980, 1–31–67, Cl. 60—241.

Lutters, Samuel F. Car top boat loader. 3,301,421, 1–31–67, Cl. 214—450.

Lutze, Gunter. Prefabricated roof construction with foamed plastic joining means. 3,300,981, 1–31–67, Cl. 52—309.

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Lyman, Frank, Jr., to Cambridge Thermionic Corp. Adjusting and locking arrangement for variable impedance devices. 3,302,150, 1–31–67, Cl. 336—136.

Lynch, John T., and F. G. Wolff, to Burroughs Corp. Store and forward message switching system utilizing a modular data processor. 3,302,182, 1–31–67, Cl. 340—172.5.

Lynnworth, Lawrence C., and E. H. Carnevale, to Parametrics, Inc. Ultrasonic probe. 3,302,044, 1–31–67, Cl. 310—8.3.

Lyssy, Georges H., to Hans Sickinger Co. Method and means for the experimental determination of the permeability of foils to gas. 3,301,043, 1–31–67, Cl. 73—38.

Lyvers, Garland E. Engine starting devices. 3,301,243, 1–31–67, Cl. 123—179.

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Magerlein, Barney J., to The Upjohn Co. Novel 1,4-dialkylprolines, derivatives thereof and process. 3,301,871, 1–31–67, Cl. 260—326.3.

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Malley, Harry H., to Rolls-Royce Ltd. Aerofoil shaped blade for fluid flow machines. 3,301,528, 1–31–67, Cl. 253—39.15.

Mallon, Richard G., and W. A. Hoyer, to Esso Production Research Co. Ion source neutron generator having magnetically stabilised plasma. 3,302,026, 1–31–67, Cl. 250—84.5.

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Krock, Richard H. 3,301,641.
Dotto, Gianni A. 3,302,045.
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Malmgren, Harvey R., to Alco Equipment Ltd. Bale deflecting device. 3,301,372, 1–31–67, Cl. 198—7.

Maloney, Daniel E., to E. I. du Pont de Nemours and Co. Composite with copolymer coating bonded to a polymeric substrate through acid halide units. 3,301,700, 1–31–67, Cl. 117—118.

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Mangini, Angelo, and A. Tundo, to Aziende Colori Nazionali Affini ACNA S.p.A. Reactive disago dyestuffs. 3,301,847, 1–31–67, Cl. 260—184.

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Marbill Co.: *See*—
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Marchioli, Giorgio. Tubular roof beams and joining means therefor. 3,300,935, 1–31–67, Cl. 52—468.

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Marshall, Maurice B., and D. H. MacDonald. Method of making thermoelectric generators. 3,300,840, 1–31–67, Cl. 29—155.5.

Martin, Elmore L., to E. I. du Pont de Nemours and Co. Polymers from polycyclic reactants having functional substituents in bridgehead carbon atoms. 3,301,827, 1–31–67, Cl. 260—978.

Martin, John P., ½ to J. N. Loomis. Tool for cementing and/or plugging a well or the like. 3,301,329, 1–31–67, Cl. 166—187.

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Flaugher, Lawrence L., Keller, and Martin. 3,302,107.

Martin, Hubert, to Reynolds Metals Co. Aluminum purification system. 3,301,666, 1–31–67, Cl. 75—68.

Martin, Le Roy L., to Bartelt Engineering Co., Inc. Cartoning machine. 3,300,946, 1–31–67, Cl. 53—73.

Martin, Neil C.: *See*—
Franklin, William J., and Martin. 3,300,847.

Marullo, Gerlando, U. Maffezzoni, and E. Susa, to Montecatini Edison S.p.A. Process of producing crystalline syndyota 1,2-polybutadiene. 3,300,466. 1–31–67, Cl. 260—94.3.

Marusak, Francis J., to Corning Glass Works. Method of making high strength glass articles. 3,301,649, 1–31–67, Cl. 65—30.

Marvel, Carl S., to E. I. du Pont de Nemours and Co. Condensation products of aromatic diesters and 1,4,5,8-tetraamino naphthalene and polymers thereof. 3,301,828, 1–31–67, Cl. 260—78.4.

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Marwood, Charles T., to The De Havilland Aircraft Co. Ltd. Engine control embodying a multiple pulse train generator. 3,301,269, 1–31–67, Cl. 137—30.

Mason, George W., to General Motors Corp. Regenerator matrix. 3,301,316, 1–31–67, Cl. 165—8.

Mason, Walter E., and J. McNutt, to Burlington Industries, Inc. Fabric dye beck having a liquid fabric barrier. 3,301,026, 1–31–67, Cl. 68—177.

Massachusetts Institute of Technology: *See*—
Baker, Richard H. 3,302,039.

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Mathes, Robert H., to United States of America, Navy. Direction indicator. 3,302,204, 1–31–67, Cl. 343—113.

Matlack, Philip R. Apparatus for turning curved surfaces. 3,301,104, 1–31–67, Cl. 82—12.

Matsukata, Kosuke. Method and apparatus for making varicolored particle board. 3,301,726, 1–31–67, Cl. 156—62.2.

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Tanaka, Yutaka, and Sasabe. 3,302,083.

Mattel, Inc.: *See*—
Ryan, John W., Moore, and Kabot. 3,301,575.

Maudinet, Louis, V. Ziegelmeyer, and R. Dintzner, to Societe Alsacienne de Constructions Atomiques de Telecommunications et d'Electronique Alcatel and Societe de Transactions Commerciales et Industrielles entre la France et l'Allemagne, in abbreviation, S.O.T.R.A.F.A. Remote control manipulation of inaccessible objects. 3,301,588, 1–31–67, Cl. 294—110.

Mauldin, William L., to Deering Milliken Research Corp. Process of modifying cellulosic textiles with epihalohydrin-triasone reaction products. 3,301,631, 1–31–67, Cl. 8—116.2.

Maule, Frank A. Survey stake protector. 3,300,918, 1–31–67, Cl. 52—103.

Maurer, Leon H., to Westworld Artists Productions Inc. Method of producing colored animated cartoons. 3,301,626, 1–31–67, Cl. 352—38.

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May, Ernest M., and A. Fono, to Otto B. May, Inc. Fluoroazo dye treated articles. 3,301,630, 1–31–67, Cl. 8—41.

May, Otto B., Inc.: *See*—
May, Ernest M., and Fono. 3,301,630.

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Mayer, Walter, to Grundig Elektro-Mechanische Versuchsanstalt. Synchronized teletransmission system which does not require the transmission of continuous sync information to maintain synchronization. 3,301,953, 1–31–67, Cl. 178—69.5.

Mayes, Nathan: *See*—
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Mayo, Clyde R., to Xerox Corp. Xerographic copying apparatus. 3,301,152, 1–31–67, Cl. 95—1.7.

Mayo, Edward E., and R. H. Lamb, to United States of America, National Aeronautics and Space Administration. Hypersonic reentry vehicle. 3,301,507, 1–31–67, Cl. 244—1.

Maytag Co., The: *See*—
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Smith, Thomas R. 3,301,024.

Mazzanti, Giorgio: *See*—
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McCall, Harold M.: *See*—
Phares, Lindsey J., McCall, Spannhake, and Snow. 3,300,988.

McClain, Ross O. Saucer pad, cover or the like. 3,301,429, 1–31–67, Cl. 220—23.83.

McClean-Anderson, Inc.: *See*—
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McCoy, Edward G. Emergency alarm circuit for use with aircraft detection and recognition systems. 3,302,196, 1–31–67, Cl. 343—6.5.

McCoy, Frederic C., and E. C. Knowles, to Texaco Inc. Hydrazine gel compositions containing metal and micro-dimensional fibers. 3,301,721, 1–31–67, Cl. 149—2.

McCoy, Frederic C.: *See*—
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McDonnell Aircraft: *See*—
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McEwen, John C., to General Motors Corp. Cutting stop and chip remover. 3,301,101, 1–31–67, Cl. 77—55.

McFarlane, Arthur H., and E. H. Spouge, to Teleflex Products Ltd. Securing devices. 3,301,592, 1–31–67, Cl. 297—385.

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McGlynn, James J., J. L. Ma, and W. H. Funk, to Lukens Steel Co. Process and apparatus for producing iron and steel. 3,301,661, 1–31–67, Cl. 75—40.

McGrath, William L., to Carrier Corp. Reverse cycle refrigeration system. 3,300,995, 1–31–67, Cl. 62—116.

McGrath, William L., to Carrier Corp. Conditioning apparatus. 3,301,002, 1–31–67, Cl. 62—75.

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Fister, Aloysius J. 3,301,979.
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McGregor, Donald T., to Carlodge Corp. Automatic slack adjuster for brakes. 3,301,354, 1–31–67, Cl. 188—196.

McKelvey, William J., and M. E. Ozenberger, to Bell Telephone Laboratories, Inc. Directional conference system. 3,301,962, 1–31–67, Cl. 179—18.

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McKinney, William S., to The Coleman Co., Inc. Automatic refrigerant storage for reversible heat pump. 3,301,001, 1–31–67, Cl. 62—149.

McLarty, Jack L., to McClean-Anderson, Inc. Delivery head for a filament winding apparatus. 3,301,505, 1–31–67, Cl. 242—157.

McLaughlin, John A., to International Business Machines Corp. Message routing system. 3,302,176, 1–31–67, Cl. 340—172.5.

McLeod, Josephine C. Body supporting undergarment. 3,301,259, 1–31–67, Cl. 128—476.

McNamer, Hugh F. Method for selectively increasing the porosity and permeability of subterranean geologic formations. 3,301,326, 1–31–67, Cl. 166—29.

McNulty, Carrell S. Liquid flow measuring apparatus. 3,301,050, 1–31–67, Cl. 73—215.

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Mead, Sterling G. Utility box. 3,301,619, 1–31–67, Cl. 312—200.

Meade, Leonard P., to Phillips Petroleum Co. Storage of volatile liquids. 3,300,982, 1–31–67, Cl. 61—.5.

Medford, Hugh L., Jr., and J. E. Tennant, to Western Electric Co., Inc. System for treating acidic etching solutions. 3,301,542, 1–31–67, Cl. 266—22.

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Meltzer, Robert I., and R. E. Brown, to Warner-Lambert Pharmaceutical Co. Substituted lactams and process for their production. 3,301,864, 1–31–67, Cl. 260—294.

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Metal Bellows Corp.: *See*—
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Meunier, Henry E. J. M., to Chemetron Corp. Methods and compositions for potentiating central nervous system depressants. 3,301,754 1–31–67, Cl. 167—65.

Meyer, Robert A., to Amity Leather Products Co. Fastener device. 3,301,296, 1–31–67, Cl. 150—39.

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Meylan, Bernard. Gas lighter construction. 3,301,019, 1–31–67, Cl. 67—7.1.

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Miller, John D. Device for hot stamping indicia on webs. 3,301,370, 1–31–67, Cl. 197—6.7.

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Millian, Stephen J. Collapsible container. 3,301,457, 1–31–67, Cl. 229—6.

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Hemstock, Glen A., and Bergmann. 3,301,691.
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Minster Machine Co., The: *See*—
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Mintz, Noah: *See*—
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Mobil Oil Corp.: *See*—
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Molden, Harris L., and A. C. Olson. Wheel lift. 3,301,419, 1–31–67, Cl. 214—332.

Monath, August. Volume governor. 3,301,273, 1–31–67, Cl. 137—624.15.

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Dahms, Ronald H., Hardy, and Popielski. 3,301,813.
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Mozzi, Henry J., to Stewart-Warner Corp. Means for and method of coating a surface with a fluid film. 3,301,699, 1–31–67, Cl. 117—111.

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Natter, Bernd. Traction studs for vehicle tires. 3,301,300, 1–31–67, Cl. 152—210.

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Neerman, Philippe, and W. Nel, to "Ateliers d'Art de Courtrai de Coene Freres." Collapsible furniture. 3,300,809, 1–31–67, Cl. 16—135.

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Brandwijk, Johannes F. 3,302,046.
Cornelissen, Bernardus H. J., and Breimer. 3,301,944.
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Ochs, Charles S., to Anchor Hocking Glass Corp. Detection mechanism for cocked caps. 3,301,399, 1–31–67, Cl. 209—90.

Ochs, Charles S., to Anchor Hocking Glass Corp. No cap detecting mechanism. 3,302,103, 1–31–67, Cl. 324—34.

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O'Conor, Frank, to Ametek, Inc. Centrifugal with cover and brake assembly. 3,300,871, 1–31–67, Cl. 34—58.

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Odgers, Ira D., M. A. Nelson, and W. W. Svendsen, to Odgers Drilling Inc. Drill rig. 3,301,334, 1–31–67, Cl. 173—43.

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Olsen, Zenny. Polorized servo valve motor with a torsionally mounted armature. 3,302,147, 1–31–67, Cl. 335—230.

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Olson, Russell W.: *See*—
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Osborne, Robert F., J. W. Melville, R. W. Eichler, K. A. Northrup, and J. F. Wirley. Reproducing apparatus. 3,301,126, 1–31–67, Cl. 88—24.

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Owen, Trevor W. Automatic envelope opener with means to jog envelope to shift contents. 3,301,116, 1–31–67, Cl. 83—408.

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Owens, Sidney W., ⅛ to A. E. Racine and ⅛ to J. R. Owens. Building system. 3,300,943, 1–31–67, Cl. 52—744.

Oxley, Robert F. Cam actuated snap acting multiple position switches. 3,301,976, 1–31–67, Cl. 200—68.

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Pasquetti, Glauco. Machine for manufacturing flexible tubing. 3,300,812, 1–31–67, Cl. 18—12.

Patry, Francis J., and H. B. Lamont, to Lamont & Riley, Inc. Expansion joint cover and flashing therefor. 3,300,918, 1–31–67, Cl. 52—58.

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Troeppl, William M., and Petersen. 3,300,883.

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Peterson, Horthun L. 3,301,112.

Peterson, Everett A.: *See*—
Baermann, Walter P., Cooke, and Peterson. 3,301,394.

Peterson, Horthun L., 33⅓% to Peterson Stamping and Mfg. Co., Small Lot Stamping Co., and Peterson Bros. Mfg. Co. Punch press ram structure. 3,301,112, 1–31–67, Cl. 83—137.

Peterson Stamping and Mfg. Co.: *See*—
Peterson, Horthun L. 3,301,112.

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Dickson, Woodrow J., and Jenkins. 3,301,783.

Petrow, Vladimir: *See*—
Hayman, David F., Petrow, and Stephenson. 3,301,896.

Pettyjohn, Austin E., and A. F. Karlin, to Lear Siegler. Quick connect coupling. 3,301,272, 1–31–67, Cl. 137—614.06.

Pfaff, Henry C., Jr., and F. G. Schlosser, to Pfaff and Kendall. Control means for lowering device cables. 3,301,533, 131–67, Cl. 254—174.

Pfaff and Kendall: *See*—
Pfaff, Henry C., Jr., and Schlosser. 3,301,533.

Pfeiffenschneider, Raymund: *See*—
Von Konig, Anita, Kruck, and Pfeiffenschneider. 3,301,677.

Pfister, Rudolf, and A. R. Sallmann, to Geigy Chemical Corp. Certain 1-alkyl-2-4-bis(dialkylamino)-quinolinium salts. 3,301,861, 1–31–61, Cl. 260—288.

Phares, Lindsey J., H. M. McCall, E. W. Spannhake, and R. K. Snow, to Raymond International Inc. Apparatus for forming piles. 3,300,988, 1–31–67, Cl. 61—63.

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Burleigh, John E., and Uraneck. 3,301,841.
Cabbage, John T. 3,301,778.
Kelly, Harold S. 3,301,277.
Kraus, Gerard, and Fu. 3,301,894.
Meade, Leonard P. 3,300,982.
Parsons, Edwin D. 3,301,323.
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Piechotta, Josef M. Load responsive switch apparatus. 3,302,142, 1–31–67, Cl. 335—128.

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Hawa, Ernest R., and Piper. 3,300,899.

Pirogow, Ignor A. Perspective drawing device and combination of perspective and parallel drawing device. 3,300,863, 1–31–67, Cl. 33—77.

Pirrie, Norman D., and J. Bland, to Economic Foundations Ltd. Tunnel boring machine having rotation control responsive to advance pressure. 3,301,598, 1–31–67, Cl. 299—1.

Pirrie, Norman D., and J. Bland, to Economic Foundations Ltd. Tunnel machine having reversible boring head. 3,301,600, 1–31–67, Cl. 299—33.

Pitkethly, Robert C.: *See*—
Holmes, Peter D., and Pitkethly. 3,301,913.

Pitkethly, Robert C., J. F. Ford, and A. Fisher, to The British Petroleum Co., Ltd. Double bond isomerization of olefins using anhydrous metal sulfate catalysts. 3,301,916, 1–31–67, Cl. 260—683.2.

Pitney-Bowes, Inc.: *See*—
Eckert, Alton B., Jr., and Lyman. 3,302,004.

Pitts, Frank H.: *See*—
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Pittsburgh Activated Carbon Co.: *See*—
Hager, Donald G., and Manes. 3,300,992.

Pittsburgh Plate Glass Co.: *See*—
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Plant, William J.: *See*—
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Platt, Philemon K., and W. T. Kitts, to United States of America, National Aeronautics and Space Administration. Cryogenic connector for vacuum use. 3,301,578, 1–31–67, Cl. 285—331.

Platt, Stanton J., to F. P. Silva. Play-back instrument for magnetic tape cartridge. 3,301,564, 1–31–67, Cl. 274—11.

Platus, David L., and P. J. Cunningham, to ARA, Inc. (Aerospace Research Associates, Inc.) Energy absorbing device. 3,301,351, 1–31–67, Cl. 188—1.

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Williams, Richard D., Plumeri, and Krautwurst. 3,301,086.

Plyer, Roger A., to American Telephone and Telegraph Co. Automatic call transmitter for repertory dialing using multifrequency pulses. 3,301,967, 1–31–67, Cl. 179—90.

Plymale, Charles E., to Owens-Illinois, Inc. Method of and apparatus for making a blown plastic article. 3,301,928, 1–31–67 Cl. 264—97

Plymale, Charles E., to Owens-Illinois, Inc. Elastic melt extruder. 3,301,933, 1–31–67, Cl. 264—176.

Polichette, Joseph, to Process Research Co. Method and apparatus for printing and electrical conductor devices. 3,301,175, 1–31–67, Cl. 101—41.

Polleys, Herbert R., to Wellman Co. Cutting machine. 3,300,802, 1–31–67, Cl. 12—86.6.

Pompa, Leonard, to Lukens Steel Co. Slotted brake disc. 3,301,356, 1–31–67, Cl. 188—218.

Pommer, Ernst-Heinrich: *See*—
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Poore, William H., to American Radiator & Standard Sanitary Corp. Tube-shell heat exchanger. 3,301,321, 1–31–67, Cl. 165—178.

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Leitten, Carl F., Jr., Potter, and McDonald. 3,300,848.

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Powers, L. A. Pontoon boat and trailer therefor. 3,300,796, 1–31–67, Cl. 9—1.

Prakash, Prem. Method and means for conversion of torque from prime movers. 3,301,094, 1–31–67, Cl. 74—718.

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Camp, Raymond H., and Pratt. 3,301,975.

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Precision Circuits, Inc.: *See*—
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Pregaglia, Gianfranco: *See*—
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Preissinger, Karl H., Siemens & Halske Aktiengesellschaft. High-voltage capacitor of low inductance. 3,302,082, 1–31–67, Cl. 317—260.

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Prescon Corp., The: *See*—
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Prescott, Robert E.: *See*—
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Price, Eugene W.: *See*—
Hanson, Glenn M., Frans, Helan, and Price. 3,301,659.

Price, Herbert P., to Celanese Coatings. Diepoxide formed by the condensation of a monohydroxyaliphatic monoglycidyl ether with a dialkyl ester of a carboxylic acid. 3,301,920, 1–31–67. Cl. 260—837.

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Probasco, Harold T. Dispensing apparatus. 3,301,620, 1–31–67, Cl. 312—201.

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Polichette, Joseph. 3,301,175.

Procter & Gamble Co., The: *See*—
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Joly, Robert, Warnant, Jolly, and Prost. 3,301,878.

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Prowinsky, Joseph H. Bird feeder. 3,301,217, 1–31–67, Cl. 119—51.

Prue, Walter W. Cover wrapping and trimming machine. 3,300,801. 1–31–67, Cl. 12—49.1.

Pukish, Michael S., Jr., to Vogt Mfg. Corp. Safety harness. 3,301,594, 1–31–67, Cl. 297—389.

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Putnam, Robert E., and W. D. Nicoll, to E. I. du Pont de Nemours and Co. Fluorocarbon ethers containing sulfonyl groups. 3,301,893, 1–31–67, Cl. 260—513.

Pyatt, Lawrence A.; 23¾ % to L. A. Pyatt, and B. Farmen, 23¾ % to C. J. Link, 23¾ % to H. G. Scoville, and 5% to R. W. Thompson. Transformer-coupled emitter-follower oscillator. 3,302,131, 1–31–67, Cl. 331—112.

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Pyrochern Corp.: *See*—
Huntington, Morgan G. 3,301,320.

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Qualman, Jack W., and E. L. Egbert, to General Motors Corp. Preloaded torque converter. 3,300,971, 1–31–67, Cl. 60—54.

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Queen, Delbert F. Hummingbird feeder. 3,301,220, 1–31–67, Cl. 119—77.

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Cosentino, Louis S., and Wine. 3,302,036.
Goodrich, Hunter C. 3,302,033.
Gray, George W., Flory, Pike, and Morey. 3,302,168.
Jenkins, Richard. 3,301,959.
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Lemke, Eugene. 3,302,049.
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Obert Maximilian J., and Ammerman. 3,302,050.
Preisig, Joseph O. 3,302,056.
Sterzer, Fred. 3,302,028.
Wine, Charles M. 3,302,038.
Wine, Charles M. 3,302,152.

Raider, George K., to The Pyle-National Co. Coffer type ventilating ceiling structure. 3,301,163, 1–31–67, Cl. 98—40.

Rain Jet Corp.: *See*—
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Hruby, John O., Jr. 3,301,490.

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Rampe, John F. Apparatus for orbital finishing. 3,300,908, 1–31–67, Cl. 51—163.

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Raser, Edward J., and A. S. Lett, to International Business Machines Corp. Information retrieval system. 3,302,186, 1–31–67, Cl. 340—172.5.

Ratcliff, Nigel A., and D. H. Roberts, to St. Joseph Lead Co. Solid-state preparation of foamed lead. 3,301,672, 1–31–67, Cl. 75—201.

Rathbun, Phillip W. Work piece holder. 3,301,548, 1–31–67, Cl. 269—92.

Rathmann, Heinrich W., J. O. Staggers, and V. H. Street, to Vanadium Corp. of America. Production of a high chromium containing ferrochrome. 3,301,669, 1–31–67, Cl. 75—130.5.

Ratliff, Otho D., and H. J. McSpadden, to North American Aviation, Inc. Insulated solid propellant rocket motor. 3,301,785, 1–31–67, Cl. 252—62.

Ratliff, George D., Jr., to United States Steel Corp. Concrete floor with embedded projecting truss. 3,300,932, 1–31–67, Cl. 52—339.

Rau, Blase C., and J. C. Jasper, to Continental Can Co., Inc. Pull tab assembly. 3,301,431, 1–31–67, Cl. 220—54.

Rausing, Gad A., H. A., and S. O. B. Stark, to AB Tetra Pak. Opening device for packages. 3,301,458, 1–31–67, Cl. 229—7.

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Rausing, Gad A., H. A., and Stark. 3,301,458.

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Ray, Velma C. Self-inflating brassiere pad. 3,301,260, 1–31–67, Cl. 128—481.

Rayfield, Harry F., to Burroughs Corp. D.C. motor drive circuit. 3,302,090, 1–31–67, Cl. 318—257.

Raymond International Inc.: *See*—
Phares, Lindsey J., McCall, Spannhake, and Snow. 3,300,988.

Read, Thomas I., to The Russel Mfg. Co. Conveyor belt and method of jointing same. 3,300,826, 1–31–67, Cl. 24—38.

Read, Wendell S.: *See*—
Fried, David L., and Read. 3,302,027.

Reding, Marcel: *See*—
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Redmond, William G., to Ling-Temco-Vought, Inc. Voltage insensitive frequency monitoring system. 3,302,064, 1–31–67, Cl. 317—51.

Reeber, Rudolf, and H. Gross, to Paff, G. M. P., A. G. Kaiserslautern. Looper drive mechanism for chainstitch sewing machines. 3,301,207, 1–31–67, Cl. 112—200.

Reed, Frank M., and G. F. Bierman. Reheat cycle for steam turbine power plants. 3,300,974, 1–31–67, Cl. 60—73.

Reesby, Carl E., and J. B. Damrel, Jr., to Texas Instruments Inc. Temperature compensated pressure sensitive device. 3,301,002, 1–31–67 Cl. 73—393.

Reese, Glenn A., to The Magnavox Co. Magnetic gearing arrangement. 3,301 091. 1–31–67, Cl. 74—640.

Reeves, Robert E. to Inland Container Corp. Box closing device. 3,301,144, 1–31–67, Cl. 93—36.

Regan, Paul E., Jr., to Ethicon, Inc. Nested package. 3,301,392, 1–31–67, Cl. 206—56.

Regan, Paul E., Jr., and B. Lisowsky, to Ethicon, Inc. Suture package. 3,301,393, 1–31–67, Cl. 206—56.

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De Castelet, Gaetan de C. 3,301,085.
De Castelet, Gaetan de C. 3,301,484.

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Reid, John G., Jr., to American Radiator & Standard Sanitary Corp. Decrystallizing means for absorption refrigeration systems. 3,300,999, 1–31–67, Cl. 62—141.

Reiland, Frank D., to Gateway Erectors, Inc. A method of fabricating a self-braced concrete form. 3,301,926, 1–31–67, Cl. 264—45.

Reilly, Joseph P. Positive displacement internal combustion engine. 3,301,234, 1–31–67, Cl. 123—47.

Reimann, William G., to Litton Systems, Inc. Standardized welded wire modules. 3,302,066, 1–31–67, Cl. 317—101.

Reinecke, Gunter, to Benz & Hilgers G.m.b.H. Apparatus for the production of a lateral spacing between a plurality of adjacent cuts produced by longitudinal and cross cutting of a length of material. 3,301,550, 1–31–67, Cl. 271—51.

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Reinstein, Frederick K., and W. G. Taylor, to Thiokol Chemical Corp. Rocket engine construction. 3,301,184, 1–31–67, Cl. 102—49.

Reising, Francis M. Plastic pipe placer mechanism. 3,300,989, 1–31–67, Cl. 61—72.6.

Reiter, Daniel I. Devices and methods for handbag handle attachment. 3,301,294, 1–31–67, Cl. 150—33.

Reminder, Francis R., to Tri-City Mfg. Co. Filter assembly for shallow well intakes. 3,301.403, 1–31–67, Cl. 210—253.

Renshaw, John P. Piston stroke control mechanism. 3,301,244, 1–31–67, Cl. 123—197.

Repplach, Hellmut, to Dornier-Werke, G.m.b.H. Lighting system utilizing the floodlight principle. 3,302,012, 1–31–67, Cl. 240—8.16.

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Wikkerink, Lance A. 3,300,897.

Rescalli, Carlo: *See*—
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Research Products Corp.: *See*—
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Reser, George L.: *See*—
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Reynolds, Jack B.: *See*—
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Reznik, Israel. Combination television phonograph assembly. 3,301,952, 1–31–67, Cl. 178—7.9.

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Rice, Hal H., and M. J. Garey, to General Motors Corp. Method of making magnesium fluoride articles. 3,301,781, 1–31–67, Cl. 252—12.

Rich, John P., to Improved Machinery Inc. Pulp treatment apparatus. 3,301,027, 1–31–67, Cl. 68—181.

Rich, Robert A., and G. A. Hood, to North American Aviation, Inc. Thrust measurement calibrator. 3,301,038, 1–31–67, Cl. 73—1.

Richardson, Maxwell T. Simulated icicle decorations. 3,302,013, 1–31–67, Cl. 240—10.

Richter, Sidney B., and F. Ross, to Velsicol Chemical Corp. Phenyl N-hydrocarboxy - N - hydrocarbyl thiocarbamates. 3,301,885, 1–31–67, Cl. 260—455.

Richter, Sidney B., and A. A. Levin, to Velsicol Chemical Corp. Dialkyl - 2 - alkoxy-3,5,6-trihalotere-phthalates. 3,301,892. 1–31–67, Cl. 260—473.

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Riddell, Bruce. Plastic gutter construction. 3,300,911, 1–31–67, Cl. 52—16.

Riddell, John A., and E. L. Wheeler, to United States Rubber Co. Bis-(substituted amine)-N-alkyl diphenylamines as fungicides and algaecides. 3,301,750, 1–31–67, Cl. 167—30.

Riemenschneider, Wilhelm, K. Dialer, O. Probst, and O.-E. Bander, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for oxidising olefins to aldehydes, ketones. 3,301,905, 1–31–67, Cl. 260—597.

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Binder, Rolf, Lamparter, and Stahell. 3,300,817.

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Ripple, Melvin H., to The Hoover Co. Suction cleaner. 3,300,806, 1–31–67, Cl. 15—334.

Rischard, Robert A., and J. E. Jessup, to Anaconda Wire and Cable Co. Flexible cable bus duct including grounding means and telescopically engaging tubular members permitting expansion and contraction. 3,301,940, 1–31–67, Cl. 174—78.

Risk, George, R. C. Root, and J. E. Sotir, to Loup Engineering Co. Pivotal door construction and method. 3,300,900, 1–31–67, Cl. 49—381.

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Roberts, David H.: *See*—
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Robins, A. H., Co., Inc.: *See*—
Lunsford, Carl D., and Cale. 3,301,757.
Lunsford, Carl D., and Cale. 3,301,758.
Lunsford, Carl D., and Cale. 3,301,759.
Lunsford, Carl D. 3,301,860.

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Rockwell Mfg. Co.: *See*—
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Walch, Leo M., Jr. and Caywood. 3,301,053.

Roeber, Rodney W., to Peerless Photo Products, Inc. Processing mechanism. 3,301,156, 1–31–67, Cl. 95—89.

Rogers, Albert P. to Brunswick Corp. Automatic pinsetter wih drive modifying means. 3,301,557, 1–31–67, Cl. 273—42.

Rogers Corp.: *See*—
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Rohaus, Donald E., and R. J. Wilkins, to United States Steel Corp. Briquette-parting apparatus. 3,300,815, 1–31–67, Cl. 18—21.

Rohde, Robert P.: *See*—
Dye, Duane K., and Rohde. 3,301,011.

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Rohm & Haas G.m.b.H.: *See*—
Gruber, Wilhelm. 3,301,883.

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Roller, Siegfried, and G. Idler, to Firma C. Eugen Mairer Metallverarbeituny G.m.b.H. Bobbin removal mechanism for spinning machines. 3,300,958, 1–31–67, Cl. 57—58.

Rolls-Royce Ltd.: *See*—
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Malley, Harry H. 3,301,528.
Sherlaw, William, and Hensman. 3,300,965.

Roman, Harold. Container and a lid therefor, and means for detachably securing said lid to said container. 3,301,427, 1–31–67, Cl. 215—39.

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Rosa, John, and Peter E. Pityk, to Westinghouse Electric Corp. System for controlling the output of plural field dynamoelectric machine. 3,302,089, 1–31–67, Cl. 318—257.

Rosen, Frank, and H. F. Young, to Dominion Electric Corp. Driving unit for electric knife. 3,300,857, 1–31–67, Cl. 30—272.

Rosenvold, Lloyd K. and R. J. Eye shield blank and method of assembling same. 3,300,786, 1–31–67, Cl. 2—2.

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Rosett, Edward S., to General Time Corp. Algebraic computational subtraction device. 3,302,010, 1–31–67, Cl. 235—177.

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Joly, Robert, Warnant, Jolly, and Prost. 3,301,878.
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Rubens, Harry E. Hand luggage. 3,301,358, 1-31-67, Cl. 190—20.
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Rubert, Kennedy F., A. R. Vick, E. H. Andrews, Jr., and C. B. King, to United States of America, National Aeronautics and Space Administration. Method of obtaining permanent record of surface flow phenomena. 3,301,046, 1-31-67, Cl. 73—147.
Ruhrmann, Alfred: *See*—
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Ruskin, Henry, and E. S. Viola, to Swingline Inc. Method of securing components of a cap member to one another. 3,301,731, 1-31-67, Cl. 156—293.
Russell Mfg. Co., The: *See*—
Read, Thomas I. 3,300,826.
Russell, Robert B. Thermographic transfer sheet having a support of a paper and plastic coating and the method of use. 3,301,697, 1-31-67, Cl. 117—36.4.
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Ryan, John W., J. D. Moore, and W. D. Kabot, to Mattel, Inc. Suspension for two-wheeled vehicle. 3,301,575, 1-31-67, Cl. 280—275.
Ryan, Mary G. S. Weighted wrist cuff exerciser. 3,301,552, 1-31-67, Cl. 272—80.
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Simons, William R., and Judd. 3,301,072.
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Edwards, Richard A. 3,301,477.
SEF Industries, Inc.: *See*—
Brady, Eugene F. 3,301,615.
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Swatman, Peter P., and Morris. 3,301,536.
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Seeloff, Melvin M., to The Taylor-Winfield Corp. Method of joining metal sheet or strip. 3,301,994, 1-31-67, Cl. 219—117.
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Short, Glen A., to Shell Oil Co. Isotactic polypropylene modified with ethylenepropylene copolymer. 3,301,921, 1-31-67, Cl. 260—878.
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Simonin, Rene, Jr., to Barksdale Valves. Adjustable (differential) actuation value pressure switch. 3,301,977, 1-31-67, Cl. 200—82.
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Simpelaar, Clyde S., to Modine Mfg. Co. Bonding compositions. 3,301,688, 1-31-67, Cl. 106—1.
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Rotary Pen Corp.: *See*—
Von Arx, Marcel J. 3,301,221.

Rothberg, Henry M., and F. J. Foster, to United States Rubber Co. Rubber latex, graphite and cement. 3,301,799, 1-31-67, Cl. 260—17.

Roudnicke Strojirny A Slevarny: *See*—
Dosedla, Miroslav, and Pavlica. 3,300,895.

Roussel-U.C.L.A.F.: *See*—
Joly, Robert, Warnant, and Jolly. 3,301,756.
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Rowlands, Richard O., to United States of America, Navy. Doppler sonar apparatus. 3,302,162, 1-31-67, Cl. 340—3.

Royal Typewriter Co., Inc.: *See*—
Heiner, Edward A. 3,301,108.

Rubens, Harry E. Hand luggage. 3,301,358, 1-31-67, Cl. 190—20.

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Ruhrmann, Alfred: *See*—
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Zollinger, Hans. 3,301,279.

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Saita, Jisaburo and H. 3,301,347.

Saita, Jisaburo and H. Lifesaving equipment to be used for structures. 3,301,347, 1-31-67, Cl. 182—48.

Sakai, Michihiko, M. Kato, Y. Sato, K. Konishi, and T. Okutani, to Takeda Chemical Industries, Ltd. Pesticidal O,O-dimethyl-O-(2- or 3-methoxy-4-cyanophenyl) phosphorothioate. 3,301,749, 1-31-67, Cl. 167—30.

Sakai, Ryo: *See*—
Asaeda, Toshio, Sakai, and Hirano. 3,300,907.

Hirano, Tadayoshi: *See*—
Asaeda, Toshio, Sakai, and Hirano. 3,300,907.

Sallmann, Alfred R.: *See*—
Pfister, Rudolf, and Sallmann. 3,301,861.

Sam, Joseph. Thienocyclopentanone antibacterial agents. 3,301,874, 1-31-67, Cl. 260—332.3.

Samonski, Frank H., Jr.: *See*—
Smylie, Robert E., Samonski, and Collier. 3,300,949.

Sampson, Edward J., to Kaman Aircraft Corp. Magnetic compass. 3,300,867, 1-31-67, Cl. 33—222.

Sanden, Milton V. Dental mirror. 3,300,859, 1-31-67, Cl. 32—69.

Sandhage, Ellsworth R.: *See*—
Fahrenbach, Marvin J., Bell, and Sandhage. 3,301,065.

Sandner, Walter J.: *See*—
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Sandoz Ltd. (also known as Sandoz AG.): *See*—
Steinemann, Willy. 3,301,844.

Sandt, J., Aktiengesellschaft: *See*—
Hartmann, Willi. 3,301,113.

Sanford, Lawrence H., and J. B. Sisson, to The Procter & Gamble Co. Process for forming absorbent paper by imprinting a fabric knuckle pattern thereon prior to drying and paper thereof. 3,301,746, 1-31-67, Cl. 162—113.

Sanford, Robert A., to General Electric Co. Electrolytic balancing apparatus. 3,301,090, 1-31-67, Cl. 74—573.

Santelli, Thomas B., to Owens-Illinois, Inc. Collapsible container. 3,301,293, 1-31-67, Cl. 150—.5.

Sapp, Robert H.: *See*—
Cox, Andrew P., Jr., Sapp, and Abruzzo. 3,302,185.

Sarlitto, Raymond J.: *See*—
Eschenbach, Richard C., Skinner, Sarlitto, and Wickham. 3,301,995.

Sasabe, Kaoru: *See*—
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Satchell, Fred E., and W. L. Jolitz, to Brunswick Corp. Bowling pin with sound controlling means. 3,301,560, 1-31-67, Cl. 273—82.

Sato, Kiyoshi: *See*—
Sugahara, Yujiro, Tsuchida, Sato, and Usui. 3,300,870.

Sato, Yasuo: *See*—
Sakai, Michihiko, Kato, Sato, Konishi, and Okutani. 3,301,749.

Satori, Guido: *See*—
Natta, Giulio, Massanti, Valvassori, Satori, and Turba. 3,301,833.

Sauter, Karl: *See*—
Schindler, Gottfried, and Sauter. 3,301,168.

Sayigh, Adnan A. R., and H. Ulrich, to The Upjohn Co. Process for the preparation of carbodimides. 3,301,895, 1-31-67, Cl. 260—551.

Scalella, Albert, and W. R. Kilroy. Egg-shelling device. 3,301,290, 1-31-67, Cl. 146—2.

Schachter, Myron M., to United States of America, National Aeronautics and Space Administration. Apparatus for producing three dimensional recordings of fluoroescence spectra. 3,302,023, 1-31-67, Cl. 250—71.

Schafroth, Werner, and A. E. Cairatti; said Cairatti assor. to said Schafroth. Nailing machine. 3,301,456, 1-31-67, Cl. 227—120.

Schauffler, Peter P. Electronic channel guidance system. 3,302,203, 1-31-67, Cl. 343—112.

Scheinpflug, Hans F. Grewe, and H. F. Jung, to Farbenfabriken Bayer Aktiengesellschaft. Fungicidal composition containing bisaticidin S and metal salts of 1,2-propylene-bisdithiocarbomate. 3,301,747, 1-31-67, Cl. 167—22.

Scherbner, Paul J., to The Beryllium Corp. Process for producing beryllium copper base alloys and products. 3,301,717, 1-31-67, Cl. 148—2.

Scherer, Louis F.: *See*—
Exley, George A., and Scherer. 3,301,927.

Schering Corp.: *See*—
Villani, Frank J. 3,301,863.

Scheurer, Robert S. Life jacket. 3,300,797, 1-31-67, Cl. 9—342.

Schick, John W., and J. H. Mahar, to Mobil Oil Co. Asphalt-aldehyde-phenolic compound containing compositions. 3,301,803, 1-31-67, Cl. 260—28.

Schickendans, Erich, to Firm Scholl-Werke G.m.b.H. Surgical pad. 3,301,254, 1-31-67, Cl. 128—153.

Schickle, Ernst R., to Rheingold Breweries, Inc. Apparatus for removing beer kegs from a conveyor and accumulating the kegs in groupings for storage thereof. 3,301,380, 1-31-67, Cl. 198—33.

Schindler, Gottfried, and K. Sauter, to Luwa Ag. Quick closure mechanism for the air passage openings of shelters and the like. 3,301,168, 1-31-67, Cl. 98—119.

Schkeeper, Paul J.: *See*—
Tollison, Paul L., Ricards, and Schkeeper. 3,300,819.

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Pfaff, Henry C., Jr., and Schlosser. 3,301,533.

Schlumberger Well Surveying Corp.: *See*—
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Kisling, James W., III. 3,301,064.

Schmelser, Hans-Georg: *See*—
Degener, Eberhart, Holtschmidt, and Schmelser. 3,301,898.

Schmermund, Alfred. Cigarette feeding arrangements. 3,301,375, 1-31-67, Cl. 198—24.

Schmid, Konrad. Reactance amplifier including phase modulation and demodulation. 3,302,121, 1-31-67, Cl. 330—7.

Schmidt, Albert S., Sr.: *See*—
Grossi, Lewis G., and Schmidt. 3,300,945.

Schmidt, Gunther: *See*—
Van Schyndel, Andreas, and Schmidt. 3,300,937.
Van Schyndel, Andreas, and Schmidt. 3,300,938.

Schmidt, Max. Apparatus for making hollow plastic articles. 3,301,737, 1-31-67, Cl. 156—511.

Schmidt-Nickels, Wilhelm: *See*—
Chiddix, Max E., Randall, and Schmidt-Nickels. 3,301,846.

Schoemehl, Henry F., and J. A. Tasarles, to Hoffman Electronics Corp. Controlled rectifier relaxation oscillator. 3,302,128, 1-31-67, Cl. 331—107.

Schoen, Herman, to North American Philips Co., Inc. Multiplicative mixing with transistors. 3,302,118, 1-31-67, Cl. 25—451.

Schoentgen, John P.: *See*—
Brandt, Ralph H., and Schoentgen. 3,301,128.

Schols, Heinrich: *See*—
Koenig, Karl-Heinz, Datow, Pommer, Jung, and Schols. 3,301,902.

Schols, Herbert, and P. Palic, to North American Philips Co., Inc. Sample changer for radio-active samples using endless flexible means for sample transportation. 3,302,025, 1-31-67, Cl. 250—106.

Schott, Arthur K., to Hondaille Industries, Inc. Press ram assembly. 3,300,972, 1-31-67, Cl. 60—54.5.

Schraudenbach, Paul. Paving block. 3,301,148, 1-31-67, Cl. 94—13.

Schroeder, Robert E.: *See*—
Belcher, Gary L., Schroeder, and Starck. 3,300,888.

Schroder, Johann: *See*—
Nijland, Louis M., and Schroder. 3,301,021.

Schubert, Rudolf, and H. Stenger, to Telefunken Patentverwertungs-G.m.b.H. Arrangement for correcting the geometry of the picture of a television picture tube by means of one or more adjustably mounted magnets. 3,302,145, 1-31-67, Cl. 335—212.

Schultze, Hermann E., K. Heide, and H. Haupt, to Behringwerke Aktiengesellschaft. Process for isolating antitrypsin from human or animal humors. 3,301,842, 1-31-67, Cl. 260—112.

Schumacher, William L., to AMP Inc. Pluggable electrical connectors. 3,302,159, 1-31-67, Cl. 339—177.

Schurink, Herbert J., to Aktiebolaget Götaverken. Hydraulic driving means for operating hatch covers. 3,301,313, 1-31-67, Cl. 160—188.

Schwab, Ray E., to Sylvania Electric Products, Inc. Cathode bar structure for glow discharge devices. 3,302,052, 1-31-67, Cl. 313—109.5.

Schwabe, William E., and J. A. Ciotti, to Union Carbide Corp. Pyrometer. 3,301,061, 1-31-67, Cl. 73—359.

Schwarz, Enid: *See*—
Barton, Oliver A., and Schwartz. 3,301,818.

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Schwartz, William L., to Westinghouse Electric Corp. Air conditioner with vent assembly therefore. 3,301,166, 1-31-67, Cl. 98—94.

Schwarz Bioresearch, Inc.: *See*—
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Schweickert, John R., to Ryan Aeronautical Co. Microwave constant gain linear bandpass amplifier. 3,302,123, 1-31-67, Cl. 330—21.

Schwertfeger, Owen J., and F. D. Brill, to The Seeburg Corp. Product dispensing device. 3,301,442, 1-31-67, Cl. 222—252.

Sciame, Tony. Combination printing and hot stamping press. 3,301,174, 1-31-67, Cl. 101—27.

Scott, Edwin M., Jr. Detonatable compositions comprising metal nitrates and mononitroparaffins. 3,301,724, 1-31-67, Cl. 149—62.

Scott, Henry T. Tray and bracket assembly. 3,301,406, 1-31-67, Cl. 211—88.

Scott Paper Co.: *See*—
Coppick, Sydney, and Brown. 3,301,745.

Scott, Robert D.: *See*—
Howard, Harold D., and Scott. 3,301,167.

Scoville, Harmon G.: *See*—
Pyatt, Lawrence A. 3,302,131.

Scully-Jones and Co.: *See*—
Kosinski, Joseph W. 3,301,082.

Seakan, Raymond, to J. T. Hajec. Vehicle washing apparatus. 3,300,803, 1-31-67, Cl. 15—21.

Searle, G. D., & Co.: *See*—
Cusic, John W., and Le Von. 3,301,851.
Klimstra, Paul D. 3,301,850.
Klimstra, Paul D. 3,301,876.
Sollman, Paul B. 3,301,872.

Sears, Arthur H.: *See*—
Stohrer, Charles E., Jr., and Sears. 3,301,311.

Seay, Orum E., to Halliburton Co. Hydraulic shock absorbing apparatus. 3,301,410, 1-31-67, Cl. 213—43.

Seeburg Corp., The: *See*—
Schwertfeger, Owen J., and Brill. 3,301,442.

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Varga, Otto H. 3,301,524.

Seeloff, Melvin M., to The Taylor-Winfield Corp. Method for joining flat metal stock. 3,301,992, 1-31-67, Cl. 219—105.

Seeloff, Melvin M., to The Taylor-Winfield Corp. Method of joining metal sheet or strip. 3,301,994, 1-31-67, Cl. 219—117.

Seidner, Orville R., to The Garrett Corp. Protective apparatus for a rocket motor. 3,300,975, 1-31-67, Cl. 60—207.

Self, Carl L.: *See*—
Vaughn, Arthur, and Self. 3,301,337.

Selvin, Manuel, and F. S. Preston, to United Aircraft Corp. Automatic terrain avoidance system. 3,302,198, 1-31-67, Cl. 343—7.

Semenchuk, William F., to Canada Iron Foundries, Ltd. Method of welding ductile iron. 3,301,997, 1-31-67, Cl. 219—137.

Semper, Kenneth D. S., to Hancock & Co. (Engineers) Ltd. Oxygen jet cutting machines. 3,301,543, 1-31-67, Cl. 266—23.

Sendish, Otto J. Ottovent shroud system. 3,301,509, 1-31-67, Cl. 244—42.

Senior, Alwyn: *See*—
Drucker, Arnold, and Senior. 3,301,797.

Sensi, Piero, and M. T. Timbal, to Lepetit S.p.A. Antibiotic. 3,301,753, 1-31-67, Cl. 167—65.

Sensing, William J., to General Motors Corp. Vehicle engine coolant condition indicator. 3,302,171, 1-31-67, Cl. 340—57.

Sevebeck, Laurin L.: *See*—
Blakeslee, William W., Grunfelder, Nadolny, Sevebeck, and Vogell. 3,301,958.

Shackson, Richard H., to Cleveland Technical Center, Inc. Collapsible reel. 3,301,500, 1-31-67, Cl. 242—71.8.

Shafer, William C., to Owens-Corning Fiberglas Corp. Method and apparatus for indication and control of fiber-forming operations. 3,301,647, 1-31-67, Cl. 65—11.

Shakarian, Demos D. Method of milking cows. 3,301,215, 1-31-67, Cl. 119—14.02.

Shalloway, Arthur M., to Honeywell Inc. Control apparatus. 3,301,071, 1-31-67, Cl. 74—5.6.

Sharp, Allen B., to Highway Equipment Co. Motor mount. 3,301,006, 1-31-67, Cl. 64—4.

Sharp, Eugene D.: *See*—
Jones, Edward M. T., and Sharp. 3,302,111.

Sharpe, Edward L.: *See*—
Falkenberg, Douglass R., and Sharpe. 3,301,402.

Shaw, Thomas P., to Beckman Instruments, Inc. Resistance measuring apparatus including an automatic balancing bridge. 3,302,106, 1-31-67, Cl. 324—62.

Sheffield, Richard M.: *See*—
Norlie, Robert N., and Sheffield. 3,301,288.

Sheldon, Gilbert J., to Bausch & Lomb Inc. Method of confining and surfacing end portions of optical fiber bundles for maximum light transmission. 3,301,648, 1-31-67, Cl. 65—4.

Sheldrick, William F.: *See*—
Dee, Geoffrey T., and Sheldrick. 3,301,657.

Shell Oil Co.: *See*—
Adams, Charles T., Brandenberger, and Nager. 3,301,793.
Durham, Harry G., Fan, and Turner. 3,301,751.
Haken, Pieter T. 3,301,873.
Lewallen, William J., and Wood. 3,301,792.
Parry, Harvey L. 3,301,814.
Short, Glen A. 3,301,920.
Short, Glen A. 3,301,921.

Shepard, Francis H., Jr., to Shepard Laboratories, Inc. Hammer firing arrangement for high speed printer. 3,301,177, 1-31-67, Cl. 101—93.

Shepard Laboratories, Inc.: *See*—
Shepard, Francis H., Jr. 3,301,177.

Sherburne, Arthur E.: *See*—
Blanchard, Robert L., and Sherburne. 3,301,056.

Sherlaw, William, and G. K. Hensman, to Rolls-Royce Ltd. Gas turbine engine fuel heating and oil cooling system. 3,300,965, 1-31-67, Cl. 60—39.08.

Sherman, George R., to General Electric Co. Domestic oven with movable wall panels. 3,302,000, 1-31-67, Cl. 219—393.

Sherwin-Williams Co., The: *See*—
Cryer, John, and Bobo. 3,301,903.
Cryer, John. 3,301,904.

Shiki, Haruo, to Nippon Electric Co., Ltd. Control signal generator for diversity reception. 3,302,115, 1-31-67, Cl. 325—304.

Shinkai, Mikio: *See*—
Kawasaki, Shigeo, Yusa, and Shinkai. 3,301,909.

Shock, D'Arcy A., W. W. Woods, and H. F. Coffer, to Continental Oil Co. Underground antenna buried in frozen soil. 3,302,206, 1-31-67, Cl. 343—719.

Shoe Tech Inc.: *See*—
Quimet, Emil R. 3,300,800.

Shonkwiler, Francis P.: *See*—
Hansen, Kenneth W., and Shonkwiler. 3,301,546.

Shore, Paul B., to Weyerhaeuser Co. Multicolored lithographed record jacket. 3,301,467, 1-31-67, Cl. 229—68.

Short, Glen A., to Shell Oil Co. Isotactic polypropylene modified with ethylenepropylene copolymer. 3,301,920, 1-31-67, Cl. 260—878.

Short, Glen A., to Shell Oil Co. Isotactic polypropylene modified with ethylenepropylene copolymer. 3,301,921, 1-31-67, Cl. 260—878.

Short, Harold O., to The Black and Decker Mfg. Co. Fan assembly for high-torque application. 3,302,047, 1-31-67, Cl. 310—60.

Shorthouse, Barry O.: *See*—
King, Ralph W., and Shorthouse. 3,301,915.

Shultz, James D., and R. F. Wells. Cover lifting apparatus. 3,301,103, 1-31-67, Cl. 81—3.32.

Shumaker, Lucky J., to H. H. Robertson Co. Hanger means for sheet metal sectional roofing and flooring. 3,300,912, 1-31-67, Cl. 52—39.

Shurtleff, O. O., to Chatleff Controls, Inc. Valves with electrically operated closure means. 3,301,489, 1-31-67, Cl. 230—22.

Sicherman, Gerald. Tug of war game apparatus. 3,301,555, 1-31-67, Cl. 273—1.

Siddall, Stanley G. Reversible snow plows. 3,300,881, 1-31-67, Cl. 37—43.

Siegel, Max, to Baby Line Furniture Corp. Crib side lock. 3,300,795, 1-31-67, Cl. 5—100.

Siemens-Schuckertwerke Aktiengesellschaft: *See*—
Dahlke, Heinz. 3,302,015.

Siemens & Halske Aktiengesellschtft: *See*—
Preissinger, Karl H. 3,302,082.

Sierracin Corp., The: *See*—
Warren, Robert A. 3,302,002.

Silberg, Hemming G., to Tung-Sol Electric Inc. Flasher for directional and emergency signals. 3,302,057, 1-31-67, Cl. 315—77.

Silva, Fred P.: *See*—
Platt, Stanton J. 3,301,564.

Simko, Frank A., Jr.: *See*—
Bergna, Horacio E., and Simko. 3,301,635.

Simoncini, Francesco, to Officine Simoncini S.p.A. Method of type character reproduction. 3,301,125, 1-31-67, Cl. 88—24.

Simonin, Rene, Jr., to Barksdale Valves. Adjustable (differential) actuation value pressure switch. 3,301,977, 1-31-67, Cl. 200—82.

Simons, William R., and D. L. Judd, to S. Smith & Sons (England) Ltd. Rate gyroscopes. 3,301,072, 1-31-67, Cl. 74—5.6.

Simpelaar, Clyde S., to Modine Mfg. Co. Bonding compositions. 3,301,688, 1-31-67, Cl. 106—1.

Simpson, Richard W., to V-M Corp. Adapter spindle for record changers. 3,301,563, 1-31-67, Cl. 274—10.

Singer Co., The: *See*—
Card, Roy T. 3,301,205.
Wigington, Jerry. 3,302,088.

Sipress, Jack M., to Bell Telephone Laboratories, Inc. Pulse transmission system. 3,302,193, 1-31-67, Cl. 340—347.

Sirrine, Edwin B.: *See*—
Allen, Terry S., Close, Lidia, and Sirrine. 3,301,074.

Sisson, James B.: *See*—
Sanford, Lawrence H., and Sisson. 3,301,746.

Skaare, Peter B. Reusable stakes. 3,300,920, 1-31-67, Cl. 52—150.

Skellett, Albert M., to Tung-Sol Electric Inc. Field effect transistor with a junction parallel to the (111) plane of the crystal. 3,302,078, 1-31-67, Cl. 317—235.

Skinner, George M.: *See*—
Eschenbach, Richard C., Skinner, Sarlitto, and Wickham. 3,301,995.

Skovronek, Herbert S., to Texaco Inc. 2,2-dihydroxymethylalkyl hydrocarbonthiophosphonates and method of preparation. 3,301,923, 1-31-67, Cl. 260—953.

Slater Electric Inc.: *See*—
Weitzman, Milton J. 3,301,988.

Slater, Raymond L., and W. F. Fisher, to Clevite Corp. Method of making bimetallic bearing material. 3,300,836, 1–31–67, Cl. 29—149.5.

Slater, Raymond L.: *See*—
Fisher, William F., and Slater. 3,300,837.

Slater, Raymond L., and W. F. Fisher, to Clevite Corp. Method of making bimetallic bearing material. 3,300,838, 1–31–67, Cl. 29—149.5.

Slavik, William H., to Motorola, Inc. Dynamic pincushion distortion correction for television receivers. 3,302,055, 1–31–67, Cl. 315—24.

Slichter, Louis B.: *See*—
Stewart, Duncan J., Lilja, and Slichter. 3,300,860.

Small Lot Stamping Co.: *See*—
Peterson, Horthun L. 3,301,112.

Smiley, Karl L., to United States of America, Agriculture. Process for obtaining amyloglucosidase. 3,301,768, 1–31–67, Cl. 195—66.

Smiley, William D., to Esso Production Research Co. Tungsten carbide compositions, method and cutting tool. 3,301,-645, 1–31–67, Cl. 51—309.

Smith, Dale A., and R. M. Truesdell, to Collins Radio Co. Gain control circuit with selectable attack time constant that is independent of a fixed decay time constant. 3,302,-117, 1–31–67, Cl. 325—410.

Smith, John J., to Mueller Co. By-pass fluid meter fitting. 3,301,051, 1–31–67, Cl. 73—201.

Smith, Michael T.: *See*—
Hardy, Derek J., and Smith. 3,301,343.

Smith, Milliard F. Apparatus for coating tubes. 3,301,736, 1–31–67, Cl. 156—501.

Smith, Richard E., and R. L. Boston, to General Aniline & Film Corp. Thermal developing apparatus. 3,301,157, 1–31–67, Cl. 95—89.

Smith, Samuel H., to A—: Bit & Tool Co. Swivel for supporting drill string in submerged casing head. 3,301,324, 1–31–67, Cl. 166—.5.

Smith, Thomas R., to The Maytag Co. Laundry apparatus. 3,301,024, 1–31–67, Cl. 68—12.

Smith, Walter J., and R. B. Parker, to Johnson Service Co. Humidity sensing element. 3,301,057, 1–31–67, Cl. 73—337.

Smithcraft Corp.: *See*—
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Smoot, Thomas W., to Harbison-Walker Refractories Co. Method of making partially stabilized zirconia. 3,301,646, 1–31–67, Cl. 51—309.

Smylie, Robert E., F. H. Samonski, Jr., and F. Collier, to United States of America, National Aeronautics, and Space Administration. Liquid-gas separator for zero gravity environment. 3,300,949, 1–31–67, Cl. 55—35.

Snam S.p.A.: *See*—
Di Cio, Alessandro, Ginnasi, and Rescalli. 3,301,770.
Cariati, Vittorio, Massi, and Di Cio. 3,301,771.

Snelling, Thomas E. Energy absorbing structure. 3,301,335, 1–31–67, Cl. 173—162.

Snow, Richard K.: *See*—
Phares, Lindsey J., McCall, Spannhake, and Snow. 3,300,988.

Sochting, Herbert, to Hoerbiger Ventilwerke Aktiengesellschaft. Atomizer. 3,301,491, 1–31–67, Cl. 239—238.

Societe Alsacienne de Constructions Atomiques de Con Telecommunications et DlElectronique "Alcatel": *See*—
Maudinet, Louis, Ziegelmeyer, and Dintzner. 3,301,588.

Societe Anglo-Belge Vulcain S.A.: *See*—
Timbs, Arthur E., and Dodd. 3,301,764.

Societe Anonyme Andre Citroen: *See*—
Henry-Biabaud, E. 3,301,248.

Societe d'Electro-Chime d'Electro-Metallurgie et des Acieries Electriques d'Ugine: *See*—
Borrel, Marcel, and Konareff. 3,301,890.

Societe de Transactions Commerciales et Industrielles Entre la France et l'Allemagne (in abbreviation S.O.T.R.A.F.A.): *See*—
Maudinet, Louis, Ziegelmeyer, and Dintzner. 3,301,588.

Societe Nationale d'Etude et de Construction de Moteurs d'Aviation: *See*—
Aubert, Jacques. 3,300,979.

Societa Nazionale delle Officine de Savigliano: *See*—
De Gasperis, Franco. 3,301,409.

Soderholm, Leo H.: *See*—
Amy, Jonathan W., and Soderholm. 3,301,481.

Sollman, Paul B., to G. D. Searle & Co. (Optionally 17-alkylated) 17-oxygenated-2-thia-5-androstan-3-ones, mercaptoacids corresponding and esters thereof. 3,301,872, 1–31–67, Cl. 260—327.

Sony Corp.: *See*—
Kawamoto, Takuya and S. 3,302,032.

Sorg, Karl W., and P. Heimbach, to Linde Aktiengesellschaft. Apparatus for separation of liquids from gases. 3,300,951, 1–31–67, Cl. 55—355.

Sornsen, Wallace V., to Paul E. Hawkinson Co. Power operated retread tire press. 3,300,814, 1–31–67, Cl. 18—18.

Sotir, Joseph E.: *See*—
Risk, George, Root, and Sotir. 3,300,900.

Soto, Ricardo H. Feeding device for infants and method. 3,301,423, 1–31–67, Cl. 215—11.

Souder, Louis C.: *See*—
Cenci, Harry J., and Souder. 3,301,919.

Southern Machinery Co.: *See*—
Jones, Coy V., Sr., and Edler. 3,300,961.

Sowards, Edward W. Compensating roller and limit means therefor. 3,301,384, 1–31–67, Cl. 198—202.

Space Control Corp.: *See*—
Hendricks, William W. 3,301,422.

Spaulding, Daniel E. Paper cutter. 3,301,117, 1–31–67, Cl. 83—455.

Speedfast Corp.: *See*—
Garfinkel, Jack. 3,301,139.

Spees, Arthur T. File card system and cards therefor. 3,301,263, 1–31–67, Cl. 129—16.7.

Sperber, Henry, and D. Zapiler. Fuel system. 3,301,310, 1–31–67, Cl. 158—46.5.

Sperry Rand Corp.: *See*—
Allen, Terry S., Close, Lidia, and Sirrine. 3,301,074.
Bina, Robert A. 3,302,177.
Bolton, Robert H. 3,302,084.
Boylan, Robert E., and Kukuk. 3,302,190.
Craig, Orlyn W. 3 302,062.
Free, William R. 3,302,116.
Glass, Emmett F. 3,300,953.
Korkowski, Vincent J., and Nelson. 3,302,189.

Spitz, Melvin P., to Bedline Inc. Folding sofa-bed construction. 3,300,792, 1–31–67, Cl. 5—13.

Spiwak, Lazarus, G. R. Traut, P. L. Anderson, and J. A. Zagusta, to Rogers Corp. Method of making a printed circuit. 3,301,730, 1–31–67, Cl. 156—267.

Spouge, Eric H.: *See*—
McFarlane, Arthur H., and Spouge 3,301,592.

Springob, Leonhard: *See*—
Geisel, Herbert, and Springob. 3,301,991.

Square D Co.: *See*—
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Stackpole Carbon Co.: *See*—
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Staeuble, Max: *See*—
Jenny, Walter, Hari, Staeuble, and Weber. 3,300,491.

Staggers, John O.: *See*—
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Stabell, Paul: *See*—
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Stahl, William H.: *See*—
Levy, Eugene L., Herk, Stahl, and Lawrey. 3,301,040.

Stahr, Henry M., to General Electric Co. Electrolytic capacitor and electrolyte material operating over wide temperature range. 3,302,071, 1–31–67, Cl. 317—320.

Staley, John, to Philip Morris Inc. Package for tobacco products. 3,301,468, 1–31–67, Cl. 229—87.

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Stan, Henry: *See*—
Glass, Marvin I., Disko, and Stan. 3,300,894.

Standard Packaging Corp.: *See*—
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Stanley, John E., to Duo-Flex Corp. Ceiling air conditioning system. 3,301,165, 1–31–67, Cl. 98—40.

Stanwick, Glenn W., to Accurate Automatic Parts, Inc. Interfering thread form. 3,301,299, 1–31–67, Cl. 151—22.

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Rausing, Gad A., Rausing, and Stark. 3,301,458.

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Belonger, Robert L. 3,301,188.

Starr, John R. Collapsible and stackable carton. 3,301,462, 1–31–67, Cl. 229—37.

Stecker, Carl G. Automatic form tool folder. 3,301,099, 1–31–67, Cl. 77—1.

Steel, Robert, to The Upjohn Co. Microfermentor and process of using. 3,301,769, 1–31–67, Cl. 195—80.

Stegner, Harvey L., to Blankmaster, Inc. Means and method of roll forming and punching. 3,301,110, 1–31–67, Cl. 83—56.

Steinberg, Hyman A. Food juice deflector means for solar oven. 3,301,171, 1–31–67, Cl. 99—425.

Steinberg, Richard W., to Owatonna Mfg. Co., Inc. Clutch mechanism having shaft actuating means. 3,301,366, 1–31–67, Cl. 192—96.

Steinemann, Willy, to Sandoz Ltd. (a/k/a Sandoz AG.). Unsymmetrical disazo formazane dyes. 3,301,844, 1–31–67, Cl. 260—146.

Stelle, Russell T. Building structure. 3,300,925, 1–31–67, Cl. 52—293.

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Stephenson, James H. Transparent container for books, magazines and the like. 3,301,621, 1–31–67, Cl. 312—234.

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Hayman, David F., Petrow, and Stephenson. 3,301,896.

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Sterzer, Fred, to Radio Corp. of America. High efficiency light modulation system. 3,302,028, 1–31–67, Cl. 250—199.

Steuernagel, Walter, to Metallgesellschaft Aktiengesellschaft. Fastening means and method of fastening electrostatic filter plates. 3,300,850, 1–31–67, Cl. 29—482.1.

Stewart, Douglas C., M. I. Adair, and E. E. Gerlach, to Actine Homes Corp. House trailer with swingable extension. 3,300,914, 1–31–67, Cl. 52—67.

Stewart, Duncan J., E. D. Lilja, and L. B. Slichter, to United States of America, Navy. Submarine attack director. 3 300,860, 1–31–67, Cl. 33—1.

Stewart, Edgar R. Shopping bag cover and carrier. 3,301,-453, 1–31–67, Cl. 224—49.

Stewart, Russell T. and William D. Stereoscopic picture camera and lenticular screen assembly therefor. 3,301,154, 1–31–67, Cl. 95—18.

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Stewart, William D.: *See*—
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Stiehl, Karl, and H. Franz, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Air pervious composite fabric. 3,301,740, 1–31–67, Cl. 161—98.

Stigleman, Alan H. Chute construction. 3,301,368, 1–31–67, Cl. 193—25.

St. Joseph Lead Co.: *See*—
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Stoeckhert, Klaus, to Continental Can Co., Inc. Process for the forming of shaped articles of thermoplastic foam material. 3,301,935, 1–31–67, Cl. 264—321.

Stohrer, Charles E., Jr., and A. H. Sears, to Harper-Wyman Co. Gas burner. 3,301,311, 1–31–67, Cl. 158—116.

Stone, Edward P. Milling cutter tool. 3,300,834, 1–31–67, Cl. 29—105.

Stone, Joseph J., to A. B. Dick Co. Electrostatic image copier having photoconductive element switching. 3,301,-947, 1–31–67, Cl. 178—6.6.

Stoppa, Gianfranco: *See*—
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Storchheim, Samuel, to Alloys Research & Mfg. Corp. Aluminous sintered parts and techniques for fabricating same. 3,301,671, 1–31–67, Cl. 75—200.

Stover, Jordan H., III, to The Lamson and Sessions Co. Flanged lock nut. 3,301,298, 1–31–67, Cl. 151—21.

Stowe, Robert A., and J. B. Reynolds, to The Dow Chemical Co. Process for production of magnesium hydroxide and calcium chloride. 3,301,633, 1–31–67, Cl. 23—90.

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Streeter, Allen R., to General Motors Corp. Reciprocating pump with full spring drive cycle. 3,301,195, 1–31–67, Cl. 103—150.

Strobel, Albert, to I-T-E Breaker Co. Circuit breaker instantaneous trip adjustment. 3,302,140, 1–31–67, Cl. 335—35.

Sturtevant, Foster E., to Colt's Inc. Mechanism for changing rate of automatic fire. 3,301,133, 1–31–67, Cl. 89—131.

Stutz, Roger A. Silverware sorting device. 3,301,397, 1–31–67, Cl. 209—73.

Stutz, Theo, to Contraves AG. Parallel adder for binary coded numbers. 3,302,009, 1–31–67, Cl. 235—174.

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Sugahara, Yujiro, H. Tsuchida, K. Sato, and K. Usui, to Mizusawa Kagaku Kogyo Kabushiki Kaisha. Multistage pneumatic conveying drying equipment. 3,300,870, 1–31–67, Cl. 34—57.

Sugaya, Masao. Beam clamp and clip assemblies. 3,301,513, 1–31–67. Cl. 248—72.

Sugaya, Masao. Clips for conduits or pipes. 3,301,514, 1–31–67, Cl. 248—734.

Summergrad, Rubin N., to General Telephone and Electronics Laboratories, Inc. Method of preparing aluminum arsenide. 3,301,638, 1–31–67, Cl. 23—204.

Sun Oil Co.: *See*—
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Dougherty, Patrick F., and Closs. 3,300,983.

Sun-Pak Products, Inc.: *See*—
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Sunnen, Joseph. Bore gage. 3,300,865, 1–31–67, Cl. 33—178.

Superior Electric Co., The: *See*—
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Perrins, Allen R. 3,302,098.

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Svendsen, Walter D.: *See*—
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Svoboda, Vlastimil: *See*—
Terzijski, Drahomira, Svoboda, and Korbl. 3,301,870.

Swarts, William. Process for making three dimensional display items. 3,301,728, 1–31–67, Cl. 156—220.

Swatman, Peter P., and J. N. Morris, to S V. Carburetter Co. Ltd. Carburetters for internal combustion engines. 3,301,536, 1–31–67, Cl. 261—44.

Swezey, Edwin W., to Union Camp Corp. Tear opening for display packages and method of making same. 3,301,395, 1–31–67, Cl. 206—80.

Swingline Inc.: *See*—
Ruskin, Henry, and Viola. 3,301,731.

Sylvania Electric Products, Inc.: *See*—
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Syntex Corp.: *See*—
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Szmuszkovicz, Jacob, to The Upjohn Co. Novel pyridoindoles. 3,301 867, 1–31–67, Cl. 260—296.

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Takayanagi, Kenjiro, to Victor Co. of Japan, Ltd. Control system for magnetic recording device. 3,301,946, 1–31–67, Cl. 178—6.6.

Takeda Chemical Industries, Ltd.: *See*—
Sakai, Michihiko, Kato, Sato, Konishi, and Okutani. 3,301,749.

Talet, Pierre, to Nobel-Bozel. Method of manufacturing acrylamide. 3,301,900, 1–31–67, Cl. 260—561.

Tanaka, Yutaka, and K. Sasabe, to Matsushita Electric Industrial Co., Ltd. Variable synchronous motors which rotate at a self-determined rotational speed. 3,302,083, 1–31–67, Cl. 318—138.

Tanner, Richard, to Non Roll A.G. Method and furnace for the combustion of low-grade fuels, for instance refuse and the like. 3,301,222, 1–31–67, Cl. 122—2.

Tapp, Geoffrey E. E., and J. Davey, to County Commercial Cars Ltd. Suspensions for the front steerable wheels of a vehicle. 3 301,572, 1–31–67, Cl. 280—95.

Tatter, Ernest O. P., to Warwick Electronics Inc. Spindle adapter. 3,301,562, 1–31–67, Cl. 274—10.

Taube, Carl, and K. Bockmann, to Farbenfabriken Bayer Aktiengesellschaft. Process for the improvement of the wash fastness of prints on cellulose containing materials with dyestuffs containing water-solubilising groups. 3,301,-696, 1–31–67, Cl. 117—15.

Tauth, George G.: *See*—
Nelson, Richard J., and Tauth. 3,301,830.

Taverna, Thomas A., to Technical Tape Corp. Method for cutting rolls of adhesive coated tape. 3,301,109, 1–31–67, Cl. 82—47.

Tawney, Pliny O., deceased, by D. E. Tawney, executrix, to United States Rubber Co. Vulcanizate of sulfur vulcanizable rubber with N-maleimide derivatives. 3,301,826, 1–31–67, Cl. 260—78.

Tawney, Dorothy E.: *See*—
Tawney, Pliny O. 3,301,826.

Taylor, George W. C., and J. R. White. Manufacture of normal lead 2:4-dinitro-resorcinate. 3,301,882, 1–31–67, Cl. 260—435.

Taylor, William G.: *See*—
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Taylor-Winfield Corp., The: *See*—
Seeloff, Melvin M. 3,301,992.
Seeloff, Melvin M. 3,301,994.

Tazartes, Jacques A.: *See*—
Schoemehl, Henry F., and Tazartes. 3,302,128.

Technical Tape Corp.: *See*—
Taverna, Thomas A. 3,301,109.

Technicon Chromatography Corp.: *See*—
Kling, Nelson G. 3,301,189.

Teichert, A., & Son, Inc.: *See*—
Werner, Peter J., and Dean. 3,301,441.

Teleflex Products Ltd.: *See*—
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Telefunken Patentverwertungs-G.m.b.H.: *See*—
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Voight, Heins E. 3,302,187.

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Tempress Research Co.: *See*—
Christensen, Frank L. 3,301,941.

Tenconi, Riccardo, to Marcella Sessa. Circular knitting machines for the production of hosiery with double, outwardly turned-over welts. 3,301,012, 1–31–67, Cl. 66—41.

Tennant, John E.: *See*—
Medford, Hugh L., Jr., and Tennant. 3,301,542.

Terho, Mikko J. Mechanism for moving front wall of refuse disposal vehicle, or the like. 3,301,417, 1–31–67, Cl. 214—82.

Terzijska, Drahomira, V. Svoboda, and J. Korbl. Metallochromic indicators and method of producing same. 3,301,-870, 1–31–67, Cl. 260—326.3.

Texaco Inc.: *See*—
McCoy, Frederic C., and Knowles. 3,301,721.
Knowles, Edwin C., and McCoy. 3,301,782.
Skovronek, Herbert S. 3,301,923.

Texas Instruments Inc.: *See*—
Fisher, Harry E., Frye, Hicks, and Schraeder. 3,300,841.
Reesby, Carl E., and Damrel, Jr. 3,301,062.
Donohoe, Leonard J., Fritz, Keefer, and Nicolau. 3,302,-180.

Texonia Industries Inc.: *See*—
Caughlin, Dan. 3,301,077.

Textile Machine Works: *See*—
Moyer, James D. 3,301,013.
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Textron Electronics, Inc.: *See*—
Larraburn, Philip M. 3,302,016.

Textron-Industries, Inc.: *See*—
York, Bill L. 3,300,798.

Thauer, Peter. Adjustable valve drive for internal combustion engines. 3,301,239, 1–31–67, Cl. 123—90.

Th. Calow & Co.: *See*—
Lindemann, Hans. 3,300,970.

Theodore, John G., and C. A. Bielawski, to The Brush Beryllium Co. Vacuum fired beryllia ware. 3,301,689, 1–31–67, Cl. 106—55.

Thesing, Georg, to Holstein & Kappert, Maschinenfabrik Phonix G.m.b.H. Method and apparatus for making parallelepiped packages. 3,300,944, 1–31–67, Cl. 53—28.

Thiebolt, Armand J., R. E. Lehman, and A. L. Fleming, to John H. Breck, Inc. Hair dryer with a pivotally mounted dryer assembly. 3,300,872, 1–31–67, Cl. 34—99.

Thiokol Chemical Corp.: *See*—
Cook, George W. 3,301,510.
Green, Joseph, and Mayes. 3,301,836.
Hoashi, Juzaemon. 3,301,807.
Reinstein, Frederick K., and Taylor. 3,301,184.

Thistle, Harry C. Bow tie mounting. 3,300,789, 1–31–67, Cl. 2—154.

Thomas, Donald E., to Bell Telephone Laboratories, Inc. Continuously variable phase shifter using a passive network terminated in an active impedance transforming device. 3,302,100, 1–31–67, Cl. 323—125.

Thomas, Robert L., to The Fafnir Bearing Co. Bearing housing cartridge. 3,301,612, 1–31–67, Cl. 308—20.

Thomassen, Erling A., to O. M. Christensen. Nestable crab traps. 3,300,890, 1–31–67, Cl. 43—100.

Thompson, Allan R.: *See*—
Koeblitz, William E., and Thompson. 3,302,212.

Thompson, Harris A. Method and apparatus for application of nebulized medication in positive pressure respiratory equipment. 3,301,255, 1–31–67, Cl. 128—29.

Thompson, Ivor A., to A. C. Egerton Engineering (Bromley) Ltd. Hospital and like beds. 3,300,793, 1–31–67, Cl. 5—61.

Thompson, Robert W.: *See*—
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Thompson, Theodore F. Fluid coupling. 3,301,096, 1–31–67, Cl. 74—774.

Thompson, William E., to General Motors Corp. Die casting plunger piston ring. 3,300,822, 1–31–67, Cl. 22—70.

Tiganik, Leonhard, and J. S. R. Ohlson, to Uddeholms Aktiebolag. Production of trichloroethylene and tetrachloroethylene. 3,301,910, 1–31–67, Cl. 260—654.

Tillotson, David S., to Newman-Green, Inc. Dip tube. 3,301,438, 1–31–67, Cl. 222—41.

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Sensi, Piero, and Timbal. 3,301,753.

Timbs, Arthur E., and J. A. Dodd, to Societe Anglo-Belge Vulcain S.A. Nuclear fuel grid and spacer assembly. 3,301,764, 1–31–67, Cl. 176—78.

Timm, Harold A., to Dominion Magnesium Ltd. Method and apparatus for producing high purity calcium. 3,301,665, 1–31–67, Cl. 75—67.

Tip-Top Products Co.: *See*—
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Tiskus, John R., and J. H. Wilson, to United States Steel Corp. System for controlling the liquid level in a continuous-casting mold or the like. 3,300,820, 1–31–67, Cl. 22—57.2.

Tobia, Vito. Display devices. 3,301,445, 1–31–67, Cl. 223—88.

Todd, Donald V.: *See*—
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Todt, Joachim H. Facsimile apparatus. 3,301,948, 1–31–67, Cl. 178—6.6.

Tolaas, William M., to Waldorf Paper Products Co. Handled can carriers. 3,301,435, 1–31–67, Cl. 220—112.

Tolkmith, Henry, to The Dow Chemical Co. Phosphinylated acetamide compounds. 3,301,901, 1–31–67, Cl. 260—562.

Tollison, Paul L., C. L. Ricards, and P. J. Schkeeper, to Wood Newspaper Machinery Corp. Ejection means for ejecting tails and defective plates from a plate casting machine. 3,300,819, 1–31–67, Cl. 22—3.

Tomanek, Martha, to Azoplate Corp. Process and material for the production of electrophotographic images. 3,301,676, 1–31–67, Cl. 96—1.5.

Tomlinson Industries, Inc.: *See*—
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Tope, Paul H. Multi-purpose car top luggage carrier. 3,301,449, 1–31–67, Cl. 224—42.01.

Tornqvist, Erik, to Esso Research and Engineering Co. Method for the formation of malleable metal powders. 3,301,494, 1–31–67, Cl. 241—22.

Toyoda Automatic Loom Works, Ltd.: *See*—
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Trans-Sonics, Inc.: *See*—
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Blanchard, Robert L., and Sherburne. 3,301,056.

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Traut, George R.: *See*—
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Travaglia, Michael P., to Pre-Fab Patio Systems, Inc. Prefabricated structure. 3,300,936, 1–31–67, Cl. 52—477.

Travers, Georges L., to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie. Tire casing. 3,301,303, 1–31–67, Cl. 152—362.

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Tree, David W.: *See*—
Attwood, William S., and Tree. 3,301,161.

Trianco Ltd.: *See*—
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Trickey, William A. Humidifier having floating heating means. 3,301,998, 1–31–67, Cl. 219—317.

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Tropeano, Joseph C. and P. L. Method and apparatus for making frosen particles. 3,301,485, 1–31–67, Cl. 239—2.

Tropeano, Joseph C. and P. L. Combination irrigator and fluid conduit adapter. 3,301,489, 1–31–67, Cl. 239—206.

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Tropeano, Joseph C. and P. L. 3,301,485.
Tropeano, Joseph C. and P. L. 3,301,489.

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Tryon, Richard R. Crutches. 3,301,268, 1–31–67, Cl. 135—50.

Tsien, Hsue C., to Esso Research and Engineering Co. Oxygen diffusion analyser. 3,301,775, 1–31–67, Cl. 204—195.

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Tung-Sol Electric Inc.: *See*—
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Turbett, Forrest L., to Kerr McGee Corp. Process of producing stoichiometric uranium dioxide. 3,301,640, 1–31–67, Cl. 23—355.

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Turner, Mason M.: *See*—
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Turney, Joseph E., to Libbey-Owens-Ford Glass Co. Storing glass sheets. 3,301,405, 1–31–67, Cl. 211—41.

Tuttle, Wainwright, to Altamil Corp. Mold assembly and pouring method and apparatus. 3,300,823, 1–31–67, Cl. 22—130.

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Tyler, Stanley R., to Dowty Fuel Systems Ltd. Fuel control systems for gas turbine engines. 3,301,109, 1–31–67, Cl. 158—36.3.

Uddeholms Aktiebolag: *See*—
Tiganik, Leonhard, and Ohlson. 3,301,910.

Udelson, Burton J., to United States of America, Army. High efficiency tranaverse-field traveling wave tube having fast wave dissipative coupler between interaction circuit and collector for decelerating electrons. 3,302,053, 1–31–67, Cl. 315—36.

Udylite Corp., The: *See*—
Davis, John V. 3,301,418.

Uhlig, Frits, to Asoplate Corp. Aluminum support for planographic printing plates. 3,301,674, 1–31–67, Cl. 96—1.

Ulig, Mehmet E., to Canadian General Electric Co., Ltd. Intermediate frequency amplifier. 3,302,125, 1–31–67, Cl. 330—46.

Ullery, Lee R., Jr., to United Aircraft Corp. Stored image control system for beam machining. 3,301,949, 1–31–67, Cl. 178—6.8.

Ulrich, Henri: *See*—
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Umewaka, Toshio, H. Kachi, N. Okubo, and M. Hirano, to The Furukawa Electric Co. Ltd. Self-bonding magnet wire and method. 3,300,843, 1–31–67, Cl. 29—155.57.

Union Camp Corp.: *See*—
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Union Carbide Corp.: *See*—
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Carney, Richard R. 3,300,991.
Eschenbach, Richard C., Skinner, Sarlitto, and Wickham. 3,301,995.
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Heimaster, John W. 3,301,599.
Heimaster, John W., and Church. 3,301,602.
Horn, Christia F., and Kincaid. 3,301,819.
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Hostettler, Fritz, and Cox. 3,301,825.
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Union Carbide Canada Ltd.: *See*—
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Union Carbide Corp.: *See*—
Schwabe, William E., and Ciotti. 3,301,061.
Zind, Frederic F. 3,301,704.

Union Oil Co.: *See*—
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Union Oil Co. of California: *See*—
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United Aircraft Corp.: *See*—
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Yamron, Joseph. 3,301,508.

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Webb, James E., Administrator of the National Aeronautics and Space Administration, with respect to an invention of P. E. Woodie, P. J. Kiefer, Jr., C. W. Wyble, and C. A. Harper. Thermal conductive connection and method of making same. 3,301,315, 1–31–67, Cl. 165—1.

Webb, James E., Administrator of the National Aeronautics and Space Administration, with respect to an invention of J. D. Sutliff. Wing deployment method and apparatus. 3,301,511, 1–31–67, Cl. 244—138.

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Weise, Oskar, to Albert Geser Manufacturer. Device for spacing apart reinforcing inserts in reinforced concrete. 3,300,930, 1–31–67, Cl. 52—309.

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Weninger, Frank L., to Bell & Howell Co. Blower fan construction and impellers therefor. 3,301,473, 1–31–67, Cl. 230—134.

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Williams, John W. Drive spline lubrication system. 3,301,849, 1–31–67, Cl. 184—11.

Williams, Richard D., N. J. Plumeri, and H. V. Krautwurst, to General Motors Corp. Transmission control. 3,301,086, 1–31–67, Cl. 74—475.

Williams, Sidney B., and V. C. Westcott, to Trans-Sonics, Inc. Thermoelectric fluid sensor. 3,301,055, 1–31–67, Cl. 73—295.

Williams, Willie V. Apparatus for splicing synthetic thermoplastic yarn. 3,301,735, 1–31–67, Cl. 156—433.

Willner, Oskar, and R. Karkutt, to Eickhoff Gebr. Maschinenfabrik und Eisengiesserei, m.b.H. Coal removing machine. 3,301,373, 1–31–67, Cl. 198—10.

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Wilson, George A., to I-T-E Circuit Breaker Co. Field discharge breaker. 3,301,985, 1–31–67, Cl. 200—153.

Wilson, George O., and H. A. Ortegren, to Federal-Mogul-Bower Bearing, Inc. Bearing assembly and method. 3,301,616, 1–31–67, Cl. 308—217.

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Winberg, Douglas F., to James S. Robbins and Associate, Inc. Drilling shafts. 3,301,581, 1–31–67, Cl. 287—119.

Wind, Herman H., to N.V. Mij Voor Industriele Research en Ontwikkeling. Device for fastening a yarn end to a tube of a spinning or twining machine. 3,300,957, 1–31–67, Cl. 57—34.

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Winkler, Alfred, D. Maas, D. Engelsmann, and H. Hackenberg, to AGFA Aktiengesellschaft. Locking arrangement. 3,301,584, 1–31–67, Cl. 292—228.

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Winter, Robert J. Contactless variable resistor. 3,302,151, 1–31–67, Cl. 338—79.

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Lee, David K. K., and Wirsing. 3,301,963.

Wise, John J., to Mobil Oil Corp. Upgrading of paraffinic hydrocarbons in the presence of a mixed alumino-silicate, platinum metal catalyst. 3,301,917, 1–31–67, Cl. 260—683.65.

Wiseman, William A., to Gas Chromatography Ltd. Packing metal gas chromatography columns. 3,300,849, 1–31–67, Cl. 29—424.

Wittke, John M., to Oel Inc. Aerosol metering valve. 3,301,444, 1–31–67, Cl. 222—402.20.

Wolf, Erich, to Zweirad-Union AG. Two-stroke internal-combustion engine. 3,301,237, 1–31–67, Cl. 123—71.

Wolf, Hans G. R.: *See*—
Dasovic, Steve Z., and Wolf. 3,301,622.

Wolfe, Gerald W. Compressed air rocket propelling device. 3,301,246, 1–31–67, Cl. 124—13.

Wolff, Fred G.: *See*—
Lynch, John T., and Wolff. 3,302,182.

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Ziegelmeyer, Victor: *See*—
Maudinet, Louis, Ziegelmeyer, and Dintzner. 3,301,588.

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Buchroeder, Richard A., and Ziegler. 3,301,130.

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Eft, Neil W., and Zimmermann. 3,301,544.

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CLASSIFICATION OF PATENTS

ISSUED JANUARY 31, 1967

NOTE.—First number, class; second number, subclass; third number, patent number

2– 2	3,300,786	33– 1	3,300,860	53–186	3,300,947	71– 2.6	3,301,655	77– 5	3,301,100	101– 93	3,301,177
19	3,300,787	46	3,300,861	54– 8	3,300,948	28	3,301,656	55	3,301,101	109	3,301,178
143	3,300,788	72	3,300,862	55– 35	3,300,949	43	3,301,657		3,301,102	114	3,301,179
154	3,300,789	77	3,300,863	199	3,300,950	50	3,301,658	81– 3.32	3,301,103	269	3,301,180
4–185	3,300,790	174	3,300,864	355	3,300,951	72– 42	3,301,029	82– 12	3,301,104	333	3,301,181
5– 3	3,300,791	178	3,300,865	491	3,300,952	98	3,301,030	14	3,301,105	351	3,301,182
13	3,300,792	205.5	3,300,866	56– 23	3,300,953	164	3,301,031	21	3,301,106	102– 27	3,301,183
61	3,300,793	222	3,300,867	327	3,300,954	197	3,301,032	36	3,301,107	49	3,301,184
68	3,300,794	34– 5	3,300,868		3,300,955	294	3,301,033	44	3,301,108	56	3,301,185
100	3,300,795	45	3,300,869	57– 12	3,300,956	319	3,301,034	47	3,301,109	93	3,301,186
8– 26	3,301,629	57	3,300,870	34	3,300,957	404	3,301,035	83– 56	3,301,110	97	3,301,187
41	3,301,630	58	3,300,871	53	3,300,958	457	3,301,036	92	3,301,111	103– 3	3,301,188
116.2	3,301,631	99	3,300,872		3,300,959	481	3,301,037	137	3,301,112	38	3,301,189
	3,301,632	168	3,300,873		3,300,960	73– 1	3,301,038	155	3,301,113	42	3,301,190
9– 1	3,300,796	242	3,300,874	54	3,300,961	9	3,301,039	236	3,301,114	111	3,301,191
342	3,300,797	35– 9	3,300,875		3,300,962	23.1	3,301,040	314	3,301,115	120	3,301,192
10– 27	3,300,798		3,300,876	120	3,300,963	35	3,301,041	408	3,301,116	129	3,301,193
12– 12.5	3,300,799		3,300,877	60– 30	3,300,964	38	3,301,042	455	3,301,117	136	3,301,194
20	3,300,800	12	3,300,878	39.08	3,300,965		3,301,043	84– 1	3,301,118	150	3,301,195
49.1	3,300,801	48	3,300,879	39.16	3,300,966	45.2	3,301,044	1.16	3,301,936	158	3,301,196
86.6	3,300,802	36– 2.5	3,300,880	39.51	3,300,967	134	3,301,045	422	3,301,119	169	3,301,197
15– 21	3,300,803	37– 43	3,300,881	39.82	3,300,968	147	3,301,046	85– 1	3,301,120	104– 7	3,301,198
147	3,300,804	129	3,300,882	52	3,300,969	170	3,301,047		3,301,121	106– 1	3,301,688
181	3,300,805	142	3,300,883	54	3,300,970		3,301,048	7	3,301,122	55	3,301,689
334	3,300,806	38– 78	3,300,884		3,300,971	193	3,301,049	79	3,301,123	59	3,301,690
340	3,300,807	40–130	3,300,885	54.5	3,300,972	201	3,301,051	88– 14	3,301,124	72	3,301,691
604	3,300,808	152	3,300,886	54.6	3,300,973	215	3,301,050	24	3,301,125	161	3,301,692
16–135	3,300,809	325	3,300,887	73	3,300,974	231	3,301,052		3,301,126	176	3,301,693
18– 12	3,300,810	42– 1	3,300,888	207	3,300,975		3,301,053		3,301,127	307	3,301,694
	3,300,811	74	3,300,889	224	3,300,976	233	3,301,054	28	3,301,128	309	3,301,695
	3,300,812	43–100	3,300,890	228	3,300,977	295	3,301,055		3,301,129	107– 7	3,301,199
17	3,300,813	46– 17	3,300,891	231	3,300,978	304	3,301,056	89– 1.81	3,301,132	108– 51	3,301,200
18	3,300,814	149	3,300,892	237	3,300,979	337	3,301,057	131	3,301,133	110– 10	3,301,201
21	3,300,815	244	3,300,893	241	3,300,980	339	3,301,058	90– 4	3,301,134	38	3,301,202
42	3,300,816		3,300,894	259	3,300,981		3,301,059	15	3,301,135	112– 2	3,301,203
19– .21	3,300,817	47– 1.2	3,300,895	61– .5	3,300,982	343	3,301,060	91–189	3,301,136	64	3,301,204
50	3,300,818		3,300,896		3,300,983	359	3,301,061	219	3,301,137	79	3,301,205
22– 3	3,300,819	49–137	3,300,897	1	3,300,984	393	3,301,062	221	3,301,138	199	3,301,206
57.2	3,300,820	193	3,300,898	25	3,300,985	395	3,301,063	355	3,301,139	200	3,301,207
57.4	3,300,821	321	3,300,899	50	3,300,986		3,301,064	92– 13	3,301,140	113–114	3,301,208
70	3,300,822	381	3,300,900	63	3,300,987	423	3,301,065	143	3,301,141	114– 16	3,301,209
130	3,300,823	502	3,300,901		3,300,988	425.4	3,301,066	172	3,301,142	20	3,301,210
200.1	3,300,824	51– 8	3,300,902	72.6	3,300,989		3,301,067	93– 36	3,301,143	235	3,301,211
23– 90	3,301,633	13	3,300,903	62– 3	3,300,990	432	3,301,068		3,301,144	116–124	3,301,212
145	3,301,634	33	3,300,904	9	3,300,991	74– 5.4	3,301,069	36.5	3,301,145	117– 15	3,301,696
182	3,301,635		3,300,905	48	3,300,992		3,301,070	94– 1	3,301,146	37	3,301,698
184	3,301,636	54	3,300,906	63	3,300,993	5.47	3,301,074	13	3,301,147	111	3,301,699
204	3,301,637	124	3,300,907		3,300,994	5.6	3,301,071		3,301,148	118	3,301,700
	3,301,638	163	3,300,908	116	3,300,995		3,301,072		3,301,149		3,301,701
209.4	3,301,639	284	3,300,909	117	3,300,996	5.7	3,301,073	46	3,301,150	135.1	3,301,702
355	3,301,640	297	3,301,644		3,300,997	10.2	3,301,075		3,301,151	138.8	3,301,703
24– 16	3,300,825	309	3,301,645	135	3,300,998	125.5	3,301,076	95– 1.7	3,301,152	200	3,301,704
38	3,300,826		3,301,646	141	3,300,999	230.17	3,301,077	10	3,301,153	201	3,301,705
73	3,300,827	52– 2	3,300,910		3,301,000	333	3,301,078	18	3,301,154	217	3,301,706
27– 12	3,300,828	16	3,300,911	149	3,301,001		3,301,079	75	3,301,155	227	3,301,707
	3,300,829	36	3,300,917	175	3,301,002	375	3,301,080	89	3,301,156	118– 48	3,301,213
28– 1	3,300,830	39	3,300,912	324	3,301,003	421	3,301,081		3,301,157	126	3,301,214
72	3,300,831	58	3,300,913	408	3,301,004	424.8	3,301,082	94	3,301,158	119– 14.02	3,301,215
29– 25.3	3,300,802	67	3,300,914	475	3,301,005	471	3,301,083		3,301,159	14.08	3,301,216
33	RE.26,152	73	3,300,915	64– 4	3,301,006	472	3,301,084	95	3,301,160	36.4	3,301,697
103	3,300,833	81	3,300,916	15	3,301,007		3,301,085	96– 1	3,301,674	51	3,301,217
105	3,300,834	103	3,300,918	17	3,301,008	475	3,301,086	1.2	3,301,675	52	3,301,218
121	3,300,835	122	3,300,919	23	3,301,009	483	3,301,087	1.5	3,301,676	55	3,301,219
149.5	3,300,836	150	3,300,920	24	3,301,010	560	3,301,088	28	3,301,677	77	3,301,220
	3,300,837	227	3,300,921	27	3,301,011	568	3,301,089	61	3,301,678	120– 42.13	3,301,221
	3,300,838	230	3,300,922	65– 2	3,301,647	573	3,301,090	75	3,301,679	122– 2	3,301,222
155	3,300,839	245	3,300,923	4	3,301,648	640	3,301,091	85	3,301,680	7	3,301,223
155.5	3,300,840	265	3,300,924	30	3,301,649	645	3,301,092	98– 2	3,301,161	406	3,301,224
	3,300,841	293	3,300,925	95	3,301,650	675	3,301,093	36	3,301,162	510	3,301,225
	3,300,842	300	3,300,926	182	3,301,651	718	3,301,094	40	3,301,163		3,301,226
155.57	3,300,843	309	3,300,927	66– 41	3,301,012	752	3,301,095		3,301,164		3,301,227
157.1	3,300,844		3,300,928	54	3,301,013	774	3,301,096		3,301,165	123– 8	3,301,228
182	3,301,641		3,300,929	115	3,301,014	820	3,301,097	94	3,301,166		3,301,229
	3,301,642		3,300,930	125	3,301,015	75– 5	3,301,659	115	3,301,167		3,301,230
195	3,301,643		3,300,931	154	3,301,016	20	3,301,660	119	3,301,168		3,301,231
206	3,300,845	339	3,300,932	178	3,301,017	40	3,301,661	99– 7	3,301,681	16	3,301,232
208	3,300,846	368	3,300,933	202	3,301,018	52	3,301,662	56	3,301,682		3,301,233
271	3,300,847	394	3,300,934	67– 7.1	3,301,019	58	3,301,660	103	3,301,683	47	3,301,234
420.5	3,300,848	468	3,300,935		3,301,020	60	3,301,664	105	3,301,684	55	3,301,235
424	3,300,849	477	3,300,936	31	3,301,021	67	3,301,665		3,301,685	59	3,301,236
432.1	3,300,850	581	3,300,937	68– 12	3,301,022	68	3,301,666	111	3,301,686	71	3,301,237
470.1	3,300,851		3,300,938		3,301,023	122.7	3,301,667	171	3,301,687	90	3,301,238
472.7	3,300,852	713	3,300,939		3,301,024	128	3,301,668	327	3,301,169		3,301,239
475	3,300,853	718	3,300,940		3,301,025	130.5	3,301,669	331	3,301,170		3,301,240
527	3,300,854	721	3,300,941	177	3,301,026	171	3,301,670	425	3,301,171		3,301,241
558	3,300,855	742	3,300,942	181	3,301,027	200	3,301,671	446	3,301,172	117	3,301,242
568	3,300,856	744	3,300,943	69– 19.2	3,301,028	201	3,301,672	101– 23	3,301,173	179	3,301,243
30–272	3,300,857	53– 28	3,300,944	71– 2.3	3,301,652	204	3,301,673	27	3,301,174	197	3,301,244
	3,300,858	35	3,300,945		3,301,653	76– 37	3,301,098	41	3,301,175	198	3,301,245
32– 69	3,300,859	73	3,300,946	2.5	3,301,654	77– 1	3,301,099	85	3,301,176	124– 13	3,301,246

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CLASSIFICATION OF PLANTS

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GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

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(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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3.300.974	3.301.615	3.302.144	3.300.949	3.301.506	3.301.243
3.300.983	3.301.646	3.302.146	3.300.989	3.301.510	3.301.296
3.300.992	3.301.650	3.302.149	3.301.009	3.301.666	3.301.299
3.301.000	3.301.654	3.302.154	3.301.036	3.301.710	3.301.344
3.301.013	3.301.656	3.302.156	3.301.062	3.301.757	3.301.367
3.301.014	3.301.661	3.302.159	3.301.064	3.301.759	3.301.451
3.301.015	3.301.693	3.302.162	3.301.185	3.301.869	3.301.466
3.301.031	3.301.701	3.302.182	3.301.209	3.301.934	3.301.505
3.301.033	3.301.702	3.302.203	3.301.218	3.301.967	3.301.559
3.301.039	3.301.717	43 : 3.301.597	3.301.253	52 : 3.300.916	3.301.561
3.301.040	3.301.718	44 : 3.300.844	3.301.305	53 : 3.301.150	3.301.587
3.301.050	3.301.720	3.300.880	3.301.364	3.301.151	3.301.659
3.301.052	3.301.743	3.301.632	3.301.469	3.301.415	3.301.688
3.301.053	3.301.745	45 : 3.300.936	3.301.522	3.301.789	3.301.719
3.301.058	3.301.752	3.300.961	3.301.523	3.302.003	3.301.862
3.301.063	3.301.791	3.301.018	3.301.577	3.302.105	3.302.037
3.301.089	3.301.804	3.301.173	3.301.618	3.302.195	3.302.107
3.301.121	3.301.806	3.301.270	3.301.738	54 : 3.301.071	3.302.142
3.301.123	3.301.808	3.301.631	3.301.785	3.301.301	3.302.160
3.301.135	3.301.846	3.301.644	3.301.793	3.301.599	56 : 3.301.495

DESIGN PATENTS

4 : 206.797	6 : 206.811	9 : 206.852	17 : 206.818	27 : 206.802	39 : 206.842
206.836	206.816	10 : 206.823	206.825	206.820	206.845
6 : 206.788	206.817	12 : 206.783	18 : 206.809	29 : 206.830	206.846
206.791	206.822	206.784	21 : 206.812	206.838	206.848
206.793	206.824	206.785	25 : 206.792	31 : 206.810	206.849
206.795	206.829	206.786	26 : 206.790	34 : 206.827	42 : 206.828
206.798	206.835	206.815	206.804	206.847	48 : 206.821
206.799	206.850	206.843	206.805	36 : 206.787	51 : 206.826
206.801	8 : 206.833	17 : 206.794	206.840	206.800	206.851
206.803	206.839	206.796	206.841	206.831	55 : 206.789
206.807	9 : 206.832	206.808	206.844	39 : 206.819	

PLANT PATENTS

36 : 2.706					

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 31, 1967 Volume 834 Number 5

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 74,530 (FORD in script), Ford Motor Company, Automobiles and their parts; **Reg. No. 643,185** (FORD), same, Passenger cars and trucks; **Reg. No. 668,488**, same, Automobile and truck leasing service, filed Aug. 17, 1966, D.C. N. Mex. (Albuquerque), Doc. 6779, *Ford Motor Company* v. *Ford Leasing Company et al.* Stipulation and order of dismissal Nov. 22, 1966.

Reg. No. 201,694 (CADILLAC), General Motors Corporation, Automobiles; **Reg. No. 201,706** (REPRESENTATION OF A COAT OF ARMS), same; **Reg. No. 647,241** (CADILLAC), same, Maintenance and repair service for automotive vehicles, parts, and accessories; **Reg. No. 658,918** (DESIGN OF EMBLEM), same, filed Nov. 14, 1966, D.C., W.D. Ky. (Louisville), Doc. 5525, *General Motors Corporation* v. *Brown Bros. Cadillac et al.* Same, filed Dec. 9, 1966, D.C., W.D. Wash. (Seattle), Doc. 6986, *General Motors Corporation* v. *Aurora Cadillac.*

Reg. No. 201,706. (See Reg. No. 201,694.)

Reg. No. 235,000 (RENAULT AND DESIGN), Societe Anonyme des Usines Renault, Internal combustion or explosion motors and parts thereof and agricultural tractors, endless-track crawler tractors, etc.; **Reg. No. 715,009** (RENAULT FRANCE AND DESIGN), Regie Nationale des Usines Renault, Automobiles and trucks including bodies and structural parts, filed Nov. 18, 1966, D.C. Mass. (Boston), Doc. 66-833-F, *Renault, Inc.* v. *Auto Imports, Inc.*

Reg. No. 344,118 (SPINCRAFT), Klementine Salow, doing business as Milwaukee Metal Spinning Co., Spun metal coffee percolator covers; **Reg. No. 557,012** (SPINCRAFT in script), Spincraft, Inc., by change of name from Milwaukee Metal Spinning Company, Spinning metal parts from flat sheet metal on customer's order and to his specifications; **Reg. No. 616,789**, same, Boats, mooring buoys and parts therefor; **Reg. No. 666,220**, same, Ladles and skimmers for handling molten die cast metal; **Reg. No. 790,634** (SPINCRAFT AND DESIGN), same, Electric lamp, electric insect trap, and combination electric lamp and insect trap, electric power driven rotating advertising display lighting fixtures, filed Nov. 29, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C-1109, *Spincraft, Inc.* (*Milwaukee, Wis.*) v. *Spincraft, Inc.* (*Brooklyn, N.Y.*).

Reg. No. 344,853 (CHINA DOLL AND DESIGN), Norman Webb Hutchings, doing business as Rice Sales Company, Rice; **Reg. No. 545,541**, same, Norman Webb Hutchings, Sr. and Norman Webb Hutchings, Jr., doing business as China Doll Company, Rice, dried beans, and dried peas, filed June 14, 1966, D.C., S.D.N.Y., Doc. 66/1688, *China Doll, Inc.* v. *Joseph Fierman & Son, Inc.* Consent judgment; defendant enjoined Nov. 25, 1966.

Reg. No. 363,405 (MOTORTRON), McGraw Electric Company, Fuses and circuit makers and breakers; **Reg. No. 537,287** (FUSETRON), The McGraw Electric Company, doing business as Bussmann Manufacturing Company, Electric fuses and protectors for electric circuits that include fuse links and thermal cut outs and that respond to heavy overloads or short circuits to open the circuit; **Reg. No. 664,665** (LIMITRON),

CONDITION OF TRADEMARK APPLICATIONS AS OF DECEMBER 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	28,133
Date of oldest new application	Dec. 16, 1965
Date of oldest amended application (filing date)	Nov. 7, 1963

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	12-16-65	12-12-63
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-13-66	11-7-63
Renewals (All Classes)	12-5-66	----------
Sec. 12(c) Publications (All Classes)	11-28-66	----------

Applications filed during the month of December 1966—2,208

Registrations Issued ---------- 345—No. 823,192 to No. 823,536
Renewals Issued ---------- 60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

McGraw-Edison Company, Electric fuses; **Reg. No. 676,630** (TRON), same; **Reg. No. 683,950** (RENEWATRON), McGraw-Edison Company, assignee of Star Fuse Co., Inc., Fuse used to protect electric circuits and motors, filed Sept. 19, 1966, D.C., S.D.N.Y., Doc. 66/3002, *McGraw-Edison Company* v. *Westron Corporation*. Consent judgment; defendant enjoined Nov. 18, 1966.

Reg. No. 366,846 (METROPOLITAN), Metropolitan Body Company, Automotive vehicles—namely, trucks, truck bodies, cabs, and buses; **Reg. No. 578,159** (WEATHER EYE), Nash-Kelvinator Corporation, Motor vehicle heaters and air conditioners; **Reg. No. 586,425** (RAMBLER), same, Passenger automobiles and structural parts therefor; **Reg. No. 656,358** (METROPOLITAN), American Motors Corporation, Automobiles and parts thereof; **Reg. No. 709,854** (R), same, Automobiles and structural parts thereof—namely, hub caps, wheel covers, mirrors, radio grills, etc.; **Reg. No. 806,891** (MARLIN in script), same, Automobiles and parts thereof, filed Nov. 29, 1966, D.C., E.D. Pa. (Philadelphia), Doc. 41623, *American Motors Corp.* v. *Louis D'Alessandro*.

Reg. No. 519,836 (OUIJA), William A. Fuld, doing business as William Fuld, Game board, utilizing a planchette, and sometimes known as a talking board, filed Sept. 22, 1966, D.C., S.D.N.Y., Doc. 66/3049, *Parker Brothers, Inc.* v. *Olympia Record Industries, Inc. et al.* Stipulation of dismissal as to defendants Oscar Klemen and David Weg Nov. 16, 1966. Consent judgment as to defendants Ervin Litkei, Olympia Record Industries, Inc., Arovox Record Corp. and Galiko Music and Film Products Enterprises, said defendants enjoined Nov. 21, 1966.

Reg. No. 536,253 (SIGMA AND DESIGN), Sigma Instruments, Incorporated, Electrical relays and acoustic switches; **Reg. No. 788,972** (SIGMA), same, Electromechanical relays, reed relays, electromechanical magnetically latching relays, etc.; **Reg. No. 792,147** (GREEK LETTER SIGMA), same, filed Nov. 17, 1966, D.C., S.D.N.Y., Doc. 66/3905, *Sigma Instruments, Inc.* v. *Sigma Educational Products, Inc.*

Reg. No. 536,821 (REPRESENTATION OF A ROASTED CHICKEN), Mathilde E. Heuck, doing business as M. E. Heuck, Metal skewers; **Reg. No. 537,932**, same, filed Nov. 18, 1966, D.C., W.D. Wash. (Seattle), Doc. 6964, *M. E. Heuck Co.* v. *Bowknot Skewer Co.*

Reg. No. 537,287. (See Reg. No. 363,405.)

Reg. No. 537,932. (See Reg. No. 536,821.)

Reg. No. 545,541. (See Reg. No. 344,853.)

Reg. No. 552,636 (AUTOMATIC), The Yale & Towne Manufacturing Company, Electric and manually operated load transporting and lifting trucks, filed Sept. 20, 1965, D.C., S.D.N.Y., Doc. 65/2831, *Yale & Towne, Inc.* v. *Atlas Deco Corp.* Stipulation and order of dismissal with prejudice Nov. 30, 1966.

Reg. No. 552,831 (PLAYER'S), Philip Morris & Co., Ltd., Incorporated, Cigarettes; **Reg. No. 555,884** (DESIGN OF FANCIFUL PORTRAIT), same, filed Feb. 6, 1963, D.C., S.D.N.Y., Doc. 63/365, *Philip Morris, Inc.* v. *Lew Minuskin et ano.* Final judgment in favor of plaintiff; defendant enjoined Nov. 22, 1966.

Reg. No. 555,064. (See Reg. No. 552,831.)

Reg. No. 557,012. (See Reg. No. 344,118.)

Reg. No. 578,159. (See Reg. No. 366,846.)

Reg. No. 586,425. (See Reg. No. 366,846.)

Reg. No. 592,771 (EXQUISITE FORM in script), Exquisite Form Brassiere, Inc., Brassieres, garter belts, and girdles; **Reg. No. 642,681** (EXQUISITE), same, filed Nov. 23, 1966, D.C., S.D.N.Y., Doc. 66/4007, *Exquisite Form Industries, Inc.* v. *Playtime Girl Originals, Inc. et ano.*

Reg. No. 616,780. (See Reg. No. 344,118.)

Reg. No. 642,681. (See Reg. No. 592,771.)

Reg. No. 643,185. (See Reg. No. 74,530.)

Reg. No. 647,241. (See Reg. No. 201,694.)

Reg. No. 656,358. (See Reg. No. 366,846.)

Reg. No. 658,918. (See Reg. No. 201,694.)

Reg. No. 664,665. (See Reg. No. 363,405.)

Reg. No. 665,835 (HERSHEY'S), Hershey Creamery Company, Ice cream and butter, filed Nov. 17, 1966, D.C., S.D.N.Y., Doc. 66/3915, *Hershey Creamery Company* v. *Hershey Chocolate Corporation et ano.*

Reg. No. 666,820. (See Reg. No. 344,118.)

Reg. No. 676,630. (See Reg. No. 363,405.)

Reg. No. 683,950. (See Reg. No. 363,405.)

Reg. No. 688,483. (See Reg. No. 74,530.)

Reg. No. 715,689. (See Reg. No. 235,066.)

Reg. No. 743,328 (KENSINGTON), Terra International Company, Ltd., Radio receiving sets, filed Aug. 17, 1966, D.C., S.D.N.Y., Doc. 66/2599, *Terra International Co., Ltd.* v. *F. J. Strauss Co., Inc.* Consent judgment; defendant enjoined Nov. 25, 1966.

Reg. No. 769,854. (See Reg. No. 366,846.)

Reg. No. 788,972. (See Reg. No. 536,253.)

Reg. No. 790,634. (See Reg. No. 344,118.)

Reg. No. 792,147. (See Reg. No. 536,253.)

Reg. No. 806,891. (See Reg. No. 366,846.)

Reg. No. 815,612 (MARRIOTT MOTOR HOTEL), Marriott Motor Hotels, Inc., Hotel, motel, and restaurant services, filed Nov. 22, 1966, D.C., S.D. Tex. (Houston), Doc. 66–H–807, *Marriott-Hot Shoppes, Inc. et al.* v. *Thos. H. Sullivan et al.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 210,478. Trikotfabriken J. Schiesser A.G., Radolfzell, Baden-Wurttemberg, Germany. Filed Jan. 22, 1965.

SCHIESSER

Owner of Reg. No. 633,212.

Class 39—Clothing

For Stockings and Socks; Jackets, Suits, and Sportswear for Men—Namely, Pullovers and Shirts; Blouses, Slips, Skirts, Suits, Coats and Jackets for Women; Pajamas, Morning Jackets and House Jackets and Suits for Women; Underwear for Men, Women, and Children; Foundation Garments; Neckties; Suspenders; and Gloves.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table and Bed Linen of Cotton, Linen, Silk, Wool, and Synthetic Materials; Woven and Knitted Piece Goods; and Felt.

First use Sept. 28, 1936; in commerce Nov. 13, 1956.

SN 213,965. Geerpres Wringer Incorporated, Muskegon, Mich. Filed Mar. 12, 1965.

Geerpres

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Broom and Mop Hangers and Holders.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mop Washers and Mop Wringers Complete With Tanks, Chassis, and Task-Baskets (Holders for Small Supply Items).

Class 29—Brooms, Brushes, and Dusters

For Mop Sticks and Mop Handles.

First use Apr. 15, 1937.

SN 225,329. Laboratory Construction Company, Kansas City, Mo. Filed Aug. 9, 1965.

LAB CON CO

Class 19—Vehicles

For Laboratory Carts.

Class 26—Measuring and Scientific Appliances

For Macro Kjeldahl Digestion and Distillation Apparatus, Micro Kjeldahl Digestion and Distillation Apparatus, Apparatus for Determination of Fat and Oil Content in Solvents, and Apparatus for Determination of Crude Fiber Content in Food.

Class 32—Furniture and Upholstery

For Laboratory Furniture.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Laboratory Hoods.

First use March 1963.

SN 226,308. Toko Kabushiki Kaisha, d.b.a. Toko, Inc., Ota-ku, Tokyo-to, Japan. Filed Aug. 23, 1965.

TOKO

Class 21—Electrical Apparatus, Machines, and Supplies

For Wire Parametrons, IF Transformers and Oscillator Coils, IF Block, Mechanical Filters, IF Modules, Sub-Miniature Resistors, Ceramic Variable Capacitors and Ceramic Trimmers.

Class 26—Measuring and Scientific Appliances

For Memory Planes, Delay Lines, and Pulse Transformers.

First use August 1955; in commerce June 1, 1964.

SN 230,290. The Regina Corporation, Rahway, N.J. Filed Oct. 15, 1965.



Class 21—Electrical Apparatus, Machines, and Supplies

For Vacuum Cleaners, Floor Polishers, Rug and Upholstery Shampooers.

Class 29—Brooms, Brushes, and Dusters

For Electric Shoe Polishers.

First use Dec. 26, 1963.

SN 234,516. Al-Craft Manufacturing Company, Troy, Mich. Filed Dec. 13, 1965.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hardware Specialties—Namely, Closure Operating Hardware, Mobile Home Window Operators, Patio Door Hardware, Sliding and Single Hung Window Hardware, Awning Operators, Jalousie Operators, and Window Operators.

Class 14—Metals and Metal Castings and Forgings

For Metal Die Castings and Metal Stampings.

Class 25—Locks and Safes

For Locks and Components and Replacement Parts for the Same.

First use Oct. 19, 1965.

SN 236,212. Andrew Corporation, Orland Park, Ill. Filed Jan. 12, 1966.

HELIAX

Owner of Reg. No. 594,172.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Transmission-Line Equipment, viz, Flexible Metallic Waveguide and Coaxial Cable, and End-Connectors, Transitions, and Similar Fittings Therefor.

First use July 29, 1953.

Class 31—Filters and Refrigerators

For Cryogenic Equipment, viz, Flexible Metallic Cryogenic Fluid Transfer Line, and End-Connectors and Similar Fittings Therefor.

First use Dec. 10, 1964.

SN 240,951. Pilot Radio, Inc., Yonkers, N.Y. Filed Mar. 14, 1966.

PILOT

Owner of Reg. Nos. 202,872, 427,250, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Tuners, Pre-Amplifiers, Speakers, Television Receivers, Combination Radio-Phonograph-Television Receivers, AM-FM Multiplex Receivers, and Components and Parts Thereof.

Class 36—Musical Instruments and Supplies

For Phonographs and Record Changers.

First use at least as early as 1924.

SN 242,389. Pilot Radio, Inc., Yonkers, N.Y. Filed Mar. 31, 1966.

PILOT

Owner of Reg. Nos. 202,872, 427,250, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Tuners, Pre-Amplifiers, Speakers, Television Receivers, Combination Radio-Phonograph-Television Receivers, AM-FM Multiplex Receivers, and Components and Parts Thereof.

Class 36—Musical Instruments and Supplies

For Phonographs and Record Changers.

First use June 1963.

SN 245,041. Bristol-Myers Company, New York, N.Y. Filed May 6, 1966.

HIGH BEAM

Class 51—Cosmetics and Toilet Preparations

For Cosmetics and Toilet Preparations—Namely, a Hair Spray and Hair Groom and Conditioner.

Class 52—Detergents and Soaps

For Detergents and Soaps—Namely, Hair Shampoo.

First use Feb. 1, 1966.

SN 245,042. Bristol-Myers Company, New York, N.Y. Filed May 6, 1966.

BRIGHT LOOK

Class 51—Cosmetics and Toilet Preparations

For Cosmetics and Toilet Preparations—Namely, a Hair Spray and Hair Groom and Conditioner.

Class 52—Detergents and Soaps

For Detergents and Soaps—Namely, Hair Shampoo.

First use Feb. 1, 1966.

SN 245,043. Bristol-Myers Company, New York, N.Y. Filed May 6, 1966.

BRUSHED LOOK

Class 51—Cosmetics and Toilet Preparations

For Cosmetics and Toilet Preparations—Namely, a Hair Spray and Hair Groom and Conditioner.

Class 52—Detergents and Soaps

For Detergents and Soaps—Namely, Hair Shampoo.

First use Feb. 3, 1966.

SN 245,044. Bristol-Myers Company, New York, N.Y. Filed May 6, 1966.

SOFT LOOK

Class 51—Cosmetics and Toilet Preparations

For Cosmetics and Toilet Preparations—Namely, a Hair Spray and Hair Groom and Conditioner.

Class 52—Detergents and Soaps

For Detergents and Soaps—Namely, Hair Shampoo.

First use Feb. 1, 1966.

SN 247,436. United States Rubber Company, New York, N.Y. Filed June 7, 1966.



Owner of Reg. Nos. 98,502, 518,612, and others.

Class 6—Chemicals and Chemical Compositions

For Auto Brake Fluid.
First use March 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

For Auto Radios.
First use Mar. 11, 1966.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 240,642. Ocean Leather Corp., Newark, N.J. Filed Mar. 10, 1966.

LEATHER FROM THE SEA

The word "Leather" is disclaimed apart from the mark as shown.
For Sharkskin Leather.
First use Feb. 1, 1966.

SN 242,253. International Pulp Sales Company, New York, N.Y. Filed Mar. 30, 1966.

DYNACELL

For Wood Pulp.
First use Feb. 18, 1966.

SN 243,157. McNair Seed Company, Laurinburg, N.C. Filed Apr. 11, 1966.

McNAIR

For Field and Grain Seed—Namely, Tobacco, Corn, and Cotton Seed, Including Hybrid Varieties Thereof.
First use in or about September 1963.

SN 243,705. Northrup, King & Co., Minneapolis, Minn. Filed Apr. 18, 1966.

MULTIVAR

For Seed Oats.
First use Jan. 1, 1966.

SN 244,991. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed May 5, 1966.

KAISER

Owner of Reg. Nos. 782,268 and 794,288.
For Dolomite.
First use at least as early as Dec. 31, 1953.

SN 246,954. St. Regis Paper Company, New York, N.Y. Filed May 31, 1966.

NEOBRITE

For Bleached Sulfite Wood Pulp.
First use Apr. 21, 1966.

SN 247,828. Paul's Wholesale Florist Co., Inc., Washington, D.C. Filed June 10, 1966.

RAPID-AIRE FLOWERS

The word "Flowers" is disclaimed apart from the mark.
For Cut Flowers.
First use May 10, 1966.

SN 248,062. Sternco Industries, Inc., Allendale, N.J. Filed June 14, 1966.



For Aquarium Tank Accessories—Namely, Carbon, Floss and Porous Air Stones, for Use as Aquarium Filter Material.
First use Sept. 4, 1962.

SN 248,098. Armour and Company, Chicago, Ill. Filed June 15, 1966.

CELESTIAL

For Leather.
First use on or prior to Oct. 22, 1965.

SN 248,099. Armour and Company, Chicago, Ill. Filed June 15, 1966.

TANESS

For Leather.
First use Sept. 8, 1965.

SN 248,102. Armour and Company, Chicago, Ill. Filed June 15, 1966.

ZEUS

For Leather.
First use on or prior to Mar. 1, 1966.

SN 248,103. Armour and Company, Chicago, Ill. Filed June 15, 1966.

FUSILEER

For Leather.
First use Mar. 18, 1966.

SN 248,104. Armour and Company, Chicago, Ill. Filed June 15, 1966.

CREOLE

For Leather.
First use on or prior to Mar. 17, 1966.

SN 255,400. Cone Mills Corporation, Greensboro, N.C. Filed Sept. 29, 1966.

DURA-LUX

For Upholstery Seating, Backing, and Cushioning Material for Furniture Made of Polyurethane Foam.
First use Sept. 1, 1966.

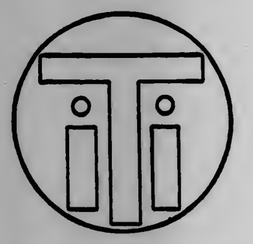
SN 255,804. E. J. Lavino and Company, Philadelphia, Pa. Filed Oct. 5, 1966.

LARCO

For Chrome Ore.
First use Feb. 18, 1924.

Class 2 — Receptades

SN 211,480. Thermoplastic Industries, Inc., Brockton, Mass. Filed Feb. 5, 1965.



For Sheet Plastic Products—Namely, Plastic Containers.
First use 1963.

SN 221,023. Continental Arms Corporation, New York, N.Y. Filed June 14, 1965.

VALVESPOUT

For Valved Containers Formed of Metal and/or Plastic for Dispensing Lubricants and Solvents.
First use in or about September 1950.

SN 231,022. Bathurst Containers Limited, Montreal, Quebec, Canada. Filed Oct. 22, 1965.

MAGICOW

Owner of Canadian Reg. No. 139,125, dated Feb. 5, 1965.
For Corrugated Cardboard Container With Plastic Liner for Dispensing Liquids.

SN 232,779. Floralware Corporation, Redondo Beach, Calif. Filed Nov. 16, 1965.

Floralware

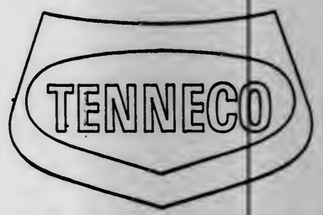
For Flower Pots.
First use Apr. 28, 1965.

SN 241,706. Tenneco Inc., Houston, Tex., by change of name from Tennessee Gas Transmission Company, Houston, Tex. Filed Mar. 23, 1966.

TENNECO

For Folding Cartons, Boxes, Containers, Filler Flats, Trays, U-Boards, Batts, and Packages Made of Plastics, Paper, Paperboard, or Molded Pulp Products Formed To Fit the Contents.
First use Mar. 4, 1966.

SN 241,707. Tenneco Inc., Houston, Tex., by change of name from Tennessee Gas Transmission Company, Houston, Tex. Filed Mar. 23, 1966.



For Folding Cartons, Boxes, Containers, Filler Flats, Trays, U-Boards, Batts, and Packages Made of Plastics, Paper, Paperboard, or Molded Pulp Products Formed To Fit the Contents.
First use Mar. 4, 1966.

SN 241,708. Tenneco Inc., Houston, Tex., by change of name from Tennessee Gas Transmission Company, Houston, Tex. Filed Mar. 23, 1966.



For Folding Cartons, Boxes, Containers, Filler Flats, Trays, U-Boards, Batts, and Packages Made of Plastics, Paper, Paperboard, or Molded Pulp Products Formed To Fit the Contents.
First use Mar. 4, 1966.

Class 4 — Abrasives and Polishing Materials

SN 254,012. S. C. Johnson & Son, Inc., Racine, Wis. Filed Sept. 8, 1966.

WAXBEAUTY

For Cleaning and Polishing Preparations and/or Polishing Preparations for Hard Surfaces.
First use on or about Sept. 17, 1965.

Class 6 — Chemicals and Chemical Compositions

SN 207,566. B-D Laboratories, Inc., East Rutherford, N.J. Filed Dec. 7, 1964.

GASPAK

For Disposable Envelope Containing Chemicals for Generating Hydrogen Gas.
First use on or about May 31, 1964.

SN 231,532. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Oct. 24, 1965.

EXCELSIOR

For Soybean Oils Used in the Manufacture of Paints and Varnishes.
First use in or about March 1939.

SN 241,714. Universal Oil Products Company, Des Plaines, Ill. Filed Mar. 23, 1966.

12-S

Owner of Reg. No. 764,504.
For Oxidation Inhibitor.
First use Jan. 11, 1966.

SN 244,280. The Viscol Company, Dallas, Tex. Filed Apr. 25, 1966.

dry-o

For Siliconed Waterproofing Dressing for Leather.
First use Dec. 1, 1965.

SN 245,746. Chas. Pfizer & Co., Inc., New York, N.Y. Filed May 16, 1966.

MICROPLATE

For Disposable Sectored Plate Containing Prepared Media Used in the Laboratory for the Isolation and Identification of Pathogenic Bacteria, for Urine Colony Counts, and for Antimicrobial Sensitivity Tests.
First use May 10, 1966.

SN 246,806. Microbiological Associates, Inc., Bethesda, Md. Filed May 27, 1966.

MA

For Human, Animal, and Plant Cell Lines, Cell Cultures and Tissue Cultures for Laboratory Investigational Use.
First use Apr. 15, 1964.

SN 247,241. Microbiological Associates, Inc., Bethesda, Md. Filed June 3, 1966.



Owner of Reg. No. 700,021.
For Sera for Cell Cultures for Laboratory Investigational Use.
First use Aug. 18, 1954.

SN 249,849. Drilling Specialties Company, Bartlesville, Okla. Filed July 8, 1966.

DESCO

For Drilling Mud Viscosity Reducer.
First use Jan. 18, 1966.

SN 250,029. Rhodia Inc., New York, N.Y. Filed July 11, 1966.

CHEMSCREEN

For Volatile Aromatic Compositions Used To Remove Malodors From Air.
First use Apr. 29, 1966.

SN 250,112. Wellman Industries, Inc., Johnsonville, S.C. Filed July 12, 1966.

WEL-BRAND

Owner of Reg. No. 774,787.
For Lanolin.
First use May 16, 1966.

SN 252,682. Rohm and Haas Company, Philadelphia, Pa. Filed Aug. 18, 1966.

LUFAX

Owner of Reg. No. 288,338.
For Chemical Composition Useful as a Coupling Agent for the Beater Addition of Acrylic Emulsions and/or as a Drainage and Retention Aid in the Manufacture of Paper or Paper-Plastic Products.
First use on or about June 17, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 253,091. Colt's Inc., Hartford, Conn. Filed Aug. 25, 1966.

COLT AR-15

Owner of Reg. Nos. 49,430, 748,721, and others.
For Rifles.
First use May 11, 1964.

SN 257,738. Ithaca Gun Company, Incorporated, Ithaca, N.Y. Filed Nov. 2, 1966.

ITHACA

Owner of Reg. Nos. 559,787, 776,021, and others.
For Firearms—Namely, Rifles and Shotguns and Parts Thereof, and Accessories Therefor—Namely, Gun Sights, Recoil Pads, Butt Plates, Gun Cases, Gun Slings, and Carrying Straps.
First use 1880 on shotguns.

Class 12 — Construction Materials

SN 206,119. Alside, Inc., Akron, Ohio. Filed Nov. 13, 1964.



Applicant disclaims "Formula" and "Protective Coating" apart from the mark as shown.
For Aluminum Siding and Accessories, Aluminum Gutters and Downspouts and Accessories, Treated With a Protective Coating Which Guards the Goods Against Weather's Damaging Effects.
First use Sept. 23, 1964.

SN 243,863. Glamour Pools Co., Holland, Mich. Filed Apr. 20, 1966.

GLAMOUR POOLS

Applicant disclaims the word "Pools" apart from the composite mark.
For Swimming Pools and Prefabricated Construction Materials Therefor.
First use on or about Apr. 1, 1965.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 239,463. Townsend Company, Braintree, Mass. Filed Feb. 23, 1966.

CUT-LOK

For Cutlery Rivets.
First use May 4, 1965.

Class 14—Metals and Metal Castings and Forgings

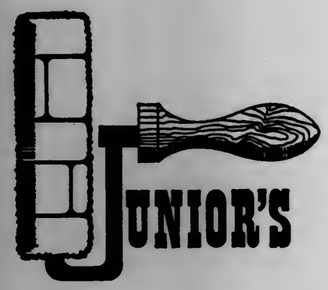
SN 230,937. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

S.M.I.-LIMESTRE

Owner of Italian Reg. No. 75,706, dated Oct. 1, 1946.
For Semi-Finished Metal Products—Namely, Sheets, Plates, Wires, Disks, Bars, and Bands.

Class 16—Protective and Decorative Coatings

SN 235,732. Tobias Paint Manufacturing Co., Cleveland, Ohio. Filed Jan. 3, 1966.



For Flat Wall Paint, Water Resistant Interior Paint, Ready Mixed Paint in Oil, Porch, Floor, and Deck Enamel, and Semi-Gloss Enamel.
First use in or about November 1965; in or about January 1965 as to the word "Junior's."

SN 242,567. Cook Paint & Varnish Company, Kansas City, Mo. Filed Apr. 4, 1966.

Corotone

For Exterior and Interior Latex House Paint.
First use Mar. 24, 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 240,833. Arco Pharmaceuticals, Inc., Plainview, N.Y. Filed Mar. 14, 1966.

ARCORET

For Medicinal Tablet Containing Vitamins and Protcase.
First use Apr. 20, 1964.

SN 240,835. Arco Pharmaceuticals, Inc., Plainview, N.Y. Filed Mar. 14, 1966.

BITRATE

For Medicinal Tablet for the Prevention and Prophylactic Treatment of Angina Pectoris.
First use Oct. 23, 1961.

SN 241,393. The Upjohn Company, Kalamazoo, Mich. Filed Mar. 18, 1966.

LINCO

Owner of Reg. No. 760,244.
For Antibiotic Feed Additive for Veterinary Use.
First use Mar. 10, 1966.

SN 242,465. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Apr. 1, 1966.

LUFYLLIN

Owner of Reg. No. 773,530.
For Drug Preparations Containing Dyphylline for Diuresis and Treatment of Cardiac and Pulmonary Disorders, etc.
First use Mar. 23, 1966.

SN 243,637. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 18, 1966.



The mark consists of a stylized "L" and design. Owner of Reg. No. 396,235.
For Pharmaceutical Preparations.
First use on or about Mar. 31, 1966.

SN 243,761. American Home Products Corporation, New York, N.Y. Filed Apr. 19, 1966.

MEDIBANE

For Analgesic Calmative.
First use Mar. 18, 1966.

SN 244,433. E. R. Squibb & Sons, Inc., New York, N.Y. Filed Apr. 27, 1966.

BOVITROL

For Veterinary Hormone Preparations and Feed Supplement.
First use Nov. 9, 1965.

SN 245,904. British Chemotheutic Products Limited, Bradford, York, England. Filed May 18, 1966.

MEDULCA

Owner of British Reg. No. 845,041, dated Feb. 13, 1963; and U.S. Reg. No. 753,211.
For Medical Preparations in Tablet, Powder, and Biscuit Form.

SN 246,816. Sills Products, Inc., Woodward, Okla. Filed May 27, 1966.

SILLS

For Foot Powder and Corn and Callous Ointment.
First use 1925.

SN 246,817. Sills Products, Inc., Woodward, Okla. Filed May 27, 1966.

CHIGGEREX

For Preparation for the Treatment of Insect Bites.
First use 1925.

SN 248,416. Bristol-Myers Company, New York, N.Y. Filed June 20, 1966.

THE SUPERSELTZER FOR OUR SUPER TIMES

For Medicinal and Pharmaceutical Preparation—Namely, an Effervescent/Analgesic Alkalizing Tablet.
First use May 19, 1966.

SN 249,257. E. R. Squibb & Sons, Inc., New York, N.Y. Filed June 29, 1966.

RAUZIDE

For Antihypertensive Diuretic Preparation.
First use June 17, 1966.

SN 249,494. Barnes-Hind Ophthalmic Products, Sunnyvale, Calif. Filed July 5, 1966.

OPTYME

For Emollient Lubricant Where Tear Production Is Inadequate and for the Symptomatic Relief of Keratoconjunctivitis.
First use Apr. 13, 1966.

SN 250,035. John Edward Ronicker, d.b.a. J. E. Ronicker Co. Laboratories, West Milton, Ohio. Filed July 11, 1966.

DOG BLOOM

Applicant disclaims exclusive right to use of the word "Dog" separate and apart from the mark as shown. Owner of Reg. Nos. 652,633 and 810,379.
For Concentrated Vitamin-Mineral-Dietary Supplement for Dogs.
First use Dec. 22, 1964.

SN 251,311. Laser, Inc., Crown Point, Ind. Filed July 29, 1966.

DIALSPAN

For Timed Disintegration Capsules Containing Dosages of Medicinal and Pharmaceutical Preparations.
First use June 13, 1966.

SN 252,103. Inpharzam S.A., Lugano, Switzerland. Filed Aug. 10, 1966.

INPHARZAM

Priority claimed under Sec. 44(d) on Swiss Reg. No. 217,010, dated Feb. 24, 1966.
For Medicines and Pharmaceutical Preparations.

SN 254,361. Smith, Miller & Patch, Inc., New York, N.Y. Filed Sept. 13, 1966.

PYOCIDIN

For Ophthalmic Ointment and Optic Preparation.
First use Sept. 7, 1966.

SN 257,898. E. R. Squibb & Sons, Inc., New York, N.Y. Filed Nov. 3, 1966.

PURAY

For Vitamin Preparations.
First use July 21, 1966.

SN 257,899. E. R. Squibb & Sons, Inc., New York, N.Y. Filed Nov. 3, 1966.

MEDIGRAN

For Vitaminic Preparation.
First use Oct. 5, 1966.

Class 19—Vehicles

SN 224,647. Royal Industries, Inc., Pasadena, Calif. Filed July 30, 1965.

OVERLAND ANCHOR LOK

For Motor Vehicle Brakes for Coaches, Trucks and Truck-Trailer Combinations, Including Emergency and Parking Brakes; and Accessories and Components Therefor.
First use on or about Oct. 24, 1960.

SN 236,417. Rockwell-Standard Corporation, Pittsburgh, Pa. Filed Jan. 13, 1966.

STOP MASTER

The drawing is lined for red.
For Brakes for Automotive Vehicles.
First use about Dec. 16, 1965.

SN 240,118. Rockford Industries, Inc., Rockford, Ohio. Filed Mar. 3, 1966.

JOYTIME

For Travel Trailers and Pickup Campers.
First use Apr. 1, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 214,596. American Electric Corp., Southaven, Miss. Filed Mar. 22, 1965.

UNIFLUX

Portions of the drawing are lined to show the color red; however, no claim is made to color as an integral portion of the mark.
For Specialty Transformers for Use in and in Conjunction With Lighting Fixtures.
First use July 30, 1964.

SN 220,271. A. M. Byers Company, Ambridge, Pa. Filed June 3, 1965.



The mark consists of a painted stripe arbitrarily disposed spirally on the conduit, no claim being made to the representation of the conduit. The drawing is lined for red. Owner of Reg. No. 311,737.
For Electrical Conduit.
First use July 30, 1964.

SN 221,439. American Components Incorporated, Conshohocken, Pa. Filed June 18, 1965.

THERMA-MET

For Electrical Components—Namely, Electrical Resistors.
First use on or about July 15, 1964.

SN 226,662. Needle Industries Limited, d.b.a. Henry Milward & Sons, Birmingham, England. Filed Aug. 27, 1965.

COURIER

Owner of British Reg. No. 822,326, dated June 26, 1961.
For Electric Shavers and Parts Thereof.

SN 228,503. Airdesign Corporation, Philadelphia, Pa. Filed Sept. 24, 1965.

REDDI LITE

For Ignition Transformer.
First use Mar. 23, 1965.

SN 228,631. Chief Equipment Corporation, Denver, Colo. Filed Sept. 27, 1965.

FLAME MATIC

For Electrical Apparatus for Automatically Relighting a Pilot Light.
First use Mar. 4, 1965.

SN 229,697. Union Carbide Corporation, New York, N.Y. Filed Oct. 8, 1965.

ENERGIZER

For Electric Dry Cell Batteries for Use in Electronic, Hearing, Lighting, and Horological Devices and for Operation of Small Electric Motors.
First use 1955.

SN 230,415. Motores y Aparatos Electricos, S.A. de C.V., Mexico City, Mexico. Filed Oct. 18, 1965.

VELOZ

For Electric Motors.
First use June 28, 1965; in commerce June 28, 1965.

SN 230,469. Yuasa Battery Company Limited, Takatsuki, Osaka Prefecture, Japan. Filed Oct. 18, 1965.

NOYPER

Owner of Japanese Reg. No. 523,345, dated July 9, 1958.
For All Kinds of Electric Batteries and Rectifiers.
First use Sept. 1, 1965; in commerce Sept. 1, 1965.

SN 230,747. Aerovox Corporation, New Bedford, Mass. Filed Oct. 21, 1965.

AEROMET

For Electrical Capacitors and Resistors.
First use Aug. 13, 1965.

SN 230,748. Aerovox Corporation, New Bedford, Mass. Filed Oct. 21, 1965.

ERASEAL

For Electrical Capacitors and Resistors.
First use Aug. 13, 1965.

SN 231,486. Prescolite Manufacturing Corporation, San Leandro, Calif. Filed Oct. 28, 1965.

ASTRALUME

For Electric Lighting Fixtures.
First use July 12, 1961.

SN 233,865. The Barkelew Electric Manufacturing Company, Middletown, Ohio. Filed Dec. 3, 1965.
Owner of Reg. No. 707,315.

BOLT-LOC

For Electrical Switches, and Parts Therefor.
First use Nov. 10, 1958.

SN 234,156. Vandalarm Systems, Inc., Houston, Tex. Filed Dec. 7, 1965.

VANDALARM

For Sound-Sensing Instruder Alarm Systems.
First use at least as early as Sept. 30, 1963.

SN 234,182. Dayton Aircraft, Inc., Fort Lauderdale, Fla. Filed Dec. 8, 1965.

MARTECH

For Electronic Communication Equipment—Namely, Radio Frequency Transmitters, Radio Beacons; and Telemetry, Data Sensing, Processing and Transducing Equipment and Parts Therefor for Use With Radio Frequency Transmitters and Radio Beacons.
First use Oct. 1, 1965.

SN 234,183. Dayton Aircraft, Inc., Fort Lauderdale, Fla. Filed Dec. 8, 1965.



For Electronic Communication Equipment—Namely, Radio Frequency Transmitters, Radio Beacons; and Telemetry, Data Sensing, Processing and Transducing Equipment and Parts Therefor for Use With Radio Frequency Transmitters and Radio Beacons.
First use Oct. 1, 1965.

SN 234,269. Cook Electric Company, Morton Grove, Ill. Filed Dec. 9, 1965.



For Telephone Protection and Distribution Equipment—Namely, Terminal Assemblies, Splice Coats, Cable Terminal Housings, Wire Terminals, Building Terminals, Terminal Blocks, Central Office Protectors, Station Protectors, Sub-Station Protectors, Junction Boxes, Lightning Arresters, Battery Chargers, Relays, Fusers, and Components and Parts for Said Equipment.
First use between Feb. 1 and 10, 1965.

SN 234,436. Kay Electric Company, Fairfield, N.J. Filed Dec. 13, 1965.

MIDGI-LITE

For Miniature Digital Luminous Lamps To Indicate Symbols.
First use July 14, 1965.

SN 235,245. Winsco Instruments & Controls Company, Inc., d.b.a. Electro-Oceanics, Santa Monica, Calif. Filed Dec. 23, 1965.



"WATER MATE"

For Underwater Electrical Connectors.
First use Nov. 18, 1965.

SN 235,246. Winsco Instruments & Controls Company, Inc., d.b.a. Electro-Oceanics, Santa Monica, Calif. Filed Dec. 23, 1965.



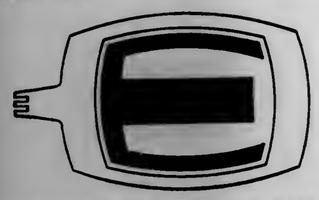
The mark consists of a design of the letters "EO."
For Underwater Electrical Connectors.
First use August 1964.

SN 242,321. Bargar Metal Fabricating Company, Cleveland, Ohio. Filed Mar. 31, 1966.

CONDUFLOR

For Underfloor Conduits, Ductwork, Junction Boxes, Outlet Boxes, and Fittings Therefor.
First use at least as early as Apr. 27, 1960.

SN 253,199. Empire Tube Sales, Inc., Jacksonville, Fla. Filed Aug. 26, 1966.



Applicant disclaims the design outline of a television picture tube apart from the mark as shown.
For Television Picture Tubes.
First use November 1965.

Class 22—Games, Toys, and Sporting Goods

SN 240,569. American Character, Inc., New York, N.Y. Filed Mar. 10, 1966.

SNIP 'N TUCK

For Dolls.
First use Dec. 15, 1965.

SN 240,570. American Character, Inc., New York, N.Y. Filed Mar. 10, 1966.

THE MAGIC MAKE-UP FACE

Applicant disclaims the wording "The Make-Up Face."
For Dolls.
First use Dec. 15, 1965.

SN 240,629. Kiddie Products, Inc., Squantum, Mass. Filed Mar. 10, 1966.

NICE BABY

No claim is made to the exclusive use of the word "Baby" apart from the mark as shown.
For Suction Toys and Squeeze Toys.
First use October 1964.

SN 241,347. Kusan, Inc., Nashville, Tenn. Filed Mar. 18, 1966.

MISS PIGTAILS

For General Line of Play Toys and Apparatus Sold as Units for Playing Various Type Parlor Games, Said Toys and Game Apparatus Being for Children and Especially Young Girls.
First use Nov. 2, 1965.

SN 246,139. Seymour Adler, d.b.a. Leonis Company, El Segundo, Calif. Filed May 20, 1966.

FLEX-I-PETS

For Plush Toy Animals.
First use Mar. 18, 1966.

SN 249,909. Brunswick Corporation, Chicago, Ill. Filed July 11, 1966.

ARMOR PLATE

No claim is made to exclusive rights in the term "Plate" apart from the mark as shown.
For Pin Decks for Bowling Lanes.
First use May 10, 1966.

SN 250,908. Mattel, Inc., Hawthorne, Calif. Filed July 25, 1966.

MRS. BEASLEY

The name "Mrs. Beasley" is fictional.
For Dolls, Doll Clothing and Doll Accessories.
First use June 21, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 215,802. U.S. Industries, Inc., New York, N.Y. Filed Apr. 5, 1965.

TORC-PAC

For Mechanical Drive Power Transmitting Mechanisms in the Nature of a Gear Reduction Unit.
First use March 1958.

SN 222,500. Omni Manufacturing Company, Bristol, Va. Filed June 30, 1965.

BUG-UP

For Automobile Jack Attachment—Namely, a Means of Applying the Lifting Force to the Bumper of the Automobile.
First use Mar. 4, 1965.

SN 232,426. Splades Pty. Limited, Sydney, New South Wales, Australia. Filed Nov. 9, 1965.

SPLAYDS

For Eating Instrument Combining the Functions of Knife, Fork, and Spoon in One Piece.
First use April 1960; in commerce August 1965.

SN 236,555. Barry-Wehmiller Company, St. Louis, Mo. Filed Jan. 17, 1966.



The mark consists of the letters "BW" and design.
For Container and Bottle Handling and Processing Machinery and Equipment—Namely, Conveying Apparatus for Containers of All Types, Container Washing, Rinsing and Drying Machines, Container Inspection Apparatus, Container Uncasers, Markers, Loaders and Dischargers, and Components and Parts Thereof.
First use Nov. 15, 1965.

SN 237,939. Cory Corporation, Chicago, Ill. Filed Feb. 3, 1966.

CONNOISSEUR

For Electric Carving and Slicing Knives.
First use Oct. 20, 1964.

Class 24—Laundry Appliances and Machines

SN 239,815. Southern Mills, Inc., Atlanta, Ga. Filed Feb. 28, 1966.

WONDERFIT

For Dry Cleaners' Form Finishing Bags Used on Steam-Air Finishing Machines.
First use on or about Sept. 1, 1965.

Class 26—Measuring and Scientific Appliances

SN 221,782. Avant Incorporated, Lincoln, Mass. Filed June 23, 1965.

DUOMATIC

For Identification Cameras and Accessories Thereto, Including Data Cards Used With Said Cameras, and Flash Attachments for Attachment to Said Cameras.
First use May 1, 1964.

SN 225,816. SCM Corporation, New York, N.Y. Filed Aug. 16, 1965.

33

For Electrostatic Copying Machines.
First use May 3, 1962.

SN 232,265. AMF Tuboscope, Inc., Houston, Tex. Filed Nov. 8, 1965.

LINASCAN

For Machines for Receiving Welded Pipe, Nondestructively Testing Said Pipe for Flaws, and Recording the Test Results.
First use at least as early as July 31, 1962.

SN 232,930. Oxford Laboratories, San Mateo, Calif. Filed Nov. 18, 1965.

VIBRATOME

For Microtome Sectioning System or Instrument for Sectioning Materials.
First use Oct. 29, 1965.

SN 233,084. Electronic Development Laboratories, Inc., Plainview, N.Y. Filed Nov. 22, 1965.

ACU-PROBE

For Pyrometers.
First use Oct. 20, 1965.

SN 233,086. Electronic Development Laboratories, Inc., Plainview, N.Y. Filed Nov. 22, 1965.

POCKET-PROBE

For Pyrometers.
First use June 4, 1963.

SN 235,237. Sterling, Inc., Milwaukee, Wis. Filed Dec. 28, 1965.

sheetliner

For Temperature Control Units for Roll Temperature Control.
First use Nov. 9, 1965.

SN 236,480. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Jan. 14, 1966.

COBI

For Cumulative Delta Octane Barrel Indicator Used in Connection With an Octane Comparator for Measuring Octane Rating of Gasoline Blends.
First use Sept. 23, 1965.

SN 236,529. Technicron Chemical Company, Inc., Chauncey, N.Y. Filed Jan. 13, 1966.

NESRAC

For Racks for Holding Chemical Reagent Bottles.
First use Dec. 1, 1965.

SN 236,585. Field Emission Corporation, McMinnville, Oreg. Filed Jan. 17, 1966.

FEBETRON

Owner of Reg. No. 714,700.
For Beta Ray Tubes and Beta Ray Apparatus Containing Such Beta Ray Tubes.
First use Dec. 10, 1965.

SN 236,689. Xerox Corporation, Rochester, N.Y. Filed Jan. 17, 1966.

TRANSALOID

For Light Sensitive Photographic Paper.
First use Mar. 15, 1939.

SN 239,115. Bolt Associates, Inc., East Norwalk, Conn. Filed Feb. 18, 1966.

PAR

For Pneumatic Sound Sources for Explosive Release of Compressed Air Under Water for Marine Seismic Surveying.
First use September 1961.

SN 243,460. Le Grand Products Corporation, Media, Pa. Filed Apr. 14, 1966.

MINI-DIP

For Soaking Kit for the Hydration of Contact Lenses.
First use Sept. 27, 1965.

SN 248,063. Sternco Industries, Inc., Allendale, N.J. Filed June 14, 1966.



For Thermometers for Aquariums.
First use Sept. 4, 1962.

Class 27 — Horological Instruments

SN 238,800. Swank, Inc., Attleboro, Mass. Filed Feb. 14, 1966.

SWANK

Owner of Reg. No. 675,988.
For Clocks.
First use Jan. 15, 1960.

Class 29 — Brooms, Brushes, and Dusters

SN 230,773. Cadillac Shoe Products, Inc., Detroit, Mich. Filed Oct. 21, 1965.

CADILLAC

For Roller-Type Lint Remover.
First use March 1965.

Class 30 — Crockery, Earthenware, and Porcelain

SN 166,128. Shenango Ceramics, Inc., New Castle, Pa., assignee of Shenango China, Inc., New Castle, Pa. Filed Apr. 4, 1963.

SVAR

For China Dinnerware.
First use Jan. 15, 1963.

SN 166,136. Shenango Ceramics, Inc., New Castle, Pa., assignee of Shenango China, Inc., New Castle, Pa. Filed Apr. 4, 1963.

SPYR

For China Dinnerware.
First use Jan. 15, 1963.

SN 169,826. Castleton China, Inc., New Castle, Pa. Filed May 28, 1963.

CORDOVA

For China Dinnerware.
First use May 6, 1963.

SN 169,827. Castleton China, Inc., New Castle, Pa. Filed May 28, 1963.

ELYSIUM

For China Dinnerware.
First use May 6, 1963.

SN 169,828. Castleton China, Inc., New Castle, Pa. Filed May 28, 1963.

POMPEII

For China Dinnerware.
First use May 6, 1963.

SN 169,829. Castleton China, Inc., New Castle, Pa. Filed May 28, 1963.

RAVENNA

For China Dinnerware.
First use May 6, 1963.

SN 212,600. Shenango Ceramics, Inc., New Castle, Pa. Filed Feb. 23, 1965.

LEMONT

For China Dinnerware.
First use Nov. 3, 1964.

SN 212,601. Shenango Ceramics, Inc., New Castle, Pa. Filed Feb. 23, 1965.

ELSA

For China Dinnerware.
First use Nov. 3, 1964.

SN 217,289. Castleton China, Inc., New Castle, Pa. Filed Apr. 26, 1965.

ANDANTE

Owner of Reg. Nos. 508,906 and 538,757.
For China Dinnerware.
First use Jan. 4, 1965.

SN 217,291. Castleton China, Inc., New Castle, Pa. Filed Apr. 26, 1965.

CAPELLA

Owner of Reg. Nos. 508,906 and 538,757.
For China Dinnerware.
First use Jan. 4, 1965.

SN 217,292. Castleton China, Inc., New Castle, Pa. Filed Apr. 26, 1965.

CONCERTO

Owner of Reg. Nos. 508,906 and 538,757.
For China Dinnerware.
First use Jan. 4, 1965.

SN 217,293. Castleton China, Inc., New Castle, Pa. Filed Apr. 26, 1965.

BOLERO

Owner of Reg. Nos. 508,906 and 538,757.
For China Dinnerware.
First use Jan. 4, 1965.

SN 217,294. Castleton China, Inc., New Castle, Pa. Filed Apr. 26, 1965.

GOLDEN MELODY

Owner of Reg. Nos. 508,906 and 538,757.
For China Dinnerware.
First use Jan. 4, 1965.

SN 217,298. Castleton China, Inc., New Castle, Pa. Filed Apr. 26, 1965.

MUSICALLE

Owner of Reg. Nos. 508,906 and 538,757.
For China Dinnerware.
First use Jan. 4, 1965.

SN 217,299. Castleton China, Inc., New Castle, Pa. Filed Apr. 26, 1965.

OVERTURE

Owner of Reg. Nos. 508,906 and 538,757.
For China Dinnerware.
First use Jan. 4, 1965.

SN 218,068. Castleton China, Inc., New Castle, Pa. Filed May 5, 1965.

FELICITY

For China Dinnerware.
First use Feb. 12, 1965.

SN 218,069. Castleton China, Inc., New Castle, Pa. Filed May 5, 1965.

PROVINCIAL FLOWER

For China Dinnerware.
First use Feb. 12, 1965.

Class 31 — Filters and Refrigerators

SN 230,249. Hupp Corporation, Cleveland, Ohio. Filed Oct. 15, 1965.

FROST CLEAR

For Refrigerators and Freezers.
First use Oct. 2, 1959.

SN 245,317. Juva-Tex, Inc., Chicago, Ill. Filed May 10, 1966.

QWIK-FILTER

For Filters for Use in Connection With Coffee Makers.
First use Apr. 26, 1966.

Class 32 — Furniture and Upholstery

SN 236,663. Stow & Davis Furniture Company, Grand Rapids, Mich. Filed Jan. 17, 1966.

BUBBLE

For Chairs.
First use Nov. 19, 1965.

SN 244,760. Stanley Furniture Company, Inc., Stanleytown, Va. Filed May 2, 1966.

The [illegible]

Villa Hermosa

(Double Oval)

by [illegible]

For Wood Furniture—Namely, Bedroom, Dining Room, Living Room, and Chairs.
First use Mar. 29, 1966.

SN 245,122. The Vollrath Company, Sheboygan, Wis. Filed May 6, 1966.

FLEX-O-SERVE

For Flexible, Self-Contained Food Transportation and Service Assemblages, Comprising Stainless Steel Food Transport and Service Pans and Insulated Carriers.
First use in the early spring of 1965.

SN 245,429. Tomlinson of High Point, High Point, N.C. Filed May 11, 1966.

ANTIQUARY

For Furniture—Namely, Sofas, Chairs, Tables, Sideboards, Cabinets, Chests, Benches, Beds, Dressers, and Mirrors.
First use Mar. 16, 1966.

SN 251,857. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 8, 1966.

CORIAN

For Nonstructural Building Materials—Namely, Counter Tops and Vanity Tops.
First use June 15, 1966.

SN 255,399. Maidenform, Inc., New York, N.Y. Filed Sept. 29, 1966.

TURN-STYLE

For Merchandise Display Stand or Rack.
First use July 21, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 243,360. United Aircraft Products, Inc., Dayton, Ohio. Filed Apr. 13, 1966.



Owner of Reg. Nos. 614,418, 625,261, and others.
For Radiant Survival Heater.
First use September 1965.

SN 243,361. United Aircraft Products, Inc., Dayton, Ohio. Filed Apr. 13, 1966.

UAP

Owner of Reg. Nos. 614,418, 625,261, and others.
For Heat Exchangers of the Tube and Shell Type, Plate and Fin Type, and Water Boiling Evaporative Type, for General Applications Where It Is Desirable To Modify the Temperature of a First Fluid by Reference to a Second Fluid.
First use June 1964.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 236,478. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed Jan. 14, 1966.

MAXPLY P-75

Owner of Reg. Nos. 511,928 and 791,741.
For Tires.
First use Dec. 31, 1965.

Class 36—Musical Instruments and Supplies

SN 223,584. George E. Runquist Enterprises Inc., Savannah, Mo. Filed July 16, 1965.

PIC-HIT

For Phonograph Records.
First use Apr. 23, 1965.

SN 255,257. Dot Records, Inc., Los Angeles, Calif. Filed Sept. 28, 1966.

Hamilton

For Phonograph Records.
First use Nov. 11, 1958.

Class 37—Paper and Stationery

SN 214,420. The Budd Company, Philadelphia, Pa. Filed Mar. 18, 1965.

BUDDGETTE

Owner of Reg. Nos. 528,554, 736,273, and others.
For Writing Paper.
First use at least as early as Mar. 3, 1965.

SN 227,883. Robert A. Starkey, d.b.a. Starkey Business Services, Wichita, Kans. Filed Sept. 15, 1965.

STARKEY BUSINESS SYSTEMS

The words "Business Systems" are disclaimed apart from the mark as a whole.
For Partially Printed Business Forms.
First use on or about Aug. 2, 1965.

SN 228,756. Southworth Company, West Springfield, Mass. Filed Sept. 27, 1965.

CREDENTIAL

For Writing, Typewriting, Drawing, Text, Printing, Bond, Manuscript Cover, and Cover Papers.
First use Nov. 30, 1913.

SN 234,029. The Holes-Webway Co., St. Cloud, Minn. Filed Dec. 6, 1965.



For Recipe Albums.
First use Oct. 1, 1965.

SN 236,081. Fraser Paper, Limited, Madawaska, Maine. Filed Jan. 10, 1966.

FRA-O-FORM

For Paper, Commercially Known as Register Bond Paper, and Particularly Adapted for Use in Multi-Copy Business Forms.
First use Apr. 12, 1963.

SN 241,828. Tenneco Inc., Houston, Tex., by change of name from Tennessee Gas Transmission Company, Houston, Tex. Filed Mar. 24, 1966.



For Paper, Paperboard, and Paperboard Sheeting Made From Fibrous Pulp.
First use Mar. 7, 1966.

SN 249,381. Connecticut Valley Paper & Envelope Co., Incorporated, New York, N.Y. Filed June 28, 1966.

CONTAC-SEAL

Owner of Reg. No. 720,694.
For Mailing Envelopes.
First use 1955.

SN 249,779. Mitsu-bishi Pencil Company Limited, Shinagawa-ku, Tokyo, Japan. Filed July 7, 1966.

uni

Owner of Japanese Reg. No. 598,894, dated Oct. 11, 1962.
For Pencils, Mechanical Pencils, Ball Point and Felt Pens.

SN 251,501. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Aug. 2, 1966.

Sasheen

For Wrapping Paper.
First use July 15, 1966.

Class 38—Prints and Publications

SN 240,473. Personal Communications Publishing Corporation, Linwood, N.J. Filed Mar. 8, 1966.

PCPC PERSONAL REPORT *for the Successful Executive*

No claim is made to the words "Personal Report for the Successful Executives" apart from the mark as shown.
For Newsletter, Published From Time to Time.
First use Sept. 30, 1965.

SN 246,987. Wine Institute, San Francisco, Calif. Filed June 1, 1966.



For Weekly Newspaper Column.
First use Feb. 8, 1966.

SN 252,932. Francisco R. Saralegui, Miami, Fla. Filed Aug. 23, 1966.

CORINA

For Magazine.
First use Mar. 9, 1966.

SN 255,263. National Periodical Publications, Inc., New York, N.Y. Filed Sept. 28, 1966.

ROBIN
-THE BOY WONDER-

For Cartoons Published in a Series.
First use Dec. 1, 1946.

SN 257,011. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed Oct. 24, 1966.

"LAZY BONES"

For Greeting Cards.
First use July 5, 1966.

SN 257,012. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed Oct. 24, 1966.

FLIBBERTI-GIBBETS

For Greeting Cards.
First use Jan. 4, 1966.

SN 257,017. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed Oct. 24, 1966.

MERRY-MENTS

For Greeting Cards.
First use July 1, 1966.

SN 257,018. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed Oct. 24, 1966.

DUTCH TREATS

For Greeting Cards.
First use on or about Aug. 26, 1966.

SN 257,235. The McNaught Syndicate, Inc., New York, N.Y. Filed Oct. 26, 1966.

DEBBIE DEERE

For Newspaper Feature in the Nature of a Comic Strip.
First use May 30, 1966.

Class 39—Clothing

SN 220,066. Beaver Shirt Manufacturing Co., Inc., New York, N.Y. Filed June 1, 1965.

Andrew
FIFTH AVENUE

The geographical location "Fifth Avenue" is disclaimed apart from the mark as shown.
For Men's and Boys' Shirts.
First use Sept. 21, 1957.

SN 228,469. Jonathan Logan, Inc., New York, N.Y. Filed Sept. 23, 1965.

CAROLINE CHARLES

The name "Caroline Charles" is not the name of any living individual known to applicant.
For Ladies' Dresses.
First use Aug. 2, 1965.

SN 228,572. Scott Paper Company, Philadelphia, Pa. Filed Sept. 24, 1965.



The word "Bib" is disclaimed apart from the mark as a whole. The drawing is lined for the colors orange, red or pink, blue, and green. Owner of Reg. No. 559,929.
For Bibs Made From Paper.
First use July 20, 1965; Oct. 14, 1964, in different form.

SN 228,731. McGregor-Doniger Inc., New York, N.Y. Filed Sept. 27, 1965.

STALKER

For Slacks.
First use Sept. 8, 1965.

SN 228,944. Schuberth Corporation, Toledo, Ohio. Filed Sept. 29, 1965.



For Safety Hats and Caps, and Accessories Thereto.
First use Mar. 1, 1965.

SN 229,088. E. Greenwald & Sons, d.b.a. Greenco Maid, New York, N.Y. Filed Oct. 1, 1965.

HIDDEN COMFORT

For Ladies' Panties.
First use Sept. 21, 1965.

SN 230,195. Rockford Textile Mills, Inc., McMinnville, Tenn. Filed Oct. 14, 1965.



For Socks.
First use May 21, 1965.

SN 231,273. Strathmore Shoe Co., Inc., Brockton, Mass. Filed Oct. 22, 1965.



Owner of Reg. Nos. 660,155 and 702,326.
For Men's Shoes.
First use in about 1961.

SN 231,279. Strathmore Shoe Co., Inc., Brockton, Mass. Filed Oct. 22, 1965.



Owner of Reg. No. 660,155.
For Men's Shoes.
First use August 1965.

SN 231,281. Strathmore Shoe Co., Inc., Brockton, Mass. Filed Oct. 22, 1965.



"Filippo Verde" is the Italian for Philip Green, a living individual who signed the application as treasurer. Owner of Reg. No. 660,155.
For Men's Shoes.
First use about 1963.

SN 233,182. Jonbil Manufacturing Company, Inc., New York, N.Y. Filed Nov. 23, 1965.



For Shorts, Pants, and Jackets for Men, Women, and Children.
First use Oct. 7, 1965.

SN 239,029. Edgewood Casuals, Inc., Lexington, N.C. Filed Feb. 17, 1966.

EDGEWOOD

For Shirts.
First use May 1958.

SN 239,454. Stockton Manufacturing Co., Inc., Dallas, Tex. Filed Feb. 23, 1966.

PATTI PIPPINS

"Patti Pippins" is not the name of any individual presently known to the applicant. Owner of Reg. No. 813,494.
For Girls' Skirts, Blouses, Dresses, Shorts, Pedal Pushers, and Capris.
First use Jan. 28, 1966.

SN 241,094. Teen-Age Beachwear Corporation, New York, N.Y. Filed Mar. 15, 1966.



The word "Knits" is disclaimed apart from the mark as shown.
For Swimwear, Beachwear, and Playsuits.
First use Sept. 22, 1965.

SN 243,250. The Londontown Manufacturing Company, Baltimore, Md. Filed Apr. 12, 1966.

THERMAPLUSH

For Lining Composed Wholly or in Part of Plush for Outer Coats.
First use Apr. 4, 1966.

SN 243,354. Sportoon Cards, Inc., Los Angeles, Calif. Filed Apr. 13, 1966.

BUDO

For Karate Uniforms.
First use Dec. 3, 1965.

SN 243,941. Alpine House, Inc., Ozone Park, N.Y. Filed Apr. 21, 1966.

ALAN MAC DONALD

The name "Alan MacDonald" is fanciful.
For Headwear and Bonnets.
First use September 1965.

SN 244,239. Palm Beach Company, Portland, Maine. Filed Apr. 25, 1966.

SPRINGWEAVE

Owner of Reg. No. 423,411.
For Men's and Boys' Suits, Slacks, and Sportcoats.
First use Aug. 1, 1941.

SN 244,578. Eagle Shoe Mfg. Company, Inc., Everett, Mass. Filed Apr. 29, 1966.

COURTLITE

Owner of Reg. No. 565,064.
For Men's and Boys' Shoes.
First use August 1953.

SN 244,797. Bear Brand Hosiery Co., Chicago, Ill. Filed May 3, 1966.

RACHEL ANNE

For Ladies' Hosiery.
First use Aug. 27, 1965.

SN 244,831. Lewel Manufacturing Co., Inc., New York, N.Y. Filed May 3, 1966.

SCINTILLATE

For Girdles and Panty Girdles.
First use Mar. 16, 1966.

SN 244,904. Jubo-Schuhfabrik Julius Bock KG., Hauenstein, Pfalz, Germany. Filed May 4, 1966.

FENDER

Owner of German Reg. No. 813,954, dated Dec. 23, 1965.
For Shoes and Footwear.

SN 244,913. Melville Shoe Corporation, New York, N.Y. Filed May 4, 1966.

SCRUBBIES

For Women's and Children's Sneakers.
First use May 3, 1966.

SN 245,257. Superba Cravats, Inc., Rochester, N.Y. Filed May 9, 1966.

MARK-X

For Neckties.
First use Apr. 1, 1966.

SN 246,314. International Latex Corporation, Dover, Del. Filed May 23, 1966.

DOUBLE V

For Foundation Garments.
First use Mar. 24, 1966.

SN 246,325. Wm. G. Leininger Knitting Co., Inc., Mohnton, Pa. Filed May 23, 1966.

R.R.X.

For Socks.
First use Oct. 10, 1959.

SN 247,159. Sinclair Refining Company, New York, N.Y. Filed June 2, 1966.



Owner of Reg. Nos. 146,362, 712,302, and others.
For Service Station Wearing Apparel—Namely, Men's Shirts, Overalls, One-Piece Suits, Coats, Jackets, and Caps.
First use at least 1959.

SN 248,346. Wm. G. Leininger Knitting Co., Inc., Mohnton, Pa. Filed June 17, 1966.



For Socks.
First use Oct. 10, 1959.

SN 257,906. Bourjois, Inc., New York, N.Y. Filed Nov. 4, 1966.

Evening in Paris

Owner of Reg. Nos. 255,826, 575,238, and others.
For Stockings.
First use on or about Sept. 14, 1965.

SN 257,907. Danskin Inc., New York, N.Y. Filed Nov. 3, 1966.

NETSKINS

For Tights.
First use Oct. 31, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 247,088. Vulcanized Rubber & Plastics Company, Morrisville, Pa. Filed June 1, 1966.

MiniComb

For Hair Combs.
First use on or about Oct. 11, 1965.

SN 247,466. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed June 7, 1966.

MOD ROD

For Hair Rollers.
First use May 21, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 234,030. Huyck Corporation, Rensselaer, N.Y. Filed Dec. 6, 1965.

FF-8

For Felts for Papermaking Machines Having Reduced Hair-Shedding Properties.
First use Oct. 14, 1965.

SN 240,434. Graniteville Company, Graniteville, S.C. Filed Mar. 8, 1966.

CaroLon

For Furniture Fabrics of All Nylon and/or Blends of Synthetics, for Use as Upholstery.
First use Nov. 24, 1965.

SN 241,986. Crown Rubber Company, Fremont, Ohio. Filed Mar. 28, 1966.

BEAUTY STRIPE

For Nylon Pile Carpet With Vinyl Backing.
First use Jan. 25, 1966.

SN 242,345. Esercizio Stabilimenti Litex S.a.S., Turin, Italy. Filed Mar. 31, 1966.

NATTIER

For Textile Fabrics of Wool, Cotton, Silk, Synthetic Fibers, and Mixtures Thereof With Leather and/or Metallic Threads.
First use no later than Feb. 15, 1963; in commerce Feb. 15, 1964.

SN 242,346. Esercizio Stabilimenti Litex S.a.S., Turin, Italy. Filed Mar. 31, 1966.

LITEX

For Textile Fabrics of Wool, Cotton, Silk, Synthetic Fibers, and Mixtures Thereof With Leather and/or Metallic Threads.
First use no later than Feb. 15, 1963; in commerce Feb. 15, 1964.

SN 257,913. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Nov. 4, 1966.

DU PONT

Owner of Reg. Nos. 281,193, 368,501, and 508,258.
For Fabrics of Man-Made Fibers and Filaments, Suitable for Making Into Household Furnishings and Apparel, and for Industrial Uses.
First use Oct. 1, 1965.

Class 44—Dental, Medical, and Surgical Appliances

SN 232,485. Testa Laboratorium A/S, Copenhagen, Denmark. Filed Nov. 10, 1965.

INFUMAT

Priority claimed under Sec. 44(d) on Danish application filed May 13, 1965; Reg. No. 2,837, dated Oct. 23, 1965.
For Apparatus and Instruments for Controlled Infusion, Primarily for Use in Connection With the Human Body, and for Use in Medical Laboratories for Pharmacological Tests and Experiments.

SN 233,431. Electro-Catheter Corporation, Linden, N.J. Filed Nov. 29, 1965.

ELECATH

For Stylettes, Catheters, Spring Guide Wires for Use With Catheters, Glass Sleeves for Shaping Catheters, and Needles for Use With Catheters.
First use Sept. 24, 1963.

SN 235,687. Mar Saunette, Inc., Grand Rapids, Mich. Filed Jan. 3, 1966.

MARSAUNETTE

For Devices for Bathing the Face—Namely, Apparatus for Electrically Generating Steam and/or Vapor, With or Without Aromatic Herbs, and Simultaneously Applying Such Steam and/or Vapor Locally to the Body.
First use July 26, 1965.

SN 245,160. Cargille Scientific Inc., Cedar Grove, N.J. Filed May 9, 1966.

Therapacer

For Electronic Metronome for Use as a Medical Aid Instrument.
First use Apr. 29, 1966.

SN 245,579. Irving Ellman and Shirley Ellman (joint owners), d.b.a. The Ellman Company, Valley Stream, N.Y. Filed May 13, 1966.

ROTO-SONIC

For Scaler for Removing Calculus From Teeth.
First use Mar. 1, 1965.

SN 245,834. Francis J. Mancini, d.b.a. Melrose Specialty Products Company, Plymouth Meeting, Pa. Filed May 17, 1966.

MELPRO

For Dental Materials and Specialties—Namely, Pastes and Polishes, Mixing Pads, Impression Compounds, Orthodontic Elastic Ligatures, Adhesives for Dentures, Bands and Shells Made of Non-Ferrous Materials, Orthodontic Ligature Metal Wires, Orthodontic Tie Buttons, Cellulosic Covers and Sheets, and Stabilgesic Ointments.
First use on or about Apr. 30, 1960.

Class 45—Soft Drinks and Carbonated Waters

SN 241,680. Russell Pierce, d.b.a. Congress Springs Development Company, San Jose, Calif. Filed Mar. 23, 1966.



For Pure Drinking Water.
First use Jan. 24, 1966.

SN 243,770. Capp Enterprises, Inc., Boston, Mass. Filed Apr. 19, 1966.

KICKAPOO JOY JUICE

For Carbonated Soft Drinks and Concentrates Therefor.
First use Nov. 18, 1964.

SN 256,629. Salient Flavoring Corp., New York, N.Y. Filed Oct. 18, 1966.

JOVO

For Soft Drinks and Syrups for Making Same.
First use August 1966.

Class 46—Foods and Ingredients of Foods

SN 231,516. Wingfield-Wilson, New York, N.Y. Filed Oct. 23, 1965.



For Peanut Butter.
First use Oct. 11, 1965.

SN 240,778. Poultry Guild, Inc., Moorefield, W. Va. Filed Mar. 11, 1966.

RING-A-DING

For Frozen Formed Chicken-Breast Cutlets.
First use Jan. 25, 1966.

SN 243,395. Beatrice Foods Co., Chicago, Ill. Filed Apr. 14, 1966.

NUTTIE-KINS

For Candy.
First use Apr. 4, 1966.

SN 243,706. Ocean Garden Products, Inc., San Diego, Calif. Filed Apr. 18, 1966.

OCEAN GARDEN

Owner of Reg. Nos. 354,746, 733,886, and others.
For Frozen Seafoods—Namely, Fresh Shrimp, Breaded Fish Sticks, Crab Meat, Abalone Steaks, Frog Legs; Canned Shellfish, Namely, Canned Abalone.
First use April 1922 on canned abalone.

SN 244,040. The Tilghman Packing Company, Tilghman, Md. Filed Apr. 21, 1966.

SKIPJACK

For Packaged Frozen Seafood Products—Namely, Fried Clams, Cooked and Seasoned Chopped Clams, Cooked Shrimp in Italian Sauce, Deviled Crabs and Crab Cakes; and Packaged Frsen, Cooked and Seasoned Sweet Potatoes.
First use Aug. 16, 1963.

Class 49 — Distilled Alcoholic Liquors

SN 240,431. Glenmore Distilleries Company, d.b.a. Five Stripe Distilling Co., Louisville, Ky. Filed Mar. 8, 1966.

FIVE STRIPE

For Gin and Vodka.
First use Sept. 28, 1962.

SN 244,823. John Gross & Co., Baltimore, Md. Filed May 3, 1966.

HIGHLAND SEAL

For Scotch Whisky.
First use Jan. 12, 1948.

SN 244,824. John Gross & Co., Baltimore, Md. Filed May 3, 1966.

HIGHLAND SUPREME

No claim is made to the word "Supreme" apart from the mark as shown.
For Scotch Whisky.
First use Jan. 12, 1948.

Class 50 — Merchandise Not Otherwise Classified

SN 246,542. Cybis, Trenton, N.J. Filed May 25, 1966.

CYBIS

For Porcelain Art Work.
First use Sept. 25, 1965.

SN 250,951. Flambeau Plastics Corporation, Baraboo, Wis. Filed July 25, 1966.

KOOLETTES

For Plastic Enclosed Ice Cubes.
First use Feb. 15, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 241,043. Jean Eymond, Inc., Miami, Fla. Filed Mar. 15, 1966.

ORCHIDEE EN FLEUR

The English translation of "Orchidee en Fleur" is "orchid blossom."
For Perfume.
First use May 5, 1965.

SN 241,046. Jean Eymond, Inc., Miami, Fla. Filed Mar. 15, 1966.

FRUIT D'OR

The English translation of "Fruit d'Or" is "golden fruit."
For Perfume.
First use May 17, 1965.

SN 241,049. Jean Eymond, Inc., Miami, Fla. Filed Mar. 15, 1966.

PARFUM DE VOS ETOILES

The English translation of "Parfum de Vos Etoiles" is "perfume of your stars."
For Perfume.
First use July 21, 1965.

SN 241,050. Jean Eymond, Inc., Miami, Fla. Filed Mar. 15, 1966.

FLEUR DE CIEL

The English translation of "Fleur de Ciel" is "flower of heaven."
For Perfume.
First use May 5, 1965.

SN 241,053. Jean Eymond, Inc., Miami, Fla. Filed Mar. 15, 1966.

MAGNOLIA EXOTIQUE

The English translation of the mark is "exotic magnolia."
For Perfume.
First use May 5, 1965.

SN 241,055. Jean Eymond, Inc., Miami, Fla. Filed Mar. 15, 1966.

LOTUS DE CEYLAN

The English translation of the mark is "lotus of Ceylan."
For Perfume.
First use May 5, 1965.

SN 241,058. Jean Eymond, Inc., Miami, Fla. Filed Mar. 15, 1966.

OEILLET D'ORIENT

For Perfume.
First use May 5, 1965.

SN 246,538. Colgate-Palmolive Company, New York, N.Y. Filed May 25, 1966.

003½

Owner of Reg. No. 817,128.
For Personal Deodorant.
First use Feb. 18, 1966.

SN 249,804. Shulton, Inc., Clifton, N.J. Filed July 7, 1966.

RALLYE

For Deodorant, Aerosol Shave Cream, Cologne, and After Shave Lotion.
First use June 17, 1966, on deodorant.

SN 254,019. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Sept. 8, 1966.



The drawing is lined for the colors gold and green, but no claim is made to color as a feature of the mark. The word "Freshener" is disclaimed apart from the mark as shown.
For Skin Lotion.
First use Jan. 21, 1965; in commerce Jan. 21, 1965.

SN 254,020. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Sept. 8, 1966.

LEMON-JELVYN

For Skin Lotion.
First use Jan. 21, 1965; in commerce Jan. 21, 1965.

SN 254,087. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Sept. 9, 1966.

jelvyn

For Skin Lotion.
First use Oct. 21, 1965; in commerce Oct. 21, 1965.

SN 254,648. The Andrew Jergens Company, Cincinnati, Ohio. Filed Sept. 19, 1966.

BEN HUR

Owner of Reg. No. 127,424.
For Perfume, After Shave Lotion, Talcum Powder, Shaving Cream, Personal Deodorant, and Hair Tonic.
First use 1904 on perfume.

SN 255,036. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 26, 1966.

ARBANE

For Perfume.
First use Sept. 14, 1966.

SN 255,037. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 26, 1966.

ZAZINE

For Perfume.
First use Sept. 19, 1966.

SN 255,038. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 26, 1966.

ZARLUNE

For Perfume.
First use Sept. 12, 1966.

SN 255,039. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 26, 1966.

ZACHINE

For Perfume.
First use Sept. 13, 1966.

SN 255,041. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 26, 1966.

ZAZETE

For Perfume.
First use Sept. 19, 1966.

SN 256,186. American Home Products Corporation, New York, N.Y. Filed Oct. 11, 1966.

NOW-ARMED

For Anti-Perspirant.
First use Sept. 16, 1966.

SN 256,187. American Home Products Corporation, New York, N.Y. Filed Oct. 11, 1966.

ARMED

For Anti-Perspirant.
First use Sept. 16, 1966.

SN 257,769. Chesebrough-Pond's Inc., New York, N.Y. Filed Nov. 2, 1966.

NICE 'N COOL

For Anti-Perspirant Deodorant.
First use Oct. 12, 1966.

Class 52 — Detergents and Soaps

SN 246,585. Nation-Wide Chemical Co. Inc., Brooklyn, N.Y. Filed May 25, 1966.

TUF-GUY

For Detergent and Cleaner for Use on Floors, Walls, and the Like.
First use March 1966.

SN 246,658. Clairol Incorporated, New York, N.Y. Filed May 26, 1966.

FIGHT IT

For Detergents and Soaps—Namely, a Hair Shampoo.
First use Jan. 3, 1966.

SN 246,659. Clairol Incorporated, New York, N.Y. Filed May 26, 1966.

FIGHT BACK

For Detergents and Soaps—Namely, a Hair Shampoo.
First use Jan. 21, 1966.

SN 246,879. Clairol Incorporated, New York, N.Y. Filed May 31, 1966.

ADVICE

For Cosmetics and Toilet Preparations—Namely, Hair Shampoo.
First use Jan. 21, 1966.

SN 247,225. Guerlain, Inc., New York, N.Y. Filed June 3, 1966.

SAPOCETI

For Toilet Soap.
First use April 1926.

SN 248,298. Clairol Incorporated, New York, N.Y. Filed June 17, 1966.

GOOD ADVICE

For Detergents and Soaps—Namely, a Conditioning Shampoo.
First use May 19, 1966.

SN 255,040. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 26, 1966.

ARBANE

For Toilet Soap.
First use Sept. 19, 1966.

SN 255,044. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 26, 1966.

ZAZETE

For Toilet Soap.
First use Sept. 14, 1966.

SN 255,253. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 28, 1966.

ZACHINE

For Toilet Soap.
First use Sept. 19, 1966.

SN 255,254. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 28, 1966.

ZARLUNE

For Toilet Soap.
First use Sept. 12, 1966.

SN 255,258. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 28, 1966.

ZULETE

For Toilet Soap.
First use Sept. 12, 1966.

SN 255,259. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 28, 1966.

BRIFFAULT

For Toilet Soap.
First use Sept. 19, 1966.

SN 255,260. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 28, 1966.

ZAZINE

For Toilet Soap.
First use Sept. 13, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 241,798. Planning Research Corporation, Los Angeles, Calif. Filed Mar. 24, 1966.



For Provision of Professional Services in Techno-Economic and Computer Sciences for Government and Industry, Such Services Being Supplied by Multidisciplined Teams of Professional Personnel.
First use March 1959.

SN 244,113. Heroes, Inc., Washington, D.C. Filed Apr. 22, 1966.



For Aiding the Widows and Children of Firemen and Policemen Killed in the Line of Duty in Washington, D.C., Maryland and Virginia, in Financial, Legal, and Like Causes.
First use Nov. 18, 1964.

SN 254,167. Hyatt Corporation of America, Burlingame, Calif. Filed Sept. 9, 1966.

HYATT HOUSE HOTELS

For Hotel Services.
First use January 1954.

SN 256,795. The Downtowner Corporation, Memphis, Tenn. Filed Oct. 20, 1966.

ROWNTOWNER

Owner of Reg. Nos. 737,345 and 766,075.
For Motor Inn Services.
First use Oct. 1, 1966.

SN 256,902. The Downtowner Corporation, Memphis, Tenn. Filed Oct. 21, 1966.



For Motor Inn Services.
First use Oct. 1, 1966.

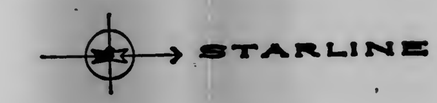
Class 101 — Advertising and Business

SN 243,344. Mystic Seaport Stores, Inc., Mystic, Conn. Filed Apr. 13, 1966.



For Retail Merchandising Services.
First use in or about May 1955.

SN 244,148. Starline Corporation, Albuquerque, N. Mex. Filed Apr. 22, 1966.



For Printing and Lithography Services.
First use in the year 1957.

SN 245,797. Sandusky Distributing Company, Sandusky, Ohio. Filed May 16, 1966.

MR. WIGGS

For Department Store Services.
First use May 21, 1962.

SN 251,169. The Advertising Council, Inc., New York, N.Y. Filed July 28, 1966.



For Services—Namely, Conducting Nationwide Advertising Campaigns on Behalf of Federal Government Agencies and Private Non-Profit Organizations on Non-Controversial Subjects in Cooperation With Volunteer Advertising Agencies and Through Facilities Contributed by Mass Communication Media, Which Promote Voluntary Citizen Actions Pertaining to, and Public Understanding of, Such Subjects as the Peace Corps, Traffic Safety, Forest Fire Prevention, American Red Cross, U.S. Savings Bonds, Mental Retardation, Support for Colleges, Need for Continued Education, United Community Funds and Other Matters of Concern to All.
First use July 26, 1966; at least prior to Feb. 1, 1947, as to "Advertising Council."

SN 253,255. Periodical Publishers' Service Bureau, Inc., Sandusky, Ohio. Filed Aug. 29, 1966.



Applicant disclaims any exclusive rights to the map of the United States, other than as a part of the mark herein.
For Securing and Servicing of Magazine Subscriptions for Publishers.
First use Aug. 10, 1966.

Class 102 — Insurance and Financial

SN 258,013. The College/University Insurance Company of America, Indianapolis, Ind. Filed Nov. 7, 1966.



For Underwriting Automobile, Fire and Casualty and Related Insurance, Excluding Life Insurance.
First use July 27, 1966.

Class 105 — Transportation and Storage

SN 254,973. Allegheny Airlines, Inc., Washington, D.C. Filed Sept. 23, 1966.

VISTA

Owner of Reg. Nos. 813,673 and 813,674.
For Air Transportation of Persons, Property, Freight, and Mail.
First use Nov. 4, 1965.

Class 107 — Education and Entertainment

SN 241,144. Hayden Huddleston Advertising Agency, Inc., Roanoke, Va. Filed Mar. 16, 1966.

KIDDIE KOLLEGE

For Quiz-Type Television Program.
First use Mar. 23, 1965.

SN 241,542. The Tahse Corporation, New York, N.Y. Filed Mar. 21, 1966.



For Production and Presentation of Plays, Musical Comedies, and Other Entertainment on the Stage, in Motion Pictures, Radio, and Television, and the Management of Theatrical Talent.
First use Sept. 15, 1965.

SN 251,771. The Pop-Op Corporation, New York, N.Y. Filed Aug. 5, 1966.



For Entertainment Services—Namely, Dance Facilities, Motion Pictures, Night Club and Cabaret Facilities, Concerts, and Party Facilities.
First use Apr. 5, 1966.

SN 255,676. International Textbook Company, Scranton, Pa. Filed Oct. 4, 1966.

INTERNATIONAL CORRESPONDENCE SCHOOLS WORLD LIMITED, INC.

Owner of Reg. No. 802,413.
For Furnishing Education by Correspondence and In-Plant Technical and Business Training.
First use Nov. 29, 1948.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 244,340. National Association of Women in Construction, Dallas, Tex. Filed Apr. 26, 1966.



For Indicating Membership in Applicant Association.
First use on or about May 17, 1954.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

823,192. HIPOLAN. Mitsubishi Rayon Company Limited. SN 139,763. Pub. 8–9–66. Filed 3–13–62.

823,193. KANEKALON. Kanegafuchi Chemical Industry Company. MULTIPLE CLASS (Classes 1, 39, 42, and 43). SN 217,684. Pub. 11–15–66. Filed 9–16–66.

823,194. VITASIL. Manley Bros. SN 224,223. Pub. 11–15–66. Filed 7–26–65.

823,195. STEREON. The Firestone Tire & Rubber Company. SN 234,275. Pub. 11–15–66. Filed 12–9–65.

823,196. AVCERAM. FMC Corporation. MULTIPLE CLASS (Classes 1 and 43). SN 236,249. Pub. 11–15–66. Filed 1–12–66.

823,197. ELASTO-LITE. The Goodyear Tire & Rubber Company. SN 239,518. Pub. 11–15–66. Filed 2–24–66.

823,198. DF. Hooker Chemical Corporation. SN 241,343. Pub. 11–15–66. Filed 3–18–66.

823,199. RILSAN. Aquitaine-Organico. SN 249,206. Pub. 11–15–66. Filed 6–29–66.

Class 2 — Receptacles

823,200. NEST-PAK. Bemis Company, Inc., by change of name from Bemis Bro. Bag Company. SN 135,746. Pub. 12–17–63. Filed 1–15–62.

823,201. LITTER AND DESIGN. Litter-Bank of America, Inc., assignee of Artistic Receptacles Company. SN 200,314. Pub. 11–15–66. Filed 8–21–64.

823,202. KONTUR-A-PAK AND DESIGN. Owens-Illinois, Inc., by change of name from Owens-Illinois Glass Company. SN 206,070. Pub. 11–15–66. Filed 11–12–64.

823,203. DURA-PACK. Midwest Hanger Co. SN 219,802. Pub. 11–15–66. Filed 5–26–65.

823,204. NEST-LOC AND DESIGN. Rigid Boxes, Inc. SN 224,027. Pub. 11–15–66. Filed 7–22–65.

823,205. IDENT-A-PEEK. Neely Manufacturing Co., Inc. SN 224,229. Pub. 11–15–66. Filed 7–26–65.

823,206. CHUB-A-MATIC. Tee-Pak, Inc. SN 224,808. Pub. 11–15–66. Filed 8–2–65.

823,207. WESTERN AGRI-COAT AND DESIGN. Western Kraft Corporation. SN 225,838. Pub. 11–15–66. Filed 8–16–65.

823,208. UNI-NEST. United Steel and Wire Company. SN 232,744. Pub. 11–15–66. Filed 11–15–65.

823,209. LIFE LINER AND DESIGN. Louise W. Hopkins. SN 242,453. Pub. 11–15–66. Filed 4–1–66.

Class 4 — Abrasives and Polishing Materials

823,210. SAABA. Norton Company. SN 173,486. Pub. 3–3–64. Filed 7–22–63.

823,211. DURA-LAN. Lancaster Chemical Corporation. MULTIPLE CLASS (Classes 4, 5, and 12). SN 195,118. Pub. 11–15–66. Filed 6–8–64.

823,212. WAXPLICATOR. Turtle Wax, Inc. SN 230,010. Pub. 11–15–66. Filed 10–12–65.

823,213. VANTAGE. The Drackett Company, assignee of Bristol-Myers Company. SN 234,530. Pub. 11–15–66. Filed 9–16–66.

823,214. VANTAGE HOUSE. The Drackett Company, assignee of Bristol-Myers Company. SN 234,532. Pub. 11–15–66. Filed 9–1–66.

Class 5 — Adhesives

823,211. (See Class 4 for this trademark.)

823,215. GLUE DOCTOR. Schramm Fiberglass Products, Inc., assignee of Cory Corporation (Pace Home Products Division). SN 205,669. Pub. 11–15–66. Filed 11–6–64.

823,216. MONOBOND. Pierce & Stevens Chemical Corp. SN 207,653. Pub. 11–15–66. Filed 12–7–64.

823,217. MARINER. Benjamin Foster Company. SN 229,424. Pub. 11–15–66. Filed 10–6–65.

Class 6 — Chemicals and Chemical Compositions

823,218. HI BARRIER DUAL SEALS. Colonial Alloys Company. SN 189,657. Pub. 11–15–66. Filed 3–26–64.

823,219. IMPRAPELL. American Hoechst Corporation. SN 215,480. Pub. 11–15–66. Filed 4–1–65.

823,220. LIN-BOND. A. E. Staley Manufacturing Company. SN 225,445. Pub. 11–15–66. Filed 8–10–65.

823,221. DUROFIX. Tenneco Chemicals, Inc., by merger of Berkshire Color & Chemical Co. SN 225,920. Pub. 11–15–66. Filed 8–18–65.

823,222. TEXFLAME. Allied Chemical Corporation. SN 226,603. Pub. 11–15–66. Filed 8–27–65.

823,223. UNI-COR. Henry Valve Company. SN 226,914. Pub. 11–15–66. Filed 9–1–65.

823,224. FLY FIGHTER. Alco Chemical Co. SN 227,218. Pub. 11–15–66. Filed 9–7–65.

823,225. LOXENE. Wyandotte Chemicals Corporation. SN 227,376. Pub. 11–15–66. Filed 9–7–65.

823,226. ESCORT. The Ansul Company. SN 227,544. Pub. 1–15–66. Filed 9–10–65.

823,227. GERMA-SOFT. C-Z Chemical Company, Inc. SN 229,064. Pub. 11–15–66. Filed 10–1–65.

823,228. NORGAS AND DESIGN. Northern Propane Gas Company. SN 229,115. Pub. 11–15–66. Filed 10–1–65.

823,229. F & B. Faesy & Besthoff, Inc. SN 229,966. Pub. 11–15–66. Filed 10–12–65.

823,230. KESSLER CHEMICALS AND DESIGN. Armour and Company. SN 233,670. Pub. 11–15–66. Filed 12–1–65.

823,231. GREEN THUMB AND HAND (DESIGN). American Fuel & Supply Co., Inc., d.b.a. American Fuel and Supply Co. MULTIPLE CLASS (Classes 6 and 10). SN 234,714. Pub. 11–15–66. Filed 12–16–65.

823,232. SPRINGFIELD. Certified Grocers of California, Ltd., d.b.a. Certified Grocers of California. MULTIPLE CLASS (Classes 6, 9, 37, 45, 46, and 52). SN 234,862. Pub. 11–15–66. Filed 12–20–65.

823,233. LDIM. Merck & Co., Inc. SN 235,416. Pub. 11–15–66. Filed 12–28–65.

823,234. ORONITE. Chevron Chemical Company. SN 235,622. Pub. 11–15–66. Filed 1–3–66.

823,235. TEXENE. Rhodia Inc. SN 235,937. Pub. 11–15–66. Filed 1–6–66.

823,236. SINDONE. Amchem Products, Inc. SN 235,950. Pub. 11–15–66. Filed 1–7–66.

823,237. PROMISAN. Geigy Chemical Corporation. SN 237,327. Pub. 11-15-66. Filed 1-26-66.

823,238. CRABOUT. Lee Patten Seed Company. SN 239,160. Pub. 11-15-66. Filed 2-18-66.

823,239. PEN KARB. Heatbath Corporation. SN 239,771. Pub. 11-15-66. Filed 2-28-66.

823,240. NOVIGANTH. Schering A.G. SN 239,807. Pub. 11-15-66. Filed 2-28-66.

823,241. COMBICELLS. Chas. Pfizer & Co., Inc. SN 240,337. Pub. 11-15-66. Filed 3-7-66.

823,242. CELLTROL. Chas. Pfizer & Co., Inc. SN 240,338. Pub. 11-15-66. Filed 3-7-66.

823,243. ODABAN. Rhodia Inc. SN 240,549. Pub. 11-15-66. Filed 3-9-66.

823,244. ICE KING AND DESIGN. Western Oil and Fuel Company. SN 240,815. Pub. 11-15-66. Filed 3-11-66.

823,245. SPRINGVALE. Premier Industrial Corporation. SN 240,953. Pub. 11-15-66. Filed 3-14-66.

823,246. CLEARCO. Marie L. Cleary, d.b.a. Clearco Products Company. SN 241,035. Pub. 11-15-66. Filed 3-15-66.

823,247. WESTRON. West Chemical Products, Inc. SN 241,608. Pub. 11-15-66. Filed 3-22-66.

823,248. AMBUSH. Union Carbide Corporation. SN 241,711. Pub. 11-15-66. Filed 3-23-66.

823,249. COMPLETE. Standard International Corporation. SN 241,814. Pub. 11-15-66. Filed 3-24-66.

823,250. NITRO-AIRE. Nitro-Aire Corporation. SN 242,268. Pub. 11-15-66. Filed 3-30-66.

823,251. KP-140. FMC Corporation. SN 243,654. Pub. 11-15-66. Filed 4-18-66.

823,252. CHLOROMYCETIN. Parke, Davis & Company. SN 244,241. Pub. 11-15-66. Filed 4-25-66.

823,253. POZZOLITH. Martin-Marietta Corporation. SN 245,214. Pub. 11-15-66. Filed 5-9-66.

823,254. CHEMPRIME AND DESIGN. Alvin J. Conner, d.b.a. The Al-Con Chemical Co. SN 245,269. Pub. 11-15-66. Filed 5-6-66.

823,255. SANIPRO. Sanipro Chemical Corp. SN 246,027. Pub. 11-15-66. Filed 5-19-66.

823,256. SEATROL. Home Dental Aids Company, d.b.a. Home Dental Aids Co., Inc. SN 247,290. Pub. 11-15-66. Filed 6-6-66.

823,257. DACONIL 2787. Diamond Alkali Company. SN 248,755. Pub. 11-15-66. Filed 6-23-66.

823,258. ACRYSCOPE. S. C. Johnson & Son, Inc. SN 249,925. Pub. 11-15-66. Filed 7-11-66.

823,259. ELECTROCOLOR. Minnesota Mining and Manufacturing Company. SN 252,791. Pub. 11-15-66. Filed 8-22-66.

823,260. SUDDEN SHOWER. Johnson & Johnson. SN 252,995. Pub. 11-15-66. Filed 8-24-66.

823,261. SI-O-KWEL. Stauffer Chemical Company. SN 253,097. Pub. 11-15-66. Filed 8-25-66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

823,262. SEAFOAM. S. M. Frank & Co., Inc. SN 202,572. Pub. 7-12-66. Filed 9-24-64.

823,263. SCRIPTO. Scripto, Inc. SN 239,176. Pub. 11-15-66. Filed 2-18-66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

823,232. (See Class 6 for this trademark.)

823,264. THE MINUTEMAN AND DESIGN. Precision Engineered Products Corporation. SN 218,219. Pub. 11-15-66. Filed 5-6-65.

823,265. DIAL-A-ROUND. Remington Arms Company, Inc. SN 226,470. Pub. 11-15-66. Filed 8-25-65.

Class 10 — Fertilizers

823,231. (See Class 6 for this trademark.)

Class 12 — Construction Materials

823,211. (See Class 4 for this trademark.)

823,266. CONFILM. Martin-Marietta Corporation. SN 225,487. Pub. 11-15-66. Filed 8-11-65.

823,267. PURLBOARD. Imperial Chemical Industries Limited. SN 234,428. Pub. 11-15-66. Filed 12-13-65.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

823,268. CENTURY. Century Electric Company. MULTIPLE CLASS (Classes 13 and 19). SN 224,070. Pub. 11-15-66. Filed 7-23-65.

823,269. STREAMSEAL. Allis-Chalmers Manufacturing Company. SN 229,720. Pub. 11-15-66. Filed 10-11-65.

823,270. AUTO-PONENTS. Deltrol Corp., d.b.a. Auto-Ponents, Inc. MULTIPLE CLASS (Classes 13 and 26). SN 232,256. Pub. 11-15-66. Filed 11-8-65.

823,271. MISCELLANEOUS DESIGN. Republic Industrial Corporation. SN 232,479. Pub. 11-15-66. Filed 11-10-65.

823,272. COMPAR-A-BOARD. Star Key & Lock Manufacturing Co., Inc. SN 237,396. Pub. 11-15-66. Filed 1-26-66.

823,273. NBI. Nippon Bulge Industries, Ltd. SN 238,361. Pub. 11-15-66. Filed 2-8-66.

823,274. AMCO CRAFT. Amco Engineering Company. SN 239,105. Pub. 11-15-66. Filed 2-18-66.

823,275. PRINCESS AND DESIGN. Jet-Flo Corporation. SN 239,276. Pub. 11-15-66. Filed 2-21-66.

823,276. TWO WATER DROPS CROSSED (DESIGN). Standard Screw Company. SN 241,384. Pub. 11-15-66. Filed 3-18-66.

823,277. BLUELINE. Stockham Valves & Fittings, Inc. SN 242,065. Pub. 11-15-66. Filed 3-28-66.

823,278. PM AND DESIGN. The Bishop and Babcock Corporation. SN 242,791. Pub. 11-15-66. Filed 4-6-66.

823,279. ADHACO. Adhaco Hardware Corporation. SN 244,450. Pub. 11-15-66. Filed 4-28-66.

823,280. LATHURSHELF. American Dispenser Company, Inc. SN 244,558. Pub. 11-15-66. Filed 4-29-66.

823,281. TEPCO. The Evans Brick and Pipe Company, Inc. SN 244,814. Pub. 11-15-66. Filed 5-3-66.

823,282. THE BIG DIPPER. Stephen A. Young Corporation. SN 245,788. Pub. 11-15-66. Filed 5-16-66.

823,283. THREDSTUDS. South Chester Corporation. SN 245,995. Pub. 11-15-66. Filed 5-18-66.

Class 14 — Metals and Metal Castings and Forgings

823,284. GALVA-BRITE. Sharon Steel Corporation. SN 235,432. Pub. 11-15-66. Filed 12-28-65.

Class 15 — Oils and Greases

823,285. DRY GOOP. Crawford Fitting Company. SN 205,672. Pub. 11-15-66. Filed 11-6-64.

823,286. MACMILLAN M RING-FREE RACING-FORMULA AND DESIGN. Macmillan Ring-Free Oil Co., Inc. SN 236,109. Pub. 11-15-66. Filed 1-10-66.

823,287. TOON-OYL. Permatex Company, Inc. SN 250,551. Pub. 11-15-66. Filed 7-19-66.

Class 16 — Protective and Decorative Coatings

823,288. GLO-WAX. Sherman Car Wash Equipment Co. SN 221,645. Pub. 9-6-66. Filed 6-21-65.

823,289. NYE-KOTE. Electro-Coatings, Inc. SN 231,076. Pub. 9-13-66. Filed 10-22-65.

823,290. RILSAN. Aquitaine-Organico. SN 249,208. Pub. 11-15-66. Filed 6-29-66.

Class 17 — Tobacco Products

823,291. RIVALS. Universal Cigar Corporation. SN 240,487. Pub. 11-15-66. Filed 8-8-66.

Class 18 — Medicines and Pharmaceutical Preparations

823,292. HARDROCK ETC. AND DESIGN. Hardrock Corporation. SN 229,091. Pub. 11-15-66. Filed 10-1-65.

823,293. POW. Southwestern Drug Corporation. SN 231,304. Pub. 11-15-66. Filed 10-22-65.

823,294. PET-A-SEPTIC. Hudson National, Inc., d.b.a. Hudson Vitamin Products. SN 249,198. Pub. 11-15-66. Filed 6-29-66.

823,295. MINDROX. Hudson National, Inc., d.b.a. Hudson Vitamin Products. SN 249,201. Pub. 11-15-66. Filed 6-29-66.

823,296. ZYPRELONE. Richardson-Merrell, Inc., d.b.a. The Wm. S. Merrell Company. SN 249,286. Pub. 11-15-66. Filed 6-30-66.

823,297. ZOLAFON. Richardson-Merrell, Inc., d.b.a. The Wm. S. Merrell Company. SN 249,287. Pub. 11-15-66. Filed 6-30-66.

823,298. ZYPRED. Richardson-Merrell, Inc., d.b.a. The Wm. S. Merrell Company. SN 249,288. Pub. 11-15-66. Filed 6-30-66.

Class 19 — Vehicles

823,268. (See Class 13 for this trademark.)

823,299. INDY 500 AND DESIGN. Halibrand Engineering, Inc. MULTIPLE CLASS (Classes 19 and 23). SN 193,666. Pub. 9-6-66. Filed 5-18-64.

823,300. DURABLE AND DESIGN. Durable Steel Products, Inc. MULTIPLE CLASS (Classes 19, 23, and 35). SN 226,132. Pub. 11-15-66. Filed 8-20-65.

823,301. TROPICANA. Western Campers, Inc. SN 227,873. Pub. 11-15-66. Filed 9-7-65.

823,302. FLAT-TOP. Hilman Equipment Company, Inc. SN 228,823. Pub. 11-15-66. Filed 9-28-65.

823,303. SKEE-HORSE. Outboard Marine Corporation. SN 233,522. Pub. 11-15-66. Filed 11-29-65.

Class 21 — Electrical Apparatus, Machines, and Supplies

823,304. FEDERAL. Federal Products Corporation. SN 167,894. Pub. 8-16-66. Filed 5-1-63.

823,305. DATA PANEL. Transistor Electronics Corporation. SN 179,743. Pub. 11-15-66. Filed 10-24-63.

823,306. CAPRI. National Cooperatives, Inc. SN 185,150. Pub. 8-16-66. Filed 1-22-64.

823,307. TIMEMARK-14. Communication Papers, Inc. SN 199,656. Pub. 11-15-66. Filed 8-11-64.

823,308. PILL. EMC Technology, Inc. SN 217,615. Pub. 11-15-66. Filed 4-29-65.

823,309. PULSECOM AND DESIGN. Pulse Communications, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 220,147. Pub. 11-15-66. Filed 6-1-65.

823,310. EMC. Howard Industries, Inc. SN 222,029. Pub. 8-2-66. Filed 6-25-65.

823,311. ARDMORE. Hampton Sales Co. Inc. MULTIPLE CLASS (Classes 21, 23, and 36). SN 225,024. Pub. 7-12-66. Filed 8-5-65.

823,312. PERPETUUM-EBNER. Perpetuum-Ebner, Fabrik fur Feinmechanik und Elektrotechnik, Steidinger & Co., K.G. MULTIPLE CLASS (Classes 21 and 36). SN 225,667. Pub. 11-15-66. Filed 8-13-65.

823,313. HOLI-MATIC. Irvin Gassenheimer and Irvin Gassenheimer, Jr., d.b.a. Electronic Engineers. SN 226,527. Pub. 11-15-66. Filed 8-26-65.

823,314. KITCHEN MAID. Modern Maid, Inc., by change of name from Tennessee Stove Works, Inc. SN 227,779. Pub. 6-14-66. Filed 9-14-65.

823,315. . . . PUT YOUR RELIANCE ON A P.S. APPLIANCE AND DESIGN. The Proctor-Silex Corporation. MULTIPLE CLASS (Classes 21 and 31). SN 228,565. Pub. 11-15-66. Filed 9-24-65.

823,316. PYROLAM. TRW, Inc. SN 231,708. Pub. 11-15-66. Filed 10-27-65.

823,317. RESCUE LITE. ACR Electronics Corp. SN 231,796. Pub. 11-15-66. Filed 10-29-65.

823,318. DIMENSIA IV. Radio Corporation of America. SN 233,392. Pub. 11-15-66. Filed 11-26-65.

823,319. ENCOM AND DESIGN. Robert P. Mallalieu, d.b.a. Encom Products Company. SN 234,446. Pub. 7-26-66. Filed 12-13-65.

823,320. CLARO-DEC. Clarostat Mfg. Co., Inc. SN 236,466. Pub. 11-15-66. Filed 1-14-66.

823,321. PICTURE OF BIRD-IN-FLIGHT. Bird Electronic Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 237,296. Pub. 8-9-66. Filed 1-26-66.

823,322. TOUCH 'N SNOOZE. Zenith Radio Corporation. SN 239,187. Pub. 9-6-66. Filed 2-18-66.

823,323. MILGO AND DESIGN. Milgo Electronic Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 252,049. Pub. 11-15-66. Filed 8-10-66.

823,324. MILGO. Milgo Electronic Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 252,050. Pub. 11-15-66. Filed 8-10-66.

Class 22 — Games, Toys, and Sporting Goods

823,325. MAGNETOP. American Magnetop Corporation. SN 192,543. Pub. 11–15–66. Filed 5–4–64.

823,326. LIMBERBAG. Andre Lafrance. SN 201,036. Pub. 11–15–66. Filed 9–1–64.

823,327. CASINO KENO. Crisloid Plastics Inc. SN 222,346. Pub. 11–15–66. Filed 6–30–65.

823,328. SPRINGBOK. Springbok Editions, Inc. SN 229,463. Pub. 11–15–66. Filed 10–6–65.

823,329. HAND ENCIRCLING SMALL GIRL (DESIGN). Mattel, Inc. SN 229,836. Pub. 11–15–66. Filed 10–11–65.

823,330. BABE BIDDLE. Mattel, Inc. SN 231,447. Pub. 11–15–66. Filed 10–23–65.

823,331. IMPERIAL. Williams Gold Refining Company, Inc. SN 233,205. Pub. 11–15–66. Filed 11–23–65.

823,332. E-Z WAR. Mary Parmer Roemer and Albert L. Roemer (firm). SN 233,947. Pub. 11–15–66. Filed 12–3–65.

823,333. ALOU. Alou Tackle Co., Inc. SN 233,978. Pub. 11–15–66. Filed 12–6–65.

823,334. WORLD WIDE SECRET AGENT. Louis Marx & Co., Inc. SN 234,132. Pub. 11–15–66. Filed 12–7–65.

823,335. OOPS. Roystoys Inc. SN 234,937. Pub. 11–15–66. Filed 12–20–65.

823,336. LIL' DEVLE. Lou J. Eppinger Manufacturing Company. SN 236,577. Pub. 11–15–66. Filed 1–17–66.

823,337. OKIE DRIFTER. Maxwell Manufacturing Company. SN 237,239. Pub. 11–15–66. Filed 1–25–66.

823,338. KONAHEAD. Sevenstrand Tackle Manufacturing Company. SN 237,255. Pub. 11–15–66. Filed 1–25–66.

823,339. SPY-EYE. Donald L. Johnson, d.b.a. Don L. Johnson Company. SN 242,090. Pub. 11–15–66. Filed 3–23–66.

823,340. SPY-DETECTOR. Donald L. Johnson, d.b.a. Don L. Johnson Company. SN 242,610. Pub. 11–15–66. Filed 4–4–66.

823,341. SWITCH 'N GO AND DESIGN. Mattel, Inc. SN 246,024. Pub. 11–15–66. Filed 5–19–66.

823,342. M MATTEL, INC. AND DESIGN. Mattel, Inc. SN 250,113. Pub. 11–15–66. Filed 7–13–66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

823,299. (See Class 19 for this trademark.)

823,300. (See Class 19 for this trademark.)

823,311. (See Class 21 for this trademark.)

823,343. HARRIS KEY REGISTER. Harris-Intertype Corporation. SN 156,295. Pub. 11–3–64. Filed 10–31–62.

823,344. MISCELLANEOUS DESIGN. L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude. SN 187,119. Pub. 11–15–66. Filed 2–20–64.

823,345. WHIPSLEEVE. Pivot Punch Corporation. SN 196,192. Pub. 11–15–66. Filed 6–22–64.

823,346. STRAIGHT GROUND. Pivot Punch Corporation. SN 196,193. Pub. 11–15–66. Filed 6–22–64.

823,347. VACMANCO. Vacmobile Manufacturing Company Limited. SN 198,684. Pub. 11–15–66. Filed 7–28–64.

823,348. STOELTING. Stoelting Brothers Company. MULTIPLE CLASS (Classes 23 and 31). SN 210,616. Pub. 11–15–66. Filed 1–25–65.

823,349. LC AND DESIGN. Lifetime Cutlery Corp. SN 222,389. Pub. 11–15–66. Filed 6–30–65.

823,350. TEMPO. Tempo Products Company. SN 227,529. Pub. 11–15–66. Filed 9–9–65.

823,351. TEMPO TANKER AND DESIGN. Tempo Products Company. SN 227,530. Pub. 11–15–66. Filed 9–9–65.

823,352. MISCELLANEOUS DESIGN. The Miles Standard Corporation. SN 227,602. Pub. 11–15–66. Filed 9–10–65.

823,353. D AND DESIGN. Consolidated Trades, Inc., d.b.a. Air Tool Manufacturing Co. SN 228,299. Pub. 11–15–66. Filed 9–22–65.

823,354. CATERPILLAR. Caterpillar Tractor Co. MULTIPLE CLASS (Classes 28 and 34). SN 230,019. Pub. 11–15–66. Filed 10–13–65.

823,355. OTIS. Otis Engineering Corporation. SN 232,139. Pub. 11–15–66. Filed 11–4–65.

823,356. AQUALIFT AND DESIGN. Studebaker Corporation. SN 233,415. Pub. 11–15–66. Filed 11–26–65.

823,357. ELECTRO VAC. Southern Mill Equipment Corp. SN 235,044. Pub. 11–15–66. Filed 12–16–65.

823,358. LIQUACLONE AND DESIGN. Donaldson Company, Inc. SN 235,397. Pub. 11–15–66. Filed 12–28–65.

823,359. CLEVELAND AND DESIGN. Cleveland Twist Drill Company. SN 236,234. Pub. 11–15–66. Filed 1–12–66.

823,360. PROFILE FOR PROFIT. Hawker Siddeley Canada Ltd. SN 237,305. Pub. 11–15–66. Filed 1–26–66.

823,361. CHIP-N-SAW. Hawker Siddeley Canada Ltd. SN 238,137. Pub. 11–15–66. Filed 1–26–66.

823,362. GAY-LEE AND DESIGN. Wisconsin Knife Works, Inc. SN 238,816. Pub. 11–15–66. Filed 2–14–66.

823,363. INSERTOR. The Gillette Company. SN 238,868. Pub. 11–15–66. Filed 2–15–66.

823,364. NELMOR AND DESIGN. Nelmor Co., Inc. SN 238,885. Pub. 11–15–66. Filed 2–15–66.

823,365. PIERCE ALL AND DESIGN. Pierce-All Manufacturing Limited. SN 239,655. Pub. 11–15–66. Filed 2–25–66.

823,366. DISPOSOPAK. Auto Pak Company. SN 239,870. Pub. 11–15–66. Filed 3–1–66.

823,367. TWISTAIR. Joy Manufacturing Company. SN 241,346. Pub. 11–15–66. Filed 3–18–66.

823,368. B & S AND DESIGN. Bauer & Schaurte. SN 242,552. Pub. 11–15–66. Filed 4–4–66.

823,369. CINCINNATI. The Cincinnati Shaper Company. SN 243,961. Pub. 11–15–66. Filed 4–21–66.

823,370. COOKIE CUTTER. Viking Carpets, Inc. SN 248,934. Pub. 11–15–66. Filed 6–24–66.

Class 24 — Laundry Appliances and Machines

823,371. WASHPOWER. The Maytag Company. SN 233,930. Pub. 9–6–66. Filed 12–3–65.

823,372. TEX-O-MATIC. Textile Marking Machine Co., Inc. SN 236,300. Pub. 11–15–66. Filed 1–12–66.

823,373. LAUNDROMAT. Westinghouse Electric Corporation. SN 250,708. Pub. 11–15–66. Filed 7–20–66.

Class 25 — Locks and Safes

823,374. MAGNEROK. The Magne-Lok Co. SN 253,587. Pub. 11–15–66. Filed 9–1–66.

Class 26 — Measuring and Scientific Appliances

823,270. (See Class 13 for this trademark.)

823,309. (See Class 21 for this trademark.)

823,321. (See Class 21 for this trademark.)

823,323. (See Class 21 for this trademark.)

823,324. (See Class 21 for this trademark.)

823,375. F AND DESIGN. Fendall Company. SN 199,732. Pub. 11–15–66. Filed 8–12–64.

823,376. AVLITE. Macbeth Corporation. SN 216,085. Pub. 11–15–66. Filed 4–8–65.

823,377. TRANSILOG. The Transilog Co., Inc. MULTIPLE CLASS (Classes 26 and 38). SN 225,687. Pub. 11–15–66. Filed 8–13–65.

823,378. BIOVUE AND DESIGN. Denoyer-Geppert Company. MULTIPLE CLASS (Classes 26 and 38). SN 231,065. Pub. 11–15–66. Filed 10–22–65.

823,379. ND AND DESIGN. Nuclear Data, Inc. SN 233,121. Pub. 11–15–66. Filed 11–22–65.

823,380. MICRONTA. Radio Shack Corporation. SN 233,393. Pub. 11–15–66. Filed 11–26–65.

823,381. XENOMEGA. Simmon Brothers, Inc. SN 233,408. Pub. 11–15–66. Filed 11–26–65.

823,382. HYDRA-AMP. Owatonna Tool Company. SN 233,815. Pub. 11–15–66. Filed 12–2–65.

823,383. TELEMAT. Spiratone, Inc. SN 233,954. Pub. 11–15–66. Filed 12–3–65.

823,384. 3M. Minnesota Mining and Manufacturing Company. SN 245,544. Pub. 11–15–66. Filed 5–18–66.

Class 27 — Horological Instruments

823,385. SCHAFFEL. Sheffield Watch, Inc., assignee of Webster Watch Company, Inc. SN 215,807. Pub. 9–21–65. Filed 4–5–65.

823,386. CIRCLE AND TRAPEZOID (DESIGN). General Time Corporation. SN 234,745. Pub. 11–1–66. Filed 12–16–65.

Class 29 — Brooms, Brushes, and Dusters

823,387. DENTAID. Dev-Coa, Inc. SN 232,196. Pub. 11–15–66. Filed 11–5–65.

823,388. CELESTE. Celeste, Inc. SN 236,053. Pub. 11–15–66. Filed 1–10–66.

Class 30 — Crockery, Earthenware, and Porcelain

823,389. FIRE-FREEZE AND DESIGN. Wayne Manufacturing Company. SN 228,787. Pub. 8–16–66. Filed 9–27–65.

Class 31 — Filters and Refrigerators

823,315. (See Class 21 for this trademark.)

823,348. (See Class 23 for this trademark.)

Class 32 — Furniture and Upholstery

823,390. RESILON. Eclipse Sleep Products, Inc. SN 235,398. Pub. 9–13–66. Filed 12–28–65.

823,391. FIGURE (DESIGN). Godfrey L. de'Caccia, d.b.a. D.E.C. Associates. SN 237,672. Pub. 11–15–66. Filed 2–1–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

823,354. (See Class 23 for this trademark.)

823,392. COMBO GRILLE. Modern Maid, Inc., by change of name from Tennessee Stove Works, Inc., d.b.a. Modern Maid. SN 228,179. Pub. 6–28–66. Filed 7–12–65.

823,393. DIXAGRAF. The Joseph Dixon Crucible Company. SN 242,885. Pub. 11–15–66. Filed 4–7–66.

823,394. DIXAMAG. The Joseph Dixon Crucible Company. SN 242,886. Pub. 11–15–66. Filed 4–7–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

823,300. (See Class 19 for this trademark.)

823,395. GUARDSMAN. United States Rubber Company. SN 224,355. Pub. 11–15–66. Filed 7–27–65.

823,396. APEX. Servotronics, Inc. SN 224,650. Pub. 11–15–66. Filed 7–30–65.

823,397. OMEGA. Servotronics, Inc. SN 224,651. Pub. 11–15–66. Filed 7–30–65.

823,398. TACTICAL CC. United States Rubber Company. SN 231,787. Pub. 11–15–66. Filed 10–28–65.

Class 36 — Musical Instruments and Supplies

823,311. (See Class 21 for this trademark.)

823,312. (See Class 21 for this trademark.)

823,399. O AND DESIGN. Orrtronics, Inc. SN 216,532. Pub. 11–15–66. Filed 4–14–65.

823,400. GP 360 AND DESIGN. Goodway Printing Company, Inc. SN 218,006. Pub. 9–20–66. Filed 5–4–65.

823,401. JOSEF PUCHNER. Josef F. Püchner. SN 222,748. Pub. 11–15–66. Filed 7–6–65.

823,402. TAPE-O-THEQUE. Rheem Manufacturing Company. SN 223,459. Pub. 11–15–66. Filed 7–15–65.

823,403. EN3. Grundig Werke G.m.b.H. SN 237,520. Pub. 11–15–66. Filed 11–30–65.

823,404. ASTRONAUT HARMONICA. M. Hohner Inc. SN 253,263. Pub. 11–15–66. Filed 8–29–66.

Class 37 — Paper and Stationery

823,232. (See Class 6 for this trademark.)

823,405. SAVOY. Kimberly-Clark Corporation. SN 217,039. Pub. 6–28–66. Filed 4–21–65.

823,406. VELTIP. Venus Pen & Pencil Corporation. SN 225,836. Pub. 11–15–66. Filed 8–16–65.

823,407. PAN CO. AND DESIGN. Panter Company, Inc. SN 232,585. Pub. 11–15–66. Filed 11–12–65.

823,408. TENNECO. Tenneco Inc., by change of name from Tennessee Gas Transmission Company. SN 241,824. Pub. 11–15–66. Filed 3–24–66.

823,409. TENNECO AND DESIGN. Tenneco Inc., by change of name from Tennessee Gas Transmission Company. SN 241,826. Pub. 11–15–66. Filed 3–24–66.

Class 38—Prints and Publications

823,377. (See Class 26 for this trademark.)

823,378. (See Class 26 for this trademark.)

823,410. THE CENTRAL IDEA. Central National Bank. SN 233,993. Pub. 11–15–66. Filed 12–6–65.

823,411. PERFORMANCE . . SPECIFIED. Downie, Turner & Buress. SN 236,069. Pub. 11–15–66. Filed 1–10–66.

823,412. THE CAPITAL GAINS INVESTOR. Capital Gains Research Bureau, Inc. SN 237,531. Pub. 11–15–66. Filed 1–28–66.

823,413. FUNNY FACE. The Pillsbury Company. SN 238,780. Pub. 11–15–66. Filed 2–14–66.

823,414. JUSTICE LEAGUE OF AMERICA. National Periodical Publications, Inc. SN 246,022. Pub. 11–15–66. Filed 5–19–66.

823,415. C AND DESIGN. Columbia Pictures Corporation. SN 250,830. Pub. 11–15–66. Filed 7–15–66.

Class 39—Clothing

823,193. (See Class 1 for this trademark.)

823,416. FEATHER MOCS. Winig Slipper Corporation. SN 207,351. Pub. 11–15–66. Filed 12–2–64.

823,417. ALL-WAYS PREST. I. C. Isaacs and Company, Inc. SN 209,509. Pub. 11–15–66. Filed 1–7–65.

823,418. FORTE. Forté-Fairbairn Inc. MULTIPLE CLASS (Classes 39 and 42). SN 224,141. Pub. 8–9–66. Filed 7–26–65.

823,419. BEAUTEX AND DESIGN. Beaumont Dry Goods Company, Inc. SN 227,230. Pub. 11–15–66. Filed 9–7–65.

823,420. GIRL WATCHERS. The Warner Brothers Company. SN 229,385. Pub. 7–12–66. Filed 10–5–65.

823,421. CLOVER LEAF. Lady Marlene Brassiere Corporation. SN 232,212. Pub. 11–15–66. Filed 11–5–65.

823,422. COLLEGE-PRESS. College-Town of Boston. SN 233,880. Pub. 11–15–66. Filed 12–3–65.

823,423. KROMER BLIZZARD KAP K AND DESIGN. Kromer Cap Co., Inc. SN 234,213. Pub. 11–15–66. Filed 12–8–65.

823,424. LITTLE LORD STUART AND DESIGN. Canoe Underwear Co. SN 234,994. Pub. 11–15–66. Filed 12–21–65.

823,425. SERVIS CAP. Keystone Adjustable Cap Co., d.b.a. Keystone Adjustable Cap Company. SN 236,889. Pub. 11–15–66. Filed 1–13–66.

823,426. PANZINI. Poirette Corsets, Inc. SN 239,489. Pub. 11–15–66. Filed 2–23–66.

823,427. GRIP-N-SLIP. Boyd W. Bullock, d.b.a. Bullock Enterprises. SN 239,584. Pub. 11–15–66. Filed 2–25–66.

823,428. SPAND-PLUS. Sarong, Inc. SN 239,665. Pub. 11–15–66. Filed 2–25–66.

823,429. PRECIOUS LITTLE. Maidenform, Inc. SN 239,918. Pub. 11–15–66. Filed 3–1–66.

823,430. T AND DESIGN. The Joseph & Feiss Company. SN 240,520. Pub. 11–15–66. Filed 3–9–66.

823,431. BECTIVE. James Branch & Sons Ltd. SN 240,576. Pub. 11–15–66. Filed 3–10–66.

823,432. HAGGAR IMPERIAL 2030. Haggar Company. SN 240,606. Pub. 11–15–66. Filed 3–10–66.

823,433. ALISON PETERS. Philip Gurian Sons, Inc. SN 240,734. Pub. 11–15–66. Filed 3–11–66.

823,434. LIVING. International Latex Corporation. SN 240,741. Pub. 11–15–66. Filed 3–11–66.

823,435. GINALA. Originala Incorporated. SN 249,178. Pub. 11–15–66. Filed 6–28–66.

823,436. BEVERLY BLAINE. Emporium World Millinery Co. SN 250,614. Pub. 11–15–66. Filed 7–20–66.

823,437. BETTY BLAKE. Emporium World Millinery Co. SN 250,650. Pub. 11–15–66. Filed 7–20–66.

823,438. CAREFREE. Johnson & Johnson. SN 253,074. Pub. 11–15–66. Filed 8–24–66.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

823,193. (See Class 1 for this trademark.)

823,418. (See Class 39 for this trademark.)

823,439. SILRAY FABRIC. A. J. Greberman and Son, Inc. SN 164,831. Pub. 4–14–64. Filed 3–18–63.

823,440. FYREL. Fabric Research Laboratories, Inc. SN 190,073. Pub. 6–22–65. Filed 4–1–64.

823,441. STA-FLAT. Huyck Corporation. SN 209,508. Pub. 11–15–66. Filed 1–7–65.

823,442. LE CHIC. Cone Mills Corporation, assignee of Anderson, Clayton & Co. SN 211,286. Pub. 5–3–66. Filed 2–3–65.

823,443. PLAZA SQUARE. James Lees and Sons Company. SN 218,672. Pub. 11–15–66. Filed 5–12–65.

823,444. PERMA-LINK. Fred M. Richman Corp., d.b.a. Richloom Fabrics. SN 235,013. Pub. 8–16–66. Filed 12–21–65.

823,445. TELESPECTRUM. Spectrum Fabrics Corporation. SN 237,886. Pub. 11–15–66. Filed 2–2–66.

823,446. LOOK BEFORE YOU LEAN—MAKE SURE IT'S A FABRIC YOU CAN LEAN ON BY KLOPMAN. Klopman Mills, Inc. SN 238,238. Pub. 11–15–66. Filed 2–7–66.

823,447. PIPING ROCK. Bates Manufacturing Company, Incorporated. SN 238,334. Pub. 11–15–66. Filed 2–8–66.

823,448. ENDURANCE. Duraloom Carpet Mills, Inc. SN 240,160. Pub. 11–15–66. Filed 3–4–66.

823,449. BELKASET. Bruck & Engelmann Ltd. SN 240,253. Pub. 11–15–66. Filed 3–7–66.

823,450. MINTED. Fair-Tex Mills, Inc. SN 241,773. Pub. 11–15–66. Filed 3–24–66.

823,451. SASSYGRASS. Thomas Pride Mills, Inc. SN 244,152. Pub. 11–15–66. Filed 4–22–66.

823,452. PUSSYFOOT. Thomas Pride Mills, Inc. SN 244,153. Pub. 11–15–66. Filed 4–22–66.

823,453. NEW COLONIES. Henry Glass & Co. SN 244,821. Pub. 11–15–66. Filed 4–26–66.

823,454. OBERMAN AND DESIGN. Oberman Fabrics, Inc. SN 244,424. Pub. 11–15–66. Filed 4–27–66.

823,455. IMAGINATION. Shirley Fabrics Corp. SN 244,749. Pub. 11–15–66. Filed 5–2–66.

823,456. LE MANOIR. B. Berger Company. SN 244,879. Pub. 11–15–66. Filed 5–4–66.

823,457. GABARINO. International Fabric Corporation. SN 244,990. Pub. 11–15–66. Filed 5–5–66.

823,458. DOMAIN. Deering Milliken, Inc. SN 245,065. Pub. 11–15–66. Filed 5–6–66.

Class 43—Thread and Yarn

823,193. (See Class 1 for this trademark.)

823,196. (See Class 1 for this trademark.)

823,459. CALTHREAD. Calthread, Inc. SN 244,185. Pub. 11–15–66. Filed 4–25–66.

823,460. ECONO-THREAD. Calthread, Inc. SN 244,186. Pub. 11–15–66. Filed 4–25–66.

823,461. WISTELLE. Deering Milliken, Inc. SN 244,196. Pub. 11–15–66. Filed 4–25–66.

823,462. RICH-FLEX. Rich-Flex Mfg. Corporation. SN 244,250. Pub. 11–15–66. Filed 4–25–66.

Class 44—Dental, Medical, and Surgical Appliances

823,463. COURTLAND AND DESIGN. Courtland Laboratories. SN 158,230. Pub. 11–15–66. Filed 11–30–62.

823,464. TECH-TABS. Hasleton Laboratories, Inc., d.b.a. Instrument Development Company. SN 236,256. Pub. 11–15–66. Filed 1–12–66.

823,465. WJ AND DESIGN. Williams Gold Refining Company Incorporated. SN 236,859. Pub. 11–15–66. Filed 1–19–66.

823,466. WJ. Williams Gold Refining Company Incorporated. SN 236,860. Pub. 11–15–66. Filed 1–19–66.

823,467. SRD APPROVED AND DESIGN. Sales Research Development Co. SN 245,108. Pub. 11–15–66. Filed 5–6–66.

Class 45—Soft Drinks and Carbonated Waters

823,232. (See Class 6 for this trademark.)

823,468. LEFTY LEMON. The Pillsbury Company. SN 230,690. Pub. 11–15–66. Filed 10–20–65.

823,469. CLICQUOT SPRING. Clicquot Club Company. SN 238,404. Pub. 11–15–66. Filed 2–9–66.

Class 46—Foods and Ingredients of Foods

823,232. (See Class 6 for this trademark.)

823,470. TOMMY TUCKER SINGS FOR HIS SUPPER AND DESIGN. Thomas & Howard Company, Incorporated. SN 158,031. Pub. 4–28–64. Filed 11–27–62.

823,471. REPRESENTATION OF A FORK, PLATE, KNIFE AND SPOON. The Pillsbury Company. SN 163,267. Pub. 3–23–65. Filed 2–21–63.

823,472. DARI-PAKT. Vita-Pakt Citrus Products Co. SN 211,686. Pub. 11–15–66. Filed 2–9–65.

823,473. FROSTDOG. General Industries Corporation. SN 214,338. Pub. 11–15–66. Filed 3–17–65.

823,474. DANISH VILLAGE. Interstate Bakeries Corporation. SN 216,700. Pub. 11–8–66. Filed 4–16–65.

823,475. CHOCOLATE JUNCTION. The Pillsbury Company. SN 218,902. Pub. 11–15–66. Filed 5–14–65.

823,476. CHERRY MOONS. Philadelphia Chewing Gum Corporation. SN 223,342. Pub. 11–15–66. Filed 7–14–65.

823,477. THE IDEA FLOUR AND DESIGN. The Pillsbury Company. SN 230,889. Pub. 11–15–66. Filed 10–21–65.

823,478. RUSSET FARMS. American Potato Company. SN 230,998. Pub. 11–15–66. Filed 10–22–65.

823,479. LOUD-MOUTH LIME. The Pillsbury Company. SN 231,207. Pub. 11–15–66. Filed 10–22–65.

823,480. LEFTY LEMON. The Pillsbury Company. SN 231,212. Pub. 11–15–66. Filed 10–22–65.

823,481. ROOTIN'-TOOTIN' RASPBERRY. The Pillsbury Company. SN 231,213. Pub. 11–15–66. Filed 10–22–65.

823,482. CHOO CHOO CHERRY. The Pillsbury Company. SN 231,214. Pub. 11–15–66. Filed 10–22–65.

823,483. FRECKLE FACE STRAWBERRY. The Pillsbury Company. SN 231,217. Pub. 11–15–66. Filed 10–22–65.

823,484. SILVER SERVICE. Red Owl Stores, Inc. SN 231,490. Pub. 11–15–66. Filed 10–23–65.

823,485. CIRCUS AND DESIGN. United States Tobacco Company. SN 231,511. Pub. 11–15–66. Filed 10–23–65.

823,486. WOMAN IN A CIRCLE (DESIGN). Albanese Food Products Company. SN 232,109. Pub. 11–15–66. Filed 11–4–65.

823,487. SEASON-EEZ. The Frank Tea & Spice Company. SN 232,304. Pub. 11–15–66. Filed 11–8–65.

823,488. WILLOWBROOK FARMS. Arkansas Valley Industries, Inc. SN 232,510. Pub. 11–15–66. Filed 11–12–65.

823,489. COCK 'N BULL. Cock 'n Bull Products. SN 236,563. Pub. 11–15–66. Filed 1–14–66.

823,490. CALEDONIA. Mott's Incorporated of Mississippi. SN 239,067. Pub. 11–15–66. Filed 2–17–66.

823,491. THOMAS. Thomas Foods, Inc. SN 239,089. Pub. 11–15–66. Filed 2–17–66.

823,492. ARISTOCRAT. WVD Company. SN 239,843. Pub. 11–15–66. Filed 2–28–66.

823,493. DOUBLE DONNA DELICIOUS WITH DD DESIGN. Donna Citrus, Inc. SN 250,427. Pub. 11–15–66. Filed 7–18–66.

823,494. ONORATO. Los Angeles Importing Co. SN 253,827. Pub. 11–15–66. Filed 9–6–66.

823,495. JS JOE'S SPICES AND DESIGN. Los Angeles Importing Co., d.b.a. L.A. Importing Co., and Joe's Spices Co. SN 253,829. Pub. 11–15–66. Filed 9–6–66.

Class 50—Merchandise Not Otherwise Classified

823,496. CPC. Ceramic Products Corporation. SN 207,007. Pub. 11–15–66. Filed 11–27–64.

823,497. NRC. National Research Corporation. SN 233,812. Pub. 11–15–66. Filed 12–2–65.

823,498. JEWEL TONE. General Crafts Corporation. SN 244,213. Pub. 11–15–66. Filed 4–25–66.

823,499. DELTA. Sternco Industries, Inc. SN 245,114. Pub. 11–15–66. Filed 5–6–66.

Class 51—Cosmetics and Toilet Preparations

823,500. BUBBLOVE AND DESIGN. Santa Monica Chemical Corporation. SN 230,083. Pub. 11–15–66. Filed 10–13–65.

823,501. NORSE AND DESIGN OF HELMET AND SHIP. Norse Chemical Corporation. SN 238,769. Pub. 11–15–66. Filed 2–14–66.

823,502. NORSE AND HELMET DESIGN. Norse Chemical Corporation. SN 238,771. Pub. 11–15–66. Filed 2–14–66.

823,503. AZUREX. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 252,514. Pub. 11–15–66. Filed 8–17–66.

823,504. AZUREL. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 252,519. Pub. 11–15–66. Filed 8–17–66.

823,505. AZARET. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 253,704. Pub. 11–15–66. Filed 9–2–66.

Class 52—Detergents and Soaps

823,232. (See Class 6 for this trademark.)

823,506. KWIK-DRAIN. Pennsalt Chemicals Corporation, assignee of B. T. Babbitt, Inc. SN 207,361. Pub. 8–2–66. Filed 12–3–64.

823,507. DERMA FRESH POWER SOFT. Alberto-Culver Company. SN 215,475. Pub. 11–15–66. Filed 4–1–65.

823,508. DERMA FRESH SOFT POWER. Alberto-Culver Company. SN 215,476. Pub. 11–15–66. Filed 4–1–65.

823,509. LOKRINSE. Wyandotte Chemicals Corporation. SN 229,620. Pub. 11–15–66. Filed 10–7–65.

823,510. DROPS OF MAGIC. Premax Laboratories, Inc. SN 236,138. Pub. 11–15–66. Filed 1–10–66.

823,511. HYPER. Abco, Inc. SN 239,858. Pub. 11–15–66. Filed 3–1–66.

823,512. BACTODAN. Hudson National, Inc., d.b.a. Hudson Vitamin Products. SN 249,202. Pub. 11–15–66. Filed 6–29–66.

Service Marks

Class 100 — Miscellaneous

823,513. LOUIE THE ELF. Maitland Junior Chamber of Commerce. SN 208,470. Pub. 11–15–66. Filed 12–18–64.

823,514. CANDY LAND AND DESIGN. Candy Land of Jesup, Inc. SN 212,644. Pub. 11–15–66. Filed 2–24–65.

823,515. TRANS CARIBBEAN JET CLUB AND DESIGN. Trans Caribbean Airways, Inc. SN 234,254. Pub. 11–15–66. Filed 12–8–65.

823,516. FASTENOMICS. Fastener Industries, Inc. SN 247,495. Pub. 11–15–66. Filed 6–7–66.

Class 101 — Advertising and Business

823,517. GROTESQUE INDIAN STANDING BY A FIRE POPPING CORN (DESIGN). Golden Kernel Popcorn, Inc. SN 231,565. Pub. 11–15–66. Filed 10–24–65.

Class 102 — Insurance and Financial

823,518. DENTI-FACT. Medi-Fact Inc. SN 229,105. Pub. 11–15–66. Filed 10–1–65.

823,519. UNI-SURANCE. Uni-Serv Corporation. SN 234,612. Pub. 11–15–66. Filed 12–13–65.

Class 103 — Construction and Repair

823,520. MAGIC WAND. Goodrich Industries, Inc. SN 185,770. Pub. 11–30–65. Filed 1–31–64.

823,521. QIK FACILITY. Burndy Corporation. SN 211,624. Pub. 11–15–66. Filed 2–9–65.

823,522. MISCELLANEOUS DESIGN. National Work Clothes Rental, d.b.a. National Industrial Laundries. SN 224,681. Pub. 11–15–66. Filed 7–30–65.

Class 105 — Transportation and Storage

823,523. FIESTA IBERIA. Columbia Tours, Inc. SN 231,542. Pub. 11–15–66. Filed 10–24–65.

Class 107 — Education and Entertainment

823,524. KLASSROOM KWIZ. Hayden Huddleston Advertising Agency, Inc. SN 187,583. Pub. 11–15–66. Filed 2–27–64.

823,525. CASINO DE PARIS. Henri Verna et Cie. SN 219,488. Pub. 11–15–66. Filed 5–21–65.

Certification Mark

Class A — Goods

823,526. FORMALL. Timber Engineering Company. SN 231,291. Pub. 11–15–66. Filed 10–22–65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 19 — Vehicles

823,527. Union City Body Company, Inc., Union City, Ind. SN 210,631. Filed P.R. 1–25–65; Am. S.R. 9–26–66.

TRAVEL COACH

For Motor Vehicle Body Units Specially Equipped for Camping Use.
First use Dec. 19, 1964.

823,528. Rockwell-Standard Corporation, Pittsburgh, Pa. SN 218,324. Filed P.R. 5–7–65; Am. S.R. 11–30–66.

THE BRAKE PROportioner

For Vehicle Brake System Responsive to Changing Weight Conditions in Automotive Roadway Vehicles.
First use about Mar. 3, 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

823,529. Litton Precision Products, Inc., Minneapolis, Minn. SN 210,887. Filed P.R. 1–28–65; Am. S.R. 11–17–66.

FASTART

For Automobile Battery Boosters and Chargers.
First use on or about Oct. 1, 1964.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

823,530. Cozzoli Machine Company, Plainfield, N.J. SN 227,651. Filed P.R. 9–13–65; Am. S.R. 11–22–66.

COZZOLI

For Equipment for the Packaging Industries, More Particularly for Container Washing Machines, Container Air, and Air-Vacuum Cleaning Machines, Container Filling Machines, Container Stoppering Machines, Glass Sealing Machines, Screw Capping Machines, Crimp Sealing Machines, Label Gluing Machines, Tablet Counting Machines, Container Unscrambling Tables, Container Accumulating Tables, and Parts and Accessories Thereof.
First use Dec. 14, 1964.

Class 39 — Clothing

823,531. L. W. Foster Sportswear Co., Inc., Philadelphia, Pa. SN 218,982. Filed P.R. 5–17–65; Am. S.R. 11–23–66.

WINTER • SPRING • SUMMER • FALL
W • S • S • F

For Men's Outer Wear—Namely, Sportscoats, Overcoats, Car Coats, and Top Coats.
First use Mar. 15, 1964.

823,532. Kebek Industries, Inc., Miami, Fla. SN 256,220. Filed 10–11–66.

fish mitt

For Gloves.
First use Mar. 26, 1964.

Class 44 — Dental, Medical, and Surgical Appliances

823,533. Ralph R. Robinson, Middlesboro, Ky. SN 204,504. Filed P.R. 10–21–64; Am. S.R. 11–25–66.

CONTRACEPTOR

For Intra-Uterine Pessary for Fertility Control.
First use June 1964.

Class 46 — Foods and Ingredients of Foods

823,534. Tillman Produce Company, Inc., Wilton, Wis. SN 216,451. Filed P.R. 4–13–65; Am. S.R. 11–28–66.



The drawing is lined for red but no claim is made to color.
For Turkey Noodle Soup, Frosen and Refrigerated Prepared Turkey Products, and Frosen and Refrigerated Turkey Meat, Sliced, Pressed, or Otherwise.
First use Feb. 15, 1962.

Class 50 — Merchandise Not Otherwise Classified

823,535. Dadant and Sons, Inc., Hamilton, Ill. SN 191,678. Filed P.R. 4–21–64; Am. S.R. 6–8–66.

Dadant

For Bee Keeping Supplies—Namely, Bee Hives, Bee Veils, Bee Hive Tools, Bee Hive Smokers, Bee Feeders and Bee Foundations.
First use Jan. 14, 1963.

Collective Membership Mark

Class 200

823,536. Oil Heat Institute of Washington, Seattle, Wash. SN 236,538. Filed P.R. 12–20–65; Am. S.R. 8–30–66.

Oil HEATS BEST

For Indicating Membership.
First use May 1963.

TRADEMARK REGISTRATIONS RENEWED

56,003. TRIUMPH. Cl. 36. 8–21–06.
57,412. SERPENT (DESIGN). Cl. 23. 11–13–06.
58,326. STRONGHOLD. Cl. 2. 12–11–06.
58,590. JONES DAIRY FARM FT. ATKINSON WIS. Cl. 46. 12–18–06.
58,617. LIZARD. Cl. 2. 12–18–06.
58,618. CROCODILE. Cl. 2. 12–18–06.
58,648. LITTLE SAUSAGES JONES DAIRY FARM. Cl. 46. 12–18–06.
58,943. CENTRIFUGAL SEPARATOR (DESIGN). Cl. 23. 12–25–06.
59,044. NATIONAL. Cl. 22. 1–1–07.
59,700. THE TRUMPET CALL. Cl. 36. 1–15–07.
59,750. PICRATOL. Cl. 6. 1–15–07.

59,917. H-O. Cl. 46. 1-22-07.
60,394. RUMFORD. Cl. 46. 2-5-07.
60,458. DAIRY FARM. Cl. 46. 2-12-07.
60,921. HARBUTT'S PLASTICINE AND DESIGN. Cl. 1. 2-26-07.
61,297. JONES DAIRY FARM. Cl. 46. 3-12-07.
61,602. DUCK BRAND AND DESIGN. Cl. 39. 3-26-07.
61,847. SAMSON. Cl. 35. 4-9-07.
62,268. JONES. Cl. 46. 4-30-07.
218,468. MILK-BONE. Cl. 46. 9-28-26.
221,074. CHIEF AND DESIGN. Cl. 46. 11-23-26.
221,337. VIKING. Cl. 37. 11-30-26.
221,339. "WYBERT." Cl. 18. 11-30-26.
221,378. MIRRORSTELE. Cl. 23. 11-30-26.
221,607. COLUMBIA. Cl. 36. 12-7-26.
221,699. C AND DESIGN. Cl. 21. 12-7-26.
221,738. IRON ARM (DESIGN). Cl. 22. 12-7-26.
222,071. BIG BOY. Cl. 46. 12-21-26.
222,073. PONTIAC. Cl. 19. 12-21-26.
222,308. FEDRIN. Cl. 18. 12-28-26.
222,824. SUMA. Cl. 46. 1-11-27.
223,424. OLD MANSE. Cl. 46. 2-1-27.
223,674. ROACH DOOM AND DESIGN. Cl. 6. 2-8-27.
224,081. THE GIFT THAT KEEPS ON GIVING. Cl. 36. 2-15-27.
224,287. STROMEYER'S AND DESIGN. Cl. 45. 2-22-27.
224,504. SIREN AND DESIGN. Cl. 39. 3-1-27.
224,927. CFC CO. AND DESIGN. Cl. 1. 3-8-27.
225,244. EMERALD AND DESIGN. Cl. 46. 3-15-27.
225,667. LILAC VEGETAL. Cl. 51. 3-22-27.
226,060. RYVITA. Cl. 46. 3-29-27.
227,179. CEPEA. Cl. 42. 5-3-27.
227,261. HAMILTON. Cl. 42. 5-3-27.
227,749. SULFAANTHRENE. Cl. 6. 5-17-27.
227,890. DOWNIES. Cl. 44. 5-17-27.
423,039. WHITE CHRISTMAS. Cl. 52. 3-20-46.
425,759. FUSE-TEX. Cl. 37. 12-3-46.
425,771. CORSAIR. Cl. 37. 12-3-46.
425,839. TA-KO-MA. Cl. 46. 12-3-46.
426,130. PLASTISCOPE. Cl. 38. 12-17-46.
426,326. N AND DESIGN. Cl. 1. 12-24-46.
426,457. UNI-MATIC. Cl. 23. 12-24-46.
426,984. STERI-LUBE. Cl. 18. 1-21-47.
427,017. REY DEL NORTE AND DESIGN. Cl. 46. 1-21-47.
427,307. ALSCO. Cl. 12. 2-4-47.
428,759. SEA SPICE. Cl. 51. 4-1-47.
428,761. IRGALEVONE. Cl. 6. 4-1-47.
428,762. TANNESCO. Cl. 6. 4-1-47.
429,322. SUPER PYRO. Cl. 6. 4-29-47.
429,474. ORTHO. Cl. 44. 4-29-47.
429,687. MANHATTAN. Cl. 39. 5-13-47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

678,649. ROUND-UP AND DESIGN. Cl. 101. 5-12-59.

The following registrations issued Dec. 13, 1960

708,231. POLANHAMP. Cl. 1.
708,236. HI-FLOW. Cl. 1.
708,237. DIAMOND NATIONAL AND DESIGN. Cl. 2.
708,238. PARTY-PICK. Cl. 2.
708,241. SELLA. Cl. 3.
708,247. GEMSTONE WELD AND DESIGN. Cl. 5.
708,251. SW A PRODUCT OF STEWART WARNER AND DESIGN. Cl. 6.
708,259. ANGEL OIL. Cl. 6.
708,264. TRULAND AND DESIGN. Cl. 6.
708,266. GARRY'S MELT AND DESIGN. Cl. 6.
708,272. SCOR. Cl. 6.
708,273. LUPERCO. Cl. 6.
708,274. ALPEROX. Cl. 6.
708,275. LUPEROX. Cl. 6.
708,277. CHEROKEE. Cl. 7.
708,280. DUET. Cl. 10.
708,283. HYDRO FOIL. Cl. 12.
708,286. BELLWOOD. Cl. 12.
708,287. SYSTE-MATIC. Cl. 12.
708,290. LE-WOOD HOMES AND DESIGN. Cl. 12.
708,292. E-Z-DO. Cl. 12.
708,294. FUTURA. Cl. 12.
708,296. HANDI-HOUSE. Cl. 12.
708,298. THE WEEK-END PLUMBER. Cl. 13.
708,299. STRUBING. Cl. 13.
708,300. STRUBE. Cl. 13.
708,305. CONTINENTAL. Cl. 15.
708,312. CANIVICIN. Cl. 18.
708,316. AMARCAL. Cl. 18.
708,317. FERROPAL-50. Cl. 18.
708,320. MINK TONE. Cl. 18.
708,326. AARANE. Cl. 18.
708,332. ULCETROL. Cl. 18.
708,338. OCTOMYCIN. Cl. 18.
708,339. CEPHALTIN. Cl. 18.
708,340. GERICANE H_3 KIRK. Cl. 18.
708,348. CARBOFIL. Cl. 18.
708,351. BEACH-CADDY. Cl. 19.
708,353. HORCH AND DESIGN. Cl. 19.
708,356. HORCH. Cl. 21.
708,363. OUTLAW AND DESIGN. Cl. 22.
708,364. MAG-IC. Cl. 22.
708,365. ALFA PIKS. Cl. 22.
708,370. JUMP MASTER. Cl. 22.
708,371. ACROMAT. Cl. 22.
708,375. STORK STICK AND DESIGN. Cl. 23.
708,376. TIMCO. Cl. 23.
708,377. UTI ETC. AND DESIGN. Cl. 23.
708,379. QUALITEX. Cl. 23.
708,385. SYSTE-MATIC. Cl. 23.
708,387. HP. Cl. 23.
708,389. MIRACLE SPRAYWASHER. Cl. 23.
708,390. CIRCLE SINK. Cl. 23.
708,391. CIRCLE SINK AND DESIGN. Cl. 23.
708,395. ROTO-BAN. Cl. 23.
708,396. A. D. PURTLE AND DESIGN. Cl. 23.
708,407. "SANI DAIRY." Cl. 31.
708,420. MOTIF. Cl. 37.
708,422. OVATEST. Cl. 38.
708,425. GUNITE SPOKESMAN. Cl. 38.
708,428. POCKET PETE. Cl. 38.
708,429. GREEN HOOD. Cl. 39.
708,431. THE ORIGINAL FUR-A-BUND ETC. AND DESIGN. Cl. 39.
708,434. STACK-LITE. Cl. 39.
708,447. FUL-ALOFT. Cl. 42.
708,448. JAGGARAC. Cl. 42.
708,450. ATRONIC PACER. Cl. 44.
708,452. DCA DESIGN. Cl. 44.
708,453. TEEMACTIC. Cl. 44.
708,456. SWABI. Cl. 44.
708,459. VISTAMATIC. Cl. 44.
708,462. FRIGIDETTES. Cl. 46.
708,464. STONE VALLEY. Cl. 46.
708,479. HOME PLATE AND DESIGN. Cl. 46.
708,481. LITTLE KING AND DESIGN. Cl. 46.
708,482. BIRD DOG. Cl. 46.
708,491. GREENWOOD KERNELS AND DESIGN. Cl. 46.
708,494. BIANCA. Cl. 46.

708,497. DIVINEROSE. Cl. 47.
708,499. CHAMPION'S BELT. Cl. 47.
708,506. FABRETA BY JASON. Cl. 50.
708,507. CHIP OFF THE OLD BLOCK. Cl. 50.
708,508. TURE-LITE. Cl. 50.
708,511. CHAF-GON. Cl. 51.
708,512. CAPREX HAIR INSURANCE. Cl. 51.
708,513. TRUBRYTE. Cl. 51.
708,514. BEAUTY FARM. Cl. 51.
708,518. FLUSH MASTER. Cl. 52.
708,519. DEGREAS-MASTER. Cl. 52.
708,524. REGULAR FELLOWS. Cl. 101.
708,537. SENIOR UNIVERSAL ETC. AND DESIGN. Cl. 200.
708,539. FLOW-CONTROL. Cl. 2.
708,543. STOR-MOR. Cl. 12.
708,546. SHU SKUF. Cl. 22.
708,548. PRE-DETERMINED ALL-DAY WEARABILITY. Cl. 26.
708,549. CRIB DRESSER. Cl. 32.
708,551. HEEL SAVERS. Cl. 39.
708,554. THERMO-DUAL. Cl. 44.
708,556. THE POCKET RESTAURANT. Cl. 46.
708,559. POND'S AND DESIGN. Cl. 51.
708,560. POND'S V ETC. AND DESIGN. Cl. 51.
708,561. POND'S F ETC. AND DESIGN. Cl. 51.
708,562. RADIO ADS AND DESIGN. Cl. 101.

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JANUARY 31, 1967

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ACR Electronics Corp., New York, N.Y. 823,317, pub. 11–15–66. Cl. 21.
Abco, Inc., Irwin, Pa. 823,511, pub. 11–15–66. Cl. 52.
Adhaco Hardware Corp., Chicago, Ill. 823,279, pub. 11–15–66. Cl. 13.
Adler, Ronald E., d.b.a. Ronac Associates, Washington, D.C. 708,375, canc. Cl. 23.
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Albanese Food Products Co., Cleveland, Ohio. 823,486, pub. 11–15–66. Cl. 46.
Alberto-Culver Co., Melrose Park, Ill. 823,507, pub. 11–15–66. Cl. 52.
Alberto-Culver Co., Melrose Park, Calif. 823,508, pub. 11–15–66. Cl. 52.
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Alou Tackle Co., Inc., Little Neck, N.Y. 823,333, pub. 11–15–66. Cl. 22.
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Amco Engineering Co., Chicago, Ill. 823,274, pub. 11–15–66. Cl. 13.
American Dispenser, New York, N.Y. 823,280, pub. 11–15–66. Cl. 13.
American Fuel & Supply Co., Inc., d.b.a. American Fuel and Supply Co., Milwaukee, Wis. 823,231, pub. 11–15–66. Multiple Class (Classes 6 and 10).
American Fuel and Supply Co.: *See*—
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American Hoechst Corp., New York, N.Y. 823,219, pub. 11–15–66. Cl. 6.
American Home Products Corp.: *See*—
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American Magnetop Corp., Brooklyn, N.Y. 823,325, pub. 11–15–66. Cl. 22.
American Optical Co., Southbridge, Mass. 708,459, canc. Cl. 44.
American Potato Co., San Francisco, Calif. 823,478, pub. 11–15–66. Cl. 46.
Amchem Products, Inc., Ambler, Pa. 823,236, pub. 11–15–66. Cl. 6.
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Anderson Clayton & Co.: *See*—
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Angel Research, Inc., Chicago, Ill. 708,259, canc. Cl. 6.
Ansul Co., The, Marinette, Wis. 823,226, pub. 11–15–66. Cl. 6.
Aquitaine-Organico, Paris, France. 823,199, pub. 11–15–66. Cl. 1.
Aquitaine-Organico, Paris, France. 823,290, pub. 11–15–66. Cl. 16.
Arkansas Valley Industries, Inc., Little Rock, Ark. 823,488, pub. 11–15–66. Cl. 46.
Armour and Co., Chicago, Ill. 823,230, pub. 11–15–66. Cl. 6.
Artistic Receptacles Co.: *See*—
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Baxter Laboratories, Inc., Morton Grove, Ill. 708,332, canc. Cl. 18.
Beaumont Dry Goods Co., Inc., Beaumont, Tex. 823,419, pub. 11–15–66. Cl. 39.
Beecham Research Laboratories Ltd., Brentford, England. 708,338, canc. Cl. 18.
Bemis Bro. Bag Co.: *See*—
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Bemis Co., Inc., from Bemis Bro. Bag Co., Minneapolis, Minn. 823,200, pub. 12–17–63. Cl. 2.
Bennett, F. H., Biscuit Co., to National Biscuit Co., New York, N.Y. 218,468, ren. 1–31–67. Cl. 46.
Berger, B., Co., Cleveland, Ohio. 823,456, pub. 11–15–66. Cl. 42.
Bessiere, Pierre Etienne, Neuilly (Seine), France. 708,376, canc. Cl. 23.
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Candy Land of Jesup, Inc., Jesup, Ga. 823,514, pub. 11–15–66. Cl. 100.
Canoe Underwear Co., Pine Grove, Pa. 823,424, pub. 11–15–66. Cl. 39.
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Caterpillar Tractor Co., East Peoria, Ill. 823,354, pub. 11–15–66. Multiple Class (Classes 23 and 34).
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Central National Bank, Chicago, Ill. 823,410, pub. 11–15–66. Cl. 38.
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Ceramic Products Corp., Morgan, Pa. 823,496, pub. 11–15–66. Cl. 50.
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Chesebrough-Pond's Inc., New York, N.Y. 708,560, canc. Cl. 51.
Chesebrough-Pond's Inc., New York, N.Y. 708,561, canc. Cl. 51.
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Columbia Phonograph Co., Inc., Bridgeport, Conn., to Columbia Broadcasting System, Inc., New York, N.Y. 221,607, ren. 1–31–67. Cl. 36.
Columbia Pictures Corp., New York, N.Y. 823,415, pub. 11–15–66. Cl. 38.
Columbia Tours, Inc., New York, N.Y. 823,523, pub. 11–15–66. Cl. 105.
Communication Papers, Inc., Moosic, Pa. 823,307, pub. 11–15–66. Cl. 21.
Cone Mills Corp., Greensboro, N.C., from Anderson Clayton & Co., Houston, Tex. 823,442, pub. 5–3–66. Cl. 42.
Conner, Alvin J., d.b.a. Al-Con Chemical Co., The, New Orleans, La. 823,254, pub. 11–15–66. Cl. 6.
Consolidated Trades, Inc., d.b.a. Air Tool Mfg. Co., Van Nuys, Calif. 823,353, pub. 11–15–66. Cl. 23.
Continental Oil Co., Ponca City, Okla. 708,305, canc. Cl. 15.
Corn Products Co.: *See*—
H-O Hornbys Oatmeal Co., The.
Oelerich & Berry Co.
Cory Corp. (Pace Home Products Division): *See*—
Schramm Fiberglass Products, Inc.
Courtland Laboratories, Los Angeles, Calif. 823,463, pub. 11–15–67. Cl. 44.
Cozzoli Machine Co., Plainfield, N.J. 823,530. Cl. 23.
Crawford Fitting Co., Solon, Ohio. 823,285, pub. 11–15–66. Cl. 15.
Crisloid Plastics Inc., Providence, R.I. 823,327, pub. 11–15–66. Cl. 22.
Crown Zellerbach Corp., San Francisco, Calif. 708,420, canc. Cl. 37.
Cunningham, E. T., Inc., to Radio Corp. of America, New York, N.Y. 221,699, ren. 1–31–67. Cl. 21.
D.E.C. Associates: *See*—
De'Caccia, Godfrey L.
Dadant and Sons, Inc., Hamilton, Ill. 823,535. Cl. 50.
Danenberg, J. S., d.b.a. Danny Danenberg, El Centro, Calif. 708,482, canc. Cl. 46.
Danenberg, Danny: *See*—
Danenberg, J. S.
De'Caccia, Godfrey L., d.b.a. D.E.C. Associates, Los Alamitos, Calif. 823,391, pub. 11–15–66. Cl. 32.
Deering Milliken, Inc., New York, N.Y. 823,458, pub. 11–15–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 823,461, pub. 11–15–66. Cl. 43.
De Laval Separator Co., The, Poughkeepsie, N.Y. 426,457, ren. 1–31–67. Cl. 23.
De Laval Separator Co., The, Poughkeepsie, N.Y. 58,943, ren. 1–31–67. Cl. 23.
Deltrol Corp., d.b.a. Auto-Ponents, Inc., Bellwood, Ill. 823,270, pub. 11–15–66. Multiple Class (Classes 13 and 26).
De Martel, Madeleine, Cosmetics: *See*—
Sherman, Robert M.
Denoyer-Geppert Co., Chicago, Ill. 823,378, pub. 11–15–66. Multiple Class (Classes 26 and 38).
Dental Corp. of America, Washington, D.C. 708,452, canc. Cl. 44.
Dev-Coa, Inc., Floral Park, N.Y. 823,387, pub. 11–15–66. Cl. 29.
Diamond Alkali Co., Cleveland, Ohio. 923,257, pub. 11–15–66. Cl. 6.
Diamond National Corp., New York, N.Y. 708,237, canc. Cl. 2.
Diamond Walnut Growers, Inc.: *See*—
California Walnut Growers Association.
Diana Mfg. Co.: *See*—
Paper Novelty Co., The.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 823,393, pub. 11–15–66. Cl. 34.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 823,394, pub. 11–15–66. Cl. 34.
Dr. H. and Dr. P. Geiger, St. Louis, Haut-Rhin, to Ets. Gaba S.a.r.L., Mulhouse (Haul-Rhin), France. 221,339, ren. 1–31–67. Cl. 18.
Donaldson Co., Inc., Minneapolis, Minn. 823,358, pub 11–15–66. Cl. 23.
Donna Citrus, Inc., Donna, Tex. 823,493, pub. 11–15–66. Cl. 46.
Downie, Turner & Buress, Baltimore, Md. 823,411, pub. 11–15–66. Cl. 38.
Drackett Co., The, Cincinnati, Ohio, from Bristol-Myers Co., New York, N.Y. 823,213, pub. 11–15–66. Cl. 4.
Drackett Co., The, Cincinnati, Ohio, from Bristol-Myers Co., New York, N.Y. 823,214, pub. 11–15–66. Cl. 4.
Durable Steel Products, Inc., Chicago, Ill. 823,300, pub. 11–15–66. Multiple Class (Classes 19, 23, and 35).
Duraloom Carpet Mills, Inc., Lehighton, Pa. 823,448, pub. 11–15–66. Cl. 42.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 227,749, ren. 1–31–67. Cl. 6.
Dwyer, Margaret, Alexandria, Va. 708,298, canc. Cl. 13.
Eclipse Sleep Products, Inc., Brooklyn, N.Y. 823,390, pub. 9–13–66. Cl. 32.
Electro-Coatings, Inc., Oakland, Calif. 823,289, pub. 9–13–66. Cl. 16.
Electronic Engineers, Unincorp., Assn.: *See*—
Gassenheimer, Irvin & Irvin Gassenheimer, Jr.
Ellis, Clarence B., d.b.a. Sport-Pix Promotions, Spokane, Wash. 708,479, canc. Cl. 46.
Emc Technology, Inc., Philadelphia, Pa. 823,308, pub. 11–15–66. Cl. 21.
Emporium World Millinery Co., Chicago, Ill. 823,436, pub. 11–15–66. Cl. 39.
Emporium World Millinery Co., Chicago, Ill. 823,437, pub. 11–15–66. Cl. 39.
Encom Products Co.: *See*—
Mallalieu, Robert P.
Eppinger, Lou J., Mfg. Co., Dearborn, Mich. 823,336, pub. 11–15–66. Cl. 22.
Essway Mfg. Co., Inc., New York, N.Y. 708,241, canc. Cl. 3.
Ets. Gaba S.a.r.L.: *See*—
Geiger, Dr. H. & Dr. P.
Evans Brick and Pipe Co., Inc., The, Uhrichsville, Ohio. 823,281, pub. 11–15–66. Cl. 13.
FMC Corp., Philadelphia, Pa. 823,196, pub. 11–15–66. Multiple Class (Classes 1 and 43).
FMC Corp., New York, N.Y. 823,251, pub. 11–15–66. Cl. 6.
Fabric Research Laboratories, Inc., Dedham, Mass. 823,440, pub. 6–22–65. Cl. 42.
Faesy & Besthoff, Inc., Edgewater, N.J. 823,229, pub. 11–15–66. Cl. 6.
Fairfax Biological Laboratory: *See*—
Murray, Edgar A.
Fair-Tex Mills, Inc., New York, N.Y. 823,450, pub. 11–15–66. Cl. 42.
Fastener Industries, Inc., Cleveland, Ohio. 823,516, pub. 11–15–66. Cl. 100.
Federal Products Corp., Providence, R.I. 823,304, pub. 8–16–66. Cl. 21.
Fendall Co., Chicago, Ill. 823,375, pub. 11–15–66. Cl. 26.
Fireman's Supply Co.: *See*—
Harvey, Clarence L.
Firestone Tire & Rubber Co., The, Akron, Ohio. 823,195, pub. 11–15–66. Cl. 1.
Firm of M. Hohner, New York, N.Y., to M. Hohner Inc., Long Island, N.Y. 59,700, ren. 1–31–67. Cl. 36.
Formsprag Co., Warren, Mich. 708,395, canc. Cl. 23.
Forte-Fairbairn Inc., Needham Heights, Mass. 823,418, pub. 8–9–66. Multiple Class (Classes 39 and 42).
Foster, Benjamin, Co., Philadelphia, Pa. 823,217, pub. 11–15–66. Cl. 5.
Foster, L. W., Sportswear Co., Inc., Philadelphia, Pa. 823,531. Cl. 39.
Frank, S. M., & Co., Inc., New York, N.Y. 823,262, pub. 7–12–66. Cl. 8.
Frank Tea & Spice Co., The, Cincinnati, Ohio. 823,487, pub. 11–15–66. Cl. 46.
Futter, Carl A., Chicago, Ill., to Harsam Perfume Corp., New York, N.Y. 423,039, ren. 1–31–67. Cl. 51.
Gallo, E. & J., Winery, Modesto, Calif. 708,499, canc. Cl. 47.
Garratt, J. E., d.b.a. The Ryvita Co., London, to The Ryvita Co. Ltd., Parkstone, Poole, England. 224,060, ren. 1–31–67. Cl. 46.
Garry Laboratories, Inc., Buffalo, N.Y. 708,266, canc. Cl. 6.
Gassenheimer, Irvin and Irvin Gassenheimer, Jr., d.b.a. Electronic Engineers, Montgomery, Ala. 823,313, pub. 11–15–66. Cl. 21.
Geigy Chemical Corp.: *See*—
Geigy Co., Inc.
Geigy Chemical Corp., Ardsley, N.Y. 823,237, pub. 11–15–66. Cl. 6.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 428,761, ren. 1–31–67. Cl. 6.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 428,762, ren. 1–31–67. Cl. 6.
Gemstone Souvenirs: *See*—
Wideboor, George A.
General Atronics Corp., from General Atronics, Bala-Cynwyd, Pa. 708,450, canc. Cl. 44.
General Atronics: *See*—
General Atronics Corp.
General Crafts Corp., Baltimore, Md. 823,498, pub. 11–15–66. Cl. 50.
General Industries Corp., Salt Lake City, Utah. 823,473, pub. 11–15–66. Cl. 46.
General Mills, Inc.: *See*—
Purity Oats Co.
General Motors Corp., Detroit, Mich. 222,073, ren. 1–31–67. Cl. 19.
General Time Corp., New York, N.Y. 823,386, pub. 11–1–66. Cl. 27.
Gillette Co., The, Boston, Mass. 823,363, pub. 11–15–66. Cl. 23.
Glass, Henry, & Co., New York, N.Y. 823,453, pub. 11–15–66. Cl. 42.
Goldberg, Max, Chicago, Ill., to National Biscuit Co., New York, N.Y. 222,071, ren. 1–31–67. Cl. 46.
Golden Kernel Popcorn, Inc., Kutztown, Pa. 823,517, pub. 11–15–66. Cl. 101.
Goodrich Industries, Inc., Oklahoma City, Okla. 823,520, pub. 11–30–65. Cl. 103.
Goodway Printing Co., Inc., Philadelphia, Pa. 823,400, pub. 9–20–66. Cl. 36.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 823,197, pub. 11–15–66. Cl. 1.
Gordon, Albert C., Los Angeles, Calif. 708,524, canc. Cl. 101.
Greberman, A. J., and Sons, Inc., Philadelphia, Pa. 823,439, pub. 4–14–64. Cl. 42.
Green Bay Canning Corp., Green Bay, Wis. 425,839, ren. 1–31–67. Cl. 46.
Grundig Werke G.m.b.H., Furth, Bavaria, Germany. 823,403, pub. 11–15–66. Cl. 36.

Gunite Foundries Corp., Rockford, Ill. 708,425, canc. Cl. 38.
Gurian, Philip, Sons, Inc., New York, N.Y. 823,433, pub. 11–15–66. Cl. 39.
H-O Hornbys Oatmeal Co., The, New York and Buffalo, N.Y., to Corn Products Co., New York, N.Y. 59,917, ren. 1–31–67. Cl. 46.
Haggar Co., Dallas, Tex. 823,432, pub. 11–15–66. Cl. 39.
Haies & Hunter Co., Chicago, Ill. 708,231, canc. Cl. 1.
Halibrand Engineering, Inc., Torrance, Calif. 823,299, pub. 9–6–66. Multiple Class (Classes 19 and 23).
Halverson Products Co., Inc., Chicago, Ill. 708,387, canc. Cl. 23.
Hampton Sales Co. Inc., Garden City, N.Y. 823,311, pub. 7–12–66. Multiple Class (Classes 21, 23, and 36).
Harbutt's Plasticine Ltd.: *See*—
Harbutt, Wm.
Harbutt, Wm., Bath, to Harbutt's Plasticine Ltd., Bathampton, England. 60,921, ren. 1–31–67. Cl. 1.
Hardrock Corp., East Meadow, N.Y. 823,292, pub. 11–15–66. Cl. 18.
Harris-Intertype Corp., Cleveland, Ohio. 823,343, pub. 11–3–64. Cl. 23.
Harsam Perfume Corp.: *See*—
Futter, Carl A.
Harvey, Clarence L., d.b.a. Fireman's Supply Co., Belleville, N.J., to United States Rubber Co., New York, N.Y. 224,504, ren. 1–31–67. Cl. 39.
Hawker Siddeley Canada Ltd., Vancouver, British Columbia, Canada. 823,360, pub. 11–15–66. Cl. 23.
Hawker Siddeley Canada Ltd., Vancouver, British Columbia, Canada. 823,361, pub. 11–15–66. Cl. 23.
Hayden Huddleston Advertising Agency, Inc., Roanoke, Va. 823,524, pub. 11–15–66. Cl. 107.
Hazleton Laboratories, Inc., d.b.a. Instrument Development Co., Reston, Va. 823,464, pub. 11–15–66. Cl. 44.
Health Aids, Inc., New York, N.Y. 708,554, canc. Cl. 44.
Heatbath Corp., Springfield, Mass. 823,239, pub. 11–15–66. Cl. 6.
Henry Valve Co., Melrose Park, Ill. 823,223, pub. 11–15–66. Cl. 6.
Hermes Corp., The, Boston, Mass. 708,283, canc. Cl. 12.
Hilman Equipment Co., Inc., Sea Girt, N.J. 823,302, pub. 11–15–66. Cl. 19.
Hoffman, Charles L., d.b.a. Mariel, Sunderland, Mass. 708,549, canc. Cl. 32.
Hohner, M., Inc., Hicksville, N.Y. 823,404, pub. 11–15–66. Cl. 36.
Hohner, M., Inc.: *See*—
Firm of M. Hohner.
Home Dental Aids Co., Inc.: *See*—
Home Dental Aids Co.
Home Dental Aids Co., d.b.a. Home Dental Aids Co., Inc., Bakersfield, Calif. 823,256, pub. 11–15–66. Cl. 6.
Hooker Chemical Corp., Niagara Falls, N.Y. 823,198, pub. 11–15–66. Cl. 1.
Hopkins, Louse W., Montclair, N.J. 823,209, pub. 11–15–66. Cl. 2.
Howard Industries, Inc., Racine, Wis. 823,310, pub. 8–2–66. Cl. 21.
Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. 823,294, pub. 11–15–66. Cl. 18.
Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. 823,295, pub. 11–15–66. Cl. 18.
Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. 823,512, pub. 11–15–66. Cl. 52.
Hudson Vitamin Products: *See*—
Hudson National, Inc.
Hulman & Co.: *See*—
Rumford Chemical Works.
Hustad, Hugo B., d.b.a. M-R Guide Co., Detroit, Mich. 708,422, canc. Cl. 38.
Huyck Corp., Rensselaer, N.Y. 823,441, pub. 11–15–66. Cl. 42.
Ideal Laboratories: *See*—
Thom, Harrison S.
Imperial Chemical Industries Ltd., London, England. 823,267, pub. 11–15–66. Cl. 12.
International Fabric Corp., Boston, Mass. 823,457, pub. 11–15–66. Cl. 42.
International Latex Corp., Dover, Del. 823,434, pub. 11–15–66. Cl. 39.
International Minerals & Chemical Corp., Skokie, Ill. 708,280, canc. Cl. 10.
International Swimming Pool Corp., White Plains, N.Y. 708,294, canc. Cl. 12.
Interstate Bakeries Corp., Kansas City, Mo. 823,474, pub. 11–8–66. Cl. 46.
Irresistible, Inc., to The Nestle-Lemur Co., New York, N.Y. 428,759, ren. 1–31–67. Cl. 51.
Isaacs, I. C., and Co., Inc., Baltimore, Md. 823,417, pub. 11–15–66. Cl. 39.
James, John, & Sons, Ltd., Redditch, England, to Needle Industries Ltd. 57,412, ren. 1–31–67. Cl. 23.
Jason Corp., The, Hoboken, N.J. 708,506, canc. Cl. 50.
Jet-Flo Corp., Tyler, Tex. 823,275, pub. 11–15–66. Cl. 13.
Johnson, Donald L., d.b.a. Don L. Johnson Co., San Pedro, Calif. 823,339, pub. 11–15–66. Cl. 22.
Johnson, Donald L., d.b.a. Don L. Johnson Co., San Pedro, Calif. 823,340, pub. 11–15–66. Cl. 22.
Johnson, Don L., Co.: *See*—
Johnson, Donald L.
Johnson & Johnson, New Brunswick, N.J. 823,260, pub. 11–15–66. Cl. 6.
Johnson & Johnson, New Brunswick, N.J. 823,438, pub. 11–15–66. Cl. 39.
Johnson, S. C., & Son, Inc., Racine, Wis. 823,258, pub. 11–15–66. Cl. 6.
Jones Dairy Farm, The, to Jones Dairy Farm, Fort Atkinson, Wis. 62,268, ren. 1–31–67. Cl. 46.
Jones Dairy Farm, The, to Jones Dairy Farm, Fort Atkinson, Wis. 61,297, ren. 1–31–67. Cl. 46.
Jones Dairy Farm, The, to Jones Dairy Farm, Fort Atkinson, Wis. 56,590, ren. 1–31–67. Cl. 46.
Jones Dairy Farm, The, to Jones Dairy Farm, Fort Atkinson, Wis. 60,458, ren. 1–31–67. Cl. 46.
Jones Dairy Farm, The, to Jones Dairy Farm, Fort Atkinson, Wis. 58,648, ren. 1–31–67. Cl. 46.
Joseph & Feiss Co., The, Cleveland, Ohio. 823,430, pub. 11–15–66. Cl. 39.
Joy Mfg. Co., Pittsburgh, Pa. 823,367, pub. 11–15–66. Cl. 23.
Kanegafuchi Chemical Industry Co., Osaka, Japan. 823,193, pub. 11–15–66. Multiple Class (Classes 1, 39, 42, and 48).
Kebek Industries, Inc., Miami, Fla. 823,532. Cl. 39.
Keystone Adjustable Cap Co., d.b.a. Keystone Adjustable Cap Co., Philadelphia, Pa. 823,425, pub. 11–15–66. Cl. 39.
Keystone Adjustable Cap Co.: *See*—
Keystone Adjustable Cap Co.
Kimberly-Clark Corp., Keenah, Wis. 823,405, pub. 6–28–66. Cl. 37.
King Kullen Grocery Co., Inc., Jamaica, N.Y. 708,481, canc. Cl. 46.
Kirk, C. F., Co., New York, N.Y. 708,340, canc. Cl. 18.
Klear Vision Contact Lens Specialists, Inc., New York, N.Y. 708,548, canc. Cl. 26.
Klopman Mills, Inc., Rockleigh, N.J. 823,446, pub. 11–15–66. Cl. 42.
Kohler & Campbell, Inc.: *See*—
Autoplano Co.
Koninklijke Fabrieken C. J. Van Houten & Zoon N.V.: *See*—
Van Houten, Inc.
Kotchan, Charles J., d.b.a. Chako Co., San Diego, Calif. 708,351, canc. Cl. 19.
Kromer Cap Co., Inc., Milwaukee, Wis. 823,423, pub. 11–15–66. Cl. 39.
L.A. Importing Co.: *See*—
Los Angeles Importing Co. and Joe's Spices Co.
L'air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude, Paris, France. 823,344, pub. 11–15–66. Cl. 23.
Lady Marlene Brassiere Corp., New York, N.Y. 823,421, pub. 11–15–66. Cl. 39.
Lafrance, Andre, Montreal, Quebec, Canada. 823,326, pub. 11–15–66. Cl. 22.
Lancaster Chemical Corp., Carlstadt, N.J. 823,211, pub. 11–15–66. Multiple Class (Classes 4, 5, and 12).
Lawton & Hall, Chicago, Ill., to United States Rubber Co., New York, N.Y. 61,602, ren. 1–31–67. Cl. 39.
Lees, James, and Sons Co., Bridgeport, Pa. 823,443, pub. 11–15–66. Cl. 42.
Le-Wood Homes, Inc., Richmond, Va. 708,290, canc. Cl. 12.
Lien Chemical Co., Franklin Park, Ill. 708,272, canc. Cl. 6.
Lifetime Cutlery Corp., Brooklyn, N.Y. 823,349, pub. 11–15–66. Cl. 23.
Ligon, Charles B., d.b.a. Ligon Industries, Santa Monica, Calif. 708,389, canc. Cl. 23.
Ligon Industries: *See*—
Ligon, Charles B.
Lilly, Eli, and Co., Indianapolis, Ind., to Parke, Davis & Co., Detroit, Mich. 222,308, ren. 1–31–67. Cl. 18.
Litter-Bank of America, Inc., Hereford, from Artistic Receptacles Co., Plainview, Tex. 823,201, pub. 11–15–66. Cl. 2.
Litton Precision Products, Inc., Minneapolis, Minn. 823,529. Cl. 21.
Lord & Burnham: *See*—
Burnham Corp.
Los Angeles Importing Co., Monterey Park, Calif. 823,494, pub. 11–15–66. Cl. 46.
Los Angeles Importing Co. and Joe's Spices Co., d.b.a. L.A. Importing Co., Monterey Park, Calif. 823,495, pub. 11–15–66. Cl. 46.
MacBeth Corp., Newburgh, N.Y. 823,376, pub. 11–15–66. Cl. 26.
Macmillan Ring-Free Oil Co., Inc., Los Angeles, Calif. 823,286, pub. 11–15–66. Cl. 15.
Mag-Ic Co., Anna, Ill. 708,364, canc. Cl. 22.
Magne-Lok Co., The, Lyndhurst, N.J. 823,374, pub. 11–15–66. Cl. 25.
Maidenform, Inc., New York, N.Y. 823,429, pub. 11–15–66. Cl. 39.
Maitland Junior Chamber of Commerce, Maitland, Fla. 823,513, pub. 11–15–66. Cl. 100.
Mallalieu, Robert P., d.b.a. Encom Products Co., Media, Pa. 823,319, pub. 7–26–66. Cl. 21.
Manhattan Shirt Co., The, New York, N.Y. 429,687, ren. 1–31–67. Cl. 39.
Manley Bros., Chesterton, Ind. 823,194, pub. 11–15–66. Cl. 1.
Mariel: *See*—
Hoffman, Charles L.
Martin-Marietta Corp., New York, N.Y. 823,253, pub. 11–15–66. Cl. 6.
Martin-Marietta Corp., New York, N.Y. 823,266, pub. 11–15–66. Cl. 12.
Marx, Louis, & Co., Inc., New York, N.Y. 823,334, pub. 11–15–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 823,329, pub. 11–15–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 823,330, pub. 11–15–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 823,341, pub. 11–15–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 823,342, pub. 11–15–66. Cl. 22.
Maxwell Mfg. Co., Vancouver, Wash. 823,337, pub. 11–15–66. Cl. 22.
Mayer, Irving, San Antonio, Tex. 708,238, canc. Cl. 2.

Maytag Co., The, Newton, Iowa. 823,371, pub. 9–6–66. Cl. 24.
Medart, Fred, Mfg. Co., St. Louis, Mo. 708,371, canc. Cl. 22.
Medi-Fact Inc., West Peabody, Mass. 823,518, pub. 11–15–66. Cl. 102.
Merck & Co., Inc., Rahway, N.J. 823,233, pub. 11–15–66. Cl. 6.
Merit Associates, Inc., Seaford, N.Y. 708,292, canc. Cl. 12.
Merrell, Wm. S., Co., The: *See*— Richardson-Merrell, Inc.
Midwest Hanger Co., Liberty, Mo. 823,203, pub. 11–15–66. Cl. 2.
Miles Standard Corp., The, Saginaw, Mich. 823,352, pub. 11–15–66. Cl. 23.
Milgo Electronic Corp., Miami, Fla. 823,323, pub. 11–15–66. Multiple Class (Classes 21 and 26).
Milgo Electronic Corp., Miami, Fla. 823,324, pub. 11–15–66. Multiple Class (Classes 21 and 26).
Milwards Fishing Tackle Ltd.: *See*— Milward, Henry, & Sons, Ltd.
Milward, Henry, & Sons, Ltd., to Milwards Fishing Tackle Ltd., Redditch, England. 221,738, ren. 1–31–67. Cl. 22.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 823,259, pub. 11–15–66. Cl. 6.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 823,384, pub. 11–15–66. Cl. 26.
Mitsubishi Rayon Co., Ltd., Tokyo, Japan. 823,192, pub. 8–9–66. Cl. 1.
Modern Maid, Inc., from Tennessee Stove Works, Inc., Chattanooga, Tenn. 823,314, pub. 6–14–66. Cl. 21.
Modern Maid, Inc., from Tennessee Stove Works, Inc., Chattanooga, Tenn. 823,392, pub. 6–28–66. Cl. 34.
Modern Plastics, Inc., to McGraw-Hill, Inc., New York, N.Y. 426,130, ren. 1–31–67. Cl. 38.
Modern Products, Inc., Milwaukee, Wis. 708,514, ren. 1–31–67. Cl. 51.
Mott's Inc. of Mississippi, Water Valley, Miss. 823,490, pub. 11–15–66. Cl. 46.
Murray, Edgar A., d.b.a. Edgar A. Murray Co. to H. A. Chittick, d.b.a. Fairfax Biological Laboratory, Clinton Corners, N.Y. 223,674, ren. 1–31–67. Cl. 6.
Murray, Edgar A., Co.: *See*— Murray, Edgar A.
McClaflin, Norman E., d.b.a. N.M. Mink Tone Co., Eau Claire, Wis. 708,320, canc. Cl. 18.
McGraw-Hill, Inc.: *See*— Modern Plastics, Inc.
McLeansboro Twine Co.: *See*— Atkinson, Sam.
N.M. Mink Tone Co.: *See*— McClaflin, Norman E.
National Association of Trailer Owners, Inc., Sarasota, Fla. 708,428, canc. Cl. 38.
National Biscuit Co.: *See*— Goldberg, Max.
Bennett, F. H., Biscuit Co.
National Cooperatives, Inc., Albert Lea, Minn. 823,306, pub. 8–16–66. Cl. 21.
National Industrial Laundries: *See*— National Work Clothes Rental.
National Pencil Co., to National Pencil Co., Shelbyville, Tenn. 425,759, ren. 1–31–67. Cl. 37.
National Pencil Co., to National Pencil Co., Shelbyville, Tenn. 425,771, ren. 1–31–67. Cl. 37.
National Periodical Publications, Inc., New York, N.Y. 823,414, pub. 11–15–66. Cl. 38.
National Research Corp., Cambridge, Mass. 823,497, pub. 11–15–66. Cl. 50.
National Work Clothes Rental, d.b.a. National Industrial Laundries, Elizabeth, N.J. 823,522, pub. 11–15–66. Cl. 103.
Needle Industries Ltd.: *See*— James, John, & Sons, Ltd.
Neely Mfg. Co., Inc., Corydon, Iowa. 823,205, pub. 11–15–66. Cl. 2.
Nelmor Co., Inc., North Uxbridge, Mass. 823,364, pub. 11–15–66. Cl. 23.
Nestle-Lemur Co., The: *See*— Irresistible, Inc.
Niemann, William H., & Co., New York, N.Y., to William H. Niemann & Co., Paramus, N.J. 426,326, ren. 1–31–67. Cl. 1.
Nippon Bulge Industries, Ltd., Tokyo, Japan. 823,273, pub. 11–15–66. Cl. 13.
Nitro-Air Corp., Miami, Fla. 823,250, pub. 11–15–66. Cl. 6.
Nordic Export & Import Agency: *See*— Nordine, Raymond H.
Nordine, Raymond H., d.b.a. Nordic Export & Import Agency, Chicago, Ill. 708,551, canc. Cl. 39.
Norton Co., Troy, N.Y. 823,210, pub. 3–3–64. Cl. 4.
Norfolk Products Corp., Norfolk, Conn. 708,390, canc. Cl. 23.
Norfolk Products Corp., Norfolk, Conn. 708,391, canc. Cl. 23.
North American Plastics Corp., d.b.a. North American Plastics Co., Paterson, N.J. 708,539, canc. Cl. 2.
North American Plastics Co.: *See*— North American Plastics Corp.
Northern Propane Gas Co., Omaha, Nebr. 823,228, pub. 11–15–66. Cl. 6.
Norse Chemical Corp., Cudahy, Wis. 823,501, pub. 11–15–66. Cl. 51.
Norse Chemical Corp., Cudahy, Wis. 823,502, pub. 11–15–66. Cl. 51.
Norwich Pharmacal Co., The, Norwich, N.Y. 708,339, canc. Cl. 18.
Nuclear Data, Inc., Palatine, Ill. 823,379, pub. 11–15–66. Cl. 26.
Oberman Fabrics, Inc., New York, N.Y. 823,454, pub. 11–15–66. Cl. 42.
Oelerich & Berry Co., Chicago, Ill., to Corn Products Co., New York, N.Y. 223,424, ren. 1–31–67. Cl. 46.
Oil Heat Institute of Washington, Seattle, Wash. 823,536. Cl. 200.
Olin Mathieson Chemical Corp.: *See*— U.S. Industrial Chemicals, Inc.
Originala Inc., New York, N.Y. 823,485, pub. 11–15–66. Cl. 39.
Orrtronics, Inc., Opelika, Ala. 823,399, pub. 11–15–66. Cl. 36.
Ortho Pharmaceutical Corp., Raritan, N.J. 429,474, ren. 1–31–67. Cl. 44.
Otis Engineering Corp., Dallas, Tex. 821,855, pub. 11–15–66. Cl. 23.
Outboard Marine Corp., Waukegan, Ill. 823,303, pub. 11–15–66. Cl. 19.
Owatonna Tool Co., Owatonna, Minn. 823,382, pub. 11–15–66. Cl. 26.
Owens-Illinois, Inc., from Owens-Illinois Glass Co., Toledo, Ohio. 823,202, pub. 11–15–66. Cl. 2.
Owens-Illinois Glass Co.: *See*— Owens-Illinois, Inc.
Packard-Bell Electronics Corp., Los Angeles, Calif. 708,286, canc. Cl. 12.
Panter Co., Inc., Detroit, Mich. 823,407, pub. 11–15–66. Cl. 37.
Paper Novelty Co., The, to Diana Mfg. Co., Green Bay, Wis. 227,890, ren. 1–31–67. Cl. 44.
Parke, Davis & Co.: *See*— Lilly, Eli, & Co.
Parke, Davis & Co., Detroit, Mich. 426,984, ren. 1–31–67. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 823,252, pub. 11–15–66. Cl. 6.
Patten, Lee, Seed Co., Moonachie, N.J. 823,238, pub. 11–15–67. Cl. 6.
Pennsalt Chemicals Corp., Philadelphia, Pa., from B. T. Babbitt, Inc., New York, N.Y. 823,500, pub. 8–2–66. Cl. 52.
Permatex Co., Inc., Brooklyn, N.Y. 823,287, pub. 11–15–66. Cl. 15.
Perpetuum-Ebner, Fabrik fur Feinmechanik und Elektrotechnik, Steidinger & Co., Black Forest, Germany. 823,312, pub. 11–15–66. Multiple Class (Classes 21 and 36).
Peyron, Antoine Francois Regis, Paris, France. 708,453, canc. Cl. 44.
Pfizer, Chas., & Co., Inc., New York, N.Y. 823,241, pub. 11–15–66. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 823,242, pub. 11–15–66. Cl. 6.
Philadelphia Ampoule Laboratories, Inc., Philadelphia, Pa. 708,317, canc. Cl. 18.
Philadelphia Chewing Gum Corp., Havertown, Pa. 823,476, pub. 11–15–66. Cl. 46.
Pierce-All Mfg. Ltd., Rexdale, Ontario, Canada. 823,365, pub. 11–15–66. Cl. 23.
Pierce & Stevens Chemical Corp., Buffalo, N.Y. 823,216, pub. 11–15–66. Cl. 5.
Pillsbury Co., The: *See*— Pillsbury Mills, Inc.
Pillsbury Co., The, Minneapolis, Minn. 823,413, pub. 11–15–66. Cl. 38.
Pillsbury Co., The, Minneapolis, Minn. 823,468, pub. 11–15–66. Cl. 45.
Pillsbury Co., The, Minneapolis, Minn. 823,471, pub. 5–23–65. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 823,475, pub. 11–15–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 823,477, pub. 11–15–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 823,479, pub. 11–15–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 823,480, pub. 11–15–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 823,481, pub. 11–15–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 823,482, pub. 11–15–66. Cl. 46.
Pillsbury Co., The, Minneapolis, Minn. 823,483, pub. 11–15–66. Cl. 46.
Pillsbury Mills, Inc., to The Pillsbury Co., Minneapolis, Minn. 427,017, ren. 1–31–67. Cl. 46.
Pinaud, Ed, Inc.: *See*— Pinaud, Inc.
Pinaud, Inc., to Ed Pinaud, Inc., New York, N.Y. 225,667, ren. 1–31–67. Cl. 51.
Pivot Punch Corp., North Tonawanda, N.Y. 823,345, pub. 11–15–66. Cl. 23.
Pivot Punch Corp., North Tonawanda, N.Y. 823,346, pub. 11–15–66. Cl. 23.
Planters Nut & Chocolate Co., Wilkes-Barre, Pa. 708,556, canc. Cl. 46.
Poirette Corsets, Inc., New York, N.Y. 823,426, pub. 11–15–66. Cl. 39.
Precision Engineered Products Corp., Charlotte Amalie, Virgin Islands. 823,264, pub. 11–15–66. Cl. 9.
Premax Laboratories, Inc., Oakland, Calif. 823,510, pub. 11–15–66. Cl. 52.
Premier Industrial Corp., Cleveland, Ohio. 823,245, pub. 11–15–66. Cl. 6.
Proctro-Silex Corp., The, Philadelphia, Pa. 823,315, pub. 11–15–66. Multiple Class (Classes 21 and 31).
Puchner, Josef F., Nauheim, Germany. 823,401, pub. 11–15–66. Cl. 36.
Pulse Communications, Inc., Alexandria, Va. 823,309, pub. 11–15–66. Multiple Class (Classes 21 and 26).

Purity Oats Co., Keokuk, Iowa, to General Mills, Inc., Minneapolis, Minn. 221,074, ren. 1–31–67. Cl. 46.
Purtle, A. D.: *See*— Purtle, Albert D.
Purtle, Albert D., d.b.a. A. D. Purtle, Marietta, Ohio. 708,396, canc. Cl. 23.
Radio Corp. of America: *See*— Cunningham, E. T., Inc.
Victor Talking Machine Co.
Radio Corp. of America, New York, N.Y. 823,318, pub. 11–15–66. Cl. 21.
Radio Shack Corp., Boston, Mass. 823,380, pub. 11–15–66. Cl. 26.
Red Owl Co., Hapkins, Minn. 823,484, pub. 11–15–66. Cl. 46.
Reed & Barton, Taunton, Mass. 221,378, ren. 1–31–67. Cl. 23.
Remington Arms Co., Inc., Bridgeport, Conn. 823,265, pub. 11–15–66. Cl. 9.
Republic Industrial Corp., New York, N.Y. 823,271, pub. 11–15–66. Cl. 13.
Revere Rubber Co., Boston, Mass., to United States Rubber Co., New York, N.Y. 61,847, ren. 1–31–67. Cl. 35.
Rheem Mfg. Co., New York, N.Y. 823,402, pub. 11–15–66. Cl. 36.
Rhodia Inc., New York, N.Y. 823,235, pub. 11–15–66. Cl. 6.
Rhodia Inc., New York, N.Y. 823,243, pub. 11–15–66. Cl. 6.
Richardson-Merrell, Inc., d.b.a. The Wm. S. Merrell Co., Cincinnati, Ohio. 823,296, pub. 11–15–66. Cl. 18.
Richardson-Merrell, Inc., d.b.a. The Wm. S. Merrell Co., Cincinnati, Ohio. 823,297, pub. 11–15–66. Cl. 18.
Richardson-Merrell, Inc., d.b.a. The Wm. S. Merrell Co., Cincinnati, Ohio. 823,298, pub. 11–15–66. Cl. 18.
Rich-Flex Mfg. Corp., Lincoln, R.I. 823,462, pub. 11–15–66. Cl. 43.
Richloom Fabrics: *See*— Richman, Fred M.
Richman, Fred M., d.b.a. Richloom Fabrics, New York, N.Y. 823,444, pub. 8–16–66. Cl. 42.
Rigid Boxes, Inc., Minneapolis, Minn. 823,204, pub. 11–15–66. Cl. 2.
Robeson Cutlery Co., Inc., Perry, N.Y. 708,507, canc. Cl. 50.
Robinson, Ralph R., Middlesboro, Ky. 823,533. Cl. 44.
Rockwell-Standard Corp., Pittsburgh, Pa. 823,528. Cl. 19.
Roemer, Mary P., and Albert L. Roemer, Montgomery, Ala. 823,332, pub. 11–15–66. Cl. 22.
Ronac Associates: *See*— Adler, Ronald E.
Roystoys Inc., Glenview, Ill. 823,335, pub. 11–15–66. Cl. 22.
Rumford Chemical Works, Providence, R.I., to Hulman & Co., Terre Haute, Ind. 60,394, ren. 1–31–67. Cl. 46.
Rust Master Chemical Corp., Worcester, Mass. 708,519, canc. Cl. 52.
Rust Master Chemical Corp., Worcester, Mass. 708,518, canc. Cl. 52.
Ryvita Co., The: *See*— Garratt, J. E.
Saffir, Jacob A., Los Angeles, Calif. 708,513, canc. Cl. 51.
Sales Research Development Co., Salt Lake City, Utah. 823,467, pub. 11–15–66. Cl. 44.
Sanipro Chemical Corp., Brooklyn, N.Y. 823,255, pub. 11–15–66. Cl. 6.
Santa Monica Chemical Corp., Santa Monica, Calif. 823,500, pub. 11–15–66. Cl. 51.
Sarong, Inc., Dover, Del. 823,428, pub. 11–15–66. Cl. 39.
Sauer, Gail, d.b.a. California Gritweld Co., Reseda, Calif. 708,546, canc. Cl. 22.
Schering A.G., Berlin, Germany. 823,240, pub. 11–15–66. Cl. 6.
Scholten, J. F., & Zonen (Curacao) N.V., Willemstad, Curacao, 708,379, canc. Cl. 23.
Schramm Fiberglass Products, Inc., from Cory Corp. (Pace Home Products Division), Chicago, Ill. 823,215, pub. 11–15–66. Cl. 5.
Scripto, Inc., Atlanta, Ga. 823,263, pub. 11–15–66. Cl. 8.
Senior Universal Mutual Benefit Association, Dallas, Tex. 708,537, canc. Cl. 200.
Servotronics, Inc., Cheektowaga, N.Y. 823,396, pub. 11–15–66. Cl. 35.
Servotronics, Inc., Cheektowaga, N.Y. 823,397, pub. 11–15–66. Cl. 35.
Sevenstrand Tackle Mfg. Co., Long Beach, Calif. 823,338, pub. 11–15–66. Cl. 22.
Sharon Steel Corp., Sharon, Pa. 823,284, pub. 11–15–66. Cl. 14.
Sheffield Watch, Inc., from Webster Watch Co., Inc., New York, N.Y. 823,385, pub. 9–21–65. Cl. 27.
Sherman Car Wash Equipment Co., Palmyra, N.J. 823,288, pub. 9–6–66. Cl. 16.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 823,503, pub. 11–15–66. Cl. 51.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 823,504, pub. 11–15–66. Cl. 51.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 823,505, pub. 11–15–66. Cl. 51.
Shirley Fabrics Corp., New York, N.Y. 823,455, pub. 11–15–66. Cl. 42.
Shuler & Benninghofen, Hamilton, Ohio. 227,261, ren. 1–31–67. Cl. 42.
Silver Star Products Corp., New York, N.Y. 708,494, canc. Cl. 46.
Simmon Brothers, Inc., Woodside, N.Y. 823,381, pub. 11–15–66. Cl. 26.
South Chester Corp., Lester, Pa. 823,283, pub. 11–15–66. Cl. 13.
Southern Chemical Cotton Co., Chattanooga, Tenn. 708,236, canc. Cl. 1.
Southern Mill Equipment Corp., Charlotte, N.C. 823,357, pub. 11–15–66. Cl. 23.
Southwestern Drug Corp., Dallas, Tex. 823,293, pub. 11–15–66. Cl. 18.
Spectrum Fabrics Corp., New York, N.Y. 823,445, pub. 11–15–66. Cl. 42.
Spiratone, Inc., Flushing, N.Y. 823,383, pub. 11–15–66. Cl. 26.
Sport-Pix Promotions: *See*— Ellis, Clarence B.
Springbok Editions, Inc., New York, N.Y. 823,328, pub. 11–15–66. Cl. 22.
Staley, A. E., Mfg. Co., Decatur, Ill. 823,220, pub. 11–15–66. Cl. 6.
Standard International Corp., Andover, Mass. 823,249, pub. 11–15–66. Cl. 6.
Standard Screw Co., Hartford, Conn. 823,276, pub. 11–15–66. Cl. 13.
Star Key & Lock Mfg. Co., Inc., Brooklyn, N.Y. 823,272, pub. 11–15–66. Cl. 18.
Stauffer Chemical Co., New York, N.Y. 823,261, pub. 11–15–66. Cl. 6.
Steinberg Brothers, Seattle, Wash. 708,429, canc. Cl. 39.
Sternco Industries, Inc., Allendale, N.J. 823,499, pub. 11–15–66. Cl. 50.
Stevens, J. P., & Co., Inc., New York, N.Y. 708,447, canc. Cl. 42.
Stewart-Warner Corp., Chicago, Ill. 708,251, canc. Cl. 6.
Stockham Valves & Fittings, Inc., Birmingham, Ala. 823,277, pub. 11–15–66. Cl. 13.
Stoelting Brothers Co., Kiel, Wis. 823,348, pub. 11–15–66. Multiple Class (Classes 23 and 31).
Stokely-Van Camp, Inc., Indianapolis, Ind. 708,462, canc. Cl. 46.
Stromeyer, J., Co., Philadelphia, Pa. 224,287, ren. 1–31–67. Cl. 45.
Studebaker Corp., South Bend, Ind. 823,356, pub. 11–15–66. Cl. 23.
Swabi Co., Inc., Boston, Mass. 708,456, canc. Cl. 44.
Syntex S.A., Mexico City, Mexico. 708,326, canc. Cl. 18.
Technical Industries, Inc., from Technical Industries, Fort Lauderdale, Fla. 708,407, canc. Cl. 31.
Technical Industries: *See*— Technical Industries, Inc.
Tee-Pak, Inc., Chicago, Ill. 823,206, pub. 11–15–66. Cl. 2.
Tempo Products Co., Solon, Ohio. 823,350, pub. 11–15–66. Cl. 23.
Tempo Products Co., Solon, Ohio. 823,351, pub. 11–15–66. Cl. 23.
Tenneco Chemicals, Inc., New York, N.Y., from Berkshire Color & Chemical Co., Reading, Pa. 823,221, pub. 11–15–66. Cl. 6.
Tenneco, Inc., from Tennessee Gas Transmission Co., Houston, Tex. 823,408, pub. 11–15–66. Cl. 37.
Tenneco, Inc., from Tennessee Gas Transmission Co., Houston, Tex. 823,409, pub. 11–15–66. Cl. 37.
Tennessee Gas Transmission Co.: *See*— Tenneco, Inc.
Tennessee Stove Works, Inc.: *See*— Modern Maid, Inc.
Textile Marking Machine Co., Inc., Syracuse, N.Y. 823,372, pub. 11–15–66. Cl. 24.
Thal, Adrian, Inc., Miami, Fla. 708,431, canc. Cl. 39.
Thom, Harrison S., d.b.a. Ideal Laboratories, Rochester, N.Y. 708,363, canc. Cl. 22.
Tomar Products, Inc., Rochester, N.Y. 708,296, canc. Cl. 12.
Thomas Foods, Inc., Cincinnati, Ohio. 823,491, pub. 11–15–66. Cl. 46.
Thomas & Howard Co., Inc., Charlotte, N.C. 823,470, pub. 4–28–64. Cl. 46.
Thomas Pride Mills, Inc., Atlanta, Ga. 823,451, pub. 11–15–66. Cl. 42.
Thomas Pride Mills, Inc., Atlanta, Ga. 823,452, pub. 11–15–66. Cl. 42.
Tillman Produce Co., Inc., Wilton, Wis. 823,534. Cl. 46.
Timber Engineering Co., Washington, D.C. 823,526, pub. 11–15–66. Cl. A.
Trans Caribbean Airways, Inc., New York, N.Y. 823,515, pub. 11–15–66. Cl. 100.
Transilog Co., Inc., The, Washington, D.C. 823,377, pub. 11–15–66. Multiple Class (Classes 26 and 38).
Transistor Electronics Corp., Minneapolis, Minn. 823,305, pub. 11–15–66. Cl. 21.
Trubek Laboratories, The, d.b.a. Truland Chemical Co., East Rutherford, N.J. 708,264, canc. Cl. 6.
Truland Chemical Co.: *See*— Trubek Laboratories, The.
TRW, Inc., Cleveland, Ohio. 823,316, pub. 11–15–66. Cl. 21.
Turtle Wax, Inc., Chicago, Ill. 823,212, pub. 11–15–66. Cl. 4.
Union Camp Corp.: *See*— Union Bag & Paper Co., The.
Union Carbide Corp., New York, N.Y. 823,248, pub. 11–15–66. Cl. 6.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 58,326, ren. 1–31–67. Cl. 2.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 58,617, ren. 1–31–67. Cl. 2.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 58,618, ren. 1–31–67. Cl. 2.
Union City Body Co., Inc., Union City, Ind. 823,527. Cl. 19.
Union Tractor Inc., Jacksonville, Fla. 708,377, canc. Cl. 23.
Uni-Serv Corp., Great Neck, N.Y. 823,519, pub. 11–15–66. Cl. 102.
U.S. Industrial Chemicals, Inc., to Olin Mathieson Chemical Corp., New York, N.Y. 429,322, ren. 1–31–67. Cl. 6.
United States Playing Card Co., The, East Norwood, Cincinnati, to The United States Playing Card Co., Cincinnati, Ohio. 59,044, ren. 1–31–67. Cl. 22.

United States Rubber Co.: *See*—
Lawton & Hall.
Revere Rubber Co.
Harvey, Clarence L.
United States Rubber Co., New York, N.Y. 823,395, pub. 11–15–66. Cl. 35.
United States Rubber Co., New York, N.Y. 823,398, pub. 11–15–66. Cl. 35.
United Steel and Wire Co., Battle Creek, Mich. 823,208, pub. 11–15–66. Cl. 2.
United States Tobacco Co., New York, N.Y. 823,485, pub. 11–15–66. Cl. 46.
Universal Cigar Corp., New York, N.Y. 823,291, pub. 11–15–66. Cl. 17.
Vacmobile Mfg. Co., Ltd., Kilburn, London, England. 823,347, pub. 11–15–66. Cl. 23.
Varna, Henri, et Cie, Ltd., Paris, France. 823,525, pub. 11–15–66. Cl. 107.
Venus Pen & Pencil Corp., New York, N.Y. 823,406, pub. 11–15–66. Cl. 37.
Van Houten, Inc., New York, N.Y., to Koninklijke Fabrieken C. J. Van Houten & Zoon N.V., Weesp, Netherlands. 222,824, ren. 1–31–67. Cl. 46.
Victor Talking Machine Co., Camden, N.J., to Radio Corp. of America, New York, N.Y. 224,081, ren. 1–31–67. Cl. 36.
Viking Carpets, Inc., New York, N.Y. 823,370, pub. 11–15–66. Cl. 23.
Vincent Michaels, Inc., New York, N.Y. 708,562, canc. Cl. 101.
Vinesco Corp., Pelham, N.Y. 708,312, canc. Cl. 18.
Vita-Pakt Citrus Products Co., Covina, Calif. 823,472, pub. 11–15–66. Cl. 46.
Vulcan Corp., Portsmouth, Ohio. 708,434, canc. Cl. 39.
Vulcan, Rocco, d.b.a. Carvul Mfg. Co., Houston, Pa. 708,491, canc. Cl. 46.
WVD Co., Denver, Colo. 823,492, pub. 11–15–66. Cl. 46.
Walker, John, d.b.a. Anchor Products Co., Princeton, Ill. 708,370, canc. Cl. 22.
Wallace & Tiernan Inc., Belleville, N.J. 708,273, canc. Cl. 6.
Wallace & Tiernan Inc., Belleville, N.J. 708,274, canc. Cl. 6.
Wallace & Tiernan Inc., Belleville, N.J. 708,275, canc. Cl. 6.
Warner Bros. Co., Bridgeport, Conn. 823,420, pub. 7–12–66. Cl. 39.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 708,316, canc. Cl. 18.
Wayne Mfg. Co., Staatsburg, N.Y. 823,389, pub. 8–16–66. Cl. 30.
Webster Watch Co., Inc.: *See*—
Sheffield Watch, Inc.
Wenzel, H., Tent & Duck Co., St. Louis, Mo. 708,508, canc. Cl. 50.
West Chemical Products, Inc., Long Island City, N.Y. 823,247, pub. 11–15–66. Cl 6.
West Shore Beef & Poultry Corp., New York, N.Y. 708,464, canc. Cl. 46.
Western Campers, Inc., Buena Park, Calif. 823,301, pub. 11–15–66. Cl. 19.
Western Kraft Corp., Portland, Oreg. 823,207, pub. 11–15–66. Cl. 2.
Western Oil and Fuel Co., Minneapolis, Minn. 823,244, pub. 11–15–66. Cl. 6.
Westinghouse Electric Corp., Mansfield, Ohio. 823,373, pub. 11–15–66. Cl. 24.
White Laboratories, Inc., Kenilworth, N.J. 708,348, canc. Cl. 18.
Wildeboor, George A., d.b.a. Gemstone Souvenirs, Savannah, Mo. 708,247, canc. Cl. 5.
Williams Gold Refining Co., Inc., Buffalo, N.Y. 823,331, pub. 11–15–66. Cl. 22.
Williams Gold Refining Co., Inc., Buffalo, N.Y. 823,465, pub. 11–15–66. Cl. 44.
Williams Gold Refining Co., Inc., Buffalo, N.Y. 823,466, pub. 11–15–66. Cl. 44.
Winig Slipper Corp., Gloversville, N.Y. 823,416, pub. 11–15–66. Cl. 39.
Wisconsin Knife Works, Inc., Beloit, Wis. 823,362, pub. 11–15–66. Cl. 23.
Wyandotte Chemicals Corp., Wyandotte, Mich. 823,225, pub. 11–15–66. Cl. 6.
Wyandotte Chemicals Corp., Wyandotte, Mich. 823,509, pub. 11–15–66. Cl. 52.
Wyeth, John, and Bro., Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 59,750, ren. 1–31–67. Cl. 6.
Young, Stephen A., Corp., Flora, Ind. 823,282, pub. 11–15–66. Cl. 13.
Zenith Radio Corp., Chicago, Ill. 823,322, pub. 9–6–66. Cl. 21.

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